RIVERVIEW COLLEGE OBSERVATORY

SEISMOLOGICAL BULLETIN

1960 & 1961

RIVERVIEW, SYDNEY, AUSTRALIA

1960, January.

R I V E R V I E W   C O L L E G E   O B S E R V A T O R Y,

R I V E R V I E W,   N. S. W.

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

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, Galvanometer registration (NS, EW, Vert.)
5. Sprengnether Short-period Vertical Seismometer.

No.	Date	Phase &	Component.	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iP	V	06 06 37	1			+		Compression
										USCGS: 18½N, 147E, H 05 57 26
2	2			05.7	Long waves.					USCGS: 2½N, 96E, H 05 06 54
3	2	i	V	09 30 36	1½			+		Large microseisms present.
		i	V	31 34	1½			+		
4	2	(iPKP)	V	03 40 18	2			+		Masked by large microseisms.
		i	V	43 03	1½			+		USCGS: 15½S,68W,H03 21 52, h 150 km.ca.
5	2	e(P)	Z	12 34 50	6				(6090)	Microseisms present.
		ePP	Z	38 11	6				(88°3)	
		e(SKKS)	N	45 26	9					USCGS: South Atlantic Ocean, west of
		iS	E	45 34	9		+8			Bouvet Is.
		ePS	N	46 44	19					H 12 21 51
		eSS	E	51 18	13					
		eSS	N	51 31						
		e(SSS)	E	54 44	15					
		eLQ	E	57.6	30					
		eL	Z	58.3	30					
		eL	E	13 00.5	40					
		eLR	Z	04.1	42					
		eL	N	04.8	34					
		M	E	10.1	20		7			
		M	N	10.8	19	9				
		M	Z	11.2	19			15		
6	2			16.4	Long waves.					
7	2	(iP)	V	21 28 54	1½			-		Masked by microseisms.
		e(S)	N	33 40	7					
		e	N	34 03	10					USCGS: 5S, 152½E, H 21 22 51
		eL	E	37.3	19					
		M	Z	39.3	19			2		
		M	NE	39.4	19	1	2			
8	4			06.6	Surface waves, masked by non-seismic waves.					USCGS: 4½S, 153½E, H 06 19 49
9	4			07.2	Long waves.					
10	4			09.2	Waves.					Seismic??
11	4			11.1	Waves.					
12	5			06.6	Waves.					
13	5			09.8	Waves.					USCGS: 15S, 173W, H 09 32.7
14	6	eP	Z	13 16 48						Masked by microseisms.
		e	Z	17 40						
		e(S)	N	21 23	10					USCGS: 10½S, 167E, H 13 11 00
		eL	Z	24.2	21					
		M	N	25.9	15	1				
		i	E	29 51	5		+4			
15	6	e	E	20 31 13	8					Masked by microseisms.
		i	Z	36 52	4			+3		USCGS: 6½S, 133E, H 20 16 29

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No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
16	Jan. 7	oL(Q)	E	08 45.1						Masked by microseisms and non-seismic waves.
		oL	E	48.6	30					USCGS: 6½N, 94E, H 08 15 21
		M	N	54.0	17	2				
		M	Z	56.3	19			1		
17	7	e	Z	13 43 22	10					Masked by microseisms.
		e	Z	48 58	10					
		eS	E	52 16	10					USCGS: Sandwich Is., H 13 28 16
		e(PS)	E	53 19	13					
		e(LQ)	E	14 04.6	(36)					
		eLR	Z	12.1	30					
		M	E	15.5	18		3			
		M	Z	18.5	19			8		
		M	EZ	23.8	17		3	10		
		M	Z	27.9	15			10		
18	7	e(P)	Z	17 27 04						Masked by microseisms.
		eS	E	31 36	10					
		eL	E	34.1	24					
		eL	Z	34.3	22					
19	7	eL	N	23 48.6	(30)					Masked b y microseisms.
		M	N	54.5	16	2				USCGS: 6½N, 94½E, H 23 17 18
		M	EZ	58.6	19		3	3		
20	8			08.0	Long waves.					
21	8	e	N	12 01 13						Masked by microseisms and non-seismic waves.
		eL	Z	13.9	30					
		M	NZ	21.9	19	2		4		USCGS: 55S, 27½W, H 11 29 18
22	8	(eP)	Z	14 59 03						Masked by microseisms.
		(eS)	E	15 09 58						USCGS: 55½S, 27½W, H 14 45 53
		e(PPS)	E	11 41						
		eLR	E	30.1	26					
		M	Z	36.3	21			6		
		M	NE	37.0	19	3	2			
23	9	(iP)	Z	07 37 17	3			-2		Masked by microseisms. USCGS: 36N,69E,H 07 23 50,h 150 km.ca.
24	9	eL	E	08 01.8	34					Masked by microseisms.
		M	NE	04.6	18	6	5			USCGS: 1S, 124E, H 07 41 57
25	9			18.3	Long waves.					
26	11	(iP)	Z	03 21 47	3					Masked by large microseisms.
		e(S)	N	31 22						USCGS: 16N, 96½E, H 03 10 14
		M	E	57.2	16		1			
27	11	i	Z	15 00 18	4			+5		Compression. Masked by microseisms.
		M	E	14.6	12		2			USCGS: 9S, 127E, H 14 53 29
		M	Z	15.0	11			3		
28	11	(i)	V	15 56 05	1½			+		Large microseisms present.
29	11	(iP)	Z	17 55 51	3			-2		Masked by microseisms.
		e	E	18 00 18	7					
		eL	N	03.3	17					USCGS: 29S, 176W, H 17 49 58
		eL	Z	04.3	21					
		M	NEZ	06.1	15	3	3	5		
30	11	(iP)	V	23 00 44	1			-		Masked by microseisms.
		eL	E	10.4	30					
		M	E	12.7	21		7			USCGS: 2S, 140½E, H 22 54 03
		M	Z	15.1	18			5		
31	12			02.4	Long waves.					USCGS: 23½N, 122E, H 01 52 37
32	12	iP	Z	03 22 07	4					Compression. Microseisms present.
		e(S)	E	33 07	?					
		eL	E	54.2	22					USCGS: 55½S, 27W, H 03 09 10
		M	Z	59.9	19			2		
		M	E	04 01.0	18		2			
		M	N	01.4	18	2				

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No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
33	Jan.12	eL	E	09 06.9	18					
		M	EZ	10.0	12		3	3		
34	12	(i)	Z	22 31 43	2			+2		Masked by microseisms.
		eL	E	40.6	15					
		M	N	42.0	13	1				
		M	EZ	44.3	16		1	3		
35	13	e	N	07 38 23						Masked by microseisms.
		eL	E	40.8	(30)					
		M	E	44.3	18		7			USCGS: 3½S, 140E, H 07 26 26
		M	N	44.8	18	5				
		M	Z	46.7	17			10		
36	13	eP	Z	15 55 12	10				12,780ca.	
		e(pP)	Z	55 49	10				115°ca.	h 0.02 ca.
		ePKP	Z	58 55	9					
		i	Z	59 18	4			+3		
		iPP	NEZ	16 00 01	8	+8	-8	+21		Compression
		i	EZ	00 22	7		-8	+18		
		i(pPP)	Z	00 38	7			+17		USCGS: 16S, 72W, H 15 40 34,
		i(sPP)	Z	00 54	7			+14		h 200 km.ca.
		i	NZ	01 21	7	+5		+10		
		iPPP	Z	02 04	7			+8		
		i(pPPP)	Z	02 35	7			+12		
		iSKS	NE	05 45	7	+8	-8			
		isSKS	NE	06 56	8	+16	-16			
		i(S)	E	07 35	7		-6			
		i	N	07 47	8	+6				
		i	E	08 17	9		-6			
		iSP	Z	09 33	13			+25		
		iPS	EZ	09 45	12		-28	-77		
		iPS	N	09 50	13	-43				
		i(pPS)	E	10 11	12		+28			
		iSPP	NE	10 36	11	-14	+24			
		i	Z	10 51	12			+29		
		iPPS	N	11 00	13	-36				
		iPPS	E	11 02	13		+28			
		i	Z	11 27	10			-31		
		iSS	E	15 52	12		+27			
		i	N	16 18	16	+58				
		i	E	16 28	10		+27			
		i	N	16 35	15	-79				
		i(sSS)	E	16 52	12		+31			
		i	Z	17 03	12			+23		
		i	E	17 14	12		+44			
		iSSS	E	20 18	16		-30			
		iSSS	N	20 21	12	-34				
		e	E	20 48	33					
		i	N	20 52	13	-18				
		i	N	23 32	13	+19				
		i	E	23 35	15		-22			
		i	N	24 09	13	-30				
		eL(Q)	E	27.6	30					
		eL	N	28.1	31					
		i	NE	29 33	16	+33	+34			
		eL	E	32.1	31					
		eLR	Z	32.9	35					
		M	N	43.9	16	20				
		M	EZ	45.1	16		21	34		
		M	NEZ	46.6	16	19	19	39		
		e(G_2)	NE	17 28	60					
37	13	iP	V	16 42 49	1			+		Compression
		i	V	42 56	1			+		Rest of record obscured by No.36
										USCGS: 51½N, 180°, H 16 29 41
38	14			06.7	Long waves.					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
39	Jan.14	eL	E	16 18.9						USCGS: 3S, 127½E, H 15 58 56
40	15	eP	Z	09 45 10	12					h 100-150 km.
		ePP	Z	49 56	7					
		i	Z	50 00	5			+5		USCGS: 15S, 75W, H 09 30 24,
		ePPP	N	52 30	9					h 150 km.ca.
		iSKS	NE	55 40	5	-2	+3			
		isSKS	NE	56 49	7	-4	+3			
		e	N	57 13	7					
		e	N	57 28	7					
		e	E	58 37	19					
		e	Z	59 08	25					
		eSP	E	59 18	25					
		iPS	Z	59 37	8			+14		
		iPPS	NE	10 00 40	8	-5	+5			
		eSS	Z	05 33	26					
		i	N	05 49	8	+3				
		i	E	06 12	20		-17			
		e	N	06 16	25					
		eSSS	E	10 00	21					
		eLQ	E	19.0	28					
		eLR	Z	23.4	28					
		eLR	E	23.5	30					
		eLR	N	23.7	26					
		M	EZ	29.8	19		7	16		
		M	N	29.9	18	6				
41	16	(iP)	NZ	07 04 36	3	-2		-1	(2880)	Masked by microseisms.
		i	Z	05 05	4			+2	(25°9)	
		i	N	05 07	4	+2				USCGS: 59½S, 149½E, H 06 59 00
		eS	E	09 05	8					
		i	N	09 16	5	-2				
		eLQ	E	09.8	20					
		eSS	E	10 11	10					
		eLR	N	11.1	22					
		eL	Z	11.5	21					
		M	NEZ	13.7	10	2	2	1		
42	16	iP	V	12 36 25	1½			+	3370	Compression
		eS	N	40 43	6				30°3	h 0.08, H 12 31 02
		eS	E	40 44	6					
		e(SS)	N	43 40	7					USCGS: 20S, 178W, H 12 30 56,
		e	E	43 44	7					h 600 km.ca.
		M	Z	44.0	15			1		
		iScS	NE	46 00	4	-3	+4			
43	16	iP	Z	15 38 02	4			-2	2550	Dilatation
		eS	N	42 08	8				22°9	H 15 32 56
		i	N	42 15	6	-3				USCGS: 22½S, 173½E, H 15 32 56
		i	E	42 16	6		-3			
		i	Z	42 18	6			-3		
		eLR	N	43.5	21					
		M	N	44.8	15	3				
		M	E	45.7	15		½			
		M	Z	46.0	15			1		
44	16	iP	NZ	21 47 12	4	-2		+2	2940	Compression
		ipP	Z	47 28	5			+6	26°4	h 0.005, H 21 41 40
		i	N	47 30	5	-2				
		isP	Z	47 37	3			+2		USCGS: 10S, 161½E, H 21 41 44
		eS	NE	51 39	7					
		e	Z	51 54	12					
		i	N	52 23	7	+5				
		i	E	52 26	5		+2			
		i	E	52 36	7	+4				
		i	E	52 42	6		+4			
		eL	N	53.1	27					
		eL	Z	53.3	25					
		eL	E	53.6	27					
		eLR	Z	54.0	26					

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
44	Jan. 16	eLR	N	21 54.2	22					
cont.		M	N	55.2	19	6				
		M	EZ	56.1	18		3	5		
45	18	e(S)	E	09 20 21	(10)					Masked by large microseisms.
		e(SS)	N	23 40	12					
		e	E	23 43	(10)					USCGS: 5N, 126½E, H 09 04 43
		eL	N	33.0	20					
46	19	iP	E	09 20 06	2		-1		3000	Vertical record lost.
		iS	E	24 06	4		+3		27°0	h 0.08, H 09 15 06
		i(sS)	N	26 57	5	+5				
		i	E	27 04	6		+8			USCGS: 23S, 180°, H 09 15 04,
		i	E	29 48	3		+2			h 600 km.ca.
		iScS	N	29 53	4	-3				
		i	E	29 55	4		+3			
		i(sScS)	N	33 46	4	-3				
		i(sScS)	E	33 47	4		+4			
47	20	e	N	11 52.6						
48	20	(iP)	Z	20 02 18	3			+1		Masked by microseisms.
		eL	N	10.9	20					USCGS: 4½S, 153½E, H 19 56 14
49	21	eL	Z	10 30.9	18					
50	21	i(P)	EZ	10 49 12	4		+2	-2		Masked by coda of preceding shock.
		e(S)	N	54 21						
		i	N	54 30	6	-3				USCGS: 16S, 179½E, H 10 43 33
		i	E	54 33	6		+5			h 600 km.ca.
		i	N	56 47	7	+6				
		eL	E	56.8	27					
		i	N	57 15	12	+12				
		eL	Z	58.1	28					
		M	EZ	11 00.3	19		16	23		
		M	N	00.7	13	10				
51	21			20.7	Waves.					
52	22	(iP)	V	13 43 47	1½			-		Masked by microseisms.
		eL	Z	58.7	27					USCGS: 0°, 125E, H 13 35 54
53	23	iP	NEZ	04 48 10	4	-4	+3	+6	4150	Compression
		i	NEZ	48 24	4	+6	-3	-10	37°3	H 04 40 54
		i	Z	48 48	4			-11		
		i	Z	49 06	4			-8		
		i	Z	49 44	4			+7		USCGS: 4S, 127½E, H 04 40 56
		i	NE	49 46	5	+8	-5			
		i	NEZ	50 18	5	-3	+6	+8		
		iS	E	53 58	7		+21			
		iS	N	53 59	7	+16				
		i	E	54 05	8		-29			
		i	N	54 19	7	+12				
		i	NE	56 12	5	+9	+10			
		i	N	56 18	7	+17				
		iSS	E	56 31	9		+13			
		i	E	59 49	6		+31			
		M	NE	05 01.3	16	54	47			
		M	NEZ	02.7	13	42	41	29		
54	23	i(P)	E	06 30 11	3		+2			Masked by microseisms.
		i(S)	N	35 08	6	+5				USCGS: 17S, 177W, H 06 24 08,
		i(ScS)	N	40 03	5	+5				h 400 km.ca.
55	23	iP	NZ	07 38 31	3	+3		-4	4080	Dilatation
		i	NEZ	38 32	4	-7	+4	+17	36°7	H 07 31 21
		isP	NEZ	38 39	4	-5	+4	+16		
		i	NEZ	38 45	4	+6	-4	-15		USCGS: 4S, 127½E, H 07 31 14
		i	Z	39 07	4			+10		
		i	Z	39 20	4			+8		
		i	NE	39 21	4	-5	+5			
		i	Z	39 43	6			+9		

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
55 cont.	Jan.23	iPP	NZ	07 39 55	6	-11		+12		
		iPP	E	39 56	5		+10			
		iPcP	Z	40 48	4			+8		
		iS	E	44 15	7		+20			
		iS	N	44 17	5	+9				
		i	N	44 27	8	-15				
		i	E	44 29	8		+32			
		i	N	45 11	7	+20				
		iSS	E	46 45	8		+22			
		i	N	46 53	7	-16				
		i	E	47 06	7		+21			
		i	Z	47 15	7			-18		
		i	Z	47 31	7			+19		
		i	N	47 42	6	+27				
		i	Z	48 12	4			+14		
		M	E	52.3	13		72			
		M	N	52.7	12	79				
		M	Z	53.1	13			44		
		M	Z	55.1	13			59		
		M	E	56.1	13		62			
56	23	iP	Z	18 03 45½	3			+5	4160	Compression
		isP	NZ	03 59	3	+2		-3	37°4	h 0.00, H 17 56 34
		i	Z	04 03	3			-9		
		i	Z	04 29	3			-8		USCGS: 4S, 127½E, H 17 56 30
		i	E	04 30	3		-1			
		i	Z	04 34	3			+6		
		iS	E	09 31	5		+8			
		i	E	09 44	10		+11			
		e	N	11 18	19					
		M	NE	16.6	16	39	31			
		M	Z	20.1	16			24		
57	23	e(S)	N	22 07 56	9					Masked by microseisms.
		i	N	08 18	9	+7				
		e	N	08 27	16					USCGS: 5½S, 152E, H 21 57 08
		M	NEZ	14.1	19	6	4	7		
58	24			00.1	Waves.					
59	24			01.4	Waves.					
60	24	i(P)	Z	04 28 23	4			+4	(3550)	Compression. Preceded by microseisms.
		iPP	Z	29 27	6			+9	(31°9)	
		iPPP	EZ	29 42	4		+3	-3		USCGS: 15½S, 179W, H 04 21 42
		i	E	30 05	5		+9			
		i	Z	30 48	4			-8		
		i	Z	31 07	6			+9		
		iS	E	33 31	7		-10			
		iS	N	33 34	7	-18				
		i	E	33 38	9		+34			
		i	Z	33 44	4			+8		
		i	N	33 55	6	+12				
		i	Z	34 33	5			+11		
		eL	N	35.6	25					
		i	E	35 38	9		+16			
		i	Z	36 26	9			+32		
		M	N	36.7	18	81				
		eL	E	36.8	31					
		i	Z	36 52	9			+30		
		eL	Z	37.0	30					
		M	Z	39.6	18			99		
		M	E	39.7	18		75			
		M	N	39.8	13	51				

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
61	Jan.25	(iP)	Z	16 35 57	4			-5	(3570)	Dilatation. Masked by large micro-
		(eS)	N	41 09					(32°1)	seisms.
		i	N	41 15	5	+5				
		e	E	41 15						USCGS: 16S, 179W, H 16 29 26
		i	E	41 23	8		+9			
		i	NE	41 39	8	+6	+9			
		eL	NE	43.5	25					
		eL	E	44.6	30					
		eL	Z	44.9	30					
		M	N	46.2	16	16				
		M	E	46.9	18		24			
		M	Z	47.1	18			30		
62	26	iP	V	22 27 00	1			+		Compression. Large microseisms
		eL	E	34.2	25					present.
		M	E	36.7	16		2			USCGS: 30S, 178W, H 22 21 19
63	28	(iP)	Z	01 49 17	3			+2		Masked by large microseisms.
		M	N	58.7	12	2				
64	29	e	N	08 22 33						Masked by large microseisms.
		el	N	28.6						USCGS: 4S, 142½E, H 08 10 18
65	30	(iP)	Z	02 54 47	3			+2		Masked by microseisms.
		eL	E	03 10.9	18					USCGS: 22N, 144½E, H 02 45 03
		M	N	15.2	18	1				
66	30	iP	Z	18 47 53	4			+2	6270	Compression. Microseisms present.
		iPP	Z	50 02	3			-2	56°4	H 18 38 08
		i	Z	50 21	3			+2		
		eS	E	55 43	8					USCGS: 27N, 144E, H 18 38 10
		i	N	55 48	4	-2				
		i	N	56 18	4	-2				
		eL	E	19 03.5	22					
		M	NZ	08.4	22	4		4		
		M	E	09.3	19		1			
67	31	(iP)	V	04 08 20	1½			+		Masked by microseisms.
		e(S)	N	12 38						USCGS: 12½S, 167½E, H 04 03 11, h 200 km.ca.
68	31	iP	Z	05 19 24	4			+2	7590	Compression. Microseisms present.
		i	Z	19 55	3			-2	68°3	H 05 08 19
		iS	N	28 25	6	+3				
		i	EZ	28 28	6		+3	+2		USCGS: 33½N, 134½E, H 05 08 18
		i	N	28 37	6	+2				
		eSS	N	32 41	18					
		e	E	32 55	13					
		M	E	46.3	16		2			
		M	N	49.3	18	4				
		M	Z	51.6	17			5		
69	31			16.9	Waves.					
70	31	(iP)	Z	19 14 37	3			+2		Masked by microseisms.
		i	V	14 43	1½			+		
		eL	E	25.4	24					USCGS: 16S, 172½W, H 19 07 23
		M	N	27.3	12	1				
		M	EZ	29.4	16		1	1		

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N.B. V = Sprengnether Vertical, Z = Galitzin Vertical.

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A. Fynn, S.J.,
Director.

P. F. Rheinberger.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
71	Feb. 2	(P)	V	06 35 18						Masked by microseisms.
		i	Z	35 29	3			+2		
		e(S)	E	39 47	6					USCGS: 33½S, 179W, H 06 29 52
		i	E	39 59	4		+3			
		eL	E	41.1	?					
		eLR	E	42.0	25					
		eL	Z	42.4	21					
		M	Z	44.2	16			2		
		M	N	44.4	14	1				
		M	E	46.0	15		2			
72	3	iP	EZ	02 25 59	4		-2	+3	2610	Compression
		i	V	26 03	1½			+	23°5	h 0.005?
		i(sP)	EZ	26 20	3		-2	+3		H 02 0 53
		iPP	V	26 34	1½			+		
		iS	N	30 05	7	+2				USCGS: 37S, 179E, H 02 20 55
		e	NE	30 17	21					
		i(SS)	NE	30 51	7	+15	+10			
		eL	Z	32.1	25					
		M	Z	33.5	16			3		
		M	NE	34.0	14	3	2			
73	3			12.1	Long waves.					USCGS: 5S, 153E, H 11 50 48
74	3	i	Z	13 34 46	2			-2		Masked by microseisms.
		e(S)	N	39 06	6					
		M	E	43.6	13			1		USCGS: 7S, 154½E, H 13 28 29,
		M	NZ	44.6	12	1	1			Slightly deeper than normal.
75	3	e	E	14 41.8						Masked by microseisms.
		eL	N	44.0	19					
		M	Z	47.9	19			6		USCGS: 19S, 173½W, H 14 28 39
		M	E	48.0	19		4			
		M	N	48.1	12	2				
76	3	e	E	18 01 57						Masked by microseisms.
										USCGS: 19½S, 169½E, H 17 53 03
									3320	
77	4	iP	NZ	03 52 36	4	-11		+19	3340	Compression.
		i	E	52 37	4		-1		29°9	h 0.00
		ipP	NZ	52 46	4	-11		+20		H 03 46 29
		i(sP)	NZ	52 52	4	+24		-38		
		i	NZ	52 58	5	-18		+33		USCGS: 4½S, 153½E, H 03 46 30
		i	Z	53 05	2			-23		
		i	N	53 08	4	+19				
		i	E	53 09	4		+5			
		m	NE	53 23	13	21	3			
		iPP	NZ	53 36	7	-37		+64		
		iPPP	N	53 50	4	-17				
		i	N	57 12	7	+18				
		i	E	57 15	5		+19			
		i	N	57 24	7	+18				
		iS	NE	57 30	7	-30	-31			
		i	N	57 50	8	+34				
		i	E	58 02	8		- !!			
		i	N	58 37	9	+105				
		M	NE	04 01.3	25	540*	650*			* From Mainka.
		M	Z	02ca	(26)			(700)		
		M	E	03.3	12		155*			
		F		07.5						
78	4	iP	NZ	09 33 21	4	-2		+3	3240	Compression
		i(sP)	Z	33 51	5			-2	29°1	h 0.01 ca.,
		iPP	V	34 20	1½			-		H 09 27 28
		iS	E	38 04	6		-			
		isS	NEZ	38 45	6	+7	-5	+4		USCGS: 5S, 154E, H 09 27 23,
		i	N	39 02	6	+9				h 100 km.ca.
		i	EZ	39 03	5		+	-4		

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
78	Feb. 4	i	N	09 40 30	5	-5				
cont.		i	E	40 34	5		-7			
		i	Z	41 23	4			+8		
		i	E	41 40	5		+8			
		eL	Z	41.9	23					
		M	E	43.5	15		5			
		M	NZ	45.5	14	5				
79	4	eP	Z	11 07 22	4					
		e	E	12 09	9					USCGS: 4½S, 153½E, H 11 01 18
		e	N	12 24	16					
		M	E	17.3	14	1	1			
		M	N	17.4	16	1				
80	4	iP	Z	17 02 03	4			-2	7940	Dilatation
		iS	E	11 21	5		-1		71°4	H 16 50 39
		iS	N	11 23	4	-2				
		iScS	E	12 09	4		-1			USCGS: 39N, 143E, H 16 50 30
		eSSS	E	19 02	15					
		eLQ	E	20.5	?					
		eL	E	22.8	22					
		M	Z	29.4	21			3		
		M	NE	29.5	22	2	1			
81	4	(iP)	Z	20 44 00	3			+2		Masked by microseisms.
										USCGS: 18½S, 178W, H 20 38 20,
										h 600 km.ca.
82	5	iP	V	05 45 52	1½			-		Dilatation. Large microseisms
		e	N	50 35						present.
		eL	E	54.0	25					
		eL	Z	54.2	27					USCGS: 4½S, 153½E, H 05 39 46
		M	E	57.7	16		1			
		M	Z	57.9	16			2		
		M	N	58.0	16	2				
83	6	e	V	01 12 52	½					Very small local tremor.
84	6	e	V	01 14 14	½					Very small local tremor.
85	6			02.3	Waves.					
86	6			03.6	Waves.					
87	7	iP	Z	10 15 34	3			+7		Compression
		i	V	15 41	1			+		USCGS: [illegible]5 [illegible], 123 E, H 10 07 50
		iS	E	21 45	4		+3			h 600 km.ca.
88	7	eLQ	N	11 32.6	20					Masked by microseisms.
		eLR	E	34.1	30					USCGS: 15½S, 173½W, H 11 16 54
		M	EZ	35.8	22		2	5		
89	7	i	Z	11 45 54	4			+2		Masked by microseisms.
		i	V	45 58	1½			+		
	8	(i)	V	03 09 42				-		Masked by microseisms.
90	8	i(Sg)	V	06 01 29	¼			+		Quarry blast ?
		i	N	01 29½	?	+				
		i	V	01 32½	½			+		
91	8	(iP)	Z	09 25 41						Masked by microseisms.
										USCGS: 5S, 1[illegible]E, H 09 19 45, h 100km.
92	8	iP	V	12 58 04	1½			+	9200	Compression. Microseisms present.
		iPcP	Z	58 10	4			-3	82°8	H 12 45 37
		i	Z	58 19	3			+5		
		i	Z	58 25	6			+6		
		i	Z	58 34	8			+10		USCGS: 58S, 67W, H 12 45 34
		iPP	Z	13 01 17	7			-4		
		eS	E	08 22	7					
		i	N	08 27	6	+3				
		iScS	E	08 36	7		+10			
		i	E	09 02	5		+4			
		i	N	09 04	6	+6				
		ePS	E	09 16	15					

(Continued on next page)

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
92 cont.	Feb. 8	e N	13 09 26	15					
		e NE	09 54	20					
		eLQ E	20.6	33					
		eLR Z	24.1	30					
		M NEZ	26.3	21	8	4	11		
		F	15.9						
	8		17.3 to 19.0	Long waves.					Seismic ??
93	9		02.2	Waves, masked by large microseisms.					USCGS: 6½S, 129½E, H 01 54 05
94	9	(iP) V	03 05 44				+		Masked by large microseisms. USCGS: 5S, 155E, H 02 59 42
95	9	iP Z	12 03 25	3			+4	4080	Compression
		i Z	03 43	3			+5	36°7	H 11 56 15
		i Z	04 25	4					
		i Z	04 37	3			+4		USCGS: 4S, 128E, H 11 56 12
		i Z	04 57	4			+5		
		eS E	09 09	12					
		i N	10 14	5	-3				
		i E	11 59	5		+7			
		M NE	16.4	16	9	8			
		M NE	18.0	11	8	5			
		M Z	19.4	13			7		
	9	i V	13 55 23	1½			-		Dilatation
96	9	iP V	16 40 41	1			+		Compression. Microseisms present.
		e N	45 39						
		eL E	49.1	20					USCGS: 6S, 147E, H 16 34 45
		eL N	49.7	24					
		M E	50.8	16		1			
		M NEZ	52.7	13	1	2	2		
97	10	iP NEZ	00 03 03	4	-7	+5	+22	4110	Compression
		i NEZ	03 13	5	-15	+10	+30	37°0	H 23 55 51 Feb.9
		i Z	03 56	5			-16		
		i E	04 24	7		+14			USCGS: 4S, 128E, H 23 55 49
		iPP NZ	05 29	6	+17		-31		
		iS E	08 50	9		+25			
		i E	09 10	7		+25			
		i N	09 50	7	-19				
		i E	09 57	8		+28			
		i E	10 37	9		-44			
		i E	10 56	10		-47			
		i(SS) E	11 31	9		-47			
		i Z	11 36	7			-43		
		i N	11 44	7	+35				
		i E	11 46	9		-94			
		eL E	12.6	40					
		i N	13 20	7	+42				
		iM E	15 31	12		+120			
		M NE	15.9	19	170ca	175			
		M Z	19.8	16			130		
		F	03.7						
98	10	e V	01 08 04	¼					Small local tremor.
		i V	08 07	¼					
99	10	iPg V	02 29 38	¼			+		Compression
		iSg V	29 42	¼			-		Quarry blast ??
		i V	29 45	½			+		
100	10	eP V	15 50 54	1					USCGS: 4½S, 154½E, H 15 44 54, h 100 km.ca.
		e N	56 16						
		M E	16 01.3	13		½			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
101	Feb.10	(iP)	V	21 56 56				+		Microseisms present.
		eL	E	22 05.8	22					USCGS: 3½S, 151½E, H 21 50 45
		M	NEZ	08.0	19	1	3	2		
102	10	iP	Z	23 27 07	4			-2		Dilatation
		i	EZ	28 47	7		-2	+4		
		M	Z	41.4	16			8		USCGS: 15½s, 173W, H 23 19 55
		M	E	41.5	18		7			
		M	N	41.6	12	6				
103	11	iP	V	04 04 28	1½			-		Dilatation
		e	NE	11.2	13?					USCGS: 25S, 179W, H 03 58 39
104	11	(eP)	V	04 32 30						USCGS: 14S, 170½E, H 04 27 22,
		i(sP)	Z	34 28	3			+2		h 450 km.ca.
		e(S)	E	36 20	7					
105	11	(iP)	V	05 51 15	1			+		Compression
106	11	(P)	V	08 34 44	1½					Masked by microseisms.
		e	V	34 48	1					USCGS: 6S, 155E, H 08 28 58,
										h 100 km.ca.
107	11	iP	NZ	21 01 47	3	-2		+8	2890ca	Compression
		i(sP)	N	02 04	4	+2			26°ca	
		i(sP)	Z	02 05	4			+6		USCGS: 11½S, 166½E, H 20 56 08
		iS	E	06 16	4		-3			
		e	N	06 17	10					
		i	E	06 36	7		-5			
		e	Z	06 40	13					
		eL	N	07.6	21					
		eL	E	08.6	25					
		eL	Z	08.8	27					
		M	N	09.2	21	6				
		M	Z	09.5	21			9		
		M	E	09.6	22		8			
108	11	i(P)	Z	21 30 20	3			-3		Dilatation
109	11	i(P)	Z	22 22 42	4			+2		Compression
		i	V	22 45	1½			+		
		i	V	26 48	2			-		
110	12	(P)	V	01 35 52						Masked by microseisms.
		M	E	46.3	15		2			USCGS: 4½S, 153½E, H 01 29 42
111	12	e	V	06 29 13	¼					Small local tremor
		e	V	29 26	¼					
112	12			23.6	Surface waves.					
113	13	iP	V	15 48 58	2			+	4670	Compression
		iP	NEZ	48 59	3	-2	+1	+5	42°0	h 0.02, H 15 41 21
		ipP	Z	49 33	3			+2		
		iPP	Z	50 37	4			+4		USCGS: 1½N, 127½E, H 15 41 04
		i	Z	50 44	5			+5		
		i	N	50 45	4	-2				
		iPcP	Z	50 51	3			+4		
		i	Z	51 28	4			-4		
		eS	E	55 04	7					
		e	E	59 04	19					
		i	E	16 02 32	4		-2			
		M	E	04.7	13		2			
		M	NZ	06.5	10	2		2		
114	13			22.3	Long waves.					
115	14	(iP)	Z	15 45 35	4			+2		Masked by microseisms.
		i	V	45 40	1½			-		
		eL	E	53.0	24					USCGS: 29S, 177W, H 15 39 43
		M	N	54.5	15	2				
		M	Z	55.2	18			4		
		M	E	55.5	16		3			

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
116	Feb.14		16.9	Long waves					
117	14	P Z	20 36 49	1					Masked by microseisms
		e N	42 08	12					USCGS: 5S, 154½E, H 20 30 44
		eL E	45.0	19					
118	14	(iP) Z	21 13 19	4			+2		Compression. Masked by microseisms. USCGS: 18½N, 145½E, H 21 04 36, h 200 km.ca.
119	15	i(pP) Z	05 23 55	3			+3		Masked by microseisms. USCGS: 18S, 177½W, H 05 16 45, h 350 km.ca.
120	15	e V	05 55 54	¼					Small local tremor
		e V	56 01	½					
121	15		22.5	Waves.					USCGS: 29½S, 176½W, H 22 18 27
122	16		01.4	Long waves.					USCGS: 29½S, 176½W, H 01 09 29
123	17		10.2	Long waves.					
124	17	iP V	12 44 17	1½			+		Compression. Large microseisms pres-
		iPcP Z	44 27	3			-2		ent.
		iPP V	47 24	1½			+		
		iPPP Z	49 06	3			+4		USCGS: 30S, 112½W, H 12 32 10
		iSKS N	54 29	4	+2				
		M E	14 12.8	19		4			
		M Z	13.3	19			5		
		M N	13.5	19	4				
125	17	(iP) N	16 55 50	3	+2				Masked by microseisms.
		M E	17 06.5	16		4			
		M N	09.4	16	4				USCGS: 5S, 142½E, H 16 49 42
		M E	09.7	15		4			
		M Z	10.5	16			6		
126	19	iP Z	10 50 28	3			-3	11,400ca	Dilatation. Microseisms present.
		i Z	54 05	3			+3	102½°ca	h 200 km., H 10 36 50
		iPP Z	54 49	4			-3		
		isPP Z	55 51	4			-4		USCGS: 36N, 70½E, H 10 36 46, h 200 km.ca.
		isPP E	55 53	4		+2			
		i N	55 55	6	+2				
		i Z	58 03	6			-4		
		i NE	58 04	6	+3	-2			
		i Z	59 47	4			+5		
		i Z	59 55	4			+6		
		iSKS E	11 00 41	4		+1			
		i E	01 01	4		+2			
		i E	01 16	5		+2			
		i E	02 19	4		-3			
		iSP Z	03 22	6			-4		
		iPS E	03 57	6		-3			
		iSPP Z	04 31	6			+6		
		i N	04 40	6	+3				
		i E	04 43	7		+7			
		iPPS NE	04 52	9	+6	-9			
		iPPS Z	04 53	7			-11		
		eSS E	09 02	11					
		esSS E	10 17	12					
		i Z	20 43	4			+7		
		i Z	20 48	4			+6		
		M Z	27.5	18			3		
		M N	27.9	18	3				
		M E	28.5	18		2			
127	19		12.7	Long waves.					Possibly W_2 of no.126
128	20		00.5	Long waves.					

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
129	Feb.21	iP	NEZ	00 51 20	3	+2	-3	+3	2250	Compression
		ipP	E	51 29	3		+2		20°2	h 0.00, H 00 46 41
		ipP	NZ	51 30	3	+5		+5		
		iPP	Z	51 35	3			+7		USCGS: 42S, 173E, H 00 46 56,
		i	NEZ	51 39	4	+5	-6	+14		h 60 km.ca.
		iPPP	Z	51 44	3			+7		
		i	NZ	51 57	5	+4		+5		
		iS	N	54 59	6	+5				
		iS	E	55 00	5		+4			
		i	Z	55 14	4			-3		
		i	N	55 19	6	+4				
		i	Z	55 20	6			-7		
		iSS	E	55 22	6		-8			
		iSSS	NE	55 37	6	+5	+5			
		i	Z	55 47	5			-6		
		eLR	NZ	56.1	23					
		M	N	57.1	18	6				
		M	EZ	57.2	19		7	9		
130	21	(P)	E	09 44 59	3					USCGS: 20S, 178½W, H 09 39 26,
		e	E	52 23	8					h 600 km.ca.
		iScS	NE	54 25	4	-1	+1			
131	21			23.2	Surface waves.					USCGS: 2½N, 128½E, H 22 43 11
132	22	iScS	NE	01 09 27	3	-2	-1			Masked by microseisms.
										USCGS: 20S, 178½W, H 00 54 30,
										h 600 km.ca.
133	22	eL	E	05 33.4	22					
134	23	iP	V	16 10 41	1½			+	3100	Compression
		ipP	V	10 54	1½			-	27°9	h 0.00, H 16 04 52
		isP	V	11 01	1½			+		
		iPPP	V	11 43	2			+		USCGS: 6S, 154½E, H 16 04 50
		iS	E	15 21	5		+3			
		iS	N	15 22	7	-3				
		e	E	15 27	14					
		isS	N	15 40	5	+4				
		i	N	15 47	8	+11				
		i	Z	15 51	6			-4		
		i	E	16 47	10		-9			
		i	N	16 52	6	+4				
		eLR	E	17.9	24					
		eL	Z	18.9	21					
		M	E	20.8	13		23			
		M	NZ	21.1	13	14		9		
		M	NZ	24.0	15	13		14		
135	23			19.2	Waves.					
136	24	iP	V	08 45 59	1½			+		Microseisms present.
		i	N	46 07	4	-2				
		i	V	46 16	1			+		USCGS: 17½S, 168E, H 08 41 00
		i	N	50 12	6	+4				
		i	E	50 13	5		+4			
		i	N	50 22	5	+4				
		i	E	50 40	5		-2			
		eL	E	51.5	22					
		eL	N	52.0	19					
		M	N	53.3	16	2				
		M	EZ	53.5	17		2	3		
137	24	iP	NZ	21 42 46	3	+2		-4	3020	Dilatation
		ipP	NZ	42 56	5	+5		-9	27°2	h 0.00, H 21 37 03
		i	Z	43 09	4			+14		
		i	N	43 10	4	-8				USCGS: 7½S, 156E, H 21 37 04
		i	NEZ	43 23	5	-12	-3	+15		
		iPP	NEZ	43 33	5	-9	-4	+16		
		iS	N	47 21	9	-13				

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
137 cont.	Feb.24	i	E	21 47 22	6		-9			
		i	E	47 29	7		+14			
		i	N	47 32	8	-45				
		i	Z	47 42	7			+19		
		i	NZ	47 55	9	-75		+42		
		i	E	48 24	6		+11			
		iSS	E	48 37	7		+29			
		i	N	48 42	8	+14				
		i	Z	48 52	7			+27		
		iSSS	E	48 53	7		+27			
		eL	NZ	50.2	28					
		M	E	52.3	15		46			
		M	NZ	53.1	17	58		52		
138	25			07.1	Waves.					
139	25	iP	V	12 54 50	1½			+		Compression. Large microseisms. USCGS: 11N, 124E, H 12 45 44
140	26	(iP)	Z	01 13 30	2					Masked by microseisms.
		eL	E	26.1						USCGS: 2½S, 128E, H 01 06 23
141	26	iP	V	02 15 30	1½			+	3840	Compression. Microseisms present.
		i	V	15 33	1½			+	34°5	
		i	Z	15 37	4			+3		USCGS: 1S, 138E, H 02 08 31
		eS	E	20 59	10					
		e	N	21 06	16					
		i	Z	23 46	3			+2		
		e	E	24 18	15					
		i	N	24 25	4	+3				
		eL	E	25.9	30					
		i	N	26 09	6	-5				
		i	Z	26 13	4			+4		
		i	Z	26 53	4			+7		
		i	Z	27 25	4			+5		
		i	E	27 27	5		-5			
		i	N	27 31	4	+5				
		i	Z	27 37	4			+9		
		i	N	28 25	4	-7				
		M	E	29.1	12		10			
		M	NZ	30.3	14,18	15		19		
		M	E	31.2	15		14			
		M	NEZ	35.1	13	18	11	23		
142	26	e	V	06 03 05						Quarry blast ??
		i	V	03 06	½			-		
		i	V	03 09	½			+		
143	26	e(S)	E	06 44 53						Masked by microseisms.
		e(L)	N	47.5						
		eL	Z	49.5	21					USCGS: 20S, 174W, H 06 32 36
		M	N	52.9	12	3				
		M	EZ	53.6	15		3	5		
144	26	iP	Z	23 42 27	4			-2	9810	Dilatation. Microseisms present.
		iS	E	53 11	7		-2		88°3	
		eL(Q)	E	24 05.3	30					USCGS: 51½N, 178W, H 23 29 25
		M	N	17.4	21	3				
		M	E	20.6	21		1			
145	27	(iP)	V	08 23 11	1½			+		Masked by microseisms.
		i	V	23 15	1½			+		USCGS: 51½N, 178W, H 08 10 03
		i(S)	N	33 49	4	+2				
146	27	iP	Z	09 01 29	?			+		Compression. Microseisms present.
		i	Z	01 48	4			-3		
		iPP	EZ	02 00	5		+4	-6		USCGS: 30½S, 179½W, H 08 56 00
		i	E	04 01	5		+3			
		i	Z	04 04	6			+6		
		i(PcP)	Z	05 02	4			+7		
		e(S)	E	05 48	12					
		e	N	05 57	9					

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
146	Feb.27	i	E	09 06 05	7		+5			
cont.		i	N	06 07	10	+13				
		eL	N	06.7	22					
		i(SS)	N	06 47	7	+8				
		i	N	06 58	8	-11				
		i	E	07 36	7		+8			
		eL	E	08.1	24					
		M	NE	09.4	15,18	27	8			
		M	N	10.9	12	22				
		M	Z	11.2	16			14		
		M	E	12.1	13		9			
147	27	(iP)	V	09 14 44	1½			-		Masked by microseisms & coda of 146.
		i	V	15 46	1½			+		
		e(S)	N	22 10						USCGS: 6½S, 102½E, H 09 05 25
		i(PS)	E	22 21	6					
148	27	(iP)	Z	10 03 21	3			+2		Masked by microseisms & coda of pre-
		i	Z	03 58	3			+2		ceding shock.
149	27	e	E	14 08 01	7					Masked by microseisms.
		e	N	08 05	9					
		e	Z	09 08	13					USCGS: 7S, 156½E, H 13 57 56
		M	NE	14.9	13	2	1			
150	27	(iP)	Z	14 28 42	3			-2		Masked by microseisms & coda of
		M	E	38.1	14		1			preceding shock.
										USCGS: 7S, 156E, H 14 23 29, h 150km.
151	27	(iP)	Z	23 14 08	3			+2		Masked by microseisms.
		(iS)	N	20 41	4	-3				USCGS: 2N, 123E, H 23 05 49
152	28	(i)	Z	23 12 57	3			+2		Masked by large microseisms.
		(iS)	E	17 20	3		+2			
		eL	E	21.2	27					USCGS: 3S, 142E, H 23 05 39
		M	E	24.2	17		14			
		M	NZ	25.6	16	14		10		
153	29			00.2	Long	waves.				USCGS: 3S, 142½E, H 23 52 27 Feb.28
154	29	(iP)	Z	08 46 34	2			+1		Masked by large microseisms.
										USCGS: 23½N, 94½E, H 08 34 30
155	29	(iPKP)	Z	24 00 15	3			+3		Compression. Large microseisms present.
		(iSKKS)	N	11 42	4	+2				
		M	N	25 09.8	19	3				USCGS: 30N, 9W, H 23 40 12
		M	E	10.6	19		2			
		M	Z	11.5	19			3		

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Director.

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No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
						AN	AE	AZ		
	1960			h m s	s	μ	μ	μ	km.	
156	Mar. 1	i	V	03 33 11	1			+		Masked by large microseisms.
		i	V	34 06	1			+		USCGS: 18½S, 178W, H 03 26 41, h 600km.
157	1	iP	Z	18 11 31	4			+5		Compression. Large microseisms pres-
		e	E	16 10	15					ent.
		M	NE	19.8	14	2	2			
158	1	eL	E	20 15.1	22					Masked by microseisms.
										USCGS: 27S, 175W, H 19 59 33
159	1	i(P)	Z	22 02 04	3			+3		Compression. Masked by microseisms.
		i	Z	02 10	3			+3		USCGS: Boeroe-Ceram Is. H 21 54 50
160	2	e	V	02 07 57						Small local tremor.
161	3	i(PcP)	E	01 11 22	3		+2			Masked by microseisms.
		M	N	19.8	14	1				USCGS: 7S, 156E, H 01 02 20
162	4	iP	Z	04 03 51	3			+(5)	7560	Compression. Large microseisms
		isP	Z	04 26	3			-3	68°0	present.
		iS	N	12 41	4	+4				h 0.01, H 03 53 00
		i	N	13 01	4	-3				
		i	E	13 49	4		-3			USCGS: 31N, 129E, H 03 53 00,
		i	N	14 17	4	+3				h 100 km.ca.
		i	N	14 57	4	+5				
		iSS	N	17 06	4	+3				
		iSS	E	17 07	5		+4			
		i	E	17 21	4		+6			
		i(SSS)	E	20 29	7		-9			
		eL	E	24.5	25					
		M	E	31.1	15		2			
163	4			21.7	Surface waves.					USCGS: 7½N, 94E, H 21 05 45
164	5			10.5	Waves.					
165	5	iP	V	13 56 59	1½			+	4500	Compression
		iP	NZ	57 00	3	-3		+5	40°5	Compression
		i	V	57 03	1½			+		H 13 49 17
		isP	NEZ	57 08	4	+5	-2	-7		
		i	Z	57 27	4			+14		USCGS: 1N, 129E, H 13 49 16
		ePP	N	58 35	13					
		i	V	58 41	2			-		
		i	E	58 44	4		-5			
		iPcP	Z	59 00	4			+19		
		iS	N	14 03 08	7	-9				
		iS	E	03 09	7		-20			
		i	E	03 19	6		+29			
		i	N	03 20	7	-23				
		i	E	03 26	6		-22			
		i	Z	03 40	7			+15		
		i	N	04 13	6	-17				
		i	E	04 20	7		+16			
		i	E	05 25	6	-	-8			
		i	N	05 41	7	+19				
		i	Z	05 44	7			-21		
		i	E	05 47	6		-16			
		eSS	NE	06 00	16					
		iSS	Z	06 05	7			+10		
		i	E	06 26	7		-36			
		iSSS	N	06 38	9	-32				
		iSSS	Z	06 43	9			+33		
		eL	E	08.3	(33)					
		eL	Z	08.4	25					
		eL	N	10.8	28					
		M	NE	17.1	13	120	105			
		M	Z	18.1	13			165ca		
166	55	eL	E	16 11.9	25					Masked by microseisms.
		M	NEZ	17.0	13	7	5	6		USCGS: 1N, 129E, H 15 49 53
167	6	iP	V	02 29 55	1½			-	4590	Dilatation
		iP	Z	29 56	3			+5	41°3	Compression

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
167	Mar. 6	iP	V	02 29 55	1½			-	4590	Dilatation. Large microseisms.
		iP	Z	29 56	3			+5	41°3	Compression
		iPP	Z	31 28	3			-3		H 02 22 06
		i	Z	31 31	3			+5		
		i	Z	32 31	3			+4		USCGS: 1N, 129E, H 02 22 06
		iS	N	36 10	4	+3				
		i	E	36 15	4		+2			
		e(LQ)	E	38.8	21					
		e	Z	38 56	15					
		iSS	Z	39 08	5			-5		
		eSS	NE	39 10	17					
		i	E	39 22	6		+5			
		i	E	39 33	5		+5			
		eL	E	44.1	28					
		i	E	45 41	7		+5			
		M	NEZ	49.8	13	15	10	18		
		i	Z	57 03	6			-11		
		i	V	59 19	1½			+		
		i	Z	59 46	6			+6		
168	7	iP	V	00 16 23	1			+		Compression
169	7	iP	Z	05 21 13	2			+2	4670	Compression
		iS	N	27 33	4	+2			42°0	H 05 13 18
		e	E	27 34						
		eSS	N	30 39	9					USCGS: 1½N, 125½E, H 05 13 10
		i	E	30 54	4		+3			
		M	E	39.9	16		1			
170	7	(iP)	Z	09 43 47	3			+2		Masked by microseisms.
		M	NEZ	52.6	18	4	2	3		USCGS: 10S, 160½E, H 09 38 09
171	7			23.5	Waves.					
172	8	i	V	11 58 24	1½			+		Masked by microseisms.
		i	Z	58 33	4			+3		
		i(S)	E	12 03 54	5		+4			USCGS: 65S, 179½E, H 11 51 10
		e	N	04 05	13					
		eL	E	06.1	24					
		M	E	06.9	16		11			
		M	NE	07.8	12	6	7			
173	8	iP	NEZ	16 38 26	3	+8	+4	-23	2560ca	Dilatation
		i	Z	38 32	3			-23	23°ca	h 150-200 km., H 16 33 37
		i	N	38 33	3	+8				
		i	E	38 42	5		+12			
		ipP	NE	38 59	4	-7	-10			USCGS: 16½S, 168½E, H 16 33 38
		iPP	NEZ	39 06	5	-11	-11	+19		h 250 km.ca
		i	NZ	39 11	3	-26		+72		
		i	NEZ	39 17	3	+19	+25	-56		
		isP	EZ	39 20	4		-50	+89		
		i	NEZ	39 44	4	+41	+54	-97		
		i	EZ	40 13	4		+38	-51		
		i	N	40 21	4	+42				
		i	Z	40 40	3			+14		
		iS	NEZ	42 19	5	-71	+195	+53		
		i	N	42 28	4	-98				
		i	N	42 37	6	-104				
		i	N	42 48	5	+74				
		i	E	43 00	5		-91			
		i	N	43 04	5	-140				
		i	N	43 13	5	-150				
		iSS	E	43 24	5		-58			
		i	E	43 36	6		-68			
		i	N	43 42	6	+100				
		i	N	47 26	9	-64				
		i	N	48 02	8	-94				
		i	E	49 02	7		+79			
		iScS	N	49 12	5	-80				
		i	E	51 08	8		+75			
		i	N	51 11	9	+88				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
						A_N	A_E	A_Z		
	1960			h m s	s	μ	μ	μ	km.	
174	Mar. 9	i(pP)	Z	01 11 52	3			+3		Masked by microseisms.
		(iS)	N	15 59	6	+4				USCGS: 5½S,148½E, H 01 05 42,
										h 150 km.ca.
175	9	i(P)	V	01 55 04	1½			+		Masked by microseisms
		i	V	02 03 08	1½			+		
		eL	E	04.0	24					
		M	E	05.4	15		4			
		M	N	08.5	15	2				
		i	E	08 40	5		+4			
		i	E	08 53	5		+4			
176	10			00.8	Long waves, masked by large microseisms.					
177	10	iP	Z	05 04 56	3			+3		Compression. Large microseisms.
										USCGS: 31½S, 179½E, H 05 00 23,
										h 500 km.ca.
178	10	(iP)	NEZ	09 19 34	4	-2	+2	+2		Masked by large microseisms.
										USCGS: 7½N, 126E, H 09 10 47
179	10	(iP)	Z	09 50 28	4			-3		Dilatation. Microseisms present.
		iS	NE	54 54	5	-2	+4			
		i	N	55 04	6	+5				USCGS: 10S, 161E, H 09 44 57
		i	E	55 07	5		+2			
		i	NZ	55 16	6	+10		-4		
		i	E	55 27	7		-4			
		i	Z	55 31	6			-6		
		i	NEZ	55 41	7	-9	-3	+6		
		i	Z	55 50	6			+6		
		i	E	55 52	6		-3			
		i	N	55 54	7	-9				
		eL	N	56.5	22					
		M	NZ	59.2	18	9		11		
		M	E	59.7	16		7			
180	10	i	E	13 57 51	4		+3			Masked by microseisms.
		eL	N	14 00.1	21					
		M	N	03.6	13	3				USCGS: 15S, 174W, H 13 44 25
		M	EZ	04.5	16		3	4		
181	10	i(P)	V	14 44 37	1			+		Masked by microseisms.
										USCGS: 47N,152E,H 14 32 39, h 100km.
182	10	(iPKP)	Z	19 14 37	3			+2		Masked by microseisms.
		(iPP)	Z	16 13	3			+2		USCGS:14½N,91½W,H 18 55 55, h 100 km.
183	12	iP	V	02 20 53	1½			-		Dilatation. Masked by microseisms.
		e	E	28.0						USCGS: 4S,152½E,H 02 14 56, h 150 km.
		eL	E	29.3	22					
184	12	iP	Z	20 36 31	2			+5	3140	Compression
		i	Z	36 34	2			+5	28°2	h 0.00 or 0.005
		i	N	36 35	3	-3				H 20 30 39
		i	Z	36 42	4			+7		
		i	NZ	36 48	3	+3		-5		USCGS: 6S, 152E, H 20 30 39
		i	N	36 51	4	+3				
		i	Z	36 53	4			+12		
		i	NZ	36 58	4	+14		-19		
		i	Z	37 08	4			-12		
		iPP	NZ	37 24	5	+11		-17		
		iPPP	NZ	37 34	6	+12		-14		
		i	NEZ	37 57	6	+12	+5	-21		
		i	N	38 20	6	+12				
		i	Z	38 21	6			+18		
		i	E	39 53	4		-4			
		i	Z	39 57	4			+6		
		i	N	39 59	4	+6				
		iS	N	41 13	8	+21				
		i	N	41 27	6	+				
		i	Z	41 30	9			-19		
		i	NE	41 32	9	+68	+13			(Continued on next page)

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
						A_N	A_E	A_Z		
	1960			h m s	s	μ	μ	μ	km.	
184	Mar.12	i	N	20 41 57	9	-64				
cont.		i	E	41 59	4		+			
		i	Z	42 06	4			+20		
		i	N	42 09	8	-34				
		i	Z	42 22	4			+17		
		i	N	42 33	7	-27				
		i	E	42 35	6		-16			
		i	N	42 44	7	+24				
		i	E	42 49	6		-25			
		i	E	43 25	6		-16			
		eL	Z	43.6	33					
		i	N	43 37	6	+18				
		eL	E	43.8	30					
		eL	N	44.4	28					
		M	N	45.8	18	49				
		M	E	47.8	13		28			
		M	Z	48.5	15			49		
		M	N	48.7	13	34				
185	15			10.0	Long waves.					USCGS: 51N, 174½E, H 09 20 56
186	15			10.4	Long waves.					USCGS: 20S, 174W, H 10 08 59
187	16	(iP)	V	00 45 54	2			+		Masked by microseisms.
		iPP	V	49 19	1½			-		USCGS: 59½S, 26W, H 00 33 05
		M	E	01 20.4	15		1			
188	16	iP	Z	17 46 28	3			+3	(4080)	Compression
		e	Z	48 00	10				(36°7)	
		i	EZ	48 21	4		+3	+5		USCGS: 15½S, 173½W, H 17 39 16
		e(S)	E	52 12	10					
		i	E	52 29	5		+4			
		i	E	52 38	8		-3			
		i(SSS)	N	55 10	10	+6				
		i	E	57 07	4		-3			
		M	E	59.8	17		8			
		M	Z	18 00.0	17			10		
		M	N	00.2	12	6				
189	16			19.5	Surface waves.					
190	17			11.8	Waves.					
191	19	i(Pg)	V	05 37 31½	¼			-		Dilatation
		i(Sg)	V	37 35	½			+		
192	19	iP	Z	09 28 52	2			+1		Compression
										USCGS: 2½N, 127E, H 09 20 51
193	19	iP	NZ	19 22 14	3	+2		-3	3600	Dilatation
		i	Z	22 16	3			+7	32°4	H 19 15 40
		iPP	Z	23 20	3			+3		
		iPPP	NZ	23 33	4	+3		-3		USCGS: 3S, 138E, H 19 15 37
		iS	E	27 28	6		+3			
		i	N	27 32	4	-3				
		e	N	28 03	19					
		i	E	30 08	4		+6			
		i	N	30 35	4	+8				
		M	NEZ	33.7	7	16	27	12		
		M	NE	36.3	11	16	14			
		M	Z	36.7	13			20		
194	20			14.3	Waves.					USCGS: 40N, 143½E, H 13 36 54
195	20	eP	NZ	17 19 04	4				8270	
		iP	Z	19 08	4			-4	74°4	Dilatation
		i	N	19 11	4	-3				h 0.00, H 17 07 28
		ipP	NZ	19 17	4	+3		-8		
		i	Z	19 28	4			+5		USCGS; 40N, 143½E, H 17 07 30,
		i	N	19 31	4	+3				h 60 km.ca.
		i	Z	20 08	5			-9		
		i	Z	21 11	4			+14		

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
195	Mar.20	i	Z	17 21 38	4			+6		
cont.		i	Z	21 59	4			-7		
		i	N	22 00	4	+3				
		i	NZ	22 12	5	+5		-12		
		i	Z	22 51	6			-7		
		i	N	28 31	7	+4				
		iS	E	28 35	8		-21			
		i	NEZ	28 44	11	+39	+72	+24		
		isS	E	28 54	8		-39			
		e	N	28 58	27					
		i	E	29 01	7		-33			
		i(SKS)	N	29 08	9	+29				
		iPS	Z	29 14	8			-19		
		i	N	29 17	16	-71				
		iPPS	E	29 27	9		+49			
		i	E	29 41	9		-33			
		i	N	32 02	6	+14				
		i	N	32 58	6	+13				
		iSS	E	33 05	18		-37			
		i	N	33 38	10	-19				
		eSSS	Z	36 14	27					
		eLQ	E	38.9	30					
		M	N	46.2	22	83				
		M	Z	46.6	21			81		
		M	E	47.3	23		51			
		M	E	48.8	19		37			
		M	N	49.7	19	73				
		W_2 M	NEZ	19 42.1	20	14	7	27		
		F		21.7						
196	21	eP	Z	00 46 28	4					
		eS	E	55 55	5					USCGS: 39½N, 143E, H 00 34 50
		e	E	56 09	24					
		e	N	56 35	24					
		M	N	01 13.9	19	1				
		N	Z	14.2	20		1	1		
		M	E	15.3	18		1			
197	21	(eP)	Z	01 56 53						Masked by coda of no.196
		M	N	02 09.7	13	3				USCGS: 16S, 173W, H 01 49 42
		M	EZ	11.2	17		5	7		
198	21	e	V	04 40 36½	¼					Small local tremor ?
199	21			08.5	Waves.					
200	21	e(S)	E	09 39 26	13					USCGS: 40N, 143½E, H 09 18 22
		e	NE	39 40	21					
		M	NZ	58.4	19	1		1		
		M	E	58.8	18		1			
201	21	(P)	Z	11 47 27						USCGS: 16½S, 172½E, H 11 40 15
		eL	N	55.9	21					
		M	N	12 00.1	13	2				
		M	EZ	01.6	17		2	3		
202	21	e(P)	V	16 43 52						USCGS: 4½S, 154E, H 16 37 46
		e	E	48 49						
		e	N	49 28						
203	22	iP	Z	02 37 09	4			+3	3200	Compression
		i	NZ	37 14	4	-3		-4	28°8	
		i	Z	37 19	3			+6		USCGS: 61½S, 154E, H 02 31 17
		i	Z	37 51	4			-4		
		iS	E	41 58	8		+7			
		i	N	42 02	8	+12				
		i	E	42 06	8		-12			
		i	N	42 17	6	+10				
		i	E	42 19	8		-14			
		iL(Q)	E	42 53	16		-50			
		iL	N	43 04	12	+(27)				

Continued on next page.

No.	Date	Phase & Component	Time (G.M.T.)	Per.	AN	AE	AZ	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
203	Mar.22	eLR Z	02 44.1	21					
cont.		iM E	44 41	10		+50			
		M EZ	45.9	10		38	31		
		M N	46.1	10	32				
		M N	47.2	10	36				
		M E	48.5	9		64			
		M Z	50.3	10			41		
204	22	iP Z	13 54 25	3			+2	3040	Compression
		iPcP V	57 43	1½			+	27°3	H 13 48 37
		eS NE	59 04	10					
		eLQ E	14 00.0	21					USCGS: 60½S, 153E, H 13 48 43
		eSS N	00 20	15					
		eLR Z	01.1	24					
		M NEZ	04.0	12	1	3	2		
205	22	iP Z	21 21 14	3			+2		Compression
		i(pP) V	21 48	1½			+		USCGS: Near coast of West Java, H 21 12 42, h 150 km.ca
206	23	eP V	00 35 01					8200	Microseisms present.
		i Z	35 08	4			+5	73°8	Compression
		iPcP Z	35 17	4			+6		H 00 23 23
		i NZ	35 41	7	+5		-10		
		e Z	36 59	13					USCGS: 39½N, 143E, H 00 23 22
		i Z	39 49	4			+5		
		i Z	40 23	4			+5		
		e Z	41 19	15					
		iS NE	44 32	7	-9	-9			
		i Z	44 33	6			-4		
		i NE	44 46	8	-11	-21			
		i Z	44 47	5			-7		
		i N	44 56	6	+9				
		i Z	45 04	7			-6		
		iPS E	45 06	7		+7			
		iPPS EZ	45 20	7		+15	-5		
		i N	45 22	7	+18				
		i Z	45 58	7			-9		
		i E	46 30	7		+8			
		i N	46 39	8	-10				
		i N	48 38	7	+7				
		i N	49 03	9	+9				
		i E	49 08	7		+9			
		i E	50 16	7		-8			
		i E	50 52	7		+8			
		eL E	54.9	(36)					
		M E	01 01.2	19		21			
		M N	02.5	15	16				
		M Z	03.7	19			30		
		F	04.1						
207	23	ePg V	06 07 22	¼					
		iSg V	07 25	¼			-		
		i V	07 29	½			+		
208	23	i(PcP) V	22 34 28	1½			+		Masked by microseisms.
		iS E	43 36	6		-2			
		iScS E	44 21	6		-2			USCGS: 39½N, 143E, H 22 22 36
		e(SS) NE	48 04	15					
		eL E	54.1	28					
		M Z	23 02.6	21			4		
		M NE	03.0	21	4	3			
209	24		21.3	Waves.					
210	25	iP V	02 34 45	1			+		Compression. Masked by microseisms.
		i V	36 14	1½			-		USCGS: 19S, 177½W, H 02 28 56,
		i Z	36 16	4			+3		h 400 km.ca.
211	25	i E	06 46 25	4		+3			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
212	Mar.27	iP	Z	03 53 48	3			-2	2700	Dilatation
		i	NEZ	53 51	4	-3	-4	+10	24°3	Compression
		i	Z	53 59	3			+10		H 03 48 28
		i	Z	54 03	5			+16		
		i	NEZ	54 13	4	-8	-6	+15		USCGS: 13½S, 166½E, H 03 48 27
		iPP	NEZ	54 24	5	-4	-6	+7		
		i	Z	54 43	4			+12		
		i	N	54 49	5	+8				
		iS	E	58 05	7		+6			
		i	E	58 14	6		-10			
		i	N	58 19	7	-19				
		i	Z	58 22	7			-16		
		i	NEZ	58 33	8	-47	-27	-33		
		i(SS)	N	58 52	9	+33				
		i	Z	59 01	6			+20		
		i	N	59 06	7	+25				
		i	N	59 18	9	-33				
		i	E	59 19	7		+20			
		eL	Z	59.6	24					
		i	Z	04 01 07	7			+21		
		M	E	01.8	15		22			
		M	NZ	02.6	13	31		19		
213	27	iP	Z	09 03 18	2			+4	2780	Compression
		i	NE	03 19	3	+2	+2		25°0	H 08 57 51
		i	Z	03 22	3			+13		
		i	NEZ	03 34	4	-8	-7	+22		
		i	NEZ	03 40	4	+6	+6	-13		USCGS: 13½S, 166½E, H 08 57 53
		i	NEZ	03 47	6	+13	+12	-30		
		i	N	04 19	7	+8				
		i	Z	04 20	5			+16		
		i	E	04 25	5		-7			
		i	NEZ	04 54	5	+12	+7	-10		
		i	NEZ	05 05	7	+12	+9	-18		
		i	E	05 26	7		+10			
		iS	E	07 40	7		+11			
		i	N	07 49	7	-28				
		i	EZ	07 51	7, 5		-28	+9		
		i	NE	08 01	10	-77	-79			
		i	Z	08 06	10			-59		
		i	N	08 21	8	-41				
		i	E	08 27	8		+19			
		i	Z	08 30	8			+34		
		i	EZ	08 45	9, 7		+16	+32		
		i	N	08 48	13	-84				
		eL	Z	10.0	22					
		M	E	11.7	16		48			
		M	N	11.9	15	63				
		M	Z	12.6	16			38		
214	27			11.1	Waves					
215	27			12.6	Waves					USCGS: 14S, 165½E, H 12 23 10, h 150 km.ca.
216	27			17.6	Waves					USCGS: 30½S, 178W, H 17 24 41
217	27	(iP)	V	19 40 45	1			-		Masked by microseisms.
		i	V	40 50	1			+		
		eS	E	45 17	9					USCGS: 13S, 166E, H 19 35 25
		iS	N	45 18	7	+5				
		i	Z	45 20	9			+5		
		eL	N	47.0	19					
		M	N	48.4	15	2				
		M	E	49.0	14		2			
218	27	eL	E	21 08.4	23					USCGS: 20N 104½W, H 20 15 46
		M	Z	14.5	16			3		
		M	E	14.9	16		1			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
						AN	AE	AZ		
	1960			h m s	s	μ	μ	μ	km.	
219	Mar.27	iP	NEZ	23 32 45	2	-3	+6	-13	2310	Dilatation
		i	NEZ	32 48	3	+6	-10	+23	20°8	h 0.03, H 23 28 20
		iPP	Z	33 18	4			+7		
		i	Z	33 35	4			-7		USCGS: 37½S, 177E, H 23 28 04
		isP	EZ	33 48	4		+4	-7		
		i	N	33 50	4	+6				
		i	E	34 02	6		+6			
		i	N	34 03	4	-3				
		i	Z	34 06	6			+7		
		i	E	34 45	4		+5			
		iS	E	36 19	4		+5			
		iS	N	36 21	4	+8				
		i	Z	36 25	7			+12		
		i	N	36 39	7	-7				
		iSS	N	37 17	7	+4				
		i	E	37 48	7		+8			
		i	N	37 54	6	-4				
		iScS	E	43 47	5		-3			
220	28	ePS	E	00 44 45	13					
		eLR	E	01 12.8	30					USCGS: 7½N, 82W, H 00 13 38
		M	NEZ	15.8	19	3	3	6		
221	28	iP	NEZ	06 41 20	4	-1	-1	+4	2610	Compression
		ipP	V	41 31	1			+	23°5	h 0.00, H 06 36 08
		i(sP)	NEZ	41 37	5	+5	+4	-7		
		iPPP	NEZ	42 00	5	+8	+6	-11		USCGS: 13½S, 165E, H 06 36 27,
		i	NE	42 10	6	+6	+5			h 300 km.ca.
		i	Z	42 14	5			+6		
		i	Z	42 37	4			+4		
		i(PcP)	Z	45 04	6			+7		
		iS	N	45 28	6	-2				
		i	E	45 41	6		+7			
		i(sS)	N	45 49	7	-11				
		i	Z	45 50	6			+7		
		i	E	45 54	7		+14			
		iSS	N	46 12	7	+6				
		iSSS	E	46 29	7		+6			
		eL	N	47.9	21					
		M	E	49.8	15		9			
		M	N	50.0	13	12				
		M	Z	51.9	14			9		
222	28	i	V	06 44 50	1½			+		Compression
		iP	Z	44 54	3			+6		Compression. Confused by coda of
		i	V	44 59	1½			+		no.221
		iS	E	49 11	7		-13			USCGS: 13½S, 166E, H 06 39 32
		M	N	55.7	10	9				
223	28	iP	V	06 48 07	1½			-		Dilatation. Masked by coda of
		i	Z	48 10	6			-9		preceding shocks.
		i	V	48 16	1½			-		USCGS: 13½S, 166E, H 06 42 44
		i	Z	48 25	6			+11		
		M	Z	57.4	10			8		
		M	E	57.7	10		9			
		M	N	59.0	10	7				
224	28	iP	V	08 01 19	1			+		Compression
		e	N	05 49	13					
		i	N	06 22	4	+2				USCGS: 13½S, 166E, H 07 55 59
		M	N	09.2	13	1				
		M	E	09.5	13		1			
225	28	(iP)	V	12 43 58	1½			-		Dilatation. Masked by microseisms.
		e	N	51 24	15					USCGS: 23S, 176W, H 12 37 50
		M	N	53.9	16	2				
226	29	iP	V	00 16 21	1¼			+		Compression,. Microseisms present.
		M	Z	26.6	16			2		USCGS: 33½S, 177½W, H 00 10 45

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
227	Mar.29	iP	V	06 35 56	1½			-	2590	Dilatation
		i	NEZ	35 59	3	+	+	-18	23°3	Dilatation
		i	NEZ	36 04	4	-8	-7	+36		H 06 30 46
		i	NEZ	36 16	3	+21	+18	-48		
		i	NE	36 19	4	+25	+33			USCGS: 17S, 167E, H 06 30 54
		iPP	NEZ	36 26	7	+17	+42	-50		
		i	E	36 33	4		-36			
		iPPP	Z	36 36	7			-68		
		iPPP	NE	36 37	7	+34	+30			
		i	NEZ	36 50	6	+22	+32	-69		
		i	NE	37 02	7	+35	+37			
		i	N	37 20	6	-42				
		i	Z	37 22	6			+63		
		i	E	37 28	6		+19			
		i	EZ	37 34	8		-40	+76		
		i	N	38 08	4	-18				
		i	E	38 15	4		+21			
		i	E	38 19	5		-40			
		i	Z	39 15	6			+37		
		i	N	39 21	5	+34				
		i	E	39 23	6		-26			
		iS	NE	40 05	9	-145	-135			
		i	Z	40 08	7			-69		
		m	NE	40 18	9	100ca	220ca			
		i	N	40 20	5	+105				
		i	Z	40 29	4			+66		
		i	E	40 31	7		+155			
		i	N	40 33	7	-185				
		i	E	40 42	8		+130			
		iSS	E	40 50	10		-102			
		iSS	N	40 52	10	-115				
		i	Z	41 04	4			+53		
		iSSS	E	41 07	10		-67			
		i	N	41 11	8	+100				
		i	Z	41 15	6			+75		
		i	Z	41 24	9			-155		
		eL	E	41.5	26					
		M	Z	43.2	18			210		
		M	E	43.3	17		145			
		M	N	43.6	16	160				
		M	N	44.5	15	185ca				
		M	Z	45.5	14			120		
		M	E	46.0	14		155			
		M	N	46.2	13	165ca				
228	29	iP	Z	22 16 17	3			+2	3020	Compression
		i	Z	16 23	4			-2	27°2	
		i	Z	16 36	6			+6		USCGS: 6S, 147E, H 22 10 20
		i	Z	17 16	6			+3		
		iS	E	20 55	6		+4			
		i	Z	21 02	4			-3		
		i	E	21 08	4		+3			
		i	N	21 14	8	-8				
		i	Z	21 19	7			-10		
		i	E	21 32	6		+6			
		i	N	21 47	7	-7				
		i	Z	22 10	6			+6		
		i	N	22 20	6	-5				
		i	Z	22 23	6			-4		
		i	Z	22 44	6			-6		
		i	E	22 45	6		+4			
		i	E	23 17	6		-6			
		eL	N	23.4	24					
		eL	Z	24.7	27					
		M	N	26.3	22	53				
		M	E	26.5	15		10			
		M	Z	27.0	20			50		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
229	Mar.30	(iP)	V	01 32 08	1			+		Possibly artificial.
		eL	N	42.7	21					
230	30			04.5	Waves.					
231	30	i(P)	V	09 43 23	1½			+		
		i	Z	43 29	3			+2		USCGS: 17S, 167½E, H 09 38 08
		e(S)	N	47 23	8					
		e	E	47 26	6					
		M	NE	51.5	13	2	1			
		M	Z	53.0	14			2		
232	30	iP	EZ	10 55 08	2		+2	-2	2750	Dilatation
		i	NZ	55 10	3	-2		+6	24°7	h 0.00, H 10 49 49
		isP	NEZ	55 21	4	-5	-3	+9		
		i	Z	55 38	4			-9		USCGS: 13½S, 166E, H 10 49 47
		i	NEZ	55 49	5	+10	+9	-19		
		i(PcP)	N	58 40	5	+6				
		iS	E	59 25	7		-5			
		i	NZ	59 37	8	-15		+8		
		i	E	59 44	8		+20			
		i	N	11 00 01	6	+9				
		i	EZ	00 18	6		+13	-7		
		i	N	00 26	7	+21				
		i	EZ	00 36	6		-8	+10		
		eL	Z	01.7	16					
		eL	N	01.8	16					
		M	N	02.8	15	28				
		M	Z	03.0	15			15		
		M	E	03.4	13		18			
233	30	(iP)	V	14 21 15	1				-	Dilatation. Masked by microseisms.
		(S)	N	28 55	4					USCGS: 3½S, 102E, H 14 11 40
234	30	iP	NEZ	15 24 36	3	-1	-1	+4	2600	Compression
		i	EZ	24 51	3		+5	-8	23°4	
		iS	E	28 46	4		+3			USCGS: 22½S, 174E, H 15 19 30
		i	N	28 51	4	+5				
		i	E	28 55	6		+28			
		i	Z	28 57	6			+21		
		i	N	29 00	6	-16				
		i	E	29 11	4		-6			
		i	N	29 27	7	-10				
		e	Z	29.9	20					
		eL	N	30.3	20					
		eL	Z	30.8	21					
		M	N	31.2	16	17				
		M	Z	32.1	16			12		
		M	E	34.9	14		9			
235	31	i(P)	Z	00 49 03	3			+2		Compression. Masked by microseisms. USCGS: 18½N, 146E, H 00 39 59 h 250 km.ca.

