RIVERVIEW COLLEGE OBSERVATORY

SEISMOLOGICAL BULLETIN

1954

JANUARY - DECEMBER

IHS

RIVERVIEW, SYDNEY, AUSTRALIA

Unless otherwise stated, readings are from the Galitzins; and Jeffrey's & Bullen's Tables (1940) are used.

The amplitudes of initial impulses on the Galitzins are computed by Galitzin's method.

Riverview College Observatory acknowledges wi... the receipt of the following Bulletins and Publications from January 14, 1955 to Jan.24, 1956.

Alger (Universite).....1949 Oct.-Dec., 1953 Nov.,Dec.,1954 Oct.-1955 June.
Apia.....1954 November-1955 October(Preliminary).
Athens.....1955 August (Preliminary).
Azores.....1954 July-1955 March.
Beograd.....1951 Annuaire; 1954 September-1955 August.
Bergen.....1945-1947.
Bogota.....1954 January-December.
Brisbane.....1952 November, December; 1955 (Provisional),1956 Jan.1-18(P
Bucarest.....1955 January,February, April-September (Provisional).
Budapest.....1953 Rapport Micro.; 1954 August-1955 February.
California.....1946, 1952, 1953 January-June.
Canada Eastern Div. ...1953 October-December.
Western Div. ...1953 July-1955 March.
Cartuja.....1953 January-December.
Cheb.....1953; 1954 Oct-Dec.,1955 Jan.,May-Sept. (Preliminary).
Chile.....1954 April-1955 March.
Chinchina.....1954 January-December.
Cleveland.....1954 April, 1955 January-August, October.
Coimbra.....1954 October-1955 March.
De Bilt.....1954 October-1955 September (Preliminary).
Djakarta..... 1954 March-December.
Ebro.....1954 November-1955 September (Provisional).
Edinburgh.....1947, 1948, 1951.
Fayetteville.....1954 October-1955 September.
Fordham.....1955 March-July.
Galerazamba.....1954 January-December.
Hamburg.....1954 July-1955 June.
Harvard.....1953 January-June.
Helwan.....1946 January-December.
Hong Kong.....1954 July-Sept.,Nov.-Dec., 1955 January-July.
Hurbanovo.....1953; 1954 October-1955September (Preliminary).
India.....1953 February-July.
I.S.S. 1945, 1946
Istanbul.....1952 Nov.,Dec.,1953 Aug.,Oct-Dec.,1954 Sept.-1955 Sept(Prel.
Ivigtut.....1948, 1949, 1950.
J.S.A. .....1955 *1 1-2, *2 1-2, *3 1-5, *4 1-11.
Kalocsa.....1954 Aug.-Oct.,Dec., 1955 Jan.,Feb.
Kecskemet.....1954 Aug.,Sept.,Nov.,Dec., 1955 Jan.,Mar.
Kew.....1954 November-1955 October.
Kiruna.....1953 January-December.
Kobenhavn.....1949, 1950, 1951.
Ksara.....1954, 1955 January-June (Provisional).
La Paz.....1951 September-December, 1952 April-June.
La Plata.....1951 January-December.
Leipzig.....1947-1954.
Lisboa.....1947 May-December, 1954 September-1955 August (Prelim.)
Lwiro.....1953 May-December, 1954 January-June; 1955 Jan.-Dec.(Prel.)
Macquarie Is. .....1954; 1955 January-November (Provisional).
Madrid.....1952 January-June.
Malaga.....1953 November-1954 June.
Manila (Baguio).....1954 Dec.,1955 Jan.,Feb.,Apr.,Sept.,Oct.,Nov.
Melbourne.....1955 Jan.,Feb.,April-October.
Noumea.....1954 November-1955 October.
Osaka.....1953, 1954.
Pasadena.....1953, 1954 Jan.1-Sept.13; Prelim.Nos.82-86; Local shocks 1954 July-1955 June; Provis.(by air) 1955, 1956 Jan.1-16.
Pennsylvania.....1948 January-December.
Perth.....1954 July-1955 June.
Pittsburgh.....1954 January-December.
Potsdam.....1939-1948, 1950, 1951, 1952.
Praha.....1953; 1954 October-1955 September (Preliminary).
Quetta.....1954 September-1955 July.
Rabaul.....1954 April-December, 1955 Oct.9-10
Rathfarnham.....1954 July-1955 June.
Relizane.....1955 June.
Reykjavik.....1954 January-December.
Rome.....1954 April-1955 May.
Santa Clara.....1954 April-1955 September.
Scoresby Sund.....1950 January-December.
Skalnate Pleso.....1953; 1954 Oct.-Dec.,1955 Jan.-Apr.,June-Sept. (Prelim.).

Strasbourg B.C.I.S. ....1954 June-1955 May; Bull.d'ech. 1954 Sept.9,10, 1955 Feb.17, Sept.12.
B.C.S.F. ....1954 May, June, August-December, 1955 January-March.
I.P.G. .....1954 October-1955 October.
Stuttgart.....1954 October-1955 August.
Szeged.....1954 August-1955 February.
Tacubaya.....1954 September, November, December.
Taiwan.....1954 January-December.
Tamanrasset.....1949 October-December, 1953 November, December, 1954 October-1955 June.
Tananarive.....1954 January-December.
Tokyo C.M.O. .....1954 June-1955 April.
Toledo.....1954 October-1955September; 1954 November-1955October(Prov
Trieste.....1954 January-June, October-December, 1955 January-March.
Uccle.....1953, 1954 January-March; 1954 Sept.-1955 Feb.(Bull.decad.
Uppsala.....1953 January-December.
U.S.C.G.S. .....1947 July-December, 1948, 1951 January, 1954 October-Decem 1955 January-August; Epi.Cards 1955 1-106, 1956 2,3, S 52-54,53-54; Data sheets 1954 Dec.24-1956 Jan.8.
Warsaw.....1954 January-April, 1955 January-September.
Wellington.....1951 October-December, 1952, 1953 January-March; 1953 Nov December (Provisional); Local shocks 1954 Jan.-Sept.
Wien.....1954 October-1955 June.
Zagreb.....1953, 1954.

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No. 1 1954, 1st Quarter.

Riverview College Observatory

RIVERVIEW, N.S.W.

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$\Phi = 33° 49' 46''$ 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)
5. Sprengnether Vertical

		V	T_o	$\epsilon : 1$	$\frac{T}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1 3	202	7.4	5.9	0.009	4	11.7	12.1	+0.02	560
E	1 3	226	6.9	4.4	0.011	4	12.3	12.2	+0.08	490
Z	2					4	10.9	10.6	+0.1	460
						5	1.6	1.6		

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h. m. s.	s.	μ	μ	μ	km.	
3	Jan. 1	iPNEZ	13 11 09	4	+4	-5	-10	4000	Dilatation
		ipPNEZ	11 29	3	+4	-3	-5	36°0	h 0.01, H 13 04 16
		iPPE	12 26	4		-3			
		iPPZ	12 27	4			+5		Gutenberg's Tables
		iN	12 30	4	+3				give Δ 35°1, h 100km.,
		iZ	12 46	3			-4		H 13 04 21
		isPPN	13 01	4	+3				
		iZ	13 02	5			+9		
		iSE	16 40	4		-4			
		iScPE	17 06	7		+7			
		iN	17 10	9	+10				
		iSSZ	19 12	5			-18		
		ME	27.3	10		28			
4	1	e(S)E	21 17 54	8					
		eLN	19.0	17					
5	2	(iP)Z	13 57 01	2			+		Compression. From the
		iE	14 02 31	14		-3			Sprengnether.
		MN	07.5	13	2				
7	7	i(P)EZ	06 58 33	4		+3	-3		Dilatation
		e(S)E	07 02 56	6					
		iE	03 16	6		+6			
		eLN	05.6	20					
		MN	10.2	12	5				
		ME	11.9	15		7			
		MZ	12.1	15			8		
8	7	i(P)Z	13 28 38	4			+3		Compression
10	11	eZ	09 33 11						
		eN	37 39						
		eLN	39.4	20					
		MN	42.0	13	2				
11	11	(iP)Z	17 19 31	4			-2		Dilatation
		e(S)N	27 52						
		e(SS)N	31 56	20					
		eLN	34.6	23					
		MN	43.1	15	1				
		MZ	44.5	16			2		
12	12	iPNEZ	14 20 38	4	+	-	+5	2050	Compression
		ipPZ	20 49	4			+	18°4	h 0.00, H 14 16 24
		iPPZ	20 54	4			+26		
		eSE	23 59						
		TZ	38.0	½					
13	12	iPNEZ	14 24 08	4	+	-	+5		Compression

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
14	Jan.12	iP_Z	14 24 38	4			+16	2050	Compression
		i_{NEZ}	24 41	7	-142	+	-100	18°4	H 14 20 24
		iPP_N	24 54	7	-150				
		i_N	27 53		-				
		iS_{NE}	27 59	10	+170	+130*			*from Wiechert
		i_N	28 09	10	-330				
		ME	29.3	11		600*			
		MN	29.6	11	560*				
		MZ	29.9	11			220		
		T_Z	42.0	½					
15	12	iP_Z	22 30 48	2			-		Dil.Sprengnether
		$i(PP)_Z$	31 05	4			+5		
		e_N	34 03	15					
		eL_E	34.4	13					
		MN	35.7	10	7				
		MZ	36.1	10			3		
16	13	iP_{NEZ}	00 17 26	2	-6	+1*	-4	2050	Dilatation
		i_{NEZ}	17 27	4	+11	+2*	+17	18°4	H 00 13 12
		ipP_{NEZ}	17 36	5	+60	-25*	+67		*from Wiechert
		i_N	18 08	6	+90				
		i_Z	18 12	3			-78		
		i_N	20 42	7	-34				
		iS_N	20 47	10	+48*				
		iS_E	20 48	10		+210*			
		i_Z	20 56	5			+32		
		i_N	20 58	10	-340				
		$iSSS_Z$	21 25	8			+100		
		MN	21.7	12	450*				
		ME	21.8	12		560*			
		MZ	22.4	12			210		
		T_Z	34.9	½					
17	13	$(P)_Z$	02 01 43						Aftershock of No.16
		T_Z	19.2	½					
19	14	iP_Z	02 19 49	2			-	4880	Dil.Sprengnether
		iS_{NE}	26 21	4	-3	+3		43°9	H 02 11 39
		eSS_E	29 27	10					
		ME	40.4	19		2			
		MZ	40.5	19			2		
		MN	40.6	18	2				
21	15	iP_Z	03 29 43	2			+2		Compression
		e_E	34 37	7					
		e_N	35 01	7					
		e_N	35 37	15					
		eL_{EZ}	36,8	24					
		MNEZ	38.8	18	2	2	3		
22	15	$iPPP_Z$	23 38 40	3			+1		
		i_{EZ}	38 53	6		-3	+4		
		eL_{EZ}	46.9	24					
		$i(ScS)_E$	47 49	4		+3			
		MEZ	48.6	18		5	4		
		MN	49.8	10	2				
23	17	$i(P)_Z$	03 10 06	4			+2		Compression
		e_N	13 56	7					
		eL_N	16.7	18					
		eL_Z	17.2	22					
		eL_E	17.3	27					
		MN	18.4	15	5				
		MEZ	19.6	16		6	6		
25	18	iP_Z	10 53 56	3			+3		Compression
		$i(S)_E$	59 00	7		+4			
		i_Z	59 02	3			+3		
		e_N	59 04	7					
		i_N	11 01 16	7	+5				
		MNE	05.7	15	13	11			
		MZ	08.0	14			8		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					AN	AE	AZ		
	1954		h m s	s	μ	μ	μ	km.	
26	Jan.18	$i(P)_Z$	16 41 04	3			+3		Compression
		eL_E	47.7	19					
		ME	49.3	12		2			
28	19	iP_Z	21 23 41	1			-		Dil.Sprengnether
		i_Z	23 43	3			+3		
		eL_N	33.6	18					
		MN	37.2	13	3				
		ME	38.6	18		3			
		MZ	38.9	18			4		
29	20	$e(SKS)_E$	04 41 55						
		e_E	46 08						
		$e(SS)_E$	50 52						
		eL_E	05 06.6						
		MZ	14.4	16			2		
		ME	14.8	16		2			
30	20	$i(P)_Z$	07 39 58	1			+		Comp.Sprengnether
		$e(S)_E$	43 11						
		eL_N	43.3	14					
		MN	45.2	10	4				
		ME	45.4	10		4			
		T_Z	57.5	½					
32	20	iP_Z	13 56 24	2			+	3290	Comp.Sprengnether
		iPP_Z	57 28	5			+4	29°6	h 0.025,
		eS_E	14 01 04	9					H 13 50 35
		$iScS_E$	06 39	4		+6			
34	22	eP_Z	11 45 00						
		i_Z	45 40	3			+2		
		eL_N	52.7						
		ME	55.7	14		11			
		MZ	56.7	16			9		
		MN	57.6	14	14				
35	22	$iPNEZ$	21 27 47	4	+12	+20	-28	2360	Dilatation
		i_E	28 02	3		-14		21°2	h 100 km.ca.
		$ipPNEZ$	28 06	3	+6	+12	-12		H 21 23 08
		i_Z	28 12	7			+17		from Gutenberg's
		i_N	28 13	5	-12				Tables.
		isP_E	28 18	5		+12			
		iPP_Z	28 22	4			+19		
		i_E	31 13	4		+9			
		iS_E	31 36	4		+5			
		i_{NE}	31 41	4	-11	-15			
		i_{NE}	31 45	5	+22	+35			
		$iPcP_Z$	31 48	5			+11		
		i_N	31 53	5	-12				
		i_N	32 06	5	+12				
		i_E	32 13	5		-10			
		i_N	32 15	7	+23				
		i_E	32 39	5		+9			
		eL_E	32.9	25					
		$iScS_E$	39 04	7		+9			
39	25	$e(S)_E$	03 45 58						
		e_N	49 45						
		e_E	50 04						
		eL_E	54.6						
		ME	59.8	19	1				
40	26	iP_Z	05 22 33	1			-		Dil.Sprengnether.
41	26	iP_Z	08 06 40	3			+2	3140	Compression
		iPP_Z	07 30	3			+2	28°2	H 08 00 48
		eS_E	11 22						
		e_N	11 47						
		eL_E	14.7	21					
		ME	17.3	14		2			
		MN	18.6	16	2				
		MZ	18.8	16			2		
		i_N	19 05	6	+6				

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
42	Jan.26	eP_Z	09 04 43					3090	H 08 58 55
		i_Z	04 50	4			-2	27°8	
		iS_N	09 22	6	+2				
		i_N	09 40	7	+4				
		i_N	10 04	7	-4				
		e_N	10 41	14					
		eLR_E	11.8	25					
		MZ	15.0	16			2		
		MN	15.1	13	2				
		ME	16.2	10		1			
43	26	$(eP)_Z$	14 06 33						
		i_Z	07 32	3			+2		
		$i(PPP)_Z$	08 09	3			+2		
		$i(PPP)_E$	08 12	5		-2			
		iS_E	12 00	5		-2			
		iS_N	12 02						
		eL_N	14.2	21					
		$i(ScS)_N$	17 04	7	+5				
		MN	19.0	13	6				
		MEZ	19.9	16		6	6		
46	29	iP_Z	08 05 46	4			+6		Compression
		iPP_Z	06 25	4			+5		
		i_N	10 26	6	-8				
		e_N	11 21	13					
		i_E	11 38	6		+6			
		MNE	16.3	12	6	7			
47	30	$i(P)_Z$	23 28 15	1			+		Comp.Sprengnether
		MN	34.6	16	5				
		ME	45.5	13		2			
48	31	$(P)_Z$	14 08 19						Sprengnether
49	31	iP_Z	19 16 41	3			+2		Compression
		eL_E	23.1	18					
50	31	$i(S)_N$	23 30 29	4	+2*				*From Wiechert.
		ME	33.8	11		4			
		MNZ	34.3	11	3		3		

Minor activity: 1d 05.8h, 09.5h; 11d 07.2h; 13d 11.6h; 14d 04.4h; 17d 18.5; 18d 19.3h; 20d 09.1, 16.7h; 23d 11.8h, 14.8h, 17.0h, 27d 02.6h, 03.0h.

51	Feb. 1	$i(P)_Z$	00 38 27	2			+		Comp.Sprengnether
52	1	iP_Z	01 16 48	3			+4	6510	Compression
		i_{NZ}	16 53	4	+9		-12	58°6	H 01 06 52
		i_Z	17 06	4			+6		
		i_N	17 10	4	+6				
		i_N	17 29	4	-6				
		$iPcP_Z$	17 35	4			-10		
		i_Z	17 59	4			+6		
		iPP_N	19 00	4	-5				
		i_N	19 24	4	+5				
		$iPPP_N$	20 24	6	+4				
		i_Z	20 27	4			+8		
		e_Z	24 45	10					
		iS_N	24 48	6	+12				
		i_N	24 55	6	-29				
		i_E	24 56	6		+15			
		i_E	25 03	6		-17			
		i_N	25 13	6	+11				
		i_N	25 23	12	+36				
		e_N	25 40	24					
		i_E	26 53	4		+9			
		SS_N	28 46	16					
		SSS_Z	31 06	19					
		eL_E	32.3	33					
		eL_N	33.7	30					
		ME	37.4	21		51			
		MZ	39.3	22			73		
		MN	39.7	20	64				
		eW_2E	03 47	20					

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
53	Feb. 1	$i(P)_Z$	01 28 05	4			-4		
54	5	iP_{NZ}	09 25 53	2	-5		+7	3290	Dilatation Compression
		i_Z	25 55	2			+7	29°6	H 09 19 49
		ipP_Z	26 01	3			+5		
		iNZ	26 08	3	-8		+5		
		iPP_N	26 52	7	+13				
		i_Z	26 59	6			+18		
		i_N	27 00	7	-22				
		i_E	27 34	7		+10			
		i_E	27 45	6		+10			
		i_Z	29 28	5			+13		
		i_N	30 02	7	-11				
		iS_E	30 45	7		-18			
		i_N	30 49	13	-67				
		i_E	31 01	12		+42			
		i_Z	31 03	5			-14		
		i_N	31 24	10	+49				
		i_E	31 59	12		-48			
		i_N	32 11	7	+34				
		i_Z	32 12	7			+31		
		iSS_E	32 15	9		+62			
		eL_E	32.7	31					
		eL_Z	34.5	27					
		ME	36.8	13		115			
		MNZ	37.6	16	88		100		
		eW_2	12 13	19					
57	7	$iPNEZ$	06 20 28	4	-2	-3	+4	2640	Compression
		ipP_Z	20 51	4			+5	23°7	h 0.01,
		iNE	20 54	5	+6	+5			H 06 15 24
		i_Z	20 59	5			-20		
		iPP_{NE}	21 09	4	+5	+5			
		iPP_Z	21 10	5			+24		
		$iPPP_{NE}$	21 20	5	+8	+9			
		i_N	24 24	5	-7				
		iS_N	24 33	7	-19				
		i_E	24 34	4		+3			
		i_Z	24 35	6			+8		
		i_N	24 39	4	+13				
		i_E	24 45	7		-24			
		isS_N	25 07	5	-12				
		i_E	25 11	7		-14			
		i_N	25 18	7	-14				
		i_Z	25 21	5			-8		
		iSS_E	25 26	7		-14			
		$iSSS_N$	25 48	6	+22				
		$iSSS_E$	25 50	7		+19			
		i_N	26 01	9	+54				
58	7	$(iP)_Z$	10 28 27	2			+		Comp.Sprengnether
		ePP_Z	29 36						
		eS_E	33 35						
		iSS_N	35 32	5	-4				
		eL_N	35.7	18					
		MN	37.8	16	4				
		MEZ	40.3	16		3	3		
59	7	$e(S)_N$	21 49 38						
		eL_N	52.2	18					
		MN	55.7	13	2				
		MEZ	56.4	16		2	2		
60	7	$(i)_Z$	22 32 21	1			+		Comp.Sprengnether
		$e(S)_{NE}$	39 19	9					
		i_Z	40 19	2			+		i_ZSprengnether
		i_N	40 20	3	+3				
		i_N	43 46	3	+3				
		$MNEZ$	46.9	15	2	1	3		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
61	Feb. 8	e_E	10 17 36						
		eL_Z	19.5	20					
		MN	22.0	13	2				
		MZ	22.1	16			5		
		ME	22.2	18		5			
62	8	$e(PP)_Z$	14 38 55	6					
		e_E	48 11	15					
		e_E	54 50	15					
63	8	P_Z	16 35 27					1920	P fromSprengnether
		eS_E	38 37					17°3	H 16 31 23
		eL_N	38.8	15					
		SS_E	38 59						
		eL_Z	39.2	16					
		MNZ	40.6	11	3		1		
		ME	41.2	10		5			
		T_Z	53.2	½					
67	11	iP_Z	00 42 57	4			+12	9660	Compression
		i_{NE}	43 01	5	+16	-12		86°9	H 00 30 14
		ipP_Z	43 07	4			+27		
		iPP_{NE}	46 17	5	-6	+7			Large microsiesms.
		i_Z	46 21	5			-16		
		i_{EZ}	46 29	4		+10	+7		
		iS_{NE}	53 31	6	-10	+7			
		$iScS_E$	53 37	3		+3			
		i_N	53 39	3	+8				
		i_N	53 44	5	+28				
		i_E	53 47	5		-25			
		i_N	53 54	8	+31				
		ePS_N	54 37						
		iPS_E	54 38	7		+12			
		eSS_N	58 49	15					
		eL_E	01 07.7	30					
		MN	18.9	22	46				
		MNE	24.1	18	45	33			
		MZ	27.3	19			38		
68	12	iP_Z	21 31 03	3			-4	5180	Dilatation
		iS_N	37 16	4	-2			46°6	h 0.07
		$iScS_N$	40 07	4	-1				H 21 23 18
		eSS_N	40 49						
		eSS_E	40 52						
69	14	$e(PS)_{NE}$	07 11 28	13					
		$e(SS)_N$	18 03	18					
		$e(SS)_E$	18 05	18					
		eL_E	29.1	19					
70	14	iP_Z	10 48 59	2			+2	3500	Compression
		eS_E	53 30	6				31°5	h 0.08
		esS_E	56 18	7					H 10 43 20
72	15	iP_Z	12 24 28	3			+1	5420	Compression
		eS_E	31 28	10				48°8	H 12 15 44
		iPS_N	31 39	5	+2				
		esS_E	31 43	9					
		i_N	31 49	6	+5				
		i_N	32 03	5	+3				
		eLR_Z	38.1	26					
74	15	i_Z	20 11 56	4			-2		
		$e(PS)_E$	20 33	8					
		$e(PS)_N$	20 37	13					
		$e(SS)_N$	26 15						
		e_E	26 50	13					
		eLR_Z	45.3	25					
76	17	$e(SKKS)_N$	02 02 02						
		e_E	10 15						
		e_N	11 49						
		eL_E	17 41						
		MN	24.6	20	1				

