

UNIVERSITETET I BERGEN
JORDSKJELVSTASJONEN
(Seismological Observatory)

Seismological Bulletin
Kirkenes, Norway
Jan. 1968 — May 1969

By
Atle Austegard and Per Optun

BERGEN — NORWAY 1970

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KIRKENES (KRR) NORWAY

Latitude: 69° 43' 27" N
 Longitude: 30° 03' 45" E
 Elevation: 25 meters
 Foundation: Gneiss-granite.

The station is part of the World-Wide Standardized Seismograph Network. The station has a three-component (Z, NS and EW) short-and long period system as follows: -

Instrument	Period sec		Magnification	Damp. ratio
	T _g	T _s		
SP Benioff	0.75	1	25.000	17 : 1
LP Sprengnether	100	15	1.500	critical

The arrival time given for each phase is the earliest onset of that phase on any component. The logarithm of the amplitude/period ratio, log (A/T) is given when it is possible. The amplitude A (in microns) is calculated from the vertical short-period component as the maximum center to peak ground motion within the first few cycles of the initial arrival of P or PKP. The predominant period T (in seconds) of the phase is read where A is observed.

The readings have been punched on cards according to the codes given by the International Seismological Centre in Edinburgh. This bulletin is a reproduction of a print-out of these cards. The character '*' in front of a letter indicates lower case of that letter. A letter 'C' or 'D' following the arrival time of the P/PKP phase indicates an apparent compression or dilatation of that phase on the SPZ-component. Some columns on the punched cards have been used for remarks. Usually the remark gives the epicenter or region assumed in the interpretation. Most epicenters quoted are determinations done by U.S. Coast & Geodetic Survey, Bureau Central International de Seismologie, Uppsala Seismological Institute, or they are epicenters worked out at Bergen.

The station was closed down in May 1969 because the owner of the vault wanted the place for other purposes.

KIRKENES (KRR) SEISMIC STATION BULLETIN - 1968

1968	P/PKP	S/SKS	SUPP. 1	SUPP. 2	SUPP. 3	LOG	REMARKS
MTH DY	M S	M S	PHASE M S	PHASE M S	PHASE M S	A/T	
JAN 3	04 11 26.2D	13 20	I 11 43				72,3N 6,5E
JAN 3	07 40 10	42 20					72,2N 1,2E
JAN 4	01 07 30.7C	15 18	I 07 34	SS 19 20	LQ 22 04		52,2N 171,3W
JAN 6	10 28 51.4C		*PP 29 20				45,8N 26,6E
JAN 6	15 24 10		*PP 24 18				16,4N 92,1E
JAN 6	23 42 38	54 44	PKP 46 08	PP 47 34	SKKS 57 16		27,8S 71,1W
JAN 7	03 53 10.1C						49,8N 78,0E
JAN 7	11 23 17	32 04					33,5N 141,6E
JAN 8	03 34 52.6C						13,7S 171,5E
JAN 8	10		E 07 18				
JAN 11	17 07 54.5C						6,9N 126,1E
JAN 12	04 28 42.8D						13,4N 93,1E
JAN 19	18 26 08.2C		PCP 26 27	PP 28 37			NEVADA
JAN 26	05		SS 18 00	PKKS 20 28			8,8S 120,4E
JAN 29	21 01 49.3D	09 36	I 01 57				56,4N 153,6W
JAN 29	22 48 03.7D						43,0N 147,1E
JAN 30	01 40 09.2C						43,3N 146,8E
JAN 30	01 58 22.6C	06 32					43,3N 147,7E
JAN 30	C2 48 07						43,3N 147,7E
JAN 30	03 11 38.9C		I 11 42				43,1N 147,2E
JAN 30	03 33 36.7C						43,3N 147,4E
JAN 30	03 56 36.6D		*PP 58 46				6,1S 113,3E
JAN 30	04 20 32.5C						43,1N 147,1E
JAN 30	06 18 27.0D						43,5N 147,1E
JAN 30	08 24 47.8D						36,4N 70,7E
JAN 30	18 44 57.6D		*PP 45 07				43,0N 147,2E
JAN 31	11 54 32.7		*PP 54 38				29,9N 92,1E
JAN 31	22 08 21.1D						43,0N 147,8E
FEB 1	12 57 16.5D						43,2N 146,9E
FEB 1	19 12 05.8C		*PP 12 15				42,9N 147,0E
FEB 3	05 49 03	59 27	PP 52 22	SS 05 16			16,7N 99,4W
FEB 3	15 53 07.3C	03 20					16,6N 93,5W
FEB 4	09 20 19.1C		*PP 20 31				43,2N 147,2E
FEB 4	11 10 46.4D	18 40	I 10 49	*PP 10 59	PPP 14 20		43,0N 147,1E
FEB 4	11 16 17						43,1N 147,0E
FEB 7	00 33 51.8C						2.3 21,6N 142,9E
FEB 7	08	55 06					43,6N 127,3W
FEB 7	22 34 50.4						
FEB 9	13 28 00.5						45,6N 26,4E
FEB 10	10 09 44.7C		*PP 10 09				2.1 46,0N 152,3E
FEB 10	17 11 12.1C						34,1N 78,5E
FEB 11	07 01 03						52,8N 170,9W
FEB 11	20 46 37.4D						34,2N 78,6E
FEB 12	05 58 49.4C	09 34	PP 03 20	PS 12 24			5,5S 153,2E
FEB 12	10 25 22.5D						38,1N 17,8E
FEB 13	02 26 05.9D						5,5S 131,1E
FEB 15	02 53 31.1D						52,2N 171,4W
FEB 16	01 19 49.4						9,2N 126,4E
FEB 16	14 32 05.1C						49,7N 147,7E
FEB 18	20 22 22.0C						13,8N 145,4E
FEB 19	22 51 58.2D	56 44	I 52 02	I 52 07	I 01 40		39,4N 25,0E
FEB 20	00 00 01.8D						39,4N 25,4E
FEB 20	02 28 07.2D						39,6N 25,4E
FEB 20	02 31 25.6D						12,4N 46,9W
FEB 20	05 15 22.2D		I 15 30				58,4N 151,7W
FEB 21	09 11 20.2C						4,0S 128,5E
FEB 21	12 47 19.7D						7,0N 126,8E
FEB 21	15 41 16.6D						NEVADA
FEB 21	21 17 47.8C		PCP 18 38				51,4N 176,0W
FEB 22	02 21 27						44,4S 167,6E

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1968 MTH DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
FEB 22	02	22 50.5C						39,6N 25,7E
FEB 23	11	12 12.1D						18,8N 145,3E
FEB 23	19	46 14.6C						18,7N 145,2E
FEB 24	12	59 47.3D						ALBANIA
FEB 24	13	05 13						8,7N 94,0E
FEB 24	13	28 58.4D						45,8N 26,6E
FEB 24	15	35 10.0D						34,2N 139,2E
FEB 24	15	44 56						34,1N 139,2E
FEB 24	17	00 27						34,2N 139,2E
FEB 25	10	35 03.0C					2.1	45,0N 142,2E
FEB 25	15	47 42.4D						36,8N 5,6E
FEB 25	18	18 06.5C		PP 18 58				51,4N 176,0W
FEB 25	20	10 46.4C						37,6N 141,4E
FEB 26	11	01 24.6C	10 29	I 01 29	PPP 05 48			22,7N 121,5E
FEB 26	11	29 26.2D						
FEB 26	13	48 35.4D						42,0N 142,2E
FEB 27	03	03 53.9C						42,9N 147,0E
FEB 27	05	31 39.3C	42 08	*PP 31 51				12,2N 140,7E
FEB 27	11	07 15.0C	17 40					12,1N 140,6E
FEB 28	12	18 08.1D		*PP 19 24	PP 20 35			32,9N 137,7E
FEB 29	04	07 46						52,8N 171,2E
FEB 29	23	54 36						14,6S 167,2E
MAR 2	22	14 35.8C		*PP 14 44				6,1S 71,4E
MAR 3	09	39 09.7D						34,7N 72,3E
MAR 3	23	07 46.0C	17 54	*PP 09 24	PPP 13 38	PS 19 58		1,6N 122,6E
MAR 5	00	31 51.1D						53,8N 163,3W
MAR 5	00	40 37.7D						53,8N 163,3W
MAR 5	18	29 02.0D	39 20					9,6N 126,3E
MAR 5	18	43 25.1C						9,6N 126,2E
MAR 5	18	50 27.8C					2.2	9,6N 126,2E
MAR 6	16	59 48.4C						48,3N 146,3E
MAR 7	03	05 09.7D						35,6N 140,0E
MAR 7	07	24 01.5C	26 10	I 27 00				71,5N 4,3W
MAR 7	07	30 24.1C						71,6N 3,5W
MAR 7	13	36 30	47 16	PP 40 48	PS 50 12	SS 56 08		5,9S 151,1E
MAR 8	19	59 53						9,4N 126,5E
MAR 9	00	57 28.9C		I 57 36				8,7N 94,0E
MAR 10	03	59 12.0C		I 59 23				52,1N 177,3W
MAR 10	07		22 24	I 28 04				39,0N 24,2E
MAR 10	07	30 45.8D						36,3S 179,4E
MAR 11	08	45 21.5C	52 16	PP 47 06	PS 57 10			16,2S 173,9W
MAR 11	18	34 44.1C						52,1N 178,2E
MAR 17	20	27 24.6D						3,4N 128,1E
MAR 18	07			SKP 43 45				23,2S 179,8W
MAR 22	09	27 49.8D	38 18				1.8	13,1N 145,5E
MAR 22	15	11 15.7D						NEVADA
MAR 22	20	45 09.2C	53 36	*PP 45 15	SS 57 32			37,4N 142,4E
MAR 23	17		37 08	I 41 56				39,8N 25,5E
MAR 25	11			PG 30 26				70,8N 8,7E
MAR 26	00	54 22.6D					2.1	6,6S 116,1E
MAR 26	19	53 07.5D	03 24	I 53 09	*PP 53 31			8,1N 126,3E
MAR 28	01	20 09.4C						15,1N 92,1W
MAR 28	07	46 28.7						37,9N 20,9E
MAR 29	22	49 20.6						72,8N 7,0E
MAR 31	08	31 46.0D						11,4N 125,3E
MAR 31	17	24 31.7C						5,0S 102,5E
APR 2	08	32 26						45,1S 166,8E
APR 3	16	34 22.7C	42 16	*PP 34 33				51,7N 174,2E
APR 4	01	53 18.2D						24,6N 66,0E
APR 5	11	50 03						64,2N 148,9W

