No. 1 1928, January.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

$\phi = 33^\circ\ 49'\ 49''$ S. $\lambda = 151^\circ\ 9'\ 30''$ E. $h = 41\ 9$ m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
A_N	(1)	201	8.6	5.4	0.03
	(3)	110	7.9	3.9	0.03
A_E	(1)	209	8.0	5.8	0.03
	(3)	127	9.2	3.3	0.04
A_Z	(2)	84	5.0	2.9	0.08

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
1	Jan. 3	e?	22 56.1						
		eL	23 07.5	16					
		MN_1	09 17	14	2				
		ME_1	09 39	14		2			
		MN_2, ME_2	12 08	16	3	4			
		F	23 55						
2	" 4	iP_Z	21 30 51	2			2		
		eP	31 46	3					
		eS	36 23						
		eL	39.4	?					
		ME_1	42 51	16		27			
		MN_1	43 07	16	30				
		ME_2	44 14	15		56			
		MN_2	45 08	14	23				
		MZ	46 03	14			9		
		ME_3	47 07	12		41			
		MN_3	47 35	12	32				
		ME_4	48 02	11		55			
		MN_4	51 26	11	24				
		F	23 00						
3	" 6	e?	19 50.7						British E.Africa.
		e(PS?)	20 00 54	10					
		e(SR_1?)	07 03	18					
			07 28	18		9			
		e	17.4	24					
		eL	24.2	34					
		MN_1	29 07	20	10				
		ME_1	32 03	20		20			
		MN_2	33 06	20	23				
		ME_2	33 45	20		14			
		MN_3	38 00	18	10				
		ME_3	39 15	20		11			
		ME_4	42 40	16		5			
		MN_4	45 14	16	8				
		ME_5	49 02	16		11			
		F	23 10						
4	" 7	e	18 52.0						
		ME	56 00	12		3			
		MN	57 00	12	3				
		F	19 15						
5	" 10	e?	05 17.1						
		eL	22.5	16					
		MN_1	24 03	12	4				
		ME	24 28	12		2			
		MN_2	26 03	9	3				
		F	05 55						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
6	Jan. 11	e?	23 23.0						Very small.
		MN	32 00	12					
		F	23 55						
7	" 19	e(P?	22 55 06					1960?	
		e(S?	58.4						
		eL	59.4	?					
		MN_1	23 01 19	14	25				
		MN_2	03 13	11	36				
		ME_1	03 30	12		6			
		MN_3, ME_2	05.5	10	13	4			
		F	00 05						
8	" 20	e?	10 39.1						
		eL	45.2	14					
		MN_1	47 15	13	5				
		ME	48 58	13		1			
		MN_2	49 05	11	5				
		F	11 15						
9	" 20	e	12 24.3						
		M	28 04	11	2				
		F	12 40						
10	" 23	e?	22 53.1						Amplitudes very small.
		e?	23 02.6						
		MN_1	20 22	14					
		ME	23 15	14					
		MN_2	29 16	12					
		F	00 35						
11	" 25	e(L?)	08 33.2	18					
		M	33 56	16	3	5			
		F	08 50						
12	" 26	eP?	22 02 07					6000?	
		eS	09 40	8					
		eL	18.3	30					
		MN_1	22 12	16	23				
		ME_1	23 19	14		7			
		MN_2	23 26	12	16				
		ME_2	25 45	16		14			
		MN_3	26 21	16	9				
		ME_3	29 20	16		7			
		F	23 00						
13	" 28	e(L?)	10 24.0	?					
		MN	26 12	13	2				
		F	11 00						
14	" 30	iP	03 27 05					8060	
		eS	36 37	8				(72.5°)	
		eL_N	~~27.7~~ 48.5	18					
		eL_E	51.1	20					
		MN_1	53 21	16	3				
		ME_1	54 17	18		11			
		MN_2	56 07	16	11				
		ME_2	56 19	18		11			
		MN_3	04 01 27	16	3				
		F	05 10						

WM. O'LEARY S.J.

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SEISMOLOGICAL BULLETIN

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. **Foundation : Triassic sandstone.**

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	ϵ : 1	$\frac{r}{T_o^2}$
A_N	(1)	249	10.7	3.2	0.017
	(3)	122	8.3	4.1	0.04
A_E	(1)	226	11.0	3.0	0.02
	(3)	135	9.9	4.0	0.048
A_Z	(2)	88	5.1	3.3	0.09

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
15	Feb. 4	e(P?)	06 15 19	2				2930?	
		eS	19 47	8					
		eL	23.3	21					
		ME_1	26 12	16		8			
		MN_1	27 17	16	10				
		ME_2	29 12	14		6			
		MN_2	30 13	11	8				
		MN_3	32 06	12	7				
		ME_3	32 21	12		6			
		F	07 55						
16	" 5	e(L?)	04 29.1						Very small.
		MN	33 54						
		F	05 00						
17	" 5	e	22 52.5						
		eL	58.4	21					
		MN_1	23 01 05	15	8				
		ME_1	01 19	15		3			
		ME_2	02 43	14		2			
		MN_2	03 08	12	5				
		F	00 00						
18	" 6	e	04 01.6						
		cMN_1	22 28	14	3				
		ME_1	23 09	14		1			
		ME_2	27 34	12		1			
		MN_2	25 09	12	2				
		F	05 45						
19	" 7	eP	00 12 28	3				7240	
		eS	21 14	8	1	2		(65.2°)	
		eL	28.6	26					
		MN_1	31 39	42	43				
		MN_2	33 46	19	28				
		ME_1	34 14	19		3			
		ME_2	35 39	16		3			
		MN_3	36 19	14	27				
		ME_3	40 00	10		18			
		MN_4	40 25	11	11				
		ME_4	43 47	14		2			
		ME_5	48 25	14		2			
		CN_1	55 15	10	1				
		CE_1	56 00	10		1			
		CE_2	01 02 46	13		1			
		CN_2	03 13	15					
		F	03 55						
20	" 10	e(L?)	05 33.5	30?					Masked by micros.

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RIVERVIEW COLLEGE OBSERVATORY,

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SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
21	Feb.12	e?	15 20.4						
		eL	25.1	17					
		MN_1	26 07	14	1				
		ME_1	27 29	13		1			
		ME_2	30 24	13		1			
		MN_2	36 10	10	1				
		F	16 00						
22	" 13	e	05 55.7						
		e(L?)	58.1	?					
		ME	06 00 05	12		1			
		MN	03 38	13	½				
		F	06 15						
23	" 13	i?	16 48 52	3					Obscured by heavy microseisms.
		eL	55.3	19					
		MN_1, ME_1	57.2	12	5	3			
		MN_2, ME_2	58 48	12	7	2			
		F	17 30						
24	" 17	iP	12 44 55	4	4			2810 (25.3°)	h m s 0, 12 39 16
		iS	49 14	8	6				
			49 33	8	10	6			
		eL	51.1	16					
		MN_1, ME_1	54c53	11	7	8			
		ME_2	58 00	9	3	3			
		MN_2	59 04	8	3				
		ME_3	13 07 27	9		3			
		MN_3	09 10	9	3				
		F	14 00						
25	" 21	e?	20.08.2						
		e	12.1						
		i(S?)	14 05	8	3½				
		eSR_1	21 32	12					
		eL	38.2	28?					
		MN_1	42 05	24	9				
		MN_2, ME_1	44 25	24	20	9			
		MN_3	49 19	20	5				
		ME_2	50 20	20		2			
		ME_3	53 42	18		2			
		MN_4	55 42	15	2				
		F	22 50						
26	" 21	e	23 01.1						
		eL	08.0	20?					
		ME	10 14	16		4			
		F	23 30						
27	" 22	e	13 05.5	4					
		e(S?)	11.1	10					
		eL	13.1	24					
		MN	15 39	12	5				
		ME	16 02	14		4			
		F	14 10						
28	" 22	e	00 20.7						
		eL	23.1	14?					
		MN	25 46	12	1				
		ME	27 10	12		1			
		F	00 55						
29	" 24	e	23 11.8						
		eL	15.4	25					
		M	17 30	16	1	1			
		F	23 30						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
30	Feb,25	eP	11 05 06	4					
		i(L?)	10 44	9	9	18			
		MN_1	11 43	7	34				
		ME_1	11 52	7		57			
		MZ_1	12 05	5			8		
		ME_2	12 37	9		59			
		MN_2	12 56	9	42				
		MZ_2	13 05	5			6		
		ME_3	13 18	12		41			
		MN_3, MZ_3	14 47	12	42		17		
		ME_4	15 00	9		32			
		MN_4	16 11	9	29				
		MN_5	17 17	9	10				
		ME_5	17 40	9		15			
		MN_6	20 15	11	12				
		ME_6	22 23	11		16			
		F	12 35						
31	" 26	e	01 44.2						
		e(SR_1)	53.3	23					
		e(SR_2)	57.7	23					
		eL	02 08.4	30					
		MN_1	14 10	25	9				
		ME_1	16 00	23		3			
		MN_2	16 06	25	9				
		MN_3	19 24	23	6				
		ME_2	22 00	23		3			
		F	04 00						
32	" 28	eP	08 42 57	4				2920	
		iS	47 24	8	¾	4½		(26.3°	
		eL	48,7	20					
		MN_1, ME_1	50 08	17	5	8			
		ME_2	53 21	9		4			
		MN_2	55 06	9	3				
		F	09 55						
33	" 29	eP	22 02 23	5	2			2500	Near New Guinea.
		iP	02 27	5	-14		+1	(22.5°	φ, 10½° S.
		iS	06 22	7		-5			λ, 151° E.
		i	06 45	8		+6			(approx.)
		i	06 52	8		-29			h m s
			07 05	8		37			0, 22 57 16
		eL	08.1	20?					
		MZ_1	08 40	18	47				
		ME_1	09 37	15		59			
		MZ_1	09 58	18			40		
		MN_2	10 15	18	94				
		ME_2	12 02	14		64			
		MN_3, MZ_2	12 32	13	49		11		
		ME_3	12 53	8		44			
		MN_4	14 38	8	31				
		ME_4	14 39	8		33			
		ME_5	15 48	8		22			
		ME_6	17 57	8		21			
		MN_5	20 17	8	19				
		F	00 10						

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Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	ϵ : 1	$\frac{r}{T_o^2}$
A_N	1	230	10.6	2.9	0.015
	3	144	8.4	4.4	0.04
A_E	1	210	11.2	3.7	0.02
	3	140	9.5	5.0	0.04
A_Z	2	86	5.0	3.8	0.08

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
34	Mar. 7	e	23 23.1	7					
		e(L?)	26.1	26					Very small.
		MN	36 08	16					
		F	00 00						
35	" 9	e(P?)	11 03 22						
		eL	16.6	20					
		MN_1	20 06	18	3				
		ME_1	21 06	15		4			
		MN_2	21 30	16	6				
		ME_2	21 42	16		7			
		F	11 55						
36	" 9	eP	18 16 10	4	$\frac{3}{4}$	1		7330	
		i	16 24	8	$+2\frac{1}{2}$	-18	-12	(66.0°)	Dilatation.
		PR_1	18 54	8		8			Computed azimuth:-
		PR_2	20 24	8		17			N. $82\frac{1}{2}$° W.
		iS	25 02	9	-10	+44			($277\frac{1}{2}$°)
			25 08	9	39	41			hence, computed:-
		PS	25 35	12	14	69			ϕ, $7\frac{1}{2}$° S.
		iP_cSS_cP	32 10	10	-30				λ, 87° E.
			32 48	18	305				
		e	33.5	60					Angenheister waves
		eL	35.5	34					h m s
		MN_1, ME_1	36.6	18	212	130			0, 18 05 24
		MN_2	37 44	16	286				
		MN_3	38 45	16	240				
		ME_2	39 58	12		130			
		MN_4	40 12	10	260				
		ME_3	41 14	14		180			
		MN_5	41 56	12	170				
		MZ_1	42 04	11			90		
		ME_4	43 05	14		210			
		MN_6, MZ_2	44.6	14	150		110		
		ME_5	46 23	17		320			
		MN_7	47 26	12	110				
		ME_6, MZ_3	47.9	17		370	120		
		ME_7	49 32	16		290			
		MN_8	51 33	14	110				
		ME_8	52 10	16		210			
		ME_9	53 48	14		200			
		MN_9	54 48	12	62				
		ME_{10}	57 30	15		140			
		MN_{10}, ME_{11}	59.2	14	48	82			
		MN_{11}	19 04 16	11	35				
		ME_{12}	04 28	12		40			
		MN_{12}	13 20	12	32				

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RIVERVIEW COLLEGE OBSERVATORY,