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
236	Apr.2	eL	E	14 30.7						Masked by large microseisms.
										USCGS: 6S, 152E, H 14 14 42
237	2	(iP)	V	23 10 43	1½			+		Masked by large microseisms.
										USCGS: 11S, 113E, H 23 02 50
238	4	iP	V	08 01 40	1½			+		Compression. Large microseisms
		ipP	Z	02 02	3			+5		present.
		isP	V	02 10	1½			-		h 0.01
		isP	NEZ	02 11	3	-6	-3	+10		
		iPP	Z	02 20	?			+		USCGS: 10S, 161½E, H 07 56 15,
		e(S)	E	06 15	9					h 100 km.ca.
		e	N	06 16	9					
		i	Z	06 19	4			+5		
		i	E	06 57	5		+5			
		i	E	07 12	4		+4			
		i	N	07 18	9	-3				
		eL	Z	08.1	30					
239	4			10.7	Waves, masked by large microseisms.					USCGS: 1S, 145½E, H 10 20 12
240	4			13.0	Long waves, masked by large micros.					USCGS: 5S, 152E, H 12 45 30, h 100km.
241	5	e(S)	E	07 41 05	?					Masked by large microseisms.
		eSS	N	46 39	15					No Vertical Galitzin record.
		eLQ	E	52.6	30					
		M	N	08 05.6	19	3				USCGS: 61S, 26W, H 07 17 45
		M	E	06.3	19		2			
		i	N	12 29	5	-8				
242	5	eSS	N	13 05 07	16					Masked by micros. No Galitz.Z record.
		M	N	28.3	16	2				USCGS: 60½S, 25W, H 12 36 15
	7	(iP)	V	03 10 14	1½			+		Masked by microseisms.
										USCGS: 21S,179½W,H 03 05 35,h 600km.
243	7	(iP)	Z	13 52 32	3			+2	3000ca	Compression. Microseisms present.
		iP	Z	52 35	3			+5	27°ca	Compression
		isP	Z	54 55	4			+4		h 0.075
		i	Z	55 06	4			+3		
		iS	E	56 37	6		+6			USCGS: 24S, 179½W, H 13 47 28,
		i	N	56 41	7	+4				h 500 km.ca.
		i	N	57 53	5	-4				
		i	N	58 10	5	-4				
		i(ScP)	N	58 22	5	-4				
		eL	Z	59.3	19					
		iScS	E	14 02 23	4		+2			
244	7			20.4	Long waves masked by microseisms.					USCGS: 12N, 143½E, H 20 03 37
245	8	iP	EZ	00 01 58	4		+2	-2	3250	Dilatation
		eS	N	06 37	7				29°2	h 0.02, H 23 56 09 April 7
		eL	Z	09.4	19					
		M	N	09.8	13	7				
		iScS	NE	12 17	4	-2	+3			
246	8	e	N	04 54 51	9					Masked by microseisms.
		eL	N	57.3	15					
247	8	i	N	08 46 36	6	-3				Masked by microseisms.
		eL	Z	50.3	25					USCGS: 6S, 147E, H 08 35 37
		M	NE	51.7	19	5	3			
		M	Z	51.8	23			5		
248	11	(P)	V	16 05 29						Obscured by microseisms.
										USCGS: 17S, 167½E, H 16 00 26
	11	(i)	Z	17 56 18	4			+4		Large microseisms present.
249	12	(iP)	Z	11 38 29	5			+3		Masked by large microseisms.
		M	E	50.4	14		2			
250	12	(iP)	Z	21 52 19	4			+2		Masked by large microseisms.
										USCGS: 3½S, 152E, H 21 46 02
251	14	e	V	00 27 15	¼					Explosion??
		i	V	27 20	¼			+		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
252	Apr.14	e(Pg)	V	05 58 41	¼					Quarry blast ??
		i	V	58 43	½			+		
253	14	(P)	V	06 32 08	1					USCGS: 8S, 118E, H 06 24 30
		eS	N	38 15	(10)					
		M	Z	50.6	18			3		
	15	i	V	02 52 10						to 03 29 20 sharp impulses on Sprengmother. Non-seismic ??
254	15	(P)	V	03 37 50	1					Masked by microseisms.
		i	Z	38 10	4			+3		
		(iSKS)	E	48 02	6		-4			USCGS: 27S, 113W, H 03 25 38
		i	N	49 16	4	-4				
		e(SS)	E	53 14	16					
		eLQ	E	59.2	30					
		eLR	Z	04 02.2	27					
		M	NEZ	06.1	21	14	8	17		
		M	N	10.1	18	13				
255	15	(P)	V	04 18 48	1					Masked by coda of no.254
		i	Z	19 27	5			+10		
		i(S)	E	23 12	5		-2			USCGS: 13½S, 166E, H 04 13 25
		i	N	23 15	8	+16				
		M	N	26.5	15	9				
		M	E	27.0	13		4			
256	15	(iP)	V	08 38 57	1½			-		Masked by microseisms. USCGS: 28S, 177W, 08 33 08
257	15	(iP)	V	11 50 30	1½			+		Masked by large microseisms.
		i	V	50 36	1½			-		USCGS: 40½N,142E,H 11 39 01, h 150km.
258	15	iP	Z	22 10 27	3			+14	2760	Compression
		i	NE	10 28	4	-9	-3		24°8	H 22 05 02
		i	NZ	10 37	5	-10		+17		
		i	E	10 39	4		-7			USCGS: 13½S, 166E, H 22 05 06
		iPP	NZ	11 01	5	-12		+19		
		i	NEZ	11 07	6	+16	+9	-18		
		i	NEZ	11 20	6	+10	+11	-18		
		i	N	11 44	5	-12				
		i	Z	11 56	4			-10		
		i	Z	12 43	6			+15		
		i	N	12 51	6	+10				
		i	Z	12 52	6			+21		
		i	E	13 01	4		+8			
		iPcP	NZ	14 07	6	-19		+15		
		iS	E	14 48	7		+17			
		i	N	14 55	9	-29				
		i	E	15 00	9		+40			
		m	NZ	15 06	10	50		16		
		i	NZ	15 28	7	+35				
		i	E	15 38	6		-11			
		i	E	16 01	6		+14			
		eL	Z	17.0	20					
		M	N	18.1	15	58				
		M	E	18.6	16		28			
		M	Z	20.8	15			27		
	16	i	V	13 40 40	1½			+		Seismic ??
259	17	e	E	15 52 26						Masked by microseisms.
		eL	LZ	55.2	22					USCGS: 21S, 175½W, H 15 40 02
		M	EZ	58	16		2	4		
		M	N	59	10	5				
260	18	iP	V	13 06 34	1½			+		Compr. Large microseisms.
		e	E	10 59	10					USCGS: 13½S, 166E, H 13 01 12
		i	N	11 04	6	+6				
261	19	(iP)	Z	09 29 19	4			+3		Masked by large microseisms.
		(S)	N	34 51	?					USCGS: 20S, 173½W, H 09 22 31
		M	EZ	42.7	16		2	2		
262	20	e	V	02 00 05	½					Very small local tremor.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
263	Apr.20	o(Pg)	V	05 16 28	¼					Small local tremor
		i	V	16 31	½			+		
264	20	(iP)	V	21 43 12	1½			+		Masked by large microseisms.
		i(PPP)	Z	44 45	4			+5		
		e(S)	N	48 37	9					USCGS: 2½S, 140E, H 21 36 41
		M	NE	56.0	15	7	5			
		M	Z	56.9	12			2		
265	21	iP	N	02 30 17	5	+5				Masked by large microseisms.
		e(SS)	E	48 17	18					
		e(SSS)	N	52 20	18					USCGS: 2½S, 110W, H 02 16 29
		eL	E	03 20.0	23					
		M	EZ	09.5	16		1	1		
266	21	o(Pg)	V	06 00 46.7	¼					Quarry blast ??
		i	N	00 47.7	½	+				iN from Mainka.
		i	V	00 51.7	½			+		
267	21			16.6	Long waves.					USCGS: 20½S, 174W, H 16 21 57
	21	(i)	Z	16 56 20	3			+3		Large microseisms present.
268	22	iP	V	20 33 03	1½			+		Compr. Microseisms present.
		i	Z	33 59	4			+6		
		i	V	34 07	1½			+		USCGS: 17½S, 174½W, H 20 26 28, h 200 km.ca.
		e(S)	E	38 18	7					
		i	N	39 38	7	-6				
		M	N	43.2	15	11				
		i(ScS)	E	44 46	5		+4			
269	24	iP	Z	03 29 50	2			+5	4970	Compression
		i	Z	30 00	4			-6	4497	h 0.09 H 03 22 28
		iPcP	Z	31 19	3			-4		
		iPP	NEZ	31 43	3	+4	-3	-9		USCGS: 6S, 113½E, H 03 22 23, h 600 km.ca.
		i	V	31 45	2			-		
		isP	EZ	32 38	3		+4	+4		
		i	V	32 56	2			+		
		i	Z	32 59	4			+7		
		iScP	Z	34 13	4			+10		
		i	E	34 16	4		+5			
		i	NEZ	34 25	4	-8	+8	+11		
		iPcS	E	35 04	4		-3			
		iS	N	35 44	4	-31				
		iS	EZ	35 45	4		-73	+26		
		i	NEZ	35 51	4	-64	+29	-27		
		i	Z	35 55	3			+14		
		i	NEZ	36 01	4	+31	-19	+21		
		i	NZ	36 13	4	+9		+11		
		i	E	36 33	4		-4			
		i	E	36 39	4		-11			
		i	N	36 58	4	-10				
		i	N	37 17	4	-16				
		i	N	38 01	4	-14				
		iScS	NE	38 41	4	-13	-11			
		isS	N	38 55	4	+20				
		i	N	39 07	5	+16				
		iSS	E	39 14	7		+28			
		i	Z	39 17	4			+11		
		i	N	39 22	5	-20				
		i	E	39 28	4		-19			
		i	N	39 33	4	-14				
		i(pScS)	E	41 31	4		-8			
		i	N	42 06	5	-22				
		i	E	42 23	4		+7			
		i	Z	43 05	4			-11		
		i	N	44 54	5	+21				
		i	N	45 04	7	-51				
		i	N	45 42	6	-35				
		i	E	45 50	4		+4			

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
270	Apr.24	(iPKP)	V	12 33 00	1½			+		Masked by microseisms.
		M	EZ	13 19.9	19		3	4		USCGS: 28N, 54½E, H 12 14 26
	27	e	V	06 59 17	½					Small local tremor ??
	27	e	V	07 00 08	½					Small local tremor ??
271	27	(P)	V	17 02 40						
		e	N	08 09	9					
		eL	E	12.1	(18)					
272	27	i(S)	N	17 23 21	6	+3				Masked by coda of No.271
		eL	E	26.4	24					
		eL	Z	27.9	24					USCGS: 3½S, 146½E, H 17 11 30
		eL	N	28.2	24					
		M	NEZ	31.9	12	7	4	3		
273	27	(iP)	V	22 53 53	1½					Masked by microseisms.
										USCGS: 18N, 120E, H 22 43 49
274	28	M	NEZ	03.0	20	2	1	3		USCGS: 59½S, 26W, H 02 10 14
	28	i	E	03 57 53	3		+3			Seismic ?? Masked by micro-
		i	V	59 10	1			+		seisms.
275	28	e	V	05 08 41						Masked by microseisms.
276	28	(iP)	V	05 14 21	1½			+		Masked by microseisms.
		(iPcP)	V	17 18	1½			+		
		i	N	21 49	9	-5				USCGS: 3½S, 144½E, H 05 08 07
		eL	E	22.4	37					
		eL	E	24.6	27					
		M	NE	26.4	19	9	12			
		M	NZ	29.4	13	7		8		
277	29	e(S)	N	10 08 04						Masked by microseisms.
		M	N	17.5	15	1				USCGS: 0°, 122E, H 09 53 26
278	29	M	NE	10 29.9	19	3	1			Masked by coda of No.277
										USCGS: 0°, 122E, H 10 06 14
279	29	iP	Z	13 41 26	2			-3		Dilatation
		iPP	V	43 06	1½			-		Merging into No.280
		iPcP	V	43 11	1½			+		USCGS: 0°, 122E, H 13 33 17
		i(S)	N	47 53	5	+1				
280	29	iP	Z	13 44 04	3			+2		Compression
		i(S)	N	48 31	6	-3				Confused by No.279
		eLR	EZ	50.7	30					USCGS: 30S, 178½W, H 13 38 31
		M	N	53.6	15	3				
		M	EZ	54.0	18		4	6		
281	29	i(S)	N	14 54 58	4	-2				USCGS: Kermadec Is., H 14 45 42
282	29	e	N	15 45 58	10					
		M	NZ	53.0	16	2		2		
283	29	e(S)	N	19 10 30	?					USCGS: ½S, 121½E, H 18 55 42
		M	N	20.2	19	1				
284	29	iP	Z	19 40 23	3			-2	4870	Dilatation
		i	Z	40 29	3			-2	43°8	H 19 32 14
		i	NEZ	40 36	4	+3	-3	-6		
		i	V	40 58	1½			+		
		iPcP	V	42 10	1½			-		USCGS: 0°, 122E, H 19 32 12
		e	NEZ	42 20	15					
		iS	N	46 54	5	-4				
		iS	E	46 56	7		+4			
		iPS	N	47 02	12	-10				
		ePPS	E	47 10	19					
		i	N	48 11	9	+11				
		iSS	N	50 02	7	+5				
		iScS	EZ	50 20	7		-10	-12		
		i	N	50 28	9	+5				
		iSSS	N	50 53	9	-9				
		eL	EZ	53.6	39					
		M	E	58.8	24		17			
		M	NZ	59.1	21	32		23		

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
285	Apr.29	iP	Z	20 52 36	3			-1	4850	Dilatation
		iS	N	59 06	6	-3			43°6	H 20 44 28
		iScS	N	21 02 26	4	-2				
		eL	N	03.4	30					USCGS: 0°, 121½E, H 20 44 27
		M	E	09.9	23		2			
		M	N	11.0	20	6				
		M	Z	11.5	22			6		
286	29	iP	V	23 58 05	1			-		Dilatation
		i	Z	58 07	3			-2		
		i	V	58 12	1			+		
		i(S)	N	24 02 35	8	+4				
		i	E	02 37	6		+3			
		eL	N	04.4	22					
		M	E	06.3	15		1			
		M	NZ	06.7	16	4		1		
287	30	iP	V	04 09 43	1½			+	4850	Compression
		i	Z	09 51	4			+2	43°6	H 04 01 35
		iS	NE	16 13	6	-4	+3			
		iSS	N	19 24	6	-2				USCGS: 0°, 122E, H 04 01 32
		i	E	19 31	9		+4			
		i	E	19 58	6		+5			
		iSSS	N	20 09	7	+4				
		iSSS	E	20 10	8		+6			
		eL	Z	23.6	36					
		M	N	28.3	17	8				
		M	EZ	28.6	19		5	9		
288	30			09.2	Waves.					
289	30			10.6	Waves.					USCGS: 0°, 121½E, H 10 11 23
290	30			11.3	Long waves.					USCGS: 16S, 173W, H 11 00 05
	30	(i)	V	13 19 17	1			+		
291	30	iP	Z	14 22 29	3			+2	2920	Compression. Microseisms present.
		i	Z	23 21	4			+3	26°3	h 0.00, H 14 16 55
		iS	N	26 57	7	-3				
		iS	E	26 58	4		+3			USCGS: 9S, 157E, H 14 17 04
		i	E	27 03	6		+5			
		isS	N	27 11	7	-9				
		i	N	27 23	6	-8				
		iSS	N	28 07	6	-7				
		eL	E	28.3	(33)					
		eLR	E	29.1	24					
		M	E	31.2	13		4			
		M	NZ	32.5	13	11		4		
		iScS	N	33 22	4	-3				
292	30			15.6	Waves.					
293	30	(iP)	V	19 31 16	1½			+		Large microseisms present.
		e(L)	N	37.4	15					
294	30	iP	Z	22 16 34	3			-4	4170	Dilatation
		ipP	Z	18 21	3			-3	37°5	h 0.095, H 22 10 10
		iS	N	21 41	4	+4				
		iS	E	21 42	4		-4			USCGS: 6S, 124½E, H 22 10 07,
		isS	N	24 48	5	+3				h 600 km.ca.
		iSS	E	24 53	5		+4			
		i	N	24 55	5	-3				
		i	E	24 58	4		+3			
		i	E	25 06	5		+9			
		i	NZ	25 12	7	+11		+7		
		i(ScS)	N	25 45	4	-2				
		i	N	27 27	5	+4				
	30	(i)	V	23 17 12	1½			-		Large microseisms present.
		(i)	V	17 46	1½			-		

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A. Fynn, S.J., Director

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
295	May 2	iP	V	12 18 21	1			+		Compression. Large microseisms.
		iPP	V	20 02	1			+		USCGS: 0°, 121½E, H 12 10 11
296	3	eP	V	13 30 17	1½					Large microseisms present.
		e(S)	E	36 45	9					USCGS: 0°, 121½E, H 13 22 07
		e	N	36 52	9					
297	3	iP	V	22 33 22	1			+		Compr. Masked by microseisms. USCGS:32N, 140E, H 22 22 41, h 150km.
	4	i	V	03 40 31	1			-		Sharp impulses on Sprengnether,
		i	V	51 44	1½			+		possibly non-seismic.
		i	V	04 19 55	1½			-		
		i	V	26 45	1½			-		
		i	V	28 16	2			+		
		i	V	48 05	1			+		
	4	(iP)	V	18 34 43	1½			-		USCGS: 0°, 122E, H 18 26 37
298	4	iP	Z	18 34 55	3			+3		Compression. Large microseisms
		i	Z	35 04	2			+3		present.
		iS	N	39 15	7	+5				
		i	N	39 23	5	-12				USCGS: 20S, 173E, H 18 29 40
		i	E	39 28	4		+3			
		i	N	39 34	8	-18				
		eL	E	40.2	22					
		eL	N	41.0	21					
		eL	Z	41.5	22					
		M	E	42.8	15		3			
		M	N	43.8	13	11				
	5	i	V	05 26 27	1½			+		Seismic ??
299	5	i	V	23 05 39	1			+		Masked by microseisms.
		i	V	06 59	1½			+		
		i	E	11 49	4		+4			
300	5	i	N	23 28 51	5	-6				
		i	N	29 29	5	+5				Masked by large microseisms.
		e(L)	N	34.0	16					
		M	NE	38.8	18	4	3			
301	8	iP	V	05 16 39	1			+		Compression. Masked by microseisms. USCGS:18½S,178W, H 05 10 58, h 450km.
302	8	e	N	05 37.6						Masked by microseisms. USCGS:31S, 178W, H 05 29 32
303	11			04.4	Surface waves.					
304	11	iP	NZ	18 43 04	3	-1		+4	4040	Compression
		ipP	V	43 14	1½			+	36°3	h 0.00, H 18 36 02
		i(sP)	Z	43 21	4			+3		
		i	Z	44 31	4			-2		USCGS: 3S, 131E, H 18 36 00
		i	V	44 34	1			+		
		iS	NE	48 42	5	-7	-4			
		i	N	48 56	7	+5				
		isS	E	48 58	8		-10			
		i	E	49 16	8		-9			
		i	N	49 25	7	-10				
		iSS	Z	51 13	6			+5		
		i	N	51 27	7	-9				
		i	NZ	51 46	10	+19	+8			
		i	N	52 32	7	-12				
		i(ScS)	N	53 06	4	-7				
		i	N	53 39	7	+7				
		eL	E	54.0	35					
		eL	E	55.8	30					
		M	N	19 00.4	13	39				
		M	EZ	00.8	15		28	24		
305	12			23.6	Surface waves					

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
	May 13	i	V	01 02 33	1			+		Seismic ??
		i	V	03 39	1			+		" "
		i	V	03 55	1			+		" "
		i	V	10 37	1			+		" "
		i	V	16 41	1½			+		" "
	13	e	V	01 56 11						Small local tremor ??
306	13			02.1	Surface waves					
	13	e	V	02 20 46						Small local tremor ??
	13	i	V	03 40 39	1			+		Seismic ??
	13	i	V	03 40 39	1			+		Seismic ??
	13	i	V	03 43 06	1½			-		Seismic ??
	13	i	V	04 30 14	1			+		Seismic ??
		i	V	30 51	1			+		" "
	13	e	V	06 14 30	¼					Quarry blast ??
		i	V	14 33.5	½			+		
307	13	iS	E	16 32 16	5		-4			Large microseisms present.
		i	E	32 35	4		+4			USCGS: 55N, 161½W, H 16 07 12
		[illegible]	E	53.0	25					
308	13	(iP)	E	20 52 01	4		-3			Masked by large microseisms.
		i(PP)	Z	52 32	4			+3		USCGS: 32½S, 179W, H 20 46 35
		i	E	56 34	6		+4			
		i	N	56 45	7	+5				
		i	Z	56 58	4			+6		
		eL	E	58.3	25					
		M	Z	21 00.6	17			4		
		M	NE	00.8	15	9	2			
	14	i	V	00 05 35	1½			+		Seismic ??
	14	i	Z	06 10 31	3			+3		Large microseisms.
	14	i	Z	13 42 12	3			+4		Large microseisms.
309	15			03.3	Waves.					
	15	(iP)	Z	13 40 58	3			+3		Masked by large microseisms.
		(i)	Z	42 34	4			+6		USCGS: 24N, 121½E, H 13 30 20
310	18	iP	Z	06 45 52	3			-3	7290	Dilatation. Large microseisms
		iS	E	54 37	6		-4		65°6	present.
		i	N	54 39	7	-8				H 06 35 04
		iPS	N	54 55	5	-5				
		i(ScS)	NE	55 52	6	+9	-6			USCGS: 29N, 130E, H 06 35 09,
		i	N	56 35	6	+18				h 100 km.ca.
		iSS	N	58 47	8	-13				
		eL	E	07 04.3	27					
		M	N	09.9	25	31				
		M	E	11.4	22		18			
		M	NZ	11.8	22	25		26		
		M	E	12.6	19		15			
		M	N	13.3	20	21				
311	18			13.0	Waves.					
312	18	(iP)	Z	18 16 59	2			+2		Masked by large microseisms.
		(iS)	N	24 42	3	-2				USCGS: Celebes, H 18 [illegible] 45
		eL	E	31.5	19					
313	19	i	Z	10 24 20	4			-2		Masked by microseisms.
		i	Z	24 41	4			+5		USCGS: 17S,66 E, H 10 11 51
		i(S)	N	33 40	7	-4				
		i(PS)	N	34 15	4	+2				
		i(PS)	E	34 17	7		-4			
		i	N	35 26	6	-5				
		M	NE	54.1	18	5	4			
314	19			22.5	Surface waves					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
315	May 20	(iP)	Z	00 29 58	2			+2		Masked by microseisms.
		i	Z	32 48	3			+3		USCGS: 3½S, 147½E, H 00 23 22
		M	E	42.2	18		2			
		M	N	44.2	13	3				
316	20	e	N	04 48 26	12					Masked by microseisms.
		e(LQ)	N	05 02.9	18					USCGS: Persian Gulf, H 04 14 18
		eLR	N	09.4	21					
317	20	iP	V	11 16 07	1			+	1780	Compression
		i	NEZ	16 09	(5)	+(6)	+(26)	-(24)	16°0	H 11 12 19
		i	NEZ	16 15	9	-21	-70	+59		
		iPPP	EZ	16 28	5		+30	+24		USCGS: 28S, 167½E, H 11 12 31
		i	E	16 33	6		-43			
		i	E	17 07	6		+34			
		iS	E	19 05	7		+			
		i	NE	19 09	5	+12	+19			
		i	Z	19 15	6			-30		
		i	E	19 20	7		-37			
		iSS	N	19 25	7	-35				
		eLR	E	19.7	20					
		i	N	19 45	8	-98				
		eL	N	20.0	19					
		M	E	21.1	16		185			
		M	N	21.3	12	130ca				
318	20	(iP)	V	17 45 48	1½			-		Masked by large microseisms.
		e(P)	Z	45 56						
	21	(iP)	V	08 26 33	1½			-		Masked by large microseisms.
		(e)	Z	26 57						USCGS: 15½N, 121½E, H 08 17 01
319	21	(iP)	Z	10 16 29	4			+5	10,840 ca.	Compression. Large micro-
		e	Z	16 44					97½°ca	seisms present. Interpretation
		i	NZ	16 50	6	+7		+16		difficult owing to overlapping and
		i	NZ	17 01	6	+10		+16		tangling of trace.
		i	NZ	17 08	6	-14		-12		
		i	N	19 53	6	-7				USCGS: 37½S, 73½W, H 10 02 50
		iPP	Z	20 18	7			+16		
		i	NZ	20 47	6	+17		+18		
		iSKS	NE	27 07	6	-23	+11			
		i	N	27 16	6	-				
		e	E	27.4	26					
		i(SKKS)	NE	27 33	6	-33	+30			
		e	E	27.8	30					
		i	E	28 12	7		+22			
		ePS	NE	29.3	21					
		ePPS	N	30.0	24					PS, PPS, LQ & LR from Mainka.
		eSS	E	34.5	20					
		iSSS	E	38 23	12		-28			
		eLQ	E	43.8	45					
		eLR	E	48.4	25					
		M	NEZ	49.9	25	290	170	380		
		F		15.2						
	21	i	V	13 00 23	1½			+		
320	21	iSKS	N	13 24 13	4	-9				Overlapped by No.319
										USCGS: 37½S, 72½W, H 12 59 58
321	22	iP	V	01 01 38	1			-		Dilatation. Large microseisms
		i	V	01 39	1			+		present.
		i	N	04 47	7	+6				
		i	Z	04 53	4			-3		
		eL	E	04.9	25					
		M	Z	06.1	20			8		
		M	E	06.2	19		8			
		M	N	07.4	12	31				
322	22	e(PS)	N	06 27 54	16					Masked by microseisms.
		M	N	07 00.0	15	1				USCGS: 38S, 73½W, H 06 01 36

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
323	May 22	(iP)	V	08 24 34	1½			+		Masked by microseisms.
		(iPP)	Z	28 30	3			+3		
		(i)	N	35 22	4	-3				USCGS: 37½S, 73W, H 08 10 53
		M	NZ	09 00.0	16	2		2		
		M	E	00.3	16		1			
324	22	i	N	10 44 23	4	-3				Masked by large microseisms.
		i(PP)	Z	48 18	4			+4		
		i(SKS)	NE	54 36	7	-6	+3			USCGS: 38S, 73½W, H 10 30 39
		i	NE	54 49	7	-9	+4			
		i	NE	56 47	4	-5	+3			
325	22	iP	Z	10 46 32	(5)			+(16)		Compression
		i	N	46 34	4	+4				
		i(PP)	Z	50 28	4			-7		USCGS: 37½S, 73W, H 10 32 43
		i(SKS)	NE	56 54	7	-15	+8			
		eSS	E	11 04 36	24					
		eSSS	E	08 20	18					
		eLQ	NE	13.5	35					
		eLR	Z	17.8	33					
		eLR	NE	17.9	24					
		M	E	21.8	18		95			
		M	NZ	22.3	18	125		145ca		
326	22			15.6	Long waves.					
327	22	iP	Z	19 09 37	4			-6		Dilatation.
		i	NEZ	09 44	6	-4	+3	+28		Large microseisms and tangling of trace makes interpretation difficult.
		iPP	Z	13 38	5			+7		
		i	NE	13 40	6	-14	+5			
		i	Z	13 51	7			+16		USCGS: 38S, 73½W, H 18 55 57
		i	N	13 52	7	-13				
		i	NE	16 35	8	-9	+6			
		iSKS	NE	20 10	7	-56	+28			
		iSKKS	NE	20 30	12	-74	+37			
		iS	NE	20 52	7	-30	+21			
		iPS	N	22 22	10	-60				
		i	E	22 36	11		-43			
		eLQ	N	36.6	48					LQ, MN & ME from Mainka.
		M	N	44.9	22	400				
		M	E	45.0	20		460			
328	22	i(P)	Z	19 24 23	4			+10		Compression. Masked by preceding shock.
		i	Z	24 48	4			-13		
		i(PP)	Z	28 11	5			+39		USCGS: 38S, 73½W, H 19 10 47
		iSKS	E	35 04	8		-14*			
		i	N	35 07	8	-12*				* SKS and following phases from Mainka.
		i(S)	E	35 40	7		-8*			
		i(S)	N	35 41	6	+5*				
		i(PS)	E	37 10	10		-46*			
		i(PPS)	E	37 49	8		-30*			
329	22	i(P)	Z	19 24 57	(4)			+(26)		Confused by preceding shocks.
		i	E	28 05	4		-25*			
		i(SKKS)	N	35 51	7	-27*				* From Mainka
		i(S)	E	36 07	8		-27*			
		i	NE	36 31	6	-27*	+26*			USCGS: 38S, 73½W, H 19 11 20
		i	N	37 28	7	+25*				
		i	N	37 54	7	-24*				
		i(PPS)	E	38 22	7		+29*			
		i	N	39 08	9	+33*				
		i	E	39 38	11		-68*			
		i(SS)	N	42 46	(12)	-(93)*				
		i(SS)	E	42 51	12		+83*			
		eG	E	49.7	98					
		eL	N	51.4	94					
		M	N	57.3	26	2060*				
		M	E	57.4	30		2180*			
		M	E	58.8	23		2760*			
		M	Z	58.9	22					MZ from Wiechert.
		M	N	59.1	24	1880*				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
329 cont.	May 22	M	N	20 03.5	17	1190*				* From Mainka
		M	E	04.9	17		1260*			
		M	N	05.8	16	1190*				
		M	Z	06.6	16					MZ from Wiechert
		M	N	08.6	15		1090*			
		eG3	NE	22 24	135					
330	23	iP	V	00 34 04	1½			+		Compression.
		i	N	41 09	9	+19				Confused by coda of No.329
		eL	Z	42.0	21					
		M !	N	44.8	12	70ca				
		M	EZ	45.9	13		9	10		
331	23	i(P)	Z	00 39 18	3			+3		Masked by No.230
		i(S)	E	50 28	7		+7			USCGS: 38½S, 75W, H 00 25 44
332	23	i(P)	Z	01 48 20	4			+5		Masked by coda of preceding shocks.
		i(S)	N	59 36	7	-6				USCGS: 39½S, 74W, H 01 34 53
333	23	i(SKS)	N	03 10 24	6	+3				Masked by coda of preceding shocks.
		eLR	N	30.6	24					USCGS: 41½S, 73½W, H 02 46 30
		M	E	35.5	17		3			
		M	NZ	36.4	17	7		6		
334	23	i	Z	03 10 20	4			+4		Masked by coda of preceding shocks.
		i(S)	E	30 42	4		+3			USCGS: 43S, 75½W, H 02 56 17
335	23	(iPP)	V	05 31 08	1½			+		Masked by microseisms.
		i	E	45 27	5		+3			USCGS: 38S, 73½W, H 05 13 25
		eL	E	55.3	27					
		eLR	EZ	58.6	27					
		M	EZ	06 04.3	17		2	5		
336	23	i(P)	Z	07 22 19	3			+2		Masked by microseisms.
		i(S)	E	32 55	6		-3			USCGS: 48S, 77W, H 07 09 17
		e(SS)	E	39 03	15					
		eLQ	E	46.5	20					
		eLR	Z	50.8	24					
		M	EZ	57.1	17		2	5		
	23	(i)	Z	08 26 48	3			+2		Masked by micros. & coda of 336.
		(i)	Z	29 46	3			+3		USCGS: 40½S, 75½W, H 08 13 15
337	23			10.6	Long waves					USCGS: 37½S, 73W, H 09 52 20
338	23	(iP)	Z	10 51 22	3			+2		Masked by microseisms.
		i	E	11 00 22	4		+2			
		i(S)	E	02 22	5		+3			USCGS: 43½S, 73½W, H 10 37 59
		eLR	EZ	20.7	27					
		M	EZ	25.1	19		3	4		
339	23			14.7	Long waves.					USCGS:Near coast of Chile, 14 01 50
340	23			16.5	Waves.					
341	24	(ePg)	V	06 00 25						Quarry blast ??
		i	V	00 31.7	½			+		
342	24	iP	V	06 37 06	1			+		Compression.
343	24			08.6	Long waves.					
344	24	iP	NEZ	14 50 27	3	-5	+4	-6	1860	Dilatation
		i	NEZ	50 32	4	+10	-6	+17	16°.7	H 14 46 30
		iPP	NZ	50 41	4	+39		+30		
		i	Z	50 54	3			+20		USCGS: 44½S, 167½E, H 14 46 34
		i	Z	50 59	4			-36		
		eS	N	53 33	(13)					
		e	E	53 36	(13)					
		i	E	53 41	7		+40			
		iL	N	53 44	12	-105				
		iSS	E	53 53	7		+86			
		iSS	N	53 54	7	+125				
		iSSS	N	54 07	7	+180				
		iLR	E	54 17	13		-125			iT V 15 06 49 per.½s
		M	NE	54.7	13	180ca	145			Max. 07.6
		M	Z	55.6	18			230ca		

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
345	May 24	e(T)	V	16 35.1	½					
346	24	i(P)	Z	16 45 10	3			+2		Compression. Masked by coda of No.344.
		T	V	17 01.4	½					
347	24	i(P)	Z	17 45 14	3			-2		Dilatation. Masked by coda of No.344.
		eL	N	50.0	19					
		M	N	52.3	12	3				
348	24	i(P)	V	18 33 21	1			+		Compression
		i(T)	V	49 55	½			+		
349	24	iP	Z	20 28 09	3			-2		Dilatation
		eL	N	31.3	15					Microseisms present.
		M	E	32.3	13		3			
		M	N	32.5	13	8				
		eT	V	44 29						
		T max.	V	45.0	½					
350	24	(iP)	Z	20 45 30	3			+2		Compression. Masked by microseisms and coda of No.349.
		i(SKS)	N	56 01	6	+3				
		eLR	Z	21 12.9	28					USCGS: 50½S, 74W, H 20 32 43
		eL	N	13.6	24					
		M	NEZ	16.2	19	3	2	4		
	24	i	V	22 42 14	1½			+		Compression. Masked by microseisms.
	24	e	V	22 55 32	½					Small local tremor or T waves.
351	24	(iP)	Z	22 50 42	2			+2		Masked by microseisms.
		i	V	51 34	1½			-		
		M	N	55.6	10	1				
		e(T)	V	23 07 53	½					Possibly small local tremor.
352	24	eL	N	23 56.0	22					
		M	NZ	24 00.6	13	2		2		
353	25	iP	NZ	02 41 38	3	-2		-3	1880	Dilatation
		iPP	NZ	41 53	4	+3		+3	16°9	H 02 37 39
		eS	N	44 46	7					USCGS: 44S, 168E, H 02 37 42
		eL	N	44.9	16					
		iSS	N	45 07	9	-10				
		eLR	Z	45.5	21					
		M	NE	45.9	13	26	11			
		M	Z	46.7	16			8		
		eT	V	57 58	½					
		T max.	V	58.5	½					
354	25	(iP)	Z	04 03 55	3			+2		Masked by microseisms.
		eL	N	07.1	18					
		iSS	N	07 22	8	-3				
		M	N	08.4	13	10				
		eT	V	20 17	½					
		T max.	V	20.7	½					
355	25	eL	NZ	05 27.7	22					USCGS: Southern Chile, H 04 44 06
356	25	iP	V	08 47 40	1½			+		Compression
		i	Z	47 44	4			+3		
		i	N	47 49	4	+3				USCGS: 45S, 76W, H 08 34 33
		i	NZ	47 58	4	+2		+8		
		e	Z	50 36	10					E-W Galitzin out of action.
		iPP	NZ	51 22	6	-4		-4		
		i	Z	51 36	6			+5		
		i	Z	52 11	4			+4		
		i	N	52 20	4	+3				
		i	N	53 35	4	+3				
		i	N	56 06	4	+3				
		i	N	56 39	7	+3				
		i	Z	57 10	6			+5		
		i	Z	57 28	6			+5		
		i	Z	57 36	6			+6		
		i	N	58 46	6	-7				
		i(PS)	N	59 58	8	+8				

(Continued on next page)

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
356	May 25	e	N	09 00 16	16					
cont.		i	N	00 49	10	+9				
		i	N	0[illegible] 49	7	-9				
		i	N	05 33	9	-10				
		e(LQ)	N	13.1	30					
		eLR	Z	16.7	30					
		M	NZ	19.3	20	6		6		
	25	i	V	09 15 56	1½			+		
357	25	(iP)	V	10 19 27	1½					Masked by microseisms. & coda of No.356.
		M	Z	29.7	18			9		
		M	N	30.5	15	12				
358	25	(iP)	V	13 46 12						Masked by microseisms.
		i	V	46 14	1½			+		
		iPP	NZ	47 47	3	-1		+2		USCGS: 1N, 129½E, H 13 38 28
		iS	N	52 23	4	+2				
		i	N	55 26	6	-4				
		eL	N	59.9	24					
		M	N	14 05.8	13	16				
		M	Z	06.2	12			10		
359	25	eL	Z	14 51.7	25					Masked by microseisms & coda of 358
		M	NZ	55.0	13	6		4		USCGS: 1N, 128½E, H 14 27 38
	25	(P)	Z	15 04 28						Masked by microseisms & coda of 359. USCGS:22S,179½W,H 14 59 12, h 600km.
360	25	(i)	V	17 33 12	1½			-		Masked by microseisms.
		i	V	33 36	1½			+		
		e(L)	N	53.5						
	25	(iP)	V	19 35 10	1½			+		Masked by microseisms. USCGS: 40S, 75½W, H 19 21 48
361	26			05.5	Waves.					
362	26	(iP)	V	20 17 34	1			+		Masked by microseisms. USCGS: 27N, 93E, H 20 05 07
363	27	iP	V	00 30 01	1			+		Compression. Large microseisms present.
		i	Z	30 17	3			+4		USCGS: 22S, 172E, H 00 25 03
		iS	N	33 54	4	+4				
		i	N	34 21	5	+7				
		i	N	34 30	6	+9				
		M	N	38.9	10	3				
364	27	e	V	00 43 05						Small local tremor, masked by microseisms.
		i	V	43 23	½			+		
365	27	(i)	V	04 41 15	1½			-		Masked by large microseisms.
		eL	E	49.6	?					
		M	E	52.1	12		2			
366	27	(iP)	Z	20 15 38	3			+4		Masked by large microseisms.
		eL	E	23.2	26					USCGS: 5½S, 153E, H 20 10 00,
		M	NEZ	26.5	15	5	7	4		h 150 km.ca.
367	27	eL	Z	23 51.0	21					USCGS: 45S, 77W, H 23 06 55
368	28	eL	Z	03 52.7	20					USCGS: 39½S, 74½W, H 03 05 53
369	28	eL	E	11 51.1	21					USCGS: 38S, 73W, H 11 05 40
370	29	(iP)	V	07 53 12	1½			+		Masked by microseisms.
		iSKS	NE	08 03 44	5	-6	+3			
		e(PS)	N	06 04	10					USCGS: 38S, 72½W, H 07 39 29
		eLQ	E	20.9	25					
		eLR	NEZ	24.6	28					
		M	NEZ	28.9	2[illegible]	8	5	11		
	30	e	V	02 09 19	¼					Small local tremor ??

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
371	May 30	i(P)	V	08 35 18	1½			+		Masked by microseisms. USCGS: 32S, 177½W, H 08 29 27
		eL	N	43.8	15					
	30	(i)	V	16 15 01	1½					Microseisms present. USCGS: Near S.W. coast of Luzon, H 16 05 59
372	31	(iP)	Z	02 53 02	4			-3		Masked by large microseisms. USCGS: 39½S, 75W, H 02 40 00
		eL	Z	03 24.6	22					
373	31	iPKP	Z	11 22 01	3			+7		Compression USCGS: 18N, 62W, H 11 02 20
		i	Z	22 10	3			+6		
		i	V	22 14	1½			+		
		i	V	22 26	1½					
		i	N	31 20	5	-9				Large microseisms present.
		eL	E	12 15.6	24					
374	31	iP	V	13 16 48	1			+		Compression. Large microseisms present. USCGS: 7½S, 156E, H 13 11 02
		i(S)	N	21 44	7	-10				
		e	E	21 45	11					
		i	N	22 03	7	+5				
		eL	E	24.0	20					
		M	E	26.5	14		2			
		M	Z	27.0	16		2			
		i(ScS)	N	27 18	5	+6				
375	31	(P)	V	18 38 55						Masked by large microseisms.
		eL	N	46.5	?					
376	31	eP	V	21 08 27	½					Masked by large microseisms. USCGS: 5½S, 109½E, H 21 00 40, h 600 km.ca.
		(i)	N	13 56	5	+4				
		e	N	16 27	19					

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A. Fynn, S.J., Director.

P.F.Rheinberger.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
377	June 1			05.8	Long waves, masked by large microseisms.					USCGS: 38S, 73W, H 05 02 56
378	1			22.0	Waves, masked by microseisms.					USCGS: 42S, 74W, H 21 12 50
379	2	iP	V	02 00 32	1			+		Compression. Masked by microseisms. USCGS: Near S. Coast of Mindanao, H 01 51 18
380	2	i	Z	03 58 55	2			+2		Masked by microseisms.
		eL	E	04 01.9	15					
		M	NE	02.5	12	4	3			
		e(T)	V	15 22	½					(Perhaps small local tremor)
381	2	iP	Z	06 11 07	3			-2	10,000	Dilatation
		i(sP)	Z	11 13	3			+2	90°0	H 05 58 04
		iS	N	21 59	6	+3				EW Galitzin not functioning.
		eL	Z	[illegible]	25					
		eL	N	41.1	23					USCGS: 46½S, 74W, H 05 58 03
		M	NZ	43.4	19	4		5		
382	2	eP	Z	07 53 05					3180	H 07 47 10
		ipP	NZ	53 13	5	-4		+4	28°6	
		isP	NZ	53 17	7	+7		-7		USCGS: 5½S, 151½E, H 07 47 11
		i	N	53 36	7	-10				
		i	Z	53 54	6			+6		
		i(PP)	NZ	54 02	6	-7		+9		
		i	N	54 22	7	+7				
		i	NZ	54 49	8	+10		-5		
		i	Z	57 12	7			-6		
		i	Z	57 48	7			-10		
		iS	N	57 50	10	-24				
		isS	N	58 10	10	-40				
		i	Z	58 14	13			-38		
		eL	Z	08 01.6	27					
		M	E	03.0	18					ME from Mainka.
		M	NZ	04.4	18	110		76		
383	2	i(P)	V	19 04 37	1			+		Compression. Masked by microseisms.
		(sP)	V	07 18	1½					
		(S)	N	08 54	6					USCGS: 20½S, 178½W, H 18 59 05, h 550 km.ca.
		i(ScS)	N	14 11	5	-4				
	2	(iP)	V	19 53 44						Masked by microseisms. USCGS: 20½S, 178W, H19 48 29, h 550 km.ca.
	3	(iP)	V	03 28 17	1½			+		Masked by microseisms.
384	3	(iP)	V	07 44 07	1½			+		Masked by microseisms.
		i	V	44 40	1			+		
		eL	Z	52.6	(25)					USCGS: 5½S, 151E, H 07 38 14
		M	NZ	55.7	18	5		3		
		M	E	56.0	17		7			
385	3			10.7	Surface waves.					
386	3	iP	Z	13 20 13	3			-2		Dilatation. Microseisms present.
		iS	N	24 36	5	-3				USCGS: 17½S, 179½W, H 13 14 38,
		i(sS)	N	27 29	4	-2				h 600 km.ca
387	3	iP	Z	13 29 13	3			-2	3420	Dilatation. Microseisms present.
		i	V	29 25	2			-	30°8	h 0.09 ca., H 13 23 42
		i	Z	30 34	3			+2		
		(ipP)	V	30 52	1½					USCGS: 17½S, 179W, H 13 23 37, h 600 km.ca.
		iS	N	33 37	6	+4				
		eS	E	33 38	6					
		i(sS)	E	36 47	4		+3			
		e	E	36 51	14					
		iScS	N	38 30	4	+3				
		i	NE	38 39	4	+4	+3			
388	3	eL	N	13 50.4	16					Masked by microseisms & coda of No.387.
		M	NE	51.4	13	10	9			
		e(T)	V	14 03 45	½					
389	3	i	N	14 06 21	4	+3				Masked by coda of No.388.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
390	June 4			04.0	Surface waves, masked by microseisms.					
391	4			06.5	Surface waves, masked by microseisms.					
392	5	e(S)	E	05 42 24	9					Masked by microseisms.
		eL	NE	44.5	18					USCGS: 65S, 178E, H 05 29 37
		M	NE	46.0	13	2	2			
393	5	(P)	V	19 36 16						Masked by microseisms.
		e	Z	36 20						
		i	Z	36 46	4			+5		USCGS: 31½S, 177W, H 19 30 30
		i	N	39 21	4	+3				
		i	N	41 08	7	+4				
		i	N	42 09	7	+7				
		eL	E	43.9	19					
		M	N	44.9	16	9				
		M	EZ	45.5	16		4	8		
394	6	(iSKKS)	N	01 43 34	4	+4				Masked by large microseisms.
		(eSSS)	E	55 42	22					
		e(LQ)	E	01 01.2	30					USCGS: 41N, 125W, H 01 17 48
		eL	N	03.3	24					
		M	E	17.1	19		4			
		M	Z	18.5	18			4		
395	6	iP	Z	06 08 54	3			+6	10,110	Compression
		i	NZ	09 01	4	+5		+10	91°0	H 05 55 47
		i	V	09 07	2					USCGS: 45½S, 73½W, H 05 55 44
		i	NEZ	09 32	5	-8	+	-17		
		i	NEZ	09 43	5	+8	-	+20		EW Amplitudes uncertain.
		i	Z	10 16	5			-12		
		i	N	10 26	7	-14				
		i	Z	10 30	5			+12		
		i	N	10 40	6	-11				
		i	E	11 04	5		-			
		i	N	11 58	6	+13				
		i(PP)	EZ	12 42	5		+	-14		
		i	Z	13 02	4			+15		
		i	Z	13 10	6			+22		
		i	N	13 13	7	+24				
		i	E	13 54	8		-			
		i	N	13 56	8	-19				
		i	Z	14 25	7			+22		
		i	E	17 21	6		+			
		i	N	17 22	9	+20				
		i	Z	18 15	6			+13		
		i	E	19 03	10		+			After 19m 09s NS record hard to
		i	N	19 09	9	+36				read owing to overlapping of trace.
		iSKS	E	19 28	9		+			
		iS	E	19 50	7		+			
		i	Z	20 10	9			-20		
		i	E	20 34	(7)		-			
		iPS	Z	21 03	8			+23		
		i	Z	21 40	8			-22		
		i	Z	21 56	7			-31		
		i	E	22 00	7		+			
		i	EZ	22 13	10		+	-54		
		i	N	22 14	15	-120				
		i !	E	22 27	10		-	-		
		e	E	23 00	35					
		i	E	23 28	12		-	-		
		i	EE	24 26	12		-			
		i	E	25 47	8		+			
		i	Z	26 12	10			+34		
		i	E	26 16	8		+			
		i	E	26 47	13		+			
		i	N	26 49	13	-135				
		iSSS	E	29 34	11		+			
		eG	E	33.1	37					
		LQ	E	33.9	33					
		eL	Z	33.9	37					

Continued on next page.

No.	Date	Phase & Component.	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
395	June 6	i N	06 34 06	13	+110				
		L E	34.7	27		380*			*From Mainka.
		i N	34 49	13	+105				
		M Z	39.[illegible]	22			660ca		
		M NE	40.0	22	390*	420*			
		M E	43.5	17		245*			
		M Z	44.5	17			480ca.		
		M N	44.8	17	290*				
		F	10.3						
396	6	(iP) V	23 35 07	1½			+		Masked by microseisms.
		i V	35 49	1			+		USCGS: 23½S, 180°, H 23 30 08,
		e E	42 12						h 600 km.ca.
397	7	i Z	05 35 14	3			+3		Masked by microseisms.
		M N	51.8	10	1				USCGS: 17S, 98E, H 05 25 11
	7	i V	11 06 41	1½			+		Masked by microseisms.
398	7		11.7	Long waves, masked by microseisms.					
	7	(iP) V	13 33 29	1½			+		Masked by microseisms.
									USCGS: 20S, 177½W, H 13 27 49,
									h 500 km.ca.
399	8	(iP) V	05 17 47	1			+		Masked by microseisms.
		i V	18 22	1½			+		
		i V	19 18	1			+		USCGS: 3½S, 127E, H 05 10 25
		i V	19 40	1½			+		
		M NE	30.8	19	2	3			
400	8	e(Pg) V	05 24 51	¼					Local tremor.
401	8	e(Pg) V	05 30 07	¼					Local tremor.
402	8	e V	06 27 12						Local tremor.
403	8	e V	06 57 40						Local tremor.
404	9	(P) V	02 41 28	½					Local tremor.
		i(S) E	41 35	1		+			(S) from Mainka.
		i V	41 36	¾			+		
		i V	41 51	1			+		
	9	i V	05 09 26	1			+		Compression.
405	9	(P) V	05 55 32						Local. Quarry blast ??
		i V	55 36	¼			+		
		i V	55 39	½			+		
406	9	e V	06 33 54.5	¼					Local.
		i V	33 59	½			+		
407	9	iP NEZ	11 28 53	4	+5	+	-8	2500	Dilatation
		i V	29 01	1½				22°5	h 0.00, H 11 23 55
		ipP NEZ	29 03	4	+9	+	-15		EW Galitzin not functioning properly,
		i NZ	29 09	5	+10		-20		amplitudes uncertain.
		i N	29 17	4	-8				
		iPPP N	29 30	7	+9				USCGS: 18S, 169E, H 11 23 51
		i Z	29 34	7			+10		
		i N	29 40	6	+11				
		i NZ	30 03	4	+14		-12		
		i N	30 27	4	+11				
		iS N	32 53	7	-35				
		iS E	32 57	7		-			
		i Z	33 00	6			+45		
		isS N	33 08	5	-				isS_N from Mainka.
		m N	33 13	12	74				
		i Z	33 41	5			+15		
		i N	33 45	7	+14				
		i N	34 06	7	+33				
		eLR Z	34.7	19					
		eL N	34.9	19					
		M NEZ	36.9	15	63		37		
408	10	(iP) V	12 05 45	1½			+		Masked by microseisms.
		M E	20.1	12		1			

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
						AN	AE	AZ		
	1960			h m s	s	μ	μ	μ	km.	
	June 10	(i)	V	14 34 35	1½			+		Microseisms present.
409	10	iP	Z	21 19 12	4			-3	4000	Dilatation
		iPP	EZ	20 41	5		+4	-3	36°0	H 21 12 07
		iS	N	24 51	7	-5				
		i	N	25 04	9	-18				USCGS: 15½S, 174W, H 21 12 05
		i	N	25 25	8	+12				
		iSSS	Nz	27 52	10	-26		-9		
		eLR	N	29.4	16					
		M	N	32.3	12	27				
		M	E	33.1	18		8			
		M	Z	33.5	18			8		
	11	(iPKP)	V	00 52 47	5			+3		Masked by large microseisms.
		(i)	V	53 20	1½			+		USCGS: 21S, 64½W, H 00 34 48,
		(i)	Z	53 42	4			+3		h 300 km.ca.
410	11	iP	V	15 19 30	1½			+	2920	Compression
		i	Z	19 32	3			+6	26°3	h 0.00, H 15 13 55
		i	NE	19 33	4	+15	+3			After 19m 33s Galitzin records
		ipP	V	19 39	1½	*		+		unreadable owing to overlapping
		i	N	19 40	?	+				of trace.
		iPP	N	20 13	?	+*				* From Mainka. NS Mainka not
		iS	N	23 58	?	+*				functioning properly.
		i	Z	24 00	3			+35		
		i	E	24 03	7		-80			USCGS: 9S, 152½E, H 15 14 07
		i	Z	24 09	7			-76		
		isS	N	24 13	?	+*				
		eL	E	26.3	22					
		eL	V	27.2	20					
		M	N	28.6	12	(400)*				
		M	E	29.1	12		590*			
411	11	iP	Z	16 43 03	3			-7	2820	Dilatation
		i	V	43 05	1			-	25°4	h 0.00, H 16 37 37
		i	V'	43 08	1½			+		After iP NS & Z Galitzin records
		i	V'	43 17	1½			+		indecipherable.
		i	V'	43 27	1½			+		NS Mainka not functioning.
		i	V'	43 32	1½			+		V' = Wiechert Vertical
		iPP	E	43 40	6		+9			
		iPPP	V'	43 54	2			-		USCGS: 9½S, 152½E, H 16 37 40
		iS	E	47 25	7		-27			
		isS	E	47 38	10		+170			
		i	E	48 11	10		-125			
		iSSS	E	48 44	12		-230			
		eL	E	49.0	24					
		i	E	49 41	10		-275			
		M	E	52.4	12		600ca			
412	11	iP	V'	17 13 17	1½			+		Compr. Galitzin records unreadable.
		i	V'	13 20	2			+		USCGS: d'Entrecasteaux Is.,
										H 17 07 52
	11	i(P)	V'	18 26 17	2			+		
	11	i(P)	V,V'	18 29 33	2			+		
	11	i(P)	V,V'	18 44 18	1½			+		
		i	V	44 45	1½			+		
413	11	iP	V	21 00 17	2			+		Compression. Microseisms present.
		i	V	00 39	2					
		i(S)	N	04 44	6	+3				
		M	N	09.8	17	4				
414	11	iP	Z	21 53 55	2			+1		Compression
		M	E	22 02.9	12		1			
415	12	iP	Z	04 01 46	2			+3		Compression. Microseisms present.
		i(PcP)	V	04 46	1			+		h 0.09?
		iS	N	05 46	6	+3				
		i(SS)	N	08 17	5	+3				USCGS: 22½S, 179E, H 03 56 44,
		e(sS)	E	08 47	7					h 600 km.ca.
		i(sS)	N	08 48	5	-3				
		i(ScS)	N	11 24	6	+4				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
416	June 12	iP	V	07 03 20	1½			+		Compression. Microseisms present.
		i	V	03 23	1			-		USCGS: 29½S, 179W, H 06 58 12, h 250 km.ca.
417	12	e(P)	Z	07 32 23	4					Masked by microseisms.
		eS	E	42 50	(12)					
		i	N	42 57	?	+				USCGS: 36S, 98W, H 07 19 43
		e	E	43 04	16					
		ePS	N	43 45	18					
		e	E	43 57	18					
		ePPS	Z	44 07	18					
		e(SS)	E	48 08	20					
		eSS	NZ	48 29	16,19					
		e	N	52 12	28					
		eLQ	N	55.3	24					
		eLR	Z	59.0	33					
		M	E	08 02.4	20		4			
		M	N	02.9	19	8				
		M	Z	03.3	21			8		
		M	N	08.2	16	9				
418	12	iP	Z	15 21 23	3			+2		Compression. Microseisms present.
		iS	N	25 16	7	-3				USCGS: 22½S, 172E, H 15 16 20
		i	N	25 32	6	-2				
419	13	iP	Z	06 00 01	3			-1		Dilatation. Microseisms present.
		e(PS)	N	12 04	13					USCGS: 44½S, 76½W, H 05 47 05
		M	NZ	33.1	19	3		3		
420	14	iP	NZ	23 43 33.5	2	-2		+3		Compression
		i	V	43 38.5	1½			+		Disturbed by changing of records.
		i	NZ	43 39.5	3	+4		-5		
		i	V	43 44	1½			+		USCGS: 9S, 152½E, H 23 38 13
		i	Z	44 17	4			+4		
		(S)	N	47 55	7					
		i(sS)	N	48 08	8	+26				
		i	E	48 09	8		+6			
		M	Z	52.5	18			11		
		M	NE	53.1	14	10	10			
		i(ScS)	N	54 26	6	+5				
421	15	(P)	V	02 15 30	1½					Masked by microseisms.
		M	N	22.6	15	2				
	15	i	V	02 59 12	1½			+		Masked by microseisms.
422	15	iP	V	08 14 36	1½			+		Compression
		i(S)	N	19 11	6	+4				Masked by microseisms.
		eL	N	22.3	18					
		M	E	23.6	13		1			
		M	NZ	23.8	18	3		2		
		M	NZ	31.2	10	3		2		
423	15	(iP)	V	15 48 34	1			+		Masked by microseisms.
		e(S)	E	58 19	9					USCGS: 41N, 142½E, H 15 36 51
		e(L)	E	16 12.1	16					
		M	N	16.2	19	2				
	15	i	Z	19 45 08	3			+4		Large microseisms.
424	15	iP	Z	22 55 23	3			+5		Compression
		i	Z	55 49	3			+4		
		i	Z	56 12	3			+2		USCGS: 32S, 177½W, H 22 49 39
		i(S)	N	59 56	5	+3				
		i	N	23 00 17	7	-7				
		i	N	01 10	7	+6				
		i	N	01 21	6	+6				
		i	NE	01 46	7	-7	+4			
		eL	Z	02.0	30					
		M	N	04.0	16	11				
		M	EZ	04.9	17		6	10		
425	15	iP	Z	22 56 32	3			+3		Compression. Confused by No.424
		M	E	23 06.7	13		9			USCGS: Solomon Is., H 22 50 47
		M	N	08.0	14	12				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
426	June 15	iP	Z	23 34 56	3			+4	(4150)	Compression
		isP	Z	35 03	3			+7	(37°3)	
		iPP	V	36 24	2			+		USCGS: ½S, 133E, H 23 27 40
		i	Z	37 01	3			+4		
		i	V	37 06	2			-		
		i	Z	37 10	4			+11		
		i(S)	N	40 44	6	-10				
		i	N	40 53	7	-10				
		i	Z	41 54	4			+5		
		i	Z	42 09	6			-9		
		iSS	N	43 13	10	+14				
		i	N	44 03	7	-20				
		eL	Z	44.3	21					
		eLR	N	45.0	19					
		M	N	45.7	16	38				
		M	Z	46.5	18			32		
		M	E	47.4	16		25			
		M	NEZ	52.0	13	44	22	27		
		$e(W_2)$	N	02.4	20					
		$e(W_3)$	N	03.2	24					
427	16	i	N	03 30 52						Masked by large microseisms.
		i	V	32 01	1½			+		
		i	V	32 07	1½			+		
		i	N	36 25	5	+3				
		i	N	42 49	4	+3				
428	16	iP	Z	09 10 13	4			-3		Dilatation. Microseisms present.
		i(S)	N	14 22	4	-2				USCGS: 35S, 179E, H 09 05 07
		i	N	14 31	5	+3				
		eL	N	15.9	16					
		M	NE	18.1	13	7	1			
429	16	eL	N	10 58.3	19					USCGS: 2S, 69E, H 10 20 04
430	16			15.4	Waves.					
	17	(iP)	V	02 50 37	1			-		Dilatation. Masked by microseisms.
431	17	iS	N	05 12 45	5	+3				Masked by microseisms. USCGS: 18S, 178W, H 05 02 34, h 600 km.ca.
		e(L)	N	16.2	13					
	17	(i)	V	10 42 06	1½			+		Masked by microseisms.
	17	(i)	V	14 46 02	1½			+		Masked by microseisms.
432	17	iP	V	16 48 39	1½			-	10,090	Dilatation
		eSKS	N	59 12	9				90°8	H 16 35 33
		iS	N	59 34	7	+3				USCGS: 52½N, 173½W, H 16 35 32
433	17	(iP)	V	17 59 21	1½			-		Masked by microseisms.
		e(L)	Z	18 31.0	20					
		eL	N	33.6	20					
		M	NEZ	39.1	16	2	1	1		
434	18	i(P)	Z	02 38 50	3			+2		Compression. Masked by microseisms.
		eL	Z	45.7	20					
		M	N	47.3	15	4				
		M	EZ	48.8	16		6	7		
435	18	iP	V	03 24 32	1½			+		Compression. Confused by micro-
		i	V	24 38	1½			+		seisms & coda of No.434
		i(S)	N	28 59	7	-4				USCGS: 9½S, 152½E, H 03 19 04
		M	N	33.4	13	3				
		M	E	33.7	13		5			
436	18	eL	N	22 53.9	18					
	18	(eP)	Z	23 41 57	2					Obscured by microseisms. USCGS: Near S. coast of Sumatra, H 23 32 39
437	19	i	V	09 49 56	2			+		Masked by microseisms. USCGS: 10S, 161E, H 09 43 38
		eL	N	56.6	17					
	19	(i)	V	12 39 35	1½					Masked by microseisms. USCGS: 15S, 178½W, H 12 21 53, h 500 km.ca.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
438	June 19			17.8	Long waves.					USCGS: 38N, 142½E, H 17 17 25
439	20	iP	Z	02 14 50	6			-6		Dilatation
		i	N	14 54	6	+3				
		i	NZ	15 06	6	+5		+6		USCGS: 38S, 73½W, H 02 01 08
		iPP	NEZ	18 48	7	-7	+5	-9		
		i	N	19 15	7	+5				
		i	N	19 37	7	+6				
		i	Z	25 16	9			+9		
		iSKS	NE	25 19	9	-18	+6			
		iSKKS	NE	25 36	7	-26	+14			
		iS	NE	26 02	6	-13	+4			
		e	E	26 15	15					
		iPS	Z	27 30	9			+13		
		ePS	E	27 30	16					
		i	N	27 40	10	+32				
		i	E	27 53	12		+13			
		iSS	E	32 56	15		+17			
		iSS	N	32 57	14	+16				
		e	Z	33 03	24					
		i	E	33 39	13		+9			
		i	N	33 43	15	+24				
		i	N	35 49	11	+15				
		eSSS	NE	36 27	22					
		eG	E	41.9	42					
		eLQ	NE	42.4	22					
		eL	Z	44.8	30					
		eLR	EZ	46.1	25					
		M	E	49.8	19		37			
		M	NZ	50.5	18	54		66		
		W2 M	E	04 33.6	19		9			
		M	Z	34.5	21			15		
		M	N	34.9	22	17				
	20	(i)	Z	12 15 00	2			-4		Obscured by microseisms. USCGS: 3S, 12½E, H 12 05 09
	20	i	V	13 12 57	2			-		Large microseisms present.
440	20	eP	Z	13 13 11	6				10,770	H 12 59 37
		i	Z	13 24	6			+9	96°9	
		i	N	13 25	6	+4				USCGS: 39½S, 73W, H 12 59 40
		ePP	Z	17 10	7					
		i	NEZ	17 15	7	-7	+3	-10		
		i	Z	17 35	7			+10		
		i	N	17 46	6	+7				
		i	N	20 41	6	+7				
		iSKS	NE	23 47	7	-17	+6			
		i	N	24 21	7	-7				
		iS	E	24 31	7		-9			
		iScS	N	24 33	4	+2				
		i	N	25 15	6	+5				
		i	N	25 42	7	-5				
		ePS	E	25 55	16					
		i	N	26 07	9	+11				
		e	E	26 12	19					
		iPPS	N	26 39	9	+7				
		i	N	26 54	8	+11				
		e	E	27 30	19					
		i	N	27 39	7	-13				
		i	N	26 21	8	+9				
		eSS	Z	31 15	22					
		iSS	E	31 16	10		+12			
		iSS	N	31 18	8	+8				
		e	E	31 27	27					
		e(SSS)	EZ	35 10	16					
		eG	E	40.3	37					
		eLQ	NE	40.9	25					
		eLR	NZ	44.3	30					
		M	NEZ	47.7	21	31	29	51		
		W2 M	NZ	15 33.7	21	9		10		ME 36.0 per.19, μ4

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
	June 20	(iP)	Z	17 10 17	4			+3		Masked by large microseisms.
										USCGS: 57N, 154½W, H 16 56 25
	21	(i)	Z	07 33 59	4			+6		Masked by large microseisms.
441	21	(iP)	Z	08 48 16	4			+3		Masked by microseisms.
		eL	E	09 24.4	20					USCGS: 4½S, 105W, H 08 34 39
		M	EZ	31.6	16		1	2		
	21	i	Z	12 36 15	3			+3		Large microseisms present.
442	21	(P)	V	12 51 37	1½					Masked by large microseisms.
		i	Z	52 37	2			+2		USCGS: 3N, 126½E, H 12 43 31
		M	E	13 12.1	13					
	21	(P)	Z	18 15 03	2					Masked by large microseisms.
		(i)	V	16 58	1½			+		USCGS: 19S, 178W, H 18 09 19,
										h 400 km.ca.
	21	(i)	V	21 32 12	1½			+		Large microseisms present.
443	21	(PP)	Z	21 49 40	4					Masked by large microseisms.
		i	N	21 57 04	4	+3				
		i	E	57 06	6		+5			USCGS: 21S, 61W, H 21 33 45
		eSS	E	22 02 38	12					
		i	N	02 49	6	+6				
		e(LQ)	E	09.0	(25)					
		eL	E	15.7	19					
		M	EZ	21.9	19		1	2		
		M	N	22.8	19	4				
	21	(i)	V	23 48 10	1½			+		Very large microseisms present.
		(i)	V	49 54	1½			+		
		(i)	V	51 41	1½			+		
		(i)	Z	52 17	3			-		
444	22	i	N	03 05 43	3	-3				Masked by microseisms.
		e(S)	E	09 19	?					USCGS: 62S, 156½E, H 02 58 24
		eL	E	10.6	16					
		eLR	Z	11.7	22					
		M	E	13.0	11		2			
		M	Z	13.5	13			3		
		M	N	13.7	16	4				
445	23	(iP)	V	12 15 03.5	1½			+		Compression. Large microseisms present.
		e	N	24 20	10					
		i	N	25 30	4	-1				USCGS: 7S, 127½E, H 12 08 13
		i	N	25 37	4	-4				
		i	N	26 20	4	+6				
		i	E	27 20	4		-2			
		M	E	30.2	15		2			
		M	NZ	30.3	15	5		4		
446	24	iP	Z	15 32 55	4			+4		Compression.
		i	Z	33 20	3			+4		Microseisms present.
		i(S)	N	36 33	4	+4				
		i	NE	36 53	4	+4	+3			
		i	Z	36 56	4			+5		
		i	N	37 45	6	-5				
		eL	N	38.4	16					
		M	NEZ	40.4		4	2	4		Per. MN 13s, MEZ 18s.
		i	N	42 33	4	+6				
447	24	eL		22.8						USCGS: 30S, 177½W, H 22 34 43
448	25	iP	Z	02 08 20	3			-5		Dilatation. Large microseisms present.
		i	Z	08 34	3			+5		USCGS: 30½S, 177W, H 02 02 35
		(iPcP)	Z	11 41	3			+4		
		e	E	13 19	13					
		eSS	N	14 13	8					
		e	N	14 50	16					
		eL	EZ	15.5	24					
		i	N	15 34	6	+6				
		M	N	17.5	15	9				
		M	EZ	17.9	18		9	14		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
449	June 25	(iPKP)	V	14 12 56						Masked by large microseisms.
		M	E	51.4	18		11			M merged in No.450.
										USCGS: 6½N, 72½W, H 13 53 37
450	25	iP	EZ	14 47 33	3		-3	+5		Compression.
		i	EZ	47 41	4		+7	+7		
		i	E	47 57	4		-3			USCGS: 30½S, 177W, H 14 41 42
		i	Z	48 06	4			+8		
		i(PP)	E	48 17	4		-5			
		i	Z	48 18	4			+5		
		i(PPP)	E	48 28	7		+8			S cannot be identified.
		i(SS)	E	53 23	7		-9			
		eLR	EZ	54.2	32					
		M	EZ	57.0	18		69	98		
451	25	(iP)	V	15 04 52						USCGS: 30S, 177W, H 14 58 59
452	27	(iP)	V	16 55 50						Masked by large microseisms.
		i(PP)	Z	56 37	3			+6		
		i	Z	57 05	3			+6		
		i(S)	N	17 00 34	7	-7				
		i	E	00 38	7		-4			
		i	N	01 25	9	-10				
		i(SS)	N	01 54	9	+19				
		i(SSS)	N	02 12	9	+21				
		e(L)	N	03.1	19					
		eL	E	03.5	21					
		M	EZ	05.0	19		7	10		
		M	N	05.9	13	23				
453	28			01.4	Waves, masked by large microseisms.					
454	29	e	Z	02 09 47						
		e(L)	E	15.6	30					
455	29	e	E	02 28.2	24					USCGS: Southern Chile, H 01 57 14
		eLR	Z	40.6	25					
		eL	N	41.6	25					
		M	NEZ	44.6	19	3	1	2		
456	29	iP	Z	04 34 59	3			+6		Compression
		ipP	EZ	35 09	4		-2	+8		h 0.00
		iPP	Z	35 35	(6)			-(6)		
		i	Z	35 42	(4)			+(5)		USCGS: 30S, 177½W, H 04 29 12
		i	E	35 51	4		-3			
		i(PcP)	Z	38 13	3			-3		
		e	E	38 22	18					
		i	E	38 49	4		+3			
		i	N	38 58	4	+3				
		i	N	39 06	5	+4				
		e	E	40 05	18					
		i	E	40 23	5		-4			
		eL	N	41.6	(20)					
		eLR	Z	42.1	25					
		eLR	E	42.2	25					
		M	N	44.0	15	12				
		M	EZ	44.7	18		15	25		
		M	N	46.4	12	13				
457	30			06.1	Surface waves.					
458	30			24.3	Surface waves.					USCGS: 10S, 119E, H 23 56 23