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1968 MTH DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
APR 5	19	40 45.8D						56,8N 151,5W
APR 5	22	15 54						30,2N 137,0E
APR 6	22	57 47.3D						51,4N 176,6E
APR 7	02	57 54.9						38,5N 141,8E
APR 7	04	50 00.2C	57 52	I 50 03	*PP 50 16			51,5N 176,5E
APR 7	05	19 38		I 19 40	I 19 47	PP 19 55		81,5N 3,9W
APR 9	02	40 39.1C	50 16	I 40 43	PP 43 24	SS 55 08		33,1N 116,1W
APR 9	11	45 28						17,8S 178,2W
APR 11	01	46 27						18,0N 145,7E
APR 11	06	55 07						42,5N 131,0E
APR 14	13	15 52.0D	24 38	*PP 16 03	PP 18 16	SCS 25 47		33,4N 141,4E
APR 14	14	37 30.0D						6,8N 73,0W
APR 17	09	19 33	25 3P					35,2N 3,7W
APR 17	09	58 07.9						36,3N 71,4E
APR 17	13	18 32						28,4N 139,2E
APR 17	13	18 52.4C		PP 20 24				36,4N 71,5E
APR 20	10	26 00.6C	32 28	I 26 04	SS 29 50			38,3N 26,6W
APR 20	12	44 08		PP 45 52	PPP 48 40	SS 02 58		15,7S 172,6W
APR 21	08	44 18.1C	52 40	I 44 34	PP 46 38	PPP 48 08	1.9	38,6N 143,0E
APR 21	08	45 08.4D						JAPAN
APR 23	06	52 37.5D					1.9	36,3N 71,2E
APR 23	12	47 57.3C	54 32	SS 58 04				27,7N 56,7E
APR 23	20	38 22.5D	45 44	*PP 38 28	PP 40 27			58,7N 150,0W
APR 24	03	16 18.8D						5,1S 68,3E
APR 24	08	24 19.1C	29 20	PP 25 25	I 34 24			39,3N 24,9E
APR 24	10	42 10						49,8N 78,1E
APR 25	21			PKKP 54 22	SS 03 06			15,2S 173,1W
APR 26	01			PKKP 11 18	SS 19 56			15,3S 173,1W
APR 26	03	05 27.3C						35,1N 50,2E
APR 26	15	11 15.5C		PCP 11 33	PP 13 47		2.2	37,3N 116,5W
APR 26	18	00 37.7	11 20	PS 12 06	PKKS 21 40			18,7N 103,3W
APR 28	04	28 38.6C	37 10	*PP 28 49				44,8N 174,5E
APR 29	17	08 17.1	13 28	I 08 25	PP 09 30	I 21 04		39,2N 44,3E
MAY 1	00	10 23.1D						38,4S 71.1W
MAY 1	04	44 33.3	55 08					2.9S 127.9E
MAY 1	08		02 28	PCP 54 03	SS 06 28			38.6N 143.0E
MAY 2	05	41 17.5D	50 54	*PP 41 39	*SP 41 48			18.7N 69.6W
MAY 2	23	39 31.8	50 42	S 51 48	SS 57 36			6.3S 129.9E
MAY 3	05	43 36.3C	52 28	*PP 44 04	SCS 53 22			25.1N 124.5E
MAY 3	16	23 19.6						54.1N 163.2W
MAY 4	03	31 39.7C						29.7N 137.9E
MAY 5	09	24 02.5C		I 24 13			2.1	39.2S 174.7E
MAY 6	14	50 20						14.6N 90.8W
MAY 6	20	56 58.4D					2.0	36.4N 70.8E
MAY 7	09	13 03		*PP 13 53				6.7N 73.0W
MAY 8	11	19 54						58.0S 157.7E
MAY 8	12		36 48	SSS 43 50				43.5N 127.8W
MAY 8	22	52 25.2D						37.0N 71.9E
MAY 9	14	32 41.0C						34.1N 136.7E
MAY 9	18	15 38.4D						16.2N 93.4W
MAY 10	15		29 10					24.3N 121.9E
MAY 11	12			E 19 17				41.0N 49.8E
MAY 11	13	47 45.5C						28.7S 63.0W
MAY 11	15		58 14					6.4S 147.3E
MAY 13	02	52 17.6C	57 20	PP 52 49			1.9	43.5N 40.3E
MAY 14	02	48 41						36.1N 70.9E
MAY 14	14	15 30.8C	24 00	I 15 32	SS 25 01			29.9N 129.3E
MAY 15	08	03 53	14 16	*PP 04 03				15.8S 25.9E
MAY 15	15	19 52.9		SS 40 28				29.7S 179.0W
MAY 16	00	59 01						40.8N 143.2E

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1968 MTH DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
MAY 16	01	14 56.0C						40.7N 143.1E
MAY 16	04	45 00.4D						41.4N 142.3E
MAY 16	06	46 50.3D		*PP 47 01			2.0	41.0N 142.9E
MAY 16	07	38 15.7						JAPAN
MAY 16	07	58 58.1C						41.3N 142.6E
MAY 16	08	56 42.3D						40.8N 143.0E
MAY 16	09	08 11.5C		*PP 08 23			2.0	41.4N 142.7E
MAY 16	10	48 58.5D						41.4N 142.6E
MAY 16	12	19 33.2D						41.0N 142.9E
MAY 16	12	44 20.9						41.6N 142.6E
MAY 16	13	59 46						JAPAN
MAY 16	14	12 39						41.4N 142.2E
MAY 16	14	13 18						JAPAN
MAY 16	15	02 29.7C						41.3N 143.4E
MAY 16	15	30 22.0						41.4N 142.9E
MAY 16	16	02 27						JAPAN
MAY 16	16	23 55.4C		*PP 24 05	PP 26 06		2.1	39.6N 143.5E
MAY 16	16	32 02.7D						39.7N 143.5E
MAY 16	17	38 10.6						41.4N 143.0E
MAY 16	18	53 18.4C		*PP 53 33	PP 55 26		2.3	40.7N 142.1E
MAY 16	19	26 43.1C		*PP 26 56				41.3N 142.3E
MAY 16	19	53 51						41.7N 142.5E
MAY 16	19	57 43.1C						12.5N 141.6E
MAY 16	20	32 12.0D					2.0	41.4N 142.6E
MAY 16	21	13 23		*PP 13 32				41.2N 142.4E
MAY 16	21	35 58						40.9N 143.0E
MAY 16	23	15 01.2		I 15 04	I 15 06			39.8N 143.0E
MAY 17	00	01 45.5						JAPAN
MAY 17	05	29 45.2						39.5N 143.3E
MAY 17	06	34 47.8C		*PP 34 57				39.0N 143.4E
MAY 17	09	11 52.6						41.2N 142.6E
MAY 17	10	52 55.5C						39.6N 143.3E
MAY 17	15	03 21.6		*PP 03 30				39.5N 143.6E
MAY 17	16	12 30.2		*PP 12 43				40.5N 144.0E
MAY 17	18	27 16.7C						39.6N 143.0E
MAY 17	22	46 19		*PP 46 29				40.5N 143.6E
MAY 18	08	08 09.5D						54.1N 164.6W
MAY 18	14	17 46.4C						41.5N 142.5E
MAY 19	04	23 10.7						35.6N 141.7E
MAY 19	16	56 47.5D						36.3N 53.3E
MAY 19	22	26 48.9						46.8N 143.1E
MAY 20	03	26 28.6C						39.9N 143.9E
MAY 20	07	03 41.6C		*PP 03 51				40.2N 143.7E
MAY 20	07	32 24.7		PKS 35 59				30.9S 178.3W
MAY 20	10	43 46.4C						48.8N 154.7E
MAY 20	12	03 08						51.9N 158.4E
MAY 20	20	25 05.5		I 25 08	PP 27 52			30.7S 178.3W
MAY 20	20	39 40.8C						30.9S 178.1W
MAY 20	21	19 32.1C						44.8N 150.2E
MAY 21	00	29 21.5						44.8N 150.1E
MAY 21	04	06 13.6C					1.7	38.9N 65.1E
MAY 21	04	21 25.3C		*PP 21 37				41.0N 143.5E
MAY 21	08	29 48.3D		*PP 29 57				44.9N 150.1E
MAY 21	11	03 38						20.1N 122.0E
MAY 21	11	10 33.8						44.7N 150.2E
MAY 21	11	13 42.3D						45.0N 150.0E
MAY 21	15	20 11.6						41.4N 142.8E
MAY 21	18	57 17						44.8N 150.3E
MAY 22	11	01 49.4	09 50	*PP 02 03	PS 10 17		2.0	41.5N 142.7E
MAY 22	19	39 28.2C	47 36	*PP 39 41		PS 48 00		40.2N 142.2E