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SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
36 Cont.	Mar. 9	CE_1	19 20 44	12		30			
		CN_1	24 00	10	15				
		CE_2	26 48	15		25			
		CN_2	31 00	10	10				
		CE_3	36 08	12		16			
		CN_3	37 10	10	10				
		F	22 55						
37	" 10	e	03 37.1						
		eL	48.1	18?					
		MN_1	52 06	14	4				
		MN_2	54 10	10	1				
		F	04 15						
38	" 10	e	06 22.1						
		e(L?)	27.8	12					
		MN_1	30 14	10	½				
		MN_2	32 06	8	1				
		F	06 45						
39	" 10	e?	21 27.2						
		i(S?)	30 05	8		5			
		eL	31.2	?					
		MN	33 18	12	1				
		ME_1	34 05	10		3			
		ME_2	37 02	10		2			
		F	22 05						
40	" 13	e(L?)	02 08.2	16?					
		MN1	11 13	12	½				
		MN2	13 31	10	½				
		F	02 40						
41	" 13	iP	18 37 43	4	-9	+4		3130 (28.2°)	Computed azimuth: N. 22° W. hence, computed: φ, 7° S. λ, 141° E. h m s Θ, 18 31 34
		i_Z	37 45	4			-5		
		eS	42 24	7	3	3			
		i	42 30	7	+8	+22			
		PS	42 39	7	14	34			
		eL	45.2	20?					
		ME_1	48 25	11		50			
		MZ_1	50 15	11			3		
		MN_1	50 26	11	28				
		ME_2	50 51	11		45			
		MZ_2	51 00	11			7		
		MN_2	51 35	10	20				
		ME_3	52 19	9		29			
		MN_3	53 17	11	17				
		ME_4	54 55	10		13			
		MN_4	56 19	9					
		ME_5	58 20	10		15			
		CE_1	19 09 17	10		4			
		CN_2	10 12	10	8				
		CE_2	16 07	9		4			
		CN_2	17 09	11	2				
		F	22 20						

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No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
42	Mar.13	e	22 53.8						
		e(L?)	57.1	12					
		MN	59 23	6	2				
		F	23 15						
43	" 16	iP	05 05 41	11	+40	+75	-72	2420	Dilatation.
			05 51	10	190	350		(21.8°	Azimuth (computed from iP):- N. 63° E.
			06 10	9	150	330			
		iPR_1	07 03	8	115	+95			
		iS	09 33	10	-110	-47	+8		hence, computed:-
		PS	09 52	11	700	190	430		φ, 22° S.
			10 12	10			600		λ, 172° E.
		eL	10.7	25					
		MN_1, ME_1	11.7	17	1230	1190			
		MN_2	12 40	14	960+				h m s
		ME_2	12 47	16	XZØ	1200+			0, 05 00 42
		ME_1	13 09	16			1150		
		MN_3, ME_3	14.6	14	960+	760+			
		MN_4	15 03	12	800+				
		MZ_2	15 27	15			1820		
		ME_4	16 00	14		840			
		MZ_3	16 21	13			1030		
		ME_5	17 05	14		760			
		MN_5	17 45	13	690				
		MZ_4	18 39	12			590		
		ME_6	18 46	12		520			
		MN_6	19 39	13	730				
		ME_7	20 19	11		430			
		MZ_5	21 03	12			540		
		MN_7	23 19	12	360				
		ME_8	23 35	11		300			
		MN_8	25 20	12	270				
		ME_9	25 36	11		260			
		MZ_6	25 54	11			250		
		MN_9	28 19	10	150				
		ME_{10}	29 28	11		120			
		MN_{10}, ME_{11}	30.6	11	180	170			
		MN_{11}	32 19	10	120				
		ME_{12}	33 47	12		120			
		MN_{12}	36 30	11	115				
		MZ_7	37 09	11			100		
		ME_{13}	38 05	10		75			
		MN_{13}	39 11	11	100				
		MZ_8	40 42	11			45		
		ME_{14}	42 52	12		100			
		MN_{14}	4636	11	90				
		CE_1	53 37	12		34			
		CN_1	58 48	12	17				
		CE_2	59 31	11		16			
		CN_2	06 05 30	11	28				
		eW_2	07 57.9	22					W_2 series.
		MN_1	59 05	20	8				
		ME_1	08 01 12	16		7			
		MN_2	01 22	17	16				
		ME_2	03 14	16		6			
		ME_3	11 04	18		6			
		MN_3	13 41	16	3				
		MN_4	17 10	17	5				
		ME_4	18 24	18		6			
		ME_5	25 43	20		9			
		F	10 05						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
44	Mar. 16	e	10 18.5	4					Very small.
		e(L?)	23.2						
45	" 16	i?	10 37 15						
		eL	39.0	20					
		MN_1	41 06	12	3				
		ME_1	42 21	16		2			
		MN_2	52 48	14	1				
		ME_2	54 00	14		3			
		F	11 15						
46	" 16	eL	15 46.5	16					
		MN	50 29	12	½				
		F	16 00						
47	" 17	e?	00 22.9	4					
		eL	31.2	22					
		ME_1	35 00	16		1			
		MN_1	35 07	12	2				
		MN_2, ME_2	44.5	12	½	1			
		F	01 00						
48	" 17	eP	03 03 51	7	1	2		2420	
		eS	07 43	6?				(21.8°)	
			07 51	6		5			
		eL	09.1	20					
		ME_1	10 43	14		4			
		MN_1	11 07	12	9				
		ME_2	11 35	14		6			
		MN_2	13 11	12	9				
		F	04 00						
49	" 18	iP	03 06 53	4	+3½	+6½	-	2500	Dilatation.
			06 59	8		9		(22.5°)	Azimuth (computed from iP):-
		iS	10 47	8	+8	-6			N. 63° E.
		i(L?)	11 11	24	+120				hence, computed:-
			12 08	20		26			φ, 22° S.
		ME_1	13 30	16		56			λ, 173° E.
		MN_1	13 51	14	58				
		ME_2	14 36	14		34			h m s
		MN_2	15 32	12	37				0, 03 01 46
		MN_3	18 00	12	19				
		ME_3	18 31	12		23			
		CE_1	26 00	10		7			
		CN_1	27 11	10	7				
		CE_2	28 01	10		4			
		CN_2	31 04	10	3				
		F	05 20						
50	" 18	iP	12 04 00	6	1½	+4		2500	
			04 04	8		8		(22.5°)	
		iS	07 58	8		-5			
			08 15	8	6				
		eL	09.1	20					
		ME_1	11 00	12		18			
		MN_1	11 10	12	23				
		ME_2	12 01	12		18			
		MN_2	12 42	12	20				
		ME_3	16 22	14		26			
		MN_3	16 30	14	25				
		F	14 20						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
51	Mar. 18	eP	20 59 26	4				2560	
		eS	21 03 28	8					
		eL	05.3	20					
		MN_1	06 22	14	2				
		ME	07 00	14		5			
		MN_2	10 44	12	3				
		F	21 50						
52	" 19	e?	20 19 55						Phases hard to identify.
		e	21 25	5					
		i	25 02	6		11			
			25 17	6	7	12			
		e(L?)	26.7	10?					
		MN	29 02	10	2				
		ME	29 13	10		3			
		F	20 55						
53	" 22	e	04 37.1						
		e(PR_3)	42 25	20?					
		i(S_cP_cS)	42 51	10		-8			
		i(S_cP_cPcS)	44 05	15	-6	+19			
		i(PS)	46 54	18		+5			
		PS_cP_cS?	47 09	18		60			
		PPS?	48 25	24		63			
		SR_1?	53 35	16	11	4			
		PPSS?	53 57	22		78			
		PSSS?	57 13	30		45			
		SR_2?	57 53	20	12	19			
		SR_3?	05 01 17	20		13			
		eL(Q)	05.8	36					
		eL(R)	10.9	40					
			11 45	32		115			
			14 51	22		63			
		MN_1	19 23	18	19				
		ME_1	21 08	18		53			
		ME_2	22 00	18		53			
		MN_2	22 19	18	18				
		MN_3	24 29	18	20				
		ME_3	24 55	18		31			
		MN_4	26 16	18	19				
		ME_4	29 10	16	10	38			
		MN_5	33 13	16	10				
		ME_5	36 41	20		43			
		ME_6	41 15	20		40			
		MN_6	44 40	19	9				
		MN_7	49 53	20	10				
		MN_8	06 08 05	24	11				
		eW_2	13.1	40					W_2 series.
		ME_1	17 25	26		23			
		MN_1	18 31	26	11				
		ME_2	21 19	24		23			
		MN_2	22 45	28	14				
		MN_3	24 43	24	25				
		MN_4	26 33	34	21				
		ME_3	27 27	24		30			
		MN_5	36 17	20	12				
		F	08 45						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
54	Mar. 23	iP	20 07 33	4		6		2710	
		PR_1	08 10	5		7		(24.4°)	
		eS	11 45	7		2			
			12 21	8		4			
		eL	14.3	24					
		ME_1	15 20	20		14			
		MN_1	15 57	18	12				
		ME_2	16 16	20		17			
		MN_2	17 06	16	10				
		ME_3	18 07	14		8			
		F	21 15						
55	" 24	iP	21 39 29	3	1	1		2070	
		eS	42 55	7				(18.6°)	
		eL	43.1	16					
		M	44 05	14	4	3			
		F	22 25						
56	" 25	cP	18 34 31						
		eL	41.2	16					
		MN	43 22	16	5				
		ME_1	43 57	16		4			
		ME_2	45 04	14		4			
		F	19 10						
57	" 26	iPR_1	05 36 07	4	5	6			
		iS	40 33	6	6				
		e	41.8	20					
		SR_1	43 46	10	3	7			
			44 13	6	7				
		eL	49.4	20?					
		MN_1	51 10	20	12				
		ME_1	52 00	20		22			
		ME_2	53 50	20		26			
		MN_2	54 19	20	12				
		ME_3	57 07	18		19			
		F	06 50						
58	" 26	i	06 57 27	6	3				
		e	07 00 25	12					
		i	00 41	6	5				
		eL	05.6	?					
		ME	09 10	20		9			
		MN	10 19	20	8				
		F	07 55						
59	" 26	i	08 20 20	6	2				
		i	23 30	6	3	3			
		e(L?)	30.3	20?					
		ME_1	32 29	18		4			
		MN_1	33 13	18	7				
		MN_2, ME_2	34 25	18	5	5			
		F	09 00						
60	" 26	i	10 01 49	6	3				
		i	05 05	7	5	4			
		eL	14.1	20					
		MN	18 08	13	3				
		ME	18 25	13		2			
		F	10 45						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
61	Mar.27	eP?	14 45 20	4				4700	
		ePR_2?	47 17	6					
		$e(PR_3)$	47 29	8					
		iP_cS	51 26	6	5	2			
		eS	51 55	9					
		i	52 17	6	4				
		SR_1	54 39	12		3			
			54 49	10	2	3			
		i(L?)	57 35	?					
		MN_1	15 01 06	12	2				
		ME_1	01 13	10		3			
		MN_2, ME_2	05 04	12	2	2			
		F	15 50						
62	" 27	e	19 34 34						
		e	36 17						
		eL	42.7	24					
		ME_1	45 08	20		6			
		MN	47 25	16	3				
		ME_2	47 45	16		4			
		F	20 40						
63	" 29	e	05 17 46	3					
		iS	24 31	6	+7	+39			iS and two succeeding i_S most outstanding feature of record. Aftert eL movement very feeble.
		i	25 35	6	+12	+20			
			25 41	6		31			
		i	27 04	10		-17			
		SR_1?	28 10	10	5				
		i	28 27	8		+16			
			34 24	10		8			
		eL	35.1	32					
		MN_1	39 08	10	2				
		ME	43 36	12		1			
		F	0? 00						
64	" 29	eP	19 24 00	3		1		2480	
		eS	27 56	8	1	1		(22.4°	
		eL	30.0	16					
		MN	31 44	12	1				
		F	19 55						
65	" 31	eL?	01 30.1	20?					
		ME_1	47 30	18		2			
		ME_2	52 50	18		2			
		F	02 35						

WM. O'LEARY S.J.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	s : 1	$\frac{r}{T_o^2}$
A_N	1	236	10.6	4.0	0.017
	3	110	8.5	4.6	0.04
A_E	1	243	11.0	3.7	0.019
	3	153	9.6	2.7	0.04
A_Z	2	86	5.1	3.2	0.06

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
66	April 2	e	22 28.9						
		eL?	31.3	24?					
		ME_1	34 50	14		2			
		MN_1	34 56	14	2				
		MN_2	38 00	14	1				
		ME_2	39 18	11		1			
		F	23 15						
67	" 3	e	11 11 09	5					Very small.
		e(L?)	14.3	16					
		ME	16 40	10		1			
		MN	17 40	10	1				
		F	11 35						
68	" 7	e?	05 25.2						Very small and obscured by micro-seisms.
		e	29.1						
		e(L?)	34.5						
		MN	37 38						
		F	05 50						
69	" 7	e	20 33.5						
		eL	54.7	?					
		ME	21 00 58	17		2			
		MN	01 56	16	1				
		F	21 45						
70	" 9	e?	17 57.4						
		ePS	18 04 06						
		eL	30.2	24?					
		ME_1	39 49	16		1			
		MN_1	42 16	15	3				
		ME_2	43 02	15		3			
		MN_2	47 44	16	2				
		ME_3	53 02	16		3			
		eW_2	19 48.5	?					
		ME	51 00	16		1			W_2 series.
		F	21 50						
71	" 10	e?	11 09.1						Very small.
		eL	12.4	14					
		ME	13 39	10		1			
		MN	14 03	10	1				
		F	11 30						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1923								
72	Apr1.14	ePR$_2$?	09 24 58	4					Bulgaria.
		ePPS?	34 37	7					Masked by heavy
		eL	10 01.4	22?					microseisms
		MN$_1$	18 38	20	3				
		ME$_1$	21 44	22		7			
		ME$_2$	24 11	18		11			
		MN$_2$	26 36	18	2				
		ME$_3$	28 46	18		5			
		ME$_4$	31 49	20		7			
		MN$_3$	45 20	20	4				
		eW$_2$	57.5	20?					
		MN	11 03 20	16	1				
		F	11 35						
73	" 14	e	15 18.1	12					
		e	18.4	12					
		eL	23.6	20?					
		MN$_1$	25 04	14	1				
		ME	25 10	12		1			
		MN$_2$	31 10	14	2				
		F	15 35						
74	" 14	eL	22 46.3	25					A few waves.
		MN, ME	49 45	20?					
		F	22 55						
75	" 15	e	21 45.3						" " "
		MN	45 47	15	1				
		ME	46 28	11		2			
76	" 17	e?	03 40.6						
		ePR$_4$?	51 32	10?					
		e	59 43	7?					
		eL	04 15.5	24					
		MN	27 12	15					
		F	05 00						
77	" 18	ePR$_1$?	19 46 06						
		e	51 04						
		ePR$_3$?	51 48						
		ePR$_4$	53 58						
		PPS?	58 06						
		e	20 22.4	25?					
		eL	30.0	33					
		MN$_1$	38 57	21	4				
		ME$_1$	43 28	21		14			
		MN$_2$	46 27	21	8				
		ME$_2$	48 57	18		7			
		MN$_3$	49 50	21	9				
		ME$_3$	53 35	14		3			
		MN$_4$	58 45	18	7				
		ME$_4$	21 02 09	16		3			
		MN$_5$	02 19	18	6				
		MN$_6$	07 50	20	3				
		eW$_2$	21.0	22					
		ME	28 14	18		2			W$_2$ series.
		MN	29 54	18	2				
		F	22 55						
78	" 27	e	19 11.8						Very small.
		M	27 12						
79	" 27	e	21 00.6	14?					
		eL	45.1	24					
		F	22 20						