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	1954		h m s	s	μ	μ	μ	km	
78	Feb.19	e(SKKS)$_E$	01 08 15						Masked by very large microseisms.
		e$_E$	18 15	24					
		eL$_E$	38.5	25					
		MN	49.9	18	8				
		ME	50.7	18		11			
		MZ	52.9	18			11		
	19	Records lost from 18.9h to 24.0h owing to failure of power.							
80	20	iP$_{NEZ}$	18 41 23	3	+3	-9	-10	4100	Dilatation
		i$_{NEZ}$	41 27	4	+36	-56	-110	36°9	h 0.09
		i$_N$	42 43	4	-20				H 18 35 03
		i$_E$	43 00	4		-25			
		ipP$_{NEZ}$	43 04	4	+21	-42	-50		
		iS$_E$	46 28	4		-47			
		i$_N$	46 32	4	+50				
		i$_E$	46 33	6		-78			
		i$_N$	46 42	6	+54				
		i$_E$	49 13	4		-9*			*Amplitudes from Wiechert.
		isS$_E$	49 34	6		-27*			
		i$_N$	49 41	5	+39*				
		i$_N$	49 56	5	+15*				
81	20	iP$_Z$	21 34 12	4			-18		Dilatation
		i(S)$_E$	38 56	6		+9			Masked by very large microseisms.
		eL$_E$	41.1	27					
		MEZ	44.0	18		59	52		
		MN	45.3	13	26				
82	23	P$_Z$	06 53 05						From Sprengnether
84	24	(iP)$_Z$	17 31 01	2			+2		Compression
		eL$_E$	56.8	18					
87	26	iPg$_Z$	06 30 15	¼			+	55	Compression. Sprengnether.
		iSg$_Z$	30 21	½			+	0°5	
		i$_Z$	30 27	1			+		
89	27	iP$_Z$	23 40 00	4			+2	2840	Compression
		ipP$_{NEZ}$	40 12	6	-5	-5	+7	25°5	H 23 34 33
		iS$_{NE}$	44 23	7	-11	+6			
		isS$_{NZ}$	44 39	8	-23		+7		
		i$_E$	44 46	9		+23			
		i$_N$	44 55	9	-19				
		i$_Z$	44 57	7			+8		
		iSS$_N$	45 27	7	+7				
		iSSS$_N$	45 46	7	+11				
		eLR$_Z$	46.6	24					
		MN	48.5	16	19				
		MEZ	49.2	16		21	17		
90	28	iP$_{NZ}$	01 06 04	4	+3		-3	7000	Dilatation
		eS$_N$	14 30					63°0	H 00 55 38
		i$_E$	14 39	7		-5			
		i$_N$	14 40	7	-6				
		PS$_E$	14 56	7					
		i$_N$	15 58	6	-4				
		i$_E$	15 59	7		-6			
		eLQ$_E$	22.3	25					
		eLR$_N$	25.2	23					
		MN	28.7	19	9				
		MEZ	30.9	19		10	5		
91	28	(P)$_Z$	17 46 55	3					
		eL$_Z$	55.9	18					
92	28	P$_Z$	18 12 26	½				1290	P & PP from Sprengnether.
		PP$_Z$	12 36	1				11°6	
		iS$_N$	14 38	3	-2				H 18 09 36
		i$_Z$	15 24	2			+3		Damage in Adelaide.
		i$_{NE}$	15 26	2	+5	-6			Epicentre by Mr.C.Kerr Grant: 35°0S.,138°5E.
		MN	15.7	8	13				
		MEZ	16.4	8		10	9		
93	28	iP$_Z$	18 53 35	3			+3		Compression

Minor Activity: 5d 16.2h; 6d 15.6h; 8d 19.2h; 9d 06.6h, 19.3h; 15d 14.4h, 16.7h; 16d 07.8h; 17d 12.0h; 19d 14.2h; 24d 12.4h, 19.9h; 25d 11.9h; 27d 17.7h.

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
95	Mar. 2	eS_E	05 55 52						
		eL_{NE}	57.4	18					
		M_N	58.6	13	4				
		M_{EZ}	59.5	11		5	1		
96	2	$(i)_Z$	13 01 07	1½			+		(i)Sprengnether
		eL_N	09.8						
		M_N	11.2	16	2				
		M_{EZ}	12.6	16		1	2		
97	3	iP_{NZ}	06 09 02	4	-3		+4	3280	Compression
		e_E	09 07	16				29°5	H 06 02 54
		i_E	12 47	5		-10			
		i_N	12 50	6	-24				
		iS_N	13 56	8	-29				
		i_E	13 59	7		-29			
		e_N	14 12	20					
		i_N	14 15	10	-100				
		iSS_N	15 32	6	+25*				*From Wiechert.
		i_N	16 05	6	+25*				
		eL_E	16.3	36					
		M_E	22.0	7		170*			
		M_N	24.0	11	425*				
		W_2N	09 06	19					
98	3	$i(P)_Z$	07 56 53	1			+		Comp.Sprengnether.
		e_N	08 13 58	18					On coda of No.97
100	3	iP_Z	15 27 29	4			+4	3280	Compression
		i_N	27 34	4	+3			29°5	H 15 21 22
		PPP_{NZ}	28 40						
		eS_N	32 23						
		i_N	32 41		-				
		i_N	32 53	11	+15				
		i_E	37 05	4		+4*			*From Wiechert.
		i_E	37 13	4		-13*			
		i_N	37 22	4	-19				
		M_E	38.3	11		32*			
		M_{NZ}	39.9	11	48		54		
103	5	i_N	11 31 40	4	-2				Masked by micro-seisms.
		eL_N	36.2	16					
104	6	iP_Z	00 34 35	3			-3	3000	Dilatation
		ipP_Z	36 02	4			+7	27°0	h 0.075
		i_E	36 24	4		+4			H 00 29 33
		isP_Z	36 52	4			-5		
		i_E	37 01	4		-3			Gutenberg's Tables
		i_Z	37 17	3			-3		give: Δ 27°0,
		iS_N	38 37	8	-8				h 500km., H 00 29 28
		i_E	38 39	8		-12			
		i_N	38 58	4	+5				
		i_E	39 07	4		+5			
		e_E	41 16	13					
		e_N	41 22	14					
		i_E	41 31	6		-9			
		i_N	41 32	6	+8				
		i_E	41 52	6		+11			
		$iScS_E$	44 24	4		+11			
105	8	e_Z	15 18 47						
		e_N	22 53						
		eL_N	26.1	15					
106	8	eP_Z	18 07 42					3990	H 18 00 43
		i_Z	07 47	3			+2	35°9	
		iS_N	13 17	6	-3				
		eSS_N	15 41	10					
		$iSSS_N$	16 09	12	-11				
		eL_N	16.4	18					
		M_N	21.4	10	8				
		M_Z	22.3	18		4			

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
107	Mar. 8	iP_Z	20 31 12	3			+2	2460	Compression
		i_N	31 17	4	-1			22°1	H 20 26 18
		ipP_Z	31 23	3			+3		
		i_Z	31 43	2			+3		
		iS_E	35 09	4		+			
		iNZ	35 12		+11		+5		T_N=7s., T_Z=4s.
		i_E	35 38	4		-			
		i_N	35 39	5	+8				
		iSS_N	35 45	5	-7				
		eL_Z	36.9	18					
		MN	37.4	16	4				
		MZ	39.1	16			3		
108	9	$iPKP_Z$	02 41 34	3			+2		Compression
		i_Z	41 45	4			-3		
		i_N	41 46	4	-3				
		i_Z	42 05	4			-2		
		i_Z	42 23	4			-2		
		eSS_N	03 03 52						
		e_N	05 33						
		$eSSS_N$	09 47						
		eLR_N	31.4	30					
		MNZ	44.9	18	3		3		
109	9	iP_Z	05 51 53	3			+2	9290	Compression
		i_Z	52 00	4			+3	83°6	H 05 39 23
		i_Z	52 17	4			+4		
		iS_N	06 02 15	5	+2				
		eSS_N	07 55	15					
		eL_N	16.0	22					
		MN	22.8	22	3				
110	9	iP_Z	10 30 47	1½			-		Dil.Sprengnether
		e_N	37 59						
111	10	$e(S)_N$	07 34 24	7					
		eL_N	37.5	18					
		$i(ScS)_N$	39 26	4	+3				
112	11	$i(P)_Z$	04 03 25	1			+		Comp.Sprengnether.
		e_N	08 54						
		eL_N	12.0						
		ME	15.3	13		1			
		MN	15.5	15	1				
113	12	iP_Z	11 25 17	1			+		Comp.Sprengnether
114	12	iP_Z	11 30 45	1			+	3780	Comp.Sprengnether
		iS_N	36 10	5	+2			34°0	H 11 23 57
		e_N	38 58	10					
		eL_N	39.2	21					
		i_N	39 48	12	-16				
115	13	iP_Z	18 22 24	1			+	4520	Comp.Sprengnether
		i_N	24 25	5	-4			40°7	H 18 14 40
		eS_N	28 35	9					
		eSS_N	31 30	13					
		eL_N	36.5	22					
		MN	40.5	18	6				
116	14	iP_Z	08 59 06	2			+	3640	Comp.Sprengnether
		i_Z	59 11	1			+	32°7	" "
		eS_N	09 04 20	9					H 08 52 30
		i_N	04 44	9	+7				
		eL_N	06.9	25					
		MN	09.3	15	31				
		ME	09.4	18					
119	14	$e(PS)_N$	18 09 12						
		eL_N	28.4	24					
121	16	e_E	11 14 34						
		i_N	15 27	5	+4				
		eL_E	16.4	18					
124	19	$e(SS)_E$	10 29 42						
		eLR_E	46.0	25					
		MEZ	52.1	19		2	4		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
125	Mar.20	$i(P)_Z$	10 49 41	1			+		Comp.Sprengnether
		eL_{NE}	57.5						
130	21	$i(S)_N$	04 44 13	5	+3				
		L_N	47.5	17					
		M_N	50.2	13	1				
131	21	i_N	12 15 08	4	-2				
		eL_N	17.9	15					
		eL_{NZ}	18.3	23					
		M_N	20.2	15	2				
		M_{EZ}	20.7	16		2	2		
132	21	iP_Z	23 53 57	2			+17	8800	Compression
		iP_{NEZ}	54 00	4	-11	+11	+36	79°2	h 0.02
		$iPcP_Z$	54 08	4			+37		H 23 42 08
		i_E	54 19	4		-5			
		ipP_{NE}	54 40	5	+6	-13			
		ipP_Z	54 41	4			-15		
		$ipPcP_{NEZ}$	54 45	4	-11	+18	+23		
		isP_Z	54 58	3			-9		
		isP_N	54 59	5	+6				
		iPP_Z	57 03	5			+7		
		i_E	57 07	6		-9			
		i_N	57 08	6	+17				
		i_Z	57 09	6			+20		
		$ipPP_E$	57 34	6		+10			
		i_Z	58 02	6			+18		
		iS_{NE}	24 03 42	7	+66	+67			
		$iScS_N$	04 01	5	+31				
		$iScS_E$	04 02	5		+26			
		i_Z	04 23	6			-18		
		ipS_E	04 26	7		-18			
		iPS_N	04 29	6	-26				
		i_Z	04 34	5			+12		
		isS_E	04 42	6		+17			
		i_E	04 56	6		-12			
		$isScS_N$	05 03	6	+22				
		i_E	05 24	7		-17			
		i_N	05 32	7	+22				
		i_{NE}	05 48	7	-30	-23			
		i_E	06 02	7		-29			
		i_N	06 56	7	+14				
		i_N	07 29	7	+16				
		i_Z	07 56	6			-12		
		i_N	08 21	7	-14				
		i_Z	08 27	6			+12		
		iSS_E	08 54	10		-34			
		iSS_N	08 55	10	-32				
		i_N	09 26	6	-19				
		e_E	10 15	22					
		i_N	10 24	6	+28				
		$iSSS_N$	12 14	7	-27				
		$iSSS_E$	12 15	7		-16			
		i_N	12 26	7	+31				
		eLQ_E	14.4	32					
		eLQ_N	14.5	28					
		eLR_N	18.8	37					
		M_N	25.1	15	43				
134	22	$e(P)_Z$	06 55 06						Masked by micro-seisms.
		i_E	56 06	5		-5			
		i_E	58 52	3		-3			
		$e(S)_N$	59 49	5					
		e_E	07 00 30	15					
		i_N	00 50	4	+3				
		i_E	01 21	4		-4			
		eL_E	02.9	19					
		M_N	04.7	13	9				
		M_{EZ}	04.9	18		5	6		

1954, March.
RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
135	Mar.22	iPP_E	09 45 31	4		-5			Masked by micro-
		i_{EZ}	45 36	4		+5	-5		seisms.
		$iPPP_E$	45 42	5		+4			
		e_N	49 34						
		i_N	49 47	5	+4				
		i_E	50 05	5		+7			
		i_E	50 21	6		+4			
		iSS_N	50 50	5	+7				
		eL_E	53.2	21					
		MZ	54.6	19			11		
		MN	54.7	14	10				
		ME	56.1	16		11			
138	23	eP_Z	18 40 33	1				2090	P from Sprengnether
		iS_E	43 58	5		-5		18:8	H 18 36 14
		i_N	44 01	5	-4				
		eLQ_N	44.1	14					
		isS_E	44 11	7		-7			
		iSS_E	44 25	12		-6			
		$iSSS_N$	44 35	7	+6				
		eL_Z	45.5	15					
		T_Z	57.6	½					
139	24	iP_{NZ}	00 01 03	3	+3		+2	2300	Compression
		iNZ	01 10	6	-5		+9	20:7	H 23 56 19
		i_N	01 19	7	-9				
		iPP_Z	01 22	7			+8		
		i_E	01 25	4		+4			
		$iPPP_Z$	01 29	4			-11		
		iNE	01 36	5	+4	+3			
		iNZ	01 52	6	+6		+5		
		iS_N	04 50	7	-6				
		iZ	05 02	5			-5		
		i_E	05 04	5		+3			
		iSS_E	05 14	8		-37			
		iSS_N	05 15	5	+12				
		i_N	05 22	6	-18				
		i_Z	05 32	5			+8		
		i_N	05 40	6	+12				
		eL_Z	05.9	23					
		i_E	06 11	7		-10			
		eL_N	06.3	22					
		i_E	06 22	8		-12			
		MNEZ	08.7	10	26	32	12		
140	24	$i(P)_Z$	00 22 52	4			-2		Superimposed on
							+		coda of No.139.
141	24	$i(P)_Z$	01 40 22	1					Comp.Sprengnether
		eL_E	53.6	24					
143	26	i_N	11 22 08	7	-6				
		iNE	23 52	4	-4	+5			
		ME	24.1	10		6			
		MN	25.1	10	6				
144	26	i_Z	18 38 36	1			+		Sprengnether.
146	27	$i(P)_Z$	11 45 37	1			+		Sprengnether
148	28	$eSKS_N$	20 59 35	9					
		iS_N	59 46	7	-3				
		i_E	59 53	7		-4			
		i_N	21 00 03	8	+9				
		i_E	00 09	7		-7			
		ePS_N	01 01	9					
		i_N	01 19	7	+5				
		iSS_N	05 50	7	-6				
		i_N	06 03	7	-9				
		$eSSS_N$	09 15	7					
		eLQ_N	14.9	28					
		eLR_N	17.2	33					
149	28	i_N	21 23 44	6	+7				

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km	
150	Mar.29	iP_Z	04 11 26	3			+6		Compression
		ipP_Z	11 37	4			-2		
		$i(PP)_Z$	13 32	6			+4		
		eL_N	34.3	25					
		MN	37.0	20	9				
		MEZ	37.2	18		7	7		
151	29	PKP_Z	06 35 52					17,700	h 600 km.ca.
		i_Z	35 54	9			+10	159°3	H 06 17 00
		i_Z	36 04	6			-16		(from Gutenberg's
		i_Z	36 15	6			+10		Tables)
		i_Z	36 38	3			+7		
		iE_Z	36 41	5		+5	+13		
		$iPKP_2Z$	36 46	6			-11		
		$iPKP_2NE$	36 47	6	+6	-5			
		i_Z	37 44	5			-7		
		i_Z	38 32	7			-9		
		i_Z	38 38	6			+6		
		$isPKP_Z$	39 08	5			+7		
		$isPKP_2Z$	39 54	5			-11		
		i_Z	40 02	3			+9		
		PP_Z	40 20						
		i_Z	40 32	3			+7		
		$ipPP_Z$	42 23	6			-4		
		i_Z	42 47	7			+13		
		i_N	42 58	5	-6				
		$isPP_N$	43 26	5	-6				
		i_Z	43 34	8			+8		
		$ePPP_N$	44 08	10					
		i_Z	44 17	6			+5		
		i_N	45 18	4	-4				
		$i(SKKS)_N$	45 34	7	-9				
		$ipPPP_E$	46 12	8		-8			
		i_Z	46 22	6			+10		
		i_Z	46 30	8			+11		
		i_N	47 20	8	-8				
		i_Z	47 23	8			-16		
		$iSKP_N$	49 34	8	+9				
		$iSKP_E$	49 36	8		-8			
		i_E	50 28	10		-9			
		i_E	51 12	10		+16			
		i_N	51 50	9	-9				
		$i(PPS)_N$	54 00	8	+10				
		$isPS_N$	54 45	6	-9				
		i_Z	56 02	8			-16		
		i_Z	57 18	9			-18		
		iSS_N	59 30	11	+12				
		i_N	07 00 25	10	+13				
		i_N	01 00	11	+14				
		$isSS_N$	03 05	8	-6				
		i_N	04 32	12	-18				
		$iSSS_N$	05 42	10	+10				
		eN	05 52	30					
		i_E	07 45	12		+19			
		i_E	08 09	12		+31			
		eL_E	21.0	40					
152	30	iP_Z	16 51 41	4			+2	8210	Compression
		i_Z	51 49	4			+2	73°9	H 16 40 08
		i_Z	56 35	4			+2		
		eS_E	17 01 09						
		i_N	01 17	6	-3				
		ePS_N	01 45	7					
		$ePPS_N$	02 06	10					
		eSS_N	06 02	12					
		eLR_N	14.6	18					

RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
153	Mar.30	eS_E	19 03 08	9					
		iS_N	03 09	8	-5				
		e_N	03 50	10					
		e_N	04 33	8					
		eSS_N	07 53	8					
		eL_N	12.1	30					
155	31	eP_Z	18 39 35					10,990	eP from Sprengnether
		iP_Z	39 36	3			+3	98°9	Compression
		i_Z	39 54	4			+5		H 18 25 57
		e_Z	43 05	11					
		i_Z	43 27	5			+4		
		iPP_Z	43 42	7			-9		
		i_Z	44 01	4			+5		
		i_Z	44 30	7			+7		
		i_Z	44 58	5			+7		
		i_Z	46 09	6			-7		
		i_E	50 21	6		+2*			*from Wiechert
		i_N	50 26	6	+6				
		iS_N	50 59	7	+8				
		i_N	51 08	10	-15				
		i_N	57 00	9	+16				
		iSS_N	57 43	13	-16				
		i_N	58 07	15	+71				
		i_E	58 23	13		+8*			
		$eSSS_N$	19 01 33						
		i_N	01 44	13	+27				
		e_N	04.9	27					
		eG_N	05.8	47					
		i_N	07 24	19	-86				
		eLNE	07.7	52					
		iLR_N	10 41	19	-115				
		MN	13.9	16	85				
		MEZ	18.2	19		110*	74		

Minor activity: 1d 00.9h; 3d 10.8h; 4d 11.1h; 5d 02.8h; 14d 13.1h, 16.7h, 20.2h; 17d 01.6h, 22.4h; 20d 14.8h, 15.7h, 16.7h, 20.3h; 22d 06.2h, 19.9h, 23.7h; 25d 09.8h; 27d 10.9h; 28d 01.7h; 31d 18.3h.

T.N.BURKE-GAFFNEY,S.J.
Director.

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. Galitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)
5. Sprengnether Vertical.

