

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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	$\epsilon : 1$	$\frac{r}{T_0^2}$
A _N {1}	147	8.0	5.3	0.01
A _E {3}	126	10.1	4.8	0.01
A _E {1}	152	7.3	3.0	0.01
A _E {3}	152	11.2	3.7	0.04
A _E {2}	77	4.9	4.9	0.03

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A _N	A _E	A _Z		
1	1916 Jan. 1	III	iP	13	26	32	3-3	μ	μ	μ	km.	Severely felt at Rabaul (New Britain). Intensity probably VII-VIII F.M., judging from newspaper reports (Sydney Jan. 18). See Special Bulletin, issued Jan. 4th. Az., computed from iP, 180° approx m) No. 2 seismometer (Z) deranged.
			i	26	47		8	+22	-	-	3280	
				27	32		9	52	-	-		
				28	03		9	55	-	-		
				28	49		9	62	-	-		
				29	39		9	60	-	-		
				30	20		9	-	51	-		
			iS	31	35		15	428	108	-		
			PS	32	05		15	750+	336	-		
			eL	33	6		30					
			M ₁	35	52		22	768	1455			
			ME ₂	37	15		19		2580			
			MN ₂	37	28		18	650+				
			ME ₃	39	19		13		360			
			MN ₃	41	51		14	640+				
			ME ₄	42	45		13		610			
			MN ₄	43	55		12	610				
			ME ₅	45	09		11		460			
			ME ₆	47	00		12		720			
			ME ₇	49	15		9		240			
			MN ₅	50	03		9	390				
			MN ₆	52	56		10	240				
			CE ₁	53	11		11		380			
			CE ₂	56	36		13		390			
			CN ₁	59	32		12	200				
			GE ₃	14	02	26	13		230			
			CN ₂	07	40		13	180				
			CE ₄	08	17		12		110			
			CN ₃	17	03		12	80				
			CN ₄	28	32		11	35				
		W ₂ waves	eW ₂	15	58		34					
			MN ₁	16	02	9	22	14			Well-marked W ₂ series.	
			MN ₂	06	1		24	16				
			ME ₁	07	4		25		30			
			MN ₃	09	6		23	19				
			ME ₂	14	6		21		25			
			MN ₄	16	0		20	14				
			MN ₅	19	5		20	14				
			ME ₃	25	3		20		27			
			ME ₄	33	6		13		15			
		W ₃ waves	eW ₃	34	0		16					
			M ₁	38	0		16	8	19			
			MN ₂	41	0		16	7				
			ME ₂	41	5		16		16			
			F	17	35							

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1 (continued)

January 1 to 31 1916

No.

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19

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	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

1

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A _N	A _E	A _Z		
2	1916 Jan. 1	I	e	18	04.5							
			eL		07.1	18						
			ME		10 30	12		20				
			F	18	55							
3	" 1	I	e	23	41.2	5	2½	-				
	" 2		eL		46.1	18						
			ME ₁		46 49	13		10				
			MN ₁		49 14	13	8					
			ME ₂		49 36	13		8				
			F	0	40							
	" 2	I	e	1	27.6							
			eL		34.5	17						
			ME		36 37	13		3½				
			MN		37 41	14	3½					
			F	1	55							
	" 2	I	e	4	59.2							
			eL	5	05.7	14						
			ME		07.7	13		3½				
			MN		07 32	13	1½					
			F	5	25							
	" 3	I	e(P?)	23	02.6							
			e(S?)		07.5	?						
			eL		12.5	15						
			MN		15 30	14	9					
			ME		16 06	13		6				
			F	23	40							
	" 4	I	e	5	09.6							
			e		14.5	12		1½				
			e		18.6							
			F	5	45							
	" 4	I	e?	11	37.6							
			e		40.0	?						
			e		45.6	18						
			MN		51 35	13	3					
			ME		52 46	12		2½				
			F	12	15							
	" 5	I	e(S?)	12	53.1	15	2	-				
			eL		57.1	20						
			ME		58 47	16		3				
			MN		59 00	20	4					
			F	13	15							
	" 7	I	e?	13	28.6							
			e(S?)		34.6							
			eL		39.5	20						
			MN		41 30	18	3					
			ME		43 47	17		3				
			F	14	05							

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No. 1 (continued)

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	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ km.	Remarks.
				h.	m.	s.		A _N μ	A _E μ	A _Z μ		
11	1916 Jan. 8	I	e	8	48	.7						
			MN		54	36	10	$\frac{3}{4}$				
			ME		55	48	10		$\frac{3}{4}$			
			F		9	05						
12	" 10	I _r	iP	17	22	43	4	-1	-		2490	
					22	50	4	5	1	1		
			iS		26	47	9	+9	-3			
			PS		27	04	9	3	3			
			eL		28	.1	18					
			ME ₁		29	45	12		21			
			MN ₁		31	38	10	16				
			MZ ₁		31	44	9			8		
			ME ₂		32	11	10		24			
			MZ ₂		33	23	8			6		
			MN ₂		34	08	10	16				
			ME ₃		34	39	9		16			
			F ₃		16	40						
13	" 11	I _r	eP	11	21	.8	5	2 $\frac{1}{2}$	$2\frac{3}{4}$		1700	
			eS		24	.7	10	2 $\frac{1}{2}$	$2\frac{3}{4}$			
			PS		25	03	10	5	1 $\frac{1}{2}$			
			eL		26	.6	21					
			ME		30	46	19		35			
			MZ		30	50	18			17		
			MN		30	54	17	25				
			F		12	10						
" 11	I	eL	16	52	.6	20?					Phases obscured by large microseisms.	
		ME		54	51	15		21				
		MN		55	51	13	6					
		F		10	00							

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	V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
A_N				
A_E				
A_Z				

(See last sheet)

