Riverview College Observatory

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ 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 with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1	209	7.4	5.4	0.004	4	11.8	11.9	+0.04	410
	3	164	9.1	5.2	0.013					
E	1	225	6.9	4.4	0.021	4	12.3	12.2	-0.02	490
	3	147	9.5	5.2	0.011					
Z	2					4	11.0	11.0	0.0	450

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h. m. s.	s.	μ	μ	μ	km.	
3	Jan. 2	iPNZ	15 20 09	5	+2		-8	2670	Dilatation
		iZ	20 22	4			+9	25°8	H 15 14 39
		iNZ	20 35	5	+8		-12		
		iEZ	23 34	4		-8	+7		
		iZ	23 40	4			+10		
		iSN	24 34	6	-8				
		iE	24 40	7		+7			
		iN	24 53	7	+20				
		iE	25 01	8		-19			
		iN	25 13	7	+21				
		iE	25 22	7		+18			
		iN	25 43	6	+17				
		iN	25 55	7	-26				
		eLRZ	27.3	21					
		MNEZ	30	14	20	11	13		
4	" 3	ePZ	03 01 54					6580	H 02 51 54
		ePPPZ	05 29					59°2	
		eSE	09 58						
		iE	10 10	6		+7			
		ePSE	10 16						
		eSSN	13 49						
		eSSSZ	16 02						
		eLE	19.3						
		MNEZ	24.5	15	16	11	17		
5	" 3	eZ	05 52 25						
		eNE	56.3						
7	" 3	e(SKS)N	11 29 53						
		e(S)E	30 20						
		e(PS)N	31 15	15					
		e(PPS)E	31 50						
		e(SS)E	36 37						
		eLRZ	47.1	30					
		MNEZ	50.8	20	6	5	12		
9	" 5	iPNEZ	10 59 27	4	+7	-2	+8	1940	Compression
		iPPNZ	59 41	4	-3		-5	17°5	H 10 55 24
		eSE	11 02 39						
		eLQE	02 49	18					
		iSSE	03 00						
		iSSSN	03 12	4	+16				
		iSSSZ	03 13	6			+6		
		iN	03 25						
		eLZ	04.2	20					
		MNEZ	04.8	12	9	12	9		
13	" 10	eE	03 33.1						
		e(SS)N	40 07	12					
		eE	40 26	15					
		eLQN	50.8	30					
		eLREZ	55.6	28					
		MNEZ	04 03.6	19	3	2	4		

1950, January.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
	1950		h m s	s	A_N μ	A_E μ	A_Z μ	km.	
17	Jan. 12	iPEZ	12 11 53	3		+3	-7	3520	Dilatation
		iN	11 56	3	+2			31°7	H 12 06 12
		ipPEZ	13 25	4		-5	+9		h 0.08
		iPPNZ	13 29	3	-5		+12		
		iZ	16 17						Gutenberg's Tables
		iZ	16 24	4					give: Δ 3500 km.,
		iSNE	16 26	6	+13	+23			31°5, h 500 km.,
		iNEZ	16 29	6	-33	-65	-24		H 12 06 08
		iN	16 48	4	-14				
		iE	16 59	4		+12			
		iE	17 15	4		-8			
		iScPZ	17 23	4			-15		
		iNE	18 18	6	-9	-8			
		iSSEZ	19 24	7		+11	+14		
		iScSNE	21 26	4	-18	+15			
18	" 12	iPEZ	20 53 07	3		+3	-4		Dilatation
		iZ	53 11	4			+4		
19	" 12	iPNEZ	20 54 38	3	-4	+5	+8	2140	Dilatation
		iNEZ	54 42	4	+5	-4	+8	19°3	H 20 50 13
		iSNE	58 08	6	+3	+2			Repetition of
		iN	58 28	4	+4				No.18. Felt in
		iZ	58 31	4			+3		Wellington, N.Z.
		eLREZ	59.2	24					
		MZ	21 00.2	20			3		
20	" 13	e(S)NE	00 21 51						
		e(SS)E	23 03						
		eLE	24.2	26					
		MNEZ	27.5	20	6	3	5		
23	" 13	iPZ	23 58 34	3			+1	3290	Compression
		ePPZ	59 30					29°6	H 23 52 31
		iN	59 36	5	-4				
		eSNE	00 03 26						
		iN	03 55						
		eLRZ	06.8	31					
		MZ	09.6	20			18		
		MNE	10.0		15	12			
27	" 15	iZ	18 06 10	4			-4		Phases cannot
		iZ	06 41	6			+8		be identified.
		iN	07 29	4	+12				
		iZ	07 50	6			+16		
		iE	07 54	6		+9			
		iN	07 58	6	-13				
		iNE	08 19	6	+30	+22			
		eLE	08.8	21					
		iN	08 59	6	+50				
		eLN	09.2	21					
		MNE	09.6	18	25	19			
		iE	11 09	7		+28			
		iZ	11 11	7			+27		
		iN	11 17	6	+13				
		iE	11 50	6		+23			
29	" 15	ePZ	23 58 03					2990	H 23 52 23
		ePPZ	59 05					26°9	
		eSN	00 02 36	10					
		isSN	02 54	5	+9				
		iZ	03 02	4			+9		
		iN	03 47	6	-7				
		iSSN	03 55	6	-13				
		eLEZ	06.0	24					
		MNE	08.0	13	2	2			MNE from Wiechert
31	" 16	PNEZ	05 13 24					2020	Compression
		iNEZ	13 27	4	-6	+3	-7	18°2	Dilatation
		ipPZ	13 34	3			+4		H 05 09 12
		iPPNEZ	13 40	4	+4	-1	+3		
		eSE	16 43						
		eLQE	16.8	15					
		iSSN	17 07	7	+13				
		iSSSN	17 22	7	+9				
		eLRZ	17.7	22					
		MNEZ	19.3	10	8	11	6		

1950, January.

RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
32	Jan. 22	e(PP)Z	07 58 07						
		eN	08 03 32						
		eL_E	06.4	16					
		MNEZ	08.3	16	3	2	2		
33	" 22	$i(S)_N$	22 14 28	6	+9				Masked by micro-seisms.
		MN	17.7	12	2				
34	" 23	iP_Z	10 08 56	5			-4	5700	Dilatation
		i_N	08 59	5	+3			51°3	H 09 59 53
		$iPcP_Z$	10 13	4			-4		
		iPP_Z	10 52	7			-5		
		iS_N	16 11	7	-4				
		eN	16.3	22					
		$ePPS_E$	16 32	10					
		$iScS_N$	18 42	4	-1				
		i_{NE}	18 58	4	+5	+2			
		eN	19 37	12					
		eSS_E	19 45	10					
		i_N	20 57	6	+6				
		MNZ	28.6	16	3		3		
36	" 24	iPNEZ	16 52 21	5	-9	-7	+25	2640	Compression
		ipPNEZ	52 50	5	+17	+7	-13	23°8	h 0.015
		iPP_EZ	52 56	5		-16	+38		H 16 47 18
		iPPPNEZ	53 10	6	+34	+28	-50		
		i_EZ	53 28	6		+20	-34		
		i_N	53 37	6	+20				
		i_E	54 21	7		+24			
		i_N	54 59	7	+32				
		iS_N	56 24	7	+21				
		iS_E	56 26	6		+14			
		iE_Z	56 43	7		-68	+30		
		isS_E	57 09	7		+26			
		isS_N	57 11	7	+55				
		i_Z	57 12	6			-31		
		iE_Z	57 26	6		-36	+24		
		iSS_E	57 35	7		+54			
		iSS_N	57 36	7	+65				
		iSS_Z	57 37	7			+95		
		i_E	57 43	7		-37			
		i_N	57 46	7	+68				
		i_E	57 57	7		+67			
		i_N	58 06	7	+63				
		i_E	58 33	7		-49			
		$iPcS_Z$	59 34	5			+25		
		i_Z	17 00 54	7			+27		
		$iScS_E$	03 14	6		+19			
37	" 25	$e(S)_E$	00 51 53						
		eL_E	55.0						
38	" 25	eP_Z	02 15 32					3160	
		iPP_Z	16 22	4			+3	28°4	
		e_E	20 31						
		eLR_Z	22.9	21					
		ME_Z	25.7	18		5	5		
		MN	26.4	14	2				
42	" 26	iP_Z	03 58 00	3			-4	3480	Dilatation
		iS_N	04 02 30	5	-4			31°3	h 0.08
		i_N	02 49	5	+4				H 03 52 22
		$iScS_{NE}$	07 30	4	-4	+7			Gutenberg Tables: h 500km., H 3 52 17
44	" 27	eP_Z	19 25 18					4020	
		ePP_Z	26 43	7				36°2	H 19 18 17
		eS_N	30 55						
		eS_E	31 00	9					
		i_N	31 01	7	+6				
		eLQ_N	33.5	25					
		$iSSS_N$	33 44		+				
		$iSSS_Z$	33 50			+			
		eLR_Z	35.2	21					
		MNZ	38.8	16	8		1		
		ME	40.3	16		1			

1950, January-February.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
45	Jan.30	iPZ	01 09 16	4			-	9740	Dilatation
		iPcPNEZ	09 18	4	+4	-1	+9	87°7	H 00 56 30
		eZ	12 25						
		$iSKS_N$	19 40	9	+11				
		iS_E	19 54	10		+17			
		$i(PS)_E$	20 50	10		+11			
		eLQ_E	32.4	37					
		MZ	58.4	15			15		
		eW2N	03 18	25					

Minor shocks: 1d 03.0h, 16.6h; 3d 10.1h; 5d 03.7h; 7d 23.8h; 8d 10.3h,20.9h; 10d 08.9h,17.1h; 11d 13.3h; 13d 08.1h,09.1h; 14d 03.1h,13.7h; 15d 18.0h,21.3h 16d 02.2h; 23d 15.9h; 25d 08.3h,12.6h,13.4h;26d 05.3h; 30d 13.8h; 31d 08.5h, 12.3h, 19.1h.

50	Feb. 1	$e(P)_Z$	14 46 11						
		eS_{NE}	52 31	8					
		iSS_{NE}	55 39	7	+4	+4			
		iE	57 32	6		+3			
		eL_E	15 00.8	22					
		MNEZ	07.7	13	6	6	9		
52	" 1	$e(S)_N$	22 33 23						Replica of No.50
		iSS_N	36 32	6	+2				
		eL_E	41.7	21					
		MNEZ	48.6	13	3	2	4		
54	" 2	iPZ	23 45 20	3			-2	8340	Dilatation
		iS_N	54 55	6	+8			75°1	H 23 33 40
		iN	55 07	6	+8				
		$iScS_N$	55 29	7	+6				
		iPS_E	55 35	4		-5			
		eSS_E	59 49	18					
		$eSSS_N$	00 02 46	20					
		eLR_E	07.6	32					
		MN	15.6	22	30				
		MEZ	19.8	18		15	24		
55	" 3	iS_N	03 13 00	6	+4				P obscured by microseisms.
		eSS_E	17 56	18					Repetition of
		$eSSS_N$	21 10	22					No.54
		eLR_E	26.0	31					
		MNE	34.5	24	19	8			
56	" 5	iPNEZ	01 27 52	3	+7	-2	+7	1990	Compression
		iNEZ	27 56	4	-41	+17	-36	17°9	H 01 23 44
		iS_E	31 08						
		iE	31 18	10		+88			
		iN	31 20	10	+52				
		iSS_{NZ}	31 28	10	-140		-55		
		eLR_Z	32.0	18					
		MZ	33.6	16			145		
57	" 6	iZ	03 28 20	3			+5		Masked by micro-
		ME	34.1	16		5			seisms.
58	" 6	iP_{NZ}	22 57 35	4	-5		-5	1990	Dilatation
		iPPZ	57 48	4			-5	17°9	H 22 53 27
		eS_E	23 00 51						
		iZ	01 11	4			-5		
		eLQ_{NE}	01.0	15					
		iSS_E	01 17	10		+17			
		eLR_Z	02.2	20					
		MNE	02.6	12	6	7			
60	" 7	iPNEZ	00 31 19	4	+2	+3	-5	2700	Dilatation
		iS_N	35 33	7	+13			24°3	H 00 26 04
		iS_E	35 36	5		+6			
		iN	35 49	8	+14				
		iE	36 00	5					
		iE	36 20	5		+3			
		iSS_N	36 30	8	+12				
		eLR_{EZ}	37.5	20					
		MNEZ	38.9	20	9	11	11		
62	" 9	iE	13 26 51	8		+4			
		eL_Z	44.9	20					