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1/3	206	7.4	5.7	0.017	4	11.7	12.1	+0.02	560
E	1/3	220	6.9	4.7	0.015	4	12.3	12.2	+0.08	490
Z	2					4	10.9	10.6	+0.1	460
						5	1.6	1.6		

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h. m. s.	s.	μ	μ	μ	km.	
156	Apr.1	ePZ	18 30 55					8970	
		eS_N	40 59	7				80°7	H 18 18 44
		$iScS_N$	41 11	5	+3				
		ePS_N	41 45	7					
		ePPSN	42 06	10					
		eSS_N	46 06	18					
		eL_N	56.3	19					
		eL_N	59.4	25					
		MZ	19 04.2	19			5		
		MN	04.7	19	4				
157	2	iP_Z	10 29 56	1			+		From Sprengnether
158	2	iP_Z	15 04 11	3			+4	3100	Compression
		ipPZ	04 25	3			+2	27°9	h 0.005ca.,
		i_N	04 49	4	+3				H 14 58 25
		i_Z	04 56	2			+4		
		ePPZ	05 03	7					
		$iPPP_{NZ}$	05 15	4	-2		-3		
		i_E	05 17	5		-2*			*from Wiechert
		eS_N	08 48						
		$e(sS)_N$	09 18	8					
		$i(SS)_N$	10 20	7	+4				
		i_N	10 45	10	+13				
		eLREZ	11.3	28					
		i_N	11 43	8	+5				
		i_N	12 05	11	-16				
		MNEZ	13.4	16	6	6*	7		
160	5	$i(P)_Z$	04 49 20	½					From Sprengnether.
162	6	$i(P)_Z$	10 53 16	3			+2		Compression
		e_N	57 15						
163	6	$i(P)_Z$	18 05 16	4			-2		Dilatation
		eL_N	13.2	15					
		MN	16.7	12	1				
		ME	17.3	13		1			
164	6	PZ	20 29 12	2				2500	H 20 24 14
		eS_N	33 12	4				22°5	
		eS_E	33 15	4					
		i_N	33 30	5	-2				
		eLQ_N	33.7	15					
		iSS_E	33 51	5		+2			
		i_E	34 18	6		+2			
		eLR_E	34.8	23					
		MEZ	36.6	18		4	3		
		MN	37.6	14	3				

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					AN	AE	AZ		
	1954		h m s	s	μ	μ	μ	km.	
167	Apr. 7	iP_{NEZ}	18 31 31	3	-1	-2	+3	2760	Compression
		ipP_{NEZ}	31 46	4	-3	-4	+8	24°8	h 0.005
		iPP_Z	32 06	3			-3		H 18 26 07
		eS_E	35 45	8					
		eN	35 51	7					
		iE	35 58	5		-4			
		isS_E	36 13	6		-3			
		iN	36 22	6	+4				
		iE	36 24	5		-3			
		eSS_E	36 40	7					
		eL_E	37.5	26					
		eLR_Z	37.7	22					
		MZ	39.1	19			3		
		MNE	39.5	16	3	3			
168	8	ePP_Z	16 54 35	7					Masked by micro-seisms.
		$e(PS)_E$	17 03 03	7					
		eE	03 36	12					
		$e(SS)_E$	08 22	12					
		eE	08 42	12					
		eLQ_E	14.6	22					
		eLR_E	18.3	30					
		ME	22.5	19		10			
		MNZ	23.5	19	7		9		
171	10	$i(P)_Z$	05 48 39	5			-2		Dilatation
		$e(S)_N$	53 10	11					
		MN	59.0	18	2				
172	10	iP_{NZ}	08 10 15	2	-1		+2	2750	Compression
		ipP_{NZ}	10 25	2	+2		-1	24°7	H 08 04 57
		$iPPP_N$	11 02	4	-1				h 0.00
		eS_N	14 32	10					
		isS_N	14 45	7	+4				
		eL_E	16.3	25					
		MNE	18.0	17	2	4			
173	10	iZ	10 34 09	3			+3		
		$(SKS)_N$	43 10	7					
174	10	iP_{NZ}	13 19 22	1	-1		+6	2700	Compression
		ipP_Z	19 59	2			+	24°3	h 0.025
		iPP_Z	20 08	3			+3		H 13 14 21
		eS_N	23 24						
		iE	23 29	4		+2			
		iN	23 40	6	+2				
		iN	24 16	5	+3				
		iN	24 24	6	+3				
		iE	24 25	5		-2			
		iE	24 36	5		-2			
		iSS_N	24 40	7	+3				
		iE	24 45	6		-2			
175	11	iP_{NZ}	03 08 47	3	-1		+2	3050	Compression
		ipP_{NEZ}	08 58	4	-7	-3	+9	27°4	H 03 03 03
		iNE	09 12	6	-8	-2			h 0.00
		iZ	09 14	4			-7		
		iNZ	09 23	4	+3		-5		
		iPP_N	09 37	5	+9				
		iZ	09 40	5			+10		
		$iPPP_{NE}$	09 50	7	-11	-5			
		iE	10 35	4		+4			
		iZ	10 52	4			-5		
		iZ	11 14	4			+6		
		iE	11 19	5		+5			
		iZ	11 39	4			-6		
		iN	12 31	6	+10				
		iS_N	13 23	9	-20				
		iZ	13 26	4			+7		
		iE	13 31	8		+9			
		iZ	13 39	6			-9		
		isS_N	13 40	5	+17				

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
175 cont.	Apr.11	i_E	03 13 41	8		-17			
		i_N	13 53	6	-35				
		i_{NE}	13 59	7	-52	-18			
		i_N	14 17	6	+13				
		i_E	14 23	6		-12			
		i_N	14 34	8	-23				
		i_{NE}	14 46	6	+10	-21			
		i_E	15 02	7		-34			
		i_E	15 11	5		+19			
		i_N	15 17	7	-16				
		i_N	15 38	10	+32				
		eL_Z	16.5	27					
		eL_N	17.1	25					
		MN	19.4	13	34				
		ME	20.2	12		29			
		MZ	23.2	12			21		
176	11	iP_Z	04 45 45	3			+2	4150	Compression
		eS_N	51 30	7				37°3	H 04 38 34
		eLR_E	55.5	23					
		ME	57.7	17		2			
		MN	59.4	13	2				
177	11	$(P)_Z$	10 39 08						(P) from Sprengneth
		ePP_Z	43 15						
		PPP_Z	45 20						
		$iSKS_E$	49 46	6		+4			
		$iSKKS_N$	50 15	6	+2				
		ePS_E	52 11	8					
		eSS_E	57 45	16					
		iE	58 11	7		+5			
		$eSSS_E$	11 01 24	19					
		eG_N	07.7	40					
		eL_N	10.2	25					
		MEZ	18.0	21		9	3		
178	11	$(P)_Z$	14 25 01						(P) from Sprengneth
		$e(S)_N$	29 46						
179	11	P_Z	18 42 18	1				3060	P from Sprengnether
		eS_N	46 55	7				27°5	H 18 36 33
		iN	47 05	7	-3				
		iN	47 11	8	-3				
		iZ	47 13	4			+2		
		MN	52.9	15	2				
182	12	iP_Z	00 43 37	1			-	4110	Dil.Sprengnether
		ePP_Z	45 02					37°0	H 00 36 24
		iZ	45 34	4			-2		
		iS_N	49 23	9	-6				
		iE	49 31	7		+3			
		iE	49 47	11		+7			
		iN	49 49	8	+15				
		iN	50 02	8	+13				
		iN	50 14	7	+5				
		eL_N	53.1	24					
		MN	56.1	13	5				
		ME	56.9	11		7			
		MZ	58.8	11			3		
185	12	iP_Z	16 02 21	1			+	2550	Comp.Sprengnether
		eS_{NE}	06 27	7				22°9	H 15 57 15
		eL_E	08.5	20					
186	14	$i(P)_Z$	04 46 33	1			+		Comp.Sprengnether
187	14	PKP_Z	08 12 52						From Sprengnether.
188	14	$(P)_Z$	13 36 08	2					
		iS_N	45 14	4	-1				
		eLR_N	57.2	25					
		MN	14 03.4	22	4				
		ME	06.8	21		3			
189	15	iZ	04 17 24	2			+		Comp.Sprengnether.

1954, April.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km	
190	Apr.15	iP_Z	23 07 41	2			-2	2100	Dilatation
		iS_N	11 09	5	-5			18°9	H 23 03 17
		iSS_E	11 36	5		+3			Microseisms pres-
		$i(ScS)_E$	19 34	4		-3			ent.
191	15	iP_Z	23 44 10	3			+4	3380	Compression
		iPP_Z	45 10	4			+5	30°4	H 23 37 59
		iS_N	49 07	7	+5				Microseisms pres-
		eLR_N	52.0	20					ent.
192	16	iP_Z	00 28 30	4			-3		Dilatation
		iS_{NE}	32 39	5	+3	-3			
		eL_N	35.4	18					
193	16	i_Z	04 21 03	4			-6		
		i_Z	24 11	5			+3		
194	16	$i(P)_Z$	21 38 49	1			-		Dil.Sprengnether
		i_Z	38 52	1			+		"
		ME	46.6	16		1			
196	17	iP_Z	20 23 36	3			+7	10,050	Compression
		$iPcP_Z$	23 42	3			+4	90°4	H 20 10 37
		ipP_Z	23 46	3			+6		
		$iSKS_N$	34 03	7	-3				
		iS_{NE}	34 26	7	+8	-9			
		i_N	34 40	7	+8				
		i_N	34 57	7	-5				
		i_E	35 05	7		-7			
		i_E	35 16	7		+5			
		i_N	35 19	6	-3				
		i_N	35 29	7	-6				
		i_N	35 58	6	-3				
		iSS_E	40 27	16		-7			
		eLQ_N	47.7	30					
		eLR_E	52.0	28					
		MNEZ	21 02.9	18	9	5	4		
		eW_2N	22 31	22					
197	18	iP_Z	03 09 04	2			+3	2910	Compression
		i_E	09 29	4		-2		26°2	H 03 03 26
		iPP_E	09 43	4		+2			
		i_E	10 07	5		-3			
		eS_E	13 35	6					
		$iSSS_N$	15 02	8	+4				
		eL_E	16.5	24					
		MN	18.2	15	6				
		MEZ	18.5	18		7	5		
198	18	$(iP)_Z$	18 48 59	2			-2		
		eL_E	55.7	15					
199	18	iP_Z	20 24 29	2			-		Dil.Sprengnether
200	18	eP_Z	20 28 50					2780	h 0.00
		i_N	28 53	5	+4			25°0	H 20 23 28
		ePP_N	29 28	7					
		eS_N	33 09	10					
		isS_N	33 23	10	+10				
		eL_N	35.7	27					
		MNZ	37.9	15	4		3		
		ME	38.2	12		3			
201	19	$e(S)_N$	07 30 41						
		eL_{NE}	33.8	19					
		MN	37.3	12	3				
202	19	$(i)_Z$	14 29 33	3			+2		
		eL	33.0	16					
204	19	iP_{EZ}	16 18 23	3		+2	-2	2450	Dilatation
		ipP_E	18 33	3		+		22°0	H 16 13 31
		iPP_E	18 52	4		+3			h 0.00
		iS_N	22 19	4	-2				
		isS_N	22 34	4	-2				
		eLR_E	23.7	21					
		MNEZ	25.6	15	4	3	2		

1954, April.
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SEISMOLOGICAL BULLETIN

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km	
207	Apr.22	iP_Z	15 03 03	1			+	6160	Comp.Sprengnether
		iS_N	10 24	5	-4			55°4	h 0.04
		iS_E	10 25	3		-2			H 14 53 56
		$iScS_N$	12 19	6	+3				
		$iScS_E$	12 21	5		-3			
209	25	$e(SS)_E$	01 08 55						
		eLQ_E	27.4	35					
		eLR_N	35.2	33					
		ME	47.4	17		3			
210	25	iP_Z	18 18 36	1			+		Comp.Sprengnether
211	26	P_Z	20 37 19	3				9340	
		$iPcP_Z$	37 25	5			-4	84°0	Surface focus.
		i_Z	37 41	4			+5		H 20 24 46
		iS_N	47 43	7	+3				
		$iScS_E$	47 55	5		-4			
		i_E	48 43	4		+2			
		iSS_N	53 17	7	-4				
		eL_E	21 01.2	33					
		MNEZ	07.0	28	12	6	6		
212	27	$eSKS_N$	10 32 28						
		e_N	35 25						
		ePS_E	37 08						
		eSS_N	44 14						
		eSS_E	44 20						
		$eSSS_E$	48 46						
		eLR_E	11 04.5	28					
		MNEZ	11.1	17					
213	27	iPN_Z	21 26 34	2	+5		+4	2750	Compression
		i_{NZ}	26 37	3	+11		+7	24°7	h 0.01
		ipP_Z	26 54	3			-3		H 21 21 21
		$iPPP_Z$	27 28	3			+9		
		$iPcP_Z$	30 02	4			+15		
		$ipPcP_Z$	30 24	4			+9		
		iS_E	30 46	10			+38		
		i_N	30 47	6	+6				
		i_N	30 56	6	+14				
		iSS_E	31 48	8		-41			
		i_N	32 00	9	+66				
		$iSSS_E$	32 05	13		-55			
		eL_N	32.3	22					
		MN	37.3	9	53				
214	29	$i(P)_Z$	11 03 10	2			-		Dil.Sprengnether
215	29	i_Z	11 09 12	3			+4		
		$e(S)_N$	16 35						
		$e(PS)_E$	18 29	13					
		eSS_N	24 12	16					
		$eSSP_E$	24 24	20					
		eE	25 03	25					
		eLQ_N	35.3	30					
		eLR_E	40.3	30					
		ME	45.6	20		6			
216	29	i_Z	11 43 50	3			-3		Dil.On coda of 215
217	29	i_N	12 01 40	8	-7				
		$i(PPS)_Z$	04 18	4			+6		Confused by coda of No.215
		iSS_N	09 16	10	-8				
		$eSSP_E$	09 30	21					
		eLQ_N	20.9	30					
		$eLREZ$	25.7	30					
		MN	28.3	16	11				
		ME	31.0	19		29			
		MZ	31.5	19			20		
		eW_2N	13 47	24					
218	30	iP_Z	06 31 12	1			-		Dil.Sprengnether.

1954, April-May.
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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
	1954								
219	Apr.30	$iPKP_Z$	13 22 08	7			+9	15,500	Compression
		i_Z	22 33	6			+8	139°5	H 13 02 38
		i_Z	22 57	5			-5		
		i_Z	23 32	5			-5		
		iPP_{EZ}	25 02	5		-6	+7		
		i_Z	25 36	5			-3		
		$iPKS_E$	25 45	5		+5			
		$iPKS_{NE}$	25 48	6	+8	-13			
		i_Z	25 54	6			-6		
		i_E	26 07	6		+6			
		i_Z	26 10	5			+7		
		i_{EZ}	26 19	5		+7	+5		
		i_{NE}	27 03	5	+3	-3			
		i_Z	27 11	4			+4		
		i_N	27 18	5	+6				
		i_E	27 19	5		-3			
		i_{NZ}	27 30	5	-3		-7		
		i_Z	27 40	5			-7		
		$iPPP_Z$	28 12	4			+6		
		$i(PKJKP)_Z$	28 22	4			-2		
		$iSKS_N$	29 27	5	-5				
		$i(PcPPKP)_Z$	30 27	5			-2		
		$iSKKKS_N$	32 18	5	-3				
		$iPcSPKP_Z$	33 52	5			-3		
		i_N	37 10	6	+5				
		$iPPS_E$	37 22	6		+8			
		e_E	37 27	13					
		i_N	38 02	6	+5				
		i_N	39 49	4	-4				
		$e(SS)_N$	43 02	15					
		eSS_E	43 26	17					
		e_E	49 10	30					
		i_E	51 24	5		+3			
		i_E	52 31	7		+6			
		e_E	54 29	24					
		eLQ_E	14 00.9	26					
		eLR_{NE}	07.7	34					
		MEZ	23.1	21		14	9		
		MN	32.1	24	8				
220	30	$i(P)_Z$	20 19 21	2			+		Comp.Sprengnether
		$e(L)_E$	23.2	15					
		ME	24.2	11		3			
221	30	$i(PKP)_Z$	23 24 43	4			-4		Dilatation

Minor activity: 4d 23.8h; 6d 06.5h; 7d 07.4h, 13.5h; 9d 07.8h, 12.3h; 11d 21,7h & 23.0h; 12d 02.8h, 14.1h; 21d 00.5h, 01.2h; 24d 03.1h.

222	May 1	iSS_N	00 31 15	5	-2*				All readings from Wiechert.
		eL_N	32.0	21					
		MN	34.1	18	13*				
		ME	35.7	15		8*			
223	1	i_Z	01 05 05	5			+5		Masked by coda of No.222
		i_E	06 18	5		+3			
		eL_N	08.4	21					
		i_E	09 08	5		-5			
		MN	10.6	15	4				
225	2	i_N	02 39 54	6	+5				Masked by non-seismic disturbance
		i_N	42 32	7	+4				
		i_N	45 43	5	+4				
226	2	$i(P)_Z$	13 51 48	2			+		Comp.Sprengnether
		i_N	56 12	4	+3				
		i_N	56 23	4	-2				
227	2	iP_Z	17 58 48	2			+2		Compression
		PS_N	18 07 49						
		MN	24.9	13	4				
		ME	27.3	19		3			

1954, May.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
229	May 3	i_Z	15 42 52	4			+2		
		$iSKS_N$	52 33	6	+3				
		iS_N	52 47	7	+5				
		eE	53 02	12					
		$ePPS_N$	54 12	15					
		eSS_N	58 21	22					
		eSS_E	58 37	19					
		e_N	58 52	19					
		eL_E	16 06.2	28					
		MZ	14.5	19			2		
		MN	15.5	19	6				
		ME	18.2	19		3			
230	4	iP_Z	02 45 49	3			-2	2000	Dilatation
		iPP_N	46 05	3	-4			18°0	H 02 41 40
		iS_N	49 06	7	+5				
		iS_E	49 07	7		-4			
		iZ	49 09	6			+8		
		iZ	49 16	6			+6		
		eLQ_E	49.3	23					
		T_Z	03 02.5	½					
231	4	iZ	16 24 33	4			-5		
		eLN	30.8	28					
		eL_E	31.8	25					
232	4	iP_Z	18 18 36	3			+2		Compression
233	4	iP_Z	19 39 12	2			+		Comp.Sprengnether
234	5	$(P)_Z$	11 44 03	1					(P) Sprengnether
		eL_E	57.5	24					
235	5	$eSKKS_N$	13 35 54						
		ePS_E	38 03	13					
		eSS_N	44 34	18					
		eLQ_N	56.2	30					
		eLR_E	14 00.7	28					
		MZ	06.0	20			2		
		ME	06.1	19		4			
		MN	07.7	19	1				
		eW_2E	15 21	24					
236	5	iP_Z	17 12 46	1			+	2970	Comp S prengnether
		$i(pP)_Z$	12 54	2			+	26°7	" "
		iPP_N	13 30	3	+2				H 17 07 08
		iS_{NE}	17 17	5	-3	-2			
		iE	17 40	4		-2			
		eL_N	19.0	20					
		eL_Z	19.5	23					
		MNE	20.1	14	4	5			
237	5	$(P)_Z$	17 25 46	2					(P) Sprengnether
		iZ	26 06	3			+3		
238	6	iP_Z	09 14 36	3			-3	9390	Dilatation
		ipP_Z	15 10	2			+3	84°5	h 0.015 ca.
		$i(sP)_Z$	15 23	2			+3		H 09 02 16
		$i(PP)_Z$	18 02	4			-4		
		$iSKS_N$	24 45	4	+2				
		iS_E	24 50	4		-3			
		i_N	24 51	5	-4				
		i_E	25 09	4		+3			
		isS_E	25 51	4		-2			
		i_N	25 58	5	-3				
240	7	P_Z	17 48 23						
241	7	P_Z	21 04 20						
242	8	$e(P)_Z$	19 30 08						
		$e(S)_E$	34 47						
		eLR_{EZ}	37.1	22					
		MN	38.7	17	4				
		MZ	39.3	17			2		
		ME	39.7	17		4			