1

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h	m.	s.		A_N	A_E	A_Z		
5	1916 Jan. 13	III	r eP	25	2		53	μ 4	μ 13	μ 14	3620	Azim. 152°
			i	25	24		53	+13.7	-5.6	-13		ϕ 3° S.
			PR ₁	26	43		7	16	10	+22		λ 140° E
			PR ₂	27	37		7	7	3			(approx.)
			iS ₂	30	37		82	+18	+22	3		
			iPS	30	58		82	-72	+20	17		
			iBR ₁	33	21		9	61	+103	23		
			SR ₂	34	00		9	58	69	61		
			eL	45	5		45					Computed time of shock, 6h 18m 18s.
			M ₁	36	50		13	? 960+				
			KZ ₁	37	26		12			1500		
			M	38	33		13	? 900				
			ME ₃	39	26		12	790				
			ME ₅	40	15		15	1520+				
			ME ₄	40	48		13	590				Pendulum N ^o 1 several times against the stop-screws.
			LN	40	52		13	150+				
			KZ ₂	40	55		13			1910		
			ME ₅	42	17		13	600				
			MN ₅	42	28		13	520				
			KZ ₃	42	53		13			530		
			ME ₆	44	00		13	520				
			MN ₆	44	30		14	350				
			KZ ₄	46	20		12			310		
			MN ₇	47	13		16	350				
			ME ₇	47	43		15	425				
			CE ₁	52	14		12	160				
			CN ₁	53	05		13	50				
			CZ ₁	53	47		11			47		
			CZ ₂	56	26		11			53		
			CN ₂	59	28		13	66				
			CE ₂	7 00	38		12	65				
			CE ₃	04	58		12	66				
			CN ₃	05	39		11	40				F lost in N ^o 16

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	V	T ₀	e: l	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

1

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ km.	Remarks.
			h.	m.	s.		A _N μ	A _E μ	A _Z μ		
16	1915 Jan. 13	eP	8	27	5	6				3630	Az. 162° 3°S 142°E. (approx.) Computed time of shock,- 8h 20m 36s Largest seismic wave-motion by far ever recorded here. Between 8-29 and 8-45, pendu- lum N° 1 rep- eatedly against stop-screws, and consequently MN4 to MN9, and ME5 to ME9 impos- sible to meas- ure accurately.
		1		27	41	6	+24	-7 $\frac{3}{4}$	-8		
				28	00	6	24	24	52		
		iPR ₁		29	10	6 $\frac{1}{2}$	+44	24	40		
		PR ₂		30	03	7	18	8	13		
		iS		32	58	9	+52	71	-84		
				33	14	9	170	150	15		
		PS		33	28	9	210	56	19		
		eL		33	6	50+	(Angen.)				
		M ₁		35	43	13	225	600	280		
		ME		37	07	23		3270			
		MN		37	26	21	2580				
		ME		37	54	29		6880			
		MZ		38	20	18			1970		
		ME		38	35	18		2900			
		MN		39	00	10	420				
		MZ		39	17	10			2350		
		MZ		39	44	10			2840		
		MZ		42	38	10			2590		
		MZ		43	39	12			4200		
		MZ		45	11	12			2520		
		MN		45	39	14	1300				
		MN		47	04	17	1820				
		MZ		48	02	17			1840		
		ME		52	09	15		1060			
		MN		52	35	10	310				
		ME		53	47	12		730			
		MN		56	30	12	360				
		ME		59	52	11		210			
		MN		9	02	26	12	300			
		ME		04	22	11		250			
		CZ		06	49	11			60		
		CN		06	53	11	120				
		CE		08	43	10		150			
		CN		10	45	10	88				
CZ		13	05	9			35				
CE		18	35	10		57					
CZ		19	29	10			40				
CE		22	22	11		70					
CN		23	56	11	42						
CE		27	42	11		90					
CN		30	21	11	63						
CE		36	13	11		55					
F		14	15								

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	V	T_0	$\epsilon: 1$	$\frac{r}{T_0^2}$
A_N				
A_E	(See last sheet)			
A_Z				

1

No.	Date.	Phase.	Time (Greenwich)				Amplitude			Δ km.	Remarks.
			h.	m.	s.	Per.	A_N μ	A_E μ	A_Z μ		
17	1916 Jan. 13	iP	10	57	56	3	-6	--	--	3770	W ₂ waves of N ^o 16, if pres- ent, masked by N ^o 17.
		S	11	03	30	8	5	--	--		
		eL		07	.0	17					
		ME ₁		09	47	12		360			
		MZ ₁		09	58	12			260		
		ME ₂		10	09	12		275			
		MN ₁		10	34	12	170				
		MN ₂		13	39	12	290		210		
18	" 13	MZ ₂								F lost in N ^o 16	
		e	14	35	.0						
		ME		40	24	7		8			
		M		43	22	23	23		17		
19	" 13	F	15	05						F lost in N ^o 20	
		e	21	49	.1						
		MN		52	28	9	3				
20	" 13	M		54	08	9		2	4	F lost in N ^o 20	
		e	22	03	.0						
		eS		05	.7	7	1 $\frac{1}{2}$	2			
		SR ₁ ?		07	.0	8	16	13			
		eL ₁ ?		08	.3	15					
		ME		09	32	11		11			
		MZ		09	47	10			10		
		MN		11	05	10	20				
21	" 13	F	22	50						F lost in N ^o 20	
		e	22	26	.8						
		ME		30	48	11		2 $\frac{1}{4}$			
		MZ		31	03	12			7		
22	" 14	MN		31	18	12	6			F lost in N ^o 20	
		F	22	40							
		e(P?)	6	43	.0	4	$\frac{1}{8}$	$\frac{1}{8}$			
		e		43	.8	4 $\frac{1}{2}$	2 $\frac{1}{4}$	$\frac{1}{8}$			
23	" 14	eL		45	.2	16				F lost in N ^o 20	
		ME		46	21	15		2			
		MN		46	42	13	8				
		F	7	05							
24	" 14	e	11	26	.0	10				F lost in N ^o 20	
		ME		26	42	10		$\frac{3}{4}$			
		MN		28	00	10	$\frac{3}{4}$				
		F	11	35							
25	" 14	e	16	58	.6	3				F lost in N ^o 20	
		ME		17	02	07	10		3 $\frac{1}{4}$		
		MN		03	57	10	1 $\frac{3}{4}$				
		F	17	15							
25	" 14	e	21	32	.8					F lost in N ^o 20	
		ME		35	09	?					
		MN		36	31	12	2 $\frac{1}{2}$				
		F	21	45							