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1968 MTH DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
MAY 22	21	23 35						2.9N 126.5E
MAY 23	17	43 52.3C						41.6S 171.9E
MAY 24	06	41 47	43 26					77.0N 12.1E
MAY 24	11	26 47.2C						53.2N 163.1W
MAY 24	14	16 24.8C	24 32	I 16 31	PP 18 31	SS 28 26	2.1	40.9N 143.0E
MAY 24	15	20 15						71.6N 2.3W
MAY 24	15	56 17.1D	05 54	*PP 58 32	S 06 40			6.8S 118.8E
MAY 24	18	00 29.2D		I 00 31	I 00 36			41.8S 171.8E
MAY 24	21	17 02.6C		I 17 05				41.8S 172.0E
MAY 24	21	46 29.1C		I 46 33				54.1N 169.3E
MAY 25	00	35 33.8						40.8N 41.9E
MAY 25	02	30 35						42.1S 171.8E
MAY 25	12	03 02.9C	11 14	*PP 03 12	SS 15 18		1.9	40.0N 143.0E
MAY 25	14	29 08						38.8N 142.9E
MAY 26	00	08 52.8C						42.0S 171.8E
MAY 26	04	14 52						0.3S 123.9E
MAY 26	17	51 42.9						40.0N 142.2E
MAY 26	23	09 21						40.7N 143.2E
MAY 27	06	27 56						39.6N 143.2E
MAY 27	18	44 44.0						29.6N 80.4E
MAY 28	09	25 52						30.9S 177.8W
MAY 28	13	40 54.1C		I 40 59	I 41 11	PP 45 05	1.8	2.9S 139.3E
MAY 28	22	39 31.4C	47 16				2.1	52.1N 172.8E
MAY 30	01	18 37.8C		I 18 42				27.8N 54.0E
MAY 30	04	44 33.7D						41.8S 171.9E
MAY 30	05	33 36.8D		*PP 33 50	PPP 37 06			44.6N 150.2E
MAY 30	17	47 10.6	52 40	I 47 17	PP 48 38			35.4N 27.9E
MAY 30	20	00 54.7		I 00 58				29.7N 51.2E
MAY 30	20	01 46						30.9S 177.6W
MAY 31	03	10 19						29.9N 80.0E
JUN 1	10	41 51.5C					2.1	40.1N 142.2E
JUN 2	06	38 05						44.2N 147.2E
JUN 3	08	42 27.7						35.9N 141.3E
JUN 3	14	25 45.1C					2.1	45.7N 148.3E
JUN 4	01	51 05.8					1.3	37.5N 49.1E
JUN 4	06	57 26.7D		PP 58 53			1.6	32.7N 48.3E
JUN 4	13	30 55					1.4	27.6N 139.7E
JUN 4	15	20 04						41.9N 142.5E
JUN 4	15	40 46						41.4N 142.6E
JUN 4	17	26 15		I 26 19	I 26 37			22.5N 121.4E
JUN 5	13	01 46.4						11.1N 122.0E
JUN 5	13	02 53.0					1.8	41.8S 172.0E
JUN 5	15	21 09						5.0N 125.1E
JUN 5	23	15 09.3		*PP 15 20	PCP 16 22		1.5	52.2N 174.3E
JUN 6	18	31 21.7						40.6N 142.3E
JUN 6	19	55 47.9D	05 27	I 55 57			1.4	14.9N 119.9E
JUN 6	21	27 11.3	35 15	E 27 25				41.3N 142.6E
JUN 6	23	01 44.8		PCP 02 38				44.5N 148.1E
JUN 7	12	10 35	21 04	I 10 46	PP 13 54	PPP 15 54		1.8S 120.1E
JUN 7	21	44 06	54 24	PP 47 37	PS 56 06			2.1S 120.5E
JUN 8	00	45 33.3		*PP 45 44				87.0N 51.3E
JUN 8	05	39 36		SCS 49 40				43.4N 147.1E
JUN 8	20	16 54.5C						
JUN 8	20	59 21.7C					1.5	26.3N 124.4E
JUN 8	21	04 41.1		*PP 04 51				41.5N 142.3E
JUN 8	23			E 43 19	PP 44 06	PKS 46 42		48.8S 31.5E
JUN 9	01	02 58		I 02 59				39.0N 46.0E
JUN 9	09			SKP 38 12				24.1S 178.5E
JUN 9	10	34 14						14.6N 92.0W
JUN 9	18	09 11.1						41.4N 142.6E

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JUN 9	19			E 26 10				HINDU KUSH
JUN 10	12	50 12.5	57 34	*PP 50 54			1.5	56.3N 161.6W
JUN 11	03	12 10.8						49.8N 78.2E
JUN 12	13	51 59.4C	00 20	*PP 52 08			2.1	39.5N 142.7E
JUN 12	14			I 27 46				
JUN 12	14	48 22		*PP 48 32				39.4N 142.8E
JUN 12	15	02 07.3		*PP 02 18				39.9N 143.1E
JUN 12	15	19 03						39.5N 143.0E
JUN 12	15	34 03		*PP 34 14				39.4N 143.1E
JUN 12	15	59 11.1D					1.6	39.3N 143.0E
JUN 12	16	33 28.4						39.5N 143.1E
JUN 12	17			*PP 33 36				39.5N 143.1E
JUN 12	18	02 13.4D		*PP 02 23			1.4	39.1N 142.9E
JUN 12	18			*PP 59 11				39.4N 142.8E
JUN 12	19	05 57.5D					1.4	39.6N 143.2E
JUN 12	20	29 07.3						0.6S 132.8E
JUN 12	22	07 52.1D	16 08	*PP 08 02	PP 10 01	SS 19 58	1.8	39.3N 142.8E
JUN 12	23	38 11.1C	47 48	*PP 38 48	PP 41 10			13.8N 120.7E
JUN 13	00	15 12.1		I 15 24	I 15 34	PCP 15 53	1.4	39.5N 143.0E
JUN 13	02	15 55.2D	24 12	*PP 16 04			1.7	39.4N 142.8E
JUN 13	07	47 38		PP 51 46				0.3S 91.5W
JUN 13	12	06 35.2D	14 54	I 06 38			1.6	39.2N 143.0E
JUN 13	15	06 27.0C		I 06 41			1.3	39.4N 142.9E
JUN 13	21	20 46.4C	29 02	*PP 20 56	PCP 21 24	SS 32 54	1.7	39.4N 142.9E
JUN 13	23	11 51		I 12 10				29.7N 51.5E
JUN 14	00	56 16						39.7N 142.5E
JUN 14	01	24 43.8						42.6N 132.7E
JUN 14	03	28 27.5	36 46	SS 40 40				39.4N 142.8E
JUN 14	06	15 14.1						39.4N 142.9E
JUN 14	19	23 02.6C		I 23 08			1.9	41.9S 171.9E
JUN 14	22	51 08						51.7N 159.4E
JUN 15	03	41 30.2C		*PP 41 36	PP 43 35			39.3N 142.8E
JUN 15	05	24 03.2D					1.7	14.4N 92.9W
JUN 15	06	09 44		I 10 11				27.0N 126.5E
JUN 15	07	21 59.4D	32 36					5.6N 82.6W
JUN 15	11	36 49.8C		I 36 55	*PP 37 02		2.0	51.7N 159.4E
JUN 15	13			E 28 30	PP 32 37	PS 41 43		0.3S 91.1W
JUN 15	13			E 53 21				18.3S 167.9E
JUN 15	14	11 15.6		I 11 25	PCP 11 35		1.8	NEVADA
JUN 15	20	03 02.8					1.7	41.9N 142.7E
JUN 15	21		49 00	PS 52 07	SS 57 38			0.1S 91.4W
JUN 16	02	39 20.6		I 40 15				18.6N 145.4E
JUN 16	04			PP 05 08	PS 14 14	SS 19 44		0.2S 91.3W
JUN 16	07			PP 31 16	PS 40 22	SS 45 52		0.2S 91.2W
JUN 16	16			PP 38 16	PS 47 23	SS 52 53		0.4S 91.4W
JUN 17	02			PP 32 54	PS 41 59	SS 47 29		0.7S 91.8W
JUN 17	04	37 39.3						22.4N 121.4E
JUN 17	04			PP 46 20	PS 55 26			0.2S 91.5W
JUN 17	05	05 16						40.9N 48.2E
JUN 17	06	34 07.8C					1.5	37.4N 72.3E
JUN 17	08	09 40.7						14.4N 92.9W
JUN 17	12	02 58.9C	11 06	I 03 00	*PP 03 14	PPP 06 30		41.0N 143.0E
JUN 17	17	06 24.1C	14 37	*PP 06 31			1.7	40.1N 143.7E
JUN 17	19	07 47		*PP 07 56	I 08 05			38.7N 143.6E
JUN 17	22			PP 23 43	PS 32 48	SS 38 16		0.4S 91.1W
JUN 18	05	33 15.6C		I 33 44			1.5	45.7N 8.1E
JUN 19	01	48 27		*PP 48 37				39.5N 142.9E
JUN 19	05	12 11.1C					1.8	50.0N 79.1E
JUN 19	08	27 26	38 07	I 27 30	PP 31 32			5.6S 77.2W
JUN 19	20	17 21.7					1.7	43.9S 75.1W