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					AN	AE	AZ		
	1954		h m s	s	μ	μ	μ	km.	
243	May 8	iP_Z	20 22 36	3			+3	3890	Compression
		ipP_Z	22 44	2			+2	35°0	H 20 15 45
		iPP_Z	23 53	3			-2		
		iPP_N	23 54	3	+2				
		$iPPP_E$	24 13	3		-2			
		iS_E	28 05	4		+3			
		iS_N	28 06	4	+3				
		isS_N	28 17	4	+4				
		i_N	30 31	6	+4				
		i_E	30 35	6		-6			
		i_N	30 37	6	-5				
		MNE	35.7	10	14	12			
244	10	iP_Z	06 31 33	1			+	3020	Comp.Sprengnether
		ipP_Z	31 46	2			+	27°2	h 0.00 "
		iS_N	36 08	6	-5				
		i_N	36 15	6	+7				
		i_N	36 27	10	-8				
		$i(SSS)_E$	37 52	6		+5			
		eL_E	39.1	29					
		ME	42.9	15		13			
		MNZ	44.0	16	12		11		
245	10	$i(P)_Z$	06 47 52	5			+7		Compression. Confused
		i_N	51 22	6	+8				by coda of No.244.
		MNE	07 08.2	19	3	4			
246	10	iP_Z	14 36 16	2			-5		Dilatation
247	11	$(i)_Z$	10 36 29	4			+3		
		i_Z	37 32	4			-4		
		i_N	40 09	4					
		eL_E	42.2	20					
		MN	43.3	16					
		MZ	44.9	15					
		ME	45.3	16					
249	13	ePP_Z	15 06 34	4				13,100ca	h 100 km.ca.
		$epSKS_E$	12 41	13				118°ca.	From Gutenberg's
		iS_E	14 05	6		-4			Tables.
		ePS_E	16 27	13					
		$epPS_N$	16 48	13					
		$epPS_Z$	16 51	11					
		$isPS_E$	17 00	6		+7			
		eSS_E	22 47	15					
		e_E	23 41	16					
		$eSSS_E$	27 11	24					
		eLQ_N	36.6	27					
		eLR_{EZ}	40.7	30					
250	14	iP_{NZ}	22 50 17	3	-2		+5	7870	Compression
		ipP_Z	51 13	4			+12	70°8	250 km.ca.
		ipP_N	51 14	4	-4				H 22 39 23
		$i(sP)_{NZ}$	51 30	3	+4		-2		From Gutenberg's
		i_N	51 39	4	+4				Tables.
		i_Z	51 40	4			-4		
		i_N	51 54	4	+5				
		i_Z	52 36	4			+5		
		i_N	52 50	4	+5				
		iPP_Z	52 54	4			-7		
		i_N	53 04	3	-3				
		i_Z	53 05	3			+4		
		i_N	53 54	3	+3				
		$i(sPP)_Z$	54 08	4			+4		
		iS_{NE}	59 13	7	+21	-29			
		i_Z	59 18	7			-10		
		i_{NZ}	59 46	5	-12		+12		
		i_N	59 59	6	-12				
		ipS_Z	23 00 05	7			+12		
		ipS_N	00 06	6	+28				
		$i(PS)_{NE}$	00 16	6	-20	-10			
		i_Z	00 22	8			+10		
		i_E	00 51	7		+8			

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
250	May 14	i_N	23 00 55	7	+10				
cont.		i_Z	01 02	4			-5		
		$isPS_N$	01 12	6	+9				
		i_Z	01 24	4			-4		
		i_E	01 48	7		+7			
		i_N	61 50	6	+8				
		i_Z	01 57	4			-4		
		i_Z	02 21	4			-6		
		i_N	02 27	6	+9				
		i_Z	02 42	4			+5		
		i_E	02 48	7		-7			
		i_N	02 50	6	+12				
		i_E	03 00	7		-7			
		i_E	03 09	6		+7			
		i_E	03 46	6		+8			
		$(SS)_N$	04 02	9					
		i_E	04 16	6		-5			
		i_Z	04 30	4			+4		
		i_N	05 35	6	-8				
		i_{NE}	08 22	7	+4	+6			
		i_{NE}	08 35	7	+8	+14			
		i_N	09 44	7	-11				
		i_N	11 38	6	-9				
		i_{NE}	12 26	9	+16	+12			
		e_E	14.2	21					
		$iP'P'_Z$	18 10	3			-3		
		$i(P'_2P'_2)_Z$	18 17	3			-4		
251	15	iP_Z	11 22 20	2			+	2480	Comp.Sprengnether
		iS_N	26 21	5	+3			22:3	H 11 17 20
		i_N	26 31	4	+2				
		iSS_N	27 01	6	+2				
		i_E	27 05	4		-2			
		eLR_N	27.8	16					
		MN	30.2	12	2				
		ME	31.0	13		2			
252	15	iP_Z	11 27 03	4			+3	2510	Compression
		iS_N	31 07	4	-4			22:6	H 11 22 00
		i_N	31 15	5	-6				
		i_N	31 59	3	-3				
		eLR_N	32.8	16					
		MEZ	34.8	13		2	1		
		MN	35.3	13	4				
253	17	$(P)_Z$	05 20 42						(P) Sprengnether,
		eL_E	27.8	24					Masked by micro-
		ME	29.3	18		4			seisms.
		MZ	29.6	18			5		
		MN	30.1	15	3				
255	19	eS_N	23 18 02						P obscured by
		eL_N	20.7	21					microseisms.
		ME	23.9	16		30			S from Wiechert.
		MZ	24.1	18			38		
		MN	24.2	19	38				
256	20	iP_{NZ}	02 21 33	2	+		+4	2650	Compression
		i_N	21 36	5	+6			23:8	H 02 16 22
		i_Z	21 50	5			+7		
		ePP_E	22 06	4					Short period (2s)
		i_E	22 10	4		+5			waves on NS from
		iS_E	25 43	5		+4			P until 02h 22.4m
		i_N	25 50	7	-10				
		isS_E	25 55	5		+10			
		$iSSS_N$	26 52	6	-5				
		eL_N	27.2	19					
		MZ	27.7	19			9		
		ME	28.4	12		7			
		MN	29.4	10	8				

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
259	May 22	iP_Z	22 54 42	4			+4	2550	Compression
		i_Z	55 07	4			+2	22°9	H 22 49 20
		iS_{NE}	58 45	6	-4	-5			
		i_Z	58 47	5			-4		
		i_N	58 55	5	-3				
		i_E	59 05	5		-5			
		iSS_N	59 30	5	-2				
		i_N	59 41	5	-4				
		eL_Z	23 00.5	22					
		eL_N	00.6	21					
		MN	02.0	16	3				
		MZ	02.4	15			2		
		ME	02.8	13		1			
260	23	iP_Z	07 05 08	2			-3	4920	Dilatation
		i_Z	05 14	2			-	44°3	iZ Sprengnether
		i_Z	05 21	3			+4		H 06 57 00
		i_Z	05 34	2			+		iZ Sprengnether
		iPP_Z	06 56	4			+5		
		iS_N	11 39	6	-3				
		iS_E	11 40	5		-3			
		i_N	11 55	6	+3				
		i_N	12 04	8	+5				
		eSS_E	14 51	?					
		$iScS_N$	14 59	7	+11				
		i_Z	15 05	7			-7		
		i_E	15 08	7		-11			
		$eSSS_E$	15 46	10					
		eL_E	18.1	23					
		i_E	20 22	5		+4			
		i_N	20 46	6	-6				
		MN	21.6	22	5				
		ME	22.0	20		5			
263	26	iP_Z	10 03 34	2			+2	2950	Compression
		iS_N	08 08	6	+2			26°5	H 09 58 03
		eL_Z	10.5	23					
		MN	12.2	16	3				
		MEZ	13.1	17		4	6		
264	27	$i(P)_Z$	16 26 11	2			+		Comp.Sprengnether
		i_Z	28 00	3			+2		
		$i(S)_{NE}$	32 22	4	+2	-2			
		eN	35 42	10					
		e_E	35 49	10					
265	29	$iPNEZ$	05 43 04	2	+1	+4	-8	3500	Dilatation
		i_{NEZ}	43 14	2	+2	+2	-2	31°5	h 0.08
		i_Z	44 28	4			+1		H 05 37 25
		ipP_E	44 33	4		+2			
		iS_N	47 35	6	+3				
		$iScP_Z$	48 31	4			-3		
		$i(sS)_N$	50 26	7	+4				
		$i(SS)_{NE}$	50 44		+5	+5.			T_N=10s, T_E=7s.
		$iScS_{NE}$	52 33	4	+3	+5			
266	29	e_{EZ}	22 27 48	5					
		e_E	31 59	7					
		eL_E	34.6	25					
		MEZ	36.6	18		3	4		
		MN	36.7	14	3				
267	30	iP_Z	19 54 29	4			+2	4690	Compression
		eS_N	20 00 50	6				42°2	H 19 46 33
		eSS_N	03 54	8					
		e_E	04 01	8					

1954, May-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
	1954		h m s	s	μ	μ	μ	km.	
269	May 31	iPNEZ	15 56 09	4	-1	+3	+4	4560	Compression
		i_E	56 21	5		+8	+9	41°0	h 0.01
		ip_Z	56 31	4			+4		H 15 48 34
		$i(sP)_{EZ}$	56 42	5		+3	+4		
		iPPNEZ	57 43	6	-5	+4	+6		
		i_N	57 51	5	+5				
		i_{EZ}	57 52	7		+15	+21		
		iPPPNEZ	58 19	5	+6	-10	-14		
		i_{EZ}	58 24	7		+14	+14		
		i_Z	58 35	5			+9		
		iS_N	16 02 14	5	-6				
		i_E	02 22	7		+11			
		i_E	02 40	7		+13			
		isS_N	02 53	6	-5				
		i_Z	05 04	13			+12		
		iSS_{EZ}	05 13	13		+23	-33		
		iSS_N	05 14	10	+28				
		i_Z	05 55	5			-4		
		$iSSS_N$	06 05	7	-7				
		i_E	06 16	8		+14			
		i_Z	07 00	5			+9		
		i_E	07 16	5		+12			
		i_N	07 37	4	+5				
		i_N	08 10	4	+17				
		eL_E	09 48	27					
		i_E	10 07	6		-16			
		eL_Z	10.6	27					
		i_N	11 39	5	+20				
		ME	13.2	18		38			
		MNZ	14.0	17	58		44		

Minor activity: 1d 18.6h; 3d 05.5h; 7d 17.0h; 12d 06.7h; 17d 06.0h; 21d 05.4h; 22d 12.3h; 24d 00.7h; 25d 15.1h; 31d 06.4h.

270	June 1	$i(P)_Z$	12 52 27	2			+2		Compression
		$e(S)_{NE}$	57 20	8					
		eL_N	59.8	15					
		ME	13 02.9	10		1			
272	2	$(iP)_Z$	09 33 29	2			+		Comp.Sprengnether
		$e(L)_E$	45.7						
274	4	iPPP$_Z$	07 12 16	3			+7		Masked by large microseisms.
		$eSKS_E$	16 03						
		$eSKKS_E$	17 06						
		ePS_E	19 43	14					
		eSS_E	25 46	27					
		$eSSS_E$	30 09	22					
		eLR_E	45.0	26					
		ME	50.6	18		4			
		MZ	50.8	18			6		
		MN	51.1	18	4				
275	4	$(iP)_Z$	10 50 22	3			+4		Masked by large microseisms.
		eS_E	57 22	5					
		iPS_N	57 31	5	+4				
		e_N	11 00 06	12					
		$i(ScS)_N$	00 20	4	+9				
		eSS_N	00 49	14					
		eL_N	06.2	22					
		MN	10.6	11	21				
		MZ	11.7	12			7		
		ME	12.6	12		10			
277	6	$i(P)_Z$	15 29 28	2			+		Comp.Sprengnether

1954, June.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
278	June 6	iP_Z	16 57 12	5			+7	3740	Compression
		i_N	57 18	5	+5			33°6	H 16 50 33
		i_{NEZ}	57 28	5	-8	+5	+15		
		i_Z	57 34	5			+34		
		iPP_{EZ}	58 25	4		+6	+12		
		$iPPP_N$	58 38	6	-11				
		$iPPP_Z$	58 39	4			-11		
		$iPPP_E$	58 42	6		-9			
		i_Z	58 48	5			+16		
		i_N	58 50	5	+20				
		i_N	59 19	5	+10				
		$iPcP_Z$	59 50	4			+16		
		i_E	17 02 21	4		+13			
		iS_N	02 31	6	-13				
		e_N	02 34	21					
		i_E	02 45	6		+28			
		i_{NE}	02 51	8	+58	-59			
		i_N	03 00	5	-72				
		i_{NE}	03 11	9	-81	-68			
		i_N	04 27	4	+15				
		i_E	04 52	6		+32			
		i_E	05 43	12		-110			
		MNE	12.4	13	850+	800+			MNE from Wiechert
280	7	iP_{NZ}	10 21 11	3	+16		-21	3350	Dilatation
		i_N	21 45	4	-4			30°1	h 0.07
		ipP_{NZ}	22 30	3	+9		-13		H 10 15 40
		iPP_{NEZ}	22 34	3	-14	-3	+14		
		isP_{NZ}	23 18	3	+10		-5		
		i_{NEZ}	23 29	3	+17	+5	-22		Gutenberg's Tables
		i_N	23 51	4	-15				Δ 30°0,
		$iPcP_Z$	23 54	3			-14		h 450 km.,
		$isPP_Z$	24 03	4			+15		H 10 15 33
		i_N	24 19	4	+11				
		i_N	24 42	4	+19				
		i_{NZ}	24 51	5	+25		-38		
		i_{NZ}	25 00	5	+30		-41		
		i_Z	25 17	3			+15		
		i_N	25 22	5	-19				
		i_N	25 27	5	+26				
		iS_{NE}	25 36	4	+44	-25			
		$ipPcP_N$	25 42	4	-30				
		i_E	26 27	4		+14			
		$isPcP_N$	26 33	5	-23				
		$isPcP_E$	26 34	4		+13			
		$iScP_N$	26 52	5	-12				
		i_Z	26 57	5			+12		
		i_N	27 07	6	-16				
		i_N	27 16	5	+20				
		$iPcS_Z$	27 39	4			+17		
		isS_E	28 04	4		+13			
		iSS_N	28 09	6	+38				
		iSS_Z	28 10	7			+32		
		i_{NE}	28 15	5	-55	+35			
		m_N	28 27	6	90ca				
		i_Z	28 32	6			-37		
		i_N	28 34	6	-110				
		$ipScP_E$	28 46	5		+26			
		i_N	28 52	7	-64				
		i_E	28 56	5		+24			
		i_Z	29 00	5			-38		
		i_N	29 06	7	+39				
		i_E	29 10	5		+50			
		$ipPcS_Z$	29 28	5			-35		
		$ipPcS_E$	29 31	5		-27			
		i_N	29 39	7	-32				
		i_E	29 48	6		-40			
		$isScP_Z$	30 07	6			-36		(Continued on page 26)

1954, June.
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
	1954								
280	June 7	$isScP_E$	10 30 11	7		-37			
cont.		i_E	30 31	5		+			
		i_N	30 37	5	+				
		$iScS_N$	30 50	5	+29				
		$iScS_{EZ}$	30 52	6		+47	-58		
		i_Z	31 20	5			+39		
		i_N	31 27	6	+48				
		i_E	31 46	6		+33			
		i_Z	31 51	5			+18		
		i_{NZ}	31 58	6	+48		+20		
		i_Z	32 18	6			+48		
		i_N	32 33	10	-70				
		i_Z	32 34	10			+54		
		i_N	32 45	8	-63				
		i_E	32 47	6		+25			
		$ipScS_N$	33 22	6	-61				
		$ipScS_Z$	33 24	6			+50		
		$ipScS_E$	33 25	6		+50			
		i_Z	33 51	6			-33		
		$isScS_N$	33 59	7	+29				
		i_E	34 10	8		-74			
		i_N	34 12	9	+51				
		i_Z	34 27	6			+35		
		i_Z	35 04	7			+39		
		i_Z	35 31	6&10			+47		
		i_{NE}	35 34		+110	+26			T_N=10s, T_E=6s.
		i_Z	35 43	4&12			+63		
		i_N	35 48	9	+110				
		i_E	35 59	9		-68			
281	9	$i(P)_Z$	04 18 46	4			+5		Compression
		e_E	25 46	11					
		eL_E	27.2	23					
		ME_Z	28.4	17		3	3		
282	9	$i(P)_Z$	10 59 22	3			-2		Dilatation
		$i(pP)_Z$	11 01 08	3			-2		
283	9	$(P)_Z$	15 25 34	½					Felt at Gunning, N.S.W
284	9	iP_{NZ}	21 26 16	4	-3		+2	2980	Compression
		iS_N	30 48	7	+3			26°8	H 21 20 37
		isS_N	31 03	7	+9				h 0.00
		i_N	32 09	7	+4				
		eL_Z	33.3	20					
		i_N	33 37	4	+4				
		MN_Z	35.0	16	4		3		
286	10	iP_Z	18 42 12	3			+2	3290	Compression
		i_Z	43 52	4			+4	29°6	h 0.10
		$iPcP_Z$	44 49	3			-2		H 18 36 55
		iS_E	46 25	7		+5			Gutenberg's Tables
		i_E	49 59	6		+3			give; Δ29°6,h 650km
		$iScS_E$	51 31	5		+4			H 18 36 52
287	12	iP_{EZ}	05 40 56	2		+2	-4	3450	Dilatation
		i_Z	41 31	2			+4	31°0	h 550 km.
		iS_N	45 23	4	-4				H 05 35 21 (from
		iS_E	45 24	4		+6			Gutenberg's Tables
		$iScP_N$	46 26	4	-3				
		isS_N	48 20	4	-3				
		i_E	50 05	3		-2			
		$iScS_E$	50 25	3		+4			
		i_N	50 28	6	+6				
288	13	iP_Z	17 01 58	1½			-	2450	Dil.Sprengnether
		ipP_Z	02 13	2			+5	22°0	h 0.005
		i_{EZ}	02 21	5		+2	+6		H 16 57 08
		iS_{NE}	05 52	5	+13	-7			
		i_N	05 58	5	+16				
		$i(PcP)_Z$	05 59	5			+6		
		i_E	06 05	4		-12			

1954, June.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AZ	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
289	June 13	i_Z	17 39 45	3			+2		
		i_N	42 53	5	+6				
		eL_E	43.2	28					
		i_N	44 02	5	+5				
		MNE	44.9	19	3	3			
290	14	ME	08 49.6	11		2			Masked by micro-
		MN	50.4	11	3				seisms & non-seis-
		i_N	51 31	3	+4				mic disturbances.
291	14	$i(P)_Z$	13 37 02	3			+4		Compression
292	14	$i(P)_Z$	16 31 47	2			-		Dil.Sprengnether
		eL_N	54.8						
293	15	$i(PKP)_Z$	13 48 34	4			+4	13,340ca	Compression
		i pPP Z	50 37	5			+3	120°ca	h 100 km.
		$esPP_Z$	50 49						from Gutenberg's
		$i(SKS)_N$	55 23	5	+1				Tables.
		$iSKS_N$	55 36	5	-3				
		i_N	57 00	6	+3				
		i_E	57 05	6		+4			
		e_{NZ}	59 59	9					
		iPS_E	14 00 01	7		+5			
		i_N	00 10	5	+3				
		e_N	00 31	19					
		$esPS_E$	00 36	9					
		$eSKKP_N$	02 36	12					
		eSS_E	06 35	19					
		i_E	07 34	5		-3			
		i_N	07 38	5	-2				
		e_E	08 04	21					
		e_N	08 05	19					
		eLQ_N	20.5	27					
		eLR_E	26.5	33					
		MZ	33.9	17			2		
		ME	34.6	17		2			
295	17	iS_{NE}	02 08 01	4	+1	-2			
		iSS_E	14 51	15					
		MN	40.2	18	2				
297	18	iP_Z	18 03 43	1½			+	5220	Compression.
		i_Z	03 46	1½			+	49°7	iPZ, iZ, iZ from
		i_Z	04 06	1½			+		Sprengnether.
		iS_N	10 52	4	+3				
		iS_E	10 53	4		+4			H 17 54 47
		i_N	11 17	4	+3				
		eSS_E	14 08						
		eL_Z	17.8	24					
		MN	21.7	16	2				
		ME	28.1	19		3			
298	19	iP_Z	02 07 14	3			+2	7350	Compression
		iS_N	16 02	3	-1			66°1	H 01 56 23
		ME	33.6	17		2			
300	20	$(P)_Z$	20 52 16						
		$e(S)_N$	57 01	11					
		i_E	57 21	6		+3			
		i_N	57 29	6	-4				
		L_N	59.9	16					
301	21	$(P)_Z$	02 13 41						
		iS_E	18 53	4		+5			
		i_N	18 58	5	+3				
		MN	26.4	6	5				
303	22	iP_Z	09 23 59	1			+		Comp.Sprengnether
		eL_E	31.3						
304	23	$e(S)_E$	15 29 59						Masked by micro-
		eL_{EZ}	32.0	25					seisms.
		MN	33.3	18	3				
		MEZ	34.3	18		2	3		

1954, June.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
306	June 27	i_E	16 31 57	6		+3			P & S masked by
		i_{NE}	32 52	6	-4	-3			microseisms.
		i_E	33 10	4		-7			
		eL_N	33.3	19					
		MNZ	36.7	12	20		16		
307	" 28	iP_Z	05 06 49	3			+2	5540	Compression
		i_Z	06 53	3			+2	49?8	H 04 57 53
		i_Z	07 21	4			+3		
		e_E	13 51	11					
		iS_{NE}	13 58	10	+9	-4			
		ePS_Z	14 06						
		i_{NE}	14 33	7	+6	-6			
		eLQ_E	18.4	30					
		eLR_Z	21.0	30					
		MN	21.1	15	13				
		ME	21.6	13		10			
		MZ	22.9	18			7		
		MN	28.8	12	9				
308	" 30	ePS_E	13 56 02						
		$iSKSP_E$	56 18	3		+3			
		eLR_E	14 20.7	30					
		MN	34.3	16	2				
		ME	36.5	17		2			
		MZ	36.8		17			3	

Minor activity: 1d 18.7h; 4d 02.1h, 17.2h; 7d 06.5h; 9d 22.8h; 16d 16.5h; 17d 07.2h; 19d 18.5h; 21d 18.0h; 26d 11.4h.

T.N.BURKE-GAFFNEY, S.J
Director.

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. Galitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)
5. Sprengnether Vertical.