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A _N				
A _E	(See last sheet)			
A _Z				

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			h.	m. s.		A _N μ	A _E μ	A _Z μ		
26	1916 Jan. 15	e	2	02.2						
		ME		07 08	11		3½			
		MN		07 19	11	4½				
27	" 15	F	2	30						
		e	5	26.7						
		e		35.3						
28	" 16	ME		46 00	17					
		MN		48 21	15	6				
		F	6	15						
29	" 16	e	17	06.2						
		ME		07 23	13		1½			
		MN		09 14	11	3½				
30	" 18	F	17	20						
		e	17	22.9						
		MN		25 36	10	¾				
31	" 19	ME		26 49	10		¾			
		F	17	30						
		iP	13	59 53	4½	2½	-	+10	2800	
			14	00 07	4½	6	-			
		iS		04 21	10	-10	2½			
		PS		04 32	10	13	1½			
		eL		07.7	18					
		ME		09 21	11		28			
		MN ₁		10 12	14	22				
		MZ ₁		12 45	15			23		
32	" 19	MN ₂		16 16	12	34				
		F	15	00						
		e	11	13.8						
32	" 19	eL		17.4	21					
		ME		18 14	16		14			
		MN		19 20	17	11				
		F	11	40						
		eP	19	02.7	11	2½	-	3450		
		iS		07 56	8	-17	-5			
		eL		11.0	22					
		ME ₁		13 47	12		114			
		MN ₁		14 20	16	58				
		ME ₂		16 32	10		53			
32	" 19	MN ₂		18 36	15	74				
		MN ₃		21 17	13	75				
		MZ ₁		21 22	13			50		
		ME ₃		22 58	10		38			
		MZ ₂		23 10	11			37		
		C		34 19	11	11	12			
		F		23v10						

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	V	T_0	$e:1$	$\frac{r}{T_0^2}$
A_x				
A_y	(See last sheet)			
A_z				

1 1

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A_x	A_y	A_z		
33	1916 Jan. 19	eP	20	30.9	4	-	2		1500?		
		S?		33.5	8	2½	5				
		eL		34.2	12						
		MN)		35 12	10	9		5			
34	" 22	MZ							B' lost in N°32.		
		ME	35	36	12		13				
		eL	11	29.8	21		1½				
		ME		35 00	13	1½	1½				
35	" 22	MN		36 14	13	1½			2370		
		F	11	50							
		eP	18	10.4	3	-	½				
		iS		14 19	7	-1½	-3½				
				14 27	7	2½	2				
		MN		17 57	12	1½					
36	" 24	ME		19 09	13		1½				
		F	18	35							
		eP	5	53.2	?						
		ME	6	30 04	17		3				
37	" 24	MN		30 14	17	3					
		F	7	00							
		e(P?)	7	21.4	?						
		e(S?)		34.9	?						
38	" 26	eL		48.4	50+				3500		
		MN ₁		56 07	35	38					
		ME ₁	8	03 44	28		28				
		MN ₂		06 28	21	13					
		MZ		11 30	18			17			
		ME ₂		11 46	19		35				
		ME ₃		18 13	18		11				
		MN ₃		22 52	17	11					
		F	9	40							
		eP	12	32.0							
		PR ₁		33 48	5½	1	4½				
		eS ₁		37.3	7	1½	2				
39	" 28	i		37 25	7	-9	-6				
		eL		39.6	20						
		MN ₁		41 00	18	124					
		MZ		43 12	18			68			
		ME ₁		43 31	17		130				
		MN ₂		44 21	12	55					
		MN ₃		52 14	12	27					
		ME ₂		52 25	13		55				
		F ₂	15	20							
		e	2	37.4							
		eL		40.5	14						
ME		41 31	12		2½						
MN		42 00	11	2½							
F	3	00									

(Continued on next sheet)

No.

 792
 (COPY)

January 1 to 31

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

	V	T_0	$\epsilon: 1$	$\frac{r}{T_0^2}$
A_N				
A_E				
A_Z				

(See last sheet)

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A_N	A_E	A_Z		
40	1916 Jan. 30	e	5	40	5						
		1(S?)		43	23	5		$4\frac{1}{2}$			
		eL		43	7	14					
		M		44	25	12	5	9			
		F	6	05							
41	" 30	e	20	22	5						
		eL		26	7	19					
		MN		29	19	14	5				
		ME		32	18	15		$2\frac{1}{2}$			F lost in N ^o 42.
42	" 30	eP	20	43	1	4			1	2300	
		S		47	0	5		$2\frac{1}{2}$			
				48	27	6	$4\frac{1}{2}$	$1\frac{1}{2}$			
		eL		50	0	22					
		MN		54	57	13	47				
		MZ		57	29	16			26		
		F	22	40							
43	" 31	eP	18	09	2	7		$\frac{1}{2}$		9000	
		ePR ₁		12	3	8	$\frac{1}{2}$	1			
		eS		19	4	15	6	14			
		PS		20	19	15	11	9			
		eL		34	3	30					
		MN ₁		38	30	16	7				
		ME ₁		38	38	16	11				
		MN ₂)		43	23	15	11	12			
		ME ₂)		43	19	18			17		
		MZ ₁		56	40	14			10		
		MZ ₂		56	40	14					
		F	20	00							
44	" 31	eP	18	19	4	4	?	?		3700	Later phases indistinguish- able from those of N ^o 43.
		eS		24	9	10	$2\frac{1}{2}$	4			
		PS		25	26	10	10	8			

E.F. Pigot 57

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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Manka Conical Pendulum Seismometer (450 kilo.)

