

ANTARCTIC SEISMOLOGICAL BULLETIN

January, February, March, 1963

MSI - 265A

Published in cooperation with the Scientific
Committee on Antarctic Research of the
International Council of Scientific Unions.

U. S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

COAST AND GEODETIC SURVEY—WASHINGTON

H. Arnold Karo, Director

FOR OFFICIAL DISTRIBUTION

U. S. COAST AND GEODETIC SURVEY
ANTARCTIC SEISMOLOGICAL BULLETIN

The Scientific Committee on Antarctic Research of the International Council of Scientific Unions recommended that a bulletin of phase readings be issued from seismological stations in the Antarctic.

The United States Coast and Geodetic Survey has undertaken the publication of the Antarctic Seismological Bulletin to be issued quarterly, based on the readings received by radio from the Antarctic stations. The phase designation shown in this bulletin is the identification given by the station operator.

The epicenters shown in this Bulletin are computed by the United States Coast and Geodetic Survey using the phase readings from many stations in addition to the Antarctic readings shown.

STATION AND INSTRUMENTAL CONSTANTS

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Country, Station and Station Abbreviation	Position		Foundation and Elevation (In Meters)	Instruments and Components	To Seconds	T _g Seconds
	Latitude	Longitude				
ARGENTINA Deception (DEC)	62°59' S	60°43' W	Rock 7 m	Mainka Mainka N E	5.0 5.0	
AUSTRALIA Macquarie (MCQ)	54°29'55" S	158°57'22" E	Weathered Basaltic Lava 14 m	Benioff Benioff Benioff Z N E	1.0 1.0 1.0	0.2 0.2 0.2
Mawson (MAW)	67°36'21" S	62°52'48" E	Pre-Cambrian granite 9 m	Benioff Benioff Benioff Z N E	1.0 1.0 1.0	0.2 14.0 14.0
Wilkes (WIL)	66°15.5' S	110°31.2' E	Rock 9 m	Grenet Lehner-Griffith Lehner-Griffith Z N E	1.4 21.0 13.0	1.0 60.0 75.0
FRANCE Dumont d'Urville (DRV)	66°40' S	140°01' E	Rock 40 m	Labrouste Galitzin Galitzin Z N E	1.5 12.5 12.5	11.0 12.3
Kerguelen (KII)	49°21'39.3" S	70°04'00.9" E	Basalt 22 m	Grenet-Coulomb Grenet-Coulomb Paris Type IPG Paris Type IPG Z Z N E	9.71 1.03 15.0 14.0	4.25 0.3 4.25 4.25
NEW ZEALAND Hallett (HLL)	72°17.7' S	170°18.5' E	Rock 5 m	Willmore Press-Ewing Press-Ewing Press-Ewing Z Z N E	1.0 15.0 15.0 15.0	2.0 75.0 75.0 75.0
Scott Base (SBA)	77°51' S	166°45' E	Rock 15 m	Benioff Benioff Benioff Z N E	0.2 25.0 25.0	0.2 - 25** 0.2 - 25** 0.2 - 10**
USSR Mirny (MIR)	66°33' S	93°00' E	Rock 30 m	SVKM SVK SGK SGK Z Z N E	2.5 12.5 12.5 12.5	1.0 1.1 1.1 1.1
UNITED KINGDOM Argentine Island (AIA)	65°15' S	64°16' W	Rock 11 m	Willmore Willmore Willmore Z N E	1.0 1.0 1.0	0.25 0.25 0.25
UNITED STATES Byrd (BYR)	80°01' S	119°31' W.	Ice 1515 m	Benioff Wilson-Lamison Wilson-Lamison Sprengnether* Sprengnether* Sprengnether* Z N E Z N E	1.0 6.3 5.8 30.0 25.0 16.0	0.5 3.6 94.0 29.0 13.7
South Pole (SPA)	90° S	0	Ice 2600 m	Benioff Benioff Wilson-Lamison Wilson-Lamison Z Z , ,	0.7 0.7 3.5 3.6	0.5 0.5 0.5 0.5

*Began operation March 1, 1962

**Long period galvanometers recording on 35 mm film.

ANTARCTIC SEISMOGRAM DEPOSITORIES

ARGENTINA: Servicio Meteorologico Nacional
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NEW ZEALAND: Superintendent
Seismological Observatory
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USSR: Research Institute of Earth Physics
Academy of Sciences of the USSR
Moscow, USSR

UNITED KINGDOM: Falkland Island Dependency Survey
4 Milbank
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England

UNITED STATES: U. S. Coast and Geodetic Survey
Seismology Division
Commerce Building
Washington 25, D. C.

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JAN 1 SPA E	06 06 20	SPA I	01 28 28	JAN 3 SPA I	08 34 27	JAN 5 BYR I	00 38 20
JAN 1 SPA E	08 25 38	JAN 2 AIA E	02 45 38	JAN 3 H-09 39 46.8 5.3S 151.5E h ABOUT 74KM		SPA IP	00 38 51
JAN 1 SPA E	11 47 18	JAN 2 H-03 23 29.5 5.8S 150.0E h ABOUT 33KM		HLL EP	09 50 39	JAN 5 AIA E	00 54 55
JAN 1 SPA I	11 58 13	SPA I	03 36 01	SPA IP	09 52 14	JAN 5 MAW EP	03 06 28
JAN 1 H-12 17 38.6 6.8S 155.9E h ABOUT 165KM		JAN 2 SPA I	04 00 47	MAW IP	09 52 28	JAN 5 H-13 04 48.1 17.8S 167.9E h ABOUT 33KM	
SPA IP	12 29 47	JAN 2 BYR E	07 03 49	JAN 3 BYR EP	12 29 30	BYR E	13 15 58
JAN 1 H-16 27 38.1 20.0S 175.4W h ABOUT 130KM		JAN 2 SPA E	11 29 27	JAN 3 MCQ IP	12 43 48	SPA IP	13 16 13
BYR I	16 38 05	JAN 2 AIA E	14 13 24	JAN 3 H-13 56 34.5 6.9S 155.2E h ABOUT 91KM		JAN 5 WIL IP	13 13 06
SPA IP	16 38 38	JAN 2 AIA E	14 47 38	SPA I	14 08 53	IS	23 18
JAN 1 H-17 49 31.0 6.9S 155.5E h ABOUT 82KM		JAN 2 H-14 56 05.4 4.1S 135.2E h ABOUT 33KM		JAN 3 SPA E	19 08 40	JAN 5 H-13 16 43.0 10.0S 124.0E h ABOUT 33KM	
SPA I	18 01 49	SPA I	15 08 44	JAN 3 H-19 12 49.8 5.9S 155.0E h ABOUT 99KM		WIL E(P)	13 26 25
JAN 1 H-19 35 55.1 40.2S 81.3E h ABOUT 33KM		BYR E	15 08 59	SPA I	19 25 11	SPA I	13 28 51
HLL EP	19 45 04	JAN 2 H-15 55 47.9 52.9S 118.2W h ABOUT 33KM		JAN 4 AIA E	03 54 21	BYR I	13 29 16
BYR E	19 45 51	BYR E	16 01 30	JAN 4 H-06 43 42.3 32.6S 178.6W h ABOUT 44KM		JAN 5 WIL I(P)	17 36 53
JAN 1 SPA E	21 56 32	HLL EP	16 02 43	SPA I	06 53 30	JAN 5 H-17 43 35.1 7.0S 72.1W h ABOUT 544KM	
JAN 1 SPA E	22 17 22	SPA I	16 02 58	JAN 4 MAW IP	07 58 47	BYR I	17 54 26
JAN 1 AIA E	22 51 47	JAN 2 H-17 59 38.8 4.3S 135.2E h ABOUT 33KM		JAN 4 BYR I	08 19 46	JAN 6 AIA E	01 47 29
AIA E	52 19	SPA E	18 12 18	JAN 4 BYR E	09 52 17	JAN 6 MAW E	03 22 02
JAN 1 AIA E	23 58 02	E	15 11	JAN 4 H-12 16 38.0 4.7S 154.0E h ABOUT 69KM		JAN 6 MAW IP	05 47 00
BYR EP	23 58 18	JAN 2 H-18 30 52.7 10.7S 165.0E h ABOUT 39KM		WIL EP	12 27 29	JAN 6 MAW IP	06 40 51
SPA IP	23 58 37	SPA E	18 42 57	IS	36 24	JAN 6 AIA E	11 05 43
JAN 2 HLL EP	00 01 27	JAN 3 AIA E	01 25 17	HLL EP	12 27 34	JAN 6 H-19 46 58.8 8.9S 123.8E h ABOUT 33KM	
JAN 2 SPA I	00 30 26	JAN 3 SPA E	06 31 05	SPA E	12 29 10	MAW IP	19 58 14
AIA E	00 30 30	JAN 3 H-06 35 28.2 12.9S 166.0E h ABOUT 74KM		JAN 4 BYR I	14 08 52	BYR I	19 59 37
JAN 2 H-01 15 50.6 4.6S 105.9W h ABOUT 33KM h ABOUT 69KM		SPA E	06 47 15	JAN 4 AIA E	20 01 24	JAN 6 AIA E	23 24 01
						h ABOUT 69KM	

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JAN 7 AIA E	00 38 29	JAN 7 MAW IP	20 15 26	JAN 9 AIA E	21 34 28	JAN 12 BYR E	00 13 34
	47 10						
	48 08	JAN 7 AIA E	28 45 17	JAN 9 AIA E	22 26 25	JAN 12 SPA E	03 53 46
JAN 7 MAW I	01 53 28	JAN 8 MAW IP	06 41 40	JAN 10 MAW IP	05 39 18	JAN 12 SPA E	08 28 45
			42 06				
JAN 7 MAW I(P)	03 31 22	JAN 8 SPA E	07 19 21	JAN 10 AIA E	06 16 53	JAN 12 SPA I	08 40 22
					20 21		
JAN 7 MAW EP	04 03 01	JAN 8 MAW IP	10 17 36	JAN 10 MAW IP	06 35 54	JAN 12 SPA I	09 42 55
JAN 7 MAW IP	04 46 01	JAN 8 SPA I	14 45 11	AIA E	06 40 27	JAN 12 AIA E	12 22 04
JAN 7 MAW IP	05 19 15	JAN 8 H-15 46 45.5		JAN 10 MAW E(P)	08 03 30	JAN 12 SPA E	14 38 50
JAN 7 MAW I(P)	05 22 41	31.2N 130.2E		JAN 10 AIA E	09 31 01	JAN 12 SPA E	17 03 11
JAN 7 H-06 24 49.2		h ABOUT 177KM		JAN 10 AIA E	11 13 36	JAN 12 MAW IP	17 32 32
6.4S 154.7E		SPA E	16 05 18	JAN 10 AIA E	16 35		
h ABOUT 80KM		JAN 9 H-02 02 38.5		JAN 11 SPA E	05 07 52	JAN 12 SPA I	20 36 29
BYR I	06 37 07	28.9S 177.4W		JAN 11 SPA E	09 30	I	39 12
JAN 7 SPA IP	06 42 10	h ABOUT 71KM		JAN 11 SPA E	10 11 50	I	44 47
JAN 7 MAW IP	07 03 43	SPA IP	02 12 49	JAN 11 SPA E	11 12 06	JAN 12 AIA E	22 24 16
JAN 7 SPA I	08 54 43	JAN 9 AIA E	02 31 51	JAN 11 SPA E	11 35 33	JAN 13 SPA I	03 21 43
JAN 7 H-11 48 22.7		JAN 9 MAW E	02 46 44	JAN 11 SPA I	11 35 33	JAN 13 SPA E	03 53 07
.6N 126.7E		JAN 9 AIA E	03 10 42	JAN 11 H-12 12 16.2		JAN 13 MAW IP	06 23 38
h ABOUT 42KM		JAN 9 MAW IP	03 25 40	JAN 11 H-12 12 16.2		JAN 13 MAW E(P)	07 10 50
MCO EP	11 58 36	JAN 9 MAW IP	03 46 46	JAN 11 H-16 09 37.4		JAN 13 MAW IP	07 52 24
HLL EP	12 00 18	JAN 9 AIA E	17 02 18	JAN 11 H-16 09 37.4		JAN 13 H-12 49 30.2	
MAW EP	12 00 32	JAN 9 AIA E	17 37 58	JAN 11 24.3S 176.1W		6.5S 149.3E	
SPA IP	12 01 22	JAN 9 AIA E	17 37 58	JAN 11 h ABOUT 55KM		h ABOUT 29KM	
BYR E	12 01 45	JAN 9 AIA E	17 37 58	BYR I	12 19 36	SPA I	13 01 57
JAN 7 WIL I(P)	11 57 15	JAN 9 H-18 22 33.4		SPA IP	12 20 32	BYR E	13 01 59
JAN 7 MAW IP	12 56 38	3.3S 29.4E		HLL EP	12 21 43	JAN 13 H-13 43 42.1	
JAN 7 AIA E	15 04 43	h ABOUT 33KM		JAN 11 BYR E	17 00 49	14.0S 171.2E	
JAN 7 SPA I	17 42 42	SPA EP	18 35 15	JAN 11 H-17 05 42.3		h ABOUT 634KM	
JAN 7 H-19 19 34.1		JAN 9 SPA E	20 39 35	JAN 11 H-17 05 42.3		BYR I	13 54 05
17.5S 167.7E		JAN 9 SPA E	20 40 14	JAN 11 29.4S 178.6W		JAN 13 AIA E	13 44 09
h ABOUT 19KM		JAN 9 H-21 16 07.7		JAN 11 h ABOUT 225KM		JAN 13 AIA E	14 04 42
BYR E	19 30 47	4.3S 128.5E		SPA IP	17 15 15	E	05 07
SPA I	19 31 03	h ABOUT 174KM		JAN 11 BYR I	23 14 08		
		SPA I	21 28 28	SPA E	23 15 15		

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JAN 13 AIA F	14 10 27	JAN 14 SPA E	14 14 01	SPA IP E	19 36 54 45 16	SPA I	04 34 25
JAN 13 H-16 21 13.1 49.7S 163.7E h ABOUT 33KM		JAN 14 SPA E	18 22 45	MAW IP IP	19 37 59 38 09	JAN 17 SPA I I	09 43 10 45 56
MCQ IP	16 22 33	JAN 14 H-18 33 25.3 45.7N 26.6E h ABOUT 132KM		JAN 15 SPA E	20 04 05	JAN 17 SPA E	16 41 24
HLL EP	16 25 18	SPA E	18 53 01	JAN 15 SPA E	22 11 34	JAN 17 H-19 31 12.6 7.6S 75.3W h ABOUT 201KM	
BYR E	16 28 40	JAN 15 BYR IP	02 10 45	JAN 15 H-22 17 50.9 31.3S 13.4W h ABOUT 33KM		BYR I	19 42 27
SPA I	16 28 50	JAN 15 WIL E(P)	02 28 11	SPA I	22 27 48	JAN 18 AIA E	03 06 00
JAN 13 H-17 20 19.2 32.0S 68.7W h ABOUT 113KM		JAN 15 AIA E	03 54 54	JAN 16 H-03 14 05.9 54.0S 133.5W h ABOUT 33KM		JAN 18 H-03 12 05.7 33.1N 135.8E h ABOUT 425KM	
SPA I	17 30 05	JAN 15 H-06 32 29.5 37.4S 73.4W h ABOUT 42KM		BYR EP	03 19 43	SPA I	03 30 12
JAN 13 MAW IP	17 49 29	SPA E	06 47 40	SPA IP	03 21 07	JAN 18 SPA E	05 18 47
JAN 13 SPA E	17 58 01	JAN 15 SPA E	09 34 16	JAN 16 MAW IP	06 16 59	JAN 18 H-05 49 18.4 32.0S 117.1E h ABOUT 35KM	
JAN 13 SPA I	22 00 57 03 41	JAN 15 H-09 47 42.9 10.6S 164.9E h ABOUT 89KM		JAN 16 H-06 44 56.8 54.3N 35.2W h ABOUT 33KM		SPA IP	05 59 10
JAN 13 MAW IP	22 12 04	BYR E	09 59 32	SPA E	07 04 27	BYR E	05 59 52
JAN 13 SPA I	22 36 03	JAN 15 AIA E	11 47 59	JAN 16 H-15 09 16.6 24.0S 68.2W h ABOUT 150KM		JAN 18 AIA E	12 19 39
JAN 13 AIA E	23 18 16 19 17	JAN 15 AIA E	12 06 59	BYR I	15 19 12	JAN 18 BYR E	13 16 24
JAN 14 SPA I	00 15 19 25 20	JAN 15 AIA I	12 23 59	SPA IP	15 19 51	JAN 18 SPA I	14 26 03
JAN 14 H-00 50 39.1 17.2S 168.1E h ABOUT 33KM		JAN 15 SPA I	14 18 30	JAN 16 H-21 08 38.8 11.1S 111.6E h ABOUT 94KM		JAN 18 MAW IP I	23 16 16 16 25
SPA I	01 02 00	JAN 15 H-15 04 15.0 36.0N 23.9E h ABOUT 81KM		SPA I	21 20 33	JAN 19 SPA I	05 16 22
JAN 14 SPA E	05 15 51	SPA I	15 23 07	BYR E	21 21 08	MAW IP I	05 22 14 02 22 22
JAN 14 H-11 19 47.5 21.2S 169.3E h ABOUT 33KM		JAN 15 SPA I	16 23 45	JAN 16 SPA E	22 26 31	JAN 19 BYR E	09 41 13
SPA I	11 30 15 31 09	JAN 15 AIA E	16 37 11	JAN 17 H-03 52 42.2 52.3N 152.5E h ABOUT 454KM		JAN 19 SPA I	09 52 57 09 53 36
JAN 14 HLL EP	11 24 45	JAN 15 H-19 26 34.3 20.5S 177.9W h ABOUT 496KM		SPA I	04 11 18	JAN 19 SPA I	10 14 05
SPA I	11 24 58 26 11 30 49	WIL E(P)	19 36 18	JAN 17 H-04 22 22.5 10.6S 78.7W h ABOUT 46KM		JAN 19 BYR E	21 56 02
JAN 14 MAW EP	13 12 18	BYR I	19 36 30			SPA E	03 25 22
						SPA E	21 56 06

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JAN 20 SPA I	03 09 16	JAN 21 H-10 35 39.0 3.0S 136.2E h ABOUT 57KM		SPA I	09 40 49	JAN 26 AIA E	11 12 24
JAN 20 JAN 20 AIA EP	03 56 22	BYR I	10 48 33	JAN 24 SPA I	11 21 52	JAN 26 MAW IP	13 58 50
JAN 20 AIA IP	03 56 37	JAN 21 H-18 35 41.5 18.0S 175.4W h ABOUT 64KM		JAN 24 SPA I	11 37 27	JAN 26 SPA E	14 42 04
JAN 20 AIA IP	04 25 27	SPA E	18 47 00	JAN 24 H-12 09 01.2 15.2S 173.6W h ABOUT 33KM		JAN 26 WIL IP	16 47 36
JAN 20 AIA EP	04 26 44	JAN 22 H-08 32 33.2 11.3S 74.7W h ABOUT 33KM		MAW IP	12 21 50	JAN 26 SPA E	21 44 52
JAN 20 AIA EP	06 23 52	BYR E	08 43 54	JAN 24 MAW IP	12 49 06	JAN 27 SPA E	05 19 55
JAN 20 SPA I	09 24 34	JAN 22 AIA E	12 11 55	JAN 24 SPA E	20 14 45	JAN 27 MAW IP	05 28 04
JAN 20 BYR E	14 05 21	JAN 22 SPA I	18 26 01	JAN 25 AIA E	05 12 53 13 07	JAN 27 SPA E	05 44 49 49 10
JAN 20 MAW EP	15 03 07	JAN 22 H-20 44 37.3 19.2S 177.6W h ABOUT 546KM		JAN 25 SPA I	10 55 25	JAN 27 SPA I	12 07 13
JAN 20 MAW IP	21 30 35	BYR E	20 54 30	JAN 25 SPA I	11 46 31	JAN 27 WIL I(P)	13 28 05
JAN 20 H-22 37 28.7 15.4S 167.7E h ABOUT 107KM		SPA I	20 55 01	JAN 25 BYR E	12 21 28	JAN 27 H-18 46 14.6 5.2S 152.3E h ABOUT 72KM	
BYR I	22 48 45	JAN 23 SPA I	02 57 59	JAN 25 SPA I	12 04 41	JAN 27 WIL IP	18 57 06
SPA IP	22 48 56	JAN 23 AIA EP	08 08 16	JAN 25 H-14 32 04.1 4.6S 147.4E h ABOUT 33KM		SPA I	18 58 42
JAN 21 H-04 25 04.6 53.3N 157.4E h ABOUT 33KM		JAN 23 AIA EP	08 08 33 11 19 11 41	BYR E	14 44 45	JAN 27 SPA I	19 54 20 57 39
SPA IP	04 45 00 45 39	JAN 23 AIA E	12 11 19	JAN 25 H-16 14 07.5 21.1S 179.2W h ABOUT 603KM		JAN 27 WIL IP	22 00 02
JAN 21 SPA I	04 25 10 26 34	JAN 23 AIA E	13 25 48	SPA I	16 24 15	JAN 28 MAW E(P)	00 17 00
JAN 21 SPA I	04 55 17	JAN 23 BYR E	17 25 45	JAN 25 H-16 56 40.1 17.5S 176.2W h ABOUT 33KM		BYR E	00 19 24
JAN 21 AIA EP	05 41 37 42 03	SPA I	17 26 10	SPA I	17 08 05	JAN 28 SPA IP	02 09 08
JAN 21 SPA I	06 17 00	JAN 24 SPA E	00 47 26	JAN 26 SPA E	05 54 14	JAN 28 H-02 12 14.3 10.8S 76.7W h ABOUT 105KM	
JAN 21 H-07 00 44.8 60.5S 27.2W h ABOUT 33KM		JAN 24 MAW IP	07 11 01	JAN 26 AIA E	10 18 46 20 27	BYR I	02 23 28
SPA IP	07 06 50 07 05 07 23	JAN 24 WIL I	08 11 53	JAN 26 H-09 58 50.7 43.8N 129.7W h ABOUT 29KM		JAN 28 AIA E	02 44 09
BYR I	07 07 05	JAN 24 H-09 29 11.6 6.0S 112.6E h ABOUT 493KM		AIA E	10 04 46	JAN 28 SPA I	09 55 33
		MAW IP	09 39 34	JAN 26 WIL IP	11 02 43	JAN 28 H-10 03 21.4 52.4S 159.6E h ABOUT 33KM	
						MCQ EP	10 03 55

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JAN 28 WIL E(P)	10 43 11	JAN 29 BYR E	09 40 33	JAN 30 AIA E	14 36 27	SPA I	13 05 46
			43 46			I	10 20
JAN 28 SPA IP	12 10 06	JAN 29 AIA E	12 34 55	JAN 30 AIA E	15 21 18	FEB 3 SPA I	13 45 25
JAN 28 H-12 12 19.8 2.6S 149.9E h ABOUT 33KM		JAN 29 H-16 54 03.7 15.2S 173.4W h ABOUT 33KM		JAN 30 AIA E	15 24 06	FEB 3 SPA E	14 13 13
WIL IP	12 23 24	BYR E	17 05 10	JAN 30 AIA E	16 22 26	FEB 3 SPA I	15 38 32
EP	23 42	JAN 29 AIA IP	18 40 39	JAN 31 BYR I	05 27 03	FEB 3 AIA E	23 17 07
IS	32 30	E	41 23	JAN 31 AIA E	09 40 18	E	20 39
HLL EP	12 23 38	JAN 29 BYR I	19 01 11	JAN 31 AIA E	12 45 41	FEB 4 H-01 17 03.1 6.3S 149.1E h ABOUT 36KM	
BYR IP	12 25 07	JAN 29 H-20 33 27.0 21.5S 68.6W h ABOUT 73KM		JAN 31 AIA E	17 51 57	MAW EP	01 28 31
JAN 28 H-13 00 50.7 54.7N 161.6W h ABOUT 33KM		BYR IP	20 43 45	JAN 31 AIA E	19 32 01	I	29 25
WIL IP	13 20 13	JAN 30 AIA E	01 48 17	JAN 31 AIA E	20 00 14	SPA I	01 29 29
JAN 28 SPA IP	13 05 20	SPA I	01 50 17	FEB 1 SPA I	01 13 45	BYR IP	01 29 31
I	09 00	JAN 30 H-04 39 56.3 54.8N 161.6W h ABOUT 33KM		FEB 1 SPA E	02 29 21	FEB 4 MAW E	07 21 50
JAN 28 BYR E	13 23 40	SPA I	04 59 26	FEB 1 BYR E	03 17 28	FEB 4 SPA I	08 08 11
JAN 28 BYR I	13 35 48	JAN 30 H-10 10 04.1 55.6S 28.3W h ABOUT 33KM		FEB 1 SPA I	08 59 14	FEB 4 AIA E	08 19 11
JAN 28 SPA IP	13 45 45	AIA EP	10 14 37	I	59 47	E	40 50
JAN 28 H-13 50 28.3 19.7S 178.1W h ABOUT 587KM		BYR I	10 17 05	FEB 1 SPA E	19 40 03	FEB 4 SPA E	09 06 02
BYR I	14 00 16	WIL IP	10 19 32	FEB 1 SPA E	19 50 15	FEB 4 H-15 04 05.3 17.3S 167.9E h ABOUT 33KM	
AIA I	14 01 46	IS	27 06	FEB 2 MAW IP	21 10 40	BYR E	15 15 17
JAN 28 SPA IP	16 02 17	JAN 30 AIA EP	10 16 22	FEB 2 MAW IP	01 04 24	SPA I	15 15 33
JAN 28 H-16 07 18.7 31.2S 177.7W h ABOUT 33KM		ES	18 29	I	04 26	FEB 4 SPA I	21 58 27
WIL EP	16 16 43	JAN 30 AIA EP	10 21 45	FEB 3 MAW IP	01 04 24	FEB 4 H-23 21 09.0 48.5N 154.9E h ABOUT 85KM	
BYR E	16 16 44	JAN 30 H-10 45 09.7 53.6S 31.0W h ABOUT 33KM		I	04 26	BYR E	23 40 24
JAN 28 SPA I	16 59 48	AIA EP	10 49 48	FEB 3 SPA I	08 04 20	I	43 48
JAN 29 AIA E	04 34 20	JAN 30 HLL EP	11 09 11	FEB 3 BYR E	08 04 34	FEB 5 AIA E	12 55 10
JAN 29 AIA E	06 37 08	JAN 30 AIA EP	11 33 55	FEB 3 AIA E	10 04 39	E	55 48
JAN 29 AIA E	07 10 28	JAN 30 H-12 52 13.8 7.6N 72.1W h ABOUT 33KM		FEB 3 H-12 52 13.8 7.6N 72.1W h ABOUT 33KM		FEB 5 H-14 03 16.6 31.8S 179.4W h ABOUT 137KM	
JAN 29 AIA E	07 41 48	JAN 30 AIA EP	11 33 55	SPA IP	14 12 59		

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
FEB 5 H-19 29 30.0 31.9S 179.0W h ABOUT 68KM		FEB 6 H-20 46 50.7 56.7S 28.8W h ABOUT 33KM		FEB 9 H-16 05 03.0 43.7N 150.6E h ABOUT 33KM		SPA IP 18 26 03	
BYR I 19 38 45		SPA IP 20 53 30		SPA IP 16 24 18		MAW EP 18 26 24	
SPA IP 19 39 16		BYR I 20 53 40		FEB 9 H-16 55 00.0 35.9S 177.9E h ABOUT 172KM		FEB 14 AIA E 04 34 57 E 35 10	
FEB 5 H-20 39 21.6 38.4S 73.2W h ABOUT 41KM		FEB 6 H-21 43 16.3 28.2S 67.4W h ABOUT 19KM		BYR E 17 03 39		FEB 14 AIA E 06 44 03	
BYR I 20 47 35		BYR I 21 52 56		SPA IP 17 04 09		FEB 14 H-06 48 30.3 10.1S 160.3E h ABOUT 64KM	
SPA IP 20 48 24 E 55 56		SPA IP 21 53 44		FEB 9 SPA IP 19 18 03		SPA IP 07 00 34	
HLL EP 20 49 33		FEB 7 H-01 23 41.7 17.7S 178.7W h ABOUT 559KM		FEB 10 MAW I(P) 09 24 46		FEB 14 H-07 04 40.8 7.2S 128.2E h ABOUT 197KM	
WIL IP 20 51 03 IS 21 00 42		SPA IP 01 34 12		FEB 11 SPA IP 01 22 35		MCO IP 07 13 41	
FEB 6 H-01 21 29.0 38.4S 73.6W h ABOUT 33KM		FEB 7 H-03 29 41.9 59.6S 147.9E h ABOUT 33KM		FEB 11 SPA IP 01 23 04		WIL IP 07 14 34 IP 15 15	
BYR I 01 29 43		SPA I 03 35 54		FEB 11 H-04 36 30.4 29.8S 179.1E h ABOUT 528KM		HLL EP 07 15 34	
SPA EP 01 30 04		FEB 7 H-16 44 45.3 14.4N 53.3E h ABOUT 33KM		BYR E 04 45 20		MAW EP 07 15 58 ES 25 14	
HLL EP 01 31 46		BYR E 17 03 10		SPA IP 04 45 49		SPA IP 07 16 44	
FEB 6 H-02 31 08.0 6.8S 123.5E h ABOUT 637KM		FEB 7 SPA E 18 18 44		FEB 12 H-00 34 05.6 36.3S 96.9W h ABOUT 33KM		BYR IP 07 17 25	
SPA I 02 42 30		FEB 8 AIA E 00 40 46		SPA I 00 43 27		FEB 14 AIA E 12 04 46	
FEB 6 H-05 53 53.9 18.1S 177.6W h ABOUT 500KM		FEB 8 H-02 29 00.4 26.9S 176.7W h ABOUT 190KM		FEB 12 MAW I 15 46 58		FEB 14 H-12 09 11.4 0.9N 30.0W h ABOUT 33KM	
BYR I 06 03 56		SPA IP 02 39 10		FEB 12 MAW E 18 25 35		SPA IP 12 22 14	
SPA I 06 04 28		FEB 8 SPA IP 07 25 31		FEB 13 AIA E 00 11 29		FEB 14 AIA E 12 54 29	
FEB 6 H-10 20 25.5 3.5S 146.0E h ABOUT 33KM		BYR E 07 25 35		FEB 13 AIA E 00 11 29		FEB 14 H-15 29 58.2 9.8S 160.6E h ABOUT 25KM	
BYR E 10 33 11		FEB 8 SPA IP 14 01 58		FEB 13 BYR IP 09 18 47		BYR I 15 41 58	
FEB 6 SPA I 12 44 27		BYR E 14 02 12		FEB 13 MAW E 14 36 21		FEB 14 SPA EP 17 53 30	
FEB 6 H-12 46 26.7 22.2S 171.3E h ABOUT 101KM		FEB 9 H-08 36 25.5 15.0S 167.4E h ABOUT 127KM		FEB 13 H-18 13 55.1 9.9S 160.8E h ABOUT 29KM		FEB 14 AIA E 20 07 38	
SPA E 12 57 15		BYR I 08 47 39		HLL EP 18 24 30		FEB 14 AIA EP 21 16 53	
FEB 6 H-18 17 10.9 55.6N 166.1E h ABOUT 33KM		SPA IP 08 47 55		WIL IP 18 24 40 IP 25 21 IS 33 24		FEB 14 H-22 07 54.3 5.0S 144.6E h ABOUT 80KM	
SPA IP 18 36 44						HLL EP 22 18 55	
						SPA IP 22 20 23	

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
AIA E	22 27 46	h ABOUT 561KM		FEB 19		BYR I	14 39 03
FEB 14		SPA I	10 57 48	H-16 39 15.1		SPA IP	14 39 38
AIA EP	22 28 28	BYR I	10 58 17	55.3S 28.8W		FEB 21	
FEB 14		FEB 16		h ABOUT 33KM		H-17 14 35.7	
BYR IP	23 20 29	H-12 12 39.1		AIA E	16 43 52	32.7N 20.9E	
FEB 15		0.6S 147.5E		SPA IP	16 46 06	h ABOUT 33KM	
H-00 48 51.9		h ABOUT 33KM		BYR I	16 46 16	SPA IP	17 33 21
33.2S 179.2W		BYR E	12 25 38	E	47 42	BYR E	17 33 44
h ABOUT 42KM		FEB 16		FEB 20		FEB 21	
BYR IP	00 58 01	H-13 22 13.8		AIA EP	05 12 16	AIA EP	18 17 55
SPA IP	00 58 34	19.9S 178.3W		FEB 20		FEB 22	
FEB 15		h ABOUT 562KM		H-06 46 19.5		H-07 58 57.0	
AIA E	02 32 34	SPA IP	13 32 31	17.2S 178.2W		17.8S 178.8W	
E	32 57	FEB 16		h ABOUT 612KM		h ABOUT 550KM	
FEB 15		H-21 32 22.4		BYR E	06 57 11	BYR I	08 08 59
AIA E	02 43 30	8.5S 80.1W		FEB 20		SPA IP	08 09 28
E	43 48	h ABOUT 33KM		H-07 41 22.1		FEB 22	
E	44 50	SPA IP	21 44 38	6.3S 154.0E		H-09 37 52.3	
FEB 15		FEB 16		h ABOUT 37KM		21.1S 68.1W	
AIA E	04 35 13	H-23 37 07.6		SPA IP	07 53 49	h ABOUT 98KM	
FEB 15		5.0S 144.5E		FEB 20		BYR I	09 48 11
H-05 39 57.2		h ABOUT 82KM		H-08 44 00.9		SPA IP	09 48 49
22.0S 170.5E		SPA I	23 49 36	22.3S 170.5E		FEB 22	
h ABOUT 33KM		FEB 17		h ABOUT 33KM		H-11 05 42.0	
SPA EP	05 50 55	AIA E	01 07 09	SPA IP	08 54 58	30.3S 178.6W	
FEB 15		E	07 42	BYR E	08 55 35	h ABOUT 113KM	
AIA E	06 26 10	FEB 17		FEB 20		SPA IP	11 15 37
FEB 15		AIA EP	03 12 03	AIA EP	11 44 16	FEB 23	
H-06 54 51.8		FEB 17		FEB 20		H-06 32 30.4	
14.9S 178.7W		H-19 26 31.5		AIA IP	11 44 53	36.0S 102.5W	
h ABOUT 33KM		23.9S 179.8W		E	45 20	h ABOUT 33KM	
SPA IP	07 06 21	h ABOUT 520KM		FEB 20		SPA IP	06 41 55
BYR I	07 07 33	SPA IP	19 36 29	H-17 07 32.5		FEB 23	
FEB 15		FEB 17		45.7S 78.7W		H-07 02 37.9	
SPA IP	10 15 12	AIA E	22 29 14	h ABOUT 33KM		44.8S 76.1W	
FEB 15		FEB 17		BYR I	17 15 51	h ABOUT 33KM	
AIA E	11 33 30	AIA E	22 51 28	SPA IP	17 15 52	BYR E	07 09 59
E	34 13	FEB 18		FEB 20		FEB 23	
FEB 16		AIA EP	09 50 09	HLL E	19 33 14	BYR E	07 22 37
AIA E	06 54 50	FEB 18		FEB 20		FEB 23	
E	55 20	AIA IP	10 59 59	AIA EP	21 20 39	SPA IP	16 38 54
E	55 38	FEB 18		FEB 21		FEB 24	
FEB 16		BYR E	14 19 44	H-13 16 05.6		H-05 38 20.6	
AIA E	07 15 28	SPA IP	14 20 50	20.6S 175.1W		15.1S 72.5W	
E	19 17	I	22 14	h ABOUT 33KM		h ABOUT 105KM	
E	29 00	FEB 19		BYR E	13 26 38	BYR I	05 49 13
FEB 16		H-15 28 20.1		SPA IP	13 27 12	SPA IP	05 49 51
H-08 31 17.5		6.2S 128.1E		FEB 21		FEB 24	
17.7S 178.6W		h ABOUT 370KM		H-14 28 29.1		H-06 36 11.3	
h ABOUT 534KM		BYR E	15 40 29	20.5S 173.9W		19.7S 177.5W	
SPA IP	08 41 50	FEB 19		h ABOUT 29KM		h ABOUT 541KM	
FEB 16		H-10 46 22.0					

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
BYR I	06 46 02	SPA IP	20 26 13	FEB 28		BYR E	02 18 35
SPA IP	06 46 32	BYR IP	20 26 18	MAW EP	15 57 46	MAR 3	
FEB 24		FEB 26		FEB 28		MCQ IP	10 19 20
MAW EP	17 46 33	H-23 23 19.5		AIA IP	16 42 49	MAR 3	
FEB 24		39.1S 75.1W		FEB 28		AIA E	12 31 07
WIL EP	19 44 27	h ABOUT 33KM		AIA EP	22 02 25	MAR 3	
FEB 24		SPA IP	23 32 20	FEB 28		MAW EP	18 27 28
H-23 29 35.9		FEB 27		AIA EP	22 02 39	MAR 3	
53.6N 164.3W		MAW EP	02 31 27	E	04 16	AIA E	18 34 19
h ABOUT 33KM		FEB 27		E	05 09		
MAW EP	23 47 46	MAW IP	03 42 24	E	05 34	MAR 4	
FEB 25		ES	52 29	MAR 1		H-05 08 30.4	
MAW EP	00 11 43	FEB 27		H-04 39 34.3		16.1S 178.5E	
FEB 25		H-04 30 00.8		18.2S 177.9W		h ABOUT 33KM	
H-08 08 20.1		6.0S 149.4E		h ABOUT 568KM		SPA IP	05 20 03
28.1S 65.4W		h ABOUT 52KM		BYR E	04 49 32	MAR 4	
h ABOUT 32KM		WIL EP	04 40 42	SPA IP	04 50 02	H-13 38 41.0	
SPA IP	08 18 40	IS	49 25	MAR 1		24.2N 121.7E	
MAW IP	08 20 14	MAW IP	04 42 24	MAW EP	05 29 51	h ABOUT 33KM	
FEB 25		ES	52 29	MAR 1		MAW EP	13 56 17
H-08 58 40.8		BYR IP	04 42 26	MAW EP	05 52 55	MAR 4	
12.2N 88.2W		SPA IP	04 42 28	MAR 1		H-15 10 19.2	
h ABOUT 33KM		FEB 27		AIA IP	15 01 36	35.2N 25.4E	
BYR E	09 17 10	HLL EP	05 41 01	MAR 1		h ABOUT 42KM	
FEB 25		FEB 27		MAW EP	20 48 21	SPA IP	15 29 14
H-09 11 23.7		H-07 34 23.8		MAR 1		MAR 4	
10.4N 121.8E		16.2S 173.3W		MAW EP	23 32 37	H-15 43 04.0	
h ABOUT 46KM		h ABOUT 33KM		MIR I	23 35 15	4.5S 81.6W	
BYR IP	09 28 52	SPA IP	07 45 54	MAR 2		h ABOUT 33KM	
FEB 25		FEB 27		H-05 39 07.4		SPA IP	15 55 39
SPA IP	14 48 52	H-11 00 45.3		1.8S 143.6E		MAR 4	
FEB 25		14.7S 73.3W		h ABOUT 129KM		SPA IP	15 43 29
H-17 11 01.7		h ABOUT 110KM		SPA IP	05 51 45	MAR 4	
24.4N 123.4E		BYR E	11 11 43	MAR 2		H-19 04 02.9	
h ABOUT 33KM		SPA IP	11 12 16	AIA E	06 57 21	19.3S 169.5E	
WIL EP	17 24 06	FEB 27		E	59 57	h ABOUT 43KM	
FEB 26		AIA EP	19 47 30	MAR 2		SPA IP	19 15 15
AIA EP	03 05 31	FEB 27		MAW EP	12 32 27	MAR 4	
FEB 26		H-20 28 34.9		MAR 2		AIA EP	19 46 33
AIA EP	03 05 37	4.6S 152.9E		AIA EP	13 50 50	MAR 5	
FEB 26		h ABOUT 100KM		MAR 2		AIA EP	03 25 42
BYR I	09 51 19	BYR IP	20 41 02	MAW EP	16 13 05	MAR 5	
FEB 26		SPA IP	20 41 03	MAR 2		H-07 05 01.7	
H-20 14 08.7		FEB 28		MAW EP	23 50 45	4.5S 81.5W	
7.5S 146.2E		H-01 31 13.2		MAR 3		h ABOUT 31KM	
h ABOUT 171KM		16.3S 66.0E		AIA EP	01 42 43	BYR EP	07 16 57
WIL IP	20 24 23	h ABOUT 33KM		MAR 3		SPA IP	07 17 37
EP	24 48	SPA IP	01 42 31	AIA EP	01 43 19	MAR 5	
IS	32 41	BYR E	01 43 29	MAR 3		AIA IP	07 06 33
HLL E	20 24 42	FEB 28		H-02 08 14.6		MAR 5	
MAW IP	20 26 02	H-02 08 14.6		20.4S 69.0W		AIA EP	13 11 18
		h ABOUT 110KM		h ABOUT 110KM			