1950, February.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
64	Feb. 11	iPZ	01 34 19	3			+2	8940	Compression
		eS$_E$	44 22					80°5	H 01 22 09
		eSKS$_{NE}$	44 30	7					
		iPS$_E$	45 11	6		+3			
		eSS$_N$	49 42	19					
		eLR$_Z$	59.8	26					
		MNEZ	02 04.2	18	3	3	4		
65	" 11	iPEZ	11 36 34	4		+3	-5	3830	Dilatation
		iPPEZ	37 57	6		-2	+4	34°5	h 0.02
		iS$_{NE}$	41 50	7	+7	+6			H 11 29 59
		isS$_E$	42 48	6		+4			
		iE	43 12	8		-4			
		iE	43 46	8		+3			
		iSS$_E$	44 14	8		+6			
		iSSS$_N$	44 48	7	+5				
		iE	48 33	5		+6			
67	" 12	iPEZ	22 20 49	4		-3	+4	3160	Compression
		ipPZ	21 01	4			-4	28°5	H 22 14 55
		iPPZ	21 31	4			+6		
		iPPNE	21 33	4	+3	+6			
		iE	21 52	6		-5			
		iZ	21 55	6			-6		
		S$_E$	25 33	10					
		iN	25 40	6	-15				
		iE	25 50	7		-13			
		iSS$_Z$	26 58	7			+10		
		iSSS$_N$	27 15	9	-17				
		iZ	27 32	7			+11		
		iN	28 05	9	-34				
		eLR$_E$	28.4	26					
		MEZ	30.4	18		35	39		
		MN	31.7	12	30				Masked by micro-seisms.
68	" 13	eZ	11 33 11						
		e(S)$_N$	37 51	15					
		eLE	40.3	16					
		eLRZ	42.0	22					
		MNEZ	43.4	19	4	3	5		
71	" 14	eZ	22 44.0						
		eNE	47.9						
		eL$_E$	50.1	20					
		MNE	53.1	11	2	3			
72	" 15	iPZ	14 48 05	3			-4		Dilatation.
		e(S)E	57 47						
		eN	15 06.3	21					
		eL$_N$	10.4	24					
		MN	19.9	2L	1				
73	" 16	e(S)N	13 13 03						Masked by micro-seisms.
		eL$_Z$	27.9	30					
		MEZ	34.6	16		1	1		
76	" 19	e(S)E	07 14 38	10					
		eLR$_Z$	20.5	26					
		MNEZ	22.0	20	3	5	6		
77	" 20	iPNZ	18 39 17	4	+5		+	2030	Compression from
		eSE	42 37					18°3	South
		eLQ$_E$	42.7	14					H 18 35 04
		SSNEZ	42 58	12					
		SSS$_{NE}$	43 14	12					
		eLR$_Z$	43.5						
		MNE	44.4	10	3	4			
		MZ	44.9	13			5		
80	" 22	e(SKS)$_N$	11 40 06	10					
		iE	40 12	8		-3			
		eE	53 03	18					
		eLR$_Z$	12 06.4	22					
		MNZ	12.7	15	1		1		
82	" 23	i(sS)$_E$	08 55 54	8		+3			
		eL$_E$	09 06.2						

1950, February-March.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
83	Feb.23	iPZ	21 52 04	2			+1	3360	Compression
		iS$_N$	56 51	4	-5			30°2	h 150 km.ca.,
		iPcS$_N$	58 29	6	+2				H 21 45 58
		iSS$_N$	59 15	6	+2				(from Gutenberg's
		eL$_N$	59.7						Tables).
		iScS$_N$	22 02 12	7	+6				
84	" 25	eP$_Z$	10 02 28					7200	
		eS$_N$	11 05					64°8	
		eE	18.7	15					
		eL$_E$	21.1	22					
		MN	25.2	22	2				
		MEZ	27.5	19		2	3		
85	" 28	e(S)EZ	00 44 44						Masked by micro-
		eLZ	46.7	24					seisms.
		ME	47.6	16		6			
		MZ	48.1	20			6		
86	" 28	iP$_{NZ}$	10 32 33	4	+6		-14	9030	Dilatation
		iPcP$_Z$	32 36	3			+21	81.3	h 0.05,
		iNZ	32 41	4	+11		-39		H 10 20 54
		iZ	33 47	6			+17		
		ipP$_{NZ}$	33 54	6	-30		+67		
		iZ	34 30	7			-48		
		iS$_E$	42 13	7		+61			
		iZ	42 15	12			+65		
		iN	42 17	6	+87				
		iScS$_N$	42 25	5	+110				
		iScS$_E$	42 26	5		-33			
		iE	42 35	7		+53			
		iN	42 40	10	-110				
		iZ	42 46	12			+43		
		iNZ	42 59	8	+71		-38		
		iZ	43 46	8			+33		
		iN	44 18	9	-60				
		isS$_E$	44 30	11		+210			
		iE	44 53	13		+93			
		iZ	45 06	12			-56		
		iZ	46 43	8			+21		
		iZ	48 56	8			-36		
		eE	49.1	27					
		eL$_E$	53.9	36					
		MNEZ	57.6	16	72	120	58		

Minor shocks: 1d 20.4h; 2d 03.6h; 7d 00.0h, 11.3h; 10d 03.5h; 12d 04.2h; 14d 03.0h, 14.6h; 16d 17.2h; 17d 04.9h; 21d 02.62h, 10.3h; 22d 16.8h; 28d 16.1h, 19.1h.

89	Mar. 1	iPEZ	08 31 55	3		+2	+4	4910	Compression
		iS$_E$	38 26	7		-7		44°2	H 08 23 47
		iS$_N$	38 29	7	-4				
		iZ	38 31	6			-8		
		isS$_E$	38 42	7		-			
		eSS$_Z$	41 36						
		iScS$_E$	41 45	6		+6			
		e(SSS)$_{NZ}$	42 12						
		eLR$_Z$	44.5	30					
		MEZ	46.8	19		20	21		
		iZ	49 04	7			+15		Perhaps another
		iZ	49 50	7			+21		shock,
91	" 2	iP$_Z$	18 52 28	5			-6	9700	Dilatation
		iP$_N$	52 30	5	+5			87°3	H 18 39 44
		iPP$_Z$	55 52	6			+5		
		iS$_{NE}$	19 03 04	6	-4	-7			
		iE	03 35	6		+6			
		iE	03 53	6		-5			
		iZ	04 04	6			+5		
		iN	04 22	6	+10				
		eSS$_N$	08 41	13					
		eSSZ	08 48	15					
		eL$_E$	14.9	23					
		eLR$_Z$	21.0	26					
		ME	31.2	19		3			
		MNZ	34.2	16	6		8		

1950, March.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	2	μ	μ	μ	km.	
94	Mar. 3	ePZ	10 49 34						
		ePE	49 37						
		iPPEZ	50 27	6		-3	+6		
		eN	54 07	10					
		e(S)E	54 12	9					
		iE	54 27	7		-6			
		iN	54 44	7	+7				
		iZ	55 49	7			+7		
		MN	59.7	14	15				
		MEZ	11 00.1	20		13	18		
95	" 3	ePZ	15 54 02					9550	
		eSKSN	16 04 23					86°0	
		iSE	04 32	6		+6			
		iScSE	04 40	6		+6			
		esSE	04 52	6					
		eSSN	10 15	12					
		MNZ	36.8	18	2		2		
97	" 4	iPZ	16 01 21	3			-4	9620	Dilatation
		ipPZ	01 55	3			-7	86°6	h 0.015
		iSKSN	11 35	4	+6				H 15 48 50
		iSNE	11 45	6	-7	-3			
		isSN	12 39	6	+7				
		eSSE	17 32	9					
		MNZ	34.6	17	2		2		
101	" 7	iPNEZ	02 17 01	5	-4	+4	+12	5760	Compression
		ipPZ	17 11	6			+17	52°0	H 02 07 53
		ePPEZ	19 01	12					
		ePPPZ	20 04	12					
		iN	22 13	6	-5				
		eSNE	24 21	12					
		ePSE	24 36	14					
		iE	24 48	7		-18			
		iScSN	26 43	8	+14				
		iE	27 09	8		+12			
		eSSE	27 54	12					
		iN	28 43	9	+32				
		iSSSN	29 36	9	+42				
		eLRZ	31.0	21					
		ME	35.9	15		21			
		MNZ	42.7	18	23		31		
102	" 8	iSN	03 14 38	7	+4				P obscured by microseisms.
		eLQN	15.2	15					
		MNE	18.6	14	4	3			
103	" 8	iPZ	03 32 54	4			-3	2550	Dilatation
		iSNE	37 01	6	-7	+3		23°0	
		eLQN	37.6	15					
		MNE	41.0	14	12	6			
104	" 8	iSN	04 59 53	6	+6				P obscured by microseisms.
		MNE	05 03.6	13	2	2			
105	" 10	iE	20 26 07	5		+3			
		iN	28 51	5	-7				
		eLZ	28.9	18					
106	" 12	iPZ	03 54 39	3			+2	5050	Compression
		eSNE	04 01 18	12				45°5	H 03 46 21
		ePSNE	01 27	12					Microseisms present.
		eLRZ	07.6	27					
107	" 13	iPZ	18 15 43	3			-5	2440	Dilatation
		eSN	19 39					22°0	H 18 10 50
		iPcPZ	19 45	3			+2		
		isSN	19 54	4	-5				
		iSSSE	20 33	5		-5			
		eLRZ	21.2	20					
		MNE	24.4	12	7	5			
109	" 16	iPPE	19 32 06	3		-1			
		iSE	35 03	6		+2			Readings from Wiechert.
		i(ScS)N	40 02	5	-1				

1950, March.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			▲	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
110	Mar.18	iPZ	04 52 32	3			+6	9920	Compression
		ipPZ	52 44	3			+4	89°3	H 04 39 38
		$eSKS_N$	05 03 01	7					
		iS_N	03 17	7	+6				
		iS_E	03 21	6		-6			
		$iScS_N$	03 32	6	+6				
		i_E	03 36	5		+4			
		eSS_E	09 25	13					
		eSS_N	09 29	15					
		eL_E	16.2	20					
		MNEZ	30	20	13	7	10		
113	" 21	$e(S)_N$	09 45 41						
		e_E	45 51	11					
		$e(SS)_N$	49 13	17					
		eL_E	54.8	20					
115	" 25	eP_N	22 37 33					3760	
		$ePPP_N$	39 06					33°9	
		iS_N	42 55	7	+6				
		i_E	42 59	10		+7			
		eLR_E	46.7	27					
		MNE	50.0	16	6	5			
117	" 27	$e(P)_N$	03 47 23						
		$e(S)_N$	52 14						
		eL_E	54.2	18					
119	" 27	eP_N	13 17 02					10,020	H 13 04 04
		iS_{NE}	27 51	7	-2	+4		90°2	
		ePS_N	29 06						
		eSS_E	33 52	22					
		eG_E	41.3	43					
		eL_N	44.3	25					
		MNE	47.0	16	5	4			
120	" 27	eP_E	21 28 00					5680	
		ePPE	30 05					51°1	
		iS_{NE}	35 14	7	+6	+6			
		iPS_E	35 28	7		-4			
		i_N	36 16	5	+6				
		$iScS_N$	37 39	8	-12				
		eL_E	43.4	33					
		MNE	50.0	18	28	32			
121	" 28	e_N	00 43 34						
		eLR_N	48.8	18					
124	" 29	eP_Z	12 58 57					3280	
		iPP_Z	59 55	4			+3	29°5	H 12 52 54
		$iPPP_E$	13 00 10	4		+2			
		eS_E	03 49						
		$eSSS_N$	05 44	14					
		eLR_{EZ}	06.7	25					
		MEZ	09.1	18		6	5		
		MN	10.7	13	7				
125	" 29	iPZ	17 47 48	3			+3	3710	Compression
		i_N	47 51	3	+4			33°4	h 0.01
		ipP_{NZ}	48 08	4	+3		-4		H 17 41 17
		iPP_{EZ}	48 58	6		+3	+5		
		$iNEZ$	49 20	6	-13	+6	+12		
		iS_N	53 01	8	+3				
		iS_E	53 07	8		+8			
		iNE	53 14	8	+29	-12			
		isS_N	53 39	8	-9				
		MNE	59.5	12	43	52			
		MZ	18 01.3	15			45		
127	" 30	iPZ	22 06 00	3			-4	2260	Dilatation
		iE_Z	06 07	4		+3	+4	20°4	H 22 01 23
		iPPZ	06 16	4			+5		
		iS_{NE}	09 42	5	+6	+3			
		eLQ_N	10.0	22					
		MN	11.8	17	10				

Minor shocks; 2d 06.6h; 3d 01.1h, 07.0h, 20.2h; 4d 20.2h; 5d 09.6h, 10.7h; 15d 21.0h; 18d 16.8h; 19d 10.3h; 23d 08.4h; 26d 17.9h; 28d 08.9h, 20.2h; 30d 15.7h; 31d 22.8h.

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Director.