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JUN 20	18	22 22						41.4N 142.6E
JUN 21	01	37 22.2						15.4N 92.1W
JUN 21	17	22 27						72.2N 1.3E
JUN 21	19	02 43						29.9N 142.7E
JUN 22	00	47 05						56.0S 27.5W
JUN 22	01	22 39.6C	30 52	*PP 22 48	PP 24 50	SCS 32 28	1.9	40.3N 143.7E
JUN 23	09	24 05.6C	30 16	I 24 08	PP 25 41	SS 32 56		29.8N 51.2E
JUN 23	17	03 12.4D	10 47					56.7N 152.4W
JUN 25	23	43 30.8C	51 47	*PP 43 40	PP 45 41	SS 55 36	1.5	39.6N 143.4E
JUN 26	01	53 23	02 29	*PP 53 30				40.1N 124.4W
JUN 26	02	02 03						29.8N 51.1E
JUN 26	02	02 33.1						
JUN 26	10	33 41.4C	41 40	I 33 53	PCP 34 33		1.7	42.1N 142.7E
JUN 27	17	21 59.3C						40.3N 142.3E
JUN 27	22	22 36						6.1N 120.9E
JUN 28	09	40 37						39.9N 143.0E
JUN 28	14	34 05						40.5N 143.4E
JUN 30	09	48 08.3C	58 34	*PP 48 30			2.0	13.0N 145.2E
JUN 30	20		44 57					17.9N 105.8W
JUL 1	04	07 09		I 07 10				47.9N 48.0E
JUL 1	10	55 32.4C	03 54				2.5	36.0N 139.3E
JUL 1	19	21 51.7						43.9N 79.2E
JUL 2	03	57 27.9C	07 54	I 57 30	*PP 57 49	SCS 08 32		17.6N 100.2W
JUL 2	04	50 08						29.7S 177.9W
JUL 2	18	53 44.3						2.6S 138.9E
JUL 2	22	23 26.7		*PP 23 37				26.0N 128.5E
JUL 2	22	52 55.9						52.6N 171.1E
JUL 4	00	44 39						34.8N 139.7E
JUL 4	07	22 09						43.9N 147.2E
JUL 4	21	54 22.8	59 38	I 55 43				37.8N 23.2E
JUL 5	00	56 54.8C	06 36					34.1N 119.7W
JUL 6	14	13 33		I 13 36				40.9N 117.3W
JUL 6	17	36 21.7D	46 39	*PP 36 26			1.7	9.7N 126.4E
JUL 6	17	40 44		I 40 52				
JUL 6	17	47 14						KERMADEC ISL
JUL 6	19	42 41.3					1.8	6.3S 133.8E
JUL 6	20	17 39.7						9.6N 126.2E
JUL 7	00	33 26	35 02					76.2N 10.6E
JUL 7	03	44 44.9		I 44 47				41.8S 171.9E
JUL 7	13	26 26	34 42					39.3N 142.8E
JUL 7	14	45 07						34.2N 119.8W
JUL 7	14					PKS 46 04		22.2S 175.1W
JUL 7	17	02 55	13 16	I 03 08				9.8N 126.1E
JUL 7	21	46 28.1D	56 46	I 46 39				9.5N 126.4E
JUL 8	00	28 40						40.7N 143.1E
JUL 8	08	11 43.2						42.5N 144.4E
JUL 8	11	35 34.4						27.9N 56.9E
JUL 8	13	21 42.1D					1.7	38.0N 67.5E
JUL 8	17	23 15.6	29 32	PP 24 52	SS 32 30			29.7N 51.1E
JUL 8	17	48 00.0C						34.4N 25.1E
JUL 8	21	36 02.4C	45 16				1.6	28.8N 142.4E
JUL 9	03	26 25.0D						10.3N 126.5E
JUL 9	03	44 53						21.6N 142.8E
JUL 9	08	16 20						39.4N 142.7E
JUL 9	09	44 06.8						42.5N 144.4E
JUL 10	00	53 28	04 02					10.5N 138.6E
JUL 10	11		43 08	SKKS 43 46				36.8S 78.5E
JUL 10	20	50 37.7D	58 48	*PP 50 45				40.1N 143.2E
JUL 12	00	54 47.7D	03 01	I 54 52	*PP 54 57	SCS 04 36		39.5N 143.1E
JUL 12	04	06 38.4D	14 54	*PP 06 47				39.5N 143.1E

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JUL 12	10	41 51						29.7N 50.6E
JUL 12	16	52 52						39.8N 142.8E
JUL 13	13	26 08						12.2N 143.5E
JUL 16	19	16 25.2						9.5N 126.2E
JUL 17	05	38 01	48 35					8.7S 125.0E
JUL 17	22	34 09.0						56.3N 153.9W
JUL 18	00	39 22						2.4N 128.3E
JUL 18	11	31 06.9	39 20					40.2N 143.6E
JUL 18	17	31 56						8.9N 93.9E
JUL 19	05	07 54.2	17 16	*PP 08 03				8.6N 93.5E
JUL 19	06	18 48.3						8.9N 93.7E
JUL 20	08	02 46.9D						21.5N 142.9E
JUL 20	08	29 22						39.4N 73.8E
JUL 21	00	36 24						14.4N 93.1W
JUL 21	06		17 00	PP 10 33	E 19 31			3.2S 150.7E
JUL 21	18	38 38.1						27.8N 140.0E
JUL 21	21	10 54						49.6N 147.8E
JUL 22	00	23 44						42.3N 142.3E
JUL 22	05	28 15		I 28 28	PP 30 19			54.6S 1.7E
JUL 22	18	17 26.6		*PPKP 17 37	PP 19 11			20.0S 169.0E
JUL 22	22	43 57.9D						30.3N 138.3E
JUL 23	18	19 27.5		*PP 19 36				39.9N 143.3E
JUL 23	18	40 45.1	51 24					18.7N 106.9W
JUL 23	23	12 43.8C	20 56	SCS 22 32				40.2N 143.3E
JUL 24	04		30 08					18.1N 106.0W
JUL 25	07	42 16.6C		I 42 21	I 42 27	PKS 46 00		30.7S 178.3W
JUL 25	11	00 10.6D	08 00	*PP 00 20				45.7N 146.7E
JUL 26	06	46 48.1	57 20	PS 58 38				14.3N 93.0W
JUL 27	02	52 35.1	58 04					35.4N 27.8E
JUL 27	17	51 27						52.5N 170.5W
JUL 28	03	34 20						52.8N 167.1W
JUL 28	07	27 03						41.1N 142.6E
JUL 28	21	21 41	29 00					55.4N 166.5E
JUL 29	06	34 33.1						52.8N 167.0W
JUL 29	07	46 12.9D						52.8N 166.9W
JUL 29	11	31 08		PP 33 19	PKS 34 31			22.5S 175.0W
JUL 30	04	29 20		PP 31 29	PKS 32 43	PS 18 15		22.4S 175.0W
JUL 30	20	52 40	03 18	PP 56 52	PS 06 08			6.9S 80.5W
JUL 31	06	49 45						52.0N 173.0E
JUL 31	10	54 26.7						80.0N 6.2E
JUL 31	19	36 11						35.5N 28.0E
AUG 1	14	31 05.5C						39.1N 29.8W
AUG 1	18	37 21.1D						39.9N 139.1E
AUG 1	20	31 03.4C	40 40				2.2	16.5N 122.2E
AUG 1	20	46 25.8						LUZON
AUG 1	20	54 51.9C						16.4N 122.4E
AUG 1	21	26 47.3						15.7N 121.8E
AUG 1	23	18 35.7						LUZON
AUG 2	13	38 40.6C	45 17				2.3	27.5N 60.9E
AUG 2	14	19 23.5C		I 19 25			2.1	16.5N 97.6W
AUG 2	17	24 51						56.9N 151.5W
AUG 3	05	05 38.4D	14 42	*PP 05 53			2.9	25.6N 128.4E
AUG 3	06	36 47.6C	46 26	*PP 36 56			2.8	16.4N 122.3E
AUG 3	14	10 23		PP 12 17				25.8N 62.7E
AUG 3	15	50 22.1		*PP 50 33				15.5N 122.0E
AUG 3	16	03 33.6						16.0N 122.3E
AUG 3	19	30 46.3D	40 28				1.6	16.3N 122.4E
AUG 4	02	16 26.1						16.6N 122.4E
AUG 4	08	16 59.5		I 17 03				16.5N 122.4E
AUG 4	11	53 54.8C	04 22	I 53 57	*PP 54 25	PP 57 24	2.1	73.2N 6.3E