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAR 5 AIA EP	13 11 35	MAR 8 H-03 24 57.2 19.2S 169.6E h ABOUT 49KM		MAR 10 H-01 26 04.1 56.2N 153.8W h ABOUT 33KM		MAR 11 HLL E	15 09 33
MAR 5 MAW EP	13 18 15	SPA IP	03 36 09	SPA IP	01 45 38	MAR 11 HLL E	16 05 03
MAR 5 WIL EP	13 51 47	MAR 8 H-03 33 03.4 19.3S 169.6E h ABOUT 33KM		MAR 10 H-09 39 09.6 16.0S 168.4E h ABOUT 283KM		MAR 11 MAW EP	16 55 27
	ES 14 02 42	BYR E	03 43 59	SPA I	09 50 16	HLL E	17 00 43
MAR 5 MAW EP	20 03 59	SPA IP	03 44 17	MAR 10 H-10 51 48.1 29.9S 71.2W h ABOUT 70KM		MAR 11 SPA IP	18 56 03
MAR 5 AIA EP	23 37 45	MAR 8 BYR I	05 33 54	AIA EP	10 58 41	MAR 11 MAW EP	19 48 05
MAR 5 AIA EP	23 39 10	MAR 8 MAW EP	09 09 52	BYR IP	11 01 05	MAR 11 MAW EP	21 11 55
MAR 5 AIA IP	23 40 42	MAR 8 MAW EP	14 57 12	SPA IP	11 01 50	MAR 11 MAW EP	23 02 06
MAR 6 AIA E	01 49 10	MAR 8 MAW EP	14 57 12	MAW EP	11 02 01	MAR 12 HLL E	03 34 30
MAR 6 H-17 53 25.9 11.4S 166.5E h ABOUT 195KM		MAR 8 H-15 06 05.3 1.1N 29.9W h ABOUT 33KM		HLL E	11 03 04	MAR 12 H-03 41 21.8 45.3N 109.6W h ABOUT 33KM	
BYR I	18 04 51	BYR E	15 19 08	MAR 10 MAW EP	11 52 28	HLL E	04 00 19
MAR 7 H-05 22 01.1 27.0S 113.5W h ABOUT 33KM		MAR 8 MAW EP	23 04 15	MAR 10 HLL E	17 14 40	MAR 12 H-08 05 49.8 53.9N 160.6E h ABOUT 33KM	
BYR IP	05 31 21	MAR 9 SPA EP	03 16 36	MAR 10 HLL E	21 52 42	AIA EP	08 23 07
SPA IP	05 32 27	MAR 9 AIA E	05 08 46	MAR 10 AIA E	22 11 50	SPA IP	08 25 16
		E	09 24	MAR 10 AIA E	22 53 10	MAR 12 AIA EP	08 15 06
MAR 7 BYR I	05 44 59	MAR 9 MAW EP	06 28 39	MAR 10 HLL E	23 27 07	MAR 12 MAW EP	08 44 01
MAR 7 MAW EP	05 57 16	MAR 9 H-16 23 44.3 3.2S 147.0E h ABOUT 33KM		MAR 11 H-07 27 22.0 38.1N 29.3E h ABOUT 33KM		MAR 12 MAW EP	09 06 11
MAR 7 H-12 16 28.5 44.3S 75.3W h ABOUT 45KM		SPA IP	16 36 27	SPA IP	07 46 24	MAR 12 MAW EP	10 04 38
BYR IP	12 23 50	MAR 9 H-19 13 53.0 19.1S 169.6E h ABOUT 33KM		I	48 30	MAR 12 MAW EP	11 34 37
SPA IP	12 24 47	SPA EP	19 25 07	MAR 11 BYR E	07 49 27	MAR 12 HLL EP	13 25 29
MAR 7 WIL IP	12 27 37	MAR 9 SPA IP	23 09 01	MAR 11 H-09 02 19.8 18.7S 177.6W h ABOUT 402KM		MAR 12 HLL E	13 47 05
	IP 27 54	MAR 10 H-01 19 38.1 15.2S 167.2E h ABOUT 142KM		SPA IP	09 12 58	MAR 12 HLL E	15 24 04
	IS 36 49	BYR IP	01 30 48	E	14 32	MAR 12 MAW EP	15 43 41
MAR 7 MAW E	23 49 00	SPA IP	01 31 04	MAR 11 H-09 42 51.2 0.0S 130.4E h ABOUT 33KM		MAR 12 H-20 14 59.8 16.2S 167.7E h ABOUT 33KM	
MAR 8 MAW EP	01 03 25	I	36 29	SPA IP	09 55 47		
MAR 8 H-02 44 31.5 19.2S 169.7E h ABOUT 33KM							
BYR E	02 55 27						

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
BYR E	20 26 23	SPA IP	00 29 27	MAR 16 HLL E	01 13 25	MAR 17 H-10 32 19.7	
MAR 12 H-20 40 12.8		MAR 15 MAW EP	03 12 09	MAR 16 MAW EP	04 16 16	37.4S 78.2E	
7.1S 156.0E		MAR 15 H-04 15 03.7		MAR 16 AIA EP	04 48 09	h ABOUT 33KM	
h ABOUT 97KM		13.1S 172.2W		MAR 16 HLL E	07 06 47	SPA I	10 41 33
SPA I	20 52 29	h ABOUT 43KM		MAR 16 AIA EP	07 27 56	MAR 17 AIA E	15 45 44
BYR I	20 52 31	MIR E	04 27 10	MAR 16 HLL E	07 52 01	MAR 17 SPA I	16 20 30
MAR 12 MAW EP	21 37 46	MAR 15 MAW IP	06 11 48	MAR 16 WIL IP	09 03 34	MAR 17 AIA EP	23 52 51
MAR 13 MAW EP	02 08 52	MAR 15 MAW EP	06 24 19	IP	03 54	MAR 17 AIA EP	23 54 42
MAR 13 SPA IP	02 59 56	HLL E	06 24 32	HLL EP'	09 03 39	MAR 17 HLL E	01 29 34
MAR 13 H-03 48 14.1		MAR 15 MAW IP	07 15 16	MIR E	09 03 41	MAR 18 H-04 25 41.4	
11.7S 160.9E		MAR 15 MAW EP	07 57 11	IP'	04 04	33.2S 179.0E	
h ABOUT 126KM		MAR 15 MIR I	10 39 15	SBA EP	09 03 44	h ABOUT 33KM	
BYR E	03 59 45	MAR 15 HLL E	11 49 08	MAW EP'	09 03 59	SPA IP	04 36 30
MAR 13 MAW EP	11 22 50	MAR 15 MIR E	12 02 08	BYR IP	09 04 00	MAR 18 SPA IP	04 36 37
MAR 13 SPA I	14 50 42	MAR 15 SPA I	13 29 26	MAR 16 HLL EP'	09 12 57	MAR 18 AIA IP	04 45 46
MAR 13 MAW IP	23 34 03	MAR 15 MAW EP	16 03 10	MAR 16 HLL E	16 50 17	E	45 54
MAR 14 SPA IP	01 03 34	MAR 15 H-18 50 34.7		MAR 16 HLL E	21 13 33	BYR I	04 47 08
MAR 14 BYR I	01 20 04	42.3N 142.3E		MAR 16 AIA E	22 23 40	MAR 18 H-13 16 23.5	
MAR 14 MAW EP	04 02 26	h ABOUT 33KM		E	24 06	15.7S 178.4W	
MAR 14 MAW EP	06 50 11	MAW IP	19 09 47	E	24 28	h ABOUT 561KM	
MAR 14 MAW EP	09 02 46	MAR 15 MAW EP	20 47 58	MAR 17 BYR I	00 02 08	BYR E	13 26 17
MAR 14 MAW EP	10 09 23	MAR 15 MAW EP	21 15 03	MAR 17 HLL E	03 06 36	MAR 18 SPA IP	14 11 05
MAR 14 SPA IP	10 43 37	MAR 15 MAW EP	21 33 11	MAR 17 HLL E	05 21 14	MAR 18 AIA EP	17 05 51
MAR 14 MAW IP	19 54 14	MAR 15 MAW EP	21 58 33	E	21 15	MAR 19 H-05 46 50.1	
MAR 15 H-00 04 01.3		MAR 15 MAW EP	22 15 40	MAR 17 HLL E	09 01 14	22.8S 170.5E	
5.0S 129.6E		MAR 15 MAW EP	23 20 02	MAR 17 HLL E	10 30 26	h ABOUT 67KM	
h ABOUT 295KM		MAR 15 MAW EP	23 59 04	MAR 17 HLL E		BYR E	05 57 20
BYR I	00 16 26	MAR 16 AIA IP	00 04 40			SPA IP	05 57 39
MAR 15 WIL IP	00 27 33	ES	06 01			MAR 19 MIR E	07 32 43
IP	27 46					E	33 35
MIR I	00 27 50					MAR 19 HLL E	08 11 11
I	28 04					MAR 19 HLL E	09 00 38
E	28 08						

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAR 19 HLL E	11 32 15	SBA EP	16 50 45	MAR 22 H-21 18 27.4 22.75 68.0W h ABOUT 242KM		MIR IP	02 17 17
MAR 19 H-13 13 22.5 22.6S 170.6E h ABOUT 49KM		SPA IP	16 51 41			E	18 56
		BYR E	16 51 50			ES	25 35
SPA IP	13 24 12	MIR E	16 55 13	SPA IP	21 28 58	MAW E(P)	02 18 17
MAR 19 H-14 42 01.2 22.6S 170.8E h ABOUT 33KM		MAR 20 AIA E	22 03 29	MAR 22 BYR E	21 19 09	HLL EP	02 18 19
		MAR 21 H-04 00 11.1 36.5N 140.9E h ABOUT 50KM				SBA EP	02 18 35
BYR E	14 52 37	SPA IP	04 19 07	MAR 22 SPA IP	21 23 39	SPA IP	02 19 21
MAR 19 H-17 19 23.9 7.7S 106.9E h ABOUT 94KM		I	20 58	BYR E	21 23 50	MAR 24 HLL E	02 17 16
		MAR 21 H-04 33 52.9 5.5S 152.2E h ABOUT 33KM		MAR 22 H-23 36 19.1 52.7S 137.4E h ABOUT 33KM		E	17 54
SPA I	17 31 36	MAW EP	04 45 39	WIL EP	23 40 42	MAR 24 H-09 31 50.4 3.2S 146.8E h ABOUT 33KM	
MAR 19 MAW EP	23 44 12	MAR 21 HLL E	07 14 29	SPA IP	23 43 30	HLL E	07 34 18
MAR 20 AIA E	00 44 18	MAR 21 AIA EP	07 35 44	MAR 23 SPA I	03 33 14	MAR 24 H-09 43 20.2 9.0N 125.6E h ABOUT 51KM	
MAR 20 H-04 43 13.5 19.9S 179.1W h ABOUT 680KM		MAR 21 AIA E	08 58 39	MAR 23 BYR I	05 24 14	WIL EP	09 55 07
SBA IP	04 52 09	MAR 21 AIA IP	23 18 53	MAR 23 BYR E	06 24 14	SPA IP	09 56 55
BYR IP	04 52 52	MAR 21 AIA IP	23 19 25	MAR 23 MAW E	07 08 02	MAR 24 HLL I	11 06 30
I	54 03	MAR 21 AIA EP	23 19 38	MAR 23 HLL E	07 44 42	E	06 52
I	54 27	MAR 21 AIA EP	23 35 10	MAR 23 MAW E(P)	07 51 27	MAR 24 SPA IP	13 17 59
SPA IP	04 53 21	MAR 22 SPA I	01 29 29	MAR 23 SPA E	09 04 17	MAR 24 H-21 35 24.4 51.8N 178.1W h ABOUT 57KM	
I	55 34	MAR 22 HLL E	03 34 49	MAR 23 BYR E	10 01 28	SPA IP	21 53 42
AIA IP	04 54 25	MAR 22 SPA I	09 04 45	MAR 23 SPA I	11 29 49	AIA E	21 54 54
IPP	57 00	I	05 40	MAR 23 BYR E	13 06 48	WIL EP	21 55 24
MAR 20 MAW EP	04 46 01	MAR 22 SPA IP	10 37 24	MAR 23 HLL E	19 31 44	MAR 25 AIA E	04 01 46
MAR 20 SPA I	05 04 16	MAR 22 HLL E	11 23 43	MAR 23 MIR E	21 50 56	E	02 27
MAR 20 MIR E	05 14 11	MAR 22 HLL EP	12 22 39	E	52 37	R	03 37
MAR 20 AIA EP	05 53 49	MAR 22 BYR I	12 35 57	BYR I	21 54 38	MAR 25 H-12 53 04.6 10.6S 120.4E h ABOUT 33KM	
MAR 20 AIA IP	06 32 56	MAR 22 HLL E	13 42 27	MAR 24 H-02 07 12.8 9.7S 120.4E h ABOUT 33KM		BYR I	13 05 36
MAR 20 H-10 44 41.3 15.8S 171.7W h ABOUT 33KM		MAR 22 HLL E	19 31 11	WIL IP	02 16 56	MAR 25 HLL E	17 43 20
SPA IP	10 56 15			I pP	17 04	E	44 03
MAR 20 H-16 38 55.8 2.4S 138.4E h ABOUT 40KM				ES	24 48	MAR 25 MAW EP	19 58 16

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAR 25 H-20 17 03.8 56.3S 149.9E h ABOUT 39KM		MIR E	13 01 57	BYR E	08 52 18	MAR 28 H-23 29 14.6 29.6S 177.5W h ABOUT 54KM	
MCO EP	20 18 23	MAW E	13 03 01	MAR 27 BYR I	11 23 10	WIL IP	23 38 47
HLL FP	20 21 26	MAR 26 H-13 25 02.6 29.8S 177.9W h ABOUT 42KM		SPA EP	11 23 33	EPP	39 04
WIL EP	20 21 30	HLL IP	13 33 02	MAR 27 SPA I	19 34 10	ES	46 31
IS	25 18	SBA IP	13 33 43	BYR I	19 34 22	BYR E	23 38 48
SBA EP	20 22 01	BYR IP	13 34 34	MAR 27 SPA I	21 49 29	MAW IP	23 38 53
SPA IP	20 23 43	I	42 22	MAR 28 H-00 15 48.4 66.4N 19.5W h ABOUT 15KM		MAR 29 SPA P	05 50 56
BYR I	20 23 59	WIL IP	13 34 36	SPA IP	00 35 40	MAR 29 HLL E	08 56 19
I	27 53	IS	42 13	BYR IP	00 35 42	MAR 29 HLL E	09 41 21
MAR 25 MAW E(IP)	22 42 42	SPA IP	13 35 11	MAR 28 SPA IP	04 13 59	MAR 29 MAW IP	19 14 21
MAR 25 WIL IP	22 57 12	MIR P	13 35 22	MAR 28 SPA IP	07 02 57	MAR 29 H-21 16 43.7 30.2S 177.7W h ABOUT 60KM	
MAR 25 SPA IP	23 59 14	E	40 58	MAR 28 MAW EP	07 53 58	BYR E	21 26 13
MAR 26 H-09 48 19.7 29.7S 177.8W h ABOUT 45KM		S	43 43	MAR 28 SPA IP	10 27 29	SPA IP	21 26 46
MCO EP	09 54 24	MAW E	13 36 27	MAR 28 H-11 12 31.3 30.2S 177.8W h ABOUT 38KM		MAW IP	21 28 06
HLL IP	09 56 19	MAR 26 MIR I	13 33 27	WIL IP	11 22 02	MAR 29 HLL E	22 54 35
SBA IP	09 57 02	MAR 26 SPA IP	14 04 06	BYR IP	11 22 02	MAR 30 MAW EP	00 29 58
WIL IP	09 57 53	BYR E	14 04 25	MAR 28 SPA IP	11 22 35	MAR 30 H-01 53 28.8 19.1S 169.1E h ABOUT 160KM	
IS	10 05 34	MAR 26 H-14 34 16.5 18.0S 168.0E h ABOUT 32KM		E	30 37	HLL IP	02 02 33
BYR IP	09 57 53	BYR E	14 45 23	MIR I	11 22 51	SBA IP	02 03 13
I	10 05 21	SPA IP	14 45 38	MAW IP	11 23 58	IS	11 09
I	11 37	MAR 26 HLL E	18 29 25	MAR 28 BYR E	14 14 54	WIL IP	02 03 21
SPA IP	09 58 25	MAR 26 BYR I	20 10 09	MAR 28 H-15 12 02.8 10.2N 126.2E h ABOUT 60KM		EPP	04 00
MIR IP	09 58 41	MAR 26 H-21 34 41.1 36.0N 135.7E h ABOUT 33KM		MIR E	15 24 07	IS	11 20
IS	10 07 02	SBA EP	21 53 18	E	28 23	MIR IP	02 04 06
MAW IP	09 59 45	SPA IP	21 53 39	E	29 36	EPP	04 51
ES	10 09 04	I	55 25	MAR 28 H-17 12 23.1 30.8N 70.0E h ABOUT 24KM		ESS	14 36
MAR 26 H-11 46 02.5 30.1S 177.4W h ABOUT 50KM		BYR IP	21 53 44	MAR 28 MAW IP	17 30 28	BYR IP	02 04 11
WIL IP	11 55 34	I	55 49	MAR 28 H-17 12 23.1 30.8N 70.0E h ABOUT 24KM		I	13 00
MAR 26 H-12 51 39.7 29.9S 177.6W h ABOUT 60KM		MAR 26 SPA IP	21 56 07	MAW IP	17 30 28	SPA IP	02 04 29
HLL EP	12 59 35	HLL EP	21 59 38	MAR 27 MAW IP	00 35 28	E	12 40
SPA IP	13 01 01	MAR 27 MAW IP	00 35 28	MAR 27 SPA I	08 51 32	MAW IP	02 05 14
BYR E	13 01 09	MAR 27 SPA I	08 51 32			IS	14 57
WIL IP	13 01 09					MAR 30 HLL EP	05 11 40

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAR 30 HLL E	05 39 32	MAR 31 H-07 07 36.3 6.1S 149.0E h ABOUT 60KM					
MAR 30 H-11 37 27.7 30.1S 176.9W h ABOUT 33KM		MAR 31 MCO EP	07 14 16				
BYR E	11 46 58	WIL IP	07 18 17				
MAR 30 H-16 51 56.6 44.2N 148.0E h ABOUT 33KM		HLL IP	07 18 29				
SPA EP	17 10 59	MIR IP	07 18 51				
BYR I	17 11 08	ES	28 06				
MAR 30 SPA E	17 13 30	SBA EP	07 18 57				
MAR 30 H-21 13 54.1 8.7S 109.2W h ABOUT 33KM		I	28 23				
SPA E	21 26 04	MAW EP	07 19 54				
MAR 31 H-04 46 00.8 6.5S 81.1W h ABOUT 33KM		BYR IP	07 20 03				
BYR I	04 57 42	E	30 35				
SPA IP	04 58 25	MAR 31 H-08 12 40.5 29.7S 176.9W h ABOUT 60KM					
MAR 31 H-05 30 49.3 29.9S 177.7W h ABOUT 48KM		SPA I	08 22 45				
HLL IP	05 38 48	MAR 31 H-09 07 20.1 30.1S 177.7W h ABOUT 48KM					
SBA EP	05 39 31	BYR I	09 16 50				
BYR IP	05 40 19	SPA IP	09 17 24				
SPA IP	05 40 55	MAR 31 H-17 28 52.7 .8N 96.6E h ABOUT 33KM					
I	49 09	SPA IP	17 41 54				
MIR IP	05 41 10	MAR 31 H-19 22 53.3 30.0S 178.0W h ABOUT 50KM					
IP	41 39	HLL IP	19 30 50				
IS	49 52	SBA E	19 31 00				
MAW EP	05 42 14	I	31 32				
MAR 31 BYR I	05 53 58	BYR IP	19 32 23				
MAR 31 HLL E	06 35 47	SPA I	19 32 51				
E	38 07	MIR IP	19 33 11				
MAR 31 BYR IP	06 42 49						
SPA IP	06 44 12						
MAR 31 SPA I	07 05 01						

ANTARCTIC SEISMOLOGICAL BULLETIN

April, May, June, 1963

MSI - 268A

Published in cooperation with the Scientific
Committee on Antarctic Research of the
International Council of Scientific Unions.

U. S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

COAST AND GEODETIC SURVEY—WASHINGTON

H. Arnold Karo, Director

FOR OFFICIAL DISTRIBUTION

U. S. COAST AND GEODETIC SURVEY
ANTARCTIC SEISMOLOGICAL BULLETIN

The Scientific Committee on Antarctic Research of the International Council of Scientific Unions recommended that a bulletin of phase readings be issued from seismological stations in the Antarctic.

The United States Coast and Geodetic Survey has undertaken the publication of the Antarctic Seismological Bulletin to be issued quarterly, based on the readings received by radio from the Antarctic stations. The phase designation shown in this bulletin is the identification given by the station operator.

The epicenters shown in this Bulletin are computed by the United States Coast and Geodetic Survey using the phase readings from many stations in addition to the Antarctic readings shown.

STATION AND INSTRUMENTAL CONSTANTS

Country, Station and Station Abbreviation	Position		Foundation and Elevation (In Meters)	Instruments and Components	To Seconds	Tg Seconds
	Latitude	Longitude				
ARGENTINA Deception (DEC)	62°59' S	60°43' W	Rock 7 m	Mainka N Mainka E	5.0 5.0	
AUSTRALIA Macquarie (MCQ)	54°29'55" S	158°57'22" E	Weathered Basaltic Lava 14 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 0.2 0.2
Mawson (MAW)	67°36'21" S	62°52'48" E	Pre-Cambrian granite 9 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 14.0 14.0
Wilkes (WIL)	66°15.5' S	110°31.2' E	Rock 9 m	Grenet Z Lehner-Griffith N Lehner-Griffith E	1.4 21.0 13.0	1.0 80.0 75.0
FRANCE Dumont d'Urville (DRV)	66°40' S	140°01' E	Rock 40 m	Labrouste Z Galitzin N Galitzin E	1.5 12.5 12.5	11.0 12.3
Kerquelen (KII)	49°21'39.3" S	70°04'00.9" E	Basalt 22 m	Grenet-Coulomb Z Grenet-Coulomb Z Paris Type IPG N Paris Type IPG E	9.71 1.03 15.0 14.0	4.25 0.3 4.25 4.25
NEW ZEALAND Hallett (HLL)	72°17.7' S	170°18.5' E	Rock 5 m	Willmore Z Press-Ewing Z Press-Ewing N Press-Ewing E	1.0 15.0 15.0 15.0	2.0 75.0 75.0 75.0
Scott Base (SBA)	77°51' S	166°45' E	Rock 15 m	Benioff Z Benioff N Benioff E	0.2 25.0 25.0	0.2 - 25** 0.2 - 25** 0.2 - 10**
USSR Mirny (MIR)	66°33' S	93°00' E	Rock 30 m	SVKM Z SVK Z SGK N SGK E	2.5 12.5 12.5 12.5	1.0 1.1 1.1 1.1
UNITED KINGDOM Argentine Island (AIA)	65°15' S	64°16' W	Rock 11 m	Willmore Z Willmore N Willmore E	1.0 1.0 1.0	0.25 0.25 0.25
UNITED STATES Byrd (BYR)	80°01' S	119°31' W	Ice 1515 m	Benioff Z Wilson-Lamison N Wilson-Lamison E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 6.3 5.8 30.0 25.0 16.0	0.5 3.6 Geotech Helicorder 94.0 95.0 13.0
South Pole (SPA)	90° S	0	Ice 2600 m	Benioff Z Benioff Z Wilson-Lamison Wilson-Lamison	0.7 0.7 3.5 3.6	0.5 0.5 0.5 0.5

*Began operation March 1, 1962

**Long period galvanometers recording on 35 mm film.

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COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 1 H-02 19 56.8 6.0S 149.0E h ABOUT 64KM		APR 2 SPA IP 04 55 38		APR 3 H-14 47 55.5 55.4S 128.2W h ABOUT 33KM		SPA IP 03 04 16	
MAW IP 02 32 16		APR 2 H-05 05 06.2 29.7S 177.0W h ABOUT 36KM		HLL EP 14 54 12		APR 6 H-05 34 08.7 30.3S 177.0W h ABOUT 33KM	
SPA IP 02 32 33		SPA E 05 15 15		SPA IP 14 55 44		SPA EP 05 44 13	
APR 1 H-03 51 48.1 13.0S 167.1E h ABOUT 213KM		APR 2 H-05 20 48.1 31.1S 177.5W h ABOUT 33KM		MIR EP 14 57 22		APR 6 MAW IP 06 59 41	
SPA IP 04 03 19		SPA EP 05 30 46		APR 3 H-15 18 36.4 6.1S 149.1E h ABOUT 61KM		APR 6 H-07 03 06.5 17.5S 178.9W h ABOUT 526KM	
APR 1 HLL E 06 35 47 E 38 07		APR 2 SBA IP 04 59 48 IS 15 02 00		SPA I 15 31 01		WIL IP 07 13 05	
APR 1 H-08 30 34.6 29.2S 176.6W h ABOUT 38KM		APR 2 HLL E 16 10 56		APR 3 H-15 54 51.7 61.1N 148.1W h ABOUT 78KM		SPA IP 07 13 40	
SPA IP 08 40 46		APR 2 H-16 18 55.6 53.2N 171.7W h ABOUT 142KM		SPA I 16 14 36		APR 6 MIR E 07 12 44	
MAW E 08 42 07		SPA IP 16 38 07		APR 3 WIL IP 16 11 53		APR 6 AIA E 08 53 11	
APR 1 H-09 22 51.8 35.4N 69.8E h ABOUT 100KM		AIA I 16 38 10		APR 3 HLL E 17 41 16		APR 6 H-11 19 23.3 63.4N 149.5W h ABOUT 39KM	
SPA IP 09 41 42		APR 2 MAW IP 16 34 24		APR 3 H-18 54 07.3 25.2S 179.5W h ABOUT 409KM		SPA IP 11 39 04	
APR 1 AIA EP 10 25 50 E 26 06		APR 3 AIA E 00 07 48 E 08 37		SPA IP 19 04 06		WIL EP 11 39 05	
APR 1 MAW EP 11 02 56		APR 3 HLL E 06 45 25		APR 3 HLL E 19 00 48		APR 6 H-12 07 09.5 63.6N 149.5W h ABOUT 55KM	
APR 1 HLL E 13 03 54		APR 3 HLL E 11 06 04		APR 3 HLL EP 22 48 15		SPA I 12 26 50	
APR 1 WIL IP 15 02 05		APR 3 H-11 21 49.0 29.6S 177.2W h ABOUT 48KM		APR 4 SPA IP 12 11 08		APR 6 H-18 02 30.6 32.1S 178.1E h ABOUT 197KM	
APR 1 HLL E 18 19 31		SPA I 11 31 56		APR 4 SPA IP 13 43 06		SPA I 18 12 05	
APR 2 H-03 33 05.9 31.0S 177.6W h ABOUT 33KM		APR 3 H-11 44 56.9 8.2S 112.7E h ABOUT 163KM		APR 4 H-18 25 43.7 30.2S 177.6W h ABOUT 20KM		MAW IP 18 13 24	
SPA I 03 43 04		SPA I 11 57 00		SPA I 18 35 51		APR 6 MIR E 21 27 48	
APR 2 H-04 06 57.3 55.2N 160.3E h ABOUT 33KM		APR 3 H-11 58 07.2 19.1N 121.4E h ABOUT 71KM		APR 5 MAW EP 00 38 42		APR 6 H-21 35 21.2 6.0S 149.9E h ABOUT 49KM	
SPA IP 04 26 28		HLL E 12 15 54 E 16 44		APR 5 H-10 50 03.3 30.1S 177.2W h ABOUT 44KM		SPA I 21 47 47	
APR 2 H-04 43 30.9 29.7S 177.1W h ABOUT 51KM		APR 3 HLL E 13 44 37		SPA E 11 00 09		APR 6 MIR E 22 44 31	
WIL IP 04 53 06				APR 5 SPA IP 20 13 58		APR 7 MIR E 02 43 41	
SPA IP 04 53 38				APR 6 H-02 51 46.4 5.1S 145.5E h ABOUT 57KM		APR 7 MAW IP 03 54 20	

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 7		APR 8		APR 9		APR 10	
H-03 57 31.6		MAW EP' 02 20 20		H-04 32 26.3		H-07 50 30.2	
24.5S 177.0W				17.8S 168.0E		9.2S 125.0E	
h ABOUT 114KM		APR 8		h ABOUT 35KM		h ABOUT 33KM	
BYR IP 04 07 32		H-05 57 39.5		HLL E 04 41 51		WIL EP 08 00 21	
SPA IP 04 08 05		31.4S 68.0W		BYR E 04 43 33		ES 08 20	
MIR E 04 08 18		h ABOUT 232KM		SPA I 04 44 35		HLL EP 08 01 32	
APR 7		APR 8		APR 9		MAW EP 08 01 46	
BYR E 07 56 13		H-06 24 50.7		HLL E 06 14 13		SPA IP 08 02 40	
APR 7		5.5S 130.1E		APR 9		SBA E 08 12 00	
SPA I 09 41 00		h ABOUT 33KM		H-14 54 04.5		APR 10	
MAW IP 09 42 48		APR 8		4.0S 151.0E		AIA IP 09 35 24	
APR 7		H-07 56 50.0		h ABOUT 33KM		APR 10	
AIA EP 12 49 12		18.8S 168.5E		HLL E 15 05 22		AIA EP 11 50 38	
APR 7		h ABOUT 33KM		BYR E 15 06 44		APR 10	
H-15 28 01.8		BYR I 08 07 52		APR 9		BYR I 13 35 33	
53.7N 170.1W		APR 8		HLL E 15 36 45		APR 10	
h ABOUT 202KM		BYR E 10 02 55		APR 9		BYR I 18 03 05	
SPA IP 15 47 09		APR 8		HLL E 15 54 20		APR 10	
MAW EP 15 47 32		H-11 53 21.3		APR 9		H-18 32 30.6	
APR 7		4.2S 152.2E		AIA EP 17 08 07		36.4S 73.3W	
MAW EP 20 40 52		h ABOUT 158KM		APR 9		h ABOUT 40KM	
APR 7		BYR E 12 05 43		MAW EP 19 36 15		SPA IP 18 41 51	
MAW EP 20 40 52		SPA IP 12 05 43		APR 9		APR 10	
APR 7		APR 8		HLL E 20 58 43		MIR E 23 29 55	
MIR E(P) 20 53 51		SPA IP 19 56 16		APR 9		APR 11	
APR 7		APR 8		MIR E 22 14 31		HLL E 02 19 18	
H-22 36 03.4		H-20 50 58.8		APR 9		APR 11	
4.9S 103.2E		10.4S 161.4E		H-22 57 47.9		HLL E 07 15 21	
h ABOUT 72KM		h ABOUT 33KM		11.6S 166.1E		APR 11	
MCO EP 22 45 46		SPA IP 21 03 03		h ABOUT 64KM		H-09 33 10.1	
WIL IP 22 46 15		APR 8		HLL E 23 07 54		9.9S 116.2E	
IP 46 27		H-22 37 29.6		BYR E 23 09 28		h ABOUT 33KM	
IS 54 31		24.7S 179.8E		APR 10		SPA I 09 45 17	
MIR IP 22 46 17		h ABOUT 424KM		MIR IP 00 51 39		BYR I 09 46 00	
IS 54 32		SPA IP 22 47 30		APR 10		APR 11	
MAW EP 22 46 57		APR 9		MAW EP 01 13 33		AIA EP 09 38 24	
ES 55 53		HLL E 00 27 50		APR 10		APR 11	
SBA EP 22 48 06		APR 9		AIA EP 02 53 22		MIR E 10 00 50	
HLL EP 22 48 15		H-02 02 25.1		APR 10		APR 11	
SPA IP 22 48 30		17.7S 178.7W		SPA IP 03 16 00		HLL E 10 59 15	
BYR IP 22 49 10		h ABOUT 538KM		HLL EP 03 27 27		APR 11	
I 59 40		HLL E 02 11 07		ES 29 09		HLL E 13 57 05	
APR 7		WIL IP 02 12 20		SBA IP 03 28 42		APR 11	
MAW EP 23 10 06		SPA IP 02 12 56		BYR IP 03 30 32		MIR E 16 15 33	
MIR E 23 15 27		MIR E 02 13 01		APR 10		ES 17 07	
E 15 50		E 13 38		HLL E 06 01 02		APR 11	
E 17 55		MAW IP 02 13 59				H-16 45 25.1	
WIL EP 23 15 27						60.2S 18.7W	
						h ABOUT 33KM	

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)									
h m s		h m s		h m s		h m s										
AIA	IP	16 50 07	APR 12	H-20 48 16.7	APR 13	SPA	IP	05 51 21								
SPA	IP	16 51 32	16.7S 173.7W	HLL	E	22 53 41	HLL	E	05 52 21							
	E	57 20	h ABOUT 33KM	APR 14	MIR	E	01 19 21	MAW	IP	05 52 33						
BYR	I	16 52 01	BYR	I	20 59 13	APR 14	HLL	E	02 04 41	APR 15	HLL	E	10 18 32			
MAW	IP	16 52 08	MAW	EP	21 00 58	APR 14	HLL	E	05 09 19	APR 15	SPA	IP	10 32 25			
MIR	I	16 53 31	APR 12	AIA	EP	21 56 17	APR 14	HLL	E	05 09 19	APR 15	SPA	IP	10 32 25		
	ES	17 07 36	APR 12	AIA	EP	21 56 56	APR 14	H-05 32 33.9	APR 15	MAW	EP	12 19 58				
APR 11	EP	16 54 06	APR 12	AIA	EP	21 56 56	31.4S 177.8W	APR 15	MAW	EP	12 38 54					
	IP	54 15	APR 13	MAW	EP	00 51 57	h ABOUT 33KM	APR 15	MAW	EP	12 38 54					
	ES	17 01 18	APR 13	HLL	E	05 40 22	APR 15	SPA	IP	13 50 46						
APR 11	SBA	E	17 02 30	APR 13	H-02 20 57.5	BYR	E	05 41 54	APR 15	SPA	IP	13 50 46				
APR 11	HLL	E	19 48 53	6.2S 76.5W	SPA	IP	05 42 31	APR 15	BYR	I	15 03 08					
APR 11	AIA	EP	23 36 22	h ABOUT 125KM	MIR	E	05 42 48	APR 15	HLL	E	16 29 25					
APR 12	AIA	EP	06 20 03	AIA	IP	02 30 50	MAW	IP	05 43 51	APR 15	MAW	EP	18 28 30			
APR 12	H-08 41 56.7	APR 12	AIA	EP	06 20 03	BYR	IP	02 32 36	APR 15	MAW	EP	18 55 34				
39.0S 176.7E	APR 12	H-08 41 56.7	APR 12	AIA	EP	06 20 03	E	42 19	APR 15	MAW	EP	18 55 34				
h ABOUT 106KM	APR 12	H-08 41 56.7	APR 12	SPA	IP	02 33 14	APR 14	H-13 14 21.8	APR 15	HLL	E	19 22 00				
HLL	EPP	08 48 32	APR 12	SBA	EP	02 33 40	5.4S 154.2E	BYR	I	13 26 36	APR 15	HLL	E	19 22 00		
SBA	IP	08 49 15	ES	44 05	BYR	I	13 26 36	SPA	IP	13 26 41	APR 15	HLL	E	19 22 00		
	IS	58 20	MAW	E	02 33 40	SPA	IP	13 26 41	APR 14	AIA	EP	15 00 10	APR 15	H-20 19 21.2		
BYR	IP	08 50 21	HLL	EP	02 33 49	APR 14	AIA	EP	15 00 10	15 01 49	0.9S 128.0E	h ABOUT 33KM	MAW	EP	20 31 23	
	E	09 01 11	APR 13	AIA	EP	02 39 30	15 02 03	BYR	I	15 02 11	h ABOUT 33KM	MAW	EP	20 31 23		
SPA	IP	08 50 50	IS	45 33	APR 13	SPA	I	03 43 35	APR 14	AIA	EP	15 14 17	APR 15	H-23 39 27.3		
MIR	E	08 50 58	APR 13	MAW	EP	07 30 45	APR 14	AIA	EP	15 14 17	18.3S 173.7W	h ABOUT 33KM	HLL	EP	23 48 56	
MAW	EP	08 52 11	APR 13	MAW	EP	08 13 40	APR 14	AIA	IP	16 30 40	h ABOUT 33KM	BYR	I	23 50 12		
APR 12	AIA	EP	08 50 06	APR 13	MAW	EP	08 13 40	APR 14	AIA	EP	23 40 05	MAW	EP	23 52 00		
	IP	50 15	APR 13	AIA	EP	14 13 53	APR 14	AIA	EP	23 40 05	APR 16	H-01 29 19.4	0.8S 128.0E	h ABOUT 33KM		
	IS	56 48	APR 13	H-14 31 21.0	APR 15	AIA	EP	00 27 16	APR 15	AIA	EP	00 27 16	29 13	h ABOUT 33KM		
APR 12	MIR	E	09 15 10	3.4S 135.4E	APR 15	AIA	E	29 13	APR 15	HLL	E	01 23 44	30 54	APR 16	H-01 29 19.4	
APR 12	MIR	E	09 20 45	h ABOUT 31KM	APR 15	HLL	E	01 23 44	APR 15	MAW	EP	02 16 56	30 54	0.8S 128.0E	h ABOUT 33KM	
APR 12	AIA	EP	10 32 19	MIR	E	14 42 29	APR 15	MAW	EP	02 16 56	APR 15	HLL	IP	01 41 08	h ABOUT 33KM	
APR 12	MAW	EP	12 40 09	E	42 38	HLL	EP	14 42 56	APR 15	MAW	EP	02 16 56	APR 15	HLL	IP	01 41 08
APR 12	H-13 38 03.0	APR 12	MAW	EP	12 40 09	SBA	EP	14 43 09	APR 15	SPA	IP	05 13 23	APR 15	SBA	IP	01 41 25
51.6N 175.0W	APR 12	H-13 38 03.0	MAW	EP	12 40 09	MAW	IP	14 43 30	APR 15	SPA	IP	05 13 23	APR 15	MAW	EP	01 41 26
h ABOUT 33KM	MAW	EP	13 57 45	APR 12	H-13 38 03.0	BYR	IP	14 44 16	APR 15	H-05 40 41.1	23.5S 68.2W	h ABOUT 105KM	BYR	IP	01 42 32	
MAW	EP	13 57 45	APR 12	H-13 38 03.0	51.6N 175.0W	APR 13	AIA	EP	14 42 11	23.5S 68.2W	h ABOUT 105KM	BYR	I	05 50 42		
APR 12	MAW	IP	19 52 45	APR 13	AIA	EP	14 42 11	IS	50 39	h ABOUT 105KM	BYR	I	05 50 42			
APR 12	MAW	IP	19 52 45	APR 13	AIA	EP	14 42 11	IS	50 39	BYR	I	05 50 42				

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 16		MAW EP	03 58 38	SBA EP	01 22 19	BYR I	12 24 19
AIA IP	01 40 10	SPA IP	03 59 25	SPA IP	01 23 04	SPA IP	12 24 55
	IP			BYR IP	01 23 23	APR 17	
	IS			APR 17	HLL E	01 40 45	APR 17
APR 16		APR 16		APR 17		APR 17	SPA IP
H-01 36 59.4		H-04 10 16.3		APR 17		APR 17	AIA EP
1.25 128.4E		0.8S 128.9E		HLL E	01 40 45	APR 17	SPA IP
h ABOUT 33KM		h ABOUT 33KM		APR 17		APR 17	SPA IP
MIR EP	01 48 09	MAW EP	04 22 22	APR 17		APR 17	AIA E
I	48 25	SPA IP	04 23 08	H-02 11 26.1		APR 17	AIA E
HLL IP	01 48 44	APR 16		19.6S 178.6E		APR 17	AIA E
MAW EP	01 49 07	SPA I	05 31 37	h ABOUT 33KM		APR 17	AIA E
BYR I	01 50 09	APR 16		HLL EP	02 20 40	APR 17	AIA EP
I	50 52	APR 16		SBA EP	02 21 20	H-18 24 27.6	ES
APR 16		H-06 27 56.5		ES	29 28	54.9S 28.2W	32 57
MIR IP	01 48 31	1.6S 127.8E		BYR IP	02 22 11	h ABOUT 26KM	
E	48 49	h ABOUT 53KM		I	39 00	AIA EP	18 29 05
APR 16		SPA I	06 41 43	MIR EP	02 22 37	ES	32 57
SBA E	02 02 10	APR 16		ES	31 46	SPA IP	18 31 22
APR 16		H-07 45 25.8		SPA IP	02 22 38	BYR I	18 31 31
H-01 55 10.9		0.0N 127.6E		MAW IP	02 23 39	MAW IP	18 32 13
.7S 128.0E		h ABOUT 33KM		E(S)	33 50	MIR EP	18 33 28
h ABOUT 32KM		SPA E	07 58 22	AIA IP	02 23 49	WIL IP	18 34 05
MCO EP	02 04 05	APR 16		APR 17		IP	34 15
APR 16		H-09 10 29.0		AIA EP	02 31 56	APR 18	
MIR EP	02 06 22	0.9S 128.5E		APR 17		H-01 51 55.2	
I	07 26	h ABOUT 33KM		APR 17		20.3S 177.7W	
HLL IP	02 06 58	MAW EP	09 22 37	APR 17		h ABOUT 530KM	
MAW EP	02 07 15	SPA IP	09 23 32	H-04 03 05.9		BYR I	02 01 44
BYR I	02 08 20	BYR I	09 23 40	1.0S 128.3E		SPA IP	02 02 13
APR 16		APR 16		h ABOUT 33KM		APR 18	
AIA IP	02 06 02	H-12 03 42.5		SPA I	04 15 59	APR 18	
IP	06 08	1.0S 127.6E		APR 17		SPA I	03 50 05
APR 16		h ABOUT 33KM		APR 17		APR 18	
AIA E	02 14 52	MIR E	12 14 50	H-08 23 34.0		MIR E	08 14 41
APR 16		HLL EP	12 15 30	15.7S 174.1W		APR 18	
AIA IP	02 21 52	MAW EP	12 15 46	h ABOUT 124KM		MAW EP	14 04 19
IP	22 12	SPA IP	12 16 34	SBA EP	08 33 49	APR 18	
IS	30 22	BYR I	12 16 53	BYR I	08 34 26	MAW EP	17 00 04
APR 16		APR 16		MIR EP	08 35 13	APR 18	
SBA E	02 41 10	MIR E	13 34 51	APR 17		MIR E	19 39 11
SPA IP	02 42 13	APR 16		APR 17		APR 18	
APR 16		SPA IP	13 45 17	MIR EP	09 10 14	MIR I	23 09 40
H-03 32 25.3		APR 16		APR 17		APR 19	
1.1S 127.9E		AIA EP	20 22 51	H-10 20 07.7		AIA E	01 13 31
h ABOUT 33KM		SPA E	20 28 38	1.1S 128.0E		APR 19	
MAW EP	03 44 31	APR 17		h ABOUT 33KM		AIA E	01 54 40
BYR I	03 45 37	APR 17		SPA IP	10 32 59	APR 19	
APR 16		H-01 10 16.6		APR 17		APR 19	
H-03 46 32.5		.6S 128.1E		SBA EP	10 46 10	AIA EP	02 00 27
.9S 127.8E		h ABOUT 89KM		APR 17		APR 19	
h ABOUT 33KM		MAW EP	01 22 18	APR 17		AIA E	02 26 12
				H-12 13 34.3		APR 19	
				18.4S 173.8W		WIL IP	03 12 57
				h ABOUT 33KM			

