RIVERVIEW COLLEGE OBSERVATORY

SEISMOLOGICAL BULLETIN

1958 & 1959

RIVERVIEW, SYDNEY, AUSTRALIA

ADDENDA. EPICENTRES 1959.

Jan. 15	(P) 07 37 02	BCIS: 12 S, 166 E, H 07 31.7
Feb. 15	(iP) 04 55 17	USCGS: 59½ S, 26 W, H 04 42 35
22	iPZ 10 32 51	USCGS: 5½ S, 131 E, H 10 26 06
23	i(P)Z 22 26 51	USCGS: 28½ S, 177 W, H 22 20 58
25	iPNZ 23 45 26	BCIS: 52½ S, 161½ E, H 23 40.9
27	iPZ 21 07 27	USCGS: 27½ N, 129 E, H 20 56 30
28	eN 06 11 14	USCGS: 24½ S, 179½ E, H 05 59 58
28	iPV 11 49 00	USCGS: 55 S, 147 E, H 11 44 05
Mar. 24	(iP)Z 17 16 33	USCGS: 18½ S, 167 E, H 17 12 51
25	(P)Z 15 01 58	BCIS: 54 S, 163 E, H 14 57.0
26	iPV 05 32 34	USCGS: 0° , 125 E, H 05 24 42
28	iPEZ 19 52 38	USCGS: 20 S, 178½ W, H 19 47 07, h 600 km.ca.
31	(i)Z 07 27 38	USCGS: 15 S, 173 W, H 07 20 45
Apr. 8	iPZ 11 57 17	USCGS: 50½ S, 73 W, H 11 44 25
19	iPV 19 50 23	USCGS: 16 S, 172 W, H 19 43 04
25	(iP)V 05 28 40	Port Moresby: 3 S, 140 E, H 05 22 05
28	(iP)V 01 49 30	USCGS: 4 S, 135 E, H 01 44 21
28	i(P)V 13 06 52	USCGS: 5 S, 152½ E, H 13 00 57, h 100 km.ca.
28	LN 16 14.5	USCGS: 6½ S, 150 E, H 15 58 13
29	(iP)V 03 33 25	Port Moresby: 6½ S, 149 E, H 03 28 06
May 8	(iP)V 09 15 51	BCIS: 16½ S, 174 E, H 09 11.1
8	iPV 11 47 35	USCGS: 53½ N, 160½ E, H 11 34 50, h 60 km.ca.
16	eLE 14 41.1	BCIS: 1½ S, 140 E, H 14 23 37
30	(iP)Z 18 23 55	BCIS: 7 S, 156½ E, H 18 18 30
June 9	iPV 14 58 49	USCGS: 33 S, 179½ W, H 14 53 30
28	(iP)Z 06 30 20	BCIS: 21 S, 178 W, H 06 24 34, h 600 km.ca.
July 20	iPNEZ 02 48 49	USCGS: 6 S,111 E, H 02 41 04, h 500 km.ca. (REVISED EPICENTRE)
Aug. 21	iPNEZ 08 09 57	BCIS: 50½ S, 139½ E, H 08 05 35
Sept.11	(iP)V 02 38 41	USCGS: 17 S, 178 W, H 02 32 11
12	(i)Z 08 54 28	USCGS: 3 S, 146 E, H 08 47 33
17	(iP)V 03 26 27	BCIS: 29½ S, 178 W, H 03 20.7
17	i(P)Z 03 46 10	BCIS: Kermadec Is., H 03 39 35
30	i(P)Z 14 58 27	BCIS: 29S, 176½ W, H 14 53 26
30	iZ 16 37 09	BCIS: 29 S, 176½ W, H 16 30 27
Oct. 3	iPNV 23 21 07	Wellington: 49½ S, 164½ E, H 23 16 51
Nov. 2	(iP)V 01 21 04	BCIS: 33½ S, 136½ E, H 01 18 00
9	(iP)V 04 26 59	BCIS: 57 S, 136 W, H 04 18 53
Dec. 10	eE 03 08 34	BCIS: 63 S, 167 E, H 02 57 20
26	e(P)Z 16 22 00	BCIS: 27½ S, 176 W, H 16 15 16

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CORRIGENDA 1958.

P.39	No.474	Dec.10	Delete Km. after h 0.04
41	504	31	" " " " 0.05

RIVERVIEW COLLEGE OBSERVATORY.

SEISMOLOGICAL BULLETIN JANUARY-DECEMBER, 1958.

Lat. 33° 49' 46" S. Long. 151° 09' 30" E. h 25m. Foundation : Triassic Sandstone

INSTRUMENTS:

Wiechert Astatic Pendulum Seismometer (1000 Kg.) NS, EW.
Wiechert Vertical Seismometer (80 Kg.)
Mainka Conical Pendulum Seismometer (450 Kg.) NS, EW.
Galitzin Aperiodic Seismometer (NS, EW, Vert.)
Sprengnether short-period Vertical (V)

(N.B. EW Galitzin defective until Jan. 25')

No.	Date	Phase-	Component	Time (G.M.T)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1958			h m s	s	μ	μ	μ	Km.	
5	Jan. 3	iP	V	17 58 59	1.5			+		Compression.
		i	Z	59 01	4			+2		Microseisms present.
		i	V	59 06	1.5			+		USCGS.22S 65E H17 42 12
		ePP	Z	18 01 47	9					Moscow H 17 47 16
		e	N	09 22	?					Mag.6 Matsushiro
		eL	N	22.3	?					5 1/2 Moscow.
		M	N	26.3	18	½		~~1/2~~		
		M	Z	27.9	19			1		
11	5	iP	NZV	08 12 40	3	-3		+8	5210Km ca.	Compression.
		iPcP	V	14 00	1.5			+	46.°9ca	h 0.10 ca.
		ipP	NZV	14 33	3	-4		+7		
		iS	Z	18 44	4			+3		USCGS.2N 122 1/2 E
		iS	N	18 45	5	+5				H 08 05 11
		i(sS)	N	22 14	7	+3				h 550Km ca.
		M	NZ	32.1	15	5		4		Mag.6 1/2 Matsushiro
										6.4 Wellington.
12	5	(P)	V	11 44 16						Masked by microseisms.
		e	N	56 31						USCGS.56 1/2 N, 121 E,
		e SS	N	12 01 46	16					H 11 30 44
		eL	N	13.7	25					Moscow 56 1/2 N,121 1/2 E,
		M	NZ	21.6	18	1		1		H 11 30 57 Mag.6.7 Rome
										6.5 Kew,Pasadena,Praha
										6 1/4 - 6 1/2 Matsushiro
										6 Moscow
16	9	i(P)	Z	11 19 42	3			+2		
		i(sP)	Z	20 31	3			+2		Masked by microseisms.
		e(PP)	Z	20 39	6					USCGS. 5 1/2 S,147 E.
		i	N	20 44	4	+1				H 11 13 56
		i(S)	N	24 17	6	-2				h 150 Km.ca.
		e	N	25 27	(18)					Mag.6 1/2 Matsushiro.
		e(LQ)	N	26.2	19					
		i	N	27 10	4	+3				
		M	Z	31.1	13			2		
		M	N	31.8	16	2				
19	11	iP	EZV	13 24 56	3		+	-11	3210Km.	Dilatation.
		i	N	25 23	4	-2			28.°9	h0.02
		iPP	Z	26 00	4			+8		H 13 19 10
		i	Z	26 05	4			-14		USCGS:23 1/2 S, 177 W,
		i	E	26 06	4		-			H 13 18 47
		iPPP	Z	26 16	4			-20		
		i	N	26 18	4	-3				
		i	Z	26 24	4			-10		
		i	E	26 29	4		+			
		i	N	26 35	4	+5				
		iS	NEZ	13 29 33	4	+4	-	-9		
		i	N	30 57	9	-20				
		i	N	31 21	9	-18				
		i	Z	31 23	5			-14		
		i	E	31 28	4		+			
		eL	N	31.8	19					
		i	Z	31 57	5			+5		M N 13 34.2 Per.15 μ50
		iScS	NE	35 21	4	-19	+			

No.	Date	Phase	Component	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1958.			h m s	s	μ	μ	μ	Km.	
20	Jan.13	iP	ZV	00 15 0?	2			-3		Dilatation. Microseisms present. USCGS: 52 1/2 N 177 E. H 00 02 24 h 100ca. Mag.6.5Uppsala,Kiruna.
		epP	V	15 37	2					
21	13	iP	V	03 00 15	1			+		Compression.
		i	Z	00 18	2			+3	2900	Microseisms present.
		i	V	00 21	1.5			-	26.°1	h 0 00. H 02 54 42
		isP	Z	00 28	3			+4		USCGS: 11 S,166 E
		i	Z	00 51	3			-4		h 100 Km.ca.
		iPP	Z	00 55	4			+4		H 02 54 37
		iS	N	04 42	4	+1				Mag. 6 1/4 Matsushiro.
		i	N	04 51	6	+3				
		e(sS)	N	04 58	?					
		e	Z	05 10	10					
		i	N	05 15	4	-4				
		eLQ	N	05.8	21					
		eLR	Z	06.8	26					
		M	NZ	09.8	15	2		3		
		iScS	N	11 05	6	5				
22	13	e(S)	N	20 35 21	?					Masked by microseisms.
		eL	N	47.5	29					USCGS:11 1/2 N,92 1/2 E
		M	N	55.4	23	2				H 20 14 27 Moscow 12.5 N,
		M	Z	56.5	24			3		93.5 E. H 20 14 34.
										Mag.6.3 Quetta. 6 Matsushiro.
23	14	(P)	V	06 01 20						Masked by microseisms.
		i	N	07 13	6					USCGS: 22 S, 175 W,
		eL	N	08.8	24					H 05 54 48
		eL	Z	09.9	28					Mag. 5 3/4 - 6 Matsushiro.
		M	NZ	12.6	17					
24	14	iP	Z	07 25 29	4			-5		Dilatation.
		i	V	25 31	1.5			+		Microseisms present.
		i	Z	26 04	4			+4		USCGS:29 S, 179 W.
		i(sS)	N	31 34	7	+3				h 350 Km.ca.
		e	N	31.7	21					H 07 20 25.
25	15	iPP	NZ	19 34 00	4	+2		+5	12800ca.	Compression.h 100 Km.ca.
		i	Z	34 14	4			+7	115°ca.	USCGS: 16 1/2 S, 71 1/2W
		i	Z	34 19	4			-10		h100 Km.ca. H 19 14 29.
		i	Z	34 44	3			+4		Mag.7 1/4 - 7 1/2 Praha.
		i	Z	35 00	3			+5		7.3 Uppsala,Kiruna
		iSKS	N	39 41	4	+3				7 1/4 Matsushiro,Kew,
		i	N	39 55	6	+7				7 Pasadena,Moscow, Rome.
		i(pSKS)	N	40 21	6	+3				6 3/4 Berkeley
		i(PKKP)	Z	43 42	5			-4		6.7 Wellington.
		iPS	N	43 44	8	-10				
		ipPS	N	44 04	8	-10				
		i	Z	44 25	5			+10		
		e	N	44.4	28					
		i	N	45 33	7	+13				
		eSS	N	49.9	39					
		e(G)	N	20 01.2	43					
		eLR	N	07.0	27					
		M	NZ	08.6	28	16		16		
		M	NZ	13.5	21	7		8		
		eW2	NZ	21 14.3	31					
26	15	iP	NEZV	22 21 15	3	-13	-	+28	2700	Compression.
		ipP	V	21 25	1.5			+	24.°3	h 0 00. H 22 16 00
		isP	NEZ	21 29	3	+11	+	-32		USCGS: 13 1/2 S, 167 E.
		i	N	21 39	3	+8				H 22 15 44
		i	Z	21 40	3			-14		Mag.6 1/2 Upsala,Kiruna, Kew.
		i	Z	21 46	3			-20		6 1/4 - 6 1/2 Matsushiro.
		iPPP	N	22 00	4	+10				
		iS	N	25 29	6	-5				

CONTINUED

No.	Date.	Phase - Component.	Time (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
26	Jan.15	i Z	22 25 30	6			+6		
Cont.		i NE	25 35	7	-30	-			
		i Z	25 48	7			+17		
		i NE	25 59	4	+11	+			
		i Z	26 16	5			-21		
		iSS NE	26 22	7	-45	+			
		i Z	26 30	7			+24		
		iSSS N	26 38	7	+18				
		eL Z	27.7	25					
		M NEZ	29.9	18	27	27*	41		* Mainka.
27	16	iP V	04 23 22	1.5			+		Compression Microseisms present.USCGS:16 S,175 W. h 250 Km.ca. H 04 16 46
		i V	25 53	1.5			+		
28	16	eP Z	11 08 55	3					Microseisms present.
		i(pP) NZ	09 03	3	+2		-3		USCGS:14 S, 167 E.
		i Z	09 17	3			+6		H 11 03 32
		i Z	09 21	4			+4		Mag. 6 Matsushiro.
		i N	09 22	4	-3				
		i N	09 35	3	+2				
		i N	13 16	6	-5				
		i(sS) N	13 26	7	+10				
		i E*	13 27	7		+			*Mainka.
		i Z	13 30	6			+6		
		i N	13 39	6	+9				
		i Z	13 43	4			+7		
		i(SS) N	14 08	5	+2				
		eL N	14.4	17					
		e(L) Z	14.6	(20)					
		eLR Z	15.1	24					
		M N	17.4	16	8				
		M Z	17.8	18			12		
29	17	(P) Z	04 21 45						Masked by microseisms.
		(PP) Z	23 20						USCGS: 1 S,127 E.
		eS N	27 51						H 04 14 02.
		eL N	34.8	21					Mag. 6 - 6 1/4 Matsushiro.
		M NZ	41.0	19		3		2	
30	17	iP Z	07 20 10	4			+11	2260	Compression. H 07 15 34.
		iP N	20 11	4	+10			20.3	USCGS: 52 S, 139 1/2 E.
		ipP N	20 20	4	+12				H 07 15 38
		iPPP Z	20 40	4			+6		Mag. 6 1/2 - 6 3/4 Matsushiro.
		i N	20 46	5	+8				
		i Z	21 19	4			+12		
		i N	21 28	3	+4				
		eS E*	23 51	?					* Mainka.
		e N	23 52	9					
		i N	23 59	5	-10				
		i(sS) N	24 06	4	+8				
		i Z	24 09	8			-18		
		iSS N	24 20	5	+14				
		eL N	24.7	30					
		i N	24 55	4	+11				
		eLR Z	25.0	25					
		M E*	26.0	13		20			
		M NZ	27.2	15	38		32		
		M N	29.0	10	35				
31	18	(iPKP) V	15 33 08	1.5			+		Masked by large microseisms.
		e N	44 15	10					
		M N.	16 14.9	22	1				USCGS: 29 S,13 W. H 15 14 26

No.	Date.	Phase - Component		Time. (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1958.			h m s	s	μ	μ	μ	Km.	
33	Jan 19	iSKS	E*	14 33 31	3		-1*			*All readings from Mainka.
		eSKKS	E*	35 04	15					USCGS: 1 1/2 N,79 1/2 W,
		ePS	E*	37.9	18					h 60 Km.ca. H 14 07 27.
		e(SS)	E*	44.0	(18)					Mag. 7 3/4 Praha,Lwiro
		eSS	E*	44.6	18					7 1/2 - 7 3/4 Matsushiro,
		eLR	E*	15 04.5	30					7 1/2Pasadena,Rome,Moscow,
		M	E*	15.5	18		8*			Shillong. 7.3 Reykjavik,
		M	N*	17.9	17	7*				Uppsala,Kiruna.6.9 Quetta.
36	23	(P)	Z	08 57 12						Masked by microseisms.
		i(pP)	Z	57 43	4					USCGS:18 1/2 S,170 E,
		e	N	09 01 12	8					h 150 Km.ca. H 08 52 23
	23	(iPKP)	Z	15 54 44	1			+		Masked by microseisms.
										USCGS:65 N, 6 1/2 E.
										H 13 35 03. BCIS:64 3/4 N,
										7 E. H 13 35 07.
										Mag. 5 3/4 - 6 Matsushiro,
										5 1/2 Praha, 5.35 Rome.
38	24	iP	ZV	06 07 03	3			+2		Compression.
		e(SKS)	N	17 28	(9)					Microseisms present.
		i(SKKS)	N	17 40	5	-2				USCGS:56 1/2 N, 163 E.
		i(S)	N	18 05	5	+4				H 05 53 58. Moscow 56 N,
		e(PS)	N	19 27	(13)					163 1/2 E, h 100 Km.ca.
		e(SS)	N	23 57	(21)					H 05 54 06. Mag.6.7 Rome
		eLR	N	36.1	36					6 1/2 - 6 3/4 Matsushiro
		M	NZ	44.2	20	3		3		6 1/2 Pasadena,Praha,
										6.4 Uppsala,Kiluna,
										6 1/4 Kew.
	24	(iP)	Z	07 00 28	3			-2		Masked by microseisms and
		(iPP)	Z	03 33	4			+3		coda of No.38.USCGS:49 S,
										32 E, H 06 48 06.
39	26	(iP)	V	03 44 54	1.5			-		Masked by microseisms.
		e	N	53 02	12					USCGS: 54 1/2 S,133 W
		e	E	53 04	13					H 03 35 17.
		M	NEZ	04 03.1	21	2	2	3		Mag. 5.8 Roxburgh.
41	27	iP	NEZV	07 51 10	3	-1	2	+6	4210	Compression.
		ipP	Z	51 32	3			+4	37.9°	h 0.01 H 07 44 01.
		iPP	NEZ	52 40	4	+4	+12	-15		USCGS:15 S, 174 W.
		i	EZ	52 55	4		-4	+4		H 07 43 58
		iPPP	NEZ	53 03	5	-3	-7	+6		Mag. 6 3/4 Pasadena,
		i	E	56 27	6		+3			6 1/2 Berkeley, Kew
		iS	N	56 54	5	+3				6 - 6 1/4 Matsushiro
		e	EZ	56 58	13					6.0 Wellington.
		i	N	57 02	7	+6				
		i	E	57 18	8		+11			
		i	N	57 51	9	+10				
		i	E	08 00 24	7		-7			
		eL	Z	01.6	28					
		M	N	02.0	16	9				
		M	EZ	03.9	18		9	8		
42	27	iP	Z	08 58 04	3			-2		Dilatation. Masked by
		ePP	Z	58 52	10					coda of No.41.
		e	N	09 02 50	10					USCGS: 8 S, 155 E
		M	E	09.4	12		5			h 200 Km. ca.
		M	NZ	09.9	12	3		4		H 08 52 42.
47	30	eP	NZ	06 19 07					2990	Compression. H 06 13 22.
		i	NZV	19 12	7	-24		+32	26.9°	USCGS:7 1/2 S,155 1/2 E.
		i	E	19 13	7		-5			H 06 13 24.
		i	NZ	19 41	6	+3		-6		Mag.6 1/2 Pasadena,Uppsala
		i	ZV	19 46	5			+12		Kiruna,Wellington,Kew.
		iPP	NE	19 49	7	+18	+8			6.45 Rome, 6.4 Quetta.
		i	NEZ	20 07	7	-25	-8	+25		6 1/4 - 6 1/2 Matsushiro,
		iPcP	E	22 31	4		+12			6.1 Roxburgh.

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Moscow .9S,157 1/2E
H 06 13 20

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
47	Jan.30	iS	N	06 23 43	6	-18				
Cont.		i	N	23 46	10	+79				
		i	Z	23 51	6			+24		
		i	Z	24 00	7			+32		
		i	E	24 03	7		-41			
		i	EZ	24 18	6		-43	+26		
		i	N	24 46	7	+31				
		iSSS	E	25 12	7		-14			
		i	E	25 55	7		+28			
		eL	NE	26.4	(21)					
		M	E	28.5	13		-55			
		M	Z	29.4	16			90		
		M	NE	31.5	10	64	76			
		M	N	35.0	12	46				
48	31	iP	V	06 37 26	1			+	2330ca.	Compression.Large Micro-
		i	ZV	37 38	3			+2	21° ca.	seisms present.
		iPPP	E	37 58	4		-6			USCGS: 40 S, 176 1/2 E.
		i(PcP)	E	41 26	3		+4			H 06 32 39
		eLQ	NE	41.5	18					Wellington 39.9 S 176.2 E.
		iSS	NZ	41 49	6	-7		-4		H 06 32 44.
		i	N	42 00	6	+5				Mag.5.9 Wellington
		iSSS	Z	42 04	5			-6		5 3/4 Matsushiro.
		eL	NE	42.9	24					
		eL	Z	43.1	24					
		M	N	44.7	15	5				
		M	ZE	44.8	19		9	7		
49	31	e(P)	Z	21 06 01						Masked by microseisms.
		e(PP)	Z	07 09	7					BCIS:23 S, 175 W.
		e(S)	E	11 08	?					H 20 59.5
		eL	N	13.3	(25)					
		eL	Z	14.9	21					
		M	N	16.6	14	5				
		M	EZ	18.0	18		9	10		
		M	N	18.8	11	6				
50	Feb. 1	(iPKP)	V	16 29 13	1.5			+		Compression.
		(iPP)	V	30 49	1.5			-		Large microseisms present.
		iPP	Z	30 54	3			-6		USCGS: 2 N, 79 W.
		iSKS	E	36 10	5		-3			H 16 10 15.
		e	E	36 17	12					Mag. 7 Praha,
		iSKKS	E	37 52	5		+3			6 3/4 - 7 Pasadena,
		i(S)	N	39 03	6	-3				Berkeley,
		eSP	E	40 34	12					Matsushiro,
		ePS	NE	40 48	22					Shillong.
		i	Z	40 55	6			+5		6.7 Quetta,
		ePPS	E	42 34	21					6 1/2 Moscow,Tacubaya.
		e	N	43 05	19					6.4 Reykjavik.
		eSS	N	47 36	(19)					
		eSS	E	47 40	19					
		i(PKPPKS)	Z	51 07	3			+10		
		e	E	51 09	24					
		e	N	59.1	23					
		eLR	NE	17 07.9	30					
		eLR	Z	08.0	30					
		M	NZ	16.0	18	11		18		
		M	E	16.8	18		14			
53	1	iP	Z	22 05 58	3			+3		Compression.
		i(PPP)	N	06 54	4	+4				Large microseisms present.
		i(S)	N	10 40	4	+6				USCGS: 7 S,156 E.
		i	N	10 56	5	+7				H 22 00 15.
		i	Z	11 07	4			+5		
		i	N	11 29	4	+8				
		i	E	11 54	5		+7			
		M	NEZ	16.1	15	10	7	7		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
54	Feb. 2	(iP	Z	08 24 14	4			+4		Compression. Masked by large microseisms.
		eS	E	34 27	10					USCGS:48 1/2 N, 154 1/2 E.
		eLQ	E	45.9	?					H 08 11 53. JMA47 N,155 E.
		M	NZ	54.9	22	6		7		h 60 km.ca.
										Moscow.H 08 11 58
										Mag.6 1/2 - 6 3/4 Pasadena
										6 1/4 Matsushiro.
										5 1/2 Moscow.
61	5	e(S)	N	21 07 42						Masked by microseisms
		e(PPS)	N	08 44	16					BCIS 36 S,101 W.
		e(SS)	E	13 11	15					H 20 44 44.
		e(SS)	N	13 13	?					
		M	NEZ	28.7	16	1	1	1		
62	6	iP	Z	16 05 38	4			+3		Compression.
		e(sP)	E	06 54	10					Masked by microseisms.
		e	Z	06 59	9					USCGS: 27 1/2 S, 178 W.
		e	E	07 38	7					H 16 00 12
		e	Z	08 04	9					h 250 Km.ca.
		e(PcP)	N	08 47	7					
		e	N	10 08	(13)					
		e	N	11 54	17					
		M	N	14.9	11	1				
		i(ScS)	E	16 04	4		-3			
		M	E	18.1	15			2		
63	7	i(PPP)	EZ	01 16 51	3		+2	-2		Masked by microseisms.
		e	E	20 05	?					USCGS 31 S, 179 W.
		e	N	20 09	?					H 01 10 31.
64	7	(iP)	Z	23 35 39	3			+3		Masked by microseisms.
		M	E	24 07.3	22		3			USCGS:31 1/2 N, 104 E.
		M	Z	13.4	18			1		H 23 23 30.
										Moscow 32 N,104 E.
										H 23 23 35. Shillong 32 N,
										103 E. H 23 23 35.
										Mag.7.0 Uppsala,Kiruna.
										6 1/4 6 1/2 Shillong
										6 1/4 Kew.6 Matsushiro.
										5 3/4 Moscow.
65	9	(iP)	Z	22 38 58	2			+2		Masked by microseisms.
		eS	E	46 35	6					USCGS:12 1/2 N, 121 E.
		i	N	46 48	4	-3				H22 29 23. Shillong 13 N,
		i	E	47.4	15					121 E. H 22 29 21.
										Mag. 6 Matsushiro,Uppsala,
										Kiruna, Kew.
										5 1/2 Moscow.
66	11	iP	V	00 54 40.5	1			-	47°.4	Dilatation.
		i	V	54 54	1			+		H 00 46 03.
		iS	N	01 01 34.5	3	+2				USCGS:9 S,1o7 1/2 E,
		eSS	E	04 55	15					H 00 46 02
		eSS	N	04 58	?					Mag. 5 3/4 - 6 Matsushiro.
		eL	NE	08.8	18					
		M	NEZ	12.3	16	8	3	4		
		M	N	14.4	12	17				
67	12	i	Z	06 41 33	3			+3		P.Obscured by microseisms.
		i(PP)	N	41 43	4	+3				USCGS: 5 1/2 S, 151 E.
		i	EZ	41 48	3		+3	+3		H 06 34 59.
		e	N	45 42	18					h60 Km.ca.
		i	N	46 04	5	-3				
		i(LQ)	E	47.2	(18)					
		i(PcS)	N	47 38	4	+3				
		eL	NZ	49.9	21					
		M	NEZ	51.9	18	7	8	13		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
69	Feb.12	(iP)	N	23 57 50	3					Masked by microseisms.
		iSKS	N	24 07 20	6	+2				USCGS:52 N, 175 W.
		iS	E	07 47	6		+4			H 23 43 45.
		e	E	08 04	13					Mag.6 1/4 Matsushiro,
		eL	N	26.1	24					6 Pasadena,Moscow, Kew
		M	NEZ	32.0	19	2	1	2		5.9 Uppsala,Kiruna,
										5 3/4 - 6 Berkeley.
70	13	iS	N	00 34 21	4	+3				Masked by coda of No.69.
										USCGS:27 1/2 N, 92 E,
										H 00 11 36
										BCIS:.27 3/4 N, 92 1/4 E.
										H 00 11 37
										Mag. 5 1/2 Shillong.
71	15	iP	ZV	01 58 40	3			+2	8570	Compression.
		iPcP	Z	58 51	4			+2	77.°1	h 0 00. H 01 46 48
		isP	V	58 53	1.5			+		USCGS:44 N,147 E.
		S	E	02 08 25	6					H 01 46 40
		e	N	08 28	8					Moscow 44 N,146 E.
		eSKS	N	08 45	8					H 01 46 50.
		eSS	N	13 31	15					JMA:43.5 N,147.7 E
		eL	E	20.5	21					H01 46 43. h 60 Km.
		M	NEZ	28.1	22	2	3	3		Mag. 6.4 Uppsala,Kiruna.
										6.3 Quetta,
										6 -6 1/4 Pasadena.
										6 Moscow,Matsushiro.
74	16	eP	Z	06 15 36					8000	Confused by microseisms.
		pP	ZV	15 45					72.°0	h 0 00.
		iS	E	24 54	6		-3			USCGS:39 N,142 E
		iS	N	24 55	6	-2				H 06 04 05.
		i	E	25 20	6		-3			JMA:38.5 N,142.2 E.
		i	N	25 44	4	+2				H 06 04 08 h60 Km.
		eL	E	34.1	21					Moscow 06 04 07
		eL	E	37.1	30					Mag.6.4 Matsushiro,
		M	NEZ	42.2	22	1	1	2		6.3 Uppsala, Kiruna.
										6 - 6 1/4 Pasadena,Kew
										6 Moscow, 5.8 Rome.
75	16	iP	V	07 50 57	1			+		Compression. USCGS:17 N,
										146 E. H 07 42 11. h 200Km ca.
77	16	(P)	V	24 00 37						Masked by microseisms.
		i(S)	N	05 21	4	+				USCGS:6 S,155 E.
		M	NEZ	11.3	13	1	1	1		H 23 54 45.
78	17	(PP)	V	05 36 37						Masked by microseisms.
		e(SKS)	E	42 41						USCGS:35 1/2 N, 70 E, H 05 18 35.h 200 Km.ca
		e	E	46 17	13					BCIS:36.5 N,70.5 E, H05 18 44. h 220 Km.ca.
		eSS	E	51 02	13					Moscow:36 N,71 E. H 05 18 38. h 200Km.
		eSS	N	51 05	10					Quetta:36 1/2 N,71 1/4 E. h 200Km.ca.
		e	N	52 30	(27)					Shillong:37 1/2 N,70 1/2 E. H 05 18 33. h 200Km.ca.
		e(G)	N	06 00.6	28					Mag. 6.9 Quetta, 6 3/4 Praha
										6.7 Uppsala,Kiruna, 6 1/2 Kew
										6 1/4 - 6 1/2 Matsushiro,6.2 Reykjavik.
80	18	(iP)	V	07 40 52	1.5			+		Masked by microseisms.
		i	Z	40 55	3			+3		USCGS: 21 S, 173 1/2 W.
		e(S)	N	46 15						H 07 34 07
		M	N	51.5	15	2				Mag. 5 3/4 Matsushiro.
		M	NEZ	51.8	19		3	3		
81	18	iP	EZ	13 26 56	5		-2	+4		Compression.
		e	N	27 03	7					USCGS: 31 S, 178 1/2 W.
		iPP	E	27 38	7		+9			H 13 21 20
		i	Z	28 09	7			+8		Mag. 5 1/2 - 5 3/4
		i(S)	E	31 30	9		-13			Matsushiro.
		i(sS)	E	31 47	8		-20			
		i	Z	31 53	8			+14		CONTINUED.

No.	Date.	Phase - Component		Time. (G.M.T.	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
81 Cont.	Feb.18	i(SS)	E	13 32 41	8		+12			
		i	N	32 50	7	+				
		i	N	33 05	8	+12				
		eL	E	33.8	27					
		M	N	35.2	14	18				
82	18	(iP)	V	19 59 05	1.5			+		Microseisms present.
		iP	Z	59 06	4			+4		USCGS:20 1/2 N, 120 1/2 E.
		eS	N	20 07 26	(9)					H 19 48 43.
										Mag.6 Matsushio, Moscow.
83	18	(P)	Z	20 15 11						Masked by coda of 82.
		ePP	NZ	16 04	6					USCGS: 3S, 147 1/2 E.
		i(S)	N	20 06	7	+4				H 20 08 44
		e	N	20 20	23					Mag. 6 1/4 - 6 1/2
		i(SSS)	E	22 18	7		+8			Matsushiro.
		eL	E	22.9	30					
		M	E	25.0	24		24			
		M	NZ	25.8	25	22		50		
		M	E	26.6	16		20			
		M	NZ	27.8	16	14		50		
		M	E	28.7	12		36			
		M	NZ	29.5	11	17		45		
85	19	iP	Z	19 34 03	2			+4	5240	Compression. H 19 25 27
		i	Z	34 07	2			+4	47°.2	USCGS: 8S, 108 E
		i	Z	34 12	2			+4		H 19 25 21.
		i	Z	34 20	2			+2		BCIS: 8 1/4 S, 107 1/4 E.
		i	Z	34 30	3			+4		H 19 25 20
		iS	N	40 56	4	+4				Mag. 6.6 Quetta,
		iS	E	40 57	4		+6			6 - 6 1/4 Matsushiro,
		i	Z	41 02	4			+6		5 3/4 Moscow.
		ePS	N	41 05	7					
		i	E	41 14	4		+5			
		i	NE	41 21	4	+3	+3			
		eSS	NE	44.3	10					
		e	Z	44.8	18					
		i	N	44 50	5	+				
		i	E	45 17	5		-			
		eL	N	47.8	31					
		eL	N	49.4	28					
		eL	Z	49.8	31					
		M	NEZ	52.8	24	18	9	13		
		M	N	54.8	12	8				
		M	EZ	57.8	18		9	14		
87	20	iP	NZV	12 01 48	3	+1		+4		Compression.
		eL	NE	05.4	13					
		eT	V	20.2	0.5					
88	22	(iP)	Z	08 17 34	2			+		Masked by microseisms.
		(i)	N	18 32	3	+				USCGS: 6 S,147 E.
		e	N	23 41	13					H 08 11 50. h 200 Km.ca.
		M	E	28.9	13		1			Mag. 5 - 5 1/2 Matsushiro.
		M	N	30.2	15	1				
89	22	iP	V	11 03 20	1.5			+	9960	Compression.
		iPcP	Z	03 22	4			+6	89°.6	Microseisms present.
		i	N	04 09	4	+2				H 10 50 19
		iSKS	N	13 49	6	-3				USCGS:50 1/2 N,175 W.
		e	E	13 52	7					H 10 50 23.
		e	NE	14 00	18					Moscow 50 1/2 N, 175 W.
		eS	N	14 10	6					H 10 50 24.
		iPS	NZ	15 15	7	-4		+5		Mag.7.2 Uppsala Kiruna,
		eSS	EZ	20.2	22					7 Praha,
		eL	E	26.5	28					6.8 Reykjavik
		eL	Z	31.0	34					6 3/4 - 7 Shillong,
		M	E	33.3	18		5			6 3/4 Pasadena, Kew,
		M	NZ	34.6	24	4	7			6 1/4 - 6 1/2 Matsushiro.
										6 1/4 Moscow.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
91	Feb.23	(i)	Z	00 30 42	?					Masked by microseisms.
		e(S)	N	35 09	(13)					USCGS: 6 S, 153 E.
		i	N	35 32	10	+8				H 00 24 34.
		M	NEZ	41.4	18	9	7	8		
	23	iP	Z	09 22 09	2			+		Masked by microseisms.
										USCGS:28 1/2 N, 139 1/2 E.
										H 09 12 20. h 400 Km. ca.
										JMA:28 1/2 N,139 3/4 E.
										H 09 12 24 h 450 Km.
										Moscow H 09 12 26.h 450Km.
										Mag. 6 1/2 Matsushiro.
92	23	i	Z	10 58 26	3			+		Masked by microseisms.
		e(PS)	N	11 05 57	12					USCGS:24 N,141 1/2 E
		eL	E	15.1	27					H 10 47 40.
		eL	N	15.7	(27)					Mag.6 1/2 Matsushiro,
										Uppsala,Kiruna.
93	24	(iP)	V	12 40 12	1.5			(+)		Masked by microseisms.
		i	V	40 16	1.5			+		USCGS:45 N, 99 E.
		i(SKS)	N	50 59	3	+1				H 12 27 06.
		M	N	13 23.4	19	1				BCIS:45.2 N,100.0 E.
										H 12 27 04.
										Moscow 45 N,100 E.
										H 12 27 10
										Shillong 45 1/2 N, 100 E.
										H 12 27 04.
										Oulan Bator: 45 N, 100 E.
										Mag.
										6.3 Oulan Bator,Uppsala,
										Kiruna.
										6 1/4Moscow,Shillong,Kew.
										6 - 6 1/4 Matsushiro.
94	24	(iP)	V	21 32 45	1.5			-		Masked by microseisms.
		M	N	44.7	13	1				USCGS:15 1/2S,172 1/2W.
		M	E	46.4	17		1			H 21 25 25.
97	25	e(S)	N	15 12 49						Masked by microseisms.
		e	N	13 08	12					USCGS: 6S,151 1/2E.
		eL	N	14.3	?					H 15 02 08
		M	NZ	19.5	16	3		5		Mag. 5 1/4 Matsushiro.
		M	E	21.6	14		6			
99	27	iP	Z	23 38 16	3			-4	6890	Dilatation.
		i	NZ	38 17	4	+3		+15	62.°0	Microseisms present.
		i	Z	38 43	4			+9		H(23 27 52)
		iPcP	Z	38 57	5			-7		USCGS:21N, 120E.
		i	Z	39 05	4			-12		H 23 27 49.
		iS	N	46 40	7	+4				Shillong:21N,121E.
		i	NE	46 52	7	+6	+12			H 23 27 44.
		i(PS)	N	47 02	5	-8				Mag.6 3/4 Matsushiro
		i(ScS)	E	48 11	4		+7			6.6 Uppsala,Kiruna,
		e(SS)	E	50.5	11					6 1/2Moscow,Praha.
		eL	E	53.8	(25)					6 1/4 Shillong.
		M	NE	24 01.0	18	3	4			
102	Mar. 3	(iP)	ZV	04 11 27				+		Large microseisms present.
		(i)	V	11 39				+		USCGS:14 1/2s,168 1/2E.
		(i)	V	12 01				+		H 04 06 16.
		e	E	16 13	14					Mag. 5.5 Roxburgh
		e	N	16 18	11					
		M	N	20.1	12	2				
103	3	iP	ZV	16 31 16	3			-4	9960	Dilatation Large micros.
		iSKS	N	41 39	4	+2			89.°7	USCGS:55 1/2N, 166 1/2E.
		iS	E	42 03	3		+2			H 16 18 17.
		eLR	N	17 00.2	30					Mag.6.5 Quetta,
		M	NEZ	09.2	15	1	1/2	1		6.4 Uppsala,Kiruna.
										6 1/4 - 6 1/2 Pasadena
										6 1/4 Matsushiro,5 3/4 Moscow,Rome.

No.	Date	Phase - Component		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
105	Mar. 7	lP	V	08 30 18	1			+		Microseisms present.
		i	V	30 27	1.5			-		USCGS:9 1/2N,126E.H08 21 23
106	8	e(S)	N	18 17 24	15					Masked by large microseisms
		eL	E	19.9	27					BCIS:6S, 157 1/2 E.
		M	NEZ	23.5	16	2	3	3		H 18 06.5.
		M	NZ	26.5	15	3		4		
108	9	e(P)	Z	07 29 46						Masked by large microseisms
		i	N	33 24	4	+3				USCGS:6 1/2S,142E.
		e(S)	N	34 21	(15)					H 07 23 51
		e	N	34 41	15					Mag.5 3/4 Matsushiro.
		eL	E	35.4	22					
		eLR	E	36.6	29					
		M	NEZ	40.9	17	5	8	6		
		M	NZ	43.7	15	9		12		
109	9	iP	Z	10 27 52	5			+4	2760	Compression.Microseisms present.
		eP	E	27 53	8				24.°8 ca.	USCGS:34S, 178 1/2W.
		i	E	28 03	7		+16			H 10 22 25. h 60 Km.ca.
		isP	V	28 05	1			+		Wellington 33 3/4 S,179W.
		iPP	EZ	28 27	6		-8	+7		H 10 22 32.
		i(PPP)	Z	28 35	6			+11		Mag.6 1/2 -6 3/4Pasadena, Matsushiro.
		iPPP	E	28 38	6		-10			6 1/2 Wellington,Kew.
		i(S)	E	32 10	6		+10			
		e	N	32 20	9					
		i(sS)	E	32 24	6		+12			
		i	N	32 27	7	-12				
		i	N	32 42	8	+24				
		e(LQ)	E	32.7	15					
		eLR	E	33.6	32					
		eLR	Z	33.9	30					
		M	EZ	36.2	18		40	45		
		M	N	36.8	15	18				
110	11	iP	ZV	00 36 29	3			+8	7140	Compression.
		ipP	NEZ	36 49	4	-14	+6	+50	64.°3	Large microseisms present.
		iPcP	NZ	37 01	5	+19		-100		H 00 25 59ca. h 0.005 ca.
		i	E	37 02	5		-11			USCGS:25 1/2N,125E.
		i	N	37 19	7	-30				H 00 25 56 h 60Km.ca.
		i	NEZ	37 30	5	+28	-16	-70		JMA:24 3/4N,124 1/2E.
		i	NE	37 38	6	-17	-			H 00 26 06 h 80 Km.ca.
		i	N	37 56	7	+27				Moscow.00 25 49
		i	E	39 10	6		-14			Probably deep.
		i	Z	39 54	9			+35		Mag.
		i	N	40 03	7	+30				M.7 1/2Moscow,Praha.
		i	Z	41 08	4			+19		7.4 Uppsala,Kiruna.
		eS	E	45 01	16					7 1/4Shillong
		i	N	45 07	7	+16				7.2Matsushiro.
		i	N	45 18	7	+25				7 Pasadena,Tacubaya.
		isS	E	45 32	10		-38			6.8 Quetta.
		i	N	45 56	7	+15				m.7 1/4 - 7 1/2 Kew.
		i	Z	46 01	7			-26		
		i(ScS)	E	46 09	9		+97			
		i	NE	46 19	7	+	-109			
		i	N	46 30	6	-75				
		m	Z	46 32	11			38		
		i	E	46 38	7		-56			
		i	NE	46 49	7	+	-56			
		i	N	47 17	7	+35				
		i	N	49 05	10	+28				
		iSS	E	49 17	6		+19			
		i	E	50 17	10		+31			
		i	E	51 14	10		+31			
		i	NE	52 30	7	+13	+11			
		eL	E	54.0	45					
		eLR	N	55.4	33					

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No.	Date.	Phase - Component		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
110	Mar.11	eLR	E	00 55.9	32					
Cont.		M	NZ	59.1	18	80ca.		110		
		M	N	01 00.2	18	57				
		M	E	01.4	18		60			
		W2M	N	03 02.8	21	3				
		M	E	05.2	24		5			
111	11	iP	Z	14 04 29	3			+6	2780	Compression.Micros.present.
		i	NE	04 39	4	-3	-3		25.°0	USCGS:13S, 167E.H 13 59 00.
		i	Z	04 42	3			-8		Mag.5 3/4 - 6 Matsushiro.
		i	NEZ	04 55	3	+3	+4	-6		
		i	N	08 44	5	-4				
		iS	E	08 51	6		+9			
		i	N	08 54	6	+8				
		i	E	09 10	5		+5			
		eLQ	E	09.6	19					
		eLR	Z	10.9	25					
		M	E	12.4	18		9			
		M	N	12.5	16	5				
		M	Z	12.6	19			25		
112	13	(P)	Z	23 58 49						Masked by microseisms.
		(PP)	Z	24 00 50						USCGS:12 1/2N,123 1/2E,H 23 49 23
		e(S)	E	06 23	(12)					Manila:12° 25'N, 123° 35'E
		e(L)	E	11.2	19					Mag. 6.2 Quetta,
		eL	E	15.8	28					5 3/4 - 6 Matsushiro.
		M	E	20.2	23		4			5 1/2 Moscow.
113	15	e(S)	E	00 43 03						Masked by microseisms.
		e	N	44 26						USCGS:23N,121 1/2E, H 00 24 01
		eL	E	52.6	(33)					Mag. 5 3/4 - 6 Matsushiro.
		M	N	58.9	16	1				5 1/2 Moscow.
		M	E	01 00.0	18		2			5.8 Oulan Bator.
										6.0 Uppsala,Kiruna.
114	15	iP	V	15 38 56	1			+		Compr. Microseisms present.
										USCGS:17 1/2S,169E. H 15 33 57.
115	15	e(S)	N	19 16 56	19					Masked by microseisms.
		eL	N	20.4	27					USCGS:5S,152E. H 19 06 10
		M	NEZ	22.6	19	3	3	3		Mag.5 1/4-5 1/2 Matsushiro.
117	20	iP	ZV	01 51 07	4			+3	10060	Compression.Microseisms
		(iPP)	Z	54 34	4			+2	90.°5	H 01 38 02. present.
		e(SKKS)	E	02 01 50	?					No NS Galitzin record.
		eS	E	02 01	9					USCGS:51N,173W.H 01 38 04
		eSS	E	07 47	22					Moscow:H 01 38 02
		eLQ	E	15.2	(42)					Mag. 6 1/2 Pasadena.
		eLR	Z	19.6	30					6 Moscow.
		M	E	21.4	19		4			
		M	Z	22.9	21			4		
118	20	iP	V	14 52 37	1.5			+	2810	Compression.Microseisms
		eS	E	57 01	7				25.°3	H 14 47 07. present.
		e	Z	57 10	13					USCGS:10S,161E.
		iSSS	E	58 20	5		+3			H 14 47 05.
		eL	E	59.2	20					
		M	EZ	15 01.7	17		3	3		
122	22	iP	V	10 23 33	1.5			-	8680	Dilatatiom.Micros.present.
		i	Z	23 35	3			-3	78.°1	H 10 11 31.
		iS	N	33 27	4	+4				USCGS:23 1/2N,94 1/2E.
		ePS	N	34 08	6					H 10 11 27. Moscow:23 1/2N,
		e	E	34 14	?					93 1/2E.H 10 11 37.h100Km.ca
		eSS	N	38 28	8					Quetta:24N,93 1/2E, H 10 11 47.
		eLQ	N	44.2	28					Mag.6 1/2 Matsushiro.
		eL	E	47.1	45					6.4 Uppsala,Kiruna.
		eL	N	48.1	37					6 Kew m.
		M	E	52.0	22		4			5 3/4 Praha.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
123	Mar.22	(iP)	Z	11 21 58	4			-3		Dilatation.Masked by microseisms.
		M	E	12 10.3	20		2			USCGS:35 1/2N,67E. H 11 07 47.
										BCIS:35 1/2N,67 1/2E.H 11 07 48.
										Moscow 35 1/2N,67 1/2E,H 11 07 50
										Shillong:36N,68E. H 11 07 45.
				Mag.6 1/4 Matsushiro.6.2 Uppsala,Kiruna. 5 3/4 Moscow.5.1 Oulan Bator					
126	24	iP	V	01 00 47	1.5			+		Compression.
		i	Z	00 50	3			+6		Microseisms present.
		i	V	00 55	1.5			+		USCGS: 21S,170 1/2 E.
		i	Z	01 02	4			+8		H 00 55 55.
		iPPP	Z	01 20	4			+4		
		i	N	01 23	4	+4				
		i	N	01 50	4	-5				
		e(S)	E	04 45	12					
		e	N	04 48	8					
		e	E	04 59	12					
		i	Z	05 11	4			-5		
		e(SS)	NZ	05 17	12					
		eLR	E	05.9	25					
		eL	Z	06.2	22					
		M	Z	07.7	16			4		
		M	E	07.8	16		5			
		M	N	09.2	10	4				
127	24	i(P)	Z	01 08 38	4			+4		Compression.
		i	E	10 12	4		+4			Confused by coda of 126
		M	Z	19.8	12			3		
		M	E	20.5	12		3			
129	24	(iP)	V	21 51 21	1.5			+		Masked by microseisms.
		i(PP)	Z	51 41	3			-2		USCGS:21 1/2S, 170 1/2E.
		e(S)	E	55 15	13					H 21 46 31.
		i	Z	55 33	5			-2		
		i	E	55 35	6		+5			
		e	N	56 00	12					
		eLR	Z	56.4	23					
		eLR	E	56.5	23					
		M	NEZ	58.1	16	3	4	2		
130	24	i(P)	V	22 14 44	1			+		Compression.
										BCIS:21 1/2S,170 1/2E.
										H 22 09 49.
132	25	(PP)	Z	19 07 15						Masked by microseisms.
		e(S)	N	10 51	9					USCGS:17 1/2S,167 1/2E.
		eL	E	12.6	21					H 19 01 52.
		M	NZ	13.8	16	1		1		
		M	E	14.7	15		1			
133	26	iP	V	00 34 40	1			-		Dilatation.
		ipP	V	35 03	1			+		USCGS:11N,126E,
		isP	V	35 13	1.5			+		H 00 25 49. h 100 Km.ca.
135	30	iP	V	17 38 04	1.5			+		Masked by microseisms.
										USCGS:23S,179 1/2E
										H 17 33 01. h 550 Km.ca.
139	Apr. 4	e(S)	N	07 27 42						Masked by microseisms.
		i	N	28 02	12	+5				USCGS: 5 1/2S,152E.
		e	Z	28 06	12					H 07 16 55.
		e	E	29 08						Mag.5 3/4 Matsushiro.
		eL	N	31.3	26					
		M	NEZ	33.5	19	5	6	6		
140	4	(P)	V	07 35 57	1.5					Obscured by micros.and
		i(S)	N	40 42	13	+3				coda of No.139.
		i	N	41 03	13	+5				USCGS:5 1/2S,152E.
		eL	N	43.0	36					H 07 29 55
		M	EZ	46.6	19		16	14		Mag. 6 Matsushiro.
		M	N	47.0	19	11				

RIVERVIEW COLLEGE OBSERVATORY.