		V	T_o	$\epsilon : 1$	$\frac{\epsilon}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1 3	206	7.3	5.5	0.010	4	11.7	12.1	+0.02	560
E	1 3	228	6.8	5.3	0.011	4	12.3	12.2	+0.08	490
Z	2					4	10.9	10.6	+0.1	460
						5	1.6	1.6		

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h. m. s.	s.	μ	μ	μ	km.	
309	July 2	iP$_{NZ}$	02 54 30	5	+3		−5	5950	Dilatation
		i$_{NZ}$	54 36	5	−6		+12	53°5	H 02 45 06
		i$_E$	54 39	6		−7			
		iPcP$_Z$	55 37	4			+5		
		iPP$_N$	56 33	6	+6				
		iPP$_Z$	56 34	7			+9		
		i$_E$	56 42	6		−7			
		i$_Z$	56 45	8			+17		
		i$_{NE}$	56 48	8	−10	+9			
		i$_Z$	57 22	6			+18		
		iPPP$_Z$	57 48	6			+9		
		i$_N$	57 53	8	+10				
		iS$_N$	03 02 02	10	+16				
		i$_E$	02 08	7		−11			
		i$_E$	02 17	6		+19			
		i$_N$	02 18	5	+21				
		e$_{NE}$	02 23	19					
		i$_N$	02 36	13	−65				
		i$_E$	02 39	7		+25			
		i$_N$	04 25	7	+14				
		iSS$_N$	05 56	15	−38				
		iSS$_E$	05 59	15		+12			
		i$_Z$	06 14	8			+11		
		i$_E$	06 25	10		−34			
		i$_N$	06 37	10	−24				
		i$_N$	07 37	9	+27				
		i$_E$	08 23	7		+16			
		i$_E$	08 40	8		+31			
		eL_E	10.2	23					
		i$_E$	11 08	9		−36			
		i$_N$	12 22	8	+23				
		i$_E$	12 29	10		−41			
		i$_E$	12 59	10		+38			
		i$_E$	13 58	10		−48			
		i$_N$	14 39	7	−21				
		M$_E$	15.2	16		26			
		M$_N$	16.8	13	21				
		M$_Z$	19.7	16			23		
310	3	(P)$_Z$	21 25 13						
		eL_N	41.0	21					
		M$_E$	50.1	15		1			

1954, July.
RIVERVIEW COLLEGE OBSERVATORY
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
311	July 3	iP_{NEZ}	22 40 16	3	-2	+6	+19	5610	Compression
		i_Z	40 22	3			+14	50°5	h 0.0025 ca.
		i_{NE}	40 24	5	-3	+8			H 22 31 21
		ipP_Z	40 29	4			+30		
		i_{EZ}	40 36	4		-15	-36		
		i_N	40 37	5	+6				
		i_{NEZ}	40 42		-7	+16	+21		T_{NE}=7s, T_Z=4s.
		i_Z	40 48	4			-17		
		i_Z	40 54	4			-13		
		i_E	41 02	5		+8			
		i_Z	41 42	4			+15		
		iPP_Z	42 10	6			+9		
		i_Z	42 19	4			+15		
		i_E	42 20	5		+7			
		i_E	42 30	5		+9			
		i_Z	42 31	5			-27		
		i_{EZ}	42 39	5		+11	+16		
		i_E	42 48	5		+9			
		i_E	43 26	4		-7			
		i_Z	43 33	4			-9		
		i_E	43 34	4		-8			
		i_E	43 48	4		-4			
		$iPcS_Z$	45 27	5			-9		
		iS_{NEZ}	47 25	6	+34	+97	-19		
		i_E	47 36	4		+23			
		i_Z	47 37	7			+35		
		iPS_N	47 41	7	-23				
		isS_{NE}	47 49	6	+35	+19			
		i_N	48 00	7	+28				
		i_Z	48 06	7			+20		
		i_N	48 10	6	+26				
		e_E	48.2	24					
		i_N	48 30	5	-6				
		i_E	48 33	6		-17			
		i_N	49 03	5	-12				
		i_E	49 11	8		+23			
		i_Z	49 16	5			+9		
		i_{NE}	49 32	6	+13	+14			
		i_Z	49 42	7			-14		
		i_N	49 48	5	+5				
		$iScS_{NE}$	50 03	5	+14	+7			
		i_Z	50 04	5			+7		
		i_Z	50 47	6			+13		
		iSS_N	50 53	10	-38				
		iSS_E	50 55	9		-40			
		i_Z	51 02	7			+20		
		i_N	51 13	10	+45				
		i_E	51 19	8		+22			
		i_E	51 49	8		-16			
		i_N	51 57	11	+38				
		eLQ_N	52.1	30					
		$iSSS_N$	52 31	7	+26				
		i_E	52 47	6		+23			
		i_N	52 58	5	+11				
		i_E	53 26	7		+22			
		i_E	54 09	10		+26			
		i_N	54 54	8	+50				
		i_{NE}	55 28	8	+60	+39			
		i_N	56 00	8	+68				
		eL_{EZ}	56.7	34					
		MN	23 00.0	14	63				
		ME	00.5	25		150			
		MZ	00.9	22			145		
		MN	03.2	12	63				
		ME	04.7	18		120			
312	5	$(S)_{NE}$	14 15 08	4					
		MN	40.3	18	1				

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
313	July 5	iPZ	16 30 37	2			+		Comp.Sprengnether
		e(S)E	35 01	5					
		eLE	39.4	15					
314	6	iPZ	02 46 10	2			+		All readings from
		iZ	46 40	1			-		Sprengnether.
		iZ	46 47	1			-		
		iZ	48 03	2			-		
		iZ	49 38	2			+		
315	6	i(P)Z	04 02 22	2			+		Comp.Sprengnether
316	6	iPZ	04 05 00	1			+		Comp.Sprengnether
317	6	PZ	04 06 35					3400	PZ& iZ from the
		iZ	06 38	2			+	30°6	Sprengnether.
		iN	07 40	5	+4				
		iZ	09 27	5			-7		H 04 00 17
		iN	11 16	6	+6				
		iSN	11 37	10	+7				
		iZ	11 42	4			-5		
		iN	12 17	6	+9				
		iE	12 24	6		+5			
		iN	12 51	8	-11				
		iZ	12 52	5			+5		
		iZ	13 11	5			-7		
		iN	13 56	7	-9				
		eLE	14.4	28					
		iN	14 43	7	-12				
		ME	18.2	16		39			
		MNE	19.3	13	28	34			
		MZ	19.8	18			25		
318	6	iPZ	06 58 51	1½			+		Comp.Sprengnether
319	6	iPZ	08 16 45	4			-4	8940	Dilatation
		iZ	17 32	5			-5	80.4	h 0.00
		iN	17 34	5	+4				H 08 04 35
		ePPZ	19 54	10					
		iSE	26 47	7		-10			
		iSN	26 49	5	-5				
		iPSN	27 33	9	+9				
		iPPSN	27 54	6	+7				
		iN	28 42	6	+7				
		eE	31 32	15					
		eSSN	31 56	20					
		e(SSS)E	35 02	12					
		eLQE	37.9	36?					
		eLRN	42.0	24					
		MN	48.0	17	17				
		MZ	50.0	20			15		
		ME	55.5	16		13			
320	6	i(PKP)Z	11 32 01	1			+		Comp.Sprengnether
		iPPZ	32 41	4			+5		
		eE	38 52						
		e(PS)E	42 13	15					
		iN	42 59	4	+5				
		eSSN	48 19	20					
		eE	48 38	22					
		eLENE	59.7	38					
		eLRE	12 06.1	24					
		MEZ	09.6	20		8	10		
321	9	(iP)Z	12 27 34	2			-	3910	Dil.Sprengnether
		iPPZ	28 56	4			-4	35°2	Microseisms pres-
		iPPE	28 57	4		+3			ent.
		iPPN	28 59	4	+3				h 0.00
		iPPPZ	29 14	4			+4		H 12 20 41
		iZ	29 21	4			+4		
		eSE	33 04	10					
		iE	33 53	5		+5			
		eE	34 03	18					
		iSSSN	35 52	7	-6				
		iScSE	37 48	5		+5			
		MN	40.5	12	7				

1954, July.
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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
322	July 10	$(iP)_Z$	23 10 46	2			+		Comp.Sprengnether
		$e(SS)_E$	29 12						
325	" 13	$(i)_Z$	08 10 38	3			+6		?Large microseism ?
		$i(P)_Z$	10 59	2			+	3450	Comp.Sprengnether
		iPP_Z	11 59	5			+11	31°0	H 08 04 38
		i_N	12 05	5	+8				
		$iPPP_Z$	12 11	5			+15		
		i_N	12 56	5	+10				
		i_Z	14 42	4			+15		
		iS_E	16 04	6		+6			
		i_N	16 08	6	-21				
		e_N	16 11	21					
		i_E	17 23	6		-17			
		iSS_E	17 46	9		+44			
		eLQ_E	17.9	24					
		$iSSS_E$	18 08	8		+13			
		i_E	18 56	10		+86			
		i_E	19 07	7		+30			
		i_N	19 13	6	+38				
		i_N	19 43	7	+22				
		i_N	19 56	6	+16				
		i_N	20 11	6	+32				
		i_N	20 29	7	+19				
		M_N	22.6	19	90				
		M_E	23.0	15		120			
		M_Z	23.5	16			83		
326	14	iP_Z	02 46 51	2			+		Comp.Sprengnether
		ipP_Z	47 02	2			-		Dil. "
		eL_E	52.8	19					Large microseisms
		eL_N	54.0	20					present.
		i_E	56 09	4		+6			
		M_E	56.3	10		3			
		M_N	57.1	10	3				
327	15	iP_Z	00 10 42	4			-5	3990	Dilatation
		iPP_Z	11 59	5			-6	35°9	H 00 03 43
		eS_E	16 17	11					
		$i(SS)_N$	19 02	11	-14				
		eLR_E	20.7	27					
		M_N	22.7	13	12				
		M_{EZ}	25.6	17		15	17		
328	15	$i(P)_N$	00 41 34	4	-2				Obscured by coda
		iS_N	47 07	5	+5				of No.327
		i_E	47 13	5		+3			
		$e(SSS)_N$	49 51						
		eL_N	50.9	21					
		M_N	54.0	12	4				
		M_{EZ}	56.5	18		9	10		
333	18	iP_Z	06 47 36	1			+		Comp.Sprengnether
		M_N	07 23.4	21	7				
334	" 18	iP_{NZ}	09 18 49	3	-2		+2	7800	Compression
		$iPcP_Z$	19 09	4			-4	70°2	H 09 07 38
		i_Z	19 24	4			+4		h 0.00
		iS_{NE}	27 57	5	-5	-5			
		i_N	28 08	4	-3				
		isS_E	28 13	4		+4			
		i_E	28 24	7		-6			
		i_N	28 42	5	-4				
		i_E	28 56	7		-5			
		i_Z	29 03	4			+4		
		$e(SS)_E$	32 08	13					
		e_N	32 44	13					
		eLR_E	40.1	30					
		M_N	45.9	24	6				
		M_{EZ}	46.6	21		4	4		

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
336	July 18	iP_Z	19 58 14	2			+	2740	Comp.Sprengnether
		ipP_{EZ}	59 22	3		-3	+3	24°6	h 400 km.
		isP_Z	20 00 08	3			+3		H 19 53 24
		eS_N	02 08	8					(from Gutenberg's
		i_N	02 14	5	-2				Tables)
		i_E	02 15	5		+3			
		i_E	04 23	5		-2			
		i_N	04 26	6	-2				
337	20	$(iP)_Z$	15 46 48	1			+		Comp.Sprengnether
		eL_E	54.2						
338	23	i_Z	04 51 27	4			+2		
		$iSKS_N$	53 14	5	-2				
		eLQ_E	05 17.6	30					
		eLR_N	22.3	21					
		MNEZ	26.9	19	3	3	4		
339	23	iP_Z	20 57 11	2			+2	2390	Compression
		i_Z	57 15	2			+3	21°5	H 20 52 19
		i_E	57 23	4		+3			
		i_Z	57 24	2			+4		
		iPP_Z	57 34	3			+2		
		eS_E	21 01 05						
		eN	01 11						
		i_N	01 31	5	-4				
		i_E	01 34	6		+5			
		eLR_Z	02.7	24					
340	24	$i(P)_Z$	06 05 59	1			-		Dil.Sprengnether
		i_Z	06 12	1			+		"
341	24	iP_Z	09 46 12	1			-		Dil.Sprengnether
342	24	$(P)_Z$	21 48 36						
		e_E	48 39						
		$e(S)_N$	52 23						
		eL_E	52.8	24					
		MZ	56.0	14			2		
		MN	56.5	14	1				
344	26	$(P)_Z$	20 29 11	1½					From Sprengnether
		i_Z	29 30	1½			+		" "
		iPP_Z	33 01	4			+2		
		$iSKS_{NE}$	39 40	6	-10	+5			
		$i(S)_E$	40 27	6		+4			
		eN	40 43	19					
		e_E	41 00	18					
		iPS_{NEZ}	41 44	6	-6	+3	-5		
		$ePPS_E$	42 20						
		i_E	42 27	5		+4			
		eSS_E	47 02	21					
		i_N	47 19	9	-9				
		eLQ_E	56.3	35					
		eLR_N	59.5	34					
		MNEZ	21 03.9	19	5	5	6		
345	29	iP_Z	03 46 51	1½			+	9360	Comp.Sprengnether
		iS_N	57 16	5	+3			84°2	H 03 34 16
		ePS_N	58 07						
		eSS_N	04 02 46						
		eLR_Z	12.7	30					
346	29	i_Z	06 34 36	2			+		Comp.Sprengnether
		eN	39 09						
		iN	39 48	6	+8				
		eL_N	40.1	21					
		MN	42.0	16	7				
347	29	iP_Z	09 27 52	1			+	2980	Comp.Sprengnether
		iS_N	32 27	4	+3			26°8	
		eLR_E	34.7	21					
348	30	iP_Z	08 58 43	3			+3	9570	Compression
		iPP_Z	09 02 02	5			+4	86°1	Surface focus.
		iS_N	09 17	7	-3				H 08 45 59
		iS_E	09 19	6		+5			
		i_N	09 32	7	-6				
		i_N	10 07	7	+7				
		iPS_E	10 15	7		-5			

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1954, July-August.
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
	1954								
348	July 30	i_N	09 10 26	7	-6				
cont.		i_E	10 27	7		+9			
		i_N	10 48	7	-5				
		iSS_N	14 58	9	+8				
		i_E	15 14	10		-9			
		i_N	15 29	10	+10				
		i_E	15 54	7		+7			
		$iSSS_E$	18 29	7		+7			
		eLQ_N	22.2	27					
		eLR_E	25.3	30					
		MEZ	30.4	18		7	6		
		MN	33.2	18	6				
350	31	$i(P)_Z$	01 12 48	2			+3		Compression
		$i(S)_E$	23 10	7		-8			
		iNE	23 22	9	-16	-21			
		eL_E	35.9	40					
		eL_N	36.4	37					
		MN	51.5	21	12				
		ME	55.1	20		12			
		MZ	57.5	20			9		
		eW_2Z	03 24	23					
Minor activity: 11d 13.7h; 12d 09.5h; 16d 03.4h, 13.1h; 17d 11.3h, 15.1h; 18d 11.4h; 26d 09.3h; 30d 15.7h.									
351	Aug. 1	iP_Z	03 29 14	1½			-		Dil.Sprengnether
		i_N	34 43	5	-3				
		eL_E	37.9	27					
		i_N	39 23	6	+5				
		i_Z	40 01	4					
		i_E	40 03	5		+17			
		i_N	40 04	5	+4				
		i_N	40 23	6	-9				
		i_E	40 26	6		+25			
		ME	41.0	14		18			
		MNZ	43.0	11	11		9		
353	1	iP_{NEZ}	21 37 19	3	-1*	-3	+7	2480	Compression
		ipP_Z	37 51	4			+6	22°3	h 0.02 ca.
		iS_E	41 09	3		+4			H 21 32 34
		i_Z	42 07	4			+2		*from Wiechert.
		i_Z	42 24	7			-8		(ScS) indicates
		$i(ScS)_E$	47 37	4		-4			h = 400 km. ca.
354	1	iP_Z	21 44 26	1½			+		Comp.Sprengnether
355	1	iP_Z	22 57 45	1½			-		Dil.Sprengnether
357	5	iP_Z	09 02 43	4			-2	9800	Dilatation
		$iSKS_N$	13 09	4	-2			88°2	h 0.00
		iS_{NE}	13 23	4	-3	-2			H 08 49 53
		$iScS_E$	13 28	4		+3			
		eSS_E	19.1	15					
		eLR_N	32.6	25					
		MN	36.9	21	2				
		ME	37.4	19		2			
358	5	iP_Z	23 50 25	3			+2	3120	Compression
		ipP_Z	50 37	3			+2	28°1	h 0.00
		$iPPP_{NZ}$	51 29	4	+4		-2		H 23 44 34
		iS_E	55 06	5		+6			
		iS_N	55 07	5	-3				
		i_E	55 20	4		+3			
		i_N	55 27	6	-9				
		i_E	55 37	6		+6			
		i_N	55 49	8	+14				
		i_E	56 18	5		-5			
		iSS_E	56 26	7		+7			
		iSS_N	56 28	6	+6				
		$iSSS_E$	56 47	6		+7			
		eLR_E	57.9	26					
		MNEZ	24 00.6	20	35	60	33		
359	6	$iPKP_Z$	16 39 26	1			+		Comp.Sprengnether
		i_Z	39 29	4			+5		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
360	Aug. 7	i_Z	09 57 42	2			+4		
361	9	P_Z	05 44 01						P_Z & i_Z from the
		i_Z	44 08	1½			+		Sprengnether.
		$e(S)_N$	47 42						
		e_N	47 55	4					
		i_E	48 03	5		+3			
363	9	iP_Z	19 29 36	3			-4	9750	Dilatation
		ipP_Z	29 46	2			+3	87°3	H 19 16 50
		iPP_Z	33 11	4			+4		h 0.00
		eS_E	40 14						
		i_E	40 25	5		+6			
		i_N	40 48	5	+4				
		eSSE	45 59	9					
		eLQ_E	53.3	30					
		eLR_N	58.3	30					
		MN	20 09.1	21	2				
		MEZ	11.5	19		1	3		
364	10	eP_Z	13 50 26					2840	H 13 44 55
		i_Z	50 51	4			-3	25°5	
		PP_E	51 08						
		eS_E	54 52						
		eLQ_N	55.8	18					
		eLR_E	57.1	26					
		MEZ	59.3	16		7	8		
		MN	59.9	15	5				
366	12	iP_Z	23 51 20	2			+3		Compression
		iPP_Z	53 06	4			-2		
		eL_E	24 04.7	21					Surface waves
		eL_Z	07.0	27					could possibly
		MN	08.7	16	7				be part of
		ME	09.6	16		10			following shock.
		MZ	10.9	16			11		
367	12	$i(P)_Z$	23 59 58	4			-5		Dilatation
		i_E	24 00 04	6		-3			
		i_Z	00 06	4			-5		
		i_Z	00 25	4			+6		
		i_E	00 42	5		-4			
		iEZ	00 49	5		+6	-4		
369	14	$i(P)_Z$	14 06 41	1			+		Comp.Sprengnether
372	14	iP_Z	23 03 35	1½			+		Comp.Sprengnether
		eS_E	09 25						eS from Wiechert.
		i_E	11 32	5		+4			
		eL_E	13.6	24					
		eL_E	16.1	24					
		MZ	20.7	19			12		
		ME	20.9	16		12			
		MN	25.5	15	12				
373	16	iP_Z	00 07 39	3			-4		Dilatation
374	16	iP_Z	14 32 11	1½			+		Comp.Sprengnether
378	17	i_Z	15 56 01	4			+4		
		eL_E	16 06.4	18					
379	17	$i(P)_Z$	22 54 43	4			+2		Compression
380	17	i_Z	23 04 10	4			+2		Compression
		i_Z	06 11	5			+5		
		i_Z	06 26	4			+5		
381	18	i_N	03 04 17	4	+2				
		e_E	06 16	4					
		i_E	06 49	5		-5			
		i_Z	06 52	4			-5		
		i_N	06 53	4	+5				
		i_E	07 02	5		+6			
		i_Z	07 17	3			-3		
		i_E	09 33	4		+6			