Wm. Keary M.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	$\varepsilon : 1$	$\frac{r}{T_o^2}$
A_N	1	226	10.4	2.8	0.018
	3	120	8.3	4.1	0.04
A_E	1	250	10.9	2.9	0.02
	3	132	9.4	3.4	0.04
A_Z	2	83	5.2	2.7	0.099

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
80	May 2	e?	11 33.0						
		e	37.1						
		MN	40 32	14	2				
		ME	41 14	14		1			
		F	11 55						
81	" 8	e	04 58.9						
		i($\overline{S_cP_cS}$)	5 07 02	7	5				i($\overline{S_cP_cS}$) and i(S) only outstanding phases on record.
		i(S)	07 15	6	7	3			
		M	33 41	14					
		F	05 40						
82	" 14	iP	02 51 29	2	1	2		2300 (20.7°)	
		eS	55 06	4					
		iS	55 16	6	3	4			
		eL	56.1	20					
		MN_1	58 15	15	7				
		ME	58 42	14		3			
		MN_2	59 05	13	11				
		F	03 35						
83	" 14	MN	03 47 29	15	2				A few waves.
84	" 14	i	22 31 04	4	2			13,800	Peru.
		iPR_1	34 47	10		1			
			35 20	10		3			
		iPS	44 14	14	+13	-26			
			45 07	14	21	36			
		PPS	46 48	14	8	14			
		iSR_1	51 28	12	4	-8			
		SPS	51 48	14	12	16			
		PPSS	52 08	21	66	103			
		e_N	23 04.7	38					
			05 00	38	80				
		e_E	05.1	42					
			05 25	42		51			
			05 52	42	96				
		eL	10.7	37					
			12 20	21		60			
			12 38	24	54				
			15 59	16	30				
			16 19	18		48			
		ME_1	19 57	16		49			
		MZ_1	21 00	16			52		
		MN_1	21 06	16	61				
		ME_2	21 40	16		77			
		MN_2	21 55	16	64				
		MZ_2	22 50	16			52		

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
84 Cont.	May 14	MN_3	23 23 12	16	59				
		ME_3	23 33	16		77			
		MN_4	30 18	16	29				
		ME_4	33 30	16		19			
		MZ_3	44 48	19			31		
		MN_5	44 54	20	60				
		ME_5	45 02	20		41			
		ME_6	53 24	18		24			
	" 15	MN_6	00 06 13	18	33				
		eW_2	13.0	25					
		MN_1	19 05	19	12				W_2 series.
		ME_1	19 16	18		30			
		ME_2	25 04	18		8			
		MN_2	25 22	18	10				
		ME_3	34 06	18		8			
		MN_3	35 04	16	5				
		ME_4	41 34	18		14			
		MN_4	46 09	18	5				
		eW_3?	02 31.0	25?					
		MN	47 40	21					
		F	lost in No.85.						
85	" 15	eL	03 33.0	24					
		MN_1	41 38	18	4				
		MN_2	44 02	18	3				
		F	05 20						
86	" 15	e	06 19.7						
		MN	39 05	14	2				
		F	07 10						
87	" 17	e	11 12.2						
		e(L?)	17.1	20					Confused by heavy microseisms.
		MN	23 41	?					
		ME	24 27	?					
		F	11 50						
88	" 17	e?	22 44.3						
		eL	54.3	22					Confused by heavy microseisms.
		ME	55 52	18		3			
		MN	57 00	18	6				
		F	23 15						
89	" 19	e	03 53.5						
		eL	04 02.6	17					
		ME	05 06	15		3			
		MN	06 03	15	2				
		F	04 25						
90	" 19	e	09 52.4						
		eL	10 05.0	27					
		MN_1	11 30	21	3				
		MN_2	13 58	17	3				
		F	10 50						
91	" 21	e	15 53.5						
		eL	56.4	20					
		MN	59 05	11					
		ME	16 00 10	11					Amplitudes very small.
		F	16 15						
92	" 22	eP?	13 29 40						
		eS?	34 26	9				3200?	
		eL	38.4	21					
		MN	42 09	12	3				
		ME	42 40	12		2			
		F	14 10						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
93	May 23	e	21 05.0						
		e	07.4						
		eL	15.1	25					
		MN_1	18 27	16	2				
		ME_1	18 29	16		2			
		MN_2	22 13	14	2				
		ME_2	24 05	15		2			
		F	21 55						
94	" 26	e?	14 29.9						
		e	33.5						
		e(L?)	40.3	25					
		MN	53 08	12	1				
		ME	53 40	12		1			
		F	15 20						
95	" 27	e	05 56.0						
		eL	06 02.7	16					
		ME	04 40	12		½			
		MN	05 06	12	2				
		F	06 20						
96	" 27	e?	10 01 24						
		eP	02 05					7870 (70°.8)	Perhaps only a large microseism. h m s 0, 09 50 51.
		iP	02 13	6	·3				
		iS	11 27	9	4	7			
		PS	11 53	16		15			
		PPPS?	12 05	16	22				
		S_cS	12 31	16	19	13			
		SR_1	16 27	17		7			
		SR_2	20 17	16		9			
		eL	21.2	43					
			22 22	43		106			
		MN_1	28 56	21	53				
		ME_1	30 09	19		18			
		MN_2	31 05	19	42				
		ME_2	33x52	19		17			
		MN_3	33 56	19	49				
		MN_4	35 05	19	44				
		ME_3	37 56	19		21			
		MN_5	40 34	19	30				
		ME_4	45 06	19		21			
		ME_5	47 10	19		34			
		MN_6	48 49	18	10				
		ME_6	49 10	16		21			
		eW_2	12 22.0	18					W_2 series.
		MN_1	24 29	18	2				
		MN_2	30 49	18	3				
		F	13 05						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
97	May 28	i	06 49 57	4		2			
		iS	53 02	9	$2\frac{1}{2}$	$1\frac{1}{2}$			
		eL	55.8	17					
		MN_1	56 37	17	21				
		ME_1	58 35	17		9			
		MN_2	59 05	13	10				
		ME_2	59 42	17		15			
		ME_3	07 03 33	14		3			
		MN_3	05 20	13	6				
		F	07 50						
98	" 31	e?	17 29.1						
		e	31.7						
		eL	36.3	18					
		MN_1	38 10	14	3				
		MN_2	39n54	13	2				
		ME_1	40 50	13		1			
		ME_2	43 38	11		1			
		F	18 10						
99	" 31	e(L?)	21 10.2						
		ME_1	17 15	13		1			
		ME_2	24 17	14		1			
		F	21 50						
100	" 31	ePR_2?	23 37.1						
		eS	41 27	10					
		$e(S_cS$	44 10	9					
		eSR_3	49 07	15					
		P_cSS_cP?	50 08	13		4			
		eL	51.1	25					
		MN_1	52 20	22	35				
		ME_1	52 50	18		22			
		ME_2	54 00	18		20			
		MN_2	54 07	15	11				
		ME_3	00 00 00	11		5			
		MN_3	01 07	9	4				
		MN_4	02 48	7	6				
		ME_4	05 08	9		3			
		F	01 00						

W^m O'Leary S.J.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	ε : 1	$\frac{r}{T_o^2}$
A_N	(1)	225	10.3	2.9	0.018
	(3)	114	8.4	4.3	0.05
A_E	(1)	253	10.6	3.6	0.018
	(3)	143	11.4	5.1	0.03
A_Z	(2)	94	4.9	3.3	0.10

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
101	June 1	eP?	13 23 14					8780?	
		ePR$_1$?	26 52						
		iS	33 21	5	2	2			
		iPPPS	34 05	5	4	4			
		eL	45.2	22					
		ME$_1$	51 50	16		2			
		MN$_1$	52 06	16	2				
		ME$_2$	53 33	16		2			
		MN$_2$	54 17	16	3				
		MN$_3$	58 05	16	3				
		MN$_4$	14 07 56	15	1				
		ME$_3$	08 28	14		1			
		ME$_4$	12 06	14		1			
		MN$_5$	17 49	15	1				
		MN$_6$	20 14	16	1				
		F	15 30						
102	" 3	eP	02 58 53	4				2830	
		iS	03 16	5		2		(25.5°)	
		iSR$_1$	04 27	6	3				
		eL	06.0	18					
		MN$_1$	07 31	14	5				
		MN$_2$	09 05	11	4				
		ME$_1$	11 00	10		5			
		ME$_2$	13 40	9		2			
		F	04 05						
103	" 3	eS	08 50 48						Japan.
		eL	09 04.4	25					
		ME	09 17	18		2			
		MN	13 05	18	5				
		F	10 10						
104	" 6	e	15 54.1						
		MN	16 02 18	14	1				
		ME$_1$	03 13	14		1			
		ME$_2$	05 24	18		2			
105	" 6	F	19 19 00						F 16h. 15m.
		e	23 13						
		e(L?)	27.1	20					
		MN$_1$	31 09	11	5				
		ME$_1$	32 15	18		3			
		MN$_2$	34 04	11	2				
		ME$_2$	36 16	18		2			
		F	20 05						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
106	June 8	eP?	14 47 29					2670?	
		eS?	51 40						
		eSR_1?	53 00						
		eL	54.7	22					
		MN_1	58 04	13	13				
		ME_1	59 05	13		5			
		MN_2	59 39	11	12				
		ME_2	15 01 00	18		20			
		MN_3	03 03	10	7±				
		ME_3	05 02	12		4			
		F	16 10						
107	" 15	iP	06 22 06	6	-8	+6	+6	6156	Condensation.
		PR_1	24 16	9	3	3		(55.4°)	Azimuth (computed from iP): 323° (N. 37° W?)
		PR_2	25 24	8	1				
		PR_3	26 00	6	3	5			
		iS_E	29 48	8	~~13~~	-13			
		iS_N	29 51	8	+20				
		PS	30 08	10	14±	15±			hence, computed:
		PPPS	30 20	10	7±	11±			φ, 13° N.
		SR_2	35 49	12	14	13			λ, 120° E.
		SR_3	36 40	14	21	35			h m s
		P_cSS_cP	38 04	12	10	20			0, 06 12 26
		eL	39.2	30					
		MN_1	41 42	12	30				
		ME_1	42 46	16		43			
		MN_2	43 07	10	16				
		MZ_1	43 26	18			14		
		ME_2	44 11	16		48			
		MN_3	45 09	12	31				
		MZ_2	47 29	19			16		
		MN_4, ME_3	47 46	16	50	44			
		ME_4	49 05	18		52			
		ME_5	51 48	16		26			
		MN_5	53 20	14	25				
		ME_6	54 48	16		23			
		MN_6	55 41	14	17				
		CN_1	07 12 30	12	4				
		CE_1	13 46	14		7			
		CN_2	19 00	10	2±				
		CE_2	19 04	10		3±			
		F	L9 10						
108	" 15	eP_z?	17 25 19					6670?	
		iS	33 28	6	4	3			
		PS	33 48	6	7	6			
		SR_1	37 34	10		2±			
		iSR_2	39 37	12		7			
		SR_3	40 21	12	5				
		eL	43.1	25					
		MN_1	46 18	17	16				
		ME_1	46 23	17		35			
		MZ_1	48 06	18			14		
		MN_2	51 04	19	26				
		ME_2	42 12	17		26			
		ME_3	58 00	12		17			
		F	19 25						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks. h	m	s
	1928												
109	June 16	eP	18	32	31	3?				2970 (26.7°)	0,	18	26 37
		iS		37	03	5		5					
		SR_2		38	38	5	7						
		eL		40.	6	20?							
				41	02	8		9±					
		MN_1		42	40	20	35						
		ME_1		43	44	12		5					
		MN_2		44	03	20	39						
		ME_2		45	52	20		11					
		MN_3, ME_3		47	07	10	5±	7±					
		F	19	45									
110	" 17	ePR_1	03	39	30	?							Mexico.
		ePR_2		42	06	?							
		e		45	04	9							
		PR_4		45	17	9		4±					
		$iS_cP_cP_cS$		46	29	11	2	+14					
		iPS		49	17	14		+40					
		PPPS		50	48	18		38					
		i		53	55	14		-17					
		iSR_1		55	02	16		-23					
		i_N		55	35	11	-17						Group of large
		i_E		55	56	22		+140					waves which cannot
				56	58	18		53					be identified.
		SR_2		59	35	27		48					
		SR_3	04	03	38	20	18	19					
		PR_4?		03	58	17	10	16					
		eL_N		07.	0	40							
				08	00	60	560±						2 remarkable waves
				09	10	60	640±						on N.
		iL_E		13	00	36		+200	+200				Group of remark-
				14	023	31		550	215				able waves on
				14	30	31		510	300				E & Z.
				17	02	20	49	125					
		MN_1		21	18	17	72						
		ME_1		21	35	16		150					
		ME_2, MZ_1		23	03	16		190	120				
		MN_2		23	21	16	70						
		ME_3		23	38	16							
		ME_4, MZ_2		25	03	16							
		MN_3		25	37	16	92						
		ME_5		26	20	16							
		MN_4		29	05	16	46						
		MZ_3		29	15	16							
		ME_6		29	18	15							
		MN_5		30	05	15	45						
		ME_7		30	20	15							
		ME_8, MZ_4		31	04	15							
		ME_9		31	57	15							
		MZ_5		32	07	15							
		ME_{10}		32	57	15							
		MN_6		33	00	15	29						
		ME_{11}		34	44	15							
		ME_{12}		36	00	15							
		MN_7		36	13	15	49						
		ME_{13}		39	58	15		48					
		ME_{14}		43	16	15		37					
		MN_8		44	05	15	29						
		CE_1		48	48	16		16					
		MN_9		49	43	15	40						
		CE_2		52	35	15		24					

Exclude the C phases. CE1 etc.