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RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S $\lambda = 151° 9' 30''$ 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. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$.		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1	209	7.3	6.0	0.002	4	11.6	11.9	+0.04	410
	3	164	9.1	5.2	0.013					
E	1	225	6.9	4.4	0.022	4	12.3	12.2	-0.02	490
	3	147	9.5	5.2	0.011					
Z	2					4	11.0	11.0	0.0	450

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h. m. s.	s.	μ	μ	μ	km.	
129	Apr. 1	$i(P)_Z$	08 27 51	3			+5		Compression
		eL_E	31.9	15					Heavy microseisms.
130	" 2	$i(P)_Z$	20 03 50	4			+2		Compression
		eS_{NE}	08 32	10					
		eSS_N	09 54	9					
		MN_E	15.9	13	2	2			
131	" 3	e	04 41 21						Felt in Sydney.
132	" 3	iPZ	06 37 16	4			+3	2400	Compression
		ipPZ	37 51	4			-4	21°6	h 0.025
		iE	38 11	4		+2			H 06 32 41
		eS_N	40 58	7					
		iE	41 07	4		-4			Gutenberg's Tables
		iPcPZ	41 09	6			+4		give: Δ 22°0,
		$iPcP_N$	41 10	6	-10				h 200 km.,
		iPcPE	41 11	6		-9			H 06 32 35
		isSE	42 02	6		+3			
		iN_Z	42 13	6	-9		+6		
		iE	42 19	6		-5			
		eL_E	43.6	21					
		$iScS_N$	48 14	6	-10				
134	" 4	$eSKKS_N$	19 08 22	9					
		eN	08 50	21					
		$e(PS)_N$	10 30	16					
		$e(SS)_N$	15 41	22					
		eL_E	27.1	24					
		eLR_E	29.9	35					
		ME	38.7	20		3			
		MZ	39.0	20			4		
		MN	40.7	22	6				
		eW_2N	21 06.9	19					
135	" 5	$eSKS_N$	01 40 43						
		eS_N	41 02						
		eLR_E	59.0	30					
		MN	02 09.1	22	2				
137	" 7	i_E	23 15 45	1		+2			Felt in Victoria.
138	" 10	iP_EZ	06 14 28	4		+3	-4	4600	Dilatation
		i_N	14 30	4	+4			41°3	H 06 06 44
		eS_N	20 39	7					
		iE	20 45	7		-3			
		i_N	20 49	7	-7				
		i_N	21 01	7	-6				
		eLR_Z	26.1	22					
		MN	27.6	19	6				
		ME	28.2	19		6			
		MZ	28.7	19			5		
139	" 11		03 27.5						Small local tremor.

1950, April.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
140	Apr.13	iP_Z	17 40 48	3			+3	2100	Compression
		iPP_Z	41 03	6			+4	18°1	H 17 36 38
		$iPPP_E$	41 09	5		+2			
		eS_N	44 06	7					
		iSS_N	44 29	7	+7				
		iSS_Z	44 30	7			-8		
		iZ	44 37	8			+12		
		i_N	44 40	8	+10				
141	" 14	iP_Z	20 12 21	3			+4	9350	Compression
		iZ	12 33	4			-4	84°0	H 19 59 53
		ePP_Z	15 35	8					
		eS_N	22 41	12					
		eS_E	22 43	12					
		ePS_N	23 35	18					
		eSS_E	28 03	13					
		eSS_N	28 11	15					
		eLR_Z	37.5	27					
		MZ	45.0	18			5		
145	" 18	eP_Z	14 45 33					11,300	H 14 31 38
		iS_E	57 11	4		+2		101°7	From Gutenberg's
		ePS_E	58 24	12					Tables.
		eSS_E	15 03 45	19					
		eLR_{EZ}	17.4	30					
		MEZ	27.2	16		1	3		
146	" 19	iP_{EZ}	16 14 01	2		-1	+1	3440	Compression
		ipP_Z	15 32	3			+2	31°0	h 0.08
		iS_E	18 29	5		+2			H 16 08 26
		$iScS_E$	23 32	5		-2			
148	" 20	eP_Z	10 02 57					8800	H 09 50 54
		$iPcP_Z$	03 05	3			-2	79°1	
		iS_{NE}	12 53	6	-4	-2			
		$eSKS_E$	13 05						
		eN	13 13						
		$iScS_E$	13 17	6		-2			
		eLR_N	27.7	25					
		eLR_Z	29.5	24					
		MNZ	31.7	19	1		2		
		ME	34.0	21		1			
153	" 26	iP_{NZ}	07 16 02	6	-3		+7	8150	Compression
		$iPcP_Z$	16 18	6			+4	73°1	H 07 04 33
		iS_E	25 26	7		-3			
		isS_E	25 43	7		+3			
		iE	26 32	6		+3			
		eLQ_E	35.1	32					
		eLR_Z	38.5	35					
		ME	43.3	20		2			
		MZ	46.0	19			6		
		MN	46.4	19	5				
154	" 29	eP_Z	20 27 07					2600	H 20 22 01
		iS_N	31 14	10	+7			23°4	
		eLR_E	33.0	20					
		MZ	35.3	16			3		
155	" 30	iP_Z	10 41 35	5			+4	8950	Compression
		eS_N	51 38	10				80°6	H 10 29 24
		eSS_E	56 56	16					
		eLQ_E	11 03.0	30					
		eLR_Z	07.1	30					
		MN	09.8	21	6				
		MEZ	10.7	20		7	13		

Minor shocks: 4d 04.2h; 5d 10.1h; 15d 01.8h, 15.9h; 16d 21.7h; 20d 01.0h, 16.3h; 22d 12.8h; 25d 01.2h, 04.1h.

RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
156	May 1	iP_Z	13 29 51	3			+3	5560	Compression
		iS_E	36 58	6		-2		50°0	H 13 20 58
		eL_Z	46.6	30					
		ME_Z	53.8	19		3	5		
160	" 7	iP_{NZ}	06 41 11	4	+		+9	2600	Compression
		iN_Z	41 34	6	+		+20	23°4	H 06 36 04
		iE	41 47	5		+3			
		iS_E	45 18	6		+3			
		iN	45 28	7	-				
		iE	45 48	7		-15			
		iSS_N	46 06	7	+				
		iN	46 26	5	+				
		eLR_Z	46.8	22					
		MZ	48.5	16			32		
		ME	49.0	10		18			
161	" 10	$i(P)_Z$	10 25 14	5			+7		Compression
		eN	30 36	13					Obscured by very
		MNZ	37.0	16	9		13		heavy microseisms.
163	" 12	iZ	21 29 11	4			+6		
		eL_E	36.2	27					
		MNE	39.0	16	11	9			
		MZ	39.7	19			17		
165	" 16	$i?_Z$	00 26 47	3			+		
		eN	30 36						
		iN	31 08	3	-4				
		iZ	31 21	3			+2		
		iE	31 22	3		+5			
		iZ	35 57	4			+7		
166	" 16	$e(P)_Z$	17 27 45						Masked by micro-
		iS_N	32 27	6	-4				seisms.
		isS_N	32 43	7	+13				
		ME	38.3	12		9			
		MNZ	39.4	16	6		8		
167	" 17	iP_Z	11 57 38	3			+6		Compression. Rest of rec-
									ord obscured by
									very heavy micros.
168	" 17	iP_Z	18 17 59	4			-18	2420	Dilatation.
		$iNEZ$	18 04	4	-18	-20	+29	21°8	H 18 13 08
		ipP_{NZ}	18 09	4	-20		-27		Large microseisms
		ipP_E	18 10	4		+21			present.
		iEZ	18 17	5		-	+		
		iPP_{NE}	18 21	5	+47	+52			
		$iPPP_{NE}$	18 30	5	+23	+33			
		iNE	18 45	5	+34	+41			
		iS_{NE}	21 53	6	-	+17			
		iN_Z	21 56	6	-90	-63			
		$iPcP_E$	21 59	4		-			
		isS_E	22 11	6		+			
		iN	22 15	6	+				
		eLR_Z	23.3	24					
		ME_Z	25.1	18		64	105		
170	" 19	iP_{NEZ}	02 42 53	7	+21	+27	-38	2360	Dilatation
		$iNEZ$	42 57	8	-63	-47	+125	21°3	H 02 38 07
		iPP_Z	43 14	7			+40		
		iPP_{NE}	43 15	7	+33	+36			
		iN	43 20	7	-51				
		$iPPP_E$	43 23	7		+85			
		iZ	43 34	7			-44		
		iS_N	46 42	6	-15				
		iS_E	46 45	6		-9			
		$iPcP_{NE}$	46 58	6	-130	+125			
		$iPcP_Z$	47 00	6			+38		
		iSS_Z	47 15	10			+135		
		$iSSS_E$	47 29	9		+36			
		MZ	51.5	15			135		
		ME	51.7	15		100			ME from Wiechert
		MN	53.0	11	100				

1950, May.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
171	May 19	iP_{NEZ}	07 10 14	7	+9	+14	-13	2370	Dilatation
		$iPPP_Z$	10 50	6			-10	21°4	H 07 05 27
		i_N	11 22	8	-14				
		i_N	11 41	8	-16				
		i_Z	12 32	9			-28		
		iS_N	14 04	8	+19				
		i_E	14 14	6		-24			
		i_N	14 15	6	+37				
		$iPcP_Z$	14 21	7			-31		
		i_Z	14 45	8			+30		
		$iSSS_E$	14 54	10		-35			
		eLR_E	15.6	22					
		MZ	18.8	16			53		
		ME	19.2	16		44			
		MN	20.3	13	63				
174	" 21	iP_Z	21 47 32	3			-4	2410	Dilatation
		$iPPP_{NE}$	48 08	5	+4	+3		21°7	H 21 42 42
		eS_E	51 25	6					
		$iPcP_{NEZ}$	51 32	6	+14	-5	+9		
		i_N	51 42	7	+9				
		i_Z	51 49	7			+10		
		eLR_Z	52.7	22					
		MN	53.8	18	4				
		MZ	54.6	20			10		
		ME	54.7	18		5			
175	" 21	iP_{NEZ}	23 19 24	3	+5	+5	-5	2410	Dilatation
		i_{EZ}	19 28	5	-7	+9		21°7	H 23 14 34
		$iPPP_E$	20 00	6		+5			
		eS_E	23 17						
		iS_E	23 20	5		-8			
		$iPcP_{NEZ}$	23 24	6	+22	-10	+19		
		i_E	23 32	6		-13			
		i_N	23 34	6	+19				
		$iSSS_N$	24 09	6	+8				
		eLR_Z	24.6	22					
		MN	25.7	16	8				
		MEZ	27.3	18		11	15		
176	" 22	iP_Z	20 21 24	3			+2	2440	Compression
		ipP_Z	21 51	5			+4	22°0	h 0.015
		i_E	22 21	5		+3			H 20 16 40
		eS_{NE}	25 13	8					
		$i(PcP)_{NE}$	25 17	6	-5	+3			
		isS_N	25 52	6	+4				
		$i(SS)_{NE}$	26 07	8	+5	-3			
177	" 23	i_E	08 18 03	6		+5			
		i_E	20 07	7		+4			
		i_N	20 12	6	-3				
		i_E	23 22	8		-4			
		eLR_Z	29.1	26					
180	" 24	iP_{NEZ}	04 00 48	5	-	-4	+9	2360	Compression
		iPP_Z	01 04	4			-9	21°3	H 03 55 54
		eS_N	04 38						Confused by
		iS_E	04 39	7		-8			microseisms.
		$iPcP_Z$	04 40	6			-13		
		$iPcP_N$	04 41	6	+40				
		i_Z	04 49	8			+13		
		i_N	04 54	7	+15				
		i_E	05 02	6		+26			
		eLR_E	05.8	24					
		MZ	07.5	19			10		
		ME	08.5	18		11			
		$iScS_E$	12 05	4		+6			

1950, May.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
181	May 25	iP_{NZ}	18 43 29	6	+19		-30	5230	Compression
		i_N	43 44	6	+10			47°1	h 0.01
		i_Z	44 32	6			+13		H 18 35 05
		i_N	44 48	5	-15				
		$iPcP_Z$	44 59	5			+8		
		i_Z	45 17	4			-6		
		iPP_{NZ}	45 22	4	-12		+18		
		i_N	50 09	5	+13				
		iS_N	50 13	8	-18				
		i_{NE}	51 08	6	-13	-13			
		i_N	52 50	6	+17				
		i_N	53 19	8	+19				
		eLR_E	56.2	27					
		ME	19 01.9	15		24			
		MN	02.5	15	28				
		MZ	02.6	15			17		
182	" 26	iP_{NEZ}	01 21 56	8	+8	+23	-25	2410	Dilatation
		ipP_{NE}	22 06	6	+53	+81		21°7	H 01 17 06
		ipP_Z	22 07	6			-210		
		iPP_{NE}	22 20	9	+46	-130			iPP_N, MN & ME
		$iPPP_E$	22 31	9		+			from Wiechert.
		i_E	23 16	10		-61			
		i_Z	23 20	10			+150		
		iS_N	25 49	9	-93				
		i_E	25 52	9		-75			
		i_Z	25 53	8			-80		
		$iPcP_N$	25 55		+				
		iSS_{NE}	26 29	7	-115	-250			
		eLR_E	27.4	23					
		ME	29.7	16		320			
		MZ	30.7	16			250		
		MN	31.1	15	300				
		eW_2N	04 04.2	28					
		MZ	10.8	23			10		
185	" 26	$i(S)_E$	10 01 53	6	+3				
		eL_E	03.6	22					
		MZ	08.3	13			3		
186	" 26	iP_Z	17 44 05	5			+9	2410	Compression.
		ipP_Z	44 20	5			+8	21°7	H 17 39 13
		ePP_E	44 31	8					
		iS_N	48 00	8	-7				
		eS_E	48 00	7					
		i_{EZ}	48 16	5		+7?	-9		
		i_N	48 25	5	+8				
		eLR_{EZ}	49.4	24					
		ME	50.5	20		11			
		MZ	50.7	20			12		
187	" 27	eP_Z	10 51 17					2370	H 10 46 30
		i_Z	51 31	7			-6	21°4	
		iPP_E	51 39	4		-3			
		eS_N	55 08						
		i_{NE}	55 17	5	-10	+7			
		i_N	55 34	5	-6				
		i_E	55 37	4		+5			
		eLR_E	56.9	22					
		MZ	58.7	15			3		
		MN	58.8	15	3				
		$iScS_N$	11 02 38	6	+8				
188	" 27	P_Z	11 49 36	4				2420	H 11 44 45
		i_Z	49 41	4			-7	21°8	
		i_Z	49 52	6			+9		
		iPP_Z	50 00	5			+7		
		iS_{NE}	53 30	6	-4	-4			
		$iPcP_N$	53 36	6	+9				
		eL_E	55.2	22					
		ME	57.5	16		6			
		MNZ	57.6	14	6		7		