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 19 H-03 47 22.7 9.8S 120.5E h ABOUT 33KM		APR 19 MIR E 20 03 44		APR 22 H-07 25 30.8 29.9S 177.6W h ABOUT 33KM		APR 23 H-07 19 44.8 60.7S 24.7W h ABOUT 33KM	
SPA E 03 59 37		APR 19 H-22 44 16.8 29.9S 177.7W h ABOUT 41KM		BYR E 07 35 03		SPA IP 07 25 46	
APR 19 H-06 20 15.3 33.1S 69.2W h ABOUT 87KM		MAW IP 22 55 42		SPA IP 07 35 36		BYR I 07 26 07	
SPA IP 06 30 06		APR 20 MAW EP 01 05 06		MIR E 07 35 52		MAW IP 07 26 41	
MIR E 06 40 06		APR 20 H-01 07 57.8 1.2S 128.9E h ABOUT 28KM		MAW IP 07 36 56		HLL E 07 28 14	
APR 19 H-07 35 23.7 35.8N 96.9E h ABOUT 33KM		SPA I 01 20 49		APR 22 H-08 30 30.5 5.1S 154.1E h ABOUT 132KM		WIL IP 07 28 33	
WIL IPP 07 53 28 ISKS 59 59		BYR E 01 21 08		SPA IP 08 43 23		APR 23 HLL E 11 19 54	
SBA EP 07 54 11		APR 20 MAW EP 01 56 30		APR 22 SPA I 12 02 46		APR 23 AIA IP 11 59 04 E 12 00 35	
SPA E 07 54 21		APR 20 AIA EP 02 40 11		APR 22 MAW IP 13 17 30		AIA IP 12 25 18	
BYR E 07 54 33		APR 20 H-05 46 59.5 27.5S 70.2W h ABOUT 33KM		APR 22 AIA IP 13 46 20		APR 23 MIR E 12 44 46	
AIA EP 07 55 06		BYR I 05 56 40		APR 22 H-15 06 53.6 19.8S 175.4W h ABOUT 53KM		APR 23 MIR E 13 36 57	
APR 19 MIR E 08 04 39		APR 20 H-16 55 53.6 22.3S 64.8W h ABOUT 271KM		BYR I 15 17 29		APR 23 WIL EP 14 07 16	
HLL EPP 08 05 15		BYR I 17 05 49		SPA IP 15 18 03		APR 23 MIR E 15 15 46	
APR 19 MAW EP 10 37 58		APR 20 AIA E 21 09 35		APR 22 MAW EP 15 45 29		APR 23 SPA IP 15 28 22	
APR 19 HLL E 13 32 12		APR 21 H-04 38 21.7 24.1N 122.1E h ABOUT 33KM		APR 22 MAW EP 16 05 49		MAW EP 15 30 03	
APR 19 MAW EP 13 59 25		SPA E 04 57 28		APR 22 MAW EP 16 13 26		APR 23 MIR E 19 04 34	
APR 19 H-16 17 54.8 58.8S 26.0W h ABOUT 99KM		BYR E 04 58 23		APR 22 AIA IP 16 34 41		APR 23 H-18 52 24.4 5.1S 146.1E h ABOUT 134KM	
AIA IP 16 22 09		APR 21 H-10 38 30.0 3.2S 146.9E h ABOUT 33KM		APR 22 MIR E 18 05 26		MAW IP 19 04 34	
SPA IP 16 24 07		WIL EP 10 49 31		APR 23 AIA EP 01 45 47		APR 23 H-19 49 58.6 23.8S 179.9E h ABOUT 540KM	
BYR I 16 24 24 I 31 09		MIR E 10 50 01		APR 23 MIR E 02 07 16		APR 23 SPA IP 19 59 54	
MAW EP 16 24 60		SPA E 10 51 14		APR 23 H-02 45 04.7 11.4S 165.9E h ABOUT 97KM		APR 23 MIR E 21 42 48	
SBA EP 16 25 50		BYR E 10 51 16		HLL E 02 55 08		APR 23 BYR E 22 21 43	
MIR E 16 26 16		APR 21 BYR I 20 34 13		SPA IP 02 56 56		MAW EP 22 22 08	
HLL E 16 26 30		APR 22 AIA IP 07 21 27 E 21 50		APR 23 AIA EP 02 59 43		MIR E 23 24 06	
WIL IP 16 26 50				APR 23 MIR E 07 08 01		APR 23 MAW EP 23 59 52	
						APR 24 AIA EP 00 23 02	
						APR 24 AIA E 01 49 27	

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 24 AIA EP	01 55 15	MIR E	21 53 03	APR 25 H-21 06 44.0 28.15 70.0W h ABOUT 68KM		APR 27 H-08 42 58.4 0.65 128.4E h ABOUT 33KM	
APR 24 H-03 55 06.6 17.25 174.5W h ABOUT 190KM		MAW IP	21 54 01	BYR I	21 16 16	WIL EP	08 53 51
BYR E	04 05 41	AIA IP	21 54 03	SPA IP	21 17 00	IS	09 02 36
SPA IP	04 06 15	APR 24 MIR E	23 42 42	APR 25 AIA EP	21 25 54	MIR E	08 54 10
APR 24 H-05 33 49.8 10.45 161.4E h ABOUT 80KM		APR 25 AIA EP	04 47 33	APR 25 AIA EP	21 26 54	HLL E(P)	08 54 54
MAW EP	05 46 10	APR 25 AIA EP	04 48 31	APR 25 AIA EP	21 26 54	SBA EP	08 55 05
APR 24 H-05 51 44.1 1.15 127.2E h ABOUT 33KM		APR 25 AIA EP	04 48 48	APR 25 HLL E	23 18 05	MAW IP	08 55 07
MAW IP	06 03 49	APR 25 AIA E	05 16 03	APR 26 HLL E	00 29 08	SPA IP	08 55 52
SPA IP	06 04 37	APR 25 MAW EP	05 35 54	APR 26 AIA E	01 08 53	BYR I	08 56 15
BYR E	06 04 56	APR 25 H-08 12 57.2 4.7N 122.4E h ABOUT 610KM		APR 26 HLL E	04 08 43	APR 27 MIR E	09 31 31
APR 24 HLL E	06 50 30	HLL E	08 24 20	APR 26 SPA IP	07 41 24	HLL E(P)	09 35 04
APR 24 AIA E	09 52 40	MAW IP	08 24 21	APR 26 HLL E	09 12 02	APR 27 SPA IP	10 34 00
APR 24 HLL E	11 03 12	APR 25 SPA EP	08 34 45	APR 26 AIA E	11 34 52	APR 27 H-11 03 29.1 22.85 68.9W h ABOUT 100KM	
APR 24 HLL F	15 24 58	APR 25 MAW IP	09 34 41	APR 26 MIR E	12 08 08	BYR I	11 13 33
APR 24 AIA E	16 08 51 15 01	APR 25 MAW EP	09 58 34	APR 26 H-16 44 12.0 18.15 69.0W h ABOUT 110KM		SPA IP	11 14 17
APR 24 AIA E	16 32 23 36 35	APR 25 MAW EP	10 48 22	BYR I	16 54 46 55 18	MAW IP	11 15 47
APR 24 MAW EP	17 41 41	APR 25 H-16 35 56.2 1.35 128.7E h ABOUT 33KM		SPA IP	16 55 24	APR 27 MAW EP	14 24 24
APR 24 H-20 48 16.4 30.15 177.8W h ABOUT 33KM		WIL IP	16 46 43	MAW EP	16 56 49	APR 27 H-15 10 10.5 61.4N 148.3W h ABOUT 39KM	
SPA IP	20 58 21	MIR EP	16 47 05	APR 26 HLL E	20 30 07	SPA IP	15 29 59
APR 24 HLL E	20 53 20	MAW IP	16 48 03	APR 27 MAW EP	04 19 14	APR 27 WIL IP	16 00 36
APR 24 H-21 42 49.0 20.85 179.1W h ABOUT 603KM		SPA IP	16 48 47	APR 27 H-04 53 50.9 44.8N 110.4W h ABOUT 33KM		APR 27 H-19 29 43.7 30.35 70.3W h ABOUT 59KM	
HLL E	21 51 05	BYR I	16 49 07	WIL EP	05 10 44	SPA IP	19 39 45
BYR E	21 52 27	APR 25 H-17 50 25.3 21.65 178.0W h ABOUT 380KM		APR 27 MAW EP	07 34 57	MAW IP	19 41 29
SPA IP	21 52 58	SPA IP	18 00 48	APR 27 MAW EP	08 09 39	APR 27 HLL E	20 29 38
		MIR E	18 00 57	APR 27 SPA IP	08 45 09	APR 27 AIA E	23 38 37
		APR 25 MAW EP	18 54 30	MAW IP	08 46 18	APR 28 H-01 51 06.8 1.15 128.6E h ABOUT 26KM	
		APR 25 AIA E	19 26 11			MAW EP	02 03 17

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
APR 28 H-02 05 15.9 24.0S 67.9W h ABOUT 120KM		SPA IP 09 32 58		APR 30 H-03 26 04.2 51.2N 178.6E h ABOUT 50KM		AIA EP 10 15 49	
MAW IP 02 17 27		BYR E 09 33 16		SPA IP 03 45 24		I 25 53	
APR 28 H-05 22 08.0 12.1S 78.0W h ABOUT 50KM		APR 29 H-14 51 52.4 63.9S 159.5E h ABOUT 33KM		MAW IP 03 45 36		I 26 22	
SPA IP 05 34 05		HLL EP 14 54 03		APR 30 H-07 07 55.9 51.6N 178.4E h ABOUT 64KM		MAY 1 HLL E 10 58 31	
APR 28 MAW IP 06 34 28		SBA EP 14 55 09		MAW EP 07 27 26		MAY 1 AIA E 20 18 38	
APR 28 WIL EP 08 02 29		WIL IP 14 56 29		APR 30 MIR E 10 58 20		MAY 1 AIA E 20 39 34	
APR 28 HLL E 12 53 46		IP 56 44		APR 30 SPA IP 12 06 19		E 40 08	
APR 28 BYR E 13 37 34		IS 15 00 18		APR 30 H-18 43 14.0 8.2S 79.9W h ABOUT 60KM		MAY 2 AIA E 00 10 38	
APR 28 SPA IP 14 10 40		SPA IP 14 57 27		BYR E 18 54 46		MAY 2 HLL E 04 04 48	
APR 28 H-14 16 05.9 17.6S 178.5W h ABOUT 505KM		BYR IP 14 57 29		APR 30 MIR EP 00 10 45		MAY 2 AIA EP 17 18 30	
BYR E 14 26 13		MIR EP 14 58 08		MAY 1 HLL E 04 25 02		MAY 2 HLL E 21 26 18	
SPA IP 14 26 41		EP 58 35		MAY 1 HLL E 06 03 17		MAY 3 MAW EP 02 37 15	
APR 28 MAW EP 15 43 57		MAW IP 14 58 51		MAY 1 AIA EP 06 11 37		MAY 3 H-10 44 28.0 30.7N 51.7E h ABOUT 25KM	
APR 28 AIA EP 16 15 35		IPP 15 01 18		E 12 53		MAW EP 11 02 10	
APR 28 H-17 28 20.4 .6S 128.5E h ABOUT 33KM		ES 07 08		MAY 1 HLL E 09 40 04		MAY 3 H-10 54 43.0 15.0S 173.3W h ABOUT 33KM	
MAW EP 17 40 28		APR 29 MIR EP 15 02 12		MAY 1 HLL E 10 10 12		BYR I 11 05 48	
APR 28 MAW EP 20 24 33		EP 03 08		HLL EP 10 12 26		SPA IP 11 06 22	
APR 28 AIA EP 20 55 09		ES 08 32		SBA IP 10 13 06		MAW IP 11 07 32	
MAW EP 20 58 43		APR 29 AIA E 15 12 01		IS 21 06		MAY 3 MAW EP 11 55 16	
APR 28 MAW EP 21 13 27		APR 29 H-21 44 17.1 51.4N 178.6E h ABOUT 60KM		WIL IP 10 13 16		MAY 3 AIA EP 13 43 53	
APR 28 H-21 57 22.1 24.0S 68.1W h ABOUT 33KM		SPA IP 22 03 29		IP 13 47		MAY 3 MAW IP 14 01 27	
MAW IP 22 09 39		BYR E 22 03 30		IS 21 16		MAY 3 MAW EP 19 59 25	
APR 29 H-09 21 34.2 17.8S 13.2W h ABOUT 33KM		I 07 03		MIR IP 10 14 01		MAY 3 AIA EP 21 32 42	
		APR 30 MAW EP 01 39 45		IP 14 34		E 33 01	
				IS 22 43		MAY 4 SPA IP 03 32 11	
				BYR IP 10 14 06		BYR I 03 42 31	
				I 23 02			
				I 43 01			
				SPA IP 10 14 23			
				I 23 29			
				E 41 35			

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAY 4 AIA EP E	04 44 56 45 59	MAY 5 H-17 11 47.2 17.5S 173.7W h ABOUT 33KM		SPA IP	16 34 01	SPA IP	19 26 48
MAY 4 H-05 56 04.1 51.8N 175.4W h ABOUT 69KM		HLL E	17 21 21	MAY 7 HLL E	16 32 27	MAY 8 H-21 26 53.4 32.1N 141.5E h ABOUT 39KM	
SPA EP	06 15 22	BYR E	17 22 38	MAY 7 SPA IP	17 27 41	HLL E	21 46 45
MAW IP	06 15 43	SPA IP	17 23 11	MAY 7 HLL E	19 26 45	MAY 8 AIA EP	23 43 50
MAY 4 H-07 38 53.3 24.7S 66.6W h ABOUT 153KM		MAW EP	17 24 23	MAY 8 SPA IP	07 11 55	MAY 9 MAW IP IP	04 40 35 40 47
BYR I	07 48 49	MAY 6 SPA E	03 05 19	MAY 8 H-08 50 56.0 54.9N 163.9W h ABOUT 89KM		BYR E	04 42 14
SPA IP	07 49 21	MAY 6 AIA E E E	03 42 04 42 16 42 45	MIR IP	09 10 16	SPA IP	04 42 48
MAY 4 SPA IP	11 16 23	MAY 6 AIA EP	05 41 28	SPA IP	09 10 19	MAY 9 MIR EP	05 36 24
MAY 4 SPA IP	17 18 34	MAY 6 H-05 53 19.5 2.5S 138.2E h ABOUT 34KM		MAY 8 MIR EP	09 11 20	MAY 9 H-10 03 36.0 31.8S 71.2W h ABOUT 91KM	
MAY 4 H-18 24 09.4 54.4S 144.0E h ABOUT 33KM		HLL E	06 04 46	BYR E	09 13 30	SPA IP	10 13 26
WIL IP	18 28 41	MAW IP	06 05 40	MAY 8 H-10 22 11.2 36.6N 141.0E h ABOUT 53KM		MAY 9 H-11 23 29.8 31.7N 142.3E h ABOUT 33KM	
HLL E	18 28 53	SPA IP	06 06 05	SPA IP	10 41 07	MIR E	11 39 20
SPA IP	18 31 06	MAY 6 H-08 38 33.3 9.1S 112.5E h ABOUT 84KM		BYR IP	10 41 11	MAY 9 AIA EP	12 42 55
MAY 4 H-19 01 40.8 56.1S 27.1W h ABOUT 33KM		MIR IP	08 48 23	MAY 8 H-13 56 27.3 58.6S 61.5W h ABOUT 33KM		MAY 9 AIA EP	14 43 22
SPA IP	19 08 23	MAW IP	08 49 17	AIA EP	13 58 04	MAY 9 AIA EP	14 43 41
BYR IP E	19 08 39 14 38	HLL E	08 49 48	BYR I	14 02 15	MAY 9 H-19 28 02.3 52.3S 27.5E h ABOUT 33KM	
MAW IP	19 09 15	SPA IP	08 50 38	SPA IP	14 02 48	SPA IP	19 35 16
MAY 4 HLL F	19 25 43	BYR I	08 51 13	MAY 8 H-15 24 00.3 5.3N 125.7E h ABOUT 70KM		BYR I	19 36 28
MAY 5 AIA E	07 50 21	MAY 6 MIR EP	08 48 40	WIL IP	15 35 31	HLL E	19 37 22
MAY 5 AIA E	14 34 38	MAY 6 H-09 15 24.2 9.9S 160.6E h ABOUT 76KM		MIR IP E	15 35 38 35 48	MAY 9 MIR E	20 24 34
MAY 5 H-15 17 01.9 24.7S 69.5W h ABOUT 50KM		BYR E	09 27 18	HLL E	15 36 28	MAY 9 HLL E	20 52 15
BYR IP	15 27 00	SPA IP	09 27 26	SPA IP	15 37 17	MAY 10 MIR E	02 30 18
SPA IP	15 27 40	MAW EP	09 27 48	BYR E E	15 37 51 41 50	MAY 10 H-04 28 41.8 20.0S 168.1E h ABOUT 33KM	
HLL E	15 28 40	MAY 6 HLL E	14 37 11	MAY 8 SPA IP	15 47 45	HLL IP	04 37 51
MAY 5 AIA E	16 19 18	MAY 7 H-16 23 11.2 22.0S 68.6W h ABOUT 110KM		MAY 8 H-19 15 39.7 17.2S 175.0W h ABOUT 199KM		SBA EP	04 38 31
		BYR IP	16 33 20				

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MIR E	04 39 26	MAY 12		MAY 13		MAY 14	
BYR IP	04 39 34	H-09 42 58.3		SPA IP	02 10 41	SBA E	14 42 00
SPA IP	04 39 51	57.5S 159.4E		MAY 13		MAY 14	
MAY 10		h ABOUT 44KM		AIA EP	05 02 30	H-15 08 46.1	
WIL IP	09 48 10	MCO IP	09 43 31	MAY 13		5.6S 127.8E	
IP	48 20	I	43 51	SPA I	10 25 36	h ABOUT 405KM	
IS	52 32	HLL EP	09 46 35	MAY 13		SPA IP	15 20 34
MAY 10		SBA IP	09 47 36	SBA EP	11 44 31	MAY 14	
AIA EP	12 15 25	WIL IP	09 48 10	MAY 13		H-17 56 15.1	
MAY 10		IP	48 20	H-12 44 00.7		30.2S 177.7W	
H-22 22 42.2		IS	52 32	14.5N 92.9W		h ABOUT 33KM	
2.2S 77.6W		MIR EP	09 49 12	h ABOUT 60KM		SPA I	18 06 19
h ABOUT 33KM		EPP	50 15	MAW EP	13 02 54	MAY 14	
SPA IP	22 35 30	ES	54 25	MAY 13		H-23 14 47.0	
SBA EP	22 35 56	SPA IP	09 49 25	MAW EP	12 48 01	4.1S 152.8E	
HLL IP	22 36 03	I	52 10	MAY 13		h ABOUT 58KM	
WIL EPP	22 42 05	MAW IP	09 50 38	H-14 07 46.8		SBA E	23 26 19
IPS	51 30	IP	50 55	19.5S 169.3E		BYR I	23 27 20
AIA E	22 43 12	IPP	52 36	h ABOUT 163KM		MAY 15	
MIR E	22 53 35	MAY 12		SBA EP	14 17 27	AIA EP	00 55 36
E	57 33	MIR E	13 43 52	SPA IP	14 18 45	MAY 15	
MAY 11		MAY 12		MAW EP	14 19 30	AIA EP	00 56 35
H-01 10 48.5		HLL I	14 06 24	MAY 13		MAY 15	
32.8N 19.4E		MAY 12		H-17 50 20.4		AIA EP	02 11 00
h ABOUT 33KM		AIA EP	15 24 12	61.1N 150.8W		MAY 15	
SPA IP	01 28 09	MAY 12		h ABOUT 93KM		H-02 17 53.5	
MAY 11		AIA EP	15 24 42	SPA E	18 10 02	45.8S 74.8W	
H-04 44 19.4		MAY 12		MAY 13		h ABOUT 33KM	
15.4S 177.1W		H-16 37 10.6		H-18 03 04.4		SPA I	02 26 13
h ABOUT 400KM		42.2S 72.1W		20.6S 70.7W		MAY 15	
SPA IP	04 55 15	h ABOUT 33KM		h ABOUT 33KM		H-02 52 39.7	
MAW IP	04 56 18	SPA IP	16 45 48	SPA IP	18 14 08	3.4S 146.8E	
MAY 11		MAY 12		MAY 13		h ABOUT 33KM	
MIR E	09 15 54	H-20 08 43.0		MAW EP	21 37 16	HLL EP	03 03 51
E	25 46	57.4N 153.9W		MAY 13		SBA EP	03 04 22
MAY 11		h ABOUT 80KM		H-22 48 10.3		SPA E	03 05 22
MAW IP	09 50 38	HLL EP	20 27 48	6.0S 150.1E		BYR EP	03 05 24
IP	50 55	BYR E	20 27 50	h ABOUT 94KM		MAY 15	
IPP	52 36	SBA EP	20 27 58	MAW EP	23 00 29	AIA E	04 09 12
MAY 11		SPA IP	20 28 11	SPA IP	23 00 42	MAY 15	
MAW EP	09 50 51	MIR IP	20 28 16	MAY 14		AIA EP	04 10 25
MAY 11		MAW IP	20 28 32	MIR I	03 25 03	MAY 15	
MAW EP	10 19 51	MAY 12		MAY 14		MAW EP	09 54 29
MAY 11		MIR EP	20 29 01	MAW EP	04 47 52	MAY 15	
H-19 44 23.5		E	29 33	MAY 14		SBA EP	16 16 41
34.9S 108.2W		MAY 12		MAW EP	06 59 08	MAY 15	
h ABOUT 33KM		H-20 37 12.9		MAY 14		SBA EP	17 28 23
SPA E	19 53 55	55.9N 163.1E		H-13 50 40.9		MAY 15	
MAY 12		h ABOUT 33KM		57.3N 154.2W		MAW EP	18 57 07
RYR IP	09 40 23	SPA IP	20 56 49	h ABOUT 37KM		SPA IP	14 10 19

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MAY 15 WIL E(P)	20 17 28	MAY 17 MAW IP	06 37 23	MAY 18 H-05 33 25.0 29.6S 68.5W h ABOUT 29KM		MAY 18 MIR I	20 36 33
MAY 16 MAW EP	10 06 35	MAY 17 H-07 33 17.5 31.0S 179.8W h ABOUT 358KM		AIA E	05 40 20	MAY 19 H-01 03 04.1 46.5S 75.1W h ABOUT 33KM	
MAY 16 H-15 52 18.4 .8S 128.5E h ABOUT 50KM		SPA IP	07 42 30	BYR I	05 42 52	AIA EP	01 07 34
WIL EP	16 03 10	MAY 17 MAW EP	12 20 59	SPA IP	05 43 34	ES	11 09
MIR E	16 03 27	MAY 17 H-14 11 01.5 14.1S 74.2W h ABOUT 51KM		SBA E	05 44 21	BYR IP	01 10 11
HLL E(P)	16 04 02	BYR I	14 22 03	HLL EP	05 44 44	SPA IP	01 11 06
SBA EP	16 04 21	MAY 17 H-17 15 37.1 .05 124.1E h ABOUT 33KM		MIR P	05 45 53	SBA IP	01 12 01
MAW IP	16 04 25	MAW IP	17 27 42	WIL IP	05 46 05	IS	21 55
SPA EP	16 04 52	SPA I	17 28 35	ES	56 28	HLL IP	01 12 20
BYR IP	16 05 28	MAY 17 H-21 31 11.8 0.85 128.8E h ABOUT 231KM		MAY 18 MIR EP	06 16 16	MAW EP	01 13 20
E	14 14	MAW IP	21 43 00	MAY 18 SBA EP	09 53 50	IS	21 51
MAY 16 MAW IP	16 13 11	SPA I	21 43 45	MAY 18 H-12 20 31.9 8.2S 115.6E h ABOUT 39KM		MIR IP	01 13 55
SPA EP	16 13 54	MAY 17 H-22 40 06.7 24.4S 177.2W h ABOUT 70KM		SBA EP	09 53 50	EPP	14 28
MAY 16 H-16 17 59.8 1.0S 128.8E h ABOUT 33KM		HLL E(P)	22 48 44	SPA IP	12 32 49	IS	22 52
HLL E	16 29 25	MIR EP	22 50 55	I	43 05	WIL IP	01 14 01
MAW IP	16 30 08	I	51 27	BYR IP	12 33 18	IPP	14 15
SPA EP	16 30 53	AIA EP	22 51 52	MAY 18 H-13 03 35.8 8.2S 115.7E h ABOUT 68KM		IS	22 57
BYR I	16 31 11	MAW IP	22 51 58	MIR IP	13 13 39	MAY 19 BYR EP	01 15 19
MAY 16 AIA EP	19 21 11	IPP	52 31	MAW IP	13 14 34	EPP	18 25
MAY 16 MAW IP	19 55 03	MAY 17 SBA IP	23 49 25	HLL EP	13 14 54	IS	25 32
MAY 17 MIR I	00 21 06	MAY 18 SPA IP	02 42 40	MIR EP	12 31 34	MAY 19 MAW EP	03 55 24
MAY 17 H-04 06 36.2 45.3N 150.8E h ABOUT 33KM		MAW EP	02 43 41	HLL EP	12 31 55	MIR IP	11 48 17
MAW EP	04 25 44	MAY 18 H-04 04 24.3 29.6S 68.3W h ABOUT 30KM		SBA EP	12 32 08	EPP	48 48
MAY 17 SPA E	04 15 43	BYR I	04 13 52	SPA IP	12 32 08	IS	56 31
MAY 17 H-06 09 18.2 15.7N 120.1E h ABOUT 80KM		SPA IP	04 14 34	BYR IP	12 32 49	MAY 19 MAW EP	11 56 60
MIR I	06 21 44	MAW EP	04 16 14	BYR IP	12 33 18	MAY 19 MAW E	18 36 32
E	22 03	BYR I	04 13 52	MAY 18 H-13 03 35.8 8.2S 115.7E h ABOUT 68KM		MAY 19 H-21 35 49.6 23.8N 45.9W h ABOUT 33KM	
MAW IP	06 22 23	SPA IP	04 14 34	MIR IP	13 13 39	SPA IP	21 54 20
I	22 34	MAW EP	04 16 14	MAW IP	13 14 34	HLL E(P)	21 54 57
		BYR I	04 13 52	HLL EP	13 14 54	MIR EP	21 55 03
		SPA IP	04 14 34	SBA EP	13 15 08	E	58 26
		MAW EP	04 16 14	SPA IP	13 15 49	E	59 50
				BYR IP	13 16 18	BYR E	21 55 06
				MAY 18 MAW EP	13 08 37	WIL IP'	21 55 18
				MAY 18 MAW IP	13 44 12	EPP	57 52
				MAY 18 SPA IP	13 50 25	MAY 19 H-23 31 25.7 17.8S 69.4W h ABOUT 148KM	
						AIA EP	23 39 49

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)	
		h m s			h m s			h m s			h m s
BYR	IP	23 41 57	MAY 21			MAY 22			MAY 23		
SBA	EP	23 43 18	H-15 16 06.6			H-15 42 48.6			H-03 33 19.1		
HLL	IP	23 43 30	11.0S 163.1E			4.3N 127.9E			15.0S 176.7W		
MAY 20			h ABOUT 64KM			h ABOUT 58KM			h ABOUT 279KM		
BYR	E	00 27 04	SPA IP	15 28 05		MAW IP	15 55 18		HLL EP	03 42 51	
SPA	I	00 28 24	MAY 21			IP	56 28		SBA EP	03 43 28	
MAY 20			H-17 30 15.4			SBA EP	15 55 18		BYR IP	03 44 06	
H-11 38 00.9			11.1S 163.3E			SPA IP	15 56 02		SPA IP	03 44 38	
30.7S 178.3W			h ABOUT 33KM			MIR E	15 56 11		MIR IP	03 44 46	
h ABOUT 34KM			HLL EP	17 40 31		ES	16 03 57		E	45 09	
MCO EP		11 43 57	WIL EP	17 40 56		BYR E	16 00 12		MAY 23		
HLL EP		11 45 53	IS	49 42		MAY 22			H-03 35 34.7		
SBA IP		11 46 48	SBA EP	17 41 07		H-16 25 36.8			10.9S 163.3E		
IS		53 37	BYR EP	17 42 06		52.2N 165.3W			h ABOUT 33KM		
WIL IP		11 47 27	SPA IP	17 42 18		h ABOUT 33KM			HLL EP	03 45 49	
BYR IP		11 47 28	MAW IP	17 42 43		SPA IP	16 44 59		MIR EP	03 46 04	
I		55 12	MAY 21			MAW IP	16 45 28		E	46 57	
SPA IP		11 48 02	H-17 51 07.7			MAY 22			E	47 27	
MAY 20			22.1S 179.5W			H-16 28 48.8			BYR IP	03 47 26	
BYR IP		11 50 02	h ABOUT 579KM			55.1N 160.2E			SPA I	03 47 37	
ES		12 00 08	SPA IP	18 01 10		h ABOUT 33KM			MAW IP	03 48 02	
MAY 20			MAY 22			SPA IP	16 48 19		MAY 23		
SPA I		11 56 05	H-02 27 56.3			MAY 22			HLL IP	07 50 17	
MAY 20			11.3S 163.2E			SPA IP	18 30 29		SBA EP	07 51 36	
SPA EP		12 16 23	h ABOUT 60KM			MAY 22			MAY 23		
MAY 20			HLL EP	02 38 08		SPA IP	21 50 19		H-07 47 59.7		
SPA IP		23 42 36	SBA EP	02 38 44		MAY 22			11.2S 163.3E		
MAY 21			BYR E	02 39 43		H-21 53 02.5			h ABOUT 17KM		
H-00 58 07.4			SPA IP	02 39 55		8.2S 115.7E			HLL EP	07 58 16	
56.0S 123.9W			MAY 22			h ABOUT 33KM			SPA I	08 00 03	
h ABOUT 33KM			H-07 52 01.3			WIL IP	22 02 54		MAY 23		
BYR EP		01 03 22	30.3S 177.6W			ES	10 54		H-11 56 45.6		
SBA EP		01 04 23	h ABOUT 168KM			MIR EP	22 03 09		44.7S 75.7W		
HLL EP		01 04 24	SPA IP	08 01 51		E	03 23		h ABOUT 33KM		
MIR E		01 07 34	MAY 22			ES	04 14		BYR I	12 04 08	
MAY 21			H-13 56 43.0			MAW IP	22 04 04		SPA IP	12 05 03	
MIR EP		01 17 14	48.6N 154.7E			ES	13 10		HLL EP	12 06 12	
MAY 21			h ABOUT 22KM			HLL EP	22 04 25		MAY 23		
MIR ES		01 42 14	MIR IP	14 15 40		SBA EP	22 04 39		H-15 12 05.7		
MAY 21			E	15 53		ES	14 18		6.0N 126.1E		
MAW EP		02 36 16	SBA EP	14 15 45		SPA E	22 14 30		h ABOUT 88KM		
MAY 21			BYR E	14 15 51		MAY 23			WIL IP	15 23 31	
MAW EP		05 42 18	MAW EP	14 16 00		H-00 51 40.3			MIR IP	15 23 46	
MAY 21			AIA EP	14 16 38		1.6N 126.4E			HLL IP	15 24 24	
BYR EP		06 07 22	WIL IPP	14 17 07		h ABOUT 33KM			MAW IP	15 24 35	
			EPS	26 35		HLL EP	01 03 43		SBA EP	15 24 42	
			SPA I	14 18 28		MAW EP	01 03 58				

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Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)	
		h m s			h m s			h m s			h m s
SPA IP	I	15 25 24 28 21	WIL IP	ES	18 10 26 14 40	WIL E(IP)		04 17 47	MCQ EP		06 57 36
BYR E		15 29 39	MAW IP ¹	PP	18 12 45 14 11	BYR EP		04 18 08	WIL IP	IP ^P	07 00 41 01 04
MAY 23			SS		29 55	MAW EP		04 18 11	IS		04 40
HLL EP		16 57 20	MAY 25			SPA IP		04 18 17	HLL EP		07 00 54
MAY 24			MIR EP		20 40 23	MAY 27			SBA IP		07 01 31
MIR E		06 54 49	MAY 25			SBA EP		04 02 56	MIR EP		07 01 50
SPA EP		06 57 00	H-22 18 17.4			MAY 27			EPP		12 29
MAY 24			37.15 179.5E			HLL EP		04 32 47	BYR IP		07 03 29
SBA EP		15 44 17	h ABOUT 33KM			MAY 27			MAW EP		07 03 29
MAY 24			SPA E		22 27 31	MAW EP		07 42 47	ES		09 23
HLL EP		18 52 56	MAY 26			MAY 27			MAY 30		
MAY 24			SPA IP		00 11 07	H-16 20 09.6			AIA EP		18 29 19
HLL EP		23 40 09	MAW EP		00 12 21	0.6S 130.1E			MAY 30		
MAY 25			MAY 26			h ABOUT 33KM			H-18 57 53.2		
H-07 57 02.1			H-00 42 56.1			SPA EP		16 33 05	59.4S 26.9W		
23.8S 66.6W			6.9S 155.6E			MAY 28			h ABOUT 33KM		
h ABOUT 210KM			h ABOUT 87KM			BYR E		13 29 37	BYR I		19 04 23
BYR I		08 11 08	SPA IP		00 55 13	MAY 28			MIR EP		19 06 20
MAY 25			MAW IP		00 55 21	HLL EP		18 24 59	HLL EP		19 06 31
MIR E		09 28 59	MAY 26			MAY 29			WIL IP		19 06 51
MAY 25			H-10 57 59.4			H-01 02 05.8			ES		15 06
MIR E		10 54 18	16.0S 173.8W			18.1S 178.0W			MAY 30		
MAY 25			h ABOUT 33KM			h ABOUT 472KM			MIR E		19 21 58
MIR E		11 53 43	SPA IP		11 09 36	HLL EP		01 10 51	MAY 30		
MAY 25			MAY 26			SPA IP		01 12 41	AIA EP		20 23 09
MIR E		12 36 27	H-12 43 48.1			MAY 29			MAY 30		
MAY 25			16.7S 72.2W			HLL EP		02 26 39	AIA EP		23 54 31
H-16 08 00.8			h ABOUT 60KM			MAY 29			E		55 26
56.8S 25.0W			BYR I		12 54 35	BYR IP		05 46 50	MAY 31		
h ABOUT 29KM			SPA IP		12 55 15	HLL EP		05 49 02	H-06 03 34.9		
AIA E		16 12 38	MAW IP		12 56 41	WIL EP		05 49 22	15.1S 173.3W		
SPA IP		16 14 36	MAY 26			ES		56 36	h ABOUT 33KM		
MAW EP		16 15 33	MAY 26			MAY 29			HLL EP		06 13 28
ES		21 25	MAW EP		20 02 50	HLL IP		07 25 16	BYR E		06 14 43
SBA EP		16 16 20	MAY 26			MAY 29			MIR EP		06 15 29
MIR IP		16 16 44	AIA EP		20 31 21	H-10 59 10.5			MAW EP		06 16 24
E		17 27	MAY 26			18.0S 178.0W			MAY 31		
IS		23 49	MAW EP		20 57 44	h ABOUT 550KM			AIA EP		09 57 44
HLL EP		16 17 00	MAY 26			HLL EP		11 07 49	MAY 31		
WIL EP		16 17 17	H-23 06 55.0			BYR IP		11 09 10	H-14 08 03.1		
IS		24 48	55.2N 159.9E			MAY 30			30.6S 178.1W		
MAY 25			h ABOUT 47KM			H-05 35 06.0			h ABOUT 60KM		
BYR IP		16 24 54	SBA EP		23 26 04	26.1S 178.3E			MIR E		14 18 14
MAY 25			BYR E		23 26 16	h ABOUT 610KM			MAY 31		
HLL EP		18 07 49	MAW EP		23 26 19	BYR I		05 44 15	MIR E		18 03 43
SBA IP		18 09 05	MAY 27			MAY 30			MAY 31		
SPA IP		18 10 12	H-03 58 47.9			H-06 56 09.3			MAY 31		
			55.3N 160.1E			54.2S 143.7E			MIR E		20 57 24
			h ABOUT 54KM			h ABOUT 33KM					

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JUN 1 HLL IP	21 23 46	WIL IP	21 13 09	JUN 4 H-11 54 09.1		JUN 5 H-00 13 50.6	
SBA IP	21 24 25	IPP	15 02	30.5S 177.8W		39.3N 104.0W	
BYR IP	21 24 59	IS	20 20	h ABOUT 33KM		h ABOUT 33KM	
MIR EP	21 25 48	HLL IP	21 13 14	HLL EP	12 02 03	MAW EP	00 32 27
JUN 1 MIR EP	21 26 22	JUN 2 SBA IP	22 12 30	SBA EP	12 02 48	MAW EP	00 32 47
JUN 2 HLL EP	00 08 11	JUN 3 SPA IP	01 32 36	WIL IP	12 03 37	JUN 5 SPA IP	00 35 41
JUN 2 H-01 16 31.1		JUN 3 SPA IP	04 09 55	ES	11 23	JUN 5 H-05 07 03.7	
17.7N 94.2W		JUN 3 H-11 31 48.7		BYR E	12 03 39	30.7S 177.6W	
h ABOUT 164KM		5.3N 72.9W		MIR E	12 04 27	h ABOUT 70KM	
BYR E	01 33 11	h ABOUT 21KM		MAW IP	12 05 32	MIR EP	05 17 18
JUN 2 BYR E	07 54 52	SPA IP	11 45 11	JUN 4 H-13 05 56.3		E	18 32
JUN 2 H-10 00 00.1		JUN 3 SPA IP	12 04 11	30.4S 177.6W		MAW IP	05 18 23
6.1S 154.4E		JUN 3 SPA E	12 33 19	h ABOUT 33KM		JUN 5 H-05 32 09.2	
h ABOUT 49KM		JUN 3 MIR E	13 04 37	SBA EP	13 14 35	34.6S 81.5E	
HLL EP	10 10 49	JUN 3 SPA IP	13 15 57	WIL I(P)	13 15 23	h ABOUT 33KM	
MIR EP	10 11 27	JUN 3 SPA E	13 48 27	MIR E	13 16 14	MAW IP	05 38 08
E	12 34	JUN 3 H-18 48 54.8		MAW EP	13 17 20	JUN 5 H-10 12 09.0	
BYR I	10 12 23	29.5S 177.8W		JUN 4 HLL EP	13 28 50	14.9S 166.8E	
SPA IP	10 12 25	h ABOUT 49KM		JUN 4 MAW EP	15 50 46	h ABOUT 37KM	
MAW IP	10 12 30	SPA IP	18 59 03	JUN 4 MAW EP	19 29 29	SBA IP	10 22 34
JUN 2 MIR E	10 37 24	MAW EP	19 00 19	JUN 4 MAW EP	19 32 29	MIR EP	10 23 18
JUN 2 SBA EP	11 13 20	JUN 3 MIR E	19 16 42	JUN 4 HLL EP	19 49 58	BYR IP	10 23 33
JUN 2 BYR EP	11 44 40	JUN 3 SPA IP	21 17 34	JUN 4 H-21 04 42.3		SPA IP	10 23 49
JUN 2 SPA IP	12 10 44	JUN 3 H-21 30 13.3		1.2S 127.3E		JUN 5 HLL EP	10 36 55
JUN 2 AIA E	15 18 05	59.5S 27.7W		h ABOUT 31KM		JUN 5 H-11 20 07.3	
E	19 19	h ABOUT 45KM		WIL IP	21 15 29	3.6S 149.6E	
JUN 2 H-21 04 24.2		SPA IP	21 36 25	IPP	15 50	h ABOUT 33KM	
58.5S 15.6W		MAW EP	21 37 25	IS	24 16	MIR EP	11 31 40
h ABOUT 50KM		HLL EP	21 38 49	MIR IP	21 15 51	JUN 5 SBA EP	14 04 27
AIA EP	21 09 29	JUN 4 MAW EP	00 16 39	ES	16 28	JUN 5 H-14 07 38.1	
ES	13 49	JUN 4 H-11 44 12.0		HLL IP	24 54	17.2S 176.7W	
MAW IP	21 11 05	8.1N 126.8E		MAW EP	21 16 46	h ABOUT 33KM	
ES	17 20	h ABOUT 161KM		ES	26 44	SPA E	14 19 04
BYR IP	21 11 17	HLL EP	11 56 33	SBA EP	21 16 47	JUN 5 SPA IP	15 17 03
MIR PP	21 12 31	JUN 4 H-11 44 12.0		BYR IP	21 17 50	JUN 5 MIR E	17 53 29
PP	13 15	8.1N 126.8E		JUN 5 MIR EP	00 01 09	JUN 5 MAW EP	22 51 39
IS	19 06	h ABOUT 161KM		MAW EP	00 01 14	JUN 5 H-22 54 28.7	
				IPP	04 00		
				ES	10 37		

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
h ABOUT	75KM	JUN 6		JUN 7		JUN 9	
MIR	IP 23 05 10	SPA	IP 15 46 24	H-19	30 35.6	SPA	IP 01 13 29
	E 05 30	JUN 6		8.5N	103.1W	JUN 9	
	I 06 05	MIR	E 16 45 33	h ABOUT	33KM	H-01	30 32.2
MAW	IP 23 06 04	JUN 6		BYR	E 19 43 27	23.5S	176.0W
	E(S) 15 41	H-17	42 47.0	JUN 7		h ABOUT	33KM
HLL	EP 23 06 10	14.3S	167.3E	MIR	E 22 10 31	SPA	IP 01 41 19
SBA	E 23 06 26	h ABOUT	160KM	JUN 7		MAW	IP 01 42 35
BYR	EP 23 07 33	HLL	IP 17 52 24	H-22	31 54.8	JUN 9	
JUN 6		SBA	IP 17 53 02	15.2S	173.1W	H-03	57 57.9
SBA	E 04 36 44	MIR	EP 17 53 47	h ABOUT	33KM	17.5S	168.0E
JUN 6		JUN 6		HLL	EP 22 41 47	h ABOUT	33KM
H-05	18 55.1	SPA	IP 17 45 15	BYR	I 22 43 00	SPA	IP 04 09 24
19.9N	120.2E	JUN 7		SPA	IP 22 43 33	JUN 9	
h ABOUT	33KM	H-00	20 54.4	MAW	EP 22 44 43	SPA	IP 04 33 45
WIL	IP 05 31 35	23.9S	66.6W	JUN 7		JUN 9	
ISKS	42 08	h ABOUT	206KM	H-22	37 30.0	SPA	IP 05 46 19
MIR	EP 05 31 47	HLL	EP 00 32 23	15.3S	173.2W	JUN 9	
	EP 32 22	MAW	EP 00 32 50	h ABOUT	33KM	SPA	IP 13 53 44
	ES 42 33	MIR	E 00 39 18	HLL	EP 22 47 22	JUN 9	
MAW	EP 05 32 23	JUN 7		BYR	EP 22 48 33	H-15	50 31.8
HLL	EP 05 32 29	MAW	EP 02 54 40	WIL	IP 22 48 44	15.3S	172.9W
SPA	E 05 37 16	JUN 7		IS	58 06	h ABOUT	33KM
BYR	E 05 38 28	BYR	E 05 45 56	SPA	IP 22 49 07	BYR	E 16 01 37
JUN 6		JUN 7		MIR	EP 22 49 24	SPA	IP 16 02 10
HLL	EP 07 23 42	MIR	E 05 54 32	EP	49 49	JUN 9	
JUN 6		JUN 7		ES	59 14	AIA	E 22 05 41
H-08	21 12.2	HLL	EP 09 16 38	MAW	EP 22 50 18	JUN 10	
6.7N	94.7E	JUN 7		ESKS	23 01 01	MAW	EP 00 46 25
h ABOUT	33KM	MIR	E 12 15 29	JUN 8		JUN 10	
MAW	IP 08 33 06	JUN 7		H-01	01 51.9	AIA	E 02 05 02
JUN 6		HLL	EP 15 24 13	15.1S	173.0W	JUN 10	
HLL	EP 11 25 58	JUN 7		h ABOUT	33KM	H-04	16 37.7
JUN 6		H-15	34 47.8	SBA	EP 01 12 41	55.4S	146.4E
H-12	04 14.3	15.3S	178.9W	BYR	E 01 12 56	h ABOUT	33KM
37.8S	77.9E	h ABOUT	33KM	JUN 8		MCO	IP 04 18 19
h ABOUT	33KM	HLL	EP 15 44 34	H-04	22 53.0	HLL	IP 04 21 05
MIR	EP 12 10 23	SBA	EP 15 45 12	22.7S	13.7W	WIL	IP 04 21 10
	EP 10 35	MIR	E 15 46 32	h ABOUT	33KM	IPP	21 34
	ES 15 18	AIA	E 15 47 16	BYR	E 04 34 08	IS	24 58
MAW	EP 12 10 27	E	48 10	JUN 8		SBA	IP 04 21 47
	ES 15 28	MAW	EP 15 47 32	H-05	34 06.8	MIR	EP 04 22 19
WIL	E(P) 12 10 40	JUN 7		5.5S	147.0E	IS	27 06
	I(S) 16 25	H-15	49 57.4	h ABOUT	170KM	BYR	IP 04 23 44
SPA	IP 12 13 23	19.0N	121.8E	SBA	EP 05 45 40	MAW	IP 04 23 57
SBA	E 12 13 33	h ABOUT	33KM	BYR	IP 05 46 25	IPP	25 19
HLL	EP 12 13 47	WIL	E(P) 16 02 39	JUN 8		ES	29 56
JUN 6		HLL	EP 16 03 32	SBA	EP 09 26 08	AIA	E 04 26 28
MAW	IP 14 54 51	JUN 8		JUN 8		JUN 10	
		AIA	E 23 27 57	AIA	E 23 27 57	SPA	IP 04 33 25