	V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
A_N (1)	152	7.5	4.8	0.02
A_B (3)	124	10.0	5.5	0.02
A_Z (1)	157	6.8	3.0	0.01
A_Z (3)	156	10.0	4.7	0.03
A_Z (2)	91	4.8	4.6	0.04

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A_N	A_E	A_Z		
45	1916 Feb. 1	I _r	iP	6	05	56	4	$-3\frac{1}{2}$	μ	μ	2600	
			eS		10	10	7	-	-	2		
			i		10	28	7	$+5\frac{1}{2}$	$-5\frac{1}{2}$			
			eL		12	.0	16					
			MN ₁		14	11	10	10				
			ME ₁		14	54	9		9			
			MN ₂		16	56	9	11				
			ME ₂		17	16	8		9			
			MZ		19	04	8			$2\frac{1}{2}$		
			F	7	40							
46	" 1	I _u	iP	7	47	15	(2)	$-5\frac{1}{2}$	-	-	7300	
			eS		56	.0	7	-	$2\frac{1}{2}$	-		
					56	17	7	$5\frac{1}{2}$	$5\frac{1}{2}$	9		
					57	34	7	8				
			eL	8	03	.3	24					
			M ₁		06	45	22	57	125			
			M ₂		12	20	15	35	54			
			MN ₃		16	26	16	90				
			MZ		16	30	16			60		
			ME ₃		17	04	16		60			
47	" 1	I _r	F	11	00						2900	
			eP	9	18	.9	4					
			eS		23	.5	6	$1\frac{1}{2}$	1			
			eL		27	.7	16					
			ME		29	43	14		23			
			MN ₁		32	00	12	7				
			MZ		34	44	10			4		
			MN ₂		36	28	10	9				
			e	19	54	.0						
			MN		59	35	8	$2\frac{1}{2}$		$3\frac{1}{2}$		
48	" 2	I	MZ		59	50	8				F lost in No. 46.	
			ME		59	57	8		2			
			F	20	20							
			eP	21	35	.5	2					
			eS		41	.0						
			i		41	10	5	$+6$	$-6\frac{1}{2}$			
					42	05	5	5	13			
			eL		44	.9	12					
			ME		46	04	8	12				
			MZ		46	.4	8		15	10		
49	" 2	I _r	F	22	40						3700	Short periods
			eP	10	08	.6						
			ME		12	15	10		2			
			MN		14	10	6	$\frac{1}{2}$				
50	" 3	I	eP								F lost in No. 51.	
			ME									
			MN									

(Continued on next sheet)

2 (continued)
 No.

1916, February 1 to 29

19

Riverview College Observatory, SYDNEY, N.S.W.

Seismological Bulletin.

 $\phi = 33^\circ 49' 49'' \text{ S.}$ $\lambda = 151^\circ 9' 30'' \text{ E.}$ $h = 41.9 \text{ m.}$ Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Manka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

2

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A _N	A _E	A _Z		
51	1916 Feb. 3	I	e	10	17.9	6				km.		
			e		18.6	7	1	2½				
			ME ₁	20	09	12		16				
			MN	22	41	10	5½					
			ME ₂	23	03	10		11				
52	" 3	I	MZ	23	19	10			8		Short wave- lengths.	
			F	11	00							
			eP	19	09.7							
			e(S?)		15.1	8	-	½				
			eL		19.3	16						
			MN	21	34	7	16					
			ME	21	38	7		17				
MZ	24	52	9			10						
53	" 4	I	F	20	20							
			e	17	05.4							
			e		06.7							
			e		11.2							
54	" 6	I	M	15	45	11	-	2½				
			F	17	40							
			e	11	05.3							
55	" 6	I	M	30	06	10	-	2				
			F	12	15							
56	" 6	I	e	12	51.6	5						
			e(S?)		56.1	7						
			eL		57.5	14						
			ME		58 01	12		15				
			MN	13	00 04	8	½					
			MZ	00	24	10			4			
			F	13	25							
57	" 6	I _u	eP	22	04.4				9700	Aleutian Islands.		
			18	07 12	7		½					
" 7	" 7	I _u	PS	15	09	8		5½			NS component, friction pres- ent (cobweb).	
			(SR ₁ ?)		15 34	8		5½				
			eL		21.0	20		15				
			ME ₁		27.4	25						
			MN		28 06	20		10				
			ME ₂		37 38	20	4					
			MZ		39 21	18		20				
			W ₂		42 52	18			15			
			L ₁	0	13.1	20						
			L ₂		16 49	20		5				
F		28 03	17		3½							
		0 55						W ₂ (or Lrep.1) waves. (major arc)				

(Continued on next sheet)

2 (continued) 1916 February 1 to 29.

No.

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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:

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2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet).			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)		Per.	Amplitude.			Δ	Remarks.
				h.	m. s.		A _N	A _E	A _Z		
58	1916 Feb. 9	I	e	7	21.1		μ	μ	μ	km.	
			ME		24 48	13		2			
			MN		27 43	12	1½				
59	" 10	I	F	7	30						
			(e)	2	52 54						
			(e)	3	03 57						
			eL		20.5	18					
			MN		26 14	16	5				
60	" 10	I _r	ME		26 41			5			
			F	4	00						
			eP	10	59.9	4	1			3300	
			iS	11	04 59	7	4½	½			
			eL		09.6	12					
			MN ₁		11 07	12	13				
			ME ₁		12 10	12		21			
			MZ ₁		13 45	12			6		
			MN ₂		15 45	12	14				
			ME ₂		20 06	10		13			
MN ₃)		20 38	10	14		8					
F ₂	11	40									
61	" 10	I	eL	14	43.5	12					
			M		45.1	1	1				
62	" 14	I _u	F	14	55						
			eP	10	08.8	4	1		5800		
			iS		16 12	8	-2½	+4			
			SR ₁		19 31	10	4½	8			
					19 43	10	4	14			
			eL		26.1	20					
			MZ		30 21	15				26	
63	" 14	I	(LN ME)		30.5	15	37	40			
			F	11	30						
			e	18	12.7						
			eL		20.6	16					
			MN		23 13	14	2				
64	" 15	I	ME		27 47	16		6			
			F	18	40						
			(e)	12	02.4						
			(e)		19.2						
eL		31.9	20								
MN		36 09	16	2½							
ME		36 16		3							
F	12	55									

(Continued on next sheet).