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
110 Cont.	June 17	CE_3	04 56 13	13		16			
		CE_4	59 16	15		17			
		CN_1	59 59	16	14				
		CN_2	05 03 58	16	11				
		CN_3	07 00	16	27				
		CE_5	10 42	16		27			
		CN_4	13 00	16	19				
		eW_2	17.0	30					W_2 series.
		ME_1	22 11	30		72			
		MN_1	22 51	26	24				
		ME_2	24 31	30		55			
		MN_2	26 48	22	25				
		ME_3	28 38	24		41			
		MN_3	33 15	18	17				
		F	Lost in No.111.						
111	" 17	i	06 47 04	6		+3			
		i	51 10	6	-16	+3			Perhaps S.
			51 16	6		9			
		i	54 04	13		-6			" L.
		i	54v20	7	+5	-3			
			54 36	12	9				
		i	56 40	12	-22				" M.
		i	56 42	8		+14			Phases hard to identify.
		F	07 45						
112	" 18	i	13 10 17	4		2			
		i	12 06	4	3				
		ME	16 56	11		3			
		MN	17 15	11	5				
		F	13 40						
113	" 18	e?	22 14.1						
		eL	21.1	20					
		ME	24 16	16		4			
		MN	24 20	16	3				
		F	22 40						
114	" 21	eP	03 51 13	4				2700 (24.3°)	Azimuth (computed from iP): 5$\frac{1}{2}$° (N. 59° E.) hence, computed: ϕ, 20° S. λ, 171$\frac{1}{2}$° E. h m s. 0, 03 45 45
		iP	51 17	4	-5	-8			
		i	55 20	3	-4	-4			
		iS	55 24	5	+2½	+28			
			55 35	8	14	12			
		eL_E	57.5ØØ.Ø	17					
		eL_N	58.0	17					
		ME_1	59 00	15		4			
		MN_1	59 14	15	6				
		ME_2	04 00 50	15		4			
		MN_2	01 29	14	3				
		MN_3	03 11	14	3				
		ME_3	04 01	13		4			
		F	05v05						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
115	June 21	iP	10 46 37	4	-1	-3		3540 (31.9°)	Azimuth (computed from iP): $67\frac{1}{2}°$ (N. $67\frac{1}{2}°$ E.) hence, computed: φ, 18° S. λ, 178° W. h m s 0, 10 39 53
			47 51	5		7			
			49 17	7		5			
		P_cP	49 24	7		7			
		eS	51 ~~22~~44	11					
		iS	51 52	11	-5	+20			
			52 09	12	8				
			52 17	12		30			
		iSR_1	53 36	12	-15	14			
		SR_2	54 03	12	23	10			
		eL_Z	55.0	24?					
		eL_E	55.1	20					
			55 25	18	76				
			55 44	18		110			
			56 30	18		96			
		MN_1	57 15	12	92				
		ME_1	57 40	14		56			
		MN_2, MZ_1	58 08	12	140		12		
		ME_2	58 26	11		42			
		MN_3	58 58	13	160				
		MN_4	11 00 16	12	110				
		MN_5	01 10	11	95				
		MZ_2	01 19	12			12		
		ME_3	01 52	11		39			
		MN_6	02 28	11	79				
		ME_4	02 50	11		45			
		ME_5	04 18	12		42			
		MN_7	05 16	11	95				
		MZ_3	05 21	13			14		
		ME_6	05 37	11		71			
		MN_8	06 29	11	125				
		ME_7	06 37	11		115			
		MN_9	07 05	11	110				
		MZ_4	07 22	13			14		
		ME_8	07 25	11		93			
		ME_9	08 05	11		59			
		MN_{10}	09 27	11	72				
		ME_{10}	10 37	11		42			
		MN_{11}	10 49	12	84				
		MN_{12}	14 12	11	59				
		ME_{11}	14 20	11		52			
		MN_{13}	15 54	11	60				
		ME_{12}	16 51	10		28±			
		MN_{14}	18 05	10	28±				
		ME_{13}	18 59	11		31			
		ME_{14}	20 39	11		26			
		MN_{15}	22 07	11	32				
		CE_1	37 09	10		14±			
		CN_1	42 35	11	12				
		CE_2	43 10	11		10			
		CN_2	45 20	11	13				
		CE_3	55 12	11		10			
		CN_3	57 51	11	10				
		eW_2	13 36.8	18					W_2 series.
		MN	38 15	18	1				
		F	14 10						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928										
116	June 21	eP?	16	41	55						
		eP'?		45	48						
		e		50	09	14					Phases will not fit.
		$eS_cP_cP_cS$		52	11	10					
		iPS		53	41	14	4	5			
				56	33	14	2				
				59	33	16		3			
				59	43	16		3			
		SR_1	17	01	14	14	3	6			
		SR_2		06	00	14	2	4			
		e(L?)		08.0		27					
		e		11.0		18					
				1128		18	2	2			
				11	48	18		2			
		MN_1		19	10	21	8				
		MN_2		23	44	21	10				
		ME_1		24	00	19		5			
		MN_3, ME_2		27	08	18	7	6			
		MN_4, ME_3		31	15	18	7	6			
		MN_5		34	24	18	5				
		MN_6		40	05	18	7				
		ME_4		43	00	18		9			
		ME_5		46	29	17		5			
		MN_7		54	15	18	5				
		eW_2	18	38.2		21					W_2 series.
		ME_1		42	26	18		2			
		MN_1		45	06	18	8				
		MN_2		52	51	18	1				
		ME_2		55	36	18		2			
		F	20	05							
117	" 29	iP	22	55	09	6	+8	+9		2810	Azimuth (cpmputed
		PR_1		55	42	8	13±	17±		(25°3)	from iP):
				56	06	6	16	33			$46\frac{1}{2}°$
				56	42	8	19	16			(N. $46\frac{1}{2}°$ E.)
				57	30	8	17	28			hence, computed:
		P_cP		48	36	10	12±	17±			ϕ, 14° S.
		S		59	30	8	46±	35±			λ, 170° E.
				59	54	10	95±	90±			
			23	01	18	12		87			h m s
		eL_Z		02.2		24					0, 22 49m30
		eL_E		02.7		18?					
		MZ_1		03	34	21			230		NS component
		ME_1		04	16	14		190+			deranged partly
		ME_2		04	58	14		170+			from 23h. 00m.
		MZ_2		05	40	15			77		to 23h. 19m.
		ME_3		06	00	13		140			
		MZ_3		09	07	10			30		
		ME_4		10	05	10		120+			
		ME_5		15	06	12		65			
		ME_6		18	38	10		52±			
		F	02	15							

W. F. O'Reilly S.J.

No. 7

1928, July.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

ϕ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	$\varepsilon : 1$	$\frac{r}{T_o^2}$
A_N	(1	238	10.4	2.9	0.018
	(3	115	8.4	4.1	0.03
A_E	(1	247	10.8	2.7	0.03
	(3	137	11.1	4.2	0.05
A_Z	(2	85	5.1	3.3	0.09

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
118	July 9	eP	21 28 59	4	1½			2830 (25.5°)	Dilatation. Azimuth (computed from iP):- N. 30° E. hence, computed:- φ, 12° S. λ, 164° E. h m s 0, 21 23 18
		iP	29 01	5	+12	+7	-1½		
			29 11	9	13				
		PR_1	29 35	10	9				
		PR_2	29 44	8	7				
		iS	33 22	8	-14	+12			
			33 49	9	57	31			
		e	34.1	14					
		SR_1	34 40	8		33			
		eL_Z	35.2	28					
		ME_1	36 03	16		80			
		MN_1	36 35	16	175				
		MN_2, ME_2	37 08	13	170	71			From 21h.34m. to 21 36 complex long waves repeated.
		MN_3	37 22	13	180				
		ME_3	37 34	15		130			
		MN_4	37 37	15	270				
		ME_4	37 47	13		81			
		MZ_1	38 05	11			14		Stations URSS. give epicentre: 13°S., 161°E.
		MN_5, ME_5	40 10	11	59	74			
		MN_6, MZ_2	41 04	11		90+	23		
		MN_6	41 11	11	58				
		MN_7	42 20	10	63				Wellington ep.- 4°S., 150°E. 0, 21h 22m 44s.
		ME_7	42 28	9		73			
		MN_8, ME_8	43 03	9	59	63			
		ME_9	44 37	9		37			
		MN_9	45 13	9	55				
		ME10	46 49	9		32			
		MN_{10}	49 18	9	56				
		CN_1	22 07 33	9	5				
		CE_1	07 36	9		5			
		CN_2	10 51	9	7				
		CE_2	11 07	9		4			
		CN_3	14 07	9	8				
		CE_3	14 11	9		4			
		F	23 35						
119	" 10	eL	04 27.0	17					
		MN	29 00	15	1				
		ME	30 26	14		1			
		F	04 45						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928										
120	July 10	eP?	09	45	23					3420?	
		eS?		49	23	8					
		eL		52.1		19					
		MN_1		53	24	15	2				
		ME_1		55	07	12		1			
		MN_2		56	07	12	2				
		ME_2		58	11	9		2			
		ME_3		59	08	8		3			
		F	10	25							
121	" 11	iP_E	02	56	00	5		$1\frac{1}{2}$		3440	
		iS_E	03	01	01	9		$2\frac{1}{2}$		(31.0°	
		eL		02.4		?					L disturbed by visit.
		ME_1		05	05	14		13			
		MN_1		05	25	14	13				h m s
		ME_2		06	00	15		22			Zi-Ka-Wei e 3 3 13
		ME_3		07	01	13		9			
		MN_2		07	32	13	13				
		ME_4		08	19	15		11			
		MN_3		09	15	13	8				
		F	04	05							
122	" 13	eL	10	18.0		20					La Paz epicentre:
		MN_1		23	10	18	2				49° S., 19° W.
		ME_1		23	29	16		1			P 9 36 41.
		MN_2		25	18	18	2				Δ 5700 km.
		ME_2		26	20	16?					
		MN_3		30	17	16	1				
		F	11	00							
123	" 13	eS	20	05	57	8		$1\frac{1}{2}$			Very small.
		eL		08.1		24					Stations URSS? ep.
		MN		09	27	10	1				9° N., 147° E.
		ME		09	47	10		1			
		F	20	20							
124	" 18	ePR_1	19	25	11						Peru.
		i		27	05	6		4			
		ePR_2		28	33	8?					La Paz epicentre:
		iPR_3		31	07	6		4			4° S., 80.5° W.
		iPR_4		32	06	6	3				P 18 08 41
		PS		35	11	10		$1\frac{1}{2}$			Δ 2000 km.
		PPS		36	18	13		1			
		ePPPS		37	23	16					
		iSR_1		41	57	8	$1\frac{1}{2}$	1			J.S.A. ep.
		PPSS		42	23	24	11	14			6.5° S., 79.5° W.
		PR_2?		43	02	16		5			0, 19 04 48.
		PSSS		46	07	16	4				Stations URSS. ep.
		eSR_2		46	37	18					3.5° S., 81° W.
		eL(Q)		55.2		32					Ottawa 0,19 05 03
		eL(R)	20	00.7		32					P 14 05
		MN_1		03	11	22	11				Δ 5510 km.
		ME_1		04	00	22		13			
		MN_2		07	00	20	6				U.S.C.& G.S.,
		ME_2		07	13	20		10			0, 19 04 53
		ME_3		10	13	20		9			
		MN_3		11	07	18	11				
		ME_4		13	15	16		7			
		MN_4		17	12	16	7				
		ME_5		26	05	16		8			
		MN_5		29	30	16	3				