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JUN 10 H-05 14 15.6 55.2S 146.3E h ABOUT 33KM		JUN 10 MIR I 16 24 24		JUN 12 AIA E 23 03 53		JUN 15 H-05 01 52.0 15.0S 177.8W h ABOUT 350KM	
HLL IP 05 18 45		JUN 11 HLL IP 00 09 41		JUN 13 H-05 14 26.6 15.2S 173.3W h ABOUT 33KM		HLL EP 05 11 08	
WIL IP 05 18 53 IS 22 40		WIL IP 00 09 44		SPA IP 05 26 06		BYR I 05 12 26	
SBA IP 05 19 26		SBA EP 00 10 12		MAW IP 05 27 15		SPA IP 05 12 56	
MIR EP 05 19 58		MIR I 00 10 14		JUN 13 SBA IP 08 03 50		JUN 15 H-15 30 37.7 36.3S 98.9W h ABOUT 33KM	
SPA IP 05 21 05		MAW IP 00 11 12		JUN 13 H-08 37 39.7 38.7N 14.8E h ABOUT 33KM		BYR E 15 38 48	
BYR I 05 21 23		BYR I 00 11 14		MAW EP 08 55 27		SPA I 15 39 59	
MAW IP 05 21 35		SPA IP 00 11 15		JUN 13 MIR E 10 30 42		SBA EP 15 40 15	
JUN 10 H-06 39 04.0 55.3S 146.1E h ABOUT 18KM		JUN 11 AIA E 04 57 23		JUN 13 MIR E 10 30 42		MAW IP 15 42 20 IPP 42 33 ES 52 02	
MCO IP 06 40 45		JUN 11 SPA IP 12 28 23		JUN 13 H-10 34 52.4 6.1S 130.1E h ABOUT 150KM		MIR EP 15 42 28 E 42 54 ES 52 21	
HLL IP 06 43 35		JUN 11 H-13 08 31.4 63.1N 151.4W h ABOUT 31KM		MIR EP 10 45 21		JUN 15 H-21 47 12.1 55.7S 28.5W h ABOUT 33KM	
WIL IP 06 43 41 IPP 44 04 IS 47 32		WIL IP 13 28 10		HLL EP 10 45 53		AIA EP 21 51 41	
SBA IP 06 44 17		JUN 11 BYR I 13 13 02		MAW IP 10 46 23		SPA IP 21 53 58	
MIR IP 06 44 49 E 45 22 EPP 45 31 IS 49 32		JUN 11 HLL EP 13 38 17		SPA IP 10 47 06 I 47 36		BYR I 21 54 12	
SPA IP 06 45 54		JUN 11 SBA EP 15 20 23		BYR I 10 47 25		MAW EP 21 54 51	
BYR IP 06 46 14		JUN 12 H-04 08 11.7 15.8S 174.2W h ABOUT 150KM		JUN 13 H-16 59 10.9 33.3S 71.3W h ABOUT 94KM		JUN 15 MIR EP 22 37 42	
MAW IP 06 46 27 IPP 48 37 IS 52 24		SPA IP 04 19 34		BYR I 17 08 08		JUN 16 HLL EP 00 03 57	
AIA E 06 48 53		MIR EP 04 19 48		SPA IP 17 08 48 I 08 56		JUN 16 MIR E 03 26 37	
JUN 10 H-07 54 28.2 51.5N 178.5W h ABOUT 33KM		JUN 12 SPA I 04 10 11		MAW IP 17 10 37		JUN 16 SBA EP 03 39 27	
MAW IP 08 14 07		JUN 12 BYR I 08 10 51		JUN 13 H-17 26 41.1 4.6S 153.2E h ABOUT 54KM		JUN 16 MIR E 07 57 59	
JUN 10 MIR E 09 15 51		JUN 12 H-15 11 59.2 55.8S 27.8W h ABOUT 33KM		HLL EP 17 37 41		JUN 16 MIR E 12 17 29	
JUN 10 H-12 19 56.1 4.6S 152.0E h ABOUT 174KM		AIA EP 15 16 33 E 20 09		MAW EP 17 39 05		SPA I 12 20 33	
HLL IP 12 30 42		SPA IP 15 18 45		BYR IP 17 39 11		JUN 16 H-13 49 00.1 4.5S 153.0E h ABOUT 72KM	
MAW IP 12 32 15 IPP 33 12		BYR I 15 18 58		SPA IP 17 39 13 I 39 25 I 41 18		HLL EP 13 59 57	
BYR I 12 32 54		MAW IP 15 19 37		JUN 14 SPA E 08 55 28 E 56 31		SBA EP 14 00 28	
SPA I 12 33 15		MIR I 15 20 52		MIR IP 14 00 30 E 00 45			
		JUN 12 AIA EP 15 36 06					

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)	
		h m s			h m s			h m s			h m s
MAW	IP I>P	14 01 28 01 50	SPA	I	18 52 02	JUN 18			JUN 19		
BYR	E	14 01 30	JUN 17			H-09 30 47.3			H-10 47 24.7		
SPA	IP I	14 01 31 01 47	HLL	EP	18 58 43	15.7S 168.0E			25.0N 92.1E		
JUN 16			JUN 17			h ABOUT 176KM	BYR	I	09 41 51	MIR	IP
MIR	E	22 47 35	H-20 08 37.0				JUN 18			MAW	IP
JUN 17			20.4S 174.4W				MIR	E	10 14 04	JUN 19	
HLL	EP	01 13 42	h ABOUT 33KM				JUN 18			H-11 58 55.0	
JUN 17			HLL	IP	20 17 51		BYR	I	13 34 42	9.3S 158.8E	
SPA	IP I	02 15 31 15 32	BYR	E	20 19 10		SPA	IP I	13 35 01 35 16	h ABOUT 33KM	
MIR	EP	02 15 35	WIL	E(P)	20 19 22		MAW	IP	13 35 52	HLL	IP
MAW	IP	02 16 33	SPA	IP I	20 19 45 19 50		JUN 18			SBA	EP
JUN 17			MIR	EP	20 20 02		MIR	EP	23 48 17	MIR	EP
WIL	E(P)	02 35 43	MAW	IP	20 20 59		JUN 19			BYR	EP
JUN 17			JUN 17				SBA	EP	01 16 57	SPA	IP
BYR	I	04 21 04	SPA	IP	22 14 39		JUN 19			MAW	IP
JUN 17			JUN 17				SBA	EP	01 43 47	JUN 19	
MIR	E	07 08 44	BYR	I	22 24 40		JUN 19			HLL	IP
JUN 17			JUN 17				HLL	EP	02 14 02	JUN 19	
AIA	E E	11 50 21 52 02	H-23 02 06.6				JUN 19			SPA	IP
JUN 17			4.1S 102.2E				H-02 15 54.1			JUN 19	
MIR	E	18 00 57	h ABOUT 73KM				23.6S 174.9W			H-18 22 09.6	
JUN 17			WIL	IP IS	23 12 24 20 44		h ABOUT 55KM			3.5S 153.4E	
H-18 30 54.1			MIR	EP E	23 12 37 13 54		HLL	EP	02 24 44	h ABOUT 279KM	
65.8S 179.5W			MAW	EP'	23 13 05		SPA	IP	02 26 41	WIL	I(P)
h ABOUT 33KM			HLL	IP	23 14 07		MAW	EP	02 27 57	HLL	IP
HLL	IP	18 32 41	SBA	IP	23 14 14		JUN 19			SBA	IP
SBA	IP	18 33 53	BYR	I	23 15 16		HLL	IP	02 20 39	MIR	IP
BYR	IP	18 35 37	JUN 17				JUN 19			ES	42 59
SPA	IP	18 36 11	HLL	IP	23 19 30		HLL	EP	05 09 17	SPA	IP
WIL	IP IPP IS	18 36 43 37 32 41 24	JUN 17				JUN 19			I	34 57
MIR	IP EPP IS	18 37 27 38 29 42 29	MAW	EP	23 41 08		H-09 09 04.0			BYR	IP
MAW	IP IPP ES	18 38 28 40 02 44 41	JUN 18				4.7N 126.5E			MAW	IP
AIA	EP	18 38 36	AIA	EP	02 57 32		h ABOUT 83KM			JUN 19	
JUN 17			JUN 18				MIR	IP EPP ES	09 20 38 23 25 30 11	AIA	E E
HLL	IP	18 39 47	MAW	E(P)	03 51 01		HLL	IP	09 21 16	E	41 49
JUN 17			MIR	E	03 52 24		MAW	IP IS	09 21 30 31 51	JUN 20	
H-18 32 14.5			SPA	IP I	03 53 45 55 23		SBA	EP	09 21 35	MIR	E
60.4N 140.8W			BYR	I	03 54 58		SPA	IP I I I	09 22 18 24 06 25 50 33 00	SBA	EP
h ABOUT 33KM			HLL	EP	03 55 22		BYR	E E	09 22 41 26 37	SP	IP I
WIL	E	18 52 00	JUN 18				JUN 20			SP	I
			MAW	IP I>P	05 20 01 20 33		SBA	EP	18 37 13	AIA	EP E
			HLL	EP	05 24 22		AIA	EP E	18 39 11 40 30		

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JUN 20 HLL EP	19 15 27	JUN 21 SPA IP	21 38 04	HLL EP	03 57 32	JUN 24	
BYR E	19 16 42	I	38 13	BYR E	03 59 05	H-05 43 48.1	
	19 50			MIR EP	03 59 53	59.4N 151.5W	
JUN 20 BYR E	20 22 11	JUN 21 H-21 42 01.0		AIA E	04 00 56	h ABOUT 57KM	
		29.7S 177.4W		MAW IP	04 00 59	SPA IP	06 03 30
JUN 20 H-22 46 18.1		h ABOUT 43KM		JUN 23		I	03 33
27.9S 176.6W				SPA IP	04 14 37	JUN 24	
h ABOUT 41KM				I	14 50	SBA EP	11 58 10
HLL EP	22 54 33	HLL EP	21 49 57	I	15 25	JUN 24	
SBA IP	22 55 16	SBA EP	21 50 41	JUN 23		H-13 18 08.2	
BYR I	22 56 02	WIL E(P)	21 51 31	AIA E	04 36 02	25.5S 175.6W	
SPA IP	22 56 37	MIR EP	21 52 20	JUN 23		h ABOUT 238KM	
I	58 03	I	52 33	H-08 53 09.6		HLL EP	13 26 20
I	58 36	MAW IP	21 53 35	6.0S 146.6E		SBA EP	13 27 02
MIR IP	22 56 55	JUN 21		h ABOUT 61KM		SPA IP	13 28 21
I	57 01	BYR E	21 50 31	HLL EP	09 04 04	I	28 41
MAW IP	22 57 59	JUN 22		MIR IP	09 04 20	MIR EP	13 28 39
ES	23 07 37	MIR E	01 54 32	SBA EP	09 04 33	I	28 52
AIA EP	22 58 49	JUN 22		MAW IP	09 05 24	MAW IP	13 29 40
JUN 20		H-04 37 21.7		SPA IP	09 05 34	JUN 24	
H-23 15 33.4		6.1S 154.4E		BYR I	09 05 40	H-15 01 44.2	
52.9N 168.6W		h ABOUT 64KM		JUN 23		15.5S 177.5W	
h ABOUT 33KM				AIA E	20 35 08	h ABOUT 412KM	
MAW IP	23 35 23	HLL EP	04 48 09	JUN 23		HLL EP	15 10 53
JUN 21		BYR I	04 49 44	AIA EP	20 36 37	SBA EP	15 11 30
HLL EP	00 16 24	MAW IP	04 49 51	JUN 24		SPA IP	15 12 41
MAW IP	00 19 52	MIR E	04 54 55	H-02 59 17.4		MAW EP	15 13 42
IP	20 05	JUN 22		10.6S 163.3E		JUN 24	
JUN 21		H-08 35 14.8		h ABOUT 58KM		H-16 17 15.4	
SPA IP	04 49 46	41.1S 90.2W		MAW IP	03 11 41	52.3N 171.2W	
JUN 21		h ABOUT 33KM		JUN 24		h ABOUT 33KM	
H-12 18 26.9		BYR E	08 42 53	H-04 26 37.9		MAW IP'	16 37 02
23.7S 66.6W		JUN 22		59.5N 151.7W		JUN 24	
h ABOUT 221KM		H-16 12 14.0		h ABOUT 52KM		SBA EP	18 13 16
AIA EP	12 25 54	6.0S 113.1E		SBA EP	04 45 56	JUN 24	
E	26 48	h ABOUT 595KM		HLL EP	04 45 58	BYR I	21 37 45
BYR IP	12 28 16	BYR I	16 24 14	BYR EP	04 45 59	JUN 25	
JUN 21		JUN 22		SPA IP	04 46 13	AIA E	00 01 53
SPA IP	16 31 17	H-21 27 58.4		I	48 31	MAW EP'	00 04 35
I	31 39	30.1S 177.2W		MIR IP	04 46 24	JUN 25	
JUN 21		h ABOUT 33KM		MAW EP'	04 46 32	AIA E	00 13 48
SPA IP	16 32 43	MIR E	21 38 21	JUN 24		JUN 25	
JUN 21		JUN 23		H-02 47 03.0		H-02 47 03.0	
H-17 42 35.9		MIR E	01 54 32	7.2S 154.8E		7.2S 154.8E	
27.9S 176.2W		JUN 23		h ABOUT 207KM		h ABOUT 207KM	
h ABOUT 33KM		SBA EP	03 43 15	BYR E	02 59 03	BYR E	02 59 03
SBA E	17 51 33	JUN 23		JUN 25		JUN 25	
BYR E	17 52 20	H-03 49 33.9		MAW EP	02 49 15	MAW EP	02 49 15
		29.6S 177.9W					
		h ABOUT 55KM					

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
JUN 25 MAW E(P)	04 12 40	JUN 26 H-14 09 13.0 36.4N 76.9E h ABOUT 33KM		SBA EP	12 30 05	JUN 28 AIA EP	03 06 33
JUN 25 MIR IP	04 46 24	SPA IP 14 28 11 I 28 24		SPA IP	12 31 29	JUN 28 AIA EP	03 22 00
JUN 25 MIR EP'	04 50 08	JUN 26 H-17 42 40.6 7.1N 82.3W h ABOUT 20KM		MIR E	12 31 43	JUN 28 MAW EP	03 44 08
	EPP 51 34	AIA E 17 54 13		MAW IP	12 32 48	JUN 28 AIA EP	06 03 22
	ESKS 51 57	BYR I 17 55 35		IPP	33 05	JUN 28 AIA EP	06 30 01
JUN 25 AIA E	11 08 42	SPA IP 17 56 12 I 56 25		AIA E	12 45 57	JUN 28 AIA EP	06 31 02
JUN 25 H-11 43 41.3 8.7N 82.9W h ABOUT 37KM		JUN 26 MAW EP 19 45 35		JUN 27 AIA E	13 55 61	JUN 28 AIA EP	06 34 08
BYR E	11 56 40	JUN 26 MAW EP 23 13 37		JUN 27 BYR I	14 36 06	JUN 28 AIA EP	06 35 17
JUN 25 H-14 32 14.3 8.4S 106.5E h ABOUT 78KM		JUN 27 MIR EP 02 36 45 EPP 37 09 ES 43 09		JUN 27 H-15 32 53.1 14.4N 93.7E h ABOUT 33KM		JUN 28 AIA EP	06 37 54
MIR EP	14 42 10	JUN 27 MAW EP 06 04 46		MIR E	15 45 08	JUN 28 AIA EP	06 55 45
ES	50 56	JUN 27 H-07 08 01.7 60.5N 140.7W h ABOUT 29KM		MAW IP	15 45 22	JUN 28 AIA E	07 11 51
WIL EP	14 42 19	SPA EP 07 27 51 I 28 21		JUN 27 BYR I	16 30 44	JUN 28 H-13 47 47.7 1.3N 97.4E h ABOUT 50KM	
ES	50 00	JUN 27 H-07 23 15.5 23.2S 177.1W h ABOUT 338KM		HLL EP	16 32 46	MIR E	13 58 50
MAW EP	14 42 51	MAW EP 07 34 46		JUN 27 AIA E	16 45 35	MAW EP	13 59 13
SBA EP	14 43 50	JUN 27 H-11 46 57.9 8.3S 111.2E h ABOUT 180KM		JUN 27 MAW EP	17 49 42	JUN 28 MAW IP	14 51 07
HLL EP	14 43 51	MAW IP 11 57 33 EPP 57 59		JUN 27 AIA EP	20 35 45	JUN 28 HLL EP	18 54 32
BYR I	14 45 08	HLL EP 11 58 09		JUN 27 AIA E	23 50 57	JUN 28 H-21 55 38.8 46.5N 153.2E h ABOUT 33KM	
JUN 25 H-16 04 19.3 20.4S 176.1W h ABOUT 250KM		SPA IP 11 58 57 I 59 23		MAW EP	20 35 45	WIL EP	22 11 00
MAW EP	16 16 14	BYR I 11 59 31		JUN 27 AIA EP	23 50 57	EPP	15 32
JUN 25 MAW EP	18 34 25	JUN 27 H-12 21 25.1 30.1S 177.7W h ABOUT 44KM		JUN 27 AIA E	55 51	ES	23 24
JUN 25 MIR EP	22 42 10	HLL EP 12 29 20		JUN 28 AIA EP	01 38 08	BYR E	22 14 46
ES	50 56			JUN 28 H-02 28 51.6 27.5S 66.1E h ABOUT 33KM		MAW IP'	22 14 50
JUN 26 MAW EP	03 10 23			MAW IP	02 36 26	AIA EP	22 15 31
JUN 26 H-09 41 31.2 4.6N 126.3E h ABOUT 33KM				ES	42 31	HLL EP	22 15 42
MIR EP	09 53 10			MIR EP	02 36 45	SPA E	22 17 42
E	53 26			EPP	37 09	JUN 28 H-23 16 56.4 4.7S 144.5E h ABOUT 83KM	
E	53 53			ES	43 09	HLL EP	23 27 54
MAW IP	09 54 02			WIL IP	02 37 36	MAW IP	23 29 10
SBA E	09 54 06			ES	44 14	JUN 29 SPA I	00 14 16
SPA I	09 54 50			SPA IP	02 39 14		
				I	39 53		
				SBA EP	02 39 34		
				HLL EP	02 39 51		
				BYR I	02 40 18		

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
JUN 29 MIR E	00 33 01	JUN 29 AIA EP	21 27 42				
JUN 29 MIR E	02 00 33 23 01	JUN 29 AIA EP	21 28 00				
JUN 29 WIL EP	06 08 04	JUN 30 MAW EP	01 12 34				
JUN 29 H-08 30 17.0 8.7S 119.8E h ABOUT 75KM		JUN 30 H-01 39 05.4 11.8N 142.5E h ABOUT 33KM					
MAW IP	08 41 20	HLL EP	01 51 44				
BYR I	08 42 54	JUN 30 H-02 04 36.9 21.9S 170.8E h ABOUT 73KM					
JUN 29 MAW EP	09 30 53	SBA EP	02 14 10				
JUN 29 MAW EP	10 38 06	BYR E	02 15 12				
JUN 29 MAW EP	10 55 46	SPA IP	02 15 29				
JUN 29 SBA EP	12 41 48	MAW EP	02 16 20				
JUN 29 H-12 43 47.5 11.6N 142.7E h ABOUT 30KM		JUN 30 HLL EP	04 46 55				
WIL EP	12 56 03	JUN 30 H-06 45 36.8 2.5S 102.4E h ABOUT 160KM					
MIR EP	12 56 26	WIL EP	06 55 54				
MAW EP	12 57 17	IS	07 04 16				
JUN 29 HLL EP	13 06 30	MIR EP	06 55 58				
BYR I	13 08 13	EP	56 55				
SPA IP	13 08 18	ES	07 04 20				
JUN 29 H-13 14 04.2 46.4N 153.7E h ABOUT 33KM		MAW EP	06 56 34				
HLL EP	13 31 41	HLL EP	06 57 35				
JUN 29 HLL EP	13 17 01	SBA EP	06 57 42				
JUN 29 HLL EP	13 27 24	SPA IP	06 58 07				
JUN 29 MIR E	16 01 34	I	58 50				
E	02 21	BYR I	06 58 45				
JUN 29 H-17 38 01.4 11.0S 163.5E h ABOUT 33KM		JUN 30 AIA EP	08 14 32				
HLL EP	17 48 15	E	16 21				
MAW EP	17 50 20	JUN 30 MAW EP	21 52 00				
		HLL EP	21 52 23				
		JUN 30 H-22 04 52.8 46.5N 153.3E h ABOUT 33KM					
		MAW EP	22 24 04				
		JUN 30 MAW IP	23 21 37				

ANTARCTIC SEISMOLOGICAL BULLETIN

July, August, September, 1963

MSI - 271A

Published in cooperation with the Scientific
Committee on Antarctic Research of the
International Council of Scientific Unions.

U. S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

COAST AND GEODETIC SURVEY—WASHINGTON

H. Arnold Karo, Director

FOR OFFICIAL DISTRIBUTION

U. S. COAST AND GEODETIC SURVEY
ANTARCTIC SEISMOLOGICAL BULLETIN

The Scientific Committee on Antarctic Research of the International Council of Scientific Unions recommended that a bulletin of phase readings be issued from seismological stations in the Antarctic.

The United States Coast and Geodetic Survey has undertaken the publication of the Antarctic Seismological Bulletin to be issued quarterly, based on the readings received by radio from the Antarctic stations. The phase designation shown in this bulletin is the identification given by the station operator.

The epicenters shown in this Bulletin are computed by the United States Coast and Geodetic Survey using the phase readings from many stations in addition to the Antarctic readings shown.

STATION AND INSTRUMENTAL CONSTANTS

1

Country, Station and Station Abbreviation	Position		Foundation and Elevation (In Meters)	Instruments and Components	To Seconds	Tg Seconds
	Latitude	Longitude				
ARGENTINA Deception (DEC)	62°59' S	60°43' W	Rock 7 m	Mainka N Mainka E	5.0 5.0	
AUSTRALIA Macquarie (MCQ)	54°29'55" S	158°57'22" E	Weathered Basaltic Lava 14 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 0.2 0.2
Mawson (MAW)	67°36'21" S	62°52'48" E	Pre-Cambrian granite 9 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 14.0 14.0
Wilkes (WIL)	66°15.5' S	110°31.2' E	Rock 9 m	Grenet Z Lehner-Griffith Z Lehner-Griffith N Lehner-Griffith E	1.4 10.0 10.0 10.0	1.0 60.0 92.0 85.0
NEW ZEALAND Hallett (HLL)	72°17.7' S	170°18.5' E	Rock 5 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0
Scott Base (SBA)	77°51' S	166°45' E	Rock 15 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0
USSR Mirny (MIR)	66°33' S	93°00' E	Rock 30 m	SVKM Z SVK Z SGK N SGK E	2.5 12.5 12.5 12.5	1.0 1.1 1.1 1.1
UNITED KINGDOM Argentine Island (AIA)	65°15' S	64°16' W	Rock 11 m	Willmore Z Willmore N Willmore E	1.0 1.0 1.0	0.25 0.25 0.25
UNITED STATES Byrd (BYR)	80°01' S	119°31' W	Ice 1515 m	Benioff Z Wilson-Lamison N Wilson-Lamison E Sprengnether Z Sprengnether N Sprengnether E	1.0 6.3 5.6 30.0 25.0 16.0	0.5 3.6 Geotech Helicorder 94.0 95.0 13.0
South Pole (SPA)	90° S	0	Ice 2800 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0

*World Wide Standard Instruments Operational Feb. 1963
Dumont d'Urville discontinued Feb. 1963

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UNITED STATES: U. S. Coast and Geodetic Survey
Seismology Division
Commerce Building
Washington 25, D. C.

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
JUL 1 SPA I	03 14 42	SPA IP	09 58 45	JUL 4 H-17 49 42.7 15.85 168.0E h ABOUT 150KM		JUL 6 H-22 32 31.7 16.35 39.7E h ABOUT 33KM	
MAW IP	03 15 29	BYR F	09 59 20	BYR I	18 00 49	SPA I	22 44 07
JUL 1 SPA I	04 00 10	JUL 2 BYR F	23 13 42	JUL 4 H-22 56 15.7 18.55 12.6W h ABOUT 33KM		JUL 7 H-00 01 13.3 42.25 84.4E h ABOUT 33KM	
JUL 1 H-04 03 42.9 17.45 167.6E h ABOUT 33KM		JUL 3 H-02 16 11.7 50.6N 177.9W h ABOUT 33KM		BYR IP	23 07 55	MIR EP	00 06 35
BYR F	04 15 00	MAW IP	02 36 08	HLL EP	23 09 11	E	06 49
JUL 1 MIR E	06 36 14	JUL 3 MIR FP	04 04 54	JUL 5 H-05 48 13.4 11.65 77.5W h ABOUT 55KM		ES	10 57
JUL 1 MAW FP	08 01 06	JUL 3 MIR F	08 08 42	BYR IP	05 59 28	MAW EP	00 07 02
JUL 1 MAW FP	10 13 42	JUL 3 MAW EP	08 48 25	SPA IP	06 00 06	SPA IP	00 09 50
JUL 1 SPA I	12 29 29	JUL 3 MIR EP	10 01 19	I	00 27	I	09 58
JUL 1 SBA FP	15 06 32	JUL 3 H-18 36 19.6 22.95 175.6W h ABOUT 33KM		I	00 52	I	10 07
JUL 1 HLL FP	16 05 10	MAW EP	18 48 25	SBA EP	06 00 39	HLL EP	00 10 01
JUL 1 HLL FP	17 00 07	JUL 4 MIR F	06 57 56	HLL EP	06 00 48	BYR E	00 11 00
JUL 1 H-17 53 12.5 20.85 169.2E h ABOUT 33KM		JUL 4 H-10 58 13.2 26.35 177.7W h ABOUT 158KM		JUL 5 MIR F	17 19 13	JUL 7 HLL EP	16 56 40
MAW FP	18 04 59	HLL IP	11 06 27	JUL 5 H-20 28 51.3 3.05 141.9E h ABOUT 68KM		JUL 7 SBA EP	18 37 16
JUL 1 H-20 19 40.6 4.75 103.7E h ABOUT 91KM		SBA IP	11 07 10	BYR E	20 41 38	BYR E	18 37 54
MAW IP	20 30 35	WIL IP	11 07 54	JUL 5 MIR E	20 29 07	JUL 7 HLL EP	23 13 28
IP	30 56	IP	08 57	JUL 6 MIR I	03 24 35	JUL 8 MIR E	05 39 32
HLL EP	20 31 34	I(S)	15 40	JUL 6 MIR E	03 58 07	JUL 8 BYR E	10 22 35
BYR E	20 32 44	BYR IP	11 07 57	JUL 6 H-05 21 14.4 31.85 179.0W h ABOUT 33KM		JUL 8 H-11 05 07.5 0.3N 17.8W h ABOUT 33KM	
JUL 2 H-02 52 53.0 2.45 77.8W h ABOUT 33KM		SPA IP	11 08 29	BYR E	20 41 38	SPA I	11 18 10
SPA I	03 05 41	I	09 03	JUL 6 MIR E	03 58 07	BYR E	11 18 22
JUL 2 WIL E(P)	07 55 45	MIR IP	11 08 41	JUL 6 H-05 21 14.4 31.85 179.0W h ABOUT 33KM		JUL 8 H-14 12 30.5 57.4N 154.0W h ABOUT 30KM	
JUL 2 HLL EP	08 45 37	PP	09 12	SPA I	05 31 08	SPA I	14 32 09
JUL 2 H-09 46 35.8 7.85 109.0E h ABOUT 117KM		MAW EP	11 09 46	I	31 13	JUL 8 MIR F	15 58 05
HLL EP	09 58 01	IS	19 12	MIR E	05 31 21	BYR E	16 25 15
		JUL 4 SPA I	11 22 16	MAW EP	05 32 27	JUL 8 H-17 49 30.9 65.8N 153.9W h ABOUT 33KM	
		JUL 4 MIR E	11 37 16	JUL 6 BYR E	06 00 33	SBA EP	18 09 05
		E	37 22	JUL 6 MIR E	06 22 08	BYR E	18 09 11
		JUL 4 H-14 16 51.1 22.95 175.6W h ABOUT 33KM		JUL 6 MIR E	11 48 53		
		HLL EP	14 25 43				

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	h m s		h m s		h m s		h m s
JUL 8 MIR F	17 52 04	JUL 9 MAW EP EPCP	20 10 17 11 08	JUL 10 MIR E	22 11 52	JUL 13 H-07 26 15.3 31.8S 71.0W h ABOUT 102KM	
JUL 8 MIR E	23 41 09	JUL 9 MAW EP	23 05 33	JUL 11 AIA EP	07 06 16	BYR IP	07 35 17
JUL 9 MIR F	01 30 22	JUL 10 H-04 29 25.1 29.7S 177.2W h ABOUT 33KM		JUL 11 H-17 49 09.0 12.0S 166.5E h ABOUT 144KM		SPA IP	07 36 02
JUL 9 SPA I	02 50 35	SBA EP	04 38 10	HLL EP	17 59 04	JUL 13 SPA IP	13 40 33
JUL 9 H-04 09 28.6 22.0N 145.7E h ABOUT 33KM		WIL F(P)	04 39 02	BYR E	18 00 38	JUL 13 AIA E	15 43 23
SBA EP	04 28 40	SPA I	04 39 33	JUL 11 AIA E	21 56 46	JUL 14 H-00 02 22.8 30.5S 177.2W h ABOUT 33KM	
JUL 9 MAW IP F=P	04 40 54 41 06	I	39 43	JUL 12 H-07 55 02.3 17.9S 178.5W h ABOUT 550KM		HLL EP	00 10 18
JUL 9 MAW EP	05 42 09	I	40 14	BYR IP	08 05 02	SBA EP	00 11 02
JUL 9 H-06 16 53.0 .8N 121.5E h ABOUT 142KM		JUL 10 H-05 22 57.1 46.3N 152.9E h ABOUT 33KM		MAW IP	08 06 33	BYR IP	00 11 41
MAW EP	06 28 44	SBA EP	05 41 54	JUL 12 HLL EP	17 01 35	WIL IP E=P IS	00 11 55 12 09 19 40
JUL 9 MIR E	08 48 54	BYR F	05 42 17	JUL 12 H-17 54 21.9 35.9S 71.9W h ABOUT 62KM		SPA IP	00 12 26
JUL 9 MIR F	09 08 26	SPA IP	05 42 29	BYR IP	18 02 56	I	12 47
JUL 9 H-09 24 33.3 8.5N 83.0W h ABOUT 31KM		AIA E	05 42 50	SPA IP	18 03 43	I	13 26
BYR I	09 37 33	WIL EP	05 43 10	I	03 57	MAW EP	00 13 48
JUL 9 MIR E	09 30 27	JUL 10 SPA I	05 42 15	MAW IP	18 05 29	JUL 14 H-03 59 12.4 30.5S 177.3W h ABOUT 50KM	
JUL 9 MAW IP	12 00 24	JUL 10 H-11 47 35.1 16.3S 72.2W h ABOUT 90KM		HLL EP	17 56 37	HLL EP	04 07 09
JUL 9 MAW IP	17 00 07	BYR E	11 58 20	JUL 12 HLL EP	18 42 39	SBA EP	04 07 52
JUL 9 H-17 34 33.2 24.2N 122.4E h ABOUT 33KM		SPA I	11 58 58	JUL 12 AIA E	22 58 50	BYR EP	04 08 39
MAW EP	17 54 14	I	59 05	F	59 36	WIL EP	04 08 42
JUL 9 H-18 56 12.6 29.1S 68.1W h ABOUT 33KM		SBA EP	11 59 36	JUL 12 H-23 51 16.0 5.5S 153.3E h ABOUT 56KM		SPA IP	04 09 13
BYR IP	19 05 43	JUL 10 SBA EP	12 14 04	HLL EP	00 02 08	I	09 26
SPA IP	19 06 25	JUL 10 H-16 48 42.2 30.2S 177.8W h ABOUT 25KM		BYR EP	00 03 42	MAW EP	04 10 35
I	06 49	SBA EP	16 57 24	SPA IP	00 03 43	JUL 14 H-05 41 43.0 10.4N 62.6W h ABOUT 24KM	
SBA EP	19 07 14	SPA I	16 58 48	MAW EP	00 03 49	AIA E	05 53 28
		I	59 03	JUL 13 HLL EP	03 22 22	BYR IP	05 55 05
		MIR EP	16 59 02	JUL 13 MAW EP	04 18 26	JUL 14 WIL EP	06 20 00
		JUL 10 H-19 52 19.4 19.2N 145.2E h ABOUT 171KM		JUL 13 HLL EP	04 38 56	JUL 14 H-09 08 32.7 31.7S 69.1W h ABOUT 110KM	
		MIR E	20 09 02			SPA IP	09 18 19
						F	18 51

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JUL 14 H-14 28 22.1 30.2S 177.4W h ABOUT 42KM	h m s	JUL 15 H-08 41 07.5 55.6N 162.0E h ABOUT 60KM	h m s	MIR EP 03 31 40	h m s	SBA EP 06 05 01	h m s
SBA EP 14 37 03		BYR EP 09 00 29		SPA IP 03 32 36 I 34 08		MIR EP 06 05 05 E 06 58	
BYR IP 14 37 51		MAW EP 09 00 31 EPP 00 48		SBA EP 03 33 48		WIL EP 06 05 16 EPP 07 56 EPKS 08 28	
WIL EP 14 37 57		SPA IP 09 00 36 I 00 48 I 00 59		BYR IP 03 33 48		HLL EP 06 05 16	
SPA IP 14 38 23 I 38 39		JUL 15 MAW EP 19 19 52 ES 25 10		JUL 17 AIA E 06 14 26 F 17 10		JUL 19 H-05 46 05.2 43.3N 8.1E h ABOUT 33KM	
MAW EP 14 39 46		JUL 16 AIA EP 15 12 27		JUL 17 HLL EP 19 21 44		SPA IP 06 05 16	
JUL 14 MAW EP 16 23 35		JUL 16 SRA EP 16 59 55		JUL 18 H-04 58 09.2 61.0S 22.3W h ABOUT 33KM		HLL EP 06 05 53	
JUL 14 H-17 06 38.6 39.4S 174.9E h ABOUT 189KM		HLL EP 17 00 09		AIA IP 05 02 33		JUL 19 AIA E 09 22 21 F 30 12	
SBA EP 17 13 47		JUL 16 H-18 27 18.4 43.1N 41.5E h ABOUT 33KM		SPA IP 05 04 07 I 05 08 I 06 17		JUL 19 BYR EP 12 23 58	
BYR IP 17 14 55 I 19 58		SRA EP 18 46 00		BYR IP 05 04 34		JUL 19 AIA E 21 09 15	
SPA IP 17 15 21 I 15 53 I 16 34		SPA EP 18 46 14 E 48 42		MAW IP 05 04 53 IS 10 22		JUL 19 MAW F(P) 23 26 51	
MAW IP 17 16 37		HLL EP 18 46 40		SBA EP 05 05 54		JUL 19 MAW E(P) 23 29 00	
JUL 14 AIA F 17 14 23		BYR IP 18 46 41		MIR EP 05 06 13 EPP 06 32 IS 12 34		JUL 20 H-00 11 35.0 65.2N 133.7W h ABOUT 33KM	
JUL 14 H-19 18 43.0 15.8S 168.0E h ABOUT 186KM		MIR EP 18 47 13		HLL EP 05 06 37		BYR EP 00 31 10	
SPA IP 19 30 01		JUL 16 H-19 08 29.2 30.6S 177.2W h ABOUT 41KM		WIL IP 05 06 48 IPP 07 04 IS 13 49		JUL 20 H-01 45 06.4 31.1N 116.5W h ABOUT 14KM	
MAW EP 19 30 39		HLL EP 19 16 24		JUL 18 H-05 25 04.3 18.5S 69.3W h ABOUT 72KM		MAW EP 02 03 01	
JUL 14 BYR IP 19 39 44		SRA EP 19 17 10		BYR IP 05 35 41		JUL 20 HLL EP 05 17 33 F 20 05 E 22 52	
JUL 14 BYR IP 20 20 57		BYR EP 19 17 55		JUL 18 AIA E 11 34 13 F 34 30 E 35 49		SBA EP 05 18 30	
JUL 15 H-00 41 07.7 20.2S 178.3W h ABOUT 510KM		WIL EP 19 18 02		JUL 18 SPA IP 12 45 08		WIL EP 05 19 10 IS 22 50	
BYR EP 00 50 58		SPA IP 19 18 31 I 19 15		JUL 18 BYR IP 20 22 11		JUL 20 H-06 36 10.8 57.6S 148.5E h ABOUT 33KM	
JUL 15 H-05 19 32.4 1.6N 127.1E h ABOUT 33KM		MIR EP 19 18 48 E 19 05 F 27 22		JUL 19 H-05 45 28.0 43.4N 8.2E h ABOUT 33KM		MCQ IP 06 37 47 IS 39 22	
MAW IP 05 31 49		JUL 16 HLL EP 23 59 26		SPA IP 06 04 39 I 05 16		HLL EP 06 40 09	
JUL 15 H-06 28 21.7 51.8N 176.8W h ABOUT 33KM		JUL 17 SRA EP 01 05 00		BYR EP 06 04 49		WIL IP 06 40 33 IS 44 12	
MAW IP 06 48 01		JUL 17 H-03 24 37.4 46.9S 33.3E h ABOUT 33KM		MAW EP 06 04 50			
		MAW EP 03 30 06					

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SBA	IP FS	06 40 56 45 04	h m s	SPA	IP I IPP	00 41 39 41 57 42 44	h m s	BYR	EP	18 59 52	h m s	SPA	IP I IPP	05 38 14 38 32 39 12	h m s		
MIR	FP FPCP	06 41 46 45 29		BYR	IP	00 41 42		JUL 24	HLL	EP	19 00 03		MAW	IP	05 38 50		
SPA	IP I	06 42 39 44 07		JUL 22	WIL	IP	07 53 53	JUL 24	H-19 04 32.5 9.05 158.2E h ABOUT 33KM			JUL 26	MCQ	EP	05 58 19		
BYR	FP	06 42 57		JUL 22	HLL	EP	11 08 50	SBA	EP	19 15 37		JUL 26	BYR	IP	22 02 41		
MAW	FP IS	06 43 22 49 17		JUL 22	MIR	EP	11 19 55	BYR	IP	19 16 39		MAW	EP	22 03 49			
AIA	F	06 45 41		JUL 22	HLL	FP	15 05 39	SPA	IP	19 16 44		JUL 26	H-23 18 03.8 23.45 72.3W h ABOUT 33KM				
JUL 20	WIL	IP	09 17 12	JUL 22	WIL	EP	16 15 12	JUL 24	H-20 57 00.5 17.95 167.2F h ABOUT 33KM			MAW	EP	23 30 29			
JUL 20	MAW	FP	11 48 04	JUL 22	HLL	EP	17 23 44	BYR	EP	21 08 09		JUL 26	H-23 48 26.5 9.75 78.5W h ABOUT 62KM				
JUL 20	HLL	FP F	18 54 41 08 56 29	JUL 23	H-18 09 52.3 17.55 167.2F h ABOUT 33KM			JUL 24	H-21 47 54.1 9.75 154.4E h ABOUT 16KM			AIA	F	23 58 18			
JUL 20	HLL	FP F	19 05 24 07 15	BYR	EP	18 21 03		BYR	EP	22 00 04		SPA	IP IPCP IPP	00 00 32 00 45 00 59			
JUL 20	HLL	FP F	19 14 11 16 08	JUL 23	SBA	EP	19 50 20	JUL 25	HLL	EP E	04 36 54 39 18		SBA	EP	00 00 58		
JUL 21	BYR	IP	02 24 26	JUL 23	MAW	EP	21 10 34	JUL 25	HLL	EP E	05 36 21 41 31		HLL	FP	00 01 07		
JUL 21	H-11 03 19.9 56.15 27.4W h ABOUT 80KM			JUL 23	H-21 51 15.5 50.0N 176.3W h ABOUT 77KM			JUL 25	H-07 04 21.9 6.8N 73.0W h ABOUT 152KM			JUL 27	BYR	FP	00 59 49		
AIA	F F	11 07 48 54 05		MAW	IP	22 10 49		BYR	EP	07 17 04		JUL 27	H-16 47 03.7 35.95 102.7W h ABOUT 33KM				
SPA	IP I	11 09 58 10 15		JUL 23	MAW	EP	23 47 13	JUL 25	HLL	FP	21 42 26		SPA	IP	16 56 29		
BYR	IP	11 10 12		JUL 24	SBA	FP	00 22 55	JUL 25	HLL	EP	23 43 09		SPA	FP	16 56 36		
MAW	IP	11 10 50		JUL 24	SPA	IP	06 08 37	JUL 26	SBA	EP	00 16 15		JUL 27	SBA	FP	22 20 51	
HLL	FP	11 12 18		BYR	IP	06 08 55		JUL 26	SBA	EP	01 07 15		JUL 28	H-04 17 50.7 51.7N 174.5W h ABOUT 33KM			
JUL 21	AIA	F	22 04 05	MAW	EP	06 09 30		JUL 26	MAW	EP FPP	05 18 56 20 02		MAW	EP	04 37 35		
JUL 22	H-00 29 14.9 6.15 148.9E h ABOUT 59KM			JUL 24	BYR	EP	11 52 30	JUL 26	H-05 26 45.1 15.05 167.3E h ABOUT 124KM			JUL 28	H-07 12 17.1 29.85 177.6W h ABOUT 33KM				
WIL	IP IS	00 39 55 48 38		JUL 24	H-16 46 38.4 6.4S 147.8E h ABOUT 55KM			SBA	IP	05 37 00		HLL	EP	07 20 16			
HLL	EP	00 40 08		HLL	EP	16 57 30		BYR	EP	05 37 45		SBA	EP	07 21 00			
MIR	EP EP FS	00 40 29 40 58 50 06		BYR	EP	16 59 07		MIR	IP	05 37 58		BYR	EP	07 21 48			
SBA	IP	00 40 38		JUL 24	HLL	EP	18 57 06	BYR	IP			WIL	EP	07 21 51			
MAW	FP	00 41 36		SBA	FP	18 59 17						SPA	IP IPP FS	07 22 23 23 13 30 51			