Riverview College Observatory,

SYDNEY, N.S.W.

Seismological Bulletin.

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INSTRUMENTS:

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2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)		Per.	Amplitude.			Δ	Remarks.
				h.	m. s.		A _N	A _E	A _Z		
65	1916 Feb. 18	I	e	14	43.1		μ	μ	μ	9500	
			MN		54 41	10	1				
			ME		54 59	10		1			
66	" 20	I _u	F	15	05						
			P	18	01 01						
			S		11 34	8	3	2			
			PS		12 06	8	-	3½			
					12 15	8	3	3			
			eL		28.0	18					
			MN ₁		35 15	16	8				
			ME ₁		36 20	17		7			
			MN ₂		45 20	16	5				
			MZ ₂		46 29	16			6		
			MN ₃		49 45	16	5				
			ME ₂		53 00	16		6			
			ME ₃	19	01 24	14		5			
			F	20	45						
67	" 21	I	e (P?)	14	03.1						
			e (S?)		11.7						
			eL		25.1	20					
			MN		28 24	16	3				
			ME		31 31	16		3			
			F	15	15						
68	" 22	I	eP	20	08.4	(4)	-	1			
			(S?)		13 20	8	-	1			
			eL		15.2	15					
			MN		16 40	12	8				
			ME		19 06	14		5			
			F	22	00						
69	" 24	I	e	10	32.2		½	½			
			ε		34.5	7					
			eL		37.9	12					
			MN		38 42	10	1				
			ME		42 47	10		1			
			F	10	50						
70	" 26	I	(e?)	16	13.5						
			eS		19.0	7	1	½			
			eL		24.5	17					
			MN		26 15	13	5				
			ME		27 07	13		4			
			F	17	15						

(Continued on next sheet).

No. 2 (continued)

1916. February 1 to 29.

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Riverview College Observatory,

SYDNEY, N.S.W.

Seismological Bulletin.

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INSTRUMENTS:

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	V	T ₀	ε : 1	r T ₀ ²
A _N	(See last sheet)			
A _E				
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.		
				h.	m.	s.		A _N	A _E	A _Z				
71	1916 Feb. 27	II _u	ePR ₁	20	42.2						13,700 km.	--- (SR ₁ -PR ₁) Nicaragua. P obscured by microseisms. (A) Anomalous wave, 3 min. before L waves were due.		
			(S?)											
			PS											
			eSR ₁											
				59.1	17	-	7							
				59	34	17	9	32						
				21	13	42	28	36	21					
				(See note A)										
			eL	18.2	28									
				21	50	18	17	32						
			M ₁	26	40	16	22	72						
			MZ ₁	26	54	16			34					
			MZ ₂	32	40	14	40	69						
			MZ ₃	34	25	15			32					
			MN ₃	39	51	14	14							
ME ₃	41	49	12		21									
C	54	39	12	7	22									
W ₂ waves														
				22	19.9	28						Well-marked W ₂ (or L rep.1) series.		
					26	54	22	10		20				
					33	57	20							
				23	40									
72	" 28	I	eL	19	30.4	16						Earlier phases masked by strong micro- seisms.		
			MN	32	49	12	3							
			ME	34	46	12		3						
			F	19	45									

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No. 3

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1916, March 1 to 31

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)
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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

	V	T_0	$e:1$	$\frac{r}{T_0^2}$
$A_N \left\{ \begin{array}{l} 1 \\ 3 \end{array} \right\}$	150 134	7.6 10.1	4.6 5.4	0.01 0.02
$A_M \left\{ \begin{array}{l} 1 \\ 3 \end{array} \right\}$	161 160	7.0 10.0	2.8 4.8	0.01 0.03
$A_Z \left\{ \begin{array}{l} 1 \\ 2 \end{array} \right\}$	95	4.6	5.3	0.04

3

No.	Date.	Phase	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A_N	A_E	A_Z		
						μ	μ	μ	km.		
73	1916 March, 4	e	1	08.5	3					Very short wave lengths.	
		MZ	12	12	6			$1\frac{1}{2}$			
		MN	12	42	6	2					
		ME	12	50	6		1				
		F	1	20							
74	" 4	e	6	03.7	6		$\frac{1}{2}$	$\frac{1}{2}$		2800	
		eL		07.7	12			$1\frac{1}{2}$			
		ME		08 42	10	1					
		MN		09 55	10						
		F	6	35							
75	" 4	eP	7	15.6	4		$\frac{1}{2}$	$\frac{1}{2}$		2800	
		eS		20.1	8		2	1			
		PS		20 30	8	5	1				
		SR ₁		21 34	8	2	5				
		eL		23.3	20						
		ME ₁		25 08	12		27				
		MZ ₁		26 45	14			12			
		MN ₁		26 49	14	40					
		MZ ₂		37 25	9			3			
		ME ₂		38 39	8		12				
MN ₂		40 05	10	15							
F	8	45									
76	" 6	e	22	10.5			$\frac{1}{2}$	-			
		e		14.6	7						
		eL		19.6	14						
		ME		20 43	11		2				
		MN		26 38	12	3					
77	" 11	F	23	00							
		(e)	13	04 .0	4						
		e		08.8	6	$\frac{1}{2}$	$\frac{1}{2}$				
78	" 11	MN	16	05	11	1					
		ME	16	59	9		$\frac{1}{2}$				
		F	13	25							
79	" 18	(e)	17	33.4							
		eL		41.2	16						
		M		44.3	10	2	2				
79	" 18	F	18	30							
		e	15	10.9	6	-	$\frac{1}{2}$				
		eL		19.0	15						
		MN		21 05	12						
79	" 18	ME		22 13	12			3			
		F	16	05							

(Continued on next sheet)

No.