No.	Date.	Phase - Component.	Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
142	Apr. 4	(P) V	15 44 05	1.5					Masked by microseisms.
		e Z	44 09	6					USCGS: 5 1/2S, 152E. H 15 38 03
		i N	44 16	6	+3				Mag. 5 1/2 Moscow
		i Z	45 42	6			-2		6 1/4 - 6 1/2 Matsushiro.
		(S) N	48 47	13					
		i Z	49 01	10			+7		
		i N	49 08	12	+30				
		i N	49 59	9	+10				
		eL N	51.1	36					
		M NEZ	54.9	18	32	28	39		
144	7	i(P) Z	15 45 23	4			+5		Compression.Masked by micros.
		i(PP) Z	49 49	4			+5		USCGS:66 1/2N,157W. H 15 30 38.
		e(SKS) N	55 53	(15)					JSA:66.1N,156.0W. H 15 30 43.
		e(S) N	57 12	(15)					Moscow: 65 1/2N,155 1/2W.
		iPS N	59 01	10	-11				H 15 30 37
		i N	16 03 09	8	+5				Mag.M. 8 Shillong,
		i E	03 11	10		-20			7 1/2 - 7 3/4 Matsushiro.
		i(SS) N	04 30	12	-32				7 1/2 Uppsala,Kiruna,Praha
		i E	04 46	10		+11			* 7.2 Tacubaya
		i N	05 21	10	+11				6.9 Lwiro.
		i E	05 50	10		+14			6 3/4 URSS.Arctique.
		eSSS N	08.8	(24)					m 7 Kew.
		eSS E	08.9	24					* M 7 Pasadena,Moscow.
		i E	09 15	10		+21			
		i NE	09 36	15	+32	+27			
		eLR E	20.7	40					
		M N	25.8	22	31				
		M E	28.0	20		25			
		M NZ	30.9	20	32		90		
145	7	i(P) Z	18 16 39	4			-10		Masked by coda of No.144.
		iS E	25 54	7		-9			USCGS:38 1/2N,143 E. H 18 05 02.
		i N	25 58	7	+8				JMA:38 1/2N,143 3/4E.H 18 04 57.
		i E	26 08	6		-7			Mag.M. 7 Moscow,Praha.
									6.9 Uppsala,Kiruna,6.8 Matsushiro.
									6.4 Reykjavik. m.6 3/4 Kew.
146	9	P V	18 06 01	1.5					Masked by microseisms.
		e V	06 13	1.5					USCGS:2N,126 1/2E,H 17 58 02
		e(S) N	12 20	?					Moscow:2N,126E. H 17 58 10.
		eL E	21.5	24					
		M E	23.7	21		3			
		M N	26.8	15	1				
149	11	iS E	01 19 05	6		-3			Masked by micros.
		e E	19 53	6		3			USCGS:38 1/2N,142 1/2E.H 00 58 13.
		M E	35.9	20		2			JMA: 38 1/2N,144E. H 00 58 06.
									Mag.M.6.6 Matsushiro, 6 1/2 Praha.
									6.4 Uppsala,Quetta.6 1/4 Moscow.
									m.6 1/2 Kew.
150	11	iP V	23 23 33			-			Dilatation.
		iS NE	33 37	9	-3	-4			USCGS:47 1/2N,153 1/2E. H 23 11 26.
		M NEZ	56	22	3	1	2		h.100 Km.ca.
									Moscow:47N,153.8E.H23 11 28.h.100 Km.
									JMA:47N,152E. H 23 11 40 h.80 Km.
									Mag.M.7.1 Uppsala,Kiruna,Shillong.
									6.8 Reykjavik.6 1/2 Pasadena.
									6 1/4 - 6 1/2 Matsushiro.6 1/4 Praha.
									m.6 1/2 Kew.
151	11	iP V	23 32 07			-			Dilatation.
		iPP V	33 44			+			USCGS:0°,125E. H 23 24 11.
									Mag. 5 1/4 - 5 1/2 Matsushiro.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	Dilatation.
153	Apr.12	iP	V	13 36 05.5				-		USCGS:25N,126E. H 13 25 22.
		eL	E	57.2	27					BCIS:25N,125 3/4E. H 13 25 22
										JMA:23N,125E. H 13 24 52.
										Mag.M 6.3 Uppsala,Kiruna,Matsushiro
										5 1/4 Moscow. m.6 1/4 Kew.
154	13	iP	Z	12 41 57	6			-4	9610	Dilatation.
		iPcP	Z	42 02	7			-5	86°.5	USCGS:53N,161E. H 12 29 07.
		ePP	Z	45 23	7			4		Moscow:52 1/2N,163 1/2E.H 12 29 06.
		iSKS	N	52 19	9	+5				Mag.M.7 Moscow.
		iS	E	52 33	9		-7			6 3/4 - 7 Matsushiro.
		iScS	NE	52 44	7	+5	-6			6.8 Praha.
		e	N	53 49	12	2				6.7 Uppsala,Kiruna.
		iSS	E	58 13	10		+2			6 1/2 Pasadena.
		eLQ	E	13 05.5	27					6.4 Quetta,
		M	NZ	15.4	22	7		9		m.6 1/2 Kew.
		M	E	17.7	19		7			
155	14	eSKS	E	21 58 32						Masked by large microseisms.
		ePS	E	22 03 01	15					USCGS:1N,79 1/2W. H 21 32 28.
		ePPS	E	04 32	12					Mag.M 7 1/4 Lwiro.
		eSS	NE	09 47	21					7 Pasadena,Moscow,Matsushiro
		eLR	EZ	29.7	30					2 3/4 Berkeley. Praha.
		M	NEZ	33.6	21	10	11	35		6.4 Quetta. m.6.9 Kew.
159	17	eS	N	06 32 20						Masked by large microseisms.
		i	N	32 35	12	+8				USCGS: 6S,155E. H 06 21 41
		M	E	36.9	16		7			Mag.5 1/4 - 5 1/2 Matsushiro.
		M	NZ	38.1	16	14		12		
160	17	(P)	Z	10 10 47						P under paper clip
		e	Z	11 29						USCGS:5 1/2S,152E. H 10 04 46
		eS	N	15 30						Mag. 5 3/4 - 6 Matsushiro.
		i	N	15 49	12	+30				
		M	NZ	22.2	16	25		47		
		M	E	23.2	13		22			
161	19	iP	Z	20 58 00	4			-4		Microseisms present.
		e	E	21 01 57	11		2			BCIS:22 1/2S,169 1/2E.
		M	NE	05.3	15	4	2			H 10 53.4.
162	20	iP	V	07 27 46				+		Compr. BCIS:60S,25W. H 21 15 02.
163	21	iP	ZV	20 21 54.5	3			-3	4030	Dilatation.
		iS	E	27 35	16		+12		36°.3	USCGS: 15S,174 1/2W. H 20 14 47
		e	E	30 09	19		4			Mag.M.6 1/2 - 6 3/4 Matsushiro.
		i	N	30 19	18	-14				6 1/2 Pasadena
		eL	E	31.7	30					6 Moscow
		M	N	35.2	13	10				m.6 1/4 Kew.
		M	EZ	37.6	16		16	18		
164	21	iP	Z	08 46 34	6			-2	5920	Dilatation.Microseisms present.
		ipP	EZ	47 17	6		+4	+7	53°.3	H 08 37 33 ca. h.0.025 ca.
		isP	Z	47 36	6			-14		USCGS:4 1/2S,104E. H 22 37 18.
		i	Z	49 15	6			+4		BCIS: 4 1/2S,104E. H 22 37 36.
		i	Z	49 27	5			-5		h.200 Km.ca.
		i	E	53 36	?		+			Moscow: H 22 37 44.h.180 Km.ca.
		iS	E	53 49	8		+14			Mag. M.6.7 Uppsala,Kiruna.
		isS	N	54 58	9	-21				6 1/2 Pasadena.
		isS	E	55 00	12		+21			6 - 6 1/4 Matsushiro.
		i(SS)	NE	57 25	7	-8	-7			m.6 1/2 Kew.
		i	E	58 39	10		+13			
165	21	iP	V	24 03 40	1.5			+		Compression.Microseisms present.
		iS	N	08 53	7	+4				USCGS:6 1/2S,131 1/2E. H 23 57 05.
		i	E	09 26	8		+5			Mag. 6 Matsushiro.
		M	E	15.3	14		10			
		M	N	15.8	7	8				
		M	Z	18.6	10			8		

No.	Date.	Phase - Component	Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
166	Apr.23	eS E	03 19 50	9		1			Masked by micros.USCGS:45N,152E. H 02 57 40.
		M N	43.6	18	2				JMA:43 3/4N,151E. H 02 57 58.
		M E	44.5	15		1			Mag.M 6.2 Uppsala,Kiruna. 6 Moscow,Praha.5 1/2 Matsushiro. m.6 1/4 Kew.
167	23	iP V	15 18 36				+		Compression. Microseisms present.
		i Z	19 57	6			+		USCGS: 15 1/2S,176W. H 15 11 39.
		M N	30.3	13	3				Mag. 5 1/2 Matsushiro.
		M EZ	30.8	16		3	3		
168	24	iP EZ	13 14 26	6		+3	-9	2330 ca.	Dilatation. Microseisms present.
		i NE	14 29	7	-4	-8		21.0° ca.	USCGS:22S,170 1/2E. H 13 09 41.
		iPP EZ	14 51	8		-8	+8		Mag. 5 3/4 Matsushiro.
		i E	15 38	6		-8			
		iS E	18 17	9		+8			
		iS N	18 18	10	-8				
		i E	18 26	10		+18			
		i Z	18 29	8			+23		
		i E	19 08	8		+7			
		eLR Z	19.6	24					
		M Z	21.9	16			9		
		M NE	22.1	15	13	8			
169	24	eP Z	17 25 55					2330 ca.	Microseisms present.
		ePP E	26 20	7		2		21.0° ca.	USCGS: 22S,170 1/2E.H 17 21 10
		iS E	29 46	6		+3			
		i Z	30 00	7			-7		
		eL Z	30.9	28					
		eL E	31.1	26					
		M NE	32.8	16	3	2			
172	26	(iP) V	09 31 07						(Dilatation)
		i Z	31 47	4			+4		Confused by large microseisms.
		e(S) N	35 14	6			+4		USCGS:15S,168E. H 09 25 54.
		iS N	35 19	6	-2				
		e E	35 25	7		+2			
		iSS N	36 08	7	+4				
		i E	36 15	7		-5			
174	28	(eP) Z	06 16 06						Masked by microseisms.
		e(S) E	20 28						BCIS:57 1/2S,142E. H 06 10.7.
		i E	20 37	6		-2			
		e NE	21.0	16					
		e E	21 27	8					
		M Z	24.1	15			1		
		M N	24.3	15	1				
		M E	24.7	10		2			
176	28	ePP Z	12 07 34	9					Microseisms present.
		eSKS E	13 20	12					USCGS:11S,74W. H 11 47 40.
		ePS N	17 24	17					Mag.M 6 1/2 Pasadena,Matsushiro.
		ePS E	17 25	17					6.4 Uppsala,Kiruna.
		e E	19 03	18					6 1/4 - 6 1/2 Berkeley.
		eSS E	23 59	12					6.3 Quetta.
		eSS N	24 06	12					m.6 1/2 Kew.
		ePSPS E	24 49	15		2			
		eSSS E	28 07	19					
		eL E	39.1	24					
		eLR Z	43.5	24					
		M N	48.7	18	3				
		M EZ	51.2	17		5	8		
177	May 1	iP NEZV	00 34 23.5	3	-4	-5	+22	2760	Compression.H 00 29 14. h.0.02.
		ipP V	34 54	2			+	24.8°	USCGS:13 1/2S,167 1/2E. H 00 29 15 h 200Km.ca.
		iPP Z	35 05	4			+10		Moscow:H 00 29 14. h160 Km.
		i NEZ	35 25	5	+5	+5	-11		Mag.6 3/4 Matsushiro.
		i NEZ	35 31	5	-9	-6	+15		6 1/4 Pasadena. 6 Berkeley.

No.	Date.	Phase - Component		Time. (G.M.T,)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958			h m s	s	μ	μ	μ	Km.	
177	May 1	iS	N	00 38 31.5	6	-15				
Cont.		isS	N	39 32	7	+ 6				
		e	E	39 33	20		22			
		iSS	E	39 44	6		+12			
		e	N	40.1	21	38				
		i	E	40 20	7		+24			
		M	NEZ	43.1	16	18	12	22		
180	8	iPP	Z	12 59 47	4			-3		Micros.Present.USCGS:24S,67W. H 12 40 46. h 200 Km.ca.
		eSKS	E	13 05 32	10					JSA:24.2S,67.2W.H 12 40 50.h 0.025
		eSKKS	E	06 33	7					Moscow: H 12 40 40. h 180 Km.ca.
		iPS	N	09 21	7	+3				Mag.7 Matsushiro,
		iPS	E	09 25	7		+3			6 1/4 - 6 1/2 Pasadena
		i	E	10 00	6		+2			6.3 Uppsala, 6.1 Tacubaya,
		e	NE	10 12	16	5	3			6 Berkeley.
183	14	iP	V	04 04 16	1.5			-		Delatation.
		eL	E	11.6	16					USCGS:4 1/2S,153E. H 03 58 09.
		M	NEZ	16.0	14	3	3	2		Mag. 5 3/4 Matsushiro.
187	18	iP	V	02 38 22	1			-	2820	Dilatation. H 02 32 56.
		ipP	NEZ	38 33	7	-16	-13	+30	25°.4	USCGS:13S,167E. H 02 32 52
		i	Z	40 17	8			+13		JSA:12.0S,165.2E. H 02 32 58.
		iS	NE	42 44	8	-22	+17			Mag.M.7 Berkeley. h 0.00.
		isS	NEZ	43 00	10	-50 ca	-28	+33		6 1/4 - 6 1/2Pasadena,Matsushiro.
		iSS	N	43 45	10	+19				6.3 Rome,Uppsala,Kiruna.
		eL	N	43.9	19	31				6 1/4 Moscow.
		M	NEZ	47.8	17	37	23	38		m 6 1/2 Kew.
188	18	iP	Z	22 26 50	5			+10	2780	Compression. h 0.005
		ipP	Z	27 07	5			+7	25°.1	USCGS:13S,167E. H 12 21 18
		isP	NEZ	27 14	5	+9	+6	-18		Mag.M.6 1/4 Matsushiro,Rome.
		iPP	Z	27 26	5			+8		6 - 6 1/4 Pasadena.
		iS	NE	31 07	8	-15	+11			5 3/4 Moscow.
		i	N	31 17	11	+46				m 6 1/4 Kew.
		i	Z	31 22	9			+37		
		isS	N	31 36	10	-46				
		iSS	E	32 12	11		+19			
		M	NEZ	35.9	15	40	24	33		
189	19	P	V	00 11 27						Microseisms present.
		i	V	11 30				+		USCGS: 13S,167E. H 00 06 00
		i	Z	11 40	4			+4		Mag. 5 1/2 Matsushiro.
		i	Z	11 53	5			+4		
		i	N	15 57	10	+11				
		i	E	16 03	10		-12			
		i	N	16 30	9	+13				
		M	NEZ	20.7	15	11	5	11		
191	21	eP	Z	15 14 18						Masked by microseisms.
		eS	NE	19 27						USCGS:3S, 146E. H 15 08 00.
		eL	E	22.3	33					Mag. M 6 Matsushiro.
		M	NZ	27.2	17	10		8		m 6 1/4 Kew.
		M	E	28.2	13		12			
192	24	eP	Z	07 34 36						Microseisms present.
		i(S)	E	38 44	5		+2			BCIS:52 1/2S,141E. H 07 29.4
		i	N	38 48	6	-4				
		i	E	40 36	5		+3			
		M	N	42.5	12	3				
		M	E	44.1	9		2			
194	25	ePS	E	21 42 08	12					Masked by microseisms.
		eSS	E	48 46	22					USCGS:3S,77W.H 21 11 45.h 100 Km.ca
		eL	EZ	22 09	28					Mag.M 6 1/2 - 6 3/4 Matsushiro.
		M	NEZ	14	19	4	3	6		6 1/2 Pasadena.6.4 Tacubaya.
										6 1/4 - 6 1/2 Berkeley,
										6.3 Uppsala,Kiruna.
										6.2 Reykjavik,6 Moscow. m 6 1/2Kew.

No.	Date.	Phase - Component.	Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
195	May.30	(P) V	05 56 12						Masked by microseisms.
		e V	56 18						USCGS:7S,154 1/2E. H 05 50 26
		e N	06 01 11	9	1				
		eL E	03.4	23					
		M E	05.7	13		2			
		M NZ	06.8	14	3		2		
196	30	P V	16 22 11						USCGS:25N,122E. H 16 11 40.h 100 Km ca.
									Mag .5 3/4 - 6 Matsushiro.
									5.8 Uppsala,Kiruna.
197	30	iP V	18 18 09				-	10320	Dilatation.
		i V	18 20				+	92.°9	USCGS:52 1/2N,169W. H 18 04 50.
		iSKS N	28 40	7	+2				Mag.M.6.5 Quetta,Matsushiro.
		eS E	29 13	12		2			6.3 Tacubaya.
		i N	29 18	6	+2				6 1/4 Berkeley.
		eSSS E	39 07	22					6 - 6 1/4 Pasadena.
		eLR Z	48.3						6 Moscow,Uppsala,Kiruna.
		M NEZ	53.9	16	1	2	2		
199	31	iP NEZ	19 37 52	5	+9	+10	-23		Dilatation.
		i NE	38 16	7	+33	+52			After iP Galitzin records confused.
		iS N	42(05)	7*	+15*	Mainka.			USCGS:15S,169E. H 19 32 30.
		M Z	45.4	18			270 ca		JSA:15.5S,168.3E.H 19 32 36.h 0.00
		M E	45.8	18		180 ca			Mag.M 7 1/2 Pasadena,Tacubaya.
		M N	46.1	18	180 ca				7 1/4 - 7 1/2 Berkeley, Matsushiro.
									7.1 Uppsala,Kiruna. 7 Rome,Moscow.
									6 1/2 - 6 3/4 Shillong. m 7 Kew.
201	Jun. 3	iP NEZV	19 37 08	5	-11	-11	+28	2700	Compression.
		isP NEZ	37 16	5	-20	-22	+53	24.°3	USCGS:15S,168E.H 19 31 52.
		i Z	37 26	7			-36		Mag.M
		iPP NE	37 46	6	+13	+12			6 3/4 - 7 Lwiro,6 3/4 Rome.
		iPPP NEZ	37 58	6	+13	+8	-22		6 1/2 - 6 3/4 Berkeley.
		iS N	41 25	8	-13				6 1/2 Pasadena.
		i NZ	41 34	8	+32		+30		6 1/4 Moscow.
		i E	41 38	7		-21			6.4 Uppsala,Kiruna.
		i N	42 06	11	+42				m 6 1/2 Kew
		i E	42 29	10		-67			
		iSSS N	42 38	10	-58				
		i E	42 55	7		+28			
		eLR E	43.2	18					
		M Z	45.6	16			45		
		M NE	45.9	14	62	47			
202	4	eP Z	14 43 13					10380	Microseisms present.
		eSKS N	53 47	7	1			93.°4	USCGS:52 1/2N,167W.H 14 29 50
		iS E	54 19	7		-3			Mag.M 6 1/2 Moscow.
		e NE	54 38	9	1	1			6 i/4 - 6 1/2 Matsushiro.
		eSS E	15 00 32						6 - 6 1/4 Pasadena,Lwiro.
		M NEZ	29.6	16	2	2	3		6.1 Strasbourg. 6 Berkeley.
									5.9 Uppsala,Kiruna. m 6 1/4 Kew.
204	6	e(PS) E	09 42 00	18		3			Masked by large microseisms.
		e E	44 25	19		3			USCGS: 8N,84 1/2W. H 09 11 14.
		e(SS) E	48 52	27		10			BCIS: 8N,84 1/2W. H 09 11 16.
		e N	49 15	22	2				Mag.M 6 3/4 - 7 Matsushiro.
		e(SSS) E	52 55	21					6 1/2 - 6 3/4 Pasadena.
		eLR E	10 08.8	36		11			6.7 Reykjavik.6.5 Tacubaya,
		eLR NZ	09.3	30	6		11		Strasbourg,Moscow Rome.
		M NEZ	21	17	2	3	5		m 6 1/4 - 6 1/2 Kew.
205	7	iP ZV	12 59 49	5			-4	2330	Dilatation.
		i V	13 00 30	2			+	21.°0	USCGS:53S,140E. H 12 55 01.
		iS E	03 39	9		+6			Mag.5 1/2 - 5 3/4 Matsushiro.
		i N	03 55	9	-14				
		i E	04 00	9		+6			
		eL Z	04.6	30					
		i N	04 35	7	-6				
		eL N	05.0	22					
		M NEZ	07	11	8	7	5		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
206	Jun.10	(iP)	Z	04 05 45						Masked by large microseisms.
		(i)	N	10 29						USCGS:30 1/2S,177W. H 04 00 04.
		eL	E	11.9	22					Mag.5 1/2 - 5 3/4 Matsushiro.
		M	E	14.2	19		4			
		M	NZ	14.5	19	3		13		
207	12	P	Z	21 06 20					10430	Obscured by large micros.H 20 52 59
		eSKS	N	16 53					93°.9	USCGS:53N,167W. H 20 52 57.
		S	E	17 28						Mag.M 6 1/4 Rome. 6.3 Lwiro.
		M	E	41.3	16		3			6 1/4 - 6 1/2 Strasbourg.
		M	N	41.9	18	4				6.4 Uppsala. 6 1/2 Pasadena.
										6 1/4 - 6 3/4 Matsushiro.
208	13	iP	V	11 04 06	1.7			+		Compression.Large Microseisms on
		iPP	V	04 42	1.7			+		Galitzin.
		(S)	N	08 28	7					BCIS:50S,125 3/4E. H 10 58 42
		i	E	08 34	8		-5			USCGS:50S,126E. H 10 58 44
		i	E	08 57	8		-6			Mag. 5 1/4 - 5 1/2 Matsushiro.
		eL	N	10.4	18					
		M	NEZ	11.3	17	13	11	22		
209	15	iP	Z	11 38 07	5			-10	2780	Large microseisms present.
		eS	N	42 30	12	8			25°.0	USCGS:9S,150E. H 11 32 38.
		eL	E	43.6	24					Mag.5 1/4 - 5 1/2 Matsushiro.
		M	E	46.6	16		17			
		M	N	47.2	13	9				
		M	Z	48.2	13			26		
210	15	iP	NEZ	15 00 16	5	+6	+11	-34		Dilatation.Large Micros.present.
		i	E	00 57	4		+5			USCGS:18S,178 1/2W. H 14 54 37
		i(pP)	E	01 48	5		+5			h 600 Km.ca.
		i	Z	02 08	5			+13		Moscow.H 14 54 35.h 550 Km.ca.
		i(S)	E	04 40	6		-4			Mag. 6 1/4 Pasadena.
		i	E	04 50	6		-4			6.3 Berkeley.
		i	E	07 42	6		+5			6 1/2 Matsushiro.
		i	N	07 43	6	+5				
		i	NE	08 10	7	+8	+8			
		iScS	N	09 49	5	+8				
211	15	(P)	Z	17 26 18						Masked by large microseisms.
		i	Z	26 28	5			+10		USCGS: 9 1/2S,150E. H 17 20 56.
		e	N	30 48	10					Mag. 5 3/4 Matsushiro.
		i	N	30 55	12	+14				
		eL	E	32.9	25					
		M	E	34.9	16		34			
		M	N	35.6	15	18				
		M	Z	36.6	13			43		
		M	E	37.9	10	32				
212	16	iS	E	08 25 27	11		+5			Masked by microseisms.
		eLR	E	29.7	25					USCGS:14 1/2S,177 1/2W.
		M	Z	31.7	19			13		H 08 13 07.
		M	E	31.8	18		6			Mag. 5 3/4 Matsushiro.
		M	N	33.0	13	5				
214	17	iP	V	19 16 38	1.5					Compression.USCGS:25N,142 1/2E.H 19 06 43.h 60 Km. ca.
		eL	E	32.6	30					JMA: 24 3/4N,143E. H 19 06 48.h 200 Km.
										Moscow 24 1/2N,141E. H 19 06 42. Mag. 6.6 Uppsala.
										6.5 Reykjavik.6 Matsushiro. 5 3/4 Moscow.
215	18	iP	V	16 20 32	1.5			+		Compression.
		i	V	20 38	1.5			+		BCIS:48 1/2S,116 1/2E.H 16 14 25.
		eL	E	29.3	15					
216	19	eP	V	05 30 28	1.5					USCGS:49 1/2N,156E. H 05 18 00.
		e(S)	NE	40 53	9					Moscow.50N,155E. H 05 18 07
		eSS	N	46 06	18					JMA:50N,156E.
		eLQ	N	53.4	30					Mag.M 6 1/2 Pasadena,Reykjavik.
		M	E	06 00.4	24		3			6 - 6 1/4 Matsushiro.5.9 Uppsala.
		M	NZ	02.5	24	6		8		5 3/4 Moscow. m 6 1/4 Kew.

No.	Date.	Phase - Component	Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
217	Jun.19	iP V	11 16 34	1					Compression.
									USCGS:15 1/2S,168 1/2E.H 11 11 20.
218	19	iP V	13 38 27	1.5					Dilatation.
		i V	38 38	1.5					BCIS:52 1/2S,140E. H 13 33 42
		e(S) E	42 21	7					
219	19	iP Z	18 06 54	4			+4		Compression. Microseisms present.
		e E	10 42	10		3			USCGS52 1/2S,140E. H 18 02 15
		i N	10 52	7	+2				Mag.5 3/4 - 6 Matsushiro.
		i E	11 03	9		-8			
		i(SS) N	11 07	7	+5				
		eL N	11.6	29					
		M E	13.4	10		6			
		M NZ	14.7	11	7		12		
221	23	i V	07 24 46	1.5					Masked by microseisms.
		i V	24 57	1.5					USCGS:15 1/2S.168 1/2E. H 07 19 02
		i N	28 27	5	-2				
		i N	28 51	6	+3				
222	23	iP V	22 34 40	1			+		Compression.
									BCIS:14S,166 3/4 E. H 22 29 26.
223	24	e(P) V	00 17 12						Masked by microseisms.
		i V	17 36				+		USCGS:8 1/2S,112E.H 00 09 18.
		eL N	34.1	20					h 200 Km.ca.
									Mag.5 3/4 - 6 Matsushiro.
224	24	e(S) N	07 00 13						Masked by microseisms.
		eLR E	17.4	25					BCIS:47S,80W. H 06 36.4.
		M NEZ	20.6	21	3	3	9		
225	25	iP NZ	09 42 55	4	-2		+9	3500	Compression
		ipP Z	43 04	6			+16	31.5	USCGS:3S,144 1/2E. H 09 36 30.
		iPP Z	43 54	5			+9		Moscow: H 09 36 42.
		iPPP N	44 09	5	+4				Mag. M 7 1/4 Strasbourg.
		i N	47 53	11	+24				7 Moscow.
		iS E	48 00	11		-20			6.9 Uppsala,Kiruna.
		isS N	48 14	11	+24				6 3/4 - 7 Matsushiro.
		i E	48 21	10		-20			6 1/2 Lwiro.
		i N	49 23	10	-45				6 1/4 - 6 1/2 Pasadena.
		i N	49 49	8	+40				m 6 3/4 - 7 Kew.
		eL E	49.9	(40)					
		M E	54.8	18		145 ca.			
		M N	56.8	16	120 ca.				
		M Z	57.9	15			500 ca.		
227	26	(iP) V	04 03 32						Masked by microseisms.
		iS N	07 29	6	+2				BCIS:22 1/2S,172E. H 03 58 44.
		i E	07 37	5		+4			
228	26	(iP) V	04 51 04						Masked by micros.
		iS E	05 01 35	7		+3			USCGS:54 1/2N,159 1/2E.H 04 38 12.Deep focus
									Moscow 53 1/2N,159 1/2E.H 04 38 25.h 150Km.
									Uppsala: h 135 Km. Mag.6.0
									Mag.6 1/2 - 6 3/4 Pasadena.
									6 1/2 Matsushiro. 6.4 Reykjavik.
230	28	iS N	11 45 06	6	-3				Masked by microseisms.
		i E	45 13	7		+2			BCIS:14 1/2S,167 1/2E.H 11 35 35
		eL E	47.2	20					
233	30	iS N	18 45 47	8	-5				Masked by large microseisms.
		i E	45 51	9		+8			USCGS:31N,141 1/2E.H 18 26 20.
		i E	47 07	8	+9				JMA: 31 1/2N,142E.H 18 26 33.
		i E	47 22	5		+6			h 60 Km.
		eL E	56.4	18					Mag.6 3/4 Pasadena.6.3 Uppsala
		M NE	19 05.4	18	6	6			6 1/4 Moscow,Strasbourg.
									6.1 Matsushiro.
									m 6 1/4 - 6 1/2 Kew.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
234	July 3	iP	Z	06 32 44	5			+9	2860	Compression.
		i	Z	33 17	5			+9	25.°7	H 06 27 48. h 0.06
		ipP	Z	33 53	5			+17		USCGS:29S,179W.H 06 27 44
		ipP	E	33 54	5		-5			h 400 Km.ca.
		isP	EZ	34 45	6		+7	-25		Mag. 6 Pasadena.
		i	E	35 26	7		+7			6 - 6 1/4 Berkeley.
		iS	NE	36 42	7	-10	+15			6.6 Matsushiro.
		i	N	36 51	7	-14				
		i	E	36 52	7		+7			
		i	N	37 13	6	-5				
		i	E	37 16	9		-13			
		iScP	NE	38 58	7	+11	-6			
		i	NE	39 14	13	+10	-15			
		iScS	N	42 53	7	-9				
236	4	iP	ZV	18 42 38	4			-5		Dilatation.
		ipP	V	42 49	2			+		USCGS: 6N,125E. H 18 34 03
		isP	ZV	42 52	4			+4		Moscow. H 18 34 10
		ePcP	V	44 10	2					JMA: H 18 34 00
		iPP	V	44 27	2			+		Mag.M 6.3 Quetta.
		e(S)	NE	49 32	?					6 Matsushiro,Uppsala,Kiruna.
		i	E	50 07	7		+3			5.8 Strasbourg, Rome.
		eSS	E	52 48	13		2			m 6 Kew.
		e	N	53 15	13					
		M	E	19 02.0	16		2			
		M	NZ	04.4	18	4		10		
238	8	iP	Z	19 34 18	4			-4		Dilatation.Microseisms present.
		e	E	39.4						BCIS:62 1/2S,153E. H 19 28 24.
		M	E	45.3	10		2			
239	10	(PKP)	Z	06 34 24						Microseisms present.
		iPP	Z	35 04	6			+12		USCGS.and BCIS:58.6N,137.1W.
		iSKS	N	41 17	9	-12				H 06 15 51.
		i	E	41 42	?		-			Moscow: 56N,136W. H 06 15 47.
		i	E	42 48	10		-12			Mag.M 8 1/2 Shillong.
		i	N	42 59	10	-18				8 1/4 - 8 1/2 Matsushiro.
		i	N	43 55	10	-16				8.2 Reykjavik.
		iPS	Z	44 34	11			+19		8 Berkeley,DeBilt.
		i	Z	44 47	10			+40		7 3/4 - 8 Pasadena.
		i	E	44 52	11		+20			7.8 Tacubaya, Rome.
		i	N	44 54	10	+21				7 3/4 Moscow,Praha.
		i	N	45 39	10	-29				7.7 Lwiro.
		i	N	46 19	10	+21				7 1/2 Peking,Strasbourg.
		i	N	46 41	10	+20				7.8 Uppsala,Kiruna.
		i	N	46 57	10	+26				m 7 3/4 Kew.
		i	E	48 14	11		+18			7.2 Uppsala,Kiruna.
		i	E	50 22	12		-32			
		eSS	N	50 33	24					
		i	E	50 36	12		+28			
		i	Z	50 42	12			+45		
		i	N	50 55	11	-45				
		e	E	51.0	16					
		i	E	52 15	10		+17			
		i	N	52 16	12	+27				
		i	E	53 12	12		-15			
		i	N	53 17	12	+24				
		i	E	53 32	12		-26			
		i	E	54 10	?		+			
		e	N	54 15	16					
		i	N	54 26	12	-46				
		eSSS	E	54 43	24					
		eLQ	E*	07 00.9	45*					* From Mainka.
		eL	N*	01.2	40*					
		iL	E	01 13	45		+420 ca			
		eLR	Z	06.6	33					Ph. Com. G.M.T. Per. A_Z
		M	NE	13.9	19	100	95			M Z 07 18.0 18 μ 180

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
	July12	iP	V	03 38 34	1.5			+		Compr. Nuclear explosion,Bikini. USAEC:11 41' 52"N.165 15'52"E. H 03 30 00.1 Mag.5 - 5 1/4 Matsushiro.
242	13	lP	V	12 09 19	1.5			+	2940	Compression.Microseisms present.
		i	V	09 31	1.5			-	26.5	H 12 03 49.h 0.01 ca.
		ipP	V	09 38	1.5			+		USCGS:10S,161 1/2E. H 12 03 50. h 100 Km.ca
		isP	V	09 47	2			+		Mag.5 1/4 Pasadena,Matsushiro.
		eS	N	13 44	12					
		M	E	19.1	16		1			
243	14	i	E	10 25 53	4		-2			BCIS: Probably Banda Sea.
		i	E	26 18	5		-5			
		eL	NE	26.6	14					
		i	N	28 59	6	+2				
244	16	eSKS	E	13 16 36						Masked by microseisms.
		eLR	E	30.2	27					USCGS:29 1/2S,113W.H 12 54 18.
		M	EZ	34.1	19		3	9		Mag.M 6 Berkeley.
		M	N	36.1	18	4				5 3/4 - 6 Matsushiro. m 6 Kew.
245	16	eP	V	16 59 53	1					Confused by microseisms.
		eS	N	17 04 25	7					USCGS:12S,166 1/2E. H 16 54 17.
		i	N	04 40	10	-7				Mag. 5 3/4 Matsushiro.
		i	E	04 45	10		+7			
		i	N	05 06	10	+9				
		i	Z	05 09	8			+10		
		M	N	09.7	13	2				
		M	EZ	13.0	13		2	5		
246	16	(P)	V	18 45 57						Masked by microseisms.
		eS	N	50 28						USCGS:12S,166 1/2E. H 18 40 21.
		i	N	50 42	10	-5				Mag. 5 1/4 - 5 1/2 Matsushiro.
		i	E	50 48	10		+4			
		i	NE	51 08	9	+5	+4			
		i	Z	51 13	9			+10		
		M	N	55.8	12	1				
		M	E	59.1	12		2			
247	19	iP	ZV	06 36 34	4			+9	3360	Compression. h 0.02.
		ipP	Z	37 08	4			-5	30.2	USCGS:4S,138 1/2E. H 06 30 19.
		isP	V	37 26	1.5			+		h 150 Km.ca.
		eS	N	41 33	11	3				Moscow H 06 30 20. h 250 Km.
		i	E	41 36	7		+4			Mag.M 6.6 Uppsala,Kiruna.
		i	N	42 56	9	-7				6 1/4 - 6 1/2 Matsushiro.
		i	E	43 24	8		+5			6.3 Rome.
		i	N	43 43	7	+6				m 6 1/2 Kew.
		i(ScS)	E	46 39	7		-12			
		M	E	48.6	13		9			
248	19	iP	V	09 07(10)	1			+		BCIS:17S,169 1/2E. H 09 02.1
249	19	iP	V	18 24 17	1.5			-	4340	Dilatation.
		i	Z	24 18	4			+5	39.1	Compression.
		i	V	24 21	1.5			-		USCGS:0°,129 1/2E. H 18 16 52
		i	NZ	24 24	5	+5		+23		Moscow: H 18 16 52.
		i	Z	24 33	4			+20		Mag.M 7 Matsushiro.
		i	NE	24 34	4	-4	+3			6.8 Uppsala.
		iPP	NZ	25 46	5	-4		+17		6 1/2 Rome
		i	NEZ	25 53	5	+9	-6	-23		6 1/4 Moscow,Praha.
		iS	NE	30 17	7	+7	-18			m 6 3/4 Kew.
		i	NZ	30 23	7	-25		+24		
		i	E	30 33	10		-14			
		iSS	NE	33 03	7	+9	+8			
		i	N	33 08	9	+38				
		i	E	33 13	9		-32			
		i	NE	33 28	11	+21	-24			
		i	E	33 52	8		+23			
		eL	N	35.0	18					
		M	NEZ	43.9	13	54	78	100		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
251	July21	i	Z	07 37 15	4			+4		Masked by microseisms.
		iS	E	46 50	7		-3			USCGS:44 1/2N,147 1/2E H 07 24 58.
		i	N	46 51	7	-3				Moscow:44 1/2N,148E. H 07 25 03.
		i(sS)	E	47 07	7		+3			JMA:43 3/4N,147 1/2E.H 07 25 08 h 60 Km.ca.
		eLQ	E	57.4	32					Mag.M 6 1/2 Bratislava.
		M	NEZ	08 06	22	3	2	8		6 - 6 1/4 Berkeley.6.1Rome.6 Praha, Matsushiro.
										5.9 Uppsala,Kiruna,Oulan Bator. m 6 1/4 Kew
252	21	iP	ZV	14 50 14	4			+4	9930	Compression.
		iSKS	N	15 00 42	7	+3			89.°4	USCGS:51 1/2N,178W. H 14 37 18.
		iS	NE	01 03	7	-2	-4			Moscow:51 1/2N,178W.H 14 37 20
		ePS	Z	02 09	10					Mag.6 1/4 - 6 1/2 Bratislava, Matsushiro.
		eLQ	E	13.7	30					6.3 Tacubaya.6 1/4 Berkeley.
		eLR	E	18.7	27					6.1 Uppsala,Kiruna. 6 Rome,Praha.
		M	NZ	22.3	22	2		4		5 3/4 Moscow. m 6.1 Kew.
		M	E	24.4	21		1			
253	21	iP	ZV	18 38 18	4			-4		Dilatation.
		i	V	38 35	1.5			-		USCGS:14S,167 1/2E. H 18 32 58.
		iS	E	42 42	6		+1			
		eL	E	44.6	18					
254	23	iP	Z	10 38 07	5			-4	7210	Dilatation.
		ipP	Z	38 17	6			+6	64.°9	USCGS:31N,142E. H 10 27 19
		iS	NE	46 48	7	-4	-5			JMA:31N,142E. H 10 27 23.
		isS	NE	47 06	?	+	+			Moscow: H 10 27 22.
		iScS	E	48 03	7		-4			Mag M 7ca.Praha.6 3/4 Rome.
		eSS	E	50 54	12		-4			6 1/2 - 6 3/4Bratislava.
		eL	NE	56.2	26					6 1/2 Moscow. 6.3Uppsala,Kiruna.
		M	NEZ	11 03.3	18	4	5	4		6 1/4 Pasadena.6 - 6 1/4 Matsushiro
										6 Strasbourg. m 6 1/2 Kew.
255	26	eP	Z	06 26 07						Microseisms present.
		eS	N	36 05						USCGS:40S,45 1/2E. H 06 13 50
		eLQ	N	47.3	25					Moscow: H 06 13 50
		eLR	NEZ	51.1	31					Mag.5 3/4 Moscow,Praha,Rome.
		M	NEZ	52.7	25	7	7	19		m 6 1/4 Kew.
257	26	iPKP	V	17 54 57	1			-	13300	Dilatation.
		i	V	55 29	1.5			+	120°ca.	h 650 Km.ca.(Gutenberg tables used)
		iPP	Z	56 33	4			-16		USCGS:13 1/2S,69W. H 17 37 09.
		i	NE	56 35	4	+3	-3			h 650 Km.ca.
		i	Z	56 52	4			+25		Mag.M 8.1 Reykjavik.
		i	NE	56 53	5	+5	-4			7.8 Rome
		ipPP	Z	58 27	5			+13		7.7 Uppsala Kiruna.
		i	Z	58 43	5			+17		7 1/2 Berkeley,Tacubaya.
		i	Z	59 50	5			+15		7 - 7 1/2 Pasadena.
		iSKS	N	18 00 57	8	+15				m 7 - 7 1/2 Kew.
		i	E	00 59	8		-13			
		i	NE	01 10	7	-25	+29			
		i	NE	01 22	7	-22	+21			
		i	N	02 14	7	-7				
		i	E	02 21	6		+13			
		i	NE	02 38	6	-14	+16			
		iSP	Z	05 16	9			+50		
		i	NE	05 21	7	+10	-7			
		m	NEZ	05 36	12	11	10	54		
		i	Z	07 34	9			+31		
		i	E	11 50	10		+10			
		eSS	E	12 02	21		11			
		e	N	12 37	22	15				
		i	E	12 51	9		-18			
		isSS	E	15 37	10		-17			
		i	N	15 47	12	+26				
		iSSS	NE	16 56	12	-22	+15			

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	S	μ	μ	μ	Km.	
	July26	(P)	V	20 38 30						USAEC:Nuclear Explosion.
										11°39'22"N,162°13'11"E. H 20 30 00.2
258	27	ipP	Z	00 29 31	4			+3		USCGS:20 1/2S,178 1/2W.
		iS	E	32 12	7		+2			H 00 22 32. h 600 Km.ca.
259	28	e(PP)	V	01 29 39						USCGS:5S,151 1/2E.H 01 23 05.
		i(SS)	E	35 17	6		+1			h 200 Km.ca
		eL	E	37.4	19		2			
260	28	iP	V	17 30 18	1			+	3400	Compression. h 0.07ca.
		iPP	V	31 46	1			+	30°.6 ca.	USCGS:20S,177 1/2W. H 17 24 40.
		iS	N	34 46	5	-2				h 500 Km.ca.
		i(SS)	NE	37 42	10	+5	+			
		iScS	E	40 00	4		-1			
261	28	(P)	V	21 28 49						USCGS:20S,178 1/2W. H 21 23 25
		e(S)	E	33 07						h 650 Km.ca.
262	29	ePP	E	10 57 08						Masked by microseisms.
		eS	N	11 01 18						USCGS:20 1/2S,175 1/2W.H 10 49 27
		eLR	EZ	04.6	21					Mag.5 3/4 - 6 Matsushiro
		M	EZ	08.5	18		4	10		
		M	N	09.1	4					
263	29	iPKP	V	21 57 12	1.5			+		USCGS:BCIS:4N,26 1/2W.H 21 37 25.
		i	V	57 17	1			+		Mag.6.2 Uppsala,Kiruna.
										5 3/4 Matsushiro.5.5 Rome.
										5.4 Strasbourg.5 1/4 Praha.
										m 6.1 Kew.
264	30	iP	ZV	04 51 29	4			-4	3630	Dilatation.
		iS	E	56 45	6		+3		32°.7	USCGS:2 1/2S,140E. H 04 44 53.
		e	N	56 48	16	2				Mag. M 6 - 6 1/4 Matsushiro.
		eSSS	E	59 11	13		1			6.1 Uppsala,Kiruna.
		i	E	05 01 20	8		+8			5.85 Rome.5 3/4 Strasbourg.
		M	NE	03.2	15	13	15			m 6 Kew.
265	30	e(S)	NE	15 30 33						BCIS:48S,120W.H 15 10.2
		eLR	N	42.5	22					
		eLR	EZ	42.6	22					
		M	NEZ	45	16	1	1	2		
266	Aug. 1	iP	V	05 43 57	1.5			+		Compression.
		eS	E	48 50						USCGS:16S,176 1/2W. H 05 37 50.
		i	E	49 01	7		+6			h 450 Km.
		eL	N	52.4	19					Mag. 5 3/4 - 6 Matsushiro.
		i(ScS)	N	53 49	7	-6				5.8 Strasbourg.
267	3	iP	EZV	01 11 42	4		+3	-15	3160	Dilatation. h 0.08
		i	E	11 52	6		+4		28°.4	USCGS:21 1/2S,179W. H 01 06 24.
		iS	N	15 52	6	-19				h 550 Km.ca.
		iS	E	15 53	5		+6			Mag.6 1/4 - 6 1/2 Pasadena,
		i	E	16 01	5		+4			Matsushiro.
		i	N	16 11	6	+9				6 Berkeley.
		eL	N	18.9	24					
		i	E	18 56	7		-9			
		i	Z	19 25	7			+12		
		iScS	NE	21 20	7	-12	+14			
		sScS	E	24 45	7		3			
268	4	iP	NZV	04 19 55	3	+3		-8	3760	Dilatation. h 0.02
		ipP	Z	20 29	4			+4	33°.8	USCGS:6S,130E. H 04 13 19.h 150 Km.
		iS	NE	25 06	8	+5	+10			Mag. 6 1/2 - 6 3/4 Matsushiro.
		i	E	26 49	7		+6			6 1/2 Praha.
		iSS	NE	27 32	9	+12	+12			6 Strasbourg.
		Lg	NE	31 16	5	14	16			

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
270	Aug. 6	(iP)	V	21 16 20	1.5			-		Masked by microseisms.
		iPP	E	17 51	6		+2			USCGS:17S,173W. H 21 09 09
		i	Z	17 54	6			+7		Mag.6 3/4 Pasadena.
		e(S)	E	22 05	7					6 1/2 Berkeley.
		i	E	22 36	6		+4			6 1/4 - 6 1/2 Praha.
		eSS	N	24 36	13					6 1/4 Strasbourg,Matsushiro.
		eLR	Z	26.5	27					6.1 Uppsala,Kiruna.
		i(ScS)	N	26 40	6	+3				m 6 1/4 Kew.
		M	N	29.8	13	6				
		M	EZ	31.3	16		12	20		
271	6	iP	V	21 56 22	1.5			-		Microseisms present.
		i	V	56 40	1.5			+		USCGS:12S,167E.H 21 51 00.
										h 150 Km.ca.
273	10	e	E	18 12 21						Masked by microseisms.
		i	Z	12 28	5			+		USCGS:3 1/2S,151 1/2E. H 18 05 54.
		i(S)	N	17 11	6	-				Mag. 5.8 Matsushiro.
		i	N	18 22	6	+				
		eL	E	19.9	30					
		M	NE	24.4	12	6	8			
274	11	iP	V	07 58 11	1.5			-		Dilatation.
		i	V	58 17	1.5			-		USCGS:18S,168 1/2E, H 07 53 12.
		eS	N	08 02 11	8					
		i	E	02 15	8		-4			
		i	N	02 18	9	+9				
		eL	Z	04.0	24					
		M	EZ	05.3	18		3	6		
		M	N	06.1	15	2				
277	12	iP	V	17 01 08	1.5			+		Compression.Microseisms present.
		M	NE	21.5	15	1/2	1/2			USCGS:1/2N,126E. H 16 53 13.
278	12	eP	Z	19 11 16					3900	USCGS:9 1/2S,123 1/2E.H 19 04 20.
		eS	E	16 49	7				35.1	Microseisms present.
		i	NE	23 35	6	+5	+5			
		M	NEZ	27.1	12	3	3	8		
279	12	iP	ZV	19 32 59	3			+3	4720	Compression.Microseisms and
		i	Z	33 04	4			+5	42.5	coda of 278 confuse readings.
		i	Z	33 17	4			-8		USCGS:0°,126 1/2E. H 19 25 05.
		i	Z	33 33	6			+11		Mag.6 1/2 Pasadena,Strasbourg,
		iPP	V	34 38	1.5			+		Matsushiro.
		iPcP	NEZ	34 50	4	-5	+5	+6		6.4 Uppsala,Kiruna.
		i	Z	35 47	7			+13		6 1/3 Moscow.
		iS	N	39 22	8	+8				6.2 Lwiro
		iS	E	39 23	8		-11			6.0 Oulan Bator.
		e	N	39 25	31					m 6 1/2 Kew.
		e	Z	39 50	31					
		e	E	40 04	31					
		iSS	Z	42 27	10			-17		
		i	N	42 30	8	-10				
		i	E	42 35	10		+20			
		i	Z	42 38	12			+33		
		eL	Z	46.0	40					
		eL	NE	46.8	34					
		M	E	50.9	18			29		
		M	NEZ	53.5	19	27	31	74		
281	13	(P)	Z	00 17 25						Masked by microseisms.
		e	N	22 17	8					USCGS:6S,152 1/2E. H 00 11 28
		eL	N	24.3	25					
		M	E	27.7	13			2		
282	13	iP	EZV	03 58 26	4			-5		Dilatation.
		iPP	V	04 00 00	1.5			+		USCGS: 1/2N,126E. H 03 50 35.
		e(S)	E	04 36						Mag. 5.8 Strasbourg.
		eL	E	13.7	25					5 3/4 Matsushiro.
		M	NEZ	19.4	17	4	5	10		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958			h m s	s	μ	μ	μ	Km.	
283	Aug.13	(P)	Z	10 08 44						Masked by microseisms.
		i	Z	09 10	4			-1		USCGS:6S,153E. H 10 02 49.
		e	N	13 43	10					
287	14	iP	Z	15 08 19	4			+6	9930	Compression.Microseisms present.
		iPP	Z	12 00	4			+6	89.°4	USCGS:52N,175W. H 14 55 10
		iSKS	N	18 43	7	+4				Mag.M 6 1/2 - 6 3/4 Matsushiro.
		iS	E	19 08	11		+5			6 1/4 - 6 1/2 Berkeley.
		eSS	NE	24 59	21					6 1/2 Moscow,Pasadena.
		eLQ	N	33.2	21					6.4 Uppsala, Kiruna.
		eLR	N	39.5	27					6 1/4 Strasbourg. 6.2 Tacubaya.
		M	NEZ	43.7	19	5	3	6		6.0 Lwow. m 6.3 Kew.
288	15	i	Z	02 32 59	4			+6		Masked by microseisms.
		i	Z	35 48	4			+5		USCGS:6S,150 1/2E. H 02 26 51.
		e	N	37 48	13	2				
		eL	E	40.2	26					
		M	NE	42.5	17	2	3			
289	15	iP	Z	20 08 25	4			+4	9790	Compression.Micros.present.h 0.005
		ipP	Z	08 43	4			+16	88.°1	USCGS:53N,160 1/2E.H 19 55 39
		i	Z	09 17	5			+9		h 60 Km.ca.
		iSKS	N	18 49	8	+5				Moscow:53 1/2N,159 1/2E.H 19 55 39.
		eS	E	19 02	?					Mag.7 Moscow.6 3/4 - 7 Matsushiro.
		e	N	19 08	16					6.8 Uppsala,Kiruna,Oulan Bator.
		eSS	NE	24 49	25	15	13			6 3/4 Pasadena Berkeley,Collm.
		eLQ	E	30.9	39					6.6 Praha, 6 1/2 Strasbourg.
		eLR	Z	36.1	42					6.3 Tacubaya.
		M	NEZ	42	22	35	12	65		m 6 1/2 Kew.
290	15	iP	NEZ	22 37 04	6	+20	-15	-92	4870	Dilatation.
		ipP	NEZ	37 55	4	-11	+11	+41	43.°8	H 22 29 19. h 0.03 ca
		iPP	NEZ	38 48	7	+22	-20	-94		USCGS:1 1/2N,125E. H 22 29 17.
		iS	NE	43 17	7	-48	-53			h 200 Km.ca
		i	N	44 34	8	+31				Mag M 7 - 7 1/4 Matsushiro,
		i(sS)	N	44 49	9	-42				Strasbourg.
		i	E	46 23	9		+35			7 Praha,6 3/4 - 7 Pasadena.
		i	N	46 24	9	+59				6.8 Uppsala,Kiruna.
		iSS	Z	46 34	?			+		m 7 Kew.
		i	E	46 37	12		+150			
		i	N	46 38	12	+350				
291	16	(iP)	Z	11 20 06	3			+5		Masked by microseisms.
		i	E	26 20	5		+5			BCIS:24 1/2S,175W. H 11 13 47.
		eL	N	27.7	19					Mag M 6 Strasbourg.
		M	N	30.3	13	7				6 - 6 1/4 Berkeley.
		M	E	32.1	16		6			5 3/4 - 6 Matsushiro.
292	16	(iP)	Z	13 30 56				+		Masked by large microseisms
		e(S)	E	41 47						USCGS:51 1/2N,176W. H 13 17 52.
										Mag.M 6 1/4 - 6 1/2 Matsushiro.
										6 - 6 1/4 Pasadena Berkeley.
										6 Moscow,Strasbourg.
										5.8 Uppsala,Kiruna.
										5 3/4 Praha. m 6 Kew.
293	16	(iPP)	Z	19 34 02						Masked by large microseisms.
		eSS	E	50 29	(15)					USCGS:34 1/2N,48E. H 19 13 45.
		e	E	55 56	18					BCIS:34.0N,48.0E. H 19 13 44.
		eL	N	20 05.5	45					Mag M 7 - 7 1/2Bucarest,
		M	N	18.4	25	19				6 3/4 - 7 Matsushiro.6 3/4 Pasadena
		M	EZ	21.7	23		12	25		6.7 Uppsala,Praha.
										6.1 Collm,Moscow. 6.3 Oulan Bator.
										6.0 Lwow. m 6.5 Kew.
294	17	iP	Z	09 21 38	4			+4		Compression.Large microseisms.
		iSS	E	38 20	6		-7			USCGS:51 1/2N,176W. H 09 08 35
										Mag.6Praha,5 3/4 - 6 Matsushiro.
										5 3/4 Moscow,Strasbourg.
										m 5 3/4 Kew.