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
459	July 1	oL	N	08 43.6						USCGS: 56N, 165E, H 07 58 58
460	2	(iP)	V	09 11 15	1½			+		Large microseisms present.
		(iSKS)	N	21 47	4	+2				USCGS: 45½S, 73½W, H 08 58 05
		M	N	46.5	15	1				
		M	E	47.6	15		(1			
461	2	iP	V	12 08 44	1			-		Dilatation. Large microseisms
		o(S)	E	19 28	10					present.
		eLQ	E	33.0	24					USCGS: 56S, 27W, H 11 55 41
		M	E	43.2	17		1			
		M	NZ	48.0	18	2		2		
462	3	iP	V	20 33 42	1½			+	9500	Compression. Large microseisms
		iP	Z	33 43	3			+12	85°5	present.
		iPcP	V	33 45	1½			-		H 20 20 46
		iSKS	N	44 08	7	-9				
		i	E	44 13	5		+5			USCGS: 50½N, 177W, H 20 20 46
		iS	E	44 27	7		+5			
		iScS	N	44 29	3	+6				
		i	N	44 36	4	-5				
		i	N	44 44	6	-6				
		iPS	N	45 28	6	+5				
		iPS	Z	45 31	4			+6		
		iPPS	N	45 56	7	+13				
		i	N	49 50	6	-6				
		i	N	50 07	7	-10				
		i	N	50 20	7	-5				
		i	N	50 58	7	-11				
		e	N	53 17	15					
		i	E	53 36	4		+6			
		eL	Z	21 01.7	(27)					
		eL	Z	04.9	24					
		i	E	05 41	4		+3			
		i	E	08 14	4		-6			
		M	E	09.7	19	5				
		M	NZ	10.9	13,15		4	5		
	4	i	V	03 30 19	2					Very large microseism ??
	4	e	V	03 30 28	½					Small local shock ??
		i	V	30 30.5	1			-		
	4	e	V	04 16 37	½					Small local shock ??
463	4	(i)	V	04 43 27	1½			+		Masked by large microseisms.
		(iPKP)	Z	47 11	3			+6		
		i	N	59 54	7	+9				
		i	N	05 00 41	6	+5				USCGS: 52N, 131½W, H 04 28 33
		e(SS)	E	02 55	15					
		e	E	03 26	19					
		i	N	06 43	4	-4				
		e(SSS)	E	06 45	20					
		i	N	06 51	5	-7				
		e	N	08 06	16					
		i	N	09 07	6	+5				
		i	N	10 54	7	-9				
		i	N	11 21	6	+8				
		i	N	12 00	5	+7				
		e(LQ)	N	14.1	24					
		i	N	17 23	5	-14				
		eLR	EZ	19.1	30					
		M	EZ	21.9	22		10	15		
		M	N	24.6	20	15				
464	4	ePg	V	06 06 35	¼					Quarry blast ??
		iSg	V	06 38.5	½			-		
		i	V	06 41.5	½			+		
	4	(i)	N	08 24 01	4	+5				Masked by large microseisms.
465	4			09.8	Surface waves, masked by large micros.					USCGS: 52N, 131W, H 08 51 20
466	4			14.1	Long waves.					USCGS: 52N, 131W, H 13 10 05

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	196			h m s	s	μ	μ	μ	km.	
	July 6	e	V	05 35 22	½					Local tremor ??
	8	i	V	03 59 03	1½			+		Compression.
467	8	(P)	V	13 02 16	1½					Masked by microseisms.
		i	V	02 31	1½			+		USCGS: 31N, 130½E, H 12 51 21
		i	N	12 14	4	+1				
468	8	(P)	V'	14 51 24	1					Masked by microseisms.
		i	V	52 25	1½			+		USCGS: 7S, 129E, H 14 44 40
		i(PP)	V	52 30	1½			-		
		M	NE	15 03.6	8	2	1			
469	8	iP	Z	15 28 43	1			+1		Compression
		iPP	V'	29 20	1			+		USCGS: 14S, 168E, H 15 23 19
470	9	e	V	06 13 08	¼					Local. Quarry blast ??
		i	V	13 13.5	½					
471	10	iP	V	00 15 32	1½			+	6770	Compression
		iP	EZ	15 33	4		-2	+5	60°9	h 0.00, H 00 05 20
		ipP	Z	15 43	4			+5		
		isP	Z	15 47	4			+2		USCGS: 0°, 98E, H 00 05 18
		i	V	16 09	1½			-		
		iPcP	Z	16 11	3			+3		
		i	Z	17 02	4			-4		
		iS	N	23 46	7	+4				
		iS	E	23 48	7		+5			
		i	Z	23 53	6			+6		
		isS	NE	24 06	7	+11	-8			Perhaps PS ?
		iScS	E	25 18	4		+2			
		i	N	25 24	9	-6				
		e	N	26 17	17					
		e	E	26 33	(20)					
		e	Z	30 09	20					
		eL	E	33.7	20					
		eL	Z	36.4	30					
		M	N	39.6	16	12				
		M	EZ	40.2	24		18	29		
		M	EZ	44.2	21		24	32		
		M	N	44.3	19	15				
472	10			06.9	Waves.					
473	10	i(S)	N	20 32 17	5	-2				
		eL	E	34.8	16					Masked by microseisms.
		M	N	36.7	12	1				USCGS: 53½S, 134E, H 20 22 51
474	11	e(P)	V	07 38 26						
		i	Z	38 30	3			-2		Microseisms present.
		e(S)	E	42 22						
		i	NE	42 35	6	+4	-5			USCGS: 54S, 140½E, H 07 33 32
		eL	Z	44.1	?					
		i	N	44 14	4	+3				
		M	NE	45.7	10	2	3			
		M	NE	47.3	9	3	3			
		M	Z	47.6	14			4		
475	11	iP	Z	12 02 28	4			+4	4180	Compression
		e	EZ	03 48	7				37°6	H 11 55 10
		iPPP	Z	04 14	5			-2		
		i	Z	04 36	5			+5		USCGS: 16S, 172W, H 11 55 10
		i	Z	08 17	4			+5		
		iS	E	08 18	4		+2			
		iS	N	08 20	4	+1				
		e	Ez	08 23	16					
		i	N	08 28	4	+3				
		i	N	08 38	4	-2				
		eLQ	N	11.1	20					
		e	Z	11 26	19					
		eLR	EZ	12.0	27					
		M	E	17.6	15		3			
		M	Z	18.9	16			6		
		M	EZ	21.6	15		5	7		M N 22.6 per.13s, 6μ

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
476	July 11			16.9	Long waves.					
477	13	e	N	08 19 48						Obscured by very large microseisms.
		eSS	N	25.6	13					
		eLQ	E	32.2	30					USCGS: 53½S, 1½E, H 07 55 54
		eL	Z	38.3	30					
		M	NEZ	42.2	22	12	9	29		
	14	i	V'	07 00 59	½					Small local tremor ??
478	14	(iP)	VV'	10 35 22	1½			+		Masked by large microseisms.
		(i)	N	41 44	4	+3				
		i(S)	N	41 51	6	+8				USCGS: 5N, 127½E, H 10 26 58
		i	N	42 35	6	-7				
		i	E	45 04	6		-5			
		i	E	45 13	6		+6			
		e	N	45 23	15					
		i	N	45 45	6	+5				
		M	NE	50.2	16	4	7			
479	16			04.5	Waves.					
480	17	e	V	12 54 44						Very small local tremor superposed on large microseisms.
	18	e	V	01 26 45						Small local tremor ??
481	18	(P)	V	01 49 16	1					Masked by microseisms.
		iP	Z	49 17	3			-2		Dilatation
		i(pP)	Z	49 37	4			-4		h 0.01 ?
		ePP		50 10	8					
		i	N	50 15	4	+3				USCGS: 4½S, 151E, H 01 43 29,
		i(S)	N	53 52	4	+2				h 200 km.ca.
		i	N	53 57	6	+2				
		i(sS)	NZ	54 28	9	+12		-17		
		e		55 32	27					
		eLR	Z	57.4	30					
		M	NE	59.7	21	13	26			
		M	Z	02 00.0	19			33		
482	18	e	V	06 23 29	¼					Local. Quarry blast ??
		i	V	23 35	¾			+		
483	18			08.1	Long waves.					
484	20	e	V	06 19 36.5	¼					Local. Quarry blast ??
		i	V	19 41.5	½			+		
	20	(i)	Z	09 42 23	3			+4		Large microseisms.
	20	(i)	Z	21 00 27	3			+4		Large microseisms.
485	20	iP	VV'	21 04 03.5	1			+	2340ca.	Compression.
		i	Z	04 05	3			+(11)	21°ca.	h 0.00 ? H 20 59 21 ?
		i(pP)	NEZ	04 12	4	+6	+7	-18		USCGS: 20½S, 169E, H 20 59 25,
		iPP	VV'	04 29	1½			+		h 200 km.ca.
		iPPP	Z	04 39	5			+17		
		i	E	04 46	4		+7			
		i	Z	07 11	3			+7		S cannot be identified.
		i(sS)	N	08 07	7	+8				
		i	E	08 10	5		+10			
		i(PcP)	Z	08 12	5			+6		
		e	N	08 16	16					
		iSS	E	08 21	7		+17			
		iSSS	NEZ	08 34	7	+21	+9	-36		
		i	N	08 55	7	+14				
		i	Z	09 00	6			-28		
		eL	NE	09.4	24					
		eL	Z	09.7	28					
		M	E	10.6	21		35			
		M	Z	11.0	19			49		
		M	N	11.2	17	24				
	20	i	Z	21 23 12	3			+5		Superposed on coda of No.485
		i	Z	23 28	4			+5		

No.	Date	Phase &	Component	Time (G.M.T.)		Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
	July 21	ePg	V	06 00 47.5	¼					Quarry blast ?
		iSg	V	00 51	¼			-		
		i	V	00 55	¾			+		
486	21			08.6	Waves, masked by microseisms.					
	21	(iP)	Z	13 05 21	2			+3		Masked by microseisms.
	22	e	V	01 51 23	¼					Quarry blast ?
		i	V	51 26.5	½			+		
	22	e	V	05 09 13						Explosion ?
	22	e	V	05 12 09						Explosion ?
	22	e(Pg)	V	05 59 57.5	½					Quarry blast ?
		i	V	06 00 05	¾			+		
	22	i(Sg)	V	06 53 43	¼			-		Quarry blast ?
		i	V	53 46	¼			+		
487	23	(iP)	VV'	00 09 13	1½			-		Dilatation. Masked by large micro-
		M	E	25.3	16		2			seisms.
488	23	(i)	Z	02 45 18	3			+5		Masked by large micro-seisms.
		eL	E	54.6	16					
		M	E	57.7	15		2			
489	23			12.9	Waves, masked by microseisms.					
490	24	(eSSS)	E	10 22.6						Masked by microseisms.
		eLR	Z	33.6	27					USCGS: 56N, 164E, H 09 48 56
		M	Z	39.6	19			3		
	24	(e)	V	22 19 47						Small local tremor ?
		i	V	19 54	½			+		
491	25	(P)	V	03 54 08						Masked by microseisms.
		iS	N	04 04 57	7	-2				
		i	E	05 04	10		+6			USCGS: 55N, 163E, H 03 41 05
		i	N	05 14	9	+3				
		eSS	E	11 07	16					
		e	N	11 15	13					
		M	E	34.1	20		5			
		M	N	34.7	20	3				
		M	Z	35.2	19			11		
492	25	i	V	05 31 12	½			+		Local tremor.
		i	V	31 18	¾			-		
493	25	(iP)	V	10 32 50	1			+		USCGS: 17½S, 178W, H 10 27 00,
		i	V	33 00	1½			+		h 500 km.ca.
494	25	iP	V	11 24 42	1½			+	9750	Compression
		iP	Z	24 42.5	2			+17	87°7	h 0.015, H 11 12 07
		i	N	24 43	2	-1				
		i	E	24 48	2		+1			USCGS: 54N, 159E, H 11 12 00,
		i	V	24 49	1			+		h 100 km.ca.
		i	Z	24 52	2			+9		
		i	V	24 57	1			+		
		i(pP)	V	25 13	2			+		
		ipP	NZ	25 16	3	-3		+16		
		i	Z	25 22	2			+19		
		i	N	25 27	4	+4				
		isP	Z	25 30	4			-10		
		i	V	25 38	1½			-		
		e	Z	25 43	15					
		i	V	25 54	1½			+		
		i	V	26 54	2			-		
		i	Z	28 06	3			+7		
		i	N	28 07	4	-3				
		iPP	Z	28 14	3			+7		
		ipPP	Z	28 39	(7)			-(9)		
		isPP	Z	28 51	(7)			-(9)		
		iPPP	V	30 12	1½			+		
		iSKS	N	34 54	7	-9				

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
494	July 25	i	Z	11 34 57	7			+11		
cont.		i	Z	35 09	9			+14		
		iS	NE	35 11	7	+14	+26			
		iScS	E	35 18	6		-36			
		i	N	35 22	7	+20				
		ipS	N	35 47	5	+5				
		i	Z	36 06	7			-9		
		isS	E	36 08	12		-8			
		iSP	N	36 21	8	+12				
		iPS	N	36 32	7	-8				
		iPS	Z	36 35	10			+11		
		i	N	36 49	7	+5				
		i(sPS)	Z	36 55	9			+15		
		i	N	37 12	7	+11				
		i	Z	37 26	10			+14		
		i	E	40 39	9		-8			
		i	N	40 45	10	-11				
		i(SS)	EE	40 58	12		-10			
		i(sSS)	E	41 39	7		-7			
		e	Z	41 49	15					
		i	E	41 56	7		+8			
		e	E	42 07	34					
		i	N	42 59	8	-7				
		i	E	43 45	14		+10			
		i	E	45 12	10		+8			
		i	N	47 06	8	+4				
		i	E	47 57	16		-13			
		eG	E	48.5	38					
		i	Z	53 41	6			+7		
		F		14.1						
495	25	(iP)	V	21 43 07	1½			-		Masked by microseisms.
		i	V	43 13	1½			+		USCGS: 3S, 148E, H 21 36 46
		eL	E	51.1	27					
		M	E	54.8	18		3			
		M	NZ	55.3	16	1		3		
		i	Z	55 56	4			+5		
		M	N	57.8	12	2				
		M	E	58.3	13		6			
	26	e	V	00 36 40						Small local tremor ?
496	27	(iP)	V	09 05 27	1½			+		Masked by microseisms.
		i(pP)	Z	05 48	3			-2		
		i	V	08 22	1½			+		USCGS: 5.6S, 103.6E, H 08 56 22.9,
		eL	E	26.7	18					h 93 km.ca.
		M	EZ	29.4	19		1	3		
497	27	iP	VV'	10 17 58	1½			-		Dilatation
		i(PcP)	Z	18 00	4			+7		h 0.00 ? H 10 04 53
		iSKS	N	28 33	7	+3				Microseisms present.
		i	E	28 39	5		+2			USCGS: 44.7S, 75.1W, H 10 04 53.0,
		eS	E	28 53	15					h 25 km.ca.
		iPS	N	30 08	7	+3				
		e(SS)	EZ	35.3	15					
		eL	Z	47.1	26					
		M	NEZ	49.6	20	2	3	6		
498	27			21.2	Long waves.					USCGS: 28.7S, 176.7W, H 21 01 06.9 h 68 km.ca.
	28	i	V	03 44 16	1½			+		
		i	V	44 24	2			+		
	28	i	V	04 57 49	1			-		
	28	e	V	05 57 11						
		i	V	57 12.5	¼			-		Followed by pulses at intervals of ¾s until 05 57 20.
			V	57 25						Explosions ??
			V	57 31						
			V	57 49						
			V	57 55.5						

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
499	July 28	(i)	V	16 40 42	1½					Masked by microseisms.
		eL	E	50.5	16					
500	28	eL		21.2						
501	29	iP	Z	00 29 06	5			+9	2500	Compression
		i	NE	29 07	5	-2	-4		22°5	H 00 24 05
		i	Z	29 11	5			-17		
		i	NEZ	29 16	5	+8	+20	-33		
		i	N	29 26	4	+6				USCGS: 19½S, 170½E, H 00 24 06
		i	Z	29 28	3			+22		
		iPP	EZ	29 32	4		-14	+7		
		i	Z	29 38	4			+15		
		i	N	29 39	5	-7				
		iPPP	EZ	29 42	5		+11	+50		
		iPPP	N	29 43	6	-12				
		e	V	29 47	9					
		i	Z	30 04	5			-28		
		i	Z	30 14	6			-18		
		i	N	30 17	6	+5				
		i	NE	30 34	6	+9	+13			
		i	Z	30 39	6			-15		
		i	N	31 03	5	-9				
		i	EZ	31 05	3		+9	+5		
		i	N	31 16	5	+11				
		iPcP	Z	33 03	5			-9		
		i	Z	33 06	6			+22		
		iS	NE	33 10	8	+46	+51			
		i	E	33 25	8	+77				
		i	Z	33 32	7			+37		
		i	NE	33 34	7	-49	-37			
		iSS	E	33 50	8		-33			
		i	E	34 13	6		+18			
		eL	Z	34.3	30					
		eL	E	34.4	30					
		i	N	34 35	7	+32				
		eL	N	34.9	19					
		M	NEZ	36.0	20	31	90	135		
	29	i(P)	V'	01 54 18	1			+		Compression
		i	Z	54 21	3			+5		
502	29	iP	VV'	01 55 28	1½			+		Compression
		i	VV'	55 33	1½			-		
		iS	NE	59 28	6	+2	+3			
		i	E	59 40	4		+4			
		eL	E	02 00.8	27					
		M	EZ	02.1	18		2	4		
		M	N	04.6	12	2				
	29	i	Z	02 08 35	5			+4		In coda of No.502
	29	i	V	02 16 04	1½			+		
	29	i	V	03 09 41	1½			+		
		i	V	10 27	1			+		
	29	i	V	11 12 44	1½			+		
503	29	iP	Z	13 30 32	3			-2		Dilatation
		i	Z	30 36	3			-2		
		iPPP	Z	31 08	4			-2		
		eS	N	34 32	6					
		eL	E	35.8	30					
		M	EZ	37.3	19		1	4		
		M	N	39.7	13	3				
504	29	(iP)	V	15 33 09	1			+		Compr. Masked by microseisms.
		iS	NE	37 06	6	+2	+2			
		i(PcP)	Z	37 10	4			+2		
		i	N	37 31	7	+3				
		eL	Z	38.1	(30)					
		M	EZ	39.8	19		2	4		
		M	N	42.3	12	1				

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
505	July 29	iP Z	17 43 17	4			+2	8200	Compression
		e Z	43 24	15				73°8	h 0.00, H 17 31 44
		ipP Z	43 29	4			+7		
		isP NZ	43 33	5	-2		+13		USCGS: 40.1N, 142.3E,
		i NZ	43 41	5	-4		+12		H 17 31 39.5
		e N	50 41	11					h 50 km.ca.
		i N	50 56	7	+3				
		i Z	52 41	(12)			-(8)		
		iS NE	52 45	7	-6	-8			
		i NE	52 52	8	+8	+12			
		e N	53 02	27					
		i E	53 08	5		+2			
		iSKS E	53 16	5		-9			
		iScS NE	53 21	7	+7	+11			
		iPPS N	53 36	8	+4				
		i N	53 50	4	+4				
		i E	54 02	6		+9			
		i N	54 27	4	+5				
		eSS E	57 30	34					
		eSS Z	57 49	30					
		i N	57 56	6	+6				
		eSSS N	18 00 37	13					
		i N	01 21	7	-4				
		e Z	03.3	21					
		eG E	03.4	43					
		LQ E	04.1	31					
		eL N	05.9	22					
		M NEZ	12.0	22	18	18	42		
		W_2 M Z	20 06.2	22			3		
506	30	e(S) E	05 53 51	6					
		M E	56.6	20		1			
		M N	59.0	12	1				
507	30	(P) Z	14 25 40	2					USCGS: 56.3N, 163.9E,
		e N	43 42	13					H 14 12 35.5, h 21 km.ca.
		e(L) E	49.6	(25)					
508	31	iP NZ	03 01 31	5	+2		-5	3170	Dilatation
		i Z	01 36	4			+8	28°5	h 0.00, H 05 55 37
		ipP V	01 39	1½			+		
		isP V	01 46	2			-		EW Galitzin not operating.
		i Z	01 51	4			+32		
		i NZ	02 02	6	+21		-36		USCGS: 5.6S, 150.0E,
		iPP NZ	02 24	4	+13		-21		H 02 55 46.2
		i N	02 30	4	+5				h 25 km.ca.
		i Z	02 34	4			+18		
		iPPP N	02 37	6	+19				
		i Z	02 50	6			-23		
		i Z	02 58	6			-21		
		i Z	04 24	6			-6		
		iPcP V	04 35	1½			+		
		i N	05 20	8	+13				
		i NZ	05 58	7	+14		-18		
		eS E	06 15	?					eS from Mainka.
		i N	06 20	7	-19				
		e N	06.4	21					
		i Z	06 28	6			+28		
		i N	06 32	9	-64				
		i N	06 41	10	-89				
		i Z	06 44	12			-130		
		i Z	07 04	12			-95		
		i N	07 07	10	+93 ca				
		i N	07 24	9	-38				
		iSS Z	07 40	10			-63		
		i N	07 44	9	-30				
		i N	08 19	6	+12				
		i Z	08 31	6			-29		
		i N	09 02	6	-14				
		eL Z	09.6	34					

Continued on next page

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ*	μ	km.	
508	July 31	M	E	03 11.0	16		52			* From Mainka.
		M	NZ	11.3	22	94ca		99		
		M	NZ	13.2	15	55ca		93		
		M	N	15.3	13	47ca				
		M	E	17.0	12		43*			
		M	NZ	17.3	13	49ca		83		
		M	E	20.8	11		54*			
		eW_2	NZ	05 40	25					
		F		06.5						
509	31	iP	Z	07 10 15	3			-2		Dilatation
		i	Z	10 21	3			-2		Aftershock of No.508
		i	N	15 02	6	-2				
		e	NZ	15.1	19					USCGS: 6.0S, 150.0E,
		i	N	15 19	10	-8				H 07 04 37.1
		M	NZ	20.1	19	6		7		h 93 km.ca.
510	31	iP	V	09 24 35	1			-		Dilatation.
										USCGS: 6.5S, 129.6E,
										H 09 17 57.4, h 83 km.ca.
511	31	(P)	Z	13 02 22						Masked by microseisms.
		i	Z	02 40	4			+2		
		e	N	06 43						
		M	N	09.1	17	1				
512	31	(P)	V	15 08 07						Masked by microseisms.
		i	V	08 24	1½			+		USCGS: 43.6S, 74.3W,
		e(PS)	N	20 32	13					H 14 55 03.3
		eL	Z	38.4	24					h 97 km.ca.
513	31	iP	V	18 52 34				+		Compression. Microseisms present.
		e(S)	N	57 42	?					
		eL	N	19 02.1	24					USCGS: 2.8S, 148.2E,
		M	NZ	04.5	17	2		3		H 18 46 13.9
		M	N	07.3	12	3				h 13 km.ca.
	31	i(PP)	V	22 45 51	2			+		USCGS: 27.9N, 54.6E,
										H 22 27 01.0
										h 127 km.ca.

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No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
514	Aug. 1	e	V	06 16 56.5	½					Local. Quarry blast ??
		i	N	16 58.5	¾	+1				
		i	V	17 01	¾			+		
515	1	e	V	07 00 33	½					Local.
	1	(iP)	V'	09 57 58	2			+		USCGS: 5.4S, 131.0E, H 09 51 11.9, h 85 km.ca.
	1	(i)	VV'	16 45 41	2					USCGS: 4.8S, 152.6E, H 16 28 55.0, h 77 km.ca.
	1	(i)	VV'	20 01 41	1½			+		
516	2	iP	NEZ	05 12 06	3	+2	+2	-6	2410	Dilatation
		i	Z	12 09	3			+11	21°7	h 0.005, H 05 07 19
		ipP	EZ	12 20	3		-5	+7		
		isP	Z	12 29	4			-12		USCGS: 22.2S, 171.5E, H 05 07 22.1
		iPP	EZ	12 32	10		+20	+31		h 108 km.ca.
		iPPP	Z	12 43	6			+24		
		i	EZ	12 59	4		-9	+9		
		i	Z	13 09	7			+21		
		iS	E	15 57	7		+8			
		i	N	16 00	6	+25				
		iPcP	Z	16 07	6			+64		
		m	NE	16 09	8	26	50			
		isS	E	16 21	7		+25			
		iSS	EZ	16 37	8		+35	-20		
		i	N	16 43	8	+23				
		i	Z	17 00	7			+18		
		eL	E	17.3	28					
		i	Z	18 55	7			+16		
		M	Z	20.2	16			15		
		M	E	20.3	13		11			
		M	N	20.4	13	13				
		iScS	N	23 21	4	+8				
517	2	(P)	Z	09 36 15	4					Masked by microseisms.
		e(P)	E	36 17	4					
		i	Z	36 25	4			+3		USCGS: 28.2S, 176.6W, H 09 30 26.5 h 61 km.ca.
		e(PP)	E	37 09	6					
		e	E	41 19	8					
		eL	N	42.3	19					
		eLR	E	43.8	24					
		M	N	46.3	15	5				
		M	EZ	47.0	16		9	11		
518	2			10.4	Surface Waves					USCGS: 284S, 176.8W, H 10 06 25.3 h 92 km.ca
519	2			10.9	Surface waves					
520	2			14.6	Surface waves					USCGS: 4.5S, 104.7W, H 13 42 28.2 h 93 km.ca.
521	4	iP	Z	07 47 41	3			+3	9950	Compression
		i(pP)	Z	47 47	4			+6	89°5	h 0.00, H 07 34 46
		isP	N	47 55	4	+2				
		isP	Z	47 56	4			+7		USCGS: 51.4N, 179.1E,
		iSKS	N	58 08	5	+3				H 07 34 53.8,
		eSKKS	N	58 16	6					h 83 km.ca.
		iS	NE	58 27	7	-5	-12			
		e	Z	58 29	10					
		isS	E	58 43	7		-9			
		e	Z	59 28	16					
		e	N	08 03 42	15					
		i	E	04 14	10		+11			
		eSS	E	04 27	?					
		e	N	06 15	15					
		eL	E	10.5	27					
		eLR	Z	15.6	36					
		M	NE	26.9	20	7	7			
		M	Z	27.8	19			14		
		eW_2	NEZ	09.9	21					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
522	Aug. 5	(iP)	V	04 34 12	1½			+		Masked by microseisms.
		M	N	52.6	16	1				
523	5			16.8	Surface waves.					USCGS: 9.5S, 118.8E, H 16 26 23.5
524	5	i	V	22 40 38	1½			+		Masked by microseisms.
		i(S)	E	51 17	5		+2			USCGS: 51.0N, 178.7E, H 22 27 34.2
525	6	(e)	V	04 44 10.5						Local. Superposed on microseisms.
		e	V	44 15	½					
		e	N	44 17	¾					
		i	V	44 22	¾			+		
	7	e	V	09 15 29	½					Local? Superposed on microseisms.
	8	e	V	06 17 21.5	½					Local?
526	9	e(SKS)	E	08 04 17						
		ePS	E	07 21	(18)					USCGS: 40.0N, 126.6W, H 07 39 22.6,
		ePPS	E	08 14	(20)					h 25 km.ca.
		eSS	N	13 13	15					
		eSS	E	13 19	15					
		eLQ	E	23.5	(30)					
		eLR	E	27.4	(35)					
		eLR	NZ	28.1	31					
		M	NEZ	35.4	20	1	3	5		
		eW_2	E	09.9	?					
527	9	(iP)	Z	16 52 29	8			+5		Microseisms present.
		iPP	EZ	53 25	6		+4	-7		Normal depth ?
		i	E	53 53	6		+6			
		i	N	54 34	7	-3				USCGS: 24.5S, 177.1W, H 16 46 37.7
		i	Z	57 27	5			+6		h 180 km.ca.
		i	E	57 34	10			+5		
		iSS	N	58 52	10	+6				
		i	N	59 49	10	-10				
		eL	N	17 00.6	18					
		eL	Z	01.3	24					
		M	N	02.9	12	48				
		M	EZ	03.2	13		19	15		
		M	NEZ	04.6	12	42	11	16		
528	9	iP	VV'	23 42 24	2			+	2960ca	Compression
		i	V	42 34	1			+	26°.6ca	Galitzin record masked by micro-
		i	V	42 36	1			+		seisms.
		i(pP)	V	42 42	1			+		h 0.01 ?
		i(sP)	V	42 54	1½			-		
		iPP	V	43 08	2			+		USCGS: 11.5S, 166.3E, H 23 36 51.4
		iS	N	46 50	8	-3				h 80 km.ca.
		i	E	47 05	7		+2			
		i	N	47 14	8	-4				
		i	Z	47 15	7			-7		
		i	N	48 33	8	-7				
		M	EZ	50.1	20		4	7		
		M	N	50.6	16	3				
	10	i(P)	Z	20 06 37	3			+4		Masked by microseisms.
529	11	i	V	03 02 26	1½			+		Masked by microseisms.
		i	Z	03 31	3			+2		
		i	V	03 58	1½			+		USCGS: 0.0, 121.6E, H 02 53 16.3
		i	N	11 13	7	-2				h 46 km.ca.
		i	E	11 17	8		-4			
		i	N	11 28	6	+4				
		M	NE	16.8	18	4	3			
		M	Z	18.7	21			5		
530	11	(iP)	V	04 59 12	1			+		
		i	V	59 15	1			+		Masked by microseisms.
		i	ZV	59 25	3			+5		
		i	V	59 30	1½			+		USCGS: 8.8N, 126.1E, H 04 50 33.9
		i(PcP)	Z	05 00 32	4			+3		h 79 km.ca.
		i	Z	01 16	3			+4		
		e	N	06 32	10					
		i(SS)	N	09 50	6	+3				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
	Aug.12	i	V	02 24 22	1½			-		Dilatation
531	12	(iP)	Z	10 08 16	4			+3		Masked by microseisms.
		iS	E	14 52	7		+4			
		eLR	EZ	21.1	28					
		M	NEZ	23.1	19	3	3	5		
	12	(iP)	Z	13 23 40	4			-2		Masked by microseisms. USCGS: 36.1N, 141.4E, H 13 12 34.3 h 95 km.ca.
532	13	(iP)	V'	04 23 16	2			-		Dilatation. Masked by large microseisms.
		iS	E	29 51	7		+3			
		eLR	EZ	36.0	27					
		M	NEZ	38.1	19	2	3	7		
	13	e	V	06 01 44	½					Local ?
	13	(P)	V'	07 22 44						Masked by large microseisms. USCGS: 40.6N, 142.0E, H 07 11 05.5 h 60 km.ca.
		i	V'	22 58	2			-		
533	13	iP	Z	14 28 17	6			-7	10570	Dilatation
		i	NZ	31 38	5	+3		+7	95°1	H 14 14 51
		iPP	N	32 05	4	+3				
		iPP	Z	32 06	4			+5		USCGS: 39.7S, 74.8W, H 14 14 57.7 h 61 km.ca.
		i	Z	32 25	5			-12		
		i	N	32 26	5	-4				
		iSKS	NE	38 55	7	+6	-4			
		iSKKS	N	39 10	5	+4				
		iS	N	39 30	8	+4				
		e	E	40 42	8					
		iPS	N	40 52	9	-9				
		i	N	41 16	7	+8				
		i	N	41 40	9	-13				
		i	N	50 55	9	+6				
		eLR	Z	58.9	24					
		M	NZ	15 04.1	18	14		37		
		M	E	04.5	18		15			
		eW2	Z	16 41	25					
534	15	e(SS)	E	07 26.3						Masked by microseisms. USCGS: 13.4S, 65.8E, H 06 58 56.4 h 15 km.ca
		eL	E	35.6	31					
		M	E	41.6	21		2			
		M	Z	42.0	20			2		
	15	(i)	V'	10 08 16	1			-		Masked by microseisms.
535	16	eL	E	09 15.7	17					Masked by microseisms.
536	16	(P)	V'	22 34 28	2					Masked by microseisms. USCGS: 7.6S, 128.[illegible]E, H 22 27 52.7 h 63 km.ca.
		eL	Z	46.6	25					
		M	E	48.8	16		3			
		M	NZ	49.0	14	2		7		
	17	e(Pg)	V	00 13 59						Very small local shock ?
		e	V	14 01						
537	17	ePg	V	05 57 29	¼					Quarry blast ?
		iSg	V	57 33	¼			+		
		i	V	57 36	½			+		
538	17	(iP)	Z	18 15 16	3			-1		Masked by microseisms. USCGS: 1.7S, 138.6E, H 18 08 35.6 h 45 km.ca.
		M	E	27.7	13		1			
539	18	eP	V	22 49 18	2					USCGS: 11.4S, 166.2E, H 22 43 46.4 h 62 km.ca
		i	VV'	49 30	1½			+		
		e	E	53 59	10					
		e	N	54 04	7					
		eL	E	56.1	18					
		eL	Z	56.4	21					
		M	E	58.1	16		1			
		M	NZ	58.7	16	1		1		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
540	Aug.19	iP	VV'	01 42 14	1½			+		Compression
		i	V	42 17	1½			+		
		eL	E	49.6	17					
		M	E	51.7	12		2			
		M	N	52.2	13	½				
541	19	i	V	06 39 16	¼			-		Local. Quarry blast ?
		i	V	39 19	½			+		
542	19	e	N	14 38.5						
543	19			17.1	Long waves.					
544	20	(eP)	V	10 10 28						Masked by microseisms.
		(i)	Z	11 31	4			+2		
		eL	EZ	18.1	21					
		M	N	20.5	13	½				
		M	EZ	20.7	15		1	1		
545	20	e	N	20 34.7						Masked by microseisms.
		eSS	E	43.1	27					
		eLQ	E	54.0	30					USCGS: 35.6S, 15.4W, H 20 08 39.0
		eG	E	54.5	67					h 37 km.ca.
		G Max.	E	57.1	58		44			
		eLR	N	21 00.6	28					
		M	E	08.9	20		1			
		M	NZ	09.0	19	3		5		
		W_2M	NZ	22 20	17	2		4		
546	20	(i)	V	22 30 37	1½			+		Masked by large microseisms.&
		i	Z	31 11	4			-4		coda of no.545.
		i	E	41 07	7		+4			USCGS: 0.5N, 122.0E, H 22 22 44.6
		i	N	41 31	7	+5				h 59 km.ca.
547	21	i(P)	VV'	00 24 21	1½			+		Masked by large microseisms.
		e	N	30 27	19					USCGS: 4.3S, 143.3E, H 00 18 01.5
		M	NE	37.3	13	2	1			h 39 km.ca.
548	21	i	N	01 09 47	5	-3				Masked by large microseisms.
		M	E	16.8	15		1			USCGS: 5.5S, 149.5E, H 00 59 25.2
		M	NZ	17.4	14	2		3		h 177 km.ca.
549	21	(iP)	V	12 57 43	1½			+		Masked by large microseisms.
		e	Z	57 45	1					USCGS: 4.9N, 125.1E, H 12 49 37.6
		iS	N	13 04 13	6	+4				h 211 km.ca
		e	E	07 27	16					
		i	N	07 39	5	-2				
		i	E	07 51	5		+4			
		i	N	08 02	5	-3				
		i	N	08 43	5	+3				
550	23	e(Pg)	V	06 28 43.5	½					
		e(Sg)	N	28 46.5	½					
		i	V	28 49	¾			-		
551	23	iP	Z	22 51 46	4			+3	4000	Compression
		iPP	NEZ	53 12	4	-2	-2	+4	36°0	h 0.00
		e	Z	57 18	16					
		iS	NE	57 21	8,10	+4	+11			USCGS: 14.5S, 176.4W, H 22 44 51.5
		isS	N	57 35	10	+5				h 56 km.ca.
		i	E	57 46	11		-10			
		i	N	23 00 12	12	+8				
		eL	EZ	01.8	24					
		M	EZ	04.1	18		18	21		
		M	N	04.5	13	15				
	24	i(P)	V	01 57 27	1½			+		Masked by microseisms.
										USCGS: 56.3N, 163.8E, H 01 44 09.9
										h 25 km.ca.
552	24	(iP)	VV'	04 32 30	1½			+		Masked by microseisms.
		e	N	37 41	10					USCGS: 6.2S, 150.4E, H 04 26 55.4
										h 66 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
553	Aug.24	i(PPP)	V	05 57 16	1½			+		Masked by microseisms.
		e	E	06 01 40						
		e	N	04 06	14					USCGS: 19.0S, 174.1W, 05 49 01.1
		eL	Z	05.4	24					h 42 km.ca.
		M	Z	08.6	17			9		
		M	E	09.0	17		6			
		M	N	09.5	14	4				
554	25			02.1	Surface waves.					
	26	e	V	05 45 58	½					Small local tremor ?
555	26	(iP)	V	11 54 02	1½			+		Masked by microseisms.
		M	N	12 08.6	12	1				USCGS: 11.1S, 123.7E, H 11 47 29.6
										h 79 km.ca.
556	26	iP	VV'	18 32 33	1½			+	2720ca	Compression. Microseisms present.
		i	Z	32 36	4			+4	24°5ca	h 0.00 ?
		i	VV'	32 39	1½			+		
		i(pP)	ZVV'	32 41	4			+5		USCGS: 13.5S, 165.9E, H 18 27 18.2
		iPP	NZ	33 10	6	+4		-5		h 56 km.ca.
		i(sS)	N	37 03	7	-3				
		i	E	37 07	7		+10			
		i	Z	37 11	5			+10		
		i	N	37 18	7	-4				
		i	E	37 21	7		+7			
		i	Z	37 26	5			+7		
		iSS	NE	37 43	9	+8	+7			
		iSS	Z	37 44	7			+11		
		i	Z	37 55	7			-9		
		i	N	38 33	9	+7				
		eL	Z	39.1	24					
		M	N	40.3	16	8				
		M	Z	40.8	18			8		
		M	E	40.9	16		4			
557	26	e	V	20 40 17	½					Local.
558	26	i(P)	VV'	20 49 38	1½			-		Dilatation. Masked by microseisms.
		e(S)	NE	53 54	10					
		M	NE	58.1	13	1	1			
559	26	e	V	22 52 34	½					Local.
		e	V	52 41	½					
560	27	e	V	02 12 37	½					Local.
		e	V	12 44	½					
		e	V	12 57	½					
561	27	iP	NV	02 22 18.5	¼	+		+		Quarry blast ?
		iSg	V	22 22	1½			+		
		i	V	22 24	¾			+		
	28	e	V	04 25 09						Small local tremor ?

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Director

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s		μ	μ	μ	Km.	
	Sept.1	e	V	02 12 32	¼					Small local tremor ?
562	1	e(Pg)	V	06 55 06	¼					Local.
		i(Sg)	V	55 09.5	½			+		
563	1	e	Z	07 40 52	?					Masked by microseisms.
		i	N	44 31	5	+2				Normal depth.
		e	E	45 52	15					
		eL	Z	48.4	22					USCGS: 27.6S, 176.9W, H 07 35 21.9
		M	N	51.1	13	3				h 500 km.ca.
		M	EZ	52.0	16		4	7		
564	1	iP	NEZ	09 33 18	4	+3	+3	-10	2500ca	Dilatation
		i	V'	33 23	3			+	22°5ca	h 0.00
		ipP	NEZ	33 26	4	-3	-5	+9		
		e	NEZ	33 37	12				USCGS:	USCGS: 16.8S, 167.6E,
		iPP	N	33 47	5	-7				H 09 28 19.5,
		i	V'	33 59	3			+		H 63 km.ca.
		i	Z	34 05	5			-14		
		i	N	34 06	5	+5				
		i	V'	34 09	3			+		
		i	Z	34 28	5			+9		
		e	E	34 31	12					
		i	E	34 38	6		+6			
		i	Z	34 51	7			+11		
		i	N	35 38	6	+7				
		i	Z	35 43	5			+11		
		e(S)	N	37 17	(8)					
		i	N	37 28	7	-14				
		i	E	37 34	4		-8			
		m	NE	37 38	8	28	16			
		iSS	N	38 01	6	+10				
		iSS	Z	38 04	7			+16		
		i(SSS)	N	38 19	8	-28				
		eL	EZ	39.6	22					
		M	Z	40.8	16			19		
		M	NE	41.1	14	32	17			
		F		Merged in No.565						
565	1	iP	NEZ	10 40 04	4	+4	+3	-9	2500ca.	Dilatation
		i	VV'	40 05	2			+	22°5ca	Replica of No.564
		i	V	40 09	2			-		
		iPP	N	40 33	5	-8				USCGS: 16.5S, 167.6E,
		i	Z	40 52	5			-12		H 10 35 01.1
		i	Z	42 29	6			+11		h 27 km.ca.
		i	N	44 14	7	-12				
		i	E	44 20	5		-6			
		m	NE	44 25	9	21	14			
		iSS	NE	44 47	7	+7	+21			
		iSS	Z	44 50	7			+18		
		i(SSS)	N	45 05	7	-30				
		eL	EZ	46.3	22					
		M	Z	47.6	15			13		
		"	NE	47.9	14	24	15			
		F		Merged in No.566						
566	1	iP	Z	11 20 02	4			+6		Compression
		i	VV'	20 06	2			+		Confused by coda of No.565
		i	V	20 16	2			+		
		i	N	24 13	7	+14				USCGS: 16.6S, 167.4E,
		i	E	24 17	6		+6			H 11 14 59.6
		i(SS)	E	24 42	9		+8			h 35 km.ca.
		i	N	24 52	9	+12				
		eL	Z	26.2	22					
		M	NE	27.8	14	10	6			

RIVERVIEW COLLEGE OBSERVATORY
PRELIMINARY SEISMOLOGICAL BULLETIN, SEPTEMBE R, 1960.

No.	Date	Phase	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
567	Sept.1	e	N	16 01 50	9					Masked by microseisms.
		e	E	02 56	7					
		i	E	03 09	6		-3			USCGS: 56.1N, 153.7W, H 15 37 14.4
		e	E	09 42	18					h 24 km.ca.
		e	N	10 34	18					
		eL	N	23.6	?					
		M	NE	31.5	21	2	2			
		M	Z	31.7	21			5		
568	1	i	V	18 48 00	1½			-		Dilatation. Masked by microseisms.
		e	NE	53 04	10					
		e	N	56 08	12					USCGS: 15.8S, 179.2E, H 18 41 16.2
		eL	E	56.8	26					h 33 km.ca.
		M	EZ	59.7	16		1	2		
		M	N	59.8	13	1				
569	1	(P)	VV'	20 08 30						Masked by microseisms.
		i	VV'	08 34	2			+		
		i	VV'	08 45	1½			+		USCGS: 16.1S, 179.6W, H 20 02 12.8
		e(S)	E	13 37	9					h 183 km.ca
		e	E	23 47	12					
		i	N	16 46	10	+4				
		eLR	E	17.0	28					
		M	Z	18.9	19			9		
		M	NE	19.6	13,18	3	6			
570	2	e(Pg)	V	01 56 07	¼					
		i(Sg)	V	56 10	½			-		
		i	V	56 12.5	?			+		
571	2			03 58	Waves.					
	2	i	V	05 03 30	1½			-		Dilatation
	2	i	V	05 17 09	1½			+		Compression
573	2	iP	VV'	10 57 19	1			+		Compression. Microseisms present.
		i	V	57 27	1			+		
		i	V	57 47	1			-		USCGS: 15.2S, 167.4E, H 10 52 18.2
		i(PP)	VV'	58 11	2			+		h 163 km.ca.
		i	N	11 01 32	5	-2				
		i	N	02 52	6	+3				
574	2	(P)	V	13 58 24						Masked by microseisms.
		e	E	14 08 29	10					USCGS: 28.7N, 98.3E, H 13 46 10.0 h 48 km.ca.
	2	i	VV'	17 29 43	1½			+		Compression
575	2	(iP)	VV'	22 15 52	2			-		Masked by microseisms.
		i	V'	16 15	2			+		
		(eSKS)	N	26 13	?					USCGS: 52.0N, 171.4W, H 22 02 48.9
		i	E	26 54	6		-2			h 49 km.ca.
		i	N	27 13	7	+4				
		i	E	27 19	4		+3			
		eSS	E	32 51	22					
		M	N	50.1	21	2				
		M	E	51.3	21		3			
		M	Z	52.3	21			3		
576	3	e	VV'	02 10 27	½					Local.
577	3	eL	Z	05 57.7	22					Masked by microseisms.
		M	EZ	06 01.0	16		3	3		USCGS: 20.9S, 174.4W, H 05 41 39.9 h 61 km.ca.
578	3	e	V	06 07 44	¼					Local.
579	3	iP	VV'	07 51 32	1			-		Dilatation. USCGS: 19.0S, 169.1E, H 07 47 53.5 h 212 km.ca.
580	3	iP	NZ	12 46 47	2	-		+12	3110	Compression.
		i	Z	46 49	2			+10	28°0	h 0.06, H 12 14 30
		ipP	Z	48 03	3			+7		USCGS: 6.1S, 154.5E, H 12 41 34.9
		iPP	Z	48 09	3			-7		h 457 km.ca.
		isP	Z	48 53	3			+9		

(Continued on next page)

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase	Component	Time (G.M.T.)	Per.	AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
580	Sept.3	i	Z	12 49 27	7			+17		
cont.		i	Z	49 49	6			+13		
		iS	NE	51 01	4	+	-4			NS readings from Mainka.
		e	Z	51 19	14					NS Galitzin not functioning.
		iScP	V	52 55	2			-		
		i(SS)	Z	53 14	(5)			-(17)		
		i(SS)	E	53 18	(5)		+(7)			
		e	Z	53 19	18					
		i	E	53 24	6		-15			
		i	N	53 26	4	+				
		i	N	53 29	4	-				
		i	E	53 35	7		-17			
		i	N	53 55	4	-				
		i	Z	54 20	6			+13		
		i	E	54 50	7		+14			
		i(ScS)	E	56 40	4		+11			
		i	E	57 46	6		-16			
		M	NEZ	58.4	13		13	28		
	3	e	V	14 00 24						Small local tremor ?
581	3	eL	Z	15 59.3	20					
		M	Z	16 01.2	18			6		
		M	E	01.8	16		2			
	3	i	VV'	18 49 27	1½			+		Compression
582	3	eL	E	20 52.6	15					
583	3	(iP)	Z	23 58 21	3			-3		Dilatation. Masked by microseisms.
		i	V	58 36	1½					
		i	Z	58 43	4			+7		USCGS: 44.6N, 149.1E, H 23 46 23.9 h 27 km.ca.
		i(S)	E	24 08 25	6		+6			
		eLQ	E	19.8	34					
		M	EZ	29.5	21		2	2		
	4	i	VV'	05 01 51	1½			-		
	4	i	V	11 48 47	1			+		
584	4	i	Z	21 15 34	4			+3		Masked by microseisms.
		eL	Z	18.5	15					
585	5	eL	Z	09 54.9	22					USCGS: 48.9S, 121.2E, H 09 41 52.6 h 89 km.ca.
586	6	eP	V	02 58 12.5	¼					Felt in the Wollongong area, south of Sydney.
		iSg	V	58 20				-		
		S	N	58 21.5	½					
	6	i	Z	09 19 26	3			-1		Dilatation. Microseisms present.
587	6	iP	V	10 03 39	1½			+		Compression
		eL	E	11.3	18					USCGS: 34.0S, 179.2W, H 09 58 32.2 h 117 km.ca.
		M	NEZ	23.7	15	1	1	2		
	6	i	Z	11 20 07	3			+		Microseisms present. USCGS: 35.7S, 179.3E, H 11 16 02.2 h 600 km.ca.
588	6	iP	VV'	14 07 42	1½			-	2440	Dilatation
		iP	Z	07 43	2			+2	2199	Compression
		ipP	E	07 53	4		+2			h 0.00ca, H 14 02 50
		ipP	NV	07 54	4,1	+2		-		
		i	Z	07 55	2			+6		USCGS: 20.4S, 169.4E, H 14 03 01.8 h 35 km.ca.
		i	V	07 57	1½			+		
		i	V	07 59	1½			+		
		i	Z	08 01	3			-6		
		iPP	V	08 08	1½			+		
		iS	N	11 37	6	-4				
		iPcP	Z	11 40	4			-5		
		i	E	11 42	6		+8			
		isS	N	11 54	5	+5				
		i	E	11 58	5		-(6)			
		eLR	E	12.9	22					
		eLR	Z	13.1	24					
		M	EZ	15.1	17		3	4		M N 15.5 Per.15 2μ

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
589	Sept.7	eL	NZ	02 12.0	30					USCGS: 37.2S, 16.1W, H 01 17 39.1
		M	E	15.2	20		1			h 25 km.ca.
		M	NZ	16.2	19	2		2		
590	7	i(P)	Z	03 58 13	4			+2		Compression. Microseisms present.
		iS	N	04 04 03	6	-1				USCGS: 0, 125E, H 03 51 52.0
		eL	E	12.6	22					h 68 km.ca
		eL	Z	14.4	25					
	7	i	VV'	04 57 45	1½			-		
	7	i	V	05 16 33	1½			+		
	7	i	V	05 28 47	1			+		
	7	i	V	05 49 15	1			+		
		i	V	49 34	1½			+		
	7	i	VV'	08 21 30	1½			-		
	7	i	V	16 25 47	1½			-		
		i	VV'	25 56	1½			+		
591	7	e	N	17 32.6	?					
		M	N	39.5	13	1				
592	8	(iP)	V	11 16 00	2			-		Obscured by very large microseisms.
		i	V	16 07	2			-		
		i	V	17 13	1½			+		
		i(S)	N	22 54	6	+7				
		i	N	23 33	5	+9				
		i(SS)	E	26 13	9		+9			
		i	E	26 29	9		+13			
		i	N	26 31	6	+8				
593	10	iP	NE	10 52 30	4	-1	+	+	5180	Compression.
		i	V	53 36	1½			+	4626	h 0.09, H 10 44 53
		i	N	53 41	4	-1				EW readings from Mainka.
		i	N	54 13	4	+2				Galitzin EW,V, Wiechert V records
		ipP	V	54 18	1½			+		unreadable.
		i(PP)	V	54 29	2			+		
		iScP	V	56 50	1½			-		USCGS: 4.0N, 122.6E, H 10 44 51.2
		iS	NE	58 37	5	+17	+			h 629 km.ca.
		i	N	59 19	4	-4				
		i	N	11 00 19	4	+3				
		iScS	N	01 19	4	+4				
		i	N	05 05	6	+5				
		i	N	05 37	6	+6				
594	10	i	N	14 10 41	5	+2				Masked by microseisms.
		i(S)	N	14 25	7	+3				Only Galitzin N & Mainka readable.
		i(SS)	N	15 23	6	+2				USCGS: 11.5S, 163.1E, H 14 04 31.9
		M	N	18.5	16	5				h 48 km.ca.
595	12	ePg	V	02 01 26.5	¼					
		i(Sg)	V	01 35.5	½			+		
596	12	ePg	V	02 02 29.5	¼					
		i(Sg)	V	02 37.8	½			+		
597	12	i	Z	12 28 00	3			+5		Masked by microseisms.
		i	Z	28 07	4			+5		
		iS	N	36 27	7	-2				USCGS: 27.3N, 128.4E, H 12 17 08.1
		eL	E	48.4	14					h 48 km.ca.
		M	E	53.6	21		1			
		M	NZ	54.2	19	2		2		
598	12	iP	VV'	16 09 04	1			-		Dilatation
		i	VV'	09 05	1			+		
		iS	N	14 37	3	+1				USCGS: 7.0S, 117.0E, H 16 02 05.8
		iS	E	14 38	3		-2			h 611 km.ca.
		i(SS)	E	18 08	7		+4			
		i	N	18 19	6		+4			
599	14	(iP)	Z	00 45 15	2					Masked by microseisms.
		e(S)	E	52 13						USCGS: 16.9N, 122.3E, H 00 34 25.3
										h 50 km.ca.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
600	Sept.14	i(S)	E	05 19 31	5		+3			Masked by microseisms.
		e(PS)	E	20 18	18					USCGS: 35.1S, 106.0W, H 04 57 12.5
		M	NEZ	39.0	18	1	2	3		h 40 km.ca.
601	14	(iP)	Z	23 25 17	3			-4		Masked by microseisms.
		e	N	33 25	13					USCGS: 20.9S, 174.1W, H 23 18 35.1
		eL	E	34.5	19					h 25 km.ca
		M	N	36.1	14	3				
		M	EZ	37.0	18		1	3		
602	15	iP	VV'	03 36 14.5	1½			-		Dilatation. Microseisms present.
		i	VV'	36 24	1½			+		
		iPP	V	36 45	2			+		USCGS: 16.5S, 167.3E, H 03 31 17.5
		e	E	40 28	7					h 69 km.ca.
		e	N	40 40	9					
		i	E	40 41	6		-3			
		i(SS)	N	41 05	6	+4				
		M	NE	43.9	14	4	2			
603	15	iP(g)	V	07 35 34	¼			-		Dilatation
		i	VV'	35 38	¾					
		i(Sg)	NV	35 43	½	+1		+		
		i	V	35 46	¾			+		
604	15	eL	E	12 08.2	15					
605	16	eL	N	20 08.3	15					
606	17	(eP)	Z	07 17 47						
		e(S)	N	21 57	7					USCGS: 17.4S, 167.4E, H 07 12 48.1
		M	NE	25.6	13	1	1			h 23 km.ca
607	17	iP	VV'	08 05 10	2			+		Compression
		e(S)	NE	15 34	4					USCGS: 49.3N, 155.4E, H 07 52 50.8
		M	Z	37.7	22			2		h 35 km.ca.
608	17	iP	ZVV'	08 17 56	3			+4	9300	Compression
		i	Z	18 09	4			+2	83°7	h 00, H 08 05 29
		iS	E	28 15	7		-2			
		isS	N	28 33	6	+1				USCGS: 49.4N, 155.2E, H 08 05 29.5
		i	E	28 40	6		-4			h 28 km.ca.
		e	Z	28 41	11					
		i	N	29 20	4	+2				
		eLR	Z	45.0	33					
		M	NZ	50.0	21	2		4		
		M	E	52.3	20		1			
609	17	iP	VV'	13 04 34	1			+		Compression. Microseisms present.
		e	N	09 13	5					
		i	N	10 15	4	+1				USCGS: 6.3S, 154.4E, H 12 58 56.4
		eL	Z	12.4	25					h 134 km.ca.
		M	E	14.0	15		1			
		M	N	15.0	14	1				
610	17	i	N	15 23 00	4	+1				Masked by microseisms.
		eL	E	28.5	21					USCGS: 3.6S, 149.5E, H 15 12 18.4
		M	EZ	31.8	12,15		1	2		h 220 km.ca.
		M	N	32.6	15	2				
611	17	(P)	V	16 00 29						Masked by microseisms.
		i	V	00 35	1			-		USCGS: 6.3S, 148.8E, H 15 54 38
		eL	E	09.1	19					h 79 km.ca.
		M	E	10.8	16		1			
		M	Z	12.0	18			3		
		M	N	13.2	16	1				
612	17	eP	Z	20 02 43						Masked by microseisms.
		i(PPP)	EZ	04 12	4		-2	+2		
		e(S)	E	08 04	11					USCGS: 20.9S, 174.5W, H 19 56 11.1
		e	E	08.5	16					h 28 km.ca.
		e	N	10 12	12					
		i	N	11 05	7	+4				
		eL	EZ	12.0	24					
		M	N	14.6	13	5				
		M	EZ	15.7	18		7	11		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
613	Sept.18	iP	ZVV'	09 47 06	3			-8	3760	Dilatation
		iP	NE	47 07	3	+1	-1		33°8	h 0.02, H 09 40 36
		i	Z	47 38	4			+3		
		ipP	VV'	47 40	1½			+		USCGS: 6.8S, 129.2E, H 09 40 28.3
		i	Z	48 15	3			+4		h 83 km.ca.
		iPP	ZVV'	48 25	3			-6		
		i	VV'	48 30	1½			+		
		isPP	V'	49 05	1½			+		
		iPcP	V'	49 41	2			-		
		iS	E	52 17	5		+3			
		iS	N	52 18	5	+3				
		i	Z	53 12	4			-3		
		isS	E	53 16	4		-3			
		isS	N	53 17	3	+2				
		i	N	54 12	5	-3				
		i	Z	54 59	3			+4		
		iScS	E	57 08	4		+7			ScS preceded by several impulses of
		M	Z	58.4	5			15		comparable period and amplitude.
		M	E	58.9	7		12			
		M	N	59.5	7	15				
614	19	i	VV'	03 49 44	2			-		Dilatation. Masked by large micro-
		e	N	57 33	11					seisms.
		i	E	59 14	5		+3			
		i	E	59 32	5		+4			USCGS: 15.6N, 120.0E, H 03 39 40.9
		eL	N	04 06.4	17					h 97 km.ca.
		M	E	11.9	15		2			
615	19	eL	E	04 25.6	18					Masked by large microseisms.
										USCGS: 15.5N, 120.0E, H 03 58 51.4
										h 25 km.ca.
616	19	(iPKP)	V	19 20 16	1			+		Masked by large microseisms.
		(i)	V	20 18	1					
		e(SS)	E	40.4	(20)					USCGS: 6.9N, 77.5W, H 19 01 25.4
		eL	E	20 02.3	(28)					h 66 km.ca.
		M	NEZ	10.1	19	3	4	11		
	20	(i)	Z	00 43 39	3			-6		Large microseisms.
617	20	eL	N	00 55.4	16					Masked by microseisms.
										USCGS: 29.8S, 177.9W, H 00 42 22.0
										h 493 km.ca.
618	20	i	Z	03 43 22	2			+4		Masked by large microseisms.
		i	N	46 13	6	+4				USCGS: 28.[illegible]S, 177.9W, H 03 35 34.6
		eL	E	49.1	18					h 47 km.ca
		M	N	51.0	12	8				
		M	E	52.7	14		2			
619	21	eL	N	07 38.0	16					USCGS: 27.9S, 177.8W, H 07 25 26.5
		M	N	40.4	13	1				h 249 km.ca.
620	21	eL	N	08 05.3	16					
		M	N	08.1	13	1				
621	22	i	V	06 05 36	1½			+		Masked by microseisms.
		eL	E	26.5	(24)					USCGS: 3.4S, 29.[illegible]E, H 05 38 14.4
		M	NEZ	42.8	16	1	1	2		h 29 km.ca.
622	22	(iPP)	Z	09 25 16	4			-2		Masked by microseisms.
		iPS	Z	34 40	6			+4		
		ePS	E	34 44	16					USCGS: 3.3S, 29.3E, H 09 05 36.8
		i	Z	36 14	6			-2		h 28 km.ca.
		eSSS	N	44 10	16					
		iSSS	E	44 20	12		+5			
		eLQ	N	53.4	35					
		eLR	E	58.3	24					
		M	NZ	10 10.5	18	6		12		
		M	E	10.8	18		8			
		M	N	13.1	18	5				
		M	E	15.5	18		7			
		M	Z	16.4	18			13		
		M	N	18.5	16	5				
		M	EZ	20.3	16		8	9		

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
623	Sept.23	i	V	01 24 00	1			+		Masked by microseisms.
		oL	E	29.0	18					USCGS: 13.3S,166.5E, H 01 18 58.6 h 322 km.ca.
624	23	e(Pg)	V	06 21 39	¼					
		i	V	21 42	½			+		
625	23	iPg	V	06 32 27	¼			+		
		iSg	V	32 30.5	½			+		
	23	(iP)	V	16 00 51	1½			+		Masked by microseisms. USCGS: 23.7S, 179.5W, H 15 55 46.2 h 473 km.ca.
626	23	M	N	23 20.7	13	6				USCGS: 22.2S, 174.8W, H 22 02 24.3 h 39 km.ca.
		M	EZ	21.4	16		5	8		
627	24	oL	E	11 19						USCGS: 41.6S, 179.3W, H 11 06 39.2 h 43 km.ca.
628	27	eP	V	01 21 54	½					Small local tremor.
629	27	iP	V	03 44 17	1			+		Compression. Large microseisms present.
		e	NE	48 20	11					
		i	N	49 28	4	-4				
630	27	oL	E	07 37.8	?					Masked by large microseisms.
		M	E	41.1	13		2			USCGS: 0.9S, 134.5E, H 07 17 55 h 107 km.ca.
		M	NZ	41.5	13	3		4		
	27	(iP)	V	18 44 27	1			-		Masked by large microseisms. USCGS: 14.4N, 145.8E, H 18 35 52.2 h 109 km.ca.
	28	(i)	V	17 40 39	1½			+		Masked by microseisms. USCGS: 18.0S, 178.8W, H 17 34 58.8 h 705 km.ca.
631	29	e	V	02 28 35	¼					Small local tremor ?
	29	i	VV'	02 43 33	1½			+		
632	29	iP	VV'	11 27 32.5	2			-	5810	Dilatation
		iP	NZ	27 33.5	3	+2		-7	52°3	h 0.05, H 11 18 53
		i	VV'	28 10	1½			-		
		i	Z	28 10.5	2			-3		USCGS: 18.9N, 144.7E, H 11 18 52.9 h 469 km.ca.
		iPcP	V	28 37.5	1			+		
		iScP	XVV'	31 53	2			+4		
		iS	N	34 29.5	7	+12				
		e	E	34 32	12					
		i	Z	34 33.5	7			-13		
		isS	E	36 40	7		+3			
		iScS	N	36 42	5	-4				
		iSS	N	38 08	6	+3				
		i	Z	40 54	5			-7		
		oG	E	42.0	28					
		M	E	47.3	14		4			
		M	NZ	49.8	16	5		8		
633	30	e	N	01 54.3						
		oL	E	55.2	21					
634	30	i	V	05 54 09	½					Small local tremor.
635	30	oL	E	12 41.9						

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
636	Oct. 1	iP	Z	16 24 11	4			-5	10,090	Dilatation. Microseisms present.
		eSKS	N	34 40	5				90°8	
		iS	N	35 06	6	-2				USCGS: 52.2N, 172.6W, H 16 10 56.9,
		iScS	N	35 10	5	+4				h 41 km.ca.
		e	N	36 37	15					
		eSS	N	41 19	17					
		eLQ	E	49.3	?					
		eLR	E	53.2	27					
		eLR	N	53.3	27					
		eLR	Z	53.6	28					
		M	NZ	58.6	20	3		5		
		M	E	59.9	20		2			
637	2	(P)	V	04 50 16						Masked by microseisms.
		i	N	05 00 53	4					USCGS: 61.0S, 23.3W, H 04 37 49.7,
		e(SS)	N	06 28	15					h 77 km.ca.
		eL	E	13.4	?					
638	2	i	Z	07 21 09	3			+2		Masked by microseisms.
		eL	Z	50.1	21					USCGS: 39.0S, 91.6W, H 07 08 15.9, h 107 km.ca.
639	2	(iP)	Z	12 06 18	4			+3		Masked by microseisms.
		e(PS)	N	18 06	13					USCGS: 38.7S, 91.5W, H 11 53 44.1,
		i	N	23 13	6	+2				h 84 km.ca.
		eLR	NEZ	34.3	28					
		M	EZ	38.3	18		5	11		
		M	N	38.5	18	4				
640	2	(i)	Z	20 20 29	3			+2		Masked by microseisms.
		i	N	22 48	4	+2				
		e	N	27 28	?					
		eL	N	29.3	18					
		M	EZ	34.0	18		1	2		
	3	i	V	00 43 40	¼					Small local tremor ??
641	3	eL	E	01 10.7	16					
642	3	(iP)	VV'	10 18 57	1½			+		Masked by microseisms.
		eL	E	30.5	15					USCGS: 3.3S, 137.8E, H 10 12 07.8, h 29 km.ca.
643	3	(i)	V	17 15 46	1½			+		Masked by microseisms.
		i	VV'	16 33	1½			+		USCGS: 8.1S, 152.8E, H 17 10 56.2,
		i	N	21 07	5	+1				h 100 km.ca.
		e(L)	E	21.7	(22)					
		M	E	26.5	16		3			
		M	NZ	27.4	15	3		5		
644	3	(iP)	V	20 00 02	1½			+		Masked by microseisms.
		i	NE	07 31	5	-2	-2			USCGS: 5.7S, 103.0E, H 19 50 48.8,
		e(L)	E	17.5	(24)					h 51 km.ca.
		e	N	18.4	16					
		eL	NE	19.2	22					
		eL	Z	19.7	26					
		M	N	21.3	15	3				
		M	EZ	24.1	19		3	7		
645	3	(iP)	Z	22 15 50	3			+2		Compression. Masked by microseisms.
		i	N	19 40	5	-2				USCGS: 22.2S, 172.3E, H 22 10 52.5,
		e	E	19 59	15					h 243 km.ca.
		eL	E	21.3	22					
646	4	eL	E	04 51.7	13					
647	4	iP	VV'	09 56 44	1½			+		Compression
		i	NZ	56 48	6	-2		+4		USCGS: 7.5S, 155.3E, H 09 51 16.1,
		i	V	57 06	1½			+		h 134 km.ca.
		i	Z	57 10	5			+4		
		iPP	NZ	57 31	5	-3		+4		
		e(S)	NE	10 01 14	(11)					
		i	N	01 23	7	+4				
		i	N	01 36	7	+5				
		i	Z	01 39	7			+8		
		i	E	01 45	7		+5			

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
647	Oct. 4	i	N	10 02 02	6	+9				
cont.		i	E	02 24	5		+3			
		i	N	02 36	6	+6				
		i	E	02 52	8		+6			
		eL	Z	05.3	25					
		M	E	05.9	13		12			
		M	N	06.9	13	7				
		M	NZ	08.3	12	8		9		
		M	NZ	11.8	12	10		12		
	5	i	V	03 58 28	1			+		Large irregular microseisms present.
648	5	e(Pg)	V	06 45 14	¼					Local.
		i(Sg)	V	45 17.5	½			+		
649	6	e(S)	E	13 59 14	12					Masked by microseisms.
		e	N	59 22	12					
		M	E	14 05.9	15		½			
		M	N	06.1	13	1				
650	7	ePg	V	06 12 04.7	¼					Local.
		iSg	V	12 08	½			+		
	7	i	V'	09 59 55.5	1½			+		
651	7	iP	V'	15 24 58	2			+	3650	Compression. H 15 18 26
		iP	NEV'	24 59	2	+2*	-3*	-	32°8	Dilatation. h 0.00
		ipP	V'	25 10	2			+		No Galitzin or Sprengnether records.
		isP	NE	25 16	2	-3*	+2*			Readings from Mainka & Wiechert Vert.
		iS	E	30 12	6		-35*			
		i	E	30 42	6		-22*			USCGS: 7.4S, 130.7E, H 15 18 30.8,
		i(SS)	V'	32 16	4			-		h 45 km.ca.
		M	E	35.1	6		103*			
		M	N	35.3	6	99*				
652	8	i(Pg)	V	05 53 11.5	¼					Local.
653	8	iP	NZVV'	06 03 54	3	-8		+37	8570	Compression
		i	Z	03 58	3			-38	77°1	h 0.095 ca., H 05 53 03
		ipP	NZ	06 03	4	+5		-10		
		isP	NZ	07 01	4	-2		+2		USCGS: 40.0N, 129.7E, H 05 53 01.1,
		iPP	NZ	07 05	7	-12		+39		h 608 km.ca.
		i	Z	09 47	7			-8		
		i	Z	10 10	7			-12		
		iS	E	12 53	6		+26			
		iSKS	N	13 05	7	-9				
		iScS	E	13 17	6		+17			
		i	N	13 23	6	+9				
		i	NZ	13 34	4	+12		-15		
		i	E	13 35	5		-10			
		i	N	13 48	6	+13				
		i	E	14 18	5		+6			
		i	N	14 44	5	+4				
		isS	NE	16 40	7	+7	+32			
		i	Z	17 17	5			-8		
		i	E	17 26	6		+10			
		iSS	N	18 05	10	+25				
		i	Z	18 28	7			-18		
		i	N	20 37	7	+6				
		i	N	21 50	9	-13				
654	8	(iP)	Z	17 38 57	3			+2		
		i	N	43 02	7	-4				USCGS: 35.9S, 176.9E, H 17 34 00.7,
		eL	E	44.2	20					h 176 km.ca.
		eL	NZ	44.9	18					
		M	Z	46.2	17			5		
		M	NE	47.4	13	1	4			
655	8	eL	N	19 33.4	18					
		M	NE	35.8	12	3	2			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
656	Oct. 8	iP	V	20 51 09	1½			-		Dilatation. Masked by microseisms.
		i	Z	51 15	3			+3		
		(S)	N	21 00 13						USCGS: 7.9N, 92.9E, H 20 40 06.6,
		eL	N	14.6	30					h 71 km.ca.
		eL	Z	16.4	30					
		M	E	22.2	22		5			
		M	N	22.4	13	4				
		M	Z	22.6	22			13		
657	9	eL	N	05 03.1						Masked by microseisms.
658	9	iP	NZVV'	09 12 11	2	-1		+4	8290	Compression
		iPcP	V	12 24	1½			+	74°6	h 0.01, H 09 00 41
		ipP	V	12 36	1½			+		
		i	Z	12 38	4			+3		U.S.C.G.S: 40.8N, 141.2E,
		i	Z	12 41	4			-4		H 09 00 42.0, h 155 km.ca.
		iS	N	21 37	7	-3				
		isS	N	22 16	6	+2				
		i	Z	22 17	6			+5		
		e	E	22 21	?					
		iPS	N	22 28	6	-3				
		i	N	27 29	6	+3				
		eG	E	32.2	45					
659	9	iP	VV'	09 58 17	1			+		Compression. Microseisms present.
		i(pP)	V'	58 43	3			+		USCGS: 15.1S, 174.0W, H 09 51 19.1, h 129 km.ca.
660	10	iP	VV'	14 34 55	1			-		Dilatation.
		i	VV'	34 59	1			+		Local shock.
		i	V	35 01.5	1			+		
		i	V	35 07.5	1					
		iS	E	35 12.7	1½		+1			
		i	N	35 18	2	+1				
		e	V	35 26	3					
		i	V	35 31	1½			+		
		M	V	35 39	2					
661	12	eL	EZ	09 29.2	22					USCGS: 15.1S, 173.2W, H 09 11 16.4, h 25 km.ca.
662	12	(iP)	Z	18 35 20	2			-1		Masked by microseisms.
		(iS)	N	40 09	4	-2				USCGS: 6.1S, 148.6E, H 18 29 35.1,
		e	N	40 41	12					h 119 km.ca.
		M	E	46.3	15		1			
663	13	eL	N	06 15.7	17					Obscured by microseisms.
664	13	M	N	06 38.4	15	2				USCGS: 37.8S, 50.1E, H 05 59 06.8, h 34 km.ca.
665	13	iP	ZVV'	15 05 29	3			+5	9920	Compression.
		iPcP	VV'	05 32	1½			+	89°3	h 0.00, H 14 52 35
		i	Z	05 35	3			+4		
		i	Z	05 38	4			-4		USCGS: 54.8N, 161.2E, H 14 52 34.7,
		i	VV'	05 39	2½			+		h 35 km.ca.
		i	VV'	05 59	1½			+		
		iSKS	N	15 54	6	+3				
		iS	N	16 14	6	-3				
		iScS	E	16 17	6		-3			
		isS	N	16 24	6	-7				
		i	E	16 33	6		+2			
		e	N	17 05	20					
		ePS	N	17 27	(7)					
		i	N	21 38	7	+3				
		e	E	21 51	12					
		eSS	N	22 11	17					
		eLQ	E	30.1	38					
		eLR	Z	33.8	37					
		M	NEZ	39.0	22	7	4	15		
		W_2	NZ	17.3	20					
666	13	iP	V	18 46 22	1			+		Compression. USCGS: 3.8S, 152.4E, H 18 40 30.3, h 213 km.ca