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AUG 5	16	27 30.6C	35 56	PP 30 04		PCS 32 18		33.2N 132.1E
AUG 5	16	55 54.5						17.2N 92.5W
AUG 6	00	22 34.3						26.6N 44.6W
AUG 6	02	45 04					1.7	33.4N 132.2E
AUG 6	03	18 10.2D						16.6N 122.3E
AUG 6	03	28 11.4						16.1N 121.8E
AUG 6	04	31 27.5						33.4N 132.1E
AUG 6	05	04 49.0		*PP 04 56				15.7N 121.9E
AUG 6	08	44 29.6C						13.9N 51.4E
AUG 7	08	10 01.8C						43.0N 144.6E
AUG 8	05	05 35.3C	14 06	I 05 43		PS 14 26		36.3N 141.4E
AUG 8	14	19 31						16.0N 122.0E
AUG 9	03	27 07						22.4S 113.0W
AUG 9	10	47 55						43.4N 22.7S
AUG 9	21	45 55.5C						61.6S 57.9W
AUG 10	00	45 15	46 52					76.7N 10.4E
AUG 10	01	07 03						76.0N 5.5E
AUG 10	02	20 05.0C		I 20 12			2.2	1.4N 126.2E
AUG 10	02	37 41						
AUG 10	02	56 31.0D					1.8	MOLUCCA PAS
AUG 10	04	00 44.4D						01.3N 126.3E
AUG 10	04	00 44.4D						1.3N 126.3E
AUG 10	04	15 27.7C						1.3N 126.4E
AUG 10	04	34 39						36.8N 43.0E
AUG 10	04		00 43	I 59 15				75.9N 8.6E
AUG 10	04	18 51.5D		*PP 19 01				1.3N 126.5E
AUG 10	06	04 43.0C		*PP 04 57			1.9	1.4N 126.1E
AUG 10	08	23 16.6C		*PP 23 30			1.9	1.6N 126.2E
AUG 10	10	18 53.9C						1.6N 126.3E
AUG 11	12	46 54.2C	54 32	*PP 47 33			2.0	52.0N 179.9W
AUG 11	20	13 45.1	24 12	PP 17 20	S 24 40			1.5N 126.1E
AUG 12	13	56 46.3C					1.6	1.6N 126.2E
AUG 12	18	26 29.7C						31.4S 177.8W
AUG 12	20	41 46		I 41 48				41.4N 142.6E
AUG 13	03	05 50.8C					2.0	1.9N 126.2E
AUG 13	09	15 48.2						1.8N 126.4E
AUG 13	19	53 57.2						15.5S 167.5E
AUG 14	01	22 35.5						55.5N 162.0E
AUG 14	08	08 29.1C						15.0N 122.4E
AUG 14	08	51 23.4D						18.5N 102.8W
AUG 14	22	27 15.7C		I 27 20				1.6N 119.7E
AUG 15	02	36 29.8						35.2N 26.7E
AUG 15	05	18 18.7D						1.6N 126.2E
AUG 15	21	38 57						0.1N 120.0E
AUG 16	10	49 34.2C	58 00	PP 51 48	SCS 59 28	SS 01 56		38.5N 143.3E
AUG 16	11	52 11.6		PKS 55 34				21.0S 179.2W
AUG 16	18	38 33.1						16.7N 97.6W
AUG 16	21	37 17.7						18.4N 102.9W
AUG 17	04	13 36.8C	24 04	*PP 13 45	S 24 36			1.3N 126.3E
AUG 17	04	48 54.6		*PP 49 13				31.6N 140.8E
AUG 17	13	41 51.6						1.8N 126.1E
AUG 17	14	52 14.5						4.7S 103.2E
AUG 17	19	00 29						2.1N 126.7E
AUG 18	05	56 59.2						1.3N 126.3E
AUG 18	07	22 43.4C						35.2N 135.3E
AUG 18	12	04 41.3						48.1N 157.3E
AUG 18	14	28 32		*PP 28 41				26.4N 90.6E
AUG 18	18	52 15.1C	02 03	PKP 56 07	PKKP 06 58	SKKS 03 17		10.1S 159.8E
AUG 18	19	09 50.0C						1.1N 126.1E
AUG 19	17	14 41.3C		*PP 14 52				11.8N 125.6E

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MTH DY HR	M S	M S	PHASE M S	PHASE M S	PHASE M S	A/T	
AUG 20 03	34 22						31.1S 179.8E
AUG 20 04	12 09						50.0N 77.9E
AUG 20 11	30 14.8D						5.5N 146.8E
AUG 21 18	16 10						30.8S 179.0W
AUG 22 14	09 32.2C	17 09	*PP 09 41	PS 17 32			53.0N 171.0E
AUG 22 16	38 17						19.0S 169.0E
AUG 22 16	51 19.6C						52.7N 171.0E
AUG 22 20	01 54						52.7N 171.2E
AUG 23 06	54 42						15.7N 121.8E
AUG 23 22	54 25	01 24	SP 03 56	E 02 06	SS 10 17		21.9S 63.5W
AUG 25 00	11 57.7C						1.3N 126.3E
AUG 25 09	17 38.8C	25 52					40.0N 143.2E
AUG 25 09	23 56						40.1N 143.2E
AUG 26 18	30 57.1						36.4N 70.7E
AUG 27 13	58 32						12.2N 144.2E
AUG 28 20	54 06.1D	03 52	*PP 54 14				15.5N 122.0E
AUG 29 21	19 51.4C						15.8N 121.7E
AUG 29 22	56 15.8						NEVADA
AUG 30 02	54 58.6D						40.0N 142.7E
AUG 30 06	31 29.2C						1.4N 126.2E
AUG 30 22	12 09	20 06					14.6N 56.3E
AUG 31 10	55 09.5C	00 42	I 55 14	I 55 24	I 55 31		33.9N 59.0E
AUG 31 11	42 01.5		PP 43 28				33.9N 59.2E
AUG 31 14	13 46.4						34.0N 59.4E
SEP 1 05	46 10.5D		PP 46 22				39.0N 46.0E
SEP 1 07	34 57.6C	41 28	I 35 01	PP 36 24	SS 43 30		34.0N 58.2E
SEP 2 16	16 42.4						9.7N 126.3E
SEP 3 05	33 21.9D						42.9N 145.2E
SEP 3 07	11 49		*PP 12 08	I 12 20			37.9N 141.7E
SEP 3 08	25 46.6	30 30	I 25 49				41.8N 32.3E
SEP 3 10	01 17		PP 02 49				33.8N 59.2E
SEP 3 11	02 11						41.8N 32.4E
SEP 3 15	48 20		I 48 40				20.6N 62.2W
SEP 3 18	55 41.1		*PP 55 57	PP 57 14			36.2N 69.2E
SEP 3 19	10 07						1.0N 28.2W
SEP 3 22	32 32.4D						29.3N 139.3E
SEP 4 04	13 33						6.9S 129.0E
SEP 4 08	16 12.3		PP 17 39				33.9N 59.2E
SEP 4 11	27 04		I 27 07				39.9N 59.1E
SEP 4 17	10 16	11 04	I 10 20	E 11 11			66.8N 23.5E
SEP 4 23	32 14.7	38 10	PP 33 42				34.0N 58.2E
SEP 5 04	12 10.0C						49.8N 78.1E
SEP 5 06	45 31.5						3.6N 125.6E
SEP 6 02	35 04.6						34.0N 59.3E
SEP 6 14	11 15.9C						37.1N 116.0W
SEP 6 19	33 26.3C	42 07	*PP 33 39				31.0N 131.9E
SEP 8 00	35 32						17.6S 167.7E
SEP 8 02	11 23.7						45.4N 142.7E
SEP 8 13			SKP 26 52				58.2S 26.6W
SEP 8 15	26 12.9	36 54	PP 30 23	PS 39 27			3.7S 143.0E
SEP 8 19	56 49		*PP 57 18				0.6N 121.9E
SEP 8 20	19 35						46.0N 151.4E
SEP 9 00	51 32	01 58	PP 55 44	PKS 59 32	S 03 00		8.7S 74.5W
SEP 9 02	28 02.6D		I 28 06				66.1N 142.1E
SEP 9 02	53 25						17.5S 167.8E
SEP 9 05	03 52.5		PCP 05 12				59.0N 149.2W
SEP 9 09	56 53.4	59 00					79.5N 3.8E
SEP 10 05	15 48.5						15.2N 93.3E
SEP 10 17	25 22.9C		PP 26 32				36.3N 70.8E
SEP 10 20	39 31		I 39 44				34.0N 59.4E