No.	Date.	Phase - Component.	Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.		h m s	S	μ	μ	μ	Km.	
295	Aug.17	i Z	12 29 52	4			-7		Large microseisms. BCIS:23S,173E. H 12 22 55.
296	17	(P) Z	18 07 28						Large microseisms.
		i V	08 00	1.5			-		USCGS:3S,145 1/2E. H 18 01 05
		iPP Z	08 29	4			+5		Mag.M 6 3/4 Praha,
		iS NE	12 33	7	-8	-8			6 1/2 - 6 3/4 Strasbourg.
		i N	13 03	9	-23				6 1/4 - 6 1/2Pasadena Matsushiro.
		i Z	13 10	5			-18		6.0 Oulan Bator,Moscow.
		eL E	16.1	30					m 6 1/2 Kew.
		M N	20.2	18	64				
		M NE	21.3	13	48	51			
		M Z	22.4	12			97		
297	17	iP Z	21 16 29	4			+9	2730	Compression.
		i E	16 42	4		+4		24°.6	USCGS:35 1/2S,179 1/2W.H 21 11 09
		i Z	16 47	4			+12		Mag.5 3/4 Strasbourg.
		i Z	16 58	6			+11		5 1/4 - 5 1/2 Matsushiro
		iPP E	17 07	5		+5			
		i Z	17 11	6			-16		
		i Z	17 24	4			+13		
		i Z	17 42	4			+11		
		iS E	20 48	7		+7			
		i E	21 37	7		-8			
		i E	22 01	6		+7			
		eL E	22.6	21					
		M Z	25.4	16			16		
		M E	26.4	18		11			
		M N	27.8	13	14				
298	19	i(S) N	04 55 58	7	+6				Masked by large microseisms.
		eL E	57.4	25					USCGS:19S,175E. H 04 45 45
		i N	05 00 43	7	+9				Mag. 5 1/2 - 5 3/4 Matsushiro.
299	19	iP NZ	21 54 45	5	3		-9	3710	Dilatation.
		iPP NZ	56 00	7	+5		-14	33°.4	USCGS:1S,149 1/2E. H 21 48 07
		iS E	22 00 06	?		+			Mag.6 1/4 - 6 1/2 Matsushiro.
		i N	00 11	?	+				6 Strasbourg.
		i N	00 20	12	-11				5 3/4 Moscow.
		e N	00.5	25					
		eL N	02.6	24					
		eL E	03.2	27					
		M E	05.9	16		10			
		M NZ	07.8	18	9		22		
300	20	iP EZ	03 45 25	6		+5	-17	2860	Dilatation.
		i NZ	45 29	7	-6		+22	25°.7	USCGS:14S,167E. H 03 40 07
		isP NEZ	45 39	7	-9	-5	+28		Mag.6 1/4 - 6 1/2 Pasadena,
		i NEZ	45 47	7	-13	-15	+50		Berkeley,Strasbourg,Matsushiro
		iPP Z	46 04	7			+36		6.0 Praha,Lwow.
		iPP NE	46 05	7	-10	-12			m 6 1/4 Kew.
		iPPP NEZ	46 16	7	-10	+12	-40		
		i E	46 42	7		+12			
		i Z	47 14	7			+26		
		iS E	49 49	10		+88			
		iS N	49 50	10	+100				
		i Z	49 55	10			+110		
		isS NE	50 10	10	-90	-76			
		i N	50 19	10	+67				
		iSS E	50 56	12		+28			
		i Z	51 14	7			+38		
		i N	51 16	10	+37				
		eL Z	51.5	30					
		M Z	53.6	18			75		
		M N	53.8	13	39				
		M E	58.7	10			30		

No.	Date	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
301	Aug.20	i	Z	17 44 52	5			+4		Masked by microseisms.
		i(S)	E	48 34	4		+3			USCGS: 19S,170E. H 17 39 38
		i	N	48 43	7	-3				
		M	NE	53.5	12	4	1			
304	21	iP	EZ	21 05 31	4		+3	-9	3690	Dilatatiom.
		ipP	E	06 05	4		+2		33°.2	H 20 59 07. h 0.02
		iPP	EZ	06 49	6		+3	-6		USCGS:18S,176W. H 20 59 10
		i	Z	06 55	6			-17		h 250 Km.ca.
		i	NE	06 58	6	+3	+7			Mag.5 3/4 - 6 Matsushiro.
		isPP	NEZ	07 25	6	+2	+3	-8		
		iS	N	10 38	7		-6			
		i	N	12 10	7					
		i	E	12 12	7		-5			
		iSSS	N	13 21	?	+				
		iScS	NE	15 37	7	-11	+14			
		i	E	17 23	7		+6			
305	22	iP	Z	00 06 21	4			+3		Compression.
		M	E	16.5	13		2			BCIS:50S,117E. H 00 01 21.
		M	Z	17.5	18			6		USCGS:49 1/2S,117E. H 00 01 21.
										Mag. 5 1/4 Matsushiro.
307	22	iP	Z	22 22 30	4			+3	3180	Compression.H 22 16 47 h 0.02
		isP	Z	23 23	3			+2	28°.6	USCGS:5 1/2S,150E. H 22 16 48
		eS	N	27 05	7					JMA: H 22 16 56. h 250 Km.
		isS	N	28 06	7	+3				Mag. 5 1/2 - 5 3/4 Matsushiro.
		i	E	33 28	7		+2			
311	26	iP	V	12 26 03	1.5			+		Preceded by microseisms,
		iS	E	30 24	5		-3			USCGS:14S,167E. H 12 20 43
		i	N	30 31	6	+5				Mag.5 1/4 - 5 1/2 Matsushiro.
		i	NE	30 40	6	+4	+3			
		iSS	E	31 20	6		+3			
		eL	N	32.2	18					
		M	NEZ	34.5	15	4	2	8		
312	26	eS	NE	12 54 44						P masked by coda of 311.
		i	N	54 52	10	+7				USCGS: 14S,167E. H 12 45 02.
		i	E	54 55	10		-9			
		iSSS	N	55 50	9	+6				
		eL	E	57.0	22					
		M	NEZ	58.8	17	4	6	11		
313	26	iP	Z	18 01 00	3			-6	2740	Dilatation.
		i	V	01 02	1.5			+	24°.7	USCGS:14S,167E. H 17 55 34
		i	V	01 06	1.5			-		
		iPPP	V	01 50	1.5			+		
		iS	NE	05 17	4	+3	-5			
		i	NZ	05 27	6	-5		+8		
		i(sS)	E	05 35	5		+3			
		i	N	06 01	6	+4				
		M	NEZ	09.0	17	5	7	15		
314	26	iS	NE	23 41 20	4	+3	-3			P masked by microseisms.
		i	N	41 26	7	+10				USCGS:14S,167E. H 23 31 38.
		i	E	41 28	7		+7			Mag. 5 3/4 Matsushiro.
		i	Z	41 29	7			+13		
		i	E	41 43	5		-6			
		eL	E	43.5	23					
		M	E	44.8	19		8			
		M	NZ	45.7	17	9		17		
315	26	i	V	23 50 38	2			+		Masked by microseisms and coda
		i	E	51 18	6					of 314.
		i	Z	53 03	5			+11		USCGS: 14S,167 1/2E. H 23 45 07.
		i	E	54 07	6		+7			
		i(S)	N	54 56	7	+7				
		i	E	54 58	7		+6			
		M	NEZ	58.7	17	6	4	7		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
316	Aug.29	iP	V	12 29 43	1.5			-	2810	Dilatation.
		i	Z	29 44	5			+7	25°3	USCGS:14 1/2S,167E. H 12 24 23.
		ipP	Z	29 53	5			+8		Mag.5.8 Strasbourg
		i	Z	30 04	5			+9		5 3/4 - 6 Pasadena.
		iPP	Z	30 23	5			-7		5 1/2 Moscow.
		i	Z	30 41	6			+10		
		iS	NE	34 04	6	+6	-6			
		i	Z	34 08	8			-16		
		i	NE	34 10	7	+26	+24			
		isS	NE	34 22	8	+20	+19			
		i	Z	34 23	7			-23		
		i	N	34 33	10	+19				
		iSS	E	35 10	9		-12			
		iSSS	N	35 25	10	-13				
		eL	Z	35.7	27					
		M	NEZ	37.7	15	11	10	23		
317	29	P	V	12 57 04	1.5					Microseisms present.
		i(S)	N	13 01 42	7	+7				USCGS:14S,167E. H 12 51 57.
		i(S)	E	13 01 44	7		+7			
		M	NE	05.4	12	4	3			
320	Sept.2	iP	V	02 33 22	1.5			-		Dilatation.
		M	NE	41.9	17	2	1			USCGS:10 1/2S,164 1/2E.H 02 27 41.
321	2	iP	Z	03 02 15	3			-2		Dilatation.
		ipP	Z	02 27	3			-3		USCGS:6 1/2S,155E. H 05 56 34.
		isP	Z	02 31	3			+3		h 100 Km.ca.
		i(S)	E	07 08	5		+2			
		M	E	11.4	14		2			
		M	NZ	12.7	15	2		3		
322	2	iP	Z	14 31 33	4			+4		Compression.
		i	N	36 24	5	+2				USCGS:5 1/2N,145 1/2E.H 14 25 37.
		e	N	36 47	9					
		M	NE	43.2	14	1	1			
323	3	i(PKP)	Z	04 03 41				+		Masked by microseisms.
		i	Z	04 26	4			+2		USCGS:0°,18W. H 03 44 24.
		i	Z	04 35	4			+3		BCIS:0°,17.8W.H 03 44 24.
		e(SS)	E	26 27						Mag.6 1/3 Moscow.6.3 Uppsala,Praha.
		e(SSS)	E	31 39						6 1/4 Lwiro.6 - 6 1/4 Pasadena.
		eLQ	E	44.4						6 Rome. m 6.2 Kew.
		M	N	05 03.2	18	1				
325	4	iSKS	E	22 15 57	?					Masked by very large microseisms.
		iSKS	N	15 59	?					USCGS:33 1/2S,69 1/2W.H 21 51 08.
		e	E	20 49	13					Mag.M 7 - 7 1/4 Matsushiro.
		eLR	E	39.1	27					6 3/4 - 7 Pasadena,Strasbourg.
		M	EZ	51.7	18		9	34		6.8 Uppsala,Kiruna.
		M	N	52.2	16	7				6.7 Tacubaya. m 6.7 Kew.
326	5	iP	N	13 11 24		+				Very large microseisms present.
		i	N	11 35		+				USCGS:5S,102E. H 13 01 55
327	7	(P)	Z	04 46 11						Masked by large microseisms.
		e	NE	50 51						USCGS:10S,153E. H 04 40 57.
328	7	i(P)	Z	04 49 06				-		Masked by microseisms and coda of 327.
		e(S)	N	53 27	10					USCGS:9 1/2S,152 1/2E.H 04 43 37.
		i	E	53 33	9		+10			
		i	N	53 41	9	-11				
		eLQ	E	53.9	19					
		eL	Z	56.6	24					
		M	NE	58.5	12	16	29			
329	8	iP	V	05 38 21				+		Large microseisms present.
		L	N	06 07						USCGS:53 1/2N,159E. H 05 25 37.
										Moscow 53 1/2N,160E. H 05 25 38.
										Mag.M 6.4 Uppsala,Kiruna. 6 Rome.
										5.9 Strasbourg.5 1/2 Moscow. m 6 1/4 Kew.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
330	Sept.8	i(S)	E	15 13 31	4		+2			USCGS:33 1/2N,131 1/2E.H 14 53 13. h 60 Km.ca. JMA:33.8N,131.9E. H 14 53 17. h 80 Km.ca. Mag.5.8 Matsushiro.
331	9	(P)	V	04 18 38						Masked by microseisms.
		L	NE	33	30					USCGS: Java Sea. H 04 09 38. BCIS:3 1/2S,108E.H 04 09.6 .
332	9	eP	Z	11 44 23						Microseisms present. USCGS:46N,151E. H 11 32 05. JMA:46N,151E.H 11 32 14.h 60 Km.ca.
334	11	iP	V	18 10 22	1.5			+		Compression.
		eS	E	17 21						USCGS:7 1/2N,126 1/2E. H 18 01 44.
		e	N	17 34						Mag.M 6 Strasbourg,Uppsala. 5 3/4 - 6 Matsushiro. m 6 Kew.
		iSS	E	20 39	12		+11			
		eL	E	23.6	24					
		M	E	27.0	16		3			
		M	N	30.2	18	4				
335	12	(iP)	V	05 47 34				+		Masked by microseisms.
		e	Z	48 36	4					USCGS:41S,78 1/2E. H 05 37 46.
		e	E	55 38	9					Mag.5 1/2 - 5 3/4 Matsushiro.
		eL	E	06 04.9	24					
		M	NEZ	07.3	18	4	4	9		
336	12	iP	V	22 14 48	1.5			+		Compression. USCGS:6 1/2S,129 1/2E. H 22 08 06.
339	15	iP !	NEZV	19 53 19	4	-8	+7	+51	4920	Compression.H 19 45 52. h 0.07
		i	ZV	54 41	3			+7	44°.3	USCGS:2 1/2N,120 1/2E. H19 45 40 h 600 Km.ca
		i	Z	54 45	3			-6		Moscow: H 19 45 52 h 700 Km.ca.
		i	Z	54 58	4			-6		Mag. M 6.3 Uppsala,Kiruna. 6 - 6 1/4 Pasadena. 6.1 Tacubaya. m 6.5 Kew.
		iPP	V	55 13	2			+		
		i	Z	55 25	4			-7		
		i	E	57 24	4		+3			
		iS	E	59 19	6		+5			
		iS	N	59 20	6	-13				
		i !	EZ	59 24	6		+32	-21		
		isS	NE	20 02 02	7	+12	+13			
		iScS	E	02 27	6		+7			
		iSS	NE	02 54	9	+23	-22			
		M	NEZ	12.1	15	9	11	26		
341	18	iP	ZV	06 57 47	4			+4		Compression.
		M	NE	07 10.8	16	4	5			USCGS:2 1/2S,141E. H 06 51 09.
342	20	iP	Z	17 15 16	6			-7	3020	Dilatation.
		isP	NZ	15 29	6	-6		+24	27°.2	USCGS:6 1/2S,154 1/2E. H 17 09 24.
		i	NZ	15 44	4	-3		+9		Mag. M 6.3 Uppsala,Kiruna. 6 1/4 - 6 1/2 Matsushiro. m 6.4 Kew.
		i	Z	15 51	4			+10		
		i	E	15 57	6		+3			
		i	N	16 07	5	-7				
		i	Z	16 08	5			-14		
		i	Z	19 04	6			+11		
		i	N	19 35	8	+9				
		iS	N	19 51	8	-20				
		iS	E	19 53	7		+10			
		i	Z	19 54	7			+21		
		isS	E	20 08	6		+12			
		i	Z	20 18	?			-		
		i	E	20 19	7		+11			
		i	N	20 20	10	+41				
		i	N	20 36	10	+23				
		i	Z	20 51	9			+26		
		i	N	20 53	9	-21				
		i	E	20 59	9		+18			
		i	E	21 22	7		-20			
		i	E	21 34	7		-21			
		eL	N	21.7	26					
		M	NEZ	24.4	21*	44	24	75		* Per.E 16

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
344	Sept22	(i)	V	08 47 16						Masked by microseisms.
		i	Z	47 42	4			+5		USCGS:27 1/2N,140E.H 08 37 27. h500 Km.ca
		i	Z	48 04	4			+5		JMA:27 3/4N,140 1/4E. H 07 37 27. h 400 Km.ca
		i	N	48 50	4	+3				
345	22	iP	EZ	19 11 21.5	6		+3	-14	2830	Dilatation.
		ipP	EZ	11 34.5	7		-11	+33	25°.5	USCGS:33 1/2S,177 1/2W.H 19 05 44.
		iPP	Z	11 56	6			+27		Mag. M 6 3/4 Pasadena,Berkeley.
		iPP	E	11 57	6		+14			6.4 Uppsala,Strasbourg.
		iPPP	EZ	12 06	7		-25	-41		m 6.6 Kew.
		iPPP	N	12 07	6	+6				
		iS	E	15 44	8		-29			
		iS	N	15 47	9	+18				
		isS	N	16 04	8	+31				
		i	Z	16 14	6			-28		
		i	N	16 16	7	+26				
		iSS	N	16 42	10	+19				
		i	Z	17 12	9			+41		
		eL	E	17.9	30					
		eL	Z	18.3	30					
		M	EZ	19.2	25		46	120		
		M	N	19.4	16	19				
		M	EZ	21.3	19		30	80		
346	22	i	Z	22 57 06				+		Masked by microseisms.
		i	N	23 00 46	4	+2				USCGS:16 1/2S,168 1/2E. H 22 51 44
		i(S)	E	01 12	6		-4			
		i	N	01 13	6	-2				
		i	Z	01 16	6			-7		
		eL	E	02.5	22					
		M	NE	04.9	14	3	2			
348	24	(SKS)	N	04 09 53						Masked by microseisms.
		(SKKS)	N	10 05						USCGS:59 1/4N,143 1/2W.H 03 44 14.
		ePS	N	12 25						Mag.M 6 1/4 Pasadena,Berkeley.
		eSS	E	18 35	21					6 Strasbourg.
		eL	E	34.0	30					5.8 Uppsala,Kiruna
		M	NEZ	46.7	19					m 6.1Kew.
349	25	iPKP	Z	07 39 40	4			+2		Compression.
		i	Z	40 01	4			-2		USCGS:9N,93 1/2W. H 07 20 01
		i	Z	40 16	6			-4		Mag. M 6.8 Bratislava.
		i	Z	40 30	3			-4		6.7 Uppsala,Kiruna.
		e	Z	41 57	10					6 1/2 Pasadena.
		iPP	Z	43 42	5			-4		6.4 Strasbourg.
		e	N	45 04	7					6 1/4 - 6 1/2 Berkeley.
		eSS	N	08 02 47	16					6.3 Tacubaya.
		eSSS	N	08 30	16					m 6.6 Kew.
		e	E	08 36	18					
		eLQ	E	23.4	38					
		eLR	Z	35.1	30					
		eLR	N	35.2	30					
		M	NEZ	43.6	19	5	5	14		
350	25	i(P)	Z	15 05 27	4			+4		Masked by microseisms.
		M	N	17.2	12	1				
351	25	eP	EZ	15 21 13	9					Masked by microseisms.
		eL	N	26.4	22					USCGS:32 1/2S,178W. H15 15 37.
		eL	Z	28.0	24					
		M	NEZ	30.1	18	4	3	8		
352	25	eP	E	21 01 27	7					Masked by microseisms.
		e	Z	01 33	7					USCGS:33S,178 1/2W. H 20 55 53.
		i	Z	01 53	6			-4		
		eL	N	06.8	17					
		eL	E	08.2	24					
		M	NEZ	10.4	18	2	3	8		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
353	27	iP	V	07 44 51	1.5			+		Microseisms present.
		eL	NE	08 03 17	24					USCGS:9S,106E.H 07 36 07.
354	27	(iP)	V	14 00 59				+		Large microseisms present.
		eL	N	11 45	18					USCGS:15S,174W.H 13 55 02. h 150 Km.ca.
355	30	(iP)	V	07 16 40				+		Large microseisms present.
		(iScS)	E	26 35			+			USCGS:3 1/2N,128E. H 07 08 37
		eL	E	31.7	21					
		M	NEZ	36.3	16	2	3	5		
356	30	i	V	08 52 08				+		Large microseisms present.
		e	N	56 10	9	1				USCGS:23S,172 1/2E. H 08 47 06.
		eL	N	57.8	18					
		M	E	59.3	15		1			
		M	N	09 01.0	11	1				
358	Oct. 1	iP	NZV	09 34 53	6	+16		+35	2690	Compression.
		m	NZ	35 00	6	18		42	24.2°	USCGS:57S,147E. H09 29 43.
		i	E	35 02	5		+5			Mag.M 6 1/4 Pasadena.
		i	Z	35 18	6			-		6.2 Uppsala,Kiruna.
		iPP	NEZ	35 25	6	-15	-11	+34		6 1/4 - 6 1/2 Matsushiro.
		iPPP	N	35 36	6	+18				m 6.4 Kew.
		iS	E	39 09	12		+18			
		i	NEZ	39 17	8	+8	-65	+43		
		i	N	39 27	7	+47				
		eLQ	N*	39.6	23					*From Mainka.
		i	N	39 58	6	+15				
		iSS	E	40 06	9		-34			
		eLR	NZ	40.7	22					
		M	NEZ	42.9	13	48	36	115		
		M	NEZ	44.4	10	42	36	69		
359	2	iS	E	04 48 53	7		-3			P obscured by microseisms
		eSS	N	54 47	10					USCGS:58S,9 1/2W. H 04 25 27.
		eSSS	E	57 58						Mag.5 3/4 - 6 Lwiro,Matsushiro.
		eLQ	E	05 00.8	27					m 6.1 Kew.
		eLR	E	05.6	27					
		M	E	11.8	15		2			
		M	NZ	12.9	22	4		8		
362	4	iP	V	04 09 29	1.5			+		Compression.
		i	V	09 39	1.5			+		USCGS:14S,167E. H 04 04 10.
		eL	E	15.6	?					
364	6	iP	V	00 52 21	1.5			+		Compression.
		i	V	52 38	1.5			+		USCGS:32S,179 1/2E. H 00 47 20
		i	V	53 16	2			+		h 250 Km.ca.
368	7	iP	NZV	12 38 46	4	+2		-5	3020	USCGS:5S,151 1/2E H 13 32 40
		ipP	V	38 56	1.5			+	27.2°	BCIS:5 1/4S,151 3/4E. H 13 32 38.
		i	N	38 58	4	+2				Mag.6 1/2 - 6 3/4 Pasadena.
		isP	Z	39 01	3			+5		6.6 Quetta.
		i	V	39 06	1.5			-		6 1/4 - 6 1/2 Berkeley,M'Bour.
		ePP	Z	39 36	6			5		6.3 Uppsala,Kiruna.
		iPcP	N	42 05	6	+3				6 1/4 Trieste,Moscow,Praha.
		iS	NE	43 21	?	-	-			m 6.4 Kew.
		i	NE	43 24	9	+8	+11			
		i	E	43 42	9		+9			
		i	N	43 45	12	-21				
		i	N	44 09	12	+14				
		iSS	E	44 36	10		+14			
		eL	E	45.0	35					
		M	NEZ	49.4	19	38	48	80		
369	8	i	E	03 23 57	4		+1			Masked by microseisms.
		e	N	25 27						BCIS:Region of Raoul Is.Kermadecs.
		eL	E	26.5	20					H 03 13 20.
		M	NE	28.4	13	1	1			

No.	Date.	Phase - Component.	Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.		h m s	s	μ	μ	μ	Km.	
370	Oct. 8	iP ZV	04 49 50	4			+6		Compression.
		i ZV	50 31	4			+5		Microseisms present.
		i ZV	51 04	4			+4		BCIS: Region ofKermadec Is.
		e E	54 40						H 04 44 10.
		eL E	57.8	18					
		M N	58.8	13	2				
		M E	59.9	15		1			
371	8	(iP) V	11 18 34	1.5			+		Confusion.Microseisms present.
		e E	23 36						USCGS:29S,177 1/2W. H 11 12 50.
		e N	23 51						
		eL E	26.5	21					
		M NE	28.2	12	2	1			
372	8	iP V	14 06 32	1.5			+		Compression.Microseisms present.
		i V	06 45	1.5			+		USCGS:7S,155 1/2E. H 14 00 47.
		i N	11 31	6	-3				Mag.5 1/4 Matsushiro.
		eL N	14.3	27					
373	8	P V	15 44 03						Microseisms present.
		e E	48 58						USCGS:29S,178W. H 15 38 17.
		e E	49 14	7					
		eL E	51.5	21					
		M NE	53.4	14	1	1.5			
		i N	53 49	4	+3				
377	9	(PP) Z	11 36 55						Masked by microseisms.
		eSKS N	43 57	15					USCGS:55 1/2S,27 1/2W. H 11 20 17.
		eS E	44 17	18					Moscow: H 11 20 20. h 120 Km.
		eSS E	50 09	18					Mag.6 1/2 - 6 3/4 Matsushiro.
		eLQ E	58.1	27					6 1/2 Pasadena.
		eLR E	12 04.4	24					6.3 Strasbourg,Tacubaya.
		M NEZ	13	19	4	2	6		6.2 Uppsala,Kiruna. m 6.2 Kew.
379	10	iP Z	08 43 08	4			+4		Compress.Masked by microseisms.
		M NE	09 16.3	20	1	1			USCGS:53 1/2N,160 1/2E.H 08 30 26.
									h 100 Km.ca.
									Moscow;H 08 30 20.h 50Km.
									Mag.6 1/2 Pasadena.
									6 1/4 Matsushiro. 6 Moscow.
383	12	iP V	15 29 08	1.5			-	7370	Dilatation.
		iP Z	29 10	3			+5	66°.3	H 15 18 42. h 0.03.
		iPcP V	29 37	2			+		USCGS:27 1/2N,125 1/2E.
		ipP V	30 03	2			+		H 15 18 42.h 250 Km ca.
		ipP Z	30 04	4			+4		JMA:27 1/4N,126 1/2E. H 15 18 40.
		iS N	37 38	7	+12				h 240 Km ca.
		iS E	37 39	7		+5			Moscow: H 15 18 50. h 280 Km.ca.
		iScS N	38 42	6	-6				Mag.6 3/4 Pasadena.
		iScS E	38 43	6		+3			6 1/2 Matsushiro.
		eL E	48.6	22					6.4 Rome.
		M E	51.8	19		3			6.1 Kew
	17	(iP) V	10 29 43	1.5			+		Masked by large microseisms.
		i V	32 10	1.5			-		USCGS:19 1/2S,177 1/2W.
									H 10 23 56.h 400 Km.ca.
388	19	iP ZV	11 48 16	3			+2	2820	Compression.
		i V	48 28	1.5			+	25°.4	USCGS:34 1/2S,178W. H 11 42 42.
		i ZV	48 59	5			+7		
		i E	49 01	6		+3			
		iS E	52 41	7		+4			
		i N	52 59	6	-4				
		iSS E	53 39	10		-4			
		iSSS N	53 57	13	-8				
		eL N	54 15	24					
		M N	57.0	15	9				
		M EZ	58.3	18		12	30		

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
389	Oct.20	iP	ZV	01 20 38	4			-4	4740	Dilatation. H 01 12 46 ca.h 0.005ca
		i	V	20 42	1.5			+	42.7 ca.	USCGS:9 1/2S,112 1/2E. H 01 12 30.
		ipP	Z	20 53	4			-6		Moscow: H 01 12 43 h 100 Km.
		i	V	20 58	1.5			+		Mag.6.7 Quetta.
		i	Z	21 05	4			+7		6.6 Uppsala,Kiruna.
		i	Z	21 09	5			-9		6 1/2 Matsushiro,Pasadena.
		iS	N	26 56	9	+7				6 1/4 Strasbourg.
		iS	E	27 00	6		+6			5.9 Lwiro.
		isS	N	27 22	9	+9				m 6 1/4 Kew.
		i	E	27 31	9		+18			
		i	N	30 21	9	+10				
		i	E	30 31	10		-6			
		i	N	34 26	7	+14				
		eL	E	34.7	22					
		M	NZ	39.5	*	17		29		* Per.N 15 s. Z 21 s.
		M	E	39.8	18		15			
390	21	iP	V	06 20 52	1.5			+	3260	Compression.
		ipP	ZV	21 33	3			+3	29.3	h 0.03ca.
		i(PP)	V	21 51	1.5			+		USCGS:5 1/2S,147E. H 06 14 50
		iPP	V	21 55	1.5			+		Moscow: H 06 15 10.
		isP	V	22 02	1.5			+		Mag. 6 1/2 Matsushiro.
		iPPP	V	22 17	1.5			+		
		i	V	24 00	1.5			+		
		iS	N	25 28	7	-4				
		i	N	26 02	7	+7				
		i	E	26 59	7		+5			
		i	N	27 14	7	+7				
		i	E	27 18	7		-7			
		i	N	28 29	7	+8				
		i	E	28 41	7		-14			
		i	ZV	28 58	4			+7		
		M	E	31 33	12		7			
391	21	iP	V	15 48 51	1.5			-	4820	Dilatation.
		isP	V	48 57	1			+	43.4	USCGS: 11S,111E. H 15 40 40.
		iPP	V	50 30	1.5			+		Moscow: H 15 40 44
		eS	E	55 20						Mag. 6.3 Quetta.
		eL	N	16 01.5	22					
		M	N	05.1	13	2				
		M	E	10.3	13		2			
392	21	iP	V	17 38 28	1.5			+		Compression.
										USCGS:29S,179W. H 17 32 45.
393	22	iP	NEZV	23 48 09	4	+5	+5	-20		Dilatation.
		ipP	NEZV	48 24	5	-4	-4	+17		h 0.005 ca.
		isP	V	48 33	1.5			+		USCGS: 14 1/2S,168E. H 23 42 47.
		iPP	Z	48 54	4			+8		Mag.6 1/2 - 6 3/4 Pasadena
		i	N	48 58	4	+6				
		iPcP	Z	51 41	5			+8		
		e(S)	NE	52 29	6					
		i	N	52 36	8	+12				
		i	E	52 39	7		-6			
		i	N	52 50	6	+				
		i	Z	52 53	5			+14		
		i(sS)	E	52 56	8		-13			
		i(sS)	N	52 57	9	-23				
		i	Z	53 26	6			-14		
		iSS	N	53 33	6	+13				
		i	Z	53 35	6			+20		
		eL	Z	54.4	23					
		i	E	53 31	10		+17			
		M	N	56.8	13	8				
396	24	eS	N	21 27 14	9					Masked by microseisms.
		eL	N	32.7						USCGS:0°,125E. H 21 13 06

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
397	Oct.26	(iP)	V	02 26 41	1.5			+		Masked by microseisms.
		e	NZ	26 45	3					USCGS:5 1/2N,117E. H 02 17 32.
		iS	E	33 58	4		+3			Moscow: H 02 17 37.
400	28	iP	Z	10 59 35	3			+6	10,000	Compression.
		ePP	Z	11 03 11	5				90°	USCGS:30 1/2N,85E. H 10 46 27.
		eSKS	N	10 07	7					Shillong:31N,85E. H 10 46 25.
		iS	N	10 27	9	-4				Moscow: H 10 46 37
		iPS	E	11 32	9		+4			Mag.M 6 1/2 - 6 3/4 Shillong.
		eSS	N	16 34	18					6.4 Uppsala,Kiruna,Rome.
		eL	E	26.3	22					6.3 Strasbourg.
		M	E	36.0	24		4			6 1/4 Moscow.
		M	N	38.0	21	2				m 6.4 Kew.
		M	Z	39.7	20			3		
		M	EZ	49.2	18		3	8		
402	29	iP	ZV	07 57 06	3			+3	9810	Compression.
		i	Z	57 15	4			+5	88.3	USCGS:51 1/2N,179 1/2E. H 07 44 10
		iSKS	N	08 07 31	8	+6				Moscow:50N,180E. H 07 44 07.
		iS	E	07 50	11		-13			Mag.M 7 Moscow.
		i	N	08 00	8	+9				6 1/2 - 6 3/4 Quetta,Lwiro.
		ePS	N	08 51	13					6.6 Uppsala,Kiruna,Strasbourg.
		i	Z	09 42	6			+8		6 1/2 Rome,Berkeley.
		e	E	12 05	22					6 1/4 - 6 1/2 M'Bour.
		eSS	N	13 38	25					m 6.3 Kew.
		eLQ	E	20.0	27					
		eLR	Z	25.0	33					
		M	N	29.3	22	10				
		M	Z	30.0	22			32		
		M	E	32.0	21		9			
		M	NEZ	36.3	19	12	8	24		
404	31	(P)	V	19 09 10						Large microseisms present.
		e	Z	10 28						USCGS:3 1/2S,143 1/2E.H 19 02 54.
		e	N	10 41						Mag. 5 3/4 Matsushiro.
		e	N	14 08						m 6 Kew.
		e	N	16 16	12					
		eL	E	17.6	26					
		M	NE	21.2	17	12	8			
		M	NZ	24.1	13	11		24		
		M	E	25.2	12		12			
405	Nov. 1	(e)	Z	03 44 48	9				3420	Microseisms present.
		eP	Z	44 56					30.8	USCGS:3S,150E. H 03 38 35.
		i	NZ	45 01	6	-2		+4		Moscow: H 03 38 36.
		i	NZ	45 48	4	+3		-6		Mag.M 6 3/4 - 7 Matsushiro.
		iPP	NZ	45 54	7	-7		+15		6 1/4 - 6 1/2 Pasadena.
		iPPP	N	46 11	5	+5				6.3 Uppsala,Kiruna,Strasbourg.
		i	Z	46 14	6			+11		m 6.5 Kew.
		i(S)	N	49 54	12	+22				
		iS	E	49 59	10		-8			
		i	E	51 22	8		+13			
		iSS	NE	51 34	12	-14	-25			
		eL	NE	52.6	28					
		eL	Z	53.7	29					
		M	NEZ	57.2	16	67	77	150		
406	1	e(P)	Z	06 13 10						Masked by microseisms.
		e(S)	N	18 07						USCGS:3 1/2S,145E. H 06 06 47.
		iSSS	N	20 15	7					Moscow: H 06 06 50
		M	NEZ	25.0	14-20	19	8	18		
407	1	P	Z	12 13 18						Masked by microseisms.
		i	EZ	13 24	4		-	+		USCGS:17 1/2S,168E. H 12 08 21
		i	EZ	13 44	4		-	+		
		eS	E	17 23	7					
		i	NE	17 28	8	+10	-4			
		i	Z	17 32	7			+9		
		eL	N	18.8	22					

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
408	Nov. 1	iP	Z	12 21 31	4			+8	2550	Compression.
		i	Z	21 35	4			+24	22.9°	USCGS:17 1/2S,168E. H 12 16 36.
		i	Z	21 48	7			-26		Mag.M 7 1/4 Praha.
		i	E	21 50	7		+13			6 1/4 - 6 1/2 Matsushiro.
		i	Z	22 04	7			+23		6 - 6 1/4 Pasadena.
		iS	NE	25 37	9	-44	+16			6.2 Strasbourg.
		i	Z	25 44	8			+87		m 6.2 Kew.
		i	Z	25 59	7			+58		
		iSS	Z	26 22	7			-45		
		iSSS	Z	26 36	9			-70		
		eL	N	27.1	22					
		M	N	28.5	16	55				
		M	Z	29.2	17			120		
409	1	iP	EZ	15 55 09	4		+	-	2520	Dilatation.
		i	NEZ	55 14	6	-4	-4	+16	22.7°	USCGS:17 1/2S,168E. H 15 50 10.
		iS	NE	59 14	9	-22	+10			
		i	Z	59 21	7			+28		
		i	E	59 34	7		-12			
		i	N	59 36	10	+22				
		eL	N	16 00.7	22					
		M	NEZ	02.8	15	23	19	35		
410	1	(iP)	V	17 31 06	2			+		Masked by microseisms.
		eL	N	38.3	15					USCGS: 15 1/2S,169E. H 17 25 45.
411	1	e(S)	N	18 10 22						BCIS:16S,168E. H 18 01.0
		eL	N	12.1						
412	1	(iP)	V	19 31 12	2			+		USCGS:18S,168 1/2E. H 19 26 09
		eL	N	37.4	18					
416	4	eP	Z	00 30 22						Masked by microseisms.
		eS	N	35 04	7					USCGS:6S,147 1/2E. H 00 24 24.
		eL	N	39.8	22					
417	4	P	Z	08 38 58						Microseisms present.
		eL	E	57.7	27					USCGS:28N,140 1/2E. H 08 28 28.
										JMA:28 1/4N,141E.H 08 28 36.
										Mag.M 6.1 Strasbourg. h 60 Km.
										5.7 Matsushiro. 5 3/4 Praha.
418	4	P	Z	08 41 24						USCGS:28N,141E. H 08 31 00.
										JMA:28 1/4N,141E.H 08 31 06.h60Km.
419	4	i	V	20 01 06	1.5			+		Masked by microseisms.
		i(S)	N	05 37						USCGS:11S,166E. H 19 55 11.
		eL	E	07.8	25					
420	4	i	Z	23 07 36				+		Masked by microseisms.
		i	Z	09 14	4			+4		USCGS:50S,115W. H 22 54 46.
		eL	EZ	26.4	25					Mag.M 6.2 Strasbourg.
		M	NEZ	29.8	18	4	3	10		6 Pasadena,Matsushiro. m 6.2 Kew.
421	4	(P)	Z	23 39 53						Masked by microseisms and coda of
		i	Z	41 40	6			+6		USCGS:17 1/2S,168E.H 23 34 50.420.
		i(S)	N	43 57	9	-5				
		i	E	44 00	7		-3			
		i	N	44 19	6	+4				
		M	N	48	13	3				
422	5	(iP)	Z	04 32 36	4			+4		Masked by microseisms
		i	Z	33 14	4			+4		USCGS:17S,168E. H 04 27 50.
		i(PP)	Z	33 23	4			+4		
		e	N	36 45						
		iS	NE	36 59	6	+3	-3			
		i	N	37 16	7	+3				
		M	N	39.6	15	3				

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	A_E	A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
424	Nov. 6	iP	V	15 36 45	1.5			+	3800	Compression.Microseisms present.
		ipP	V	37 54	1.5			-	34.2°	h 0.05
		i	V	38 07	1.5			+		USCGS:6S,128E. H 15 30 06.
		iPP	V	38 14	1.5			+		h 250 Km.ca
		iPcP	V	39 11	1.5			+		Mag.M 6.1 Quetta.
		iS	E	41 46	4		+3			
		iSS	N	44 27	4	+3				
		i	E	44 35	7		+4			
		i	N	45 45	4	+3				
		i	N	48 15	4	+3				
		i	E	48 31	5		+3			
425	6	iP	NZ	23 10 05	5	-23		+100	8810	Compression. h 0.01
		i	E	10 07	4		-1		79.3°	USCGS:44 1/2N,148 1/2E. H 22 58 06
		iPcP	NZ	10 13	5	+39		-		h 60 Km.ca
		i	E	10 16	4		-5			JMA:44.3N,148.5E.H 22 58 11
		i	NZ	10 19	4	-36		+140		h 100 Km.
		ipP	NZ	10 31	4	+46		-		Moscow 44 1/2N,149 1/2E.H 22 58 05.
		isP	NZ	10 41	4	-41		+270		BCIS:44.5N,148.5E. H 22 58 07.
		i	NZ	10 50	6	-70		+240		Mag.M 8.7 Strasbourg. 8.3 Praha.
		e	N	18.5	37					8 1/4 De Bilt.8 - 8 1/4 Pasadena,
		iS	N	19 56	6	+58				Wien,Berkeley. 8.1 Kew.8 Uppsala,
		iS	N*E	19 59	6	-105*	-150			Kiruna,Rome,Lwiro,Moscow,
		i	Z	20 02	10			+480		Oulan Bator.
		iScS	N*	20 19	8	+28*				7.8 Tacubaya,Matsushiro.
		isS	N*	20 40	8	+120*				7 3/4 Shillong. m 7.6 Kew.
		iPS	Z	20 49	8			+280		* Mainka.
		iPS	N*	20 53	8	-63*				
		iPPS	N	21 10	18	-330				
		i	N	24 46	9	-150				
		iSS	N	25 03	22	+510				
		eLQ	E	30.4	44					
		eLR	NZ	34.6	37					
		M	E	38.5	24		600 ca.			
		M	N*Z	39.5	23	1000 *ca		2700 ca		
426	7	e(S)	E	05 21 44						Masked by microseisms.
		e	N	21 49						USCGS:44 1/2N,149E. H 04 59 56.
										JMA:44 1/4N,149 1/2E. H04 59 58.
										h 100 Km.ca.
										Mag.M 6.2 Quetta.5.9 Uppsala,Kiruna
										5 3/4 Moscow. m 6.2 Kew.
427	7	iP	V	07 52 47	1.5			-		Dilatation.
										USCGS:44 1/2N,149E. H 07 40 36.
										JMA:43.7N147.7E.H 07 40 47.
										h 100 Km.ca.
										Mag.M 6 Matsushiro.
										5 3/4 Praha. m 6.1 Kew.
430	8	iP	Z	09 35 36	3			-3		Dilatation.Confused by Microseisms.
		i	Z	35 47	3			+4		USCGS:52N,159 1/2E. H 09 22 53.
		eS	E	45 59						Moscow:52N,160 1/2E.H 09 22 55.
		e	N	51 10						Mag.M 6.8 Quetta.
		eL	E	57.4						6 1/2 Moscow,Praha.
		M	NZ	10 09.4	19	2		3		6 1/4 - 6 1/2 Matsushiro.
										6.2 Strasbourg. m 6.1 Kew.
431	10	iP	Z	11 26 20	3			-4		Large microseisms present.
		i	Z	27 08	4			+5		USCGS:9S,110W. H 11 13 05.
		e	N	37 31						BCIS: 9S,110W. H 11 13 04
		eL	E	58.5	20					
		M	E	12 02.2	19			1		
		M	Z	04.7	16			2		
432	12	iP	V	10 45 27	0.5			+		Compression.
		i	Z	45 35	3			+3		USCGS:7S,156E. H 10 39 47.
		e	NZ	46 33	9					h 100 Km.ca.
		e(S)	N	49 58	6					