No.	Date	Phase	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
667	Oct.14	i	Z	01 31 50	4			+5		
		eL	N	39.8	15					
668	14	ePg	V	06 02 19.5	¼					Quarry blast ??
		iSg	V	02 23.7	¼			+		
		i	VV'	02 26.8	½			+		
669	14	iP	VV'	15 36 59	1½			-		Dilatation.
										USCGS: 4.8N, 125.5E, H 15 28 39.0 h 36 km.ca.
670	14	eL	N	18 35.8	21					USCGS: 37.9S, 74.7W, H 17 48 28.5, h 25 km.ca.
671	14	iP	ZVV'	21 32 15	3			-5	10,200	Dilatation.
		i	V	32 26	2			-	91°8	h 0.005, H 21 19 13
		i	V	32 33	1½			-		
		ipP	Z	32 34	5			+7		USCGS: 51.7N, 172.1W, H 21 19 11.4,
		isP	V	32 39	1½			+		h 50 km.ca.
		i	Z	36 05	3			+3		
		iSKKS	N	42 53	6	+5				
		i	E	42 54	6		+3			
		iS	N	43 08	6	+5				
		e	E	43 11	10					
		i	N	43 20	6	+5				
		e	E	43 28	21					
		isS	N	43 39	6	+7				
		i	E	43 48	7		-4			
		ePS	Z	44 30	10					
		e	N	44 39	16					
		eSS	Z	49 07	22					
		eSS	NE	49 24	21					
		e(SSS)	E	52 32	22					
		eLR	Z	22 00.7	36					
		M	Z	06.0	18			6		
		M	E	07.6	16		4			
		M	N	08.1	18	6				
		i	Z	10 24	6			+6		
		W_2 M	NZ	23 47	19	3		4		
672	15	(iP)	Z	02 58 56	5			+3		Masked by microseisms.
		e	N	03 04 09	?					USCGS: 11.0S, 162.5E, H 02 53 42.5,
		M	E	08.3	13		½			h 139 km.ca.
673	15	i	V	06 01 58	¼			+		Local. Quarry blast ??
		i	VV'	02 01.5	½			+		
	16	(eP)	V	04 58 59						USCGS: 22.9S, 179.3E, H 04 53 59.2, h 565 km.ca.
674	16	iP	V'	13 32 38	2			+		Compression.
		e	E	36 49	8					Masked by microseisms.
		i	N	36 55	7	+1				USCGS: 36.2S, 177.3E, H 13 27 44.5,
		e	Z	36 56	12					h 25 km.ca.
		eL	N	38.3	21					
		M	Z	39.9	18			3		
		M	E	40.9	14		2			
		M	N	41.3	13	4				
675	17	eL	E	07 39.7	18					Masked by microseisms.
676	20	iP	VV'	11 11 30	1½			-	2860	Dilatation
		iP	NZ	11 30.5	2	+3		+5	25°7	h 0.00, H 11 06 01
		i	EZ	11 33	4		-4	+13		
		i	N	11 38	5	+5				
		ipP	V'	11 39	1½			+		USCGS: 11.0S, 164.9E, H 11 05 58.3,
		i	EZ	12 07	4		+3	-6		h 40 km.ca.
		i	Z	12 35	5			+10		
		i	N	12 52	4	+6				
		iPcP	V	15 00	1½			+		
		eS	N	15 54	?					
		isS	N	16 07	6	-6				
		i	E	16 10	5		-5			
		i	E	16 22	7		-11			
		i	N	16 32	7	+8				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
676 cont.	Oct.20	i	E	11 16 45	5		+14			
		i	N	16 59	5	+7				
		iSS	Z	17 02	7			+16		
		i	E	17 05	6		-10			
		i	N	17 11	6	+7				
		iSSS	Z	17 19	7			-15		
		i	E	17 35	8		+17			
		eL	Z	18.7	19					
		M	Z	20.7	15			11		
		M	E	21.0	15		7			
		M	N	21.1	13	11				
		i	N	22 41	5	+9				
677	22	iP	NEZVV'	08 27 21	4	-6	-4	+18	2740	Compression
		ipP	NZ	27 29	4	-6		+17	24°6	h 0.00, H 08 22 03
		isP	NEZ	27 34	4	+11	+3	-24		
		i	VV'	27 38	1½			+		USCGS: 10.3S, 161.2E, H 08 22 00.9
		i	NE	27 40	4	+10	+5			h 93 km.ca.
		i	N	27 48	4	+14				
		i	V	27 56	1½			-		
		iPP	Z	27 58	(4)			+(15)		
		i	NE	28 01	(4)	+(9)	+(4)			
		i	N	29 21	3	-6				
		i	N	30 21	3	+4				
		i	N	30 59	3	+3				
		iS	N	31 37	5	+4				
		i	E	31 45	5		+10			
		isS	NE	31 53	6	-6	+9			
		i	N	32 04	7	-18				
		i	E	32 06	6		-18			
		i	Z	32 14	6			+17		
		i	E	32 18	5		+8			
		iSS	EZ	32 33	7		-38	-20		
		i	N	32 38	7	-31				
		iSSS	NE	32 48	7	+13	-36			
		i	N	33 14	5	-19				
		eL	Z	33.8	30					
		M	NE	34.5	22	64	39			
		M	Z	35.3	22			73		
		M	E	38.2	12		14			
678	24	iP	NEZVV'	05 17 09	2	-2	-1	+5	2670ca.	Compression
		i	VV'	17 33	1½			+	24°ca.	h 0.01ca., H 05 12 02
		i(pP)	ZVV'	17 37	3			+4		
		iPP	Z	17 47	4			+6		USCGS: 15.0S, 167.4E, H 05 12 04.4,
		i	VV'	17 48	2			-		h 145 km.ca.
		i	V	18 08	1½			+		
		i	Z	18 09	3			-2		
		iS	N	21 17	7	-4				
		i	E	21 28	6		+2			
		i	Z	21 30	6			+6		
		i	Z	21 54	4			+4		
		i	N	21 58	5	+3				
		i	E	22 11	7		+4			
		i	Z	22 13	6			+9		
		eL	Z	23.0	17					
		M	N	24.2	15	2				
		M	Z	25.5	16			3		
		M	E	25.9	15		2			
	24	e	V	06 28 30	½					Small local tremor ??
679	24			06.7	Long waves.					USCGS: 36.3N, 70.7E, H 05 47 03.5, h 277 km.ca.
	24	e	V	06 58 46	½					Small local tremor ??
		e	V	58 54	½					
	24	e	V	07 51 22	¼					Small local tremor ??
		e	V	51 25	¼					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE.	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
680	Oct.24	eP	Z	17 14 55	6					Microseisms present.
		i	Z	15 14	4			-2		
		eS	N	19 37	?					USCGS: 6.0S, 150.0E, H 17 09 14.4,
		e	Z	19 45	15					h 122 km.ca.
		i	N	20 00	8	+7				
		eL	E	22.8	(22)					
		M	NE	24.6	18	3	3			
		M	Z	24.7	21			6		
		M	NZ	26.2	15	4		9		
681	25	eL	E	18 38.8	15					USCGS: 18.1S, 167.8E, H 18 26 27, h 100 km.ca.
682	26			01.7	Surface waves.					
683	26	iP	V	17 40 09	1			+		Compression. USCGS: 17.8S, 178.6W, H 17 34 29.8, h 589 km.ca.
684	26	(iP)	VV'	19 59 14	1			+		Masked by microseisms.
		i	VV'	59 25	1½			-		USCGS: 2.0S, 125.9E, H 19 51 59.4,
		eL	E	20 12.9	18					h 86 km.ca.
	26	e	V	23 59 54	½					Local. Seismic ??
	27	i	V	00 00 14	¾			+		
	27	e	V	00 12 26	¼					Local. Seismic ??
	27	e	V	02 21 49						Local Seismic ??
		e	V	02 22 56						Local. Seismic ??
		e	V	02 23 28						Local. Seismic ??
	27	i	V	02 24 40	1½			+		Compression.
	27	e	V	04 44 11	¼					Explosion ??
		e	V	44 24	¼					"
		e	V	44 40	¼					"
		i	V	44 45½	¼					"
	27	e	V	04 53 26	¼					Local. Seismic ??
	27	e	V	06 23 58	¼					Local. Seismic ??
685	27	(ePg)	V	07 42 35.5	¼					Local.
		i(Sg)	V	42 39.2	¼			-		
		i	VV'	42 42.5	½			+		
686	27	(i)	V	15 51 09	1½			+		
		M	E	56.0	11		1			
687	27	(iP)	VV'	22 34 28	1			+		Masked by microseisms. USCGS: 15.2S, 175.0W, H 22 27 55.1, h 253 km.ca.
688	28	iP	V	13 30 47	1½			+	9600	Compression
		iP	ZV'	30 47.5	3			+6	86°4	h 0.01, H H 13 18 14
		i	N	30 49	4	+3				
		iPcP	V	30 50	1½			+		USCGS: 52.0N, 157.4E, H 13 18 14.3,
		ipP	Z	31 12	3			+7		h 96 km.ca.
		i	N	31 14	4	-2				
		isP	Z	31 24	4			-5		
		iSKS	N	41 00	7	-4				
		iS	E	41 13	6		+11			
		iScS	NE	41 25	5	-4	+8			
		i	N	41 48	7	+9				
		isS	E	41 59	5		-4			
		i	Z	45 53	4			-5		
		eLR	Z	57.8	40					
		i(SKPP')	Z	14 00 05	4			+5		
689	28	(i)	Z	22 40 52	4			-2		Masked by microseisms.
		i(S)	N	49 34	6	-2				
		i	E	49 39	6		+5			USCGS: 34.4N, 141.1E, H 22 29 26.6,
		i	E	50 34	4		+2			h 96 km.ca.
		e(LQ)	E	58.3	29					
		eLR	E	23 01.5	22					
		M	Z	08.4	19			2		

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
690	Oct.29	iP	Z	09 44 45	3			-2	(4150)	Dilatation. Microseisms present.
		i(pP)	Z	45 02	3			-2	(37°3)	h (0.01), H (09 37 41)
		e(S)	E	50 25	13					
		e	Z	50 50	15					USCGS: 15.8S, 172.9W, H 09 37 41.6,
		e(sS)	E	51 05	13					h 99 km.ca.
		e(SS)	N	53 13	18					
		eLR	EZ	54.8	27					
		M	EZ	56.4	20		2	5		
		M	N	57.5	12	2				
	29	(iP)	V	21 52 58	2			-		Masked by microseisms.
										USCGS: 12.0N, 140.0E, H 21 44 37.2,
										h 25 km.ca.
691	30	(iPP)	VV'	12 33 39	1½			+		Masked by large microseisms.
		e(PS)	E	43 08	15					USCGS: 23.3S, 70.4W, H 12 14 36.1,
		e	N	43 17	15					h 76 km.ca.
		eLR	Z	13 06.5	27					
692	30	(iP)	Z	15 58 22	3			+5		Masked by large microseisms.
		e	N	16 04 33	8					
		eL	E	12.0	21					USCGS: 1.0S, 127.0E, H 15 50 50.4,
		M	N	17.0	13	3				h 32 km.ca.
		M	Z	17.7	20			6		
		M	E	18.0	20		3			

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
693	Nov. 1	i	V	06 34 02.6	½			-		Local.
		i	V	34 08.8	1			+		
694	1	iP	ZV	08 59 25	4			-2		Dilatation.
		i	V	59 37	2			+		
		i	Z	09 00 05	4			+5		USCGS: 38.4S, 74.4W, H 08 46 01.9,
		i(PP)	NZ	03 16	5	+2		+4		h 97 km.ca.
		i(SKS)	N	10 18	5	+3				
		i(S)	E	10 45	5		+4			
		e	NE	11 00	13					
		i	N	13 43	6	+5				
		eLQ	NE	26.4	31					
		eLR	E	31.4	24					
		M	NEZ	40.5	16	4	5	9		
695	2	iP	V'	17 20 22.5	1½			-	2820	Dilatation
		iP	V	20 23	1½			-	25°4	h 0.00, H 17 14 56
		iP	NEZ	20 23.5	4	+7	+5	-20		
		i	V	20 32	1			+		USCGS: 10.9S, 164.9E, H 17 14 49.3,
		i	V	20 34	1			+		h 25 km.ca.
		m	NEZ	20 34	9	10	6	22		
		i	E	20 48	4		-5			
		i	Z	20 50	6			-28		
		iPP	NEZ	21 01	7	-12	-9	+22		
		i	N	21 44	6	-9				
		i	N	22 13	6	+14				
		i	VV'	23 28	2			+		
		i	Z	23 46	6			+23		
		iPcP	VV'	23 53	1½			+		
		iS	N	24 44	77	+7				
		isS	E	24 59	7		+8			
		i	N	25 10	8	+18				
		i	NE	25 26	8	-12	+22			
		iSS	E	25 46	9		+52			
		i	Z	25 55	8			+22		
		iSSS	E	26 02	8		+10			
		iSSS	N	26 03	7	+40				
		eL	Z	27.4	18					
		M	NE	30.0	13	51	29			
		M	Z	30.6	16			32		
		M	E	31.5	13		35			
		F		20.7						
696	2	e	V	19 44 15	½					Local.
697	3	M	NE	02 21						Masked by microseisms.
698	3	(i)	Z	02 48 15	3			-2		Masked by microseisms.
		e	N	57 03	16					
		eLE	E	57.6	21					USCGS: 22.1S, 175.1W, H 02 42 54.5,
		eL	Z	58.4	24					h 25 km.ca.
		M	EZ	13 00.6	18		4	6		
		M	N	01.0	13	6				
	3	i	V	05 27 00	1			+		Seismic ??
		i	V	27 03	1			+		"
		i	V	27 17	1			+		"
699	3	i(Pg)	V	06 45 00	¼			-		Local.
		i	V	45 03.3	½			+		
700	3			17.8	Long waves.					USCGS: 16.9S, 176.5W, H 17 30 29.9, h 25 km.ca.
701	6	iP	ZVV'	04 51 03	3			+3	9790	Compression. Microseisms present.
		ipP	ZVV'	51 12	3			+3	88°1	h 0.00, H 04 38 15
		iSKS	N	05 01 30	6	-2				
		eS	E	01 43	9					USCGS: 53.0N, 159.8E, H 04 38 16.7,
		eLQ	E	15.2	30					h 49 km.ca.
		eLR	N	19.7	30					
		M	NZ	25.1	22	4		8		
		M	E	25.9	22		3			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
702	Nov. 6	i(P)	E	06 20 29	5		-4			Large microseisms present.
		i	Z	20 33	7			-8		Phases hard to identify.
		i	E	20 39	7		-7			
		i	ZVV'	20 49	3			+10		USCGS: 31.0S, 177.7W, H 06 15 05.7,
		i	Z	20 57	5			-9		H 184 km.ca.
		i	E	21 10	7		-6			
		i	Z	21 [illegible]6	7			-10		
		i	Z	21 44	6			+12		
		i	N	25 02	6	-5				
		i	E	25 06	6		+4			
		i	EZ	25 34	7		+11	+15		
		i	N	25 55	7	+7				
		i	N	26 33	10	+11				
		eL	Z	27.4	25					
		M	N	29.5	16	41				
		M	Z	31.2	16			49		
		M	E	31.5	16		37			
703	6	eL	E	10 31.0	21					
704	6	eL	EZ	15 21.2	18					
705	6	i(S)	N	22 34 32	4	-2				Masked by microseisms.
		i(PPS)	N	36 18	4	+1				USCGS: 52.7N, 168.0W, H 22 10 06.4,
		eL	NZ	57.0						h 42 km.ca.
	7	e	V	05 10 25	½					Local ??
706	7			14.0	Surface waves.					USCGS: 32.2N, 131.5E, H 13 23 05.1, h 25 km.ca.
707	7	iP	Z	16 32 10	5			+3	2820	Compression
		i	Z	32 33	3			+2	25°4	H 16 26 39
		eS	N	36 35	9					
		e	E	36 38	9					USCGS: 10.7S, 163.0E, H 16 26 43.0,
		e	E	37.0	19					h 25 km.ca.
		iSS	N	37 37	8	+5				
		eLR	Z	38.5	25					
		M	Z	40.2	13			3		
		M	NE	41.1	13	4	2			
708	8	(e)	VV'	00 02 24	1					Masked by microseisms.
		i	VV'	02 42	1½			+		USCGS: 30.6S, 177.5W, H 23 56 32.2
		e	N	06 56	8					h 25 km.ca.
		eL	E	10.2	18					
		eL	Z	10.3	21					
		M	N	11.2	15	2				
		M	EZ	11.9	16		2	3		
709	8	eL	Z	02 58.8	19					USCGS: 29.8S, 176.9W, H 02 43 38.1, h 25 km.ca.
710	8	e	E	11 10 21						Masked by microseisms.
		eL	EZ	12.8	22					USCGS: 31.1S, 177.6W, H 10 59 43.5,
		M	NEZ	15.3	16	1	1	2		h 18 km.ca.
711	8	eL	N	19 59.1	16					Masked by microseisms. USCGS: 18.4S, 168.3E, H 19 47 49.5, h 25 km.ca.
712	9	iP	V	03 30 34	1½			+	9560	Compression. Microseisms present.
		iPcP	ZV	30 38	5			+8	86°0	H 0.00, H 03 17 56
		i	N	30 39	4	+3				
		isP	Z	30 48	4			+8		USCGS: 60.7S, 24.8W, H 03 17 58.5,
		i	Z	31 08	4			-4		h 37 km.ca.
		ePP	Z	33 55	10					
		iPP	N	34 00	7	+3				
		iS	N	41 04	6	+5				
		iScS	E	41 14	7		+15			
		isS	N	41 23	6	+6				
		iPS	N	42 12	7	+6				
		i	N	42 20	7	-9				
		eSS	N	46 41	10					
		eSS	EZ	46 46	18					
		i	N	46 59	10	+28				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
712	Nov. 9	i	N	03 47 19	10	+18				
cont.		eLQ	E	52.7	30					
		eLR	E	58.6	33					
		eLR	Z	59.5	42					
		M	E	04 09.0	16		6			
		M	NZ	12.0	16	14		21		
713	9	e(S)	N	11 05 58						Masked by large microseisms.
		eL	E	17.3						USCGS: 32.7N, 103.4E, H 10 43 43.1,
		M	NE	29.5	21	5	3			h 47 km.ca.
714	9			19.8	Surface waves-masked by large micros.					USCGS: 30.7S, 177.1W, H 19 32 39.0,
										h 68 km.ca.
715	9	e	N	20 31 34						Masked by large microseisms.
		e(PS)	E	34 52	15					
		e(PS)	N	34 59	13					USCGS: 23.2S, 70.6W, H 20 06 16.2,
		eLR	Z	58.2	27					h 52 km.ca.
		M	E	21 04.9	16		3			
		M	NZ	05.9	16	3		4		
716	10	iP	NEZVV'	14 51 23	3	-5	+2	+17	3650	Compression
		ipP	Z	51 36	4			+8	32°8	h 0.00, H 14 44 51
		i	N	51 38	4	-3				
		i	NZ	51 52	3	+4		-8		USCGS: 2.6S, 139.4E, H 14 44 47.3,
		iPP	NZ	52 31	5	-4		+5		h 25 km.ca.
		i	Z	52 57	4			-8		
		i	NZ	53 08	4	+4		-8		
		i	N	53 36	4	+5				
		i	Z	53 39	4			+14		
		iPcP	Z	54 08	3			-4		
		i	N	56 33	6	+8				
		i	Z	56 36	4			+10		
		iS	E	56 37	6		+22			
		i	N	56 40	7	-16				
		i	Z	56 43	5			-22		
		i	E	56 47	7		+14			
		i	N	57 08	7	-10				
		e	N	57.6	16					
		i	Z	58 02	3			+10		
		i	N	58 18	4	-17				
		M	NE	15 03.0	7	44	66			
		M	Z	04.2	6			55		
717	10	iP	VV'	16 35 12	1½			+		Compression
		i(S)	N	38 57	6	-3				
		i	N	39 06	6	+3				USCGS: 22.0S, 171.6E, H 16 30 16.2,
		eL	N	40.1	20					h 128 km.ca.
		M	N	41.5	16	5				
		M	Z	42.0	17			3		
		M	E	42.4	15		2			
718	11			05.1	Surface waves.					
719	11			21.6	Surface waves.					
	11	i	VV'	22 33 57	1½					Masked by microseisms.
720	13	iP	NEZVV'	06 44 53	3	-5	+3	+13	4540	Compression.
		i	Z	44 57	4			+14	40°8	h 0.005ca., H 06 37 17
		i(sP)	Z	45 17	4			+7		
		iPP	NZ	46 31	4	-5		+23	+23	USCGS: 1.4N, 127.2E, H 06 37 05.7,
		iPP	E	46 32	4		+3			h 49 km.ca.
		i	Z	46 44	(6)			+(17)		
		i	N	46 53	4	+7				
		i	Z	46 54	4			+8		
		i	Z	47 06	4			+11		
		iS	NE	50 59	6,4	+9	+4			
		i	Z	51 00	4			+9		
		i	N	51 06	7	-15				
		i	E	51 09	6		+12			
		i	NE	51 53	6	+8	+11			

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No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
720	Nov.13	i	E	06 52 13	6		+11			
cont.		i	N	53 36	4	+6				
		i	N	54 04	8	+6				
		iSS	NZ	54 10	8,4	-12		+8		
		i	E	54 20	4		+4			
		i	N	54 21	7	+5				
		i	E	54 46	6		+8			
		iScS	NZ	54 48	5,7	+10		+15		
		M	E	07 00.7	13		10			
		M	N	01.0	13	11				
		M	Z	02.3	13			20		
		M	NZ	06.3	13	18		25		
721	13	iP	Z	09 33 44	4			+13	10,240	Compression. Large microseisms
		i	VV'	33 48	1½			+	92°1	present.
		i(pP)	Z	33 53	4			+9		h (0.00), H 09 20 37
		i	N	34 02	4	+2				
		i	Z	34 22	4			+8		
		i	NZ	34 29	5	+4		+17		USCGS: 51.1N, 168.8W, H 09 20 36.8,
		iPP	Z	37 22	(7)			+(11)		h 65 km.ca.
		i	N	37 29	4	+3				
		iPPP	Z	39 21	(7)			+(10)		
		iSKS	N	44 17	7	-17				
		iSKS	E	44 18	7		-12			
		i	Z	44 20	7			+15		
		oS	E	44 41						
		iS	E	44 44	7		+17			
		i	N	44 49	10	-36				
		i	EZ	44 51	7		-24	-20		
		i	Z	45 54	7			+16		
		oPS	N	45 58	18					
		i	N	46 14	7	-14				
		iPPS	NE	46 35	7		+10			
		i	N	47 29	6	+9				
		e(SS)	E	50 28	28					
		eSS	N	50 57	27					
		e	E	51 26	19					
		i	N	51 30	15	+27				
		eLQ	E	58.5	(35)					
		eLR	Z	10 04.6	27					
		M	E	08.1	15		13			
		M	NZ	08.9	21	30		44		
		eW2	N	11 44	21					
	13	i	VV'	13 53 29	1½			+		Masked by large microseisms.
722	13	i	N	21 31 35	4	+2				Masked by large microseisms.
		eL	E	33.8	18					
		M	N	35.3	15	3				
		M	E	35.8	12		2			
723	14	(iP)	VV'	02 11 46	1½					Masked by microseisms.
		e(S)	E	16 50						
		i	N	17 09	6	+4				USCGS: 53.5S, 140.7E, H 02 08 05.5,
		M	NE	20.0	10	2	2			h 21 km.ca.
		M	Z	20.3	15			3		
724	14	(i)	N	04 19 19	3	+1				Masked by microseisms.
		(i)	Z	20 48	4			-3		USCGS: 53.5S, 140.3E, H 04 17 12.7,
		M	N	29.3	11	½				h 100 km.ca.
725	14	(i)	V	09 38 55	1½			+		Masked by microseisms.
		eL	N	45.5	17					
		M	NE	47.5	15	3	1			
		M	NE	56.3	13	3	1			
	14	(i)	VV'	10 15 09	2			+		Masked by microseisms.
	14	(i)	VV'	20 18 25	1½			+		Masked by microseisms.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
726	Nov.15	(P)	V'	02 34 44						
		e	Z	39 25	7					USCGS: 11.5S, 166.2E, H 02 29 04.6,
		e(S)	N	39 29	9					h 25 km.ca.
		i	E	39 31	6		+2			
		e	E	41 45	10					
		M	N	47.4	12	½				
727	15	e(P)	Z	06 31 14	5					
		e(PP)	Z	32 52	(11)					USCGS: 62.5S, 161.7W, H 06 23 27.5,
		iS	N	37 32	7	± 2				h 46 km.ca.
		e	E	37 37	10					
		e(SS)	E	40 04	9					
		e(LQ)	NE	40.7	19					
		i	N	40 52	12	-5				
		i	E	40 54	12		-7			
		i	N	41 25	13	+7				
		i	E	41 28	13		+11			
		eLR	Z	42.3	25					
		eL	N	42.4	27					
		M	Z	45.7	16			5		
		M	N	46.5	16	3				
728	15	(i)	V'	09 17 30	1½			+		USCGS: 23.2N, 94.3E, H 09 05 59.1,
		(i)	Z	17 34	3			+2		h 103 km.ca.
		e	N	24 53	8					
729	15	eP	EZ	21 45 10	4					
		e	Z	45 36	7					USCGS: 35.0S, 178.4E, H 21 40 14.4,
		eS	NE	49 24	7					h 84 km.ca.
		i	Z	49 36	6			+4		
		eLR	NZ	51.1	21					
		M	E	53.4	16		5			
		M	Z	53.9	16			5		
		M	N	54.1	13	6				
	16	e	V	00 44 01	½					Local. Seismic ??
		e	V	00 55 47	½					" "
		e	V	00 56 53	½					" "
		e	V	00 59 45	½					" "
		e	V	01 00 24	½					" "
		e	V	01 02 22	½					" "
		e	V	01 05 24	½					" "
	16	(iP)	V'	01 28 10	1½					Masked by microseisms.
		(iS)	N	32 05	4	-1				USCGS: 23.7S, 179.3E, H 01 23 11.1,
		(iScS)	E	38 00	4		+1			h 552 km.ca.
	16	e	V	05 14 02	½					Local. Seismic ??
		e	V	06 57 13	½					" "
730	16	iPg	V	07 20 36.7	¼			+		Local.
		iSg	V	20 40	½			+		
731	17	(iP)	Z	04 13 45	3			+3		Masked by microseisms.
		e	Z	14 06	4					
		e	Z	18 24	12					USCGS: 30.8S, 177.7W, H 04 08 03.1,
		e(LQ)	N	19.9	15					h 71 km.ca.
		eL	Z	21.1	21					
		M	N	22.8	14	3				
		M	EZ	23.4	17		3	3		
732	17	e	V	05 03 06						Masked by microseisms.
		e	NE	03 45						Felt in Brisbane, Queensland.
	17	i	VV'	13 11 48.5	2			+		Probably only a large microseism.
		i	VV'	11 52.5	2			+		" " " "
733	17	e	E	14 13 20						
734	17	e	N	20 15.9						USCGS: 52.4N, 170.3W, H 19 46 50.6,
										h 46 km.ca.
735	17	eL	NZ	21 50.7	(24)					USCGS: 56.2S, 122.6W, H 21 22 45.6,
		M	NEZ	54.2	19	1	1	3		h 38 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
736	Nov.19	o(Pg)	V	02 33 58.7	¼					Local.
		i(Sg)	VV'	34 04.6	¾			+		
	19	e	V	04 37 58	½					Local ?
737	19	e(SS)	N	12 34 47	10					Masked by microseisms.
		eL	Z	40.3	20					USCGS: 8.6N, 137.6E, H 12 16 44.5,
		M	NZ	47.0	13	1		2		h 27 km.ca.
738	20	ePP	NE	22 21 51	9					No Vertical Galitzin record.
		i	NE	22 42	10	+3	-4			
		e(SKKS)	E	28 12	13					USCGS: 6.8S, 80.7W, H 22 01 59.9,
		i(S)	E	29 32	9		+8			h 93 km.ca.
		e	E	31 01	19					
		e	N	31 12	19					
		iPS	E	31 29	12		+14			
		i	N	31 36	10	+10				
		i	NE	31 50	13	-17	+31			
		i	E	32 14	13		+44			
		i	N	32 16	13	-18				
		e	E	33 54	15					
		i	N	34 04	10	+7				
		i	NE	34 13	10,12	+8	-14			
		eSS	E	38 08	15					
		iSS	N	38 11	13	+11				
		i	E	38 24	16		+28			
		i	N	38 28	15	-13				
		i	N	39 10	15	-23				
		i	N	42 04	12	+3				
		eSSS	E	42 19	22					
		i	E	42 38	14		-9			
		eLR	E	55.8	31					
		M	NE	59	22	22	45			
		M	NE	23 11	18	22	38			
		F		25 30						
	21	e	V	02 23 23	½					Local. Seismic ??
		e	V	02 24 28	½					" "
739	21	(P)	Z	04 34 40						Masked by microseisms.
		M	E	41.7						USCGS: 3.4S, 152.3E, H 04 29 04.7, h 371 km.ca.
	21	e	V	04 41 35	½					Local. Seismic ??
740	21	e	V	23 17 11	¼					Local.
741	22	iP	Z	03 38 52	3			+3	3970	Compression. Microseisms present.
		iPP	E	40 14	4		+2		35°.7	H 03 31 50
		iPPP	E	40 31	4		-2			
		i	Z	40 34	4			-3		USCGS: 19.2S, 173.1W, H 03 31 54.3,
		eS	N	44 29	8					h 25 km.ca.
		e	N	46 36	9					
		e	N	47 06	16					
		eL	Z	48.5	22					
		M	N	51.4	13	7				
		M	NEZ	52.3	*	7	9	14		* Per.MN 12s, MEZ 17s.
742	22	iP	Z	06 33 44	4			+4	8720	Compression. Microseisms present.
		iS	E	43 40	6		-2		78°.5	
		e	N	43 41	10					USCGS: 35.9S, 52.3E, H 06 21 45.0,
		eLR	Z	58.0	30					h 21 km.ca.
		eL	N	58.4	28					
		M	NEZ	07 01.3	19	4	4	11		
743	22	e(P)	Z	12 42 22						Masked by microseisms.
	**	e	N	42 27						USCGS: 40.0S, 74.3W, H 12 28 58.4,
		e(S)	N	52 52	9					h 107 km.ca.
		M	NEZ	13 18.2	18	1	1	4		
744	23			01.7	Surface waves.					USCGS: 5.0S, 153.3E, H 01 24 30.1, h 79 km.ca.
743	** 22	e	N	12 51 34	9					

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1960		h m s	s	μ	μ	μ	km.	
745	Nov.23	iP VV'	04 16 55	1½			+		Compression.
		iS NE	21 16	4	+3	-2			
		M E	26.3	15		1			USCGS: 4.9S, 153.8E, H 04 11 34.7,
		i N	36 01	5	+3				h 516 km.ca.
	23	e V	07 37 13	¼					Local.
746	23	ePg V	07 55 01	¼					
		iSg V	55 05	½			-		
		i V	55 08	¾			+		
747	23	(eP) Z	09 47 33						Masked by microseisms.
		e(S) N	52 14	9					USCGS: 10.3S, 152.3E, H 09 42 50.6,
		eL E	55.0	18					h 70 km.ca.
748	23	iP Z	14 18 37	4			+4	3340ca.	Compression
		i EZ	18 42	4			-5	30°ca.	S cannot be identified.
		i Z	18 52	3			+5		
		i Z	19 14	4			+4		USCGS: 24.2S, 176.1W, H 14 12 21.2,
		i Z	19 28	4			+6		h 28 km.ca.
		iPP E	19 37	4		+5			
		iPP Z	19 39	4			+13		
		i N	19 47	4	+2				
		i Z	19 55	4			+5		
		i E	19 56	5		-6			
		i Z	20 01	4			+22		
		i E	20 04	4		+3			
		i N	20 06	4	-3				
		i E	20 25	5		+9			
		i Z	22 42	6			-11		
		i N	23 19	6	+5				
		i Z	23 23	6			+17		
		i(S) N	23 30	7	+7				
		i E	23 38	5		+6			
		i E	24 36	6		+8			
		i N	24 42	5	+7				
		i Z	25 03	7			+10		
		i(SS) N	25 07	10	+17				
		i(SSS) N	25 32	10	+51				
		i Z	25 33	7			+21		
		e(L) Z	25.8	(16)					
		i Z	26 04	9			-39		
		M N	26.7	14	87ca.				
		i Z	26 54	12			+78		
		M EZ	29.9	16		61	78		
		M N	30.1	12	190*				*From Mainka.
		M Z	30.9	15			79		
		M E	32.8	10		51			
749	23	iP VV'	17 00 23	1			+		Compression.
		i(PP) VV'	02 13	1			+		USCGS: 4.6N, 125.8E, H 16 52 12.9,
		(iS) N	06 50	4	-2				h 143 km.ca.
		M Z	14.6	19			2		
750	23	(i) V	17 34 21	1½			-		USCGS: 24.5S, 176.4W, H 17 29 08.5,
		eL N	42.7	16					h 171 km.ca.
		M N	46.4	12	3				
751	23	e(P) V	18 02 54	4					
		i Z	02 56	(2)			+		USCGS: 24.0S, 176.3W, H 17 56 38.0,
		i EZ	03 48	4		+2	-3		h 51 km.ca.
		i Z	03 58	4			+4		
		eL N	10.5	18					
		eL E	11.1	22					
		M N	12.8	14	9				
		M EZ	14.2	16		7	8		
752	23	eL N	20 25.5	18					USCGS: 24.1S, 175.7W, H 20 11 03.2,
									h 25 km.ca.
	24	i V	02 27 30	1			-		

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
753	Nov.24	oP	NZ	04 56 13	5				3210	
		iP	VV'	56 14	1½			-	28°9	Dilatation
		i	Z	56 32	4			+3		h 0.005 ca., H 04 50 18
		i	NZ	56 54	6	+2		-6		
		e	N	57 02	13					USCGS: 4.6S, 153.0E, H 04 50 15.8,
		i	NZ	57 17	9	+8		-11		h 87 km.ca.
		i	E	57 21	4		+2			
		e	N	05 00 47	15					
		iS	N	00 58	9	-12				
		i	E	01 02	9		-3			
		i	Z	01 03	6			+6		
		i	E	01 22	7		+2			
		isS	N	01 24	9	-12				
		i	Z	01 28	10			-19		
		i	N	02 03	9	+10				
		iPcS	ZVV'	02 58	4			-10		
		eL	E	04.2	28					
		eL	Z	04.7	28					
		eL	N	05.2	26					
		M	E	06.6	16		15			
		M	Z	07.8	18			34		
		M	N	08.1	17	23				
754	24	iP	EZVV'	06 58 52	2		-2	+3	3280	Compression.
		i	Z	58 56	3			+6	29°5	H 06 52 44
		i	VV'	58 57	1½			+		
		i	Z	58 59	4			+14		USCGS: 24.2S, 176.1W, H 06 52 41.1,
		i	Z	59 08	4			+8		h 23 km.ca.
		i	V	59 19	1½			-		
		i	V	59 33	1½			+		
		i	ZV'	59 41	4			+15		
		iPP	Z	59 48	6			+20		
		i	N	59 56	6	+4				
		iPPP	EV'	59 59	4		+12	+		
		iPPP	Z	07 00 00	4			+48		
		i	NE	00 09	6	-7	+18			
		i	Z	00 14	4			+24		
		i	E	00 21	5		+18			
		i	NZ	00 28	4	-5		+17		
		i	E	00 43	7		+24			
		i	E	00 49	6		-29			
		i	Z	00 50	4			+26		
		i	N	00 57	7	+11				
		i	N	01 31	7	+10				
		i	E	01 36	5		+22			
		i	N	02 05	4	+7				
		i	Z	03 01	4			-22		
		i	Z	03 22	4			+8		
		i	Z	03 34	6			-31		
		iS	N	03 46	6	+9				
		iS	E	03 48	10		+50			
		i	Z	03 50	10			+63		
		i	N	03 52	6	+12				
		i	E	03 57	9		-54			
		i	E	04 22	9		-36			
		i	N	04 35	7	-15				
		i	E	04 41	10		+21			
		e(LQ)	N	04 46	18					
		i	E	05 09	7		-54			
		iSS	N	05 23	11	+36				
		i	E	05 28	7		+27			
		i(SSS)	N	05 48	13	+160ca				
		i	EZ	06 13	10		+78	+51		
		i	E	06 35	12		+120			
		eL	E	07.3	(24)					* From Mainka.
		M	N	08.5	14	590*				
		M	EZ	09.4	16		120	200		
		M	N	10.2	12	425*				W_2 E 09^h 46^m per.24s.
		M	EZ	12.9	14		150	165		F 10.8

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
755	Nov.24	iP	VV'	08 22 56	1½			+		Compression. Obscured by coda of 754. USCGS: 24.4S, 176.3W, H 08 16 43.7, h 25 km.ca.
	24	i(P)	V	08 32 10	1½			+		Compression. Obscured by coda of 754. USCGS: 24.5S, 175.9W, H 08 26 14.4
	24	i(P)	V	09 21 38	1½			+		Compression.
757	25	(eP)	Z	22 05 27						
		e(S)	E	14 45	5					USCGS: 38.0N, 140.5E, H 21 54 13.8,
		i	N	15 26	4	-1				h 157 km.ca.
		i	E	15 27	4		-1			
756	25	e	V	06 09 14	½					Local.
		i(Sg)	N	09 14.5	¾	+2				
		i	VV'	09 17	¾			+		
	26	(e)	V	01 51 26						Local.
		e	V	51 30	½					
758	26	eL	N	14 48.3	15					
759	26	eP	Z	18 25 09	3					USCGS: 53.9S, 141.5E, H 18 20 22.9,
		i	NVV'	25 13	3	+1		+		h 25 km.ca.
		e(PP)	N	25 28	6					
		e	E	29 07	7					
		i	E	29 17	7		-2			
		i	N	29 19	4	-2				
		i	Z	29 22	5			-2		
		i	N	29 26	6	-2				
		eL	Z	30.3	22					
		eL	N	30.5	22					
		M	NEZ	32.5	10	2	2	1		
760	26	eL	N	21 48.7						
761	27	e	N	07 15.9						
762	27			13.4	Waves.					USCGS: 5.6S, 146.4E, H 13 10 11.0, h 100 km.ca.
763	27			19.1	Surface waves.					
764	27			21.0	Surface waves.					
765	27			22.2	Surface waves.					USCGS: 37.3S, 72.5W, H 21 24 32.8, h 100 km.ca.
	28	e	V	02 25 20						Local. Seismic ??
		e	V	02 25 47						" "
766	28	e	E	02 56 51	3					
		e	Z	57 00	3					
		i	NE	57 05	5	+2	+3			
		e(L)	E	03 00.0	12					
767	28			21.3	Waves.					
	29	e	V	00 02 59	(½)					Local. Seismic ??
		e	V	00 03 38	½					" "
		e	V	00 04 12	½					" "
		(e)	V	00 34 01	?					" "
		e	V	00 57 22	½					" "
		e	V	01 07 33	½					" "
		e	V	01 57 50	½					" "
		e	V	01 59 26	½					" "
	29	i	V	02 01 56	1			+		Compression.
	29	(e)	V	06 09 17	?					Local. Seismic ??
777		e	V	06 12 04	½					" "
	29	i(P)	VV'	09 19 21	1½			+		Compression.
778	29	i(P)	Z	09 45 01	4			+2		Compression. Microseisms present.
		i	VV'	45 04	1½			+		USCGS: 44.0S, 74.9W, H 09 32 01.5,
		i	N	56 30	4	+2				h 86 km.ca.
		eL	Z	10 15.3	24					
	30	(e)	V	06 28 56	(½)					Local.
		e	V	29 17	½					

A. Fynn, S.J., Director. P.F.Rheinberger.

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
779	Dec.1	(P)	V	09 44 54						Masked by microseisms.
		i(PP)	V	45 59	1½			+		USCGS: 6.9S, 128.9E, H 09 38 16.7,
		e	N	51 54	7					h 33 km.ca.
		i(ScS)	NE	55 15	4	+3	+2			
		M	NE	56.6	9	3	2			
780	1	(P)	V	10 17 39						Masked by microseisms.
		(eS)	N	22 21						USCGS: 5.7S, 145.9E, H 10 11 44.6,
		e	N	22 40	7					h 45 km.ca.
		e(SS)	E	23 54	9					
		eL	E	25.9	19					
		M	E	28.2	13		1			
781	1	e	Z	10 47 37	4					
		e	E	47 43	4					
		i	Z	47 47	4			+3		
		eL	N	54.2	20					
		eL	Z	54.8	26					
		M	N	56.2	15	5				
		M	EZ	57.3	18		6	11		
782	1	i(P)	VV'	21 03 57	1½			+		
		e(SS)	NE	24 08	16					USCGS: 48.8N, 129.3W, H 20 49 45.5
		eLQ	N	35.1	21					h 15 km.ca.
		eLR	NEZ	39.8	28					
		M	NZ	50.1	19	1	2			
	2	e	V	01 15 08	(½)					Small local tremor ??
		e	V	01 16 13	(½)					" " "$??
783	2	eP	V	04 43 18						
		i	Z	43 23	4			+2		USCGS: 6.6S, 152.5E, H 04 37 28.2,
		e	N	44 10	10					h 33 km.ca.
		e	N	48 14	10					
		e	Z	48 16	19					
		M	E	52.9	17		5			
		M	N	53.6	18	4				
		M	Z	53.9	18			6		
784	2	eP	Z	09 25 28	13					
		e	NZ	25 44	9					USCGS: 24.5S, 69.9W, H 09 10 41.0,
		ePP	Z	30 00	9					h 37 km.ca.
		i	Z	30 06	6			+6		
		i	Z	30 28	6			-7		
		eSKS	E	35 55	10					
		i	N	36 12	9	+5				
		ePS	EZ	39 13	27					
		e	N	39 23	12					
		eSS	E	44 47	33					
		eSS	NZ	44 54	36					
		eG	E	57.0	50					
		eLR	Z	10 02.1	24					
		M	Z	07.5	19			31		
		M	E	07.6	19		15			
		M	N	07.9	18	14				
		F		12 35						
785	2	i(PP)	Z	09 56 45	6			-5		Masked by No.784
										USCGS: 24.3S, 69.8W, H 09 37 33.[illegible],
										h 64 km.ca.
786	2	e	E	19 57 15						USCGS: 41.6S, 88.3E, H 19 41 06.8,
		eL	E	20 04.9	24					h 35 km.ca.
		M	E	08.2	17		1			
787	3	i(P)	VV'	02 38 30	1½			+		Masked by microseisms.
		M	N	47.4	15	1				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
788	Dec. 3	iP	Z	04 37 05.5	4			+8	9740	Compression
		i	VV'	37 07	2			-	87°6	h 0.00, H 04 24 20
		e	N	37 09	9					
		e	E	37 10	9					USCGS: 42.8N, 104.5E, H 04 27 17.5
		ipP	Z	37 14	7			+11		h 45 km.ca.
		ePP	Z	40 32	(11)					
		i(SKS)	N	47 33	6	+5				
		i	E	47 39	8		+4			
		iS	N	47 43	7	+12				
		i(ScS)	N	47 51	8	-9				
		i(sS)	E	48 01	7		-5			
		iPS	NZ	48 49	7	+4		-7		
		iPS	E	48 52	7		-4			
		i	N	50 22	7	+6				
		i(SS)	N	53 12	6	-4				
		(SSS)	N	56 46	12					
		e(L)	N	05 05.0	21					
		eL	N	06.5	30					
		M	E	13.0	19		11			
		M	Z	15.8	22			19		
		M	N	17.3	21	15				
		M	E	18.4	19		11			
		F		07 30						
789	3	iP	VV'	07 20 38	1			-		Dilatation.
		iS	E	31 19	4		+2			USCGS: 52.5N, 177.3W, H 07 07 42.7
										h 79 km.ca.
790	3	(iP)	VV'	14 12 25						Masked by microseisms.
		e(L)	E	18.8						
	3	(iP)	V	21 53 15						Masked by microseisms.
										USCGS: 4.2S, 152.1E, H 21 47 11.6
										h 40 km.ca.
791	6	eL	N	03 48.1						Masked by microseisms.
		M	N	50.1	14	3				
		M	E	51.4	18		1			
792	6	iPS	E	09 25 10	5		+2			Masked by microseisms.
		ePS	N	25 16	5					USCGS: 21.4S, 69.0W, H 08 56 07.6
		e(SS)	N	31 05	12					h 25 km.ca.
		e(SS)	E	31 34	18					
		eLR	NEZ	48.7	27					
		M	NEZ	51	21	4	2	7		
793	6	e(S)	N	21 51 28						Masked by microseisms.
		eL	N	58.4	(24)					USCGS: 2.6S, 101.5E, H 21 34 09.3
		M	E	22 06.0	24		3			h 54 km.ca.
		M	N	07.6	17	2				
794	7			00.7	Surface waves.					
795	7	(i)	Z	03 05 06	4			+3		Masked by microseisms.
		e	E	09 58	14					USCGS: 35.7S, 179.6W, H 02 59 29.5
		eL	E	11.5	24					h 25 km.ca.
		M	Z	13.7	18			3		
		M	NE	15.7	13	5	3			
796	7			07.0	Surface waves.					
797	7	e	E	16 39.2						USCGS: 1.2N, 121.8E, H 16 19 09.2
										h 40 km.ca.
	8	(e)	V	01 05 12.7						Very small local tremor??
		i	V	05 17	½					
798	8	i	Z	01 06 52	4			-2		Masked by microseisms.
		e(L)	E	11.9	?					USCGS: 35.8S, 179.6W, H 01 01 16.2
		M	Z	15.3	16			2		h 81 km.ca.
		M	E	16.0	15		1			
		M	N	16.7	13	3				
	8	e	V	01 13 25	½					Small local tremor ??

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
799	Dec. 8	iP	VV'	01 29 27	1			+	3150	Compression
		iPcP	N	32 22	4	+2			28°3	h 0.08, H 01 24 15
		iS	N	33 36	4	-3				
		i	Z	33 47	5			+5		USCGS: 21.8S, 179.4W, H 01 24 18.9,
		iScS	NE	39 02	3	-2	-1			h 685 km.ca.
	8	o	V	07 35 17	½					Small local tremor ??
800	8	o	N	21 45.0						
801	9	e(Pg)	V	06 57 23.5	(¼)					Local.
		o(Sg)	V	57 29.5	¼					
802	9	o(Pg)	V	07 05 24	(¼)					Local.
	10	o	V	01 50 16	¼					Local. Seismic ??
803	10	e(Pg)	V	05 27 10	¼					Local.
		i(Sg)	V	27 15	¼			+		
		i	VV'	27 22	¾			+		
804	10	oL	Z	13 50.6	25					USCGS: 15.0S, 172.3W, H 13 32 18.3,
		M	EZ	54.0	17		1	2		h 25 km.ca.
		M	N	54.2	12	1				
805	10	iP	ZVV'	14 02 54	2			-3		Dilatation. Masked by coda of 805.
		i	V	04 38	2			+		USCGS: 1.5N, 124.3E, H 13 55 16.5,
		i	N	12 21	6	+2				h 292 km.ca.
806	10			22.4	Waves.					
807	11	iP	NEZVV'	00 05 50.5	4	+1	+2	-3	2410 ca.	Dilatation
		i	VV'	05 55.5	1½			+	21°7 ca.	h 0.005 ca, H 00 01 03
		i(pP)	V'	06 06.5	1			+		
		i	V	06 08	1			+		USCGS: 22.1S, 171.4E, H 00 01 10.4,
		isP	Z	06 11.5	3			+5		h 144 km.ca.
		iPP	EZ	06 18	4			+8		
		i	NEZ	06 22	6	+2	+6	-9		
		iPPP	Z	06 27	4			+11		
		iS	E	09 42	6		+3			
		i	Z	09 43	4			+3		
		i	N	09 44	6	+16				
		iPcP	EZ	09 49	6		+37	-8		
		isS	E	10 05	6		+11			
		i	E	10 21	6		-5			
		iSS	Z	10 24	5			+10		
		i	N	10 28	6	+10				
		oLR	Z	11.1	24					
		M	EZ	14.1	16		4	5		
		M	N	14.4	13	5				
		iScS	N	17 06	4	+3				
		iScS	E	17 07	4		-3			
808	11	iP	V'	03 26 14	1½			-		Dilatation. Microseisms present.
		iP	V	26 15	1½			-		
		oS	N	32 24	12					USCGS: 1.6N, 126.4E, H 03 18 10.9,
		e(SS)	N	35 26	11					h 52 km.ca.
		oL	E	38.2	24					
		M	E	43.7	21		3			
		M	NZ	46.7	19	7		9		
809	11	iP	V'	18 58 15	1½			+	2560 ca.	Compression. Large microseisms
		iP	V	58 16	1½			+	23°ca.	present.
		iP	NEZ	58 17	5	-7	-6	+14		h 0.00, H 17 53 12 ca.
		ipP	NE	58 25	5	+5	+6			
		isP	Z	58 31	5			+10		USCGS: 15.7S, 166.9E, H 17 53 09,
		i	Z	58 39	4			-9		h 133 km.ca.
		iS	N	19 02 19	9	-19				
		iS	E	02 20	9		-12			
		i	Z	02 25	7			-8		
		i	Z	02 28	8			+29		
		m	EZ	02.7	12		43	33		
		i	N	02 51	7	-19				
		i	E	02 59	7		+17			

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
809	Dec.11	i(SS)	N	19 03 08	8	+22				
cont.		oL	Z	04.0	(17)					
		M	E	05.4	16		15			
		M	Z	05.6	16			22		
		M	Z	08.1	15			24		
		M	N	09.6	13	22				
810	12	o	N	04 28 41	13					Masked by large microseisms.
										USCGS: 10.7S, 164.8E, H 04 18 40.5,
										h 198 km.ca.
811	12	iP	VV'	10 07 30.5	1			-		Dilatation. Large microseisms
		oL	Z	11.1	24					present.
		oL	E	11.2	24					USCGS: 28.8S, 167.6E, H 10 04 02.0,
		M	N	13.6	12	4				h 54 km.ca.
812	13	iP	NZ	07 40 46	3	+2		+3	2420	Compression
		i	NZ	40 49	4	+8		+37	21°8	
		i	NEZ	40 57	4	-16	+8	-25		USCGS: 52.1S, 160.9E, H 07 36 13.8,
		iPP	NE	41 11	4	-75	+29			h 29 km.ca.
		i	E	41 14	4		+41			
		i	N	41 16	6	+110ca				
		i	Z	41 17	6			+270		
		i	E	41 24	7		+57			
		i	N	41 45	7	-54				
		i	Z	41 51	4			+66		
		i	Z	42 00	4			+65		
		i	N	42 14	5	+40				
		i	Z	42 27	5			-63		
		i	Z	43 26	6			+89		
		i	N	43 28	7	+58				
		i	N	43 51	7	-59				
		i	N	44 40	10	+79				
		iS	E	44 43	8		-37			
		i(LQ)	N	44 51	12	-120*				* From Mainka.
		i	Z	44 53	10			+110		
		i	N	45 00	13	+370*				
		i	Z	45 08	9			+150		
		M	E	46.0	13		1030*			
		M	N	46.6	11	830*				
		M	Z	46.7	11			310ca		
		oT	V'	58 42	½					
		T max.	V	08 00 19	¾					
		T max.	N	00 23	¾					
		F		11.8						
813	13	i(P)	VV'	10 15 54	1½			-		USCGS: 27.7N, 142.4E, H 10 05 24.3,
										h 28 km.ca.
814	13			14.6	Surface waves.					
815	14	iP	V'	00 26 29	2			+		Compression
		o(S)	N	31 00	10					USCGS: 10.7S, 165.3E, H 00 20 52.7,
		o	E	31 06	7					h 51 km.ca.
816	14	iP	NZVV'	01 02 58	3	+1		-3	2950 ca.	Dilatation
		i	Z	03 01	3			+7	26°5 ca.	h 0.00 ca., H 00 57 22 ca.
		i(sP)	V	03 13	1½			+		
		iS	N	07 28	10	-7				USCGS: 10.8S, 165.4E, H 00 57 25.0,
		i	E	07 34	7		-4			h 65 km.ca.
		i	N	07 51	8	+7				
		i	N	08 07	7	+7				
		i(PcS)	Z	09 59	6			+11		
		oL	Z	10.8	18					
		M	N	13.7	12	16				
		M	E	14.2	12		9			
		N	Z	14.8	14			11		
817	14			13.5	Long waves.					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
818	Dec.14	iP	NZVV'	14 27 52	4	+2		+3	2220	Compression
		i	V	27 55	1½			+	20°0	
		i	VV'	28 04	1½			+		USCGS: 51.9S, 160.7E, H 14 23 25.7,
		i	V	28 26	1			+		h 77 km.ca.
		i	N	28 31	4	-4				
		eS	E	31 32	?					
		e(LQ)	N	31 45	16					
		i	Z	31 50	4			+3		
		eLR	Z	32.5	24					
		M	E	33.0	10		7			
		M	N	33.7	11	6				
		M	Z	33.8	15			7		
819	14	iP	V'	23 59 28.5	1½			-	4880	Dilatation
		iP	NZV	59 29	3	+3		-10	43°9	h 0.01 ca., H 23 51 32
		i	NZV	59 33	4	-4		+15		
		i	E	59 34	4		+3			USCGS: 2.9N, 126.5E, H 23 51 28.6,
		i	VV'	59 43	1½			-		h 77 km.ca.
		i	Z	59 44	4			+6		
		e	N	59 44	18					
		i	NZ	59 59	3	+4		-11		
		i	VV'	24 00 01	2			+		
		i	Z	00 19	3			+4		
		i	Z	00 34	4			+9		
		iPP	NV	01 12	4	+5		+		
		iPP	Z	00 13	4			-10		
		i	Z	01 39	4			+11		
		i	NZ	01 50	3	+2		-5		
		iS	NE	05 52	9	-11	-12			
		i	N	06 18	7	-8				
		i	E	06 28	7		-9			
		i	N	06 37	7	+8				
		iSS	NEZ	09 04	7	+13	+11	+11		
		iScS	NE	09 13	8	+25	+26			
		i	Z	09 19	4			+2		
		i	Z	09 30	5			+9		
		i	Z	09 45	7			+9		
		i	E	09 53	7		-7			
		i	Z	09 58	13			+29		
		i	N	10 01	6	-8				
		i	E	10 08	7		-12			
		i	E	10 15	8		+24			
		i	E	10 40	6		-6			
		i	N	10 47	6	-13				
		eL	E	10.9	19					
		eL	Z	12.9	24					
		M	NZ	19.6	18	25		38		
		M	E	20.1	18		17			
820	15			14.2	Long waves.					
821	16	e	V	00 06 24						Local.
		i	N	06 38	½	+				
822	16			05.4	Waves.					USCGS: 4.2S, 139.9E, H 05 08 50.6, h 194 km.ca.
823	16	(iP)	V	08 58 26	1½			+		Masked by large microseisms.
		e	N	09 00 42	9					USCGS: 16.3S, 178.0E, H 08 52 17.3,
		e(L)	N	03.7	(15)					h 44 km.ca.
824	17			02.4	Surface waves, masked by large microseisms.					
825	17	iP	Z	10 45 22	3			+3	5300ca	Compression Large microseisms
		iP	VV'	45 23	1½			+	48°ca	present.
		iS	N	51 56	4	+4				h 0.04 ca.
		iS	E	51 58	4		-3			USCGS: 6.4S, 109.3E, H 10 37 14.1,
		iSS	E	55 28	4		+3			h 295 km.ca.
		e	N	55 32	15					
		M	N	11 01.4	9	4				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
826	Dec.17	iS	E	16 15 01	4		-3			Masked by large microseisms.
		i	N	15 04	4	+4				USCGS: 22.3S, 172.4E, H 16 06 04.7,
		eL	N	17.1	15					h 245 km.ca.
		M	N	19.6	10	2				
		M	E	20.6	10		1			
827	18	e	N	18 35 52						Masked by large microseisms.
		M	N	40.4	13	3				USCGS: 8.5N, 125.9E, H 18 20 43.3,
										h 36 km.ca.
828	18			21.2	Waves.					USCGS: 5.4S, 152.7E, H 20 54 34.4,
										h 62 km.ca.
829	19	i	V	07 05 13	1½			+		Masked by large microseisms.
		eL	E	10.2	21					USCGS: 21.0S, 169.4E, H 06 59 52.2,
										h 25 km.ca.
	19	i	VV'	09 45 59	1½			-		Masked by large microseisms.
830	19	e(S)	N	13 10 32	7					Masked by microseisms.
		e	E	10 34	7					USCGS: 10.7S, 166.9E, H 13 00 09.8,
										h 96 km.ca.
831	19	(iP)	V	19 08 11	1½			+		Masked by microseisms.
		eL	N	24.1	20					USCGS: 11.3N, 141.2E, H 18 59 40.8,
		M	E	28.7	15		1			h 77 km.ca.
		M	N	29.2	15	1				
832	19	e	E	22 19 51						
		i	N	24 09	7	-3				USCGS: 12.6S, 166.8E, H 22 13 58.8,
		i	EZ	24 14	8		+4	-4		h 66 km.ca.
		M	EZ	29.4	16		1	2		
833	20	M	NE	22 17.0	12	1	1			
834	21	e	N	21 12 29						USCGS: 11.2N, 141.3E, H 20 53 51.8,
		M	E	21.1	17		1			h 72 km.ca.
835	21	i(P)	V	22 36 11	1½			+		USCGS: 62,5S, 167.1E, H 22 29 54.9,
		e	E	41 24	7					h 29 km.ca.
		e(SS)	E	42 50	11					
		eLR	Z	43.8	22					
		M	EZ	45.1	19		8	10		
		M	N	45.4	19	9				
836	22	i	N	02 36 37	7	-4				Masked by microseisms.
										USCGS: 29.8S, 179.6W, H 02 25 29.3,
										h 379 km.ca.
837	22	(iP)	V	03 13 19	1½			+		Masked by microseisms.
		M	N	41.9	15	1				USCGS: 9.8N, 94.2E, H 03 02 29.2,
		M	E	44.7	19		1			h 60 km.ca.
		M	Z	45.4	19			1		
838	22	(iP)	ZVV'	06 37 04	3			+2		Masked by microseisms.
		e	E	41.7						USCGS: 30.8S, 177.1W, H 06 31 21.5,
		eL	EZ	44.1	30					h 46 km.ca.
		M	NEZ	47.0	18	4	3	6		
839	22	eP	Z	14 18 11	6					USCGS: 27.8S, 176.1W, H 14 12 18.7,
		ePP	EZ	19 06	7					h 60 km.ca.
		ePPP	E	19 20	7					
		eS	E	22 52	12					
		e	N	23 07	10					
		i	N	23 29	7	-2				
		e	E	23 37	10					
		e	N	23 44	16					
		eL	Z	25.9	22					
		M	N	28.3	14	6				
		M	Z	28.7	16			10		
		M	E	29.6	16		8			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
840	Dec.22	iP	ZVV'	21 07 48	2			+1	3000	Compression
		i	V	07 50	1			+	27°0	h 0.06, H 21 02 40
		i	VV'	07 52	1½			+		
		ipP	NZ	08 58.5	4	+2		-2		USCGS: 6.8S, 155.3E, H 21 02 41.1,
		ipP	VV'	08 59	1½			+		h 469 km.ca.
		i	ZVV'	09 04	2			+2		
		i	N	09 06	3	+3				
		i	Z	09 10	3			+2		
		i	ZVV'	09 12	3			+3		
		i	N	09 14	3	+4				
		i	VV'	09 20	2			+		
		i	Z	09 21	3			+3		
		i	VV'	09 27	1½			+		
		isP	Z	09 53	4			+12		
		isP	N	09 54	4	-4				
		i	VV'	09 55	3			-		
		i	E	09 56	5		+3			
		i	NZ	10 19	4	+6		-10		
		i	NZ	10 29	4	+6		+6		
		iPcP	Z	10 53	3			-4		
		iS	EZ	11 55	6		+8	+7		
		i	N	11 59	8	-14				
		iScP	V	13 58	1½			+		
		isS	E	14 06	7		+5			
		i	Z	14 08	7			+11		
		i	N	14 20	6	+10				
		i	Z	14 28	6			+9		
		i	E	15 28	5		+7			
		i	Z	15 33	5			+7		
		M	NZ	23.9	15	10		16		
841	23	iP	ZVV'	09 51 09	2			+1		Compression
		iPP	Z	53 14	2			+1		USCGS: 3.3S, 101.9E, H 09 41 48.4,
		M	N	10 12.2	20	1				h 134 km.ca.
		M	E	12.4	(20)					
842	23	(eP)	Z	10 57 02						Masked by microseisms.
		e(S)	N	11 04 06	9					USCGS: 8.2N, 125.7E, H 10 47 57.9,
		e(SS)	N	07 19	12					h 67 km.ca.
		e	E	08 49	12					
		M	E	17.5	16		1			
		M	Z	18.0	13			1		
		M	N	18.1	13	1				
843	23	(eP)	Z	16 20 06						Masked by microseisms.
		eL	N	25.5	15					USCGS: 10.6S, 164.3E, H 16 14 22.0,
										h 82 km.ca.
844	23	e	E	19 17 58	10					Masked by microseisms.
		M	EZ	22.8	17		1	2		USCGS: 27.8S, 177.2W, H 19 07 06.1,
										h 261 km.ca.
845	24	(iP)	VV'	05 09 09	1½			+		Masked by microseisms.
		M	N	19.1	12	½				
		M	E	20.4	15		½			
846	24	(eP)	V	16 44 06						Microseisms present.
		eP	VV'	44 07	¾					Felt in South-western Victoria.
		e	N	46 04	4					
		i	V'	46 16	1			+		USCGS: 38.4S, 143.6E, H 16 42 14.7,
		i	V	46 17	1			+		h 27 km.ca.
		i	V'	46 18	1			+		
		i	N	46 21	1½	+2				
		i	Z	46 24	1½			+9		
		i	E	46 30	1½		+2			
		eL	N	46 30	10					
		M	N	47 06	8	10				
		M	Z	47 14	8			18		
		M	E	47 16	6		12			

No.	Date	Phase &	Component	Time G. M. T.	Per.	A_N	A_E	A_Z	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
847	Dec.25	iP	V	05 55 29	1			-		Dilatation. Masked by microseisms.
		e	NE	06 01 09	5					USCGS: 10.7S, 164.7E, H 05 49 54.5, h 60 km.ca.
848	26	eP	V	01 02 13	1½					Microseisms present.
		i	Z	02 30	4			+2		
		e	E	06 59	12					USCGS: 23.7S, 176.9W, H 00 56 16.6, h 59 km.ca.
		e	E	08 08	10					
		e	N	08 18	7					
		eL	Z	10.4	25					
		M	EZ	12.7	17		3	4		
		M	N	12.8	13	13				
849	26	iP	ZVV'	01 55 50	3			+2	(7700)	Compression.
		e(S)	E	02 04 56	7				(69°3)	Confused by coda of 848.
		i(ScS)	E	05 53	4		-1			USCGS: 33.8N, 136.2E, H 01 44 48.7, h 109 km.ca.
		eL	E	15.3	28					
		eL	Z	19.7	28					
		M	Z	25.5	21			1		
850	26	iP	VV'	04 45 25	1			+	9670	Compression
		i	Z	45 27	3			+2	87°0	H 04 32 37
		iPcP	VV'	45 28	1			-		
		i	ZV	45 57	3			+2		USCGS: 57.4S, 26.2W, H 04 32 30.1, h 25 km.ca.
		i	ZV	46 12	3			+2		
		iPP	V	48 53	1½			-		
		i	N	55 43	6	+2				
		iSKS	N	55 49	6	-2				
		iS	NE	56 03	6	-2	+2			
		eSS	E	05 01 50	16					
		e	N	02 09	16					
		eLQ	E	09.2	21					
851	26	eL	N	07 27						
852	26	iP	NZVV'	13 47 30	2	+1		+3	2110ca	Compression
		eS	E	50 58	?				19°ca	
		i(LQ)	E	51 05	12		-9			USCGS: 49.4S, 164.3E, H 13 43 12.9, h 37 km.ca.
		M	NE	51.7	12	3	4			
		eL	Z	52.4	18					
		M	Z	53.2	10			3		
		(eT)	V	14 05 32						
		T max.	V	06.2	½					
	26	i	Z	14 09 47	3			+3		On coda of 852.
853	27	e(SS)	E	11 09 30	16					USCGS: 41.3N, 124.9W, H 10 35 28.0, h 30 km.ca.
		eLQ	N	20.4	27					
		eLR	Z	24.9	30					
		M	NEZ	29	21	½	½	1		
854	27			15.8	Waves.					
	28	e	V	02 02 32	½					Small local tremor ??
855	28	e	N	09 32 27						
		e(L)	N	38.1	16					
856	29	eP	EVV'	06 08 51					3780ca	
		iP	Z	08 52	3			+2	34°ca.	Compression
		e	Z	09 00	6					
		iPP	Z	10 10	5			+3		USCGS: 18.4S, 174.7W, H 06 02 13.9, h 104 km.ca.
		iPP	E	10 11	5		-2			
		iPPP	Z	10 31	6			+10		
		iPPP	E	10 32 6	6		-5			
		i	N	11 09	6	+2				
		e(S)	E	14 09	10					
		e	N	14 19	10					
		i	NE	14 35	7	+3	+2			
		i	E	15 21	7		+4			
		eL	E	18.3	23					
		eL	Z	18.5	28					
		M	EZ	20.0	19		5	6		
		N	N	22.7	11	3				

RIVERVIEW COLLEGE OBSERVATORY

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1960			h m s	s	μ	μ	μ	km.	
857	Dec.29	iP	ZV'	10 49 46	3			+2	10,150ca	Compression
		iPcP	V	49 48	2			+	91°4ca	h 0.00, H 10 36 42 ca.
		ipP	VV'	49 56	2			-		
		isP	V	50 00	2			-		USCGS: 44.8S, 75.6W, H 10 36 40.0,
		i	V	50 07	1½			+		h 30 km.ca.
		iPP	Z	53 23	4			-1		
		e(SKS)	N	11 00 22	8					
		e(S)	E	00 40	14					
		iPS	N	01 56	9	+3				
		ePS	E	01 59	22					
		e	Z	02 09	21					
		eSS	NEZ	06 53	19					
		eLQ	N	14.8	30					
		eLR	Z	18.1	27					
		eLR	NE	18.2	29					
		M	NEZ	21.5	21	2	3	6		
858	29	(P)	VV'	13 48 26						
		(P)	Z	48 27						USCGS: 5.5S, 146.1E, H 13 42 34.6,
		e(sS)	E	53 38	7					h 57 km.ca.
		e	Z	54 01	13					
		eL	N	56.9	30					
		eL	Z	57.3	31					
		M	E	59.2	17		2			
		M	NZ	59.7	21	2		4		
859	30	iP	VV'	00 30 33	1			+		Compression
	31	i	V'	06 51 09	½					Probably artificial.
	31	i	VV'	13 45 57	1½					Probably large microseism.
860	31	(i)	V'	16 12 31	2			-		Masked by microseisms.
		i	VV'	12 53	2			+		
		e(S)	N	18 48	9					USCGS: 7.8S, 120.1E, H 16 05 22.1,
		i	VV'	18 52	1½			+		h 25 km.ca.
		eL	E	25.9	(27)					
		eL	N	26.2	30					
		eL	Z	26.5	(27)					
		M	NEZ	29.6	16	2	1	1		
861	31	iP	V'	18 21 13	2			+	10,290	Compression
		iP	Z	21 13.5	3			+2	92°6	
		i	V	21 14	2			+		USCGS: 43.9S, 75.0W, H 18 08 12.3,
		i	Z	21 30	3			+2		h 92 km.ca.
		eSKS	N	31 47	7					
		eS	E	32 16	10					
		ePS	E	33 31	13					
		eSS	E	38 38	12					
		eLR	Z	50.8	21					
		M	Z	57.6	16			1		
		M	E	58.0	18		½			
862	31	(i)	Z	20 06 20	2			+1		Masked by microseisms.
		e(L)	Z	14.2	16					USCGS: 6.6S, 129.1E, H 19 59 08.3, h 112 km.ca.
		M	NE	17.7	8	1	1			
863	31			21.3	Waves.					USCGS: 5.0S, 151.4E, H 21 06 01.7, h 138 km.ca.

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A. Fynn, S.J.
Director

P.F.Rheinberger.

RIVERVIEW COLLEGE OBSERVATO

RIVERVIEW, N. S. W.

SEISMOLOGICAL BULLETIN

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

INSTRUMENTS:

Galitzin Aperiodic Seismometer, Galvanometer registration, NS, EW, Vert.
Sprengnether Short-period Vertical Seismometer. = V
Wiechert Vertical Seismometer (80 kilo.) Adapted for Galvanometer registration:
Tp 4.5s, Tg 1.0s. = V'
Wiechert Astatic Pendulum Seismometer (1000 kilo.) NS, EW. (Not operating)
Mainka Conical Pendulum Seismometer (450 kilo.) NS, EW.

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N.B. Amplitudes are from the Galitzin, unless stated otherwise.