1950, May.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
189	May 27	iPE	12 44 08	6		+10		2370	
		iPNEZ	44 11	6	-15	-17	+28	21°4	Compression
		iNEZ	44 26	9	-14	-10	+26		h 0.03
		iPPN	44 45	8	-19				H 12 39 38
		ipPZ	44 48	6			+10		
		iZ	45 02	6			-13		
		iSE	47 47	6		+7			
		iNE	48 05	5	+4	+6			
		iPcPNEZ	48 08	5	+25	+31	+24		
		isSNE	48 55	6	+8	+9			
		iSSSNE	49 04	8	+36	+33			
		eLRE	49.5	18					
		iZ	49 53	10			+37		
		MEZ	52.0	15		23	31		
		MN	52.7	15	29				
190	" 27	iPEZ	14 32 48	4		+6	-9	3480	Dilatation
		iPN	34 24	4	-5			31°3	h 0.09
		iSNE	37 15	6	-9	+8			H 14 27 14
		iE	37 24	6		+7			
		iScPZ	38 13	5			-8		
		isSN	40 29	5	-7				
		iE	40 35	6		+4			
		iScSE	42 16	3		+6			
191	" 28	iPNEZ	01 41 31	4	-9	-10	+21	2440	Compression
		iNEZ	41 45	6	+25	+29	-4	22°0	H 01 36 38
		iN	41 49	6	-16				
		iPPEZ	41 57	6		+14	-20		
		iPPPN	42 06	6	-18				
		iN	42 20	5	+14				
		iE	42 21	5		+10			
		iNZ	42 42	6	-14		+15		
		iZ	43 11	8			-24		
		iSN	45 27	8	+28				
		iSE	45 28	8		+26			
		iPcPZ	45 29	6			+25		
		iN	45 33	6	-72				
		iE	45 36	6		-75			
		isSN	45 40	9	+67				
		iZ	45 41	9			+75		
		iE	45 45	8		-86			
		iSSN	46 05	8	+19				
		iZ	46 11	9			+19		
		eLREZ	46.9	24					
		MZ	49.0	18			45		
		ME	49.9	18		37			
		MN	50.4	13	32				
193	" 30	iPZ	15 09 29	4			-3	3400	Dilatation
		ipPEZ	11 07	4		-5	+8	30°6	h 0.10
		iZ	12 18	6			-9		H 15 04 04
		iSE	13 49	10		-22			
		isSE	16 57	7		+8			Gutenberg's Table
		iSSSN	17 02	9	+30				give: Δ 30°3,
		iSSSEZ	17 05	9		-12	+13		h 600 km.,
		iScSNE	18 59	5	-6	+8			H 15 03 59
		MN	21.1	14	6				
195	" 31	ePZ	13 24 06	9				7300	H 13 13 21
		eSN	32 49	8				65°9	
		eSKSE	34 00	9					
		e(SSS)E	40 18	16					
		eLQE	42.6	24					
		eLRZ	45.2	22					
		ME	50.6	19		4			
		MNZ	51.1	20	5		6		

Minor shocks: 2d 03.8h; 3d 02.1h; 7d 05.8h; 11d 00.5h; 15d 16.1h; 19d 19.3h; 20d 07.3h; 23d 13.1h, 22.6h; 26d 04.4h, 04.9h; 29d 09.8h; 31d 11.6h, 19.6h.

1950, June.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
202	June 4	eP_Z	07 38 24	4				5240	
		eS_N	45 14	9				47°2	
		eSS_N	48 32	11					
		eSS_E	48 36	11					
		eL_E	51.3	21					
		MNE	08 00.0	18	4	4			
203	" 4	eS_N	08 13 55	8					Replica of No.202
		eSS_N	16 46	10					
		eSS_E	16 48	10					
		eL_E	20.5	25					
205	" 4	iP_{NEZ}	15 23 02	4	-2	-5	+4	2370	Compression
		ipP_{NEZ}	23 19	4	-4	-7	+5	21°4	h 0.005
		iPP_{EZ}	23 25	6		-9	+18		H 15 18 18
		$iPPP_N$	23 35	6	-6				
		i_Z	24 05	7			+14		
		iS_{EZ}	26 51	8		-25	+9		
		iS_N	26 52	8	+11				
		iE_Z	26 58	9		+58	+29		
		i_Z	27 23	8					
		eLR_Z	28.5	27					
		MNEZ	31.5	14	10	4	7		
207	" 8	$iSKS_N$	16 31 58	6	+8				
		eSS_E	39 38	10					
		i_N	40 01	8	+17				
		$eSSS_N$	43 32	15					
		eLQ_E	49.3	22					
		eG_E	50.9	53					
		MNZ	17 02.5	19	13		15		
		ME	02.6	16		9			
208	" 10	$i(S)_{NE}$	04 32 18	6	+4	-4			Confused by non-seismic disturbances
		ME	37.1	13		2			
209	" 11	eP_{NZ}	22 16 22	5				2420	
		i_Z	16 27	6			-9	21°9	H 22 11 30
		ipP_Z	16 32	4			+6		
		i_Z	16 52	4			+11		
		eS_N	20 17	8					
		iSS_Z	20 52	10			+13		
		iSS_E	20 55	10		-44			
		i_N	21 02	9	+10				
		$iSSS_E$	21 08	10		-22			
		eLR_Z	22.1	26					
		MNZ	23.3	20	36		46		
		ME	23.5	15		13			
212	" 12	iP_{NZ}	14 15 04	4	-8		+11	2840	Compression
		iPP_Z	15 43	4			+7	25°6	H 14 09 36
		i_N	17 37	5	-5				
		iS_N	19 26	8	+5				
		iS_E	19 28	8		-7			
		eL_Z	21.8	21					
		MNE	24.1	14	14	10			
		MZ	24.4	16			10		
14	" 14	$i(PP)_Z$	03 52 16	3			+2		Masked by micro-seisms.
		$e(S)_E$	56 53						
		eL_N	59.2	20					
		eL_E	04 00.0	20					
		MEZ	04.1	18		4	6		
		MN	04.9	15	3				
15	" 14	iP_Z	04 47 07	3			-2	2770	Dilatation
		iS_{NE}	51 26	7	-7	-8		25°0	H 04 41 45
		i_Z	51 34	6			+8		Masked by micro-seisms.
		i_N	51 53	6	-8				
		eL_Z	53.2	20			9		
		MZ	54.9	18					
		MNE	55.5	14	8	7			Masked by micro-seisms.
.6	" 14	P?Z	06 46 36			+3			
		iS_E	50 28	4					
		eL_Z	51.7	22		2			
		ME	53.7	15					

1950, June.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
217	June 14	ePZ	08 15 33					2400	Masked by micro-
		iS_E	19 25	4		+3		21°6	seisms.
		eL_E	21.3	20					
		ME	22.4	16		1			
218	" 16	$i(S)_N$	22 30 54	6	+8				Masked by micro-
		eL_E	33.4	18					seisms.
		MNE	35.2	13	3	4			
219	" 17	iE	16 05 56	4		+4			Masked by micros.
221	" 19	iPZ	12 45 16	3			+6	5100	Compression
		$ipPZ$	45 27	4			+9	45°9	H 12 36 55
		$iPcP_N$	46 52	4	+9				
		iPP_E	46 58	5		-7			Microseisms
		$iPPP_E$	47 50	5		+9			present.
		iE	51 01	6		-17			
		iS_E	51 57	12		-24			
		iPS_N	52 09						
		eLQ_E	56.0	25					
		eLR_E	58.3						
		MN	13 04.0	20	230				
		ME	06.1	17		105			
222	" 21	iP_{NEZ}	07 00 25	7	+30	+43	-54	2410	Dilatation
		ipP_E	00 36	6		-110		21°7	H 06 55 35
		iPP_{NEZ}	00 50	7	-57	-75	+93		
		iS_{NE}	04 18	9	-110	+31			
		iZ	04 21	7			-100		
		$iPcP_E$	04 27	6		+200			
		iZ	04 36	7			+215		
		iN	04 45	8	-88				
		mZ	04 46	10			165		
		iSS_{NE}	04 56	9	-155	+63			
		eLR_E	05.7	24					
		MEZ	08.0	16		165	235		
		MN	08.7	15	155				
		eW_2N	09 52.0	19					
223	" 21	ePZ	10 02 16					3460	H 09 55 59
		iZ	05 27	3			+4	31°1	
		iS_{NE}	07 18		+	+			
		eLR_E	10.3	28					
		M_1E	14.2	16		50			
		M_1Z	14.8	18			52		
		M_1N	15.0	17	49				
		M_2NEZ	17.1	11	53	58	37		
225	" 24	iP_{NEZ}	22 30 17	7	+55	+62	-110	2410	Dilatation
		iPP_{NZ}	30 41	7	-95		+150	21°7	H 22 25 27
		$iPPP_E$	30 49	7		-			
		iS_{NE}	34 10	9	-170	+53			Replica of No.222
		iZ	34 13	7			-		
		$iPcP_E$	34 18	6		+48			
		iN	34 39	6	+200				
		iSS_E	34 43			-			
		$iSSS_N$	35 01	8	+115				
		eLR_E	35.5	21					
		ME	37.9	16		250			
		MNZ	38.6	16	240		400		
226	" 25	iPZ	11 14 11	3			+7	4960	Compression
		iS_N	20 45	7	-12			44°7	H 11 05 59
		iS_E	20 46	7		-13			
		iPS_N	20 57	9	-12				
		iN	21 11	9	-11				Large microseisms
		$iScS_N$	24 03	7	-14				present.
		$iScS_E$	24 05	7		-10			
		eL_E	28.7	30					
		ME	33.4	22		13			
227	" 25	$i?_E$	21 00 27	3		+3			
		eL_E	07.8	19					Masked by micros.
228	" 26	iZ	00 41 50	3			+5		" " "
		iZ	42 39	3			+9		

Minor shocks: 3d 02.0h, 14.0h, 21.8h; 4d 01.9h, 06.8h, 14.3h; 6d 19.6h; 12d 05.1h, 05.8h; 13d 05.1h; 18d 02.3h; 22d 05.6h.