3 (continued)

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(COPY)

1916, March 1 to 31

Riverview College Observatory,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

 $\phi = 33^{\circ} 49' 49''$ S.

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3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

	V	T ₀	ε: 1	$\frac{r}{T_0^2}$
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A _N	A _E	A _Z		
	1916										
80	March. 19	iP	12	06	17	5	-1	-		2750	
		S		06	54	5	2	-			
		PS		10	45	9	3	-			
		eL		11	12	10	14	3			
		M ₁		14.1		20					
		MN ₂		15	21	14	10	28			
		ME ₂		16	59	12	15				
		MN ₃		17	37	10		19			
		MZ		19.8		11	18				
		F		13	55						
81	" 19	e(P?)	23	22	9	3					
		(S)		27	28	7	$\frac{1}{2}$	$\frac{1}{2}$			
		eL		29.1		16					
		MN		28	48	14	4				
		ME		32	26	10		2			
82	" 19	(S?)	23	36	34	8	1				F lost in N°82
		eL		37.6		13					
		MN		39	46	12	3				
		ME		40	43	12		3			
	" 20	F		0	15						
83	" 23	e(P?)	8	52.3		5					
		eS		57.5		10	-	1			
				57	46	10	-	$1\frac{1}{2}$			
		eL		9	00.4	15					
		MN			00	48	6				
		ME			02	11		6			
		F		10	00						
84	" 26	eP	0	01	48						8200
		eS		11	20	7	1	-			
		eL		23.2		26					
		MN		26	53	20	6				
		ME		27	46	18		7			
		MZ		30	54	18					
		F		1	25						8
85	" 27	e	22	49.8							
		e		51.8		?					
		eL		55.2		16					
		MN		58	44	14					
		ME		23	00	31	3				
		F		23	15			$1\frac{1}{2}$			

S. F. Pigot 57.

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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N(1)$	151	7.7	4.4	0.02
(3)	130	10.0	6.1	0.02
$A_E(1)$	157	7.0	2.4	0.02
(3)	141	9.6	8.0	0.04
$A_Z(2)$	91	4.7	4.4	0.07

4

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A_N	A_E	A_Z		
86	1916 April. 1	I	e	2	18	7						
			eL		23	6						
			ME		24	38	12			7		
			MN		24	48	12	4				
86a	" 1	I	F	3	05							
			eL	12	48	1	17					
			MN		48	58	12	1				
			ME		50	51	14		1			
86b	" 2	I	F	13	20							
			e	16	07	5						
			MN		11	25	11	1				
			ME		14	46	?					
87	" 2	I	F	16	20							
			e	16	24	4		1				
			eL		30	7	16					
			M		31	8	16	10	6			
88	" 3	I_r	F	16	50							
			iP	10	32	24	3	$-\frac{1}{2}$	$-4\frac{1}{2}$		2600	
			eS		36	38	7		$1\frac{1}{2}$			
			iS		36	50	7	9	4			
					36	53	7	5	11			
			eL		41	3	15					
			i		41	52	4	+18	+6			
					41	56	4	9	$8\frac{1}{2}$			Perhaps a second P (?)
			MN		46	04	10	2				
			ME		46	55	12		3			
89	" 5	I	F	10	20							
			e?	20	56	6	4		1			
			eL	21	17	8	40					
			ME		26	35	20		4			
90	" 7	II_u	MN		27	10	20	12				
			F	22	05							
			iP	9	38	03	4		-3	1	8600	Probably near Bourbon (Mauritius).
					38	20	4	2	5	2		
			PR ₁		41	07	6	$1\frac{1}{2}$	2			
			eS		47	9	8	$\frac{1}{2}$	2			
			PS		48	18	8	8	$4\frac{1}{2}$			
			eL		58	8	38					
			ME ₁	10	03	53	20		65			
			MN ₁		04	07	20	44				
ME ₂		06	44	16		125						
MZ		07	23	15			31					
MN ₂		07	46	15	44							
MN ₃		13	41	14	27							
ME ₃		13	48	14		42						
C		27	52	14	11	18						
F		12	50									

(Continued on next sheet)

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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.
				h.	m.	s.		A _N μ	A _E μ	A _Z μ		
91	1916 April 12	I	e?	9	16.0							
			e		24.1	?						
			eL		30.1	16						
			ME		35 13	12			7			
			MN		36 47	15	4					
92	" 14	I	F	10	30							
			e	2	39.0	5	$\frac{1}{2}$	-				
			eL?		47.4							
			MN		50 51	12	3					
			ME		51 32	12			3			
93	" 14	II _r	F	3	20							
			eP	17	10 12	4	-	$\frac{1}{2}$		2750		
					10 55	4	2	$\frac{1}{2}$				
			eS		14 44	8	-	1				
			iS		14 51	8	-	$+2\frac{1}{2}$				
			PS		15 10	8	3	11				
			eL		16.2	20						
			ME ₁		17 02	16		22				
			MN ₁		17 08	16	23					
			M ₂		17.7	14	22	32				
			MZ		18 16	15			11			
			94	" 15	I	ME ₃		20 54	8		15	
MN ₃		22 38				8	10					
F	19	55										
eS	9	36 10				7	$\frac{1}{2}$	$\frac{1}{4}$		Benkoelen (Sumatra).		
eL		43.2				?						
95	" 15	I _u	MN		51 00	14	3					
			ME		52 27	14		4				
			F	10	35							
			eP	12	41 06	4	$\frac{1}{2}$	1		5700	Benkoelen (Sumatra).	
			iS		48 26	6	+5	+3				
					48 30	6	10	7				
			PS		48 45	6	11	11				
			eL		56.9	26						
			ME ₁	13	02 10	22		75				
			MN ₁		02 17	22	64					
MN ₂		03 30	17	44								
ME ₂		04 56	20		68							
MZ		05 28	21			22						
M ₃		11 11	16	22	53							
F	14	40										

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No. 4 (continued)

1916, April.