No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iP	VV'	13 14 30	1			+		Compression
		eL	N	25.0	15					USCGS: 12.9S, 167.2E, H 13 09 06.4,
		M	NEZ	29.8	16	½	½	1		h 87 km.ca.
2	1	iP	V	20 27 35	1½			+		Compression. Microseisms present.
		e(S)	E	32 07						USCGS: 49.5S, 125.5E, H 20 22 14.6,
		eL	E	33.6	19					h 59 km.ca.
		eL	N	33.9	15					
		M	N	35.8	9	1				
		M	EZ	36.1	9		½	1		
3	1	eL	N	22 24.6	16					USCGS: 29.0S, 177.1W, H 22 11 15.5,
										h 115 km.ca.
4	2	iP	VV'	10 17 14.5	1½			+	2890	Compression.
		iP	NEZ	17 15	3	-10	-8	+35	26°0	h 0.005, H 10 11 46
		i	V	17 26	1½			+		
		ipP	NE	17 30	4	+6	+6			USCGS: 12.4S, 166.4E, H 10 11 56.9,
		i	Z	17 32	3			+13		h 161 km.ca.
		isP	NEZ	17 38	3	+14	+10	-26		
		iPP	N	17 57	4	+15				
		iS	N	21 38	6	-30				
		iS	E	21 39	6		-15			
		i	EZ	21 54	5		+19	+23		
		i	N	22 22	7	+34				
		i	N	22 39	6	+49				
		i	Z	22 43	5			+28		
		eL	Z	23.8	27					
		i	E	24 33	5		+39			
		M	Z	26.6	15			31		
		M	NEZ	27.8	13	22	26			F 12.4h
5	2	(i)	V	20 57 09	2			-		Masked by microseisms.
		i	V	57 54	2			+		USCGS: 6.8S, 150.3E, H 20 51 59.3,
		eL	E	21 04.2	20					h 62 km.ca.
		M	NE	08.0	14	3	3			
		M	Z	09.1	13			3		
	2	(iP)	ZVV'	23 12 37	3			+5		Masked by large microseisms.
		(i)	ZVV'	12 54	3			+3		USCGS: 10.2S, 160.7E, H 23 07 21.5,
										h 117 km.ca.
6	3	e	E	11 53 57	?					Masked by large microseisms.
		i	N	59 21	5	+8				
		M	E	59.4	16		5			
		i	N	59 26	5	-8				
7	3	(iP)	V	19 33 32						Masked by large microseisms.
		(S)	N	38 50						USCGS: 6.4S, 130.4E, H 19 27 00.4,
										h 100 km.ca.
8	3			20.4	Waves. Obscured by microseisms.					
9	3	(i)	V'	22 32 05	2			+		Masked by microseisms.
		(i)	VV'	33 44	1½			+		
		eL	E	43.8	18					
10	4	e	E	11 50.3						Masked by microseisms.
										USCGS: 6.9S, 121.7E, H 11 29 53.1,
										h 25 km.ca

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
11	Jan. 4	i	Z	13 31 37	3			+6		Masked by microseisms.
										USCGS: 17.4S, 178.9W, H 13 25 35.6,
										h 591 km.ca.
12	5	iP	V'	14 19 26.5	2			+	10,100	Compression
		iP	ZV	19 27	4			+5	90°9	h 0.00, H 14 06 24
		ipP	Z	19 36	4			+8		
		isP	ZVV'	19 42	4			-10		USCGS: 51.6N, 176.3W, H 14 06 25.9,
		i	Z	22 58	4			+4		h 37 km.ca.
		iSKS	N	29 55	5	+7				
		e	EZ	30 03	16, 13					
		i	N	30 13	7	-6				
		iS	E	30 18	7		-8			
		i	Z	30 23	10			+8		
		i	N	31 23	7	-4				
		iPS	Z	31 28	7			-8		
		eLR	N	48.8	28					
		M	NZ	51.4	21	9		12		
		M	Z	54.9	21			13		
		M	N	55.3	20	7				
		M	E	55.5	21		7			
13	5	iP	VV'	16 00 04	1½			+	3390ca.	Compression
		i	Z	00 08	5			+6	30½°ca	Slightly deeper than normal.
		i	VV'	00 14	1½			+		H 15 53 55 ca.
		i	V	00 50	1½			-		Difficult to read. Overlappd by
		i	VV'	00 53	1½					following shocks.
		iPP	Z	01 08	5			+		
		iPP	N	01 11	5	+7				USCGS: 4.1S, 143.0E, H 15 53 56.0,
		i	Z	04 58	4			-12		h 108 km.ca.
		iS	NE	04 59	6	-17	+15			
		i	N	05 30	7	-12				
		M	E	12.6	11		34			
		M	NZ	13.9	12	51		74		
14	5	eP	V'	18 02 26						
		i	VV'	02 28	2			-		Dilatation.
		i	Z	02 30	3			-9		Difficult to read owing to over-
		i	V	02 32	2			-		lapping of trace.
		i(pP)	NEZ	02 34	4	+9	+19	-38		
		i	E	02 43	4		+35			USCGS: 21.2S, 169.3E, H 17 57 56.6,
		i(PP)	VV'	02 48	2			-		h 123 km.ca.
		i	N	03 02	4	+16				
		i	E	06 26	5		+12			
		i	N	06 28	6	-37				
		i	Z	06 29	6			-53		
		i	E	06 34	7		+155			
		i	N	06 37	6	-125				
		eL	N	07.2	20					eL from Mainka.
		eL	E	07.8	21					
		M	EZ	08.8	20		120	185		
		M	N	09.9	16	71				
15	5	iP	V'	18 19 15	2			-		Dilatation
		iP	V	19 16	2			-		Difficult to read owing to over-
		i	NEZ	19 17	6	+31	+44	-57		lapping of trace.
		i(PP)	EZ	19 37	6		+51	-63		
		i	N	19 49	3	-18*				* From Mainka.
		i	NE	19 56	5	-15*	-21			
		i	NE	23 10	5	-52	+10			USCGS: 21.0S, 169.1E, H 18 14 43.0,
		i	Z	23 11	6			-130		h 124 km.ca.
		i	NE	23 18	7	+29*	+230			
		i	N	23 34	6	+24*				
		eL	E	24.7	21					
		M	EZ	25.6	19		195	240ca		
		M	N	26.5	14	115ca				F 21.7h
	5	(iP)	V	20 13 30	1½			+		USCGS: 11.5N, 143.5E, H 20 05 12,
		i	VV'	13 59	1½			+		h 25 km.ca.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
16	Jan. 6	iP	Z	00 02 56	4			+2		Compression
		e	Z	07 52	8					
		e	N	08 09	12					USCGS: 32.4S, 178.6W, H 23 57 29.6
		eL	Z	09.9	22					h 116km.ca. (Jan.5th)
		eL	E	10.0	22					
		M	N	11.3	15	2				
		M	Z	11.8	19			4		
		M	E	12.2	18		2			
17	7	e	N	18 40 34						USCGS: 57.2S, 25.3W, H 18 16 51.2,
		M	NZ	19 08.6	19	½	1			h 94 km.ca.
18	8	(i)	Z	01 22 41	33			+2		USCGS: 4.1N, 129.3E, H 01 15 25.6,
		e	E	32 58	5					h 106 km.ca.
		M	NEZ	45	13	1	1	2		
19	8	e	Z	03 05 26						Masked by microseisms.
		e(S)	NE	10 53	9					USCGS: 3.5N, 129.6E, H 02 56 34.1,
		i	N	14 01	5	+3				h 117 km.ca.
		i	E	14 10	5		+3			
		M	Z	22.8	13			2		
		M	N	23.2	10	½				
		M	E	24.1	14		3			
20	8	(i)	VV'	07 33 46	1½			+		Masked by microseisms.
		i(P)	VV'	36 08	1½					
		e	Z	36 09	9					
		e	NE	36 12	9					
		e	E	39 33	16					
		i	Z	40 05	5			-3		
		i(S)	N	40 06	6	+3				
		eL	E	41.5	22					
		M	EZ	42.3	18		3	4		
		M	N	42.4	16	1				
21	9	e	N	08 06 55	10					Masked by microseisms.
		eL	N	07.9	16					USCGS: 28.2S, 176.8W, H 07 54 25.0,
		eL	Z	10.2	18					h 25 km.ca.
		M	N	11.2	13	2				
		M	EZ	12.5	15		3	3		
22	9	eP	Z	10 17 50					2420	
		i	Z	17 55	7			+4	21°8	H 10 12 55
		iS	E	21 47	4		-2			
		iPcP	Z	21 51	4			+5		USCGS: 21.3S, 169.1E, H 10 13 17.7,
		i	E	21 54	7		+4			h 82 km.ca.
		i	Z	21 56	4			+3		
		iSS	N	22 21	7	-3				
		eLR	N	23.0	19					
		eLR	E	23.2	22					
		M	EZ	24.4	18		3	6		
		M	N	25.5	14	3				
23	10			09.5	Waves.					
24	10	i(P)	N	11 29 09	3	+1				Masked by microseisms.
		eL	E	33.7	15					
25	10	iP	ZVV'	14 34 47	4			+6	9390	Compression
		iP	N	34 48	4	-2			84°5	h 0.00, H 14 22 16
		iPcP	VV'	34 50	1½			+		
		isP	Z	35 01	6			+7		USCGS: 49.9N, 156.2E, H 14 22 18.2,
		i	VV'	35 06	1½			-		h 29 km.ca.
		i(PP)	V'	37 56	2			+		
		iSKS	N	45 07	6	+4				
		iS	E	45 10	7		-8			
		i	Z	45 12	9			+7		
		esS	E	45 30	(7)					
		i	E	45 33	6		+3			
		i	E	45 55	7		+7			
		i	N	45 57	9	+5				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
25 cont.	Jan. 10	ePS	N	14 46 11	11					
		i	Z	46 19	7			-10		
		i	Z	48 10	4			-3		
		i	N	48 42	6	+2				
		i	N	50 21	7	+5				
		eSS	Z	50 47	13					
		SS	N	50 50	10	3				
		eG	E	56.9	45					
		eL	N	58.6	30					
		eLR	N	15 01.7	32					
		M	NZ	02.9	30	10		27		
		M	E	03.5	27		9			
		M	NE	06.4	21	9	5			
		M	Z	07.1	21			13		
		eW2	NZ	16 44	25					
		M	NZ	49	24	½		2		
26	11	(iP)	Z	12 13 06	3			-1		Masked by microseisms.
		e	Z	13 43	5					
		iSKS	N	23 34	4	+1				USCGS: 51.8N, 171.0W, H 11 59 55.0,
		eS	NE	23 59	(8)					h 47 km.ca.
		ePS	Z	25 14	10					
		ePS	N	25 22	9					
		eSS	E	30 10	21					
		eLQ	N	38.6	23					
		M	N	48.4	19	½				
		M	EZ	48.6	18		1	1		
27	11	(P)	V	16 36 52						Masked by microseisms.
		eL	E	41.7	16					USCGS: 54.7S, 162.9E, H 16 31 50.6, h 27 km.ca.
28	11	iP	NEZ	21 41 40	4	-1	+½	-2		Dilatation
		i	N	42 17	4	-1				
		e(S)	E	45 16	?					USCGS: 52.3S, 160.3E, H 21 37 05.1,
		i(LQ)	E	45 26	10		-7			h 25 km.ca.
		i	N	45 28	7	-2				
		i	E	45 42	12		-10			
		eLR	Z	46 15	19					
		M	E	46.6	12		6			
		M	N	46.7	12	4				
		M	Z	47.1	12			3		
29	12	iP	V	05 20 48	1			-		Dilatation
		i	Z	20 53	4			+2		
		e	Z	21 07	5					
		i(S)	N	24 48	6	-2				
		i	E	24 49	4		-1			
		eL	E	26.2	20					
		eL	Z	26.5	20					
		eL	N	26.9	17					
		M	E	29.0	15		1			
		M	N	29.1	12	1				
		M	Z	29.2	16			1		
30	13	e	V	06 44 38						Local.
		i	V	44 42	½			+		
31	13	(i)	VV'	19 28 29	2			+		Masked by large microseisms.
		(i)	V	31 42	1½			+		USCGS: 46.5S, 34.1E, H 19 18 44.7,
		eL	E	58.5	22					h 60 km.ca.
32	14	iP	ZV	00 39 29	4			+2		Compression. Masked by large microseisms.
		eL	E	43.4	15					
		ME	E	44.2	12		3			USCGS: 52.9S, 160.8E, H 00 35 03.0,
		M	N	44.6	12	3				h 25 km.ca.
		M	Z	45.0	19			5		
33	14	eL		05 46						Masked by large microseisms. USCGS: 5.4S, 152.9E, H 05 32 42.5, h 81 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
34	Jan.15	i(P)	Z	01 06 51	3			+2		Masked by microseisms.
		i	Z	06 57	3			+2		USCGS: 53.6S, 139.6E, H 01 02 50.2,
		e	E	11 37	13					h 25 km.ca.
		eL	N	12.7	27					
		eL	Z	12.8	27					
35	15	eL	E	10 22.0						Masked by microseisms.
36	15	iP	V'	16 49 21	1			+	2450	Compression
		iP	EZV	49 22	4		-2	+4	22°.0	h 0.015, H 16 44 37
		i	VV'	49 29	1½			-		
		i	Z	49 41	3			-4		USCGS: 20.4S, 169.5E, H 16 44 44.8,
		ipP	V	49 46	1			+		h 182 km.ca.
		iPP	NEZ	49 53	4	+3	+5	-8		
		isP	NEZ	50 01	6	+7	+11	-20		
		iPPP	Z	50 04	4			+21		
		i	Z	50 11	4			-11		
		i	NE	50 25	4	+5	+7			
		i	N	50 38	4	+5				
		iS	E	53 10	5		+5			
		iS	N	53 11	3	+38				
		i	E	53 14	6		+10			
		i(PcP)	Z	53 20	5			-21		
		isS	NZ	53 51	10	-13		+7		
		iSS	Z	53 56	7			+23		
		iSS	E	53 59	6		+17			
		M	N	57.8	13	8				
		M	EZ	58.2	14		6	10		
37	16	i(P)	ZV	04 19 59				+		Masked by microseisms.
		eL	N	25.2	15					
		eL	E	25.6	19					
38	16	iP	ZV	07 31 26	4			-7		Dilatation. Microseisms present.
		i	ZV	31 31	4			+12		h perhaps 0.02
		i	Z	32 14	4			+6		
		i	N	32 20	4	+3				USCGS: 36.0N, 141.1E, H 07 20 18.6,
		i	Z	33 31	6			+7		h 131 km.ca.
		iS	NE	40 35	7	-21	-23			
		i	Z	40 38	7			+17		
		i	NEZ	40 55	6	-13	-	+13		
		i	N	41 02	6	+4				
		i	Z	41 10	7			+12		
		i	E	41 11	8		+11			
		i	N	41 13	6	+9				
		i	N	41 20	6	+4				
		i	E	41 25	8		+9			
		i(sS)	E	41 35	7		+53			
		i	N	41 49	7	-21				
		i	E	41 53	6		+19			
		i	N	42 07	6	+14				
		i	E	44 30	6		+7			
		i	N	44 57	10	+12				
		i	N	45 31	9	+19				
		i	E	45 35	7		+7			
		M	NEZ	68.9	19	22	22	27		
		M	NZ	08 02.6	19	29		42		
		M	Z	03.9	18			40		
		M	E	04.6	18		20			
		W_2 M	N	09 58.4	18	2				
39	16	i(S)	NE	11 40 02	7	+4	+4			Masked by microseisms.
		i	E	40 58	6		+4			
		eG	E	50.6	30					USCGS: 35.7N, 140.6E, H 11 19 46.5,
		M	NZ	58.2	21	4		5		h 157 km.ca.
		M	E	58.6	20		2			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
40	Jan.16	iP	V	12 23 43	1½			+		Compression. Microseisms present
		i	VV'	23 49	1½			-		
		iS	NE	32 55	7	-6	-6			USCGS: 36.2N, 141.7E, H 12 12 34.4, h 105 km.ca.
		i	E	33 16	9		+10			
		i	N	33 36	7	+6				
		i(sS)	E	33 53	6		+			
		i	E	34 10	7		+9			
		M	NEZ	51.5	19	9	8	9		
		M	NZ	53.6	19	13		12		
		M	NZ	55.0	19	14		15		
41	16	(iP)	V'	14 15 11						Masked by microseisms.
		iS	NE	24 23	7	+2	+3			USCGS: 36.3N, 141.2E, H 14 04 05.3, h 127 km.ca.
		i	E	24 40	6		+3			
		i	E	25 19	6		+5			
	16	i	Z	15 15 10	4			+6		
42	16	(i)	Z	15 52 35	3			+2		Masked by microseisms.
		iS	NE	16 01 38	6	-5	-6			
		i	E	01 59	7		+5			USCGS: 36.4N, 140.6E, H 15 41 23.3, h 147 km.ca.
		i(sS)	E	02 35	6		+10			
		i	E	02 54	6		+5			
		M	NEZ	20.3	21	5	6	6		
43	17	i	Z	01 42 06	4			+3		Masked by microseisms.
		i	N	42 11	4	-2				
		e	E	45 43	?					
		eL	NE	46.0	15					
		eL	Z	46.3	24					
		M	NE	46.8	12	3	5			
		M	Z	47.6	12			3		
44	17	e	NE	13 37 58	12					
45	17	i	N	17 59 15	4	+1				Masked by microseisms.
		e	E	18 02 50	?					
		iL	E	03 05	13		+6			
		eL	Z	03.4	21					
		M	E	04.0	12		4			
		M	N	04.3	12	3				
		M	Z	05.3	13			3		
46	17	iP	NEZ	23 10 05	5	+2	+3	-6		Dilatation
		i	NEZ	10 32	4	-3	-3	+5		
		i	NEZ	10 51	4	+5	+4	-4		USCGS: 21.4S, 169.3E, H 23 05 32.5, h 84 km.ca.
		i	N	11 11	5	+3				
		i	E	11 13	5		+3			
		i	Z	11 14	5			-3		
		e(S)	E	13 50	7					
		i	E	13 53	7		+5			
		i	Z	13 57	7			+9		
		i	N	14 00	8	+6				
		i	E	14 14	7		-10			
		i	E	14 47	7		+5			
		eL	E	15.7	22					
		M	Z	16.8	18			15		
		M	E	17.0	17		8			
		M	N	18.5	12	12				
47	18	(i)	Z	05 01 37	4			+4		Masked by microseisms.
		M	N	10.4	15	½				
	18	(iP)	V	09 11 05	1½			+		Masked by microseisms. USCGS: 12.2S, 166.2E, H 09 05 43.8, h 95 km.ca.
48	18	(i)	V'	15 20 08	2			+		Masked by microseisms. USCGS: 24.4S, 176.3W, H 15 09 44.9, h 10 km.ca.
		eL	N	25.0	15					
		M	N	28.5	12	2				
49	18	(i)	VV'	17 59 06	1½			+		Masked by microseisms.

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
50	Jan.18	(i) VV'	20 54 11	1½			+		Masked by microseisms.
		eL N	21 04.9	18					
		M EZ	07.9	18		2	3		
		M N	09.2	12	3				
51	19	iP Z	04 26 40	4			-3		Dilatation. Microseisms present.
		i ZVV'	27 14	4			+6		
		i Z	30 13	4			-4		USCGS: 14.4S, 166.7E, H 04 21 16.0,
		iS NE	30 41	5	+3	+2			h 26 km.ca.
		i Z	30 53	4			-5		
		isS N	30 54	7	+10				
		isS E	30 55	5		+6			
		i N	31 35	7	+8				
		eL EZ	33.0	22					
		M NE	34.8	14	5	4			
		M Z	35.3	16			7		
	19	(i) Z	05 56 29				-3		Masked by microseisms.
		(i) V'	56 30	2			+		
52	19	iP EZ	05 59 10	3		-2	+4		Compression. Microseisms present.
		i Z	59 14	4			-8		
		i(S) N	06 03 07	7	+4				USCGS: 21.5S, 170.3E, H 05 54 25.5,
		i(S) E	03 08	7		+5			h 100 km.ca.
		eL EZ	04.2	27					
		M EZ	05.9	18		8	13		
		M N	06.8	14	23				
53	19	(iP) Z	17 34 46	4			+3		Masked by microseisms.
		eL N	18 06	?					USCGS: 49.7N, 155.8E, H 17 22 16.9,
									h 31 km.ca.
54	20	e N	17 33.9						Masked by large microseisms.
		e E	41.8						USCGS: 56.4N, 152.3E, H 17 09 15.7,
		e N	43.1						h 46 km.ca.
		eL Z	57.2	30					
		M NEZ	18 03.8	19	3	1	2		
55	20	(i) V'	18 46 18	2					Masked by large microseisms.
		eL N	50.7	19					
		M NE	53.2	12	7	2			
		M Z	53.7	15			2		
56	21	e(Pg) V	00 21 55.5	¼					Local.
		i(Sg) V	22 00	½			+		
		i V'	22 05	¾			+		
		i V	22 07	¾			-		
57	21	eL N	00 26.6	19					
		M NE	29.0	12	5	2			
58	21	eL E	15 16.4	13					
59	22	iP V'	03 29 36	1½			+	3080	Compression. Small.
		iP V	29 37	1½			+	27°7	"
		i NEZVV'	29 40	4	-3	-2	+14		h 0.00, H 03 23 49
		m NEZ	29 48	7	12	9	32		Galitzin record hard to read owing
		isP V'	29 50	3			+		to overlapping of trace.
		i E	33 17	6		+30			
		iS N	34 14	8	+44				USCGS: 11.9S, 166.2E, H 03 24 04.5,
		i E	34 20	11		-87			h 25 km.ca.
		isS NZ	34 30	9	+125ca.		-78		
		i N	35 38	7	-57				
		eL Z	36.3	28					
		M NE	39.7	15	125ca.	110			
		M N	43.5	15	195ca.				
		M Z	43.8	15			210		
		W_2 E	06.4						
	22	i(P) V	04 09 58	1½					
60	22	eL N	13 01.2						

No.	Date	Phase &	Component	(G.M.T.) Time	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ		
61	Jan.22	e	E	13 50 51						Masked by microseisms.
62	22	iP	VV'	14 45 35	¾			+		Compression. Local.
		i	V	45 40	¾			-		
		e	V	46 57	½					
63	22	iP	Z	16 15 43	3			+2		Compression
		e(S)	N	20 40	7					Masked by microseisms.
		eL	EZ	23.6	24					USCGS: 28.5S, 174.8W, H 16 09 37.3,
		M	N	25.7	14	3				h 68 km.ca.
		M	EZ	29.8	16		3	4		
64	22	iP	VV'	18 41 34	¾			+		Compression. Local.
		i	V	41 42.5	½			+		
		e	V	42 55	½					
65	22	iP	V	19 10 24	1			+		Compression. Microseisms present.
		i	Z	15 04	7			+4		USCGS: 12.3S, 166.1E, H 19 04 54.1,
		i	N	15 05	7	-5				h 35 km.ca.
		i	E	15 08	9		+7			
		M	N	19.6	15	3				
		M	E	20.6	16		3			
		M	Z	20.9	15			3		
66	23	(P)	V	05 00 15	1					USCGS: 42.9N, 145.3E, H 04 48 21.4,
		eL	E	23.2	21					h 46 km.ca.
67	24	iP	ZVV'	07 29 58	3			-7	2660	Dilatation
		ipP	EZ	30 20	4		+3	+5	23°9	h 0.01, H 07 24 52
		i	N	30 23	4	+3				
		i !	VV'	30 26	1½			-		USCGS: 15.6S, 167.6E, H 07 25 03.5,
		isP	VV'	30 31	2			+		h 198 km.ca.
		iPP	NEZ	30 38	4	+4	+3	-6		
		iPPP	VV'	30 47	1½			-		
		i	VV'	31 44	1½			+		
		iS	E	34 04	6		-10			
		i	N	34 08	5	+6				
		i	EZ	34 13	6		+9	+10		
		i	N	34 16	7	-14				
		isS	NEZ	34 44	6	+6	+4	+8		
		i	Z	34 54	5			+14		
		i	E	34 59	5		+5			
		iSSS	E	35 24	7		-10			
		M	N	39.2	12	4				
		M	Z	40.4	15			6		
		M	E	41.0	13		4			
68	24	iP	V	08 08 12	1½			-		Dilatation
		e(S)	E	12 24	5					
		i	N	13 08	5	-3				USCGS: 61.1S, 1[illegible]2.1E, H 08 02 28.7,
		eL	E	13.8	17					h 25 km.ca.
		i	N	14 15	6	-6				
		M	NZ	18.1	10	6		6		
		M	E	19.4	10		8			
69	25	iP	NEZ	05 26 39	4	+1	+1	-7	2580	Dilatation
		i !	VV'	26 40	2			+	23°2	h 0.005, H 05 21 37
		i !	VV'	26 45	2			+		
		ipP	VV'	26 54	2			+		USCGS: 14.1S, 165.4E, H 05 21 42.2,
		ipP	Z	26 55	3			+6		h 195 km.ca.
		iPP	Z	27 09	5			+10		
		i	N	27 17	4	+5				
		iPPP	ZVV'	27 23	3			+8		
		iS	EZ	30 42	4		+3	-4		
		isS	NE	31 07	9, 6	-8	-5			
		i	E	31 15	6		+8			
		i	Z	31 17	6			+7		
		iSS	NZ	31 33	7, 5	-5		+5		
		iSSS	NE	31 50	6	+8	-6			
		M	E	34.7	16		6			
		M	N	36.4	13	10				
		M	Z	36.5	15			12		

RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
70	Jan.25	(ePg)	V	07 20 20						Local.
		i(Sg)	V	20 23.3	½			+		
		(Sg)	N	20 24	¾					
		i	V	20 26.4	½			+		
71	25	e	N	17 00 43						Masked by microseisms.
		M	EZ	07.3	16		1	2		
72	25	iP	ZV	17 28 47	3			+3		Compression. Masked by microseisms.
		eL	E	44.4	18					USCGS: 1.2N, 121.3E, H 17 20 34.7,
		eL	Z	45.2	27					h 56 km.ca.
		M	NEZ	48	19	1	1	2		
73	26	iP	V'	06 07 32	1			+		Compression. Microseisms present.
		iP	ZV	07 33	4			+3		USCGS: 13.9S, 165.7E, H 06 02 20.1,
		i	VV'	07 37	1½					h 50 km.ca.
		i(S)	N	12 03	7	+4				
		e	E	12 05	7					
		eL	Z	14.4	17					
		M	E	15.5	15		1			
		M	N	15.6	14	1				
		M	Z	16.2	17			2		
74	26	eL	E	07 50						Masked by microseisms.
75	26	e(S)	NE	10 37 12	10					Masked by microseisms.
		eL	Z	40.4	19					USCGS: 11.7S, 165.7E, H 10 26 59.7, h 113 km.ca.
76	26	iP	VV'	13 16 58	1½			+		Compression. Microseisms present.
		i	Z	17 00	3			+3		USCGS: 21.3S, 169.5E, H 13 12 22.6,
		eS	E	20 57	7					h 77 km.ca.
		i	NE	21 06	4	+1	+2			
		eL	EZ	22,3	21					
		M	NEZ	23.8	19	1	2	2		
77	26	iP	NEVV'	16 17 54.5	8	+11	+20	-		Dilatation. Small amplitudes on
		i	VV'	18 04	1½			-		Sprengnether & Wiechert Vert.
		i	V'	18 31	3			+		Sprengnether has 1½s per. waves
		i	NEVV'	18 39	7	+10	+13	+		superposed on on 9s per. waves.
		i	N	18 54	7	-33				No Galitzin Z record.
		i	N	21 47	7	-28				
		i	E	21 49	7		-38			USCGS: 21.4S, 169.5E, H 16 13 25.1,
		i	N	21 55	7	+48				h 119 km.ca.
		i	E	21 56	7		+83			
		i	E	22 09	7		-34			
		i	E	22 45	6		+22			
		eL	E	23.2	19					
		M	E	24.9	17		96			
		M	N	26.1	13	86				
	26	i	V	18 24 19	1½			+		Compression
78	26	iP	V	18 53 38.5	1			+		Compression
		i	NE	53 39	4	+1	+2			USCGS: 20.7S, 169.5E, H 18 48 56.9,
		i	NE	53 48	4	+2	+3			h 106 km.ca.
		i	V	53 49	1			+		
		i	N	57 32	8	-9				
		i	E	57 33	8		-7			
		eL	E	58.8	22					
		M	N	59.7	15	3				
		M	E	19 00.5	19		6			
79	27	i	V	00 04 14	1½			+		
		e	E	07 32	6					
		eL	Z	09.4	19					
		eL	E	09.5	19					
80	27	iP	ZVV'	00 58 01	2			+1		Compression
		eL	E	01 04.8	25					
		M	Z	07.2	21			2		
		M	E	07.3	16		3			
		M	N	08.5	13	3				

RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
81	Jan.27	(iP)	Z	14 00 48	3			+2		Masked by microseisms.
		e	N	05 48	12					USCGS: 5.5S, 151.9E, H 13 55 15.6,
		e	N	06 09	13					h 118 km.ca.
		eL	E	09.6	22					
		M	E	11.7	19		1			
		M	NZ	11.9	19	1		2		
82	27	iP	V	14 51 27.5	1½			-		Dilatation
		i	NEZ	51 30	7	-2	-3	+4		USCGS: 21.4S, 169.5E, H 14 46 51.2,
		e(S)	E	55 18	6					h 64 km.ca.
		i	N	55 24	9	+6				
		i	Z	55 30	7			+5		
		eL	N	56.2	21					
		eL	Z	56.8	24					
		M	E	57.4	21		5			
		M	N	57.7	18	7				
		M	Z	57.9	18			9		
83	27	iP	ZVV'	15 10 29.5	4			-4		Dilatation
		i	E	10 48	6		+4			USCGS: 21.2S, 169.4E, H 15 05 53.5,
		i	N	14 09	6	+3				h 68 km.ca.
		i	E	14 20	6		+4			
		i	N	14 27	7	+15				
		i	Z	14 36	7			-21		
		i	N	14 38	6	+9				
		eL	E	15.1	21					
		M	E	16.4	20		8			
		M	NZ	16.9	16	13		11		
84	27	i	ZV	15 18 06	4			-4		Superposed on No.83.
		i	Z	18 21	4			+6		
85	28	(iPKP)	V	03 43 29	1½			-		Masked by microseisms.
		(iPP)	Z	44 24	3			-		USCGS: 13.6S, 76.6W, H 03 24 39.2,
		i	VV'	52 52	1½			+		h 35 km.ca.
		eSS	N	04 00 15	(12)					
		eL	E	18.1	(27)					
		M	E	22.9	19		1			
		M	NZ	24.0	16	½		1		
86	28	iP	VV'	05 17 12	1½			-	2370	Dilatation
		i	VV'	17 19	1½			+	21°3	
		iPP	V	17 33	1½			+		
		iPPP	V	17 43	1½			+		
		iS	N	21 05	5	+2				
		iS	E	21 06	5		-2			
		eLQ	E	21.3	(16)					
		M	NE	25.0	13	2	½			
87	28	(iP)	Z	11 20 55						Masked by microseisms.
		e	N	24 23	10					
		e	Z	24 27	9					
		eL	E	26.2	18					
	28	i	V'	14 24 23	2			-		Dilatation
88	28	iP	VV'	14 27 12	1½			+		Compression
		iP	NEZ	27 14	3	+1	+½	-3		Dilatation
		i	VV'	27 24	2			+		
		i	NEZ	27 31	4	+2	+1	-5		
		i	VV'	27 35	2			+		
		i	Z	27 39	6			-3		
		i	N	31 42	8	-4				
		i	E	31 49	6		+3			
		i	N	32 30	7	+4				
		eL	Z	33.2	(19)					
		M	E	34.9	16		2			
		M	N	35.3	15	4				
		M	Z	35.8	15			5		
89	28	i(P)	Z	14 40 01	3		-2			Dil. Superposed on No.88.
										USCGS: 13.8S, 165.8E, H 14 34 56.1,
										h 128 km.ca.

No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
90	Jan.28	eP	ZV	17 39 04						
		i(S)	E	42 51	5		+2			
		i	N	42 57	7	+4				
		eL	NE	44.1	20					
		M	N	45.2	16	3				
		M	Z	45.5	17			2		
		M	E	45.9	16		1			
91	28	iP	NEZ	19 47 40	7	+2	+3	-8		Dilatation
		i	VV'	47 42	1½			+		
		iPP	NEZ	48 00	7	+6	+10	-18		USCGS: 21.3S, 169.5E, H 19 43 01.4, h 50 km.ca.
		i	N	51 31	10	-18				
		i	E	51 33	7		+14			
		i	Z	51 45	7			+35		
		m	N	51 48	10	31				
		i	E	51 55	7		-			
		i	Z	52 02	7			+13		
		eL	E	52.3	25					
		i	V'	53 00	2			+		
		M	E	53.6	21		35			
		M	Z	53.9	19			59		
		M	N	54.2	16	55				
92	28	eL	N	23 30.6						
93	29	(i)	V'	00 25 07						Masked by microseisms.
										USCGS: 5.8S, 131.8E, H 00 18 39.7, h 47 km.ca.
94	29	iP	VV'	00 55 41	1			+		Compression
		i	VV'	55 45	1			+		
		i	VV'	56 08	1			-		
		i	N	01 00 06	5	-1				USCGS: 14.0S, 165.9E, H 00 50 35.0, h 123 km.ca.
		i	N	00 18	6	-3				
		e(LQ)	E	00.7	16					
		M	E	03.6	15		1			
		M	Z	04.4	16			2		
		M	N	04.5	13	2				
	29	i	VV'	01 52 17	1			+		Compression
95	29	iP	ZVV'	03 22 13	2			+2		Compression
		e	N	26 36	7					
		e	N	27 25	9					
		eL	N	29.3	16					
		M	E	30.2	13		½			
		M	N	30.3	13	1				
96	31	e	V	01 02 44	½					Short period waves, perhaps small local tremor.
		e.(SKS)	N	13 06						
		e(S)	E	14 09	7					Masked by microseisms.
		i	NE	14 13	6	+2	-2			USCGS: 55.8N, 153.9W, H 00 48 36.5, h 26 km.ca.
		e	E	17 38	(17)					
		eLR	Z	36.3	24					
		M	NZ	42.0	20	3		6		
		M	E	42.4	20		3			
97	31	iP	ZVV'	06 18 00	4			+4	2420	Compression
		i	NZ	18 06	5	+3		-4	21°8	
		iS	E	21 57	4		-3			USCGS: 17.1S, 166.8E, H 06 13 15.2, h 60 km.ca.
		i	E	22 07	6		-3			
		iSS	Z	22 34	7			-3		
		M	EZ	25.0	15		2	2		
		M	N	25.1	13	4				

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RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
98	Feb. 2	e(S)	N	00 57 26	10					Masked by microseisms. USCGS: 7.3N, 127.3E, H 00 42 07.2, h 157 km.ca.
	2	i	VV'	11 22 35	1½					Masked by microseisms. USCGS: 13.6N, 145.3E, H 11 13 31.8, h 131 km.ca.
99	3	eL	E	11 22						
100	3	iP	VV'	12 37 41	1½			+		Compression. Microseisms present. USCGS: 36.9S, 176.8E, H 12 33 22.8 h 300 km.ca.
		e(S)	E	41 25	7					
		i	Z	41 26	3			-2		
101	4			03.2	Surface waves.					
102	4			06.2	Surface waves.					
103	4	iP	VV'	09 03 38	1½			+		Compression. USCGS: 24.7N, 95.3E, H 08 51 48.9, h 162 km.ca.
		iP	Z	03 39	2			+2		
104	4	eS	N	15 41 05	8					Masked by microseisms. USCGS: 17.0S, 176.8W, H 15 29 11.7, h 57 km.ca.
		e(SSS)	N	43 35	10					
		M	E	47.4	16		1			
		M	N	47.5	12	4				
		M	Z	47.6	16			1		
105	4	iP	VV'	19 19 49	2			+	7110	Compression.
		iS	N	28 25	5	-2			64°0	H 19 09 11
		eL	E	39.6	22					USCGS: 24.0N, 122.7E, H 19 09 12.9, h 14 km.ca.
		M	E	44.8	21		1			
		M	Z	45.7	22			4		
		M	N	46.2	21	2				
106	5	eP	Z	18 00 49					6440	H 17 50 53
		iS	N	08 48	5	+1			57°9	USCGS: 38.4S, 78.2E, H 17 50 51.1, h 25 km.ca.
		eLR	Z	17.9	?					
		M	NEZ	22.7	16	3	5	7		
107	6	(i)	Z	11 44 02	3			+2		Masked by microseisms.
		eL	Z	52.4	25					
108	6	e(S)	N	19 39 20	7					Masked by microseisms. USCGS: 4.8S, 154.2E, H 19 29 33.2, h 470 km.ca.
		i	N	41 48	7	+2				
109	6	iP	ZVV'	21 50 55	3			+7	3010	Compression
		i	V	50 59	2			-	27°1	h 0.00ca., H 21 45 13
		i	N	51 00	7	+6				USCGS: 6.8S, 155.3E, H 21 45 13.5, h 59 km.ca.
		i	VV'	51 07	1½			+		
		i	NZ	51 09	4	+5		-6		
		i	VV'	51 12	1½			+		
		i	Z	51 15	4			+18		
		i	N	51 21	8	+14				
		i	VV'	51 30	1½			+		
		i	N	51 38	5	+4				
		iPP	Z	51 40	4			+11		
		i	VV'	51 42	1½			-		
		iPPP	NE	51 53	7	+17	+5			
		i	NEZ	52 03	6	-16	-5	+24		
		iS	N	55 29	6	+7				
		i	NZ	55 35	6	-23		+13		
		i	E	55 39	7		+14			
		e	Z	55.8	24					
		i	NE	55 55	7		-22			
		i(LQ)	N	56 23	15	+				
		iSS	E	56 42	12		-43			
		i	EZ	57 15	7		+50	+44		
		LR	Z	58.4	29					
		M	Z	59.8	24			170		
		M	E	22 00.5	14		33			
		M	N	00.9	15	51				
		e(W_2)	Z	24 29	25					

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
110	Feb. 7	iP	V	01 49 13	1			+		Compression
		i(pP)	V	49 22	1			+		USCGS: 11.6S, 166.0E, H 01 43 42.6,
		e(S)	E	53 39	8					h 55 km.ca.
		e	N	53 44	8					
		e(sS)	NE	54 02	9					
		eL	Z	56.9	22					
		M	NEZ	02 01.8	13	2	2	3		
111	7			03.3	Surface waves.					USCGS: 11.7S, 166.1E, H 02 57 51.4, h 54 km.ca.
112	7			04.2	Waves.					USCGS: 11.8S, 166.2E, H 03 59 49.4, h 55 km.ca.
113	7			06.3	Waves.					USCGS: 11.6S, 166.2E, H 06 02 12.6, h 77 km.ca.
114	8	iP	ZVV'	02 41 41	3			+2		Compression.
		iPP	Z	42 22	4			+3		
		e	N	45 47	?					USCGS: 15.3S, 167.5E, H 02 36 40.5,
		e	E	45 52	9					h 162 km.ca.
		i	N	45 55	4	-3				
		i	N	46 27	5	+3				
		i	N	46 43	5	+2				
115	8			10.0	Waves.					
116	8			16.1	Waves.					
117	8	e(S)	N	18 00 41						Obscured by large microseisms.
		iScS	N	05 51	4	+2				USCGS: 20.4S, 178.1W, H 17 50 45.2, h 543 km.ca.
118	8			19.7	Long waves-obscured by microseisms.					USCGS: 5.9S, 151.8E, H 19 25 54.9, h 51 km.ca.
119	9	iP	EZ	02 14 02	4		-4	+11		Compression.
		ipP	EZ	14 17	4		-5	+11		
		isP	EZ	14 25	4		-5	+14		S cannot be identified.
		i	E	14 56	4		-8			
		i	E	15 08	4		+5			USCGS: 28.2S, 177.4W, H 02 08 15.9,
		i	Z	15 09	4			+19		h 37 km.ca.
		i	E	15 20	6		+14			
		i	E	19 11	7		-7			
		i(SSS)	N	20 18	12	+18				
		eLR	EZ	20.8	30					
		M	N	22.1	18	22				
		M	NEZ	23.3	18	14	29	41		
		M	EZ	24.7	16		26	43		
120	9	e	E	20 35 06						
		i	N	39 17	7					Obscured by large microseisms.
		i	E	39 22	6					USCGS: 9.9S, 111.3E, H 20 21 20.1,
		M	NE	46.4	13	12	6			h 73 km.ca.
		M	Z	47.4	12			7		
121	10	e	N	13 32 38						
		M	NE	41.7	15	2	2			Obscured by microseisms. USCGS: 2.9S, 127.6E, H 13 19 26.6, h 78 km.ca.
122	11	iP	VV'	16 52 32	1½			+	3480	Compression
		eS	N	57 21	4				31°.3	h 0.03 ca.
		iScS	N	17 02 39	4	+1				USCGS: 19.8S, 176.2W, H 16 46 24.6, h 261 km.ca.
123	11	iP	EZVV'	21 06 53	4		-4	+13		Compression
		i	VV'	06 54	2			-		
		ipP	Z	07 07	4			+8		
		isP	Z	07 13	3			+6		S cannot be identified.
		i	E	07 14	4		+3			
		i	Z	07 33	4			-6		USCGS: 28.2S, 177.5W, H 21 01 06.4,
		i	Z	07 56	4			-4		h 41 km.ca.
		i	Z	08 00	5			+9		
		i	E	08 01	5		-6			
		i	EZ	08 13	5		+9	+12		
		i	E	12 03	5		-4			
		i	Z	12 10	5			+4		
		i	NZ	12 30	7	-11		+14		

Continued on next page.

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
123 cont.	Feb.11	i	N	21 13 09	12	+13				
		eLR	Z	13.8	27					
		M	EZ	16.0	18		21	26		
		M	N	16.6	15	11				
		M	EZ	17.3	16		19	25		
124	12	e	E	01 41 37						Obscured by microseisms.
		e	E	46.8						USCGS: 34.8S, 106.9W, H 01 19 21.8,
		M	NEZ	02 00	19	1	1	1		h 100 km.ca.
125	12	(i)	VV'	03 02 52	1½			+		Masked by microseisms.
		M	N	18.9	12	½				
	12	(iP)	V	12 15 58	1					Masked by microseisms.
										USCGS: 15.0S, 175.2W, H 12 09 22.0,
										h 281 km.ca.
126	12	iP	ZVV'	13 02 22½	2			+5		Compression. Deep focus.
		i	Z	02 32½	2			+4		USCGS: 13.1S, 171.8E, H 12 57 15.3,
		iS	NE	06 23½	3	-2	+2			h 598 km.ca.
127	12	iP	V	22 05 39	1½			+	8670	Compression
		iP	Z	05 40	3			+3	78°0	h 0.00, H 21 53 42
		i	VV'	05 41	1½			-		
		i	NZ	05 46	5	+2		+7		USCGS: 43.7N, 147.6E, H 21 53 43.5,
		i	VV'	05 51	2			-		h 45 km.ca.
		i	VV'	06 01	1½			+		
		i	VV'	06 05	1½			+		
		i	NZ	0 07	3	+2		-5		
		i	Z	06 26	4			-5		
		i	Z	07 05	4			+6		
		iS	E	15 29	7		-16			
		iS	N	15 30	7	-12				
		e	Z	15 32	13					
		i	N	15 40	6	+7				
		iScS	N	15 51	7	+13				
		iPS	Z	16 14	6			+11		
		i	N	16 17	6	+5				
		e	E	16 17	28					
		e	E	19 45	21					
		e	E	20 13	21					
		eSS	N	20 40	21					
		eSSS	N	23 48	18					
		eLQ	E	26.1	26					
		eG	E	26.9	33					
		eLR	E	30.2	27					
		M	NZ	34.8	22	25		43		
		M	E	35.9	21		22			
128	12	iP	VV'	23 38 31	1			+	8690	Compression
		iPcP	Z	38 41	4			+5	78°2	h 0.00, H 23 26 33
		isP !	VV'	38 44	1½			+		
		i	Z	38 49	4			+6		USCGS: 44.0N, 147.7E, H 23 26 34.5,
		iS	NE	48 22	5	-2	-2			h 23 km.ca.
		iSKS	N	48 37	5	+1				
		eSS	N	53 24	13					
		eLR	E	24 03.3	22					
		M	Z	07.8	20			7		
		M	N	08.0	21	6				
		M	E	09.0	20		3			
129	13	eP	Z	06 52 23	?			-2	3960 35°6	h 0.00, H 06 45 27
		i	Z	52 43	4					USCGS: 17.0S, 173.7W, H 06 45 25.0,
		ePPP	E	54 00						h 43 km.ca.
		ePPP	Z	54 02	12					
		i	EZ	54 29	4		+3	-2		
		eS	N	57 56	10					
		e	E	58 00	15					
		e	Z	07 00 35	18					
		eLQ	E	00.7	24					
		iSSS	N	00 45	12					
		eLR	Z	02.2	24					
		M	N	05.2	13	14				
		M	EZ	07.2	18		15	20		

RIVERVIEW COLLEGE OBSERVATORY
PRELIMINARY SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	µ	µ	µ	km.	
130	Feb.13	(iP)	ZV	13 51 44	3			+2		USCGS: 6.9S, 155.7E, H 13 45 57.7,
		eL	Z	59.6	22					h 25 km.ca.
		M	N	14 02.4	13	½				
131	13	iP	V	16 24 13	1			+		Compression
		e(S)	E	29 34						USCGS: 5.1S, 128.7E, H 16 17 20.1,
										h 66 km.ca.
132	13	iP	VV'	16 39 18	1½			-	8620	Dilatation
		i	Z	39 29	3			-3	77°6	h 0.00, H 16 27 23
		ipP	VV'	39 30	1½			+		
		iS	N	49 06	5	+1				USCGS: 43.7N, 149.6E, H 16 27 20.9,
		i(sS)	N	49 28	4	+1				h 25 km.ca.
		i	N	49 41	5	+2				
		eSS	N	54 05	16					
		eL	E	17 01.6	20					
		M	NZ	08.4	21	1		2		
		M	E	09.1	21		1			
133	14	iP	VV'	03 33 59	1½			-	8680	Dilatation
		i	V	34 16	1½			-	78°1	H 03 21 57
		eS	E	43 53	4					
		eSKS	N	44 18	7					USCGS: 43.8N, 147.9E, H 03 22 00.7,
		ePS	N	44 39	4					h 20 km.ca.
		eL	E	58.6	25					
		eL	N	04 00.0	24					
		M	NEZ	03.4	22	1	1	3		
134	14	e(S)	E	16 03 36	?					USCGS: 15.4S, 175.1W, H 15 50 52.2,
		eL	Z	07.6	21					h 25 km.ca.
		M	N	12.6	11	½				
		M	EZ	13.4	16		½	1		
135	15	(P)	V	02 14 09	1					
		i(S)	N	18 03	5	+1				
		e	E	18 05	10					
136	15	(P)	V	06 32 55						USCGS: 26.1S, 177.5W, 06 27 13.8,
		M	N	46.0	13	½				h 148 km.ca.
137	15	iP	VV'	10 57 10	1½			+	8650	Compression
		ipP	ZVV'	57 21	3			+3	77°8	h 0.00, H 10 45 14
		i	VV'	57 23	1½			-		
		isP	ZVV'	57 26	4			+4		USCGS: 43.7N, 147.4E, H 10 45 15.9,
		e	Z	57 30	17					h 69 km.ca.
		e	Z	11 06 58	15					
		iS	N	06 59	8	-3				
		isS	N	07 20	8	+4				
		ePS	Z	07 43	12					
		eSS	N	12 06	16					
		eSSS	N	15 21	16					
		eLQ	E	17.4	30					
		eL(R)	Z	23.3	27					
		M	NEZ	26.9	21	6	7	9		
138	16	(e)	V	12 41 20						Small local tremor.
		i	V	41 25	½			+		
		i	V	41 30	½			+		
139	16	e	N	13 39.9	13					
		eL	Z	40.4	19					
		eL	E	40.8	24					
		M	N	41.9	15	1				
		M	EZ	42.1	19		1	1		
140	16	M	NEZ	14 36	20	½	1	1		USCGS: 43.2N, 148.0E, H 13 54 53.7,
										h 71 km.ca.
141	16	i	VV'	23 51 08	1½			+		
		e	E	56 45	13					
		M	E	24 02.5	15		1			
		M	N	02.8	15	1				

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Componont	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
142	Feb.18	iP V'	12 10 19½	1½			-	2340ca.	Dilatation
		iP EZV	10 20	3		+1	-3	21°ca.	h 0.00, H 12 05 37 ca.
		isP VV'	10 32	1½			+		
		iPP VV'	10 41	1½			+		USCGS: 22.6S, 171.3E, H 12 05 36.3,
		iPP EZ	10 43	5		+2	-4		h 38 km.ca.
		i(S) N	14 14	7	+3				
		i N	14 18	8	-11				
		i E	14 21	8		+7			
		iPcP Z	14 27	4			+6		
		iSS E	14 37	7		+6			
		eL N	15.6	21					
		M NEZ	17.4	16	5	3	7		
		M N	19.4	10	5				
	18	(iP) VV'	20 08 25						Masked by microseisms.
		(eS) N	15 12						USCGS: 4.3N, 126.6E, H 20 00 28.7, h 75 km.ca.
143	19	e(S) N	07 20 09	9					Masked by large microseisms.
		M N	24.8	10	1				USCGS: 23.1S, 171.9E, H 07 11 21.5, h 25 km.ca.
144	20	eL N	09 24.5						Masked by microseisms.
145	20	e(S) N	14 28 07						Masked by microseisms.
		eL N	32.5	21					USCGS: 5.0S, 153.4E, H 14 17 27.3, h 107 km.ca.
	20	(iP) ZVV'	16 50 39	2			+		Masked by microseisms.
146	21	e E	19 23 38						Masked by microseisms. USCGS: 48.8S, 106.2E, H 19 10 56.8, h 52 km.ca.
147	22	iP EZVV'	21 59 18	3		-2	+4		Compression
		i VV'	59 28	1½			+		
		i VV'	59 37	1½			+		S cannot be identified.
		i Z	59 38	3			+4		
		i Z	22 00 16	4			-5		USCGS: 28.4S, 177.2W, H 21 53 34.5,
		i EZV'	00 21	4		+3	-3		h 78 km.ca.
		i E	04 56	6		-3			
		i N	05 27	6	+3				
		i N	05 49	10	+7				
		eLR EZ	06.1	27					
		M N	07.1	16	6				
		M EZ	09.1	17		9	17		
149	23	e(L) NE	03 18.6	13					Masked by microseisms.
		M NEZ	21.9	12	3	2	4		USCGS: 4.4S, 134.1E, H 03 00 05.1, h 60 km.ca.
150	23	i V	04 28 08	1½			+		Masked by microseisms.
		iS E	37 05	6		-2			USCGS: 38.2N, 142.7E, H 04 16 25.0,
		i E	37 55	4		-1			h 119 km.ca.
		e(SS) E	41 31	15					
		eL E	48.9	21					
151	23	e(S) E	05 43 22	7					Masked by microseisms.
		eL N	45.4	16					
152	24	i(P) V	01 33 12	1½			+		Microseisms present.
		i V	33 19	1½			+		
		e(S) NE	37 43	10					
		M NE	43.6	13	½	½			
153	24	eL E	03 34						Masked by microseisms. USCGS: 26.1N, 125.4E, H 03 04 11.7, h 25 km.ca.
154	25	e(S) N	01 28 34						Masked by microseisms. USCGS: 14.1S, 165.8E, H 01 18 58.3 h 105 km.ca.
155	25	iP VV'	05 00 37	1½			-		Dilatation. USCGS: 21.7S, 179.6W, H 04 55 25.1, h 608 km.ca.
156	25	iP VV'	08 29 34	1½			+		Compression USCGS: 23.4S, 179.9W, H 08 24 33.2, h 576 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
157	Feb.25	eS	E	15 14 29	9					P obscured by microseisms.
		eL	Z	18.7	30					USCGS: 15.4S, 175.8W, H 15 02 04.8,
		M	EZ	22.5	18		3	4		h 62 km.ca.
		M	N	22.7	12	2				
	26	(iP)	V'	03 01 44	1½			+		Masked by microseisms.
										USCGS: 22.4S, 175.6W, H 02 56 10.3,
										h 623 km.ca.
	26	(P)	V	05 13 44	1					Masked by microseisms.
										USCGS: 13.8S, 165.7E, H 05 08 41.4,
										h 91 km.ca.
158	26	iP	V'	06 00 48	1			+	8680	Compression. Microseisms present.
		iPcP	V	00 55	1½			+	78°1	H o5 48 46
		e	Z	01 09	5					USCGS: 32.7S, 111.2W, H 05 48 46.3,
		eS	N	10 42	7					h 29 km.ca.
		iScS	N	11 05	4	-1				
		M	EZ	30.3	18		2	3		
		M	N	32.8	16	1				
159	26	iP	ZVV'	18 21 46	4			+8		Compression
		i	NZ	21 58	4	+3		-14		Some evidence for focal depth of
		i	V'	22 04	3			+		0.02 ca.
		i	NZ	22 10	6	-		+		
		i	Z	22 26	4			+15		USCGS: 31.4N, 131.2E, H 18 10 48.7,
		iPP	NZ	24 26	7	-13		+25		h 54 km.ca.
		i	Z	24 45	6			+15		
		i	Z	30 42	9			-27		
		iS	NE	30 48	9	-77	-21			
		i	Z	30 52	8			+69		
		i	N	31 03	7	+*				
		i	Z	31 09	9			-82		* From Mainka.
		i(sS)	N	31 52	6	+18				
		i(sS)	E	31 54	7		-24			
		m	NE	32 02	10	69	47			
		i	N	32 08	8	-*				
		i	E	32 12	8		-*			
		iSSS	N	38 18	11	+31				
		iSSS	E	38 26	11		+41			
		iSSS	Z	38 32	12			-48		
		i	Ez	38 54	12		-	-52		
		i	Z	39 23	12			-42		
		eG	E	40.6	45					
		M	NZ	47.5	22	84	140			
		M	E	47.7	21		87			
		F		22.2						
160	27	e	N	05 52 02	7					
		eL	N	54.4	15					Masked by microseisms.
161	27	i	Z	16 55 08	3					
		e(S)	E	17 00.2	13			+2		Masked by microseisms.
		M	E	07.9	12		1			USCGS: 4.2S, 135.3E, H 16 49 24.9,
		M	NZ	10.1	12	1		2		h 100 km.ca.
162	27	eL	Z	17 49.7	15					
	27	e	V	18 05 16	½					Masked by microseisms.
163	28	i(P)	Z	07 37 12	4			+4		Small local tremor.
		i(SS)	E	41 00	7		-7			Compression. Microseisms present.
		i(SSS)	E	41 14	8		-10			
		eL	N	41.3	13					
		eL	Z	41.8	(18)					
		M	E	41.9	12		6			
		M	N	42.2	12	5				
		M	Z	42.7	(10)			(2)		
		eT	V	56.3	½					
164	28	eL	E	23 17.2	17					
		M	NZ	21.2	11	2		3		Masked by microseisms.

A. Fynn, S.J. Director.

P.F.Rheinberger.

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
165	Mar. 1	i E	09 37 19	7		-4			Masked by microseisms.
		eL N	37 20	15					
		M E	38.4	12		3			
		M N	38.6	12	2				
		eT V	52.9	½					
166	1		11.6	Waves- masked by microseisms.					
167	1	e E	14 00.0						Masked by microseisms. USCGS: 7.5S, 130.0E, H 13 47 37.2, h 25 km.ca.
		M E	05.9	14		2			
		M N	07.0	10	2				
		M Z	08.1	15			2		
168	1	eL	19 48						USCGS: 13.7N, 146.2E, H 19 26 13.5, h 73 km.ca.
169	2	eL Z	00 29.4						
	2	e V	02 01 51	½					Local. Small. Seismic ??
	2	i V	03 47 18	1½			+		Compression
170	2	eL E	16 06.7	19					Masked by microseisms. USCGS: 4.7S, 106.3W, H 15 18 54.3, h 25 km.ca.
		M EZ	15.3	16		1	4		
171	3	(iP) V	03 24 12						Masked by microseisms. USCGS: 17.4S, 168.0E, H 03 19 00.1, h 42 km.ca.
		e(S) N	28 09	9					
		i N	28 20	4					
		eL E	30.8	?					
172	3	iP Z	06 30 22	4			-7		Dilatation
		i VV'	30 23	1½			+		USCGS: 22.9S, 171.4E, H 06 25 37.9, h 27 km.ca.
		i NEZ	30 26	5	-4	-9	+16		
		i V	30 30	2			-		
		i(sP) VV'	30 38	1½			+		
		iPP VV'	30 45	1½			+		
		eS N	34 19	7					
		i N	34 23	9	-18				
		i E	34 26	8		+6			
		eL Z	35.7	21					
		eL E	36.2	21					
		M EZ	37.3	16		6	12		
		M N	38.7	12	7				
		M N	40.5	11	10				
173	3	(i) VV'	08 22 48	1½			+		Masked by microseisms. USCGS: 31.8S, 178.0W, H 08 17 30.6, h 63 km.ca.
		e N	28.6	?					
		eL E	30.7	18					
174	3		10.0	Long waves.					USCGS: 5.7S, 147.4E, H 09 46 16.7, h 25 km.ca.
175	3	(iP) V	20 18 53	2			+		Masked by microseisms. USCGS: 22.3S, 171.6E, H 20 14 19.7, h 61 km.ca.
		eL N	25.3						
176	5	iP Z	01 31 42	4			+3	2860 25°7	Compression h 0.00
		i N	31 45	4	-3				
		i VV'	31 47	1½			+		USCGS: 10.8S, 161.6E, H 01 26 26.1, h 99 km.ca.
		ipP Z	31 51	4			+5		
		i NZVV'	31 58	4	-3		+8		
		iS E	36 06	4		-2			
		i N	36 09	4	-3				
		i N	36 17	7	+5				
		isS E	36 23	7		-3			
		i N	36 53	7	+5				
		iSS E	37 10	7		+7			
		eL Z	37.6	28					
		M Z	39.6	22			13		
		M N	39.7	18	8				
		M E	40.3	18		7			
177	5	i(P) V'	02 09 51	1½			+		Masked by microseisms. USCGS: 7.9S, 115.0E, H 02 02 08.0, h 76 km.ca.
		i ZV	09 56	2			+3		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
178	Mar. 5	e(L)	E	19 59.8	?					USCGS: 3.6S, 137.0E, H 19 42 08.0, h 25 km.ca.
	6	e(Pg)	V	06 40 25	¼					Small local tremor.
		e	V	40 42	½					
	7	e(Pg)	V	02 27 53						Small local tremor.
		e	V	28 17	½					
179	7	e	V	07 06 25	11					
		e(S)	N	06 48	12					USCGS: 43.3S, 80.4W, H 06 43 10.6, h 60 km.ca.
		e	N	07 45	12					
		e(SS)	Z	12 39	19					
		e(SSS)	N	16 07	18					
		eL	N	23.7	28					
		M	NEZ	27	19	2	3	4		
180	7	iP	Z	10 16 37	4			+6	3170	Compression.
		i	EVV'	16 39	4		+2	-	28°5	h 0.00, H 10 10 43
		i	VV'	16 41	2			+		
		isP	EZVV'	16 52	3		-	+24		USCGS: 28.2S, 175.7W, H 10 10 38.9, h 43 km.ca.
		i	V	17 30	2					
		iPP	EZ	17 32	5		-66	+84		
		i	N	17 33	5	+7				
		iPPP	N	17 43	6	-15				
		i	EZ	17 46	6		-77			
		iPcP	V'	19 48	2			+		
		i	E	20 53	6		-19			
		iS	NE	21 21	6	+15	-53			
		i	Z	21 23	12			+140		
		i	Z	21 54	12			+180		
		i	E	22 09	7		+49			
		M	N	25.4	17	175ca.				
		M	E	26.4	20		320			
		M	Z	27.0	17			380ca.		
		M	E	29.6	16		670ca.			
		F		14.3						
181	7	eL	E	18 32.9						
182	7	(P)	V'	19 18 30					6450ca.	Masked by microseisms.
		i	V'	18 43	3			+	58°ca.	H 19 08 38 ca.
		eS	E	26 27	7					
		i	N	26 33	5	+3				USCGS: 38.2S, 78.1E, H 19 08 36.2, h 30 km.ca.
		ePS	E	26 45	12					
		iScS	N	28 16	5	+2				
		eSS	N	30 18	16					
		eLR	E	36.1	27					
		eLR	Z	36.2	25					
		M	E	40.4	16		10			
		M	Z	40.7	16			14		
		M	N	43.5	11	6				
183	7	(i)	VV'	23 18 07	1½					USCGS: 4.7S, 153.2E, H 23 11 59.6, h 90 km.ca.
		i	VV'	19 01	1½			-		
		M	NZ	29	17	3		5		
184	8	iP	V	03 33 19	1			+		Compression.
		M	NE	45.3	13	½	½			USCGS: 4.0S, 141.8E, H 03 27 16.2, h 217 km.ca.
185	8	(eP)	V	05 34 12						Masked by microseisms.
		eL	Z	41.6	19					USCGS: 29.8S, 177.7W, H 05 28 34.4, h 55 km.ca.
		M	EZ	43.5	18		½	1		
		M	N	45.3	12	½				
	8	e(P)	V	06 25 26	¼					Local.
		i(S)	V	25 31	½			+		
	9	e	V	05 18 00	½					Local.
		e	V	18 08	½					
	9	ePg	V	06 13 31	¼					Local. Quarry blast ??
		iSg	V	13 34	½			+		

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
186	Mar. 9	e(P)	Z	13 20 45	4					Masked by microseisms.
		e(S)	E	25 34	9					
		eL	N	28.1	15					
		M	N	30.1	14	½				
		M	EZ	32.2	16		1	1		
187	10	(iP)	Z	03 05 14	3			-2	2200ca	Dilatation
		iP	VV'	05 15	2			+	19°8ca	Compression
		eS	E	08 51						Large microseisms present.
		e(L)	N	08 55	17					
		i(LQ)	E	09 03	10		-12			USCGS: 51.9S, 161.6E, H 03 00 43.3,
		iSS	E	09 18	11		-24			h 25 km.ca.
		eLR	Z	09.9	22					
		M	E	09.9	12		9			
		M	N	10.3	12	7				
		M	Z	10.7	17			10		
188	10	eL	E	09 25.8	13					Masked by microseisms.
189	11	iP	Z	01 43 58	3			+3	9210	Compression. Large microseisms
		i	VV'	44 01	1½			+	82°9	present.
		i	VV'	44 20	1½			+		
		i	Z	44 21	3			+4		USCGS: 48.7N, 154.6E, H 01 31 34.4,
		iS	NE	54 13	5	-2	-2			h 26 km.ca.
		eLQ	E	02 06.7	30					
		M	N	14.0	23	6				
		M	Z	15.5	21			4		
		M	E	16.3	20		2			
190	11	(ePKP)	V	08 59 39						USCGS: 11.2N, 43.3E, H 08 41 00.0,
		M	E	09 43.6	19		1			h 18 km.ca.
	12	i	VV'	02 11 53	1½			+		Masked by microseisms.
	12	i	VV'	04 14 45	1½			+		Masked by microseisms.
191	12	iP	Z	23 27 34	4			-3	3180	Dilatation. Large microseisms
		i	E	28 23	4		-2		28°6	present.
		PP	Z	28 26	6					
		i	VV'	29 02	1½			+		USCGS: 28.4S, 176.0W, H 23 21 42.5,
		eS	N	32 19	6					h 113 km.ca.
		eL	Z	35.6	21					
		M	N	37.2	13	7				
		M	Z	40.8	15			9		
		M	E	41.4	15		9			
	13	i	VV'	00 26 27	1½			+		
		i	VV'	26 30	1½			+		
192	13	(P)	V	04 43 18						Masked by microseisms.
		i	Z	43 30	3			+1		
		(S)	N	48 06	5					USCGS: 5.2S, 135.4E, H 04 37 13.4,
		eL	E	54.7	19					h 229 km.ca.
		M	E	56.4	12		2			
		M	NZ	58.7	11	2		3		
193	13	i(PKS)	VV'	08 25 28	1½			+		Compression. Microseisms present.
		i(PKS)	Z	25 29	3			+2		
		iSKS	N	28 46	3	+1				USCGS: 19.2N, 107.3W, H 08 03 43.9,
		eSS	E	38 25	15					h 49 km.ca.
		e	E	41 18	13					
		eLR	EZ	54.3	28					
		M	EZ	09 04.0	16		1	2		
194	13			20.3	Waves.					
195	13			21.6	Surface waves.					USCGS: 16.9S, 178.1W, H 21 16 13.1, h 600 km.ca.
196	14	eL	Z	01 28.6	19					Masked by microseisms. USCGS: 16.9S, 176.5W, H 01 11 55.4, h 60 km.ca.
		M	N	30.4	12	3				
		M	EZ	32.6	13		2	2		
		M	N	32.8	12	5				

No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remark
	1961			h m s	s	μ	μ	μ	km.	
197	Mar.14	iP	ZVV'	13 54 31	2			-2		Dilatation. Deep focus??
		i(S)	E	58 26	5		+3			USCGS: 22.0S, 172.1E, H 13 49 31.7, h 25 km.ca.
	15	e	V	03 34 52						Small local tremor.
		i	VV'	34 54	¼			+		
198	15	iP	ZVV'	10 21 06	3			+3	3500	Compression
		i	Z	21 10	3			+2	31°5	h 0.00, H 10 14 45
		i	Z	21 35	5			-5		
		iPP	N	22 12	6	+6				USCGS: 3.3S, 150.7E, 10 14 55.5, h 21 km.ca.
		i	Z	22 15	7			+12		
		iS	N	26 11	7	+7				
		e	Z	26 26	21					
		isS	N	26 28	7	+3				
		i	N	26 45	10	+12				
		i	E	26 51	7		+6			
		i	N	27 17	7	+4				
		eLQ	E	28.1	30					
		eLR	Z	29.8	33					
		M	Z	32,3	19			54		
		M	NEZ	33.8	16	32	40	47		
		M	E	34.7	12		33			
		M	N	35.6	13	27				
		M	NZ	40.8	11	25		31		
		M	NZ	42.7	11	30		26		
199	15	iP	VV'	13 06 59	1½			+		Masked by microseisms.
		e	N	12 34						
		eL	Z	15.2	26					USCGS: 4.4S, 152.5E, H 13 01 02.2, h 99 km.ca.
		M	Z	16.8	22			3		
		M	E	17.8	15		1			
		M	N	20.2	12	1				
	16	i	ZV	02 55 40	3			-3		Microseisms present.
200	16	iP	V	04 35 38	1½			-		Dilatation. Microseisms present.
		i	V	37 05	2			+		USCGS: 24.9S, 179.9E, H 04 30 39.9, h 536 km.ca.
	16	e	V	05 28 26	¼					Small local tremor.
	16	iPg	V	06 57 47½	¼			-		Quarry blast ??
		iSg	VV'	57 50½	½			-		
	16	(iP)	V	07 24 20	1½					
201	16	iP	VV'	11 26 18	1½			+		Compression
		i(pP)	VV'	26 36	1½			+		
		i	Z	26 37	3			+3		USCGS: 6.4S, 130.7E, H 11 19 43.5, h 77 km.ca.
		i	Z	26 42	4			+4		
		i	VV'	27 36	1½			+		
		i	N	30 54	4	-1				
		e(S)	N	31 36	6					
		i	N	34 17	3	-3				
		i	E	34 31	3		+2			
		M	N	40.4	14	3				
202	16	iP	ZVV'	13 52 42	4			+10	4100	Compression
		i	NE	52 46	6	+8	-9		36°9	h 0.00, H 13 45 35
		isP	V	52 56	2			-		
		isP	NEZ	52 57	4	+6	-9	-31		USCGS: 8.2S, 122.0E, H 13 45 35.6, h 74 km.ca.
		i	NEZV	53 20	6	-8	+7	+25		
		iPP	EV	54 09	7		-5	+		
		i	V	54 13	1½			+		
		i	Z	54 16	4			+10		
		iPcP	Z	55 02	3			+10		
		i	VV'	55 03	1½			-		
		i	N	58 12	4	+3				
		iS	N	58 24	7	-10				
		i	E	58 30	6		+6			
		i(sS)	N	58 44	7	+16				
		e	E	14 00 23	24					
		i	N	01 14	7	+19				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	AN	AE	AZ	Δ	Remarks
	1951			h m s	s	μ	μ	μ	km.	
202	Mar.16	i	E	14 01 33	7		+15			
cont.		iScS	E	02 51	4		-18			
		eL	E	03.0	33					
		eL	N	03.4	34					
		M	E	06.1	23		105			
		M	N	06.8	19	99				
203	16	iP	VV'	18 28 22	1½			+		Compression
		i	VV'	28 25	1½			-		
		i	VV'	28 29	1½			+		USCGS: 8.1S, 122.0E, H 18 21 12.2,
		i(S)	E	34 11	5		+2			h 43 km.ca.
		eL	E	39.9	30					
		M	E	41.6	27		13			
		M	N	42.3	21	16				
204	16	eL	N	20 19.9	16					USCGS: 23.6S, 176.0W, H 20 05 27.2, h 101 km.ca.
205	17	eP	V	04 58 14	1½					USCGS: 8.3S, 122.1E, H 04 51 10.4, h 93 km.ca.
		e	V	59 39	1½					
206	17	eP	V	20 16 47						USCGS: 24.3S, 176.6W, H 20 10 36.4,
		e(PPP)	V	17 57						h 79 km.ca.
		eL	E	26.0	20					No Galitzin record for nos.205,206.
	18	e	V	00 39 31	½					Local.
207	18	e	N	02 04 59	10					Masked by microseisms.
		eL	N	05.9	17					
		M	N	08.4	14	2				
		M	EZ	08.7	16		1	4		
208	18	iP	V	02 15 48	1½			-		Dilatation. Microseisms present.
		i	ZV'	15 50	4			+3		
		i	E	21 38	4		-2			USCGS: 8.2S, 122.0E, H 02 08 38.5,
		eL	E	27.3	30					h 35 km.ca.
		M	NEZ	29.8	20	7	4	4		
	18	e	V	05 07 18	¼					Local.
		e	V	07 34	½					
209	18	(iP)	Z	08 33 12	3			+2		Masked by microseisms.
		e	N	39 11	10					USCGS: 24.3S, 174.2W, H 08 26 49.0,
		eL	N	41.0	18					h 25 km.ca.
		eL	E	41.9	22					
		M	N	43.5	15	4				
		M	EZ	44.0	18		5	6		
210	18	i(P)	ZV	13 23 38	3			-2		Masked by microseisms.
		M	N	32.1	12	1				USCGS: 16.8S, 174.2W, H 13 16 09.2, h 25 km.ca.
211	18	iP	ZVV'	14 59 15	5			+61	2060	Compression
		i	NEV	59 18	5	+37	-21	+	18°5	After iP Galitzin record difficult
		iPP	NE	59 34	4	+*	-*			to read owing to overlapping.
		i	N	59 56	4	+*				* From Mainka.
		i	E	59 59	4		+*			USCGS: 49.9S, 163.3E, H 14 54 59.3,
		iS	E	15 02 37	14		-110			h 38 km.ca.
		i(LQ)	N	02 46	14	+140				
		i(SS)	Z	02 57	9			-220ca		
		M	E	04.6	12		650ca*			
		M	N	04.8	11	280ca*				
		M	V	05.0	10					
		eT	VV'	17 14	½					
		T max.	VV'	18.4	½					
		eW_2	EZ	17 58	22					
	18	i(P)	ZVV'	17 47 45	3			+2		Obscured by coda of no.211. USCGS: 7.6N, 126.9E, H 17 39 34.3, h 63 km.ca.