CONTINUED.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
432 Cont.	Nov.12	e	N	10 50 19	7					
		e	E	50 28	7					
		e	N	50 54	16					
		eL	E	52.2	25					
		M	E	54.9	12		1			
		M	NZ	56.0	17	3		6		
433	12	iP	NZ	20 35 29	4	-8		+27	8680	Compression. H 20 23 27.
		isP	NZ	35 35	4	+12		-32	78.°1	USCGS:44 1/2N,148 1/2E.H 20 23 26.
		iPcP	Z	35 41	3			+37		BCIS:44.5N,148.5E.H 20 23 32.
		iPP	N	38 28	7	+7				h 33 Km.
		i	N	44 38	9	+10				JMA:44N,148 3/4E. H 20 23 32
		iS	NE	45 23	12	-15	-23			h 60 Km.ca.
		i	Z	45 43	12			+37		Mag. M 7.3 Oulan Bator.
		i	N	45 44	12	+35				7 1/4 Moscow.
		e	E	45 55	21					7.2 Lwiro,Bucarest.
		iPS	E	46 04	12		+27			7 - 7 1/4 Kew,Berkeley,Quetta.
		iPS	Z	46 07	12			+36		7 Uppsala,Kiruna.
		iPPS	E	46 22	10		+16			6 3/4 - 7 Pasadena.
		iPPS	Z	46 25	12			+52		6.7 Tacubaya,Matsushiro.
		i	N	46 28	10	-27				
		eSS	NE	50 11	27					
		iSS	E	50 21	13		+29			
		iSSS	N	53 33	18	+20				
		eLQ	E	55.5	33					
		i	N	55 36	14	-27				
		iL	E	56 19	24		+92			
		eL	N	56.7	33					
		iL	E	56 57	32		+100 ca.			
		eLR	Z	59.4	40					
		M	NZ	21 05.6	21	60		150		
		M	E	09.1	19		53			
434	13	iP	Z	04 16 39	4			+4		Compress.Large micros.present.
		i	N	17 41	5	+3				USCGS:44 1/2N,148E. H 04 04 37.
		iS	E	26 30	6		-4			Moscow 44 1/2N,148E.H 04 04 44.
		i	N	26 37	6	+3				JMA:43.6N,148.2E. H 04 04 44
		M	N	47.3	22	3				Mag.M 6.7 Quetta. 6.4 Wellington.
										6.2 Praha. 6.1 Strasbourg.
										6.0 Oulan Bator. 5.9 Uppsala.
										5.8 Matsushiro. m 6.3 Kew.
436	14	iP	ZV	13 55 02	4			+4	3670	Compression.Microseisms present.
		ipP	Z	55 27	3			-5	33.°0	h 0.01.
		isP	Z	55 38	3			-8		USCGS:6S,131E. H 13 48 20.
		iS	NE	14 00 12	8	+4	+7			Shillong 6 1/2S,133E. H 13 48 38.
		isS	N	00 47	7	-4				Moscow: H 13 48 33. h 100 Km.ca.
		i	E	00 54	9		-11			Mag.M 6.9 Quetta.
		i	N	00 56	6	-7				6 1/2 - 6 3/4 Matsushiro.
		i	Z	01 46	4			+13		6.0 Strasbourg.
		i	N	01 52	5	-8				m 6.2 Kew.
		iSS	N	02 12	6	-11				
		iSS	Z	02 17	5			+14		
		i	E	02 21	5		+8			
		i	E	02 28	5		+12			
		iSSS	E	02 42	8		+22			
		iScS	E	05 16	6		+24			
		M	E	06.4	17		39			
		M	N	08.8	12	24				
437	15	iP	V	04 29 04	1.5			+		Compression.
		i	V	29 11	1.5			+		BCIS:18S,168E. H 04 24.2
		eL	E	34.8						

No.	Date.	Phase - Component.		Time. (G.M.T)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
438	Nov.15	i(P)	Z	09 13 03	4			-6		USCGS:44N,149E.H 09 00 45
		i(S)	N	22 44	4	+1				Moscow:45N,148 1/2E. H 09 00 55.
		ePS	N	23 19	9					JMA:43 3/4N,148 3/4E. H 09 00 53.
		eL	E	33.7	22					h 70 Km.ca.
		M	N	41.7	16	1				Mag.6 1/2 - 6 3/4 Pasadena.
										6.4 Wellington.
										6.2 Matsushiro,Praha,
										6 Strasbourg. m 6 1/4 Kew.
440	16	iP	E	17 52 08	4		+3		4210	Preceded by microseisms.
		i	NZV	52 10	4	-2		+9	37.°9	USCGS:16S,172W. H 17 44 48
		eS	N	58 00	9					Mag. M 6 1/4 Pasadena.
		iS	E	58 02	13		+7			6.2 Wellington.
		eLQ	N	18 01.0	22					6 - 6 1/4 Matsushiro.
		eLR	E	02.7	30					m 6 1/4 Kew.
		M	N	05.3	13	3				
		M	EZ	07.3	16		5	13		
441	16	iP	ZV	18 07 15	2			+		Large micros.and coda of No.440
		i	V	07 43	1.5			+		confuse record.
		i	V	07 55	2			+		USCGS:20S,169E. H 18 02 25.
		i	N	09 03	5	-5				Mag. M 5.7 Wellington.
		i	N	09 11	6	+5				5 1/2 - 5 3/4 Matsushiro.
		i	NZ	11 15	10 N 6 Z	+12		+18		
		i	E	11 16	10		+12			
		M	EZ	14.7	18		6	12		
442	17	eP	Z	09 52 01					2830	Masked by microseisms.
		eS	N	56 27	9				25.°5	USCGS:10 1/2S,162 1/2E. H 09 46 30
		i	N	56 40	10	+5				Mag. M 6 - 6 1/4 Matsushiro.
		i	E	56 51	10		+6			5.8 Wellington.
		eLQ	E	57.3	20					
		i	N	57 34	9	-5				
		i	E	57 54	7		-6			
		eLR	N	58.8	21					
		M	NEZ	10 02.6	12	8	6	6		
444	17	i(S)	N	18 53 36	5	-3				Masked by microseisms
		eL	N	55.6	15					USCGS:20 1/2S,169E. H 18 44 49.
		M	E	57.0	15		2			Mag.M 5.4 Wellington.
										5 - 5 1/4 Matsushiro.
446	19	eP	V	03 59 27	0.5					Masked by microseisms.
		e	N	04 03 24	7					USCGS:31S,179W. H 03 53 56.
		i	Z	03 26	3			+2		
		e	N	04.3	16					
447	19	(P)	V	09 35 47						Large microseisms present.
		eS	E	45 42						USCGS:44N,149E.H 09 23 51.h 60 Km..
		eSS	N	50 40	15					Moscow:44N,149E.H 09 23 50. ca.
		eLQ	E	56.4	24					JMA:43.8N,149.1E.H 09 23 51.
		M	NZ	10 06.4	21	1		2		h 100 Km.ca
		M	E	07.4	18		1			Mag.M 6 Strasbourg,Praha.
										5 3/4 Moscow. 5 Matsushiro.m 6 Kew.
449	20	(P)	Z	14 30 05	3					Masked by microseisms.
		eS	N	39 55	7					USCGS:45N,149 1/2E. H 14 18 04.
		e(PS)	N	40 32	12					JMA:44.2N,149.9E. H 14 18 07
		e(SS)	N	45 20	19					h 80 Km.ca.
		eLQ	E	51.6	24					Moscow: H 14 18 13.
		eLR	E	56.0	22					Mag. m 6.1 Kew.
		M	NEZ	15 01.8	19	1	1	2		
450	22	iP	ZV	00 12 19	3			-3	4670	Dilatation.
		isP	Z	12 26	5			+4	42.°0	USCGS:10 1/2S,112 1/2E.H 00 04 20
		iPcP	Z	14 11	5			+3		Moscow:H 00 04 25
		iS	NE	18 39	10	+3	-3			Mag.M 5.8 Wellington.
		i	E	18 46	7		+6			
		i	E	19 12	10		-6			
		eSS	E	21 43	7					
		i	N	21 53	7	+4				
		i	E	21 57	7		+4			
		eScS	N	22 21	9	4				CONTINUED.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
450 Cont.	Nov.22	eL	E	00 24.8	30					
		M	N	27.3	18	11				
		M	EZ	30.3	18		10	26		
		M	N	32.5	9	8				
451	22	iP	NZV	02 03 48	3	+1		-5	3840	Dilatation.
		isP	ZV	04 02	4			+5	34.°6	USCGS:4S,131 1/2E. H 01 56 56
		iPP	Z	05 05	4			+4		Moscow: H 01 57 02
		eS	N	09 14	9					Mag.M 6.0 Wellington.
		e	E	10 26	15					
		e	N	10 35	13					
		i	N	11 40	6	-3				
		iScS	N	14 12	6	+3				
		M	N	17.2	10	5				
		M	E	18.8	10		6			
		M	Z	20.3	11			8		
459	30	iP	ZV	01 43 36	4			+6	7350	Compression.
		iPcP	Z	43 59	4			+3	66.°1	USCGS:32N,(137 1/2)E.H01 32 41
		iS	N	52 24	7	+3				JMA:32 1/2N,142 1/2E. H 01 32 49. h 160 Km ca.
		eL	E	02 03.3	27					Shillong:32 1/2N,142E.H 01 32 51.
		M	E	10.5	19		1			Mag.M 6.5 Uppsala,Kiruna.
		M	N	14.0	18	1				6 Pasadena,Strasbourg,Wellington.
		M	Z	15.1	18			2		5.8 Matsushiro.5 3/4 Lwow. m 6 1/4 Kew.
463	Dec. 3	(iP)	V	09 58 38	1.5			+		Masked by microseisms.
		e	E	10 07 21						USCGS:19N,121 1/2E. H 09 48 26.
		e	N	11 25	16					Moscow:H 09 48 35. JMA:H 09 48 48.
		eL	E	18.6	20					Mag.M 6 3/4 Quetta. 6.0 Uppsala.
		M	NE	24.2	19	2	1			5 3/4 Matsushiro. m 6 1/4 Kew.
466	7	iP	V	02 54 04	1.5			+		Compression Large micros.present.
		e(S)	N	03 00 34						USCGS,-BCIS:4N,127E. H 02 45 49.
		eS	E	00 37						Mag.M 5 3/4 - 6 Matsushiro.
		eL	E	09.9	24					
		M	NEZ	14.5	19	2	1	4		
469	8	i(pP)	V	12 20 41	1.5			-		Dilat. Preceded by microseisms.
		e(S)	E	30 23	5					USCGS:44N,149 1/2E. H 12 08 23.
		eL	E	41.0	24					Moscow:44 1/2N,150E.H 12 08 26.
		M	NE	51.9	20	1	1			JMA:43 3/4N,149E.H 12 08 36. h 80 Km.ca
										Mag.M 6.3 Quetta.6.0 Uppsala,Kiruna
										5 3/4 Moscow Rome. 5.7 Roxburgh. m 6.2 Kew.
472	9	(eP)	V	08 08 10						Masked by microseisms.
		i	V	08 27	1.5			+		USCGS:8S,118E. H 08 00 30.
		eL	E	23.0	19					Mag.5 1/4 Matsushiro.
473	9	iP	Z	12 23 09	3			-3		Dilatation.
		i	E	23 11	3		-1			USCGS:14 1/2S,167E. H 12 17 47.
		eS	E	27 21	10					Mag.M 5 1/4 - 5 1/2 Matsushiro.
		e	N	27 25	8					5.4 Roxburgh.
		i	E	27 48	6		+4			
		eL	E	29.5	25					
		M	EZ	31.0	18		3	6		
		M	N	31.4	18	3				
474	10	iP	EZ	07 07 32	4		-6	+25	2420	Compression. h 0.04 Km.ca.
		i	Z	07 40	5			+21	21.°8	USCGS:37S,176 1/2E. H 07 02 59.
		i	E	07 43	4		-8			h 300 Km ca.
		i	E	08 08	6		+17			Wellington:37.2S,176.9E.H 07 03 03.
		i	N	08 11	5	-7				h 300 Km ca.
		i	Z	08 12	4			+29		Mag.M 6 3/4 Pasadena,Matsushiro.
		i	Z	08 20	3			-27		6.7 Tacubaya.
		i	Z	08 44	4			+34		6 1/2 - 6 3/4 Berkeley.
		isP	E	08 50	6		+15			6 1/4 Praha.
		isP	NZ	08 52	7	+12		+72		m 6.7 Kew.
		i	N	08 58	7	-				

CONTINUED.

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
474	Dec.10	m	NEZ	07 09 02	7	26	75	83		
Cont.		i	Z	09 16	7			+92		
		i	N	09 21	7	+25				
		iS	NE	11 10	5	+9*	-28*			* From Mainka.
		m	NEZ	11 22	9	28	67	73		
		i	N	11 28	7	+52				
		i	N	11 44	6	+40				
		i	E	11 48	10		+43			
		i	E	12 30	10		+39			
		i	N	12 37	11	-86				
		i	E	12 48	11		+55			
		i	N	12 59	12	+130				
		i	E	13 26	10		+55			
		iScS	NE	18 09	5	+9*	-19*			
475	14	eS	N	07 33 34	10					Masked by large microseisms.
		eS	E	33 36	10					USCGS:35S,108 1/2W. H 07 11 28
		e	N	39 08						Mag.M 6 1/4 - 6 1/2 Matsushiro.
		eL	E	44 41						6.0 Wellington.
		M	NEZ	52.7	17	2	2	4		6 Pasadena.
476	15	P	V	12 46 09	1.5					Large microseisms present.
		eL	E	53.5	21					USCGS:31S,177 1/2W. H 12 40 27.
483	18	(P)	V	19 31 05						Masked by microseisms.
		e	E	32 39						USCGS:16S,173W. H 19 23 53
		i	Z	32 41	4			+4		Mag. M 5 3/4 Matsushiro.
		e(S)	N	36 46	10					5.3 Roxburgh.
		e	N	39 39	16					
		eL	E	41.6	27					
		M	N	42.9	15	2				
		M	EZ	43.5	19		5	8		
484	19	eSKS	N	10 12 10						Masked by microseisms.
		eSS	E	17 42						BCIS:36S,102W. H 09 49 25
		M	E	34.6	15		1			Wellington:37S,100W. Mag.5 1/2.
486	21	(P)	V	06 00 24						Masked by microseisms.
		eSKS	E	10 57						USCGS:44 1/2N,81E. H 05 46 26
		eS	E	11 59						Quetta:44 3/4N,80 3/4E. H 05 46 20
		eL	N	31.1						Shillong 45N, 82E. H 05 46 25.
		eL	E	37.3	25					Moscow:45N,81E. H 05 46 30
		M	NE	44.8	25	2	2			Mag.M 6 1/2 - 6 3/4 Matsushiro.
		M	Z	45.5	24			3		6 1/2 Moscow,Strasbourg,Oulan Bator
										6.4 Uppsala,Kiruna,Lwow.
										6 - 6 1/2 Praha.6 1/4 - 6 1/2Rome
										6.0 Quetta.5.8 Wellington.
										m 6.5 Kew.
487	22	iP	V	02 23 12	1.5			+		Microseisms present.
		eS	N	27 49	15					USCGS:6S,155E. H 02 17 14.
		eL	E	30.0	25					Mag.M 5.6 Wellington.
		M	NZ	32.3	22	4		8		5 1/4 - 5 1/2 Matsushiro.
		M	E	32.5	15		3			
489	22	eP	E	19 26 20	7					Microseisms present.
		e	Z	26 25	7					BCIS:33S,178 1/2W. H 19 20.8
		e	N	31 02	11					
		e	E	31 13	13					
		eL	Z	32.9	22					
		M	NEZ	35.8	17	2	2	6		
494	24	P	V	20 40 26						Masked by microseisms.
		i	NZ	40 35	4	+1		-3		USCGS:18S,169E. H 20 35 20
		iS	N	44 25	7	-4				Mag. 5.4 Wellington.
		iS	E	44 26	7		-3			
		e	Z	44 31	8					
		eL	E	45.8	25					
		M	EZ	47.8	19		2	5		
		M	N	48.2	16	2				

No.	Date.	Phase - Component.		Time. (G.M.T.)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1958.			h m s	s	μ	μ	μ	Km.	
496	Dec.24	eS	N	22 20 03	6					USCGS:18S,169E. H 22 10 56
		eL	N	22.3	16					Mag.4.8 Wellington.
497	25	iP	Z	08 11 29	4			-3	3070	Dilatation.
		ipP	Z	11 38	4			-6	27.°6	USCGS:5 1/2N,151E. H 08 05 38
		isP	NZ	11 43	6	+7		+22		h 60 Km ca.
		iPP	Z	12 18	6			+11		Mag.M 6 3/4 Pasadena,Moscow,
		i	E	12 20	6		+3			Lwiro,Matsushiro.
		i	NZ	12 24	6	-7		+19		6 1/2Strasbourg,Praha.
		iS	NZ	16 07	9N 7Z	+14		+15		6.3 Uppsala,Kiruna.
		isS	N	16 23	?	+				6.0 Oulan Bator.
		i	N	16 35	19	-65				m 6 1/2 Kew.
		i	Z	16 40	9			-39		
		i	E	16 47	7		+10			
		iSS	N	17 29	7	+10				
		iSSS	N	17 50	10	+16				
		i	E	18 06	7		+19			
		i	E	18 51	10		+37			
		i	Z	18 52	7			+29		
		eL	Z	20.0	25					
		eM	NZ	20.6	21					
		M	E	21.9	19		61			
		M	NZ	22.7	18	70		150		
498	26	i(P)	V	05 56 28				-		Masked by microseisms.
		eS	E	06 00 25	7					USCGS:S of Fiji Is.H 05 51 04
										h 600 Km.ca.
										BCIS:21 3/4 S,179W.H 05 51 04
										h 600 Km.ca.
501	28	iP	ZV	05 47 53	4			+4	10320	Compression H 05 34 37
		ePP	Z	51 38	8				92.°9	USCGS:29 1/2N,80E. H 05 34 36
		eS	E	58 57	9					Shillong:29N,81E. H 05 34 44
		ePS	E	06 00 17	13					Mag.M 6.9 Uppsala,Kiruna.
		M	EZ	30.1	22		1	3		6 3/4 Praha.6 1/4 - 6 1/2 Matsushiro
										6 1/4 Shillong. 6 Moscow.
502	29	i(PcP)	Z	22 49 30	4			+3		5.8 Strasbourg. 5.6 Lwow.m 6 1/2Kew.
		eL	N	23 09.0						Masked by microseisms.
										USCGS:2 1/2N,99E. H 22 38 22
										Mag.M 5 1/2 Matsushiro.
503	30	iP	Z	08 50 08	4			+3		Compression.Microseisms present.
		iPcP	ZV	50 18	3			+3		USCGS:35 1/2S,105 1/2W. H 08 37 56
		eS	NE	09 00 19	12					Mag.M 6 Pasadena.
		ePS	E	01 06	12					5 3/4 - 6 Matsushiro.
		eSS	N	05 31	12					
		eSS	E	05 36	13					
		eLR	E	14.4	33					
		M	NEZ	19.9	19	2	3	7		
504	31	iP	EZ	01 51 21	4			-5	3170	Dilatation.
		iS	N	55 42	6	-7			28.°5	H 01 45 55. h 0.05 Km ca.
		iS	E	55 43	6		+3			BCIS:23 1/2S,178 1/2W.
		i	E	58 08	10		-3			H 01 45 53 h 400 Km.ca.
		i	N	58 11	9	-6				USCGS:23S,178 1/2W.
		i	Z	58 19	7			-14		H 01 45 52. h 400 Km.ca.
		iScS	E	02 01 22	7		+4			Mag.M 6.3 Wellington.
		M	N	01.9	11	2				
		i(sScS)	NE	04 08	7	+4	-4			

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L. HESSION, S.J.
A/Director.

P. F. RHEINBERGER.

RIVERVIEW COLLEGE OBSERVATORY SEISMOLOGICAL BULLETIN

Lat 33°49'46" S Long 151°09'30" E h 25 m

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo NS EW)
2. Wiechert Vertical Seismometer (80 kilo)
3. Mainka Conical Pendulum Seismometer (450 kilo NS EW)
4. Galitzin Aperiodic Seismometer (NS EW Vert)
5. Sprengnether short-period Vertical (V).

Date	Phase	Time	Per	Amplitude			Δ	Remarks
				A_N	A_E	A_Z		
1959		h m s	s	μ	μ	μ	km	
Jan. 1	$(iP)_V$	07 32 48	1			+		
	iS_{NE}	38 14	7	-3	+4			Compression. Masked by microseisms.
	e_N	39 54	17					USCGS: 19S, 176W.
	eL_Z	41.9	24					
	M_Z	44.2	16			5		
	M_{NE}	44.8		7	4			MN per.12s, ME 15s.
1	iS_N	08 01 36	6	+4				
	i_E	01 41	7		+7			Masked by coda of preceding shock. Repetition
	eL_Z	05.4	24					
	M_E	07.7	16		6			
	M_N	08.2	12	9				USCGS: 8½S, 177W.
3	$(iP)_V$	07 40 50	1½			+		
3	eL_N	11 53.8	20					Compr. Masked by large microseisms.
3	eL_N	15 29.1	19					
4	e_N	03 30 57						
	M_N	39.7	16	4				Masked by large microseisms.
	M_E	43.1	19		5			USCGS: 10S, 111½E.
5	$(iP)_Z$	09 40 46	3			+2		Compr. Masked by microseisms.
	$e(S)_N$	45 19	10					
	i_{NE}	45 54	5	+5	+6			USCGS: 7S, 156½E,
	i_N	46 09	5	+5				h 100 km.ca.
	eL_N	48.5	21					
	M_E	50.4	13		7			
	M_N	51.2	15	5				
5	iP_Z	09 51 41	3			+9	2420	Compression
	i_Z	51 44	3			-5	21°8	h 0.01
	ipP_Z	51 59	3			+10		H 09 46 56
	i_E	52 04	3		+6			
	iPP_{EZ}	52 11	4		+17	-9		USCGS: 22S, 171½E.
	i_N	52 12	4	+7				
	iS_N	55 31	5	+25				
	iS_E	55 32	4		+10			
	i_N	55 37	6	-78				
	i_E	55 39	6		+110			
	i_Z	55 41	5			+41		
	isS_N	56 08	7	-29				
	iSS_N	56 20	6	-17				
6	iP_V	14 57 11	1½			+		Compression
								USCGS: 7½S, 105½E.

RIVERVIEW COLLEGE OBSERVATORY

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Jan. 8	iPKP$_V$	01 53 19	1½			+		Compression
	i(pPKP)$_V$	54 07	1½			+		USCGS: 15½N, 61W, h 100km.ca
8	e(S)$_N$	22 47 47	14					
	i$_Z$	53 03	3			+2		USCGS: 4½S, 138½E.
	i$_E$	53 15	3		+5			
	MNZ	56.8	11	12		12		
11	(iP)$_V$	05 13 33	1½			+		
11	e(P)$_Z$	16 30 20						Masked by microseisms.
	e(S)$_N$	35 11						
13	eP$_Z$	01 24 04					5210	H 01 15 30
	eZ	24 28	7				46°9	
	iZ	24 50	4			+2		USCGS: 13½N, 146E.
	i$_Z$	26 30	5			+3		
	iS$_E$	30 55	5		-3			
	iScS$_E$	33 59	5		-2			
	eSS$_E$	34 12	13					
	eL$_E$	36.0	27					
	M$_Z$	42.6	21			7		
	M$_N$	43.2	19	7				
	M$_E$	44.8	12		6			
13	e$_E$	07 51 36						
	eL$_N$	08 00.1	30					USCGS: 3S, 102E, h 150km.ca.
	M$_{EZ}$	05.2	24		2	2		
	M$_N$	05.8	17	2				
13	i$_E$	09 05 10	4		-2			USCGS: 9N, 83½W, h 100km.ca.
	eL$_E$	33.1	23					
13	e(S)$_E$	09 15 30						USCGS: 19S, 176½E.
13	e(SS)$_E$	10 05 08						USCGS: 9S, 67½E.
	eL$_N$	13.5	23					
13	e(S)$_N$	12 00 13						USCGS: 5S, 153½E.
14	(iP)$_V$	13 22 24	1½			-		
15	(P)$_Z$	07 37 02						Masked by microseisms.
	i$_N$	37 35	3	+1				
	eN	43 20	8					
	eL$_N$	44.1	15					
15	iP$_{EZ}$	21 25 27	4		+4	-5	2950	Dilatation
	ipP$_Z$	26 43	3			+2	26°5	h 0.07 ca., H 21 20 28
	i$_N$	27 16	4	+4				
	isP$_Z$	27 44	4			+4		USCGS: 25½S, 180°,
	iS$_N$	29 27	5	-6				h 500 km.ca.
	iScP$_Z$	31 33	4			-5		
	iZ	31 56	4			+3		
	iNZ	32 10	7	-6		+7		
	iE	32 17	8		+10			
	iNE	32 27	8	+7	-9			
	iScSE	35 27	4		+17			
	iScS$_N$	35 28	4	-4				
16	i$_V$	01 44 31	1			+		Masked by microseisms.
	e(SS)$_E$	02 02 09						USCGS: 52½N, 171W.
	eLE	16.5						
16	iP$_V$	10 56 36	1			-		Dilatation
	e(S)$_{NE}$	11 00 30						USCGS: 22S, 170E.
17	(eP)$_Z$	11 36 19						Masked by microseisms.
	i(S)$_N$	40 57	5	+2				USCGS: 10S, 162½E.
	i$_N$	41 33	5	+2				
	eL$_N$	43.7	21					
18	iP$_V$	14 47 06	1½			+	3190	Compression
	eS$_N$	51 55	18				28°7	H 14 41 05
	eL$_N$	54.5	30					USCGS: 5S, 152½E.
	M$_{NEZ}$	57	20	6	6	6		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Jan.18	$(iP)_V$	19 31 57	1			+		Masked by microseisms & surface waves of earlier shock.
	$e(S)_N$	36 50	13					
	M_E	41.8	19		4			
	M_Z	42.4	20			3		USCGS: 5S, 152½E.
	M_N	42.5	19	3				
18	iP_V	22 29 01	1½			+	3420	Compression.
	iS_N	33 34	4	-4			30°8	h 0.06, H 22 23 20
	i_N	33 51	4	-2				USCGS: 19S,178W, h 450km.ca.
	$iScS_{NE}$	38 44	4	-4	+4			
19	iP_V	10 48 55	1½			-		Dilatation. Masked by microseisms.
	$e(S)_E$	53 10						
	i_N	53 19	4	+3				USCGS: 16S, 168½E.
	eL_N	54.0	16					
	M_N	56.6	17	2				
	M_E	57.1	15		1			
20	iP_Z	16 53 05	4			+5	3780	Compression
	iPP_E	54 22	6		+8		34°0	H 16 46 17
	iS_E	58 30	6		+5			Very large microseisms present.
	e_N	59.0	23					
	eL_N	17 02.8	30					USCGS: 9S, 126E.
	M_{NE}	05.5	19	34	29			
	M_Z	08.1	13			27		
22	iP_Z	05 21 59	5			+14	7700	Compression. H 05 10 48
	iS_E	31 05	9		-48		69°3	Very large microseisms present.
	iS_N	31 08	9	-28				
	iSS_N	35 37	10	+18				USCGS: 34N, 142E.
	eLQ_N	39.9	24					
	M_N	48.0	21	63				
	M_E	48.6	20		34			
23	e_N	01 22 32						Masked by microseisms.
24	$(iP)_V$	00 32 49	1			+		Compression. Masked by microseisms.
	eL_N	42.6	22					
	MEZ	45.2	19		5	6		
	M_N	45.5	13	3				
24	$i(P)_V$	01 35 02	1			+		Masked by microseisms.
24	iP_Z	05 19 52	3			-3		Dilatation
	$i(sS)_N$	29 44	5	+4				USCGS: 37½N,141E, h 100km.ca
24	iP_V	07 59 21	1½			+		Compression
	iP_Z	59 23	3			+3		
	i_Z	08 00 54	3			+2		USCGS: 1½S, 116½E.
	i_Z	01 21	4			+3		
	e_N	05 09	12					
	eL_E	13.4	18					
	M_N	19.5	16	1				
	M_E	21.6	13		1			
24	i_N	10 04 25	3	+2				Masked by microseisms.
	i_Z	04 36	4			+2		
24	$(iP)_Z$	15 40 03	3			+2		Compression. Masked by microseisms.
	$e(S)_E$	44 50	8					
	eL_E	46.8	22					USCGS: New Britain region, h 100 km.ca.
	M_E	50.7	12		2			
	M_{NZ}	51.4	15	1		2		
24	$(iPKP)_Z$	20 00 49	3			+2		Compression
	M_E	46.6	16		2			USCGS: 15N, 92½W.
24	$ePKP_Z$	20 15 30						
	iPP_Z	21 02	4			+3		Compression
	i_Z	24 34	4			+5		
	$e(SKKS)_N$	27 41	7					USCGS: 37½N, 24½W.
	$e(SKKS)_E$	27 48	7					
	eL_E	21 23.2	30					
	M_{NEZ}	35	19	3	3	3		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Jan.25	e(S)NE	22 37 06	10					
	eL_E	38.8	23					
29	(iP)V	11 14 18	1½			+		Compression. Masked by microseisms.
	eL_{NE}	22.6	19					
	M_{NEZ}	25.7	13	3	1	2		
30	iPV	00 25 03	1½			+	2940	Compression
	i_{NEZ}	25 06	4	+2	+2	-3	26°4	h 0.00, H 00 19 28
	iZ	25 11	3			-3		
	ipPV	25 12	1½			+		USCGS: 10S, 161E.
	i_{NE}	25 13	4	+3	+3			
	iV	25 34	1½			-		
	iPPZ	25 45	4			+2		
	i_N	29 24	6	-5				
	iS_E	29 32	7		+11			
	iS_N	29 34	7	+9				
	iZ	29 36	6			+7		
	iE	29 43	9		+14			
	i_N	29 54	6	+8				
	iE	30 06	6		+11			
	i_N	30 07	6	+12				
	i_{NE}	30 20	7	+13	+7			
	eL_N	30.7	21					
	eL_E	31.9	20					
	M_N	33.6	18	18				
	M_Z	33.9	18			15		
	M_E	34.8	16		16			
30	iPZ	18 14 31	3			+3	2660	Compression
	iZ	16 19	4			-2	23°9	h 0.07 ca.,H 18 09 55
	eZ	16 48	6					Gutenberg Tables give:
	iZ	16 55	4			-5		Δ 23°2, h 500 km.,
	iZ	17 03	5			-5		H 18 09 59
	iE	17 04	4		+3			
	iS_{NE}	18 13	6	-13	+4			USCGS: 31S, 179W.
	i_{NE}	18 31	7	+5	+4			
	iE	18 45	6		+4			
	iScPZ	20 46	5			+5		
	$iScS_N$	24 34	4	-4				
30	(P)V	20 51 02						Masked by microseisms.
	e(S)E	21 00 47						
	i(ScS)N	01 17	4	+2				USCGS: 44N, 144E.
	eL_E	11.9	36					
30	iPZ	22 28 46	4			+2	8680	Compression
	iPcPZ	28 58	4			+2	78°1	H 22 16 44
	eS_E	38 40	10					USCGS: 44N, 144E.
	ePS_E	39 21	10					
	eL_{2E}	49.4	40					
31	(iP)V	05 51 52	1½			+		Compression.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Feb. 2	$(P)_Z$	04 02 59						
	$i(pP)_V$	03 41	2			+		USCGS: 6½S, 126E, h 150km.ca
	$e(S)_E$	08 10						
4	i_V	05 06 12	1½			+		USCGS:Off N.coast of Mindanao
6	$(P)_V$	14 46 02	1				(10050)	Microseisms present.
	i_Z	46 16	3			+1	(90°5)	
	$iSKS_N$	56 32	7	-2				USCGS: 51½N, 175½W.
	eS_E	56 55	9					
	M_{NEZ}	15 21.4	20	2	1	1		
7	$i(P)_Z$	09 52 07	4			-2	13050	ca. Dilatation
	$iPKP_Z$	55 41	5			+3	117½°	ca. Compression
	iPP_{NEZ}	56 54	5	+2	-3	+9		
	$eSKS_E$	10 02 34	8					USCGS: 4S, 81½W.
	$iSKS_E$	02 48	9		+7			
	$i(SKKS)_E$	03 58	9		+13			
	e_E	04 56	16					
	e_N	05 00	15					
	ePS_E	06 30	24					
	i_{NEZ}	06 51	10	+10	-21	+24		
	i_E	07 12	10		+16			
	i_Z	07 14	8			+15		
	iSS_E	13 04	15		-35			
	$eSSP_{NZ}$	13 18	30					
	i_E	13 30	13		+26			
	i_N	13 36	18	+45				
	m_E	13 57	20		45			
	i_N	16 48	13	+18				
	e_N	24.2	25					
	eL_{2N}	26.3	33					
	eL_{2E}	26.7	37					
	eLR_N	31.7	30					
	eLR_Z	31.8	30					
	eLR_E	32.0	30					
	M_{NEZ}	36.4	19	27	37	44		
	eW_{2E}	11 44	30					
	M_E	47	22		20			
7	iP_V	16 53 03	1			+		Compression
	i_V	56 25	1½					USCGS:6½S,113E, h 600 km.ca.
8	iP_V	05 51 23	1½			-		Dilatation
	iS_E	55 26	4		+3			USCGS:23S,180°,h 600 km.ca.
	e_N	58 24	12					
9	iP_Z	04 55 33	3			+2	(9710)	Compression. Masked by
	iS_E	05 06 13	5		-4		(87°4)	microseisms.
	i_N	06 19	5	-3				
	ePS_N	07 14	18					USCGS: 50½N, 177½W.
	eL_N	23.0	22					
	M_N	27.1	19	4				
9	iP_Z	21 19 19	2			+4	3260	Compression
	isP_Z	19 53	2			+2	29°3	h 0.01, H 21 13 24
	eS_E	24 04	4					USCGS:5S,154E, h 100 km.ca.
	$e(sS)_E$	24 37	4					
11	i_V	03 52 28	1½			+		
	e_N	04 03 01	10					
12	iP_{EZ}	17 08 09	3		+2	-3	2560	Dilatation
	i_Z	08 15	3			+3	23°0	h 0.01, H 17 03 12
	ipP_{EZ}	08 29	3		-3	+4		
	isP_Z	08 42	4			+4		USCGS: 22S, 173E.
	iPP_N	08 43	4	-3				
	$i(PPP)_Z$	08 49	5			+5		
	e_E	11 59	6					
	iS_N	12 08	5	-11				

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Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Feb.12	iS_E	17 12 09	5		+27			
cont.	i_Z	12 11	6			+13		
	i_{NZ}	12 22	5	+7		+5		
	i_E	12 41	6		-3			
	i_{NZ}	12 48	5	+3		+6		
	eL_E	13.4	25					
	M_N	16.5	12	2				
	M_Z	16.9	16			2		
	M_E	17.2	15		3			
	$i(ScS)_N$	19 22	4	+3				
13	iPV	15 14 52	1			+		Compression
13	iPZ	20 08 31	2			+2		Compression
14	ePV	04 43 34					4190	H 04 36 15
	i_Z	44 01	3			+4	37°7	Compression
	iS_E	49 25	5		-4			
	i_E	49 32	7		-5			USCGS: 7½S, 122E.
	i_N	49 50	4	+4				
	eSS_Z	52 03	15					
	eL_N	56.7	24					
	eL_Z	57.9	25					
	M_{NE}	05 01.4	13	9	8			
	M_Z	02.1	13			5		
14	$(iP)_Z$	22 38 05	5			+5		Large microseisms present. USCGS: 28N, 97E.
15	$(iP)_V$	04 12 12				+	9550	Compression
	iP_Z	12 14	5			-5	86°	Dilatation
	ePP_N	15 40	15					H 03 59 31
	e_Z	15 55	12					
	iS_E	22 47	7		+12			(USCGS: ~~44½N, 83½E, H 04 02 22~~ 59½S, 25W, 03 59 25)
	e_Z	22 47	15					
	e_N	23 40	15					
	e_N	24 13	20					
	eSS_E	28 20	16					
	m_E	28 44	16		5			
	eLQ_E	34.8	27					
	eLR_N	39.3	27					
	M_E	47.2	15		8			
	M_Z	49.0	19			15		
	M_N	49.2	18	15				
15	$(iP)_Z$	04 55 17	4			-4	9550ca.	Dilatation. P masked
	i_Z	55 22	6			-10	86°ca	by coda of preceding shock.
	iS_E	05 05 58	7		+21			Replica of preceding earth-
	i_E	06 11	7		+19			quake.
	eLQ_E	18.0	27					USCGS: 59½S, 26W, H 04 42 35
	M_Z	32.1	19			15		
	M_N	32.4	18	17				
15	eP_gV	21 39 59					67	H 21 39 47
	iP^*V	40 00	¼				0°6	
	iS_gV	40 06.5	½					
	iV	40 08	½					
	iV	40 09.5	½					
	M_V	40 18	1					
16	$(iP)_Z$	07 59 27	4			+3		Compr. Masked by micros. USCGS:25S,180°, h 500km.ca.
16	$(iP)_V$	13 41 11	2			-		Dil. Masked by micros.
17	eV	01 30 42						
17	iPV	12 16 11	1			-	10380	Dilatation. P very small.
	$iPcP_V$	16 13	1			+	93°4	Microseisms present.
	i_Z	16 14	3			+2		
	$iSKS_N$	26 47	4	-3				USCGS: 51½N, 171W.
	iS_N	27 17	4	-3				
	eSS_E	33 22	18					

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Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks.
1959		h m s	s	μ	μ	μ	km.	
Feb.17	eLQE	12 40.4	26					
	M_N	49.6	20	3				
	M_{EZ}	51.6	20		2	2		
20	$(Pg)_V$	00 36 00	½					
20	$(Pg)_V$	00 39 09	½					
20	$(Pg)_V$	00 40 49	½					
20	$(Pg)_V$	00 43 13	½					
20	$(Pg)_V$	00 45 17	½					
20	$(Pg)_V$	00 45 49	½				(67)	
	$(Sg)_V$	45 57	½				(0°6)	
20	$(Pg)_V$	01 16 41	½					
20	$(Pg)_V$	01 19 14	½					
20	P_gV	01 23 20	½					
20	P_gV	01 25 10	½				(67)	
	$(Sg)_V$	25 18	½				(0°6)	
20	$(P)_V$	01 37 12						Obscured by microseisms.
20	$e(P)_V$	06 19 25	½					
	i_V	19 36	¾			+		
	i_V	19 49	½					
20	$(P)_V$	12 08 48						Obscured by microseisms. USCGS:18S,178½W,h 600km.ca.
21	$i(Pg)_V$	01 36 34	½				(78)	
	$i(Sg)_V$	36 43	½				(0°7)	
21	$(iP)_V$	13 01 57	1			+		Obscured by microseisms.
22	iP_Z	10 32 51	2			-2		Dilatation
	i_Z	34 08	3			+2		
	iS_N	38 04	5	-2				
	i_E	42 47	4		+4			
23	eP_Z	02 04 34					3040	
	i_Z	04 42	4			-2	27°3	
	i_N	04 44	4	+2				USCGS: 5½S, 150E.
	iPP_{NZ}	05 16	5	+4		-3		
	$iPPP_{NZ}$	05 30	5	+6		-5		
	eS_N	09 13	8					
	i_N	09 32	9	-14				
	i_Z	09 33	6			+4		
	iSS_N	10 29	7	+9				
	i_E	10 40	6		+7			
	i_E	12 10	6		+10			
	eL_E	12.9	27					
	eL_Z	13.6	23					
	M_E	15.4	16		17			
	M_Z	16.5	16			7		
	M_N	17.8	13	7				
23	iP_gV	05 57 44	¼			+	33	Compression
	iS_gV	57 48	½			+	0°3	
23	$(i)_V$	18 38 38	1½			-		
	i_V	40 24	1½			+		
23	$i(P)_Z$	22 26 51	3			+2		Compression
	e_E	32 02	7					
	e_N	32 32	6					
	eL_E	33.7	26					
	eL_Z	34.0	23					
	M_N	36.2	15	1				
	M_Z	36.3	17			1		
	M_E	37.3	17		2			

Date	Phase	Time	Per	A_N	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Feb.25	iP_V	20 15 22	1			+	4450	Dilatation
	i_V	15 26	1			-	40°	
	eS_N	21 28						USCGS: 2S, 129E, h 200km.ca.
	eL_E	28.2	21					
	M_E	34.2	18		3			
	M_N	36.3	16	1				
25	iP_{NZ}	23 45 26	4	-1		-2	2210	Dilatation
	ePP_{NZ}	45 44	4				19°9	H 23 40 50
	eS_{NE}	49 05	6					
	eLQ_N	49.2	16					
	iE	49 14	8		-16			
	i_E	49 26	7		+14			
	eLR_Z	50.1	21					
	M_E	50.3	11		14			
	M_N	50.5	12	8				
	M_Z	50.9	12			5		
	$(eT)_V$	24 04 12	½					
	eT_V	04 45	½					
27	i_V	11 59 06	1½			+		
	i_V	59 12	1½			+		
27	eL_N	15 34.6	18					
	M_N	37.3	14	1				
	M_{EZ}	39.1	17		2	2		
27	iP_V	18 53 21	1			-		Dilatation
27	iP_Z	21 07 27	3			+3	6910	Compression
	i_Z	07 32	4			-3	62°2	
	iS_N	15 52	7	-3				
	i_N	16 07	6	-2				
	e_N	23 29	10					
	e_E	23 34	12					
	eL_E	27.8	26					
	M_E	33.1	19		2			
	M_N	34.0	22	3				
	M_Z	34.3	21			3		
28	e_N	06 11 14						Masked by microseisms.
	e_N	12 32	9					
	eL_N	15.4						
	M_N	19.3	12	2				
28	iP_V	11 49 00	1½			+	2490	Compression
	i_N	49 03	5	-4			22°4	
	i_Z	49 06	5			+5		
	i_N	49 12	7	-3				
	i_Z	49 17	5			+4		
	eS_E	53 03						
	iE	53 08	9		-23			
	i_N	53 09	6	+7				
	eL_{NZ}	54.2	22					
	MN	56.4	9	10				
	M_E	56.5	9		15			
	M_Z	56.9	10			6		

Date	Phase	Time	Per.	A_N	A_E	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Mar. 1	iP_Z	16 56 19	3			-3	4000	Dilatation
	i_N	56 21	3	+2			36°0	h 0.0
	i_{EZ}	56 23	3		+3	+12		H 16 49 19
	ipP_Z	56 27	3			-11		
	isP_Z	56 33	3			+7		USCGS: ½S, 134½E,
	i_E	56 34	3		-3			h 100 km.ca.
	i_N	56 35	3	+4				
	i_E	56 42	3		+4			
	i_Z	56 43	4			-20		
	i_N	56 45	4	+14				
	i_Z	56 53	4			-13		
	i_Z	57 02	4			-13		
	$iPPP_Z$	57 59	4			+15		
	$iPPP_{NE}$	58 00	4	-15	+14			
	i_{NEZ}	58 08	5	+19	-10	-13		
	i_{NZ}	58 20	4	+12		+26		
	$i(PcP)_Z$	58 43	3			-13		
	i_{NE}	58 55	4	-12	+15			
	iS_E	17 01 55	9		+20			
	i_N	02 05	6	+18				
	isS_E	02 09	9		+54			
	i_N	02 17	10	+120				
	i_E	02 24	6		-20			
	i_Z	02 34	6			-18		
	i_Z	02 47	5			+17		
	i_E	02 49	5		-31			
	i_E	03 24	7		+33			
	i_N	03 36	4	+8				
	i_N	03 48	6	+23				
	i_N	03 59	8	-44				
	i_N	04 27	5	+17				
	i_E	04 37	9		-38			
	i_N	04 47	9	-41				
	i_Z	04 55	7			+20		
	i_E	05 14	7		-21			
	i_E	05 43	7		-49			
	i_Z	05 53	6			+16		
	eL_E	06.1	37					
	M_E	10.6	16		350ca			
	M_N	12.6	14	175ca				
	M_Z	13.7	15			300ca.		
	eW_2N	19 40	22					
2	$e(S)_N$	01 54 27	8					USCGS: 7S, 104E.
	eL_E	02 07.4	22					
2	$e(P)_V$	05 45 31½	½					Small local shock.
	e_V	45 36½	½					
	$i(S)_V$	45 43½	½					
2	$(P)_V$	05 50 33½	½					Small local shock.
	$(S)_V$	50 39	½					
	i_V	50 41½	1			+		
2	iP_V	09 20 25	1½			+	3670	Compression
	i_V	20 40	1½			+	33°0	H 09 13 46
	eS_E	25 43	9					
	i_{NE}	25 48	4	-1	+3			USCGS: 8S, 128E.
	$eNEZ$	26.1	24					
	$mNEZ$	26.8	22	5	5	2		
	$iSSS_N$	28 06	7	+3				
	eL_{NE}	31.0	24					
	M_{NE}	32.6	19	26	26			
	M_{EZ}	35.4	14		33	24		
2	e_V	10 32 53	½					Small local shock.
2	$e(Pg)_V$	10 33 11	½					Small local shock.
	$i(Sg)_V$	33 18½	½			-		
	M_V	33 29	1½					