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
124	July 18	ME_6	20 33 30	16		3			
Contd.		MN_6	36 18	16	3				
		MN_7	42 32	16	3				
		ME_7	45 33	16		2			
		MN_8	54 55	16	3				
		eW_2	21 15.0						W_2 series.
		MN	20 45	18	3				
		ME	21 23	18		3			
		F	22 25						
125	" 20	e(L)	00 21.5	28					
		MN_1	28 18	20	4				
		MN_2	30 34	18	2				
		F	00 50						
126	" 21	i(P?)	02 48 06	2	2				Obscured by heavy microseisms.-
		e(S?)	54 04	6					
			54 40	7	1				L disturbed by visit.
		$i(SR_2$	57 38	4	2				
		$i(SR_3$	58 00	6	3				Stations URSS. ep 2.2° S., 124.6°E Moluccas.
		eL	03 04.1	?					
		MN_1	06 32	14	2				
		MN_2	10 36	14	2				
		F	03 45						
127	" 23	iP	07 45 16	4	+5	-3		2130	Azimuth (computed
		iS	48 48	10	+5½	+6		(19.2°)	from iP): S. 32° E.
		ME_1	49 00	14		45			hence, computed:
		MN_1	49 06	14	24				ϕ, 49° S.
		ME_2	49 14	13		32			λ, 166° E.
		MN_2	49 34	12	19				O, 07 40 49
		ME_3	49 54	12		30			iS beginning of
		MN_3	49 58	12	19				Max. phases.
		ME_4	50 38	12		38			
		MN_4	50 42	12	18				
		ME_5	50 58	12		37			Adelaide Δ 2780 k
		MN_5	51 30	12	14				P 7 46 13
		ME_6	52 03	12		17			
		MN_6	53 38	10	9				Wellington,
		MN_7	54 52	10	8				P 7 46 02
		ME_7	55 04	10		9			
		MN_8	56 50	10	7				
		ME_8	59.28	10		4			
		MN_9	08 01 17	12	5				
		ME_9	02 05	10		4			
		F	09 15						
128	" 26	e?	12 23.9						Obscured by heavy microseisms.
		e?	25.7						
		eL	36.0	20					Stations URSS.ep.
		MN_1	39 26	12	3				8° S., 121° E.
		MN_2	40 27	16	5				(approx.)
		ME_1	41 04	14		3			
		ME_2	42 50	14		3			
		F	13 30						
129	" 28	i	00 11 35	4		3			Very small and
		ME	16 38	9		1			masked by micros.
		MN	17 36	9	1				

Wm O'Leary S.J.

1928, August.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	s : 1	$\frac{r}{T_o^2}$
A_N	(1)	205	9.4	6.5	0.02
	(3)	113	6.4	4.8	0.05
A_E	(1)	226	11.0	5.2	0.03
	(3)	125	11.5	9.1	0.06
A_Z	(2)	89	5.0	3.6	0.12

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
130	Aug. 4	e	18 46.2						Destructive in Oaxaca, Mexico.
		ePR_3	51 16						
		i_Z	51 30						
		iS_cP_cS	52 00	7		2			U.S.C.& G.S. ep. 14° N., 98° W. 0, 18 25 54.
		$iS_cP_cP_cS$	53 09	8		3			
		iPS	55 56	12		5			
			56 04	16		11			
		PPS	57 22	18		6			Georgetown, P 18 32 19
			58 20	18		6			
		SR_1	19 02 35	20	12				
		PPSS	02 50	24		40			Harvard Δ 3740 km 0, 18 26 05 P 33 04
		ePSSS	06 38	18					
		eSR_2	07 00	16					
		eL(Q)	14.0	28					
		eL(R)	19.4	32					
		ME_1	20 22	28		33			La Paz Δ 4780 km P 18 34 31
		ME_2	25 20	20		12			
		MN_1	25 42	20	16				Stations URSS. ep 16° N., 97.5° W.
		MN_2	32 18	16	7				
		ME_3	35 08	16		7			
		MN_3	41 00	16	8				
		ME_4	42 04	14		5			
		ME_5	48 10	16		6			
		MN_4	50 59	16	8				
		ME_6	55 10	16		3			
		MN_5	59 00	16	7				
		ME_7	20 04 06	16		4			
		MN_6	07 52	16	4				
		$\overline{eW}_2$	26.4	40					W_2 series.
		ME_1	35 59	24		13			
		MN_1	37 52	20	10				
		ME_2	42 28	20		9			
		MN_2	44 30	20	20				
		ME_3	51 33	20		7			
		MN_3	53 42	20	6				
		ME_4	21 02 14	20		4			
		F	22 25						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
131	Aug.12	eP	08 16 27	4				4600	iP Dilatation.
		iP	16 31	4	+10	-8½	-4¾	(41.4°)	Azimuth (computed from iP):
		iPR_1	18 06	6	9	8			N. 39° 45' W.
		PcP	18 17	6	9	6			hence, computed:
		PcS	22 19	6		2			φ, 0°
		iS	22 37	6	10				λ, 126° E.
		iSR_1	25 59	6	8	12			0, 08 08 26.
			26 34	8		8			
		SR_2	26 50	8	9				Batavia Δ 2190 km
		iSR_3	27 11	6	9	10			P 8 13 33. Menado,
			29 08	6	7	9			Sangi I., Terante.
			31 22	9		10			Phu-Lien Δ 2790 km
		eL	32.0	14					P 8 14 31
		ME_1	33 46	14		13			Zi-Ka-Wei Δ 3810
		MN_1	34 22	16	18				P 8 15 27
		ME_2	36 08	10		9			Wellington Δ 67°.8
		ME_3	37 00	14		20			0 8 07 46
		MN_2	37 30	12	17				Stations URSS. ep.
		MZ	37 34	12			6		2° N., 125° E.
		ME_4	38 52	10		9			
		F	09 45						
132	" 24	iP	21 48 35	4	-9	-7	+2	2610	Condensation.
			48 39	4	13	10	-9	(23.5°)	Azimuth (computed from iP):
		iPR_1	49 06	5	-13				N. 37° E.
		PR_2	49 17	~~5~~	11~~6~~	6 ~~¼~~	+4		hence, computed:
		PR_3	49 26	5	15	5	+4		φ, 14½° S.
			49 38	6	17	20			λ, 166° E.
		iS	52 42	6	-42	+9			0, 21 43 16
		SR_1	53 40	8	51	45			
		SR_2	54 00	8	66	24			Adelaide Δ 3350 km
		SR_3	54 22	9	54	39			P 21 49 54
		eL	54.8	13					Wellington Δ 31°.1
		MN_1	55 16	8	28				P 21 49 05
		ME_1	55 28	8		33			Batavia Δ 6370 km.
		MN_2	55 41	8	23				P 21 53 07
		ME_2	55 52	10		30			Zi-Kz-Wei Δ 6860 km
		ME_3	56 41	7		21			P 21 53 41
		MN_3	57 40	8	23				
		ME_4	57.59	8		18			
		MN_4	22 00 17	6	15				
		F	23 10						
133	" 24	eP_Z?	23 23 45						P lost on Weichert
		eS?	28 46	8					while changing
			29 24	13	6				papers.
		eL	33.6	21					
		ME_1	35 00	17		12			Adelaide
		MN_1	35 09	17	14				i 23 29 36
		MN_2	36 33	15	8				eL 35 05?
		ME_2	37 09	13		4			Wellington
		ME_3	40 10	13		3			eL 23 35 39
		MN_3	41 13	13	4				
		MN_4	44 09	13	7				
		F	00 20						

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No. 8 (continued) 1928, August.

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude.			Δ	Remarks.
					A_N	A_E	A_Z		
	1928		h. m. s.	s.	μ	μ	μ	km.	
134	Aug. 28	eP?	08 29 33					3630?	
		iS	34 47	4	3				
		i	35 07	4	5				
		i	36 05	5		8			
		eL	39.0	24					
		MN_1, ME_1	40 00	18	8	8			
		MN_2	42 00	14	3				
		ME_2	43 05	12		3			
		ME_3	44 17	12		2			
		F	09 20						
									h m
135	" 29	e	02 39.5						Apia e 2 41
		e	45.1						
		eL	47.1	32					
		ME_1	49 06	14		3			
		ME_2	52 38	18		1			
		MN	53 38	14	1				
		F	03 10						

W. H. O'Leary Sc.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

ϕ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	$\varepsilon : 1$	$\frac{r}{T_o^2}$
A_N	(1)	216	9.4	6.3	0.026
	(3)	123	8.3	4.8	0.03
A_E	(1)	235	10.8	6.0	0.03
	(3)	118	10.1	4.2	0.06
A_Z	(2)	87	5.1	3.3	0.09

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
136	Sept. 1	e	06 32.1						URSS. Stations ep 30° N., 72° E.
		eL	07 02.4	25					
		ME_1	08 56	20		5			Tachkent Δ 1210km
		MN	10 08	16	4				P 6 12 58
		ME_2	13 24	20		3			Zi-Ka-Wei Δ 4810
		F	07 45						e 6 17 20
137	" 1	e	07 46.5						
		MN_1	54 12	14	3				Apia P 7 39 36
		MN_2	55 39	12	1				
		ME_1	56 00	16		2			
		ME_2	57 33	13		1			
		F	08 45						
138	" 6	e	09 02.6						Masked by heavy microseisms.
		eL	10.1	16					
		MN_1	11 07	10	4				
		MN_2	12 53	10	2				Apia Δ 2°
		ME	14 08	13		2			P 8 52 00
		F	09 25						
139	" 7	eP	02 55 12	4				3120	0, 02 49 04
		iS	58 54	7	4	9		(28.1°)	
			03 00 05	7	9				Perth P 2 55 12
		SR_1	01 22	8	5	7			
		eL	02.5	22					Adelaide Δ 3100 k
		MN_1	06 20	19	49				P 2 55 22
		ME_1	06 31	15		71			
		MZ_1	07 09	15			18		Batavia
		MN_2	07 37	15	66				i 2 56 53
		ME_2	07 53	13		33			
		MN_3	08 42	15	45				
		ME_3	09 07	13		26			
		F	04 05						
140	" 10	e	21 48.2						
		MN	54 31	17	4				
		F	22 15						
141	" 11	eP	00 43 08					3290	
		eS	48 00	?				(29.6°)	
			48 30	15	11				
		eL	51.6	26					
		MN_1	53 07	18	13				
		ME_1	53 20	16		7			
		MN_2	54 30	16	12				
		ME_2	56 13	14		4			
		MN_3	57 20	15	7				
		F	01 40						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
142	Sept. 12	iP_E	01 24 45	4		-1½		2370	0, 01 19 52
		i	25 51	4		+3½		(21.3°)	
		i	25 56	4		-16	+2		Wellington N.Z. reports felt in Hawkes Bay and Bay of Plenty Distr
			26 51	5		10			
			27 32	7		12			
		iS	28 34	7	-5	+14			
		eL	30.3	12					
		i	31 00	8	+23				icts, N.I.,N.Z.
			31 10	8	31				Δ, 9.4°
			31 16	12		14			0, 1 20 03
		MN_1	32 51	12	6				P, 22 25
		ME_1	33 20	12		7			
		MN_2	34 07	12	9				
		F	02 25						
143	" 13	eP	03 34 22					4790	0, 03 26 08
		iS	40 43	6	-9			(43.1°)	Very heavy micro-
		iSR_1	45 02	7	+6	-6			seisms.
		eSR_2	46 18	19					Manila Δ 3280 km
		eSR_3	46 44	19					P 3 29 37
		eL	48.2	26					SE. Sangi Is.
		ME_1	52 00	23		35			Amboina Δ 700 km
		MN_1	53 47	21	19				P 3 29 57
		ME_2	54 45	26		30			Batavia Δ 2400 km
		ME_3	56 03	17		25			P 3 31 08 Menado
		MN_2	56 21	17	38				Sangi I.,Halmahei
		F	04 50						URSS. stations ep.
144	" 19	e	13 10.5						2½°N.,126½° E.
		eL	13.3	14					
		MN	15 20	11					
		F	13 25						
145	" 22	iP	07 36 54	4	+3	+2½		2830	Azimuth (computed
		iPR_1	37 26	4	+6	+4		(25.5°)	from iP):
		iPR_3	37 41	4	-4				N 37° 45' E.
		P_cP	40 11	7	5				hence, computed:
		eS	41 17	8					φ, 13° S.
		iS_1	41 22	11	+25	+12			λ, 167° E.
		iS_2	41 27	11	-49	-45			0, 07 31 13
		SR_1	42 06	9	17	18			
		SR_2	42 27	9		13			
		SR_3	42 36	12	33	14			Apia P 7 36 22
		eL	43 38	18					
		MN_1	44 27	11	27				Wellington Δ
		MZ_1	44 36	18			20		26.9-28.1°
		ME_1	44 59	16		48			P 7 37 25-27
		MN_2	45 25	14	60				Manila Δ 5195 km.
		ME_2	46 07	14		31			P 7 40 37
		MZ_2	49 33	15			18		U.S.C.& G.S. ep.
		MN_3	50 13	14	45				14° S.,164° E.
		ME_3	51 32	12		30			URSS. stations ep.
		MN_4	53 17	12	18				16° S.,161° E.
		ME_4	55 08	12		35			
		ME_5	56 47	11		24			
		eW_2	10 31.9	14?					W_2 series.
		F	11 15						
146	" 24	e?	09 29.8						Obscured by heavy
		e	32.9						microseisms.
		e(L?)	39.3	16					
		MN	42 44	14	2				
		ME	43 14	14		1			
		F	09 45						

Wm. O'Leary S.J.