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No.	Date	Phase &	Component	Time (G.M.T.)	per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
212	Mar.19	iP	V	05 08 09	1			-		Dilatation
		iS	E	15 19	6		+2			USCGS: 6.4S, 105.5E, H 04 59 19.3,
		eL	N	25.5	28					h 120 km.ca.
		M	EZ	28.4	24		2	4		
213	19	iP	VV'	07 20 01	2			+	2530	Compression. Microseisms present.
		iP	Z	20 02	3			+5	22°8	h 0.00, H 07 15 00
		i	NZ	20 08	4	+4		-11		
		i	VV'	20 23	2			+		USCGS: 16.0S, 168.2E, H 07 14 57.4,
		iPP	NE	20 30	4	+2	+3			h 90 km.ca.
		iPPP	NE	20 39	4	+3	+3			
		i	N	23 59	5	-3				
		iS	E	24 03	6		+3			
		i	N	24 07	7	-7				
		i	E	24 09	7		+6			
		iSS	N	24 44	9	-14				
		i	E	24 50	8		+10			
		M	NZ	27.5	14	21		10		
		M	E	27.8	13		11			
214	19	i	VV'	07 59 41	1			-		Dilatation. Masked by coda of 213.
		i	Z	59 42	4			-5		USCGS: 2.3N, 127.4E, H 07 51 35,
										h 83 km.ca.
	19	i	VV'	12 09 49	1½			-		
		i	VV'	10 22	1½			+		
215	19	iP	ZVV'	12 10 52	4			+5	(2520)	Compression.
		iPP	N	11 19	4	-2			(22°7)	
		i	VV'	11 26	2			+		USCGS: 16.4S, 167.3E, H 12 05 47.7,
		i	Z	11 27	4			+5		h 16 km.ca.
		i	N	14 48	6	+2				
		e(S)	N	14 57	8					
		i	NE	15 03	7,5	+6	+3			
		i(SS)	N	15 36	9	-8				
		iSS	E	15 42	7		+5			
		eL	Z	16.7	21					
		M	N	18.4	14	7				
		M	Z	18.6	16			5		
		M	E	18.7	14		6			
	19	i(P)	V	12 54 30	1			+		Masked by coda of no.215.
										USCGS: 8.1S, 121.9E, H 12 47 17.5,
										h 25 km.ca.
216	19	(iP)	Z	20 40 07						Masked by microseisms.
		eL	N	48.1	16					USCGS: 24.1S, 176.1W, H 20 33 55.7,
		M	N	50.8	15	3				h 39 km.ca.
		M	EZ	51.1	17		6	7		
217	20	iPKP	V'	06 35 11	1½			+		Compression. Microseisms present.
		M	EZ	07 20.4	18		2	4		USCGS: 11.5N, 86.3W, H 06 16 23.9,
										h 122 km.ca.
218	20	iP	VV'	15 59 41	1½			-	3780ca	Dilatation
		iP	NEZ	59 42	4	+3	+13	-31	34°ca	h 0.03 ca., H 15 53 17
		i	V	59 44	1½			+		
		i	Z	16 00 16	4			-5		USCGS: 18.4S, 175.2W, H 15 53 09.9,
		ipP	EZ	00 26	4		+3	-11		h 175 km.ca.
		isP	EZ	00 53	7		+12	-26		
		i	N	00 55	6	+7				
		iPP	NEZ	01 04	4	+5	+29	-47		
		isPP	N	01 52	4	-9				
		iPcP	N	02 10	6	+10				
		iPcP	E	02 11	6		+26			
		iS	NE	04 49	4	-17	+15			
		i	N	05 07	4	+13				
		iScP	Z	05 33	6			+24		
		i	Z	05 47	4			-15		
		i	N	05 52	6	+10				
		i	N	06 05	4	+11				
		i(SS)	N	07 26	7	-32				
		i	Z	07 33	7			+21		

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
218	Mar.20	i	N	16 07 36	7	+37				
cont.		i	N	08 13	7	+22				
		iScS	N	09 49	7	-56				
		iScS	E	09 52	6		+59			
		i(sScS)	E	11 29	7		+39			
219	20	iP	Z	23 48 49	6			+4	3450ca	Compression. Large microseisms
		iPP	EZ	49 53	7		-5	+9	31°ca.	present.
		iPPP	N	50 05	7	-4				
		i	N	50 57	4	+4				USCGS: 24.2S, 175.9W, H 23 42 33.9,
		e	E	53 55	13					h 25 km.ca.
		i	E	54 07	8		-7			
		i	Z	54 15	9			+11		
		i	N	54 38	6	-5				
		i	E	55 02	10		+14			
		iSS	N	55 40	9	+8				
		eL	Z	56.1	22					
		eL	N	56.6	16					
		M	NZ	24 00.4	13,16	95ca		125		
		M	E	00.6	16		85			
220	21	e	N	06 18.8						Masked by microseisms.
221	21	eL	N	06 40.3	16					Masked by microseisms.
		M	N	42.5	12	2				
222	21	e	N	07 53.3						Masked by microseisms.
	21	(iP)	VV'	09 27 24	1½					Masked by microseisms.
										USCGS: 21.8S, 178.9W, H 09 22 31.7,
										h 595 km.ca.
223	21	(P)	Z	19 59 30	4					Microseisms present.
		i	V'	59 32	1½			+		
		i	Z	59 37	3			+8		USCGS: 22.8S, 171.4E, H 19 54 44.4,
		i	Z	59 57	4					h 19 km.ca.
		i	NE	20 03 27	6	+3	+3			
		i(PcP)	Z	03 40	4			-3		
		eL	N	04.6	15					
		M	N	07.5	12	7				
		M	EZ	08.0	13		4	5		
		M	N	09.0	10	7				
224	22	eS	N	04 24 00	12					Masked by microseisms.
		eL	N	26.0	21					USCGS: 9.0S, 157.9E, H 04 14 03.4,
		M	E	29.6	11		9			h 41 km.ca.
		M	Z	30.5	11			5		
		M	N	30.7	10	5				
	22	(ePg)	V	06 32 38.5						Quarry blast ??
		i(Sg)	V	32 42	¼			-		
225	22	iP	Z	14 02 35	2			-2		Dilatation. Masked by microseisms.
										USCGS: 18.0S, 178.3W, H 13 56 59.5,
										h 610 km.ca.
226	22	(i)	V	17 46 02	1½					Masked by microseisms.
		eL	E	57.3	21					
		M	N	18 01.7	15	2				
227	22	eS	NE	21 37 32	7					Masked by microseisms.
										USCGS: 24.6S, 179.3E, H 21 28 41.6,
										h 517 km.ca.
228	23	i(P)	V	01 55 43	1½					Masked by microseisms.
		M	N	02 16.2	15	½				USCGS: 1.0S, 120.2E, H 01 47 27.6,
										h 10 km.ca.
229	24	(i)	VV'	23 43 33	1½					Masked by large microseisms.
		eL	E	51.9	?					USCGS: 2.6S, 141.9E, H 23 37 17.1,
		M	E	56.3	12		3			h 116 km.ca.
		M	Z	56.7	12			4		
		M	N	57.0	12	3				
	26	i	V	03 21 08	1½					Large microseisms present.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
230	Mar.26	(P)	Z	14 37 30						Masked by microseisms.
		e(S)	N	44 17	9					USCGS: 5.7N, 126.4E, H 14 29 23.8,
		e(SSS)	E	47 32	13					h 147 km.ca.
231	26	e	Z	20 35 33						Masked by microseisms.
		i	Z	35 40	3			-2		USCGS: 3.1S, 146.2E, H 20 29 05.7,
		e	E	40 33	?					h 25 km.ca.
		eL	E	44.1	27					
		M	E	47.3	16		7			
		M	NZ	50.3	13	7		9		
232	27	i	V	04 30 15	1½					Masked by microseisms.
		eL	E	42.8	19					USCGS: 4.8S, 125.1E, H 04 22 48.3,
		M	N	46.3	13	1				h 43 km.ca.
233	27			16.7	Waves.					USCGS: 30.7S, 179.3E, H 16 29 52.9, h 514 km.ca.
234	28	iP	NEZVV'	09 43 47	3	+1	-1	-5		Dilatation.
		i	NEZ	43 58	5	-12	+9	+41		H 09 35 56
		i	V	44 14	1½			+		
		i(pP)	NZ	44 23	3	+6		+30		USCGS: 0.2N, 123.6E, H 09 35 55.4,
		i	E	44 25	3		+14			h 83 km.ca.
		i	NEZ	44 34	4	+16	-17	-70		
		i	NE	44 47	7	+26	-26			
		i	NZ	45 53	8	+20		-50		
		i	E	45 55	8		-24			
		i	Z	46 25	4			+53		
		i	NE	46 28	11	+58	-51			
		i(S)	NE	50 01	12	-	+			
		i	Z	50 03	6			-42		
		iS	E	50 05	8		+54			
		i	NZ	50 11	7	+105		+47		
		i	E	50 50	10		+110			
		i	N	50 53	9	+82				
		i	N	51 00	9	-155				
		i	Z	51 01	7			+30		
		i(sS)	E	51 06	12		+155			
		i	N	53 08	10	-61				
		i(SS)	Z	53 19	8			+47		
		i(ScS)	N	53 30	7	+100				
		i	E	53 32	6		-105			
		i	Z	53 52	15			-175		
		i	E	54 04	10		+78			
		i(SSS)	E	54 19	12		+195			
		eL	Z	57.5	36					
		M	Z	10 02.1	24			490		
		eW_2	Z	12 25	27					
		eW_3		13 12	24					
235	28	iP	ZVV'	12 42 10	2			+4	9950	Compression
		iPcP	VV'	42 11	1½			-	89°5	h 0.00, H 12 29 15
		ipP	VV'	42 20	1/			-		
		isP	VV'	42 24	1½			+		USCGS: 51.7N, 176.2W, H 12 29 12.7,
		i	VV'	42 30	1½			-		h 60 km.ca.
		iSKS	N	52 39	4	+2				
		eS	E	52 56	7					
236	28			21.3	Waves					USCGS: 8.7S, 121.9E, H 20 54 40.3, h 76 km.ca.
	29	e	V	05 14 46	¼					Small local tremor.
		e	V	15 10	¼					
237	30	eP	V	08 56 56					4170	H 08 49 44
		ePP	E	58 27	6				37°5	
		eS	N	09 02 42	(13)					USCGS: 15.2S, 172.8W, H 08 49 45.6,
		e.	E	0254	13					h 25 km.ca.
		eLQ		05.5	19					
		M	N	10.5	12	6				
		M	E	12.1	16		9			
238	31			21.2	Long waves.					

A. Fynn, S.J. Director. P.F.Rheinberger.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
239	Apr. 1	iP	Z	15 32 13	6			+4		Compression. Large microseisms present.
		iSKS	NE	42 52	7	+2	-3			
		iPS	Z	45 15	(6)			-(6)		USCGS: 39.6N, 77.7E, H 15 18 22.8, h 21 km.ca.
		e(L)	N	58.8	20					
		eL	E	16 12.5	24					
		M	E	19.9	21		1			
		M	N	24.8	15	2				
		M	EZ	26.3	18		2	4		
	2	(iP)	V	02 55 19	1			+		Masked by large microseisms. USCGS: 30.6N, 138.4E, H 02 44 49.5, h 175 km.ca.
240	2			19.2	Surface Waves.					USCGS: 0.3S, 133.1E, H 18 47 21.0, h 85 km.ca.
241	2	i	E	22 28 14	5		-2			Masked by microseisms.
		eL	N	29.7	20					
242	4	i	Z	05 06 41	3			+3		Masked by microseisms.
		i	Z	07 17	3			-2		USCGS: 2.4S, 138.2E, H 04 59 24.8, h 99 km.ca.
		M	E	20.2	15		½			
	4	(P)	V	07 53 50						Masked by microseisms. USCGS: 19.6S, 177.1W, H 07 47 48.1, h 276 km.ca.
243	4	i	VV'	10 00 42	1½				+	Masked by microseisms.
		(SKS)	N	11 32						USCGS: 40.1N, 77.8E, H 09 46 36.6, h 16 km.ca.
		eLR	Z	37.8	42					
		M	Z	42.7	35			12		
		M	E	43,2	33		5			
		M	N	43.9	30	4				
244	4	i	ZVV'	10 40 41	2			+2		Compression. Masked by surface waves of No.243.
		i	VV'	41 05	1½			-		USCGS: 5.9S, 149.4E, H 10 35 11.1, h 124 km.ca.
		M	N	50.6	20	3				
		M	E	51.9	15		4			
		M	Z	53.0	15			5		
	5	e	V	01 58 28						Small local tremor.
		i(Sg)	V	58 30	½			+		
245	5	iP	VV'	21 34 29	1½			+		Compression. Microseisms present.
		i	N	34 32	4	-2				USCGS: 52.2S, 160.0E, H 21 30 00.4, h 47 km.ca.
		i	ZV	34 34	3			+3		
		(eS)	N	37 50	7					
		iL	E	38 23	10		-4			
		M	E	38.8	13		2			
		eL	Z	38.9	20					
		M	N	41.2	10	2				
246	6	(P)	V	14 15 21						Masked by microseisms.
		M		40						USCGS: 2.2N, 97.2E, H 14 05 00.3, h 25 km.ca
247	6	P	V	15 38 21	1½					Microseisms present.
		i	V	38 34	1			+		USCGS: 20.3S, 169.4E, H 15 33 38.6, h 121 km.ca.
		i	Z	39 04	4					
		e	NE	42 20	6					
248	6	M	NE	19 16	19	½	½			USCGS: 27.8N, 56.7E, H 18 12 40.7, h 109 km.ca.
	6	(i)	Z	22 37 02	3			-2		USCGS: 1.9N, 96.5E, H 22 26 29.6, h 25 km.ca.
	7	i	V	17 44 46	1½			+		USCGS: 19.5S, 177.1W, H 17 37 09.6, h 355 km.ca.
249	8	iP	Z	16 04 38	4			-2		Dilatation.
		i(sP)	Z	04 52	4			+4		h (0.00)
		i	NE	04 58	4	+2	+2			USCGS: 18.2S, 168.6E, H 15 59 49.2, h 120 km.ca.
		i	Z	05 16	4			+3		
		eS	N	08 29	10					
		i(sS)	E	08 41	7		-3			
		i(sS)	N	08 42	7	+7				
		i	Z	08 47	6			+6		(Continued on next page)

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
249	Apr. 8	i	N	16 09 10	9	+5				
cont.		eL	E	09.9	19					
		eLR	Z	10.3	24					
		i	N	11 33	4	+3				
		N	EZ	11.7	19		4	5		
		M	N	13.7	15	2				
250	8	(iP)	V	18 13 15	1½			-	10.780ca.	Microseisms present.
		eP	Z	13 23	4				97°ca.	
		e(PP)	Z	17 24	6					USCGS: 38.2S, 72.7W, H 17 59 46.7,
		iSKS	NE	23 53	5	-2	+2			h 60 km.ca.
		eS	E	24 31	8					
		ePS	N	26 08	15					
		eSS	E	31 16	18					
		eSSS	E	35 10	21					
		eLQ	E	40.8	27					
		eLR	N	44.4	28					
		eLR	Z	44.5	28					
		M	EZ	48.1	19		5	9		
		M	N	49.8	18	5				
	8	(P)	V	19 30 03						Masked by coda of No.250.
		e(S)	N	39 02						USCGS: 37.6N, 140.3E, H 19 18 54.8,
										h 189 km.ca.
251	8	(eP)	Z	21 45 22						Masked by microseisms.
		eS	NE	52 05	11					USCGS: 14.8N, 145.1E, H 21 36 41.6,
		e	E	52 49	6					h 105 km.ca.
		i(ScS)	E	55 03	4		+2			
		iSS	E	55 49	7		+3			
		eSSS	E	57 11	12					
		eLR	E	59.0	22					
		M	NE	22 04.1	14	1	1			
	9	i	VV'	01 01 19	1½			+		
252	9	i	VV'	08 53 44	1½			+		Masked by microseisms.
		i	VV'	54 08	2			+		USCGS: 17.4S, 176.7W, H 08 46 31.3,
		M	N	09 04.7	12	2				h 55 km.ca
253	9	iP	VV'	09 26 08	1			-	2720ca	Dilatation
		i	V	26 11	1			-	24°5ca	h 0.09 ca., H 09 21 33
		iS	N	29 48	6	-1				USCGS: 26.0S, 178.4E, H 09 21 29.0,
		iScS	NE	35 52	5	-2	+3			h 655 km.ca.
254	9	eP	Z	15 45 41	4				7100	H 15 35 04
		i	VV'	45 46	1½			-	63°9	
		i	Z	45 50	6			+5		USCGS: 24.1N, 122.2E, H 15 35 05.4,
		i	VV'	45 55	2			+		h 13 km.ca.
		i	Z	45 59	3			+5		
		i	Z	46 03	6			+10		
		i	Z	46 26	3			+5		
		i	VV'	47 22	2			+		
		i(PP)	NZ	48 11	4	-2		+5		
		i	VV'	48 17	2			+		
		iPPP	EZ	49 33	4		-2	+4		
		i	N	49 35	4	-2				
		eS	E	54 16						
		iS	NE	54 20	7	-9	+7			
		i	Z	54 25	7			+11		
		iPS	Z	54 33	7			-18		
		iPPS	NE	54 44	7	+4	-5			
		iScS	N	55 36	6	+6				
		iSS	N	58 27	8	+8				
		e(SSS)	Z	16 01 05	13					
		e	Z	01 33	18					
		e	N	01 43	12					
		eL	E	03.8	27					
		M	NZ	12.5	19	9		12		
		M	E	14.8	18		12			

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
	Apr.10	i	VV'	17 46 29	1½			-		Masked by microseisms.
										USCGS: 17.5S, 178.8W, H 17 40 26.6,
										h 618 km.ca.
255	10	(i)	Z	19 47 23	2					Masked by microseisms.
		e	N	53 27						USCGS: 0.2S, 132.9E, H 19 40 15.9,
		e	E	53 31						h 36 km.ca.
		e	N	56 06						
		eL	E	59 48	25					
		i	N	20 02 31	6	+5				
		M	NEZ	04.6	15	5	8	13		
	11	i(Pg)	V	06 02 18½	+			+		Compression. Quarry blast ?
		i(Sg)	V	02 21½	½			-		
	11	i	V	07 31 33	(½)			-		
		i(Sg)	V	31 35½	1			+		
256	11	(iP)	Z	16 16 06	3			-1		Masked by microseisms.
		(iPP)	VV'	16 25	2			-		USCGS: 22.4S, 169.9E , H 16 11 33.3,
		M	N	24.1	13	½				h 58 km.ca.
	11	(iP)	V	18 40 06				+		Masked by microseisms.
										USCGS: 8.8S, 117.4E, H 18 32 45.0,
										h 182 km.ca.
257	12			11.7	Long waves.					
258	12	(iP)	Z	17 25 42	3			+3		Masked by microseisms.
		i	Z	26 05	3			+3		USCGS: 0.3N, 123.8E, H 17 17 55.3,
		i(sP)	VV'	26 21	1			+		h 122 km.ca.
		i(ScS)	N	35 29	4	-2				
259	12	e(PS)	Z	22 50 56	13					(USCGS: 13.1N, 88.9W, H 22 20 33.6,
		e	E	51 24	13					h 122 km.ca)
		M	EZ	23 18	27		2	6		
260	13	(iP)	Z	16 48 27						Masked by microseisms.
		eSKS	N	59 08	6					USCGS: 40.1N, 77.8E, H 16 34 39.1,
		eSKS	E	59 15	6					h 19 km.ca.
		ePS	EZ	17 01 33	18					
		eSS	E	07 06	20					
		i	Z	07 31	3			+2		
		e	E	14 52	15					
		e	N	14 55	19					
		eL	N	25.1	40					
		eL	E	26.3	45					
		eL	Z	26.6	43					
		M	Z	31.9	30			16		
		M	N	32.0	28	9				
		M	E	32.3	28		10			
		eW_2	NZ	18 52.3	19					
		M	EZ	57.2	19		1	2		
261	14	iP	V	12 49 15	1½			+		Compression. Microseisms present.
		iPP	V	50 56	1½			+		USCGS: 10.2N, 143.6E, H 12 41 02.5,
		iPPP	V	51 38	1½			+		h 25 km.ca.
262	14	eL	N	14 20	15					
263	15	eL	E	09 48.4	20					USCGS: 32.2S, 178.9W, H 09 36 24.4,
										h 131 km.ca.
	15	i	VV'	21 46 27	1½			+		
264	16	(iP)	V	12 11 53	2			+		Masked by microseisms.
		e	N	17 00	9					USCGS: 3.5S, 149.5E, H 12 05 53.8,
		e(LQ)	E	18.6	17					h 109 km.ca.
		i	E	19 51	6		+4			
		eL	E	20.1	25					
		eL	Z	21.2	27					
		M	NZ	24.3	18	4		9		
		M	E	25.1	13		8			
		i	Z	26 14	4			+5		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
265	Apr.16	M	NEZ	23 34.7	16	3	1	6		USCGS: 3.4S, 135.6E, H 23 12 52.2, h 64 km.ca.
266	18	i	N	04 00 54	4	+1				Masked by microseisms.
		eL	N	02.4	16					
267	18	L	N	06 44						
268	18	eL	E	14 01.4	20					USCGS: 6.3S, 131.5E, H 13 44 08.7, h 67 km.ca.
269	19			00.8	Waves.					
	19	(iP)	Z	03 55 12						Masked by microseisms. USCGS: 8.7S, 123.6E, H 03 43 10.1, h 25 km.ca.
	19	i	VV'	06 02 10	1½			+		
270	19	i	V	07 44 09	1½			+		Masked by microseisms. USCGS: 18.2S, 168.2E, H 07 39 12.8, h 98 km.ca.
		i(S)	N	48 04	6	-2				
		i	E	48 06	6		-1			
		i	N	48 19	6	-2				
		eL	Z	49.8	24					
		M	EZ	51.5	18		1	1		
		M	N	51.9	16	½				
	19	i	Z	13 06 29	3			+2		Masked by microseisms.
		e	E	10 39	7					
271	19	e(S)	NE	20 41 48						Masked by microseisms. USCGS: 44.6N, 150.2E, H 20 19 46.4, h 27 km.ca.
		eL	N	59.1						
	20	e(Pg)	V	06 25 06	¼					Quarry blast ?
		i(Sg)	V	25 10	½			-		
		i	V	25 12	¾			+		
	20	i	VV'	07 43 35	1½			-		
		i	Z	43 36	3			-2		
272	20	(P)	Z	19 24 54						Masked by microseisms. USCGS: 32.9S, 178.8W, H 19 19 29.7, h 58 km.ca.
		i(PP)	VV'	25 29	1½			-		
		i(PP)	Z	25 30	3			-3		
		e	Z	29 59	7					
		e	E	30 25	9					
		eL	Z	31.7	21					
		M	N	33.4	16	2				
		M	EZ	34.0	18		3	5		
273	20	iP	Z	21 46 17	4			+2		Compression. Microseisms present. USCGS: 15.2S, 173.7W, H 21 39 07.0 h 25 km.ca.
		i	EZ	47 47	4		-2	+2		
		i	EZ	48 04	4		-4	+7		
		i	Z	48 29	4			-4		
		e	E	52 20	15					
		eLQ	E	54.7	22					
		eLR	E	56.5	28					
		eL	Z	56.8	27					
		M	E	59.3	18		2			
		M	Z	59.5	18			4		
		M	N	59.8	12	2				
	21	(iP)	V	02 57 20	1½			+		Microseisms present. USCGS: 6.9S, 129.0E, H 02 50 41.7, h 118 km.ca.
		(i)	V	57 27	1½			+		
274	21	eL	Z	14 02.1	18					
275	21	M	Z	20 14	21					USCGS: 48.1N, 154.6E, H 19 30 36.8, h 23 km.ca.
276	21	i	N	20 32 53	4	+1				USCGS: 47.7N, 154.6E, H 20 10 38.3, h 27 km.ca.
		M	NZ	54.0	21	½		2		
		M	E	54.8	19		½			

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AN	Amplitude AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
277	Apr.22	(i)	V	00 36 26	1½					Masked by microseisms.
		i	Z	37 44	4			-2		
		i	VV'	40 21	1½			-		
		e(S)	E	41 38	7					
		i(S)	N	41 39	6	+1				
		e	N	42 12	9					
		eL	E	43.6	36					
		eL	Z	45.4	31					
		M	E	47.8	18		9			
		M	N	48.5	18	6				
		M	Z	49.1	16			9		
278	22	eP	ZVV'	19 05 29	2					Microseisms present.
		i	VV'	05 33	1½			+		USCGS: 3.5S, 150.1E, H 18 59 23.2,
		iS	N	10 31	6	+1				h 91 km.ca.
		e	E	13 15	13					
		eL	E	13.6	22					
		eL	NZ	15.4	21					
		M	E	18.1	14		8			
		M	N	18.7	13	4				
		M	Z	19.0	15			6		
279	23	iP	VV'	05 24 49	1½			-		Dilatation.
		iP	Z	24 50	4			+5		Compression.
		i	Z	25 24	4			+3		USCGS: 26.2N, 129.8E, H 05 14 31.1,
		i	VV'	25 28	1½			+		h 110 km.ca.
		e	E	33 26	(20)					
		e	N	33 37	(20)					
		eL	E	43.0	28					
		eL	Z	45.7	31					
		M	E	48.8	19		1			
		M	N	49.1	19	2				
		M	Z	49.7	21			3		
280	23	eP	Z	09 13 41	5					Microseisms present.
		iPcP (pP)	VV'	13 51	1½			+		
		i	NZ	13 52	5	-2		+9		USCGS: 44.6N, 150.2E, H 09 01 41.8,
		i	ZVV'	13 59	4			+6		h 44 km.ca.
		i	N	14 01	5	+2				
		i	Z	14 15	6			+9		
		e(S)	N	23 32						
		iSKS	NE	23 42	7	-7	-10			
		i	Z	23 45	7			+8		
		i(ScS)	N	23 58	7	+9				
		i	E	24 05	7		+6			
		i	N	24 11	7	+9				
		ePPS	N	24 35	12					
		e(SS)	E	28 26	18					
		e(SS)	N	28 42	19					
		eLQ	E	34.6	21					
		eG	E	35.2	28					
		eL	Z	40.3	25					
		M	NZ	42.0	20	12		15		
		M	E	45.7	20		8			
		M	Z	48.8	19			17		
		W_2	Z	11 31	18					
281	23	i	V	17 03 35	1			+		Masked by microseisms.
		i	Z	03 45	3			+2		USCGS: 44.5N, 150.1E, H 16 51 03.6,
		e	E	12 58	12					h 76 km.ca.
		e	N	12 59	12					
		e(L)	N	30.7	20					
		M	E	38.9	18		½			
		M	Z	39.5	18			1		
		M	N	40.5	16	½				
	23			20 16	Long Waves.					
	23	(eP)	V	20 56 11						Masked by large microseisms.
										USCGS: 51.9N, 170.9W, H 20 43 08.7,
										h 36 km.ca.

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
	Apr.25	(iP)	VV'	02 39 11	1½			-		Masked by very large microseisms.
		(i)	VV'	41 01				+		USCGS: 0.7S, 124.1E, H 02 31 44.2,
										h 200 km.ca.
282	25	(iP)	Z	11 22 09	3			+4		Masked by very large microseisms.
		i	Z	22 18	4			+9		USCGS: 32.7S, 178.5W, H 11 16 41.4,
		e(PP)	E	22 48	9					h 45 km.ca.
		e(SS)	E	27 39	10					
		eLR	Z	29.2	23					
		eLR	E	29.4	22					
		M	N	30.8	16	7				
		M	EZ	31.1	19		12	20		
283	26	i	Z	06 26 30	3			+4		Masked by large microseisms.
		e(S)	N	30 55	9					USCGS: 5.7S, 151.1E, H 06 20 23.5,
		e	N	31 15	12					h 34 km.ca.
		M	E	37.4	13		2			
		M	NZ	38.2	16	4		7		
	26	(P)	V	17 01 14	1					Masked by microseisms.
										USCGS: 0.2N, 124.1E, H 16 53 29.4,
										h 135 km.ca.
	27	(iP)	V	00 30 48	1			-		Masked by microseisms.
										USCGS: 25.3S, 180°, H 00 25 48.7,
										h 504 km.ca.
284	26	e	Z	07 51 12						Masked by large microseisms.
		e(S)	E	08 00 54	13					USCGS: 44.6N, 149.9E, H 07 38 54.1,
		i	N	01 25	4	+2				h 20 km.ca.
		eLQ	E	11.7	20					
		M	EZ	26.8	18		3	3		
285	29	eL	E	06 55.5						USCGS: 49.8S, 126.8E, H 06 44 15.6,
										h 119 km.ca
286	29	ePP	Z	09 38 05	4					
		iSKS	N	44 15	3	+1				USCGS: 40.6N, 127.5W, H 09 19 28.3,
		ePS	E	47 29	(12)					h 26 km.ca.
		eSS	N	53 09	10					
		i	N	53 42	5					
		eLR	Z	10 08.0	30					
		M	EZ	13.0	19	1	1			
287	30	eL		00 23.8						USCGS: 49.6S, 117.0E, H 00 10 18.5,
										h 25 km.ca.
288	30	(eP)	V	11 27 29						Masked by microseisms.
		(eS)	E	37 09						USCGS: 44.6N, 149.7E, H 11 15 19.8,
		e	N	37 12						h 70 km.ca.
		eL(Q)	E	48.1	18					
		eL	N	54.4	(21)					
		M	NZ	12 02.0	18	1		1		
289	30	(iP)	V	14 55 13	1½			+		
		i	VV'	55 18	1½			+		USCGS: 15.3S, 174.4W, H 14 48 11.5,
		e	E	56 48	4					h 25 km.ca.
		eS	E	15 00 51	9					
		e	N	03 30	8					
		eL	NE	03.6	20					
		eL	Z	04.6	24					
		M	N	05.8	15	7				
		M	EZ	07.5	17		4	5		
		M	N	08.3	12	8				
		M	EZ	11.1	16		6	9		

A. Fynn, S.J.
Director.

P.F.Rheinberger.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
	May 1	e	V	08 25 10	½					Small local tremor ??
	1	(iP)	V	11 14 21	1½			+		Masked by microseisms.
										USCGS: 2.8N, 127.5E, H 11 06 26.0,
										h 135 km.ca.
	2	i(P)	V	01 09 44	½			+		Small local tremor.
		i	V	09 55	½			-		
		i	V	09 59½	½			+		
	2	e	V	01 12 40						Small. Local.
		(e)	V	01 56 03						Small. Local.
		i	V	56 05	½			+		
290	2	i(P)	V	19 45 28	1½			+		Masked by microseisms.
		eL	E	52.3	21					USCGS: 27.5S, 176.7W, H 19 39 38.2,
		M	N	54.0	13	4				h 77 km.ca.
		M	EZ	55.0	17		7	11		
291	2	(iP)	VV'	20 55 00						Masked by microseisms.
		i	VV'	55 06	1½			+		
		i	Z	55 10	(6)			-(6)		
		i	V	55 27	1½			+		
		eL	Z	21 02.9	21					
		M	EZ	04.7	16		4	7		
		M	N	05.1	13	4				
292	2	iP	VV'	22 50 37	2			+		Compression
		iP	EZ	50 38	4		-2	+6		
		i(pP)	Z	50 48	6			+15		USCGS: 27.8S, 176.5W, H 22 44 44.3,
		i	EZ	50 55	6		-5	+7		h 47 km.ca.
		i	Z	51 23	6			+10		
		iPP	EVV'	51 28	4		+5	+		
		iPPP	Z	51 39	6			+14		
		i	EZ	51 46	4		-12	+6		
		i	N	51 59	6	+5				
		i	EZ	52 02	6		+10	-7		
		i	E	52 26	7		-7			
		i	Z	52 47	6			-7		
		i	Z	53 09	7			+13		
		i	Z	54 18	6			-6		
		i	E	54 29	8		-4			
		i	Z	54 35	7			-10		
		i	N	54 42	7	+6				
		i	E	54 52	8		+9			S cannot be identified.
		i	N	55 04	9	+6				
		i	Z	55 26	9			+10		
		i	E	55 43	8		-7			
		i	N	55 48	9	+10				
		i	E	56 03	9		+21			
		i	Z	56 05	9			+27		
		i	N	56 51	9	+13				
		eL	NE	57.2	18					
		eL	EZ	58.4	24					
		M	N	23 00.7	13	61				
		M	EZ	01.3	16		85	140ca.		
		M	E	02.7	15		87			
		M	Z	02.9	15			150ca.		
	3	e(PKP)	VV'	00 46 06	1½					USCGS: 1.0N, 26.4W, H 00 26 17.0,
										h 25 km.ca.
293	3	e	N	17 05 11						Masked by microseisms.
		eL	E	08.7						USCGS: 27.8S, 176.1W, H 16 54 11.4,
		M	EZ	11.2	16		2	2		h 49 km.ca.
294	3	eL	E	19 15						Masked by microseisms.
										USCGS: 27.7S, 176.0W, H 19 00 40.7,
										h 44 km.ca.
295	5	M	EZ	06 59	14		1	2		Masked by microseisms.
										USCGS: 27.7S, 176.4W, H 06 39 07.9,
										h 84 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
296	May 5	M	EZ	09 01.8	15		2	4		Masked by microseisms.
		M	N	02.5	13	1				USCGS: 27.3S, 176.4W, H 08 44 15.7, h 42 km.ca.
297	5	e(PP)	E	13 50 05	6					Masked by large microseisms.
		i	E	50 46	5		+6			USCGS: 27.8S, 176.1W, H 13 43 21.1, h 84 km.ca.
		i	N	54 35	8	+5				
		i	E	54 39	9		+9			
		i	Z	57 38	4			+9		
		M	NEZ	14 00.2		8	10	14		M_N per. 12s, M_{EZ} 16s.
		M	N	03.1	12	9				
		M	EZ	05.1	15		14	20		
298	5	M	EZ	15 45.7	18		2	5		Masked by large microseisms.
		M	N	46.4	12	2				USCGS: 27.3S, 176.1W, H 15 28 50.7, h 60 km.ca.
	5	(i)	Z	16 16 58	2			+4		Masked by large microseisms.
	5	(i)	Z	19 06 35	3			-6		Masked by large microseisms.
299	5	M	E	20 54.5	13		1			Masked by large microseisms.
	5	(iP)	ZVV'	20 52 45	2			+4		Masked by No.299 & microseisms. USCGS: 28.2S, 177.4W, H20 47 48.6, h 600 km.ca.
300	6	(iP)	V	23 18 20	1½			(+)		Masked by large microseisms.
		i	V	18 25	2			-		No Galitzin Z record.
		i(pP)	VV'	18 37	1½			+		USCGS: 17.2S, 167.9E, H 23 13 29.5, h 96 km.ca.
		i(PP)	V	18 54	1½			+		
		i(PPP)	VV'	19 02	2			+		
		i(S)	NE	22 29	6	-8	+2			
		i	E	22 42	7		-13			
		i	N	22 44	7	+7				
		i	N	22 51	6	+7				
		i(SS)	E	23 06	7		+10			
		i(SSS)	E	23 23	7		+6			
		eLR	E	23.9	24					
		M	E	26.0	18		8			
		M	N	27.5	13	5				
301	6	i(PPP)	VV'	23 45 30	1½			+		Masked by large microseisms.
		L	E	49.4	15					USCGS: 51.5S, 161.3E, H 23 40 54.7, h 21 km.ca.
		M	E	50.2	12		5			
		M	N	50.6	11	3				
302	7	iP	VV'	00 31 22	1½			+		Compression. Large microseisms present.
		i	VV'	31 33	2			+		
		i	VV'	31 44	1½			+		No Galitzin Z record.
		i	V	32 08	1½			+		
		e(S)	N	35 51	7					USCGS: 6.1S, 154.4E, H 00 25 40.8, h 123 km.ca.
		i	N	36 03	6	-7				
		e	E	36 09	15					
		i	N	36 25	5	+7				
		e	E	36 46	28					
		eL	E	37.9	30					
		M	N	41.8	13	20				
		M	E	42.0	13		28			
303	7	(iP)	VV'	04 40 18	1½			+		Masked by large microseisms.
		(i)	Z	40 44	4			+5		USCGS: 8.6S, 111.4E, H 04 32 14.5, h 113 km.ca.
		(iS)	E	46 41	4		+2			
		eL	E	53.7	(20)					
		eL	Z	54.2	21					
		M	N	56.1	15	3				
		M	E	58.5	24		5			
		M	Z	58.9	24			11		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
304	May 7	iP	VV'	10 30 58	1½			-		Dilatation. Large microseisms
		i	V'	31 03	2			-		present.
		ipP	ZV	31 23	4			+10		h 0.01
		i	V'	31 24	2			-		USCGS: 5.8N, 126.8E, H 10 22 43.7,
		e(S)	N	37 32	9					h 89 km.ca.
		e	E	37 39	9					
		e(PS)	E	37 53	8					
		e(sS)	E	38 13	10					
		iSS	N	40 55	7	-4				
		i	E	41 05	9		+6			
		i	N	41 10	7	+9				
		i	E	41 31	7		+6			
		i	N	41 43	5	+6				
		i	N	41 55	5	+5				
		eL	E	45.8	33					
		M	E	51.0	24		9			
		M	NZ	51.1	19	4		8		
305	8	M	E	08 45.4	13		1			Masked by microseisms.
		M	NZ	46.2	13	2		2		USCGS: 3.4S, 135.6E, H 08 24 45.7,
										h 41 km.ca.
306	8	e(PS)	E	19 51 57	(19)					Masked by microseisms.
		(eSS)	Z	57 37	(20)					USCGS: 24.3S, 69.7W, H 19 23 35.4,
		eLR	Z	20 14.3	(25)					h 48 km.ca.
	9	i	VV'	06 04 11	1½			-		Masked by microseisms.
307	9	(i)	ZVV'	08 21 07	3			+2		Masked by microseisms.
		eL	E	30.6	(22)					USCGS: 27.7S, 176.4W, H 08 16 08.2,
		M	Z	31.9	16			2		h 84 km.ca.
		M	E	32.6	16		1			
	9	i(P)	VV'	11 12 11	1½			+		Masked by microseisms.
										USCGS: 6.2S, 154.5E, H 11 06 26.2,
										h 110 km.ca.
	10	i(P)	ZVV'	06 20 07	2			+2		Masked by microseisms.
308	10	(iP)	VV'	10 12 22	1½			+		Masked by microseisms.
		M	E	26.5	18		1			USCGS: 15.8S, 172.3W, H 10 05 13.7,
										h 52 km.ca.
309	11	(i)	VV'	08 51 51	1½			+		Masked by large microseisms.
		eLR	Z	09 23.7	24					No EW Galitzin record.
		M	N	29.6	17	2				USCGS: 37.2S, 73.6W, H 08 38 27.1,
		M	Z	31.9	17			6		h 47 km.ca.
310	12	e	E	04 51 42						Masked by microseisms.
		eL	N	58.1	18					USCGS: 27.7S, 176.2W, H 04 44 28.6,
		M	N	05 00.4	13	2				h 60 km.ca.
		M	EZ	01.3	16		2	3		
	12	(iP)	V	06 31 34	1½			+		Masked by microseisms.
										USCGS: 11.7S, 167.3E, H 06 26 00.4,
										h 100 km.ca.
311	12			07 40	Waves-masked by microseisms.					USCGS: 28.2S, 176.2W, H 07 24 04.6,
										h 21 km.ca.
	12	(i)	VV'	16 56 06	1½					Masked by microseisms.
										USCGS: 11.5N, 141.5E, H 16 47 41.7,
										h 136 km.ca.
312	13	(iP)	VV'	13 47 40	1					Masked by microseisms.
		e	E	52 40						USCGS: 27.8S, 176.2W, H 13 41 48.1,
		M	EZ	59.7	15		2	3		h 32 km.ca.
		M	N	14 00.0	13	2				
313	13	(iP)	V	14 24 39	1			+		Masked by microseisms.
		i	V	24 44	1½			-		USCGS: 27.9S, 176.0W, H 14 18 42.4,
		i(S)	E	29 25	9		+5			h 25 km.ca.
		eL **	N	31.5	15					** i E 14 30 04 per.9s, +6μ
		eL	E	33.0	19					
		eL	Z	33.2	21					
		M	E	36.4	15		10			
		M	Z	36.8	15			13		
		M	N	36.9	13	7				Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
313	May 13	M	Z	14 38.8	15			18		
cont.		M	EZ	40.4	15		14	19		
		M	N	41.5	12	9				
314	13	iP	ZVV'	14 58 34	3			-5		Dilatation
		i	VV'	59 22	1½			+		h 0.08 ca.
		i(pP)	VV'	15 00 05	1½			-		USCGS: 17.5S, 178.8W, H 14 52 55.3,
		i	Z	00 06	4			+5		h 556 km.ca.
		iS	NE	03 04	4	-2	-3			
		i(ScS)	N	08 08	3	+2				
315	13	e	Z	16 01 32	4					Masked by microseisms.
		M	Z	34.2	18			1		USCGS: 43.4N, 147.8E, H 15 49 29.6,
										h 31 km.ca
316	14	i(P)	ZV	00 17 24	3			+2		Compression. Microseisms present.
		i	Z	17 37	4			+2		USCGS: 39.6S, 176.8E, H 00 12 33.6,
		i	N	21 34	4	+2				h 40 km.ca.
		i	N	21 46	7	+3				
		eL	E	23.2	22					
317	14	i(P)	Z	02 49 13	3			+2		Compression. Masked by microseisms.
		e	E	54 48	11					USCGS: 27.9S, 176.3W, H 02 43 22.7,
		eL	E	57.5	22					h 47 km.ca.
		M	EZ	13 00.5	16		3	3		
		M	N	01.2	12	2				
	14	i	Z	03 13 05	4			+3		Confused by microseisms and coda
		i	VV'	14 01	1½			+		of no.317.
318	14	i(P)	VV'	13 45 11	1½			+		Masked by microseisms.
		i	Z	45 51	4			+4		
		eL	E	53.3	19					
		M	EZ	57.1	15		1	2		
	15	e	V	03 47 06	½					Masked by microseisms.
319	15	iP	ZVV'	19 17 14	2			+4	2580	Compression.
		i	ZVV'	17 24	3			-3	23°.2	h 0.005, H 19 12 12
		ipP	VV'	17 29	1½			-		
		isP	VV'	17 35	1½			+		USCGS: 15.3S, 166.6E, H 19 12 10.8,
		iPP	ZV	17 44	4			+5		h 58 km.ca.
		eS	E	21 17	6					
		i	N	21 19	5	+2				
		i	E	21 54	6		+4			
		iSS	N	22 04	7	+4				
		eL	E	23.1	24					
		eL	Z	23.5	22					
		M	EZ	24.8	18		3	6		
320	15	iP	VV'	19 54 17	1			+		Compression. Microseisms present.
		i	VV'	54 27	1			+		USCGS: 15.4S, 166.4E, H 19 49 18.4,
		i	V	54 40	1½			+		h 107 km.ca.
321	15	(iP)	ZVV'	20 58 59	3			+2		Masked by microseisms.
		i	VV'	59 23	1					USCGS: 20.0S, 177.2W, H 20 53 05.3,
		i	E	21 03 49	4		+2			h 89 km.ca.
		(iS)	N	04 15	5	+2				
	16	e	V	01 57 31						Local.
		i	V	57 33	¼			+		
322	16	eP	V	06 53 58	½					
		i	V	53 59	¾			+		
		iPP	V	54 06	1			+		
		i	VV'	54 09	¾			+		
		iPPP	V	54 12	¾			+		
		i	V	54 24	1			+		
		e(S)	V	54 46						
		i	NEZVV'	55 04½	1½	-1	-2	+2		
		i	VV'	55 11	1½			-		
		M	VV'	55 51	3					
323	16	(i)	Z	14 49 56	6			+4		Large microseisms present.
		e(L)	E	57.8						

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ.	Remarks
	1961			h m s	s	μ	μ	μ	km.	
324	May 16	(iP)	Z	17 33 15	4			+2		
		i	Z	34 28	4			+3		USCGS: 27.9S, 176.4W, H 17 27 34.1, h 53 km.ca.
		i	E	34 35	5		+3			
		i	E	38 53	7		+4			
		eL	E	41.1	?					
		M	EZ	44.1	18		5	8		
		M	N	47.6	13	3				
		M	EZ	47.9	15		6	10		
325	16	eP	VV'	21 56 12	2					
		i	VV'	56 16	2			+		USCGS: 30.0N, 132.0E, H 21 45 24.0, h 25 km.ca.
		i	VV'	56 26	1½			+		
		i	ZVV'	56 31	4			-2		
		e	N	22 05 14	10					
		eLR	E	16.0	22					
		M	E	22.1	18		2			
		M	Z	26.5	18			3		
326	17	eP	Z	19 42 14	3				9800	H 19 29 20
		i	Z	42 20	4			+6	88°2	
		i	V	42 25	2			+		USCGS: 52.0N, 173.9E, H 19 29 19.3, h 21 km.ca.
		eSKS	N	52 42	9					
		iS	E	52 58	6		-3			
		i	Z	53 03	4			+3		
		iScS	N	53 04	4	+2				
		e	Z	54 23	15					
		e(SS)	E	58 41	13					
		e	E	59 06	23					
		e	E	20 05 12	13					
		eLR	Z	10.7	33					
		eL	E	12.3	24					
		M	NZ	17.5	19	1		7		
		M	E	18.0	19		4			
	18	ePg	V	06 14 14½						Quarry blast ?
		iSg	V	14 18	½			+		
		i	V	14 21½	¾			+		
327	18	(iP)	V	20 45 57	2			+		Masked by microseisms.
		i	V	46 13	1½			+		USCGS: 4.6N, 125.7E, H 20 37 57.0, h 126 km.ca.
		M	E	56.3	13		1			
328	19	eL	E	04 01	191					USCGS: 15.8S, 172.8W, H 03 42 31.2, h 25 km.ca.
	19	i	V	23 25 51	½					Local.
		i	VV'	25 58	¾			+		
	20	e	V	00 33 01						Local.
		i	V	33 09½	½			+		
	20	i	V	01 20 39	½			-		Local.
	20	e	V	02 16 39	½					Local.
	20	e	V	05 41 59						Local.
		i	V	42 01½	¾			-		
329	20			18 51	Waves.					
330	21	iP	VV'	21 17 50	1			-		Dilatation. USCGS: 2.0N, 127.0E, H 21 10 01.6, h 103 km.ca.
331	21	iP	V'	21 40 19				-		Dilatation.
		iP	NEZ	40 19½	(1)	-(57)	-(48)	-		Damage at Bowral & Robertson, N.S.W.
		(S)	NE	40 31	?					Felt in Sydney.
		M	NE	40.6	?					USCGS: 34.3S, 150.4E, H 21 40 03.2, h 27 km.ca.
332	22	P	V	04 23 50	¼					Small aftershock of No.331 ??
		i(S)	VV'	24 01	½			+		
333	22	eL	E	11 57.3	22					

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
334	May 22	iP	EZVV'	13 51 04	4		-2	+3		Compression
		i	V	51 47	2			+		USCGS: 21.3S, 174.4W, H 13 44 35.8,
		i	Z	51 49	4			+3		h 97 km.ca.
		i	E	55 44	4		-2			
		i	NE	58 28	6	-2	-2			
		i	N	59 35	9	+4				
		eL	E	14 01.5	22					
		M	N	01.9	14	18				
		M	EZ	03.0	19		23	35		
		M	N	03.3	13	18				
335	22	iP	VV'	17 38 36	2			+		Cpmpression.
		iP	Z	38 37	4			+4		USCGS: 22.8S, 176.1W, H 17 32 21.6,
		i	VV'	38 41	1½			+		h 35 km.ca.
		i(pP)	VV'	38 55	1½			+		
		i(pP)	Z	38 56	4			+6		
		i(sP)	Z	39 09	3			+5		
		i	VV'	39 12	2			+		
		iPP	Z	39 49	4			+10		
		iPP	EVV'	39 50	4		-7	-		
		iPPP	EZ	40 04	4		-5	+7		
		i	V'	40 14	3			-		
		i	V'	40 22	3			+		
		e(S)	E	43 19	9					
		i(S)	E	43 35	10		-4			
		i	Z	43 52	4			+5		
		i	E	44 00	11		+9			
		e	N	45 05	10					
		i	Z	45 15	4			-4		
		eL	Z	45.7	33					
		eL	E	46.3	36					
		M	NEZ	48.0		30	36	60		M N per. 16s, M EZ per. 22s.
		i(ScS)	N	49 14	4	+3				
336	22	iP	V	23 52 49	1½			-		Dilatation. Masked by microseisms.
		eL	N	59.2						USCGS: 22.6S, 177.0W, H 23 47 03.2, h 526 km.ca.
337	23	iPKP	Z	03 04 31	5			+4		Compression.
		i	VV'	04 34	1½			-		USCGS: 36.4N, 28.3E, H 02 45 16.0,
		iPP	V'	06 58	2			-		h 49 km.ca.
		i	VV'	07 59	2			+		
		i	Z	08 00	4			+4		
		ei	E	08 01	7		-2			
		i	Z	08 24	5			+4		
		i(SKKS)	N	13 55	5	+2				
		i(SKKS)	E	14 01	6		+2			
		e(PS)	E	17 14	10					
		eSS	E	25 08	13					
	**	e	E	27 06	13					
		eL	E	45.3	(27)					eSSS E 03 30 02 per.25s.
		eLR	E	51.7	37					
		eL	Z	52.5	31					
		M	N	59.4	24	4				
		M	Z	04 01.5	22			8		
		M	E	01.8	22		6			
	23	i	VV'	03 59 30	2			-		USCGS: 9.8N, 84.0W, H 03 40 26.1, h 136 km.
338	23	eL	E	06 06.6	16					
		M	NE	08.2	12	2	2			
		M	Z	08.7	12			2		
339	23	e(PKP)	VV'	17 03 45	1					USCGS: 12.6N, 87.3W, H 16 44 59.4,
		e(PS)	Z	15 24	10					h 138 km.ca.
		eL	Z	43.5	25					

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
340	May 24	iP	V'	17 25 28	2			+		Compression. Microseisms present.
		i	V	25 29	2			+		
		eL	E	37.0	(27)					USCGS: 8.2S, 121.8E, H 17 18 17.6,
		i	N	38 03	6	+4				h 36 km.ca.
		M	N	43.4	15	5				
		M	EZ	43.7	15		2	3		
	25	i	V	06 29 20	½			-		Local. Quarry blast ??
		i	VV'	29 23½	¼			+		
	25	(iP)	Z	09 29 16				+		Masked by microseisms.
										USCGS: 31.3N, 139.9E, H 08 48.4,
										h 171 km.ca.
	25	(iP)	VV'	17 39 50	1½			-		Masked by microseisms.
										USCGS: 22.7S, 176.1W, H 17 33 44.6,
										h 25 km.ca.
341	26	eL	E	05 18						USCGS: 32.7S, 109.1W, H 04 36 08.5,
										h 43 km.ca.
342	27	e(L)	N	17 23.3						Masked by microseisms.
		eL	EZ	26.4	24					USCGS: 0.8N, 98.5E, H 16 52 19.3,
		M	EZ	30.8	20		1	2		h 39km.ca.
		M	N	31.2	17	1				
343	28	(i)	VV'	02 35 58	1½					Masked by microseisms.
		M	N	48.4	?					USCGS: 4.9S, 145.0E, H 02 30 20.8,
		M	E	49.5	?					h 59 km.ca.
344	28	(eP)	V	04 09 07	1					Masked by microseisms.
		i	Z	09 26	2			+2		USCGS: 5.4S, 102.4E, H 03 59 53.5,
		M	N	29.9	16	½				h 74 km.ca.
		i	N	30 48	7	+2				
		M	EZ	32.8	21		1	1		
345	28	eL	E	12 56.1						
346	29	eL	Z	08 13.3						Masked by microseisms.
	29	(iS)	E	10 48 02	4		+2			Masked by microseisms.
		(iS)	N	48 03	4	+2				USCGS: 27.7N, 141.7E, H 10 29 27.8,
		(i)	N	48 50	4	+2				h 25 km.ca.
347	29	(i)	V'	11 45 01	2			+		Masked by microseisms.
		e(L)	Z	52.3	(21)					
	30	i	VV'	14 48 13	1½			+		Large microseisms present.
	31	e	V	12 48 29	2					Microseisms present.
	31	(i)	VV'	13 28 03	1½			+		Microseisms present.
		(i)	N	33 54	4	+2				
348	31	eL	E	15 15.9						Masked by microseisms.
										USCGS: 48.9N, 154.5E, H 14 39 20.4,
										h 50 km.ca.
349	31	(eP)	Z	19 21 49	7					Confused by microseisms.
		e	NE	21 56	8					USCGS: 5.3S, 151.6E H 19 15 57.0,
		i	V'	22 00	2			+		h 56 km.ca.
		i	ZVV'	22 05	3			+2		
		e	Z	23 24	9					
		e(S)	N	26 34	16					
		i	NZ	26 57	13	+15		-10		
		eL	E	27.2	24					
		eL	Z	29.6	36					
		i	E	29 43	7		+6			
		M	E	32.4	18		16			
		M	NZ	33.0	18	16		29		

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks.
	1961			h m s	s	μ	μ	μ	km.	
350	June 1	i(P)	V'	09 37 26	1½			-		Dilatation
		i	N	39 33	1½	+1				USCGS: 38.4S, 144.2E, H 09 35 35.2,
		i	V	39 43	1			+		h 28 km.ca.
		eL	NE	39.7	9					
		M	V	40 08	2					
351	1	(i)	VV'	13 40 32	1½			+		
		e	N	44 31	15					USCGS: 0.0°, 123.2E, H 13 32 50.9,
		e	N	45 38	12					h 312 km.ca.
	1	(iP)	VV'	18 55 08	1			+		USCGS: 6.7N, 123.1E, H 18 46 31.2, h 87 km.ca.
352	1	i	VV'	23 48 25	1½			+		
		iPP	ZVV'	49 16	3			+2		USCGS: 10.6N, 39.3E, H 23 29 21.1,
		ePS	E	58 35	15					h 51 km.ca.
		ePS	Z	58 39	9					
		eSS	E	24 05 06	18					
		e	E	05 24	33					
		eSSS	E	09 49	22					
		eLQ	N	16.4	30					
		eLR	EZ	22.9	39					
		M	N	29.6	21	11				
		M	EZ	31.0	21		15	22		
		M	N	34.6	19	5				
		M	Z	38.2	18			19		
		M	E	38.7	18		15			
		e(W_2)	E	25 27.5	30					
353	2	iPP	Z	05 10 42	4			+2		
		e	N	17 38	13					USCGS: 9.8N, 40.0E, H 04 51 10.4,
		ePS	E	20 24	19					h 41 km.ca.
		i	Z	20 47	7			-3		
		eSS	E	27 13	36					
		eSSS	E	31 07	32					
		eLQ	N	38.2	(30)					
		eLR	Z	44.7	(40)					
		M	N	51.8	20	2				
		M	EZ	53.5	20		4	4		
354	2	M	E	08 04.0	20		1			USCGS: 10.3N, 40.0E, H 07 02 52.4, h 54 km.ca.
355	2	(P)	Z	18 19 05						
		i	Z	21 37	3			+2		USCGS: 21.3N, 145.9E, H 18 09 25.9,
		i(S)	N	26 47	4	+1				h 42 km.ca.
		eL	E	35.3	(22)					
356	3	eL	Z	01 56.6	30					
		M	Z	02 01.3	21			2		USCGS: 56.1N, 164.8E, H 01 13 25.4,
		M	N	01.4	16	1				h 29 km.ca.
		M	E	04.1	16		½			
357	3	iP	VV'	03 23 29	1			+		Compression
		i	Z	23 39	4			+3		USCGS: 17.7S, 167.6E, H 03 18 30.2,
		i	N	27 31	7	+2				h 31 km.ca.
		e	NE	27 39	15					
		eL	EZ	29.1	19					
		M	N	30.3	16	1				
		M	EZ	31.0	16		1	1		
		i	N	31 22	6	+2				
358	3	i	N	03 49 21	7	+2				Masked by coda of no.357
		M	N	52.1	16	½				USCGS: 17.9S, 167.9E, H 03 40 20.2,
		M	E	53.1	16		1			h 39 km.ca.
		i	N	53 13	6	+2				
359	3	(iP)	VV'	06 01 08	1½			+		
		i	VV'	01 30	1½			+		USCGS: 4.3S, 151.1E, H 05 55 12.6,
		eL	Z	10.2	26					h 18 km.ca.
		M	NEZ	12.1		2	2	2		Per. M NZ 20s, M E 16s.
		i	Z	15 18	7			+5		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
360	June 3	e	N	09 25 45						USCGS: 4.3S, 150.9E, H 09 14 32.1
		eL	Z	29.7	25					h 25 km.ca.
		eL	N	30.3	22					
		M	NZ	32.5	18	2		3		
		M	E	33.4	13		3			
361	3	(eP)	V	21 56 01						
		e(S)	N	22 00 00	7					USCGS: 17.6S, 167.6E, H 21 51 05.9,
		eL	NZ	01.9	18					h 25 km.ca.
		M	N	03.2	13	½				
362	4	eP	VV'	07 46 17						Microseisms present.
		i	Z	46 24	3			+3		USCGS: 33.8N, 81.8E, H 07 33 05.4,
		ePP	Z	50 04	6					h 46 km.ca.
		e	E	57 03	12					
		e	N	58 37	12					
		e	N	59 19	12					
		eSS	E	08 03 55	13					
		e(L)	E	19.3	(28)					
		eL	E	22.2	30					
		M	N	28.1	22	1				
		M	EZ	28.8	19		1	2		
363	4	M	N	09 06.2	13	1				Masked by microseisms & coda of 362
		M	E	06.5	17		1			USCGS: 8.7S, 124.2E, H 08 45 22.0,
		M	Z	07.7	17			2		h 18 km.ca.
	6	(iPKP)	VV'	10 04 52	1½			+		Very large microseisms present.
		(iPKS)	Z	08 48	4			-8		USCGS: 29.9N, 52.4E, H 09 46 18.6,
										h 25 km.ca.
364	7	(iPKP)	V	14 34 48	1½			+		Large microseisms present.
		(i)	Z	36 02	4			+6		USCGS: 5.4S, 11.6W, H 14 15 18.9,
		M	E	15 31	18					h 17 km.ca.
	7	(iP)	V	15 43 11	1½			+		Masked by large microseisms.
										USCGS: 10.7S, 166.3E, H 15 38 13.1,
										h 209 km.ca.
365	8	iP	Z	15 51 14	3			+2	4210	Compression. Microseisms present.
		ipP	Z	51 23	3			+2	37°9	h 0.00, H 15 43 58
		e	N	52 49						USCGS: 8.1S, 121.7E, H 15 44 01.0,
		iS	E	57 03	4		+2			h 25 km.ca.
		eL	E	16 03.2	30					
		M	N	07.6	13	3				
		M	EZ	08.3	15		5	6		
366	9	iP	ZVV'	18 58 15	1			-		Dilatation. Large microseisms present.
		i(sP)	VV'	58 48	1½			+		USCGS: 10.7S, 165.4E, H 18 52 41.8,
										h 115 km.ca.
367	9	(P)	Z	22 13 00						Masked by large microseisms.
		M	N	30.7	13	1				USCGS: 7.6S, 122.3E, H 22 05 50.0,
										h 25 km.ca.
368	10	(iP)	V	09 24 11	1½					Masked by microseisms.
		eLR	E	50.0	18					USCGS: 24.0S, 111.4W, H 09 11 51.8,
										h 25 km.ca.
369	10	i	V	20 44 32	1			+		Masked by microseisms.
		eLQ	NE	21 06.5	(22)					USCGS: 24.1S, 112.1W, H 20 31 50.9,
		eLR	Z	10.0	25					h 47 km.ca.
		M	EZ	13.5	19		3	7		
370	11	i(PP)	VV'	05 29 28	2			-		Masked by large microseisms
		i	ZVV'	31 08	3			+3		
		ePS	Z	39 03	(15)					USCGS: 28.9N, 54.6E, H 05 10 26.0,
		ePPS	Z	40 08	19					h 38 km.ca.
		ePPS	E	40 11	18					
		e(LQ)	E	55.3	(30)					
		eG	E	57.5	45					
		eG	N	58.2	45					
		eLR	Z	06 01.9	45					
		M	Z	07.6	30			47		
		M	E	07.9	28		16			
		M	N	08.1	24	6				
		M	EZ	14.1	21		18	29		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
371	June 11	i	E	10 49 51	4		+4		km.	
		i	E	50 01	5		-3			(USCGS: 46.6N, 27.4W, H 10 19 23.6,
		i	E	50 19	5		+3			h 22 km.ca.)
		i	E	51 16	5		+3			
		i	E	51 26	5		+3			
372	11	M	EZ	13 34	19					USCGS: 28.0N, 54.6E, H 12 31 26.8,
										h 36 km.ca.
373	12	iP	ZV'	07 39 42	2			+2		Compression. Large microseisms
		i	V'	39 52	2			-		present.
		e	E	43 04	18					USCGS: 49.6S, 163.8E, H 07 35 24.4,
		i	Z	43 16	4			+3		h 34 km.ca.
		eL	Z	44.2	19					
		M	E	44.9	11		4			
		M	N	45.2	11	1				
		M	Z	45.4	18			8		
		eT	V	58.0	½					
374	12	(iP)	VV'	17 58 59	1½			+		Masked by large microseisms.
		M	Z	18 09.5	16					USCGS: 6.9S, 155.0E, H 17 53 27.4,
										h 110 km.ca.
375	13	(iP)	ZVV'	12 03 41	3			+3		Masked by large microseisms.
		M	E	23.7	13		½			USCGS: 0.0°, 121.5E, H 11 55 44.1,
										h 20 km.ca.
376	13	iP	VV'	21 44 05	2			+	3420	Compression
		iS	N	49 00	4	+2			30°6	h 0.01, H 21 37 56
		e	E	50 22	13					USCGS: 21.4S, 176.4W, H 21 37 55.0,
		iScS	NE	54 28	5	+3	+5			h 146 km.ca.
377	14	M	E	21 33.5	20		1			USCGS: 10.8N, 40.1E, H 20 32 24.0,
										h 56 km.ca.
	15		V	03 25 36						Explosion ??
			V	03 25 53						"
	15	e	VV'	06 26 27	½					Local. Non-seismic ??
	15	i	VV'	22 41 12	1½			+		
	15	(iP)	VV'	23 36 46	1½			+		Masked by microseisms.
		(i)	VV'	36 51	1½			+		USCGS: 45.4N, 151.3E, H 23 24 40.5,
										h 38 km.ca.
378	16	iPKP	VV'	10 51 03	1			+		Compression. Microseisms present.
		ipPKP	VV'	51 33	1			+		USCGS: 8.8N, 73.4W, H 10 31 56.2,
		i	VV'	54 16	1½			-		h 120 km.ca.
		i	V	55 11	1½			+		
		i	V	55 12	2					
		i	Z	55 14	3			+4		
379	17	iP	ZVV'	15 30 39	3			+6		Compression. Large microseisms
		i	Z	41 19	3			+7		present.
		i	Z	41 41	3			+7		USCGS: 3.7S, 138.2E, H 15 24 17.8,
		i	N	41 49	4	+3				h 139 km.ca.
		i	N	42 09	3	-2				
		i	Z	42 24	3			+5		
		M	E	45.0	14		3			
		i	N	47 02	4	+4				
380	17	eL	E	16 03.7	(30)					USCGS: 14.2N, 92.2W, H 15 07 36.1,
		M	Z	11.4	19			5		h 147 km.ca.
		M	E	12.1	19		2			
		i	Z	17 30	4			-7		
	17	(iP)	V	21 54 38						Masked by large microseisms.
										USCGS: 20.8S, 178.9W, H 21 49 25.8,
										h 627 km.ca.
381	18	iP	VV'	03 20 01	1			+		Compression. Large micros. present.
										USCGS: 5.9S, 113.0E, H 03 12 35.7,
										h 641 km.ca.
382	18	iP	VV'	13 29 47	1			-		Dilatation. Microseisms present.
										USCGS: 0.2N, 123.9E, H 13 21 55.9,
										h 91 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_Z	A_Z	Δ	Remarks.
	1961			h m s	s	μ	μ	μ	km.	
383	June 18	iP	ZVV'	14 00 02	2			+4		Compression.
		i(PP)	V'	01 06	2			+		h 0.07 ca.
		i	V'	01 17	2			+		USCGS: 31.3S, 179.8E, H 13 55 16.6,
		i	N	01 46	3	+1				h 434 km.ca.
		i	N	02 09	3	+2				
		iS	E	03 48	5		-3			
		i(ScP)	Z	06 09	6			+10		
		i	N	06 11	6	+4				
		i	E	06 23	5		+2			
		i	N	06 33	7	+4				
		i	E	06 39	7		-7			
384	18	i	Z	22 22 30	2			+4		Masked by microseisms.
		e(S)	E	29 30	5					USCGS: 56.7S, 141.6W, H 22 13 30,
		e	E	29 39	11					h 92 km.ca.
		i	N	29 45	4	+4				
		eL	Z	36.7	25					
	19	(iP)	V	00 52 44	1½			-		Masked by large microseisms.
										USCGS: 22.5S, 178.9W, H 00 47 32.0,
										h 477 km.ca.
385	19	(iP)	V	01 54 49	1			+		Masked by large microseisms.
		i	V'	55 03	2			+		USCGS: 12.6N, 121.9E, H 01 45 29.9,
		i	V	02 01 16	1			-		h 120 km.ca.
		e(S)	E	02 10	6					
		M	E	14.8	18		3			
	19	i	VV'	02 32 59	2			+		Large microseisms present.
386	19	i	V'	06 34 20	1½			+		Masked by large microseisms.
		i	V'	37 07	1½			+		USCGS: 24.2S, 179.6E, H 06 29 07.1,
		i(ScS)	E	43 55	4		+3			h 591 km.ca.
	19	i	VV'	20 08 10	1½			+		Large microseisms present.
	20	(iP)	VV'	06 43 51	1			+		Large microseisms present.
		i	ZVV'	44 28	4			+5		USCGS: 14.7S, 167.3E, H 06 38 47.1,
										h 172 km.ca.
387	20	iP	ZVV'	14 31 34	4			+3		Compression.
		i	VV'	31 38	1			+		h 0.005 ca.
		i	ZV'	31 50	4			+5		USCGS: 21.8S, 169.3E, H 14 27 02.6,
		isP	V	31 58	1			+		h 64 km.ca.
		i	V	32 02	1½			+		
		i(S)	E	35 24	4		+3			
		i	EZ	35 29	4, 7		+3	-8		
		i	N	35 39	5	-2				
		i	E	35 50	5		+3			
		i	Z	35 57	7			+13		
		eLR	E	36,7	21					
		M	Z	39.0	16			5		
		M	E	39.1	16		3			
		M	N	39.5	12	1				
388	20	iP	VV'	16 37 52	1			+		Masked by microseisms.
		iPP	ZV	38 38	3			+2		USCGS: 10.5S, 164.9E, H 16 32 14.3,
		eL	Z	46.2	18					h 50 km.ca.
389	21	(PP)	V	07 39 51	1½					Masked by microseisms.
		e	N	44 15	6					USCGS: 7.7S, 146.7E, H 07 33 34.4,
		eL	Z	46.9	25					h 25 km.ca.
		i	Z	49 25	4			+5		
		M	E	50.8	14		7			
		M	N	51.2	14	2				
		M	Z	51.5	14			9		
	21	(iP)	V'	09 12 09	1½			-		Masked by microseisms.
		i	V	12 38	1½			+		USCGS: 8.4N, 124.4E, H 09 04 19.4,
										h 615 km.ca.
	21	i	Z	16 45 34	4			+5		Masked by microseisms.
										USCGS: 5.9S, 128.5E, H 16 37 37.1,
										h 389 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
390	June 21	iP	VV'	20 33 13	1			+		Compression.
		i(pP)	VV'	33 37	1			-		h (0.01)
		i(sP)	VV'	33 46	1			+		USCGS: 7.6S, 110.0E, H 20 25 00.9,
		i(S)	N	39 51	4	+1				h 163 km.ca.
		e(SS)	E	43 12	12					
		M	E	56.2	17		½			
391	22	eL	E	05 43.8						Masked by microseisms.
										USCGS: 21.2S, 170.3E, H 05 33 35.4,
										h 55 km.ca.
392	23	(iPP)	VVZ	09 14 45	3			+4		Masked by microseisms.
		(iS)	N	21 59	4	+2				USCGS: 43.9N, 128.9W, H 08 55 55.2,
		e(PS)	E	23 51	?					h 56 km.ca.
		eSS	N	29 37	12					
		eSS	E	29 49	18					
		eLR	E	45.3	27					
		M	EZ	52.1	20		1	3		
	23	(iP)	V	10 14 34						Masked by microseisms.
										USCGS: 18.5N, 145.2E, H 10 05 35.4,
										h 256 km.ca.
	24	e	V	03 00 48						Explosion ??
393	24	(iS)	N	09 54 36	4	+1				Masked by microseisms.
		eL	E	10 07.3	(30)					USCGS: 4.1N, 97.5E, H 09 36 08.8,
		M	N	10.8	18	1				h 188 km.ca.
		M	EZ	13.2	21		2	3		
394	24	i	E	16 31 49	4		+1			Masked by microseisms.
		e(L)	E	32.5	?					USCGS: 4.6S, 144.9E, H 16 19 23.7,
		i	Z	39 13	5			+6		h 212 km.ca.
395	24	iP	ZV	19 41 42	2			+2		Dilatation. Microseisms present.
		i	V	41 53	1½			-		USCGS: 2.9S, 130.4E, H 19 34 32.6,
		i	V	41 59	1½			+		h 19 km.ca.
		eL	E	54.6	18					
		M	EZ	58.8	16		1	2		
	25	(iP)	V	09 15 41	1			-		Masked by microseisms.
										USCGS: 19.4S, 177.9W, H 09 10 04.2,
										h 489 km.ca.
396	25	eP	VV'	16 56 14	2½				6320	
		i	ZVV'	56 20	3			-	56°9	USCGS: 21.7N, 143.1E, H 16 46 32.9,
		i	N	56 21	3	+2				h 13 km.ca.
		i	VV'	56 28	2			+		
		iPcP	VV'	57 07	1½			+		
		i	N	57 30	3	+1				
		eS	N	17 04 07	8	2				
		e	E	04 09	6					
		e	E	04 25	7					
		i	N	04 28	5	-2				
		M	NEZ	17.0	22	2	4	6		
397	26	iP	VV'	07 07 36	1½			+	2340 ca	Compression. Microseisms present.
		i	Z	07 39	3			+1	21°ca	h 0.00
		ipP	Z	07 44	4			-7		
		i	VV'	07 45	1½			+		USCGS: 21.3S, 170.1E, H 07 02 57.7,
		isP	EZ	07 48	5		-4	+10		h 89 km.ca.
		i	N	07 51	4	+3				
		iPP	Z	08 00	6			-10		
		i	VV'	08 02	1½			+		
		iPPP	N	08 08	4	+2				
		e(S)	E	11 23	8					
		e	N	11 33	7					
		i	Z	11 37	5			+2		
		i	N	11 38	5	-6				
		i	N	11 46	5	+5				
		i	E	11 50	5		+6			
		i	N	11 55	8	+7				
		e(L)	E	12.7	(28)					
		eL	E	13.3	21					
		M	E	14.9	16		7			
		M	N	15.3	13	7				
		M	Z	15.6	16			9		

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
398	June 26		14.2	Waves.					USCGS: 21.0S, 174.4W, H 13 48 57.2, h 25 km.ca.
399	26	i Z	15 00 39	3			+2		USCGS: 52.4N, 174.5E, H 14 47 26.1, h 60 km.ca.
		e(S) E	11 00	10					
		eL Z	30.9	24					
		M E	35.9	19		1			
400	27	iP ZVV'	07 15 46	3			-2	8840	Dilatation.
		i ZVV'	15 49	4			+7	79°.5	H 07 03 36
		iPcP V	15 52	1			+		
		iPP Z	18 48	5			-2		USCGS: 27.8N, 99.4E, H 07 03 42.2,
		iPPP Z	20 41	4			+2		h 33 km.ca.
		iS E	25 47	7		-3			
		iS N	25 48	7	+4				
		iScS E	26 09	7		-2			
		eL E	38.8	27					
		eL E	45.1	33					
		M EZ	53.0	20		5	9		
		M N	56.4	18	2				
		M EZ	58.0	18		7	7		
401	27	eL EZ	14 49.9						
	28	i(P) V	06 20 38	1			+		
402	29	eL E	01 30.5	30					
		M E	33.3	15		2			
403	29	iP NEZVV'	09 28 11	4	+1	+2	-7	(2690)	Dilatation
		i Z	28 15	4			+18	(24°.2)	H (09 22 57), h 0.00 ca.
		i NE	28 18	4	+6	+8			
		i(sP) NEZ	28 28	4	-4	-6	+21		USCGS: 13.8S, 166.0E, H 09 22 55.8,
		i Z	28 43	3			+27		h 37 km.ca.
		iPP NE	28 47	6	-5	-7			
		i Z	28 53	6			+34		
		i N	29 11	4	+8				
		i N	29 29	5	+8				
		e(S) N	32 24	(9)					
		i(sS) NE	32 43	10	+51	+46			
		i Z	32 47	9			+42		
		i E	32 50	10		-60			
		i N	32 56	10	+55				
		iSS Z	33 20	6			+22		
		iSSS E	32 36	7		+33			
		eL N	34.1	21					
		M NE	36.5	15	19	27			
		M Z	37.9	15			50		
404	29	iP VV'	10 29 03						Compression. Masked by microseisms and coda of no.403. USCGS: 22.6S, 179.1E, H 10 24 07.3, h 654 km.ca.
	29	i VV'	15 44 55	1½			-		Masked by microseisms. USCGS: 13.7S, 165.9E, H 15 39 32.5, h 74 km.ca.
405	29	i VV'	16 47 10	1½			+		Masked by microseisms.
		M E	53.0	10		½			
		M N	53.1	12	½				
	30	i V'	06 14 05						Local ??
406	30	M E	19 09.5,	7		½			Masked by microseisms. USCGS: 6.7S, 129.4E, H 18 51 14.4, h 179 km.ca.