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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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A _N	A _E	A _Z		
96	1916 April 15	III _r	P	15	03.9		4	$\frac{1}{2}$	-	$\frac{1}{2}$	3250	Short wave lengths.
			iS		08 55		4	+6	-10			
			SR ₂		11 31		5	5	3			
			eL		12.8		12					
			M		17.6		(4/8)	28	28	3 $\frac{1}{2}$		
97	" 18	I _u	F	16	35							
			eP	4	14 45						9200	Aleutian Islands.
			iP		14 48		3	-5 $\frac{1}{2}$	-2 $\frac{1}{2}$	+8		
			i		15 38		4	+7	+3	-3 $\frac{1}{2}$		
			eS		25 04		7	5	$\frac{1}{2}$			
			iS		25 08		7	-26	-5			
			iPS		26 15		9	+60	+20			
			eL		43.3		20					
			ME		44 52		15		7			
			MN		45 09		15	9				
			F	6	40							
98	" 21	I _u	eP	11	42.3		4	$\frac{1}{2}$	1		7100	Hachijo Islands (Japan).
			eS		50 51		7	1 $\frac{1}{2}$	1 $\frac{1}{2}$			
			iS		50 58		7	-5	-10			
			PS		52 10		8	5	13			
			eL		59.2		38					
			ME ₁	12	01 14		30		195			
			ME ₂		02 57		24		42			
			MN		04 22		36	126				
			MZ		04 38		36			32		
			ME ₃		06 03		20		46			
			F	15	35							
99	" 21	I	e	21	17.6							
			e(S?)		22.0							
			eL		26 51		16					
			ME		31 20		12		3			
			MN		32 06		12	2 $\frac{1}{2}$				
			F	21	55							
100	" 22	I	eP	9	07.3		4	-	1 $\frac{1}{2}$			
			MN		12 08		11	3 $\frac{1}{2}$				
			ME		12 20		10		2			
			F	9	20							
101	" 24	I	e?	4	39.5							
			ME		5 08 47		?					
			MN		16 38		?					
			F	6	45							

(Continued on next sheet)

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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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T _o	ε : 1	r T _o ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Amplitude.			Δ	Remarks.
				h.	m.	s.	Per.	A _N	A _E		
102	1916 April 24	I	e?	8	15.3						
			e(S?)		29.9	12	-	1			
			SR ₁ ?	34	22	16	2½	6			
				39	22	20	8	23			
			eL	54	5	32					
			ME ₁	9	03 02	16		8			
			MN ₁	05	06	16	4				
			M ₂	09	15	16	5	14			
			ME ₃	13	44	15		7			
			MN ₃	16	45	13	3				
			MN ₄	22	24	14	5				
			F	11	50						
			103	" 24	I	e	11	56.7	3		
MN	12	01 27				10	2				
ME	02	24				?					
104	" 24	I	F	12	10						
			i	17	21 17	4	-	-4			
			i		25 18	5	-	3½			
			i		31 07	4	-	3			
			MN	32	37	10	1				
105	" 26	I _u	ME	33	40	11		1			
			F	17	55						
			eP?	2	39.3	?				13500?	Central America ?
			e(S?)		52.5	9	2	2			
			PS	53	58	9	3½	1			
			SR ₂ ?	59	53	?					
			eL	3	20.8	25					
			MI	31	29	15	2	3			
			MN ₂	36	32	12	2				
			ME ₂	40	59	14		3			
106	" 28	I	F	6	15						
			eL	22	06.8	15					
			MN	08	56	12	1				
			ME	12	20	12		3			
			F	22	30						

E. F. Tigg

No. 5

1916, May.

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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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N(1)$	151	7.7	4.4	0.02
$A_E(3)$	130	10.0	6.1	0.02
$A_E(1)$	157	7.0	2.4	0.02
$A_z(3)$	141	9.5	8.0	0.04
$A_z(2)$	91	4.7	4.4	0.07

N.B. NS & EW data always from Seismometer No.1, unless otherwise specified.

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A_N	A_E	A_z		
				μ^c						km.		
107	1916 May 3	I_r	eP	4	20	1					3400	
			PR ₁	41	25	?						
			eS	45	3	?						
			SR ₁	47	10	8	$\frac{1}{2}$	1				
			eL	49	7	20						
			i	50	55	6	9	20				
			MN ₁	51	35	12						
			ME ₁	51	43	12			46			
			ME ₂	53	10	12			39			
			MN ₂	53	34	12	25					
108	" 4	I	MZ	53	42	12				$6\frac{1}{2}$		
			F	6	30							
			e?	13	48	2						
			eL	14	08	6	?					
			ME	10	35	10			$1\frac{1}{2}$			
109	" 7	I_r	MN	11	23	10	2					
			F	14	35							
			eP	5	46	9	5		$\frac{1}{2}$		2000	
			S	50	3	8			1			
			PS	50	36	8	$1\frac{1}{2}$	$1\frac{1}{2}$				
eL	51	4	17									
MN	53	48	14	11								
110	" 7	I	ME	54	12	12			3			
			F	6	45							
			e(P?)	22	25	34	4	$\frac{1}{2}$	-			
			eL	37	8	?						
			ME	41	01	13			$1\frac{1}{2}$			
111	" 9	I_u	MN	43	59	11	1					
			F	22	55							
			eP	14	44	06	4	-	$\frac{1}{2}$		7600	ϕ 0° λ 89° E (Approx).
			eS	46	37	5			1			
			eL	15	03	6	34	1	$1\frac{1}{2}$			
			MN ₁	06	00	26	43					
			ME ₁	06	12	24			14			
			MN ₂	09	18	12	5					
			ME ₂	13	44	16			11			
			ME ₃	17	35	14			8			
F	16	20										

(Continued on next sheet)

Riverview College Observatory, SYDNEY, N.S.W.

Seismological Bulletin.