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RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ 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. Galilitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : l$	$\frac{r}{T_o^3}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1	214	7.4	8.0	0.005	4	11.8	11.9	+0.04	410
	3	160	9.1	7.0	0.017					
E	1	221	6.9	4.8	0.016	4	12.3	12.2	-0.02	490
	3	154	11.6	6.2	0.010					
Z	2					4	11.0	11.0	0.0	450

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h. m. s.	s.	μ	μ	μ	km.	
230	July 3	P?Z	02 03 54						
		iS$_N$	07 26	7	+8				
		eLQ$_N$	07.6	21					
		eLR$_Z$	08.5	21					
		MNE	10.6	13	20	4			
231	" 3	PZ	10 11 40					4880	
		iP$_N$Z	11 43	3	-2		+4	43°8	Compression
		iPP$_N$	13 25	4	-3				H 10 03 36
		iPPP$_N$	14 00	6	-4				
		iS$_E$	18 08			-			
		iS$_N$	18 10	7	+8				
		iSS$_Z$	21 15	7			-5		
		iScS$_N$	21 33	6	-7				
		eL$_E$	23.0	28					
		eLR$_Z$	24.8	32					
		MZ	27.8	22			44		
		MN	28.5	18	47				
		ME	29.0	15		17			
232	" 3	i(P)EZ	12 36 31	4					
		eL$_E$	43.4	25					
		MN	45.0	15	6				
		MEZ	45.4	19		5	9		
233	" 5	iP$_E$Z	03 39 43	6		+3	-3	2470	Dilatation.
		ipPZ	39 56	4			+3	22°1	H 03 34 49
		iZ	40 01	7			+10		
		iNE	40 02	7	-4	-7			
		iSNE	43 40		+	-			
		iPcP$_N$EZ	43 44	6	+15	-5	+9		
		iSS$_N$	44 19	7	+7				
		eLR$_E$	45.1	20					
		MEZ	47.1	16		6	7		
		MN	48.0	12	5				
235	" 7	iP$_N$EZ	16 52 24	5	+6	+4	-9	2720	Dilatation
		ipP$_N$Z	52 36	4	+7		-9	24°4	H 16 47 07
		iPP$_N$Z	52 58	5	+11		-10		
		eS$_N$	56 39						
		iN	56 50	8	-12				
		iSSS$_N$	57 51	7	+29				
		eLR$_Z$	58.5	25					
		MN	17 02.1	15	17				
		ME	02.8	14		14			
36	" 7	i(P)$_Z$	16 59 46	6			+21		Compression
		i(S)$_N$	17 04 05	9	+26				Aftershock of
		MZ	07.0	15			30		No.235.
		MN	07.5	15	33				
		ME	09.8	14		25			

1950, July.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
237	July 8	i_Z	19 55 25	4			+5		
		i_E	20 07 03	6		-5			
238	" 9	iPP_Z	00 09 13						
		iS_E	13 04	7		-4			
		iS_N	13 05	7	+7				
		$i(SS)_E$	14 09	7		-2			
		$i(SS)_N$	14 12	7	-4				
		eLR_Z	15.5						
		MNE	17.2	16	16	6			
		MZ	19.8	15			8		
240	" 9	$i(P)_Z$	01 51 51	4			-4		Dilatation
		i_{NE}	02 01 44	5	+3	+2			
		i_E	02 03	5		-4			
		e_E	04 21	13					
		MZ	22.9	18			6		
242	" 9	$iPKP_Z$	04 57 54	4			-2	13,500	Dilatation
		iPP_Z	59 39	6			-2	122°	h 0.10
		i_Z	05 01 46	6			+4		
		i_Z	02 59	7			-3		
		$i(SKKS)_{NE}$	05 33						
		i_Z	08 28	8			-3		
		iPS_{NE}	09 47	7	+5	-6			
		i_{NE}	10.02	9	+8	-5			
		i_Z	10 04	7			+12		
		i_E	12 39	10		-6			
		i_N	12 46	10	-13				
		$i(SS)_N$	15 48	10	+7				
		i_{NE}	19 20	10	-8	-4			
244	" 9	i_Z	16 29 24	5			-4	11,500	h 0.03 ca.
		$e(SKS)_E$	34 10	7				103°	
		$PS?_N$	36 48	7					
		iPS_E	37 28	7		+3			
		i_N	38 15	6	-4				
		$iPPS_{NEZ}$	38 21	6	+4	-3	-6		
		$i(SS)_E$	42 27	4		-3			
		i_E	42 41	4		+4			
246	" 10	iP_Z	13 56 44	4			-4	3260	Dilatation
		iS_N	14 01 00	4	-4			29°3	h 0.08
		iS_E	01 01	4		+4			H 13 51 24
		i_E	01 10	4		+4			
		i_N	04 03	4	-4				Gutenberg's Tables
		i_N	04 09	4	-5				give: Δ 29°0
		i_E	04 23	4		+4			h 500 km.,
		$iScS_E$	06 20	4		+6			H 13 51 20
		$iScS_N$	06 22	4	+5				
247	" 12	$eSKS_N$	11 33 05	6					
248	" 12	$i(PP)_E$	11 56 04	4		+3			
		i_Z	56 07	4			+4		
		e_N	12 02 35						
		eLR_Z	03.9	22					
249	" 13	iPP_Z	04 16 10	6			-4	6900ca	P masked by micro-
		$isPP_Z$	18 32	4			+5	62°ca	seisms.
		iS_E	21 21	6		+6			h 500 km.ca.,
		iS_N	21 22	6	+6				H 04 04 04 (From
		$i(ScS)_E$	22 38	4		+5			Gutenberg's Table
		i_E	22 44	6		+5			
		i_N	24 24	5	+4				
		isS_E	24 29	7		+15			
		isS_N	24 30	7	+11				
		iSS_N	26 08	7	+4				
252	" 17	iP_{NEZ}	20 22 41	5	+5	+7	+10	2480	Dilatation
		i_{NE}	22 59	5	-5	+6		22°3	h 0.01
		ipP_Z	23 04	4			-10		H 20 17 51
		iPP_{EZ}	23 14	6		-16	+22		
		iS_N	26 35	6	+18				
		$iPcP_{EZ}$	26 36	6		-18	+7		
		i_N	26 39	7	-68				
		i_{EZ}	26 42	7		+94	+57		
		i_N	27 00	7	+50				
		isS_E	27 12	8		-19			

1950, July.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
255	July 20	iP_Z	09 36 26	4			+11	2820	Compression
		ipP_{NEZ}	36 35	7	+10	+15	-27	25°4	H 09 31 00
		$iPPP_E$	37 14			+			
		i_{EZ}	37 22	7		-18	+27		
		i_N	37 23	7	-14				
		i_E	37 58	7		+9			
		i_E	40 02	6		+8			
		i_Z	40 06	6			+16		
		i_Z	40 40	7			-21		
		iS_N	40 48		-				
		isS_{EZ}	41 05	10		-30	-36		
		isS_N	41 06	10	-40				
		i_E	41 36	9		-31			
		i_E	41 59	9		+25			
		eLR_Z	42.8	25					
		MN	42.8	12	47				
		ME	44.0	22		74			
		MZ	44.7	20			76		
258	" 21	iP_{NEZ}	20 37 15	4	-9	-10	+20		Compression
		ipP_{NEZ}	37 25	4	+30	+18	-34		
		i_Z	37 34	5			-39		
		i_{NE}	37 35	5	-16	-18			
		i_E	38 00	5		-20			
		i_E	40 54	7		-15			
		i_N	41 25	8	+28				
		i_Z	41 26	5			+32		
		i_E	41 32	5		-14			
		i_{NZ}	41 36	5	+55		+48		
		MNE	46.3	13	40	39			
259	" 22	$i(P)_Z$	23 13 24	4			+7		Compression
		$i(PP)_{NE}$	14 00	4	+10	+7			Masked by heavy microseisms.
		$i(S)_{NE}$	17 45						
		MZ	22.6	16			13		
260	" 23	i_E	16 00 15	5		+7			Masked by heavy microseisms.
		i_N	00 41	6	+8				
		i_Z	00 43	5			+14		
		eL_Z	02.0	21					
262	" 25	$e(S)_E$	05 12 37						Masked by microseisms.
		i_N	13 11	4	+4				
		i_Z	16 07	6			+8		
		i_N	16 12	5	+10				
		i_Z	16 19	6			+8		
264	" 27	$P?_Z$	17 36 11						
		$i(S)_E$	40 33	5		+4			
		$i(S)_N$	40 34	4	-4				
		i_N	41 36	4	-5				
		i_E	43 56	4		-4			
265	" 28	iP_{EZ}	05 00 46	6		-4	+9	2900	Compression
		i_{NEZ}	01 07	5	+4	+4	-7	26°1	H 04 55 13
		iPP_{EZ}	01 23	5		+5	-7		
		$iPPP_{NZ}$	01 36	5	-10	+8			
		i_Z	04 24	4			+5		
		e_N	04 59	10					
		iS_N	05 13	6	+9				
		i_E	05 21	6		+5			
		i_N	05 23	6	+8				
		i_Z	05 29	7			-17		
		eLQ_N	06.2	22					
		eLR_Z	07.4	21					
		MN	09.1	15	30				
		MZ	09.3	17			29		
		ME	09.4	15		12			

1950, July-August.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
267	July 29	iP$_{NEZ}$	16 53 54	4	-8	+3	+19	4610	Compression
		iZ	54 27	6			+12	41°5	H 16 46 08
		iPP$_{NEZ}$	55 38	6	-9	+3	+15		
		iN$_Z$	55 41	4	-10		+15		
		iPPP$_{EZ}$	55 58	4		+3	+7		
		iN	56 00	4	+13				
		iZ	56 21	7			+27		
		iS$_N$	17 00 07	5	+6				
		iN	00 18	5	+13				
		i(SS)Z	03 19	8			-11		
		iN	03 22	5	+12				
		iE	03 23	5		-8			
		iE	03 33	5		+8			
		iSSS$_N$	03 46	6	+29				
		iE	03 48	5		-9			
		MNZ	15.2	12	22		30		
		ME	15.6	10		8			
268	" 29	iP$_{NZ}$	23 54 49	6	-5		+9	3990	Compression
		iZ	55 06	4			+16	26°9	H 23 49 09
		iPPN	55 31	6	+11				
		iPPZ	55 33	6			+14		
		iPPPN	55 46	7	+27				
		iE	55 47	6		+8			
		iS$_{NZ}$	59 22	7	+19		+14		
		iE	59 29	5		+12			
		iN	59 45	6	+27				
		iE	59 46	5		-27			
		iZ	59 48	7			+24		
		eLQ$_N$	00 00.2	20					
		iN	00 30	7	+24				
		iE	00 57	6		-38			
		iE	01 09	5		-25			
		eL$_N$	02.1	30					
		MNZ	03.7	23	175		190		
		eW$_2$Z	02 36.5	20					

Minor shocks: 1d 01.1h; 5d 20.9h; 9d 01.1h, 03.6h, 10.4h; 10d 06.2h; 16d 22.9h 17d 00.3h; 18d 01.8h, 16.8h; 20d 23.4h; 21d 07.5h; 24d 00.5h; 26d 16.7h; 28d 05.6h; 30d 06.7h, 07.1h, 14.9h.

272	Aug. 1	eZ	00 19 08						
		e(S)$_N$	22.2						
		eL$_Z$	25.3	15					
273	" 1	iP?Z	09 23 44	3			+3		
		eL$_Z$	50.3	22					
274	" 2	iS$_N$	11 05 23	5	+2				From Wiechert.
		i(ScS)$_N$	08 32	5	+2				
		eL$_E$	12.5	21					
		ME	16.4	15		1			
		MN	17.0	16	1				
277	" 5	iP$_{NEZ}$	09 21 10	5	+155	-62	+160	1940	Compression
		iPP$_N$	21 22	4	+			17°2	H 09 17 11
		iPPP$_E$	21 32	5		-			
		iS$_E$	24 19	10		-42			
		iSS$_E$	24 39	13		+130			
		iZ	24 46	9			-160		
		iN	24 49	10	-280				
		MNE	26.3	11	210	360			MNE from Wiechert
		MZ	26.8	12			170		
278	" 7	iP$_{NEZ}$	02 53 21	5	-18	+11	+44	5220	Compression
		iN	53 35	5	+15			47°0	h 0.02
		ipPZ	53 55	6			+16		H 02 45 04
		iZ	54 04	6			+28		
		iPP$_{NEZ}$	55 10	5	-20	+19	+38		
		iS$_N$	59 59	10	-67				
		iSS$_N$	03 00 59	10	+54				
		iSS$_E$	03 28	6		+32			
		iSS$_N$	03 30	6	-58				
		iE	03 33	6		+48			
		iZ	03 37	7			+43		
		iE	03 50	9		+95			
		iE	04 29	9		-48			

1950, August.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
279	Aug. 7	iP_Z	15 55 17	4			+4	4650	Compression
		iP_{NE}	55 19	4	-2	+2		41°9	H 15 47 28
		iPP_Z	56 57	4			+3		
		$iPPP_Z$	57 23	4			-4		
		iS_N	16 01 33	8	-5				
		eSS_N	04 38	13					
		i_N	04 49	7	-9				
		i_E	04 54	7		+8			
		iN	05 22	5	-4				
		iE	05 24	5		+6			
		eL_Z	11.3	27					
		MZ	13.7	25			15		
		MN	16.1	20	9				
280	" 10	$i(S)_E$	18 03 37	5	-				
		eL_N	05.3	20					
281	" 10	eP_Z	19 25 36	4				2960	H 19 19 58
		iPP_Z	26 20	4			+4	26°7	
		iPP_N	26 21	4	-4				
		iS_N	30 07	6	-4				
		iNE	30 17	7	+14	+5			
		iSS_N	31 22	6	+4				
		eLR_Z	32.5	24					
		MZ	34.3	21			9		
285	" 12	$P?_Z$	10 49 57						
		iS_N	54 29	6	+4				
		eLR_{EZ}	56.3	24					
		MN	58.6	14	1				
		MEZ	58.8	17		2	3		
287	" 14	iPP_{NZ}	23 09 39	6	+9		+16	12,400	h 700 km.,
		iZ	09 46	6			+18	111°6	H 22 51 24
		iZ	13 59	5			+5		(From Gutenberg's
		$iSKS_{NE}$	14 35	7	+15	-8			Tables)
		iE	15 34	6		+5			
		iN	15 38	6	-8				
		iN	15 48	7	+15				
		$i(S)_E$	16 24	6		-6			
		iZ	17 59	6			+5		
		$i(SP)_E$	18 11	6		+5			
		$i(SP)_{NZ}$	18 14	6	+12		+15		
		iNZ	18 28	6	-13		-12		
		$i(PS)_E$	19 23	6		+8			
		iSS_E	24 25	8		+7			
289	" 15	iP_{NZ}	14 21 47	6	+6		-22	9050	Dilatation
		$iPcP_E$	21 52	5		+5		81°5	H 14 09 30
		iE	22 20						
		iN	22 21						After iP Galitzin
		iN	22 41						record indecipher-
		iE	22 45						able.
		iE	23 01						
		iE	23 32						
		iN	23 34						
		iE	23 40						
		iN	23 49						
		iS_N	31 55						
		iS_E	31 56						
		iNE	32 05						
		isS_N	32 17						
		iE	32 41						
		iN	32 42						
		iN	33 34						
		iE	33 47						
		iN	33 54						
		iN	34 09						
		eL_N	47.0	40					
		M_1N	54.2	32	2700				
		M_1E	58.2	32		4300			
		M_2N	15 01.1	21	2600				
		M_2E	01.7	22		3500			