A. Fynn, S.J.
Director.

P.F.Rheinberger.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
407	July 1	(i)	VV'	11 45 07	1½			+		Masked by large microseisms.
		M	E	55.6	13		1			USCGS: 7.7S, 148.3E, H 11 39 50.5, h 64 km.ca.
	1	(i)	Z	18 56 42	3			+3		Masked by large microseisms. USCGS: 17.9S, 178.4W, H 18 50 57.5, h 601 km.ca.
	2	i	Z	14 25 19	4			+6		Very large microseisms present.
		i	VV'	25 22	2½			+		
408	2	M	Z	17 01.1	15					Masked by large microseisms. USCGS: 13.9S, 166.1E, H 16 47 22.7, h 33 km.ca.
409	4	eL	E	02 30.6						Masked by microseisms. USCGS: 17.9S, 167.4E, H 02 19 48.7, h 56 km.ca.
410	4	iP	VV'	06 19 42	1			+		Compression.
		eL	E	34.3	25					USCGS: 17.9N, 146.4E, H 06 10 44.8, h 145 km.ca.
411	4	(iP)	V'	08 27 28	1½					Masked by microseisms.
		e	E	30 58						USCGS: 43.2S, 166.8E, H 08 23 43.6,
		eT	V	44 14	½					h 213 km.ca.
412	4	i(P)	Z	19 22 40	4			+3		Masked by microseisms.
		i	NZ	22 44	5	+2		+5		USCGS: 55.8S, 147.4E, H 19 17 46.7,
		i(PP)	Z	23 07	6			+6		h 39 km.ca.
		e	E	26 51	11					
		i	E	27 00	10		-7			
		i	N	27 08	5	-4				
		eL	Z	27.6	27					
		i	N	27 40	5	+4				
		i	N	28 08	6	+5				
		eL	N	28.3	24					
		M	NZ	29.4	18	8		16		
		M	NE	30.6	10	8	7			
		M	N	33.4	9	10				
	4	i	N	20 01 44	4	-2				On coda of no.412.
		i	Z	02 01	4			+4		
413	4	i(P)	Z	20 03 23	3			+2		Compression. Masked by coda of 412.
		i(pP)	Z	03 43	3			+2		USCGS: 55.4S, 147.8E, H 19 58 34.4, h 122 km.ca.
414	5	eP	Z	02 33 58	3					
		i	NE	38 50	6	-4	-3			USCGS: 58.2S, 150.4E, H 02 28 38.2,
		eL	E	39.3	20					h 25 km.ca.
		eL	N	40.1	24					
		eL	Z	40.3	24					
		M	NE	41.3	18	4	3			
		M	Z	42.1	17			6		
		i(ScS)	N	44 59	5	+3				
	5	i	V	04 26 30	1½			+		
		i	V	26 36	1½			+		
		i	V	46 49	1½			-		
		i	V	05 15 05	1			+		
	5	(iP)	Z	18 41 17						Large microseisms present.
		(i)	ZVV'	43 19						USCGS: 7.0S, 120.4E, H 18 34 35.4, h 598 km.ca.
415	6	iP	NEZVV'	22 14 14	4	+8	+9	-25	2410	Dilatation.
		i	NEZ	14 18	4	-13	-18	+48	21°7	H 22 09 24, h 0.00
		ipP	NEZ	14 24	4	+23	+29	-53		
		iPP	EZ	14 41	4		-25	+45		USCGS: 20.0S, 169.0E, H 22 09 31.4,
		iPP	N	14 42	4	-16				h 47 km.ca.
		iPPP	NZ	14 50	4	-14		+45		
		i	N	15 10	4	-17				
		i	Z	15 17	4			+29		
		i	E	15 25	4		+10			
		e	N	17 41	18					
		iS	NE	18 07	6	-67	+16			

(Continued on next page)

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
415	July 6	i!	Z	22 18 10	4			-		
cont.		iPcP	E	18 13	4		-45			
		i	N	18 17	6	+(125)				
		isS	E	18 24	7		-110			
		i	N	18 27	6	+28				
		iSS	NE	18 39	9	+80	-120			
		eLR	E	19.4	25					
		M	EZ	21.4	16		58	71		
		M	N	22.5	13	30				
		iScS	E	25 32	5		+8			
		W_2 M	N	25 16.7	19	1				
		M	EZ	17.7	19		2	3		
416	7	iP	VV'	03 26 22	1			+		Compression. Microseisms present.
		i	Z	26 24	3			+2		USCGS: 14.1S, 167.2E, H 03 21 18.9,
		i	ZV	27 13	3			+3		h 201 km.ca.
417	7	iP	N	07 47 27	4	-2				Masked by microseisms.
		i	ZV	47 39	3			+3		USCGS: 9.4S, 155.2E, H 07 42 22.5,
		i	VV'	49 48	1½					h 174 km.ca.
		i	N	51 54	7	-2				
		i	N	52 08	4	+2				
		eL	Z	54.6	22					
		M	E	56.2	15		1			
		i	N	56 45	4	+2				
		i	N	57 00	4	+3				
		M	N	57.6	13	1				
418	7	(iP)	VV'	12 38 24	1			-		Masked by microseisms.
		i(S)	N	42 19	5	-3				USCGS: 20.2S, 169.6E, H 12 33 37.1,
		i(sS)	N	42 32	6	+3				h 25 km.ca
		eL	N	43.3	(19)					
		M	N	44.8	18	1				
		M	Z	45.4	18			1		
		M	E	45.5	18		½			
419	7	(iP)	VV'	13 16 36	1½			+		Masked by microseisms.
		i	Z	16 38	3			+3		h 0.005 ca.
		i(pP)	NZ	16 49	4	+3		-5		
		e	NE	16 54	20					USCGS: 5.7S, 149.7E, H 13 10 43.8,
		i(sP)	N	16 58	7	+6				h 57 km.ca.
		iPP	NZ	17 21	6	+8		-9		
		iPPP	NZ	17 34	6	+12		-15		
		iS	N	21 11	10	-7				
		i	E	21 17	6		+6			
		i	Z	21 18	4			+4		
		i	E	21 31	6		+5			
		isS	N	21 35	10	-37				
		i	Z	21 39	11			-45		
		e	NZ	21 55	24					
		i	N	22 18	6	+6				
		iSS	N	22 34	10	-30				
		i	VV'	23 32	2			+		
		eLR	E	24.1	27					
		M	NZ	26.2	22	30		48		
		M	E	26.8	15		22			
420	7	(eP)	V'	14 46 33						Masked by microseisms & coda of 419.
		i(S)	N	50 25	5	+2				USCGS: 20.4S, 169.2E, H 14 41 53.0,
		i	N	50 41	6	+5				h 100 km.ca.
		M	N	52.9	16	2				
421	7	i	VV'	15 42 52	1½			+		Masked by microseisms.
		i	Z	43 17	3			-2		USCGS: 53.5N, 159.9E, H 15 28 14.5,
		M	N	16 14.2	17	1				h 20 km.ca.
422	7	i	N	20 39 10	4	+1				Masked by microseisms.
		M	N	42.8	12	½				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
423	July 7	iP	Z	22 24 15	3			-5	2380ca	Dilatation.
		iP	VV'	24 16	1½			+	21°4ca	Compression.
		e	E	24 23	8					h 0.00
		ipP	Z	24 24	5			-5		
		isP	ZVV'	24 27	6			+10		USCGS: 20.1S, 169.2E, H 22 19 34.2,
		i	NZ	24 33	6	+5		-14		h 89 km.ca.
		i	Z	24 45	4			+5		
		i	E	24 57	4		+4			
		iS	N	28 06	6	+3				
		i(PcP)	EZ	28 14	6		-5	-6		
		i	N	28 16	7	+18				
		i	E	28 31	6		-9			
		i	NZ	28 36	9,6	-7		+13		
		i	Z	28 56	5			+9		
		eLR	EZ	29.5	24					
		M	NEZ	31.2	19	4	7	9		
		M	N	32.6	13	3				
424	8	iP	Z	02 40 00	4			-8	2310ca	Dilatation.
		iP	NE	40 02	4	+3	+6		20°8ca	h 0.005 ca., H 02 35 22
		i	NEZVV'	40 06	7	-12	-15	+34		
		isP	NEZ	40 18	7	-14	-14	+40		USCGS: 20.0S, 168.8E, H 02 35 20.1,
		e	NE	40 38	?					h 52 km.ca.
		i	NEZ	40 42	6	-16	-13	+22		
		i	N	40 58	7	+11				
		i	NEZ	41 29	6	-12	-10	+31		
		iS	N	43 43	7	+7				
		i	E	43 55	6		+7			
		i	Z	44 01	7			+35		
		isS	NE	44 03	7	+37	-23			
		iSS	E	44 19	8		+30			
		i	Z	44 21	7			+35		
		i	NZ	45 10	7	+15		-16		
		eL	E	45.4	24					
		M	Z	47.9	17			43		
		M	NE	48.3	13,16	26	29			
	8	i	Z	06 08 34	4			-5		Large microseisms present.
		i	Z	11 42	4			-5		USCGS: 6.2S, 77.1W, H 05 49 03.0, h 15 km.ca.
425	8	i	N	15 17 17	7	+4				Masked by microseisms.
		eL	E	18.3	20					
		M	NEZ	20.2	18	2	2	3		
426	8	iP	NEZVV'	15 39 22	3	+4	+8	-17		Dilatation.
		i	NEZ	39 26	4	-11	-14	+29		
		i	VV'	39 29	2			+		USCGS: 20.1S, 169.8E, H 15 34 38.5,
		i(pP)	NEZ	39 34	5	-4	-10	+23		h 44 km.ca.
		i	E	39 48	5		-13			
		i	N	39 51	6	+8				
		i	Z	39 54	4			+12		
		i	E	39 57	7		+15			
		i	Z	40 10	6			-14		
		i	N	40 12	5	+7				
		i	E	40 15	6		-8			
		i	NE	40 31	6,7	+13	+16			
		i	Z	40 34	6			+26		
		(S)	N	43 06	7					
		i	E	43 16	6		+7			
		i	Z	43 20	6			-13		
		isS	NE	43 23	7,6	+70	-24			
		i	Z	43 32	9			-53		
		eLQ	E	43.7	16					
		i	N	43 53	7	-24				
		i	N	44 06	6	+21				
		i	Z	44 09	7			-15		
		i	E	44 42	5		+10			
		eLR	EZ	44.8	24,21					
		i	EZ	45 13	6		-20	+23		
		i	N	45 24	7	+19				

(Continued on next page)

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
426	July 8	M	N	15 46.2	15	21				
cont.		M	Z	46.4	17			46		
		M	E	46.8	16		35			
427	8	i.(P)	ZVV'	15 45 00	5			+21		Confused by no.427.
		i	E	48 55	5		+3			
		i	Z	48 56	6			+18		
		M	EZ	52.9	15		23	36		
		M	N	53.2	12	23				
428	8	i(P)	VV'	19 14 28	2			+		Masked by microseisms.
429	8	iP	VV'	21 18 43	1½			+		Large microseisms present.
		i	VV'	18 54	1½			+		
		isS	NE	22 40	8	+11	-6			USCGS: 20.2S, 169.0E, H 21 13 59.4, h 56 km.ca.
		i	Z	22 42	7			+		
		eL	E	24.1	22					
		M	N	25.0	17	5				
		M	Z	26.0	17			14		
		M	E	26.2	17		11			
430	8	iP	ZVV'	21 53 26	3			-5		Dilatation.
		i	NE	53 30	3	+2	+2			
		i	ZVV'	53 31	3			+12		USCGS: 20.2S, 169.0E, H 21 48 46.2, h 68 km.ca.
		i	Z	54 00	4			-7		
		i	E	54 03	4		+5			
		i	N	54 05	5	-4				
		i	Z	54 06	4			+8		
		i	N	56 46	4	+4				
		i	E	57 22	4		+5			
		isS	N	57 26	7	+19				
		i	EZ	57 27	5		-6	+17		
		i	E	57 36	6		-12			
		i	N	57 37	7	+21				
		i	Z	57 38	7			+17		
		eLR	E	58.8	21					
		M	N	22 00.3	16	6				
		M	E	00.8	16		9			
		M	Z	01.3	16			12		
	8	i(P)	NZ	22 30 47	3	-2		+4		Masked by microseisms & coda of 430.
		i	Z	36 43	3			+5		
431	11	iP	NZ	09 42 49	4	-1		+2	7700	Compression.
		i(pP)	Z	43 03	4			+2	69°3	h 0.00 ca.
		eS	N	51 52	7					USCGS: 8.3N, 93.3E, H 09 31 57.2, h 163 km.ca.
		e	N	52 08	7					
		ePS	N	52 30	6					
		eSKS	E	52 45	8					
		iScS	N	52 50	6	-1				
		i	N	54 03	4	+2				
		eL	E	10 07.2	(34)					
		eL	Z	07.9	(34)					
		M	EZ	11.2	25		4	6		
		M	N	11.9	24	6				
		M	N	13.7	12	2				
		M	EZ	14.3	22		6	7		
432	11	iP	VV'	18 42 11	1			-		Dilatation. USCGS: 6.7S, 125.8E, H 18 35 54.6, h 579 km.ca.
	12	e	V	00 44 44						Local. Explosion ??
	12	e	V	02 29 17	¾					Local ??
	12	e	V	06 12 09	½					Local ??

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
433	July 12	iP	VV'	14 41 39	1			-		Dilatation
		i	Z	41 43	4			+3		
		iPP	Z	42 02	6			-2		USCGS: 22.8S, 171.3E, H 14 36 57.4, h 65 km.ca.
		e	N	45 33	9					
		e	E	45 34	9					
		i	N	45 40	6	-2				
		i(PcP)	Z	45 46	5			+3		
		eL	N	46.9	21					
		eL	Z	47.3	21					
		M	Z	50.0	16			1		
		M	E	50.6	9		1			
		M	N	50.9	9	2				
	13	e	V	03 55 28						Explosion ??
434	13	iP	VV'	10 37 52	1½			+		Compression.
		eL	Z	46.6	(24)					USCGS: 5.5S, 150.8E, H 10 31 55.6,
		M	EZ	48.3	18		1	2		h 25 km.ca.
		M	N	48.9	18	3				
435	13	iP	V	15 01 29	1½			-		Dilatation.
		eL	E	07.1	20					USCGS: 20.5S, 169.0E, H 14 56 50.9, h 67 km.ca.
436	13	(iP)	V	21 54 59	1			-		Masked by microseisms.
		M	E	22 22.8	16		½			USCGS: 22.8N, 122.7E, H 21 44 38.0, h 100 km.ca.
437	13	iP	V	22 15 02	1			+		Compression. USCGS: 25.2S, 179.7E, H 22 10 04.0, h 526 km.ca.
438	14	M	N	01 24	16					Masked by microseisms. USCGS: 5.4S, 151.9E, H 01 07 10.9, h 77 km.ca.
439	15	iP	Z	00 27 18	4			+8		Compression. Large microseisms. USCGS: 13.1N, 120.4E, H 00 17 49.5, h 52 km.ca.
	15	i	VV'	06 09 55	1½			+		Large microseisms present.
	15	(iP)	ZVV'	07 58 52	4			+5		Large microseisms present.
440	15	i	N	08 05 08	6	+3				Large microseisms present.
		eL	N	09.1	19					USCGS: 57.8S, 148.5E, H 07 57 20.5,
		M	NZ	10.4	16	2		3		h 60 km.ca.
	15	(iP)	V	12 01 13	1½			-		Masked by large microseisms. USCGS: 3.8S, 131.4E, H 11 54 14.8, h 100 km.ca.
441	15	(iP)	V	14 02 32						Masked by large microseisms.
		i	Z	02 34	2			+3		
		i	Z	03 23	3			+5		
		i(S)	E	08 09	3		-2			
442	16	iP	NZ	14 06 21	3	+2		-7		Dilatation. Large microseisms
		i	NEZ	06 25	3	-3	-3	+11		present.
		i(PP)	E	06 44	4		+5			USCGS: 22.7S, 171.2E, H 14 01 38.7,
		i(PP)	Z	06 45	5			-8		h 56 km.ca.
		i	Z	06 59	4			+9		
		i	Z	08 52	4			+8		
		i	Z	09 20	3			+7		
		e(sS)	N	10 17	6					
		i	N	10 21	7	-14				
		i	E	10 24	7		+9			
		i(PcP)	Z	10 29	4			+9		
		i(SS)	E	10 38	7		+9			
		eL	Z	11.6	22					
		M	EZ	12.6	18		5	12		
		M	N	12.9	15	6				
		M	N	14.8	11	8				
		M	E	15.3	10		5			
443	16	eL	N	20 12.0	17					Masked by large microseisms. USCGS: 34.3S, 178.5W, H 20 00 19.4, h 191 km.ca.

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No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
444	July 17	(iS) N	15 16 19	4	-3				Masked by large microseisms.
		M E	23.9	20		3			USCGS: 2.6S, 141.9E, H 15 04 46.8,
		M N	24.7	13	2				h 60 km.ca
445	17	(iP) Z	16 31 29	3			-3		Masked by large microseisms.
		eL E	52.8	(24)					USCGS: 35.7N, 141.2E, H 16 20 22.6,
		M N	17 02.0	18	2				h 75 km.ca.
	17	(iP) VV'	17 14 02	1½			-		Masked by large microseisms.
		(i) VV'	14 22	1½			+		USCGS: 5.4S, 152.4E, H 17 08 17.2,
									h 64 km.ca.
	18	(e) V	01 06 57						Local.
		e V	06 58	¼					
		i V	07 09	¼					
		i V	07 15	½			+		
	18	(iP) V	13 10 19						Masked by microseisms.
									USCGS: 5.9S, 128.5E, H 13 03 28.3,
									h 25 km.ca.
446	18	iP NZVV'	14 14 24	3	+4		-13		Dilatation.
		i NEZ	14 27	5	-13	+3	+43		
		i(pP) VV'	14 35	1½			-		USCGS: 29.4N, 131.6E, H 14 03 36.5,
		i(sP) Z	14 38	3			+17		h 21 km.ca.
		i(PcP) NZVV'	14 59	4	-6		+15		
		i Z	15 08	4			+14		
		i NEZ	15 19	4	-5	-5	+20		
		i VV'	16 32	2			+		
		i VV'	16 47	2			+		
		i Z	17 34	4			+12		
		iPPP Z	18 27	5			+10		
		i(S) NE	23 13	7	+8	+8			
		i(PS) N	23 35	6	+9				
		i Z	23 38	8			-19		
		i N	24 08	6	+8				
		i E	24 17	6		-5			
		i N	24 41	8	-16				
		e E	24 45	15					
		i N	25 34	8	+10				
		eLQ E	30.3	24					
		eLR E	32.9	27					
		eLR N	33.7	24					
		M E	40.4	20		41			
		M Z	41.2	20			66		
		M N	41.3	20	51				
		M NZ	43.1	19	51		115		
		M E	43.5	17		34			
		f	17.2						
	18	i VV'	14 43 07	1½			+		On coda of no.446.
		i VV'	43 21	1½			+		
	18	i(P) VV'	14 44 49	1½			-		Confused by coda of no.446.
		i VV'	45 00	1½			-		USCGS: 29.9N, 131.2E, H 14 34 07.3,
									h 72 km.ca.
	18	i VV'	15 27 09	1½					Masked by micros & coda of 446.
									USCGS: 29.5N, 131.3E, H 15 16 12.5,
									h 35 km.ca.
	18	(iP) V	23 53 22	1½					Masked by microseisms.
									USCGS: 29.7N, 131.4E, H 23 42 36.5,
									h 39 km.ca.
447	19	iP VV'	12 09 32	1½			+		Masked by microseisms.
									USCGS: 29.6N, 131.5E, H 11 58 43.7,
									h 31 km.ca.
448	19	M E	18 21						Masked by microseisms.
									USCGS: 19.8S, 173.9W, H 18 00 28.3,
									h 66 km.ca.
	19	(iP) VV'	18 31 43	1			+		Masked by microseisms.
		(i) VV'	32 31	1½			+		USCGS: 23.5S, 179.9E, H 18 26 37.9,
									h 531 km.ca.

No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
	July 20	i	N	06 15 22½	(½)	-				Quarry blast ?
		i	V	15 28	½			+		
449	20	(i)	V	06 58 16	1½					Masked by microseisms.
		e(L)	N	07 08.6						
	20	(iP)	VV'	15 16 07	1			+		Masked by microseisms.
		(i)	Z	18 21	3			-3		USCGS: 17.5S, 178.7W, H 15 10 26.7,
										h 570 km.ca.
450	20	eL	E	20 11.1	23					Masked by microseisms.
		M	N	13.1	14	2				USCGS: 31.8S, 177.2W, H 19 58 03.3,
		M	EZ	13.5	18		2	5		h 44 km.ca.
	21	(iP)	Z	01 15 16	3			+2		Masked by microseisms.
										USCGS: 22.2S, 171.6E, H 01 10 36.2,
										h 117 km.ca.
	21	e	V	06 06 43	(¼)					Local ?
451	21	(iP)	V	13 12 06	1½			+		Masked by microseisms.
		i(PP)	Z	12 38	5			+6		USCGS: 19.4S, 169.2E, H 13 07 15.4,
		e	N	16 05	8					h 167 km.ca.
		e	E	16 15	7					
		i(SS)	N	16 39	6	+4				
		eL	N	17.5	19					
		M	NZ	19.2	16	2		2		
		M	E	19.5	16		1			
452	21	i	VV'	19 03 07	2			+		Masked by microseisms.
		i	VV'	03 22	2			+		USCGS: 29.6N, 131.6E, H 18 50 50.3,
		eL	E	22.7	17					h 16 km.ca.
	21	i	VV'	22 05 15	1½			+		Masked by microseisms.
453	22	eL	Z	14 07.9	27					Masked by microseisms.
		M	E	08.9	15		2			
		M	N	09.0	13	2				
		M	Z	09.4	19			2		
454	22	(iP)	Z	18 17 23	3			-2		Masked by microseisms.
		i	N	17 29	5	+2				USCGS: 54.0S, 141.2E, H 18 12 31.1,
		i	Z	17 38	4			+4		h 84 km.ca.
		i(S)	E	21 26	5		+3			
		i	N	21 28	5	+4				
		i	Z	21 31	5			-3		
		eLR	Z	23.0	21					
		M	E	24.5	9		4			
		M	Z	24.9	12			3		
		M	N	25.4	9	4				
455	23	M	NZ	11 30.9	16	1		2		Masked by large microseisms.
										USCGS: 7.7S, 151.0E, H 11 14 28.9,
										h 75 km.ca.
456	23	iP	Z	14 08 25	3			-2	2390ca	Dilatation. Large microseisms
		e	NEZ	08.5	19				21½°ca	present.
		ipP	V	08 35	1½			+		h 0.00
		isP	V	08 39	1½			+		USCGS: 18.5S, 168.2E, H 14 03 39.8,
		i	VV'	08 47	1½			+		h 44 km.ca.
		i	EZ	08 49	4		+7	-11		
		i	NEZ	09 06	6	+8	+10	-15		
		i	Z	09 13	6			+17		
		isS	NE	12 32	4	-14	+5			
		i	N	12 37	8	+41				
		i	EZ	12 38	8		+17	+33		
		iSS	Z	12 54	8			+30		
		i	E	13 00	8		-18			
		eLR	E	14.3	21					
		M	E	16.5	16		41			
		M	Z	16.7	15			48		
		M	N	16.8	15	41				
457	23	i(P)	VV'	14 50 56	1½			-		Masked by micros & coda of 456.
		eL	E	15 19.7	25					USCGS: 6.9N, 123.5W, H 14 38 03.5,
										h 89 km.ca.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
458	July 23	i	VV'	15 35 11	1½			-		P obscured by microseisms & coda
		i	V'	35 12	1½			+		of no.456.
		i	NEZ	35 27	6	+5	+6	-12		USCGS: 18.3S, 168.2E, H 15 28 52.6,
		i	VV'	35 46	1½			+		h 44 km.ca.
		isS	NE	39 09	4	-5	+4			USCGS: 18.5S, 168.0E, H 15 30 22.8,
		i	NZ	39 16	8	+24		+18		h 107 km.ca.
		i	E	39 18	6		+18			
		e	EZ	39 24	16					
		i	E	39 35	6		+14			
		eLR	E	41.0	22					
		M	EZ	43.1	16		14	19		
		M	N	43.4	15	13				
459	23	iP	ZVV'	21 55 59	4			-90>		Dilatation.
		iP	NE	56 00	4	+37	+49			After P photogrpahic records hard
		i	NEZVV'	56 06	6	-73	-95	+		to read.
		i	NEVV'	56 10	5	-15*	-27*			* From Mainka.
		iPPP	NE	56 36	5	-43*	-75*			
		i	E	59 44	7		+33			USCGS: 18.3S, 168.3E, H 21 51 07.5,
		i	NE	59 59	?	-	+			h 44 km.ca.
		i	V'	22 00 07	5			+		
		m	NE	00.3	12	710*	560*			
		M	E	03.6	16		1150*			
		M	V	03.7	16					
		M	N	04.2	15	1120*				
		$e(W_2)$	Z	24 35.2	25					
460	23	iP	VV'	22 06 45	1½			+		Compression. On surface waves of 459. USCGS: 18.4S, 168.3E, H 22 01 55.3, h 37 km.ca.
461	23	i(P)	V	22 45 59	1½			-		Confused by coda of 459.
		i	V'	46 03	1½			+		USCGS: 18.1S, 167.9E, H 22 41 09.4, h 139 km.ca.
462	23	i	VV'	23 26 28	1½			-		On coda of 459.
		i	VV'	27 01	1½			+		USCGS: 18.6S, 168.0E, H 23 22 10.1,
		i	VV'	29 21	2			+		h 53 km.ca.
	23	i	VV'	23 51 20	1½			+		USCGS: 18.4S, 167.8E, H 23 46 17.2, h 25 km.ca.
	24	e(P)	V	00 39 54	1½					USCGS: 18.1S, 168.2E, H 00 34 54.0, h 58 km.ca.
	24	e	V	00 54 23						Local. Seismic ??
	24	e	V	01 30 25	(¼)					Local. Seismic ??
463	24	(i)	VV'	02 03 07	2			+		Masked by microseisms.
		i	VV'	03 55	1			+		USCGS: 18.2S, 168.4E, H 01 58 52.3,
		i	N	07 53	4	+3				h 23 km.ca.
		eL	Z	10.4	18					
464	24	(i)	VV'	02 48 27	1					Masked by microseisms.
		eL	N	03 01.5	(18)					
		M	N	05.1	13	2				
465	24	iP	VV'	08 55 54	1½			+		Compression. Microseisms present.
		i	V'	56 05	1½			+		USCGS: 0°, 121.4E, H 08 48 13.8,
		i(pP)	VV'	56 29	1½			+		h 159 km.ca.
		i(PcP)	V	57 46	1½			+		
		i(S)	N	09 02 08	5	+2				
		i(ScS)	E	05 32	6		+2			
466	24	(P)	VV'	18 16 45						USCGS: 3.9S, 130.8E, H 18 09 57.1,
		(i)	N	22 20	4	-1				h 118 km.ca.
467	25	(e)	V	01 35 27						Masked by microseisms.
		e	N	39 22	10					USCGS: 18.3S, 168.3E, H 01 30 33.2,
		eL	E	41.4	21					h 99 km.ca.
		M	NEZ	43.3	16	1	1	1		
468	25	M		08.5						USCGS: 38.2S, 78.6E, H 08 00 56.9, h 19 km.ca.
469	25	e(P)	VV'	08 55 31	1½					Masked by microseisms.
		i	NZ	56 00	3	+2		-2		USCGS: 18.4S, 167.7E, H 08 50 38.5, h 25 km.ca.

(Continued on next page)

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks.
	1961		h m s	s	μ	μ	μ	km.	
469	July 25	e N	08 59 33	9					
cont.		eL Z	09 01.7	19					
		M E	04.5	13		½			
		M N	04.7	13	2				
		M Z	04.9	15			2		
	25	i VV'	18 05 06	1½			-		Masked by microseisms.
									USCGS: 8.7S, 110.5E, H 17 56 48.4,
									h 245 km.ca.
470	25	(eP) V'	18 47 12	1					Masked by microseisms.
		i VV'	47 25	1½			-		USCGS: 0.0, 124.7E, H 18 39 24.1,
		i VV'	47 36	1½			-		h 43 km.ca.
		eS E	53 30	7					
		i N	53 33	4	+4				
		i(SS) N	56 43	7	+3				
		i E	56 50	4		+2			
		M Z	19 04.1	24			2		
		M N	04.2	24	2				
		M E	04.5	22		1			
	26	i VV'	09 23 09	1½			+		
471	26	iP Z	09 23 44	4			-7		Dilatation.
		iP VV'	23 45	1½			+		Compression.
		i Z	24 07	4			+5		h (0.01)
		iPP NEZ	24 14	4	+3	-5	+6		
		i(sP) Z	24 17	4			-4		USCGS: 37.1S, 177.3E, H 09 18 59.9,
		i E	24 32	5		+5			h 100 km.ca.
		i Z	24 33	5			-5		
		i NE	27 40	5	+2	+2			
		i E	27 47	4		-3			
		i N	27 49	5	+7				
		i N	28 02	4	+2				
		i N	28 37	5	-2				
		i E	28 39	4		+3			
		i N	28 52	4	+4				
		M E	31.4	13		1			
		M N	31.6	13	1				
472	27	eL N	02 18.3	(19)					Masked by large microseisms.
		M N	21.8	15	4				USCGS: 30.4S, 178.7W, H 02 07 24.4,
									h 482 km.ca.
473	27	(i) Z	10 34 29	3			+6		Masked by large microseisms.
		M N	43.2	12	2				USCGS: 17.9S, 167.8E, H 10 30 17.2,
									h 60 km.ca.
	27	(iP) V	11 38 30	1			+		Masked by large microseisms.
									USCGS: 19.1S, 169.3E, H 11 33 48.4,
									h 158 km.ca.
474	27	eL E	15 45.7	21					Masked by large microseisms.
		M N	47.7	15	5				
		M EZ	47.9	16		4	5		
475	28	(iPKP) Z	01 24 14	3			-3		Masked by large microseisms.
		e(SS) E	42.8	16					USCGS: 2.2S, 77.1W, H 01 05 30.0,
									h 136 km.ca.
	28	i(P) Z	04 59 31	3			+3		Masked by large microseisms.
									USCGS: 18.5S, 167.9E, H 04 54 55.1,
									h 50 km.ca.
476	28	iP ZVV'	06 16 19	4			+8		Compression. Large microseisms
		i E	16 24	6		+6			present.
		i ZVV'	16 27	7			+20		
		i NE	16 34	7	+10	+9			USCGS: 18.6S, 167.7E, H 06 11 38.7,
		i V	16 36	2			-		h 41 km.ca.
		i V'	16 38	2			-		
		i V	16 40	2			+		
		i Z	16 50	(4)			-(10)		
		i Z	16 54	(6)			+(25)		
		i Z	17 03	6			+27		

(Continued on next page)

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
476	July 28	i	E	06 17 08	7		+10			
cont.		i(sS)	N	20 28	5	-16				
		m	N	20 32	9	29				
		i	Z	20 32	4			+28		
		i	E	20 33	7		+30			
		i(SS)	N	20 56	7	+28				
		eL	N	22.5	18					
		eL	Z	22.7	18					
		eL	E	22.8	18					
		M	N	24.1	13	46				
		M	E	25.3	13		25			
		M	Z	25.5	12			23		
		M	NZ	26.8	13	61		29		
	28	i	Z	08 59 49	3			+3		Large microseisms present.
		i	Z	09 00 25	4			+9		
477	28	e	E	11 11.0						Masked by large microseisms. USCGS: 20.2N, 109.1W, H 10 38 28.2, h 106 km.ca.
478	28	eL	E	13 46.3	24					Masked by large microseisms. USCGS: 0.6S, 122.4E, H 13 20 33.8, h 35 km.ca.
479	29	eL	E	10 45.0	(20)					Masked by large microseisms. USCGS: 16.6S, 174.1E, H 10 31 52.5, h 132 km.ca.
480	29	i(P)	Z	16 33 35	3			+3		Compression. Masked by large microseisms.
		eL	N	41.2	18					USCGS: 23.9S, 176.1W, H 16 27 19.0,
		eL	E	41.4	25					h 23 km.ca.
		M	NEZ	43.0	(16N 21EZ)	8	12	18		
481	29			22.9	Waves, Masked by large microseisms.					
	30	(iP)	V	02 40 17	1½			-		Masked by microseisms.
		(i)	V	41 17	1½			+		USCGS: 3.8S, 103.4E, H 02 31 10.3, h 146 km.ca.
482	31	eP	V	00 24 26						USCGS: 5.3S, 107.2E, H 00 15 55.3,
		i	VV'	24 27	1½			+		h 244 km.ca.
	31	(iP)	VV'	19 16 09	1½			+		USCGS: 9.7S, 117.6E, H 19 08 41.5, h 32 km.ca.

A. Fynn, S.J.
Director.

P.F.Rheinberger.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
483	Aug. 1	iP	ZVV'	01 23 06	2			+2		Compression.
		i	VV'	23 10	1½			+		
		i	Z	23 13	3-			+2		USCGS: 14.2S, 166.7E, H 01 17 44.7,
		i	VV'	23 14	1½			-		h 26 km.ca.
		i	Z	23 19	3			-2		
		i	N	27 02	5	+2				
		i	E	27 32	5		+2			
		i	N	27 51	7	+2				
		eLQ	N	28.3	18					
		eL	Z	30.0	19					
		M	E	31.3	16		1			
		M	NZ	31.8	16	1		2		
484	1	iP	VV'	05 45 19	2			+	2810ca	Compression.
		iP	NEZ	45 19½	3	-3	-2	+8	25°3ca	h 0.00 ca.,
		ipP	NEZ	45 27	4	+8	+6	-28		H 05 39 55 ca.
		ipP	VV'	45 27½	2			+		
		i	N	45 49	5	+9				USCGS: 9.8S, 160.5E, H 05 39 53.2,
		iPP	Z	45 59	5			-31		h 50 km.ca.
		iPP	NE	46 00	5		+6			
		i	NEZ	46 19	4	+7	+6	-22		
		i	Z	46 49	4			+20		
		i	N	47 16	7	+12				
		i	Z	49 02	7			+17		
		e(S)	N	49 41	(10)					
		i	NE	49 49	6	-24	+24			
		i	Z	49 50	6			+13		
		i	NE	49 57	6	+35	-			
		i	Z	50 02	8			+33		
		i	E	50 04	7		-50			
		i	N	50 06	7	-56				
		i	E	50 13	7		+65			
		i	E	50 26	6		+26			
		iSS	N	50 42	7	+28				
		i	Z	50 46	6			+43		
		iSSS	NE	50 57	9	-66	+80			
		i	Z	51 04	6			-37		
		L	EZ	51.3	24					
		L	N	51.6	21					
		M	N	52.7	20	89				
		M	Z	53.1	22			91		
		M	N	56.0	12	49				
		M	Z	56.3	14			53		
		M	E	56.7	13		59			
485	1	iP	ZVV'	07 34 09	4			+4	(10,160)	Compression.
		ipP	ZVV'	34 19	4			+5	(91°5)	Superposed on coda of no.484
		i	VV'	35 02	2			+		
		iSKS	N	44 41	5	+2				USCGS: 56.8S, 25.1W, H 07 21 12.3,
		iS	NE	45 04	8	+8	-13			h 44 km.ca.
		i	Z	45 11	8			+8		
		i	N	45 27	8	+5				
		eLQ	E	59.2	(26)					
		M	NEZ	08 12.9	19	9	5	19		
486	1	eP	VV'	09 47 32					(10,100)	
		iP	Z	47 33	4			+2	(90°9)	Compression
		iPcP	VV'	47 35	2			-		
		iSKS	N	58 01	5	-1				USCGS: 57.1S, 26.1W, H 09 34 40.7,
		iS	E	58 24	6		+3			h 31 km.ca.
		i	E	58 33	10		+9			
		M	NEZ	10 26.7	18	4	4	7		
	1	(iP)	Z	15 03 22	3			+2		USCGS: 17.8S, 167.7E, H 14 58 25.4, h 25 km.ca.
487	1	iP	V	16 23 47	1			+		Compression. Microseisms present. USCGS: 25.0S, 179.6E, H 16 18 50.5, h 530 km.ca.
	1	(iP)	VV'	19 07 26	1½			-		Masked by microseisms.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
488	Aug. 1	eL	E	19 39.8	16					Masked by microseisms.
										USCGS: 10.1S, 160.8E, H 19 26 51.1
										h 59 km.ca.
	1	(iP)	VV'	22 16 26	1½			+		Masked by microseisms.
										USCGS: 18.0S, 167.6E, H 22 11 49.3
										h 214 km.ca.
489	2	(i)	Z	01 26 05	4			-		Masked by microseisms.
		eL	N	43.9	22					USCGS: 53.3S, 134.9W, H 01 17 08.1
										h 22 km.ca.
490	2	M	N	03 23.6						Masked by microseisms.
										USCGS: 56.7S, 24.8W, H 02 31 24.8
										h 25 km.ca.
	2	(iP)	VV'	17 30 32						Masked by microseisms.
										USCGS: 12.2S, 112.2E, H 17 22 59.4
										h 270 km.ca.
491	3	iP	V	06 58 44	1½			+		Compression. Large microseisms present.
		i(S)	N	07 04 24	6	+2				USCGS: 3.5S, 130.8E, H 06 51 44.1
		M	NZ	14.8	(18)	(9)		(8)		h 22 km.ca.
		M	E	15.8	(19)		(8)			
492	3	(P)	N	23 42 10						Masked by microseisms.
		M	NE	24 00.2	15	1	2			USCGS: 12.1N, 143.8E, H 23 33 37.7
		M	Z	01.2	15			2		h 20 km.ca.
	4	(e)	V	06 00 09						
		i	VV'	00 12	1			+		
493	4	i(P)	VV'	17 57 13	1			-		Dilatation. Masked by microseisms.
		eL	N	18 03.0	(16)					
		eL	Z	03.3	(21)					
		M	EZ	06.3	16		1	2		
494	4	iP	VV'	18 24 05	1			+		Compression. Microseisms present.
		i(sP)	ZV	24 38	3			+2		USCGS: 19.9S, 169.7E, H 18 19 22.8,
		i(S)	N	27 54	5	+2				h 119 km.ca.
	4	i	Z	23 05 16	4			+4		Masked by microseisms.
										USCGS: 45.3N, 151.1E, H 22 52 49.2
										h 20 km.ca.
	5	(iP)	VV'	01 13 04						Masked by microseisms.
										USCGS: 13.7S, 166.0E, H 01 07 49.1,
										h 40 km.ca.
	5	e	VV'	01 59 28	½					Local.
495	5	i	V	06 50 24	1½			+		Masked by microseisms.
		(iS)	N	53 28	4	+1				USCGS: 28.2S, 176.7W, H 06 43 05.0
		eL	N	56.1	(26)					h 66 km.ca.
		M	NEZ	59.4	16	1	½	2		
	6	i	VV'	03 32 15	1½			+		Masked by microseisms.
										USCGS: 26.7N, 141.8E, H 03 20 39.0
										h 36 km.ca.
496	6	i	Z	08 29 27	3			-2		Masked by microseisms.
		i	N	32 00	4	+2				
		e	E	32 04	6					
		M	NZ	35.2	12	1		1		
497	6	iP	VV'	10 42 18	1			-		Masked by microseisms.
										USCGS: 2.7S, 122.0E, H 10 34 33.4
										h 69 km.ca.
498	7	iP	ZVV'	04 30 08	3			+2	4570	Compression.
		i	Z	30 11	4			+4	41°1	H 04 22 21
		i	VV'	30 12	1½			-		
		(PP)	VV'	32 40	2					USCGS: 2.7S, 121.6E, H 04 22 20.5
		iS	NE	36 22	6	-4	+2			h 18 km.ca.
		e	N	37 25	15					
		eSS	N	39 17	(15)					
		e	E	39 27	15					
		i	NZ	38 34	7	+3		+8		
		M	NE	44.8	19	7	5			
		M	N	47.5	16	7				
		M	Z	48.1	15			8		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
499	Aug. 7	i(PP)	Z	12 29 02	4			+2		Masked by microseisms.
		e	NE	33 20	10					
		eL	Z	35.9	22					USCGS: 28.1S, 176.5W, H 12 22 23.3
		M	N	38.6	15	4				h 39 km.ca.
		M	EZ	38.8	16		5	7		
500	7	i	VV'	16 17 45	1			+		Masked by microseisms.
		e	E	22 28	10					
		eL	NE	23.3	22					USCGS: 61.1S, 160.4E, H 16 11 41.4,
		M	NE	23.8	16	2	9			h 49 km.ca.
501	8	e	E	00 29 31						Masked by microseisms.
		M	N	34.8	15	2				USCGS: 28.1S, 176.5W, H 00 18 52.3
		M	EZ	35.0	18		3	5		h 51 km.ca.
502	8	iP	V	07 24 13	1½			+		Compression. Microseisms present.
		e(S)	E	28 43	10					
		e	N	28 58	9					USCGS: 8.1S, 156.6E, H 07 18 34.9
		i	N	29 10	7	-5				h 61 km.ca.
		i	N	29 41	7	+2				
		M	NEZ	34.2	11	3	3	2		
503	8	iP	VV'	12 31 25	1			-		Dilatation
		iP	Z	31 26	4			-2		
		i	VV'	31 28	1			+		USCGS: 50.9N, 170.7W, H 12 18 18.9
		i	V	31 30	1			+		h 24 km.ca.
		i	V'	31 39	1			+		
		iSKS	NE	41 59	6	-2	-1			
		i(sS)	N	42 32	7	-2				
		i(PS)	NZ	43 29	7	+2		-3		
		i	NE	48 41	7	+3	+3			
		eLR		13 01.6	21					
		M	NE	05,7	13	1	1			
		M	Z	07.0	21			4		
		M	EZ	19.6	19		2	4		
504	8	eL	E	16 05.9	15					
505	9	iP	VV'	05 58 55	1½			+		Compression. Microseisms present.
		(iS)	N	06 02 39	3	+1				USCGS: 18.7S, 167.6E, H 05 54 10.6
										h 21 km.ca.
506	9	iP	VV'	16 07 25	2			+	2390ca	Compression. Large microseisms present.
		i	VV'	07 28	1			+	21°5ca	h 0.00 ca.
		i	Z	07 30	3			+7		
		ipP	NEZ	07 35	4	+5	+5	-10		USCGS: 19.1S, 168.7E, H 16 02 36.1
		isP	Z	07 40	3			+15		h 69 km.ca.
		iPP	Z	07 52	4			-14		
		iS	N	11 17	5	+4				
		i(PcP)	Z	11 24	6			-7		
		i(PcP)	NE	11 25	6	-8	-13			
		i	Z	11 29	7			+22		
		i	E	11 41	7		-19			
		e	Z	11 43	19					
		i	N	11 46	6	+5				
		iSS	Z	11 52	6			+19		
		eL	E	12.7	28					
		eL	Z	13.0	27					
		M	E	14.5	18		10			
		M	Z	14.8	18			14		
		M	N	15.1	13	5				
		i	N	15 21	4	+4				
507	10	i	N	01 48 29	3	-2				Masked by microseisms.
		i	Z	48 38	3			+3		
		i	Z	48 45	3			-3		
		eL	N	56.1	16					
		M	N	58.2	12	2				
508	11	iP	VV'	10 29 49	1½			+		Compression. Large microseisms
		i	VV'	29 53	1½			+		present.
		i	Z	30 11	4			+4		USCGS: 18.5S, 168.2E, H 10 24 58.9
		e	N	33 52	?					h 25 km.ca.
		e	N	33 59	13					

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SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
508	Aug.11	i	E	10 34 08	5		-2			
cont.		eL	Z	35.6	23					
		M	NEZ	37.2	18	1	3	4		
509	11	(i)	V	11 12 16	1½			+		Masked by large microseisms.
		i(P)	V'	12 22	1			+		
		e(S)	E	18 22	?					USCGS: 0.2N, 124.0E, H 11 04 39.1
		i	N	21 51	3	+1				h 143 km.ca.
		i(ScS)	E	21 57	4		+2			
		i	N	22 03	4	-3				
510	11	iP	VV'	16 03 22	1½			+	8570	Compression. Large microseisms
		iP	NZ	03 23	4	-2		+12	77°1	present.
		i	V	03 25	1½			+		h 0.00, H 15 51 30
		i	Z	03 28	4			-15		
		ipP	NZ	03 33	4	-3		+11		USCGS: 42.9N, 145.1E, H 15 51 35.4
		isP	ZVV'	03 37	4			+21		h 71 km.ca.
		i	Z	03 52	6			+7		
		i	Z	04 28	5			+7		
		ePP	Z	06 20	7					
		iS	NE	13 07	7	-13	-24			
		i	Z	13 11	7			+21		
		iScS	N	13 32	6	+14				
		i	Z	13 38	7			+13		
		i	E	13 43	7		+18			
		e	E	17 16	27					
		iSS	N	18 06	10	+13				
		e	Z	21 05	29					
		eLQ	E	23.3	27					
		eLR	Z	27.0	28					
		M	NZ	31.2	25	15		78		
		M	E	32.4	23		26			
511	11	iP	VV'	22 45 06	1½			+	4540	Compression. Large microseisms
		i	VV'	45 08	1½			-	40°8	present.
		i	Z	45 09	3			+5		H 22 37 21
		i	ZVV'	45 12	3			+10		
		i	V	45 15	1½			+		USCGS: 2.8S, 122.1E, H 22 37 22.0
		iPP	Z	46 45	4			+4		h 20 km.ca.
		i	Z	46 49	4			+9		
		i	NE	46 50	4	-1	+2			
		iS	N	51 18	5	+2				
		eSS	E	54 14	13					
		i	Z	54 34	6			+8		
		eL	E	59.2	22					
		M	N	23 02.5	16	3				
		M	EZ	05.3	13		7	11		
	13	i	VV'	12 52 35	1½			+		USCGS: 7.7S, 127.5E, H 12 45 51.8, h 160 km.ca.
	14	e(Sg)	N	07 32 04	½					Local.
		e	V'	32 05	½					
512	14	(P)	ZV	18 57 02						
		iPP	Z	58 01	4			-2		USCGS: 24.2S, 175.7W, H 18 50 50.3
		eL	EZ	19 05.1	27					h 21 km.ca.
		M	Z	07.2	19			23		
		M	NE	07.6	14,18	2	13			
513	14	iP	Z	23 33 27	4			-5		Dilatation.
		i	NEZ	33 32	7	-3	-10	+20		
		i	VV'	33 40	1½			+		USCGS: 20.3S, 169.4E, H 23 28 46.5
		i	V	33 56	1½			+		h 97 km.ca.
		i	Z	33 58	4			+10		
		i	E	34 01	6		+5			
		i	NZ	37 21	7, 4	-10		+7		
		i	E	37 23	7		-27			
		i(sS)	E	37 45	6		-39			
		eL	E	38.4	27					
		M	NEZ	40.4	19	5	36	48		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
514	Aug.15	P	VV'	19 14 48	1½					Microseisms present.
		i(PcP)	Z	15 14	3			+3		
		eL	E	34.4	(19)					USCGS: 32.8N, 142.4E, H 19 03 55.7
		M	E	42.6	16		1			h 39 km.ca.
		M	Z	45.7	18			2		
515	16	(iP)	VV'	03 39 22	1½			+		Masked by microseisms.
		i	Z	39 26	3			+2		
		eL	Z	47.1	19					USCGS: 31.8S, 177.9W, H 03 33 52.6
		M	EZ	48.7	16		2	2		h 70 km.ca.
	16	(P)	VV'	22 31 10	1					Masked by microseisms.
										USCGS: 11.0N, 124.8E, H 22 22 32.7
										h 305 km.ca.
516	17	i	Z	01 09 50	3			-2		Masked by microseisms.
		i	VV'	09 51	2					USCGS: 31.5S, 179.1W, H 01 04 35.2
		M	E	19.1	18		½			h 45 km.ca.
	17	i	V	03 42 51	½			+		Local ?
		i	V	43 42	(¾)			+		
517	17	eL	Z	05 33.9						Masked by microseisms.
										USCGS: 55.3S, 124.3W, H 05 06 03.5
										h 62 km.ca.
518	17	iP	VV'	21 28 24	1½			-	8970	Dilatation.
		ipP	Z	29 00	4			+5	80°7	h 0.02 ca.,
		i(pP)	VV'	29 02	2			-		
		isP	V'	29 16	2			+		USCGS: 46.3N, 149.3E, H 21 16 30.0
		i	Z	31 53	4			+3		h 186 km.ca.
		iS	E	38 17	6		+14			
		i	N	38 18	4	+4				
		i	Z	38 20	6			-11		
		i	N	38 28	4	+3				
		i(pS)	E	38 58	6		-9			
		isS	EZ	39 24	7		+15	+6		
519	19	iPKP	ZVV'	05 27 34	4			-3	13,300ca	Dilatation.
		iPP	VV'	29 10	2			+	120°ca	h 600 km.ca. (Gutenberg Tables)
		iPP	Z	29 11	4			+8		
		ipPKP	V	29 57	1½			+		USCGS: 10.7S, 71.0W, H 05 09 49.5
		i	VV'	30 11	2			-		h 649 km.ca.
		ipPP	Z	31 14	4			+8		
		isPP	Z	32 19	5			+7		
		i	Z	32 26	5			-6		
		i	Z	32 41	6			-9		
		i	Z	33 15	5			+7		
		iSKS	NE	33 35	6	+4	-8			
		i	NE	35 02	6	-5	+8			
		i	Z	35 05	5			-8		
		i	N	36 01	5	-2				
		iS	E	36 03	6		-4			
		i	V'	37 34	2			+		
		i(PKKP)	Z	37 57	7			-27		
		e(SP)	E	38 04	18					
		i(SKSP)	N	38 24	6	+4				
		i(PS)	NE	39 12	8	+3	-6			
		i(SPP)	E	39 24	8		+6			
		i(SPP)	N	39 29	7	+6				
		i(SPP)	Z	39 31	77			+36		
		i	Z	40 32	8			+15		
		i	Z	40 47	8			+17		
		i	NE	40 56	6,8	-6	+13			
		i	E	42 05	9		+9			
		i	Z	42 14	9			+24		
		i	Z	43 31	9			-29		
520	19	iP	ZVV'	05 44 50	3			+7		Compression. Confused by no.519.
		i	VV'	45 05	2			-		
		i	Z	45 11	5			+16		USCGS: 36.0N, 136.5E, H 05 33 30.6,
		i	VV'	45 23	2			-		h 17 km.ca.
		eL	E	06 04.9	35					
		M	Z	13.4	19			33		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
521	Aug.20	iP	VV'	01 35 09	1½			-		Dilatation.
		ipP	VV'	35 17	2			+		
		i	Z	35 19	3			+6		USCGS: 17,8S, 169.0E, H 01 30 19.2
		isP	VV'	35 23	2			+		h 36 km.ca.
		i	NZ	39 17	4	-2		-3		
		i	E	39 18	5		-4			
		e	EZ	39 28	16					
		eLR	E	40.9	22					
		M	N	42.3	15	2				
		M	EZ	43.2	16		6	10		
		i(ScS)	N	46 21	4	+2				
522	20	iP	VV'	05 09 52	1			-	3460	Dilatation.
		iP	NEZ	09 53	2	+1	+2	-7	31°1	h 0.075, H 05 04 15
		(pP)	V	11 17	1½					
		iS	E	14 22	4		-2			USCGS: 17.8S, 178.8W, H 05 04 14.3,
		i	E	17 22	4		+2			h 592 km.ca.
		e	Z	17 27	13					
		iScS	NE	19 24	3	+2	+2			
	21	(iP)	Z	02 11 48	4			+		Large microseisms present.
										USCGS: 22.7S, 179.2W, H 02 06 43.4
										h 554 km.ca.
523	21	i(P)	E	16 13 42	4		+2			Masked by large microseisms.
		i	N	18 18	4	+2				USCGS: 17.8S, 174.4W, H 16 06 55.4
		eL	E	23.4	28					h 74 km.ca.
		M	E	25.3	18		2			
	22	i	VV'	03 08 57	1			+		Masked by microseisms.
		i	VV'	09 22	2			+		USCGS: 17.7S, 168.5E, H 03 03 56.6
										h 77 km.ca.
524	22	iP	V	09 04 46	2			+		Compression. Masked by microseisms.
		iP	Z	04 47	3			+2		
		i	VV'	04 48	2			-		USCGS: 13.4S, 166.7E, H 08 59 27.9
		i	Z	04 59	4			+3		h 63 km.ca.
		e	E	09 27	13					
		eL	E	11.5	21					
		M	NEZ	13.9	16	1	3	8		
	23	Pg	V	06 49 21	¼					Quarry blast ?
		iSg	VV'	49 24½	½			+		
525	24	(P)	VV'	21 03 21						Masked by microseisms.
		i	Z	03 26	2			+3		
		i	N	04 19	3	+2				USCGS: 21.3S, 173.1E, H 20 58 36.2
		e	E	07 42	9					h 258 km.ca.
		M	N	10.6	16	1				
		M	EZ	11.3	18		5	9		
	25	(iP)	VV'	21 33 18	1			+		Masked by microseisms.
										USCGS: 8.1S, 122.8E, H 21 26 28.1
										h 191 km.ca.
526	26	e(LQ)	E	18 12.3						Masked by microseisms.
		M	EZ	17.2	15		1	2		USCGS: 13.9S, 166.2E, H 18 02 35.9
										h 66 km.ca.
527	27	e(S)	N	16 44 30	9					Masked by microseisms.
		e(S)	E	44 35	9					USCGS: 46.6N, 154.1E, H 16 22 08.1
										h 31 km.ca.
528	27	(iP)	VV'	16 56 53	1½			-		Dilatation. Microseisms present.
		i	VV'	56 57	1			-		
		i	VV'	57 12	1½			+		USCGS: 18.3N, 146.6E, H 16 47 44.8
		i	VV'	57 20	1½			+		h 27 km.ca.
		iPcP	V	58 08	1			+		
		i	Z	17 00 35	4			+4		
		iS	E	04 11	6		-4			
		eScS	E	06 37	7					
		i	E	06 43	6		-4			
		eL	E	10.1	34					
		M	Z	14.5	25			13		
		M	E	15.4	19		5			
		M	N	16.2	19	2				

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
529	Aug.27	iP	VV'	17 09 56	1½			-		Dilatation. Masked by no.528. USCGS: 2.2N, 128.6E, H 17 02 27.2 h 263 km.ca.
530	28	iP	VV'	07 46 20	1			-		Dilatation. USCGS: 12.7S, 169.6E, H 07 41 24.5 h 662 km.ca.
	28	(eP)	V	09 49 52						Masked by microseisms. USCGS: 18.6S, 178.0W, H 09 44 13.5 h 574 km.ca.
531	28	(P)	V	20 38 18						Masked by microseisms.
		eL	Z	21 05.8	21					USCGS: 22.9S, 113.4W, H 20 26 04.2
		M	Z	11.9	15			½		h 56 km.ca.
532	29	eLR	Z	15 34.4	(27)					USCGS: 52.2N, 170.8W, H 14 51 14.2 h 41 km.ca.
533	29	iP	VV'	21 38 58	1			-		Dilatation.
		i	VV'	38 59	1			+		USCGS: 15.4S, 168.1E, H 21 33 43.0 h 25 km.ca.
534	30	(iPKP)	VV'	03 54 29	1½			+		Masked by microseisms.
		e	E	59 34	8					(USCGS: 7.0N, 33.2W, H 03 35 07.7
		e	E	04 06 23	19					h 69 km.ca)
		e	N	07 27	13					
535	31	(P)	V'	00 28 40						Masked by microseisms.
		e	E	34 06						USCGS: 28.1S, 176.7W, H 00 22 47.3
		eL	E	35.9	24					h 56 km.ca.
		eL	Z	36.3	21					
		M	NEZ	38.4	16,18	2	4	4		
536	31	iPKP	ZVV'	02 06 23	3			-2	13,300ca	Dilatation.
		i	VV'	06 24	1½			+	120°ca.	h 600 km.ca
		iPP	Z	08 01	3			-3		
		ipPP	Z	09 59	4			+3		USCGS: 10.6S, 70.9W, H 01 48 37.5
		eSKS	E	12 28	6					h 626 km.ca.
		i	NE	13 58	6	+3	-4			
		i(PKKP)	VV'	16 39	1½			+		
		i(SP)	Z	16 54	(9)			+(7)		
		e	Z	17 21	15					
		i	Z	18 21	9			+10		
		i	Z	18 37	6			+7		
		i(PPS)	Z	19 37	7			+10		
537	31	i	VV'	02 11 10	1			-		Dilatation.
		ePKP	VV'	14 55	1				13,300ca	
		iPKP	Z	14 56	4			-3	120°ca	Dilatation.
		iPP	ZVV'	16 33	4			+5		h 600 km.ca
		i	VV'	17 19	1			-		
		i	VV'	17 35	1			+		USCGS: 10.4S, 70.7W, H 01 57 08.0
		i	VV'	17 37	1			+		h 629 km.ca.
		iSKS	NE	20 55	5	-3	+4			
		m	NE	21 06	7	6	9			
		i	NE	22 26	5	-9	+8			
		m	NE	22 37	7	14	17			
		i(PKKP)	ZVV'	25 12	4			+15		
		i(SP)	NE	25 33	8	-13	+18			
		i	NEZ	26 56	7	+21	-24	+59		
		i	NZ	28 14	6	+10		+13		
		i	E	28 19	9		+27			
		i	Z	29 02	5			+14		
		i(SS)	E	32 40	12		+19			
		i	E	33 06	10		+27			
		i(sSS)	E	36 03	13		-34			
		(SSS)	E	36 56	(20)					

A. Fynn, S.J.
Director.

P.F.Rheinberger.

No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
538	Sept.1	iP	NZVV'	00 22 10	3	+1		+4	9660ca	Compression.
		i	VV'	22 13	2			+	87°ca	h 0.01+ H 00 09 34
		i	V	22 21	1½			+		
		ipP	Z	22 41	4			-8		USCGS: 59.3S, 27.3W, H 00 09 34.6
		ipP	V'	22 42	3			+		h 131 km.ca.
		i	V	22 45	1½			-		
		i	VV'	22 48	1½			+		
		isP	NZ	22 51	4	+4		+19		
		iPP	NZ	25 40	4	-3		-10		
		i	VV'	25 42	2			+		
		ipPP	NZ	26 05	4	-4		-11		
		i	VV'	26 09	2			-		
		i(sPP)	N	26 23	4	+5				
		e	Z	32 09	12					
		iSKS	N	32 24	6	-15				
		i	N	32 30	6	+(39)				
		i	Z	32 31	7			-15		
		iS	E	32 39	7		+48			
		iScS	N	32 43	7	-(33)				
		i(pSKS)	E	33 00	7		+8			
		i	N	33 13	6	-5				
		isS	E	33 22	7		+10			
		i	Z	33 27	9			-22		
		i	N	33 28	7	+13				
		iSP	E	33 37	9		-12			
		i	N	33 44	10	+22				
		i	N	34 52	8	-18				
		iSS	E	38 22	12		+16			
		e	Z	38 37	21					
		eLQ	E	45.0	27					
		eLR	Z	50.2	45					
		M	EZ	58.7	20		12	27		
		M	N	58.9	18	10				
		M	Z	01 00.7	16			28		
		M	N	02.8	16	15				
539	1	e	E	19 15.5						Masked by microseisms.
540	1	eL	EZ	19 46	21					Masked by microseisms.
		M	NEZ	20 00	16					
541	2	eL	E	01 06.0						Masked by large microseisms. USCGS: 52.0N, 170.9W, H 00 26 06.2 h 39 km.ca.
542	2	iP	NZ	03 51 43	3	+2		+3		Compression. Large microseisms present.
		i	VV'	51 49	1½			-		USCGS: 56.6S, 147.1E, H 03 46 36.8
		ipP	Z	51 52	3			+3		h 41 km.ca
		i	N	52 18	3	+2				
		e	E	55 58	9					
		i	N	56 09	4	+2				
		eL	Z	57.3	21					
		eL	N	57.5	19					
		M	NZ	59.3	16	3		6		
		M	E	59.6	11		3			
		M	N	04 02.6	10	4				
	2	(iP)	VV'	18 01 33	1½			+		Masked by microseisms. USCGS: 6.0S, 105.9E, H 17 52 46.1 h 127 km.ca.
543	4	iP	VV'	10 02 07	1½			-		Dilatation. Microseisms present.
		(S)	NE	12 53						USCGS: 51.4N, 178.1W, H 09 49 10.7 h 35 km.ca.
544	5	M	EZ	01 07.5	17	½	½			USCGS: 16.2S, 172.6W, H 00 46 29.6 h 49 km.ca.
545	5	(eP)	V	11 48 47						Masked by microseisms.
		i(SKS)	N	59 47	6	+2				
		e(S)	E	12 00 42	7					USCGS: 59.8N, 150.6W, H 11 34 37.3 h 44 km.ca.
		eL	E	24.4	24					
		M	EZ	30.7	20		1	2		

RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
546	Sept. 8	(i)	Z	06 38 24	3			+2		Masked by microseisms.
		M	N	46.9	16	1				
547	8	iP	V'	11 39 20	1½			+	10,070	Compression.
		iP	NZV	39 21	4	+15		+63	90°6	h 0.01, H 11 26 28
		i	Z	39 30	6			+43		USCGS: 56.1S, 27.3W, H 11 26 32.8
		i	N	39 31	6	+12				h 125 km.ca.
		ipP	Z	39 47	6			+14		
		isP	Z	39 56	6			+28		
		isP	N	39 57	6	+10				
		i	N	40 28	6	+10				
		i	N	40 46	6	+10				
		iPP	VV'	42 56	4			+		
		iPP	Z	42 58	6			+74		
		iPP	NE	42 59	6	+24	+5			
		ipPP	E	43 23	6		+7			
		isPP	NZ	43 32	7	+12		+39		
		iSKS	N	49 41	7	+24				
		iS	NE	50 06	7	-16	+13			
		isS	E	50 51	10		+46			
		i	E	51 09	9		-19			
		e	N	51 15	16					
		i	Z	51 16	9			+32		
		iPS	N	51 32	7	-31				
		i	N	52 34	7	+22				
		eSS	N	56 19	16					
		isSS	N	57 00	10	+7				
		eLQ	E	12 03.7	24					
		eLR	Z	08.8	48					
		M	E	12.0	25		34			
		M	N	12.4	28	44				
		M	Z	12.6	31			97		
		m	E	19.3	19		24			
		M	NZ	19.7	19	24		59		
		eW_2	Z	13 45.9	29					
	9	i	VV'	05 19 13	1½			-		
		i	VV'	19 35	1½			+		
548	9	iP	VV'	15 29 29	1			+		Microseisms present.
		M	EZ	39.2	15		½	1		USCGS: 10.6S, 164.4E, H 15 23 57.8 h 79 km.ca.
549	10	i	VV'	01 00 19	1½			+		Masked by microseisms.
		eL	E	08.3	13					
550	11	i	Z	20 04 53	3			+2		Masked by microseisms.
		i	VV'	06 02	1½			+		USCGS: 4.1S, 134.3E, H 19 57 58.2
		e	N	10 14	?					h 19 km.ca.
		eL	E	15.1	28					
		M	E	17.9	13		8			
		M	N	18.0	12	6				
		M	Z	19.4	12			7		
551	12	eL	N	17 02.1	16					
552	12	i(P)	VV'	19 42 00	1½			+		Masked by microseisms.
		i	VV'	44 56	1½			+		USCGS: 59.4S, 29.2W, H 19 29 05.2
		e(SKS)	N	52 22	7					h 25 km.ca.
		i(S)	E	52 34	5		+3			
		e(sS)	E	52 50	6					
		eSS	N	58 12	13					
		eLQ	E	20 04.7	30					
		eL	Z	14.6	21					
		M	Z	19.3	18			3		
		M	N	19.5	18	2				
		M	Z	23.1	16			5		
		M	NE	23.5	16	3	2			
553	13	(P)	V	03 11 33						Masked by microseisms.
		eL	E	21.1	19					USCGS: 5.6S, 144.8E, H 03 05 35.9
		M	E	23.5	12		½			h 100 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
554	Sept.13	e(S)	N	14 18 53						Masked by microseisms.
		e(SS)	N	22 13	12					USCGS: 9.3S, 112.9E, H 14 04 40.1
		eL	E	26.0	27					h 93 km.ca.
		M	NE	27.9	19	1	1			10.0S, 113.1E, H 14 04 44.0
		M	EZ	30.9	21		2	3		h 104 km.ca.
555	13	(P)	Z	21 32 32						Masked by microseisms.
		eL	Z	22 03.9	22					USCGS: 41.6S, 73.2W, H 21 19 26.2
										h 154 km.ca.
	14	i	VV'	16 59 57	1½			+		Large microseisms present.
556	15	i(PKP)	V	02 05 12	1½			+		Large microseisms present.
		e	E	15 58						USCGS: 35.1N, 33.9E, H 01 46 08.4
		e(PS)	E	17 47	13					h 25 km.ca.
		e	E	18 13	30					
		M	NE	59.5	21	1	2			
		M	Z	03 00.1	21			3		
557	15	M	V	05 12 19	2					Regional. Masked by microseisms.
	15	(e)	V	06 02 20						Local.
		i	V	02 24	½			+		
		i	V	02 33	½			+		
558	15	(iP)	VV'	10 12 02	1½			+		Masked by microseisms.
		eL	N	19.3	(17)					USCGS: 10.1S, 160.7E, H 10 06 36.4
		M	NZ	21.3	16	½		2		h 66 km.ca.
		M	E	21.6	15		½			
559	17	(iP)	VV'	01 18 44						Large microseisms present.
		M	E	32,8	15		1			USCGS: 4.1S, 129.7E, H 01 11 43.7
										h 46 km.ca.
560	17	(P)	Z	08 52 27						Masked by microseisms.
		e	N	09 01 08	9					USCGS: 23.9N, 122.2E, H 08 41 53.6
		e	N	02 20	8					h 35 km.ca.
		eL	E	11,8	21					
		eL	E	13.7	24					
		M	NZ	19.4	19	1		1		
		M	E	19.7	18	1	1			
561	17	eP	V	22 39 45	¼					Felt at Bowral, N.S.W.
562	17	iP	V'	23 27 57	1½			+		Microseisms present.
		i(pP)	ZV	28 06				+		USCGS: 5.9S, 147.4E, H 23 22 06.3
		eS	N	32 35	8					h 45 km.ca.
		i(ScP)	Z	34 17	3			+4		
		e(L)	N	34.8	(27)					
		eL	Z	35.8	30					
		M	N	38.1	21	11				
		M	EZ	38.4	16,21		9	16		
563	18	e(T)	V	00 30 12	½					Masked by micros. & coda of 562.
564	18	eP	ZVV'	15 42 42						
		i	VV'	42 46	1½			-		USCGS: 21.0S, 173.6E, H 15 37 33.1
		i	EZ	42 48	4		+2	-7		h 25 km.ca.
		i	VV'	42 50	1½			+		
		e	Z	42 58	6					
		i	VV'	43 09	1½			-		
		i	ZVV'	43 15	3			+3		
		i	Z	44 25	4			+4		
		i(PcP)	Z	46 19	4			-3		
		eS	E	46 59	10					
		i	EZ	47 12	5			+5	-2	
		i	N	47 15	8	+7				
		i	Z	47 22	6			+4		
		iSS	N	47 51	9	+7				
		i	Z	47 53	6			+4		
		eL	N	48.4	21					
		eL	E	48.7	24					
		eL	Z	49.0	24					
		M	N	50.1	16	5				
		M	EZ	50.6	18		5	7		
		M	N	51.2	13	5				

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
565	Sept.19	(iPKP)	V'	02 42 18	1					Masked by microseisms.
		e(SKKS)	NE	49 36	7					USCGS: 20.3S, 63.2W, H 02 25 49.2
		e(PS)	N	53 26	9					h 609 km.ca.
		e(PS)	Z	53 32	(13)					
		i	VV'	57 09	1½			+		
		e	N	57 14	15					
		e	E	57 29	16					
		e(LR)	E	03 19.6	22					
566	19	(P)	Z	06 18 40						Masked by microseisms.
		eL	E	33.0	18					USCGS: 14.8N, 146.8E, H 06 09 56.6
										h 61 km.ca.
	19	(iP)	VV'	09 26 51	1½					Masked by microseisms.
										USCGS: 2.4N, 126.3E, H 09 18 55.0
										h 84 km.ca.
567	19	(i)	VV'	09 59 42	1½			+		USCGS: 6.7N, 82.4W, H 09 46 17.7
		e(PP)	Z	10 06 52	9					h 33 km.ca
		e(PS)	E	17 07	10					
		e(SS)	E	23 31	17					
		eLR	EZ	45.1	28					
		M	EZ	52.8	18		1	2		
		M	N	54.7	16	½				
568	19	(P)	V	13 52 22						Masked by microseisms.
		(i)	V	52 34	1½			+		USCGS: 1.2N, 125.5E, H 13 44 28.2
		i(PP)	VV'	54 08	2			+		h 54 km.ca.
		e(S)	N	58 38						
569	19	(iP)	VV'	18 30 42	1½			+		Masked by microseisms.
		(i)	VV'	30 56	1½			+		USCGS: 21.6S, 179.4W, H 18 25 29.0
		eL	E	38.1	16					h 639 km.ca.
		M	N	41.6	11	¼				
570	19	eP	VV'	21 47 21	1½					
		i	VV'	47 22	1½			-		USCGS: 60.1S, 22.9W, H 21 34 43.3
		e	N	58 00	7					h 56 km.ca.
		M	EZ	25.3	17		½	1		
		M	N	28.4	16	1				
	20	e	V	00 20 18	½					Local.
	20	e	V	01 05 19	(½)					"
	20	eP	V	01 57 18	½					"
		i	V	57 27	¾			-		
	20	(P)	V	01 58 13	½					"
		i	V	58 21	¾			-		
	20	eP	V	02 09 41	(½)					"
	20	eP	V	02 11 12	(¼)					"
	20	e	V	06 00 09	¼					" Quarry blast ?
571	20	(iP)	V	19 09 44	1½			+	3360ca	
		iP	NZVV'	09 46	3	-1		+6	30°2ca	Compression.
		i	V	09 55	2			-		H 19 03 37 ca.
		i	V	10 05	1½			-		
		i	NZ	10 10	5	+6		-9		USCGS: 3.6S, 150.9E, H 19 03 37.1
		i	Z	10 41	4			+6		h 30 km.ca.
		iPP	NZ	10 48	6	+10		-9		
		iPPP	Z	11 04	6			+13		
		e	N	11 11	9					
		i	Z	11 16	7			+10		
		iS	N	14 42	10	+10				
		e	N	15 00	23					
		i	N	15 23	6	+14				
		i	Z	16 00	4			+7		
		iSS	E	16 26	10		+19			
		i	E	17 13	6		+23			
		i	N	17 19	7	-7				
		i	E	17 35	7		+22			
		i	Z	18 11	4			+12		Continued on next page.