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	h m s		h m s		h m s		h m s
BYR IP	05 55 25	WIL EP	14 32 49	BYR IP	14 56 27	HLL E(P)	18 56 41
WIL IP	05 55 28	SPA IP	14 33 21	AUG 1		AUG 1	
	IS 06 03 12			SPA IP	00 55 58	HLL FP	19 58 02
SPA FF	05 56 00	JUL 30		I	56 19	AUG 1	
I	56 05	H-15 04 38.7		AUG 1		HLL E(P)	21 36 25
IPCP	57 21	29.95 177.4W		BYR EP	02 44 51	AUG 2	
IPP	58 10	h ABOUT 76KM		AUG 1		MIR FP	01 32 29
MIR FP	05 56 16	HLL FP	15 12 34	AUG 1		AUG 2	
E	58 13	FS	19 03	HLL E(P)	03 20 24	SPA IP	04 00 25
IS	06 04 42	SBA FP	15 13 17	SBA FP	03 21 04	AUG 2	
AIA F	05 57 16	FS	20 30	AUG 1		BYR EP	04 16 14
MAW IP	05 57 31	BYR IP	15 14 05	SBA EP	03 45 43	SPA I	04 17 07
FS	06 05 50	WIL FP	15 14 09	AUG 1		AUG 2	
JUL 30		IS	22 00	H-04 39 02.7		MIR FP	04 56 27
WIL IP	10 17 42	SPA IP	15 14 41	7.05 146.1E		AUG 2	
JUL 30		I	15 18	h ABOUT 174KM		AUG 2	
WIL IP	10 44 11	JUL 30		SPA IP	04 51 09	AUG 2	
JUL 30		HLL EP	17 51 35	AUG 1		H-09 07 18.0	
H-12 57 25.3		JUL 30		H-10 45 02.7		56.2N 34.1W	
29.25 112.1W		MAW EP	19 58 33	55.3N 161.8E		h ABOUT 41KM	
h ABOUT 33KM		JUL 30		h ABOUT 50KM		SPA IP	09 26 54
HLL FP	13 07 22	H-23 30 59.0		SPA IP	11 04 32	I	33 22
SBA FP	13 07 29	7.35 128.9E		I	04 42	AUG 2	
SPA IP	13 07 37	h ABOUT 143KM		AUG 1		SPA IP	12 50 59
JUL 30		MAW IP	23 42 22	HLL E(P)	12 51 09	AUG 2	
H-13 51 57.8		JUL 31		AUG 1		MAW EP	17 05 28
55.95 27.5W		BYR EP	01 08 27	SBA EP	12 55 51	AUG 2	
h ABOUT 33KM		JUL 31		HLL E(P)	12 58 18	MIR IP	17 52 14
AIA FP	13 56 32	H-01 44 18.8		AUG 1		AUG 2	
ES	14 00 16	29.85 177.2W		BYR IP	13 07 32	H-19 26 26.0	
SPA IP	13 58 43	h ABOUT 65KM		SPA IP	13 08 02	6.0N 125.1E	
I	59 38	SBA FP	01 52 59	AUG 1		h ABOUT 118KM	
I	14 02 22	BYR IP	01 53 46	H-15 20 55.9		MIR EP	19 38 03
BYR IP	13 58 56	WIL FP	01 53 54	29.85 177.2W		AUG 3	
MAW IP	13 59 34	FS	02 01 42	h ABOUT 59KM		H-01 09 56.1	
SBA IP	14 00 22	SPA IP	01 54 22	HLL EP	15 28 53	8.85 108.3W	
MIR IP	14 00 49	I	54 31	SBA EP	15 29 37	h ABOUT 33KM	
EP	01 30	I	54 56	BYR IP	15 30 25	SPA IP	01 22 09
FS	06 30	MIR EP	01 54 42	WIL E(P)	15 30 33	AUG 3	
HLL IP	14 01 02	IP	55 01	SPA IP	15 31 00	SBA IR	03 43 40
WIL IP	14 01 22	ES	02 03 10	I	31 26	AUG 3	
IP	01 36	MAW EP	01 55 45	I	32 04	H-03 48 06.4	
FS	08 54	JUL 31		MIR EP	15 31 18	7.65 156.8E	
JUL 30		HLL EP	06 52 14	AUG 1		h ABOUT 402KM	
H-14 23 13.7		JUL 31		BYR IP	17 08 01	HLL IP	03 58 08
29.55 177.1W		WIL E	14 53 30	SPA IP	17 08 30	MIR IP	03 58 53
h ABOUT 33KM		MIR EP	14 53 48	I	08 41	F	04 00 21
HLL E(P)	14 31 14	MAW IP	14 54 45	AUG 1		BYR IP	03 59 41
SBA EP	14 31 58	HLL E(P)	14 55 01	BYR IP	18 54 35	I	04 01 11
BYR IP	14 32 45	SBA EP	14 55 16	SPA IP		SPA IP	03 59 46
				I		IPP	59 58
						MAW IP	03 59 56

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	h m s		h m s		h m s		h m s
AUG 3 MIP EP	05 37 14	h ABOUT 117KM		MIR IP	24 04 53	AUG 6	
		MIR FP	07 18 36	Exp	06 48	HLL EP	02 49 37
		I	18 51	IS	13 39	SBA EP	02 50 33
AUG 3 H-06 28 02.5 6.7S 147.5E h ABOUT 83KM		SPA FP	07 20 11	AUG 5		AUG 6	
		SPA IP	07 20 46	RYP EP	00 32 28	MIR F	04 33 22
MAW EP	06 40 13	I	21 10	AUG 5		AUG 6	
		I	27 03	WIL F	02 34 06	H-09 28 30.0 38.1S 72.3W h ABOUT 96KM	
AUG 3 MIP FP	09 11 55	BYR IP	07 21 19	AUG 5		BYR EP	09 36 42
		AUG 4		H-07 41 37.9 27.2S 178.0W h ABOUT 33KM		SPA IP	09 37 32
AUG 3 MIP IP	09 41 14	H-09 13 17.8 22.6S 173.4E h ABOUT 72KM		HLL E(P)	07 49 55	HLL EP	09 38 38
		SBA IP	09 22 48	SBA EP	07 50 40	MAW EP	09 39 30
		WIL IP	09 23 11	MAW IP	07 53 18	AUG 6	
AUG 3 H-10 21 36.6 7.7N 35.8W h ABOUT 32KM		BYR FP	09 23 41	AUG 5		H-13 36 35.6 57.0N 33.6W h ABOUT 33KM	
AIA IP	10 33 18	MIR EP	09 23 56	H-08 46 59.7 9.9S 79.0W h ABOUT 31KM		BYR IP	13 56 09
SPA IP	10 35 07	SPA IP	09 24 08	BYR IP	08 58 25	SPA IP	13 56 14
		I	24 12	SPA IP	08 59 08	MIR F	13 56 32
		I	24 19	I	59 21	AUG 6	
MAW EP	10 35 21	AUG 4		AUG 5		MAW EP	19 13 09
SBA EP	10 39 28	H-12 07 24.4 4.1S 80.9W h ABOUT 34KM		MIR IP	11 59 51	AUG 6	
		BYR FP	12 19 22	AUG 5		HLL EP	21 09 29
		SPA IP	12 20 03	HLL F(P)	15 39 50	AUG 7	
		I	20 17	AUG 5		MAW EP	02 55 11
		I	20 33	H-15 39 07.0 60.7S 154.3E h ABOUT 33KM		AUG 7	
HLL EP	10 41 00	AUG 4		HLL FP	15 42 13	H-04 26 23.4 21.8S 173.5E h ABOUT 106KM	
AUG 3 HLL E(P)	10 51 05	MIR FP	14 48 56	E(S)	44 40	SBA EP	04 35 53
AUG 3 SPA IP	20 04 41	AUG 4		SBA IP	15 43 11	MIR F	04 37 02
		AUG 4		WIL IP	15 43 37	MAW EP	04 38 08
AUG 3 H-20 26 04.1 30.7S 178.3W h ABOUT 37KM		WIL E	15 03 03	IPP	44 11	AUG 7	
		AUG 4		IS	47 16	H-04 33 42.7 54.0N 142.1E h ABOUT 33KM	
BYR IP	20 35 31	H-21 40 52.4 5.2S 145.9E h ABOUT 59KM		MIR EP	15 44 53	BYR IP	04 53 12
SPA IP	20 36 05	SPA IP	21 53 22	IP	45 18	AUG 7	
		I	53 35	IS	49 28	HLL EP	06 09 53
		AUG 4		SPA IP	15 45 13	AUG 7	
MAW IP	20 37 24	H-23 54 14.0 17.5S 179.1W h ABOUT 515KM		IPP	45 28	AIA I	08 40 24
AUG 3 MIR IP	20 42 19	HLL F(P)	24 03 00	ES	51 37	AUG 7	
		SBA IP	24 03 38	BYR IP	15 45 20	H-11 15 07.6 20.0S 178.3W h ABOUT 600KM	
		WIL IP	24 04 11	MAW IP	15 46 15	HLL EP	11 23 30
AUG 4 H-02 13 50.6 42.6S 83.4W h ABOUT 33KM		IPP	06 04	ES	52 00	SBA IP	11 24 08
		IS	12 19	AUG 5		I	25 50
BYR EP	02 21 22	BYR EP	24 04 20	SBA EP	18 54 17		
SPA IP	02 22 24	SPA IP	24 04 49	AUG 6			
		IPCP	04 59	H-01 34 22.2 11.3S 167.1E h ABOUT 33KM			
AUG 4 H-07 08 47.1		IPP	06 41	HLL E(P)	01 44 36		

ANTARCTIC SEISMOLOGICAL BULLETIN

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
PYR IP	11 24 51	AUG 8 SPA EP	06 41 41	AUG 9 H-12 20 02.2		AUG 9 SPA IP	22 50 20
SPA IP	11 25 22	AUG 8 H-10 58 23.1		51.6N 178.8W		I	50 30
MIR F	11 25 28	35.9S 103.6W		h ABOUT 33KM		AUG 10 AIA F	00 49 21
MAW IP	11 26 36	h ABOUT 33KM		MIR E	12 37 33	AUG 10 AIA F	00 49 21
AUG 7 H-11 16 48.6		BYR EP	11 06 36	MAW EP	12 39 32	AUG 10 H-03 34 44.5	
20.1S 178.4W		SRA FP	11 07 42	AUG 9 H-14 13 58.9		27.3S 176.6W	
h ABOUT 600KM		SPA IP	11 07 48	1.2N 125.6E		h ABOUT 140KM	
BYR EP	11 26 33	HLL FP	11 07 53	h ABOUT 33KM		MAW FP	03 46 16
MAW IP	11 28 06	MAW EP	11 10 09	MAW IP	14 26 10	AUG 10 HLL EP	12 37 31
AUG 7 MAW IP	12 26 36	MIR E	11 10 14	AUG 9 H-14 36 45.9		AUG 10 H-16 05 59.7	
AUG 7 H-17 13 18.4		AUG 8 H-11 16 11.2		15.3S 175.7W		15.0S 179.0W	
56.1S 27.0W		5.8S 151.0E		h ABOUT 33KM		h ABOUT 389KM	
h ABOUT 33KM		h ABOUT 48KM		HLL EP	14 46 36	BYR IP	16 16 33
AIA F	17 17 53	HLL FP	11 27 05	SBA FP	14 47 14	SPA IP	16 17 01
SPA IP	17 20 02	MIR E	11 27 33	BYR FP	14 47 52	MAW IP	16 18 00
I	20 20	I ^{SP}	27 60	WIL EP	14 47 54	AUG 10 AIA F	16 39 38
I	21 05	IS	36 55	E(S)	57 03	I	40 13
BYR IP	17 20 16	SBA FP	11 27 36	SPA IP	14 48 25	AUG 10 H-17 51 39.6	
MAW IP	17 20 52	MAW IP	11 28 37	IPCP	48 36	3.2S 141.9E	
SBA FP	17 21 40	SPA IP	11 28 39	IPP	48 44	h ABOUT 88KM	
HLL FP	17 22 21	I	28 46	MIR E	14 48 35	MAW FP	18 03 56
AUG 7 AIA FP	21 03 15	I	28 55	ES	58 20	BYE FP	18 04 23
F	04 21	BYR FP	11 28 39	MAW FP	14 49 30	AUG 10 BYR FP	18 12 59
AUG 7 AIA FP	21 45 22	AUG 8 BYR FP	11 29 39	ESKS	15 00 13	SPA IP	18 14 24
AUG 7 MAW IP	22 03 26	AUG 8 AIA I	14 23 23	AUG 9 H-15 12 57.0		WIL EP	18 16 25
AUG 7 MAW FP	23 03 26	F	25 01	3.0S 152.3E		E(S)	16 23 50
AUG 8 MAW FP	01 24 53	AUG 9 MAW FP	04 20 31	h ABOUT 143KM		MAW EP	18 17 14
AUG 8 H-02 14 54.4		AUG 9 H-06 05 32.2		HLL FP	15 23 55	AUG 10 MAW EP	20 23 42
54.2N 168.1E		44.5N 11.9E		BYR IP	15 25 25	AUG 10 H-21 03 39.2	
h ABOUT 33KM		h ABOUT 33KM		SPA IP	15 25 27	49.6N 179.2E	
SRA FP	02 34 00	HLL EP	06 25 19	AUG 9 H-16 40 15.9		h ABOUT 33KM	
F	37 28	AUG 9 H-10 10 18.2		15.5S 167.7E		MAW FP	21 23 39
PYR EP	02 34 12	21.6S 171.1E		h ABOUT 127KM		AUG 10 MIR E	21 29 52
SPA IP	02 34 23	h ABOUT 153KM		BYR IP	16 51 26	AUG 11 MAW FP	01 07 29
I	34 37	SPA IP	10 21 06	AUG 9 MAW EP	20 10 27	AUG 11 H-01 34 22.2	
I	35 01	MAW EP	10 21 55	AUG 9 MAW EP	20 15 26	60.5S 154.9E	
MAW IP	02 34 24	AUG 9 AIA EP	10 20 52	AUG 9 MAW EP	21 51 32	h ABOUT 33KM	
MIR E	02 36 35	AUG 9 MAW EP	11 48 30	AUG 9 SPA EP	22 50 11	SBA EP	01 38 29

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
WIL IP	01 38 56	AUG 12		MAW IP	13 47 45	BYR IP	14 42 41
IS	72 38	MAW F	10 46 51			I	43 14
MIR FP	01 40 07	AUG 12		AUG 13		HLL EP	14 43 23
EP	40 36	SPA IP	12 15 18	H-21 52 37.4		MAW IP	14 44 53
ES	44 51	I	15 31	19.35 173.7W			
SPA FP	01 40 25	AUG 12		h ABOUT 33KM		AUG 14	
BYR FP	01 40 45	H-21 14 00.1		HLL FP	22 02 00	MAW IP	14 45 32
MAW FP	01 41 37	56.05 27.7W		SBA FP	22 02 39	AUG 14	
		h ABOUT 33KM		BYR IP	22 03 17	HLL FP	18 40 19
AUG 11		AIA EP	21 18 32	WIL EP	22 03 25	AUG 14	
H-05 24 00.6		BYR IP	21 20 57	E	04 28	H-18 43 55.5	
17.45 179.0W		SBA EP	21 22 22	MIR F(P)	22 04 10	3.45 135.4E	
h ABOUT 509KM		AUG 13		I	04 24	h ABOUT 33KM	
MAW EP	05 35 38	MIR E(P)	00 02 52	E(S)	13 42	WIL IP	18 54 37
AUG 11		AUG 13		MAW EP	22 05 05	I	54 54
H-10 03 05.1		MIR F(P)	00 45 23	AUG 14		MIR IP	18 55 03
38.15 73.1W		AUG 13		MAW EP	01 53 31	IP	55 19
h ABOUT 60KM		AIA EP	01 38 25	SPA IP	01 53 44	Γ	56 17
AIA F	10 08 48	AUG 13		BYR IP	01 54 27	SBA IP	18 55 43
BYR IP	10 11 20	MIR IP	01 55 03	AUG 14		MAW IP	18 56 05
SPA IP	10 12 10	F	55 26	H-02 46 44.1		BYR IP	18 56 51
SBA FP	10 13 59	AUG 13		21.45 175.2W		AUG 14	
MAW IP	10 14 09	MIR FP	02 58 00	h ABOUT 33KM		MAW IP	19 14 47
		F	58 23	HLL EP	02 57 02	AUG 14	
AUG 11		AUG 13		BYR EP	02 57 12	H-20 43 11.6	
MIR E(P)	11 58 28	H-03 26 45.4		MAW EP	02 58 57	22.55 175.5W	
AUG 11		55.0N 156.4W		AUG 14		h ABOUT 33KM	
MIR I(P)	12 08 44	h ABOUT 33KM		MAW FP	20 55 21		
AUG 11		SPA IP	03 46 14	AUG 14		AUG 14	
H-21 14 33.0		I	46 27	H-03 32 33.5		WIL EP	22 03 25
7.75 108.8E		AUG 13		4.95 152.3E		F	04 28
h ABOUT 169KM		H-04 53 58.8		h ABOUT 62KM		AUG 14	
MAW IP	21 25 12	7.25 124.5E		HLL EP	03 43 30	AUG 14	
AUG 11		h ABOUT 542KM		MIR IP	03 44 02	SBA IP	22 18 55
MAW EP	21 18 53	BYR IP	05 05 50	IPCP	44 16	AUG 15	
AUG 12		AUG 13		ES	53 20	AIA EP	00 10 11
H-01 05 34.1		SPA EP	05 14 52	BYR IP	03 45 04	AUG 15	
32.55 71.1W		AUG 13		SPA IP	03 45 04	H-01 33 02.1	
h ABOUT 92KM		H-06 29 19.1		I	45 18	18.15 172.6W	
BYR IP	01 14 33	20.65 178.5W		I	45 35	h ABOUT 33KM	
MAW IP	01 17 05	h ABOUT 562KM		MAW IP	03 45 05	BYR EP	01 43 47
AUG 12		BYR IP	06 39 04	AUG 14		AUG 15	
H-08 58 03.3		AUG 13		H-08 27 14.9		H-02 17 16.9	
11.65 166.3F		H-06 52 06.1		9.35 158.3E		27.9N 139.6E	
h ABOUT 53KM		19.15 173.9W		h ABOUT 33KM		h ABOUT 476KM	
SPA IP	09 09 59	h ABOUT 28KM		HLL E(P)	08 37 44	MAW IP	02 34 55
AUG 12		SPA EP	07 03 22	AUG 14		SPA IP	02 35 08
H-10 10 08.0		MIR F(P)	07 03 38	HLL E(P)	10 35 18	BYR EP	02 35 12
5.75 131.1E		AUG 13		AUG 14		AUG 15	
h ABOUT 92KM		H-13 28 02.2		H-14 32 36.7		MAW FP	02 47 12
BYR FP	10 22 49	76.2N 6.4E		22.35 68.7W		AUG 15	
		h ABOUT 33KM		h ABOUT 120KM		MIR E(P)	05 31 19

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
AUG 15 H-06 11 34.6 37.9N 141.6E h ABOUT 59KM		SPA IP 17 35 59		AUG 16 MIR FP 12 29 27 F 38 00		AUG 17 H-05 33 40.1 20.0S 174.0W h ABOUT 33KM	
MIR E(P) 06 29 55		SBA FP 17 36 37		AUG 16 MAW EP 14 32 32		BYR EP 05 44 15	
WIL EPP 06 30 12 ISKS 36 22		HLL EP 17 36 48		AUG 16 MAW EP 14 56 13		SPA EP 05 44 50	
SPA FP 06 30 12		MAW IP 17 37 16 ES 46 54		AUG 16 MAW EP 16 54 20		MAW EP 05 46 04	
MAW IP 06 30 19		MIR E(P) 17 37 50 I 38 09 I 38 15		AUG 16 MAW EP 19 18 29		AUG 17 H-06 17 36.4 52.4N 168.7W h ABOUT 33KM	
SPA IP 06 30 33 I 30 42		WIL IP 17 37 55 EPP 38 10 IS 44 30		AUG 16 H-20 49 52.1 2.1N 126.1E h ABOUT 36KM		MAW EP 06 37 25	
BYR IP 06 30 35		AUG 15 MIR IP 17 39 53 I 40 25 IS 47 51		MAW EP 21 02 10		AUG 17 SPA IP 09 44 28	
MIR FP 06 30 37 EPP 31 27 FS 37 31		AUG 15 MAW EP 18 23 04		AUG 16 PYR EP 21 29 22		MIR E(P) 09 44 42	
HLL FP 06 30 55		AUG 15 MAW EP 18 27 31		AUG 16 H-23 06 24.6 12.8S 14.5W h ABOUT 33KM		MAW EP 09 45 49	
AUG 15 MAW EP 06 18 02		AUG 15 SPA FP 18 51 22		MAW EP 23 17 54		AUG 17 H-11 12 41.2 30.6N 130.9E h ABOUT 33KM	
AUG 15 MAW EP 07 26 17		AUG 15 MAW EP 18 58 50		BYR IP 23 18 33		WIL EP 11 26 15 IPP 30 12 ISKS 36 50	
AUG 15 MAW IP 08 13 12		AUG 15 H-19 14 27.4 40.2S 71.8W h ABOUT 58KM		SBA EP 23 19 19		MIR EP 11 26 29 EPP 30 38 IS 38 02	
AUG 15 MAW EP 09 54 11		BYR EP 19 22 28		AUG 16 H-23 19 31.1 48.9S 122.8E h ABOUT 33KM		HLL E(P) 11 31 01	
AUG 15 H-10 18 30.1 15.8S 175.3W h ABOUT 287KM		MAW EP 19 25 17		WIL IPP 23 23 44 E 24 30 ES 27 18		SBA EP 11 31 09	
MAW EP 10 30 43		AUG 15 H-22 29 47.1 21.0S 179.2W h ABOUT 597KM		MIR EP 23 24 38 EPP 25 08		MAW EP 11 31 10	
AUG 15 MAW FP 13 21 36		SPA IP 22 39 56		HLL EP 23 25 50		SPA IP 11 31 30 I 31 40 I 32 33	
AUG 15 H-14 57 51.1 20.0S 178.9W h ABOUT 298KM		MAW EP 22 40 59		SBA FP 23 26 07		BYR FP 11 31 37	
MAW FP 15 09 01		AUG 15 HLL FP 23 59 46		MAW EP 23 26 21 ES 31 45		AIA F 11 32 12	
AUG 15 MAW EP 14 58 27		AUG 16 MAW EP 02 07 50		SPA IP 23 27 14 I 27 30 I 28 26		AUG 17 H-11 33 28.0 63.4S 169.5E h ABOUT 33KM	
AUG 15 AIA F 16 31 15		AUG 16 MAW EP 02 16 01		BYR IP 23 28 00		HLL E(P) 11 35 34	
AUG 15 H-17 25 05.9 13.8S 69.3W h ABOUT 543KM		AUG 16 H-02 38 10.9 3.1S 129.3E h ABOUT 94KM		WIL EP 23 41 11		WIL EP 11 38 45	
DEC IP 17 32 52 IS 40 35		MAW EP 02 50 04		AUG 17 MAW EP 02 49 03		BYR IP 11 38 54	
AIA IP 17 33 22 ES 40 06		AUG 16 H-03 00 24.3 6.3S 129.0E h ABOUT 263KM		AUG 17 MIR E(P) 04 51 41		SPA IP 11 39 07 I 39 41	
BYR IP 17 35 24 IS 37 40		MAW IP 03 11 40		AUG 17 MIR E(P) 05 03 31		MAW IP 11 40 55	
						AUG 17 H-11 34 23.4 17.7N 94.3W h ABOUT 163KM	
						MAW IP 11 53 09	

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
AUG 17 WIL FP	20 15 54	AUG 18 H-20 27 41.9 32.15 178.1W h ABOUT 33KM		BYR IP	09 57 54	AUG 20 AIA EP	07 31 14
AUG 17 RYR FP	21 07 12	HLL FP	20 35 30	MAW EP	09 58 32	AUG 20 H-09 20 26.7 27.85 176.5W h ABOUT 37KM	
MAW FP	21 09 16	SBA FP	20 36 08	SBA EP	09 59 19	MIR EP	09 31 05
AUG 18 SPA FP	01 50 48	BYR IP	20 37 00	MIR EP	09 59 48	MAW EP	09 32 08
AUG 18 WIL FP	02 47 46	WIL EP	20 37 01	WIL E(P)	10 00 22	AUG 20 AIA E	10 00 27
AUG 18 WIL FP	05 17 33	ES	44 34	AUG 19 H-11 49 26.4 45.7S 95.9E h ABOUT 33KM		E	01 11
AUG 18 MIR F(P)	05 46 24	SPA IP	20 37 34	MIR EP	11 54 09	AUG 20 MIR EP	11 27 20
AUG 18 MAW EP	07 04 06	IPP	37 59	E	54 28	AUG 20 MAW EP	12 49 23
AUG 18 MIR I(P)	08 52 41	MIR IP	20 37 50	E	58 11	MIR E(P)	12 49 56
AUG 18 MAW FP	08 58 37	I	38 15	WIL EP	11 54 18	AUG 20 H-13 19 50.3 4.1N 76.5W h ABOUT 59KM	
AUG 18 MAW FP	09 49 19	ES	46 03	MAW EP	11 55 14	BYR EP	13 32 29
AUG 18 MIR E(P)	17 01 55	MAW EP	20 38 30	AUG 19 MIR EP	12 16 27	AUG 20 MIR E(P)	14 33 45
AUG 18 H-18 43 16.1 50.3N 176.9W h ABOUT 33KM		AUG 18 SPA EP	22 06 50	AUG 19 WIL EP	16 11 07	AUG 20 H-15 48 12.2 41.2N 142.7F h ABOUT 50KM	
SPA FP	19 02 19	MIR E(P)	22 07 18	AUG 19 SBA FP	19 21 21	MAW FP	16 07 00
RYR FP	19 02 30	AUG 19 H-04 24 00.4 32.05 177.9W h ABOUT 33KM		AUG 19 H-19 09 48.2 6.1S 130.7E h ABOUT 33KM		BYR EP	16 07 20
E	05 00	SBA FP	04 32 26	WIL EP	22 26 51	AUG 20 RYR EP	16 10 42
SPA IP	19 02 31	BYR FP	04 33 18	I	27 04	AUG 20 MAW EP	17 10 59
IPP	02 50	WIL EP	04 33 22	AUG 20 H-00 27 40.4 21.9S 175.8W h ABOUT 33KM		AUG 20 H-19 43 56.6 30.2S 177.8W h ABOUT 43KM	
ISP	03 11	E(S)	40 52	MAW EP	00 39 52	SPA FP	19 54 03
MIR E(P)	19 02 32	SPA IP	04 33 52	AUG 20 MAW EP	03 09 01	MIR IP	19 54 14
E	03 04	I	34 03	AUG 20 MIR E(P)	03 19 36	MAW IP	19 55 19
E	06 01	I	34 13	AUG 20 H-06 39 56.7 5.5S 145.8E h ABOUT 90KM		AUG 21 SBA EP	02 26 43
MAW EP	19 02 53	MIR FP	04 34 09	MIR EP	06 51 06	AUG 21 H-02 41 32.6 5.5S 147.7E h ABOUT 164KM	
AUG 18 MAW EP	19 28 59	E	34 55	MAW EP	06 52 11	RYR EP	02 53 51
AUG 18 H-20 18 29.9 22.5S 175.2W h ABOUT 33KM		ES	42 26	AUG 20 H-06 53 28.1 6.9S 103.0F h ABOUT 61KM		AUG 21 HLL EP	04 41 15
SPA IP	20 29 23	MAW EP	04 35 11	MIR EP	07 03 29		
MIR F(P)	20 29 40	AUG 19 H-07 29 40.5 45.6S 95.7E h ABOUT 33KM		SBA EP	07 05 21		
MAW FP	20 30 39	MIR EP	07 34 24				
		F	35 01				
		ES	38 27				
		WIL EP	07 34 36				
		ES	38 46				
		MAW EP	07 35 28				
		AUG 19 H-09 51 25.2 59.8S 25.9W h ABOUT 33KM					
		AIA F	09 55 35				
		SPA IP	09 57 36				
		I	57 48				
		I	57 55				

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
AUG 21 MIR F(P)	05 09 06	AUG 22 MAW EP	10 54 44	BYR EP	23 32 55	AUG 24 MAW EP	07 26 09
AUG 21 SRA EP	05 27 10	AUG 22 MIR F(P)	12 03 26	AUG 20 MIR I(P)	07 40 05	AUG 24 MIR F(P)	19 52 47
AUG 21 HLL EP	08 50 53	AUG 22 MIR F(P)	13 45 40	AUG 23 MIR E(P)	09 35 44	HLL EP	19 58 09
AUG 21 H-10 17 00.9 8.35 108.8E h ABOUT 225KM		AUG 22 H-14 39 27.5 1.95 133.9E h ABOUT 33KM		AUG 23 H-13 35 57.2 17.35 67.8W h ABOUT 33KM		AUG 24 WIL EP'	22 15 15
MAW EP	10 27 29	MAW EP	14 51 42	BYR EP	13 46 46	AUG 25 AIA EP	09 11 43
BYR EP	10 29 32	AUG 22 H-17 05 27.5 7.25 120.4E h ABOUT 398KM		AUG 23 WIL EP'	14 12 11	E	16 06
AUG 21 MAW EP	11 10 46	MAW EP	17 16 08	AUG 23 MIR E(P)	14 29 24	AUG 25 H-12 18 12.5 17.55 178.8W h ABOUT 565KM	
AUG 21 MIR F(P)	11 41 36	AUG 22 MAW EP	18 23 15	AUG 23 AIA EP	21 50 16	MCO IP	12 25 06
AUG 21 MIR F(P)	11 56 40	AUG 22 MAW EP	19 31 05	E	51 06	HLL EP	12 26 54
AUG 21 MIR F(P)	12 04 07	AUG 22 H-19 52 25.0 9.45 158.0E h ABOUT 33KM		F	54 51	SPA IP	12 27 32
AUG 21 SPA EP	15 46 09	HLL EP	20 02 52	AUG 24 H-01 41 40.5 22.45 68.5W h ABOUT 66KM		IPP	29 28
AUG 21 MAW EP	17 25 18	SBA EP	20 03 26	BYR IP	01 51 53	IS	35 10
AUG 21 MIR E(P)	17 35 14	F	12 33	I	52 26	WIL IP	12 28 06
AUG 21 SPA EP	22 22 04	MIR IP	20 03 44	HLL EP	01 53 31	IPP	30 06
AUG 21 H-22 59 24.2 21.35 176.0W h ABOUT 140KM		IPP	04 15	MAW EP	01 54 02	IS	36 12
SPA IP	23 10 16	IS	13 04	AUG 24 SBA EP	02 05 32	BYR IP	12 28 15
I	10 52	BYR IP	20 04 30	AUG 24 H-02 11 58.3 54.35 5.2E h ABOUT 28KM		IS	36 32
MAW IP	23 11 27	SPA IP	20 04 35	MAW EP	02 18 03	MIR IP	12 28 48
AUG 22 MAW EP	00 04 06	IPP	05 03	AIA IP	02 18 47	IPP	30 51
SBA EP	00 08 09	IS	14 32	RYP P	02 19 51	IS	37 31
AUG 22 MAW EP	01 32 59	MAW IP	20 05 40	E	21 24	AIA EP	12 29 45
SBA EP	01 36 27	F(S)	15 11	HLL EP	02 21 16	E	29 49
AUG 22 SBA EP	05 05 33	AUG 22 WIL IPP	20 33 06	AUG 24 H-03 18 09.5 30.75 178.2W h ABOUT 42KM		E	39 09
AUG 22 SPA IP	10 01 10	IS	11 48	MAW EP	02 18 03	MAW EP	12 29 45
AUG 22 BYR EP	10 23 38	AUG 22 H-21 24 47.7 45.05 75.1W h ABOUT 33KM		AIA IP	02 18 47	ES	39 12
MAW EP	10 25 44	BYR EP	21 32 09	RYP E	02 19 51	AUG 25 SBA E(P)	12 55 42
		HLL EP	21 34 14	HLL EP	02 21 16	BYR EP	12 56 14
		MAW EP	21 35 17	AUG 24 H-05 42 40.3 6.85 105.6E h ABOUT 33KM		AUG 25 MAW EP	14 40 32
		MIR E(P)	21 35 45	WIL E(P)	03 27 34	AUG 25 WIL E(P)	15 20 39
		AUG 22 H-23 20 21.1 4.3N 76.4W h ABOUT 100KM		BYR EP	03 27 36	AUG 26 WIL EP	03 18 10
				MAW EP	03 29 28	AUG 26 H-05 42 40.3 6.85 105.6E h ABOUT 33KM	
				AUG 24 HLL EP	05 30 29	MIR E(P)	05 52 49
						SBA EP	05 54 35
						AUG 26 WIL E(P)	22 04 58

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
AUG 26 MAW FP	23 13 10	MIR FP	12 54 27	AUG 29 H-15 30 31.4		SBA FP	14 01 24
		FP	55 29	7.15 81.6W		BYR EP	14 02 05
		FS	13 04 35	h ABOUT 23KM		SPA IP	14 02 41
AUG 26 H-23 32 38.2		MAW FP	12 55 46	AIA EP	15 40 34	MIR FP	14 02 58
7.75 127.3E		FP	56 15	SBA IP	15 43 20	MAW IP	14 03 58
h ABOUT 151KM				FPP	46 47	IS	08 00
MIR F(P)	23 42 53	AUG 28		ES	53 40		
MAW FP	23 43 56	MIR F(P)	14 46 42	HLL IP	15 43 27	AUG 30	
				MAW IP'	15 44 21	WIL F(P)	18 32 33
AUG 27		AUG 28		MIR EP	15 44 43		
MAW EP	01 24 08	H-16 57 46.2		IPP	49 07	AUG 30	
FP	24 41	39.15 91.8W		ISKS	55 21	MIR F(P)	18 59 15
		h ABOUT 33KM		WIL IP	15 44 45		
AUG 27		BYR EP	17 05 39	IP'	48 10	AUG 30	
H-03 23 32.6		HLL EP	17 08 20	IPP	49 08	WIL F(P)	22 24 15
45.95 75.3W		MAW EP	17 09 07	ESKS	54 54		
h ABOUT 33KM		MIR F(P)	17 09 29			AUG 31	
AIA EP	03 28 11			AUG 29		MIR F(P)	05 53 17
BYR EP	03 30 44	AUG 28		H-20 57 31.5			
HLL EP	03 32 51	MAW EP	19 29 40	15.55 172.9W		AUG 31	
MAW IP	03 33 58			h ABOUT 33KM		AIA F	10 09 17
MIR EP	03 34 32	AUG 29		HLL IP	21 07 22	F	12 10
FS	43 28	H-01 22 06.4		SBA F(P)	21 07 59		
WIL EP	03 34 33	2.0N 123.4E		BYR IP	21 08 34	AUG 31	
FP	37 15	h ABOUT 43KM		WIL IP	21 08 45	H-10 30 30.1	
FS	43 36	MIR EP	01 33 25	FS	17 58	15.95 74.4W	
		MAW FP	01 34 18			h ABOUT 53KM	
AUG 27				MIR EP	21 09 26	BYR EP	10 41 21
H-03 32 56.5		AUG 29		FP	09 42		
11.25 165.7E		AIA EP	06 53 08	ES	19 22	AUG 31	
h ABOUT 33KM				MAW EP	21 10 20	MIR F(P)	22 20 56
BYR EP	03 44 45	AUG 29					
		BYR EP	08 44 22	AUG 29		SEP 1	
AUG 27				MIR F(P)	21 54 47	BYR EP	20 16 51
MAW IP	06 15 23	AUG 29					
		H-08 53 48.4		AUG 30		SEP 1	
AUG 27		39.6N 74.2E		H-00 16 36.3		MIR F(P)	23 08 24
MAW FP	07 59 45	h ABOUT 31KM		8.75 108.6E			
				h ABOUT 33KM		SEP 2	
AUG 27		MIR E(P)	09 08 00	MIR E(P)	00 26 32	H-01 34 31.6	
WIL E(P)	08 15 17	FP	12 20	HLL IP	00 28 06	33.9N 74.7E	
		ESKS	18 52	SPA EP	00 28 50	h ABOUT 44KM	
AUG 28		MAW EP'	09 08 05	BYR EP	00 29 25		
BYR EP	00 58 31			AUG 30		SPA IP	01 53 25
		HLL EP	09 12 54	SPA IP	00 41 57	BYR P	01 53 44
AUG 28		SBA FP	09 12 54	BYR EP	00 42 24		
MIR E(P)	03 52 11	BYR EP	09 13 05			SEP 2	
		AIA EP	09 13 23	AUG 30		MAW EP	07 56 27
AUG 28				H-13 51 51.6			
MIR FP	10 23 18	AUG 29		23.45 175.4W		SEP 2	
		MIR E(P)	09 03 35	h ABOUT 33KM		MAW EP	22 11 46
AUG 28							
H-12 48 22.1		AUG 29		AUG 30		SEP 2	
61.95 164.5E		WIL EPP	09 22 16	AIA EP	03 23 49	H-22 37 22.0	
h ABOUT 33KM		F	28 26			37.95 179.5E	
HLL EP	12 50 57	EPS	32 08	AUG 30		h ABOUT 33KM	
SBA F(P)	12 52 08			H-13 51 51.6			
WIL EP	12 53 25	AUG 29		23.45 175.4W		BYR P	22 46 00
IS	57 29	MIR E(P)	13 17 17	h ABOUT 33KM			
BYR EP	12 54 14						
				HLL IP	14 00 43		

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SEP 3 H-03 49 41.6 60.3° 152.0E h ABOUT 33KM		SEP 4 H-13 32 12.3 71.4N 73.3W h ABOUT 33KM		SEP 5 MAW EP 21 08 57		SEP 6 BYR EP 08 54 26	
HLL EP 03 53 11 ES 56 00		BYR IP 13 52 02		SEP 6 H-01 40 45.0 19.3S 176.9W h ABOUT 66KM		SEP 6 H-10 16 38.9 24.0S 179.9E h ABOUT 500KM	
WIL FP 03 54 05 IS 57 34		SPA EP 13 52 05		SBA EP 01 50 40		HLL EP 10 24 38	
SEP 3 H-06 12 28.9 51.9N 173.5W h ABOUT 50KM		HLL EP 13 52 06		SPA IP 01 51 54		SBA IP 10 25 19	
MAW FP 06 31 51		SBA F(P) 13 52 11		MAW EP 01 54 26		BYR IP 10 26 07	
SEP 3 MIR I(P) 08 28 35		MIR FP' 13 53 48 FPP 57 35		SEP 6 MIR F(P) 02 14 02		SPA IP 10 26 37 I 26 54 I 28 25	
SEP 3 H-09 13 33.1 62.8N 25.2W h ABOUT 33KM		WIL FP' 13 53 54		SEP 6 MAW EP 02 30 20		MAW IP 10 27 43	
MAW FP 09 33 06		SEP 4 SPA IP 13 52 56 I 53 15 I 56 34		BYR EP 02 31 33		SEP 6 BYR EP 10 27 52	
BYR FP 09 33 25		SEP 4 AIA EP 18 12 27		HLL EP 02 32 24		SEP 6 MIR F(P) 11 49 04 E 52 23	
SEP 3 MAW FP 09 30 33		SEP 4 MAW EP 18 46 35		SBA FP 02 32 31		SEP 6 H-11 58 38.9 55.4S 128.4W h ABOUT 33KM	
SEP 3 SBA FP 21 18 52		SEP 5 HLL EP 04 47 37		SEP 6 MIR E(P) 02 35 35 E(S) 43 21		BYR FP 12 03 58	
SEP 4 MAW FP 03 49 58		SEP 5 H-10 42 42.5 18.0S 168.1E h ABOUT 33KM		MAW EP 02 35 54		HLL FP 12 04 47	
SEP 4 SBA F(P) 04 16 06		SPA IP 10 54 04		SEP 6 SBA E(P) 04 13 33		SBA EP 12 05 00	
SEP 4 BYR IP 04 57 03		MAW EP 10 54 45		SEP 6 H-05 29 54.1 10.9S 164.8E h ABOUT 33KM		SPA IP 12 05 27	
SBA FP 04 58 05		SEP 5 MIR E(P) 12 52 27		MAW IP 05 42 26		MAW EP 12 08 21	
SPA FP 04 58 30		SEP 5 AIA EP 16 05 01		SEP 6 MAW EP 05 33 34		SEP 6 MAW EP 13 30 51	
MIR F(P) 05 01 09 ES 08 40		SEP 5 MAW FP 16 34 10		SEP 6 H-06 03 52.1 36.4N 130.6E h ABOUT 33KM		SEP 6 MAW EP 20 52 27	
MAW EP 05 01 23		SEP 5 MIR E(P) 19 36 44		MAW EP 06 22 31		SEP 6 MAW FP 21 11 54 E+P 17 07	
SEP 4 H-05 06 47.0 36.1N 5.3E h ABOUT 38KM		SEP 5 MAW EP 19 39 50		MIR E(P) 06 22 41		SEP 6 MAW FP 23 53 37	
MAW FP 05 25 18		SEP 5 MAW EP 19 43 39		SPA E 06 22 52 24 44		SEP 7 H-01 16 55.1 36.4N 130.6E h ABOUT 33KM	
SPA IP 05 25 44 I 27 35		SEP 5 MAW EP 20 10 41		BYR EP 06 22 58		MAW EP 01 35 35	
SEP 4 BYR F 09 01 18		SEP 5 MAW EP 20 14 05		SBA E(P) 06 23 32		MIR F(P) 01 35 36	
SEP 4 BYR IP 09 29 19		SEP 5 MAW EP 20 21 52		SEP 6 BYR EP 06 25 06		SPA IP 01 35 56	
SEP 4 MAW EP 12 53 15		SEP 5 MAW EP 20 27 21		SEP 6 H-08 10 26.5 6.1N 126.2E h ABOUT 47KM		BYR EP 01 36 02	
AIA FP 12 55 28		SEP 5 HLL FP 20 52 36		HLL EP 08 22 49		SEP 7 BYR EP 01 38 10	
				MAW EP 08 23 01			