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Mar. 2	(iP)V	10 37 08	1½			+		Masked by microseisms.
2	iV	16 43 41	1½			+		Large microseisms present.
2	iV	21 28 04	1½			+		Masked by microseisms.
	eLE	32.1	16					
5	(iP)V	13 00 17	2			-		Dilatation
5	iV	16 34 55	1½			+		USCGS: 29½S, 179W.
6	(iP)Z	15 09 37	3			+2		Masked by microseisms.
6	iV	17 30 33	1½			+		
6	iPZ	20 34 08	4			-3	2790	Dilatation
	eSNE	38 31	7				25°1	H 20 28 40
	iE	38 40	5		+2			
	iN	38 44	7	-5				USCGS: 11S, 162E.
	eSSZ	39 32	12					
	iE	39 37	4		+3			
	iN	39 45	6	+6				
	iZ	39 46	5			-3		
	eLRE	40.3	24					
	MN	43.3	13	2				
	ME	44.7	14		4			
	MZ	45.1	14			2		
6	iPZ	20 47 19	3			+3		Compr. Masked by coda of preceding shock. USCGS: 10½S, 162E.
7	iPV	09 22 06	1½			+	6110	Compression
	iSN	29 48	4	+1			55°0	
	eLN	39.4	22					USCGS: 3S, 102E.
	ME	43.8	16		1			
	MNZ	44.1		1		1		M_N per. 15s, M_Z 18s.
7	eN	15 02 56						
	eLE	05.5	20					
8	iPZ	17 12 43	3			+2	2360	Compression
	eZ	12 48	8				21°2	H 17 07 54
	iZ	13 01	4			-2		
	iZ	13 09	4			-3		USCGS: 21S, 170E.
	eSN	16 25	7					
	iN	17 47	5	+4				
	eLN	17.7	22					
	eLEZ	18.1	24					
	MZ	19.7	16			2		
	ME	19.9	16		3			
	MN	20.2	14	7				
12	e(P)Z	01 37 05						Masked by large microseisms.
	iZ	38 45	3			-2		
	iZ	39 27	3			+3		USCGS: 17N, 145E.
	eSE	43 05						
	iE	43 11	5		-5			
	iN	43 21	5	+8				
	iE	45 31	5		-3			
	eE	46 16	15					
	iE	46 25	10		-16			
	eLE	47.6	32					
	LE	48.6	26		42			
	ME	49.4	16		12			
	MNZ	49.7	18	15		10		
12	(iP)V	09 06 28	1					Masked by microseisms.
	iV	07 08	1½					USCGS: 5S, 155E.
	eL	14.7	18					
13	i(P)V	00 19 09	1½			+		Masked by microseisms.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Mar.14	$(iP)_Z$	07 01 05	3			+2		Compr. Masked by large microseisms.
	i_E	05 25	4		-2			
	i_E	05 29	5		-5			USCGS: 18S, 166E, h 500 km.ca
	i_N	05 30	5	+7				
17	$(iP)_Z$	08 35 55	4			+2		Compression. Masked by microseisms.
	i_Z	36 10	4			-3		
	iS_N	44 36	7	+5				
	i_E	44 44	4		+3			USCGS: 27½N, 130E.
	i_N	44 48	7	+5				
	i_E	44 52	7		-7			
	e_N	44 55	21					
	eSS_N	48 52	10					
	e_{NE}	51 55	25					
	eL_E	53.3	28					
	eL_N	55.3	20					
	M_E	09 00.0	19		3			
	M_{NZ}	01.9	21	4		5		
17	$(i)_V$	13 11 48	1½			+		Masked by large microseisms
	$(iS)_N$	22 45	4	-3				USCGS: 57S, 25W.
	M_N	49.4	19	1				
17	$i(P)_Z$	15 49 25	3			+3		Compression. Masked by microseisms.
	i_N	54 18	4	+3				
	eL_N	56.0	18					
18	iP_Z	00 51 57	3			-1	7160	Dilatation. Microseisms
	eS_N	01 00 35	6				64°4	present. H 00 41 17
	ePS_E	00 50	6					
	eL_E	10.1	22					USCGS: 27N, 129E.
	M_E	16.0	15		1			
19	$(i)_V$	08 44 11	1½			+		
	$(iPKP)_V$	45 52	1½			+		
	i_V	45 55	1½			+		USCGS: 35N, 36W.
	iPP_Z	51 18	4			+4		
	i_E	53 22	4		-2			
	eSS_N	09 12 45	19					
	eL_N	46.3	27					
	eL_E	49.1	30					
	M_{NEZ}	55.4	24	5	5	5		
21	$(P)_V$	00 00 59						
	$e(S)_N$	06 58						USCGS: 10S, 117E.
	eL_{NE}	14.2	22					
21	iP_V	04 33 03	1			-		Dilatation
								USCGS: 19S, 178W, h 550 km.
23	i_E	06 20 35	7		+5			Masked by microseisms.
23	eL_E	19 39.3	17					Masked by microseisms.
	eL_N	40.4	24					
24	$(iP)_Z$	09 50 17	3			+2		Compr. Masked by micros.
24	$(iP)_Z$	17 16 33	4			-2		Dil. Masked by large microseisms.
	e_N	21 49						
	eL_E	23.6	24					
25	$(iP)_V$	07 05 09	1½			+		Compr. Masked by micros.
	$e(S)_N$	11 07	7					
	e_N	13 07	17					
25	eL_N	11 37.6						Masked by large microseisms.
25	$(P)_Z$	15 01 58						Masked by large microseisms
	eS_E	05 35						
	$eL(Q)_{NE}$	05.8	21					
	M_{NE}	06.7	13	2	3			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Mar.26	iPV	02 29 55	1			-	3090	Dilatation
	i(sP)Z	30 29	4			+2	27°8	h 0.01?
	iZ	30 56	4			+2		H 02 24 13
	iS_N	34 29	6	-4				
	iZ	34 31	4			+4		USCGS: 7S, 155½E,
	iN	34 34	5	+5				h 60 km.ca.
	iE	34 44	4		+3			
	iN	34 52	6	-6				
	iZ	34 53	3			+1		
	iE	34 55	7		+6			
	$i(sS)_N$	35 08	6	+8				
	iE	35 15	4		-3			
	iN	35 18	6	+6				
	iZ	35 35	4			-2		
	iE	35 48	4		+4			
	iE	35 56	5		+3			
	iN	36 07	6	+4				
	iE	36 10	6		+7			
	eL_E	36.5	33					
	eL_N	37.1	30					
	eL_Z	37.4	31					
	M_Z	39.0	21			6		
	M_E	39.4	14		4			
	M_N	39.8	17	5				
26	iPV	05 32 34	1½			-	4640	Dilatation
	iZ	32 35	3			+1	41°7	Compression
	iV	32 43	1½			+		
	iV	32 51	2			-		
	iZ	32 56	3			+2		
	eS_{NE}	38 51						
	eL_E	46.4	33					
	eL_N	46.5	33					
	M_{NE}	49.0	27	4	4			
27	(i)V	06 54 29	1½			+		Compression. Masked by
	(i)V	57 16	1½			+		microseisms.
	e(L)N	07 04.8	19					
28	iP_{EZ}	19 52 38	2		-1	+3	3360	Compression
	ipP_Z	54 10	2			+3	30°2	h 0.08, H 19 47 10
	ipP_E	54 11	2		-1			
	iEZ	54 19	4		-4	+8		
	iE	54 25	6		+5			
	iZ	54 26	4			-4		
	iZ	54 53	4			+5		
	iZ	56 59	4			+6		
	iS_E	57 00	6		+13			
	eE	57 13	15					
	iE	57 18	5		-8			
	iE	59 58	10		-8			
	iN	20 00 00	7	+4				
	iE	00 24	10		+14			
	iNZ	00 31	5			+5		
	iZ	00 40	5			+6		
	iZ	00 56	4			+4		
	$iScS_{NE}$	02 08	3	-7	-2			
	iNE	06 16	7	-9	+14			
31	(i)Z	07 27 38	3			+3		Masked by large microseisms
	$(iPP)_Z$	29 26	3			+2		
	eN	33 48	10					
	eS_E	34 03	10					
	i_E	34 16	4		+4			
	eSS_N	36 34	18					
	eSS_Z	36 37	13					
	eL_E	38.8	24					
	eL_Z	39.1	21					
	M_N	41.6	12	4				
	M_{EZ}	43.1	16		8	7		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr. 1	(iPKP)$_Z$	00 54 34	3			+2		Compression. Masked by microseisms.
	e(SKKS)$_E$	1 06 04	19					
	e(SS)$_E$	21 04	30					
	eG$_E$	46.2	45					USCGS: 27½N, 21W,
	M$_{EZ}$	02 12.8	18		1	1		H 00 34 18
	M$_N$	16.6	16	1				
1	i$_Z$	14 19 42	2			+2		Compression. Masked by
	i$_V$	20 00	1½			+		microseisms.
	iPP$_Z$	21 29	3			+2		
	e$_N$	25 22						USCGS: 48S, 98½E,
	iS$_E$	25 36	8		-6			H 14 11 30
	eSS$_N$	28 27	14					
	e$_E$	28 35	12					
	eL$_N$	29.2	25					
	eL$_E$	30.0	22					
	M$_{NEZ}$	33.0	19	4	5	3		
1	(i)$_V$	14 53 00	1½			+		Masked by microseisms &
	i(PcP)$_Z$	57 06	4	+3				coda of preceding shock.
								USCGS: 18S, 169E,
								H 18 48 28, h 150 km.
1	(iP)$_V$	19 22 43	1½			+		Compr. Masked by micros.
	eL$_N$	31.3	21					USCGS: 17S, 173W,
	M$_N$	35.3	12	1				H 19 15 38
1	iP$_Z$	22 52 53	2			+2	2460	Compr. Microseisms present
	eS$_E$	56 47					22°2	h 0.005
	iS$_N$	56 48	6	-3				USCGS: 17S, 168½E,
	i$_E$	56 53	6		-5			H 22 47 54, h 100km.ca.
	isS$_{NE}$	57 11	7	+6	-5			
	eL$_E$	58.6	24					
	M$_{NE}$	23 00.7	14	1	1			
1	iP$_Z$	23 39 29	3			-1	3170	Dilatation. Microseisms
	eS$_N$	44 13	6				28°5	present.
	isS$_N$	44 29	6	+3				h 0.00, H 23 33 35
	e$_N$	45 23	14					
	i$_E$	46 21	4		-3			USCGS: 6S, 154½E,
	i$_E$	46 50	4		-3			H 23 33 36
	eL$_N$	47.2	27					
	eL$_Z$	47.4	27					
	M$_{NE}$	49.6	14	2	3			
2	iPg$_V$	05 50 28.4	¼			+		Compression. Local shock.
	iSg$_V$	50 32.1	½			+		
2	(iP)$_V$	12 14 25	1½			-		Dilatation. Masked by
	i$_Z$	18 13	3			+4		large microseisms.
	iS$_E$	18 29	4		+3			
	iS$_N$	18 32	4	+5				
	i$_Z$	18 33	4			-5		
	i$_N$	18 50	6	+5				
	i(SS)$_E$	19 13	4		-4			
	eL$_{NE}$	19.8	19					
	M$_{NEZ}$	22.0	13	5	7	6		
2	iP$_Z$	19 31 52	3			+2		Compression
	e(S)$_N$	40 14						USCGS: 20½N, 121E,
	iScS$_E$	41 46	4		+2			H 19 21 34
	M$_E$	57.6	18					
2	eL	22 04.8	21					USCGS: Tonga Is. H 21 48 20
3	eL$_E$	00 40.3	25					
	M$_N$	44.8	13	2				
	M$_E$	45.3	13		2			
5	iP$_V$	21 10 59	1½			+		Compr. Large microseisms
	e$_E$	15 33	10					present.
	i$_N$	15 49	7	+4				USCGS: 15½S, 167½E,
								H 21 05 54, h 150 km.ca.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr. 5	iP_V	23 35 24	1½			+	3250	Compression
	iP_Z	35 25	3			+2	29°2	h 0.00, H 23 29 23
	i_Z	35 40	4			+4		
	iPP_V	36 20	1½			+		USCGS: 5½S, 146E,
	$iPPP_Z$	36 33	4			+3		H 23 29 25
	eS_N	40 13						
	i_N	40 47	9	-6				
	i_N	41 21	7	+6				
	i_N	41 31	7	+10				
	i_N	41 38	9	-13				
	i_N	41 53	8	-9				
	eL_N	43.9	25					
	eL_{EZ}	44.4	25					
	M_N	47.4	17	18				
	M_E	48.4	15		27			
	M_Z	49.1	14			22		
6	iP_Z	14 19 48	4			-5	4170	Dilatation
	ipP_{EZ}	19 59	4		+5	+6	37°5	h 0.00, H 14 12 35
	isP_{EZ}	20 03	4		-6	-6		N-S record lost.
	i_Z	20 13	4			+5		
	i_Z	20 29	4			+7		USCGS: 10S, 120½E,
	iPP_Z	21 15	4			+7		H 14 12 36
	i_Z	25 33	4			-9		
	iS_E	25 34	6		+14			
	e_E	26 17	19					
	$e(SS)_E$	28 02	15					
	iSS_Z	28 09	4			-5		
	i_Z	28 19	5			-8		
	i_Z	28 40	5			-9		
	eL_E	29.9	27					
	i_E	30 15	4		-5			
	i_E	31 12	4		+6			
	i_E	32 18	4		+9			
	eL_{EZ}	34.4	30					
	M_{EZ}	38.0	16		58	40		
7	$(iP)_Z$	13 33 04	4			+3		Compr. Masked by large microseisms.
7	$(iP)_Z$	18 04 34	4			+5		Compr. Masked by large microseisms.
8	iP_{EZ}	01 28 11	3		-5	+5		Compression.
	$i(sP)_Z$	30 09	4			-3		Deep focus.
	i_Z	30 38	4			+5		Record confused by non-
	i_Z	31 04	4			+5		seismic disturbances.
	i_Z	31 45	4			+5		
	iS_E	32 24	6		+13			USCGS: 32½S, 179½E,
	i_N	34 04	6	-5				H 01 23 26, h 400 km.ca.
	i_Z	35 59	6			-7		
	i_E	37 18	4		-3			
8	$i(P)_E$	07 44 34	3		+2			Masked by microseisms.
	$i(S)_E$	48 37	6		-3			
	eL_N	49.9	22					
	i_E	52 19	4		+3			
	i_Z	52 43	6			+5		
	M_N	53.2	13	2				
	i_E	54 24	4		+3			
8	$(iP)_Z$	08 08 27	3			+2		Compr. Masked by large
	iP_V	08 28	1½			-		Dil. microseisms.
	i_V	11 56	2			-		USCGS: 17S, 174½W,
								H 08 01 36, h 100 km.ca.
8	iP_Z	11 57 17	3			+3	9640	Compression. Microseisms
	eS_N	12 07 54					86°7	present.
	eLR_N	25.6	25					

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr. 9	iPEZ	04 49 08	4		-3	+4		Compression
	ipPZ	49 29	3			+4		h 0.01
	iZ	49 38	3			+3		
	iPPZ	49 45	3			+4		USCGS: 14½S, 167½E,
	i(S)E	53 29	5		-3			H 04 43 58
	iN	53 34	6	-6				h 100 km.ca.
	iE	53 52	4		-2			
	iE	54 02	5		+4			
	i(SS)N	54 26	7	-4				
	iN	54 57	5	-4				
	eLN	55.2	20					
	MN	56.9	16	2				
9	(Pg)V	06 02 51						Local shock.
	iSgN	02 55	½	+				
9	iPV	06 28 44	1½			-	6660	Dilatation
	iE	29 17	4		-2		59°9	H 06 18 34
	iN	29 20	4	+3				
	eSN	36 55	10					USCGS: 36S, 76E,
	eE	37 03	10					H 06 18 30
	iPSN	37 08	5	+4				
	ePPSE	37 16	18					
	iScSN	38 30	5	-4				
	eE	40 23	18					
	eSSNE	40 57	18					
	eLQE	43.4	27					
	eLEZ	47.2	24					
	MEZ	49.3	19		8	5		
9	(iPKP)V	17 55 10	1½			+		Compression. Masked by
	(iPP)NZ	56 59	4	+2		+2		microseisms.
	(iSKS)E	18 03 42	4		+3			USCGS: 7N, 82W,
	e(SS)E	14 11	21					H 17 36 10
	eLE	35.2	25					
10	iPEZ	05 52 18	2		-1	+3	2780	Compression
	iZ	53 45	3			-3	25°	h 0.09 ca.,
	iZ	53 58	3			+3		H 05 47 38
	iZ	54 08	3			+3		
	iZ	54 22	3			+3		USCGS: 25S, 178½E,
	isPEZ	55 02	3		-6	+4		H 05 47 34
	iEZ	55 05	6		+13	-12		h 600 km.ca.
	iE	55 21	4		-6			
	iPcPZ	55 31	3			+4		
	iSNEZ	56 02	4	-8	+17	+5		
	iNZ	56 11	4	-6		-5		
	iN	56 27	4	+7				
	iE	56 33	5		+11			
	iE	56 40	5		-10			
	iN	56 46	4	+6				
	iZ	56 47	4			+5		
	iScPNZ	58 1	4	+5		+4		
	iPcSNE	59 15	4	+4	+6			
	iZ	59 32	4			+5		
	iScSN	06 02 06	4	-7				
	iScSE	02 07	5		+13			
	i(sScS)E	06 21	5		+8			
10	(iP)V	07 42 01						Masked by large microseisms
	iN	42 05	3	+1				
	e(S)E	46 06						
	e(L)N	46.4	18					
	eLE	47.6	14					
11	(iP)Z	11 36 18	3			-2		Dilatation. Masked by
	iSN	42 29	5	+2				large microseisms.
	iE	43 12	5		-4			
	i(SS)E	45 16	6		+3			USCGS: 1 S, 128 E,
	eLE	49.4	27					H 11 28 50
	MN	51.6	19	4				
	MEZ	56.5	17		8	4		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr.11	$(iP)_Z$	18 03 05	3			+3		Compression. Masked by
	i_N	09 16	4	+3				large microseisms.
	$i(ScS)_N$	13 26	4	+2				
	eL_E	13.9	21					USCGS: 15S, 173½W,
	M_{NE}	16.8	15	2	2			H 17 55 53
12	$(iPKP)_Z$	10 13 20	3			+2		Compression. Masked by
	$(i)_Z$	15 26	3			+3		large microseisms.
	$e(PS)_E$	24 36	9					
	$e(SS)_E$	31 39	18					USCGS: 17½N, 95W,
	eL_E	50.0	30					H 09 54 51
12	$(iP)_Z$	15 29 14	3			+1		Compression. Masked by
	i_Z	32 29	3			+3		microseisms.
	$i(S)_N$	34 29	6	+3				Large surface waves;
	eE	34 32	7					other phases all small
	eN	35 05	21					and indefinite.
	$e(SS)_E$	36 26	7					
	$e(SSS)_E$	36 54	11					USCGS: 4½S, 134E,
	$e(SSS)_N$	36 55	10					H 15 22 33,
	eL_E	38.1	36					h 100 km.ca.
	eL_N	39.5	31					
	M_E	41.0	18		82			
	M_N	41.2	16	58				
	M_Z	44.8	11			42		
12	iP_Z	21 01 13	3			+3	4110ca	Compression.
	$i(pP)_Z$	01 29	4			+4	37°ca	Perhaps slightly deeper
	iPP_EZ	02 40	5		-4	+3		than normal.
	$iPPP_Z$	02 58	4			+10		
	$iPPP_E$	02 59	4		-8			S cannot be identified.
	i_N	03 00	4	-3				
	i_Z	03 17	4			+5		USCGS: 15½S, 173W,
	i_E	03 24	4		+6			H 20 54 00
	$iPcP_Z$	03 36	3			-2		
	i_N	04 03	4	+3				
	i_E	07 17	4		+4			
	i_E	07 33	4		+5			
	eL_N	09.6	25					
	$iSSS_N$	10 03	7	-3				
	eLR_E	11.5	26					
	$i(ScS)_N$	11 34	4	+3				
	eL_Z	11.7	26					
	M_{EZ}	14.2	18		7	5		
	M_N	14.9	13	6				
15	$(P)_Z$	00 27 05						Masked by microseisms.
	eL_E	48.4	28					USCGS: 41½N, 143E,
								H 00 15 21
15	$(iP)_V$	00 59 00	1½			+		Compression.
15	i_Z	19 24 43	3			-2		Dil. Masked by microseisms.
								USCGS: 54N, 160½E,
								H 19 11 20
16	$(iP)_V$	00 40 13	1½			+		Compr. Masked by micros.
16	iP_Z	07 32 27	3			+1	2940	Compression,
	$e(sP)_Z$	35 00	4				26°4	h 0.08 ca.,
	i_Z	35 24	3			+1		
	iS_E	36 23	3		+2			USCGS: 23½S, 179E,
	iS_N	36 24	3	+3				H 07 27 27
	$i(ScS)_N$	42 19	3	-1				h 550 km.ca.
16	$e(S)_E$	13 01 10						

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr.16	iP_Z	16 22 22	3			+2	5260	Compression
	ipP_Z	22 43	3			+1	47°3	h 0.01, H 16 13 56
	iS_N	29 07	4	+1				
	$ePPS_E$	29 37	6					USCGS: 12½N, 143E,
	$iScS_E$	32 12	5		+2			H 16 13 56
	eSS_E	32 27	15					h 100 km.ca.
	eLR_{NE}	35.3	17					
	M_{NEZ}	38.4	16	1	1	1		
16	$(iP)_Z$	17 22 03	2			+		Compression. Masked by
	eL_N	34.0	18					microseisms.
17	$(iP)_V$	10 37 12	1½			+		Compr. Masked by micros.
								USCGS: 21S, 178W,
								H 10 31 35, h 500 km.ca.
18	$(iP)_V$	06 23 55	1½			+		Compr. Masked by micros.
	$e(S)_N$	28 48						
	e_E	28 54						USCGS: 4½S, 154E,
	eLR_N	32.2	30					H 06 17 51
	eL_Z	32.5	30					
	M_{NE}	34.5	18	3	4			
	i_E	34 55	5		+4			
	M_Z	35.1	19			3		
19	$(P)_Z$	07 39 18						Masked by microseisms
	$(S)_N$	49 50	5					
	e_N	50 11						USCGS: 45S, 82W,
	$e(PS)_E$	51 02	20					H 07 26 15
	$e(PS)_N$	51 03	20					
	eLR_N	08 06.9	30					
	M_{EZ}	10.3	19		3	3		
								USCGS:24½N,142E,H 14 51 03
19	i_V	14 58 46	1½			+		Compr. Microseisms present
19	iP_V	19 50 23	1			-		Dilatation
	i_V	51 18	1½			-		
	eLR_E	20 01.2	24					
20	iP_V	03 33 40	1			+	3080	Compression
	ipP_Z	33 47	3			-2	27°7	H 03 27 53
	isP_Z	33 55	3			+3		h 0.00
	iN	34 02	4	+4				
	iN	34 21	5	-3				USCGS: 6S, 149½E,
	iZ	34 33	4			+3		H 03 27 52
	iS_N	38 18	7	-5				h 100 km.ca.
	isS_{NE}	38 34	7	+5	+6			
	iZ	38 41	6			+3		
	iN	38 55	6	+4				
	iE	39 20	7		+8			
	iN	39 21	6	+6				
	iE	39 49	7		+9			
	iN	39 53	6	+7				
	eLR_E	40.8	28					
	M_N	44.6	19	8				
	M_E	45.0	14		17			
	M_Z	45.5	18			13		
22	iP_Z	20 39 20	3			-1	9420	Dilatation
	eS_E	49 48	10				84°8	H 20 26 42
	eN	49 56	10					
	eE	49 59	20					USCGS: 36½S, 97½W,
	eE	50 52	20					H 20 26 46
	eSS_N	55 25	16					
	eE	55 51	13					
	eLQ_N	21 02.4	22					
	eLR_E	06.2	27					
	M_E	09.3	19		2			
	M_{NZ}	10.0	18	1		1		
24	eL_E	10 30.7	23					USCGS: 11½N, 86½W,
								H 09 31 33

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr.24	iP_{EZ}	18 03 36	4		-10	+12	2860	Compression
	isP_{EV}	03 43	4		+11		25°7	
	iE_Z	03 47	5		-10	+13		
	iE_Z	03 55	5		-21	+22		USCGS: 31S, 178W,
	iN_E	04 08	5	+4	-13			H 17 57 58
	$i(PP)_Z$	04 16	5			+16		
	$i(PPP)_Z$	04 30	5			+14		
	i_N	04 33	5	-6				
	i_E	04 36	6		-22			
	i_E	04 43	5		+22			
	iS_E	08 03	6		-21			
	i_Z	08 10	6			-5		
	i_N	08 23	7	-16				
	i_Z	08 31	7			-16		
	i_N	08 44	7	+26				
	i_N	08 54	7	+35				
	$i(SS)_{NZ}$	09 08	7	+17		+5		
	$i(SSS)_N$	09 22	7	+22				
	eLR_E	10.1	28					
	eL_Z	10.2	27					
	M_{EZ}	13.6	16		44	36		
	M_N	14.6	13	20				
25	$iPKP_Z$	00 45 59	4			+3		Compression
	iPP_Z	48 37	4			+3		USCGS: 37N, 28½E,
	eLR_{NE}	01 28.4	30					H 00 26 40
25	$(iP)_V$	05 28 40	1½			+		Compression. Masked by
	$(i)_V$	29 14	2			-		large microseisms.
	iE	36 51	3		-2			
	iN	38 53	4	+2				
	iN	39 40	4	+2				
	M_{NEZ}	42.7	12	3	2	3		
26	iP_Z	05 52 33	3			+1		Compression. Large micro-
	iS_N	56 16	5	-3				seisms present.
	eL_N	57.6	20					
	M_E	59.8	16		1			
26	iP_Z	20 51 03	4			-5	7190	Dilatation
	i_Z	51 09	5			-15	64°7	h 0.01, H 20 40 33
	i_N	51 10	5	+5				
	ipP_{NEZ}	51 27	5	-7	+5	+11		USCGS: 25N, 122½E,
	$iNEZ$	51 33	7	-48	+30	+104		H 20 40 38
	i_N	51 46	4	+7				h 150 km.ca.
	i_{NE}	51 56	6	-15	+8			
	i_Z	52 05	5			+15		
	i_E	52 07	6		-13			
	i_Z	52 17	5			+14		
	i_{NZ}	52 25	5	+12		+18		
	i_E	52 34	6		-15			
	i_Z	52 46	4			+12		
	i_N	52 56	5	+11				
	i_Z	53 25	4			+14		
	iPP_Z	53 30	5			-16		
	iPP_E	53 34	5		+15			
	i_N	53 38	7	+13				
	i_N	53 57	7	+19				
	iE_Z	54 03	4		+10	-18		
	$isPP_Z$	54 08	6			+22		
	i_N	54 25	6	+15				
	$iPPP_Z$	55 00	7			+23		
	i_N	55 07	7	+10				
	i_E	55 13	6		+11			
	i_N	55 25	7	-14				
	i_E	59 28	7		+15			
	iS_E	59 34	9		+89			
	iNE	59 41	6,10	-21	-220			
	i_Z	59 43	7			+19		

Continued on next page.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr.26	i_N	20 59 46	6	+27				
cont.	i_N	59 49	6	+(15)				
	iPS_Z	21 00 10	6			+25		
	iPS_E	00 11	6		+29			
	$iPPS_{NE}$	00 20	9,10	-56	-86			
	$iScS_N$	00 31	7	-30				
	i_Z	00 40	9			-32		
	i_N	00 47	7	-31				
	i_{NE}	00 54	10	-122	-105			
	i_N	01 27	7	-41				
	i_Z	01 31	9			+28		
	i_{NE}	01 43	10	+51	+91			
	i_N	02 16	6	+31				
	i_E	03 20	9		+32			
	i_E	03 40	7		+27			
	i_N	03 41	7	-22				
	i_N	04 11	9	-30				
	i_E	04 24	10		+46			
	i_Z	04 38	9			-14		
	i_E	05 46	10		-40			
	i_E	06 44	10		-27			
	i_Z	06 52	10			-25		
	i_N	06 55	9	+32				
	i_N	07 07	10	+36				
	i_Z	07 13	8			+18		
	i_E	07 21	10		-71			
	i_E	07 32	10		+43			
	i_Z	07 42	10			-22		
	i_N	07 48	10	+47				
	i_Z	08 35	7			+12		
	i_{NE}	09 13	9,10	+29	-61			
	L_E	09.3	24					
	i_N	10 30	10	+37				
	i_E	10 33	10		-26			
	i_Z	10 55	9			+26		
	M_E	12.9	18		60			
	M_Z	16.8	16			33		
	M_N	17.3	18	42				
	$iP'P'_V$	20 03	1½			+		Compression
27	iP_Z	09 54 54	2			-1	3710ca	Dilatation
	ipP_Z	55 27	3			+3	3304ca	h 0.02 ca.
	i_V	55 37	1½			+		H 09 48 29
	i_V	55 41	1½			-		
	i_V	55 52	1½			+		USCGS: 7S, 129E,
	e_Z	56 07	7					H 09 48 09
	iPP_V	56 11	1½			+		
	i_V	57 09	1½			+		
	$iPcP_V$	57 30	1½			-		
	i_Z	57 37	3			+3		
	iS_E	10 00 02	7		+6			
	iS_N	00 03	6	-6				
	isS_{NE}	00 59	4	+4	+4			
	i_E	01 08	4		+5			
	i_N	01 11	6	+6				
	i_E	01 32	5		+3			
	i_N	01 39	6	+5				
	i_E	01 42	4		+6			
	i_N	01 49	5	+6				
	i_N	02 00	4	+7				
	i_E	02 10	4		-6			
	i_N	02 23	6	+8				
	i_E	02 30	6		+7			
	i_Z	02 34	6			+7		
	i_E	02 43	3		+4			
	i_N	03 30	3	+6				
	i_E	03 36	3		+13			
	i_E	04 45	3		+8			
	M_Z	06.1	6			14		
	M_{NE}	06.6	8	20ca	24ca			

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Apr.27	iPV	12 55 08	1½			-		Dilatation
	iV	55 37	1½			-		USCGS: ½S, 124E, H 12 47 27, h 200km.ca.
27	(iP)V	13 54 53	1½			-		Dilatation
28	(iP)V	01 49 30	1½			+		Compression. Masked by microseisms.
	(i)V	49 35	1½			+		
	MZ	02 03.0	6			4		
	MNE	03.2	6	11	8			
28	iPKPE	11 28 08	4		+3			
	iPKPZ	28 11	3			+5		Compression
	iV	29 36	1½			+		
	iPPV	29 56	1½			+		USCGS: 15N, 93W, H 11 09 30
	e(SKS)E	35 26	?					
	e(SKKS)E	36 44	10					
	iPSEZ	39 42	7		+7	-4		
	iZ	40 04	7			+5		
	iPPSE	40 58	5		+5			
	eSSE	46 24	26					
	eE	49 55	16					
	eE	50 10	21					
	eN	50 25	19					
	eE	53 44	27					
	eLRZ	12 04.4	33					
	eLRE	04.6	31					
	MZ	09.6	21			9		
	ME	10.4	20		8			
	MN	11.7	19	7				
28	i(P)Z	12 34 22	4			+4		Compression. Confued by coda of preceding shock.
	i(S)E	37 42	4		-3			
28	i(P)V	13 06 52	1½			+		Compression.
28	LN	16 14.5						
29	(iP)V	03 33 25	1½			+		Compression. Masked by microseisms.

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Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 1	iS_N	07 31 23	4	+2				Masked by microseisms.
	eL_E	36.3	30					
	eL_{NE}	37.3	18					USCGS: 3½S, 135½E,
	M_E	38.8	12		10			H 07 19 16
	M_{NZ}	40.7	12	11		12		
1	iP_V	15 02 55	1½			+		Compression.
								USCGS: 5S, 154E, h 60 km.ca
								H 14 56 57
3	$(P)_Z$	03 07 02	2					USCGS: 10½S, 161½E,
								H 03 01 38
3	$(PKP)_V$	05 00 07	1½					
	$(SKS)_N$	07 19	4					USCGS: 12½N, 87½W,h 100km.
	eL_E	40.2	22					H 04 41 24
	M_E	45.8	18		1			
3	$e(S)_E$	23 45 27	9					
	eL_N	47.0	22					
4	iP_{NEZ}	07 28 26	4	+9	+3	-25	9770	Dilatation
	$iPcP_Z$	28 30	3			+20	87°9	h 0.01,
	i_{NZ}	28 33	3	-21		+50		H 07 15 46
	i_Z	28 40	3			+29		
	i_{NE}	28 42	4	+23	+10			USCGS: 52½N, 159½E,
	i_{NZ}	28 48	4	-23		+60		h 60 km.ca,
	isP_{NZ}	29 02	5	-23		-75		H 07 15 42
	i_Z	29 15	4			-35		
	i_N	29 18	4	-15				
	i_{EZ}	29 22	4		+11	-46		
	i_N	29 24	3	+12				
	i_E	29 41	4		+8			
	i_N	29 43	4	+14				
	i_Z	29 44	4			+26		
	i_Z	29 50	4			-20		
	i_N	29 51	4	+17				
	i_E	29 52	5		-12			
	i_E	30 37	4		+14			
	i_N	30 58	6	-10				
	i_E	31 26	5		+18			
	i_Z	31 42	3			+22		
	i_E	31 50	4		+13			
	iPP_{NZ}	31 52	5	+23		-27		
	i_N	32 04	5	-15				
	i_Z	32 10	5			+42		
	i_Z	32 24	5			+21		
	i_N	32 27	7	+38				
	i_E	32 45	5		+16			
	i_E	33 00	5		+14			
	i_N	34 09	6	+15				
	i_Z	34 23	4			+17		
	i_E	34 30	5		-15			
	i_N	34 42	5	-11				
	i_E	35 04	5		-15			
	i_E	35 24	7		+19			
	i_N	36 32	7	+15				
	$iSKS_N$	38 45	7	+24				
	i_N	38 55	6	+19				
	iS_E	38 59	10		-93			
	$iScS_N$	39 03	7	+38				
	i_E	39 12	6		-29			
	i_E	39 23	6		+71			
	i_E	39 32	5		-65			
	i_N	39 33	7	+115				
	e_E	39.7	30					
	i_E	39 47	7		-71			
	iSP_Z	39 57	7			+21		
	iSP_N	39 58	8	+125ca				
	i_E	40 02	9		-52			
	iPS_N	40 08	7	+72				

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Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 4 cont.	iZ	07 40 23	4			+23		
	iZ	40 38	7			-32		
	$isPS_N$	40 41	8	-98				
	iE	40 50	10		+43			
	iZ	40 51	6			-28		
	iN	41 02	7	-22				
	eN	41.2	46					
	iN	41 49	7	+41				
	iE	41 56	7		+33			
	iE	42 49	6		+18			
	iE	43 03	9		+55			
	iN	43 56	7	+12				
	iN	44 23	8	+44				
	iE	44 27	7		+28			
	iE	44 40	8		-35			
	iN	44 41	8	+32				
	iZ	44 54	6			+10		
	iSS_N	44 57	11	-54				
	iN	45 12	7	+40				
	iE	45 13	7		-36			
	iZ	45 14	6			-22		
	$isSS_N$	45 31	11	-54				
	iE	45 43	7		-54			
	iZ	45 56	9			+15		
	eLQ_E	51.1	45					
	L_E	51.9	55		1030			
	eLR_N	55.6	50		-			
	eLZ	56.0	42					
	L_N	56.9	45	700	-			
	LZ	57.0	37			300		
	M_E	08 00.5	14		39			
	M_Z	01.3	18			47		
	M_N	01.7	19	62				
	e_N	36.3	45		-			
	$eG2Z$	09 09.1	50					
5	iPZ	19 17 06	4			+2		Compression
	$i(SKS)_E$	27 23	4		-1			
	i_N	28 08	4	-1				USCGS: 53N, 159E, H 09 04 16
	$e(PS)_N$	28 44	9					
	$e(PPS)_E$	29 17	12					
	eLQ_E	40.0	30ca					
	eL_N	43.3	26ca					
	M_Z	47.2	28			3		
	M_{NE}	47.6	28	3	3			
6	eL_Z	11 53.2						Obscured by microseisms.
6	eL_E	13 47.8						Obscured by microseisms.
6	eL_E	14 31.5						Obscured by microseisms.
6	e_N	17 39 08				-		Obscured by microseisms. USCGS: 18S, 179W, h 600km.ca. H 17 29 26
6	e_E	18 57 58	10					
	eL_N	58.6	18					Masked by microseisms.
6	$(P)V$	18 59 40						Masked by large microseisms
	iE	19 09 35	4		+4			& coda of preceding shock.
	eL_N	09.7	24					
	eL_E	12.4	25					USCGS: 3S, 128E, H 18 52 22
	M_{EZ}	17.2	18		6	3		
	M_N	19.1	16	3				
7	$(P)V$	00 09 47						Masked by large microseisms.
	iZ	09 56	3			+3		
	iPP_N	10 48	4	+3				USCGS: 3S, 143½E, H 00 03 24
	iZ	10 53	4			+5		
	iS_{NE}	14 46	6	+4	+5			
	i_N	14 59	9	+9				
	eL_N	17.2	16					
	eL_E	17.6	30					

Continued on next page.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 7	i_N	00 17 57	7	+10				
cont.	i_N	18 27	6	+11				
	eL_Z	18.6	34					
	iN	18 37	4	+9				
	M_N	21.7	18	23				
	M_Z	21.9	19			17		
	M_E	22.6	15		30			
7	e_E	09 15.1						Masked by large microseisms USCGS:3½S,149½E,H 09 03 46
7	eL_E	11 31.3						Masked by large microseisms USCGS:3½S,150E,H11 17 16
7	$i(S)_E$	20 35 21	4		+4			Masked by large microseisms
	iN	40 47	3	+4				
	M_E	46.1	15		4			USCGS:8½S,123½E,H 20 22 41
	M_Z	46.5	13			5		
	M_N	46.9	11	4				
8	$(iP)_V$	09 15 51	1½			+		Compression. Masked by microseisms.
	eL_E	24.2	20					
8	iP_V	11 47 35	1½			+		Compression.
	eL_N	12 16.9	28					
9	$(i)_V$	08 47 34	1½			+		Masked by microseisms.
	eL_E	57.1	21					
11	eL_E	17 02.0						USCGS:53½N,160E,H 16 28 49
12	$(PP)_Z$	04 04 10						USCGS:7½N,77W, H 03 42 47
12	eP_Z	05 10 42					9860	
	i_Z	10 46	3			+3	88°7	USCGS:54½N,163E, H 04 57 35
	$iSKS_N$	21 06	7	+4				
	iS_E	21 28	7		+4			
	$iScS_N$	21 33	7	-3				
	i_E	21 51	7		-5			
	ePS_N	22 35	10					
	iSS_E	27 29	10		+8			
	e_E	27 54	21					
	eL_N	35.8	26					
	eLR_N	39.2	36					
	eL_Z	39.6	33					
	MNZ	43.2	24	10		12		
	M_E	44.9	18		7			
12	$(P)_Z$	08 11 26						
	eZ	11 31						
	e_N	15 52	10					USCGS: 9½S, 159E, h 100 km.ca., H 08 06 01
	iS_N	16 05	6	-3				
	eL_N	18.6	18					
	M_E	21.2	12		6			
	M_N	21.7	12	2				
12	$ePKP_Z$	10 05 25	5				114°Ca.	
	$iPPNZ$	06 27	5	+2		+3		Compression.
	$eSKS_N$	12 17	7					
	iPS_E	16 04	7		+3			USCGS: 23½S, 64½W, H 09 46 51
	iPS_N	16 09	10	+6				
	e_N	21 12	14					
	eSS_E	22 20	13					
	eSS_N	22 25	14					
	i_E	22 29	9		+7			
	$eSSS_E$	26 35	22					
	eLQ_E	34.3	39					
	eG_E	35.9	42					
	eLR_N	40.6	34					
	$MNEZ$	49.8	18	4	6	6		
12	e_E	23 54 21	7					
	M_N	24 01.2	11	1				

Date	Phase	Time	Per	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 13	e(Pg)V	06 07 54						Quarry blast at Prospect,
	i(Sg)V	07 58	¼					west of Sydney.
14	iPPZ	06 59 10	4			+3		Compression
	eZ	59 50	7					
	ePPSE	07 11 01	12					USCGS: 35½N, 24½E,
	eSSE	17 08	20					H 06 36 57
	eSSSNE	21 41	?					
	eLN	45.3	30					
	MEZ	56.1	22	3	2			
14	eLE	08 30.6						USCGS: 7S,154½E, h 100km.ca
								H 08 13 23
14	iPZ	09 32 26	3			+1	2600	Compression
	isPNEZ	32 39	4	-3	-3	+3	23°4	h 0.00, H 09 33 19
	iPPZ	39 01	4			+3		
	eE	39 06	7					USCGS: 19S, 170E,
	eN	39 07	7					H 09 33 22
	iPPPZ	39 12	6			+6		
	iE	39 30	4		+3			
	iN	39 33	4	-3				
	iN	40 26	5	-2				
	iSNE	42 33	7	+5	+6			
	iZ	42 36	6			+3		
	iN	42 42	7	+8				
	iZ	42 46	6			+5		
	isSE	42 50	6		+5			
	iN	42 57	6	-4				
	iZ	43 07	6			+6		
	iN	43 29	6	+3				
	eLRE	44.1	22					
	eLZ	44.3	21					
	MN	46.8	12	2				
	MZ	47.4	15			3		
	ME	47.8	14		4			
14	iPZ	10 46 52	4			+3	2600	Compression
	isPEZ	47 05	4		-2	+2	23°4	h 0.00, H 10 41 45
	eNE	47 32	7					Replica of preceding shock.
	iE	47 56	4		+2			
	iN	48 00	4	+1				USCGS: 19S, 170E,
	iSN	50 59	6	+2				h 100 km.ca.
	iSE	51 02	5		+2			H 10 41 56
	iN	51 08	6	+3				
	iE	51 11	5		+4			
	iZ	51 12	6			+4		
	iE	51 16	6		+4			
	iN	51 21	6	-2				
	iN	51 56	6	+1				
	eLRE	52.6	21					
	eLZ	52.8	21					
	MN	55.2	12	1				
	ME	56.2	14		1			
14	iPZ	11 54 15	4			+4	2610	Compression
	iE	54 17	4		-2		23°5	h 0.00, H 11 49 07
	iN	54 23	4	+2				Replica of preceding shocks
	isPEZ	54 29	4		-3	+4		
	iZ	54 44	4			+5		USCGS: 19S, 170E,
	iNEZ	54 56	4	+3	+4	-2		h 100 km.ca.
	iPPPZ	55 02	4			+5		H 11 49 20
	iSN	58 23	7	+5				
	iSE	58 24	7		+5			
	iN	58 32	8	+8				
	iZ	58 36	6			+8		
	isSE	58 41	6		+3			
	iN	58 45	6	-4				
	iE	59 14	6		+4			
	iN	59 20	5	+3				
	eLE	59.9	21					

Continued on next page.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 14	eL_Z	12 00.2	21					
cont.	M_N	02.6	12	1				
	M_Z	03.3	15			2		
	M_E	03.6	14		3			
14	eL_E	12 56.3						
14	$iPNEZ$	13 24 22	4	-2	-3	+5	2590	Compression
	$isPZ$	24 34	4			+5	23°3	h 0.00, H 13 19 16
	$isPNE$	24 35	4	-2	-4			Replica of preceding
	iZ	24 43	4			+4		shocks.
	$iPPZ$	24 57	4			+5		
	iE	25 00	5		-3			
	iN	25 01	4	-2				USCGS: 19S, 170E,
	$iPPPZ$	25 07	4			+5		h 150 km.ca.,
	iE	25 11	5		+5			H 13 19 32
	iN	25 29	4	-2				
	iN	25 59	4	+4				
	iE	26 24	5		+4			
	iN	26 26	4	+4				
	$iSNE$	28 28	7	+6	+7			
	iN	28 38	7	+10				
	iE	28 39	6		+15			
	iZ	28 41	7			+8		
	$isSNE$	28 46	6	+4	+7			
	iE	29 20	5		+6			
	iN	29 25	7	+6				
	eLR_E	30.0	24					
	eL_Z	30.3	21					
	M_Z	33.4	15			3		
	M_E	33.7	15		6			
	M_N	34.0	12	5				
15	P_{gV}	06 00 04.4	½					Quarry blast at Prospect,
	iS_{gV}	00 08.4	½			-		west of Sydney.
	iN	00 09.6						
	iV	00 11.6	½					
16	iP_{NZ}	06 22 21	3	-2		+4	3210	Compression
	ipP_{NZ}	22 32	3	-3		+5	28°9	h 0.00, H 06 16 23
	iV	22 34	1½			+		
	iNZ	22 38	3	-3		+4		USCGS: 4½S, 153½E,
	iNZ	22 49	4	+5		-5		h 60 km.ca.,
	$ePPP_{NZ}$	23 31	11					H 06 16 23
	iE	27 07	4		-3			
	iS_N	27 08	10	-13				
	iZ	27 13	6			+7		
	iE	27 19	5		+9			
	isS_N	27 28	7	-24				
	iE	27 33	10		-23			
	iNZ	27 35	10	+64		-24		
	eNZ	27 57	21					
	iE	28 45	10		+21			
	iZ	28 59	6			+8		
	eL_E	29.0	31					
	eL_N	29.3	27					
	eL_Z	30.6	23					
	M_{NE}	31.4	22	74	84			
	M_Z	32.5	22			71		
16	eL_E	14 41.1						

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	REMARKS
1959		h m s	s	μ	μ	μ	km.	
May 18	iP_nV	06 13 49.3	¼			+	330	Compression
	iP^*V	13 53.7	½			-	3?0	Dilatation
	$iPgNEZ$	14 00	1	+2	+2	+2		Compression
	iZ	14 26	1½			+2		H 06 13 00
	$iSnNE$	14 27	1½	+3	-4			
	$iSSNE$	14 38	1	-6	+5			USCGS: 36S, 148E,
	$iSgNEZ$	14 39	1	-16	+19	+3		H 06 12 56
	eL_Z	14 42	10					
	M_E	14 54	7		10			
	M_N	14 55	7	11				
	M_Z	14 57	7			10		
20	$(iP)_V$	08 39 15	1½			+		Compr. Masked by micros.
20	$(iP)_V$	19 47 02	1½			+		Compr. Masked by micros. USCGS: 44½N, 149E, H 19 35 03
22	iP_Z	07 01 47	3			+3	2260	Compression.
	iZ	01 55	3			+2	20?3	Large microseisms present.
	iNE	01 57	3	-3	+3			
	iZ	02 02	2			-2		USCGS: 40S, 176E,
	iPP_{EZ}	02 05	3		-2	+3		H 06 57 00
	iZ	02 25	3			-3		
	iS_N	05 30	6	-7				
	iE	05 32	6		-5			
	iE	05 40	6		+5			
	iZ	05 51	6			+5		
	iE	05 56	4		+4			
	iSS_N	05 59	5	-4				
	iN	06 07	5	+4				
	eL_E	06.4	25					
24	$(iP)_V$	04 44 46	1½			+		Compr. Masked by micros. USCGS: 20½S, 179W, H 04 39 27, h 700km.
24	ePP_Z	19 37 33						Large microseisms present.
	$epPP_{EZ}$	37 57						
	$iSKS_E$	43 08	4		-2			USCGS: 17½N, 97W,
	iE	43 16	5		+7			h 100 km.ca.,
	iE	44 33	6		-13			H 19 17 40
	$i(S)_E$	45 01	6		+3			
	iE	45 11	6		+5			
	iPS_Z	47 19	9			+3		
	iPS_E	47 22	10		-7			
	$e(pPS)_E$	47 39	10					
	iN	47 53	4	-3				
	$i(sPS)_{EZ}$	47 55	7		-8	+10		
	iE	48 02	8		+16			
	iN	48 04	6	-4				
	iE	48 20	7		+7			
	iZ	48 32	5			-3		
	eE	48 44	15					
	iZ	49 07	7			-9		
	eE	50 06	19					
	iZ	50 25	7			+6		
	eSS_N	53 26	14					
	eSS_E	53 35	15					
	$iSSP_E$	53 53	12		+14			
	$eSSS_E$	57 51	33					
	$eL(Q)_N$	20 07.1	22					
	$eL(R)_E$	11.6	28					
	eLR_E	12.0	31					
	eLR_Z	12.1	31					
	M_{NZ}	17.8	19	4		8		
	M_E	18.1	17		5			