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1968	P/PKP	S/SKS	SUPP. 1	SUPP. 2	SUPP. 3	LOG	REMARKS
MTH DY HR	M S	M S	PHASE M S	PHASE M S	PHASE M S	A/T	
SEP 10 21	35 50.2		*PP 36 22	I 36 34			18.6N 145.8E
SEP 10 22	26 28						14.3N 92.9W
SEP 11 18	45 52		PP 48 29	SS 06 27			43.0S 75.2W
SEP 11 19	24 40.4D	30 43	I 24 43				33.9N 59.4E
SEP 12 13	46 40.0C						39.7N 143.6E
SEP 12 15	44 17.6						39.8N 77.8E
SEP 12 23	02 03.0		I 04 28	PKS 05 27	PPP 07 20	2.4	21.6S 179.4W
SEP 13 01	10 11						41.3N 142.4E
SEP 13 07	43 26						15.1N 93.9W
SEP 14 13	56 32.3D	02 56	*PP 56 42	PP 58 18	SS 05 58	2.6	28.4N 53.1E
SEP 14 19	28 23.7C		*PP 28 33				28.4N 53.2E
SEP 15 11	00 15.7C	08 23	I 00 27				40.9N 143.2E
SEP 15 14	24 24						37.2N 72.7E
SEP 16 14	09 40		PP 13 55				6.1S 148.7E
SEP 18 07	44 41.3D						37.2N 71.9E
SEP 19 22	20 39						28.4N 53.2E
SEP 20 06	12 06.8	22 05	PP 15 11	SS 17 22			10.7N 62.7W
SEP 21 13	15 50.7C	23 47	*PP 16 09				42.2N 142.6E
SEP 22 09	32 14		*PP 32 21				15.7N 121.9E
SEP 23 05	13 56	22 09	SS 25 55				40.3N 143.5E
SEP 24 03	44 56	53 10	SS 56 53				40.3N 143.7E
SEP 24 04	26 13		I 26 16				39.2N 40.2E
SEP 25 07	22 36.8						46.4S 166.8E
SEP 25 10	51 05.5	01 21	I 51 12	*PP 51 32	SS 06 56	2.3	15.6N 92.6W
SEP 26 00	54 03.4C		*PP 54 12	PP 55 30		2.0	33.7N 69.9E
SEP 26 14	56 24.2C		PP 58 28	SKP 59 24	PKS 59 44	2.3	20.9S 177.0W
SEP 26 18	19 27		PKP 22 08	I 22 14			30.5S 178.2W
SEP 27 04	12 24.0	22 46	I 13 18	PP 16 33	S 23 33	2.4	6.8S 129.1E
SEP 27 10	45 11.7D		*PP 45 37	PP 46 31		1.9	37.8N 72.3E
SEP 27 17	00 28		PP 03 17				30.7S 178.2W
SEP 27 19		31 42	PP 24 53				3.7S 143.3E
SEP 28 10	06 33.0D						15.9N 122.6E
SEP 28 14		18 24	PP 12 31	SKS 19 18	SKKS 19 50	1.7	13.2S 76.4W
SEP 29 03	49 09.9C						49.8N 78.2E
SEP 29 13	39 48						1.6N 126.2E
OCT 2 05	20 26.5						27.2N 14.1E
OCT 3 08	18 14.5C						3.7S 128.4E
OCT 3 11	18 25.8						51.6N 174.1W
OCT 4 00	49 56						41.6N 142.7E
OCT 4 06	23 41		SKP 26 53				56.2S 27.0W
OCT 6 07	53 36.7						10.0N 93.7E
OCT 7 19	30 54.8D	39 32					26.2N 140.5E
OCT 7 19	57 38.8						26.3N 140.8E
OCT 7 20	58 54.5C		I 58 57	*PP 59 03			42.0N 142.4E
OCT 8 00	00 19.6D						15.5N 146.8E
OCT 8 01	01 05.4D						35.5N 139.9E
OCT 8 08			PS 13 00				39.8S 87.7E
OCT 10 15			PPS 33 36				6.0S 148.6E
OCT 12 19	35 39.2C		SKP 38 06				20.8S 178.7W
OCT 12 23	27 35.6D						36.4N 70.8E
OCT 14 03	17 40		SKKS 26 40				31.5S 116.9E
OCT 14 07	39 25		*PP 39 36				22.4N 144.3E
OCT 15 02	22 54.9C						0.5S 100.6E
OCT 15 20	21 32	31 50	I 21 35				8.9N 126.2E
OCT 19 00	33 04						1.5N 126.1E
OCT 19 07	09 02						37.3N 73.1E
OCT 19 09	59 33.3C						37.4N 73.3E
OCT 20 07	19 15.7D	28 12	I 19 21				24.9N 122.4E
OCT 23 21	18 32		PP 22 36				3.3S 143.2E
OCT 24 04	27 38.1C						0.3N 99.7E