1954, August.
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
382	Aug.18	iP_{NEZ}	04 48 38	4	+7	+25	-42	3520	Dilatation
		i_E	48 48	5		+13		31°7	h 0.01
		ipP_E	49 00	4		-9			H 04 42 22
		i_N	49 04	5	-7				
		isP_Z	49 12	4			-15		
		i_E	49 15	5		-14			
		i_Z	49 34	4			-20		
		iPP_Z	49 46	5			-5		
		i_E	49 50	6		-27			
		i_N	49 51	6	-5				
		i_Z	49 52	6			-41		
		i_Z	50 03	4			+38		
		$iPPP_N$	50 09	6	+17				
		$iPPP_Z$	50 11	5			+45		
		i_Z	50 32	7			+26		
		i_Z	50 44	4			+20		
		i_Z	50 49	5			-16		
		$iPcP_Z$	51 27	5			+22		
		$i(pPcP)_Z$	51 49	5			+16		
		iS_E	53 39	6		+27			
		isS_E	54 17	6		+14			
		i_N	54 37	6	+25				
		$iScP_{EZ}$	54 57	7		+19	-31		
		i_E	55 13	5		+23			
		iSS_N	55 38	7	-13				
		$iSSS_{NZ}$	56 07	9	-40		+21		
		i_N	56 19	8	+38				
		$iScS_{NE}$	58 58	5	+26	+105			
		i_Z	59 00	8			-42		
		i_N	05 00 08	6	-25				
		i_E	02 30	8		-37			
383	21	eP_Z	06 47 08					5210	H 06 38 34
		i_Z	47 26	3			-2	46°9	
		i_Z	48 33	4			-4		
		i_Z	49 16	4			-2		
		i_Z	49 20	4			+4		
		eS_N	53 59	10					
		iSS_E	57 25	7		-3			
		i_N	57 31	7	-3				
		i_E	57 55	8		-4			
		eL_E	07 02.3	30					
		MEZ	07.2	21		8	4		
		MN	07.4	24	5				
384	22	iP_Z	01 38 41	4			+2	3070	Compression
		iPP_Z	39 24	5			+2	27°6	H 01 32 50
		eS_N	43 22	6					
		i_N	43 29	6	+2				
		eL_E	46.2	23					
		ME	48.0	15		2			
		MZ	51.9	12			1		
386	24	$eSKS_E$	06 16 59						
		ePS_N	20 20						
		eSS_N	26 22						
		eSS_E	26 25						
		eLQ_E	37.7	35					
		eLQ_N	37.8	40					
		MNE	48.0	20	4	13			
388	26	$i(P)_Z$	18 46 31	2			+		Comp.Sprengnether
		iPP_Z	47 18	3			+3		Masked by micro-
		eS_N	51 12						seisms.
		eL_E	54.7	20					
		$MNEZ$	57.0	19	6	6	8		
389	26	i_Z	19 24 08	3			+3		Masked by micro-
		iS_N	28 16	9	+9				seisms.
		i_N	28 45	9	-13				
		eL_E	31.5	24					
		$MNEZ$	33.8	20	14	14	12		

1954, August-September.
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
	1954								
390	Aug.27	iP_Z	11 04 47	1½			+	6520	Comp.Sprengnether
		i_Z	04 55	3			-2	58°7	h 0.005 ca
		i_Z	05 05	3			+2		H 10 54 54
		i_N	05 06	4	-1				
		i_Z	05 31	6			+6		
		i_Z	05 46	4			+4		
		i_Z	12 43	4			-2		
		iS_N	12 45	5	+9				
		i_E	12 48	6		+8			
		i_Z	12 53	6			+7		
		isS_{NE}	13 16	5	-3	+3			
		i_N	14 22	6	-4				
		i_E	14 36	6		-4			
		eL_E	19.4	30					
		ME	25.2	22		14			
		MNZ	27.2	21	14		14		
391	27	i_Z	19 34 27	4			+4		
394	28	iP_Z	23 16 56	1			+		Comp.Sprengnether
		eL_N	40.1	24					
		MN	49.4	21	1				
395	30	i_Z	02 24 03	1½			+		Comp.Sprengnether
		i_Z	24 16	1½			+		" "
		eL_E	31.1	20					
		ME	33.6	12					
396	30	iP_Z	08 09 18	2			+2	8730	Compression
		$iPcP_Z$	09 29	4			+4	78°6	h 0.005
		ipP_Z	09 34	4			+4		H 07 57 22
		iS_E	19 08	5		-3			
		eSS_E	24 14						
		eLQ_E	30.7	26					
		eLR_E	34.5	28					
		MN	38.5	22	3				
		ME	39.6	19		3			
397	30	$e(S)_E$	09 21 26						
		eL_E	24.1	20					
		ME	26.3	12		4			
398	30	$(iP)_Z$	11 42 45	2			+		Comp.Sprengnether
		iS_E	47 11	4		-2			
		iS_N	47 12	5	-3				
		eL_E	49.3	20					
		ME	52.1	11		6			
		$iScS_N$	53 40	6	+5				
399	31	iP_Z	11 07 18	3			+3	2670	Compression
		ipP_Z	07 25	4			+4	24°0	h 0.00
		eS_{NE}	11 30						H 11 02 05
		i_N	11 47	7	+3				
		i_E	12 00	6		-5			
		eL_E	13.7	19					
		MNE	15.2	17	2	2			
400	31	iP_Z	18 20 25	3			-2	3290	Dilatation
		iS_N	25 17	6	+3			29°6	H 18 14 21
		isS_N	25 32	6	+4				h 0.00
		ME	31.2	13		1			
401	31	$i(P)_Z$	22 35 15	1½			+		Comp.Sprengnether

Minor activity: 1d 13.6h; 9d 15.2h; 12d 18.2h; 14d 07.6h, 17.0h, 20.5h; 16d 23.9h; 17d 05.9h, 07.2h; 23d 08.8h; 24d 13.0h; 28d 14.0h, 15.5h.

403	Sept.2	iP_Z	18 57 08	1½			-	2980	Dil.Sprengnether
		i_Z	57 12	4			+5	26°8	
		isP_Z	57 38	1½			-		" "
		i_Z	57 47	4			+7		h 0.01
		iPP_Z	57 56	2			+		H 18 51 35
		iS_N	19 01 35	7	-13				
		i_N	01 50	5	-9				
		i_N	02 37	5	+6				
		i_Z	02 39	5			+9		
		iSS_N	02 50	5	-14				

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1954, September.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km	
403	Sept.2	i_Z	19 02 57	5			-8		
cont.		i_N	03 09	5	+14				
		i_E	03 17	5		-10			
		i_N	03 29	6	-12				
		i_E	04 07	5		-9			
		i_N	04 10	5	-9				
		i_E	04 42	5		+6			
		i_E	05 03	6		-12			
		i_N	05 20	5	-7				
		i_E	07 30	5		+6			
		$iScS_E$	07 49	4		+9			
404	4	iP_Z	03 35 00	1½			+	3610	Comp.Sprengnether
		i_Z	35 07	4			-4	32°5	h 0.005
		ipP_Z	35 17	4			+5		H 03 28 33
		iPP_Z	36 10	5			+7		
		i_NZ	36 21	4	+10		-8		
		iS_N	40 09	6	+13				
		i_E	40 15	6		+12			
		i_N	40 17	6	+20				
		i_E	40 31	6		-13			
		i_N	41 02	7	+23				
		i_N	41 43	6	+10				
		i_N	41 50	6	-15				
		i_N	42 00	6	+19				
		iSS_N	42 09	6	-10				
		$iSSS_N$	42 35	7	+15				
		i_E	42 42	6		+21			
		MNEZ	46.0	6	130*	160*	56		*From Wiechert.
405	4	iP_Z	05 16 45	1			-		Dil.Sprengnether
406	4	iP_Z	06 58 16	2			+		Comp.Sprengnether
407	4	$(P)_Z$	09 03 51						(P) Sprengnether
		eL_E	21.4						
409	4	iP_Z	13 17 24	1½			+	2910	Comp.Sprengnether
		ipP_Z	17 34	1½			+4	26°2	h 0.00
		i_NZ	17 37	4	-3		+5		H 13 11 51
		iPP_Z	18 10	4			+3		
		iS_N	21 52	6	-5				
		i_Z	22 05	6			+6		
		isS_N	22 10	8	-16				
		i_E	22 17	8		+12			
		i_Z	22 21	7			+12		
		eL_Z	24.3	24					
		MNEZ	25.6	21	10	8	10		
410	5	iP_Z	07 51 13	2			+	2890	Comp.Sprengnether
		iPE_Z	51 15	4		+7	-11	26°0	Dilatation
		iP_N	51 16	4	+3				h 0.00
		ipP_Z	51 21	2			-		H 07 45 41
		i_E	51 26	4		+10			
		i_Z	51 47	4			-9		
		iPP_E	51 50	6		-16			
		iPP_Z	51 51	6			+21		
		i_N	51 55	8	+9				
		i_Z	53 08	6			+10		
		iS_N	55 39	8	-8				
		isS_N	55 56	10	-29				
		i_E	55 57	9		-23			
		i_E	56 34	7		+22			
		iSS_N	56 47	7	+24				
		i_N	56 54	11	-68				
		i_E	56 58	7		+12			
		iL_N	57 51	17	+110				
		eLR_Z	57.9	24					
		MEZ	59.8	19		80	73		
		MN	08 00.2	15	66				

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
411	Sept.5	$(P)_Z$	17 23 24						From Sprengnether
412	6	$e(P)_Z$	16 57 24						
		$e(S)_N$	17 05 43						
		$e(SS)_N$	09 21						
		eL_E	14.7						
		ME	18.6	18		2			
		MN	26.6	18	2				
413	6	iP_{NZ}	18 43 25	3	-1		+6	9560	Compression
		ipP_Z	43 40	4			+6	86.0	h 0.003
		i_Z	46 59	5			-4		H 18 30 49
		$iSKS_N$	53 45	5	+4				
		iS_E	53 53	5		-5			
		i_N	53 55	6	+8				
		$i(ScS)_N$	54 06	4	+3				
		i_N	54 15	6	-1				
		isS_E	54 20	6		-5			
		i_N	55 08	7	+5				
		iSS_N	59 40	6	-5				
		eLQ_E	19 06.6	31					
		eLR_Z	10.5	34					
		eLR_N	10.8	33					
414	9	iP_{EZ}	01 08 22	2		+2	-4	3440	Dilatation
		iPP_{EZ}	09 33	3		-2	+2	30°9	h 0.02
		iS_N	13 13	4	-3				H 01 02 18
		MN	17.4	12					
		$iScS_E$	18 39	4		+5			
415	9	$iPKP_Z$	01 24 27	3			+1	17,600	Compression
		i_Z	24 38	4			+3	158°4	H 01 04 27
		i_Z	25 00	4			-4		
		i_Z	25 08	3			+7		From Gutenberg's
		iPP_Z	28 44	4			-5		Tables.
		$iPPP_Z$	32 15	4			-2		
		$SKKS_E$	35 33	9					
		iSS_N	48 30	12	+8				
		$eSSS_E$	54 22	23					
		e_E	58 27	23					
		eG_N	02 14.6	41					
		eLR_E	21.0	36					
		MZ	36.1	19			11		
		ME	36.4	19		13			
		MN	37.6	18	10				
417	10	$i(PKP)_Z$	06 04 38	3			-3		Dilatation
		iPP_Z	08 09	3			-2		
		i_Z	08 19	6			+4		
		eSS_N	27 59	5					
		ME	C7 20.0	16		4			
		MN	21.5	21	7				
418	10	$i(P)_Z$	14 58 47	1½			-		Dil.Sprengnether
		$e(S)_E$	15 02 47	9					
		iE	03 18	5		-3			
		i_E	03 31	6		-2			
419	12	iP_Z	07 55 33	3			+2	8410	Compression
		PcP_Z	55 48	3				75°7	h 0.00
		PP_Z	58 28	3					H 07 43 49
		eS_E	08 05 11	5					
		e_E	05 42	13					
		PPS_N	06 06	9					
		eSS_E	09 56	18					
		eLQ_E	15.7	37					
		eLR_N	19.2	24					
		MZ	27.7	19			2		
		MN	28.8	19	2				
		ME	30.3	19		2			

1954, September.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
421	Sep.13	iP_{NEZ}	02 16 15	4	+6	+15	-23	3540	Dilatation
		ipP_Z	16 50	4			-5	31°8	h 0.02
		isP_E	17 11	5		+4			H 02 10 04
		isP_Z	17 13	6			+17		
		iPP_Z	17 30	5			+16		
		iPP_E	17 33	6		+24			
		iE	17 43	5		-17			
		$iPPP_Z$	17 49	5			-12		
		iEZ	17 58	4		-10	-11		
		iZ	18 20	4			+12		
		iE	18 22	4		+20			
		iEZ	18 34	4		+7	-9		
		iZ	18 43	6			+25		
		iZ	19 09	6			-10		
		iS_{NE}	21 12	6	-46	+11			
		iE	21 36	6		+8			
		iE	22 16	6		+6			
		iN	22 27	9	-64				
		iE	22 45	7		-26			
		iZ	23 54	9			-28		
		iN	23 55	10	-48				
		iE	24 24	8		+22			
		iN	24 31	8	+8				
		iE	24 46	9		-22			
		iN	24 59	10	+68				
		$iScS_E$	26 30	6		-34			
		$iScS_N$	26 32	6	-24				
		$isScS_E$	27 40	8		-35			
		iN	27 53	8	+56				
		iE	27 54	8		-35			
422	14	$(iP)_Z$	00 58 40	2			+		Comp.Sprengnether
		eN	01 07 21						
		eL_E	16.4	18					
		MN_E	25.3	16	2	2			
423	14	$i(P)_Z$	07 05 38	2			+4		Compression
424	14	iZ	07 31 19	4			+4		Compression
425	15	iP_{NEZ}	18 01 47	3	+6	+15	-26	3450	Dilatation
		ipP_Z	03 16	4			+8	31°0	h 0.08
		ipP_{NE}	03 17	4	-3	-10			H 17 56 12
		iN_Z	03 32	6	-6		+14		
		iE	03 35	5		-8			Short period waves
		$iPcP_Z$	04 29	4			+10		(1s) superimposed
		iZ	06 10	4			-6		on record from P
		iS_{NEZ}	06 15	4	+6	-31	-12		until 18h 05m.
		iN	06 41	5	-9				
		iEZ	06 47	5		-20	-8		
		iF	07 05	5		-5			
		iE	07 13	5		-10			
		$iScP_Z$	07 16	3			-7		
		iE	07 30	3		-6			
		iE	09 10	5		+7			
		iNE	09 28	6	+10	+22			
		$iScS_{NE}$	11 17	3	+31	+9			
		iN	11 47	4	+19				
427	17	iP_{NZ}	01 19 14	2	+4		-5	3240	Dilatation
		$iPPP_N$	20 21	4	+5			29°1	h 0.00
		iS_E	24 02	6		+6			H 01 13 14
		iN	24 27	6	+4				
		iN	24 43	7	+8				
		eSS_N	25 28	10					
		iE	26 12	6		-6			
		iE	26 34	7		-9			
		eL_Z	26.8	30					
		iE	26 51	7		-11			
		iN	27 51	8	+11				
		$MNEZ$	28.9	25	16	19	22		
		$iScS_E$	29 52	6		+11			

1954, September,
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SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
428	Sep.17	iP_Z	07 44 00	3			+4	7020	Compression
		i_Z	44 21	3			+2	63°2	H 07 33 28
		eS_E	52 31	13					
		e_E	52 40	13					
		M_N	08 08.2	13	1				
		M_E	08.6	23		2			
429	17	iP_Z	11 09 17	1½			+	3350	Comp.Sprengnether
		iP_{NEZ}	09 18	3	+3	+6	-10	30°1	Dilatation
		i_{NEZ}	09 23	4	-4	-19	+30		h 0.03
		i_E	09 32	4		+10			H 11 03 26
		i_Z	10 10	3			+12		
		$i(PP)_{EZ}$	10 32	3		-20	+15		
		i_{EZ}	10 36	3		-12	+18		Gutenberg's Tables
		i_N	10 39	4	+11				give: Δ 29°7,
		i_Z	10 41	6			+41		h 200 km.,
		i_E	10 45	6		-42			H 11 03 24
		i_N	10 51	4	-7				
		i_N	11 06	4	-9				
		i_E	11 11	5		-23			
		i_E	11 19	4		+22			
		i_E	11 31	4		+14			
		i_{EZ}	11 47	7		-58	+26		
		i_N	11 55	7	+13				
		i_E	12 02	7		+40			
		$iPcP_Z$	12 11	6			+28		
		i_N	12 32	7	+14				
		i_E	12 48	6		+10			
		i_E	12 53	6		-30			
		iS_{NE}	13 58	5	-17	+28			
		i_{NE}	14 04	8	-34	-70			
		i_Z	14 11	6			-27		
		isS_N	15 11	9	+38				
		i_Z	15 12	6			+25		
		i_E	15 31	6		-19			
		i_N	15 32	9	+48				
		i_E	15 44	9		-56			
		i_E	15 53	9		-67			
		$i(SS)_N$	15 58	9	+33				
		i_N	16 22	8	-61				
		$i(SSS)_E$	16 28	10		-27			
		i_Z	16 31	9			+36		
		i_N	16 40	11	+175				
		i_Z	16 45	12			+140		
		i_N	17 06	10	+190ca				
		i_Z	17 20	7			+40		
		i_E	17 23	9		+60			
		$iScS_{NE}$	19 27	4	+16	+19			
		i_{NE}	19 34	4	+130	+45			
432	18	$i(S)_E$	15 46 32	3		+4			Masked by micro-
		i_E	46 40	3		+5			seisms.
		e_E	49 41						
		i_E	49 49	3		+5			
		e_{LE}	52.5	25					
433	19	P_{nZ}	10 38 28	½				600	H 10 37 04
		iS_{nZ}	39 32	1				5°4	
434	19	iP_{nZ}	10 38 45	½			+	690	Compression
		i_Z	38 48	1			-	6°2	H 10 37 13
		i_Z	39 04	1			-		Nos.433 & 434 felt
		iS_{nZ}	39 58	1			+		in Southern Queens-
		i_{NEZ}	40 00	1½	+3	-4	+		land & Northern New
		iS^*_{NE}	40 08	1½	+5	+1			South Wales. Vert-
		M_E	40 36	5		2			ical readings, except
		M_Z	40 39	5			3		M, from Sprengnether.
		M_N	40 41	5	4				
435	19	i_Z	16 00 43	2			-		Dil.Sprengnether
		e_E	05 22						
		e_{LE}	08.3	27					
		M_{NEZ}	11.3	11	6	8	3		

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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
	1954								
436	Sept.19	iZ	16 08 29	2			+		Comp.Sprengnether
		iZ	09 39	1½			+		"
		iN	13 49	5	+13				
		iZ	14 21	5			+11		
437	19	iZ	16 23 52	1½			+		Comp.Sprengnether
438	20	iP_Z	00 47 33	2			+3	4790	Compression
		iZ	47 38	5			+7	43°1	H 00 39 29
		iZ	47 53	4			+7		
		iPP_Z	49 11	4			+6		
		$iPcP_Z$	49 23	1½			-		PcP Sprengnether
		$iSNE$	54 00	6	-10	-10			
		iN	54 15	7	+9				
		iZ	54 34	4			+7		
		iN	55 03	5	-6				
		$iSSNE$	57 05	8	+6	+9			
		iE	57 17	6		+8			
		iN	57 20	7	-7				
		$iScSNE$	57 32	5	+4	-10			
		eLQ_E	57.8	19					
		iN	57 55	4	+6				
		iN	58 03	4	+4				
		eN	58 14	16					
		eL_E	01 00.7	30					
		MNE	03.3	20	24	27			
		MZ	06.7	16			16		
439	20	$(iP)_Z$	08 11 13	4			+4		
440	20	$(iP)_Z$	17 11 09	1½			+		Large microseisms.
		$i(S)N$	15 10	3	+4				Comp.Sprengnether
441	21	iP_Z	03 47 33	2			+4	4450	Large microseisms.
		iN	50 53	3	+5			40°0	Compression
		iS_E	53 26	4		-7			h 0.02
		iN	53 28	6	+6				H 03 40 12
		iSS_Z	56 26	4			+7		
		$i(SS)_N$	56 33	4	+9				
		iE	56 37	4		+6			
		$iScSNE$	57 23	2	+4	+5			
		iE	58 26	3		+4			
		iN	58 28	3	-5				
442	21	$i(S)_N$	06 04 41	5	+4				
		eL_E	06.6	19					Obscured by large
		MNE	08.1	12	6	6			microseisms.
443	21	eN	14 38 34						
		$e(S)_E$	40 31						Masked by large
		eL_N	41.7	20					microseisms.
		MN	43.8	16	3				
		iN	44 19	5	+6				
		iE	44 53	4		+4			
444	21	iP_Z	14 52 31	3			+5		Compression
		iN	56 56	4	+3				Large microseisms
		iN	57 25	5	+8				present.
		eL_N	57.8	19					
		MN	59.7	16	4				
		ME	15 00.8	13		4			
445	23	ePZ	21 56 02					9200	H 21 43 35
		$iSNE$	22 06 20	4	-3	-5		82°8	
		iE	06 29	5		-6			
		$iScSE$	06 35	5		+13			
		iN	06 44	5	-3				
		iN	06 53	5	-3				
		iE	07 05	6		-2			
		iN	07 18	5	-3				
		iN	11 32	7	-4				
		iSS_N	11 44	6	+5				
		iN	12 00	6	-3				
		iN	12 23	5	-1				
		iN	12 33	5	-2				
		eLQ_E	17.8	27					
		ME	29.3	17		3			
		MN	31.1	19	5				
		MZ	37.5	19			5		

1954, September
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
446	Sep.24	i_Z	04 35 22	3			+1		
		e_{NE}	38 25						
		eL_E	41.9						
448	25	iP_{NEZ}	11 18 25	3	+6	+2	+3	2200	Compression
		ipP_{NZ}	18 35	4	+5		+6	19°8	h 0.00
		iPP_Z	18 45	3			+4		H 11 13 55
		i_Z	18 57	4			+4		
		i_N	19 22	4	+6				
		i_N	21 05	4	-3				
		i_N	21 16	6	+5				
		eS_E	22 01						
		i_E	22 09	8		-13			
		i_Z	22 12	4			+7		
		i_N	22 18	5	-4				
		i_E	22 21	6		-15			
		i_E	22 27	5		+17			
		i_Z	22 30	4			+9		
		i_E	22 33	4		-4			
		i_E	22 55	4		+4			
		eLN_Z	22.9	29					
		i_E	23 03	5		+8			
		M_E	24.5	13		16			
		M_N	26.7	11	15				
		M_Z	27.4	9		12			
449	27	$i(pP)_Z$	16 50 23	6			+5		Masked by micro-seisms.
		$i(S)_N$	59 59	4	+3				
450	28	iP_Z	13 00 36	1½			-	4170	Dil.Sprengnether
		i_E	01 46	4		+3		37°5	h 0.00
		iPP_Z	02 01	6			+7		H 12 53 24
		eS_E	06 22						
		$e(SS)_N$	08 50	16					
		eLQ_N	09.1	25					
		$iScS_{NE}$	10 44	4	-5	-4			
		eLR_E	11.2	22					
		M_N	13.9	14	7				
	M	M_Z	14.6	16			8		
		M_E	14.9	16		7			
452	29	$i(P)_Z$	15 14 39	4			+3		Compression
		eL_E	20.8	24					
		M_E	22.7	10		2			
		M_N	24.5	16	3				
453	30	i_N	17 19 17	5	+3				
		i_N	20 07	6	+2				
		i_E	20 12	5		+6			
		i_N	20 16	6	+6				
		eL_{NE}	20.7	18					
		i_{NE}	22 45	5	-4	-6			
		M_{NZ}	23.2	11	3		4		

Minor activity: 4d 11.2h; 9d 04.1h; 12d 17.4h; 16d 09.6h; 17d 15.2h; 18d 06.4h; 25d 07.1h; 29d 08.7h.