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 26	iP_Z	04 23 34	3			+4	7240	Compression.
	ipP_Z	23 57	3			+2	65°1	Large microseisms present.
	i_Z	24 02	4			+4		h 0.01, H 04 13 02
	eS_N	32 07	9					
	esS_N	32 51	10					USCGS: 27½N, 126½E,
	eL_Z	45.0	22					h 100 km.ca.,
	M_NZ	51.7	22	2		4		H 04 13 01
29	iP_{NEZ}	10 47 35	4	+7	+13	-14	2480	Dilatation
	i_Z	47 50	4			-13	22°3	h 0.01, H 10 42 45
	i_{NZ}	47 55	3	-7		+11		
	i_Z	48 02	3			+8		USCGS: 19S, 169½E,
	i_{NE}	48 03	3	+6	+13			h 100 km.ca.,
	isP_Z	48 05	4			+21		H 10 42 48
	$iPPP_{NE}$	48 16	4	+6	+16			
	$iPPP_Z$	48 17	3			+13		
	i_N	48 23	4	+7				
	i_{EZ}	51 26	5		+6	-8		
	iS_N	51 29	?	-				
	i_N	51 32	6	-60				
	i_E	51 36	6		+22			
	m_N	51 37	8	59				
	i_Z	51 46	5			-30		
	i_E	51 51	6		+30			
	i_Z	51 56	6			-16		
	i_E	52 06	6		-41			
	isS_N	52 07	8	+51				
	i_Z	52 14	6			+24		
	i_E	52 22	8		+30			
	i_E	53 11	6		+20			
	i_E	53 20	6		+19			
	eL_E	53.4	21					
	eL_Z	53.7	19					
	M_N	56.2	13	17				
	i_E	58 24	4		+6			
	i_E	58 40	4		+7			
	i_N	58 50	6	-15				
	i_E	58 52	4		+11			
	i_E	11 00 10	6		+15			
29	$(iP)_Z$	14 33 56	3			+3		Compr. Masked by micros.
30	$(iP)_Z$	18 23 55	3			+1		Compr. Masked by micros.
	$i(S)_E$	28 05	4		+2			
	i_E	28 13	4		+2			
	i_N	36 12	4	+3				
31	iP_{NZ}	09 34 03	3	-1		+1	3240	Compression
	i_{NZ}	34 09	4	-3		+6	29°1	h 0.00, H 09 28 03
	ipP_{NZ}	34 14	4	+4		-8		
	i_Z	34 23	4			+5		USCGS: 6½S, 155E,
	i_N	34 24	4	-2				H 09 28 09
	i_Z	34 32	5			+5		
	i_N	34 34	5	-3				
	i_Z	34 49	4			+5		
	iPP_{NZ}	35 00	5	+5		-5		
	i_Z	35 09	6			-7		
	i_N	35 10	6	+6				
	i_Z	35 24	3			+4		
	i_N	35 26	4	+6				
	i_Z	35 43	4			+5		
	i_Z	36 00	4		+4			
	i_N	36 08	5	+4				
	i_N	37 00	4	+3				
	i_N	37 05	4	+6				
	i_Z	38 09	4			-5		
	i_N	38 15	6	+5				
	i_Z	38 37	4			+4		
	iS_N	38 51	9	+11				
	i_Z	39 04	5			-5		
	isS_N	39 08	9	+11				

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RIVERVIEW COLLEGE OBSERVATORY

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
May 31	i_E	09 39 14	6		+8			
cont.	i_{NZ}	39 17	7	+14		+10		
	i_E	39 21	7		-11			
	i_N	39 39	6	+8				
	i_Z	39 42	7			-10		
	i_E	39 56	5		+10			
	i_N	40 00	7	+12				
	i_E	40 07	6		+10			
	i_E	40 31	4		+7			
	$iSSS_N$	40 40	7	-11				
	$iSSS_E$	40 42	4		+14			
	i_Z	40 50	6			+10		
	i_E	40 51	6		+23			
	i_N	40 55	7	+14				
	i_Z	41 20	6			-8		
	i_Z	41 54	6			+7		
	i_E	41 57	7		-28			
	eL_E	42.2	25					
	eL_Z	42.3	24					
	M_E	44.5	12		20			
	M_Z	44.6	16			10		
	M_N	45.7	12	13				
					*********			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 1	iP_V	05 37 07	1			+		Compr. Large microseisms. USCGS:4S,153E,H 05 31 30, h 400 km.ca.
1	$(iP)_Z$	12 37 43	3			-	(3110)	Dil. Masked by microseisms
	ipP_Z	38 59	3			-	(28°0)	h 0.07
	iV	39 02	1			+		
	isP_Z	39 50	3			+		USCGS: 6S, 154E,
	iS_N	41 53	3	+4				H 12 32 25,
	i_N	41 58	4	-3				h 400 km.ca.
	i_N	42 10	3	+3				
	iZ	44 08	4			+		
	i_E	44 18	4		+3			
	isS_N	44 21	5	+4				
	M_{NZ}	49.0	15	2				
1	iP_Z	17 13 07	4			+	3090	Compression
	iNZ	13 14	3	-3		+	27°8	H 17 07 25,
	ipP_Z	13 29	4			+		h 0.01
	ePP_Z	13 58	9					USCGS: 6½S, 155½E,
	iZ	14 04	6			-		H 17 07 23,
	i_N	14 06	5	+4				h 100 km.ca.
	$iPPP_Z$	14 14	5			-		
	i_N	14 29	5	+4				
	i_N	15 14	4	+3				
	e_N	17 18	9					
	i_N	17 27	6	+4				
	eS_E	17 41	10					
	i_N	17 43	5	+4				
	i_N	18 04	5	-5				
	i_N	18 17	5	+5				
	isS_E	18 19	7		+6			
	eZ	18 20	12					
	i_N	18 26	7	-13				
	i_E	18 27	7		-3			
	i_E	18 44	6		-3			
	iNZ	18 51	6	-4		+		
	i_E	19 00	5		-3			
	iSS_N	19 04	8	+8				
	e_E	19 12	15					
	$iSSS_N$	19 29	6	+4				
	i_E	19 37	5		+5			
	i_E	19 46	5		+6			
	i_E	19 56	6		+9			
	iZ	20 25	6			-		
	eL_E	21.3	23					
	i_E	22 54	6		+10			
	M_{EZ}	23.6	13		7			
	iZ	23 57	5			+		
	M_N	24.0	13	5				
2	$e(P)_Z$	02 48 11					(6860)	Masked by microseisms.
	$i(S)_N$	56 33	4	+1			(61°7)	
	i_N	57 41	4	+1				USCGS: 21N, 121E,
	eSS_E	3 00 43	12					H 02 37 46
	eL_E	06.9	21					
	M_E	13.5	18		1			
2	iP_V	03 29 17	1½			+		Compression. Microseisms
	$i(PP)_Z$	30 14	4			-		present.
	$i(PPP)_{EZ}$	30 28	4		+2	-		
	$e(S)_E$	34 17	7					USCGS: 25S, 176W,
	eL_E	36.8	22					H 03 23 12
	eL_N	37.1	21					
	eL_Z	37.4	23					
	eL_E	37.5	28					
	M_N	39.8	16	5				
	M_{EZ}	40.2	17		12			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 2	i_N	03 42 10	7	+4				Masked by coda of preceding shock. H
	M_N	48.5	16	4				USCGS:25½S,176W, 03 31 55
	M_EZ	48.8	16		12			
2	$e(S)_E$	03 59 13						Masked by coda of preceding shocks.
	M_E	04 04.6	12		3			USCGS:25S,176W,H 03 48 13
2	i_Z	03 58 25	2			+		Masked by coda of preceding shocks.
	$i(PPP)_Z$	59 23	4			+		
	eL_E	04 06.0	22					
	M_N	08.8	16	6				USCGS: 25½S, 176W,
	M_E	09.0	18		13			H 03 52 06
	M_Z	09.2	17					
2	iP_V	05 07 43	1½			+	6820	Compression
	iP_Z	07 45	4			+	61°4	H 04 57 22
	$i(pP)_Z$	07 55	4			-		
	iPP_Z	10 00	3			+		USCGS: 21N, 121½E,
	i_Z	10 13	3			-		H 04 57 18
	eS_{NE}	16 03	14					
	$e(SS)_E$	19 48	15					
	eLQ_E	22.9	30					
	eL_E	27.0	27					
	M_E	29.9	19		2			
	M_Z	30.7	17					
	M_N	31.0	18	1				
2	$e(PP)_Z$	05 55 28						Masked by coda of preceding shock.
	eLQ_E	06 08.7	23					USCGS:21½N,121½E,05 42 34
	eLR_N	11.6	22					
2	$i(P)_Z$	12 47 41	2			+		Compression
	eL_N	59.2	24					
2	$(iP)_Z$	17 22 33	1			-		Dil. Masked by micros. USCGS:South Is.New Zealand. H 17 18 16
3	eS_E	09 00 01	4					USCGS:55½N,163E,08 36 04
3	eN	12 14 41						
5	i_N	06 09 03	4	+2				USCGS:7S, 155½E,
	M_{NEZ}	14.8	15	2	1			H 05 58 40, h 150km.ca.
6	iV	11 20 24	2			+		Masked by microseisms.
	iV	21 58	1½			+		
7	eL_E	04 06.7						USCGS:10½N,126E,H 03 45 21
7	$(i)_V$	08 50 08	1½			+		Large microsseisms.
7	$(i)_V$	08 43 51	1½			+		Large microseisms.
	eL_E	09 00.2	19					USCGS: Samar, Philippine
	M_E	05.4	16		1			Is., H 08 34 32
9	$(P)_V$	06 25 52	1½					Masked by microseisms.
	M_E	36.0	18		1			USCGS:6S,146½E, 06 19 54
9	iP_Z	13 40 48	4			+		Compression
9	$(iP)_Z$	13 48 47	3			+		Compression
	$(i)_Z$	49 08	4			+		
9	iP_V	14 58 49	1½			+		Compression
	$i(PP)_V$	59 26	1½			+		
	$i(S)_N$	15 02 53	4	+2				
9	$i(S)_E$	23 34 05	4		-1			USCGS:59S,7½W,H 23 10 46
	$(i)_E$	36 48	4		+2			
10	$(iPP)_V$	04 38 32	1½			+		USCGS:36N,23E,H 04 16 03
10	$(P)_V$	07 10 30½						Small local Shock.
	eV	10 33						
	eN	10 47						

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 10	$(iP)_Z$	10 54 33	3			+		Compr. Masked by micros.
								USCGS: 20½S, 179W,
								H 10 50 32, h 600km.ca.
10	$(iP)_V$	13 11 58	1			+		Compr. Masked by micro-
	eL_E	16.2	15					seisms.
	eL_N	16.4	15					
	M_{NE}	17.0	13	1	1			
11	$(iP)_V$	00 00 39	1½			+		Compr. Large microseisms.
14	ePP_Z	00 31 24					12,660ca.—	Gutenberg Tables.
	iPP_{NEZ}!	31 28	7	-10	+10	-	114°ca.	Dilatation.
	i_Z	31 50	7			+		h 100 km.ca.
	i_Z	32 01	6			+		
	i_E	32 03	6		-7			USCGS: 20½S, 68W,
	i_Z!	32 07	7			+		H 00 11 57
	i_{NE}	32 08	7	+4	-6			h 100 km.
	i_Z	32 46	7			-		
	i_N	33 00	6	+7				
	i_Z	33 13	7			-		
	$iSKS_E$	37 11	9		+9			
	i_N	37 15	7	+11				
	$iSKKS_N$	37 49	7	-5				
	i_E	38 06	7		-6			
	i_E	38 40	5		+7			
	eiS_{NE}	39 04	13	-11				
	i_E	39 15	7		-6			
	$i(pS)_E$	39 36	7		-9			
	$i(sS)_N$	39 50	10	+9				
	eSP_Z	40 49	10					
	iPS_Z!!	41 05	12			+		
	iPS_N	41 08	6	+6				
	iPS_E	41 09	9		+11			
	$ipPS_Z$!	41 23	12			+		
	$ipPS_N$!	41 25	8	-16				
	$ipPS_E$!	41 26	8		+24			
	$isPS_{NE}$!	41 37	9	+21	-27			
	i_Z!	41 43	12			-		
	i_E!	41 47	9		-18			
	i_N!	41 58	8	-19				
	i_E	42 03	9		-11			
	$iPPS_Z$!	42 10	9			+		
	i_N	42 24	8	+12				
	i_{NE}!	42 37	10	-18	+24			
	i_{NE}	43 45	8,10	+9	-8			
	eSS_N	47 03	26					
	$isSS_N$	47 44	10	+12				
	i_{NE}!	48 03	9,13	-10	-51			
	i_E	48 47	7		+7			
	i_N	49 26	8	+11				
	i_E	49 44	10		+10			
	e_E	50 57	20					
	i_N	51 04	8	+12				
	i_N	51 32	8	+14				
	i_E	52 02	9		-15			
	i_E	53 43	8		+13			
	eLQ_E	59.5	33					
	eLR_{NE}	01 05.3	40					
	i_Z	05 53	6			+		
	M_{NZ}	08.4	20	16				
	M_E	08.7	20		15			
	i_Z	10 53	6			+		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 14	$(iP)_Z$	05 58 26	3			+		Compression. Microseisms present.
	i_Z	06 00 18	4			+		
	eL_E	08.5	18					
17	M_{NEZ}	11 05.6	13	2	5			H USCGS:3S,135½E, 10 43 44
18	$(iP)_Z$	07 00 34	4			+		Compr. Masked by micros.
	$e(S)_N$	08 54	13					USCGS:55S,129W,H 06 50 45
	eL_N	17.5	27					
18	$e(S)_E$	08 59 23	4					USCGS:16S,168E,H 08 49 55
	eL_E	09 01.3	22					
18	iP_V	15 44 20	1			+	(9860)	Compression
	iP_Z	44 23	3			+	(88°7)	Compression
	i_V	44 26	1			+		Microseisms present.
	i_Z	44 29	3			+		
	i_V	44 35	1½			+		USCGS: 54N, 160E,
	i_N	44 54	5	+3				H 15 31 25
	i_Z	45 22	4			+		
	i_Z	45 42	5			-		
	e_Z	49 35	8					
	i_Z	49 48	4			+		
	e_N	54 38	10					
	$i(SKS)_N$	54 49	4	-1				
	$i(S)_N$	55 06	7	+2				
	e_E	55 07	4					
	i_N	55 17	6	+4				
	e_E	55 22	9					
	i_N	55 42	5	+4				
	e_{NE}	56 04	7					
	i_N	56 18	7	-5				
	i_N	57 52	7	+4				
	eSS_N	16 00 44	17					
	eSS_E	00 58	19					
	$e(SSS)_E$	03 58	22					
	eLQ_E	07.3	40					
	eL_E	08.3	50					
	eLR_N	13.4	33					
	M_{NEZ}	19.1	22	22	8			M_E per. 19s.
18	iP_Z	16 11 32	3			-		Dilatation.
	iPP_Z	15 05	4			+		Following phases masked by coda of preceding Eq.
								USCGS:54N,161E,15 58 38
21	$(P)_V$	03 34 31						Obscured by microseisms.
	eL_N	44.6	21					USCGS: 3S, 146E,
	M_N	46.4	18	1				H 03 28 10
	M_E	47.4	15		2			
21	eL_E	06 00.7						Obscured by microseisms.
								USCGS: 4½S, 151½E,
								H 05 47 27
21	$(P)_Z$	22 17 33						Obscured by microseisms.
	eS_N	22 07						USCGS: 11½S, 167E,
	eL_E	24.2	22?					H 22 11 51
24	PgV	06 00 04.4	¼			(+)		Quarry blast at Prospect west of Sydney.
	$i(Sg)_V$	00 07.9	¼			+		
	$iSgV$	00 08.1	½			-		
	i_V	00 11.2	½			+		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 27	iP_{EZ}	19 09 42	4		-16	+	2780	Compression
	i_{NEZ}!!	09 45	6	-9	+50	-	25°0	h 0.02,
	i_E!	09 52	5		-31			H 19 04 31
	i_{EZ}!	10 03	5		+32	-		
	i_N	10 10	5	-14				USCGS: 33S, 179W,
	i_Z	10 11	3			+		H 19 04 27
	ipP_Z!	10 13	4			+		h 100 km.ca.
	ipP_E	10 14	4		-8			
	i_N	10 15	5	+11				
	iPP_{EZ}!	10 25	5		+22	-		
	i_E!	10 29	6		-30			
	isP_Z!!	10 35	6			-		
	i_N	10 37	4	+12				
	i_E!	10 49	7		+29			
	i_Z!	10 53	7			+		
	i_N	11 13	5	+16				
	i_Z	11 15	5			-		
	i_N	11 25	5	-13				
	i_{EZ}	11 37	5		+12	-		
	i_N	11 38	6	+11				
	i_E	12 02	6		-19			
	i_Z	12 08	4			+		
	i_N	12 30	6	-24				
	i_E	12 33	5		+14			
	i_E	12 45	4		+6			
	i_E	12 49	5		+7			
	i_Z	12 54	4			-		
	i_Z	13 02	5			+		
	i_N	13 05	7	+14				
	i_E	13 08	4		+13			
	i_N	13 15	8	+14				
	iS_N!	13 51	10	-49				
	i_Z	14 01	7			+		
	i_{NE}!	14 03	5	+30	+17			
	m_N	14 10	10	28				
	i_{NZ}	14 16	7	-25		-		
	i_E	14 25	5		+13			
	i_E	14 33	7		-20			
	i_Z	14 34	6			+		
	i_E	14 45	7		-20			
	isS_N!	14 51	9	-36				
	iSS_N!!	15 03	9	-73				
	iSS_E!	15 04	10		-34			
	i_Z!	15 10	7			+		
	i_{NE}!!	15 21	9	+90	+53			
	i_Z	15 22	6			+		
	i_Z	15 46	6			+		
	eL_E	16.1	25					
	i_Z	16 19	6			+		
	eL_Z	16.4	21					
	M_N	20.0	13	18				
	$i(ScS)_E$	20 24	3		+4			
28	$(iP)_Z$	06 30 20				+		Compr. Masked by large microseisms.
28	iP_Z	19 50 26	3			-	4010	Dilatation
	i_Z	50 28	3			+	36°1	h 0.005 ca.
	i_{EZ}	50 32	4			-		
	iPP_Z	51 40	4			+		USCGS: 9½S, 122½E,
	iS_{NE}	56 00	6	+(14)	-8			H 19 48 22
	$i(sS)_N$	56 27	7	+16				
	i_N	58 33	6	+12				
	i_E	58 36	6		+8			
	i_Z	58 37	5			-		
	M_E	20 03.3	9		15			
	M_N	03.6	8	26				
	M_Z	04.1	7					

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
June 29	$(iP)_N$	07 21 47	3	+3			(3110)	Large microseisms.
	iP_Z	21 55	4			+	(27°2)	Compression
	i_N	22 01	4	+5				
	i_Z	22 05	4			+		USCGS: 7S, 155½E,
	i_Z	22 34	4			-		H 07 16 07
	$i(PP)_N$	22 38	7	-5				
	i_Z	22 42	4			-		
	$i(PcP)_Z$	25 06	4			-		
	iS_E	26 31	6		-6			
	iS_N	26 33	7	+9				
	i_N	26 47	7	-17				
	i_{EZ}	26 51	7		+8	-		
	i_N	27 07	5	+9				
	i_N	27 25	6	-7				
	i_E	27 28	7		+6			
	i_E	27 39	7		+8			
	i_N	28 26	6	+9				
	i_E	28 28	7		-13			
	eL_E	29.3	20					
	M_E	31.2	14		16			
	M_N	32.0	12	14				
	i_Z	32 24	4			+		
	i_Z	32 39	5			+		
	M_Z	33.2	13					
29	$(iP)_Z$	13 27 56	4			-		Dil. Masked by large microseisms. USCGS: 6N, 126½E, h 150 km.ca., H 13 19 47
30	L	10.6h						Masked by large micros. USCGS; 34S, 179W, H 10 23 17

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 1	(P)V	02 37 20						Masked by microseisms.
	iSN	45 08	6	+3				
	iN	45 25	5	+2				USCGS: 28N, 139½E,
	iZ	45 28	6			+		H 02 27 46, h 550 km.ca.
	iE	48 15	4		+3			
3	iPEZ	18 00 49	3		+1	-	(3220)	Dilatation
	iNEZ	00 52	4	-3	-5	+	(29°0)	H (17 55 07),
	ipPNEZ	01 37	4	-6	-7	+		h 0.03 ca.
	mNEZ	01 44	9	7	6			
	isPEZ	02 01	4		+4	-		USCGS: 16S, 172½E,
	iZ	02 17	4			-		H 17 55 29,
	eN	02 17	16					h 200 km.ca.
	iEZ	02 21	7		+13	-		
	iZ	02 42	5			-		
	iE	02 43	6		+5			
	iE	03 02	5		+7			
	iN	03 29	7	-13				
	iE	03 30	7		-11			
	iZ	03 38	5			-		
	iN	03 42	6	-11				
	iZ	04 05	5			+		
	iE	04 20	7		+12			
	iN	04 23	7	+9				
	iZ	04 37	6			+		
	iE	04 46	6		+11			
	iZ	04 50	6			+		
	iN	05 10	9	-13				
	iZ	05 14	7			+		
	i(S)E	05 22	7		+20			
	iN	05 37	10	-25				
	iE	06 05	8		+34			
	iN	06 12	9	-48				
	iZ !!	06 17	10			+		
	mNE	06 20	12	39	60			
	iZ !!	06 31	10			+		
	iN	06 45	8	+53				
	iE	06 48	8		+34			
	iN	07 01	8	+41				
	i(SS)E	07 14	7		+39			
	iN	07 24	11	-64				
	i(SSS)N	07 42	12	+88				
	i(SSS)Z	07 43	7			+		
	iN	08 18	9	-44				
	iE	08 20	9		+38			
	eLE	08.6	27					
	eLZ	08.7	21					
	iZ !	08 46	12			-		
	iE	08 52	13		-59			
	iZ !!	09 03	12			-		
	iN	09 05	12	+82				
4	(P)Z	05 00 14	3				(3220ca.)	Masked by microseisms.
	(sP)Z	00 46	3				(29°ca.)	h 0.01 ca.
	iN	05 53	4	+1				USCGS: 24½S, 177W,
	i(ScS)E	10 44	4		-2			H 04 54 14, h 100 km.ca.
4	iZ	13 48 33	4			+		Compression. Masked by
	eN	52 41						microseisms.
5	eLNE	14 21.4	19					Masked by microseisms.
								USCGS: 6S,147E,14 05 42
6	(P)V	06 30 32						
	eLN	35.9	16					

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 6	i_Z	09 28 20	4			+		Compression
	iPP_Z	28 45	4			+		
	e_Z	28 57	11					USCGS: 26½S, 61½W,
	e_N	29 02	7					H 09 10 17,
	e_N	31 58	11					h 600 km.ca.
	e_Z	32 05	7					
	e_N	37 22	16					
	e_E	37 29	19					
	i_N	38 27	7	+2				
	e_E	38 33	10					
	e_Z	38 37	8					
	i_E	39 19	7		-2			
	i_N	39 24	7	-2				
	e_N	41 06	15					
	i_N	41 21	7	+6				
	eSS_E	43 32	19					
	eSS_N	43 42	19					
	i_N	44 06	8	+8				
	e_E	47 38	19					
6	i_Z	09 39 53	5			+		Compression
	iPP_Z	41 54	5			+		
	e_E	48 30	15					USCGS: 26½S, 61½W,
	i_N	51 03	7	-4				H 09 23 27,
	i_E	51 04	6		+4			h 600 km.ca.
	e_N	51 29	18					
	e_Z	51 31	15					
	e_E	51 32	?					
	i_N	51 59	7	-5				
	i_N	53 06	7	+3				
	i_E	54 22	12		+6			
	i_N	54 24	12	-9				
	e_N	56 55	18					
	e_E	57 06	17					
	i_Z	58 17	5			+		
8	$(iP)_Z$	13 10 39	3			+		Compr. Masked by micros.
	i_E	21 55	4					USCGS:5S,134E,H 13 04 03
	MNEZ	24.9	12					
9	$(i)_V$	02 50 45	1½			+		Compr. Masked by micros.
	$(i)_V$	50 51	1½			+		USCGS:20S,72W, H 02 32 40
9		09.5 Surface waves.						USCGS:15S,173W,H 09 07 12
9	$(iP)_V$	10 23 17	1½			+		Compr. Masked by micros.
	M_E	32.6	13		2			USCGS: 9S, 153E,
	i_E	32 57	6		+6			H 10 17 47
9	ePP_Z	16 24 45	7					
	i_Z	25 30	4			+		USCGS: 20½S, 68W,
	$eSKS_E$	30 29	7					H 16 05 18,
	i_N	31 10	3	+3				h 100 km.ca.
	i_N	31 23	5	+3				
	e_E	31 24	?					
	e_N	32 31	9					
	iSP_N	34 12	4	+3				
	iPS_Z	34 27	7			+		
	i_E	34 40	5		-3			
	e_E	34 48	13					
	$iPPS_N$	35 04	4	-3				
	$iPPS_Z$	35 06	4			-		
	i_E	35 52	6		-4			
	e_N	39 58	13					
	e_E	40 05	9					
	eSS_E	40 27	20					
10		18.1 Surface waves.						USCGS: 5½S, 145½E,
								H 17 51 46
11	e_E	03 17 21	12					USCGS: Fiji Is.region,
								H 03 07 04

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 11	iP_V	04 56 27	1½			+	2470	Compression
	eS_N	05 00 27	7				22°.2	
	i_E	00 32	6		-4			USCGS: 18½S, 169E,
	i_Z	00 42	5			+		H 04 51 30
	$i(sS)_{NE}$	00 45	8	+9	-9			
	eLR_{EZ}	02.1	24					
	M_{EZ}	04.7	16		5			
	M_N	05.2	14	7				
11	iP_V	12 11 39	1½			+	6520	Compression
	i_V	11 42	1½			+	58°.7	H 12 01 37
	eS_E	19 43	10					
	i_{NE}	19 48	8	-8	+8			USCGS: 36S, 78E,
	i_Z	19 51	7			-		H 12 01 36
	i_E	20 01	9		-10			
	i_N	21 34	5	+3				
	e_Z	23 22	16					
	eSS_N	23 31	10					
	eSS_E	23 32	15					
	i_E	23 47	7		-4			
	eLQ_N	26.5	30					
	eLR_E	29.1	30					
	eL_Z	29.2	28					
	M_{EZ}	33.9	16		20			
	M_N	34.7	16	14				
12	iP_V	00 19 15	1½			+		Compression
	i_V	19 33	1½			+		
	e_N	23 41	7					USCGS: 8½S, 157½E,
	e_E	23 56	15					H 00 13 30
	eL_E	26.1	21					
	M_E	28.6	15		3			
12	iP_Z	00 30 09	2			+	3440	Compression
	i_Z	31 33	3			+	30°.9	H 00 24 22, h 0.05
	iS_N	34 47	3	-2				
	i_N	37 35	8	-8				USCGS: 19½S, 177½W,
	$iScS_N$	40 02	5	-5				H 00 24 22, h 400 km.ca.
13	iP_Z	12 41 52	4			-	10,190	Dilatation
	iS_E	52 51	6		+2		91°.7	H 12 28 42
	M_Z	13 26.2	16					
	M_E	27.3	19		1			USCGS: 52N, 172½W,
	M_N	28.2	17	1				H 12 28 45
13	iP_V	15 29(40)	1½			+		Compression
								USCGS: 25½S, 180°,
								H 15 24 44, h 500 km.ca.
14		13.1 Waves.						USCGS: 16½S,173E,
								H 13 00 24, h 100 km.ca.
14	i_V	22 40 13	1½			-		Masked by microseisms.
	eL_N	56.4	22					
	M_{NE}	58.9	16	3	3			USCGS: ½N, 120E,
	M_Z	23 00.1	15					H 22 31 22
16	$i(P)_Z$	19 18 39	4			-5		Dil. Masked by micros.
	i_Z	19 27	4			-4		Deeper than normal.
	i_V	19 44	1½			+		
	$i(S)_E$	22 24	5		-2			USCGS: 21½S, 169E,
	i_Z	22 29	7			-8		H 19 13 52
	i_N	22 30	7	+3				
	eL_E	23.3	24					
	eL_Z	23.6	24					
	M_{EZ}	25.4	16		2	3		
	M_N	27.3	12	2				
	i_N	28 31	4	+4				
	$i(ScS)_E$	28 39	4		-4			
17	i_V	06 00 08.9	½			+		Quarry blast at Prospect,
	i_N	00 09.4	½	+				west of Sydney.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 18	iP_V	07 05 52	1			+		Compression.
	$i(ScS)_E$	15 28	4		+3			USCGS: 21½S, 179W, H 07 00 36, h 600 km.ca.
18	iP_Z	20 04 36	3			+8	6340	Compression
	iZ	04 41	3			-8	57°0	H 19 54 58,
	$i(sP)_{NZ}$	05 11	4	-3		+7		h 0.01 ca.
	$i(sP)_E$	05 12	4		+1			
	iZ	05 22	4			+14		USCGS: 15½N, 120½E,
	iZ	06 30	3			+8		H 19 54 45
	iE	07 13	5		-3			
	iZ	07 16	7			+12		
	iZ	08 08	7			+9		
	iN	08 10	6	-4				
	iZ	08 19	4			+17		
	iZ	09 12	4			+7		
	iN	09 16	4	+4				
	$iSNE$	12 21	6	+56	-20			
	iZ	12 22	6			+11		
	iZ	12 29	8			+58		
	iNE	12 32	7	-39	+38			
	iZ	12 59	8			+11		
	iN	13 03	7	-13				
	iE	13 09	8		+13			
	iN	13 12	7	+18				
	iE	13 27	8		-13			
	iN	13 32	7	+19				
	iZ	13 33	4			+10		
	iE	13 40	7		-20			
	iN	13 51	7	+18				
	$iScSNE$	14 15	5	-16	+30			
	iZ	14 18	7			+20		
	iN	14 42	7	+10				
	iE	14 47	7		+13			
	iN	15 06	8	-9				
	iE	15 26	8		+17			
	iN	15 36	7	-7				
	iZ	15 56	6			+17		
	iN	16 08	7	+10				
	$iSSE$	16 09	8		-15			
	$iSSN$	16 16	9	+36				
	iE	16 41	9		-21			
	iE	17 16	7		-8			
	iNZ	17 54	6	-18		+16		
	eZ	18 00	19					
	eN	18 06	20					
	iE	18 22	7		+21			
	iE	18 32	8		+7			
	iN	18 49	8	-23				
	iZ	18 55	9			+42		
	iZ	19 18	6			+27		
	iE	19 20	10		-37			
	iE	20 28	10		-25			
	iN	20 59	9	+21				
	eLE	21.6	25					
	iNE	21 48	10	+34	-44			
	iZ	21 56	7			+16		
	eLN	22.6	28					
	ME	23.4	19		48			
	MZ	26.7	16			39		
	MN	26.8	19	51				
	iZ	28 10	7			-21		
19	iP_V	03 51 03	1			+	5540	Compression
	iV	51 11	1½			+	49°8	H 03 42 07
	iV	51 30	1½			-		
	iS_N	58 11	6	+4				USCGS: 6½S, 105E,
	iS_E	58 13	6		+4			H 03 42 02
	$iScSN$	04 00 52	4	+2				
	eLR_N	06.0	32					

Continued on next page.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 19 cont.	eL_E	04 07.0	32					
	M_N	08.6	24	5				
	M_Z	11.4	26			9		
	M_E	11.7	24		5			
19	$(iP)_Z$	13 50 07	3			+1		Compr. Masked by micros. USCGS: 23½S, 179E, H 13 44 52, h 550 km.ca
19	iP_Z	15 20 57	4			-3	13,000	Dilatation
	e_Z	21 46	12				117°	h 0.03 ca.
	e_Z	22 19	16					
	iPP_{NEZ}	25 46	4	+3	-1	+4		USCGS: 15S, 70½W,
	iNE_Z	25 49	6	-8	+7	+21		H 15 06 10,
	i_Z	25 59	7			+11		h 200 km.ca.
	i_E	26 07	6		+6			
	$ipPP_E$	26 36	7		+5			
	$ipPP_Z$	26 38	6			-7		
	i_E	26 53	7		+5			
	$isPP_Z$	26 59	9			+26		
	i_N	27 00	9	+7				
	e_E	27 03	21					
	eN_Z	27 10	19					
	i_E	27 24	6		-4			
	$i(PPP)_E$	28 24	5		-1			
	i_N	28 26	7	-5				
	i_Z	28 32	7			+9		
	i_N	28 36	4	-2				
	i_Z	29 34	6			+7		
	i_Z	30 15	6			+6		
	$iSKS_{NE}$	31 13	6	-7	+7			
	i_Z	32 21	5			+5		
	$ipSKS_{NE}$	32 30	7	-8	+9			
	i_Z	32 51	5			-5		
	$isSKS_{NE}$	32 54	6	-9	+7			
	iNE	34 05	9	+6	-7			
	i_Z	34 09	6			+7		
	iNE	34 21	8	+7	-7			
	i_Z	34 31	6			-6		
	i_Z	35 10	9			+8		
	eSP_N	35 25	16					
	iSP_E	35 26	6		+5			
	iSP_Z	35 28	9			+14		
	i_N	35 35	7	+7				
	iPS_{NE}	35 48	9	+16	-14			
	i_E	36 13	8		+7			
	$ipPS_Z$	36 21	8			+8		
	eNE	36 25	25					
	$iSPP_Z$	36 36	9			+17		
	iNE	36 43	(18)	+(21)	-(23)			
	$iPPS_N$	36 49	7	-13				
	$isPS_Z$	36 52	10			+16		
	i_E	36 53	(16)		+(33)			
	i_N	37 04	(9)	+(24)				
	iNE	37 16	(10)	-(20)	+(13)			
	i_N	37 55	9	+8				
	i_Z	38 03	7			-10		
	i_E	38 10	7		-3			
	i_Z	38 13	5			+10		
	i_E	38 27	7		-4			
	e_E	38 52	18					
	eN	39 16	19					
	eE	39 29	24					
	i_Z	39 53	7			+11		
	$e(SS)_E$	41 19	23					
	eN	41 49	19					
	i_Z	42 49	6			-9		
	eE	42 51	30					
	i_Z	44 15	7			-6		

Continued on next page.

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 19	iZ	15 44 47	6			+7		
cont.	iZ	45 13	6			+9		
	iE	45 28	7		+5			
	iZ	46 06	6			+6		
	eN	46 52	24					
	iZ	49 38	6			+8		
	eZ	49 45	34					
	eG_N	55.0	34					
	eL_Z	55.0	37					
	eL_E	56.3	36					
20	$iPNEZ$	02 48 49	3	+3	-4	-13	5140	Dilatation
	$iPcPV$	50 14	1½			-	46°2	H 02 41 10,
	$ipPV$	50 25	1½			-		h 0.075
	iPP_Z	50 46	5			-6		
	isP_Z	51 25	3			-5		USCGS: 6S, 110E,
	$i(pPcP)_V$	52 14	2			+		H 02 40 13
	$iScP_Z$	53 19	4			-3		
	iZ	54 45	3			+4		
	iS_N	54 59	5	+8				
	iZ	56 53	4			+5		
	isS_N	57 43	5	-4				
	$iScSNE$	57 48	4	+5	+4			
	iE	58 18	4		+3			
	iSS_N	58 23	5	-5				
	iE	58 34	4		-4			
	iN	58 36	4	-3				
	iN	03 04 34	6	-8				
	iN	04 48	6	+6				
	eL_N	05.0	19					
	iE	13 20	4		+3			
20	$(iP)_Z$	16 58 36	2			-4	(2950)	Dil. Masked by large
	$i(sP)_{EZ}$	17 01 11	3		-4	+3	(26°5)	micros.
	iS_E	02 33	5		+5			h (0.08), H(16 53 40)
	eN	03 46	10					USCGS: 23½S, 179E,
	eL_N	05.3	18					H 16 53 38, h 600 km.ca.
21	$(i)_E$	00 49 37	4		-3			Obscured by very large
	eE	50 26	15					microseisms.
	$i(S)_N$	53 18	7	-7				
	eE	53 32	18					USCGS: 9S, 151E,
	eL_E	55.5	25					H 00 43 38
	M_Z	58.0	15			12		
	M_E	58.1	13		12			
	M_N	58.6	16	9				
21		01.8 Surface waves, obscured by very						large microseisms.
								USCGS: D'Entrecasteaux Is.
								H 01 32 55
21	iP_Z	07 48 44	6			+14	2880	Compression. Deeper than
	iZ	48 56	6			+5	25°9	normal-perhaps 0.01
	$i(sP)_Z$	49 14	6			+13		H 07 43 19
	iZ	49 25	6			+9		Large microseisms.
	iS_E	53 05	6		+11			USCGS: 14½S, 167½E,
	iN	53 11	5	+8				H 07 43 13
	iE	53 24	6		+12			
	iNZ	53 26	6	+8		+11		
	iN	53 39	6	+15				
	$i(sS)_E$	53 41	5		+13			
	iE	54 03	4		+7			
	iE	54 13	5		+12			
	$i(SS)_N$	54 16	6	+16				
	eL_E	55.2	21					
	M_E	57.1	16		9			
	M_N	59.2	13	8				
	M_Z	59.5	15			9		
	iE	59 54	4		+6			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
July 22	$(iP)_Z$	23 08 22	4			-5	(3200)	Dil. Masked by very large
	iP_{NZ}	08 28	6	-7		+9	(28:8)	Compr. microseisms.
	i_{NZ}	08 41	6	-10		-11		h(0.00)
	i_Z	08 46	6			+18		
	$i(S)_N$	13 10	7	-14				USCGS: 5S, 152½E,
	iS_N	13 14	12	+45				H 23 02 27,
	i_Z	13 21	6			-9		h 60 km.ca.
	i_N	13 32	12	+105				
	i_Z	13 34	12			-42		
	i_E	13 36	7		+24			
	i_E	14 26	7		+26			
	i_N	15 21	7	-25				
	eL_Z	16.8	29					
	eL_N	17.0	26					
	M_E	18.5	19		71			
	M_{NZ}	19.0	19	93		125ca		
23	i_V	07 09 07	1½			+		Non-seismic?
	i_V	11 16	1½			+		" "
	i_V	15 33	1			+		" "
	i_V	15 50	1			+		" "
	i_V	20 20	1½			+		" "
23	$(iP)_Z$	15 02 49	4			+6		Compr. Masked by very
	eL_N	10.2	21					large microseisms.
	M_N	12.0	17	19				USCGS: 24½S, 176W,
								H 14 56 45, h 60 km.ca.
29	iP_V	00 36 28	1			+		Compr. Masked by micros.
								USCGS: 18½S,178W,
								H 00 30 54, h 650 km.ca.
30	eL_E	13 06.4	24					USCGS: 31½S, 177½W,
								H 12 53 56
31	$(iP)_V$	05 05 19	1½			+		Compr. Masked by micros.
	$e(S)_N$	10 28						USCGS: 5S, 152½E,
	M_{NZ}	17.8	15	3		3		H 04 59 23
	M_E	18.0	12		3			
31	eL_E	15 42.5						
31	$(P)_V$	18 40 57	1½					Masked by microseisms.
	eL_E	49.6	15					USCGS: 6½S, 154½E,
								H 18 35 12
31	i_N	20 48 20	4	+2				Masked by microseisms.
	e_E	48 32						USCGS: 40S, 174E,
								H 20 40 31, h 200 km.ca.

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N.B. July 22-28 very large microseisms.

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Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug. 2	eV	08 49 18	¼					Very small local shock.
	eV	49 35	¼					
2	$(iP)_Z$	12 03 57	3			+2		Masked by microseisms.
	iV	04 25	1½			-		
	M_E	13.3	13		2			USCGS: 6½S, 154½E,
	M_N	14.1	12	2				H 11 57 56
	iN	14 42	6	+5				
	iN	14 54	4	+6				
	M_Z	14.9	13			2		
2	(e)V	15 55 22						Very small local shock.
	eV	55 26	¼					
3	i(P)V	01 09 53.5	1			+		Compression
3	eV	01 24 34	½					Very small local shock.
3	iV	02 07 08	1			+		Compression
3	eS_E	16 24 15						Masked by microseisms.
	eL_E	30.4	22					USCGS: near 46½S, 98E,
								H 16 09 54
4	iZ	05 28 01	1			-		Dil. Non-seismic??
4	(iP)V	08 07 44	1			+		Compression. Masked by
	$i(S)_{NE}$	12 01	4	-3	+1			microseisms.
	$i(sS)_E$	14 57	4		+3			USCGS: 20½S, 178W,
	$i(ScS)_E$	17 17	4		+3			H 08 02 17, h 600 km.ca.
5	$(i)_E$	05 33 40						Masked by large micros.
								USCGS: 12½S, 125E,
								H 05 16 39
7	eL_E	19 24.2						USCGS: 10½S, 152½E,
								H 19 10 59
8	iPV	01 00 42	1			+		Compression
	iV	00 48	1½			+		
	e_E	11 43						USCGS: 55N, 162½E,
	eL_Z	29.4						H 00 47 38
9	iP_Z	00 01 55	4			+3		Compression. Masked by
	eL_Z	10.2	17					microseisms.
	i_N	11 27	4	+4				USCGS: 6S, 155E, h 100km.
	i_E	11 34	7		+4			H 23 56 05 (8th)
	M_N	12.4	15	1				
9	iPV	02 42 42	1			+		Compr. Masked by micros.
								USCGS: 2N, 128E, H 02 34 43
9	$(iP)_Z$	20 34 48	4			+2		Compression. Masked by
	iS_E	39 17	4		+3			microseisms.
	e_N	39 20	7					
	i_N	39 26	6	+5				USCGS: 10S, 161E,
	i_N	39 36	6	+11				H 20 29 28,
	e_{NE}	39 40	16					h 100 km.ca.
	eL_N	42.3	19					
	M_Z	44.2	18			11		
	M_{NE}	44.7	15	5	5			
10	iP_Z	00 41 29	2			+2	2600	Compression
	iV	41 34	1			+	23°4	
	i_Z	41 38	4			+8		USCGS: 55½S, 146E,
	iS_N	45 40	5	-4				H 00 36 35
	i_E	45 43	5		-8			
	i_N	45 45	5	+6				
	i_N	45 52	5	-7				
	i_{EZ}	45 57	5		-7	-6		
	eL_Z	46.7	26					
	eL_N	46.9	25					
	M_{NE}	49.2	10	8	7			
	M_Z	49.6	10			6		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.11	iP_Z	21 55 10	3			+5	2820	Compression
	$iNEZ$	55 15	4	+4	+3	-6	25°4	H 21 49 39
	iPP_Z	55 51	4			+5		
	$i(PcP)_N$	58 37	4	-4				USCGS: 11S, 163E,
	eS_{NE}	59 35						H 21 49 42
	i_Z	59 37	5			+4		
	i_E	59 42	7		+4			
	i_N	59 44	7	+5				
	i_{NZ}	59 59	4	+4		+5		
	i_E	22 00 01	5		-6			
	i_N	00 26	5	-3				
	eSS_Z	00 36	10					
	i_E	01 17	4		+5			
	eLR_{NE}	01.5	25					
	eL_Z	01.8	25					
	M_N	03.2	18	8				
	M_Z	03.5	18			6		
	M_E	04.5	16		5			
12	i_V	04 05 23	2			+		Compression
12	iP_V	10 05 06	1½			+	3650	Compression
	i_Z	05 12	4			+.	32°8	Large microseisms present.
	iPP_{EZ}	06 15	4		-4	+8		H 09 58 29
	i_{NE}	06 22	4	+3	+5			
	i_Z	06 24	5			+10		USCGS: 16½S, 177½W,
	i_Z	09 30	5			-12		H 09 58 22
	i_Z	10 15	6			+13		
	iS_N	10 23	7	+15				
	i_N	10 31	7	-25				
	i_Z	10 38	7			+21		
	i_E	10 45	7		-11			
	i_E	11 05	6		-11			
	i_N	11 51	6	-10				
	e_N	12 21	22					
	i_N	12 40	10	+38				
	eL_E	12.7	22					
	i_E	13 00	9		+19			
	eL_Z	13.2	23					
	M_N	17.0	13	78				
	M_E	17.3	16		54			
	M_Z	17.4	16			79		
	M_E	18.1	15		55			
12	$(i)_Z$	12 50 00	4			+5		Large microseisms present
12	$(i)_N$	16 45 10	4	-6				Very large microseisms.
13	eL_E	21 39.3						
14	iV	04 47 18	1½			+		
	i_Z	47 21	2			-3		USCGS: 0°, 125½E,
	eL_E	05 01.5	22					H 04 39 07
14	Pg_V	06 00 04.5	¼					Quarry blast at Prospect,
	iSg_V	00 08.5	¼					west of Sydney.
	i_N	00 09.5						
	i_V	00 10.2	½					
	iM_V	00 11.8	½			+		
15	$i(P)_V$	05 57 41	1			+		Compression
15	iP_Z	09 07 29	3			-7	6890	Dilatation
	$iNEZ$	07 33	4	-3	+1	+16	62°0	H 08 57 05
	i_Z	07 37	7			+26		
	iNE	07 38	7	-9	+6			
	i_Z	07 55	7			+22		USCGS: 23N, 121E,
	i_Z	08 15	9			+27		H 08 57 04
	i_N	08 20	7	-10				
	i_Z	08 30	6			+13		
	i_Z	09 06	5			+10		
	e_Z	09 30	14					
	$i(PP)_Z$	09 47	7			+18		

(continued on next page)

Date	Phase	Time	Per.	A_N	A_E	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.15	iZ	09 10 01	7			+15		
cont.	iN	10 07	8	+9				
	iZ	10 31	8			+18		
	iZ	10 56	8			+19		
	iZ	11 57	8			+13		
	iN	12 03	8	-8				
	iZ	12 43	7			+11		
	iSNE	15 53	7	+10	-7			
	iZ	15 54	12			-19		
	mN	16 05	10	15				
	eN	16 08	30					
	iN	16 14	7	-8				
	iN	16 30	10	-33				
	mE	16 36	18		42			
	iN	16 46	10	+32				
	iZ	17 18	9			+21		
	iE	17 27	10		+32			
	iZ	17 36	9			+13		
	iN	17 39	9	+24				
	iE	18 44	10		+33			
	iN	18 45	6	+18				
	iN	19 27	11	+14				
	$e(SS)_E$	20 00	19					
	iNE	20 16	10	+16	-24			
	iE	20 30	8		-12			
	iN	21 18	12	+29				
	iE	21 20	12		-31			
	iN	22 39	10	+21				
	iZ	22 45	7			-16		
	iN	22 59	9	-31				
	iZ	23 08	13			+34		
	iE	23 14	9		+30			
	iZ	23 50	18			+66		
	iZ	24 45	10			-33		
	eLN	25.9	30					
	iZ	27 52	9			+10		
	eLZ	28.1	37					
	iN	28 24	13	+53				
	iE	28 26	18		+40			
	iZ	28 30	9			-30		
	eLN	28.6	38					
	ME	34.4	19		94			
	MNZ	35.1	18	97		150		
	eW2N	11 36.0	24					
15	(iP)V	13 21 08	1½			-		Dilatation. Masked by microseisms.
	eN	30 14	7					
	eLN	31.0	20					USCGS: 21S, 174W,
	MEZ	32.4	20		5	6		H 13 14 26
	MN	33.5	13	7				
15	iPV	13 30 56	1½			+		Compression. Masked by
	MEZ	38.8	14		5	6		micros. & preceding shock.
15	iZ	13 55 27	4			-3		Dil. Masked by coda of preceding shock.
15	iZ	14 26 12	4			+4		Compr. Masked by micros.
15	i(P)V	18 55 07	1½			+		Compr. Masked by micros.
	iV	55 14	2			+		USCGS: 55N, 162½E,
	iZ	59 15	3			+3		H 18 41 56
16	iPNEZ	00 56 23	6	+5	+5	-10	2450	Dilatation
	isPNEZ	56 38	6	-9	-13	+27	22?0	H 00 51 30, h 0.00
	iE	57 07	6		+3			
	iZ	57 08	5			-9		USCGS: 21S, 169E,
	iN	57 09	6	+6				H 00 51 40
	iN	57 24	6	-5				
	iEZ	57 48	5		-4	+7		
	iN	58 13	5	+4				

Continued on next page.