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SEP 7 H-02 29 38.3 21.5S 174.6W h ABOUT 33KM		h ABOUT 64KM		SEP 8 HLL EP 04 21 42		SEP 8 H-19 29 47.6 21.9S 174.6W h ABOUT 33KM	
SPA IP 02 40 39		RYR FP 13 57 15		SEP 8 H-04 41 20.0 18.1S 178.4W h ABOUT 550KM		HLL EP 19 37 48	
MAW FP 02 41 54		SEP 7 MAW EP 15 43 46		BYR IP 04 51 20		SBA FP 19 39 29	
SEP 7 MAW FP 02 45 32		BYR EP 15 44 28		MIR E(P) 04 44 32		BYR EP 19 40 08	
SEP 7 MAW FP 03 54 28		MIR E(P) 15 44 59		SEP 8 MIR E(P) 06 58 56		WIL E(P) 19 40 18	
MIR E(P) 03 58 25		SEP 7 MIR E(P) 16 58 09		SEP 8 MIR E(P) 06 58 56		MIR IP 19 41 03	
SEP 7 H-04 09 29.8 5.9S 129.8E h ABOUT 169KM		SEP 7 MIR E(P) 17 04 24		SEP 8 H-07 38 14.9 20.7S 178.3W h ABOUT 573KM		E 41 35	
MAW IP 04 20 59		SEP 7 H-19 26 29.3 3.0S 130.4E h ABOUT 33KM		MIR EP 07 48 34		MAW IP 19 42 01	
SEP 7 H-07 07 13 39.9 45.4N 150.8E h ABOUT 33KM		WIL E(P) 19 37 11		MAW EP 07 49 33		SEP 8 H-19 50 29.8 23.6S 179.8E h ABOUT 550KM	
MAW FP 07 32 48		MIR EP 19 37 29		SEP 8 H-09 06 16.0 36.2S 100.5W h ABOUT 33KM		HLL EP 19 58 29	
BYR EP 07 32 55		HLL EP 19 38 01		BYR FP 09 14 21		SBA IP 19 59 11	
SPA FP 07 32 55		MAW IP 19 38 30		SPA IP 09 15 39		WIL EP 19 59 45	
MIR E(P) 07 33 52		SPA IP 19 39 12		I 15 49		E ^{DP} 20 01 32	
SEP 7 H-08 43 26.5 8.8S 117.5E h ABOUT 81KM		I 39 21		SEP 8 SBA EP 09 15 49		ES 07 18	
MAW FP 08 54 25		BYR IP 19 39 30		HLL EP 09 15 50		BYR IP 19 59 57	
SEP 7 H-08 50 57.5 11.7S 13.6W h ABOUT 33KM		SEP 7 H-20 01 26.1 26.7S 178.0W h ABOUT 263KM		MAW EP 09 18 00		IS 20 07 44	
SPA IP 09 02 56		MAW IP 20 12 44		MIR EP 09 18 07		SPA IP 20 00 27	
I 03 12		SEP 8 MIR E(P) 00 03 10		E(S) 27 58		I 02 21	
BYR EP 09 03 13		SEP 8 H-00 47 27.7 28.1S 176.8W h ABOUT 57KM		SEP 8 MAW EP 10 05 00		I 08 36	
MIR F(P) 09 03 35		HLL EP 00 55 39		MIR EP 10 07 32		MIR IP 20 00 31	
F 04 42		SBA E(P) 00 56 23		SEP 8 MAW EP 11 03 31		I ^{DP} 02 23	
SBA FP 09 03 58		BYR EP 00 57 09		SEP 8 SBA EP 11 53 18		IS 08 45	
SEP 7 H-12 44 01.1 54.0N 160.3E h ABOUT 110KM		WIL EP 00 57 12		SEP 8 H-13 06 25.9 30.3S 177.9W h ABOUT 33KM		MAW IP 20 01 33	
MIR I(P) 13 03 00		FS 01 05 08		SPA IP 13 16 35		ES 10 39	
BYR FP 13 03 12		SEP 7 SPA IP 00 57 44		MIR E(P) 13 16 44		AIA IP 20 01 37	
SEP 7 H-13 44 51.9		MIR IP 00 58 01		MAW EP 13 17 48		E 03 32	
		ES 01 06 44		SEP 8 MIR E(P) 16 11 49		E 10 52	
		MAW EP 00 59 05		SEP 8 WIL E(P) 17 03 23		SEP 8 BYR EP 20 28 34	
		ES 01 08 43				SEP 8 MIR E(P) 22 04 17	
		SEP 8 MIR E(P) 00 57 30				SEP 8 H-23 26 25.3 34.0S 180.0E h ABOUT 309KM	
		SEP 8 MIR E(P) 03 52 24				HLL EP 23 33 21	
						MIR EP 23 35 48	
						MAW IP 23 36 56	
						SEP 9 H-00 19 02.7 22.6S 179.5W h ABOUT 550KM	
						MIR E(P) 00 29 10	
						MAW IP 00 30 11	

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	h m s		h m s		h m s		h m s
SEP 9 H-02 45 45.5 4.4S 152.7E h ABOUT 34KM		BYR EP 13 03 24		SPA IP 06 35 12		SEP 10 H-19 40 08.3 28.9N 104.0W h ABOUT 33KM	
MCO IP 02 54 40		SPA EP 13 03 39		I 35 23		WIL F(P) 19 59 16	
WIL IP 02 56 45		MAW IP 13 04 15		I 37 05		SEP 10 MAW EP 23 21 15	
I 57 21		SEP 9 MAW EP 14 46 03		MAW EP 06 36 18		SEP 10 MAW EP 11 23 14	
ES 03 05 44		SEP 9 WIL F(P) 17 48 30		SEP 10 MAW EP 11 23 14		SEP 10 H-23 56 26.2 3.4S 131.4E h ABOUT 64KM	
HLL FP 02 56 48		SEP 9 MAW EP 21 06 33		SEP 10 MIR E(P) 12 00 53		HLL EP 24 07 50	
SPA IP 02 57 19		SEP 9 H-21 11 05.9 31.7S 178.4W h ABOUT 33KM		MIR E(P) 13 03 33		MAW IP 24 08 22	
F(S) 03 06 48		SPA EP 21 21 01		E 09 46		BYR EP 24 09 20	
MIR IP 02 57 20		MIR E(P) 21 21 15		SEP 10 MAW EP 14 15 58		SEP 10 HLL E(P) 23 59 10	
FoP 57 23		SEP 9 MAW EP 22 22 20		SEP 10 MAW EP 15 51 28		SEP 11 H-00 53 12.7 4.1S 151.8E h ABOUT 205KM	
ES 03 06 53		SEP 9 MAW EP 22 50 58		SEP 10 WIL E(P) 15 59 44		MIR IP 01 04 27	
BYR IP 02 58 20		SEP 9 MAW EP 23 41 05		SEP 10 MAW EP 16 11 29		MAW EP 01 05 28	
ES 03 08 52		SEP 9 MAW EP 23 41 05		SEP 10 H-17 01 07.3 53.8N 159.9W h ABOUT 33KM		SEP 11 H-03 45 35.6 44.4N 114.8W h ABOUT 33KM	
SPA IP 02 58 22		SEP 10 H-01 09 47.0 14.0S 166.2E h ABOUT 64KM		SPA IP 17 20 34		MAW EP 04 03 13	
I 58 45		HLL EP 01 19 38		MIR E(P) 17 20 34		SEP 11 MAW EP 05 11 42	
I 59 05		WIL EP 01 20 14		MAW FP 17 21 15		SEP 11 MIR E(P) 05 48 05	
MAW IP 02 58 23		SBA EP 01 20 15		SEP 10 MIR E(P) 17 09 40		SEP 11 MIR EP 06 26 29	
ES 03 08 55		BYR EP 01 21 14		SEP 10 H-19 14 26.8 19.0S 175.8E h ABOUT 33KM		SEP 11 MIR E(P) 06 58 48	
SEP 9 SBA EP 03 03 40		SPA IP 01 21 29		HLL EP 19 23 42		SEP 11 MIR E(P) 08 48 46	
SEP 9 SPA I 03 08 57		MAW EP 01 22 03		SBA EP 19 24 23		SEP 11 H-08 59 37.6 3.5S 131.2E h ABOUT 33KM	
SEP 9 MIR FP 03 24 43		SEP 10 MAW EP 02 48 04		WIL EP 19 24 51		MIR P 09 10 37	
SEP 9 MIR E(P) 04 30 58		SEP 10 MAW FP 03 32 38		EoP 25 05		HLL EP 09 11 06	
SEP 9 MAW EP 04 45 28		SEP 10 H-03 33 25.0 44.4N 114.7W h ABOUT 33KM		ES 33 12		SBA EP 09 11 28	
SEP 9 MIR E(P) 07 14 00		MAW FP 03 50 31		BYR EP 19 25 16		MAW IP 09 11 38	
SEP 9 MAW EP 08 47 40		SEP 10 MIR E(P) 04 09 16		MIR IP 19 25 34		SPA IP 09 12 19	
SEP 9 MIR I(P) 09 16 15		SEP 10 MAW EP 05 23 17		FPP 28 05		BYR IP 09 12 36	
SEP 9 MAW FP 10 22 10		SEP 10 H-06 25 14.5 23.0S 179.8E h ABOUT 520KM		ES 34 50			
SEP 9 H-12 52 15.4 14.7S 167.4E h ABOUT 182KM				SPA IP 19 25 41			
HLL FP 13 01 47				I 25 48			
SBA EP 13 02 25				I 25 58			
WIL EP 13 02 30				MAW IP 19 26 37			
MIR EP 13 03 10				AIA EP 19 26 56			
ESKS 13 21							

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
SEP 11 AIA FP I	h m s 10 52 59 53 22	SEP 12 MAW FP	h m s 21 32 37	BYR EP MAW EP	h m s 23 42 57 23 44 52	AIA EP	h m s 04 03 33
SEP 11 AIA FP	13 26 36	SEP 13 MAW FP	01 22 31	SEP 14 H-00 15 45.2 3.55 131.2F h ABOUT 33KM		SEP 14 H-05 07 15.7 44.4N 114.7W h ABOUT 33KM	
SEP 11 MAW F(P)	13 37 54	SEP 13 MAW FP	02 38 48	HLL FP	00 27 12	SPA IP	05 27 07
SEP 11 MIR F(P)	14 21 55	SEP 13 MAW FP	07 21 21	SBA EP	00 27 35	MAW EP	05 28 19
SEP 11 H-22 20 26.6 33.1S 178.2W h ABOUT 21KM		SEP 13 SBA FP	08 22 36	MAW IP	00 27 45	SEP 14 MIR F(P)	11 34 27
HLL FP	22 28 01	SEP 13 H-10 07 22.6 12.5S 167.3E h ABOUT 83KM		SPA IP	00 28 25 I 31 14	SEP 14 H-11 48 18.3 20.1S 68.2W h ABOUT 33KM	
BYR FP	22 29 38	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		BYR EP	00 28 43	BYR EP	11 58 50
SPA IP	22 30 13	SEP 13 H-18 15 53.9 49.6S 117.2E h ABOUT 33KM		SEP 14 H-00 18 33.4 3.6S 131.2F h ABOUT 33KM		HLL E(P)	12 00 25
MIR F(P) F F(S)	22 30 30 30 41 38 32	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		MAW IP	00 30 33	SEP 14 MIR E(P)	14 25 06
MAW EP	22 31 35	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		BYR IP	00 31 31	SEP 14 MAW EP	14 28 50
SEP 12 H-02 28 53.2 22.0S 67.6W h ABOUT 160KM		SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SEP 14 H-00 38 07.5 31.3S 179.1W h ABOUT 33KM		SEP 14 H-15 15 58.1 13.7S 166.4E h ABOUT 34KM	
BYR IP	02 38 58	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		HLL FP	00 45 48	HLL EP	15 25 54
SPA IP	02 39 38	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SBA EP E	00 46 37 46 40	SEP 14 H-15 25 33.3 13.7S 166.2E h ABOUT 20KM	
HLL EP	02 40 37	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		BYR EP	00 47 32	HLL EP	15 35 30
SEP 12 H-03 11 53.9 22.5S 170.7E h ABOUT 54KM		SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SPA IP E	00 48 03 48 18	BYR EP	15 37 08
HLL FP	03 20 48	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		MAW EP	00 49 26	SEP 14 H-16 16 51.8 33.6S 126.7W h ABOUT 33KM	
SPA F(P)	03 21 26	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SEP 14 H-03 51 13.6 33.3N 118.6W h ABOUT 14KM		SPA IP I	16 26 34 26 41
BYR IP	03 22 26	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		MAW FP	04 10 58	MAW IP	16 28 53
MIR IP F	03 22 27 23 25	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SEP 14 H-03 52 16.9 31.4S 179.0W h ABOUT 33KM		SEP 14 H-19 46 15.8 36.7N 121.8W h ABOUT 15KM	
SPA IP	03 22 41	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		HLL IP	04 00 02	MIR E(P)	20 01 42
MAW IP	03 23 36	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SBA IP E(S)	04 00 46 07 41	MAW IP	20 06 09
SEP 12 H-03 26 19.4 13.5S 166.5E h ABOUT 68KM		SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		BYR IP	04 01 39	SEP 15 H-00 46 54.1 10.3S 165.6F h ABOUT 43KM	
HLL FP	03 36 14	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		SPA IP I I	04 02 12 02 20 02 31	HLL IP	00 57 11
BYR FP	03 37 49	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		MIR IP ES	04 02 31 10 42	WIL IP	00 57 43
SEP 12 H-14 10 57.8 19.0S 175.9E h ABOUT 33KM		SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM		MAW EP	04 03 30	IS	01 06 26
MAW EP	14 23 09	SEP 13 H-16 59 58.9 37.1N 116.0W h ABOUT 0KM					

Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)		Date and Station	Phase (GCT)
		h m s			h m s			h m s		
SBA	EP	00 57 47	h ABOUT	89KM		SEP 16			SEP 17	
MIR	IP	00 58 25	SBA	EP	08 37 33	H-15 11 52.4			BYR	IP
	IPP	01 01 31	MAW	IP	08 38 21	52.2N 171.0W				
	IS	07 53	BYR	EP	08 38 35	h ABOUT 140KM			SEP 17	
BYR	IP	00 58 44	SEP 15			MAW	EP	15 31 33	AIA	EP
	IS	01 08 36	H-09 08 09.1			SEP 16				E
SPA	IP	00 58 58	13.85 166.4E			MAW	EP	15 20 14	BYR	EP
MAW	IP	00 59 28	h ABOUT 36KM			SEP 16			SEP 17	
	F(S)	01 09 50	HLL	F(P)	09 18 03	MIR	E	16 14 18	H-19 20 08.2	
AIA	EP	01 00 22	SBA	EP	09 18 42	SEP 16			10.15 165.3E	
SEP 15			BYR	EP	09 19 41	H-16 36 32.0			h ABOUT 17KM	
HLL	E	01 26 15	SPA	IP	09 19 55	13.45 166.6E			MCO	IP
SEP 15			MAW	EP	09 20 27	h ABOUT 28KM			HLL	EP
H-01 57 23.9			SEP 15			MIR	IP	16 47 50	FS	
9.45 167.0E			H-10 59 47.7			BYR	EP	16 48 07	WIL	IP
h ABOUT 33KM			17.15 173.8F			SEP 16			FPP	
HLL	EP	02 07 54	h ABOUT 33KM			H-20 05 21.9			IS	
WIL	EP	02 08 25	BYR	EP	11 10 52	13.45 166.5F			SBA	EP
SPA	EP	02 08 36	SPA	IP	11 11 15	h ABOUT 28KM			MIR	IP
MIR	IP	02 09 09	MAW	EP	11 12 07	HLL	IP	20 15 20	IPP	
	F	11 18	SEP 15			SBA	EP	20 15 56	IS	
BYR	EP	02 09 28	H-11 44 44.7			MIR	IP	20 16 40	BYR	IP
MAW	IP	02 10 12	14.05 166.1E			ES		25 50	E	
SEP 15			h ABOUT 30KM			BYR	IP	20 16 56	MAW	EP
BYR	EP	02 08 30	HLL	F(P)	11 54 38	MAW	EP	20 17 45	E(S)	
SEP 15			SBA	EP	11 55 15	SEP 16			AIA	EP
H-04 22 03.3			SEP 15			SBA	EP	20 33 09	ES	
55.55 140.5W			MAW	EP	12 54 03	SEP 16			SEP 17	
h ABOUT 33KM			SEP 15			MIR	E(P)	21 45 14	H-19 57 40.3	
BYR	EP	04 27 30	MAW	EP	16 26 45	SEP 16			10.15 165.0F	
HLL	EP	04 27 37	SEP 15			MAW	EP	22 41 06	h ABOUT 36KM	
SPA	IP	04 28 49	MAW	EP	16 37 01	SEP 17			HLL	E
MAW	EP	04 31 43	SEP 15			H-02 22 49.1			SEP 17	
SEP 15			MAW	EP	17 32 55	15.35 72.6W			H-22 28 29.6	
H-06 15 21.7			SEP 16			h ABOUT 143KM			10.25 165.1F	
10.25 165.4E			SEP 16			BYR	EP	02 33 35	h ABOUT 33KM	
h ABOUT 28KM			H-01 49 13.7			SEP 17			HLL	EP
SPA	IP	06 27 28	10.25 165.3E			H-05 54 33.7			WIL	E(P)
MAW	EP	06 27 57	h ABOUT 33KM			10.65 78.2W			MIR	EP
SEP 15			SPA	IP	02 01 20	h ABOUT 61KM			E	
H-06 28 44.2			SEP 16			AIA	EP	06 04 02	BYR	EP
10.15 165.5E			MAW	EP	06 00 00	BYR	IP	06 05 52	MAW	EP
h ABOUT 33KM			SEP 16			SBA	EP	06 07 02	SEP 18	
SPA	IP	06 41 04	MIR	E(P)	06 11 50	HLL	EP	06 07 11	H-01 16 53.9	
SEP 15			SEP 17			SEP 17			10.15 165.1F	
HLL	F(P)	08 01 11	MIR	IP	03 18 20	H-07 34 38.7			h ABOUT 33KM	
SEP 15			I		18 27	1.55 77.9W			BYR	EP
H-08 26 08.7			I		18 38	h ABOUT 178KM			SPA	IP
						BYR	IP	07 46 34		

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SEP 18 H-01 55 46.2 10.75 165.1E h ABOUT 28KM		SEP 19 H-19 29 17.0 15.25 167.6E h ABOUT 161KM		SEP 21 SPA IP 03 07 39 I 07 47 I 08 08		MAW EP 10 53 56	
HLL EP 02 06 02		HLL EP 19 38 48 F 39 25		SEP 21 MIR F(P) 03 13 58		SEP 22 H-11 23 05.2 5.25 150.6E h ABOUT 45KM	
BYR EP 02 07 31		MIR IP 19 40 13		SEP 21 WIL E(P) 10 32 05		BYR F 11 35 32	
SPA IP 02 07 49		BYR IP 19 40 24		SEP 21 SPA IP 11 35 32		SEP 22 H-19 21 57.1 19.25 175.9E h ABOUT 24KM	
SEP 18 MIR IP 04 40 01		SPA IP 19 40 40		SEP 21 AIA EP 16 27 52		HLL EP 19 31 15	
SEP 18 SPA IP 06 32 60		SEP 20 AIA EP 02 19 54 FS 26 39		SEP 21 MIR F(P) 11 52 26		WIL EP 19 32 22	
SEP 18 SPA IP 06 57 27		SEP 20 BYR EP 03 24 49		SEP 21 AIA EP 16 27 52		BYR IP 19 32 48	
SEP 18 SPA IP 07 17 18 I 19 36 I 20 43		SEP 20 H-07 25 11.8 21.55 68.3W h ABOUT 125KM		SEP 21 SPA IP 19 33 13 I 33 20 I 33 32		MIR IP 19 32 06	
SEP 18 H-16 58 12.5 40.9N 29.2E h ABOUT 33KM		BYR IP 07 35 25		SEP 22 AIA EP 01 26 50 E 29 34 E 30 04		MAW IP 19 34 11	
SPA EP 17 17 29		SPA IP 07 36 03		SEP 22 H-02 16 08.6 16.35 178.5E h ABOUT 33KM		SEP 22 H-19 28 42.2 10.35 165.1E h ABOUT 33KM	
BYR EP 17 17 32		MAW IP 07 37 31		SEP 22 BYR EP 02 27 14		BYR EP 19 40 36	
HLL EP 17 17 39		SEP 20 MIR I(P) 08 23 16		SEP 22 H-02 56 24.3 19.35 175.9E h ABOUT 28KM		SEP 22 MIR F(P) 21 01 57	
SEP 18 SRA EP 17 09 14		SEP 20 SPA IP 11 24 28		HLL EP 03 05 42		SEP 22 MCQ EP 22 23 30	
SEP 18 H-17 18 00.8 3.35 129.9E h ABOUT 90KM		SEP 20 H-14 41 22.6 21.55 68.0W h ABOUT 155KM		SEP 22 SRA IP 03 06 22		SEP 23 SPA IP 00 09 46	
MIR EP 17 29 09		BYR EP 14 51 32		WIL EP 03 06 46 E 06 56 FS 15 07		SEP 23 SPA EP 02 09 35	
HLL EP 17 29 12		SPA IP 14 52 11		BYR IP 03 07 15		SEP 23 H-06 40 36.5 16.65 28.6E h ABOUT 33KM	
MAW EP 17 30 11		SEP 20 H-19 02 15.1 1.6N 127.1E h ABOUT 97KM		MIR IP 03 07 32 E+P 07 49 FS 17 29		MAW IP 06 50 10 FS 58 03	
BYR EP 17 30 45		MIR I(P) 19 13 31		BYR IP 03 07 15		MIR IP 06 51 14 E(S) 07 00 02	
SEP 18 BYR EP 17 20 16		SPA IP 19 15 12		MAW EP 03 08 36 F(S) 18 54		WIL EP 06 51 58	
SEP 18 MIR E(P) 18 06 48		SEP 20 H-22 11 32.2 17.85 68.8W h ABOUT 171KM		AIA EP 03 08 53		SPA IP 06 52 07 I 52 18	
SEP 18 MIR EP 23 48 34 F 48 44		BYR IP 22 22 04		SEP 22 BYR EP 03 35 40		BYR IP 06 52 56	
SEP 19 H-00 06 43.0 2.65 78.0W h ABOUT 33KM		SPA IP 22 22 42		SEP 22 MAW EP 05 52 29		SRA EP 06 53 00	
SPA IP 00 19 30		HLL EP 22 23 37		SEP 22 MAW EP 06 57 28		HLL EP 06 53 22	
SEP 19 BYR EP 12 56 45		MAW IP 22 24 05 E+P 24 46		SEP 22 H-10 40 55.8 29.3N 55.3E h ABOUT 33KM		SEP 23 H-08 10 35.4 16.75 28.7E h ABOUT 33KM	
		SEP 21 SPA IP 02 27 39				MAW EP 08 20 09	

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SEP 23 H-09 01 56.8 16.6S 28.8E h ABOUT 33KM		SEP 23 H-17 02 36.6 51.3N 179.2W h ABOUT 33KM		SEP 24 BYR EP 08 09 09		HLL EP 22 18 50	
MAW IP 09 11 30 ES 19 24		SPA IP 17 21 59		SEP 24 H-08 30 01.6 28.6S 68.4W h ABOUT 94KM		BYR EP 22 20 33	
MIR IP 09 12 34 FS 21 18		MAW EP 17 22 12		BYR IP 08 39 30		SEP 24 H-23 08 56.0 10.5S 164.7E h ABOUT 42KM	
WIL IP 09 13 17 FS 22 46		SEP 23 SBA EP 18 06 33		HLL EP 08 41 16		HLL EP 23 19 14	
SPA IP 09 13 28 I 13 38		SEP 23 HLL F(P) 21 16 42		MAW IP 08 41 50		SEP 25 MIR E(P) 00 48 39	
SPA EP 09 14 19		SEP 23 H-22 23 37.7 16.6S 28.7E h ABOUT 33KM		SEP 24 H-09 13 38.0 16.6S 28.7E h ABOUT 33KM		SEP 25 SBA EP 00 59 32	
HLL EP 09 14 44		MAW EP 22 33 11		MIR IP 09 24 15		SEP 26 HLL EP 03 38 15	
AIA EP 09 14 44		MIR I(P) 22 34 14		SPA IP 09 25 08		SEP 25 MIR EP 03 52 58 E 53 52	
SEP 23 BYR IP 09 29 16		SPA IP 22 35 07		BYR IP 09 25 57		SPA IP 03 56 21	
SEP 23 H-09 58 46.0 5.6S 153.8E h ABOUT 80KM		BYR IP 22 35 59		HLL FP 09 26 25		SEP 26 SPA IP 04 54 57	
BYR IP 10 11 09		SPA FP 22 36 00		SEP 24 MAW FP 14 15 19		SBA FP 04 55 09	
SPA IP 10 11 11		HLL EP 22 36 25		SEP 24 MIR E(P) 16 06 17		SEP 25 MIR EP 05 24 11 F 24 26	
SEP 23 BYR EP 09 58 49		SEP 23 MAW EP 22 45 47		SEP 24 H-16 30 16.0 10.6S 78.0W h ABOUT 80KM		SPA IP 05 27 38	
SEP 23 SBA FP 10 14 53		BYR IP 22 48 35		AIA IP 16 39 44		SEP 25 H-07 03 54.6 16.7S 28.7E h ABOUT 33KM	
SEP 23 H-14 41 51.5 33.7N 117.0W h ABOUT 14KM		SEP 23 MIR I(P) 23 10 01		BYR IP 16 41 33 E 50 54		MIR IP 07 14 31 E 15 12	
MAW EP 15 01 32		SEP 24 MAW E(P) 00 39 46		SPA IP 16 42 16		SPA IP 07 15 25	
SEP 23 H-15 02 23.3 16.7S 28.4E h ABOUT 33KM		SEP 24 MAW EP 01 07 30		HLL FP 16 42 25		BYR IP 07 16 14	
MAW IP 15 11 57		SEP 24 SPA IP 05 49 01		SBA IP 16 42 43		SBA I 07 16 17	
MIR IP 15 13 01		BYR EP 05 49 18		MAW IP 16 43 40 FSKS 54 11		HLL FP 07 16 41	
SPA IP 15 13 54		SEP 24 MIR F(P) 06 23 27		MIR FP 16 44 05 FPP 48 44 ESKS 54 45		SEP 25 MIR E(P) 11 07 31	
BYR IP 15 14 43		SEP 24 MIR E(P) 06 40 06		SEP 24 MAW EP 16 43 03		SEP 25 H-12 46 42.0 15.2S 167.4E h ABOUT 122KM	
SPA EP 15 14 45		SEP 24 MIR I(P) 07 08 49		SEP 24 MIR E(P) 17 08 26		HLL E(P) 12 56 17	
HLL FP 15 15 10		SEP 24 H-07 55 41.4 15.8S 13.3W h ABOUT 33KM		SBA FP 17 08 43		BYR EP 12 57 54	
SEP 23 MAW IP 16 17 10		MAW FP 08 06 52		SEP 24 MIR I(P) 17 58 13		SPA IP 12 58 11	
SEP 23 MIR E(P) 16 26 34		SPA IP 08 07 17		SEP 24 MIR E(P) 21 40 39		SEP 25 H-14 00 54.6 10.2S 164.6E h ABOUT 33KM	
SEP 23 HLL E(P) 16 50 54		BYR EP 08 07 35		SEP 24 H-22 08 32.1 10.3S 164.6E h ABOUT 33KM		HLL F(P) 14 11 09	
		SBA EP 08 08 22					
		HLL EP 08 08 49					

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SBA F	14 11 50	SEP 26 MIR I(P)	15 30 37	MIR EP	11 37 18	SEP 28 H-06 58 12.7	
MIR E(P)	14 12 25	SFP 26 WIL F(P)	17 15 31	SPA IP	11 37 20	31.55 179.6F	
BYR FP	14 12 48	SFP 26 H-20 35 54.3		MAW FP	11 38 12	h ABOUT 457KM	
SPA IP	14 13 02	3.35 141.9E		SFP 27 MIR I(P)	13 09 20		
SFP 25 H-14 50 18.2		h ABOUT 33KM		SEP 27 MIR E(P)	14 41 26		
10.15 164.5E		WIL E(P)	20 46 43	SEP 27 HLL EP	18 31 35		
h ABOUT 33KM		HLL FP	20 47 12	SFP 28 H-00 33 55.1			
HLL FP	15 00 40	MIR IP	20 47 14	49.85 125.9F			
SBA FP	15 01 14	MAW IP	20 48 16	h ABOUT 33KM			
MIR F(P)	15 01 47	SPA IP	20 48 35	WIL EP	00 38 07		
BYR FP	15 02 14	PYR IP	20 48 43	IS	41 37		
SPA IP	15 02 24	SFP 27 MIR I(P)	01 59 54	MIR EP	00 39 05		
SFP 25 MIR F(P)	23 23 29	SEP 27 MIR E(P)	07 22 17	EPP	39 32		
SFP 26 H-05 28 07.3		SEP 27 PYR FP	09 08 40	IS	43 26		
50.4N 176.9W		SFP 27 MIR F(P)	09 49 39	HLL EP	00 40 02		
h ABOUT 33KM		SEP 27 H-10 28 04.1		SBA EP	00 40 20		
HLL FP	05 47 02	17.15 174.6E		SPA IP	00 41 32		
SBA FP	05 47 09	h ABOUT 33KM		BYR E	00 43 59		
MIR E(P)	05 47 17	BYR EP	10 39 09	SEP 28 H-03 01 11.6			
BYR FP	05 47 20	SPA IP	10 39 31	20.55 174.3W			
SPA IP	05 47 26	MAW EP	10 40 23	h ABOUT 33KM			
MAW IP	05 47 44	SEP 27 SBA FP	10 53 14	BYR E	03 11 43		
SFP 26 H-05 55 09.7		SEP 27 H-11 04 17.3		SPA FP	03 12 18		
5.65 148.0E		11.3N 126.0E		SEP 28 H-03 30 48.8			
h ABOUT 156KM		h ABOUT 17KM		14.35 13.7W			
HLL EP	06 05 54	WIL E(P)	11 16 19	h ABOUT 33KM			
MIR IP	06 06 14	MIR FP	11 16 34	SPA IP	03 42 33		
SPA EP	06 06 23	HLL FP	11 17 09	BYR EP	03 42 49		
MAW IP	06 07 18	MAW EP	11 17 18	SBA EP	03 43 37		
SPA IP	06 07 25	SBA EP	11 17 26	SEP 28 SBA EP	04 52 21		
BYR IP	06 07 29	SEP 27 H-11 25 53.6		SEP 28 H-05 25 25.9			
SEP 26 SPA IP	06 52 18	17.25 174.7E		17.85 178.6W			
I	07 00 18	h ABOUT 33KM		h ABOUT 548KM			
MIR EP	06 52 58	SBA FP	11 36 05	BYR EP	05 35 28		
MAW FP	06 54 08	WIL FP	11 36 26	SEP 28 H-06 00 25.4			
SFP 26 H-10 53 57.3		ES	45 05	22.9N 94.5E			
17.45 178.8W		BYR EP	06 19 06	h ABOUT 108KM			
h ABOUT 512KM		WIL EP	06 13 18	HLL FP	02 57 35		
MIR F(P)	11 04 24	BYR EP	06 19 06	SPA FP	02 58 47		
				WIL EP	03 00 07		
				I(S)	04 08		
				BYR EP	03 00 53		

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
	h m s		h m s		h m s		h m s
SPA	IP 03 00 55	SEP 30					
MIR	FP 03 01 09	MIR	E(P) 05 46 42				
	EPP 03 05						
	ES 05 53	SEP 30					
SEP 29		H-08 54 15.0					
SPA	IP 07 46 21	1.3S 128.5E					
		h ABOUT 30KM					
SEP 29		MIR	EP 09 05 24				
H-10 06 43.4			F 06 02				
28.8S 177.8W		SBA	EP 09 06 18				
h ABOUT 116KM		MAW	EP 09 06 22				
SPA	EP 10 15 28	SPA	IP 09 07 06				
MAW	IP 10 18 07	BYR	IP 09 07 21				
SEP 29		SEP 30					
SBA	FP 12 12 41	H-15 40 46.3					
SEP 29		2.2S 134.1E					
HLL	FP 12 36 37	h ABOUT 135KM					
SEP 29		MAW	EP 15 52 48				
H-19 31 22.7		SPA	IP 15 53 21				
13.5N 57.5E		BYR	EP 15 53 37				
h ABOUT 33KM		SEP 30					
MAW	FP 19 43 34	MAW	FP 17 33 00				
SEP 29		SEP 30					
H-19 35 01.6		MAW	FP 19 44 54				
6.0N 125.3E		SEP 30					
h ABOUT 117KM		MAW	EP 22 19 42				
WIL	E(P) 19 46 18	BYR	EP 22 22 28				
MIR	IP 19 46 38						
	I 47 02						
HLL	EP 19 47 18						
MAW	IP 19 47 27						
SPA	FP 19 47 35						
SPA	IP 19 48 17						
BYR	EP 19 48 39						
SEP 29							
BYR	EP 21 47 25						
SEP 29							
SPA	IP 22 15 33						
SEP 29							
H-22 16 38.6							
36.1N 18.0E							
h ABOUT 47KM							
SBA	E(P) 22 35 39						
BYR	EP 22 35 47						
HLL	EP 22 36 06						
SEP 30							
H-03 46 51.3							
7.3N 76.9W							
h ABOUT 33KM							
BYR	EP 03 59 51						

ANTARCTIC SEISMOLOGICAL BULLETIN

October, November, December, 1963

MSI - 274A

Published in cooperation with the Scientific
Committee on Antarctic Research of the
International Council of Scientific Unions.

U. S. DEPARTMENT OF COMMERCE

Luther H. Hodges, Secretary

COAST AND GEODETIC SURVEY—WASHINGTON

H. Arnold Karo, Director

FOR OFFICIAL DISTRIBUTION

U. S. COAST AND GEODETIC SURVEY
ANTARCTIC SEISMOLOGICAL BULLETIN

The Scientific Committee on Antarctic Research of the International Council of Scientific Unions recommended that a bulletin of phase readings be issued from seismological stations in the Antarctic.

The United States Coast and Geodetic Survey has undertaken the publication of the Antarctic Seismological Bulletin to be issued quarterly, based on the readings received by radio from the Antarctic stations. The phase designation shown in this bulletin is the identification given by the station operator.

The epicenters shown in this Bulletin are computed by the United States Coast and Geodetic Survey using the phase readings from many stations in addition to the Antarctic readings shown.

STATION AND INSTRUMENTAL CONSTANTS

1

Country, Station and Station Abbreviation	Position Latitude Longitude	Foundation and Elevation (In Meters)	Instruments and Components	To Seconds	T _g Seconds
ARGENTINA Deception (DEC)	62°59' S 60°43' W	Rock 7 m	Mainka N Mainka E	5.0 5.0	
AUSTRALIA Macquarie (MCQ)	54°29'55" S 158°57'22" E	Weathered Basaltic Lava 14 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 0.2 0.2
Mawson (MAW)	67°36'21" S 62°52'48" E	Pre-Cambrian granite 9 m	Benioff Z Benioff N Benioff E	1.0 1.0 1.0	0.2 14.0 14.0
Wilkes (WIL)	66°15.5' S 110°31.2' E	Rock 9 m	Grenet Z Lehner-Griffith Z Lehner-Griffith N Lehner-Griffith E	1.4 16.4 14.1 14.4	1.0 60.0 92.0 85.0
NEW ZEALAND Hallett (HLL)	72°17.7' S 170°18.5' E	Rock 5 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0
Scott Base (SBA)	77°51' S 166°45' E	Rock 15 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0
USSR Mirny (MIR)	66°33' S 93°00' E	Rock 30 m	SVKM Z SVK Z SGK N SGK E	2.5 12.5 12.5 12.5	1.0 1.1 1.1 1.1
UNITED KINGDOM Argentine Island (AIA)	65°15' S 64°16' W	Rock 11 m	Willmore Z Willmore N Willmore E	1.0 1.0 1.0	0.25 0.25 0.25
UNITED STATES Byrd (BYR)	80°01' S 119°31' W	Ice 1515 m	Benioff Z Wilson-Lamison N Wilson-Lamison E Sprengnether Z Sprengnether N Sprengnether E	1.0 6.3 5.8 30.0 25.0 16.0	0.5 3.6 Geotech Helicorder 94.0 95.0 13.0
South Pole (SPA)	90° S 0	Ice 2800 m	Benioff* Z Benioff* N Benioff* E Sprengnether* Z Sprengnether* N Sprengnether* E	1.0 1.0 1.0 30.0 30.0 30.0	0.2 - 25 0.2 - 25 0.2 - 25 100.0 100.0 100.0

*World Wide Standard Instruments Operational Feb. 1963
Dumont d'Urville discontinued Feb. 1963

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Washington 25, D. C.