1950, August.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
290	Aug. 15	iP_Z	18 51 04	4			+5	9100	Compression
		iS_N	19 01 14	7	+7			81°.9	H 18 38 47
294	" 16	i_Z	16 18 13	4			+4		
		$i(S)_E$	21 23	8		-4			
295	" 17	iP_{EZ}	16 20 33	3		-2	+7	3130	Compression
		ipP_Z	22 06	3			+5	28°.1	h 0.09
		isP_{EZ}	23 20	4		-6	+9		H 16 15 26
		$iPcP_{EZ}$	23 29	3		+6	-3		
		iS_{NE}	24 38	6	+13	+17			Gutenberg's Tables
		$iScP_N$	26 08	5	+6				give: Δ 27°.7,
		i_N	27 42	6	+6				h 600 km.,
		isS_E	27 49	6		+16			H 16 15 26
		$iScS_N$	30 04	6	+8				
296	" 18	iP_Z	01 20 18	6			-5	9080	Dilatation
		iS_E	30 27	6		+9		81°.7	Large microseisms
		$iSKS_N$	30 32	6	-12				present.
		iPS_{EZ}	31 18	5		+5	+4		
		ME_Z	58.0	24		6	7		
		M_N	02 00.7	18	8				
297	" 18	$i(P)_Z$	17 11 12	5			+9		Compression.
		ME	49.0	19		3			Large microseisms
298	" 20	$i(P)_Z$	09 16 05	5			+4		Compression
		MNE_Z	56.7	30	4	2	3		
300	" 20	iP_Z	23 39 43	3			+10	2650	Compression
		iPP_Z	40 13	5			+6	23°.9	H 23 34 30
		i_N	42 30						After iPP readings
		eS_N	43 54						are from Wiechert
		i_N	44 11						
		i_E	44 22						
301	" 22	$i?_Z$	06 05 46	3			+4		Masked by micro-
		e_E	16 17						seisms.
		e_E	20 01						
		$e(L)_Z$	25.8	18					Possibly multiple
		M_N	34.9	13	4				shock.
		eL_E	35.7	24					
		i_Z	36 49	4			+4		
		ME	45.0	15		3			
304	" 23	iS_E	03 32 00	4		+3			
		i_N	32 02	4	+2				
		MN_Z	04 03.9	18	2		1		
305	" 23	$i(P)_Z$	18 59 23	4			+5		Compression
		$i(S)_E$	19 09 26	5		+			
		M_N	39.0	18	2				
		M_Z	42.0	18			3		
307	" 26	i_E	16 00 58	5		-6			Masked by micro-
		i_Z	01 00	5			+5		seisms.
		i_N	01 02	5	+7				
		eL_{NE}	01.5	16					
		eL_Z	01.9	19					
		MNE_Z	03.8	12	6	5	5		
310	" 30	P_Z	05 25 32					2500	H 05 20 34
		iPP_Z	25 57	6			-4	22°.5	
		iS_E	29 32	6		+5			
		i_N	29 51	6	-10				
		i_E	30 08	6		-3			
		i_N	30 37	7	+9				
		i_N	31 02	6	+6				
		eLR_N	31.1	22					
		MN_Z	32.4	16	9		7		
311	" 30	iP_Z	06 58 05	3			+4	4100	Compression
		ipP_Z	58 16	3			+5	37°.0	H 06 50 57
		iPP_Z	59 28	4			+5		
		eS_E	07 03 48						
		iS_N	03 53	7	-10				
		iSS_Z	06 23	7			+8		
		$iSSS_N$	06 46	7	+15				
		M_N	11.5	16	40				
		M_Z	13.9	13			20		

1950, August-September.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
312	Aug.30	$i(P)_Z$	08 15 16	5			-4		Dilatation
		eL_N	21.9	18					
313	" 30	eP_Z	09 18 35					2500	H 09 13 37
		iS_{NZ}	22 35	9	+17		+12	22°5	
		i_E	22 38	6		+9			
		isS_N	22 47	9	+12				
		eLQ_N	22.9	18					
		iSS_Z	23 18	7			+6		
		eLR_Z	24.0	18					
		ME_Z	26.0	18		3	9		
		M_N	27.3	13	3				
314	" 30	iP_Z	23 18 49	4			+4	2560	Compression
		ipP_Z	18 58	7			+8	23°1	H 23 13 45
		$iPPP_Z$	19 27	6			-7		
		iS_{NE}	22 54	7	+7	+7			
		i_E	23 04	6		+10			
		isS_N	23 09	7	+5				
		eLR_Z	24.5	23					
		M_{NZ}	25.5	19	5		6		
315	" 31	iP_{NZ}	07 14 04	4	+5		-6		Dilatation
		i_{NEZ}	14 10	3	+	-3	+11		h perhaps 0.02
		$i(pP)_Z$	14 37	4			+12		H 07 05 39
		iPP_Z	15 55	4			+7		
		iS_{NE}	20 49						
		i_Z	20 51	6			-12		
		iSS_N	24 13	8	+35				
		iSS_E	24 14	6		-11			
		iSS_Z	24 16	12			-45		
		i_E	24 20	6		+6			
		i_N	24 36	9	-41				
		M_Z	33.0	17			17		
		M_N	33.4	15	24				
Minor shocks: 3d 15.8h, 23.5h; 11d 11.3h, 20.6h, 23.5h; 12d 16.3h; 15d 06.0h, 22.4h; 16d 06.4h, 07.5h; 20d 15.1h; 22d 08.2h, 14.0h; 26d 07.2h; 29d 18.2h,23h									
320	Sept.3	$i(S)_N$	04 15 17	7	+3				Masked by micro-seisms.
		i_N	16 38	5	-5				
		eL_N	17.6	20					
		i_N	19 49	6	+7				
321	" 4	$i(P)_Z$	07 35 00	4			+4		Compression
		i_E	40 14		-				
		M_Z	50.0	17			5		
324	" 7	iP_Z	15 04 32	3			-2	2740	Dilatation
		ipP_Z	04 42	4			-5	24°6	H 14 59 14
		i_Z	05 02	4			-3		
		$iPPP_Z$	05 20	4			-4		
		iS_N	08 48	7	-4				
		i_N	09 20	7	+5				
		SS_N	09 44	7					
		eLR_Z	10.4	27					
		M_N	11.8	16	4				
325	" 9	iP_{NZ}	10 27 49	4	-4		+7	3400	Compression
		i_{NZ}	28 29	5	-6		+7	30°4	H 10 21 38
		iPP_{NZ}	28 49	7	+8		-6		
		$iPPP_Z$	29 04	7			-8		
		i_Z	29 41	7			-11		
		iS_N	32 46	8	+21				
		i_E	32 52	4		+5			
		e_N	32.9	20					
		iSS_E	34 23	7		-15			
		i_E	34 56	9		-24			
		eL_E	36.0	30					
		M_E	39.1	16		88			
		M_N	40.9	13	42				
		M_Z	41.0	16			55		
326	" 9	$i(S)_{NE}$	14 36 47	6	+5	+6			
		i_E	37 20	7		+4			
		$i(SS)_N$	37 33	6	+5				
		eL_Z	38.3	19					
		MNE_Z	39.8	16	6	4	7		

1950, September.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
	1950								
328	Sept.10	iPZ	15 21 16	4			+9	2600	Compression
		iP_{NEZ}	21 22	4	+26	+21	-47	23.1	h 0.015
		ipP_{NEZ}	21 46	5	+31	+28	-47		H 15 16 21
		iPP_{NEZ}	21 52	7	-75	-70	+130		
		$iPPP_E$	22 02	7		+47			
		$iPPP_N$	22 03	7	+65				
		iE	22 20	7		+105			
		iN	22 31	6	+35				
		iS_N	25 14	6	-29				
		iS_E	25 19	7		+46			
		iZ	25 31	8			+110		
		iE	25 43	10		-210			
		mN	25 51	9	140				
		iZ	25 59	9			-87		
		isS_N	26 00	7	+60				
		iE	26 04	6		-40			
		iN	26 21	8	-160				
		iE	26 25	7		-92			
		iN	26 40	9	-175				
		iE	26 43	7		-135			
		iZ	27 16	10			+260		
		iE	28 11	7		-40			
		iN	28 21	9	+97				
		iE	29 58	9		-140			
		iN	30 23	11	+190				
		$iScS_N$	32 12	7	-120				
		$iScS_E$	32 14	7		+95			
332	" 13	e(P)Z	20 49 18						
		e(S)NE	53 36	8					
		e(SS)E	54 31	8					
		eLZ	55.6	21					
		MNEZ	57.6	15	4	3	4		
334	" 14	iPZ	09 13 38	4			-4	4650	Dilatation
		iZ	13 46	4			+5	41°8	H 09 05 50
		iZ	13 54	4			+5		
		iZ	13 59	4			-9		
		iZ	14 51	4			+6		
		ePP_{NEZ}	15 18	10					
		eN	19 39	10					
		iS_{NE}	19 53	8	-14	+10			
		eE	21 04	28					
		iSS_Z	22 57	9			+		
		iN	23 06	7	+				
		iE	23 13	7		+8			
		eL_E	26.8	35					
		MN	30.6	24	25				
		MEZ	31.6	23		23	26		
335	" 15	e(S)N	14 25 40	7					
		i(SS)N	27 27	7	+5				
		eL_N	28.6	18					
		MN	30.9	12	2				
336	" 15	iP_{NZ}	19 03 10	3	+5		+4	2160	Compression
		eS_N	06 42					19°4	H 18 58 44
		eE	06 45						
		eLQ_N	06.9	16					
		$iSSS_N$	07 18	5	+5				
		eLR_Z	07.9						
		ME	08.8	11		2			
		MZ	09.0	12	2				
337	" 15	iZ	19 12 26	4			+5		
339	" 19	iP_{NEZ}	20 36 34	4	+11		-23	3800	Dilatation
		iPP_N	37 55	4	-11			34°3	H 20 29 49
		iS_E	41 58	5		-20			
		iS_N	42 00	10	+52				
		eN	42.5	23					
		eN	43.1	30					
		iSS_N	44 15	9	+40				
		ME	48.3	8		300			ME, MN from
		MN	51.0	11	320				Wiechert.

1950, September.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
340	Sept.20	$i(S)_N$	00 44 35	4	+5				
		MN	47.6	14	3				
342	" 21	i_E	16 09 25	3		+4			
		e_N	11 53	7					
		eL_Z	18.8	17					
343	" 21	iP_Z	23 03 16	7			+6	9000	Compression
		i_Z	05 24	4			+4	81°	H 22 51 03
		e_N	11 57	7					
		eS_N	13 23	6					
		eLQ_E	25.5	28					
		eLR_N	27.8	25					
		MZ	34.5	20			3		
345	" 22	iP_Z	08 04 20	5			-2	9100	Dilatation
		ipP_Z	04 33	5			-2	81°3	H 07 52 06
		iPP_Z	07 25	6			+2		
		iS_E	14 27	7		+4			
		$iSKS_N$	14 31	7	-4				
		i_E	14 51	6		+3			
		ePS_E	15 15	14					
		$ePPS_Z$	15 39	12					
		eSS_{EZ}	19 50	18					
		i_E	20 12	10		+8			
		$eSSS_E$	23 11	16					
		eLR_{EZ}	29.3	36					
		MZ	31.0	25			17		
		MN	31.3	26	6				
		ME	31.6	24		10			
347	" 22	iP_{NEZ}	23 59 30	4	+4	+7	-18	3560	Dilatation
	23	ipP_E	00 00 46	5		+4		32.0	h 400 km.,
		iPP_Z	00 58	6			-13		H 23 53 35
		iPP_E	00 59	6		+10			(From Gutenberg's
		i_Z	01 32	7			+11		Tables)
		i_E	01 33	6		-9			
		iS_{NE}	04 14	6	-	+21			
		i_E	04 25	6		+25			
		i_N	04 28	6	+14				
		i_E	04 46	6		+16			
		i_E	05 30	4		+9			
		i_N	06 36	8	+6				
		i_N	07 04	9	+41				
		$iScS_{NE}$	09 15	4	+	-			
		i_{NE}	12 17	8	-44	+33			
349	" 23	$e(P)_Z$	18 47 36						
		$e(S)_E$	54 36						
		$e(PS)_E$	54 47						
		$e(PPS)_N$	54 52	10					
		e_E	57 38	12					
		e_E	58 10	11					
		e_N	58 31	15					
		e_Z	58 38	20					
		ME	19 08.3	17		2			
		MNZ	11.0	18	3		3		
351	" 25	$i(P)_Z$	23 24 59	4			+5		Compression
		i_N	32 12	5	+8				
		$e(SS)_N$	35 19						
		MEZ	54.9	16		6	6		
		MN	55.2	15	8				
352	" 27	iP_E	08 29 32	5		+3		3040	
		iP_Z	29 34	5			-2	27°4	Dilatation
		iS_E	34 08	7		+4			
		iS_N	34 12	7	+4				
		i_E	35 05	7		+7			
		i_N	35 06	6	+5				
		eLQ_N	35.2	16					
		eLR_Z	36.5	20					
		MN	41.4	10	6				