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1968 MTH DY	HR	P/PPK M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
OCT 26	19	26 35.9						52.3N 169.5W
OCT 27	13	54 47.7D						5.8N 125.5E
OCT 28	14	51 21.2C		*PP 51 37				33.4N 140.7E
OCT 28	23	51 06.5		I 51 08	*PPKP 51 22	PKKP 01 48	2.0	12.4S 166.4E
OCT 29	04	17 04.9C					2.0	31.1N 141.6E
OCT 29	06	56 13						31.1N 141.6E
OCT 29	22	24 33.3D	31 12	I 24 36	SS 34 18			65.4N 150.1W
OCT 31	09	19 38.1C	30 06	S 30 40				1.2N 126.3E
NOV 2	22	45 22	55 56					1.5N 126.1E
NOV 3	04	55 25.1D	00 42	I 55 32	I 56 34			42.1N 19.3
NOV 4	09	25 23.0C	32 54	SKP 28 06	I 30 25	PKKP 35 56		14.1S 172.0E
NOV 7	09	29 08.6						40.2N 142.2E
NOV 7	10	04 10.5C						73.4N 54.8E
NOV 7	14	46 23.1						44.9N 150.0E
NOV 8	08	01 21						13.3S 167.1E
NOV 11	14	51 21.5C	59 33	SCS 01 10	SS 03 38			40.1N 143.0E
NOV 11	17	15 52.2						25.2N 140.8E
NOV 12	00	55 03.2		*PP 55 17				27.5N 128.4E
NOV 12	14	14 38.4		*PP 14 51				40.0N 142.6E
NOV 13	18	51 50.9C	00 00	*PP 52 05	SS 04 04			40.1N 142.4E
NOV 17	00	28 28.7C	38 44	*PP 29 13	S 40 00			9.5N 72.6W
NOV 17	08		02 52					1.3S 13.5W
NOV 21	03	11 54.2C						36.4N 70.6E
NOV 21	14	43 54.6D						18.7N 144.9E
NOV 22	09	11 06.2C	20 48	I 11 07				16.2N 122.3E
NOV 22	10	44 48.3C						1.5N 125.6E
NOV 22	11	50 20						13.1N 122.6E
NOV 22	16	02 17		SKP 04 52				23.6S 179.9W
NOV 23	05	32 16						40.1N 142.3E
NOV 24	21	31 01.6C	39 08	PP 33 11				40.2N 142.2E
NOV 25	18	49 39.6	00 14					4.9N 126.8E
NOV 26	09	59 05						45.7N 28.1E
NOV 26	18	38 59.3D		I 39 05	PP 40 25			55.8N 111.3E
NOV 27	13	05 13.5						56.6N 157.5W
NOV 28	07	10 11.3		*PP 10 24				40.0N 142.2E
NOV 28	10	48 53	59 16					15.3N 94.5W
DEC 5	07	58 48	04 12	PP 59 44				36.6N 27.0E
DEC 5	09	48 54	52 53					63.9N 21.7W
DEC 7	05			PP 16 06				3.4S 145.8E
DEC 11	11	55 59.6D						33.6N 134.0E
DEC 12	05	37 50.8						9.7N 125.7E
DEC 14	10	08 43						51.5N 175.7E
DEC 15	02	23 57.1C						51.6N 175.8E
DEC 17	10	24 51.7					1.8	72.8N 6.9E
DEC 17	12		18 08		SCS 20 44			60.2N 152.8W
DEC 19	00	39 40.7						0.2S 124.3E
DEC 19	05	25 12.3		*PP 25 46	PP 26 44	SS 33 58		36.1N 70.1E
DEC 19	15	25 03		PCP 26 15				53.3N 160.1E
DEC 19	16	41 15.3D		PKPPKP 09 12			2.1	37.2N 116.5W
DEC 20	21	54 18						9.2N 125.4E
DEC 20	23	45 12						36.4N 71.0E
DEC 22	09	15 31						36.2N 101.9E
DEC 22	16	54 08.8C		*PP 54 17			1.9	56.3N 153.8W
DEC 23	04	15 05						56.4N 153.8W
DEC 23	23	27 14						36.4N 70.6E
DEC 25	04	06 33.8C		I 06 39			1.6	41.7N 142.8E
DEC 29	07		37 33	I 28 07	PS 38 24			13.6N 120.6E
DEC 29	17	49 08.4		I 49 12				14.5N 92.4W
DEC 30	07	12 26.8C		*PP 12 37	*PPCP 13 45		1.6	57.6N 151.4W
DEC 30	10	29 19.4D	30	I 29 25				76.2N 7.5E

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1968 MTH DY	HR	P/PPK M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
DEC 30	22	22 42						23.2N 121.5E

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1969 MTH	DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
JAN 2	18	09	51.9						55.9S 27.4W
JAN 3	03	23	41.7D		I 23 45			1.8	37.1N 57.8E
JAN 3	13	38	00.8D						51.1N 179.3W
JAN 4	16	16	08.1						57.9N 153.8W
JAN 5	01	46	01						1.0N 125.8E
JAN 5	13	14	24.6C						48.4N 146.1E
JAN 5	13	41	02	51 40	PKP 45 36				7.9S 158.9E
JAN 6	05	56	57		*PP 57 08				53.7N 163.5W
JAN 6	15	49	39						30.2S 177.9W
JAN 6	15	57	36		I 57 41	PS 08 04	SS 14 28		10.5S 164.4E
JAN 7	07	12	54.8D						26.1N 129.5E
JAN 13	05	49	13						13.7N 120.6E
JAN 14	16	12	18						37.4N 141.4E
JAN 14	23	18	47.3	24 08	I 18 58	PP 20 10			36.1N 29.2E
JAN 15	08	51	36						45.6N 26.4E
JAN 18	03	21	36.1		I 21 38	*PPKP 22 09	SKP 24 37		56.8S 26.7W
JAN 19	07	11	20.5	18 48	I 11 22	PP 13 25			45.0N 143.1E
JAN 19	07	39	04.1D						1.8N 126.6E
JAN 19	09	09	29.1	16 16	I 09 39	PP 10 46	SKKS 17 23	2.1	14.8S 167.1E
JAN 20	04	17	43.0D						35.4N 135.4E
JAN 25	05	32	21.6C		I 42 23			2.1	0.8N 126.0E
JAN 25	23	44	26.5		*PP 44 42				22.9N 92.3E
JAN 26	06	18	42.7		*PP 18 55				6.5N 127.4E
JAN 26	10	06	27.1						38.2N 73.8E
JAN 26	15	14	28.6C	21 54	*PP 14 39				55.8N 162.9E
JAN 26	15	50	41.0						25.0N 122.5E
JAN 26	16	54	08.4D						55.9N 163.0E
JAN 26	16	57	47.6D						55.8N 163.0E
JAN 27	06	42	54	47 04	*PP 43 03				80.8N 121.8E
JAN 27	10	19	53						30.9S 179.6W
JAN 27	13	28	16 C	38 52	PKP 31 46	PS 39 36			8.7N 137.7E
JAN 27	14	51	46						12.4N 114.4E
JAN 30	10	42	23.5	52 58	I 42 26				4.8N 127.4E
JAN 30	17	32	19		*PP 32 41				4.8N 127.4E
JAN 30	18	48	29.1						3.9N 122.9E
JAN 30	21	04	11.4						42.8N 145.2E
JAN 31	00	57	05	07 44	*PP 57 18	PP 00 32	SS 14 01		4.1N 128.0E
JAN 31	04	19	18.1						53.4N 158.6E
JAN 31	14	01	13						4.3N 128.1E
JAN 31	15	18	01.5C						15.5S 175.0W
JAN 31	23	49	52						32.0S 179.5E
FEB 1	07	53	49.1D						9.2N 126.3E
FEB 3	08	09	29.7		PP 12 00				25.8S 178.1E
FEB 3	08	36	10.5		PP 38 44			1.6	25.7S 178.3E
FEB 3	19	14	20.4		I 14 39				4.4N 128.1E
FEB 3	21	54	29.7	04 50	PP 57 58	S 05 10			4.9N 127.4E
FEB 4	01	51	28	02 20	PP 55 12	SS 08 34			0.6S 121.7E
FEB 8	23	31	19.5		I 31 28			1.6	29.9N 51.0E
FEB 10	23	12	52		I 15 51	PKP 16 01	PP 18 14		22.7S 178.6E
FEB 11	22	16	09.1C	21 44	I 16 11	PP 17 37		1.5	41.4N 79.2E
FEB 11	22	29	04.3						6.7S 126.8E
FEB 13	01	45	41.9C					1.8	41.3N 79.3E
FEB 15	14	07	36.4					1.6	52.2N 169.9W
FEB 16	00	06	26		I 06 36	I 06 40			13.6S 167.2E
FEB 17	00	55	56.6	06 22	I 55 59	*PP 56 06	S 06 39		41.5N 79.5E
FEB 18	19	59	43						3.8N 128.4E
FEB 20	10	08	30	18 57	I 08 35			2.0	29.7N 68.4E
FEB 20	10	43	12.1C		I 43 17	*PP 43 31		2.2	3.5N 128.2E
FEB 20	17	11	06	21 43	I 11 18				3.7N 128.2E