No. 10 1928, October.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

	V	T_o	$\kappa : 1$	$\frac{r}{T_o^2}$
(1)	212	9.4	5.3	0.02
A_N (3)	113	8.4	4.8	0.03
(1)	256	10.7	5.4	0.03
A_E (3)	106	9.5	3.4	0.07
A_Z (2)	80	5.0	3.0	0.10

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
147	Oct. 9	e	03 19 52						Mexico.
		iP′	21 09	4		+3			
		iPR_1	22 04	4		-7			
		iPR_3	26 54	8		-11			
		iS_cP_cS?	28 08	10		+18			Georgetown,
		iPS	30 56	11		+11			P 03 07 10
		i	31 03	15		-77			S 11 57
		$P_cP_cP_cP$	31 33	19		32			Harvard Δ 3740 km.
		PPS	31 56	19		28			0 03 00 30
		PPPS	32 25	22		57			P 07 29
		SR_1	37 52	24	31	110			
		SR_2	42 09	17		20			Spokane Δ 36.7° in
		SR_3	46 01	19		17			Acapulco Deep off
		eL	54.8	30					Coast of Mexico.
		L	55 28	30	40	100	66		
		L	55 59	30		120	88		Granada epicentre
		ME_1	04 01 19	19		57			14.7°N.,97.5°W.
		MN_1	01 35	19	34				P 03 13 37
		MZ_1	03 07	19			34		
		ME_2	03 27	19		77			U.R.S.S. ep.
		MN_2	09 22	17	13				16.8°N.,102.2°W.
		ME_3	09 57	17		21			
		ME_4	14 35	15		15			Wellington Δ 89.6°
		MN_3	17 14	15	12				0 03 01 03
		MN_4	21 01	15	18				P 14 21
		ME_5	23 04	15		21			
		MN_5	28 13	15	10				
		ME_6	29 02	15		13			
		ME_7	34 16	17		11			
		MN_6	36 18	15	6				
		MN_7	43 16	19	15				
		ME_8	47 04	16		8			
		MN_8	49 16	19	14				
		eW_2	56.1	34					W_2 series.
		MN_1	05 02 16	21	13				
		ME_1	05 00	30		58			
		MN_2	05 07	21	15				
		MN_3	09 50	21	21				
		ME_2	10 20	21		23			
		ME_3	16 07	20		24			
		MN_4, ME_4	18 53	20	19	34			
		ME_5	21 03	19		19			
		MN_5	25 16	19	10				
	5		07 15						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
148	Oct. 9	i?	14 42 53	3					Preliminaries obscured by heavy microseisms.
		iS	45 51	6	4	3			
			46 00	8	6				
		eL	47.1	19					
		MN_1	48 46	17	9				Wellington e 45 48
		ME_1	49 12	17		4			eL 49 21.
		ME_2	51 54	13		2			Melbourne i 47 32
		MN_2	52 05	13	3				
		F	15 20						
149	" 10	e?	20 43 33	3					U.R.S.S. stations ep.,12°N. 144°7E
		e?	44 17	3					
		e	54 42	3					
		eL	58.3	22					Manila P 41 53
		ME	21 02 46	13		½			S 46 13
		MN	03 06	13	3				Melbourne i 52 33
		F	21 30.						
150	" 12	e	07 51.9	4					U.R.S.S. stations ep.,44°N. 146°E.
		e	52.7	7					
		eL	08 11.4	20?					Irkutsk Δ 3150 km
		MN_1	15 07	20	5				i 7 35 58
		MN_2	18 18	20	4				Hukuoka Δ 4900 km.
		F	08 30						Okhotsk Sea.P31 57
151	" 13	eP	15 24 54	3	1	1		4670	
		eS	31 09	4	2			(42.0°)	0, 15 16 48
		eSR_1	34 25	6	2	2			Amboina Δ 670 km.
		eL	38.2	30?					P 15 18 25
		ME_1	42 19	20		2			Batavia e 20 39
		ME_2	44 12	20		6			Minahasa?
		MN_1	44 46	18	3				Manila Δ 1060 km
		ME_3	46 19	18		3			P 20 40. Pacific,
		MN_2	46 35	18	3				SE.Coast of Mindan
		MN_3	49 15	16	4				U.R.S.S stations
		F	16 10						ep.,0°5S.121°E.
152	" 15	eP	08 37 18	6	3			3230	
		eS	42 07	9	5			(29.1°)	Adelaide Δ 2700
			42 24	19	17				eP 8 34 38
		eL	45 05	11		17			Amboina Δ 3140 km
		eL	45.4	29?					P 35 37
		MN_1	47 36	22	64				Manila P 38 19
		MZ_1	47 44	20			47		L 45 36
		ME_1	48 33	17		26			Irkutsk Δ 7620 km
		MN_2	49 18	15	24				P 41 56
		ME_2	50 33	13		51			
		MN_3	51 31	13	19				U.R.S.S. stations
		ME_3	52 25	13		20			ep.,1°S. 157°E.
		ME_4	54 11	11		12			
		MN_4	56 40	11	21				
		F	10 00						U.R.S.S. stations
153	" 15	eL	15 06.1	22					ep.,29°N.66.5°E.
		ME_1	12 42	20		4			Tachkent i 14 22
		MN_1	13 42	19	9				Baku Δ 2020 km.
		ME_2	16 10	20		7			i 14 23 29
		MN_2	18 16	19	13				Zi-Ka-Wei Δ 5140
		ME_3	19 26	19		18			P 28 13
		MN_3	20 43	19	14				Manila Δ 5600
		ME_4	22 24	19		10			e 29 09
		F	15 45						Strasbourg ep., 25.5°N. 63°E.

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY. N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per.	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
154	Oct. 17	eP	06 20 54	3		1		2780	0, 06 15 19
		eS	25 12	?				(25.0°)	Wellington Δ 15°
		eL	27.8	23					0, 06 15 27
		MN_1, ME_1	30 00	15	4	3			P 19 06
		MN_2	32 34	15	3				Melbourne e 22 40
		ME_2	33 10	14		3			Sverdlovsk P 34 25
		F	07 10						
155	" 17	eP	15 32 09					10,530	0, 15 18 41
		eS	43 27	8	1	1			Sucre Δ 3760 km.
		eSR_1	49 21	9	1	1			ep., 52°S. 60°W.
		eL_N	57.5	22					P 15 26 28
		eL_E	57.6	22					
		ME_1	16 03 17	19		2			Georgetown e 33 13
		MN_1	04 43	19	3				Adelaide i 39 27
		ME_2	08 19	19		3			Melbourne i 42 35
		MN_2	11 10	17	4				Wellington eL 40 54
		MN_3, ME_3	15 21	15	3	1			
		MN_4	20 32	17	3				
		ME_4	22 16	14		2			
		MN_5	27 58	15	2				
		F	17 00						
156	" 18	e	05 01.8						Very small.
		MN	04 00	11	1				
		F	05 20						
157	" 19	eP	07 03 16	3	½	¾		2820	
		eS	07 38	5		1		(25.4°)	Adelaide Δ 3400 km
		eL	10.1	19					P 7 05 00?
		MN_1	12 08	13	4				Melbourne i 06 07
		ME_1	13 21	13		1			Wellington iL 06 33
		MN_2	14 11	11	2				
		ME_2	15 20	13		1			
		F	07 50						
158	" 19	eP	10 24 40					3560	
		iP	24 41	4		+3		(32.0°	
		iPR_1	25 37	6		-10			
		iPR_2	25 58	6		-10			
		eS	29 48	9	2				S hard to identify
		P_cS	30 40	12	6	4			
		eL	32.3	20					Wellington Δ 16.4°
		MZ_1	33 48	19			34		Ep., 17°S. 174°W.
		ME_1	34 07	19		100			0, 10 18 16
		MN_1	34 47	15	34				P 22 22
		ME_2	35 15	15		61			Melbourne P 25 23
		MN_2	36 04	13	52				Manila e 30
		MN_3	36 56	13	40				Batavia i 30 34
		ME_3	37 14	15		48			Irkutsk P 33 08
		MN_4	37 46	13	40				Δ 11.800 km.
		MZ_2	38 24	15			21		U.R.S.S. stations
		ME_4	38 42	13		57			ep., 32.5°S. 181°E
		ME_5	39 45	13		42			Kermadic Is.
		MN_5	42 08	12	26				
		ME_6	45 07	13		28			
		ME_7	47 17	13		28			
		MN_6	48 08	13	28				
		F	13 00						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A^Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
159	Oct.21	e	16 28.8	4	2	1			Early phases obscured by micros. From 16h 35m to 16 37 complex waves on EW. Perhaps two shocks superposed. U.R.S.S. stations ep., 4°5S. 134°5E. Manila P 16 21 20 Zi-Ka-Wei Δ 6590 e 16 24 30 Melbourne Δ 22.7° P 29 08 Wellington Δ 40°2 O 23 50 P 31 47
		e	33.2	9	3				
		eL	34.1	20					
		ME_1	35 10	7		19			
		MN_1	35 32	6	18				
		MN_2	36 32	6	16				
		ME_2	36 44	12		27			
		MN_3, ME_3	37 51	8	14	18			
		ME_4	39 10	8		19			
		MN_4	40 10	9	13				
		MN_5	41 19	9	18				
		ME_5	41 34	14		14			
		F	17 25						
160	" 21	eL?	21 06.1						Very small. Melbourne eL 06.5
		ME	08 10						
		F	21 20						
161	" 22	i	05 52x10	4		2			
		eL	58.8	19					Wellington i 50 50 Melbourne i 57 12
		ME_1	06 01 04	11		2			
		MN_1	02 38	11	3				
		ME_2	03 40	13		1			
		MN_2	04 30	11	2				
		F	06 30						
162	" 23	i?	18 09 10	4		4			Slight traces only.
		i	15 10	8	6				

WM. O'LEARY S.J.
Director.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	s : 1	$\frac{r}{T_o^2}$
A_N	(1)	204	9.6	6.0	0.02
	(3)	112	8.3	5.0	0.03
A_E	(1)	240	10.9	5.5	0.02
	(3)	86	11.1	5.0	0.04
A_Z	(2)	86	5.1	3.0	0.10