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
571 cont.	Sept.20	eL	Z	19 18.4	28					
		i	N	20 10	9	+28				
		i	E	20 29	12		+46			
		M	Z	20.8	19			73		
		M	N	21.4	16	42				
		M	E	21.8	13		49			
	22	(ePg)	V	06 00 18						Quarry blast ?
		i(Sg)	V	00 21	¼			-		
		!	V	00 24	¼			+		
572	23	i	VV'	12 07 26	1½			+		Masked by microseisms.
		eL	N	12.7	15					
573	24	eL	E	22 11						USCGS: 33.3N, 141.3E, H 21 40 58.8 h 93 km.ca.
	25	(iP)	Z	14 54 45	3			+3		Masked by large microseisms. USCGS: 4.4N, 122.7E, H 14 47 08.6 h 598 km.ca.
	25	(iP)	V	15 59 14	2			+		Masked by large microseisms. USCGS: 18.2S, 177.9W, H 15 53 33.2 h 667 km.ca.
	26	e	V	06 00 33	¼					Local. Quarry blast ?
	27	e	V	05 00 22	½					" " "
	27	e(Pg)	V	06 15 30½	¼					" " "
		i(Sg)	V	15 34½	¼			-		
		i !	V	15 37½	½			+		
574	27	iP	EZVV'	06 39 44	2		+2	-12	3480 31°3	Dilatation. h 0.08, H 06 34 07
		i	VV'	39 56	1½			+		
		i	V	40 04	1½			+		
		i	ZVV'	40 10	2			+4		USCGS: 17.4S, 178.7W, H 06 34 03.7 h 576 km.ca.
		ipP	E	41 14	4		-2			
		iPP	Z	41 16	4			-3		
		iPP	VV'	41 18	1½			+		
		iPcP	VV'	42 21	1½			-		
		iS	N	44 14	5	-4				
		iS	E	44 15	4		+2			
		iScP	ZVV'	45 15	2			-3		
		i	EZ	47 13	5		+2	+2		
		i	N	47 22	4	-1				
		i	NZ	49 16	3	+3		+5		
		iScS	NE	49 18	4	+9	+6			
575	27	iP	V'	12 20 16	2			+		Compression. Microseisms present.
		eSKS	N	30 34	6					
		iS	E	30 56	6		-5			USCGS: 59.4S, 24.2W, H 12 07 39.2 h 110 km.ca.
		i	N	31 55	4	-1				
		e(SS)	E	36 33	17					
		eSS	N	36 45	16					
		eLQ	E	43.0	26					
		eL	Z	51.3	(30)					
		M	E	57.3	19		3			
		M	NZ	58.1	18	5		7		
576	27	(e)	E	19 51 14						Masked by microseisms. USCGS: 52.5N, 168.7W, H 19 20 48.6 h 42 km.ca.
		e	N	58 15	17					
		M	N	20 14.6	16	¼				
		M	E	16.0	16		¼			
577	27	M	N	20 24.9	16	¼				Masked by no.576. USCGS: 52.2N, 168.7W, H 19 27 00.7 h 22 km.ca.
		M	EZ	27.8	16		¼	1		
578	28	iP	VV'	01 33 21	1½			+	6080 54°7	Compression. h 0.005
		i	VV'	33 29	1½			+		
		i	VV'	33 34	1½			+		
		iS	E	40 55	6		+2			USCGS: 3.9S, 102.0E, H 01 23 59.6 h 78 km.ca.
		isS	E	41 24	6		+2			
		e	NE	45 22	12					
		eL	Z	51.6	22					

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
578	Sept.28	M	N	01 55.2	15	1				
cont.		M	E	58.1	20		1			
		M	Z	58.8	19			1		
579	28	(P)	VV'	03 35 18	1½					Masked by microseisms.
		i(S)	N	43 55	5	-2				
		e	E	44 00	9					USCGS: 30.5N, 141.3E, H 03 24 43.4
		e		45 16	12					h 125 km.ca.
		M	E	04 00.6	21		1			
		M	N	02.3	19	1				
		M	Z	05.5	19			1		
	28	e	V	05 30 09	¼					Local. Seismic ??
		e	V	30 16	¼					
		e	V	30 44	¼					
		e	V	30 57	¼					
	28	i	V	05 40 40				(+)		Local. Seismic ??
	28	e	V	06 00 25						Local. Quarry blast ?
		i	V	00 27	½			+		
580	28	iP	V	06 37 56	¼			-		Dilatation. Felt at Bowral, N.S.W.
		i(S)	NVV'	38 10½	½			+		
	29	i(P)	V	05 40 29	1			+		USCGS: 30.2S, 177.7W, 05 34 51.7
										h 58 km.ca.
	29	(ePg)	V	06 10 20½						
		e	V	10 21½	¼					Quarry blast ?
		iSg	V	10 24½	¼			-		
		i	VV'	10 28	¾			+		
581	29	iP	ZVV'	19 14 11	4			-2		Dilatation
		i(pP)	V	14 32	1½			+		
		i	V	14 36	1½			+		USCGS: 0.5N, 122.4E, H 19 06 13.4
		i	VV'	14 37	1½			+		h 110 km.ca.
		i	NEZ	14 38	3	+1	-1	-3		
		i	VV'	14 49	1½			+		
		i	VV'	14 52	1½			+		
		e	NEZ	16 15	16					
		e	N	20 21	16					
		iS	N	20 38	6	-6				
		i	E	20 41	6		+5			
		i	E	21 11	6		+7			
		i	NZ	21 12	6	-3		+5		
		i	N	21 37	5	-3				
		iSS	NZ	23 55	7	+6		+9		
		iSS	E	23 57	7		+9			
		i	N	24 02	6	-8				
		e	Z	24 14	15					
		i	N	24 37	6	+8				
		i	E	24 40	6		-4			
		i(SSS)	Z	24 52	7			+8		
		eL	E	26.8	34					
		eL	Z	28.3	39					
		M	N	29.5	15	5				
		M	E	29.8	15		4			

A. Fynn, S.J.
Director.

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
582	Oct. 2	iP	Z	05 58 48	3			+3		Compression
		i	Z	58 50	4			+10		Large microseisms present.
		i	E	58 51	4		-4			
		i	VV'	58 55	1½			+		USCGS: 33.9S, 179.6E, H 05 53 37.5
		i	Z	59 00	3			-5		h 30 km.ca.
		i	E	59 10	4		+5			
		i	Z	59 13	4			+10		
		i(PP)	E	59 20	4		+4			
		i	Z	59 22	4			+12		
		i	N	59 23	4	+4				
		i	N	06 03 19	4	+3				
		i	E	03 22	7		+6			
		i	E	03 34	7		+5			
		i	N	03 37	4	+4				
		eL	N	04.9	21					
		eL	Z	05.0	24					
		eL	E	05.2	21					
		M	N	06.5	16	11				
		M	E	06.8	16		6			
		M	Z	06.9	16			14		
	2	(iP)	Z	06 12 41	4			+7		Obscured by coda of No.582.
		i	VV'	13 01	1½			-		USCGS: 33.8S, 179.6E, H 06 07 40.0
										h 50 km.ca.
583	7	iP	Z	07 07 51	5			+8		Compression.
		i	E	07 52	5		-3			Large microseisms present.
		i	VV'	07 55	2			+		
		i	VV'	08 01	1½			+		USCGS: 33.8S, 179.5E, H 07 02 40.4
		i(pP)	Z	08 04	4			+18		h 57 km.ca.
		i	Z	08 10	5			-19		
		i(sS)	N	12 18	6	+4				
		i	E	12 20	6		-7			
		i	Z	12 21	4			+7		
		i	Z	12 26	6			+11		
		i	NE	12 36	8	+11	+19			
		i	Z	12 49	6			+17		
		eL	E	13.7	28					
		eL	N	13.9	22					
		eL	Z	14.0	26					
		M	N	15.5	15	29				
		M	Z	17.4	16			31		
		M	E	17.5	15		22			
584	2	(iP)	Z	11 59 24	3			+3		Masked by large microseisms.
		M	E	12 11.8	12		2			USCGS: 1.5S, 138.3E, H 11 52 33.8
		M	NZ	14.3	15	1		2		h 41 km.ca.
	2	(iP)	VV'	13 08 25						Masked by microseisms.
										USCGS: 13.4S, 167.7E, H 13 02 59.8
										h 62 km.ca.
	3	i	V	06 51 36	½			-		Local.
		i	V'	51 36½	½			+		
585	3	i(S)	E	18 35 55	6		+3			Masked by microseisms.
		i	Z	35 57	5			+4		USCGS: 20.5S, 170.7E, H 18 27 05.3
		eL	N	38.3	17					h 39 km.ca.
		M	Z	43.7	13			2		
586	3	(i)	V	19 04 18	1½			+		Masked by microseisms.
		e	N	10 07	12					
		eL	N	12.8	19					
		M	N	16.0	12	2				
		M	E	16.2	11		3			

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
587	Oct. 4	iP	VV'	02 28 42	1			+		Compression.
		i(pP)	V	28 59	1½			+		Large microseisms present.
		i	Z	29 26	3			+4		
		e(S)	N	32 59	10					USCGS:13.2S, 166.5E, H 02 23 23.5
		e	Z	33 10	15					h 66 km.ca.
		i	N	33 16	5	+4				
		i	E	33 28	4		-3			
		i	Z	33 40	4			+6		
		eLR	Z	35.0	26					
		M	E	37.6	18		5			
		M	Z	37.7	18			10		
		M	N	37.8	16	4				
	4	(iP)	VV'	04 21 59	1½					Masked by large microseisms.
										USCGS: 19.1S, 176.7W, H 04 15 46.6
										h 211 km.ca.
	5	e(Pg)	VV'	05 06 37½	½					Local.
		i !	VV'	07 00	1			-		
588	5	iP	VV'	18 13 33	1½			+		Compression. Microseisms present.
		i(S)	NE	17 31	7	+5	+7			
		i	N	17 43	7	+4				USCGS: 19.4S, 169.0E, H 18 08 43.4
		i	N	17 50	6	+4				h 58 km.ca.
		i	E	17 52	7		+7			
		eL	E	18.8	26					
		M	E	20.5	19		2			
		M	Z	20.8	16			2		
	5	(P)	VV'	19 44 11	1					Masked by microseisms.
										USCGS: 15.4S, 167.8E, H 19 39 12.6
										h 161 km.ca.
589	8	iP	V'	23 49 14	1½			+		Compression.
		iP	V	49 14½	1½			+		h 0.015 ca.
		iP	NEZ	49 15	2	-	+	+5		
		i	ZV	49 20	3			+3		USCGS: 1.6N, 127.3E, H 23 41 32.2
		i	V	49 38	1½			+		h 102 km.ca.
		i(pP)	V	49 46	2			+		
		iPP	ZVV'	50 52	3			+5		
		i	VV'	50 54	1½			-		
		iPcP	VV'	51 03	1½			+		
		e	E	56 22	7					
		i	E	59 09	4		+3			
		e	E	59.2	16					
		eL	E	24 00.9	(36)					
		M	Z	07.4	11			2		
		M	E	09.6	13		2			
		M	Z	10.3	14			4		
590	9	(P)	VV'	10 33 32						USCGS: 5.9S, 147.7E, H 10 27 41.4
		M	E	45.3	12		¼			h 71 km.ca.
591	10	(eP)	Z	03 49 44						Masked by microseisms.
		e(S)	E	53 46	5					USCGS: 22.9S, 180°, H 03 44 38.3
		e	E	53 51	10					h 576 km.ca.
	10	e	V	05 00 23½	¼					Local.
		i	VV'	00 44½	1			+		
	10	(eP)	V	08 31 36						USCGS: 5.4S, 154.3E, H 08 25 54.6
										h 154 km.ca.
592	10	(P)	Z	17 31 22						Masked by large microseisms.
		iPP	VV'	32 25	1½			+		
		e	NE	36 43						USCGS: 4.7S, 138.2E, H 17 24 58.9
		i(ScS)	EZ	41 45	3		-8	+7		h 36 km.ca.
		i	EZ	41 55	4		+12	+16		
		M	NE	45.1	12,16	23	17			
		M	Z	45.5	15			36		

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
593	Oct.11	(i) Z	00 35 50						Masked by microseisms.
		eL N	43.3	(18)					
		M N	45.3	15	½				USCGS: 28.8S, 175.9W, H 00 29 36.4
		M E	48.1	16		1			h 88 km.ca.
		M Z	48.3	15			1		
	11	e V	04 23 22						Local. Seismic ??
		i V	23 49	¼			+		
	11	e V	06 00 05	¼					Local. Quarry blast ??
		i V	00 09	¾			+		
594	11	i(P) VV'	09 33 59	1			+		Masked by microseisms.
		e E	38 36	7					USCGS: 11.6S, 166.3E, H 09 28 17.7
		eL E	41.0	24					h 52 km.ca.
	11	(iP) V'	16 09 17	2			+		Masked by microseisms. USCGS: 24.5S, 179.8E, H 16 04 18.0 h 560 km.ca.
595	12	eL E	01 26.9	19					
596	12	iP VV'	03 51 03	1½			+		Compression. Microseisms present.
		i VV'	51 11	1½			+		USCGS: 5.4N, 126.0E, H 03 42 50.9
		i VV'	51 21	1½			+		h 124 km.ca.
597	12	eLR E	06 16.4	27					Masked by microseisms.
		M NE	19.4	19	3	8			USCGS: 2.9S, 144.9E, H 06 01 25.5
		M E	22.0	13		5			h 25 km.ca.
		M NZ	22.3	13	5		7		
598	12	i(P) V	08 30 08	1½			+		Masked by microseisms.
		e NZ	35 12	16					USCGS: 5.6S, 151.9E, H 08 24 10.0
		eL E	38.4	21					h 41 km.ca.
		M NEZ	40.8	18	2	2	3		
599	12	eL E	22 09.0	16					USCGS: 60.7S, 153.8E, H 21 57 35.0 h 25 km.ca.
	13	(iP) V'	02 30 15						Masked by microseisms. USCGS: 6.3N, 126.8E, H 02 21 44.6 h 60 km.ca.
600	13	iP VV'	05 12 01	1			+		Compression. USCGS: 55.9S, 27.2W, H 04 59 04.8 h 67 km.ca.
601	13	(eP) V	08 45 30	1½					Microseisms present.
		i V'	45 33	2			+		
		i Z	45 34	3			+2		
		i ! V	45 37	1½			+		
602	13	(iP) VV'	10 59 26	1½			+		Masked by microseisms.
		e(SS) N	11 15 48	?					USCGS: 60.3S, 34.3W, H 10 46 47.7
		M Z	37.2	18			1		h 44 km.ca.
		M E	37.5	18		1			
		M N	37.6	18	1				
603	13	iP VV'	17 34 22	1½			+		Compression. Microseisms present.
		e N	40 36						USCGS: 22.0S, 176.9W, H 17 28 21.5
		M N	42.0	13	1				h 155 km.ca.
604	14	iP VV'	16 18 36.5	1			-		Dilatation
		i V	18 40	1			+		
		i V	18 43.5	1			-		USCGS: 19.1S, 168.4E, H 16 13 48.7
		i ZV	18 53	3			+3		h 28 km.ca.
		e(S) E	22 36	6					
		i E	22 47	5		+5			
		i N	22 50	5	-2				
		eLR Z	24.1	22					
		eL E	24.3	21					
		M NEZ	25.2	20	3	2	4		
		M N	26.1	14	2				
		M E	26.7	13		2			
	15	i VV'	16 14 31	1½			+		Masked by large microseisms.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks.
	1961			h m s	s	μ	μ	μ	km.	
	Oct.15	i	V	19 16 42	1½			+		Masked by large microseisms.
		i	V	19 18	1½			+		
	16	e	V	02 29 41	¼					Local.
605	17	(i)	V	04 40 18	1½			+		Masked by large microseisms.
		e(P)	V	40 21	2					
		e(PP)	V	43 52	2½					USCGS: 55.8S, 0.5E, H 04 27 33.5
		e(S)	N	51 12	(10)					h 25 km.ca.
		i	E	51 16	6		-3			
		(e)	N	55 24	?					
		(e)	E	55 27	?					
		(eSS)	E	59 00	(20)					
		eLQ	E	05 03.1	(26)					
		M	NEZ	15.0	21	3	3	6		
		M	NEZ	16.9	18	4	4	6		
606	17	(P)	Z	11 10 58						Masked by large microseisms.
		(i)	V	11 34						USCGS: 12.1N, 143.4E, H 11 02 32.7
		eL	Z	25.0	(18)					h 25 km.ca.
607	18	(e)	E	01 57 39	(18)					Masked by microseisms.
		eL	E	02 04.9	22					USCGS: 18.0S, 168.6E, H 01 38 28.8
		M	NE	08.1	22	1	1			h 117 km.ca.
608	18	iP	ZV	02 55 35	2			+2		Compression. Large micros. present.
		eL	E	03 02.7	23					USCGS: 29.9S, 177.6W, H 02 49 59.6
		M	EZ	04.7	18		1	3		h 65 km.ca.
	18	e	V	06 40 49						Local.
		i	V	40 58	¾			+		
	18	e	V	06 59 39	(½)					Local.
		e	V	07 00 40	¼					"
		e	V	01 06	¾					
609	18	eP	Z	17 05 33	5				11,000ca	
		iPP	Z	09 40	4			-3	99°ca.	
		iSKS	N	16 11	8	-3				USCGS: 36.7S, 72.6W, H 16 52 00.2,
		i	E	16 13	4			+2		h 67 km.ca.
		e	E	16 21	14					
		i	N	16 33	5	+3				
		i	N	16 37	8	+3				
		iS	E	17 02	7		-3			
		iPS	Z	18 34	7			-4		
		e	E	18 46	21					
		i	N	19 06	9	+6				
		ePPS	Z	19 15	15					
		eSS	E	23 51	18					
		eLQ	E	33.8	24					
		eLR	Z	37.3	24					
		eLR	E	37.9	24					
		M	NEZ	42.9	18	8	6	18		
		M	Z	48.3	16			19		
		M	E	49.1	16		12			
		M	N	50.2	16	8				
	19	e(P)	V	06 44 29						Masked by microseisms.
	19	(eP)	V	07 10 22						Local.
		i	VV'	10 47	½			+		
610	19	(i)	V	09 16 57	1½			-		Masked by microseisms.
		i	E	21 25	6		+2			
		e	N	21 26	5					USCGS: 55.2S, 146.0E, H 09 12 28.5
		eL	E	22.4	13					h 86 km.ca.
		M	E	24.2	11		1			
		M	N	24.8	10	1				
611	19	i(PP)	VV'	11 36 55	1½			+		Masked by microseisms.
		e	N	42 13	7					USCGS: 37.1S, 69.8W, H 11 19 19.6
										h 155 km.ca

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
612	Oct.19	e(L)	N	13 44.2						Masked by microseisms.
										USCGS: 21.6S, 170.1E, H 13 31 57.1
										h 75 km.ca.
613	19	iP	VV'	19 31 22	1½			-		Dilatation.
		i(pP)	ZVV'	31 29	3			+3		Microseisms present.
		i(sP)	VV'	31 33	1½			+		
		iPP	V	31 49	1½			+		USCGS: 55.3S, 146.4E, H 19 26 32.2
		i	VV'	32 25	1½			+		h 50 km.ca.
		e	E	35 25						
		i(sS)	E	35 32	6		+5			
		i(sS)	N	35 33	6	+3				
		i	Z	35 37	5			+6		
		eL	E	36.2	15					
		M	E	38.3	11		9			
		M	N	38.9	10	9				
		M	Z	39.2	11			7		
	19	e(Pg)	V	23 25 36	(¼)					Local.
		e	V	26 01	(¼)					
	20	(iP)	V	03 55 37	1				-	Masked by microseisms.
										USCGS: 9.4S, 160.4E, H 03 49 58.2
										h 21 km.ca.
	20	e	V	04 29 20	½					Local.
		e	V	29 34	½					
		e	V	30 04	½					
	21	(iP)	V'	11 49 10	2			+		Masked by very large microseisms.
		(i)	V'	49 17	2			+		USCGS: 18.0S, 178.5W, H 11 43 41.3
										h 618 km.ca.
614	21	(i)	V	17 41 07						Masked by microseisms.
		i(S)	N	44 24	5	-2				USCGS: 10.8S, 166.0E, H 17 34 36.8
		e	E	45 45	7					h 192 km.ca.
615	22	iP	NEZVV'	09 55 42	3	-½	-1	+3		Compression.
		i	V	55 45	1½			+		h (0.005)
		i	Z	55 49	3			+4		
		i(pP)	VV'	55 58	1½			+		USCGS: 19.9S, 172.4E, H 09 50 43.6
		iPP	N	56 10	4	-1				h 181 km.ca.
		i	VV'	56 12	1½			+		
		i	Z	56 15	4			+3		
		i	NZ	57 19	5	+2		-5		
		e	NE	59 51	13					
		i	N	59 57	6	+3				
		i	E	10 00 02	7		-7			
		e	Z	00 04	13					
		i	N	00 18	6	+4				
		i	Z	00 21	7			+14		
		eL	N	01.2	18					
		eL	E	01.7	25					
		M	E	03.1	19		13			
		M	N	03.4	15	14				
		M	Z	03.6	16			16		
		M	E	04.0	16		9			
		M	N	04.3	13	14				
616	22	iP	VV'	14 46 41	1½			+		Compression. Microseisms present.
		i(PcS)	Z	53 16	4			+4		USCGS: 17.6S, 179.6W, H 14 40 56.6
										h 549 km.ca.
617	22	(iP)	VV'	18 43 19	1½			+		Microseisms present.
		i	Z	49 43	4			+3		USCGS: 17.7S, 168.2E, H 18 40 25.4
		e	NE	49 45	10					h 41 km.ca.
		eL	Z	51.1	24					
		eL	E	51.5	24					
		M	N	54.1	13	1				

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
618	Oct.23	iP	VV'	00 21 17	1½			-	9720 c	Dilatation. Microseisms present.
		iPcP	ZVV'	21 20	4			+6	87°5	h 0.00, H 00 08 31
		ipP	VV'	21 16	1½			+		
		ipP	Z	21 27	4			+8		USCGS: 60.4S, 33.4W, H 00 08 33.3
		i	Z	21 36	5			+6		h 25 km.ca.
		iPP	Z	24 48	4			+3		
		iS	NE	31 54	6	-2	-6			
		i	E	32 21	6		+6			
		i	N	32 33	6	+4				
		iPPS	N	33 26	7	-3				
		iSS	E	37 36	9		+8			
		eLQ	E	43.6	30					
		eLR	Z	48.4	27					
		M	NEZ	59.1	18	8	9	9		
619	23	(iP)	VV'	04 22 36	1½			-		Masked by microseisms.
		eL	E	33.2	19					
620	23	i(P)	VV'	09 21 15	1½					Masked by microseisms.
		eL	E	31.8	20					
		M	E	33.6	13		2			
		M	N	33.9	13	2				
		M	Z	34.1	18			4		
621	23	iP	VV'	14 47 46	1			+	4940	Compression. Microseisms present.
		i	Z	47 48	4			+4	44°4	H 14 39 32
		i	N	47 50	5	+2				
		i	Z	47 53	5			+9		USCGS: 3.5N, 126.4E, H 14 39 33.5
		iPP	Z	49 34	5			+3		h 25 km.ca.
		i	Z	50 25	6			-6		
		i	NZ	51 12	6	+4		-4		
		iS	N	54 21	9	+8				
		i	E	54 31	9		+7			
		i	Z	54 35	6			+3		
		iSS	N	57 28	9	+3				
		iSS	E	57 29	9		+7			
		i	Z	57 36	9			+8		
		iScS	N	57 46	7	+7				
		e(LQ)	E	58.0	21					
		e	Z	59 26	21					
		e	E	15 00 05	24					
		eL	E	03.2	30					
		M	Z	08.7	16			36		
		M	E	08.9	16		31			
		M	N	09.1	16	24				
	23	(iP)	VV'	15 00 12	1½					USCGS: 3.5N, 126.6E, H 14 52 28.2 h 32 km.ca.
	24	i	V	04 43 27	½			-		Dilatation.
	25	i(Pg)	V	02 15 01	¼			(-)		Local. On large microseisms.
	25	i(Pg)	V	06 44 32½	½			+		" " " "
		i(Sg)	VV'	44 35½	¾			+		
622	25	(iP)	E	14 26 58	4		+2			Masked by large microseisms.
		e	N	35 15	16					
		eL	E	36.9	(19)					USCGS: 20.3S, 174.1W, H 14 20 20.8
		M	N	40.6	12	3				h 25 km.ca.
		M	Z	40.7	16		9	9		
		M	E	41.3	16		6			
623	25	e(L)	E	22 56.2						Masked by large microseisms. USCGS: 20.3S, 173.2W, H 22 38 06.6 h 25 km.ca.

No.	Date	Phase	Component	Time (G.M.T.)	Per.	AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
624	Oct.26	(iP)	Z	00 44 40	4			-3		Large microseisms present.
		i	V	44 43	1½			+		
		i	Z	45 10	4			+7		USCGS: 3.1S, 147.4E, H 00 38 20.3,
		i	Z	45 24	5			+5		h 14 km.ca.
		i	VV'	45 29	2			+		
		iPP	N	45 40	6	-4				
		i	Z	46 02	4			+8		
		eS	NE	49 40	9					
		i	N	49 45	7	+8				
		eL	E	52.5	30					
		eL	Z	54.0	31					
		eL	N	54.2	28					
		M	E	56.5	16		60			
		M	Z	56.8	19			57		
		M	N	57.3	15	44				
		M	E	59.3	13		66			
		M	NZ	01 01.3	12	45ca		68		
625	26	M	E	06 10.5						Masked by microseisms.
626	26	e	N	11 20.4						Masked by microseisms. USCGS: 17.9S, 167.7E, H 11 11 26.2 h 124 km.ca.
627	26	iP	VV'	15 37 06	1½			+	6600	Compression. Large microseisms
		i	Z	37 14	4			-5	59°4	present.
		ipP	VV'	37 15	2			+		h 0.00ca. H 15 27 02
		iS	N	45 12	6	+4				USCGS: 0.4S, 98.6E, H 15 27 02.0
		iS	E	45 15	6		+5			h 18 km.ca.
		isS	N	45 26	6	+4				
		iPS	E	45 32	7		+5			
		i	N	45 47	5	+4				
		eSS	N	49 02	12					
		eL	N	56.7	30					
		M	E	16 01.3	24		11			
		M	Z	01.4	24			19		
		M	N	01.5	21	9				
628	26	(iP)	V'	19 38 36	2			-		Masked by large microseisms. USCGS: 0.3S, 98.5E, H 19 28 37.3
		M	E	20 03.2	20		1			h 58 km.ca.
629	27	eL	N	02 48.8						Masked by microseisms. USCGS: 17.9S, 167.7E, H 02 37 10.2, h 17 km.ca.
	27	e	V	04 32 17	(¼)					Small, local.
630	27	eL	E	12 15.4						Masked by microseisms.
	28	i	VV'	01 40 51	1½			+		Masked by microseisms. USCGS: 17.7S, 178.9W, H 01 34 59.5 h 605 km.ca.
	28	e(Pg)	V	02 24 32½	(½)					Local.
		e	V	24 38	(½)					
		i	VV'	24 45	¾			+		
631	28	P	VV'	06 06 09	1½			-		USCGS: 11.6S, 166.4E, H 06 00 33.7
		i(pP)	V	06 20	1½					h 34 km.ca.
		(eS)	E	10 36						
		i	N	10 51	6	+2				
		i	E	10 53	6		+2			
		eL	E	12.9	26					
632	28	eL	Z	15 36.5						USCGS: 38.7S, 73.3W, H 14 49 13.6 h 43 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
633	Oct.28	iP	VV'	22 49 44	1			+	2700 ca.	Compression.
		i	Z	49 47	4			+10	24°3 ca	(h 0.00)
		i	NE	49 48	4	-3	-3			
		i(pP)	Z	49 54	4			+7		USCGS: 13.9S, 166.0E, H 22 44 33.6
		iPP	NEZ	50 19	6, 4	-5	-5	+8		h 89 km.ca.
		i	N	50 55	6	+5				
		i	Z	53 44	7			+7		
		e(S)	E	53 58	?					
		e	N	54 02	?					
		i(sS)	NE	54 14	7	-11	-8			
		i	Z	54 20	9			+23		
		i	E	54 27	7		-15			
		i	Z	54 53	5			+9		
		i(SSS)	N	55 05	7	+4				
		i(SSS)	E	55 10	9		+15			
		i	N	55 24	7	+5				
		e(L)	E	55.7	(21)					
		eL	E	56.7	25					
		M	N	58.1	14	10				
		M	EZ	59.4	15		11	15		
	28	(iP)	V	23 36 23	1½			+		Masked by micros. & coda of 633. USCGS: 13.9S, 166.3E, H 23 31 32.7 h 225 km.ca.
634	29	i(P)	ZVV'	00 01 14	3			+3		Compression.
635	29	(iPKP)	VV'	09 30 46	1½			-		
		eSS	N	46 35	15					USCGS: 49.0N, 128.7W, H 09 12 15.7
		e	E	46 50	18					h 16 km.ca.
		eLQ	N	57.7	(24)					
		eLR	Z	10 02.2	28					
		eLR	E	02.4	28					
		M	NEZ	12.8	20	1	1	2		
636	30	(eSKS)	N	02 09 36						
		(e)	N	13 39						Masked by microseisms.
		(e)	N	20 36						USCGS: 42.5N, 126.6W, H 01 44 53.2
		eL	NE	29.4	27					h 50 km.ca.
637	30	eL	E	03 07.0						Masked by microseisms.
		M	EZ	10.8	19		1	2		USCGS: 42.3N, 126.7W, H 02 16 32.7 h 36 km.ca.
638	30	eL	NZ	09 39.1	28					
		M	NZ	48	21	1		1		Masked by microseisms.
639	30	e	N	17 44 48						Masked by microseisms. USCGS: 28.5S, 178.1W, H 17 35 03.3 h 219 km.ca.
640	30	(iP)	Z	21 26 08	4			+2		Masked by microseisms.
		i	VV'	26 11	2			+		
		iS	NE	34 35	5	-1	-2			
		eLR	E	45.1	22					USCGS: 28.9N, 141.8E, H 21 15 35.2
		M	N	49.8	19	1				h 31 km.ca.
		M	E	51.7	20		1			
	31	e	V	06 01 56½						Quarry blast ?
		i	V	02 00	½			-		
	31	(i)	VV'	01 56 38	2			+		Masked by microseisms.
		i	VV'	58 12	1½			+		
641	31	(P)	V	03 51 15						
		eL	Z	57.6	25					Masked by microseisms.
		M	N	04 00.3	16	1				
		M	EZ	01.0	16		1	1		USCGS: 31.2S, 178.3W, H 03 46 03.2 h 232 km.ca.

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No.	Date	Phase & Component	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1961		h m s	s	μ	μ	μ	km.	
	Nov. 1	(iP) V	20 16 16	1			+		Large microseisms present.
									USCGS: 17.9S, 178.4W, H 20 10 41.7
									h 629 km.ca.
	2	(P) V	05 28 20	1					Masked by microseisms.
									USCGS: 17.9S, 178.5W, H 05 22 41.4
									h 598 km.ca
	2	i(Pg) V	06 17 42	¼			+		Local.
		i V	17 45	¾			+		
	3	i(P) V	04 09 28	1			+		Masked by microseisms.
		i VV'	10 20	1½			+		USCGS: 13.4S, 167.8E, H 04 04 04.7
									h 75 km.ca.
642	3	oL E	15 33.7						Masked by microseisms.
									USCGS: 10.5S, 165.8E, H 15 20 44.5
									h 66 km.ca.
643	3	i(P) Z	22 20 29	3			+2		Masked by microseisms.
		oLR N	25.1	22					USCGS: 22.5S, 170.2E, H 22 15 46.1
		M NE	27.9	13	4	1			h 91 km.ca.
644	4	i(P) V'	03 11 02	1			+		Masked by microseisms.
		i ZV	11 14	3			+2		USCGS: 2.9S, 137.2E, H 03 04 21.2
		i Z	22 28	4			-5		h 51 km.ca.
		i E	22 30	6		+4			
		i N	22 37	5	+3				
		M N	26.1	13	2				
	4	e V	04 20 40	½					Local.
645	5	iP V	00 25 36	1			+		Compression. Microseisms present.
									USCGS: 11.6S, 166.4E, H 00 20 02.7
									h 67 km.ca.
646	5	iP ZV	24 00 33	3			-3		Dilatation.
		i! VV'	00 39	1			+		
		i VV'	00 45	1			-		USCGS: 49.4S, 163.3E, H 23 56 25.4
		i VV'	00 51	1			+		h 35 km.ca.
		oSS NE	04 20	9					
		M NE	04.9	12	1	1			
		oL Z	05.0	22					
		M Z	06.4	16			2		
		oT V	18 26	½					
647	6	iP VV'	05 33 41	1½			-	(2750)	Dilatation.
		iP NEZ	33 42	4	-1	-1	+3	(24°7)	Compression.
		i VV'	33 48	2			+		
		i NEZ	33 49	4	-2	-1	+5		USCGS: 13.3S, 166.0E, H 05 28 39.3
		i VV'	34 05	2			+		h 210 km.ca.
		i(PP) V	34 19	2			-		
		i(PP) NZ	34 20	4	+3		-7		
		e N	37 16	10					
		i(sS) N	38 13	7	+9				
		i E	38 16	6		+5			
		i Z	38 17	6			+7		
		i N	38 25	9	+12				
		i Z	38 30	6			+15		
		i Z	38 44	6			-13		
		i E	38 52	6		+5			
		i(SS) N	38 57	7	-11				
		i Z	39 46	6			+7		
		oL Z	39.9	25					
		oL E	40.4	23					
		M NE	43.0	16	11	9			
		M Z	43.2	16			20		
648	6	oL E	13 25.0	22					USCGS: 6.0S, 146.9E, H 13 09 50.1
		M E	28.4	14		½			h 25 km.ca.
		M N	28.7	13	¼				
	6	i V	13 43 55	1½			+		USCGS: 17.5N, 145.3E, H 13 34 54.8
									h 251 km.ca.
	7	(iP) Z	00 45 14	4			+2		Masked by microseisms.
									USCGS: 21.4S, 179.1W, 00 40 05.9
									h 653 km.ca.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
649	Nov. 7	(iP)	Z	01 21 55	3			-2		Masked by microseisms.
		M	NZ	44.0	18	1		1		USCGS: 11.6N, 126.1E, H 01 12 55.7
										h 47 km.ca.
650	7	e	E	12 26 34						Masked by large microseisms.
		eL	E	28.9	22					USCGS: 26.9S, 176.3W, H 12 15 03.6
		M	EZ	31.0	18		1	5		h 54 km.ca.
651	7	eL	E	21 22.5	21					Masked by large microseisms.
		M	EZ	24.7	16		3	4		USCGS: 34.3S, 179.2W, H 21 09 47.4
										h 39 km.ca.
652	8	M	NE	19.8	15	1	2			Masked by microseisms.
										USCGS: 3.9S, 136.2E, H 19 28 39.9
										h 54 km.ca.
653	9	iP	VV'	01 13 54	1½			+	2280 ca	Compression.
		i	VV'	13 59	1½			+	20½°Ca	h 0.00
		isP	ZVV'	14 07	3			-5		USCGS: 22.0S, 170.1E, H 01 09 16.0
		iPP	VV'	14 12	1½			+		h 33 km.ca.
		i	NEZ	14 16	4	+2	+2	-5		
		iPPP	VV'	14 23	1½			+		
		i	Z	14 25	4			-5		
		i(sS)	N	17 52	5	+3				
		e(SS)	Z	18 03	(15)					
		eL	N	19.1	19					
		M	Z	21.1	17			6		
		M	E	21.2	15		2			
		M	N	21.6	13	6				
	9	e(Pg)	V	06 33 41	½					Local.
		i	V	33 43½	¾			+		
654	9	(iP)	VV'	17 44 53						Masked by microseisms.
		i(sS)	E	49 33	4		+2			USCGS: 13.7S, 165.7E, H 17 39 42.8
										h 92 km.ca.
655	9	iP	VV'	18 43 53	1			-		Dilatation. Microseisms present.
										USCGS: 5.9S, 129.8E, H 18 37 11.8
										h 87 km.ca.
656	10	eL	E	07 47.3	24					Masked by microseisms.
		M	E	50.4	13		3			USCGS: 2.5S, 138.3E, H 07 30 00.6
		M	N	51.0	13	3				h 52 km.ca.
		M	Z	51.2	18			4		
657	10	iP	V	18 06 28	1			-	3470	Dilatation.
		i	V'	06 28½	1½			+	31°.2	h 0.08, H 18 00 52
		iS	N	10 57	4	-2				USCGS: 17.5S, 178.8W, H 18 00 49.6
		iScS	N	15 55	5	-3				h 586 km.ca.
658	11	M	NE	09 06.9	13	½	½			Masked by microseisms.
		M	Z	10.0	10			1		USCGS: 2.3S, 138.2E, H 08 47 33.9
										h 54 km.ca.
659	12	M	N	03 19.4	15	½				USCGS: 0.8N, 29.5E, H 02 15 16.7
		M	EZ	21.8	16		½	½		h 39 km.ca.
660	12	iP	V'	10 19 10	1½			-		Dil. Masked by microseisms.
		eT	V	35 39	½					USCGS: 45.5S, 167.3E, H 10 15 10.7
		T Max.	V	36 31	¾					h 19 km.ca.
661	12	e(S)	N	14 23 39						Masked by microseisms.
		eL	N	26.9	(15)					USCGS: 15.6S, 175.9W, H 14 11 58.8
		M	N	30.5	12	½				h 219 km.ca.
662	13	eL	E	07 56.7	24					
		i	N	57 27	4	+2				USCGS: 3.8S, 136.3E, H 07 39 53.0
		i	Z	57 36	3			+7		h 34 km.ca.
		M	Z	08 00.9	13			20		
		M	NE	01.1	13	13	9			
	13	i(P)	V'	16 36 14	1½			+		Masked by microseisms.
	13	i	V	16 36 55	1					Masked by microseisms.
										USCGS: 14.9S, 167.0E, H 16 31 26.6
										h 43 km.ca.

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	
	1961			h m s	s	μ	μ	μ	km.	
663	Nov.14	oL	E	01 15.0	15					Masked by microseisms.
		M	E	17.6	15		1			
		M	Z	18.2	(15)					
		M	N	18.5	11	1				
	14	o	V	01 41 44	(½)					Local. Explosion ??
664	14	(iPP)	V'	05 03 13	2			+		Masked by microseisms. USCGS: 7.3N, 82.4W, H 04 42 26.5
		M	Z	51.9	16			½		h 29 km.ca.
665	14	(o)	V	12 44 25						Masked by microseisms. USCGS: 33.9S, 179.6W, H 12 38 51.9
		o	N	48 58	10					h 51 km.ca.
		oL	Z	50.9	22					
		M	NEZ	53	18	1	2	3		
666	15	iP	VV'	07 29 00				+	8580	Compression.
		iP	NZ	29 01	3	-1		+7	77°2	h 0.00 ca. H 07 17 08
		i(pP)	NZ	29 13	4	-2		+6		
		iPP	Z	32 02	4			+9		USCGS: 43.1N, 145.1E, H 07 17 12.4
		iS	NE	38 46	7	-9	-10			h 43 km.ca.
		i	Z	38 48	8			+10		
		i(sS)	N	39 06	7	-5				
		i	N	39 24	8	+10				
		iPS	Z	39 27	9			+27		
		i	N	39 47	10	-9				
		iSS	N	43 44	13	+8				
		o(LQ)	E	49.0	25					
		i	E	49 20	12		-16			
		oG	E	49.6	42					
		oLR	Z	53.1	27					
		M	NE	56.3	25	24	23			
		M	Z	56.7	25			40		
667	15	oT	V	10 40 16	½					Masked by microseisms.
668	15	(iPP)	Z	19 34 28	4			-4		Masked by large microseisms. USCGS: 21.1S, 175.8W, H 19 26 51.5
		i	E	34 41	4		+4			h 25 km.ca.
		e(S)	N	38 21	9					
		eL	Z	42.0	25					
		M	EZ	44.6	17	4	5			
669	16	(iP)	V	16 09 07	1½			-		Masked by large microseisms. USCGS: 20.2S, 172.9E, H 16 03 54.8
		i	V	·09 20	1½			+		h 32 km.ca.
		M	N	17ca	16	10				
670	18	M	NE	06 29.7	15	3	3			Masked by very large microseisms. USCGA: 0.9S, 126.9E, H 06 02 34.3 h 38 km.ca.
671	18	oL	E	11 30.7	25					Masked by very large microseisms. USCGS: 27.0S, 176.3W, H 11 16 56.8
		M	E	34.1	17		15			h 61 km.ca.
		M	N	34.8	14	5				
672	19	(iP)	VV'	23 29 38	1½			+	(4750)	Compression. Very large microseisms
		iP	NEZ	29 39½	3	+2	-5	(-)	(42°7)	Dilatation?
		i !	VV'	29 40	1½			+		h (0.02), H (23 21 56)
		i(pP)	V	30 15	2			+		
		i(sP)	V	30 30	1½			+		USCGS: 0.8N, 124.3E, H 23 21 55.5
		i(PP)	Z	31 20	3			+4		h 157 km.ca.
		i(PcP)	V	31 27	1½			-		
		iS	NE	35 49	5	-3	-4			
		i(SS)	Z	39 07	4			-8		
		i(SS)	N	39 08	6	+13				
		i(ScS)	E	39 14	7		-15			
		i	N	39 24	7	-9				
		i	Z	42 40	4			+8		
		i	N	42 43	4	+7				
		i	N	43 05	3	+4				
		M	NE	45.1	16	6	5			

No.	Date	Phase	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
673	Nov.20	(iP)	V	11 48 57	?			(-)		Masked by very large microseisms.
		eP	NE	48 57						
		i	Z	48 59	5			-12		USCGS: 21.8S, 169.9E, H 11 44 19.4
		i	NE	49 00	4	+3	+6			h 33 km.ca.
		i	N	49 14	6	-4				
		i	EZ	49 17	6		+10	-9		
		i	E	49 24	6		-15			
		i	EZ	49 42	6		+9	-11		
		e(S)	N	52 35	(16)					
		i	E	52 52	9		-21			
		i	N	52 54	9	+26				
		i	Z	52 57	9			+49		
		eL	E	53.6	33					
		eLR	Z	54.1	25					
		eLR	E	54.2	23					
		M	Z	55.4	19			46		
		M	E	55.9	18		31			
		M	N	56.2	14	38				
674	20	i	E	13 05 46	4		+2			Masked by large microseisms & coda
		eL	E	14.1	21					of No.673.
675	20	eL	Z	19 24						Masked by large microseisms
										USCGS: 5.0S, 144.4E, H 19 08 06.6 h 65 km.ca.
676	21	(i)	Z	11 14 45						Masked by large microseisms.
		i(S)	N	21 08	4	+3				USCGS: 0.9N, 122.5E, H 11 06 38.1
		e	E	24 21	9					h 85 km.ca.
677	22	eP	Z	02 50 06	3					Large microseisms present.
		i	V	50 15	1			+		
		e(S)	E	53 52						USCGS: 21.6S, 169.9E, H 02 45 26.7
		i	E	54 01	4		-2			h 74 km.ca.
		iPcP	NZ	54 07	4	-3		+5		
		eLR	EZ	55.4	24					
		M	N	57.3	15	2				
		M	EZ	57.8	16		2	2		
678	22	e(P)	E	11 11 15						Masked by microseisms.
		i	V	11 18	1½			+		
		i	V	11 21	1			+		USCGS: 21.5S, 169.8E, H 11 06 40.5
		i	E	11 27	6		+3			h 41 km.ca.
		i	V	11 32	1½			+		
		i	N	15 14	7	+4				
		i	E	15 18	5		+6			
		i	N	15 25	7	+6				
		eL		16.4	21					
		eL	E	16.6	24					
		M	E	17.9	18		3			
		M	N	18.5	15	4				
679	22	e	E	20 50 00						
		eL	E	53.1	23					Masked by large microseisms.
		eL	Z	53.4	24					
		M	N	55.1	15	2				USCGS: 26.8S, 176.6W, H 20 39 18.6
		M	EZ	55.3	18		3	5		h 77 km.ca.
680	23	iP	V	01 17 52½	¼			+		Felt at Orange, N.S.W.
		iS	VV'	18 17½	½			+		
	23	i	V	05 13 15	(¼)					Local. Explosion ??
	23	(i)	V	07 00 14	½					Local.
		i	V	00 16	½			-		
681	25	(iP)	V	14 17 04	11			+		
		e(S)	N	21 46	7					Masked by large microseisms.
		e	E	22 08	10					
		i	N	22 46	4	+4				USCGS: 6.3S, 154.8E, H 14 11 23.2
		eL	Z	24.9	26					h 83 km.ca.
		M	N	26.1	21	4				
		M	E	26.2	16		2			
		M	Z	26.7	21			6		
		i(ScS)	E	27 44	5		+3			

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
682	Nov.26	i(P)	V	19 11 11	1½			+		Compression. Microseisms present.
		e	E	16 37						USCGS: 9.3S, 150.0E, H 19 04 02.8
		e(L)	N	18.3						h 109 km.ca.
	27	i	VV'	05 27 35						Large microseisms present.
683	27	(iP)	V	06 08 11	1½			+		Masked by microseisms.
		iS	N	17 05	5	-2				USCGS: 31.6N, 131.1E, H 05 57 07.6
		i	N	18 10	4	+2				h 25 km.ca.
		e(SSS)	E	24 31	(18)					
		eLR	E	28.3	24					
		M	E	35.5	19		1			
		M	NZ	35.7	20	2		2		
684	27	iP	VV'	17 18 12	1½			-	4560	Dilatation
		iP	Z	18 12½	3			-5	41°0	
		i	NEZ	18 15½	5	-8	+6	+26		USCGS: 0.6S, 127.1E, H 17 10 33.3
		i	V	18 19	1½			+		h 25 km.ca.
		i	NZ	19 31	4	-5		+5		
		i	E	19 32	4		+3			
		i	VV'	19 37	2			-		
		i	VV'	19 44	1½			-		
		iPP	NEZ	19 47	5	-9	+8	+24		
		i	E	20 01	4		+8			
		i	N	20 04	4	+6				
		i	N	24 13	5	-4				
		iS	NE	24 25	10, 7	-13	-5			
		e	Z	24.5	31					
		e	NE	24.9	30					
		i	N	26 11	7	+8				
		i	N	27 16	6	+13				
		i	E	27 27	7		-5			
		i	N	27 32	6	+7				
		i	Z	28 22	6			+11		
		eL	E	30.1	31					
		i	E	32 22	10		-22			
		M	N	34.6	15	20				
		M	EZ	36.1	18		36	53		
		M	Z	38.4	16			42		
		M	NE	38.7	14	24	28			
685	27	(i)	V	23 36 02						Masked by microseisms.
		e	E	40 50						
		i	N	41 16	4	-2				USCGS: 60.6S, 156.9E, H 23 30 46.4
		eL	E	41.8	20					h 46 km.ca.
		M	NE	42.1	13	5	7			
		eL	Z	43.6	22					
686	28	M	Z	03 08.0	16			½		Masked by microseisms.
		M	N	08.4	15	½				USCGS: 0.2S, 128.0E, H 02 40 21.2
										h 62 km.ca.
687	28	iP	NZ	18 39 44	4	+2		+3		Compression.
		i	Z	40 10	4			+4		
		e(S)	E	43 57						USCGS: 56.9S 143.5E, H 18 34 37.4
		i	N	44 10	5	+2				h 51 km.ca.
		eL	Z	45.3	23					
		eL	N	45.6	23					
		i	N	46 04	4	+5				
		M	E	46.9	13		2			
		M	NZ	47.4	16	5		5		
688	29	i	V	09 50 36	1½			+		USCGS: 38.3S, 19.4W, H 09 28 12.7
		eL(Q)	E	10 13.4	28					h 25 km.ca.
		eG	E	15.3	50					
		eL(R)	N	20.2	(24)					
		M	N	24.5	25	3				
		M	EZ	24.9	24		1	6		

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No.	Date	Phase & Component		Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
689	Nov.29	(P)	V	22 00 28	1					Masked by microseisms.
		e	Z	00 30	5					
		i	E	00 35	4		+2			USCGS: 23.1S, 170.9E, H 21 55 44.7
		e	E	04 15						h 29 km.ca.
		i(PcP)	Z	04 27	5			-3		
		i	N	04 37	8	+3				
		eL	N	05.5	20					
		M	EZ	07.4	16		1	2		
		M	N	08.6	12	3				
690	29	(i)	Z	23 21 06	4			+2		Masked by microseisms.
		M	N	28.8	15	1				USCGS: 38.0S, 177.7E, H 23 16 09.1
		M	E	29.1	15		1			h 68 km.ca.
691	30	e	N	14 24.8	(9)					Masked by large microseisms.
		e	N	26.1	(12)					USCGS: 14.6S, 170.9E, H 14 14 35.4
		eL	E	28.1	22					h 82 km.ca.

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No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
692	Dec. 1	M		20.9						Masked by large microseisms. USCGS: 27.7N, 141.5E, H 20 17 41.5 h 25 km.ca.
693	1	iP	NZ	21 23 25	4	+1		-8		Dilatation.
		i	V	23 26	1½					
		o(sP)	Z	24 37						USCGS: 26.5N, 124.9E, H 21 13 04.1, h 206 km.ca.
		i	Z	24 46	4			+7		
		iS	E	31 54	7		-5			
		iS	N	31 55	7	-6				
		e	E	32 11	7					
		o(sS)	E	33 15	8					
		i	N	33 27	5	+3				
		M	E	45.9	20		3			
		M	NZ	48.1	15	3		4		
694	2	iP	VV'	14 11 00	1½			-		Dilatation.
		o(S)	NE	15 05	7					USCGS: 16.9S, 168.2E, H 14 06 10.0 h 219 km.ca.
		eL	E	16.7	23					
		oL	Z	16.8	26					
		M	EZ	18.6	17		1	2		
		M	N	19.3	15	2				
695	2	oL	N	19 00.2	19					USCGS: 22.7S, 175.1W, H 18 45 51.6 h 89 km.ca.
		M	N	03.1	14	1				
696	3	iP	VV'	08 50 52	1			+		Compression. Microseisms present. USCGS: 25.0N, 122.9E, H 08 40 20.6 h 91 km.ca.
697	3	o	N	10 50 52						
698	3	P	V	16 20 00	1½					Confused by minute mark.
		o	N	20 10	7					
		i	Z	20 15	5			+4		USCGS: 11.6S, 166.1E, H 16 14 31.4 h 122 km.ca.
		i	V	20 22	1			+		
		o	NE	24 31	7					
		i	NE	24 43	6	+3	+3			
		o	Z	24 55	10					
		o(LQ)	N	25.5	18					
		oLR	E	26.8	25					
		M	N	27.5	19	3				
		M	Z	27.8	22			5		
		M	E	27.9	22		3			
699	3	iP	V	20 06 28	1½			-		Dilatation. USCGS: 43.6N, 134.9E, H 19 55 05.3 h 420 km.ca.
		o	E	18 22	(13)					
	4	(oPg)	V	02 10 34	?					Local.
		i	V	10 39	½			+		
700	4	iP	V	05 39 15	1½			+		Microseisms present.
		o	N	42 08	12					USCGS: 5.2S, 151.6E, H 05 33 18.5 h 59 km.ca.
		o	N	44 14	15					
		o	Z	44 18	15					
		oL	E	46.9	22					
		oL	N	48.0	24					
		M	E	49.5	17		2			
		M	NZ	50.0	18	3		4		
701	4	iP	V	12 50 50	1			+		Microseisms present.
		o(S)	E	13 01 20	(7)					USCGS: 33.2N, 95.3E, H 12 38 11.9 h 45 km.ca.
		e	Z	13.4	19					
		o	E	15.1	19					
		M	N	26.4	24	2				
		M	EZ	32.6	21		2	2		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
702	Dec. 5	iP	NEZVV'	13 05 25	4	+16	+7	+26	2190	Compression.
		i	VV'	05 31	2			+	19°7	h 0.00
		ipP	NEZ	05 35	4	+22	+10	+25		
		iPP	NZ	05 44	4	+6		+9		USCGS: 50.8S, 139.8E, H 13 01 04.7
		iS	E	09 00	8		+18			h 64 km.ca.
		i	Z	09 08	8			+32		
		isS	E	09 14	9		+25			
		iSS	N	09 26	5	+16				
		eLR	Z	10.0	25					
		eLR	N	10.4	22					
		eL	E	10.5	19					
		M	NZ	11.4	19	70		136		
		M	E	11.7	16		71			
		M	NZ	14.0	8	63		74		
	5	i	VV'	14 14 10	1½			+		
703	6	M		06 27						Masked by very large microseisms. USCGS: 13.7N, 93.6E, H 05 48 39.3 h 53 km.ca.
704	6	(P)	V	13 42 00						Masked by very large microseisms. USCGS: 23.5S, 176.0W, H 13 35 43.8 h 18 km.ca.
		eL	N	49.6	22					
		M	N	51.6	16	20				
		M	E	54.1	16		19			
705	6	(iP)	Z	16 51 58	3			+7		Masked by very large microseisms. USCGS: 49.4N, 155.2E, H 16 39 31.5 h 22 km.ca.
		eS	E	17 02 19	7					
		i	E	02 41	4		-3			
		M	NZ	24.3	22	7		13		
706	7	eL	E	00 32.3	19					Masked by microseisms. USCGS: 23.4S, 175.9W, H 00 18 26.0 h 45 km.ca.
		M	N	34.0	16	4				
		M	EZ	35.1	18		3	5		
707	7	eL	N	16 43.5						Masked by microseisms. USCGS: 25.4S, 175.4W, H 16 29 13 h 79 km.ca.
	8	i	V	03 35 40	1			+		
	8	i	V	05 43 23	1			+		
708	8	(eP)	V	06 14 13						Masked by microseisms. USCGS: 3.0S, 136.9E, H 06 07 38.6 h 64 km.ca.
		i	V	15 23	1½			+		
		i	E	25 51	5		-3			
		M	N	28.7	12	3				
709	8	iP	V	09 43 08	1½			+		Compression. Microseisms present.
		e	NE	48 38	9					
		eL	E	53.2	33					USCGS: 1.8S, 139.4E, H 09 36 24.9 h 55 km.ca.
		i	E	55 24	6		+7			
		i	N	55 25	6	+4				
		M	NE	55.7	16	5	8			
		i	N	55 56	6	+5				
		M	NZ	58.2	13	8		9		
		M	E	58.8	13		7			
	9	i	VV'	02 16 45	1½			+		
710	9	(iP)	V	02 29 13	1½			+		Masked by microseisms. USCGS: 56.3N, 153.9W, H 02 15 22.0 h 31 km.ca.
		e	E	41 02						
		e	E	42 41						
		eL	N	03 04.6	21					
		M	NE	09.3	21	3	3			
		M	Z	09.5	21			5		
711	9	(PKP)	V	04 17 32						Masked by microseisms. USCGS: 14.9S, 75.7W, H 03 58 55.4 h 39 km.ca.
		e	E	35 22						
		M	E	05 05.6	15		1			
		M	Z	05.7	15			3		
	9	i	VV'	06 47 16	1½			+		Masked by microseisms.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
712	Dec. 9	(eP)	Z	11 31 13						Microseisms present.
		i	NZ	31 19	4	+4		+13		Compression.
		i	NZ	31 33	4	+3		+8		
		i(PP)	Z	34 53	5			+5		USCGS: 43.7S, 75.2W, H 11 18 08.9
		i	Z	35 14	5			+9		h 34 km.ca.
		i(S)	E	42 01	6		+6			
		i(S)	N	42 02	6	-5				
		i	E	42 30	7		-7			
		i	E	43 31	6		+6			
		o	E	43 38	16					
		i	N	44 07	7	+5				
		oSS	E	48 41	15					
		oLQ	E	55.5	30					
		oL	Z	12 00.4	27					
		M	E	09.8	16		3			
		M	NZ	10.0	16	3		7		
713	9	(i)	ZV	16 43 42	2			+		Masked by microseisms.
		oL	E	17 01.5	16					USCGS: 8.9S, 105.6E, H 16 35 53.2
										h 35 km.ca.
714	9	iP	VV'	19 54 51	1			+	3080	Compression.
		o	E	57 34	6				27°7	h 0.08, H 19 49 45
		i	Z	57 35	4			-3		
		iS	NE	58 56	4	+4	+3			USCGS: 21.7S, 179.9E, H 19 49 41.3
		i	E	59 03	5		+7			h 620 km.ca.
		i	N	59 05	4	+3				
		o	E	21 01 49						
		i	EZ	02 00	7		+11	+5		
		i	N	02 06	5	+4				
		i	N	02 14	4	-4				
		i	Z	02 16	4			+8		
		iScS	E	04 30	4		-3			
715	9	(P)	V	21 48 26	1½					Masked by microseisms.
		L	E	57	26					USCGS: 23.0S, 172.6W, H 21 41 42.1
										h 25 km.ca.
	9	(iP)	VV'	22 44 50	1½					Masked by microseisms.
										USCGS: 6.0S, 149.3E, H 22 39 00.2
										h 125 km.ca.
716	10	eP	V	01 45 12½	¼					Local.
		i	V	45 16½	½			+		
		M	V	45 39	1½					
717	10	eP	V	01 53 54½	¼					Local.
718	11	o(P)	V	02 59 50	¼					Local.
719	11	eP	V	03 19 38	¼					Local.
720	12	(i)	V	04 02 06	1½			+		Masked by microseisms.
		(iP)	Z	02 16	4			+2		
		i	Z	02 28	3			+2		USCGS: 4.3S, 127.2E, H 03 55 10.2
		o	E	08 09	9					6 65 km.ca.
		o	N	08 11	9					
		oSS	N	10 31	10					
		M	NE	16.1	14	4	4			
721	12	(P)	Z	17 32 42						Masked by microseisms.
		i	Z	32 47	3			+2		USCGS: 21.7N, 146.0E, H 17 23 04.0
		o(S)	E	40 19	12					h 24 km.ca.
		o	E	42 33	7					
		oL	E	48.6	24					
		M	NZ	57.1	15	½	½			
722	13	iP	V	16 54 36	1½			+		Compression. Microseisms present.
		e	Z	54 42	7					
		o	NEZ	54 54	9					USCGS: 18.9S, 168.4E, H 16 49 50.4
		i	Z	55 37	5			+5		h 30 km.ca.
		i	E	58 41	6		+2			
		i	Z	58 46	4			+5		
		i	N	58 49	6	+2				
		oL	N	17 00.2	21					
		M	NEZ	01.7	17	5	4	5		

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
723	Dec.14	iP	NZVV'	07 16 49	3	-1		+5	3620	Compression.
		i	NZ	16 55	3	+2			32°6	h 0.00, H 07 10 18
		i	NZ	17 52	3	-2		+5		
		iPP	NZ	17 58	4	-4		+8		USCGS: 3.1S, 140.9E, H 07 10 23.2
		i	EZ	18 05	6		+3	+10		h 44 km.ca.
		iPPP	N	18 11	4	+5				
		iS	E	22 02	6		-3			
		i	N	22 16	6	+5				
		esS	E	22 18	(13)					
		i	N	22 33	6	+5				
		iSS	N	24 05	9	+7				
		i	E	24 15	9		-8			
		eL	E	25.9	30					
		M	N	30.1	13	29				
		M	E	30.4	13		36			
		M	Z	30.6	10			23		
724	14	(P)	V'	12 22 01						Masked by microseisms.
		eL	N	35.4	25					USCGS: 7.8S, 120.5E, H 12 14 38.9
		M	NE	38.6	16	½	½			h 62 km.ca.
725	15	(iP)	Z	12 42 01	3			+2		Masked by microseisms.
		eL	E	51.2	19					USCGS: 5.5S, 147.2E, H 12 36 30.7 h 181 km.ca.
726	15	(P)	VV'	19 43 57	1½					Masked by microseisms.
		M	E	20 01.7	18		½			USCGS: 0.9N, 126.2E, H 19 36 03.5 h 47 km.ca.
727	16	(iP)	VV'	10 05 05	1½			+		Masked by microseisms.
		e	E	06 35						
		e	Z	06 48						
		e	E	12 02						USCGS: 23.9S, 175.4W, H 09 59 11.8
		e	N	12 18						h 25 km.ca.
		eL	EZ	15.3	22					
		M	NEZ	17.0	16	4	3	5		
	17	i	VV'	10 00 21	1½					Large microseisms present.
728	17	iP	VV'	22 17 17	1			-		Dilatation. Microseisms present.
		i	EZ	17 19	3		+2	+3		
		i	VV'	17 21	1½			+		USCGS: 54.5S, 143.9E, H 22 12 32.3
		i	N	17 24	4	-3				h 45 km.ca.
		i	Z	17 27	3			+7		
		i	N	17 33	4	-4				
		e(S)	E	21 19	9					
		i	E	21 25	8		-22			
		i	N	21 29	6	+8				
		i	Z	21 31	6			-9		
		i	Z	21 58	6			-10		
		eL	N	22.2	26					
		eL	Z	22.3	24					
		M	E	24.3	11		15			
		M	Z	24.4	13			12		
		M	N	24.6	10	14				
729	20	iPKP	V	13 44 22	1½			+		Compression. Microseisms present.
		i	VV'	45 10	1			+		
		ePP	Z	46 17	13					USCGS: 4.6N, 75.6W, H 13 25 34.4
		e	EZ	47 26	11					h 176 km.ca.
		e	EZ	48 32	15					
		e	E	52 26	16					
		e	E	54 35	15					
		e	N	54 38	12					
		e	N	55 44	13					
		i	N	56 02	4	-4				
		e	E	14 04 19	(24)					
		eL	E	20.1	24					
		M	E	31.6	20		3			
		M	Z	33.7	18			5		
		M	N	34.2	16	2				

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
730	Dec.22	(i)	Z	10 40 12	3			+		Masked by large microseisms.
		o(L)	E	52.4	24					USCGS: 2.8S, 136.7E, H 10 33 42.5
										h 38 km.ca.
	22	o(P)	VV'	22 16 17	¾	USCGS: 14.7S, 167.3E,				Masked by large microseisms.
							H 22 11 07.6, h 74 km.ca.			
731	23	(iP)	V	16 29 50	1½			+		Masked by microseisms.
		o(L)	E	43.4	?					
		M	NE	48	12	½	½			
732	24	(iP)	V	02 46 27	1½			+		Masked by microseisms.
		i	V	46 42	1½			-		No Galitzin Z record.
		o(S)	N	51 47	13					
		oL	E	55.0	31					USCGS: 3.4S, 140.3E, H 02 40 07.6
		M	E	58.3	15		15			h 29 km.ca.
		M	N	58.4	13	10				
733	24	oL	NE	09 36	18	USCGS: 20.4S, 173.6W,				No Galitzin Z record.
							H 09 19 02.7, h 45 km.ca.			
734	24	o(PS)	E	14 55 22	20					Masked by microseisms.
		o(SS)	E	15 01 51	16					No Galitzin Z record.
		oL	E	20.4	26					USCGS: 5.7S, 80.9W, H 14 25 32.7
		M	NE	24.4	19	1	1			h 52 km.ca.
735	24	oL	E	17 15.7						Masked by microseisms.
736	24	(i)	V	23 59 29	1½			+		Masked by microseisms.
		(i)	V	24 00 27	1½			-		No Galitzin Z record.
		i	V	01 28	1½			+		USCGS: 38.3S, 74.6W, H 23 43 19.2
		o	N	07 26						h 31 km.ca.
		(oL)	E	23.1						
		M	E	35.5	18		1			
		M	N	35.6	16	1				
737	25	i(P)	V	08 08 10	1½			+		Masked by microseisms.
		o(S)	E	13 58	9					No Galitzin Z record.
		M	E	21.1	16		2			USCGS: 3.7S, 127.7E, H 08 00 59.3
		M	N	22.7	13	3				h 47 km.ca.
	25	i	V	09 14 44				-		Large microseisms present.
		i	V	20 48				+		
738	25	oL	E	14 12.9	22					Masked by large microseisms.
		M	E	14.2	18		2			USCGS: 20.4S, 173.7W, H 13 55 38.8
		M	N	15.3	13	1				h 64 km.ca.
739	26	oP	V	04 32 40				-	(5190) (46°7)	Large microseisms present. h (0.08)
		oS	N	38 50	6					USCGS: 5.5S, 110.7E, H 04 24 55.4
		o(sS)	E	41 42	13					h 566 km.ca.
		o(L)	N	44.6	?					
		M	N	52.5	12	2				
740	26	(iP)	VV'	06 29 13	1½			+		Masked by large microseisms.
		o	E	40 02	13					
		o(SS)	E	45 16	16					USCGS: 44.2S, 38.1E, H 06 17 30.6
		oL	E	53.5	(22)					h 22 km.ca.
		M	E	07 02.3	16		2			
		M	Z	02.8	16			3		
		M	N	03.0	17	2				
741	27	oL	E	02 44.2	18	USCGS: 2.7S, 141.3E,	H 02 25 48.2, h 22 km.ca.			Masked by microseisms.
	27	o	V	07 02 34	½					Local. Non-seismic ??
742	27	iP	ZVV'	23 52 43	3			+4	2310 ca	Compression.
		i	VV'	52 45	1½			-	20°8 ca	h 0.00
		i	NEZ	52 46	4	+3	-8	+12		S unidentifiable.
		ipP	NEZ	52 51	5	-(11)	+22	-30		
		o	NEZ	52.9	16					USCGS: 41.2S, 175.7E, H 23 48 01.3
		i	NEZ	52 59	5	+13	+24	+31		h 57 km.ca.
		iPP	V	53 04	1½			+		
		i	V	53 09	1½			+		
		iPcP	NE	56 50	9 ,12	-17	-52			
		i	Z	56 53	8			-44		
		iSS	N	56 58	9	+51				
		i	Z	57 08	9			-91		

Continued on next page.

No.	Date	Phase &	Component	Time (G.M.T.)	Per.	Amplitude AN	AE	AZ	Δ	Remarks
	1961			h m s	s	μ	μ	μ	km.	
742	Dec.27	M	N	24 00.0	15	150ca				
cont.		M	E	00.1	14		73			
		M	Z	02.1	16			120		
		M	E	02.2	14		77ca			
743	29	iP	V	00 01 19	1			-		Dilatation.
		i	V	01 25	1			+		Dec.28
		i	Z	01 31	4			+2		USCGS: 12.4S, 166.3E, H 23 55 57.6
		i	N	01 35	6	+2				h 100 km.ca.
		iS	N	05 42	6	-4				
		i	N	06 01	6	-4				
		i	E	06 03	7		+5			
		i	N	06 19	7	-4				
		oLQ	E	06.4	15					
		i	Z	06 31	6			+6		
		iSS	N	06 36	7	+9				
		iSS	E	06 38	7		+6			
		oLR	Z	08.2	26					
		M	Z	10.6	15			3		
		M	NE	11.4	12	2	3			
744	29	(iP)	V	10 06 23	1½			+		Masked by microseisms.
		i	VV'	07 01	1½			+		USCGS: 6.3S, 154.5E, H 10 00 33.1
		M	E	15.7	15		1			h 44 km.ca.
745	30	iP	VV'	00 52 19	2			+	10,010	Compression.
		iP	Z	52 19½	2			+2	90°.1	h 0.00, H 00 39 22
		i	V	53 41	2			+		
		i	ZV'	53 42	4			-5		USCGS: 52.3N, 177.7E, H 00 39 24.1
		i(SKS)	N	01 02 52	7	+4				h 52 km.ca.
		iS	E	03 08	7		-5			
		iScS	N	03 11	7	+6				
		i(sS)	N	03 26	6	+6				
		i	E	03 42	7		+9			
		i	N	04 08	7	+7				
		i	Z	04 10	7			+4		
		i(PS)	E	04 14	7		+6			
		i	Z	04 23	7			+7		
		iPPS	N	04 43	6	+8				
		i	N	04 52	6	+2				
		i	E	04 53	7		+7			
		oSS	E	09 01						
		iSS	N	09 08	8	+7				
		oG	E	15.8	(54)					
		M	E	28.6	19		11			
		M	NZ	31.0	20	11		19		
		W_2 M	NZ	03 02	22	3		6		
746	30	o	N	09 13.0	10					Masked by microseisms.
		oL	Z	14.7	24					USCGS: 22.9S, 175.2W, H 08 59 31.7
		M	EZ	16.7	19		3	5		h 41 km.ca.
		M	N	17.4	13	6				
747	31	iP	VV'	13 53 38	1½			+		Compression
		e(sS)	N	14 00 48	8					
		e(SS)	N	02 58	10					USCGS: 1.6N, 127.3E, H 13 46 01.8
		o	E	03 51	16					h 140 km.ca.
		M	N	09.8	15	½				
		M	Z	11.8	12			½		
		M	E	14.1	16		¼			

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