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.16	i_E	00 58 15	5		-4			
cont.	i_N	58 19	6	+10				
	i_Z	58 29	7			+16		
	iS_N	01 00 19	6	+15				
	$iPcPE_Z$	00 23	6		-15	+27		
	i_N	00 24	4	+10				
	$isSE$	00 33	7		-17			
	i_N	00 50	7	-13				
	iSS_Z	01 01	6			+9		
	i_E	01 19	7		+6			
	i_N	01 26	7	-15				
	eL_{NEZ}	02.1	21					
	M_{EZ}	02.8	19		27	38		
	M_N	04.9	13	28				
	M_{EZ}	05.6	15		24	26		
16	$(iP)_V$	01 31 42	1½			+		Compr. Masked by micros.& coda of preceding shock. USCGS: 22N, 121E, 01 2105
16	iP_V	09 59 37	1½			+		Compr. Masked by large microseisms. USCGS: 18S, 178W, H 09 53 52, h 300 km.ca.
16		11.4h Surface waves.						USCGS: 5S, 152E, 11 07 49
16	$(i)_Z$	17 55 04	3			+3		Very large microseisms present.
	$(i)_Z$	55 47	3			+5		
	$(i)_Z$	57 16	4			-6		
	$(i)_Z$	18 01 24	3			+6		
	$(i)_N$	04 23	5	-3				
17	$(i)_Z$	01 07 23	2			+4		Masked by large microseisms.
	i_N	07 53	4	+3				
	i_N	07 59	5	+6				
	eL_N	16.4	16					
17	iP_{NZ}	21 10 21	4	+6		-10	2990	Dilatation
	i_{NZ}	10 26	4	-18		+32	26°9	H 21 04 36
	i_{NEZ}	10 30	5	+36	+7	-52		
	i_Z	10 38	5			+54		USCGS: 7½S, 156E,
	iPP_N	11 08	7	+36				H 21 04 40
	i_Z	11 11	6			-44		
	i_N	13 50	4	+15				
	iS_N	14 57	8	+34				After iS, readings are
	i_N	15 04	9	-12				from Mainka. Galitzin
	i_E	15 05	9		-6			record too tangled to
	i_N	15 18	9	+35				read.
	i_E	15 24	7		-17			
	i_N	15 35	6	+7				
	i_E	15 38	9		+26			
	i_N	15 45	9	+28				
	i_E	16 02	7		-22			
	i_E	16 11	7		+24			
	i_E	16 23	9		+45			
	iM_E	19 22	12		+86			
	iM_N	20 08	9	-31				
	M_N	20.8	12	200				
	M_E	21.3	12		230			
18	$(P)_V$	00 37 42						Masked by large microseisms USCGS: 0°, 123E, H 00 30 00, h 200 km.ca.
18	$i(PcP)_V$	00 44 55	1½			-		Dilatation. Masked by
	iS_N	52 41	4	-2				large microseisms.
	$eL(Q)_N$	59.6	?					USCGS: 22N, 121½E, H 00 33 43

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.18	$(i)_{EZ}$	05 43 26	2		-2	+4		Masked by largemicroseisms
	i_E	44 27	4		+3			
	i_E	44 35	4		+4			USCGS: 22½S, 172E,
	i_{S_E}	47 31	5		-4			H 05 38 39
	i_{S_N}	47 33	6	-7				
	i_Z	47 41	5			+8		
	e_{L_N}	48.8	19					
	M_N	50.7	13	5				
18	$iPKP_Z$	06 56 15	4			+4		Compression. Large micro-
	i_Z	56 20	4			+8		seisms present.
	iPP_Z	57 30	4			+7		
	i_{NZ}	57 33	6	+4		+30		USCGS: 44½N, 111W,
	i_E	57 38	6		+8			H 06 37 13
	i_Z	58 08	8			+17		
	i_Z	58 44	4			-8		
	$iPPP_Z$	59 59	7			-14		
	$iSKS_N$	C7 03 11	5	-3				
	i_N	03 17	6	+8				
	i_E	03 25	7		+11			
	$iSKKKS_{NE}$	04 36	7	+12	+10			
	$i(PKKP)_Z$	06 35	4			+14		
	iPS_Z	07 15	7			+13		
	iPS_{NE}	07 22	6	+8	+6			
	i_Z	07 33	7			-14		
	i_{NE}	07 36	7	+33	+20			
	i_N	08 00	6	+14				
	i_Z	08 31	6			+15		
	eS_N	14 08	39					
	i_N	17 18	10	+16				
	eL_E	26.7	43					
	eL_N	27.3	40					
	eLR_Z	32.2	37					
	M_{EZ}	35.4	24		89	210		
	M_N	36.2	22	47				
18	$(iPKP)_Z$	15 44 56	3			+2		Masked by microseisms.
	i_Z	45 16				+2		
	$i(PS)_N$	56 14	6	-2				USCGS: 44½N, 111W,
	e_E	56 15	9					H 15 26 06
	eL_N	16 16.2	28					
	eLR_Z	22.2	28					
18	eL_N	21 26.0						USCGS: 11S, 162½E, H 21 13 09, h 200 km.ca.
19		05.1h Surface waves.						USCGS: 45N, 111½W, H 04 04 03
20	i_Z	02 04 54	3			+2		Masked by microseisms.
	$i(S)_N$	09 06	7	-5				
	$i(SS)_N$	09 57	6	-3				USCGS: 10½S, 161E,
	M_{NE}	15.6	10	1	2			H 01 59 06
20	i_N	09 03 38	4	+2				Masked by microseisms.
	e_N	06 06	?					
	e_N	08 56	12					USCGS: New Britain,
	eL_Z	09.9	21					H 08 54 59
	M_N	12.0	16	3				
	M_Z	12.2	16			3		
	M_E	12.8	12		3			
20	$e(S)_N$	12 38 15	7					Masked by microseisms
	e_{EZ}	38 18	11					
	eL_E	46.4	22					USCGS: 29S, 78E,
	eL_Z	47.8	22					H 12 20 08
	M_E	52.0	15		2			
	M_Z	52.3	15			5		
20		22.1h Surface waves.						

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.21	iP_{NEZ}	08 07 36	4	+17	+7	+22	2140	Compression
	isP_Z	07 48	4			+14	19°2	H 08 03 12, h 0.00
	i_{NE}	07 51	4	+5	+5			
	iPP_Z	07 53	4			-13		USCGS: 50½S, 139½E,
	i_E	08 05	5		+5			H 08 03 15
	i_N	08 12	4	+7				
	iS_E	11 05	7		+12			
	isS_{NE}	11 15	7	+9	-13			
	i_N	11 25	6	-14				
	i_E	12 02	5		-12			
	eLR_Z	12 08	27					
	eL_N	12 30	22					
	i_E	13 04	10		+31			
	M_N	13.4	15	61				
	M_E	13.7	11		36			
	M_Z	14.2	16			90		
	M_Z	14.7	12			65		
	M_N	15.1	12	78				
21	iP_{NEZ}	08 09 57	4	+12	+5	+18	2170	Compression
	i_V	09 59	1½			-	19°5	H 08 05 31, h 0.00
	i_{NEZ}	10 02	6	-27	-8	-44		Confused by preceding
	$i(pP)_V$	10 06	1½			+		shock.
	i_V	10 14	1½			+		
	iPP_E	10 15	5		+5			
	$iPPP_{EZ}$	10 25	6		+8	+20		
	i_Z	11 13	5			-14		
	iS_E	13 30	7		+33			
	eL_N	14.9	20					
	M_N	15.9	10	83ca				
	M_E	16.2	12		52			
	M_N	17.5	10	84ca				
	M_Z	17.6	9			100		
	M_E	17.7	8		64			
21	iP_V	09 42 09	1½				2140	Compression
	iP_{NZ}	42 10	3	+8		+10	19°2	H 09 37 45, h 0.00
	i_V	42 12	1½					Overlapped by preced-
	i_{NEZ}	42 14	5	-23	-10	-35		ing shocks.
	eS_E	45 38	7					
	isS_E	45 48	6		-15			USCGS: 50½S, 14CE,
	i_Z	45 49	7			+15		H 09 37 49
	i_N	45 58	6	-14				
	eLR_Z	46.7	27					
	eL_N	47.0	27					
	M_Z	48.7	15			63		
	M_E	49.2	9		22*			*From Mainka.
	M_N	49.3	9	13*				
	M_N	50.4	8	21*				
21	eL_E	13 46.6						
21	$(P)_V$	15 22 39						
21	e_N	16 52 56						
	eL_Z	56.2	20					
21	eL	17 58.7						
24	iP_Z	15 47 11	4			+2	2750	Compression
	i_Z	47 15	3			+2	24°7	H 15 41 47
	i_V	49 15	1½			+		
	iS_N	51 30	7	-3				USCGS: 10½S, 161½E,
	i_Z	51 40	6			-4		H 15 41 40
	i_{NE}	51 44	7	-12	-6			
	i_E	52 05	6		-2			
	i_N	52 06	7	+8				
	iSS_N	52 24	7	+5				
	iSS_E	52 26	8		+6			
	$iSSS_N$	52 41	7	-6				
	eLR_E	53.3	19					
	M_{NZ}	55.4	15	6		3		
	M_E	56.7	14		4			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.24	iP_{NEZ}	21 36 17	4	+10	+4	-14	2870	Dilatation
	iZ	36 21	4			+41	25°8	H 21 30 43, h C.00
	isP_Z	36 30	6			-72		
	isP_{NE}	36 31	6	+40	+19			
	iPP_{NE}	36 52	6	+18	+13			USCGS: 10½S, 161E,
	$iPPP_{NE}$	37 06	6	+20	+10			H 21 30 46
	iE	37 22	5		+10			
	iZ	37 23	7			+56		
	iN	37 24	7	-27				
	iE	38 04	5		-12			
	iE	38 28	6		+15			
	iE	39 16	6		+14			
	iZ	39 46	6			+25		
	iN	40 16	7	+21				
	iN	40 30	7	+41				
	iZ	40 32	7			-37		
	iS_{NE}	40 42	7	+41	+19			
	iN_E	40 47	7	+105	-69			
	iZ	40 53	7			+82		
	iE	41 03	7		+250			
	iEZ	41 15	8		+230	-130ca		
	iN	41 16	10	+260				
	iN_E	41 35	7	+91	+220			
	iE	41 49	10		+95			
	iN	41 59	8	+200				
	M_{NZ}	44.7	15	240ca		160ca		
	M_E	45.0	15		170ca			
	M_Z	45.8	16			210ca		
24	i(P)V	23 37 41	1			+		Masked by coda of preceding shock.
	iZ	37 50	4			+5		
	iN	42 22	6	+6				USCGS: 10½S,161½E,23 32 23
24	iZ	23 47 15	5			+5		Masked by preceding shocks.
	iE	51 32	7		+5			USCGS: 10½S,161½E,23 41 34
	iN	51 34	6	+5				
25	(P)V	13 45 57						Masked by microseisms.
	iZ	46 13	2			+4		USCGS: 6½S,155E,H 13 40 06
	eL_Z	54.2	25					
26		05.1h Waves.						USCGS: 5½S,153½E, 04 53 00
26	eZ	08 45 23						Masked by microseisms.
	$eSKS_E$	51 35						
	$eSKKS_E$	52 46						USCGS: 18N, 94½W,
	ePS_Z	55 38	15					H 08 25 30
	ePS_E	55 43	15					
	eS_Z	09 01 56	15					
	eE	02 43	40					
	eEZ	03 14	27					
	eL_QN	16.6	28					
	eLR_Z	21.1	36					
	eLR_E	21.2	36					
	M_N	28.8	18	7				
	M_{EZ}	30.7	18		14	23		
26	eL_QE	11 12.5	28					Masked by coda of preceding shock.
	eL_QN	12.7	28					
	eLR_Z	18.2	30					USCGS: 51N, 132E,
	M_{NZ}	28.0	18	2		4		H 10 27 41
	M_E	29.1	18		3			
27	(iP)V	05 11(30)						Masked by microseisms.
								USCGS: 5S, 150½E,
								H 05 05 44, h 300 km.ca.
27		12.5h Long waves.						
27		14.3h Long waves.						
27		20.7h Long waves.						

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.28	iP_Z	02 42 18	4			-3	2870	Dilatation
	iV	42 47	1½			+	25°8	
	iV	42 50	1½			+		USCGS: 9S, 158E,
	iS_E	46 46	5		+2			H 02 37 00,
	i_N	46 50	5	-2				h 150 km.ca.
	i_N	47 47	4	-2				
	eL_Z	49.6	21					
	eL_N	49.7	21					
	M_E	52.5	10		6			
	M_{NZ}	53.6	10	3		3		
28	i_Z	12 35 34	4			-4		Masked by microseisms.
28	iP_{NEZ}	15 57 11	4	-3	-3	+7	2550	Compression
	ipP_Z	57 21	4			+5	22°9	H 15 52 09, h 0.00
	e_Z	57 34	9					
	i_E	57 38	9		+5			USCGS: 17S, 167E,
	i_{NZ}	58 11	4	+3		-4		H 15 52 10
	i_E	58 12	4		+3			
	i_E	58 25	4		+3			
	i_N	58 26	4	+4				
	i_Z	58 29	4			+4		
	i_Z	59 03	4			+7		
	iS_{NZ}	16 01 14	5	+6		-5		
	iS_E	01 16	5		+7			
	i_N	01 19	7	-17				
	i_Z	01 20	7			-10		
	i_E	01 29	5		-13			
	i_N	01 40	6	-12				
	i_E	01 50	7		+10			
	i_Z	01 55	5			+7		
	eL_E	01.9	18					
	eLR_Z	03.1	22					
	M_N	04.0	13	12				
	M_E	05.4	13		6			
	M_Z	07.3	15			10		
29	$(iP)_V$	02 03 31	1½			+		Compression
29	$(P)_V$	03 26 30						
	$e(S)_N$	31 00						USCGS: Solomon Is.,
	iN_E	31 13	7	-4	-2			H 03 21 07
	eL_N	33.8	18					
29		11.1h Waves.						USCGS: Solomon Is.,
								H 10 52 27
29	$(i)_V$	13 23 25	1½			+		
	i_Z	23 49	4			+3		
	M_E	29.8	10		1			
29	iP_{NZ}	17 16 35	4	+2		-3	10,560ca	Dilatation
	i_Z	16 43	4			-7	95°ca	H 17 03 09 ca.
	i_Z	20 17	4			+2		
	iPP_{NZ}	20 26	5	-2		+7		USCGS: 52N, 106½E,
	$iSKS_N$	27 16	5	-3				H 17 03 10
	i_N	27 22	6	+5				
	i_N	28 01	6	-3				
	iPS_N	29 11	7	+4				
	e_N	33 52	15					
	eSS_N	34 23	23					
	e_N	40 59	22					
	eLR_E	47.7	30					
	eLR_Z	48.4	30					
	M_E	18 00.5	19		3			
	M_N	02.0	19	10				
	M_Z	02.6	19			12		
29	$(P)_V$	21 25 37						
	$i(PP)_Z$	25 58	4			+2		USCGS: 17S, 168E,
	M_E	33.4	13		1			H 21 20 27
	M_N	33.5	13	2				
	M_Z	34.2	14			1		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Aug.30	i(P)V	18 53 27	2			+		Compression. Masked by microseisms.
	e_{LN}	58.3	16					
	M_N	19 00.3	13	3				USCGS: 23S, 171½E, H 18 48 34
30	e_N	22 03 23						Masked by microseisms.
	e_{LZ}	12.4	30					
	iE	17 19	7		+8			USCGS: 36½S, 78½E, H 21 45 07
	M_Z	17.8	16			9		
	M_N	18.2	15	4				
	M_E	18.3	15		5			
31	(iP)Z	13 30 14	4			+3		Compression. Masked by large microseisms.
	e_{LN}	37.7	15					
31	(iP)Z	20 38 54	4			+4		Compression. Masked by large microseisms.
	M_N	46.6	13	3				USCGS: 17S, 167½E, H 20 33 52

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Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sept. 3	iPZ	06 35 08	5			+12	4190	Compression. Large
	i_N	35 18	4	+5			37°7	microseisms present.
	i_Z	35 53	6			-4		H 06 27 49
	iPP_N	36 37	8	+6				
	iPPZ	36 40	8			+15		
	$i(PcP)_V$	37 29	2			+		
	i_Z	39 14	6			+9		USCGS: 4½S, 123E,
	iS_E	40 59	8		-5			H 06 27 30
	i_Z	41 06	5			+11		
	i_E	41 09	6		-6			
	i_Z	41 15	7			+13		
	i_N	41 41	6	+6				
	i_E	42 17	6		-3			
	i_N	43 30	7	-7				
	iSS_E	43 33	6		+9			
	eL_N	43.7	18					
	i_N	43 54	7	+14				
	$iSSS_E$	44 03	7		+12			
	i_E	44 38	6		-8			
	i_E	45 08	7		+11			
	i_N	45 38	6	+8				
	i_E	45 59	7		+9			
	i_N	46 20	5	+5				
	i_E	46 44	7		+10			
	i_N	46 50	5	+7				
	i_N	47 44	4	+8				
	i_N	48 00	5	+9				
	i_N	48 36	5	+7				
	eL_{NE}	48.7	25					
	M_E	51.6	21		26			
	M_N	53.1	17	24				
	M_Z	54.0	15			20		
	M_E	54.8	13		17			
	M_N	56.4	14	39				
	M_Z	56.5	13			30		
3	$(iP)_V$	21 56 02	1½			+		Compr. Masked by micros.
								USCGS:15S,175½W, 21 48 56
4	$(P)_Z$	12 35 44						Masked by microseisms.
	eL_N	44.2	16					
	$i(ScS)_N$	45 35	4	+4				USCGS: 31½S, 177W,
	M_Z	47.4	15			3		H 12 30 00
	M_{NE}	48.2	11	2	2			
4	iP_Z	17 53 44	3			+5		Compr.Large microseisms.
4	$iPKP_V$	18 46 22	1			+		Compr.Large microseisms.
								USCGS: 1S,24W,H 18 26 41
5	iP_V	06 15 23.5	1			+	4440	Compression. Large
	i_V	15 25	1			+	39°9	microseisms present.
	i_Z	15 33	3			-3		
	$i(PP)_V$	17 03	1½			+		USCGS: 1N, 129E,
	i_V	17 46	1½			+		H 06 07 38
	iS_{NE}	21 29	5	-2	-3			
	eL_E	24.1	28					
	iSS_N	24 28	7	+5				
	i_E	24 41	10		+9			
	$iSSS_E$	25 00	7		+6			
	eL_E	29.1	28					
	M_N	34.4	15	25				
	M_E	35.1	15		26			
	M_Z	36.4	13			20		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	u	u	u	km.	
Sept.5	iPV	07 06 23	1			+	3180	Compression. Large
	iV	06 26	1			+	28°6	microseisms present.
	iPPZ	07 10	5	+6				H 07 00 23
	eSE	11 11	9					
	iN	11 29	6	+4				USCGS: 62S, 156E,
	eLQE	12.3	18					H 07 00 26
	eSSN	12 36	18					
	eZ	12 46	13					
	eLN	13.3	24					
	eLZ	13.4	22					
	ME	15.4	10		6			
	MN	16.3	10	7				
	MZ	17.2	10			6		
5	iPV	15 42 29	1½			+	4490	Compression. Large
	iZ	42 31	3			+3	40°4	microseisms present.
	iV	42 36	1½			+		H 15 34 48
	iV	42 44	1½			+		
	iZ	42 51	5			-5		USCGS: 1N, 129E,
	iZ	44 25	7			+5		H 15 34 44
	eSE	48 38	13					
	eN	48 46	15					
	eN	51 41	16					
	iE	51 50	7		+4			
	eLE	56.3	25					
	eLZ	58.3	27					
	MNE	16 02.1	14	10	12			
	MZ	03.5	13			13		
5	iPZ	23 10 42	2			-2		Dil. Large microseisms.
								USCGS: 18S, 178½W,
								H 23 05 00, h 650km.ca.
6	iPZ	00 36 26	1			+2		Compr. Large microseisms.
	iPPV	38 11	2			+		
	eSSE	46 29	10					USCGS: 5½N, 126½E,
	e(LQ)N	47.5	19					H 00 27 59
6	(iP)Z	04 13 51	4			-3		Large microseisms present
	(i)Z	14 28	6			+7		
6	iPZ	04 16 21	3			+3	2940	Compr. Large microseisms
	iSN	20 50	7	+4			26°4	present.
	i(sS)N	21 06	6	+2				h 0.00, H 04 10 46
	iN	21 45	7	-3				USCGS: 10S, 160½E,
	MN	26.2	9	2				H 04 10 54
	ME	27.4	10		4			
	MZ	28.5	8			4		
7	i(P)V	04 16 30	1½			+		Compression.
7	eV	16 00 16.5	¼					Quarry blast at Prospect,
	iMV	00 20	1			+		west of Sydney.
8	i(P)Z	01 08 35	4			+4		Compression. Masked by
	iZ	09 25	3			+4		microseisms.
8	(iP)V	13 24 36	1½			-		Dil. Masked by micros.
	iV	24 39	1½			-		USCGS: South Atlantic,
	(iS)N	34 58	4	+2				700 miles east of
								Bouvet Is. H 13 12 04
8	iV	14 43 32	1½			-		Dil. Masked by micros.
	iV	44 01	1½			+		
10	iPZ	05 40 54	3			+3	3080	Compression. Microseisms
	iV	40 59	1½			+	27°7	present.
	isPZ	41 07	4			-5		h 0.00, H 05 35 07
	iZ	41 13	4			+3		
	iV	41 34	1½			+		USCGS: 6½S, 154½E,
	i(PP)V	41 39	1½			-		H 05 35 04
	iSN	45 32	7	-3				
	eN	45 55	20					

Continued on next page.

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sep.10	eZ	05 46 00	20					
cont.	iN	46 18	4	-2				
	$iSSN$	46 56	4	+3				
	$iSSS_E$	47 13	4		-4			
	eZ	48 08	18					
	iZ	48 23	7			-6		
	$eLNZ$	48.8	25					
	M_E	50.1	15		3			
	M_{NZ}	51.3	14	5		6		
10	$(P)_Z$	10 40 30						Masked by microseisms.
	eL_N	44.9	16					
	M_N	45.6	13	3				
	M_E	45.8	13		2			
	$(eT)_V$	58 38	½					
	eT_V	58 48	½					
10	eL_E	16 31.8	16					USCGS: 9½S, 151½E, H 16 18 09, h 100 km.ca
11	$(iP)_V$	02 38 41	1			+		Microseisms present.
12	$i(P)_Z$	00 31 07	3			+3		Comp. Masked by micros. USCGS: 6S, 106E, H 00 22 01, h 100 km.ca.
12	$(iP)_Z$	01 59 59	3			+2		Compression. Microseisms present.
	iZ	02 00 21	3			-3		
	iV	00 30	2			+		
	iZ	00 36	3			-3		USCGS: 3S, 146½E, H 01 53 47
	$i(PP)_N$	01 09	4	-4				
	iN	01 40	4	+4				
	iS_{NZ}	05 12	5	+3		-5		
	iN	05 19	5	+6				
	iE	05 21	5		+3			
	$i(sS)_N$	05 28	6	+13				
	iN	05 43	6	-12				
	iE	05 58	5		-8			
	iE	06 11	5		+5			
	iN	06 19	6	-10				
	$e(LQ)_E$	06.8	21					
	$i(SS)_E$	07 10	6		-11			
	iZ	07 30	6			-14		
	$i(SSS)_E$	07 32	6		-6			
	eL_E	08.1	32					
	eL_N	09.0	32					
	eL_Z	09.1	36					
	M_E	11.8	18		49			
	M_N	12.8	18	52				
	M_Z	13.4	18			65		
12	$(Pg)_V$	05 53 30	¼					
	$i(Sg)_V$	53 34	½					
12	$(Pg)_V$	05 57 35						
	$(Sg)_V$	57 38.5						
12	iP_V	07 08 06	1½			+		Compression. Masked by microseisms.
	$(S)_N$	13 05	6					
	$e(L)_E$	16.6	19					USCGS: 3S, 147E, H 07 01 45
	eL_Z	18.8	27					
	M_E	22.1	12		5			
	M_N	23.1	13	8				
	M_Z	23.3	13			13		
12		08.3		Waves.				
12	$(i)_Z$	08 54 28	3			+3		Masked by microseisms.
	eL_N	09 05.7	18					
	M_{NZ}	08.4	11	3		3		

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
Sep.12	iPZ	11 29 51	4			-7	2820	Dilatation
	ipPNZ	29 59	4	+6		-6	25°4	h 0.00, H 11 24 25
	iZ	30 12	5			-14		
	iN	30 13	4	+6				
	iZ	30 37	4			-3		USCGS: 9½S, 156E,
	iN	30 40	4	-3				H 11 24 27
	iZ	30 43	4			-8		
	iZ	30 57	4			+4		
	iZ	31 20	5			-14		
	iN	31 54	4	-5				
	iE	32 33	4		+5			
	iZ	34 02	5			+10		
	e(S)N	34 08	13					
	iSE	34 13	6		+10ca			
	iE	34 21	7		-38			
	iN	34 24	9	-48				
	iZ	34 25	5			+9		
	iN	34 35	6	+24				
	iN	34 47	7	+32				
	iE	35 02	6		+14			
	iZ	35 03	7		-18			
	iN	35 10	6	-14				
	iSSE	35 14	9		-45			
	iN	35 18	6	+10				
	eLN	35.6	27					
	iE	35 42	6		+26			
	eLRZ	36.3	23					
	MNE	39.6	11	49	42			
	MZ	40.7	10			36		
13	eV	02 13 47	½					Local shock?
	iV	13 59.5	½					
13	(iP)Z	02 55 49	3			+3		Compression. Large micro-
	iV	03 00 02	2					seisms present.
13	eLZ	04 57.0	19					Obscured by large micros. USCGS:3½S,146½E, 04 38 05
13	(i)Z	14 24 30	4			+3		Large micros. present.
13	(iP)Z	22 48 21	3			+2		Masked by large micros.
	eLN	23 03.0	24					USCGS: 1N, 129E,
	MNZ	07.4	14	6		8		H 22 40 36
	ME	08.2	14		5			
14	(i)V	00 56 48.6	½			+		Seismic??
	(i)V	57 23.5	½			+		
14	(iP)Z	13 21 52	4			+3		Compression. Masked by
	i(PP)Z	23 00	4			+5		microseisms & overlapped
	eE	25 40	16					by following shock.
	i(S)E	26 38	6		+5			
	eZ	26 43	13					USCGS: 24S, 176½W,
	MN	31.9	13	46				H 13 15 49
	MZ	32.4	18			20		
	ME	33.5	16		12			
14	iPV	14 15 30	1½			+	3100	Compression
	iPZ	15 31	3			+9	27°9	H 14 09 36
	iEZ	15 34	4		-9	+19		After PP, Galitzin record
	iPPN	16 15	6	+13				indecipherable, and read-
	iPPEZ	16 17	6		+72	-96		ings are from Mainka.
	iE	16 38	5		+			
	iSN	20 13	5	+				USCGS: 28½S, 177W,
	iE	20 48	5		+			H 14 09 39
	iE	21 04	13		+			
	iN	21 06	6	-				
	iN	21 22	5	-				
	eLE	22.4	30					
	MN	23.3	18	210				
	ME	26.0	17		420			
	ME	27.1	17		510			

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sep.14	$(iP)_V$	15 04 33	1			+		Masked by coda of preceding shock. USCGS:28½S,176½W, 14 58 40
14	$(iP)_V$	16 28 14	1½					Masked by preceding shocks USCGS:28½S,176½W 16 22 01
14	iP_{EZ}	17 12 07	4		-4	+17		Compression. Overlapped by preceding shocks. USCGS: 29S, 176½W, H 17 06 15 *From Mainka.
	i_E	12 53	4		+7			
	i_E	13 15	4		+23			
	eL_E	18.7	30*					
	eL_V	19.9	20					
	M_E	22.0	17*		34			
14	eL_N	20 39.9	15					Obscured by microseisms.
	M_Z	43.2	16			6		USCGS: 28½S, 176½W, H 20 27 10
	M_E	43.8	15		2			
14	iP_Z	22 29 45	4			+5	3000	Compression. Microseisms present.
	i_E	30 39	6		+6		27?0	
	$iPPP_Z$	30 46	4			+11		
	iS_N	34 22	6	+3				USCGS: 29S, 177W, H 22 23 53
	e_N	34 29	27?					
	i_E	34 31	6		+6			
	eE_Z	34 37	20					
	i_Z	35 07	4			+8		
	eL_Z	36.1	22					
	eL_E	36.6	31?					
	eL_{NZ}	37.1	*					* N per.22s, Z per.27s.
	M_Z	39.4	19			57		
	M_E	39.5	18		22			
	M_N	39.6	15	14				
	ME_Z	42.3	16		24	47		
15	i_V	01 51 32	1½			-		Seismic??
	i_V	51 36	1½			-		"
	i_V	56 33	1½			+		"
	i_V	02 00 58	1½			+		"
	i_V	01 05	1½			+		"
	i_V	36 35	1½			+		"
	i_V	36 38	1½			+		"
15	i_V	04 24 58	1			+		Masked by large microseisms.
	eL_E	30.0	21					
15	$i(P)_V$	06 00 16	1½			+		Compr. Masked by large microseisms
15	iP_{EZ}	06 05 35	4		-9	+14	(3100)	Compression.
	i_E	05 40	6		+20		(27?9)	Interpretation difficult,
	i_Z	05 45	6?			+(33)		owing to overlapping by
	i_Z	06 15	?			+		coda.
	i_E	06 30	8		+34			
	e_N	09 03	21					USCGS: 28½S, 177W, H 05 59 42
	i_N	09 53	7	+12				
	$e(S)_E$	10 18	9					
	i_N	10 25	7	+16				
	i_E	10 29	7		-42			
	i_E	10 41	8		+37			
	i_N	10 50	8	-26				
	i_E	10 58	9		+48			
	i_E	11 28	8		+22			
	i_N	12 14	9	+58				
	i_N	12 45	9	-26				
	eL_E	12.9	30					
	i_N	13 07	12	+78				
	iM_Z	13 14	15			+110		
	iM_E	13 48	13		+130			
	M_N	15.7	15	155ca				
	ME_Z	17.0	16		250ca	430ca		
15	iP_V	08 06 17	1½			+		Compr. Masked by micros. & coda of preceding. USCGS:28½S,177W, 08 00 23
	i_V	06 24	1½			+		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	Km.	
Sep.15	iP_V	10 54 35	1½			+		Compr. Masked by micros.
	eL_Z	11 03.3	19					USCGS:29S,177W, 10 48 44
15	iPV	11 10 48.5	1			+	3160	Compression
	iPE_Z	10 49	2		+4	-14	28°4	Dilatation
	$i(pP)_{EZ}$	12 24	4		-6	+17		h 0.09 ca, H 11 05 40
	iZ	12 36	5			-14		
	iV	13 01	1½					
	iZ	13 05	4			+11		USCGS: 21½S, 179½W,
	iZ	13 28	4			+7		H 11 05 33
	isPE	13 34	6?		+(9)			h 600 km.ca.
	iV	13 35.5	2			-		
	iPcPZ	13 39	6			+9		
	iZ	14 21	4			+8		
	iE	14 24	5		+10			
	iS_N	14 56	4	-18				
	iSE_V	14 57	3		-14	-		
	iE	15 03	6		+26			
	iV	15 07.5	5			+		
	iN	15 15	4	+10				
	iV	15 16.5	2			+		
	iV	15 23.5	2			-		
	iE	15 27	5		+15			
	$i(pPcP)_N$	15 59	4	+10				
	iE	16 09	3		+7			
	$iScP_Z$	16 27	4			-12		
	$i(sPcP)_Z$	16 57	4			+5		
	$i(sS)_N$	17 59	5	+12				
	iE	18 02	4		-4			
	eZ	18 09	16					
	iN	18 14	6	-13				
	iE	18 15	7		+26			
	iE	18 33	7		-13			
	iN	18 46	8	-17				
	$i(pScP)_E$	19 17	5		-7			
	$iScS_{NE}$	20 23	4	-17	+25			
	i_N	20 48	6	+13				
	i_{NE}	24 33	6	-11	+10			
15	$(i)_V$	12 06 32	1½			-		Masked by microseisms.
	eL_Z	15.0	18					USCGS:28½S,176½W,12 00 20
15	$(iP)_Z$	13 52 13	3			+3		Masked by microseisms.
	eL_E	14 00.1	19					
	M_Z	01.8	18			8		USCGS: 29S,177W, 13 46 17
	M_E	02.2	18		3			
16	$(P)_V$	02 09 32						Masked by large micros.
	eL_E	15.9	?					USCGS:29S,176½W,02 03 34
16	$(P)_V$	02 41 52						Masked by large micros.
	eL_Z	49.1	23					
	eL_E	49.3	25					USCGS:29S,176½W,02 35 59
	M_N	50.8	16	3				
	M_E	51.9	16		6			
	M_Z	52.3	17			10		
16	$(i)_Z$	03 36 31	5			+7		Masked by large micros.
16	eL_Z	10 21.5	22					Masked by large micros.
	eL_E	21.6	22					
	M_{EZ}	24.2	16		6	9		USCGS:29S,176½W,10 07 45
	M_N	24.4	13	3				
16	$(iP)_Z$	11 35 14	4			+5		Compression. Masked by large microseisms.

Date	Phase	Time	Per.	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sept.16	iPZ	16 03 03	4			-7	3170	Dilatation. Large micro-
	iZ	03 35	4			+5	28°5	seisms present.
	iE	03 47	4		+4			H 15 57 04
	iPPZ	03 52	7			-14		
	iE	04 02	5		-5			USCGS: 28½S, 176W,
	iE	04 13	7		-5			H 15 57 03
	iE	04 21	7		-8			
	iE	04 36	7		-6			
	iN	07 39	7	-5				
	iSE	07 50	7		-6			
	iE	08 08	6		+7			
	iN	08 09	6	+7				
	iN	08 17	7	+7				
	eZ	08 18	13					
	iE	08 19	12		+10			
	iZ	09 27	7			+7		
	iN	09 33	9	+12				
	iE	09 43	6		+8			
	eLN	10.2	18					
	eLE	10.6	24					
	eLZ	10.9	27					
	MN	14.4	13	22				
	MEZ	15.4	15		25	42		
16	iZ	16 35 14	4			+5		In coda of preceding
	iZ	35 20	4			-10		shock.
	iV	37 02	1			+		
16	(i)V	16 47 14	1½			+		Microseisms present.
17	eLZ	00 41.9	18					Masked by microseisms.
17	(iP)V	03 26 27	1½			+		Compression. Masked by
	eLE	36.1	18					microseisms.
17	i(P)Z	03 46 10	4			+3		Compression. Masked by
	eLZ	56.1	18					microseisms.
17	eLN	05 42.7	18					Masked by microseisms.
17	(iP)V	07 16 39	1½			+		Masked by microseisms.
	iV	17 18	1½			+		
	eLZ	23.6	24					
	MEZ	26.8	18		6	6		
	MN	27.0	16	3				
17	eLE	08 53.7						Masked by microseisms.
17	eE	14 19 15						Masked by microseisms.
	MN	23.9	15	3				USCGS: 28½S, 176W,
	MZ	24.7	16			3		H 14 07 54
17	iPE	14 42 11	4		+5		3150	Microseisms present.
	iPPZ	43 00	4			+5	28°3	H 14 36 11
	iPPE	43 01	4		+5			
	iZ	43 09	5			+9		USCGS: 28½S, 176W,
	iZ	43 18	5			+8		H 14 36 11
	iE	43 26	6		+6			
	iZ	43 32	5			+8		
	iE	43 38	4		+5			
	iZ	44 00	5			+8		
	iE	44 01	5		+5			
	iN	44 28	4	+4				
	iSN	46 57	5	+4				
	eZ	47 11	12					
	iE	47 15	5		+4			
	iZ	47 37	8			-10		
	iE	47 38	7		-6			
	iE	47 53	7		+8			
	iSSSN	48 36	7	-6				
	eLN	49.5	18					
	eLZ	50.6	21					
	MN	52.2	13	16				
	MEZ	54.7	15		11	23		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sep.17	eL_Z	16 25.2						Masked by microseisms.
17	eL_Z	17 28.0						Masked by microseisms.
18	$(P)_Z$	03 10 26						Masked by microseisms.
	eL_E	20.8	18					
18	$(iP)_V$	09 30 31	1½					Masked by microseisms.
	eL_N	36.9	17					
	eL_E	38.4	24					USCGS: 28½S, 176½W,
	M_N	38.8	16	2				H 09 24 35
	M_{EZ}	41.5	17		2	5		
18	eL_N	10 56.2						Masked by microseisms.
18	$(iP)_V$	12 14 08	1½			+		Masked by microseisms.
	$e(S)_N$	24 57						
	M_E	51.9	19		2			USCGS: 57½S, 24W,
	M_{NZ}	52.7	19	3		4		H 12 01 11
18	$(iP)_V$	16 43 18	1½			+		Masked by microseisms.
19	$(iP)_Z$	00 38 25	4			-3		Masked by microseisms.
	eL_E	45.3	16					
19	eL_Z	06 14.3	16					Masked by microseisms.
21	$(iP)_V$	02 13 50	1½			+		Masked by large micro-
	i_Z	13 56	4			+7		seisms.
	eS_N	18 10	12					
	i_N	18 18	9	-14				USCGS: 9½S, 149E,
	i_E	18 34	5		+7			H 02 08 28
	i_N	19 11	5	+8				
	eL_Z	20.4	31					
	M_{NE}	23.1	13	8	12			
	M_Z	23.3	15			18		
23		21.Ch	Waves.					
24	$(i)_V$	19 50 58	1½			+		Masked by microseisms.
	$i(PP)_Z$	51 08	4			+3		
	M_N	59.4	15	1				USCGS: 29½S, 176½W,
	M_E	20 00.4	16		½			H 19 44 29
	M_Z	00.9	15			1		
25	iP_Z	00 22 26	2			+2		Compression
	i_V	22 47	1½			+		USCGS:9S,113½E, 00 14 30
25	$(P)_V$	01 44 58						Masked by microseisms.
	eL_N	52.8	18					
	eL_Z	53.1	22					USCGS: 29S, 177W,
	M_Z	55.5	17			5		H 01 39 09
	M_N	56.0	14	2				
25	iP_V	02 47 15	1			+	6860	Compression
	ipP_V	47 24	1½			+	61°7	h 0.00, H 02 36 58
	i_Z	47 45	4			+5		
	iS_N	55 34	5	-2				USCGS: 22N, 122E,
	e_Z	55 43	12					H 02 36 48
	i_Z	55 51	7			-10		
	isS_N	55 52	6	+5				
	i_Z	56 05	6			+7		
	i_N	56 07	6	+6				
	i_N	57 04	6	+5				
	e_N	57 13	16					
	e_Z	03 00 16	25					
	e_N	00 34	22					
	e_Z	02 46	12					
	e_N	02 52	22					
	eL_N	04.7	22					
	eL_Z	05.1	22					
	M_E	12.7	19		9			
	M_N	13.3	19	27				
	M_Z	15.1	18			36		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Sep.25	(iP)V	03 47 28	1½			+		Compression
25	i(P$_3$)V	05 58 17	¼			+		Compression. Small local shock.
	i(Sg)V	58 20	⅜			+		
25	(iP)V	06 13 43	1½			+		Compression
25		23.9h	Waves.					USCGS: 29S, 176½W, H 23 34 57
26		09.4h	Surface waves					USCGS: 43½N, 128½W, H 08 20 51
26	eZ	10 40.1						Masked by microseisms. USCGS:22S,68½W,H 10 18 20 h.150 km.ca.
27	iP$_Z$	10 27 06	2			-2		Dilatation. Rest of shock masked by large microseisms. USCGS:5½S,129½E,H 10 20 18
28	(iPKP)Z	01 30 39	3			+4		Comp. Large microseisms. USCGS:81½N,26E, H 01 11 20
28	iV	04 32 00	1½			+		Masked by large micros. USCGS: 26½N, 128E, H 04 20 27
29	iV	14 37 47	1½			+		Masked by large micro-seisms.
	i(S)$_E$	41 13	8		-5			
29	iP$_Z$	15 37 53	4			+7	3000ca	Compression
	i$_E$	37 56	4		+5		27°ca	
	iPP$_Z$	38 38	4			+15		USCGS: 29S, 176½W, H 15 31 57
	i$_E$	38 42	4		-8			
	iPPP$_Z$	38 49	5		+17	-16		
	i$_E$	39 04	5		+12			
	i$_E$	39 23	6		+22			
	i$_E$	40 20	4		+7			
	i$_Z$	40 21	5			+10		
	i$_Z$	42 03	8			-14		
	(S)$_E$	42 34						
	e$_Z$	42 50	15					
	i$_E$	43 14	12		+36			
	eL$_N$	43.7	20					
	eL$_Z$	45.4	30					
	M$_N$	49.1	14	52				
	M$_Z$	50.7	14			110		
	M$_E$	50.8	14		81			
30	(iP)V	05 02 14	2			+		Compression. Masked by large microseisms. USCGS: 28½S, 176½W, H 04 56 21
	eL$_N$	09.7	20					
	eL$_Z$	11.0	21					
	M$_N$	12.3	16	4				
	M$_Z$	14.1	15			6		
	M$_E$	15.1	15		4			
30	eV	16 00 06						Quarry blast?
	i(Sg)V	00 08	¼					
30	eL$_Z$	13 45.7	19					USCGS: 29S, 176½W, H 13 31 30
30	i(P)$_Z$	14 58 27	3			+3		Compression. Masked by microseisms.
	eL$_Z$	15 09.9	19					
	M$_Z$	12.8	15			4		
	M$_E$	12.9	13		2			
	M$_N$	13.0	13	4				
30	i$_Z$	16 37 09	3			+3		Masked by microseisms.
	eL$_E$	46.3	21					
	M$_E$	51.2	15		2			
	M$_Z$	51.7	15			5		

Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
		h m s	s	μ	μ	μ	km.	
1959						-2	2580	Dilatation
Sep.30	iPZ	20 30 58	3				23°2	h 0.005, H 20 25 56
	iE	31 02	4		+			
	iN	31 04	4	+2				
	ipPNEZ	31 12	6	-10	-12	+24		
	isPNEZ	31 22	6	-5	-12	+15		USCGS: 18S, 168E,
	iPPZ	31 30	5			+13		H 20 25 58
	iPPPNEZ	31 40	5	+5	+8	-11		
	iEZ	32 12	6		+12	-11		
	iZ	34 58	5			+7		
	iSN	35 01	6	-25				
	iSE	35 02	6		-25			
	iZ	35 06	7			+41		
	iN	35 15	6	-25				
	eZ	35 21	20					
	isSE	35 25	7		+13			
	iSSZ	35 47	7			+23		
	iN	36 00	6	+10				
	iSSSZ	36 03	6			+10		
	iN	36 10	7	-18				
	iN	36 35	6	-10				
	eLRZ	36.7	24					
	eLRE	36.8	24					
	MN	38.9	16	23				
	MEZ	39.3	17		19	31		

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Date	Phase	Time	Per	A_N	A_E	A_Z	Δ.	Remarks
1959		h m s	s	μ	μ	μ	km.	
Oct. 1	$i(S)_E$	03 17 54	4		+1			Masked by microseisms.
1	eV	05 27 40	¼					Small local shock ?
	eV	27 54	½					
3	iP_{NV}	23 21 07	3	+3		+		Compression
	$e(S)_E$	24 34	?					
	i_E	24 50	4		+3			
	eL_N	24.9	13					
	eL_Z	25.7	13					
	M_N	26.1	12	1				
	M_E	26.3	10		2			
	M_Z	26.8	11			2		
	eT_V	39 38	½					
6	$(iP)_V$	05 52 29	1½			+		Masked by large micros.
	$(i)_V$	52 36	2			+		USCGS: ½N, 122½E, H 05 44 37, h 200 km.ca.
8	iP_Z	00 08 25	2			+2	2420	Compression
	ipP_E	08 36	3		+3		21°8	h 0.00, H 00 03 34
	ipP_Z	08 37	3			-4		
	iZ	08 41	4			+6		USCGS: 19S, 169E,
	$iPPP_Z$	09 00	5			+5		H 00 03 28
	$iPPP_N$	09 01	5	-3				
	i_E	09 41	4		-3			
	eS_E	12 19	7					
	i_{NE}	12 24	6	-5	-3			
	iZ	12 31	6			+9		
	iE	12 36	4		+6			
	iN	12 48	6	+6				
	e_N	13 00	15					
	$eSSS_Z$	13 12	10					
	eL_Z	14.2	24					
	M_{EZ}	15.5	19		2	5		
	M_N	15.9	14	3				
8	$(iPKP)_V$	11 14 40	1			+		Masked by microseis ms.
	iV	15 18	1½			+		USCGS:19½N,73½W, 10 55 12
11	eL_E	10 09.2	18					USCGS:3½S,152E, 09 53 18
11	$(iP)_Z$	17 56 18	2			+2		Masked by microseisms.
	eL_Z	18 04.7	20					USCGS:28½S,176½W, H 17 50 22
11	eL_{NZ}	20 17.5	21					Masked by microseisms. USCGS: 5½S, 147E, H 20 03 10
12	$(iP)_Z$	03 32 11	4			+2		Masked by microseisms.
	iS_E	40 30	4		+3			
	e_N	40 35	14					USCGS: 2N, 98½E,
	$iPPS_E$	40 53	4		+3			H 03 21 55
	e_N	42 23	8					
	i_E	42 28	4		-3			
	eL_E	52.1	33					
	eL_Z	53.6	34					
	M_{NZ}	56.0	28	6		8		
	M_E	56.8	24		4			
12	eL_N	10 29.1	16					Masked by microseisms. USCGS:29S,176½W, 10 15 17
12		19.6h	Long waves.					USCGS:7S,155½E, 19 21 50
12	eP_V	21 25 03.4	¼				(360)	Felt in northern New
	iV	25 05.0	½			-	(3°2)	South Wales at Uralla,
	iV	25 07.1	¾			-		Tamworth etc.
	$i(S)_V$	25 43.1	½			+		
	$(S)_{NE}$	25 43.4	1					
	iV	25 44.9	½			-		
	$iV!$	25 47.4	¾			+		

Date	Phase	Time	Per	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Oct.14	eLE	20 50.8	?					USCGS: 15S, 177W, H 20 33 59
15	eLZ	04 38.9	24					USCGS: 5½S, 146E, H 04 22 44
15	iPNEZ	06 23 49	4	+2	-2	-6	5000	Dilatation
	isPNEZ	23 56	4	+6	-7	-24	45°0	H 06 15 30
	iNZ	25 07	6	+5		-11		
	iPcPZ	25 29	4			+9		USCGS: ½N, 120½E, H 06 15 32
	iPPNE	25 33	4	+6	-4			
	iPPV	25 35	2			+		
	iZ	30 27	7			-20		
	iSE	30 28	4		+5			
	iPSE	30 35	7		+18			
	iNZ	30 38	7			+24		
	iPPSE	30 43	7		-14			
	iN	30 57	7	+14				
	iZ	31 26	7			-19		
	iN	31 27	9	+14				
	iN	31 53	10	-19				
	iN	32 16	7	+20				
	iE	32 19	4		+8			
	iE	32 37	7		-17			
	iE	33 38	7		-8			
	iSSZ	33 42	8			-23		
	iNE	33 51	8	+38	+18			
	iN	34 09	8	+47				
	iSSSN	34 43	9	-35				
	iZ	35 05	8			+23		
	iZ	35 35	7			+16		
	iE	35 38	7		-31			
	iZ	35 57	7			+16		
	iZ	36 12	7?			+(28)		
	iE	36 16	5		+13			
	iN	36 17	7	+18				
	iN	36 32	13	-50				
	iZ	36 55	8			+37		
	eLN	38.1	31					
	iMN	39 52	13	+53				
	ME	40.7	21		(36)			
	MN	41.1	22	140				
	MZ	42.4	18			96		
	eW2N	09 03	16					
16	i(Pg)V	02 00 27	¼			+		Very small local tremor, superposed on microseisms.
16	e(Pg)V	02 35 10	¼					Very small local tremor, superposed on microseisms.
16	i(P)Z	16 23 22	3			+3		Masked by microseisms. USCGS:6N,125E,H 16 14 53
17	eLZ	01 40.1	24					Masked by large micros.
17	e(Pg)V	05 33 08	¼					Very small localtremor, superposed on microseisms.
17	(ePg)V	05 37 00	¼					Very small local tremor, superposed on microseisms
	eV	37 10.5	¼					
17	(iP)V	08 42 37	1½			-		Masked by large micros.
	iN	47 47	4	+3				USCGS: 57½S, 161W H. 08 35 00
18	(iP)V	23 33 49	1½			+		Microseisms present. USCGS: 6S, 105E H 23 25 13, h 150 km.ca.
19	eV	02 02 15	¼					Small local tremor.