T.N.BURKE-GAFFNEY, S.J.
Director.

P.F.RHEINBERGER.

1954, 4th Quarter.

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)
5. Sprengnether Vertical.

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1	195	7.5	5.5	0.005	4	11.7	12.1	+0.02	560
	3									
E	1	234	6.8	4.6	0.011	4	12.3	12.2	+0.08	490
	3									
Z	2					4	10.9	10.6	+0.1	460
						5	1.6	1.6		

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h. m. s.	s.	μ	μ	μ	km.	
454	Oct. 1	iP_Z	03 01 15	2			+5	3050	Compression
		ipP_Z	01 24	3			+6	27?4	h 0.00
		iNE	01 27	4	+8	+5			H 02 55 31
		$iNEZ$	01 36	6	-16	-13	+31		
		$iPPNEZ$	02 06	6	+16	+10	-14		
		iZ	02 10	6			+24		
		$iPPPN$	02 17	6	+11				
		$iPPPZ$	02 20	6			+24		
		iE	03 07	6		+10			
		iE	03 46	6		-12			
		iN	04 42	9	+16				
		iE	05 08	6		+16			
		iZ	05 36	6			+18		
		iE	05 49	6		-12			
		iS_N	05 52	13	-37				
		iE	05 58	7		-15			
		iNE	06 16	7	-58	-56			
		iZ	06 24	6			+32		
		iZ	06 35	6			+40		
		iE	06 36	7		-47			
		iN	06 37	7	+40				
		iZ	06 46	6			+29		
		iE	06 51	7		+37			
		iZ	07 02	6			-30		
		iE	07 08	7		+45			
		iSS_N	07 11	13	-43				
		$iSSS_Z$	07 27	8			+22		
		iZ	07 38	9			+51		
		iN	07 41	9	+70				
		iE	08 00	7		-39			
		eL_N	08.2	17					
		iE	08 19	10		-29			
		iEZ	08 36	8		-45	-40		
		MN	10.7	15	70ca				
		iE	12 28	5		-43			
		iE	12 42	6		+38			
		ME	13.1	12		58			
		MZ	13.2	14			53		
455	1	$i(P)_Z$	06 24 04	1			-		Dil.Sprengnether.
		eL_E	29.1	20					
456	1	$e(Pn)_Z$	06 38 17	1					From Sprengnether
457	1	$e(Pn)_Z$	06 40 34	1					From Sprengnether
		$i(Sn)_Z$	41 12	1					" "

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
458	Oct. 1	iP_Z	06 57 38	2			+2	4110	Compression
		eS_E	07 03 24	8				37°0	Surface focus
		eLQ_N	06.0	19					H 06 50 25
		$eSSS_Z$	06 27	13					
		$iScS_N$	07 51	5	-2				
		eLR_E	08.3	25					
		MN	11.4	12	3				
		MEZ	11.5	17		4	5		
459	2	$(iPcP)_Z$	10 11 12	1			+		Comp.Sprengnether
460	3	iP_{NEZ}	02 53 03	3	-4	-3	+8	3130	Compression
		i_{NEZ}	53 06	3	+7	+5	-14	28°2	h 0.00
		i_{NEZ}	53 11	3	-5	-4	+10		H 02 47 11
		ipP_Z	53 15	4			+21		
		i_{NE}	53 19	4	+8	+6			
		i_Z	53 41	4			+17		
		iPP_E	53 55	?					
		i_Z	53 58	7			+19		
		i_E	54 39	8		+15			
		i_Z	54 40	6			-21		
		i_E	54 52	8		+17			
		i_Z	55 07	6			-16		
		i_Z	55 25	4			+16		
		i_N	56 04	6	-18				
		$iPcP_Z$	56 15	5			+20		
		i_N	56 24	6	+24				
		i_Z	56 27	7			+25		
		i_N	57 20	5	+10				
		i_Z	57 31	6			-23		
		iS_E	57 45	8		+19			
		i_N	57 50	7	-37				
		i_{NE}	57 56	9	+77	+87			
		i_N	58 11	6	+28				
		i_E	58 15	7		+78			
		i_N	58 20	6	+33				
		i_Z	58 23	5			+31		
		i_E	58 24	7		-88			
		i_E	58 44	9		-80			
		i_E	58 50	7		+64			
		i_N	58 58	7	-55				
		i_E	59 03	7		+86			
		iSS_N	59 10	8	+100ca				
		i_{NE}	59 18	8	-250	+120			
		$iSSS_Z$	59 30	7			+54		
		i_E	59 46	10		-155			
		eLR_N	03 00.4	20					
		MZ	00.9	20			150		
		MN	01.5	16	210ca				
		ME	02.6	15		150			
		eW_{2E}	05 42.6	22					
62	3	iP_Z	09 03 39	1			+		Comp.Sprengnether
63	3	iP_Z	11 32 34	1½			+		Comp.Sprengnether
		iPP_Z	37 27	5			+3		
		$iSKS_{NE}$	43 29	5	-4	-2			
		i_N	43 58	6	+5				
		$i(S)_E$	44 53	6		-5			
		$i(S)_N$	44 55	7	-6				
		i_N	45 15	7	+4				
		i_E	45 16	7		+9			
		i_E	45 31	6		+6			
		iSS_{NE}	52 02	7	+6	-3			
		i_{NE}	52 11	7	-4	+9			
		i_N	52 29	7	-3				
		i_N	52 44	8	+6				
		i_E	53 10	8		+6			
		eLQ_E	12 02.3	43					
		MN	14.8	21	5				
		ME	17.1	22		3			
		eW_{2N}	13 26.7	24					

1954, October.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
464	Oct. 3	iP_Z	23 29 16	3			+3	4150	Compression
		iPP_Z	30 43	3			+	37°3	Sprengnether
		i_Z	31 22	1½			+		"
		i_Z	34 23	2			-		"
		iS_N	35 04	6	+5				H 23 22 00
		i_E	35 07	5	-4				
		iSS_E	37 36	6		-3			
		eL_E	41.0	24					
		MN	46.2	18	10				
		ME	46.7	16		9			
		MZ	46.8	18			13		
466	4	iP_Z	19 38 38	1½			+	2990	Comp.Sprengnether
		i_{NEZ}	38 41	4	+3	+3	-7	26°9	H 19 32 54
		i_Z	38 56	4			-4		
		i_Z	39 13	4			+5		
		i_Z	39 29	4			-2		
		i_E	41 29	4		+4			
		i_Z	41 32	4					
		i_N	41 40	4	-4				
		eS_E	43 14						
		i_N	43 28	5	+6				
		i_E	43 39	5		-5			
		i_N	43 42	4	+6				
		i_E	44 07	6		+8			
		eLQ_E	44.2	25					
		i_N	44 37	8	+15				
		i_N	44 59	9	+23				
		eLR_N	45.6	19					
		MNE	48.8	12	18	13			
		MZ	50.8	15			8		
467	4	iP_Z	15 58 44	3			-2	2970	Dilatation
		i_Z	58 49	3			+4	26°7	h 0.005
		isP_{NEZ}	59 02	4	+3	+4	-4		H 15 53 09
		i_{NZ}	59 11	3	+3		-3		
		iPP_Z	59 30	3			+3		
		$iPPP_{EZ}$	59 43	3		+2	+3		
		iS_N	16 03 13	6	+3				
		isS_N	03 40	7	+6				
		$i(SS)_N$	04 22	6	-3				
		eL_E	05.4	21					
		MN	06.9	15	2				
468	4	iP_Z	22 44 11	2			-	2310	Dil.Sprengnether
		eS_N	47 59	4				20°8	H 22 39 26
		MN	51.9	13	1				
469	5	iP_Z	04 29 15	4			+3		Compression
		i_Z	29 35	4			-2		
		eL_E	50.7	24					
		MN	55.2	19	1				
470	7	iP_Z	07 21 44	2			-		Dil.Sprengnether
		i_Z	21 56	1½			-		"
472	7	iP_{NZ}	19 23 22	3	-4		+3	2600	Compression
		i_Z	23 28	4			+10	23°4	H 19 18 11
		i_Z	23 32	4			-14		
		i_Z	23 48	4			+5		
		iPP_Z	23 54	4			+5		
		i_N	23 57	4	+7				
		i_Z	24 33	4					
		eS_N	27 32	5					
		iS_N	27 35	9	+31				
		i_{EZ}	27 39	5		+4	+7		
		i_N	27 40	7	-61				
		i_E	27 46	9		+17			
		i_N	27 59	8	+25				
		i_N	28 11	6	+13				
		eL_Z	29.7	27					
		ME	32.3	12		36			
		MNZ	32.8	13	33		28		

1954, October,
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					AN	AE	AZ		
	1954		h m s	s	μ	μ	μ	km.	
473	Oct. 9	$(iP)_Z$	01 54 14	2			+		Comp.Sprengnether
474	9	eS_{NE}	19 25 48	9					Masked by micro-seisms.
		eN	28 36	9					
		eL_E	30.2	24					
		MEZ	32.9	18		3	2		
		MN	34.0	12	3				
476	11	iP_{NZ}	17 16 04	3	+2		-2	2480	Dilatation
		i_Z	16 23	4			-6	22:3	h 0.02
		iPP_Z	16 39	1			+		H 17 11 19
		iS_{NE}	19 54	4	-7	+3			PP from Spreng-nether.
		i_N	20 00	5	+20				
		i_N	20 13	5	-4				
		i_E	20 25	5		-7			
		isS_N	20 49	6	-5				
478	13	i_E	01 13 27	4		-3			Masked by micro-seisms.
		$i(S)_E$	17 13	4		+2			
		eL_N	18.9	19					
		i_N	20 21	5	-4				
		MN	20.7	14	3				
		ME	21.2	15		1			
480	14	iP_Z	01 41 50	$1\frac{1}{2}$			+	3790	Comp.Sprengnether
		iP_{NEZ}	41 52	3	-3	+3	+2	34:1	h 0.00
		ipP_Z	42 04	$1\frac{1}{2}$			+		H 01 35 06
		i_{NEZ}	42 08	4	+4	-5	-5		pP from Spreng-nether.
		iPP_N	43 05	4	+2				
		iPP_{EZ}	43 08	4		+4	+4		
		$iPcP_Z$	44 27	4			+5		
		iS_E	47 13	6		-5			
		iS_N	47 15	7	-6				
		i_E	47 37	7		+6			
		i_N	48 05	6	+5				
		iSS_E	49 21	4		+4			
		i_N	50 03	7	+13				
		i_E	50 09	4		-5			
		i_N	50 41	6	+16				
		i_E	51 02	5		+13			
		i_N	51 19	7	-23				
		i_E	52 14	5		+23			
		i_N	52 15	5	+16				
		i_N	52 22	4	+13				
		i_{NE}	53 09	6	-52	-59			
		MNE	53.7	8	48	41			
		MZ	57.0	11			39		
481	19	$(iP)_Z$	05 26 05	1			+		Comp.Sprengnether
		$e(S)_{NE}$	29 26						Masked by large microseisms.
		i_E	29 32	4		-6			
		i_E	29 59	4		-7			
		i_N	30 04	6	+7				
		$i(PcP)_N$	30 36	4	+8				
		TZ	42.4	$\frac{1}{2}$					
482	21	iP_Z	00 19 46	2			-	6290	Dil.Sprengnether
		ipP_Z	19 56	2			-	56:6	" "
		iS_E	27 34	10		+19			h 0.00
		iS_N	27 37	10	+21				H 00 10 04
		i_N	27 48	7	-24				
		isS_E	27 52	10		+39			
		i_E	30 20	7					
		i_N	31 08	8					
		iSS_E	31 22	12		-12			
		eL_N	34.1	32					
		eL_Z	36.5	28					
		MN	38.0	21	61				
		ME	39.7	17		70			
		MZ	40.3	17			48		
		i_N	44 06	7	+28				
		eW_2	02 42	21					

1954, October.
RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
483	Oct.21	eE	07 18 14						
		eE	22 15						
		eLRE	48.0	24					
484	23	iPZ	03 30 45	2			+4		Compression
		eLE	34.3	15					
		MNE	35.7	12	3	4			
		MZ	36.4	12			4		
		TZ	49.2	½					
487	24	i(P)Z	10 35 55	2					
490	27	ePSN	22 15 43						
		eLN	30.4	22					
491	29	iPNEZ	11 13 54	4	-6	-10	+11	2320	Compression
		iZ	13 59	4			-13	20°9	h 0.00
		iN	14 00	4	+7				H 11 09 12
		ipPN	14 04	4	-4				
		iPPNE	14 18	4	-4	-4			
		iZ	14 22	4			-7		
		iN	14 38	4	+5				
		iN	15 10	4	+6				
		iSNE	17 40	6	+3	+6			
		iZ	17 44	4			+6		
		iN	17 49	4	+6				
		iZ	17 50	6			+16		
		isSE	17 53	6		+16			
		iE	18 07	4		+12			
		iSSZ	18 13	6			-9		
		iSSNE	18 16	6	+3	+6			
		eLRN	19.0	15					
		MZ	20.2	18			11		
		ME	20.9	17		10			
		MN	22.1	12	13				
492	30	iPZ	18 32 23	1			+1	2670	Compression
		iSN	36 38	5	+3			24°0	H 18 27 06
		iN	36 47	6	+4				
		iE	36 54	5		+3			
		iSSN	37 29	5	+4				
		iSSE	37 32	8		+4			
493	31	i(P)Z	00 04 09	4			+2		Compression
		i(S)N	09 34	5	+3				
		iN	10 29	4	+3				
		eLN	13.5	20					
		MN	17.1	15	1				
		MEZ	17.6	13		1	1		
496	31	iPZ	23 17 55	2			-1	2620	Dilatation
		iNEZ	17 58	3	-3	-1	+4	23°6	H 23 12 42
		iNEZ	18 07	4	-7	-11	+15		
		iNE	18 16	4	+5	+4			
		iZ	18 17	4			+11		
		iZ	18 22	3			+8		
		iNE	18 23	5	+7	+10			
		iZ	18 31	5			-8		
		iNE	18 40	6	+11	+12			
		iZ	18 43	7			+28		
		iN	18 54	7	-6				
		iZ	19 11	4			+7		
		iN	19 20	6	-9				
		iE	19 23	6		+7			
		iSNE	22 07	6	-11*	-10*			*From Wiechert
		iN	22 14	5	+7*				
		iN	23 16	6	-2*				
		eLRE	23.8	24					
		ME	27.1	14		15			
		MN	29.4	11	14				
497	31	iPZ	23 38 54	1			-		Dil.Sprengnether
		iZ	38 56	1			+		Comp. "

Minor activity: 3d 07.2h; 4d 02.1h; 7d 08.6h; 10d 12.0h; 12d 21.8h; 23d 08.5h; 24d 10.2h; 25d 16.7h; 27d 10.8h; 31d 11.4h, 12.5h.

1954, November.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
498	Nov. 2	iP_{NEZ}	08 31 43	4	-6	+5	+12	4380	Compression
		i_{NE}	31 49	5	+6	-9		39°4	H 08 24 10
		i_Z	31 51	4			+21		
		i_{NEZ}	32 01	4	-8	+13	+18		
		iPP_{EZ}	33 14	5		+11	+21		
		iPP_N	33 15	5	-9				
		i_{NEZ}	33 20	5	+19	-25	-28		
		i_{EZ}	33 29	5		+11	-15		
		$iPPP_{NEZ}$	33 41	6	+17	-24	-24		
		i_N	33 55	4	+13				
		iS_N	37 41	6	-14				
		iS_E	37 45	7		+9			
		i_N	37 48	5	+17				
		i_E	37 51	7		+31			
		i_E	38 03	7		+27			
		i_N	38 10	5	+13				
		eNZ	38.3	28					
		i_E	38 26	8		-50			
		i_E	40 10	9		+34			
		iSS_N	40 28	8	-24				
		i_E	40 37	6		-45			
		i_Z	40 40	6			+30		
		i_N	40 41	7	-35				
		eLQ_E	40.7	24					
		i_N	41 10	7	+21				
		eL_N	42.9	36					
		eL_E	43.8	37					
		MZ	47.6	23			155		
		MNE	49.9	17	120	100			
499	2	$i(P)_Z$	09 25 20	1½			-		Dil.Sprengnether
500	2	$i(P)_Z$	10 34 29	2			+4		Compression
501	2	$i(P)_Z$	13 29 16	2			-		Dil.Sprengnether.
		eL_E	39.4	18					
502	2	$i(P)_Z$	13 37 10	2			+3		Compression
		i_Z	37 19	3			+3		
		i_Z	38 25	4			-6		
503	2	i_Z	17 25 47	½					Sprengnether.Local?
507	7	$iPPP_Z$	05 26 17	1½			+		Sprengnether.
		$e(SS)_N$	31 39						
		eL_E	33.3	25					
		MZ	34.9	19			11		
		ME	35.3	17		8			
		MN	35.5	13	6				
509	8	Pn_Z	04 48 58	½					Pn Sprengnether
		$(Sn)_Z$	49 10	½					"
510	8	$(Pn)_Z$	05 08 09	½					"
513	8	$e(S)_N$	23 58 09						
		eL_E	24 00.9	21					
		MN	02.5	16	5				
		ME	02.9	18		5			
		MZ	03.7	16			5		
516	11	Pn_Z	02 29 16	½					Sprengnether
		$(Sn)_Z$	29 26	½					"
517	11	$i(PKP)_Z$	05 33 03	1½			-		Dil.Sprengnether
		eL_N	58.5	24					
518	11	$(P)_Z$	20 39 11						
		eE	43 13						
		eL_N	45.0	19					
		$MNEZ$	48.0	16	1	1	2		
519	12	iPn_Z	04 34 31	½			-		Dil.Sprengnether
		i_Z	34 41	½			+		Comp. "
		MZ	34 50	1					"

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
521	Nov.12	$(i)_{EZ}$	12 43 39	3		+3	+3		Compression
		$i(PKP)_Z$	45 11	1½			+		Comp.Sprengnether
		$e(PS)_E$	55 22						
		i_N	56 00	4	+3				
		$e(SS)_E$	13 01 18	16					
		eLQ_N	12.6	30					
		eLR_{EZ}	17.5	28					
		MEZ	26.4	17		2	2		
		MN	28.7	16	2				
		eW_2E	14 40	21					
522	12	$iPPP_E$	21 57 42	4		-4			Masked by large microseisms.
		eS_E	22 01 44						
		eLQ_N	04.6	25					
		eLR_{EZ}	06.6	26					
		ME	08.6	18		5			
		MZ	09.2	16			6		
		MN	09.3	13	3				
523	13	$e(P)_Z$	18 36 23						
		$e(S)_E$	47 11	10					
		$e(S)_N$	47 13	10					
		$e(PS)_N$	48 08	15					
		eE	48 13	22					
		eLR_N	19 04.1	30					
525	14	iP_Z	18 31 33	1½			+	3440	Comp.Sprengnether
		iPP_Z	33 01	4			-4	30°9	h 0.07
		iS_N	36 03	5	+5				H 18 25 55
		iS_E	36 07	5		+6			
		$iScS_N$	41 10	4	+5				
526	15	iPn_Z	01 38 49	½½½			-		Dil.Sprengnether
		$i(Sn)_Z$	39 06	½½½			+		"
527	15	$(Pn)_Z$	01 40 24	½½½					"
		$i(Sn)_Z$	40 42	1			+		"
528	15	iP_NZ	16 35 39	3	-3		-10	5890ca	Dilatation
		ipP_Z	36 20	3			+4	53°ca.	h 200 km.,
		$iPcP_Z$	36 43	2			+4		(from Gutenberg's
		isP_Z	36 46	3			+5		Tables)
		iPP_N	37 47	3	+3				
		$isPP_NZ$	38 46	4	+3		-4		
		$iPPP_Z$	38 53	4			+4		
		i_N	38 56	4	-3				
		$i(sS)_E$	44 04	5		-3			
		eL_E	49.7	28					
		MNEZ	57.2	16	2	3	3		
530	17	iP_Z	17 26 42	3			-2		Dilatation
		iS_N	33 27	5	+3				Deep focus.
531	18	Pn_Z	03 04 25	½					Readings from
		i_Z	04 34	½			+		Sprengnether
		i_Z	04 44	1			+		
532	18	$(Pn)_Z$	03 09 20	½					Readings from
		i_Z	09 28	½			+		Sprengnether
533	18	iP_Z	05 12 06	1			-		Dil.Sprengnether
534	18	iP_Z	05 32 17	4			+3	9210	Compression
		ipP_Z	32 31	4			+3	82°9	h 0.00 ca.
		iS_E	42 32	7		-2			H 05 19 54
		iS_N	42 33	5	-3				
		eSS_N	48 12	20					
		eLQ_E	54.3	35					
		MZ	06 03.4	22			4		
		MN	03.6	21	4				
		ME	04.7	22		2			
536	18	$(iP)_Z$	20 56 24	1½			+		Comp.Sprengnether
		$iPcP_Z$	56 43	3			+2		
		iS_E	21 05 50	5		-2			
		eN	05 53	5					
		iE	06 12	5		+2			
		eL_E	17.7	22					