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1969 MTH	DY	HR	P/PKP M S	S/SKS M S	SUPP. 1 PHASE M S	SUPP. 2 PHASE M S	SUPP. 3 PHASE M S	LOG A/T	REMARKS
FEB 23	00	50	07	00 41	*PP 50 14	PP 53 52			3.1S 118.9E
FEB 24	00	22	26	32 52	I 23 02	S 33 42	SS 40 44		6.2S 131.0E
FEB 24	01	14	13		I 14 16				1.7N 126.4E
FEB 24	22	56	48.7		E 57 35			1.6	6.9N 72.9W
FEB 25	01	47	43.7D	58 20				2.0	5.2N 126.3E
FEB 25	02	14	19.9					1.6	15.3N 87.5W
FEB 25	04	10	32						32.4S 180.0E
FEB 25	07	51	36.7D	02 04	I 51 40			2.0	15.2N 87.5W
FEB 25	15	01	04						15.0S 167.4E
FEB 25	16	32	01	33 38					76.4N 10.4E
FEB 28	02	48	09.1					3.3	36.0N 10.6W
FEB 28	04	33	10.4C		*PP 33 21	PP 34 43		2.5	36.2N 10.5W
MAR 2	05	00	28.7D						1.4N 128.0E
MAR 3	01	05	20	10 16	I 17 12				40.1N 27.4E
MAR 3	06	29	05.5D						30.1N 79.9E
MAR 3	09	05	58.0		*PP 06 21				10.6N 125.3E
MAR 3	14	58	48.9N	06 48	I 58 51				51.6N 159.2E
MAR 4	01	53	50						36.9N 31.0E
MAR 5	03	05	10						35.9N 10.8W
MAR 5	09	03	39						9.9N 125.8E
MAR 5	14	04	56.5D	15 40	*PP 05 08				4.0N 128.1E
MAR 5	19	40	38.2C	46 26	*PP 41 22	PP 41 44	SS 48 41	2.9	36.4N 70.7E
MAR 6	01	33	38						4.1N 128.2E
MAR 6	19	31	19.4C		*PP 31 33				36.0N 10.5W
MAR 7	08	33	09.9						49.8N 78.1E
MAR 9	13	19	27.5						1.5N 126.3E
MAR 9	14	01	41	13 12	*PP 01 50	S 14 42			4.1S 135.5E
MAR 9	14	37	16.7						31.2N 141.5E
MAR 10	07	08	00.5	19 48	PP 12 07			1.8	5.5S 147.2E
MAR 10	19	11	18.9C						36.4N 70.9E
MAR 13	18	52	13.9C	59 04	*PP 52 23	I 52 30		1.8	63.4N 128.9W
MAR 14	08	59	42	09 48	PP 03 08	S 10 06	PPS 11 24		12.9N 86.7W
MAR 15	08	32	06.5						42.3N 48.9E
MAR 15	11	58	02						2.7S 126.5E
MAR 15	13	45	21		*PP 45 33				51.2N 179.0W
MAR 16	16	04	32.2D	12 50	*PP 04 43	SS 16 46			38.5N 142.6E
MAR 16	17	07	07.0C						40.9N 143.0E
MAR 16	23	10	46.6						21.9N 121.6E
MAR 18	16	26	33.4D		I 26 38	*PP 26 46		2.0	44.1N 150.9E
MAR 19	14	09	55.2C	18 32	*PP 10 25				28.7N 128.2E
MAR 19	16	18	41.1D						13.9N 123.8E
MAR 20	08	29	29.7D	39 14					31.3N 114.3W
MAR 20	16	31	26.9D	41 46	PPP 36 42			2.5	8.6N 127.2E
MAR 20	17	20	15						8.7N 127.3E
MAR 21	03			23 30					40.3N 143.7E
MAR 21	05	08	06		I 08 09				31.2N 114.2W
MAR 21	06	46	12		I 46 15				31.1N 114.3W
MAR 21	06	52	10						43.4N 145.0E
MAR 21	10	22	02		I 22 11				31.2N 114.3W
MAR 23	21	15	01.5D	20 00	PP 15 59				39.1N 28.4E
MAR 24	02			10 55					39.1N 28.5E
MAR 25	02	35	59.3C						31.6N 141.7E
MAR 25	13	27	46.7C	32 50	PP 28 40				39.1N 28.3E
MAR 27	04			10 10					3.8N 128.5E
MAR 27	08	34	42.4						19.5N 144.5E
MAR 27	12	54	24.2C	05 16	PP 58 00				4.7N 127.5E
MAR 28	01	54	54.0	00 00					38.5N 28.4E
MAR 28	09	35	48.5					1.7	22.5N 142.9E
MAR 29	09	25	48.7D	33 52	PPP 29 10			2.4	11.9N 41.1E
MAR 29	11	14	44.7D						11.9N 41.2E

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1969	P/PKP	S/SKS	SUPP. 1	SUPP. 2	SUPP. 3	LOG	REMARKS
MTH DY HR	M S	M S	PHASE M S	PHASE M S	PHASE M S	A/T	
MAR 29 11	17 22.5C						11.9N 41.2E
MAR 29 13	18 08.9						11.9N 41.5E
MAR 29 13	59 13.6C		I 59 21			2.1	10.4N 56.8E
MAR 30 08	08 03		I 08 08				4.4N 127.9E
MAR 31 07	23 45.0D	30 06	PP 25 30			1.5	27.6N 33.9E
MAR 31 19	34 46.9C	42 24	I 34 50	PP 36 19	SCS 43 54		38.3N 134.6E
MAR 31 20	36 27						31.0N 140.5E
MAR 31 21	52 24						27.4S 34.0E
APR 1 20	42 14						1.7S 99.9E
APR 1 21	42 34						55.8N 161.2W
APR 2 01	44 02.6C						39.0N 15.3E
APR 3 22	18 26	23 36	I 18 31	PP 19 24	PPP 19 43		40.7N 19.8E
APR 4 08	54 59.5C	02 56					51.1N 173.7E
APR 4 23	06 29.4D		*PP 06 37				54.5N 169.4E
APR 5 02		36 25	*PP 28 28				12.2N 41.2E
APR 5 03	57 13.3D						3.4N 125.4E
APR 5 23		50 19					1.2N 85.2W
APR 6 03		01 08					38.4N 26.4E
APR 7 20	32 04.5	37 06	I 32 10				76.5N 130.8E
APR 8 10	39 46		*PP 39 51				27.5N 33.7E
APR 9 13	07 35.7D					2.3	36.8N 139.6E
APR 10 15	02 43.1C					2.2	41.9N 130.9E
APR 12 10	57 41						10.2N 126.2E
APR 12 20	44 02.0	48 26					45.2N 25.0E
APR 13 15	35 03	43 24	I 35 07	SS 47 16			17.9N 80.6E
APR 13 23	46 39.4D	58 10	I 46 42	PP 50 46			6.1S 129.9E
APR 14 13	21 30						27.7N 54.6E
APR 15 17	41 06.9	48 22	SS 53 20				39.8N 143.4E
APR 15 22	27 22.1						5.9S 113.1E
APR 16 01		47 24	SS 56 04				3.5S 150.9E
APR 16 23	02 24						35.3N 27.9E
APR 17 05		14 44	SS 18 37				39.5N 143.4E
APR 19 08	26 25						25.2N 46.6W
APR 19 08	58 13.5	08 58	*PP 58 28				6.2S 103.9E
APR 19 19	35 12.9C						60.3N 146.0W
APR 21 02	31 44.6	42 06	PP 35 24	S 42 24	SS 47 59		14.0N 91.0W
APR 21 07	29 59.1D	38 36	I 30 30	PP 32 22	SCS 39 54	2.0	32.1N 131.8E
APR 21 22	29 49	31 15	I 29 53				74.1N 9.6E
APR 22 06			PPP 56 46				26.8S 114.1W
APR 22 08	21 29.5C		*PP 21 40			1.9	39.8N 143.0E
APR 22 22	44 40.1D					2.0	12.9N 58.2E
APR 23 13	45 12.9						27.5N 33.9E
APR 25 03	47 19.1		*PP 47 27				7.4N 82.0W
APR 25 07	44 51.6						30.8N 70.3E
APR 25 09	22 58						56.6N 156.7W
APR 25 13	37 56.9C						7.3N 123.7E
APR 25 21	45 31						39.7N 143.1E
APR 26 05	30 12.5						18.0N 146.3E
APR 26 06	21 42		SKP 25 16				30.6S 71.5W
APR 27 01	50 11.2						0.8N 120.0E
APR 28 00	59 02.0						13.2N 145.0E
APR 28 07	44 04		SKP 47 02	PKS 47 28			22.3S 177.6W
APR 28 23	32 25.1C					1.9	33.3N 116.3W
APR 29 04	45 30.4C		*PP 45 39			2.4	29.5N 51.4E
APR 30 17	11 16.7						37.0N 116.0W
APR 30 20	26 48.2D	31 52					39.1N 28.5E
MAY 1 09	18 47.4						55.0N 156.6W
MAY 1 12	04 49.7					1.5	5.1N 125.2E
MAY 1 18	09 00	14 24					35.3N 27.7E
MAY 1 19	24 01.9		PP 25 48			1.9	16.7S 174.6W

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1969	P/PKP	S/SKS	SUPP. 1	SUPP. 2	SUPP. 3	LOG	REMARKS
MTH DY HR	M S	M S	PHASE M S	PHASE M S	PHASE M S	A/T	
MAY 1 20	13 30		*PP 13 39				35.3N 27.6E
MAY 2 22	55 45.9C						40.1N 142.3E
MAY 4 12			I 55 34				17.4S 168.9E
MAY 4 17	31 24.6D						0.0N 123.3E
MAY 5 02	28 40						57.8S 147.6E
MAY 5 02	55 31.7	03 40					11.9N 41.2E
MAY 5 05			I 37 14				58.0S 148.3E
MAY 5 05	41 58.7C	48 01	*PP 42 11			2.1	36.0N 10.3W
MAY 5 17	58 42.9						48.0N 146.8E
MAY 5 21	51 35.2	55 00				2.5	66.7N 18.2W
MAY 7 09	04 47.6	14 43	I 04 50	*PP 05 23			12.0N 124.5E
MAY 7 13	56 14.6						37.2N 116.5W
MAY 8 02	02 39.3						13.2N 144.9E
MAY 10 13	08 12.5C					1.6	56.3N 153.6W