1950, September.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
353	Sept.28	iP_Z	03 40 09	4			+4		Compression
		eL_E	04 01.9	22					
		MNE	05.9	19	2	2			
355	" 29	iPP_Z	06 51 20	7			+4	12,200	
		$eSKS_E$	57 43					110°	
		$i(S)_E$	59 16	7		-4			
		ePS_EZ	07 00 47						
		$e(PPS)_E$	01 59						
		iSS_E	06 56	10		+7			
		iE	07 11	10		+12			
		eLR_Z	22.5	20					
		MN	29.0	19	4				
		MEZ	30.8	19		12	15		
		eW_2E	08 38.7	30					
356	" 30	$eP?_Z$	07 41 17						
		$iPcPZ$	41 25	4			-3		
		i_Z	41 36	6			-4		
		$i(SKS)_E$	51 35	4		+5			
		$i(SKS)_N$	51 36	4	+4				
		iE	51 48	4		+5			
		i_N	51 50	4	+4				
		eSS_E	56 56	20					
		MZ	08 17.0	25			8		

Minor shocks: 1d 03.4h, 14.1h, 14.8h; 2d 13.5h; 5d 02.3h, 09.0h; 10d 04.0h; 12d 02.7h; 13d 00.8h, 11.8h; 14d 06.6h; 16d 01.7h; 20d 09.6h; 22d 04.2h, 12.5h 23d 16.6h; 24d 09.0h; 28d 13.7h.

D.J.K.O'Connell,S.J.
Director.

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P.F.Rheinberger.

Riverview College Observatory

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ 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. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : l$	$\frac{r}{T_o^2}$		T_g (Galv.)	T (Pend)	μ^2	V_s
N	1	193	7.4	4.5	0.015	4	11.8	11.9	+0.04	410
	3	160	9.1	7.0	0.017					
E	1	241	6.8	6.6	0.004	4	12.3	12.2	-0.02	490
	3	154	11.6	6.2	0.010					
Z	2					4	11.0	11.0	0.0	450

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h. m. s.	s.	μ	μ	μ	km.	
360	Oct. 4	P?Z	17 15 57						Masked by micro-seisms.
		S?E	19 59						
361	" 4	iPZ	18 09 00					2600	Compression
		ipPZ	09 13	6			+9	23°4	H 18 03 53
		iE	09 16	6		+9			
		iPPPZ	09 41	7			-10		
		iN	10 09	6	-7				
		iS_{NE}	13 07	8	+8	+10			
		isSE	13 25	8		+			
		eLREZ	14.9	23					
		MZ	18.1	16			11		
		MNE	18.2	14	18	8			
362	" 5	iPZ	00 46 07	4			-4	2650	Dilatation
		iZ	46 14	5			-18	23°8	H 00 40 58
		iN_E	46 15	5	+9	+9			
		iPPNE	46 40	4	+5	+8			
		iPPZ	46 42	5			+		
		iPPPE	46 50	6		-7			
		iPPPZ	46 51	6			-13		
		iS_N	50 19	7	+5				
		iS_E	50 20	7		+18			
		iZ	50 23	7			+13		
		iE	50 27	7		-48			
		isS_N	50 35	7	+21				
		isSE	50 36	7		+41			
		eLRNEZ	52.1	23					
		MEZ	52.6	23		75	78		
		MN	54.6	15	32				
363	" 5	PKP?Z	16 28 36					13,800	
		ePPEZ	30 17					124°ca	
		$eSKS_E$	35 25						
		iE	35 37	8		+5			
		$iSKKKS_E$	37 15	10		+21			
		iPSEZ	40 14	12		+26	-24		
		$iPPS_E$	41 42	11		+24			
		eE	43 54	33					
		eE	45 42	33					
		eSS_E	46 58						
		iSS_E	47 24	24		+130			
		iZ	50 18						
		eLQ_N	17 01.7	40					
		eLR_E	06.7	30					
		M_1NEZ	15.6	18	32	43	67		
		M_2EZ	24.9	16		53	73		
364	" 5	iZ	23 56 16	4			+4		
		eLZ	00 05.9	20					
		ME	09.1	18		1			

1950, October.
RIVERVIEW COLLEGE OBSERVATORY,
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
366	Oct. 8	iP_Z	03 30 17	4			+4	4050	Compression
		iP_{NEZ}	30 19	4	+13	-8	-26	36°2	H 03 23 18
		ipP_{NEZ}	30 26	4	+16	-11	-32		
		i_{NEZ}	30 35	5	-58	+41	+130		
		iZ	31 09	7			+75		
		i_{NE}	31 51	5	-36	+35			
		iS_N	35 54	8	-58				
		i_{NE}	36 05	9	-140	+165			
		iSS_{NE}	38 25	9	+170	-195			
		ME	45.3	13		430			ME, MN from
		MN	47.5	13	640				Wiechert.
		eW_2N	06 11.0	35					
368	" 8	$e(S)_N$	11 19 02	10					
		eL_N	22.9	24					
		MN	25.2	14	3				
		ME	25.4	13		3			
369	" 8	iP_Z	14 55 37	3			-4	3240	Dilatation
		iS_N	15 00 25		-			29°1	H 14 49 37
		i_N	00 38	13	-19				
		i_N	00 59	13	-31				
		i_E	02 45	7		-11			
		eL_E	03.2	25					
		ME	06.0	18		23			
		MNZ	06.3	18	35		46		
374	" 10	iP_Z	18 46 14	3			-4	1850	Dilatation
		i_{NEZ}	46 18	3	+8	-5	+9	16°8	H 18 42 20
		ePP_Z	46 27	5					
		$ePPP_Z$	46 37	7					
		eS_N	49 18						
		eS_E	49 19						
		i_N	49 27	4	+4				
		i_E	49 29	4		-4			
		i_Z	49 32	6			+13		
		eLQ_N	49.6	15					
		iSS_E	49 39	6		-3			
		$iSSS_N$	49 50	6	-8				
		$iSSS_E$	49 52	5		+6			
		eLRZ	50.2	21					
		ME	51.9	12		3			
375	" 13	i_E	00 02 27	6		-6			Masked by heavy
		i_N	02 29	6	+6				microseisms.
		i_N	05 01	7	+8				
		eL_N	08.5						
		MNEZ	15.5	10	5	5	7		
376	" 14	$e(S)_N$	05 10 14						
		eLN	14.0	21					
		MNE	16.1	19	4	2			
		MZ	16.3	19			8		
377	" 15	e_N	14 21 02						
		e_N	25 33	19					
		i_N	26 01	12	+9				
		eL_E	29.3						
		MNEZ	31.5	20	8	7	13		
378	" 15	iP_{NEZ}	16 05 23	4	+5	+3	-11	2950	Dilatation
		i_N	05 46	4	-5			26°5	H 15 59 47
		eS_N	09 53	10					
		isS_N	10 08	10	+21				
		i_{NE}	10 44	4	+9	+8			
		i_N	10 54	5	-9				
		i_E	11 07	5		-7			
		i_N	11 49	5	+9				
		eLRZ	12.2	22					
		MN	15.2	15	14				
		MEZ	16.3	15		16	20		
379	" 15	$i(S)_{NZ}$	18 17 45	4	-2		-2		
		$i(S)_E$	17 47	4		+8			
		eLN	20.4	15					

1950, October.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
381	Oct.17	iP_{NEZ}	16 40 39	4	-2	-1	+4	2840	Compression
		ipP_{EZ}	40 53	5		-3	+5	25°6	H 16 35 11
		iPP_{NEZ}	41 11	6	-3	-3	+6		
		iS_E	45 02	5		-3			
		iS_N	45 06	7	-6				
		$i(sS)_N$	45 25	9	+19				
		eLQ_N	45.8	18					
		iSS_E	46 00	6		-4			
		eLR_Z	47.4	19					
		MN_{EZ}	50.0	16	6	5	8		
383	" 21	eP_Z	04 19 50					3750	H 04 13 10
		ipP_Z	20 01	5			+4	33°7	
		iZ	21 11	4			+3		
		iE	21 16	4		+3			
		iEZ	21 27	4		-7	-4		
		iS_{NE}	25 10	6	+4	-6			
		iSS_N	27 15						
		eLQ_E	27.4	20					
		eLR_Z	29.3	30					
		ME	31.1	20		32			
		MZ	32.5	19			30		
		MN	32.8	13	10				
388	" 22	$i(S)_N$	19 04 33	4	+2				
		eLZ	07.2	18					
		MEZ	08.8	15		1	1		
390	" 23	eP_Z	16 28 39					13,300	h 100 km. (from
		$ePKP_Z$	32 13					120°	Gutenberg's Table$
		ePP_{EZ}	33 37	16					
		$ePPP_Z$	36 05						H 16 13 23
		$e(PPP)_E$	36 16	17					
		eE	38 22	21					
		$eSKS_E$	39 08	13					
		$e(SKKS)_E$	40 38	13					
		ePS_E	43 26	23					
		iPS_Z	43 32	16			-24		
		$ePPS_E$	44 46	24					
		iEZ	45 04	15		-34	+30		
		eSS_E	49 52	37					
		$eSSP_N$	50 09						
		$isSS_E$	50 28	23		+48			
		eNE	53 54	23					
		$eSSS_Z$	54 14	35					
		$iSSS_E$	54 17	20		+43			
		eLQ_N	17 03.9	37					
		eLR_Z	08.4	36					
		M_1N	16.9	18	13				
		M_1EZ	17.9	18		13	30		
		M_2NEZ	23.5	16	16	19	32		F 21.1h
391	" 24	iP_{EZ}	01 50 55	6			-4		Dilatation
		eN	55 40	9					
		eL_{EZ}	57.9	22					
		$MNEZ$	02 01.2	16	4	4	4		
393	" 24	iP_Z	22 35 15	3			+3	2400	Compression
		ePP_E	35 39	7				21°6	H 22 30 26
		$iSNE$	39 07	8	-3	+2			
		eLR_{EZ}	40.4	23					
		MN	43.0	13	1				
394	" 25	eZ	02 23 58						
		eZ	32 03						
		eL_E	35.0	28					
		MNZ	40.1	14	4		6		
395	" 25	iP_Z	07 13 49	4			+3	7200	Compression
		epP_Z	14 17	6				64°9	h 0.01
		eS_E	22 21	5					H 07 03 18
		isS_E	23 12	6		-4			
		$eSKS_N$	23 19	7					
		$iScS_N$	23 36	5	-4				
		eL_Z	36.6	25					

1950, October-November.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
396	Oct.26	iP_{EZ}	03 55 28	4		-2	+4		Compression
		i_Z	56 26	7			-5		
		i_E	56 30	7		-3			Foreshock of
		$e(S)_{NE}$	04 00 17						No.398
		i_N	00 24	5	+7				
		i_Z	00 25	6			-9		
		i_E	00 26	6		+7			
		i_E	01 04	9		+8			
		i_N	01 41	10	+11				
		eL_E	02.4	24					
		MN	04.2	16	21				
		MEZ	04.9	16		15	22		
397	" 26	ePZ	07 15 30					2400	h 0.01
		i_E	15 45	4		-3		21°8	H 07 10 45
		ipP_Z	15 50	3			+4		
		i_{NEZ}	15 52	4	-4	-5	+7		
		iPP_{EZ}	15 58	6		-7	+8		
		iS_N	19 20	7	+7				
		$iPcP_{EZ}$	19 24	6		-7	-4		
		isS_N	19 56	6	-17				
		MN	23.6	12	9				
398	" 26	iP_{EZ}	15 44 23	7		+4	-8		Dilatation
		i_Z	44 47	7			-10		
		i_E	44 49	6		+5			
		i_E	45 01	6		-5			
		i_{EZ}	49 11	7		-7	+6		S cannot be ident-
		i_{NE}	49 17	7	+13	+16			ified.
		i_E	50 00	7					
		eL_Z	51.9	24					
		MN	53.1	16	27				
		MZ	53.8	16			34		
		ME	54.3	14		20			
400	" 27	iPZ	21 33 54	3			+2	2650	Compression
		ipP_{NEZ}	34 04	4	-6	-5	+11	23°8	H 21 28 43
		i_Z	34 13	4			+7		
		iPP_N	34 30	4	+5				
		iS_N	38 04	4	-12				
		iS_E	38 07	4		-6			
		iN_Z	38 12	7	+26		+11		
		i_E	38 14	6		-13			
		i_{NZ}	38 25	7	+14		-12		
		eLR_Z	39.7	27					
		MN	41.1	18	7				
		MEZ	41.7	18		9	8		
402	" 28	iP_Z	09 11 13	4			+2	2990	Compression
		ipP_Z	11 22	4			+5	26°9	H 09 05 33
		i_E	11 36	6		+3			
		i_Z	11 40	7			+4		
		ePP_{EZ}	11 59	9					
		iS_E	15 46	7		+4			
		i_E	16 07	7		-5			
		i_{NZ}	16 11	7	+4		-3		
		iSS_E	16 57	7		-5			
		eL_Z	19.3	22					
		MEZ	21.1	15		7	8		
		MN	21.8	13	11				
407	" 30	i_E	02 35 00	5		+3			
		eLQ_N	42.1						
		eLR_Z	44.2	20					
		MEZ	46.1	16		1	1		
408	" 30	eS_E	14 00 10						
		MNE	03.6	12	1	1			

Minor shocks: 1d 01.9h; 2d 18.9h; 3d 09.4h; 7d 07.2h; 8d 10.1h, 17.9h; 9d 05.2h & 16.6h; 10d 16.3h; 16d 20.4h; 19d 10.0h; 21d 06.5h, 10.6h; 22d 01.7, 18.2h; 23d 01.2h; 24d 05.0h; 27d 06.2h, 22.7h; 28d 18.4h, 23.4h; 29d 01.4h, 07.9h; 31d 20.1h.