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 1 MIR	E(P) 00 18 50	OCT 1 MIR	EP 18 04 22	h ABOUT 176KM		OCT 3 H-17	55 54.2
OCT 1 MAW	IP 02 30 24	OCT 1 MIR	E(P) 19 27 35	BYR	IP 16 03 45	58.65	25.5W
BYR	EP 02 31 45	OCT 1 MIR	I(P) 21 26 08	OCT 2 WIL	E(P) 16 30 57	h ABOUT	33KM
OCT 1 H-02	43 27.1	OCT 1 MIR	E(P) 23 42 52	OCT 2 H-16	57 47.5	AIA	EP 18 00 19
6.8N	73.1W	OCT 2 MAW	EP 01 45 05	20.05	175.1W	E	20 52
h ABOUT	132KM	OCT 2 MAW	EP 01 45 05	h ABOUT	33KM	E	39 51
MIR	E(P) 03 00 29	OCT 2 HLL	EP 03 42 18	MAW	EP 17 10 09	SPA	IP 18 02 15
OCT 1 H-03	09 40.0	OCT 2 SBA	EP 03 42 49	OCT 3 HLL	E(P) 02 02 46	I	02 22
14.5S	167.5E	OCT 2 SBA	EP 03 42 49	OCT 3 SBA	EP 03 05 18	I	02 30
h ABOUT	170KM	OCT 2 BYR	EP 03 43 52	OCT 3 WIL	E(P) 03 34 29	BYR	IP 18 02 33
SBA	EP 03 19 54	OCT 2 SPA	IP 03 43 53	E	35 24	MAW	EP 18 03 04
MAW	EP 03 21 43	OCT 2 MAW	IP 03 43 54	OCT 3 BYR	IP 13 39 16	HLL	EP 18 04 39
OCT 1 SBA	EP 03 37 46	OCT 2 MAW	EP 04 49 13	OCT 3 BYR	IP 13 39 16	E	07 16
OCT 1 MIR	EP 03 42 51	OCT 2 MAW	EP 04 49 13	OCT 3 BYR	IP 13 39 16	OCT 3 SBA	EP 18 21 57
E	43 02	OCT 2 MAW	E(P) 05 41 51	OCT 3 H-13	53 44.1	MAW	EP 18 42 36
E	43 24	OCT 2 MAW	E(P) 05 41 51	15.3S	173.4W	OCT 3 MAW	EP 19 27 21
OCT 1 MIR	E(P) 04 54 22	OCT 2 MAW	E(P) 05 41 51	h ABOUT	36KM	OCT 3 H-23	24 34.7
OCT 1 MIR	EP 05 58 30	OCT 2 MAW	E(P) 05 41 51	MAW	EP 14 06 32	32.2N	131.6E
EP	58 50	OCT 2 MAW	E(P) 05 41 51	OCT 3 AIA	EP 14 53 37	h ABOUT	33KM
ES	06 07 53	OCT 2 HLL	EP 05 56 18	OCT 3 AIA	EP 14 53 37	SBA	EP 23 43 06
OCT 1 MIR	F(P) 07 32 13	OCT 2 HLL	ES 06 03 52	OCT 3 H-15	48 17.2	MAW	EP 23 43 08
OCT 1 MIR	I(P) 07 49 27	OCT 2 SBA	EP 05 56 57	58.5S	25.1W	BYR	EP 23 43 31
OCT 1 MIR	E(P) 08 46 25	OCT 2 BYR	IP 05 57 36	h ABOUT	54KM	AIA	EP 23 44 09
OCT 1 MIR	E(P) 12 17 39	OCT 2 WIL	EP 05 57 46	AIA	EP 15 52 41	OCT 3 MAW	EP 23 54 00
OCT 1 SBA	EP 13 10 10	OCT 2 WIL	ES 06 08 32	SPA	IP 15 54 37	OCT 4 AIA	EP 01 08 47
MIR	E(P) 13 12 46	OCT 2 SPA	IP 05 57 52	I	54 52	OCT 4 AIA	EP 01 42 34
OCT 1 H-13	22 25.3	OCT 2 AIA	EP 05 59 09	I	55 08	E	43 55
52.6N	168.1W	OCT 2 MAW	IP 05 59 27	BYR	IP 15 54 55	OCT 4 SBA	EP 01 54 30
h ABOUT	33KM	OCT 2 MAW	ES 06 09 44	E	16 01 18	OCT 4 H-02	47 32.1
MAW	FP 13 42 02	OCT 2 SBA	EP 06 05 05	MAW	EP 15 55 27	20.7S	174.0W
OCT 1 MIR	EP 15 56 46	OCT 2 BYR	IP 06 26 28	ES	16 04 49	h ABOUT	33KM
E	57 15	OCT 2 MAW	EP 09 45 32	SBA	EP 15 56 19	SBA	EP 02 57 23
ES	16 03 38	OCT 2 MAW	EP 13 06 50	HLL	EP 15 57 01	BYR	EP 02 58 02
OCT 1 MIR	E(P) 16 54 27	OCT 2 MAW	EP 13 06 50	WIL	E(P) 15 57 26	WIL	EP 02 58 15
OCT 1 MIR	E(P) 17 45 40	OCT 2 H-15	51 48.2	OCT 3 AIA	EP 16 05 48	SPA	IP 02 58 39
		OCT 3 BYR	EP 17 18 42	OCT 3 BYR	IP 16 08 03	MIR	E(P) 02 58 56
				OCT 3 MAW	EP 16 08 33	MAW	EP 02 59 54
				OCT 3 AIA	EP 17 00 05		
				OCT 3 BYR	EP 17 18 42		

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 8 WIL EP	13 17 20	OCT 9 SBA EP	06 17 11	OCT 10 H-00 50 35.4		OCT 11 MIR E(P)	02 25 46
	27 02			5.6S 145.6E			
OCT 8 MAW IP	17 27 53	OCT 9 MAW EP	10 14 55	h ABOUT 102KM		OCT 11 MIR EP	04 46 59
OCT 8 MIR F(P)	19 01 10	OCT 9 H-10 15 32.6		MIR IP	01 01 41	OCT 11 MIR E(P)	05 07 31
OCT 8 H-20 29 40.1		16.6S 177.1E		SBA EP	01 01 56	OCT 11 MIR E(P)	05 33 45
2.6N 128.4E		h ABOUT 77KM		MAW IP	01 02 45	OCT 11 MIR I(P)	09 41 12
h ABOUT 166KM		SBA EP	10 25 41	OCT 10 BYR IP	01 52 33	OCT 11 MIR I(P)	10 47 53
MIR I(P)	20 40 55	BYR EP	10 26 32	OCT 10 SBA EP	02 48 50	OCT 11 MIR E(P)	11 02 08
MAW IP	20 41 49	MIR E(P)	10 26 53	OCT 10 SBA EP	06 14 14	OCT 11 H-16 33 59.8	
OCT 8 SBA EP	20 52 40	SPA IP	10 26 57	OCT 10 SBA EP	06 31 05	18.5S 177.7W	
OCT 8 H-23 01 16.0		OCT 9 H-10 36 53.4		OCT 10 SBA EP	06 31 05	h ABOUT 583KM	
19.4S 175.8W		20.3S 174.4W		OCT 10 MAW EP	10 09 38	BYR EP	16 43 55
h ABOUT 182KM		h ABOUT 33KM		OCT 10 H-12 04 46.6		SPA EP	16 44 45
MAW EP	23 13 23	HLL EP	10 46 06	20.2S 175.2W		OCT 11 BYR EP	18 04 58
OCT 8 MIR E(P)	23 27 21	SBA EP	10 46 46	h ABOUT 25KM		OCT 11 SPA EP	18 50 09
OCT 9 MIR E(P)	00 07 03	BYR IP	10 47 24	SPA IP	12 15 57	OCT 11 MIR E(P)	19 15 21
OCT 9 SBA EP	01 18 06	SPA IP	10 47 60	OCT 10 MIR E(P)	12 57 07	OCT 12 H-03 37 09.2	
OCT 9 MIR I(P)	02 04 31	MIR EP	10 48 19	OCT 10 H-14 16 31.1		10.2S 161.2F	
OCT 9 BYR EP	02 16 04	MAW IP	10 49 16	12.6S 167.0E		h ABOUT 65KM	
SPA IP	02 16 06	OCT 9 SBA EP	13 00 10	h ABOUT 223KM		HLL EP	03 47 25
OCT 9 H-03 21 11.1		OCT 9 SBA EP	13 05 01	SBA EP	14 26 51	MAW EP	03 49 31
53.8N 170.5W		OCT 9 MAW EP	13 07 25	MIR EP	14 27 33	OCT 12 MIR I(P)	04 35 04
h ABOUT 250KM		OCT 9 ATC EP	13 54 14	BYR IP	14 27 46	OCT 12 MIR E(P)	04 59 33
MAW IP	03 40 35	I	14 02 16	SPA IP	14 28 03	OCT 12 MIR E(P)	06 24 52
OCT 9 MAW EP	04 56 52	I	06 24	OCT 10 MIR E(P)	16 54 17	OCT 12 BYR EP	07 46 20
OCT 9 H-05 13 26.9		OCT 9 MAW EP	14 14 28	OCT 10 MIR E(P)	18 01 07	OCT 12 MIR E(P)	08 02 49
18.6S 173.7W		OCT 9 H-16 24 13.9		OCT 10 SPA EP	21 31 37	OCT 12 MIR E(P)	09 47 23
h ABOUT 33KM		0.2N 18.4W		OCT 10 HLL E(P)	21 42 09	OCT 12 H-10 25 37.4	
HLL EP	05 22 53	h ABOUT 33KM		OCT 10 MIR I(P)	22 37 12	52.3N 179.8W	
BYR EP	05 24 09	MAW EP	16 36 58	OCT 10 MIR E(P)	22 45 46	h ABOUT 33KM	
WIL E(P)	05 24 20	OCT 9 MIR E(P)	21 20 52	OCT 11 BYR EP	01 24 40	MIR E(P)	10 41 32
SPA IP	05 24 45	OCT 9 H-23 40 56.5					
MIR I(P)	05 25 02	8.4S 126.1E					
MAW IP	05 25 58	h ABOUT 229KM					
		MAW E(P)	23 51 48				
		OCT 10 SBA EP	00 17 32				
		OCT 10 HLL EP	00 33 50				

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 12 H-11 26 57.9 44.8N 149.0E h ABOUT 40KM		OCT 13 H-06 12 21.7 45.1N 149.7E h ABOUT 40KM		OCT 14 BYR EP 04 35 14		h ABOUT 33KM	
MIR E(P) 11 42 13 EP' 45 42 EPP 47 16 ISKS 52 38		MIR I(P) 06 27 48		OCT 14 BYR EP 05 43 25		SPA IP 15 00 14	
HLL EP 11 42 18 EPP 47 05 ES 54 52		OCT 13 H-12 58 21.6 45.0N 150.1E h ABOUT 50KM		OCT 14 H-05 39 17.1 2.3S 77.6W h ABOUT 33KM		OCT 14 MIR I(P) 18 07 38	
SBA E(P) 11 44 32 E 45 50		SBA EP 13 17 12		OCT 14 BYR EP 05 51 28		OCT 14 H-18 02 56.3 44.8N 152.2E h ABOUT 40KM	
BYR EP 11 46 11 E 50 13		MIR F(P) 13 17 20		OCT 14 H-06 26 11.7 52.8N 167.1W h ABOUT 80KM		MIR E(P) 18 19 57	
AIA EP 11 46 49		BYR EP 13 17 33		SPA EP 06 45 27		OCT 14 MIR IP 21 55 59 E 56 07 ES 22 05 02	
OCT 12 MIR E(P) 19 41 41		OCT 13 H-14 50 19.7 17.6N 100.8W h ABOUT 88KM		OCT 14 H-06 59 56.6 18.8S 169.3E h ABOUT 250KM		OCT 14 H-22 59 05.4 17.0S 173.8E h ABOUT 33KM	
OCT 12 MIR I(P) 20 22 40		MIR E(P) 15 09 46 E 10 07		SPA IP 07 11 43		SBA EP 23 09 16	
OCT 12 MAW EP 21 03 23		OCT 13 H-16 12 33.2 45.1N 150.8E h ABOUT 30KM		OCT 14 H-07 54 33.9 44.8N 151.2E h ABOUT 55KM		OCT 15 H-07 06 59.9 20.5S 173.9W h ABOUT 33KM	
OCT 12 MIR F(P) 22 37 20		BYR EP 16 30 06		SPA EP 08 13 36		HLL EP 07 16 12	
OCT 13 MAW EP 00 40 15		MIR F(P) 16 32 32		BYR EP 08 13 45		SBA EP 07 16 52	
OCT 13 H-01 26 34.3 44.4N 149.3E h ABOUT 33KM		OCT 13 MIR IP 16 18 39 I 20 05 E(S) 28 10		SPA IP 08 13 46		SPA IP 07 18 06	
MAW EP 01 45 33		SBA EP 16 18 46		OCT 14 SPA EP 12 44 33		OCT 15 H-07 26 09.4 59.0N 136.8W h ABOUT 33KM	
OCT 13 AIA EP 04 40 52		MAW EP' 16 18 47		OCT 14 H-13 21 45.2 44.8N 151.0E h ABOUT 60KM		SPA IP 07 45 51	
OCT 13 H-05 17 57.1 44.8N 149.5E h ABOUT 60KM		BYR EP 16 18 56 I 19 08 I 22 31		HLL E(P) 13 40 24 E 41 38 E(S) 51 32		OCT 15 BYR EP 09 24 47	
HLL EP 05 33 02		AIA E 16 19 44		OCT 14 MIR IP 13 40 29 EPP 42 11 E(S) 47 40		OCT 15 BYR EP 09 54 48	
MIR IP 05 33 08 EP' 34 14 IPP 37 59 ISP 48 47		OCT 13 BYR EP 19 50 18		SBA EP 13 40 34		OCT 15 H-09 59 30.1 67.2N 18.4W h ABOUT 33KM	
SBA E(P) 05 33 46 E 36 47		OCT 13 SBA EP 22 13 51		SPA IP 13 40 42 I 40 58 I 15 13		SPA EP 10 19 25	
MAW EP 05 34 51 EP' 37 00 E 41 49		BYR EP 22 14 09		BYR EP 13 40 44		BYR EP 10 19 52	
BYR EP 05 36 58 I 37 16		AIA EP 22 14 48		AIA EP 13 41 33 E 43 38		HLL E(P) 10 21 11	
AIA EP 05 37 44 F 42 42 E 51 55		OCT 13 MIR E(P) 23 04 09		OCT 14 BYR EP 13 53 13		OCT 15 SBA EP 13 24 36	
		OCT 14 SBA EP 00 11 14		OCT 14 BYR EP 14 41 40		OCT 15 H-13 56 19.1 17.1S 173.9E h ABOUT 33KM	
		BYR EP 00 11 34		OCT 14 H-14 47.30.9		HLL EP 14 05 18 I 05 50	
		OCT 14 MIR F(P) 00 47 43				SBA EP 14 06 30	
		OCT 14 MIR E(P) 03 35 26					

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
BYR EP	14 07 23	OCT 16		OCT 17		SPA IP	08 25 04
		BYR EP	13 51 52	MIR E(P)	09 10 20	I	25 21
OCT 15		OCT 16		OCT 17		OCT 18	
HLL F(P)	14 21 11	H-13 55 26.2		MIR I(P)	09 57 43	H-08 41 38.0	
OCT 15		15.15 173.6W		OCT 17		10.5S 161.6E	
H-20 41 30.2		h ABOUT 33KM		H-11 35 30.7		h ABOUT 33KM	
45.4N 151.1E		SBA EP	14 05 33	17.3S 168.0E		SPA IP	08 53 42
h ABOUT 50KM		BYR EP	14 06 32	h ABOUT 33KM		OCT 18	
SPA EP	21 00 44	SPA IP	14 07 05	HLL IP	11 45 01	BYR P	09 53 33
OCT 15		OCT 16		SPA IP	11 46 58	OCT 18	
H-21 44 58.0		SBA EP	14 02 31	OCT 17		BYR EP	12 14 33
3.0S 129.9E		OCT 16		H-14 13 59.8		OCT 18	
h ABOUT 27KM		H-15 43 00.8		9.8N 126.5E		BYR EP	12 50 03
HLL EP	21 56 31	38.6N 73.4E		h ABOUT 33KM		OCT 18	
SBA EP	21 56 52	h ABOUT 33KM		MIR EP	14 26 06	H-16 00 33.8	
SPA EP	21 57 41	MIR EP'	16 01 32	E(S)	36 12	34.0S 71.4W	
BYR IP	21 58 07	EPP	02 36	HLL EP	14 26 42	h ABOUT 60KM	
OCT 16		ISKS	07 55	SBA EP	14 26 56	BYR IP	16 09 23
SBA P	05 34 44	WIL EPP	16 01 52	OCT 17		SPA IP	16 10 09
SPA EP	05 34 50	ESKS	08 06	SBA EP	19 58 13	OCT 18	
MIR E(P)	05 35 54	SBA F(P)	16 02 06	WIL E(P)	20 00 15	WIL E(P)	16 45 28
OCT 16		BYR EP	16 02 25	OCT 17		OCT 19	
HLL EP	06 59 32	E	06 02	MIR P	21 33 14	H-02 14 17.4	
E	59 45	OCT 16		OCT 17		18.3S 71.2W	
OCT 16		H-16 59 59.4		H-23 24 34.4		h ABOUT 78KM	
H-07 12 57.9		37.2N 116.3W		44.6N 149.0E		BYR P	02 24 52
22.2S 179.5W		h ABOUT 0KM		h ABOUT 45KM		SPA IP	02 25 32
h ABOUT 539KM		MIR E(P)	17 19 41	SBA EP	23 43 26	OCT 19	
BYR EP	07 22 35	OCT 16		MIR E(P)	23 43 31	H-02 18 37.9	
SPA IP	07 23 04	MIR E(P)	17 35 58	ES	54 55	46.8N 153.7E	
MIR I(P)	07 23 09	OCT 16		MAW EP	23 43 39	h ABOUT 45KM	
OCT 16		MIR E(P)	17 54 46	BYR EP	23 43 47	MAW EP	02 37 50
H-07 50 22.4		OCT 16		WIL EP'	23 44 28	OCT 19	
10.8S 163.7E		H-20 39 30.5		EPS	53 43	H-03 34 19.6	
h ABOUT 68KM		8.8N 137.9E		ESS	59 52	46.6N 153.8E	
MIR E(P)	08 01 44	h ABOUT 28KM		OCT 18		h ABOUT 33KM	
OCT 16		MIR EP	20 51 55	WIL E(P)	00 29 29	MAW EP	03 53 33
H-10 30 55.2		OCT 16		OCT 18		BYR EP	03 53 37
45.2N 150.4E		MIR I(P)	21 05 47	MIR EP	00 49 30	OCT 19	
h ABOUT 45KM		OCT 16		OCT 18		H-03 47 07.7	
SPA EP	10 50 10	H-21 30 52.7		H-04 36 00.9		46.8N 153.8E	
OCT 16		44.4N 150.9E		44.0N 150.9E		h ABOUT 25KM	
H-12 47 44.2		h ABOUT 80KM		h ABOUT 40KM		SPA EP	04 06 24
1.8S 127.9E		SPA EP	21 50 12	SBA EP	04 55 28	OCT 19	
h ABOUT 33KM		OCT 17		OCT 18		MIR I(P)	04 51 04
MIR EP	12 58 52	SBA EP	00 11 13	SBA EP	06 29 33	OCT 19	
E	59 03	OCT 17		OCT 18		H-09 02 20.1	
SBA EP	12 59 44	H-03 05 50.2		OCT 18		9.9N 126.1E	
SPA IP	13 00 32	11.6N 140.6E		H-08 05 22.1		h ABOUT 86KM	
		h ABOUT 70KM		62.6N 146.6W		MAW EP	09 15 08
		HLL EP	03 18 24	h ABOUT 51KM			

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 19 WIL F(P)	11 05 23	HLL EP	00 33 13	OCT 20 H-06 10 25.0 43.9N 150.7E h ABOUT 50KM		OCT 20 H-17 58 58.7 44.2N 149.6E h ABOUT 45KM	
OCT 19 MAW EP	14 06 21	MAW IP	00 34 05	SPA IP	06 29 36	MAW EP	18 15 41
OCT 19 H-14 51 24.0 34.0S 71.4W h ABOUT 60KM		MIR EP EPP F(S)	00 34 37 37 55 44 29	OCT 20 H-09 10 43.9 44.4N 150.0E h ABOUT 40KM		OCT 20 BYR IP	19 26 13
BYR EP	15 00 13	WIL IP ES	00 34 45 44 28	SBA EP	09 29 36	SPA IP	19 27 33
SPA IP	15 00 59	OCT 20 H-00 53 07.2 44.7N 150.7E h ABOUT 25KM		MIR E(P) E	09 29 41 30 48	OCT 20 H-20 16 07.7 24.0S 177.6W h ABOUT 605KM	
MAW IP	15 02 48	SBA EP	01 12 02	SPA IP	09 29 48	SPA IP	20 25 58
OCT 19 H-15 20 05.2 23.7S 70.0W h ABOUT 67KM		WIL EP EPP ESKS	01 12 05 12 52 18 56	MAW IP I>P	09 29 49 30 01	OCT 20 MIR E(P)	23 56 40
SPA IP	15 30 49	HLL FP ES	01 12 13 22 58	BYR EP	09 29 58 33 20	OCT 21 SBA EP	00 30 25
OCT 19 H-16 15 21.4 44.4N 150.9E h ABOUT 120KM		MAW FP	01 12 15	OCT 20 H-11 00 15.7 16.1S 66.3E h ABOUT 33KM		OCT 21 H-02 31 39.3 22.9S 172.1E h ABOUT 54KM	
BYR EP	16 34 28	SPA IP	01 12 25	MAW EP	11 09 25	MIR E(P)	02 42 15
OCT 19 MIR E(P)	16 54 42	BYR EP	01 12 25	SPA IP	11 11 49	SPA IP	02 42 30
OCT 19 H-18 00 45.6 35.9S 80.5E h ABOUT 33KM		OCT 20 H-01 54 12.5 23.4S 68.4W h ABOUT 118KM		OCT 20 MIR E(P)	11 35 53	MAW EP	02 43 24
MIR EP E	18 06 53 07 18	SPA IP	02 04 53	OCT 20 SBA EP	12 11 12	OCT 21 H-03 03 33.6 44.0N 149.7E h ABOUT 45KM	
WIL E(P)	18 07 22	SBA EP	02 06 14	MAW EP E>P	12 11 25 11 38	MIR E(P)	03 21 19
MAW EP	18 07 23	OCT 20 BYR IP	02 09 51	SPA EP	12 11 35	OCT 21 SPA IP	04 29 33
SPA IP	18 10 09	OCT 20 H-02 20 36.7 44.8N 150.0E h ABOUT 40KM		BYR EP	12 11 36	OCT 21 SPA IP	05 14 56
BYR FP	18 11 17	BYR IP	02 39 25	OCT 20 BYR EP	12 15 00	OCT 21 SBA EP	06 16 38
OCT 19 WIL E(P)	20 08 25	OCT 20 SBA EP	02 50 19	OCT 20 SBA FP	13 19 02	OCT 21 H-09 18 46.7 23.6S 176.1W h ABOUT 33KM	
OCT 19 MIR E(P)	20 39 19	OCT 20 H-03 00 10.9 20.8S 178.6W h ABOUT 600KM		OCT 20 H-13 21 14.1 45.1N 150.5E h ABOUT 45KM		HLL EP	09 27 34
OCT 19 MIR I(P)	20 48 00	SBA EP	03 09 06	MAW EP	13 40 22	SBA FP	09 28 15
OCT 19 SBA EP	23 46 32	SPA IP	03 10 20	SPA EP	13 40 30	MIR IP	09 29 49
OCT 20 H-00 22 53.3 37.7S 73.2W h ABOUT 35KM		OCT 20 SPA IP	03 39 54	OCT 20 H-15 44 34.2 45.7N 149.7E h ABOUT 45KM		MAW EP	09 30 49
BYR IP	00 31 12	SBA EP	03 41 16	MIR E(P) E	16 00 09 00 30	OCT 21 MIP E(P)	11 05 26
SPA IP	00 32 07	MAW EP	03 41 53	OCT 20 SPA EP	16 25 12	MAW EP	11 06 12
SBA FP F	00 32 50 32 56	MIR E(P)	03 42 44	OCT 20 MIR F(P)	16 25 42	OCT 21 MIR E(P)	11 48 26

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 21 MIR EP	13 14 46	OCT 22 H-14 07 32.4 16.2S 173.9W h ABOUT 33KM		OCT 23 SBA EP	22 22 41	OCT 25 H-19 58 58.3 12.3N 144.5E h ABOUT 29KM	
OCT 21 H-13 09 34.6 3.3S 150.2E h ABOUT 43KM		SPA EP	14 19 06	OCT 24 SBA EP	00 22 28	WIL IP	20 11 19
MIR F(P)	13 21 10	OCT 22 H-15 35 26.1 11.6S 166.3E h ABOUT 80KM		E	24 48	EP	11 41
MAW EP	13 22 12	SPA IP	00 23 06	SPA IP	00 23 06	F(S)	21 41
OCT 21 HLL EP	14 48 20	OCT 24 H-07 26 23.9 4.9S 102.9E h ABOUT 50KM		OCT 24 HLL EP	07 28 32	HLL EP	20 11 40
OCT 21 MIR E(P)	15 36 41	SBA EP	15 46 06	WIL EP	07 36 38	BYR EP	20 13 10
OCT 21 H-15 38 24.3 45.5N 149.7E h ABOUT 55KM		WIL EP	15 46 18	IP	36 47	OCT 25 BYR EP	20 17 30
SBA IP	15 57 16	MAW EP	15 47 50	IS	44 54	OCT 26 H-03 55 39.7 44.5N 150.1E h ABOUT 55KM	
SPA EP	15 57 24	OCT 23 SBA FP	01 55 57	SBA EP	07 38 27	SPA IP	04 14 54
OCT 21 H-17 20 46.0 44.1N 150.3E h ABOUT 65KM		OCT 23 H-04 24 06.2 31.4S 68.7W h ABOUT 110KM		SPA IP	07 38 54	MIR E(P)	04 15 42
SPA IP	17 39 59	SPA IP	04 33 53	OCT 24 SPA IP	07 39 06	OCT 26 H-05 59 44.2 44.5N 149.8E h ABOUT 60KM	
OCT 21 H-20 39 39.3 44.2N 151.0E h ABOUT 50KM		MAW IP	04 35 35	OCT 24 SPA IP	07 39 22	SPA IP	06 18 49
SPA EP	20 58 48	OCT 23 SBA EP	07 09 39	OCT 24 WIL EP	08 06 03	OCT 26 H-11 21 47.6 44.7N 149.7E h ABOUT 55KM	
OCT 22 H-03 17 15.2 45.0N 150.2E h ABOUT 45KM		OCT 23 H-07 56 12.3 12.0S 166.5E h ABOUT 107KM		OCT 24 SPA IP	15 57 36	SPA IP	11 40 52
SPA EP	03 36 17	SBA IP	08 06 48	OCT 24 SPA IP	20 06 11	SBA EP	11 41 00
OCT 22 SBA EP	04 19 02	WIL EP	08 06 48	OCT 25 H-01 30 57.1 62.3S 156.9E h ABOUT 33KM		OCT 26 H-12 33 50.1 15.8S 174.0W h ABOUT 115KM	
OCT 22 H-04 29 11.7 51.0N 179.4E h ABOUT 55KM		E(S)	15 24	SBA EP	01 34 40	HLL EP	12 43 30
MAW EP	04 48 49	SPA IP	08 08 00	WIL EP	01 35 30	SBA IP	12 44 06
OCT 22 H-07 02 54.0 3.0S 130.0E h ABOUT 54KM		MAW IP	08 08 32	IS	39 12	BYR IP	12 44 44
MAW EP	07 14 51	OCT 23 H-09 47 08.1 41.2N 144.2E h ABOUT 50KM		OCT 25 SBA EP	02 06 39	WIL I(P)	12 44 49
OCT 22 H-10 18 14.5 44.2N 150.3E h ABOUT 50KM		SBA EP	10 05 53	OCT 25 SPA IP	02 36 38	SPA IP	12 45 17
MAW EP	10 37 19	MAW EP	10 06 02	OCT 25 SBA EP	03 36 45	MIR IP	12 45 30
SPA FP	10 37 27	SPA IP	10 06 15	OCT 25 SBA EP	08 11 09	E	46 29
		OCT 23 H-10 16 38.9 6.9S 148.4E h ABOUT 29KM		OCT 25 H-15 20 40.0 3.7S 104.0W h ABOUT 33KM		OCT 26 HLL EP	14 57 22
		SPA IP	10 29 03	BYR EP	15 32 29	OCT 26 MIR E(P)	15 40 35
		OCT 23 SBA EP	19 20 34	OCT 25 SPA IP	15 44 21	OCT 26 H-18 55 39.1 7.0S 129.7E h ABOUT 125KM	
		OCT 23 SBA EP	21 40 59			SPA IP	19 07 51
						BYR EP	19 08 11

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 26 H-22 41 29.8 5.2S 152.0E h ABOUT 73KM		OCT 27 SPA IP 19 03 52		SPA IP 19 23 46		MIR IP 22 33 37	
WIL I(P) 22 52 19		OCT 27 H-19 36 26.6 16.8S 173.5W h ABOUT 33KM		SBA EP 19 24 37		MAW EP 22 34 37	
MIR EP 22 52 54 F 53 07 E 53 16		SPA IP 19 47 57		MAW EP 19 25 52		OCT 29 H-22 24 02.6 47.0N 92.8E h ABOUT 118KM	
BYR EP 22 53 56		OCT 27 H-20 05 38.1 44.5N 150.1E h ABOUT 50KM		OCT 28 H-19 59 15.0 24.5S 179.9E h ABOUT 532KM		BYR EP 22 43 25	
SPA IP 22 53 57		SPA IP 20 24 37		SBA EP 20 07 49		OCT 29 BYR EP 23 32 10	
OCT 27 WIL E(P) 01 14 08		OCT 28 MAW EP 06 46 44		SPA IP 20 09 08		OCT 30 H-01 17 31.1 4.8S 77.9W h ABOUT 20KM	
OCT 27 MIR IP 08 35 41 I 35 52		OCT 28 H-07 55 12.3 24.3S 176.0W h ABOUT 33KM		MIR IP 20 09 11		BYR IP 01 29 28	
OCT 27 H-08 45 43.8 17.9S 178.5W h ABOUT 586KM		SBA IP 08 04 37		MAW IP 20 10 14		SPA IP 01 30 09	
BYR IP 08 55 42 F 57 42		BYR IP 08 05 21		OCT 29 MAW F(P) 13 13 21		SBA EP 01 30 33	
SPA IP 08 56 11		SPA IP 08 05 55		OCT 29 H-15 49 10.3 24.8S 68.6W h ABOUT 67KM		OCT 30 H-05 31 48.5 26.6S 178.0W h ABOUT 240KM	
OCT 27 H-10 38 48.5 22.8S 175.2W h ABOUT 35KM		MIR EP 08 06 10 E 06 19		BYR IP 15 59 05		SBA EP 05 40 34	
HLL EP 10 47 43		MAW EP 08 07 11 ES 17 05		SPA IP 15 59 47 I 16 00 11		SPA IP 05 41 55	
SBA EP 10 48 43		OCT 28 H-11 23 38.9 57.1S 147.1E h ABOUT 33KM		SBA EP 16 00 32		OCT 30 SBA EP 07 11 01	
SPA IP 10 49 40		SPA IP 11 30 13		MAW IP 16 01 20 E+P 01 50		OCT 30 SBA EP 10 05 45	
OCT 27 MIR I(P) 11 39 45		OCT 28 H-12 03 19.8 52.8N 159.8E h ABOUT 33KM		MIR IP 16 01 46 E+P 02 35		OCT 31 MIR EP 00 07 00 E 07 06 ES 10 49	
OCT 27 H-15 26 18.5 33.9S 15.3W h ABOUT 33KM		MIR I(P) 12 22 23		OCT 29 H-16 55 49.4 26.5S 177.5W h ABOUT 65KM		OCT 31 BYR EP 00 13 08	
BYR EP 15 36 19		SBA EP 12 22 26		SBA EP 17 04 54		OCT 31 SBA EP 00 43 48	
OCT 27 SPA IP 15 30 31		BYR EP 12 22 34		SPA IP 17 06 16		MIR E(P) 00 49 24	
OCT 27 SPA IP 15 45 55		MAW EP 12 22 35		MAW EP 17 07 31		OCT 31 H-03 17 42.0 21.8S 175.0W h ABOUT 33KM	
OCT 27 H-18 24 42.9 24.3S 176.1W h ABOUT 33KM		SPA IP 12 22 43		OCT 29 H-20 22 15.7 26.2S 177.8W h ABOUT 49KM		SBA EP 03 27 26	
HLL EP 18 33 26		OCT 28 BYR IP 12 34 54		SBA EP 20 31 23		BYR EP 03 28 04	
SBA EP 18 34 08		OCT 28 SPA IP 13 11 33		SPA EP 20 32 44		SPA IP 03 28 41 I 28 55	
BYR EP 18 34 51		OCT 28 SBA EP 15 40 13		MIR E(P) 20 32 58		MIR EP 03 28 58 EPP 31 40 IS 38 15	
SPA IP 18 35 26		OCT 28 H-19 15 12.5 42.8S 73.7W h ABOUT 30KM		MAW EP 20 33 59		OCT 31 BYR EP 03 57 03	
MAW IP 18 36 43		BYR IP 19 22 52		OCT 29 H-22 22 37.7 24.4S 176.1W h ABOUT 33KM			
				SBA EP 22 32 03			
				BYR EP 22 32 46			
				SPA IP 22 33 22			

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
OCT 31 H-04 25 38.0 23.9S 179.8W h ABOUT 464KM		NOV 1 MIR FP 13 20 12		h ABOUT 33KM		SPA IP 01 25 59	
SPA IP 04 35 39		NOV 1 H-20 59 28.1 22.5S 176.8W h ABOUT 71KM		BYR EP 03 22 15		NOV 4 SPA IP 01 24 44	
OCT 31 MIR EP 08 24 00		SBA EP 21 09 02		SPA IP 03 22 54 E 23 19		NOV 4 H-01 17 08.9 6.8S 129.6E h ABOUT 80KM	
OCT 31 MIR E(P) 08 35 16		BYR EP 21 09 45		MIR EP' 03 29 11 E 29 29 ESKS 35 18		MIR IP 01 27 41 EPP 29 50 IS 36 08	
OCT 31 MIR EP 08 48 32 IS 52 15		SPA IP 21 10 19		NOV 3 H-07 38 10.7 15.6S 73.3W h ABOUT 112KM		NOV 4 H-05 22 59.0 6.8S 129.8E h ABOUT 80KM	
OCT 31 H-08 51 42.2 17.9S 178.8W h ABOUT 637KM		MIR IP 21 10 31		BYR IP 07 48 59 I 49 23		SPA IP 05 35 08	
BYR IP 09 01 37		NOV 1 BYR EP 21 38 33		NOV 3 H-12 02 28.3 3.7S 78.3W h ABOUT 33KM		BYR IP 05 35 36	
SPA IP 09 02 06		NOV 1 BYR EP 23 00 34		SPA IP 12 15 09		NOV 4 SPA EP 05 34 25	
MIR I(P) 09 02 11		SPA IP 23 00 36		NOV 3 H-14 31 57.2 14.0S 165.9E h ABOUT 50KM		NOV 4 SPA IP 15 00 32	
OCT 31 SPA IP 10 00 27		NOV 2 H-01 41 58.5 6.2S 154.4E h ABOUT 63KM		BYR IP 14 43 26 I 15 00 46		NOV 4 BYR IP 17 26 29 I 27 33	
OCT 31 MIR EP 10 11 58 IS 15 45		BYR IP 01 54 20		SPA IP 14 43 40		NOV 4 H-22 17 07.5 6.8S 129.8E h ABOUT 122KM	
OCT 31 H-10 47 25.3 10.5S 162.0E h ABOUT 38KM		SPA IP 01 54 21		NOV 3 H-00 52 53.0 45.2N 150.0E h ABOUT 66KM		SBA E(P) 22 28 29	
SPA IP 10 59 29		NOV 2 MIR E(P) 21 21 24		NOV 3 SPA EP 14 37 39		MAW EP 22 28 38	
OCT 31 SPA IP 12 29 26		NOV 2 H-21 35 29.8 24.3S 68.1W h ABOUT 106KM		NOV 3 SPA EP 14 42 26		SPA IP 22 29 21	
BYR IP 12 29 39		SPA IP 21 46 06		NOV 3 SPA FP 16 19 11		NOV 4 SBA EP 22 25 47	
OCT 31 SBA EP 16 25 02		SPA F(P) 21 46 37		NOV 3 SPA EP 19 51 28		BYR IP 22 26 58 I 29 39	
OCT 31 SPA IP 23 00 36		NOV 2 H-22 21 20.7 1.9S 138.9E h ABOUT 33KM		NOV 4 H-00 52 53.0 45.2N 150.0E h ABOUT 66KM		NOV 4 H-22 25 02.8 .9S 139.7E h ABOUT 33KM	
NOV 1 SPA IP 02 39 25		MIR FP 22 32 42 E 33 13		MAW EP 01 11 15 F 11 35 F(S) 23 08		SPA IP 22 37 56	
NOV 1 H-03 52 25.9 51.7N 159.8E h ABOUT 33KM		SPA FP 22 33 12		NOV 4 MAW EP 01 13 43 E(S) 23 08		NOV 5 BYR IP 02 26 12 I 28 00	
SPA EP 04 11 41		BYR FP 22 34 25		NOV 4 H-01 14 32.8 15.1S 167.3E h ABOUT 154KM		NOV 5 H-02 56 50.6 55.5N 157.9E h ABOUT 33KM	
NOV 1 SPA IP 07 30 46		NOV 2 BYR EP 22 59 27		WIL IP 01 24 46 IS 27 12		SPA EP 03 16 21	
BYR EP 07 31 03		SPA EP 23 00 03		MIR IP 01 25 30 I 25 51		NOV 5 BYR IP 03 08 51	
NOV 1 SPA IP 10 04 58		NOV 2 MIR E(P) 23 03 30 ES 10 32		BYR IP 01 25 43 I 29 50		NOV 5 BYR IP 03 13 08 I 13 11	
NOV 1 MIR E(P) 13 12 25		NOV 2 SPA EP 23 34 39					
		NOV 3 H-03 10 12.7					

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
NOV 5 BYR	FP 04 19 44	MIR	IP 02 24 35 IPP 27 20 IS 33 56	NOV 6 H-11	33 08.0 2.8S 139.1E h ABOUT 95KM	NOV 7 H-16	45 59.8 50.2S 114.9W h ABOUT 33KM
NOV 5 H-05	16 31.2 7.3S 129.2E h ABOUT 141KM	SBA	EP 02 25 06	SPA	IP 11 45 48	BYR	IP 16 52 08 I 52 16 I 53 19
NOV 5 SPA	FP 06 03 35	MAW	EP 02 25 35	NOV 6 SPA	IP 13 46 13	SPA	IP 16 53 30
NOV 5 BYR	IP 06 39 08	NOV 6 H-02	55 54.0 2.5S 138.6E h ABOUT 32KM	NOV 6 SPA	IP 14 43 28	WIL	EP 16 55 58 ES 17 04 10
NOV 5 H-08	43 33.8 7.2S 129.0E h ABOUT 112KM	SPA	IP 03 08 41	NOV 6 SPA	IP 15 29 22	MIR	EP 16 56 15 ES 17 04 44
NOV 5 SPA	IP 08 55 47	NOV 6 H-03	00 12.2 2.2S 138.7E h ABOUT 43KM	NOV 6 H-18	33 25.9 16.7S 69.7W h ABOUT 174KM	NOV 7 SBA	EP 17 03 13
NOV 5 H-09	33 36.1 27.6S 176.2W h ABOUT 92KM	SBA	EP 03 12 02	NOV 6 SPA	IP 18 44 41	NOV 7 H-17	34 58.0 24.4S 176.0W h ABOUT 33KM
SBA	EP 09 42 30	SPA	IP 03 12 56	NOV 6 SPA	IP 18 33 42	SBA	EP 17 44 22
NOV 5 SPA	IP 09 43 50	NOV 6 H-04	06 45.4 2.4S 138.6E h ABOUT 22KM	NOV 7 SBA	EP 01 19 08 E 19 42	NOV 7 SPA	IP 17 45 41
NOV 5 BYR	IP 13 46 57	NOV 6 H-04	35 09.3 2.5S 138.4E h ABOUT 33KM	NOV 7 SBA	EP 01 51 03 E 59 12	NOV 7 SBA	EP 17 48 55
NOV 5 SPA	IP 14 01 30	SPA	IP 04 19 33	NOV 7 WIL	EP 02 00 08 IS 04 16	NOV 7 H-20	15 22.5 29.4S 178.1W h ABOUT 110KM
NOV 5 H-16	02 05.4 26.1S 178.9E h ABOUT 56KM	SPA	IP 04 47 54	NOV 7 SPA	IP 02 01 12	SPA	IP 20 25 25
SBA	EP 16 11 13	NOV 6 SPA	IP 04 35 50	NOV 7 BYR	IP 02 04 14	NOV 7 SBA	EP 22 00 54
NOV 5 SPA	IP 16 12 34	NOV 6 H-06	28 55.3 30.8S 179.9E h ABOUT 411KM	NOV 7 H-02	42 57.8 2.5S 138.7E h ABOUT 69KM	NOV 8 H-04	24 14.4 23.0S 170.9E h ABOUT 35KM
NOV 5 SRA	FP 17 25 55	SPA	IP 06 38 16	WIL	I(P) 02 53 44	SPA	IP 04 35 05
NOV 5 BYR	IP 18 44 02 I 44 44	NOV 6 MIR	F(P) 06 32 49	SBA	EP 02 54 43	NOV 8 SPA	IP 05 58 49
NOV 5 H-23	10 54.0 55.5S 28.4W h ABOUT 33KM	NOV 6 H-07	35 25.6 2.5S 138.6E h ABOUT 38KM	SPA	IP 02 55 39	NOV 8 H-08	08 09.2 45.0N 150.9E h ABOUT 40KM
SRA	EP 23 19 20	SBA	EP 07 47 16	BYR	IP 02 55 49	SPA	EP 08 27 23
NOV 6 SBA	IP 00 05 18	NOV 6 H-09	01 12.0 7.1S 129.2E h ABOUT 90KM	NOV 7 SBA	EP 05 19 05	NOV 8 H-09	59 24.3 16.5S 28.5E h ABOUT 33KM
NOV 6 H-02	13 16.8 2.6S 138.4E h ABOUT 33KM	SPA	IP 07 48 11	NOV 7 H-15	53 41.9 24.2S 176.4W h ABOUT 33KM	MIR	IP 10 10 02 E 11 38
WIL	IP 02 24 05 IS 33 00	SBA	EP 09 12 35	BYR	IP 16 03 51	SPA	IP 10 10 55
		MAW	IP 09 12 43	NOV 7 H-16	26 37.8 11.3S 166.1E h ABOUT 89KM	NOV 9 BYR	IP 01 50 03
		SPA	IP 09 13 27	NOV 7 BYR	IP 16 38 15	NOV 9 BYR	IP 03 07 21

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
NOV 9 H-05 37 15.1 5.6S 105.5E h ABOUT 33KM		BYR IP I I	01 11 18 13 22 20 08	BYR IP IS	11 39 44 40 27	NOV 12 H-17 41 52.6 30.4S 177.8W h ABOUT 60KM	
SBA EP 05 49 15		SPA IP 01 11 52		WIL I(P) E(S)	11 39 52 48 45	SPA IP 17 51 54	
SPA IP 05 49 45		SBA EP 01 12 26		SPA IP 11 40 19		NOV 12 MAW IP 20 09 26	
BYR IP 05 50 28		MIR E(P) IPP IS	01 13 38 16 55 24 38	MIR IP EPP IS	11 40 33 41 24 50 02	NOV 12 MAW IP 20 14 21	
NOV 9 SPA IP 05 42 09		NOV 10 BYR IP I	01 38 26 41 04	NOV 11 SPA IP	11 46 12	NOV 12 WIL E(P) 20 21 18	
NOV 9 H-08 51 18.6 45.3N 150.8E h ABOUT 33KM		NOV 10 H-17 17 42.7 44.4N 149.0E h ABOUT 40KM		NOV 11 SBA EP	14 41 43	NOV 12 SBA EP 20 35 14	
SPA EP 09 10 26		SBA EP 17 36 34		NOV 11 H-19 54 09.4 9.1S 71.4W h ABOUT 585KM		NOV 12 H-21 48 43.1 27.7S 176.3W h ABOUT 33KM	
NOV 9 SBA EP 12 33 47		SPA IP I	17 36 44 37 00	NOV 11 BYR IP I	20 04 49 07 50	SBA EP 21 57 43	
NOV 9 H-12 54 30.3 .1S 25.1W h ABOUT 33KM		BYR IP I	17 36 58 39 25	SPA IP 20 05 25		SPA IP 21 59 04	
SPA IP 13 07 19		WIL EP EPP ESKS	17 37 22 43 05 46 48	SBA EP 20 05 56		MIR E(P) 21 59 36	
BYR IP 13 07 33		NOV 10 H-19 20 38.8 26.2S 178.3E h ABOUT 607KM		NOV 12 SBA EP 00 59 55		NOV 13 MCO IP 01 56 25	
NOV 9 MIR I(P) 15 51 23		NOV 10 SPA IP 19 30 15		NOV 12 SBA EP 06 01 53		NOV 13 H-05 16 16.6 7.8N 125.9E h ABOUT 33KM	
NOV 9 H-18 50 42.2 7.1S 129.4E h ABOUT 80KM		NOV 10 SBA EP 19 43 55		NOV 12 H-06 07 53.3 27.9S 176.2W h ABOUT 33KM		MIR I(P) 05 28 17	
SPA IP 19 02 58		NOV 11 H-00 15 04.8 7.0S 129.5E h ABOUT 132KM		NOV 12 H-06 07 53.3 27.9S 176.2W h ABOUT 33KM		NOV 13 MIR I(P) 07 37 35	
NOV 9 SPA EP 20 41 33		NOV 11 SBA EP 00 26 15		NOV 12 SBA EP 06 18 14		NOV 13 H-08 38 57.8 4.9S 132.3E h ABOUT 33KM	
NOV 9 H-21 15 30.4 9.0S 71.5W h ABOUT 600KM		SPA IP 00 27 16		NOV 12 SBA E(P) 07 48 41		SPA EP 08 51 32	
BYR IP 21 26 21		NOV 11 SBA EP 02 01 10		NOV 12 SPA IP 07 49 53		NOV 13 H-11 18 28.6 23.8S 179.9W h ABOUT 520KM	
SPA IP 21 26 45		NOV 11 H-07 32 43.2 56.0S 126.4W h ABOUT 33KM		BYR EP E	07 49 58 50 37	NOV 13 SBA I(P) 11 27 09	
SBA EP 21 27 18		BYR EP I	07 37 59 38 09	NOV 12 SBA EP 11 57 54		BYR IP 11 27 58	
MIR IP EPP IS	21 28 32 30 38 39 26	SPA IP 07 39 26		NOV 12 H-12 44 02.4 22.6S 175.5W h ABOUT 33KM		SPA IP 11 28 27	
WIL I(P) 21 30 45		NOV 11 SPA IP 10 05 34		SBA EP 12 53 35		MIR IP 11 28 32	
NOV 9 H-23 14 12.6 8.5S 72.1W h ABOUT 563KM		NOV 11 H-11 29 06.4 16.9S 174.4W h ABOUT 185KM		SPA IP 12 54 52		NOV 13 SPA EP 14 04 44	
BYR IP 23 24 58		NOV 11 H-11 29 06.4 16.9S 174.4W h ABOUT 185KM		NOV 12 MAW EP 15 20 17		NOV 13 H-15 46 49.0 22.8S 175.3W h ABOUT 33KM	
NOV 10 H-01 00 38.8 9.2S 71.5W h ABOUT 600KM		SBA IP 11 39 08		NOV 12 MAW IP 15 32 40		SPA EP 15 57 40	