Date	Phase	Time	Per	A_N	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Oct.19	iP_Z	08 33 16	4			+4	2960	Compression
	iZ	33 27	3			+6	26°6	H 08 27 34
	iV	33 30	2			+		
	iZ	33 37	4			-3		USCGS: 27½S, 177W,
	$iPPP_Z$	34 12	5			-6		H 08 27 21
	iZ	34 43	6			+10		
	iZ	37 01	6			+6		
	eS_N	37 48	9					
	$eLEZ$	41.0	22					
	M_N	43.3	15	14				
	M_E	44.8	16					
	M_Z	45.3	16			46		
19	iZ	09 21 23	5			+5		Obscured by coda of pre-
	iV	21 30	1½			+		ceding shock.
	M_Z	33.3	15			5		USCGS:28S,176½W, 09 15 20
19	$(eP)_V$	13 57 54						USCGS: 22S, 179½W,
	iV	58 24	1½			+		H 13 52 40, h 600 km.ca.
19	$(iP)_Z$	16 08 34	3			+2		Compression. Microseisms
	iZ	08 43	3			+2		present.
	iZ	08 46	4			+11		
	iN	08 47	4	+3				USCGS: 54½S, 29W,
	$i(P^{\cdot})Z$	12 26	4			-2		H 15 55 30
	$i(SKS)_N$	19 20	5	+5				
	iN	19 33	6	+4				
	eZ	19 38	14					
	iN	19 51	7	+6				
	ePS_N	20 46	25					
	eSS_N	25 35	19					
	eZ	26 20	25					
	eLR_Z	39.5	40					
	M_{NZ}	46.7	22	12		13		
	M_E	51.2	16					
	M_{NZ}	52.5	16	11		15		
	eV_2Z	18 12.4	28					
20	eL_E	18 36.3						Masked by large microseisms
20	eL_E	21 52.9						Masked by large microseisms
23	eL_E	03 57.9	22					Masked by microseisms.
								USCGS: 4S, 154E,
								H 03 43 32, h 150 km.ca.
23	eN	06 00 09						Quarry blast at Prospect,
	eE	00 11						west of Sydney.
24	$(iP)_Z$	17 24 04	2			-2		Dilatation
	eL_N	37.4	?					
25	eL_N	00 30.4						USCGS:41½N,70E,23 40 34(24th
26	iP_Z	07 46 42	6			+7	7850	Compression
	isP_Z	46 58	5			-6	70°6	h 0.00, H 07 35 28
	$iPcP_Z$	47 05	5			-7		
	ePP_Z	49 18	10					USCGS: 37½N, 142½E,
	iS_{NE}	55 52	6	-8	-8			H 07 35 12,
	iE	56 07	7		+7			h 60 km.ca.
	iN	56 21	6	+3				
	iE	56 26	8		-			
	iE	56 44	9		+13			
	iN	56 52	6	+7				
	iE	57 54	6		-(5)			
	iSS_E	08 00 31	7		-5			
	$eLQE$	05.5	33					
	eL_Z	07.5	18					
	M_E	08.0	19		9			
	eL_N	08.5	27					
	M_N	12.9	16	6				
	M_{EZ}	13.2	16		4	5		
26	eL_N	12 20.6	15					

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Oct.26	$i(S)_N$	19 43 16	5	+3				
27	iP_{NZ}	07 04 54	4	-2		+7	8910	Compression
	ipPNZ	05 06	5	-4		+11	80?2	h 0.00, H 06 52 45
	iZ	05 27	4			+4		
	iZ	14 45	8			+3		USCGS: 45½N, 151E,
	iS_{NE}	14 55	7	-16	-(24)			H 06 52 50
	iZ	14 57	11			+15		h 100 km.ca.
	isS_{NE}	15 16	9	+14	-27			
	eZ	15 27	16					
	iE	15 35	9		+7			
	ePSZ	15 43	26					
	iPPSN	16 02	12	-19				
	iE	19 35	10		-7			
	iN	19 56	8	-5				
	eSS_N	20 04	25					
	iZ	20 27	11			-12		
	eZ	20 37	31					
	eSSSN	23 17	19					
	eLQE	25.9	42					
	eLRZ	30.2	33					
	MZ	33.3	25			49		
	MN	33.8	24	37				
	M_E	34.1	22		14			
	eW_2Z	09 22	23					
29	$(iP)_Z$	10 47 31	3			+3		Compr. Masked by micros. USCGS:46N,151E,H 10 35 20
29	iP_Z	14 25 40	3			+		Compression
	iEZ	25 43	4		-2	+4		h 0.005 ca.
	ipPZ	25 55	4			+6		
	isPZ	26 04	4			+7		USCGS: 29½S, 176½W,
	isPE	26 05	4		-3			H 14 19 51,
	eZ	26 10	12					h 60 km.ca.
	iZ	26 27	4			+5		
	iPPE	26 31	4		+3			
	iZ	26 48	6			+11		
	iE	26 49	6		-13			
	iE	26 58	5		+9			
	iZ	27 06	5			-7		
	iZ	27 22	5			-8		
	iE	28 49	3		+2			
	iZ	28 51	4			+6		
	iE	29 37	4		+4			
	eZ	30 32	28					
	eE	30 42	10					
	iE	30 50	7		-4			
	eN	30 56	8					
	iE	31 08	6		-7			
	iN	31 17	7	-9				
	iE	31 40	6		-8			
	$i(SSS)_N$	31 57	12	+11				
	iN	32 15	10	+17				
	eLRZ	32.3	31					
	eLE	32.9	30					
	MN	33.6	16	14				
	MNEZ	35.0	18	9	18	30		
	MEZ	36.4	16		17	30		
29	eLN	22 16.0						
30	iS_E	00 47 16	4		+3			Masked by microseisms.
	eSS_N	50 32	10					USCGS: 8½N,138E, 00 32 29
30	$(iPKP)_Z$	05 39 23	3			+5		Large microseisms present.
	$(i)_Z$	39 32	3			+5		USCGS: 4S, 80½W,
	$(iPP)_Z$	40 43	3			+6		H 05 20 36
30	iZ	06 32 24	3			+3		Masked by large micros.
	MNE	46.6	18	3	2			USCGS:7S,123½E, 06 24 38

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Oct.30		11.4	Waves.					USCGS: Solomon Is., H 11 10 16
30	i_N	11 42 32	4	+3				Masked by large micros. USCGS: Sandwich Is.region, H 11 27 33
30	$(iPP)_Z$	14 05 46	3			+4		Masked by large micro-seisms.
	$e(S)_N$	09 51						
	$i(SS)_N$	11 37	7	+4				
	eL_N	12.4	24					USCGS: 23½S, 175½W, H 13 58 25
	eL_E	13.6	24					
	eL_Z	13.7	22					
	M_N	16.2	12	17				
	M_Z	16.4	16			14		
	M_E	16.5	16		13			
31	iPE_Z	04 33 09	3		-3	+5	3660	Compression
	i_E	33 20	4		-3		32?9	h 0.06 ca,
	ipP_Z	34 22	3			+4		H 04 27 09
	iPP_{NEZ}	34 38	4	-2	-3	+4		
	isP_Z	35 11	4			-2		USCGS: 16½S, 178W,
	isP_E	35 12	4		+3			H 04 27 12,
	$isPP_Z$	36 04	4			+4		h 450 km. ca.
	i_Z	36 15	3			+3		
	iS_{NEZ}	37 56	4	+3	+4	+5		
	i_E	38 04	5		+5			
	i_N	38 28	4	+2				
	$iScP_Z$	38 46	4			+4		
	$iPcS_Z$	39 19	4			-3		
	i_Z	39 41	4			+4		
	$iScS_E$	42 55	4		-6			

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Date	Phase	Time	Per	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov. 2	(iP)V	01 21 04	1½			+		
	iV	24 42	1			+		
	iV	24 50	1½			+		
	iN	24 55	4	+5				
	iV	24 59	1			+		
	iN	25 05	4	+5				
	iN	25 19	3	+4				
2	iPZ	08 53 38	3			+2		Compression
	eLE	09 09.0	37					USCGS: 22½N, 144½E,
	eLZ	11.3	37					H 08 43 54
2	ePZ	20 09 25					3100	H 20 03 36
	ipPNZ	09 35	5	+4		-7	27°9	h 0.00
	iZ	09 52	4			+6		
	iNZ	10 09	4	+4		-5		USCGS: 5½S, 151½E,
	iN	10 17	4	+2				H 20 03 32,
	iZ	10 19	4			+7		h 60 km.ca.
	iZ	14 01	6			+6		
	iSN	14 05	7	-10				
	eN	14 12	25					
	iN	14 16	6	+6				
	iN	14 25	10	-26				
	iZ	14 30	10			-23		
	eZ	14 36	22					
	iE	14 37	7		+12			
	eE	14 52	22					
	iE	15 07	6		+7			
	iE	15 41	7		+7			
	iE	16 23	7		+14			
	eLN	17.5	30					
	eLZ	17.8	30					
	ME	20.4	17		30			
	MZ	21.6	18			59		
	MN	21.7	17	45				
2	i(P)V	21 59 21	1½			-		Dilatation
	eLN	22 06.8	19					
	eLZ	06.9	20					USCGS: 23½S, 175½W,
	MN	08.8	16	4				H 21 53 05
	MZ	09.8	19			6		
	ME	09.9	19		5			
3		00.9h	Long waves.					USCGS: 3½N, 126½E, 00 32 19
3	eLN	09 18.7	19					USCGS: 23½S, 175½W, 09 04 58
3	iPEZ	09 48 12	4		-1	-6	4810	Dilatation
	iZ	48 48	4			+5	43°3	H 09 40 07
	iZ	49 07	3			-5		
	iZ	49 11	3			+11		USCGS: 10½S, 111E,
	iZ	49 30	4			+7		H 09 40 05
	iPPZ	49 57	4			+6		
	iPPE	49 58	5		-4			
	iSN	54 40	4	-4				
	iE	54 42	6		+3			
	eE	54 52	18					
	iZ	55 38	6			-6		
	iN	55 49	4	+6				
	iE	55 53	6		-5			
	iSSE	57 53	6		+5			
	iZ	58 02	6			-15		
	iN	58 05	6	+7				
	iScSE	58 11	6		+19			
	iE	5 40	7		+16			
	eLE	10 01.3	36					
	MZ	04.5	15			14		
	MNE	04.7	13	37	12			
	MN	09.4	9	26				
	ME	09.8	10		23			
	MZ	11.0	10			33		

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov. 4	i_E	17 20 58	3		+2			Masked by microseisms. USCGS:Tonga Is.,H 17 13 50
4	$(i)_Z$	18 28 46	3			+5		Masked by microseisms. USCGS:Tonga Is.,H 18 22 40
4	eL_N	19 18.0	18					Masked by microseisms. USCGS:20S,169½E,H 19 07 36
4	eL_E	20 08.6	15					Masked by microseisms.
	i_Z	14 15	3			+5		
5	$(iP)_V$	05 51 18	1½			+		Masked by microseisms. USCGS:4½S,153E, H 05 45 23, h 100 km.ca.
5	iP_{EZ}	11 55 38	4		-4	+5	2840	Compression
	ipP_V	55 48	1½			+	25°5	H 11 50 12, h C.00
	isP_Z	55 53	6			+16		
	isP_E	55 54	6		-5			USCGS: 13S, 166½E,
	i_E	56 14	5		+5			H 11 50 17,
	i_Z	56 15	4			-4		h 100 km.ca.
	i_Z	56 25	3			+8		
	i_Z	56 31	5			+8		
	iS_N	12 00 01	6	-5				
	i_E	00 03	5		-4			
	i_N	00 10	6	-3				
	i_E	00 12	5		-5			
	i_N	00 20	6	-9				
	i_E	00 21	6		-7			
	i_Z	00 33	6			+11		
	i_N	00 42	5	+8				
	i_E	00 53	6		+8			
	i_N	00 57	5	+8				
	iSS_N	01 04	6	-11				
	i_E	02 07	4		-4			
	eL_Z	02.4	28					
	i_E	02 32	6		-12			
	M_E	03.9	19		10			
	M_{NZ}	04.5	18	14		12		
5	iP_{NZ}	17 43 43	3	-2		+5		Compression
	i_Z	43 49	4			+10		
	i_Z	43 56	4			-10		USCGS: 9S, 157½E,
	i_Z	44 18	3			+5		H 17 38 08
	i_N	45 36	5	+3				
	i_Z	45 38	4			-5		
	i_E	45 47	4		+3			
	$i(S)_N$	48 17	7	-6				
	i_{NE}	48 22	7	+16	-5			
	i_Z	48 26	8			+9		
	i_E	48 37	8		+11			
	i_E	48 55	5		+6			
	e_N	49 35	19					
	i_{NE}	49 55	7	+12	-9			
	e_N	50 10	21					
	i_N	50 52	6	+5				
	M_N	53.5	12	8				
	M_E	54.0	11		16			
	M_Z	54.8	11			10		
6	iP_{NZ}	01 13 05	6	-3		+5		Compression
	i_Z	13 14	4			+9		
	i_Z	13 24	5			+8		USCGS: 9S, 157½E,
	i_Z	14 09	4			+5		H 01 07 31
	iS_E	17 38	6		+5			
	i_N	17 41	6	-7				
	i_{NE}	17 48	7	+18	+14			
	i_N	21 50	6	+5				
	M_E	22.8	13		12			
	M_N	23.1	13	7				
	M_Z	24.2	11			10		

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	H
Nov. 6	eL_E	11 46.9						USCGS:Bismarck Sea,11 32 50
6	$i(P)_Z$	11 49 41	3			+3		Compression
	eL_N	57.8	19					USCGS: 24S, 174½W,
	eL_E	59.0	27					H 11 43 06
	M_N	59.9	15	6				
	M_{EZ}	12 01.0	19		7	8		
7	eP_Z	22 22 37					3500	H 22 16 11
	iPP_Z	23 40	4			+3	31°5	
	$iPPP_Z$	23 57	4			+4		USCGS: 23½S, 175½W,
	i_N	24 10	4	+3				H 22 16 15
	eS_N	27 45	9					
	i_N	28 34	4	-2				
	eSS_N	29 36	13					
	eL_N	30.8	19					
	eL_Z	31.2	24					
	M_Z	34.1	18			22		
	M_N	34.2	12	22				
8	eL_N	02 31.3						
8	iP_V	14 06 59	1½			-		Dilatation. Large micro-
	i_N	07 01	4	+3				seisms.
	$i(S)_N$	17 01	4	+3				EW&Z Galitzins out of action.
	eL_N	31.9	25					USCGS: 44N, 140½E,
	M_N	37.2	16	3				H 13 54 55
8	iP_V	14 32 55	1			-		Dil. Large microseisms.
								USCGS: 13S, 167E,
								h 100 km.ca.,H 14 27 37
9	$(iP)_V$	04 26 59	1½			+		Compression. Large micro-
	e_N	35 59						seisms present.
	eL_N	41.5	22					
	M_{NEZ}	46.1	19	2	3	5		
9	$(P)_V$	13 42 20						Masked by microseisms.
								USCGS:6½S,132E,H 13 35 40
9	eL_Z	20 02.3						Masked by microseisms.
10	$(iP)_V$	08 14 06	1½			+		Masked by microseisms.
								USCGS:3½S,153½E,h 200km.ca,
								H 08 08 18
10	$(iP)_V$	16 46 32	1½			+		Masked by microseisms.
	eL_N	54.8	22					USCGS:7S,156E, H 16 40 45
13	$i(S)_E$	10 15 11	4		+3			Masked by microseisms.
								USCGS:23S,179E, h 600 km.ca,
								H 10 06 14
14	$(P)_N$	10 40 19						Masked by microseisms.
	$e(S)_N$	45 17						USCGS: 3S, 148½E,
	eL_Z	49.0	25					H 10 33 57
	M_{NZ}	52.6	16	3		4		
14	eL_N	20 36.2	18					
14	eL_N	23 23.8						
15		11.4h	Surface waves.					USCGS:38N,74½E, 10 25 03
15	$(iPKP)_V$	17 28 12	1½			+		Compression. Microseisms
	$ePKP_Z$	28 14	4					present.
	i_Z	28 57	4			-4		EW Galitzin out of action.
	ePP_Z	31 15						
	i_V	31 24	2			-		USCGS: 37½N, 20½E,
	$iPKS_Z$	31 54	6			+15		H 17 08 41
	i_Z	32 06	4			+12		
	i_Z	36 53	4			-5		
	e_N	37 34	9					
	e_N	39 40	10					
	ePS_Z	41 38	13					
	$ePPS_Z$	43 27	12					

Continued on next page.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov.15	iSS_N	17 49 34	7	+5				
cont.	iN	49 41	10	+29				
	SSP_N	50 04	10					
	eLQ_N	18 07.3	28					
	eLR_N	14.5	34					
	M_Z	27.0	24			22		
	M_N	31.4	19	7				
	M_Z	33.3	21			23		
	$M\ W_2Z$	19 07.4	18			19		
15	$i(PP)_N$	17 53 16	5	-5				Masked by preceding shock.
16	$iPKP_Z$	10 41 03	3			-2		Dilatation
	i_Z	41 11	3			+3		
	iV	41 14	1½			+		USCGS: 1N, 26½W,
	i_Z	41 19	4			+3		H 10 21 17
	eL_Z	11 36.8	20					
	M_Z	47.1	18			1		
16	$(iP)_V$	19 59 36	1			-		Dil. Seismic??
16	$(iP)_V$	21 40 57	1			+		Compr. Seismic??
	$(i)_V$	40 59	1½			+		"
17	i_Z	17 32 48	2			+3		Masked by large microseisms.
	i_E	39 57	4		+2			USCGS: 5S, 141E,
	eL_E	40.4	16					H 17 23 28
18		05.7h		Long waves.				
19	eL_N	05 39.3	22					USCGS: 24½S, 177W, 05 25 53
19	iP_Z	11 14 29	2			+3	3080	Compression
	iP_N	14 31	4	+3			27°7	h 0.00, H 11 08 42
	i_Z	14 32	3			+18		
	ipP_{NZ}	14 37	4	+10		-14		
	i_{NZ}	15 01	4	-8		+13		USCGS: 5½S, 146E,
	i_{NZ}	15 09	4	-5		+19		H 11 08 32
	i_Z	15 24	6			+31		
	i_E	15 26	5		+6			
	i_N	15 33	5	+17				
	i_Z	15 34	6			+35		
	i_N	15 47	5	+15				
	i_Z	16 01	5			-17		
	i_N	16 17	5	+10				
	i_Z	16 19	4			-6		
	i_Z	16 59	4			-10		
	i_E	17 33	4		+7			
	i_N	18 09	4	-13				
	i_N	18 28	4	+13				
	i_E	18 39	4		+10			
	iS_{NE}	19 07	7	-21	-32			
	i_Z	19 08	6			+22		
	isS_{NE}	19 23	7	+39	-27			
	i_Z	19 33	8			-35		
	i_E	19 47	6		+10			
	iSS_Z	20 10	9			-38		
	iSS_N	20 11	8	+80				
	i_E	20 26	9		-43			
	i_E	20 35	10		+69			
	i_Z	20 42	9			-78		
	i_N	22 31	8	+80				
	M_E	23.3	22		280			
	M_N	24.9	21	145				
	M_E	25.1	13		180			
	M_Z	25.7	13			57		
	M_N	28.7	13	96				
	M_Z	31.1	11			87		
20	$(e)_V$	02 10 25.5						Small local tremor.
	eV	10 30.4	¼					
	iV	10 36.5	½					

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov.20	$(ePg)_V$	06 00 04.7						Quarry blast at Prospect,
	$i(Sg)_V$	00 08.6	½			-		west of Sydney.
	i_V	00 11.6	½			+		
20	$(e)_V$	06 06 40						Small local tremor.
20	e_V	06 50 12						Small local tremor.
20		11.2h	Long waves.					USCGS: 4½S,153E,H 10 56 59, h 100 km.ca.
20		15.6h	Long waves.					USCGS:15½S,174W,H 15 16 45
20		16.8h	Long Waves.					USCGS:7S,129E, H 16 30 45
20		18.1h	Long waves.					
21	$(eP)_Z$	08 04 48	4					
	e_{LN}	12.4	18					
22	i_Z	12 56 32	3			+2		Masked by microseisms.
	$e(S)_N$	59 38						
	$e(S)_E$	59 40						USCGS: 3S, 140E,
	e_E	13 01 47	10					H 12 47 56
	e_{LE}	03.6	30					
	i_E	05 19	4		+6			
	i_E	05 31	4		-12			
	i_N	05 32	4	-6				
	M_E	06.1	13		7			
	M_{NE}	07.9	12	6	6			
	M_Z	08.2	12			6		
22	e_E	15 46 34	7					
	e_{LN}	47.8	19					
22	$(eP)_Z$	16 35 58						Masked by microseisms.
	e_{SE}	43 29						
	e_N	43 35						USCGS: 54S, 136W,
	i_N	43 42	10	-6				H 16 26 34
	i_E	43 44	10		+5			
	e_{LQE}	48.8	22					
	e_{LRZ}	50.7	27					
	M_{NEZ}	53.1	21	7	6	9		
22	$(P)_Z$	19 39 55					3220ca.	h 500 km.ca.
	$i(pP)_Z$	41 29	3			+3	29°ca.	
	i_Z	41 46	4			+4		
	$i(sP)_Z$	42 27	5			+3		USCGS: 21½S, 178½W,
	i_{SNEZ}	44 15	4	-5	+8	+4		H 19 34 35,
	i_E	44 22	5		+9			h 550 km.ca.
	i_Z	44 43	4			-3		
	e_N	47 02	12					
	i_N	47 09	4	+5				
	i_Z	47 12	4			-2		
	i_Z	47 16	4			+5		
	i_E	47 21	6		-3			
	i_{ScSN}	49 40	4	-3				
22	$(P)_E$	22 48 24						
	e_{SN}	52 45	9					
	e_E	52 49	9					USCGS: 19½S, 175E,
	e_{LRZ}	54.7	25					H 22 42 49
	e_{LRE}	54.8	25					
	M_{EZ}	56.2	19		3	2		
	M_N	57.5	12	2				
23	e_V	06 50 42						Small local tremor super-
	e_V	51 01						posed on microseisms.
23	$(P)_Z$	14 49 04						
	e_E	53 40						USCGS: ½S, 128½E,
	e_{LE}	59.6	24					H 14 41 42

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov.23	eP_Z	16 20 16	3					
	i_Z	20 21	3			+2		
	i_E	20 23	3		+2			USCGS: 20S, 174½E,
	ePP_Z	20 44	6					H 16 14 47
	$e(S)_N$	24 22						
	i_E	24 45	7		+3			
	i_N	26 07	7	+11				
	eLR_Z	26.5	30					
	M_E	28.2	18		6			
	M_Z	28.4	18			8		
	M_N	29.4	13	3				
24	eV	03 40 24	¼					Small local tremor super-
	eV	40 26	¼					posed on microseisms.
	eV	40 39	¼					
	eV	40 52	¼					
	iV	40 55.5	¼					
25		15.8h	Long waves.					
25	$(iP)_Z$	19 12 57	3			+2		Masked by microseisms.
								USCGS:6N,127E, H 19 04 20
26	eL_E	01 05.0	19					USCGS:1½N,127½E,H 00 41 35
26	iP_Z	07 15 41	2			+1	5910	Compression
	i_Z	15 48	3			+2	53°2	h 0.00, H 07 06 24
	isP_Z	15 55	3			+3		
	i_Z	17 50	3			+3		USCGS: 5½S, 102½E,
	iS_N	23 08	6	+6				H 07 06 19
	iS_E	23 09	6		+7			
	isS_N	23 24	6	-4				
	i_E	23 28	6		+8			
	e_N	23 47	25					
	e_E	23 54	25					
	e_Z	24 07	21					
	i_N	24 46	6	-5				
	$i(ScS)_N$	25 28	5	+3				
	e_N	25 35	25					
	eSS_N	26 47	24					
	$iSSS_E$	28 36	7		+5			
	eL_{NE}	30.8	36					
	eL_Z	33.4	31					
	M_N	37.0	17	20				
	M_{NEZ}	39.7		28	40			
	eW_2Z	09 56.6	20					
26	$(i)_V$	16 11 37						USCGS: Tonga Is.,
	eL_Z	25.8	18					H 16 06 03
26	eV	23 18 57	1					
	iV	18 59	1½			+		
	iS_N	26 14	6	+9				USCGS: 5½S, 103E,
	iS_E	26 15	6		+8			H 23 09 23
	i_Z	26 21	6			+4		
	$(sS)_N$	26 31	11					
	$i(ScS)_N$	28 30	7	+6				
	eSS_N	29 53	24					
	e_Z	30 38	25					
	eL_N	33.2	37					
	eL_E	33.9	37					
	eL_Z	36.4	37					
	M_N	39.4	16	28				
	M_{EZ}	42.1	19		21	24		
	M_N	47.3	15	21				
	M_{EZ}	47.5	18		25	33		
27		19.3h	Long waves.					USCGS:5½S,103E,H 18 51 27
28	ePg_V	02 00 06.0	¼					Quarry blast at Prospect,
	iSg_V	00 09.8	½			(-)		west of Sydney.
	iV	00 13.2	½			+		

Date	Phase	Time	Per	AN	AE	AZ	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Nov.28	iP_{EZ}	02 51 16	3		-1	+3	2840	Compression
	iZ	51 21	3			-3	25°5	H 02 45 44
	iZ	51 37	4			+4		
	iE	51 39	4		+2			USCGS: 19½S, 174½E,
	iZ	51 49	6			+5		H 02 45 45
	iE	52 00	6		+4			
	iZ	52 22	6			+5		
	iS_E	55 41	7		+4			
	iS_N	55 42	7	+6				
	iN	56 01	7	+3				
	iE	56 15	4		-4			
	eZ	56 18	19					
	iN	56 24	7	-11				
	iE	56 37	9		+9			
	iN	56 41	7	+12				
	iN	56 58	6	-5				
	iE	57 18	6		+4			
	eL_N	57.7	21					
	eL_Z	58.1	25					
	eL_E	58.2	24					
	ME_Z	59.4	18					
	M_N	03 00.9	12	8				
28	$e(PP)_Z$	12 53 41						
	iZ	54 24	3			+3		
	ePS_Z	13 02 52						USCGS: 28½S, 71W,
	eSS_E	08 34	15					H 12 34 53
	eN	08 52	18					
	eZ	09 11	21					
	$eSSS_E$	12.5	19					
	eLR_N	23.7	27					
	eLR_E	24.4	27					
	M_E	29.8	19		1			
	M_N	30.5	19	1				
28	$e(S)_N$	21 28 18						USCGS:14½S,168E,H 21 18 32
28	iP_Z	22 44 43	2			+3	2850	Compression
	$i(pP)_Z$	45 13	2			+2	25°6	h (0.02),
	iNZ	45 16	3	-2		+3		H 22 39 27
	iE	45 19	3		+1			
	iS_N	48 57	5	-3				USCGS: 13S, 167½E,
	iE	49 13	4		+1			H 22 39 13
	iZ	49 17	4			+2		
	$i(sS)_N$	49 52	5	+3				
	iE	50 05	5		-2			
	$e(SS)_N$	50 16	7					
	iZ	50 21	5			-3		
	eL_Z	51.5	17					
29	$i(P)_V$	01 37 02.5	1			+		USCGS 21S, 177W,
	eL_N	42.9	15					H 01 30 52
29		04.0h	Waves.					
29	iZ	05 53 20	3			+2		
	eN	58 10	11					
29	$(iP)_Z$	19 26 17	3			+2	(5250)	Masked by microseisms.
	eS_N	33 10	9				(47°2)	
	eE	33 15	9					USCGS: 57S, 147½W,
	eL_E	36.9	25					H 19 17 40
	eL_Z	38.3	25					
	M_N	41.9	11	3				
	M_E	42.1	11		3			
	M_Z	42.3	19			7		

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Date	Phase	Time	Per.	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec. 1	iP_Z	15 05 59	4			-3		Dilatation.
	iPP_N	06 46	4	-2				Large microseisms present.
	iZ	06 50	5			-5		
	iZ	07 04	5			+4		
	eS_E	10 44	13					USCGS: 63S, 154E,
	iZ	10 55	7			+8		H 14 59 40
	$i(sS)_E$	10 59	7		-12			
	i_N	11 03	7	-7				
	eL_E	11.9	20					
	iSS_E	12 07	16		+64			
	iSS_N	12 09	14	+19				
	eLR_Z	13.2	23					
	M_{EZ}	15.1			23	50		M_E per. 10s, M_Z 18s,
	M_N	15.3	16	34				
	M_N	16.1	111	23				
	M_{EZ}	17.0			24	56		M_E per. 10s, M_Z 16s.
2	iS_N	07 46 36	4	+2				P obscured by microseisms
	eS_E	46 37	7					
	eL_E	56.8	22					USCGS: 5S, 104E,
	M_N	59.8	16	3				H 07 30 05, h 150 km.ca.
	M_{EZ}	08 03.1	20		4	4		
2	iP_Z	09 41 58	4			-3	4640	Dilatation
	iNZ	42 04	4	+3		-8	41°7	H 09 34 06
	iE	42 06	5		+4			
	iZ	42 27	5			+5		USCGS: 1S, 123E,
	iN	42 38	5	+4				H 09 34 CO
	iEZ	42 41	4		+3	+9		
	iZ	42 54	4			+4		
	iPP_E	43 37	4		+3			
	iPP_N	43 40	4	+3				
	eNE	43 46	13					
	iZ	43 56	4			+8		
	iE	43 58	4		+6			
	iN	43 59	4	+5				
	iEZ	44 02	4		+6	+7		
	iN	44 10	4	+6				
	iE	44 11	4		+6			
	iZ	44 15	4			+4		
	iNE	44 27	4	+4	-5			
	iZ	44 34	5			-10		
	eE	44 45	13					
	eNZ	44 48	13					
	iS_N	48 16	7	-11				
	iS_E	48 17	7		+12			
	iN	48 25	7	-22				
	iE	48 27	7		-19			
	iN	48 36	8	-24				
	iZ	48 52	5			+10		
	iN	50 22	6	+16				
	iE	50 49	4		+11			
	$eL(Q)_E$	51.1	22					
	i_N	51 24	8	-37				
	iE	51 31	9		+22			
	iZ	51 32	5			+4		
	iZ	51 44	5			+17		
	iZ	52 03	6			-18		
	iE	53 48	7		-27			
	iN	53 52	6	+18				
	eL_Z	56.1	33					
	M_N	56.5	17	80				
	M_E	56.8	16		66			
	M_{EZ}	10 00.2	16		51	61		
2	M_N	20 15.5	13	5				Masked by microseisms.
	M_E	15.7	12		6			USCGS: 4½S, 140E, 19 57 55
3		02.8		Surface waves.				

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec. 3	$i(P)_Z$	13 23 18	3			+2		Masked by microseisms.
	$e(S)_E$	28 30	7					
	eL_N	31.2	21					USCGS: 16½S, 177½W, H 13 16 26
	eL_E	31.8	21					
	M_N	34.0	15	1				
	M_{EZ}	34.7	17		1	1		
4	eV	00 03 22	½					Local. Explosions??
	eV	00 05 02	½					
	eV	00 07 54	½					
	eV	00 34 50	½					
	eV	00 35 02	½					
	eV	00 38 17	½					
	eV	00 50 12	½					
	eV	01 05 48	½					
	eV	01 41 02	½					
4	iV	01 42 37	1			-		Dilatation
5	eV	00 05 59	½					Local. Explosions??
	eV	01 35 13	½					
	eV	01 35 37	½					
7	eV	01 19 39	½					Local?
7	eL	01 27						USCGS: 6S, 146½E, H 01 12 05, h 100 km.ca.
7	iP_V	03 07 25.5	1			-		Dilatation USCGS: 18S, 178W, H 03 01 44, h 600 km.ca.
7	eP_V	05 26 19	1					USCGS:32½N,139½E,05 15 24
7	$e(Pg)_V$	07 30 51.5	½					Small local tremor.
	iV	30 59.5	¾			+		
7		08.3	Surface waves					
7		09.0	Surface waves					
8	$(eP)_Z$	04 38 04						Masked by microseisms.
	eS_N	44 20	9					
	M_E	52.9	16		2			USCGS: 1S, 124E, H 04 30 06
	M_N	54.5	18	2				
8	iPg_V	06 03 32.5	¼			-		Dilatation
	iSg_V	03 35.5	½			+		
9		21.7	Waves					USCGS:5S,153E,H 21 28 57
10	e_E	03 08 34						Masked by microseisms.
	eL_{NE}	10.0	19					
	M_E	14.0	10		2			
	M_{NZ}	15.5	10	2		3		
10		14.8	Waves.					
11	eL_E	00 50.6	18					Masked by large micros. USCGS:5S,130E,H 00 31 40
11	$(P)_Z$	01 45 00						Masked by large micros.
	$e(S)_E$	50 09						
	eLR_N	53.1	19					USCGS: 23S, 175W, H 01 38 33
	M_N	56.2	13	12				
	M_Z	56.5	17			10		
	M_E	569	15		7			
11		03.9	Long waves.					
11		10.4	Surface waves.					USCGS:23S,175W, 10 07 12
12	$i(Pg)_V$	05 42 01.7	¼			+		Compression
	$i(Sg)_V$	42 07.2	½			+		Small local tremor.
	iV	42 08.2	½			+		
	iV	42 08.7	½			-		
13	eL_N	06 04.0	22					USCGS:9½S,106½E,05 39 31

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec.13	$(P)_Z$	17 43 09						Masked by microseisms.
	eZ	44 43	4					
	eE	49 18						USCGS: 18S, 173½W,
	eL_N	51.3	22					H 17 36 07
	M_E	57.2	16		2			
	M_N	57.4	12	3				
	M_Z	57.5	16			4		
13		23.0	Waves.					
14	$e(Pg)_V$	07 16 47	¼					Small local tremor.
	iV	16 52	½			+		
14	eL_Z	11 25.3	21					
14	eE	13 07 53						
	eL_N	10.6	16					
14	iP_V	18 06 44	1½			-	5020	Dilatation
	iZ	06 55	3			-2	45°2	h 0.01, H 17 58 35
	ipP_Z	07 10	3			+2		
	isP_Z	07 21	5			+6		USCGS: 5N, 126E,
	iZ	07 32	4			+5		H 17 58 31,
	iZ	09 11	3			+3		h 150 km.
	$iPPP_Z$	09 16	3			+5		
	iS_N	13 16	4	+6				
	iS_E	13 18	4		+3			
	esS_E	14 03	7					
	$iScS_{NE}$	16 26	4	+2	+6			
	eSS_E	16 31	15					
	iN	16 41	5	-5				
	iE	16 49	6		+10			
	iN	17 04	6	+5				
	iE	17 13	6		-5			
	iE	17 21	7		-6			
	iN	17 22	7	+8				
	iN	17 39	5	+8				
	M_{EZ}	27.6	17		3	5		
	M_N	27.8	17	6				
14	iP_Z	21 57 09	2			+2	4740	Compression
	ipP_V	57 20	1½			+	42°6	h 0.00, H 21 49 11
	iZ	57 22	3			-2		
	eS_{NE}	22 03 20	6					USCGS: 1N, 125E,
	$e(SS)_E$	06 42	6					H 21 49 10
	eN	06 45	7					
	iN	07 11	4	+2				
	M_{NEZ}	15.7	19	1	2	3		
14	$(iP)_Z$	22 14 08	3			-2		Dilatation. Masked by
	$iSKS_N$	24 42	7	+3				coda of preceding shock.
	iS_E	25 16	7		-4			
	iN	25 22	6	+2				USCGS: 52½N, 168W,
	eE	27 20	14					H 20 00 50
	M_N	58.4	18	2				
	M_{EZ}	59.2	18		2	3		
14	iP_Z	23 34 43	3			+5	9690	Compression
	$iPcP_{NZ}$	34 46	3	+5		+13	87°2	H 23 21 54
	isP_V	34 49	1½			+		
	iZ	35 00	3			+15		USCGS: 59½S, 31W,
	iN	35 22	4	+5				H 23 21 56
	iZ	35 28	4			+7		
	iZ	36 17	4			-10		
	$i(PP)_Z$	38 11	4			-7		
	iN	38 24	5	+8				
	iZ	38 31	4			+10		
	iZ	41 11	4			-8		
	$iSKS_N$	45 10	5	-				SKS partly obscured by
	iS_N	45 22	5	+6				paper clip.
	iS_E	45 23	5		+12			
	eN	45 31	18					

Continued on next page.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec.14	m_E	23 45 40	8		48			
cont.	i_N	45 52	7	-16				
	i_N	46 19	7	+7				
	ePS_Z	46 26	13					
	E	46 35	7		-10			
	iSS_N	51 10	13	+26				
	eZ	51 14	18					
	iE	51 16	9		+16			
	i_N	51 27	13	+34				
	eLQ_E	57.2	30					
	eL_Z	24 04.9	27					
	eL_N	05.2	27					
	M_E	11.2	19		32			
	M_{NZ}	11.9	19	71		95		
		12.4	17		21			
	M_{NZ}	13.5	18	56		73		
	W_2NZ	25.7						
15	$i(P)_N$	12 28 35	4	+2				Masked by microseisms.
	eS_E	39 14	6					
	$e(PPS)_N$	40 43	13					USCGS: 59S, 24W,
	eLQ_E	51.0	25					H 12 15 45
	M_E	13 04.8	19		1			
	M_{NZ}	05.2	19	2		3		
15		20.5	Waves.					
16		11.7	Waves.					USCGS: 47½N, 152E, 11 21 47
17	iS_E	06 10 39	4		+1			Masked by microseisms.
	eL_E	18.9	21					
	eL_N	19.1	21					USCGS: 5½S, 102½E,
	M_N	24.8	14	3				H 05 53 46
	M_{EZ}	26.4	19		2	3		
17		10.0	Waves.					
17	e_N	17 11 40						Masked by microseisms.
	$e(SS)_E$	17 05	9					
	e_N	17 19	13					USCGS: 36½S, 101½W,
	eL_Z	27.5	19					H 16 48 55
	M_{EZ}	34.9	18		1	2		
	M_N	35.2	17	1				
19		10.9	Long waves.					
20	i_Z	08 11 18	2			-2		Masked by microseisms.
	e_N	16 36						
	eLE_Z	18.3	24					USCGS: South Of Kermadec
	M_N	19.5	16	3				Is. H 08 05 34
	M_{EZ}	20.0	18		4	5		
	i_N	28 56	4	-3				
20	$(i)_V$	13 02 38	1½			+		Masked by microseisms.
	iV	02 46	1			+		USCGS: 10½N, 126½E, 12 53 37
20		14.6	Surface waves.					USCGS: 17½S, 174½W, 14 16 52
20		21.1	Long Waves.					
21		01.8	Long waves.					
21	ePZ	10 26 33	6					
	$iPPEZ$	27 29	6		-4	+11		USCGS: 27½S, 176W,
	eEZ	27 45	18					H 10 20 33
	$e(S)_N$	31 29	?					
	eZ	31 30	22					
	iE	31 47	6		+3			
	$iSSS_N$	33 23	8	+17				
	i_N	33 37	8	+13				
	eL_Z	34.3	27					
	M_{NZ}	36.9			22	35		M_N per.16s, M_Z 18s.
	M_E	37.2	18		25			

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec.21	$e(P)_Z$	11 20 13						Masked by coda of preceding shock.
	i_Z	20 56	4			+5		
	iPP_{EZ}	21 09	6		-7	+9		
	eL_Z	28.0	27					USCGS: 27½S, 176W, H 11 14 17
	M_{EZ}	30.5	17		29	41		
	M_N	31.1	13	30				
	M_{EZ}	33.3	15		31	33		
21	$(iP)_V$	11 33 25	1½			+		Masked by coda of preceding shock.
	i_V	40 27	1½			+		
	eG_N	12 03.6	48					
	M_{NE}	16.6	19	9	7			USCGS: 14N, 52E, H 11 19 14
	eW_2E	13 31	21					
21		14.2	Long waves.					
21		21.2	Waves.					
22	$(i)_V$	05 45 17	1½			-		Microseisms present.
	eL_E	56.1	15					
23		04.7	Waves.					USCGS:28S,176W, 04 31 00
23	iP_Z	14 04 58	3			+2		Compression. Microseisms present.
	i_Z	05 05	4			+3		
	$e(PP)_Z$	05 57	9					
	i_Z	06 14	3			+3		USCGS: 27½S, 176W, H 13 59 02
	i_Z	06 48	4			+4		
	i_Z	07 25	4			+5		
	i_Z	08 16	4			+3		
	$e(S)_E$	09 54	9					
	eL_Z	13.8	25					
	M_E	18.0	16		6			
	M_{NZ}	18.2		6		8		M_N Per.12s, M_Z 15s.
24	i_V	07 25 32	1½			+		Masked by microseisms.
	eL_E	44.4	25					
24	iP_Z	09 20 22	3			+2		Compression. Microseisms present.
	eL_E	27.7	22					
	M_{EZ}	30.3	18		1	2		USCGS: 27½S, 176½W, H 09 14 24
	M_N	30.5	13	2				
24	$e(P)_Z$	13 17 35	5					Masked by microseisms.
	$i(PP)_Z$	19 24	4			+2		
	i_Z	19 36	5			+3		USCGS: 9N, 126½E, H 13 08 34
	eSN_E	24 32	8					
	eSS_N	28 03	13					
	e_Z	28 36	16					
	M_N	34.6	14	½				
	M_E	36.2	16		1			
	M_Z	37.1	16			2		
24		18.9	Waves.					
25	iP_V	03 55 00	1½			+		Compression. Microseisms present.
	ePP_E	55 52	6					
	i_E	56 30	4		+2			USCGS: 27½S, 176W, H 03 48 58
	$e(S)_N$	59 49	13					
	e_N	04 01 34	16					
	eL_Z	02.6	25					
	eL_E	02.7	22					
	M_{NEZ}	04.9		7	5	8		M_N per.15s, M_{EZ} 17s.
25		05.9	Waves.					
25	$(i)_Z$	07 12 59	3			+2		Masked by microseisms.
	$e(L)_E$	21.6	20					
25	$e(PP)_Z$	10 37 37						Masked by microseisms.
	i_Z	38 21	4			+4		
	eN_E	44 34	7					USCGS: 25½S, 67W, H 10 18 35
	$e(PS)_E$	47 08	15					
	$e(SS)_N$	53 45	15					

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec.25	$(i)_Z$	16 01 59	3		+2			Masked by microseisms.
	$(i)_Z$	02 40	3			+2		
	eL_N	17.8	19?					
26	eL_E	12 13.4	20					
26	$e(P)_Z$	16 22 00	7					
	$e(PP)_E$	22 51						
	$e(S)_E$	26 37	7					
	eN	28 12	12					
	M_N	32.1	13	3				
	M_Z	32.7	16			3		
	M_E	33.1	15		2			
26		19.2	Waves.					USCGS:59½N,151½W,18 19 10
26		22.8	Long waves.					USCGS:53N,160E,H 22 02 35
27	$(iP)_Z$	05 00 41	3			+2		Masked by microseisms.
	M_Z	38.8	19			3		USCGS:52½N,160½E,04 47 45
27	$(iPKP)_V$	12 56 51	1½					Large micros.present. USCGS: 28S, 63W, H 12 39 09, h 650 km.
27	ePZ	16 06 02	4				10,050	Microseisms present.
	iPV	06 05	1½			+	90°4	Compression
	$ipPZ$	06 10	4			+5		h 0.00, H 15 53 03
	eZ	08 06	15					
	iS_E	16 52	8		-8			USCGS: 56N, 162½E,
	isS_E	17 12	9		-14			H 15 52 55
	eSS_E	22 50	10					
	eE	23 05	33					
	eZ	23 22	28					
	$eSSS_E$	26 35	22					
	iE	29 45	10		-7			
	eLQ_E	31.5	37					
	eLR_Z	35.4	39					
	M_Z	41.4	21			24		
	M_E	48.6	19		9			
28	iP_Z	07 33 22	3			-3	9560	Dilatation
	$iPcP_Z$	33 27	3			+4	86°0	h 0.00, H 07 20 44
	ipP_Z	33 31	4			+5		
	$eSKS_N$	43 38	9					USCGS: 52½N, 160E,
	iN	43 42	4	+2				H 07 20 32
	iS_E	43 52	6		-5			
	eZ	43 56	15					
	$iScS_E$	44 00	4		+6			
	sS_E	44 08	7					
	eE	44 12	19					
	iN	44 20	4	+5				
	eSS_E	44 22	19					
	eE	52 03	12					
	$eSSS_E$	52 50	18					
	eLQ_E	56.6	34					
	eLR_Z	08 01.3	30					
	M_Z	06.6	20			16		
	M_N	07.0	20	12				
	M_E	18.2	17		9			
28		13.8	Waves, masked by microseisms.					USCGS:52½N,160E, H 20 35 08
29	eN	07 18 41						
	eL_N	26.0						
29		17.5	Surface waves, masked by microseisms.					
29		21.0	Waves, masked by microseisms.					USCGS:18N, 145E, H 20 35 08, h 350 km.ca.

Date	Phase	Time	Per	A_N	A_E	A_Z	Δ	Remarks
1959		h m s	s	μ	μ	μ	km.	
Dec.29		21.8	Surface waves.					USCGS: 8½S, 122E, H 21 27 17
30		00.2	Waves, masked by microseisms.					
30		02.9	Waves, masked by microseisms.					
31	$i(P)_Z$	10 36 05	3			+2		Compression. Microseisms present.
	eS_N	41 15	14					
	eL_E	44.4	38?					
	$i(ScS)_N$	46 52	2	+3				USCGS: 3S, 139½E, H 10 29 23
	M_E	47.7	15		13			
	M_{NZ}	49.9	12	10		12		
31		20.9	Long waves.					

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