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
537	Nov.19	iPNZ	06 06 58	3	-1		+7	8550	Compression
		iPPZ	09 50	3			+3	76°9	h 0.08
		iS_E	16 02	5		+8			H 05 56 00
		iNE	16 28	4	+3	+3			
		i_N	16 39	4	-1				
		i_N	16 56	4	-1				
		isS_E	19 24	6		-3			
		i_N	19 39	5	-2				
		i_N	19 59	7	+5				
		eNE	20 05	18					
		eSS_N	21 12	11					
538	21	$i(P)_Z$	07 43 19	2			-		Dil.Sprengnether
		eL_N	51.0	20					
		MEZ	53.2	17		35	37		
		MN	53.6	15	24				
539	22	iP_Z	18 45 44	1			+		Comp.Sprengnether
		eS_E	49 59						Deep focus. Masked
		i_E	53 09	7		-4			by microseisms.
540	23	$i(P)_Z$	00 34 59	1½			+		Comp.Sprengnether
541	23	$(iP)_Z$	02 43 08	1½			+		Comp.Sprengnether
545	24	iPNEZ	00 38 30	2	+3	+4	-5	2450	Dilatation
		ipPZ	38 40	1½			+	22°0	Comp.Sprengnether
		iS_E	42 26	4		+5			h 0.00,
		i_N	42 31	6	+14				H 00 33 38
		$iPcP_Z$	42 32	4			+7		
		i_E	42 35	7		+7			
		i_N	42 40	6	+8				
		$iSSS_N$	43 20	4	+4				
		eLR_E	44.0	22					
		MZ	46.1	16			4		
		MNE	46.6	14	5	4			
546	24	iP_Z	14 10 37	1½			+	2470	Comp.Sprengnether.
		i_Z	10 40	4			+6	22°2	H 14 05 38
		iPP_E	10 59	7		+5			
		iS_{NEZ}	14 37	5	+7	-5	+7		
		iSS_N	15 13	6	+4				
		eLR_E	16.0	22					
		MNE	18.3	15	3	4			
		MZ	19.3	16			4		
548	25	eZ	11 34 43					11,800ca	
		iPP_{NEZ}	35 16	5	-3	-4	+9	106°ca	
		$iSKS_{NE}$	41 36	6	-3	-3			
		i_{NE}	41 44	5	+3	+4			
		e_N	42 15						
		$i(SKKS)_E$	42 18	5		+3			
		$e(S)_N$	42 52	15					
		i_E	43 07	5		+6			
		iPS_E	44 35	7		+6			
		iPS_{NZ}	44 38	7	-6		+6		
		eNE	44 43	20					
		$iPPS_{NE}$	45 40	8	+5	+10			
		i_N	46 26	7	+5				
		iSS_E	50 25	6		+4			
		iSS_N	50 28	9	+23				
		i_E	50 31	8		+13			
		i_N	50 47	9	+15				
		i_E	50 49	15		-65			
		i_N	51 16	10	+10				
		i_E	51 58	9		-7			
		i_N	52 19	9	-5				
		iNE	52 33	9	-10	-12			
		i_E	54 02	9		+10			
		$i(SSS)_N$	54 33	13	+9				
		i_N	56 27	8	+8				
		i_N	57 12	8	-10				
		eLQ_N	12 00.5	40					
		eLR_{NEZ}	05.4	33					
		MNE	14.8	16	24	31			
		MZ	17.0	18			53		

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No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude AN μ	AE μ	AZ μ	Δ km.	Remarks
	1954								
550	Nov.25	iP_{NEZ}	21 38 46	3	+1	+3	-7	3060	Dilatation
		$i(PP)_{NEZ}$	40 28	4	+2	+4	-4	27°5	h 0.09
		$iPcP_{EZ}$	41 41	6		+11	-12		H 21 33 45
		iS_{NEZ}	42 47	4	-7	+12	+5		
		i_N	42 50	5	+21				
		i_N	43 07	5	+7				
		$i(SS)_N$	45 56	7	+21				
		$i(SS)_E$	46 02	7		+17			
		i_N	46 14	7	-16				
		$iScS_N$	48 18	5	-25				
		$iScS_E$	48 20	4		+28			
552	26	$e(S)_E$	07 48 03						
		eL_{NZ}	49.7	20					
		MNE	51.3	10	1	2			
553	27	$e(PP)_{EZ}$	11 58 52						
		eL_N	12 04.3	18					
		MN	08.2	13	2				
		MEZ	08.9	14		2	2		
557	30	$i(P)_Z$	00 18 35	1½			-		Dil.Sprengnether
558	30	$i(S)_N$	04 20 40	4	+3				
		eL_N	23.3	16					

Minor activity: 3d 09.1h; 4d 19.4h; 6d 13.7h; 8d 02.8h, 05.3h, 17.0; 9d 17.4h; 10d 15.2h; 12d 10.7h; 14d 02.5h; 15d 23.0h; 18d 16.9h; 23d 06.7h, 10.8h, 21.8h; 24d 23.8h; 25d 21.3h; 26d 08.2h; 27d 15.8h, 17.2h; 28d 22.8h; 30d 23.7h.

561	Dec.4	iP_Z	07 06 36	4			-2	3160	Dilatation
		i_N	06 39	4	-2			28°4	h 0.00
		ipP_Z	06 47	4			+4		H 07 00 43
		iPP_{NZ}	07 28	4	-4		+5		
		i_Z	07 43	4			-4		
		i_N	08 00	4	+5				
		i_N	08 30	5	-3				
		i_Z	08 48	4			-6		
		i_N	08 55	6	-5				
		iS_{NZ}	11 19		-14		-5		T_N=7s, T_Z=4s
		i_E	11 22	8		+8			
		iEZ	11 35			+16	+6		T_E=7s, T_Z=4s.
		i_N	11 43	10	+45				
		i_{NE}	11 51		-55	+7			T_N=10s, T_E=7s.
		i_Z	11 56	5			+13		
		i_N	12 05	9	+34				
		i_N	12 17	9	-33				
		i_N	12 26	9	+25				
		i_E	12 32	8		-11			
		i_N	13 01	7	-9				
		eL_E	13.3	35					
		i_Z	13 21	5			-6		
		i_N	13 54	8	+18				
		eL_N	14.1	33					
		i_N	14 20	6	+25				
		MZ	17.2	19			54		
		MNE	17.7		53	60			TN=19s, T_E=13s.
562	4	$iPKP_Z$	18 50 39	4			+5	15,900ca	Compression
		i_Z	50 56	4			+4	143°ca	h 0.00
		i_E	51 27	3		+2			H 18 31.2
		$iPKS_Z$	54 18	3			+4		
		$e(SKS)_N$	57 39						
		$iPcPPKP_{NE}$	58 59	2	+2	-1			
		$iSKKS_E$	19 00 42	4		+3			
		e_E	04 18	12					
		eSS_{NE}	12 31	18					
		$eSSS_E$	17 59	24					
		eLR_E	40.0	30					
		ME	48.7	22		2			
		MN	20 00.1	24	3				
		MZ	01.8	24			5		

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
563	Dec. 6	ePN_Z	02 57 57					3370	H 02 51 42
		$ePPN_Z$	58 58					30°3	
		i_N	59 02	4	+4				
		$ePPPZ$	59 12						
		iS_N	03 02 57	4	+4				
		i_N	03 02	9	-				
		e_N	03 17	21					
		iSS_E	04 42	10		+11			
		eLQ_E	04.9	31					
		i_E	05 27	9		+13			
		eLR_N	06.3	28					
		eL_Z	06.5	37					
		MNZ	09.1	19	23		22		
		ME	11.3	13		29			
565	6	$e(P)_{EZ}$	22 19 16						
		e_E	24 24						
		e_N	25 28						
		eL_E	27.0	21					
		MN	29.8	14	1				
		MEZ	30.2	16		3	2		
566	6	iP_Z	23 51 32	2			-2	2950	Dilatation
		i_{NEZ}	51 35	2	-1	-1	+4	26°5	H 23 45 51
		$i(pP)_Z$	51 43	1½			-		Dil.Sprengnether
		ePP_N	52 14						
		$ePPP_N$	52 26						
		eS_N	56 05						
		i_N	56 19	7	-3				
		e_N	56 32	21					
		iSS_E	57 15	5		+3			
		eL_Z	58.9	24					
		MN	24 00.0	16	3				
		MEZ	03.1	14		2	2		
568	7	$iPNEZ$	14 56 39	4	-2	+2	+5	4940	Compression
		i_{NZ}	56 43	4	+3		+7	44°5	h 25km.
		eS_E	15 03 10						H 14 48 24
		i_E	03 20	4		-3			(from Gutenberg's
		i_N	03 23	4	-3				Tables)
		iSS_N	06 41	6	+9				
		MN	13.8	19	3				
		ME	15.7	20		4			
571	10	e_Z	00 40 29	4					
		eL_N	48.2	18					
573	10	$(PKP)_{EZ}$	13 19 40						
		$e(SS)_N$	39 32	15					
		eLQ_N	55.5	30					
		eLR_E	14 01.8	24					
		MEZ	16.8	16		1	1		
574	10	$e(S)_N$	22 26 51						
		eL_E	29.3	19					
		MN	31.5	16	1				
		ME	31.8	12		1			
575	11	e_N	03 59 21						
		e_N	04 06 46						
		eL_N	42.0	24					
		MN	49.8	18					
577	11	$iPKP_Z$	13 17 13	4			+2	17,900 ca.	Compression
		ePP_N	21 40					161° ca.	
		i_Z	21 46	4			+2		
		e_E	24 56						
		$iPPP_N$	25 27	4	-1				
		$iSKKKS_N$	29 13	6	-2				
		eSS_E	41 56	18					
		$eSSS_E$	47 53	23					
		e_N	48 24	24					
		eLQ_E	14 03.7	40					
		eLR_N	12.4	37					
		MZ	18.9	28			5		
		MNE	23.1	25	5	3			

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No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1954		h m s	s	μ	μ	μ	km.	
578	Dec.12	iP_Z	10 45 33	4			+3		Compression
		$e(S)_N$	50 33						
		eL_{EZ}	52.1	23					
		MN	53.6	16	3				
		MEZ	54.0	18		3	5		
580	12	$(iP)_Z$	23 57 18	1½			+		Comp.Sprengnether
		eL_E	24 04.5	19					Masked by heavy
		MZ	07.1	16			3		microseisms.
		MN	07.4	13	2				
		ME	07.5	17		2			
581	13	iP_Z	22 46 43	1½			+	4600	Comp.Sprengnether
		iPP_Z	48 24	1½			+	41°4	" "
		$iPcP_Z$	48 52	1½			+		" "
		iS_N	52 58	5	+2				H 22 38 53
		i_N	54 45	4	+2				
		iN	56 26	6	+2				
		eL_E	56.5	20					
		ME	23 03.5	22		3			
584	14	iPn_Z	16 11 48	½			+	290	Comp.Sprengnether
		iSn_Z	12 21	½			+	2°6	Sprengn. H 16 11 04
585	16	iP_{EZ}	07 04 23	4		-2	+4	3510	Compression
		iPP_{EZ}	05 27	5		-3	+5	31°6	H 06 57 56
		$iPPP_E$	05 44	6		+5			
		i_E	05 54	6		-6			
		iS_N	09 32	5	-4				
		i_E	09 46	4		+3			
		eLQ_N	11.0	16					
		eSS_E	11 18	9					
		eSS_N	11 21	9					
		e_E	12.2	20					
		eLR_{EZ}	12.9	25					
		MN	14.7	15	11				
		MEZ	15.1	19		12	9		
587	16	i_Z	11 25 26	4			+2	12,340 ca.	Compression
		iPP_Z	26 35	6			+10	111°ca.	
		iPP_{NE}	26 36	6	-3	-5			
		$iPPP_Z$	28 51	6			-4		
		$eSKS_E$	32 25						
		i_E	33 35	7		+4			
		i_N	33 40	8	-7				
		i_E	34 11	7		-5			
		i_N	34 31	7	-6				
		e_E	34 45						
		i_E	35 12	8		+5			
		i_N	35 14	8	+4				
		i_Z	35 49	6			+6		
		ePS_Z	35 56	13					
		i_E	36 11	11		-21			
		i_Z	36 24	7			+7		
		i_N	36 32	7	-7				
		i_E	36 54	12		+16			
		i_Z	37 20	8			-24		
		i_E	37 21	7		+7			
		e_N	37 50	19					
		i_E	38 02	7		-12			
		iSS_N	42 02	10	+12				
		$iSSP_N$	42 15	10	-13				
		i_N	42 33	10	-16				
		i_{NE}	42 47	10	+17	+27			
		i_E	45 01	12		-17			
		$eSSS_N$	46 15	26					
		i_E	47 18	10		-24			
		eLQ_{NE}	53.3	42					
		G_{NE}	54.3	37	130	100			
		MEZ	12 02.0	22		82	65		
		MN	05.3	19	15				

1954, December.
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
	1954								
594	Dec.18	$e(P)_Z$	15 36 10						
		$e(S)_N$	40 44						
		eL_Z	43.4	22					
		$MNEZ$	45.0	18	1	1	1		
596	19	iPP_Z	10 42 47	4			-2	12,640ca.	Dilatation
		ipP_Z	43 43	4			-2	113°7ca.	h 250 km.
		$i(SKS)_{NE}$	48 23	4	+3	-2			(from Gutenberg's Tables)
		eNE	49 24						
		eSE	50 07	10					
		$esSE$	51 57	10					
		e_N	52 11	11					
		ePS_{NE}	52 31	11					
		$epPS_N$	53 14	10					
		e_E	53 56	15					
		e_N	53 58	15					
		eSS_E	58 13	13					
		$esSS_{NE}$	59 55	13					
		$eSSS_E$	11 02 40	20					
		e_N	05.1	27					
		eL_E	11.1	27					
601	20	e_E	17 43 24						
		e_Z	43 31						
		e_N	49.3						
		eL_Z	51.1	27					
		MN	52.6	16	3				
		ME_Z	53.1	19		4	3		
602	21	$e(S)_{NE}$	08 37 23						
		eL_N	40.7	18					
603	21	iP_Z	12 03 38	4			-2	3410	Dilatation
		i_Z	04 17	5			+3	30°7	H 11 57 19
		i_N	04 48	5	-1				
		$iPPP_Z$	04 50	5			+3		
		iS_E	08 40	7		+4			
		i_N	08 42	7	-7				
		i_N	08 53	6	-3				
		i_N	09 08	7	+6				
		iSS_N	10 25	6	-3				
		i_N	10 38	6	+5				
		i_E	10 55	6		+4			
		eL_E	11.6	31					
		MN	16.4	16	27				
		ME	17.6	14		36			
		MZ	18.1	13			23		
604	21	iP_{NZ}	18 13 41	3	+3		+4	2120	Compression
		ipP_Z	13 51	1½			+	19°1	" Sprengnether
		eS_E	17 09						h 0.00
		eLQ_N	17 15	13					H 18 09 18
		iSS_E	17 35	5		+3			
		MNE	18.8	10	2	3			
		MZ	19.3	11			1		
		TZ	31.8	½					
605	21	iPP_Z	20 15 17	4			-4	12,000ca.	Dilatation
		i_Z	15 25	5			+7	108°Ca.	
		$iSKS_{NE}$	21 32	5	+3	+4			
		i_{NE}	21 45	6	+6	+5			
		i_E	22 12	5		+3			
		i_{NE}	22 23	6	+7	+6			
		iPS_{NE}	24 43	7	+6	+7			
		i_N	24 51	7	-5				
		i_E	24 52	7		-9			
		i_E	25 05	5		+5			
		e_E	26 10	20					
		iSS_N	30 39	13	-8				
		i_E	30 47	13		+10			
		eLQ_N	42.0	27					
		eLR_E	46.3	33					
		MN	55.6	19	10				
		MEZ	59.6	18		17	12		
		MoN	22 00	24					

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_Z	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
606	Dec.22	iP_Z	04 24 15	1			+		Comp.Sprengnether
		i_Z	24 20	1			+		" "
		i_Z	24 39	3			+3		
		i_Z	24 47	4			+4		
		$(eS)_E$	28 59						
		i_N	29 14	4	-1				
		i_N	29 32	5	-3				
		i_E	29 34	5		-3			
		eL_N	32.0	27					
		ME	34.0	14		4			
		MN	34.4	15	3				
609	24	iP_Z	01 01 47	2			+3	2940	Compression
		i_Z	02 13	$1\frac{1}{2}$			-	26°4	Dil.Sprengnether
		i_Z	02 19	$1\frac{1}{2}$			-		" "
		i_{NE}	02 24	3	+2	+2			h 0.01
		i_Z	02 27	2			+3		H 00 56 18
		iPP_N	02 35	4	+3				
		$iPPP_Z$	02 51	3			+4		
		eS_E	06 11	6					
		i_N	06 14	6	-5				
		i_N	06 32	5	+5				
		i_E	07 11	5		+5			
		i_{NZ}	07 18	5	-5	+3			
		i_E	07 24	6		+7			
		iSS_N	07 26	5	+5				
		$iSSS_N$	07 48	5	+5				
		eL_N	07.9	21					
		i_E	07 56	6		-6			
		i_E	08 47	6		-2			
		i_N	09 03	5	-3				
		$iScS_E$	12 30	4		+4			
610	24	$e(S)_E$	02 54 16						
611	24	iPN_Z	11 39 13	3	-1		-2		Dilata tion
		eL_E	43.0	14					
618 & 619	26	$e(P_2)_Z$	03 52 24						
		$e(S_1)_E$	59 59						
		$i(S_2)_{NE}$	04 00 48	5	-1	-2			
		i_E	01 00	4		-2			
		e_N	01 21	8					
		eL_E	11.3	22					
		MN	15.9	19	2				
		ME	16.1	17		1			
		MZ	22.4	18			1		
620	27	$(iP)_E$	05 38 23	2		+3			Masked by heavy microseisms.
		eS_N	42 52						
		e_N	45 47						
621	27	$(iP)_Z$	06 54 26	3			+4		Compression
		e_N	07 04 09						Masked by heavy
		i_N	05 01	4	+6				microseisms.
622	27	$e(S)_N$	14 29 21						Masked by heavy
		eL_N	32.5	27					microseisms.
		MNE	34.6	15	2	2			
623	28	iP_Z	01 06 48	4			+7	3210	Compression
		i_{NZ}	06 52	4	-5		+6	28°9	H 01 00 45
		i_Z	07 48	5			-10		
		i_N	07 49	5	+11				
		i_Z	08 15	5			+11		
		i_N	08 40	5	-9				
		i_Z	08 44	5			-10		
		iS_N	11 38	9	+20				
		i_N	11 50	10	-29				
		i_Z	11 59	9			-19		
		i_N	12 03	9	-68				
		i_N	12 28	9	-41				
		i_N	14 02	10	+38				
		eLR_N	14.3	31					
		MNZ	17.6	17	85ca		70		
		ME	18.0	13		63*			*from Wiechert
		eW_2N	02.3	20					

1954, December.
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SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1954		h m s	s	μ	μ	μ	km.	
624	Dec.28	$i(P)_Z$	01 15 34						Compression
626	28	$e(PP)_N$	07 23 16						Masked by micro-seisms.
		eS_N	27 11						
		$e(SS)_N$	28 36						
		eL_Z	30.8	24					
		MZ	32.2	21			7		
		ME	33.2	14		5 *			*from Wiechert
		MN	34.1	13	6				
627	29	eZ	11 48 11						Masked by heavy microseisms.
		eN	48 20						
		iS_N	51 50	5	-6				
		eL_E	54.1	32					
		ME	58.0	13		26			
		MN	58.6	13	11				
		MZ	12 01.2	15			12		
628	30	$e(SKKS)_N$	11 56 25						
		$e(S)_E$	56 47						
		MN	12 22.6	16	1				
629	31	iP_Z	05 40 00	1½			+	2570	Comp.Sprengnether
		eS_E	44 08					23°1	H 05 34 52
		iZ	44 10	5			-5		
		iE	44 13	5		+7			
		iN	44 14	4	+4				
		eL_E	45.9	25					
		MN	48.3	13	2				
		ME	49.0	15		1			

Minor activity: 3d 09.6h; 6d 18.7h; 7d 12.6h; 9d 08.6h, 12.9h; 10d 10.1h; 11d 12.5h; 12d 17.5h; 14d 02.1h, 06.6h; 16d 10.8h, 15.2h; 17d 06.1h, 10.1h, 13.4h, 13.8h, 20dh; 19d 05.6h, 18.1h; 20d 03.5h, 12.2h, 15.0h; 22d 19.5h; 23d 17.8h; 24d 11.9h, 15.3h, 16.0h; 25d 13.7h, 14.4h, 19.6h; 28d 02.4h.

T.N.BURKE-GAFFNEY,S.J.
Director.

P.F.RHEINBERGER.