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
NOV 13 H-16 06 35.7 22.8S 175.3W h ABOUT 33KM		NOV 14 H-23 37 49.5 17.4S 167.8E h ABOUT 33KM		NOV 16 H-06 46 15.7 41.3S 87.5W h ABOUT 11KM		MIR EP E	01 00 11 00 25
SPA EP 16 17 28		SBA EP 23 46 51		BYR IP 06 53 57		MAW EP'	01 01 09
NOV 13 H-17 18 50.1 22.9S 175.3W h ABOUT 33KM		MIR E(P) 23 48 51		SBA FP 06 55 35 E 55 43		NOV 17 SBA EP ES	08 00 32 03 18
BYR IP 17 29 07 E 29 39		NOV 15 SBA FP 02 52 03		WIL EP 06 57 39 EPP 57 58 ES 07 07 44		NOV 17 BYR IP E E	09 59 19 10 01 30 05 23
SPA EP 17 29 40		NOV 15 SBA E(P) 06 31 04		MIR IP 06 57 43 I 57 49 E 57 59		NOV 17 H-13 13 49.3 17.4S 178.5W h ABOUT 509KM	
MIR EP 17 30 01 I 30 20		NOV 15 MIR E(P) 07 13 42		NOV 16 MIR E(P) 12 35 21		MAW IP 13 25 27	
NOV 13 H-18 04 10.5 22.9S 175.5W h ABOUT 33KM		NOV 15 SBA EP 10 32 33		NOV 16 MIR E(P) 12 35 21		NOV 18 H-01 01 52.9 3.6S 143.4E h ABOUT 33KM	
SPA EP 18 15 01		NOV 15 WIL EP' 11 25 10 EPP 26 05 ESKS 31 48		NOV 16 BYR IP 22 39 59		MAW IP 01 14 17	
NOV 13 SBA EP 22 26 43		NOV 15 SBA EP 11 50 37		NOV 16 H-22 43 26.4 22.3S 175.0W h ABOUT 33KM		NOV 18 MAW IP 01 11 17	
NOV 13 SPA EP 23 05 00		NOV 15 SBA EP 15 55 45		SBA EP 22 53 06 ES 23 01 02		NOV 18 H-06 04 12.7 22.4S 170.5E h ABOUT 33KM	
NOV 14 H-00 20 03.0 30.1S 177.4W h ABOUT 42KM		NOV 15 SRA EP 15 57 31		BYR IP 22 53 47 E 23 22 50		MAW EP 06 15 58	
SBA EP 00 28 48		NOV 15 SRA EP 16 00 12		WIL IP 22 53 56 EPP 56 24 IS 23 02 28		NOV 18 SPA IP 07 49 53	
MIR I(P) 00 30 23		NOV 15 SBA E(P) 17 42 29		MIR IP 22 54 40 I P 55 08 IS 23 03 52		NOV 18 SPA IP 12 54 32	
NOV 14 H-04 35 48.5 17.5S 167.7E h ABOUT 33KM		NOV 15 SRA EP 19 03 26		MAW IP 22 55 38 ES 23 04 45		NOV 18 H-13 13 42.8 35.5S 179.9W h ABOUT 50KM	
SBA FP 04 45 57		NOV 15 H-21 06 34.0 44.3N 149.0E h ABOUT 50KM		NOV 16 MAW IP 22 51 10		MAW EP 13 24 33	
MIR EP 04 46 47		NOV 15 WIL EP' 21 25 10 EPP 26 05 ESKS 31 48		NOV 16 H-23 39 58.3 22.1S 175.3W h ABOUT 33KM		NOV 18 H-13 51 35.8 15.9S 173.3W h ABOUT 33KM	
NOV 14 SBA EP 12 00 52		MIR IP 21 25 18 EPP 26 31 ESKS 32 31		SBA IP 23 49 38		BYR IP 14 02 36 E 02 46	
NOV 14 H-14 01 18.4 17.4S 167.6E h ABOUT 33KM		SBA EP 21 25 25 F 25 37 ES 37 08		BYR IP 23 50 19		MAW IP 14 04 21	
SBA FP 14 11 27		SPA EP 21 25 31 I 25 46		WIL FP 23 50 27		NOV 18 H-14 38 28.9 29.9N 113.6W h ABOUT 14KM	
BYR IP 14 12 26 I 16 43		BYR IP 21 25 46 I 29 13 E 37 36		MIR EP 23 51 19		MAW EP' 14 57 53	
SPA IP 14 12 44		NOV 15 SBA EP 23 05 22 ES 07 47		NOV 17 H-00 48 57.0 22.2S 175.0W h ABOUT 33KM		MIR EP' 14 58 10	
NOV 14 MCQ IP 16 36 36				SBA EP 00 58 37		NOV 18 H-21 11 10.2 13.4S 166.6E h ABOUT 51KM	
SBA FP 16 41 35				WIL FP 00 59 28 EPP 01 08 13 FPS 17 48			

COAST AND GEODETIC SURVEY

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
MIR IP	21 22 25	BYR IP	04 19 34	NOV 22		MIR E(P)	17 15 22
	IP P 22 46		E 20 23	H-00 18 35.9		E	15 42
RYR EP	21 22 43	NOV 20		5.9S 107.9E		MAW EP	17 16 14
	F 22 53	MIR E(P)	06 11 04	h ABOUT 323KM		NOV 22	
NOV 18		NOV 20		WIL E(P)	00 28 12	H-18 57 02.5	
SRA EP	23 19 12	H-08 54 24.7		E(S)	36 06	21.05 67.9W	
	E(S) 21 04	17.5S 172.8W		MIR IP	00 28 20	h ABOUT 87KM	
NOV 19		h ABOUT 33KM		IS	36 14	SPA IP	19 08 01
MAW IP	10 19 49	SPA E	09 05 50	IsS	37 24	MAW IP	19 09 27
NOV 19		NOV 20		MAW EP	00 29 06	NOV 22	
MAW IP	10 32 51	H-11 59 58.5		SPA IP	00 30 33	SPA IP	21 56 58
NOV 19		22.2S 175.2W		NOV 22		NOV 23	
H-10 45 49.1		h ABOUT 33KM		WIL E(P)	00 27 12	H-04 58 52.0	
22.5S 171.3E		SRA EP	12 09 39	E(S)	36 06	15.0S 167.3E	
h ABOUT 36KM		E(S)	17 30	NOV 22		h ABOUT 116KM	
BYR IP	10 56 24	BYR E	12 10 25	H-03 24 36.3		HLL IP	05 08 29
MIR IP	10 56 27	WIL EP	12 10 26	6.1S 154.3E		BYR IP	05 10 07
MAW IP	10 57 34	SPA IP	12 10 54	h ABOUT 78KM		E	10 40
I	57 35	MIR EP	12 11 10	SPA IP	03 36 01	I	10 53
NOV 19		E(S)	21 19	NOV 22		NOV 23	
H-11 00 54.3		MAW FP	12 12 09	MIR E(P)	08 19 39	HLL EP	05 25 25
44.4N 149.2E		E P P	12 02	NOV 22		NOV 23	
h ABOUT 33KM		NOV 20		HLL EP	09 49 46	H-07 50 46.3	
MAW IP	11 19 49	MAW EP	12 29 42	NOV 22		30.1N 114.0W	
BYR IP	11 20 07	NOV 21		SPA IP	10 04 02	h ABOUT 14KM	
E	23 38	H-06 36 24.2		NOV 22		SPA IP	08 09 36
NOV 19		8.9S 117.8E		H-14 45 51.7		MAW EP	08 10 13
H-12 25 39.5		h ABOUT 33KM		44.4N 149.0E		MIR EP'	08 10 16
30.2S 60.8E		MAW FP	06 47 28	h ABOUT 33KM		NOV 23	
h ABOUT 33KM		SPA IP	06 48 38	MAW EP	15 04 57	SPA IP	15 10 22
MAW IP	12 32 51	NOV 21		BYR IP	15 05 06	NOV 23	
MIR IP	12 33 22	SPA EP	10 33 47	I	05 21	H-19 30 19.4	
NOV 19		NOV 21		SPA IP	15 05 08	20.2S 178.1W	
H-17 38 39.7		MAW EP	15 06 56	E	07 41	h ABOUT 515KM	
53.1N 159.6E		NOV 21		I	08 39	SPA IP	19 40 40
h ABOUT 40KM		H-18 42 44.8		NOV 22		E	42 36
RYR IP	17 58 02	13.8S 14.5W		SPA E	15 17 24	NOV 24	
NOV 19		h ABOUT 33KM		NOV 22		H-01 41 41.2	
H-18 17 02.2		SPA IP	18 54 32	HLL EP	16 14 38	17.1S 173.2W	
5.0S 102.2E		BYR IP	18 54 46	NOV 22		h ABOUT 33KM	
h ABOUT 37KM		NOV 21		H-16 15 54.0		MIR EP	01 52 14
MIR F(P)	18 27 35	HLL FP	19 50 12	10.4N 94.0E		EPP	52 31
F(S)	36 00	NOV 21		h ABOUT 33KM		ES	55 55
NOV 20		H-21 01 35.3		MAW P	16 28 05	NOV 24	
MAW IP	03 19 16	50.3N 156.4E		NOV 22		SPA IP	01 55 45
NOV 20		h ABOUT 80KM		H-17 03 38.9		NOV 24	
H-04 07 22.6		SPA EP	21 20 47	17.9S 172.8W		SPA I	02 00 45
5.5S 148.2E		NOV 21		h ABOUT 33KM		I	07 07
h ABOUT 201KM		HLL EP	23 41 10	BYR IP	17 14 26	I	08 11
MAW IP	04 19 26	NOV 21		WIL E(P)	17 14 38	NOV 24	
SPA IP	04 19 34	HLL EP	23 41 10	SPA IP	17 15 03	MIR EP	02 43 21

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
NOV 24 H-05 08 42.8 22.1S 175.6W h ABOUT 33KM		NOV 24 H-22 58 16.8 56.1S 27.5W h ABOUT 33KM		NOV 26 H-18 00 32.9 32.5S 71.2W h ABOUT 140KM		NOV 28 SBA EP 14 21 25	
MIR F(P) 05 19 55		SPA IP 23 05 01		SPA IP 18 10 10		NOV 28 H-15 07 50.8 12.1S 166.1E h ABOUT 33KM	
MAW IP 05 20 54 SP 25 34		BYR IP 23 05 14 E 06 44		NOV 26 H-22 50 08.9 16.6S 175.2E h ABOUT 33KM		HLL EP 15 17 56	
NOV 24 H-05 13 23.5 21.9S 175.8W h ABOUT 33KM		MIR IP 23 07 07		SBA EP 23 00 24 ES 08 50		SBA EP 15 18 33	
SPA IP 05 24 20 I 31 37		HLL EP 23 15 19		NOV 25 H-00 51 02.1 16.3S 174.6W h ABOUT 196KM		MIR IP 15 19 14	
NOV 24 H-06 16 09.2 21.9S 176.8W h ABOUT 33KM		NOV 25 H-00 51 02.1 16.3S 174.6W h ABOUT 196KM		BYR IP 23 01 17 I 01 39 E 03 25		BYR IP 15 19 32 I 19 40	
SPA IP 06 27 08		SPA IP 01 02 17		MIR EP 23 01 35		SPA IP 15 19 41 E 32 31	
NOV 24 MIR F(P) 06 18 53		NOV 25 MAW FP 01 58 11		SPA IP 23 01 39		MAW EP 15 20 17	
NOV 24 HLL EP 10 31 42		NOV 25 MAW FP 05 54 09		MAW EP 23 02 31 E(S) 12 54		NOV 28 H-15 13 11.0 52.2N 174.2E h ABOUT 33KM	
NOV 24 HLL EP 11 07 33		NOV 26 SPA IP 02 31 07		NOV 27 HLL EP 01 26 43		MAW IP 15 32 40	
NOV 24 SPA IP 11 24 12 I 34 33		NOV 26 H-02 58 34.7 26.9S 176.5W h ABOUT 46KM		NOV 27 H-02 19 41.9 16.6S 72.1W h ABOUT 79KM		NOV 28 BYR EP 16 56 04	
NOV 24 H-11 53 56.0 48.1N 148.0E h ABOUT 40KM		SBA FP 03 07 40		BYR IP 02 30 27 F 30 49		NOV 28 H-19 26 25.5 12.2S 165.9E h ABOUT 25KM	
SPA IP 12 11 28		SPA IP 03 09 00		SBA FP 02 31 44		SPA IP 19 38 20 E 40 59	
NOV 24 H-15 31 29.4 6.1S 147.6E h ABOUT 75KM		MIR IP 03 09 17		MAW IP 02 32 24		NOV 28 H-19 57 56.7 7.1S 129.4E h ABOUT 113KM	
SPA IP 15 43 52		MAW EP 03 10 19		NOV 27 MAW EP 09 34 58		MAW IP 20 09 26	
NOV 24 H-17 48 47.0 61.8N 149.5W h ABOUT 36KM		NOV 26 H-06 52 08.2 6.8S 129.6E h ABOUT 111KM		NOV 27 HLL EP 12 19 00		SPA IP 20 10 10 I 14 12	
SPA I 18 08 30		MIR EP 07 02 36		NOV 27 H-13 58 58.4 3.1N 126.6E h ABOUT 33KM		NOV 28 SBA EP 20 12 59	
NOV 24 H-18 09 08.7 46.4N 150.0E h ABOUT 40KM		MAW IP 07 03 39		MIR EP 14 10 48 E 11 09		BYR IP 20 13 59	
SPA F 18 28 10		SPA IP 07 04 23 E 14 23		MAW IP 14 11 22		MAW IP 20 14 21	
NOV 24 MIR F(P) 19 44 51		BYR EP 07 04 43		NOV 27 MIR EP 14 10 29		NOV 28 SPA EP 21 00 40	
NOV 24 HLL UP 20 49 21		NOV 26 HLL IP 07 24 06		NOV 27 NOV 27 BYR IP 17 50 49		NOV 28 SPA EP 22 10 18	
		NOV 26 SPA IP 07 50 32		NOV 28 HLL EP 02 11 17		NOV 28 HLL EP 22 15 46	
		NOV 26 H-08 47 17.0 7.1S 129.2E h ABOUT 117KM		NOV 28 SPA EP 09 22 03		NOV 29 MAW EP 04 18 26	
		MAW FP 08 58 45		NOV 28 MAW EP 12 18 12		NOV 29 SPA IP 05 15 03	
		SPA IP 08 59 30		NOV 28 HLL EP 12 44 50		NOV 29 SPA EP 06 35 59	
		NOV 26 SPA IP 17 50 27					

Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
NOV 29 H-10 21 53.0 12.2S 166.0E h ABOUT 54KM		NOV 30 MAW E(P) 20 03 34 DEC 1 SBA FP 03 32 23		DEC 2 H-13 37 25.1 44.4S 15.6W h ABOUT 33KM		SBA EP 21 40 49 WIL E(P) 21 40 58 SPA IP 21 42 02	
HLL FP 10 31 57		DEC 1 SPA E 03 53 54		SPA IP 13 45 45		DEC 3 SPA E 22 11 35	
SBA FP 10 32 33		DEC 1 H-04 26 12.8 56.1N 111.8E h ABOUT 33KM		DEC 2 SPA IP 21 17 20		DEC 3 H-23 03 41.6 22.4S 69.3W h ABOUT 18KM	
RYS IP 10 33 32 I 33 41		SPA IP 04 45 47		DEC 3 SPA IP 00 12 00		BYR IP 23 13 59 E 43 14	
SPA IP 10 33 46		BYR EP 04 46 02		DEC 3 SPA EP 05 51 33		SPA IP 23 14 39 E 23 03 I 29 13	
NOV 29 MIR FP' 16 28 49		DEC 1 H-08 50 41.8 38.3S 73.9W h ABOUT 55KM		SPA IP 07 25 57		SBA EP 23 15 23 E 15 31	
NOV 29 H-18 33 23.0 5.3S 151.6E h ABOUT 58KM		SPA IP 08 59 47		DEC 3 H-12 16 15.8 15.2S 173.2W h ABOUT 33KM		HLL IP 23 15 36 MAW EP 23 16 13	
SPA EP 18 45 50		DEC 1 HLL FP 09 27 09		SPA IP 12 27 54		WIL EP' 23 16 49 SpP' 16 59 EPP 17 53	
NOV 29 H-18 55 23.6 17.3S 178.4W h ABOUT 528KM		DEC 1 HLL IP 10 00 52		DEC 3 H-13 43 07.5 11.3S 167.4E h ABOUT 51KM		DEC 4 H-00 13 22.4 12.1S 166.1E h ABOUT 39KM	
SBA EP 19 04 47		DEC 1 H-11 52 52.9 4.6S 154.8E h ABOUT 479KM		SPA EP 13 55 14		SBA EP 00 24 05 E(S) 24 57	
SPA IP 19 05 59		SPA IP 12 04 39 E 06 26		DEC 3 H-17 12 01.6 2.2N 84.5W h ABOUT 56KM		SPA IP 00 25 17	
NOV 30 MAW EP 05 34 22		DEC 1 BYR IP 13 46 08 I 56 25		SPA IP 17 25 10		DEC 4 H-00 44 37.4 34.0S 179.3W h ABOUT 33KM	
NOV 30 HLL IP 08 40 16		DEC 1 SBA EP 15 37 44		DEC 3 SPA IP 17 49 18		BYR IP 00 53 45	
NOV 30 H-09 47 59.0 1.6N 128.4E h ABOUT 61KM		DEC 1 H-16 06 14.8 21.2S 68.4W h ABOUT 61KM		DEC 3 BYR IP 19 53 23		SPA IP 00 54 17 I 59 09	
MIR FP 09 59 37 IpP 59 44 ES 10 08 38		SPA EP 16 17 15 I 17 36		SPA IP 19 53 56		DEC 4 H-02 30 18.1 31.3N 55.4E h ABOUT 46KM	
MAW P 10 00 14		DEC 1 H-16 44 12.0 11.6S 167.0E h ABOUT 33KM		DEC 3 SBA EP 21 25 56 E(S) 34 25		SPA EP 02 49 04	
SBA EP 10 00 14 E 00 31		SPA IP 16 56 19		WIL E(P) 21 26 00 E(S) 34 39		DEC 4 H-02 53 42.1 4.8S 130.1E h ABOUT 33KM	
MAW FP 10 00 14		DEC 2 H-00 24 03.1 15.3S 173.7W h ABOUT 348KM		BYR IP 21 26 51 I 26 56 F 27 38		SPA I 03 06 15	
SPA IP 10 01 00		SPA EP 00 35 07		SPA IP 21 27 05		DEC 4 H-03 13 07.1 8.3S 83.1W h ABOUT 33KM	
BYR EP 10 01 19 I 01 36		DEC 2 H-05 16 42.2 54.9N 159.1E h ABOUT 110KM		DEC 3 H-21 30 05.7 12.0S 166.0E h ABOUT 40KM		SPA IP 03 25 31	
WIL F 10 07 58		SPA IP 05 36 02					
NOV 30 HLL FP 09 55 54							
NOV 30 MIR EP 09 59 21							
NOV 30 SPA IP 12 57 00							

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
DEC 4		h ABOUT 61KM		DEC 7		DEC 9	
H-04 21 22.6		MIR IP 02 08 09		SPA IP 09 37 07		HLL EP 02 01 49	
7.1S 80.4W		E 08 14					
h ABOUT 45KM		ES 17 23		DEC 7		DEC 9	
SPA IP 04 33 45		MAW IP 02 09 06		H-10 32 39.5		HLL EP 04 01 04	
DEC 4		SPA IP 02 09 09		20.8S 174.0E			
HLL EP 05 21 09		BYR IP 02 09 11		h ABOUT 33KM		DEC 9	
DEC 4		I 09 22		BYR EP 10 43 21		H-05 38 29.5	
SPA EP 07 41 02		E 10 06		MIR EP 10 43 33		54.9N 159.4W	
I 41 52				I 43 43		h ABOUT 45KM	
				E(S) 52 31		SPA IP 05 57 59	
DEC 4		DEC 6		DEC 7		DEC 9	
SPA E 07 55 26		H-04 12 48.7		SPA IP 10 58 45		H-10 53 39.4	
I 56 41		25.6S 68.6W				21.1S 178.0W	
DEC 4		h ABOUT 105KM		DEC 7		h ABOUT 435KM	
SPA EP 08 57 33		SPA IP 04 23 17		HLL IP 14 56 31		SBA EP 11 02 47	
DEC 4		MAW IP 04 24 50		DEC 7		F(S) 10 16	
HLL IP 12 21 01		DEC 6		H-17 37 25.6		WIL IP 11 03 26	
DEC 4		BYR EP 06 01 08		29.3S 178.5W		FPP 05 48	
SPA EP 13 05 45		SPA I 06 01 40		h ABOUT 209KM		IS 11 23	
DEC 4		DEC 6		BYR IP 17 46 43		BYR IP 11 03 30	
H-15 59 42.1		HLL IP 07 46 31		SPA IP 17 47 17		I 04 01	
35.5S 102.8W		DEC 6		MIR IP 17 47 28		SPA IP 11 04 00	
h ABOUT 33KM		MAW EP 08 06 42		DEC 7		MIR E(P) 11 04 08	
BYR EP 16 07 52		DEC 6		HLL EP 18 00 08		E _p P 05 03	
I 08 01		MAW FP 08 16 32		DEC 7		IS 12 49	
I 08 43		DEC 6		SPA IP 23 01 26		DEC 9	
SPA IP 16 09 07		MAW EP 09 18 19		DEC 8		H-12 22 42.0	
I 15 07		DEC 6		BYR IP 06 05 44		45.2N 151.2E	
SBA EP 16 09 18		H-18 14 32.1		DEC 8		h ABOUT 50KM	
ES 17 02		7.1S 80.5W		H-07 53 15.1		SPA EP 12 41 58	
WIL EP 16 11 25		h ABOUT 33KM		46.4N 153.0E		DEC 9	
IS 21 00		SPA IP 18 26 56		h ABOUT 20KM		SPA IP 16 34 16	
MIR F(P) 16 11 37		DEC 6		BYR EP 08 12 33		DEC 9	
F(S) 21 19		SPA IP 19 52 24		SPA EP 08 12 34		SPA IP 16 35 36	
DEC 4		DEC 6		DEC 8		BYR IP 16 35 50	
SBA F(P) 19 55 34		SBA FP 22 44 53		HLL EP 08 46 38		DEC 9	
E(S) 56 30		DEC 7		DEC 8		H-19 17 49.6	
DEC 5		MAW FP 03 39 06		H-10 49 19.2		25.2S 179.5E	
H-04 23 22.2		DEC 7		11.9S 166.0E		h ABOUT 533KM	
35.7S 103.1W		H-04 07 52.8		h ABOUT 44KM		SPA FP 19 27 37	
h ABOUT 33KM		22.1S 179.4W		MIR F(P) 11 00 54		DEC 10	
BYR EP 04 31 33		h ABOUT 546KM		BYR IP 11 01 01		H-03 31 21.1	
SPA IP 04 32 46		BYR IP 04 17 30		SPA EP 11 01 16		6.2S 128.1E	
MIR E(P) 04 35 15		SPA IP 04 17 59		DEC 8		h ABOUT 366KM	
ES 45 05		MIR EP 04 18 04		SPA EP 16 53 49		MCO EP 03 41 12	
DEC 5		F _p P 18 50		DEC 8		MIR E(P) 03 41 24	
H-11 29 49.4		E(S) 26 22		SPA EP 17 22 10		E _p P 42 44	
7.4N 77.3W		MAW FP 04 19 02		DEC 8		IS 49 34	
h ABOUT 33KM		AIA FP 04 19 06		SPA EP 21 53 58		WIL EP 03 42 15	
SPA IP 11 43 21				DEC 9		F _p P 42 58	
F 50 06				HLL EP 01 34 50		IS 48 49	
DEC 6						SBA EP 03 42 21	
H-01 56 42.8						ES 51 26	

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		h m s			h m s			h m s			h m s
SPA	EP	03 43 09	DEC 11			DEC 11			DEC 13		
	I	53 00	H-00 47 48.3			SPA	IP	17 27 35	H-21 10 21.0		
	I	15 45	15.1S 173.6W			AIA	EP	17 27 45	3.5S 140.1E		
HLL	EP	03 43 10	h ABOUT 33KM			MAW	EP	17 27 48	h ABOUT 44KM		
BYR	IP	03 43 31	HLL	EP	00 57 40	DEC 12			SPA	IP	21 23 00
	I	44 53	SBA	EP	00 58 18	HLL	EP	04 30 26	BYR	IP	21 23 10
DEC 10			E	58 35	DEC 12				DEC 14		
H-06 30 54.8			E(S)	01 07 09	DEC 12			H-00 05 39.8			
58.1S 26.4W			BYR	IP	00 58 55	SPA	IP	06 39 34	2.3S 61.2W		
h ABOUT 110KM			WIL	IP	00 59 01	DEC 12			h ABOUT 36KM		
AIA	IP	06 35 12	IPCP	59 19	MIR	E(P)	09 11 20	SPA	IP	00 18 25	
	I	35 49	ES	01 08 14	DEC 12			DEC 14			
	E	38 31	SPA	IP	00 59 28	HLL	IP	15 22 49	H-01 45 13.8		
SPA	IP	06 37 13	MAW	EP	01 00 36	DEC 12			17.9S 178.3W		
	I	42 14	DEC 11			AIA	EP	16 42 27	h ABOUT 550KM		
	I	47 27	BYR	E	01 27 17	E	44 23	SPA	IP	01 55 45	
BYR	IP	06 37 29	DEC 11			DEC 12			I	57 46	
	I	40 04	H-02 31 19.4			H-17 59 23.3			DEC 14		
MAW	EP	06 38 05	17.8S 178.6W			32.4S 69.0W			H-07 35 21.6		
SBA	EP	06 38 53	h ABOUT 537KM			h ABOUT 51KM			2.8S 140.8E		
	F	39 36	HLL	EP	02 40 01	SPA	IP	18 09 11	h ABOUT 33KM		
	E(S)	45 16	BYR	IP	02 41 22	DEC 12			SPA	IP	07 48 05
MIR	IP	06 39 21	I	43 16	DEC 12			DEC 14			
	E	40 05	SPA	IP	02 41 51	HLL	IP	21 38 33	H-07 51 07.9		
	E(S)	46 06	MIR	IP	02 41 56	DEC 12			62.7N 149.5W		
HLL	EP	06 39 33	I	42 02	H-22 26 42.2			h ABOUT 95KM	BYR	IP	08 10 28
WIL	I(P)	06 39 54	E	42 18	19.8S 174.1W			SPA	EP	08 10 48	
	EP	40 31	MAW	IP	02 42 53	h ABOUT 33KM			I	10 53	
	IS	47 07	DEC 11			SPA	EP	22 37 53	I	11 13	
DEC 10			SPA	IP	02 43 48	DEC 12			DEC 14		
H-07 26 36.5			E	50 29	BYR	IP	23 47 07	DEC 13	SPA	IP	12 30 33
8.7S 79.8W			DEC 11		DEC 13			H-04 16 13.5	DEC 14		
h ABOUT 33KM			SPA	IP	04 08 25	H-06 54 46.4			HLL	EP	12 37 19
SPA	EP	07 38 51	DEC 11		DEC 11			2.7S 78.4W	DEC 14		
DEC 10			HLL	IP	09 01 49	H-11 12 30.3			h ABOUT 109KM		
H-14 42 11.2			DEC 11		H-11 12 30.3			SPA	EP	04 28 49	DEC 14
7.1S 155.5E			DEC 11		24.2S 179.3E			DEC 13	DEC 14		
h ABOUT 88KM			HLL	IP	09 01 49	h ABOUT 33KM		H-06 54 46.4	H-15 06 04.9		
SPA	EP	14 54 29	DEC 11		DEC 11			15.9S 168.2E	7.1S 155.7E		
	E	15 00 59	H-11 12 30.3		HLL	IP	09 29 38	h ABOUT 33KM	h ABOUT 95KM		
DEC 10			24.2S 179.3E		DEC 13			SPA	IP	15 18 21	
H-14 49 42.6			h ABOUT 540KM		H-06 54 46.4			DEC 14	SPA	IP	16 38 17
18.1S 68.5W			WIL	E(P)	11 22 00	15.9S 168.2E		DEC 14	DEC 14		
h ABOUT 79KM			SPA	IP	11 22 23	h ABOUT 33KM		H-19 13 53.3	H-19 13 53.3		
BYR	IP	15 00 21	DEC 11		DEC 13			22.8S 70.5W	h ABOUT 48KM		
	I	00 53	AIA	EP	14 48 59	H-12 15 19.9		h ABOUT 48KM	SPA	IP	19 24 45
	E	50 12	I	49 05	I	49 05		DEC 15	DEC 15		
DEC 10			I	50 22	DEC 13			HLL	HLL		
HLL	EP	16 10 54	BYR	EP	14 53 10	HLL	EP	09 29 38	EP	02 03 14	
DEC 10			SPA	EP	14 53 37	DEC 13			DEC 15		
HLL	EP	16 48 22	DEC 11		DEC 13			SPA	IP	07 44 48	
			MIR	E(P)	15 36 07	HLL	EP	20 01 20	DEC 15		
					DEC 13			SPA	IP	15 13 19	
					HLL	EP	20 01 20	E	E	17 26	

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
DEC 15		DEC 16		DEC 17		DEC 18	
H-17 32 37.2		H-06 27 23.8		H-10 19 10.0		MIR I(P) 18 14 33	
9.4S 124.1E		17.4S 167.9E		6.5S 146.8E			
h ABOUT 33KM		h ABOUT 33KM		h ABOUT 33KM		DEC 19	
MAW EP 17 43 48		SPA IP 06 38 51		MIR E(P) 10 30 22		SBA EP 06 59 44	
DEC 15		DEC 16		SPA IP 10 31 39		DEC 19	
SPA EP 18 33 38		H-13 47 56.4		BYR IP 10 31 42		HLL EP 07 18 36	
DEC 15		37.1N 20.9E		DEC 17		DEC 19	
H-19 34 45.5		h ABOUT 15KM		H-13 52 30.5		SPA IP 12 57 08	
4.8S 108.0E		SPA IP 14 07 00		45.6N 151.7E		DEC 19	
h ABOUT 650KM		DEC 16		h ABOUT 33KM		H-17 04 07.8	
WIL IP 19 44 03		BYR IP 14 09 52		BYR IP 14 09 52		9.7S 79.1W	
IP 44 38		DEC 16		DEC 17		h ABOUT 56KM	
IS 51 33		H-14 18 04.9		HLL EP 15 13 41		BYR IP 17 15 33	
MIR IP 19 44 08		49.1S 127.1E		DEC 18		SPA P 17 16 15	
IPP 46 11		h ABOUT 33KM		H-00 30 02.6		SBA EP 17 16 55	
FS 51 40		WIL IP 14 22 27		24.8S 176.6W		F 17 24	
MCQ IP 19 44 22		IS 26 00		h ABOUT 46KM		FS 27 12	
MAW IP 19 44 53		MIR IP 14 23 23		HLL IP 00 38 42		DEC 19	
ES 53 10		E _p P 23 56		SBA EP 00 39 24		MIR E(P) 17 38 41	
HLL IP 19 45 37		ES 27 51		E 40 18		DEC 19	
SBA IP 19 45 48		SBA EP 14 24 35		ES 47 00		H-20 33 50.1	
E 46 13		MAW EP 14 25 07		WIL IP 00 40 09		35.2S 68.0W	
ES 54 55		ES 30 48		IP 40 33		h ABOUT 32KM	
SPA EP 19 46 16		SPA IP 14 25 46		IS 48 18		BYR IP 20 42 38	
I 48 32		BYR IP 14 26 26		BYR IP 00 40 09		SPA I 20 43 19	
BYR IP 19 46 50		I 28 16		SPA IP 00 40 42		I 50 53	
I 49 16		AIA EP 14 28 47		MIR IP 00 40 56		MAW EP 20 45 05	
I 56 20		DEC 16		IP 41 41		MIR E(P) 20 45 44	
AIA IP 19 52 05		H-15 18 34.8		IS 49 42		DEC 19	
I 54 39		15.2S 173.7W		DEC 18		MAW EP 20 40 05	
E 57 25		h ABOUT 33KM		AIA IP 00 41 49		DEC 20	
DEC 15		SPA IP 15 30 14		ES 41 13		H-00 23 50.2	
AIA F 20 01 04		MAW IP 15 31 22		DEC 18		8.6S 160.4E	
F 03 24		DEC 16		MAW EP 00 45 16		h ABOUT 69KM	
DEC 15		H-16 06 35.2		ES 51 42		MIR EP 00 35 15	
MAW EP 20 12 43		6.5S 105.3E		DEC 18		E 35 29	
DEC 16		h ABOUT 46KM		WIL IP' 01 09 20		BYR IP 00 35 52	
MAW EP 02 30 43		MAW FP 16 17 27		DEC 18		DEC 20	
DEC 16		SPA IP 16 19 00		MCQ IP 01 36 52		H-08 57 17.8	
MAW EP 03 25 50		BYR IP 16 19 37		DEC 18		7.0S 129.3E	
DEC 16		DEC 16		SPA EP 02 09 44		h ABOUT 103KM	
H-04 16 43.0		H-16 41 09.5		DEC 18		MCQ EP 09 06 24	
6.3S 105.5E		1.6S 78.0W		SPA IP 07 14 16		MIR EP 09 07 44	
h ABOUT 63KM		h ABOUT 170KM		HLL EP 07 18 26		E 07 57	
SPA EP 04 29 06		SPA IP 16 53 16		DEC 18		MAW EP 09 08 48	
DEC 16		DEC 17		H-12 21 50.1		BYR IP 09 09 52	
H-05 08 14.8		H-08 33 22.6		29.9S 177.2W		DEC 20	
5.0S 133.8E		h ABOUT 383KM		h ABOUT 130KM		H-10 48 04.2	
h ABOUT 39KM		SPA IP 08 42 30		SPA IP 12 31 47		5.2S 80.8W	
MAW EP 05 20 13						h ABOUT 55KM	
SPA IP 05 20 48							

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h m s		h m s		h m s		h m s	
BYR IP	10 59 54	DEC 21		DEC 24		DEC 25	
DEC 20		H-13 09 09.6		H-11 18 15.2		HLL IP	13 59 56
H-15 49 44.9		16.1N 119.7E		13.1S 166.7E		DEC 25	
12.8S 66.0E		h ABOUT 49KM		h ABOUT 61KM		HLL IP	15 29 10
h ABOUT 33KM		WIL EP	13 21 30	MCO IP	11 26 02	DEC 26	
MAW EP	15 59 13	IP	21 40	HLL IP	11 28 11	H-01 30 51.7	
MIR E(P)	15 59 26	ES	35 54	WIL IP	11 28 48	5.1S 102.3E	
BYR IP	16 02 31	MIR IP	13 21 43	IP	29 09	h ABOUT 40KM	
DEC 20		IP	22 31	E(S)	36 57	MAW EP	01 41 48
H-16 24 05.1		ES	32 02	MIR IP	11 29 31	E	41 58
12.7S 66.3E		DEC 21		BYR IP	11 29 47	BYR IP	01 44 00
h ABOUT 33KM		BYR EP	18 45 09	IS	30 13	DEC 26	
BYR IP	16 36 51	DEC 22		MAW EP	11 30 17	HLL IP	03 18 26
DEC 20		MCO IP	07 01 22	EP	30 35	DEC 26	
H-16 46 14.4		DEC 22		DEC 24		WIL E(P)	03 40 28
12.6S 66.4E		H-11 57 27.4		HLL EP	11 40 13	DEC 26	
h ABOUT 33KM		6.1S 146.9E		DEC 24		H-03 58 51.6	
MAW EP	16 55 02	h ABOUT 102KM		HLL EP	11 43 13	39.2N 114.2W	
DEC 20		MIR E(P)	12 08 45	DEC 24		h ABOUT 33KM	
MAW EP	16 55 12	BYR EP	12 09 52	HLL EP	11 43 13	HLL EP	04 14 59
DEC 20		DEC 22		DEC 24		DEC 26	
MAW EP	20 00 38	HLL EP	12 50 40	MCO IP	18 01 20	HLL EP	04 35 41
DEC 20		DEC 22		ES	01 30	DEC 26	
MAW IP	21 12 33	DEC 22		DEC 24		MAW EP	06 56 06
DEC 21		H-13 35 38.2		MAW EP	19 48 59	DEC 26	
MCO EP	04 34 06	34.9S 173.9E		DEC 24		H-07 58 22.4	
DEC 21		h ABOUT 82KM		H-21 05 54.6		76.5N 22.4E	
SRA EP	06 59 44	MIR I(P)	13 42 51	h ABOUT 33KM		h ABOUT 33KM	
WIL EP	07 01 37	BYR E	13 44 40	MCO IP	21 06 17	MAW EP	08 17 58
BYR IP	07 01 40	DEC 22		HLL EP	21 10 24	DEC 26	
DEC 20		HLL EP	15 59 24	SRA EP	21 11 17	H-16 23 54.2	
WIL EP	07 06 14	DEC 22		ES	15 50	1.4N 126.7E	
DEC 20		MCO EP	16 04 00	WIL EP	21 11 40	h ABOUT 65KM	
MCO IP	07 09 03	DEC 22		EPCP	12 10	MIR E(P)	16 35 11
ES	09 20	HLL EP	19 13 18	ES	16 20	E	35 26
DEC 21		DEC 23		BYR IP	21 13 00	MAW EP	15 36 06
MCO IP	10 18 40	HLL EP	05 42 10	E	14 19	DEC 26	
DEC 21		DEC 23		MAW EP	21 14 08	MAW EP	17 45 35
H-12 34 22.7		MCO IP	12 19 57	DEC 25		DEC 26	
21.2S 175.8W		DEC 23		HLL EP	07 36 46	MAW EP	17 46 35
h ABOUT 90KM		H-13 52 34.8		DEC 25		DEC 27	
BYR IP	12 44 47	5.3S 144.9E		HLL EP	07 51 52	HLL EP	02 59 47
I	45 10	h ABOUT 65KM		DEC 25		DEC 27	
WIL I(P)	12 44 49	BYR EP	14 05 09	H-09 00 02.7		HLL EP	03 28 40
F(S)	53 22	DEC 24		52.0N 172.1W		DEC 27	
MIR IP	12 45 34	MCO IP	01 15 16	h ABOUT 45KM		HLL EP	03 50 25
EP	46 18	DEC 24		MAW EP	09 19 45	DEC 27	
ES	54 46	HLL EP	06 36 24	DEC 25		H-05 21 37.8	
		DEC 24		MIR E(P)	12 49 00	15.1S 175.2W	
		HLL EP	06 36 24	DEC 25		h ABOUT 33KM	
				HLL IP	13 45 16	BYR IP	05 32 47

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Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)	Date and Station	Phase (GCT)
h m s		h m s		h m s		h m s	
DEC 27 BYR EP	06 41 06	AIA EP	09 15 02	DEC 29 BYR IP	23 06 12	DEC 31 H-19 16 54.9 17.4S 174.2W h ABOUT 80KM	
DEC 27 HLL EP	07 30 47	DEC 28 SBA E(P)	09 17 36	DEC 30 MCQ IP	07 43 17	SBA EP	19 27 05
DEC 27 H-09 45 47.6 8.3S 156.5E h ABOUT 33KM		DEC 28 SBA E(P)	09 17 38	DEC 30 MIR E(P)	12 01 57	MAW EP	19 29 26
BYR EP	09 58 00	DEC 28 H-17 58 33.1 60.4S 51.8W h ABOUT 49KM		DEC 30 AIA EP	13 49 17		
DEC 27 HLL EP	11 44 19	AIA IP	18 00 18	DEC 30 MCQ IP	15 15 14		
DEC 27 HLL FP	13 30 17	IPP	01 56	MIR E(P)	15 16 10		
DEC 27 MIR I	20 47 30	ES	05 55	I	16 33		
DEC 28 MCQ IP	02 45 54	BYR IP	18 04 15	BYR EP	15 18 05		
IS	46 04	E	09 02	DEC 30 MAW EP	17 45 00 51 01		
DEC 28 H-04 35 07.8 20.2S 177.9W h ABOUT 507KM		HLL EP	18 05 28	DEC 30 H-22 06 07.1 6.9N 94.7E h ABOUT 64KM			
SBA EP	04 44 15	SBA EP	18 06 05	MAW EP	22 17 59		
DEC 28 MCQ IP	04 54 08	ES	12 18	DEC 31 BYR EP	08 49 21		
DEC 28 H-05 45 20.2 5.1S 153.5E h ABOUT 70KM		MAW EP	18 06 35	DEC 31 H-10 21 52.3 19.1S 178.1W h ABOUT 609KM			
HLL EP	05 55 42	MIR IP	18 07 29	BYR IP	10 31 42		
WIL IP	05 56 13	EPP	09 37	DEC 31 H-17 37 32.1 56.5S 26.0W h ABOUT 30KM			
IPCP	56 34	ES	14 42	AIA EP	17 42 08		
IS	06 05 06	WIL IP	18 08 49	E	45 57		
SBA EP	05 56 44	ES	15 15	E	48 20		
E	57 08	DEC 29 MIR E(P)	03 10 27	BYR IP	17 44 28		
ES	06 06 12	DEC 29 H-11 52 42.1 6.1S 148.9E h ABOUT 86KM		MAW EP	17 45 00		
MIR IP	05 56 47	BYR IP	12 05 07	ES	51 01		
E(P)	57 32	E	16 21	SBA IP	17 45 52		
IS	06 06 17	DEC 29 H-15 00 24.0 20.7S 178.4W h ABOUT 534KM		E	46 09		
BYR IP	05 57 45	BYR IP	15 10 09	E(S)	52 30		
I	58 04	DEC 29 MCQ EP	15 57 55	MIR IP	17 46 18		
DEC 28 H-09 03 52.9 32.7S 178.9W h ABOUT 33KM		ES	58 04	EPP	48 13		
HLL EP	09 11 36	DEC 29 H-17 15 39.2 18.5S 69.7W h ABOUT 113KM		IS	53 19		
SBA EP	09 12 14	BYR IP	17 26 12	WIL IP	17 46 51		
E	12 20	WIL E(P)	17 28 54	MCQ EP	17 48 39		
ES	18 58	SBA EP	17 30 31	DEC 31 AIA E	18 13 52		
BYR IP	09 13 08			E	15 36		
MIR IP	09 13 55						
E(P)	14 30						
IS	21 56						