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
163	Nov. 6	iP	04 09 48	6	-4	-7	+10	2000	Condensation.
		PR_1	09 55	5	8	13	4	(18.0°	Δ from L-P.S hard
		PR_2	10 00	5	18	14			to identify.
		PR_3	10 06	6	13	37	10		Azimuth (computed
		mN	10 21	8	28				from iP):
		mE	10 31	8		47			N. 59° 45′ E.
		mNE	10 39	8	33	43			hence, computed:
		mZ	11 14	7			7		φ, 24° S.
		mNE	11 58	6	43	33			λ, 168° E.
		mE	12 49	6		31			(approx.)
		iSR_2	13 53	5	-14	-27			O, 04 05 35
		mNEZ	14 01	5	54	105	-9		
		P_cP	14 25	9	58	75	42		
		mNE	14 37	10	88	68			USSR. stations
		eL_Z	14.8	30					ep.,21°S. 167°E.
		mE	15 01	9		57			
		mN	15 29	9	85				Wellington ep.,
		mE	15 41	11		62			20°S. 167°E.
		mN	15 51	8	86				Δ 21.9°
		mE	16 25	20		170			O, 04 04 41
		MN_1	16 29	18	265				P 09 45
		MZ_1	16 41	15			63		
		MN_2	16 46	18	295				Melbourne Δ 3120
		ME_1	17 05	18		220			P 10 46
		MZ_2	17 19	15			45		
		ME_2	17 23	16		220			Adelaide Δ 3350
		ME_3	17 39	16		225			P 11 17
		MN_3	17 47	15	180				
		ME_4	18 15	15		94			Manila Δ 6356
		MN_4	20 23	12	71				P 14 50
		ME_5	21 50	14		71			
		ME_6	23 00	12		58			Zi-Ka-Wei Δ 7610
		MN_5	24 00	12	59				P 16 01
		ME_7	25 00	11		42			
		ME_8	27 14	12		42			
		MN_6	28 02	12	47				
		MN_7	29 13	12	63				
		MN_8	30 37	12	63				
		ME_9	31 07	12		51			
		MN_9	31 56	12	40				
		ME_{10}	32 56	12		38			
		MN_{10}	36 31	10	25				
		ME_{11}	37 33	10		31			
		MN_{11}	40 12	11	23				
		F	06 55						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A^Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
164	Nov. 9	i(P?)	11 09 35	4	3			2560?	h m
		i(S?)	13 37	6	6				Wellington L 11 30
		eL	16.6	22					
		i_E	17 07	4		7			
		ME	18 00	19		6			
		MN	18 25	20	8				
		F	11 40						
165	" 10	iP	12 32 18	4	+1	+1½		2530	0, 12 27 07
		PR_1	32 46	8		4		(22.8°)	Wellington Δ 21.6°
		PR_2	32 59	7	3	2			0 12 27 27
		IR_3	33 05	7	5	5			P 32 27
		iS	36 18	8	+27				Suva Δ 12°. Probably
		mNE	36 32	8	22	18			same ep. as Nov. 6.
		i	37 39	38		-9			Manila e 12 37 51
		mE	38 05	15		12			Adelaide Δ 3500
		eL	38 15	30					iS 38 48
		MN_1	38 37	15	13				Batavia e 38 43
		ME_1	39 45	15		15			Melbourne P 43 18
		ME_2	40 22	15		17			S 48 02
		MN_2	40 48	13	13				USSR. stations ep.
		F	13 45						21°S. 167°E.
166	" 10	e	21 38 54						
		e	44 00	6		2			Wellington i 44 14
		e	44 05	6	2	4			L 47 32
		eL	46.6	17					Melbourne e 45 45
		ME	48 18	15		2			L 50 35
		MN	48 29	15	2				
		F	22 15						
167	" 11	e	23 02 13	9	1				Batavia i 22 50 14
		eL	21.3	21					Zi-Ka-Wei P 54 12
		MN	24 22	11	1				Δ 9230 km.
		ME	26 12	15		1			Hong Kong P 02 40
		F	00 05						
168	" 15	eP	02 39 59	3		1½		4510	Amboina P 2 34.1
		iS_N	46 04	7	5			(40?6)	Manila P 36 23
		iS_E	46 07	7		4			S 40 45
		eL	55.1	19					Hong Kong P 38 06
		MN	56 51	13	3				Batavia i 38 07
		ME	57 13	12		1			S 43 01
		F	03 13						Δ 3340 km.
169	" 15	e	07 50 53	5	2				Adelaide i 7 56 45
		eL	08 02.2	16					eL 59 50
		MN	03 20	15	2				M 8 01 35
		F	08 15						
170	" 17	e	10 29.1	4					Melbourne i 32 52
		eL	33.2	16					Wellington e 34 24
		MN	34 55	12	1				Adelaide eL 36 17
		ME	36 45	8		2			Perth P 43 00
		F	10 50						
171	" 18	e	06 02.4						Adelaide Δ 2100 km
		i	06 27	3	2				P 6 01 08
		eL	09.4	18					Melbourne i 01 35
		ME	12 05	9		3			Perth P 03 30
		MN	13 35	7	3				
		F	06 50						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N μ	Amplitude A_E μ	Amplitude A^Z μ	Δ km.	Remarks.
	1928								
172	Nov.19	e?	15 34.1						Obscured by heavy microseisms. Wellington ep. 20°S.168°E.approx.
		e	36.9	8					O 15 27 27
		MN	40 16	11	1				P 32 21
		F	16 00						Melbourne Δ 3330
									P 33 29
173	" 20	eP?	20 50 10					12,100	
		eP'?	53 49	4		2		(109°)	La Plata Δ 1725 km
		ePR_1	54 35	5		1			Pcia de Antofagasta, Chile.
		e	55 09	?					P 20 38.78
		$iS_cP_cP_cS$	01 20	8	4	2			J.S.A. epicentre; 23.1°S. 75.4°W.
		ePS	03 49	12	4	2			U.S.C.& G.S. ep. 23°S. 73°W.
		eSR_1	09 47	14	4	3			New Orleans Δ 7700
		mNE	10 33	26	18	9			P 20 43 40
		eSR_2	14 09	20		5			Georgetown Δ 7000
		eL	21.2	34					P 45 28
		mNE	22 35	34	18	15			Ottawa Δ 7550
		MN_1,ME_1	27 36	30	31	23			O 35 09
		MN_2	34 53	20	6				P 46 06
		ME_2	34 59	22		8			Cartuja Δ 9000
		ME_3	48 39	18		2			P 47 50
		MN_3	53 30	18	5				Wellington Δ 81.9°
		MN_4 ~~eW~~	22 01 23	18	3				O 35 59
		~~bW~~ $_2$	47.3	32					P 48 29
		MN	49 50	22	4				Manila iP' 55 41.
		ME_1	52 17	24		4			P obscured by heavy microseisms.
		ME_2	59 29	20		3			La Plata Δ 4520
		F	23 20						O 08 30.94
174	" 22	i(P?)	08 44 06	5	3			10,000?	P 38.93
		eS	54 43	6	3	2			Perth P 43 00
		iS	54 48	6		6			S 53 00
		$S_cP_cP_cS$	55 00	6		7			Wellington Δ 84°.4?
		SR_1	09 00 50	14	6	4			P? 43 27
		SR_3	07 26	28		40			iS 53 55
		e	09.7	40?					Melbourne Δ 6670
		eL	13.2	38					P 43 35
		ME_1	15 29	30		20			Batavia i 49 19
		MN_1	16 09	28	58				Adelaide Δ 7300?
		MN_2,ME_2	20 04	18	18	18			S 54 00
		ME_3	23 03	16		11			
		ME_4	26 21	16		7			Masked by micros.
		MN_3	26 54	16	21				Amboina Δ 330 km.
		MN_4	32 08	16	12				P 8 14 19
		F	10 50						
175	" 23	e	08 33.6						Very small.
		ME	38 47	16		2			Adelaide i 43 20
		MN	40 23	16	2				Melbourne i 50 05
		F	08 50						
176	" 25	e?	20 44.1						
		e	48.4						
		F	21 02						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N μ	A_E μ	A^Z μ	Δ km.	Remarks.
177	1928 Nov.28	iP	10 50 28	3	-1	+2		4080 (36.7°)	Azimuth (computed from iP): N. 55° W. hence, computed: φ, 9.5° S. λ, 121° E. 0 10 43 04
		i_{NE}	50 30	3	+4	-5			
		i_Z	50 33	3			+4		
		i_Z	50 37	3			+8		
		mNE	50 42	7	5	7			
		PR_1	51 23	10	4	6			
		PR_2	52 08	10	4	4			
		PR_3	52 20	10	6	6			
		iS	56 06	6	-11	+11			Amboina Δ 940 km. S. Celebes? P 10 45 25
		mNE	56 26	11	14	34			
		P_cS	56 36	11		46			
		SR_1	58 36	16	24	31			Malabar i 46 30
		SR_2	59 16	13	31	31			Batavia P 46 41
		SR_3	59 42	10	18	23			Manila P 48 20
		mN	11 00 00	9	24				Melbourne Δ 3860
		mE	00 10	9		28			P 49 20
		eL_Z	01.4	21					Hong Kong 49 34
		MN_1	04 26	20	370				Adelaide P 49 38
		ME_1	04 36	20		240			Δ 3050
		MZ_1	05 12	20			51		Phu Lien Δ 3470
		ME_2	07 10	20		410			P 49 43
		MN_2, MZ_2	07 35	18	385		54		Zi-Ka-Wei Δ 4330
		ME_3	07 48	18		340			P 50 36
		MN_3	08 32	16	200				Wellington epi., 8° S. 118° E. (approx.)
		ME_4	09 38	14		120			
		MN_4	10 36	14	130				0 10 43c07
		MZ_3	10 51	14			23		P 53 04
		ME_5	11 20	12		77			Δ 57.7°
		MN_5	11 40	12	100				
		MN_6	14 30	12	49				
		ME_6	15 42	12		83			
		ME_7	19 08	12		32			
		MN_7	19 30	14	56				
		eW_2	13 33.1	16					
		F	13 45						
178	" 29	eP?	14 02 42	6	2	2		2900?	
		eS?	07 10	8		1			Wellington i 05 07
		e	09 42	8	1				i 09 07
		eL	12.0	15					Adelaide i(S)09 27
		MN_1	13 22	14	5				e(L)14 50
		ME_2	14 00	16		2			
		MN_2	14 15	14	5				
		ME_2	18 26	14		1			
		F	14 50						
179	" 29	eP	15 49 42	4		2		2960 (24.1°)	Wellington Δ 19°4
		eS	53 54	8		2			Epi. 24°S. 172°W.
		eL	56.4	20					0 15 42 21
		MN_1	57 20	18	9				P 46 55
		ME_1	59 00	18		13			
		MN_2	59 10	16	16				Melbourne Δ 4110?
		ME_2	16 00 36	17		16			P 49 43
		MN_3	01 21	14	6				
		ME_3	01 51	16		23			
		F	17 10						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
180	Nov.29	eP	18 06 08	6		2		3390	
		PR_1	06 58	8		4		(30.5°)	Wellington Δ 18°.4
		PR_2	07 11	8	3	8			0 17 59 28
		iS	11 06	9		9			P 18 03 48
		mE	11 35	11		13			Suva Δ 13° Approx.
		eL	13.6	22					ep. 25°S.171°W.
		ME_1	15 54	18		96			
		MN_1	16 08	16	84				Melbourne Δ 4090
		ME_2	16 58	15		105			P 06 50
		MN_2	17 18	14	53				Adeliade
		MN_3	18 14	14	53				eS 09 24
		ME_3	18 46	14		120			Perth Pca 11 50
		ME_4	20 26	14		75			
		MN_4	21 51	14	40				
		ME_5	22 34	14		85			
		MN_5	26 08	13	30				
		ME_6	26 42	14		42			
		MN_6	27 21	12	26				
		F	20 05						
181	" 29	e	22 56.3						
		eL	58.1	20					Melbourne i 58 12
		MN_1, ME_1	23 00 46	14	3	1			Adelaide
		ME_2	03 42	15		1			e 23 00 05
		MN_2	04 06	12	3				
		F	lost in No.182.						
182	" 29	e	23 15.6	4					
		eS?	16 11	12?					Wellington Δ 21°.2
		mNE	16 45	6	1	3			0 23 07 56
		eL	20.7	17					P 12 51
		ME_1	22 28	20		21			
		MN_1	22 42	18	12				Perth Pca 19 00
		ME_2	24 10	17		21			
		MN_2	25 45	13	6				
		MN_3	26 41	12	9				
		ME_3	28 08	13		10			
		F	00 40						

WM. O'LEARY S.J.
Director.

Riverview College Observatory.

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

ϕ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m. Foundation : Triassic sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS. EW.)
2. Weichert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$
A_N	(1)	244	11.7	7.1	0.02
	(3)	111	8.3	4.2	0.04
A_E	(1)	237	11.2	5.1	0.02
	(3)	95	12.2	5.6	0.02
A_Z	(2)	87	5.1	3.0	0.09

No.	Date	Phase	Time (Greenwich) h. m. s.	Per. s.	Amplitude. A_N μ	A_E μ	A_Z μ	Δ km.	Remarks.
	1928								
183	Dec. 1	eP	04 20 13	4		1		9100	
		mNE	24 26	8	2	2		(81°9)	La Plata Δ 1310
		iS	30 33	6	-6	∓6			Destructive in Central Chile (Talaca)
		mNE	30 56	8	24	19			O 04 05.9
		i	31 48	10		∓28			P 08.9
		mNE	33 54	20	22	26			Pa Paz Δ 2180
		mNE	34 15	20	26	30			P 10 29
		mNE	34 56	20	23	19			J.S.A. epicentre
		eSR_1	37 16	26	19	25			33° S. 74.5° W.
		mE	38 32	30		120			U.S.C.&.G.S. ep.
		mE	39 03	30		170			36° S. 74° W.
		eSR_2	42 14	18	7	8			Georgetown Δ 7990
		mNE	42 43	24	19	26			P 04 17 46
		eSR_3	45 06	16		11			St.Louis Δ 8120
		mNE	45 39	16	6	8			P 17 57
		e	48 06	40					Ottawa Δ 8980
		mNE	48 30	40	130	280			O 06 06
		mE	49 12	40		450			P 18 18
		eL	52.1	30					Wellington Δ 81.2°
		mNE	52 47	30	75	110			O 06 06
		mNE	53 26	42	100	210			P 18 32
		ME_1	56 45	20		130			Kew Δ 12,100
		MN_1	57 05	20	61				ep. 37°S. 73°W.
		MN_2	05 00 00	18	46				P 20 24
		ME_2	00 51	18		120			Strasbourg
		ME_3	02 46	16		65			Δ 12,500
		MN_3	03 46	16	23				P 20 34
		ME_4	04 18	16		68			Manila Δ 17,000
		MN_4	06 08	17	20				eP' 26 10
		ME_5	09 20	16		45			Zi-Ka-Wei Δ 19,000
		MN_5	11 05	18	25				P 26 26
		ME_6	14 38	16		43			
		MN_6	15 26	16	17				
		ME_7	17 41	15		39			
		ME_8	24 14	16		25			
		MN_7	24 33	16	14				
		eW2	06 19.2	27					W_2 series.
		ME_1	23 10	20		29			
		MN_1	27 20	20	13				
		ME_2	31 12	20		12			
		MN_2	32 09	22	16				
		MN_3, ME_3	38 44	20	24	26			
		ME_4	43 11	20		24			
		MN_4	44 00	20	28				
		eW3	08 02 2	20					