410	Nov. 2	$e(P)_Z$	07 18 09						
		$e(S)_N$	26 58						
		$e(SS)_E$	31 22						
		eL_E	38.1						

1950, November.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
	1950								
411	Nov. 2	iP_{NEZ}	15 34 36	5	+63	-43	-140	3550	Dilatation
		ipP_{NE}	34 49	5	+21	-17		31°8	H 15 28 12
		iPP_{NE}	35 40	5	+37	-41			
		$iPPP_{NE}$	35 53	6	+37	-29			After iP all readings from Wiechert.
		iS_E	39 43	6		-43			
		iE	39 50	7		-62			
		iN	39 54	7	+88				
		iNE	41 01	6	-170	-100			
		iSS_N	41 32	6	-165				
		$iSSS_N$	42 01	6	+130				
		MNE	47 ca						
412	" 2	iP_Z	18 20 48	3			+6		Compression
		iN	26 00	6	-4				Aftershock of 411
		MNEZ	35.7	19	22	20	28		
415	" 4	iP_Z	07 27 50	4			-7	2850	Dilatation
		$iNEZ$	27 52	4	-9	-8	+15	25°5	h 0.02
		$ipPEZ$	28 23	4		-3	+6		H 07 22 35
		iZ	31 41	4			+9		
		eS_N	32 03						
		iE	32 14	6		+4			
		isS_N	33 01	7	+12				
		iN	33 17	7	+12				
		iE	33 28	7		+8			
416	" 5	eZ	17 48 35	13					
		$e(PPP)_Z$	52 19	18					
		ePS_Z	57 35	15					
		iPS_N	57 36	12	-10				
		iE	57 41	12		+8			
		iE	58 38	12		-8			
		$e(SS)_N$	18 01.6						
		eE	02.6	28					
		eZ	05.3	30					
		eLQ_N	05.5						
		eL_E	07.7	34					
		iE	10 07	25		+17			
		eLR_Z	10.5	37					
		MNEZ	15.7	22	16	12	21		
418	" 6	iP_Z	22 27 56	3			-4	2800	Dilatation
		iNZ	27 57	7	-8		+15	26°0	H 22 22 24
		$ipPZ$	28 08	4			+12		
		iN	28 21	6	+5				
		$ePPZ$	28 34	9					
		$iPPPZ$	28 47	9			+9		
		iS_N	32 22	10	-29				
		iZ	32 43	10			+27		
		iN	32 47	9	+86				
		iE	32 48	11		+41			
		iSS_E	33 21	8		-17			
		iN	33 23	8	+29				
		$iSSS_E$	33 38	9		+16			
		iN	34 36	10	+43				
		eL_{NE}	35.5	22					
		eL_Z	35.6	25					
		ME	37.0	13		27			
		MN	38.6	13	28				
		MZ	39.0	14			29		
420	" 7	eS_N	06 35 00						
		$iSSS_E$	36 32	4		+2			
		ME	39.5	13		1			
		MNZ	41.4	14	1		1		
422	" 8	$i(S)_{NE}$	02 08 04	7	-2	-2			
		eL_E	10.0	23					
		ME	11.2	18		2			

1950, November.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
423	Nov. 8	iPNEZ	02 23 39	7	+20	+8	-32	2850	Dilatation
		ipPNEZ	23 47	6	-68	-28	+85	25°6	H 02 18 11
		iN	24 11	5	+12				
		iPPZ	24 17	6			+29		
		iPPPE	24 26	5		+12			
		iZ	24 36	5			+28		
		iNEZ	24 52	5	+43	+18	-42		
		iPcPN	27 08	4	+12				
		iZ	27 55	9			+30		
		iSN	28 02	9	+28				
		iE	28 09	5		+25			
		iN	28 24	7	-75				
		iE	28 26	7		-62			
		iZ	28 27	10			-61		
		iN	28 50	7	+110				
		iE	28 51	5		+43			
		iZ	28 59	10			-100		
		eLN	29.2	31					
		iE	29 18	7		+110			
		iE	29 39	10		-140			
		eLRZ	30.3	32					
		MN	31.6	19	310				
		ME	33.0	15		280			
		MZ	34.4	15			260		
		W2N	05 10	21					
		W3EZ	05 49	20					
424	" 8	e(S)N	06 51 00						
		eN	51 11	9					
		MNE	55.7	15	6	3			
425	" 8	eNE	11 59 18						
		eN	12 03 29						
		eE	03 30						
		ME	08.1	16		2			
		MN	08.9	15	2				
426	" 9	iE	12 16 50	4		+3			
		eLN	20.9	16					
427	" 10	iPZ	05 08 27	3			+3	3850	Compression
		ipPZ	09 42	3			+2	34°7	h 0.06
		iSE	13 27	4		-3			H 05 02 13
		iE	18 14	5		-3			
428	" 11	iPZ	03 44 01	5			-3	3100	Dilatation
		iZ	44 16	4			-2	28°0	H 03 38 11
		iZ	44 24	4			-5		
		iPPZ	44 53	5			+5		
		iE	48 36	5		+2			
		iSN	48 41	7	-4				
		iE	48 53	6		-2			
		isSN	48 56	7	+6				
		iN	49 18	6	+5				
		eLQE	49.9	26					
		iSSN	50 05	7	-4				
		iSSSE	50 26	6		-5			
		eL RE	51.6	27					
		iScSE	54 46	7		+7			
		ME	55.7	13		14			
		MNZ	56.7	15	10		15		
429	" 11	iPNZ	22 23 21	4	+4		-5	2850	Dilatation
		eSE	27 44					25°6	H 22 17 53
		iE	27 51	7		+9			
		iN	28 03	7	+8				
		iSSE	28 51	6		+3			
		iSSSE	29 07	6		-			
		eLREZ	30.0	27					
		MZ	32.1	19			6		
		MNE	33.0	12	4	19			

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1950		h m s	s	μ	μ	μ	km.	
486 cont.	Dec. 4	L_Z	16 42.3	22					
		i_E	42 38	11		+265			
		i_N	43 07	9	+55				
		ME	45.2	12		85			
		MN	46.6	12	120				
		MZ	47.2	14			140		
		eW_2Z	19 09	30					
487	" 4	iP_Z	20 17 06	3			+	2500	Compression
		i_Z	17 13	3			+5	22°5	H 20 12 08
		i_{EZ}	17 22	4		-4	+5		
		iPP_{NE}	17 33	4	+3	+5			
		iS_{NE}	21 06	6	+6	-3			
		isS_N	21 21	6	-8				
		eLR_Z	22.6						
		MN	24.6	13	4				
		MZ	26.7	15			5		
		ME	27.2	15		4			
488	" 4	$e(P)_Z$	20 43 08						
		eNE	43 18						
		$i(S)_E$	47 05	4		+4			
		$i(S)_N$	47 09	7	+11				
		$i(SS)_E$	47 50	4		-4			
		eL_N	49.1	19					
491	" 5	eP_Z	08 48 01					2490	H 08 43 04
		ePP_E	48 28	7				22°4	
		eS_{NE}	52 00	6					
		eL_N	54.0	19					
		MN	56.3	13	3				
		MEZ	56.7	13		2	2		
492	" 5	eP_Z	12 00 35	5				2450	H 11 55 43
		eS_N	04 30					21°9	
		iNE	04 38	8	+4	+2			
		eL_Z	06.8	19					
		MN	09.8	13	2				
493	" 5	iP_Z	12 10 54	3			+2	2490	Compression.
		iPP_{NEZ}	11 18	4	+4	+4	-4	22°4	H 12 05 57
		iS_{NE}	14 53	7	-4	+5			S_E 4s.per.
		iSS_{NE}	15 38	7	+5	+3			
		eLR_Z	16.4						
		MNE	18.6	13	3	1			
494	" 5	iP_Z	16 57 10	4			-2	2480	Dilatation
		ipP_{EZ}	57 18	4		-3	+4	22°3	H 16 52 14
		$iPPP_{NEZ}$	57 44	6	+6	+5	-5		
		$iPcP_Z$	17 01 05	5			-4		
		$iPcP_E$	01 06	5		+3			
		iS_N	01 08	6	+8				
		i_N	01 20	6	+10				
		i_E	01 26	6		+12			
		i_N	01 29	7	+10				
		iSS_{NZ}	01 47	6	-2		-2		
		eLR_Z	02.7	24					
		MEZ	03.7	19		6	4		
		MN	03.9	16	4				
496	" 5	$e?_E$	22 03 23						
		$e(P)_Z$	03 43	4					
		eNE	13 21						
		eN	14 29	7					
		iE	14 41	5		+2			
		eL_E	24.1	20					
		ME	30.4	19		1			
		MNZ	33.7	18	1		1		
497	" 6	eP_Z	03 42 43					2550	
		iPP_E	43 09	4		+2		22°6	
		eS_N	46 44	4					
		eL_N	48.4	19					
		MN	50.2	14	1				
		MEZ	51.0	15		1	1		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1950		h m s	s	μ	μ	μ	km.	
498	Dec. 6	eP_Z	04 06 02					2450	H 04 01 08
		eS_N	09 59	7				22°1	
		isS_N	10 14	7	-4				
		eLR_Z	11.7	19					
		MN	13.7	15	1				
		MZ	13.9	16			1		
		ME	14.2	15		1			
499	" 6	eS_N	07 27 38						
		eLR_Z	29.6	19					
		MN	32.7	14	1				
501	" 6	iP_Z	16 58 58	3			-2	2440	Dilatation
		iZ	59 02	3			+4	22°0	H 16 54 05
		iZ	59 19	3			+2		
		eP_Z	59 24	7					
		$ePPP_Z$	59 34	7					
		iZ	59 47	4			+4		
		iS_N	17 02 54	5	+3				
		$iPcP_{EZ}$	02 57	4		+4	-5		
		iN	03 03	6	+9				
		eSS_Z	03 35	7					
		eLR_Z	04.4						
		MNEZ	05.8	16	2	4	2		
502	" 6	eP_Z	21 10 58					2440	H 21 06 05
		eS_N	14 54	5				22°0	
		$iPcP_E$	14 59	5		-2			
		eLR_Z	16.4	20					
		MNEZ	17.8	16	2	1	1		
503	" 8	eP_Z	01 03 48					2370	H 00 59 02
		iZ	03 54	4			+3	21°3	
		eS_N	07 38	7					
		i_{NE}	07 49	7	+21	-6			
		$iPcP_Z$	07 53	3			+6		
		i_{NE}	08 03	5	+5	+8			
		i_E	08 11	6		+7			
		i_N	08 14	5	-10				
		eL_E	08.9	24					
		eL_Z	09.3	22					
		MN	10.7	16	5				
		MEZ	11.2	17		6	5		
506	" 8	$i(S)_E$	15 40 36	6		+4			Masked by heavy microseisms.
		eL_N	42.4	17					
		MN	44.2	14	3				
		ME	45.8	15		3			
508	" 9	iP_Z	16 41 19	4			+3	2390	Compression
		iS_N	45 10	5	+4			21°5	H 16 36 31
		i_N	45 16	6	+10				
		i_{EZ}	45 18	5		+5	-4		Large microseisms present.
		i_N	45 29	7	-8				
		eSS_N	45 47	10					
		eLR_E	46.5	28					
		MN	49.1	13	9				
		MZ	50.0	15			7		
		ME	50.4	14		5			
509	" 9	eP_Z	17 51 23					2440	H 17 46 31
		iS_N	55 18	7	-4			21°9	
		i_E	55 20	7		-4			Large microseisms present.
		i_E	55 30	7		-7			
		eLQ_N	55.7	15					
		eLR_N	56.8	21					
		MN	58.2	16	5				
		ME	59.0	14		4			
		MZ	59.2	16			4		