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
184	Dec. 2	e	04 36 53	5					Aftershock of 183.
		e	37 10	5					
		ePR_1?	38 32	?					La Plata Δ 1330
		iS_cP_cS	44 43	7	-2	+1			Central Chile.
		$iS_cP_cP_cS$	45 15	6	-2	+1			0 04 20.29
		PS	47 24	16	2	2			P 23.25
		PPPS	48 23	16	1	1			Pa Paz Δ 2190
		$P_cP_cP_cP$	50 12	11	1				P 24 54
		SR_1	53 00	14	2				Ottawa Δ 8920
		PPSS	53 11 ~~48 22~~	20		5			0 20 26
		mE	54 02	16		4			P 32 35
		SR_3	05 00 40	14	2				Wellington Δ 78.9°
		eL	02.9	38					0 20 42
		MN_1, ME_1	11 10	17	17	31			P 32 54
		MN_2, ME_2	14 08	17	14	32			Melbourne Δ 86.6°
		MN_3, ME_3	18 10	15	6	8			P 34 00
		ME_4	23 07	14		8			Zi-Ka-Wei Δ 19000?
		MN_4	24 42	15	5				P' 40 51
		ME_5	26 25	15		5			
		MN_5	29 17	15	4				
		eW_2	06 34.2	22					W_2 series.
		ME_1	43 24	16		1			
		MN_1	46 42	16	1				
		MN_2	52 46	17	1				
		ME_2	52 52	16		1			
		MN_3	56 42	17	2				
		F	07 55						
185	" 3	e	17 05 22	4					Very small.
		eL	09.4	20					Hukuoka Δ 185 km.
		MN	08 38	16	1				P 16 33 18
		F	17 20						Zi-Ka-Wei Δ 1080
186	" 5	e?	03 16.3						P 34 09
		ME	23 16	12		1			
		MN	24 15	12	1				
		F	17 20						
187	" 7	eP	09 20 42	4	1	$2\frac{1}{2}$		4000 (36.0°)	0, 09 13 26
		PR_1	22 06	6	4	3			Manila P 9 19 10
		eS	26 16	4	4	5			Malabar Δ 2900 km.
		PS	26 28	8	7	5			P 9 19 40
		P_cS	26 54	12	8	8			Batavia Δ 3210
		SR_1	28 36	10	8	6			P 19 43
		SR_2	29 22	6	5	6			Adelaide Δ 3250
		SR_3	29 56	8	7	10			P 20 20
		eL	31.1	20?					Hong Kong
		ME_1	32 28	16		21			P 20 25
		MZ_1	32 39	4			8		Perth P 20 41
		MN_1	32 40	13	84				Melbourne Δ 3630
		ME_2	33 06	16		340±			P 21 00
		MN_2	33 10	12	88				Zi-Ka-Wei Δ 4150
		ME_3	33 42	16		200			e 21 12
		MN_3	33 52	9	62				Wellington Δ 51.3°
		MN_4	34 58	9	68				0 9 14 10
		MZ_2	35 09	6			9		P 23 25
		MN_5, ME_4	36 01	10	71	110			ep. 3°S. 126°E.
		MZ_3	36 14	10			58		
		ME_5	36 53	9		120			
		MN_6	37 05	9	61				
		MZ_4	37 10	10			43		
		ME_6	38 52	12		110			

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A^Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
187 (cont.)	Dec. 7	MN_7	09 39 44	14	83				
		MZ_5	39 51	10			29		
		ME_7	41 03	9		105			
		ME_8	42 28	11		63			
		MN_8	43 52	14	35				
		F	11 40						
188	" 8	e	07 11.9						
		eL	12.1	16?					Melbourne
		MN	16 00	10	½				i 7 15 08
		ME	16 12	12		1			L 16 00
		F	07 30						
189	" 8	e	10 53.1						Melbourne L 58 00
		eL	57.1	14					Adelaide
		ME	58 18	12		1			e(L) 11 00 10
190	" 8	e	16 58 45						
		eS	17 03 24	10	2				Melbourne
		eL	06.6	20					i 17 04 36
		ME_1	08 12	12		2			L 07 00
		MN	09 19	13	2				Adelaide
		ME_2	09 30	10		2			i(S) 04 41
		F	17 40						eL 08 45?
191	" 8	e	18 16.2						
		eL	17.2	20					
		MN_1	18 39	14	2				
		ME	20 42	14	1	1			
		MN_2	21 14	12	1				
		F	18 40						
192	" 9	eP	00 03 06	8	2	1		2930	0 23 57 16
		éS	07 35	7	2	2		(26.4°)	
		iS	07 39	8	+17	-9			Melbourne Δ 3610
		mNE	07 51	11	15	17			P 00 04 00
		SR_1	08 45	12	5	16			Adelaide Δ 3200
		SR_3	09 02	12	5	15			P 04 05
		eL	09.4	?					Wellington Δ 26.3°
		MN_1	10 49	20	16				0 23 58 38
		MN_2	11 27	18	31				P 00 04 29
		ME_1	11 44	16		13			Manila P 05 43
		ME_2	12 40	14		89			Perth P 06 00
		ME_3	13 35	10		78			Batavia i 06 42
		MN_3	14 24	10	24				
		ME_4	14 55	10		48			
		MN_4, ME_5	16 10	10	16	13			
		F	02 10						
193	" 9	eP	03 55 34	2		1		2020	0 03 51 19
		eS	58 55	4	2	2		(18.2°)	Wellington says
		mN	59 08	6	4				felt extensively in
		eL	59.7	18					both Is. of N.Zea-
		MN_1	04 00 53	14	7				land. Max.force R-F6
		ME_1	00 58	14		3			Epi. 40°S. 174°E.
		MN_2	01 58	12	5				0 03 51 09
		ME_2	02 15	12		4			P 51 29
		ME_3	05 24	12		3			Melbourne Δ 22.6°
		MN_3	07 01	11	3				P 55 52
		F	05 05						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N μ	A_E μ	A^z μ	Δ km.	Remarks.
194	1928 Dec. 9	eP	05 10 54	7	1			3000 (27.0°)	0 05 04 57
		mN	11 07	10	6				Melbourne Δ 3660
		PR_1	11 29	8	4				P 5 11 38
		PR_2	11 37	8	4				Manila
		mN	12 54	8	8				P 13 37
		e	15 10	6	4	3			Wellington
		i	15 18	6	8				iPP? 13 59
		iS	15 28	8	28	12			Batavia
		mNE	15 42	10	22	28			i 14 32
		SR_1	16 48	10	12	21			Perth
		SR_2	17 12	10	21	18			P_{ca} 19 45
		SR_3	17 24	10	8	16			
		eL	19.1	16?					
		ME_1	20 22	12		71			
		ME_2	21 20	10	XX	110			
		MN_1	22 08	10	28				
		ME_3	22 20	10		81			
		ME_4	23 18	11		50			
		MN_2	23 56	10	20				
		ME_5	25 34	8		56			
		MN_3	25 40	8	33				
		ME_6	27 08	8		39			
		MN_4	27 24	8	22				
		MN_5, ME_7	30 27	9	32	105			
		MN_6	31 28	9	40				
		ME_8	31 59	8		76			
		MN_7	32 52	8	37				
		MN_8	34 18	8	26				
		MN_9	36 13	8	26				
		ME_9	36 39	8		38			
		F	07 50						
195	" 9	eP	18 15 58	6	2	1		2940 (26.5°)	0 18 10 07
		iP	16 01	6	4				Melbourne Δ 31.3°
		iS	20 28	8	18	2			P 18 16 48
		mNE	20 39	8	30	25			Adelaide Δ 3100 km.
		mNE	20 48	8	38	21			P 17 09
		mNE	20 55	8	30	19			Wellington Δ 33.4°
		mE	22 37	7		15			P 17b33
		eL	24.1	16					approx. epicentre
		ME_1	25 24	14		36			10° S. 157° E.
		ME_2	26 08	12		80			Manila
		ME_3	27 42	10		79			P 18 39
		ME_4	29 16	10		37			Batavia e 18 20 0
		ME_5	31 02	8		25			Hong Kong M 34 30
		ME_6	33 06	8		21			
		F	21 00						
196	" 10	e	04 40 12						Batavia Δ 1640,
		e	40 52	10	1				Tapanoeli (N.Sumatra.)
		e	52 10	6	1	1			P 4 36 45
		eL	05 06.1	26					Manila P 4 39 22
		MN	08 42	18	2				Perth Pca 46 00
		ME	10 18	17		2			Melbourne i 51 36
		F	05 45						
197	" 12	e	20 08 15						
		eL	16.4	20					
		ME	18 04	14		2			
		MN	18 14	14	1				
		F	lost in No.198.						

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RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N μ	A_E μ	A^z μ	Δ km.	Remarks.
	1928								
198	Dec.12	iP	20 25 40	4		-4		3420	0 20 19 03
		PR_1	26 32	7	3	10		(30.8°)	
		PR_2	26 46	7		19			
		iS	30 40	9		-9			Wellington Δ 18.0°
		mNE	31 08	11	8	16			approx. epicentre
		SR_1	32 28	10	6	9			27° S. 172° W.
		SR_2	32 57	10		14			0 20 19 08
		eL	33.6	24					P 23 25
		MZ_1	34 41	16			31		Melbourne Δ 35.5°
		MN_1	34 49	16	61				P 26 27
		ME_1	35 08	18		150			Adelaide Δ 4500 km
		MN_2	35 44	15	98				P 27 09
		ME_2	36 20	16		150			Manila
		MZ_2	36 33	14			60		P 31 23
		MN_3, ME_3	37 38	14	37	140			Perth
		MZ_3	38 07	14			61		P 31 45
		ME_4	39 21	14		130			
		MZ_4	39 36	14			39		
		ME_5	40 06	14		130			
		MN_4	42 01	12	58				
		MZ_5	43 31	13			25		
		MN_5	43 36	12	30				
		ME_6	43 45	14		78			
		ME_7	45 07	14		82			
		MN_6	45 58	12	17				
		ME_8	52 40	12		35			
		F	00 00						
199	" 13	e	03 35 27						
		eL	38.4	15?					Melbourne
		ME	40 45	11		1			eL 3 40.7
		MN	42 00	11	1				
		F	04 00						
200	" 14	e	14 18 31	4		1			Wellington Δ 6.2°
		e	18 46	5		2			0 14 16 03
		eL	25.3	27					P 17 38
		ME_1	26 58	21		3			Melbourne
		MN	27 08	13	2				i 19 50
		ME_2	29 19	17		2			
		F	14 50						
201	" 14	e	23 23.8	6					
		eL	30.2	25					Melbourne
		MN_1	32 18	16	3				eL 23 24 05
		ME_1	33 17	16		7			Wellington
		ME_2	35 13	16		6			eL 25 03
		MN_2	35 42	14	2				
		F	00 10						
202	" 17	e	04 06 20	6		2			Wellington i 01 27
		eL	08.9	17					Melbourne i 03 00
		MN	10 52	15	2				Adelaide e 12 27
		ME	11 54	15		2			
		F	04 35						
203	" 18	e	22 05 45	2		2			Very small.
		eL	06.1	13					Melbourne
		ME	06 49	10		1			i 21 40 32
		MN	07 49	11	1				
		F	22 20						

(Continued On next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A^Z	Δ	Remarks.
	1928		h. m. s.	s.	μ	μ	μ	km.	
204	Dec.19	eP	11 45 51	4	1	1		5410	0 11 36 56
		PR1	47 52	6	4	2		(48.7°)	
		PR2	48 35	9	7	4			Manila ∠ 1040,
		mNE	50 06	10	10	7			N.Celebes Sea, S.
		iS	52 51	8	8	4			Mindanao.
		PS	53 00	10	12	9			P 11 39 18
		SR1	56 27	14	20	25			Amboina Δ 2450
		mNE	56 56	12	37	39			P 39 48
		SR2	57 52	13	29	29			Phu Lien Δ 2550
		SR3	58 14	13	30				P 42 11
		eL	12 00.1	?					Zi-Ka-Wei Δ 2810
		MN1	01 12	12	59				P 42 31
		ME1	02 32	12		42			Hukuoka Δ 2640
		MN2	04 00	12	44				P 42 53
		ME2	05 34	12		44			Adelaide ∠ 4800
		MZ1	06 52	15			27		P 45 08
		ME3	07 46	16		98			Melbourne ∠ 46.3°
		MN3	07 54	12	34				P 46 00
		ME4	09 30	14		50			Wellington Δ 61.5
		MN4	09 52	16	69				0 38 09
		MZ2	09 58	15			27		P 48 31
		ME5	12 12	13		73			epi. 5°N. 128°E.
		MZ3	12 19	15			25		Strasbourg epi.
		MN5	13 40	14	46				6°N. 124.5°E.
		ME6	13 52	12		40			
		ME7	16 50	14		42			
		MZ4	18 10	15			27		
		MN6	18 33	14	53				
		CN1	29 32	14	19				
		CN2, CE1	34 14	13	14	19			
		eW2	14 18.1	26					W2 series.
		ME	22 56	24		2			
		F	15 30						
205	" 27	e	05 08 55	8	1				Zi-Ka-Wei
		eL	26.1	32?					PcP 5 05 52
		MN	36 20	20	2				PcPcS 10 04
		ME	36 38	16	1				Melbourne i 08 25
		F	06 05						Ottawa e 11.0
206	" 28	iP	14 28 28	4	2	3		5660	0 14 19 18
		PR1	30 40	12	3	2		(50.9°)	Manila ∠ 930 km.
		iS	35 42	10	11	+16			P 14 21 26
		PS	35 50	10	5	13			Phu Lien ∠ 2390
		SR1	39 05	12	8	15			P 24 25
		SR2	40 16	12	25	24			Batavia ∠ 2670
		eL	45.5	20					P 24 31
		ME1	49 17	16		28			Zi-Ka-Wei
		MN1	49 58	14	10				e 24 47
		ME2	50 29	18		39			Adelaide ∠ 4800
		MN2	51 54	14	17				P 27 55
		ME3	55 05	15		26			Wellington ∠ 69°4
		MN3	55 36	14	16				0 19 14
		ME4	57 25	14		14			P 30 27
		MN4	58 36	14	16				ep.13°N. 127°E.
		F	17 00						(approx.)
207	" 31	i	07 00 48	4	2	2			Wellington ∠ 4.1°
		eL	05.0	16					Felt in S.Is. N.Z.
		ME	05 32	13		1			0 06 56 11
		MN	05 50	13	2				P 57 15
		F	07 30						

WM. O'LEARY S.J. Director.