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INSTRUMENTS:

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2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.
				h.	m.	s.		A _N μ	A _E μ	A _Z μ		
112	1916 May 10	I _r	eP	18	24.7					2300	L waves not measurable.	
			eS		28	29	7	$\frac{1}{2}$	$\frac{1}{2}$			
			iS		28	35	7	+6	-6			
			F	18	40							
113	" 13	I _r	eP	7	47.4					1400?		
			i(S?)		49	49	5	+4	-5			
					49	53	5	$1\frac{1}{2}$	$4\frac{1}{2}$			
			e(L?)		51.9		12					
114	" 21	I _r	M		53	00	11	10	2	1900?		
			F	8	25							
			iP	12	04	32	3	-1	-4			
			e(S?)		07.8		5	-	$\frac{1}{4}$			
115	" 23	I	MN		14	54	7	1				
			ME		16	47	7		$\frac{1}{2}$			
			F	12	25							
			e?	20	33.5							
116	" 25	I	e?		38.7		5	-	$\frac{1}{2}$			
			eL		45.3		18					
			M		47.0		16	12	$1\frac{1}{2}$			
			F	21	00							
			e	22	53.5		4	-	$\frac{1}{2}$			
			e?		58.2							
			eL	23	02.3		16					
			MN		04	21	14	2				
			ME		05	52	12		4			
			F	23	45							

E. F. T. [Signature]

Riverview College Observatory,

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INSTRUMENTS:

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2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N(1)$	142	7.8	4.8	0.02
$A_N(3)$	128	10.0	3.7	0.02
$A_E(1)$	152	7.0	2.9	0.02
$A_E(5)$	138	9.5	8.0	0.05
$A_Z(2)$	80	4.5	3.3	0.08

NOTE. NS & EW data always from Seismometer No. 1, unless otherwise specified

No.	Date.	Char.	Phase.	Time (Greenwich)			Per.	Amplitude.			Δ	Remarks.
				h.	m.	s.		A_N	A_E	A_Z		
							s.	μ	μ	μ	km.	
117	1916 June 1 2	I _r	eP	23	29.5	5	$\frac{1}{2}$	$\frac{1}{2}$		4900		
			eS		36.1	10	$1\frac{1}{2}$	-				
					36 22	10	3	$3\frac{1}{2}$				
			eL		42.5	18						
			MN ₁		42 55	16	5					
			ME		43 49	13		$5\frac{1}{2}$				
			MN ₂		50 51	12	3					
118	" 2	I	F	0	20							
			e?	14	15.5							
			e(S?)		29.4	10	-	1				
					50 10	10	-	1				
			e(SR ₁ ?)		36.8	16	-	3				
			ME		55 06	?						
			MN		56 32	?						
119	" 2	I _r	F	15	35					2300		
			eP	16	21.2	5	$\frac{1}{2}$	$\frac{3}{4}$				
			S		25 02	7	$\frac{1}{2}$	1				
			iPS		25 21	7	1	+4				
			eL		27.7	16						
			ME		28 42	14		3				
			MN		29 11	12	$1\frac{1}{2}$					
120	" 3	I _r	F	17	00					2500		
			eP	5	16.3	4	1	-				
			S		20 21	8	$1\frac{1}{2}$	$\frac{1}{2}$				
			PS		20 51	8	3	$1\frac{1}{2}$				
			eL		25.1	?						
			ME		25 50	10		2				
			MN		26 37	13	3					
121	" 5	I	F	5	50							
			e?	1	09.8							
			eL		15.1	20						
			MN		18 52	16	3					
122	" 5	I	ME		21 57	14		$\frac{1}{2}$				
			F	1	35							
			e?	2	17.5							
			eL		25.9	16						
			ME		27 52	12		$4\frac{1}{2}$				
MN		28 56	12	4								
F		3 00										

(Continued on next sheet)

Riverview College Observatory,

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INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E	(See last sheet)			
A _Z				

No.	Date.	Char.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.
				h.	m.	s.		A _N μ	A _E μ	A _Z μ		
123	1916 June 6	I	e(S?)	13	38.5		8	-	½			
			eL		53.4		22					
			MN		56 21		17	4½				
			ME		57 05		16		6			
124	" 7	I	F	14	45							
			e(S?)	14	05.6		8	1	1			
			eL		06.2		12					
			ME		06 40		10		1½			
125	" 8	I	MN		08 09		?					
			F	14	15							
			e	3	35.2		8	½	½			
			M	4	02.8		10	1½	1½			
126	" 8	I	F	4	25							
			eL	8	21.2		20					
			M		22.6		16	2½				
127	" 9	I	F	6	50							
			eL	11	56.5		16					
			MN		58 02		12	1½				
128	" 9	I _r	ME		58 54		13		2			
			F	12	10							
			eP	21	52.6					4900	Near Mindanao, (P.I.)	
			eS		59.2		9	1½	-			
129	" 10	I _v	PS		59 45		9	2	1½			
			SR ₁		42 34		10	1	2			
					45 10		12	6	6			
			eL		49.5		20					
			M		52 56		17	9	13			
			F	23	10							
			iP(N)	17	51 33	½	4½			220?	Felt at Taree, Seal Rocks, and other places in that district of N.S.Wales. Seal Rocks lighthouse dam- aged by shock.	
iP(E)		51 35	½			+5						
		51 37	½	4½		2½						
		51 49	(¼)	1		1½						
		F	17	55								

(Continued on next sheet)

No. 6 (continued)

1916, June.

19

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.)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.)

	V	T ₀	ε : 1	r T ₀ ²
A _N				
A _E				
A _Z				

(See last sheet)

No.	Date.	Char.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.
				h.	m.	s.		A _N	A _E	A _Z		
				μ	μ	μ						
130	1916 June 15	II _u	eP	11	21.9	?				5000	Probably φ, 10°S. λ, 113°E.	
			eS		28.6	8	½	1				
			IS		28.41	8		+13				
					28.49	8	4½	10				
			SR ₁		31.48	12	4	1½				
			eL		33.0	20						
			MN ₁		35.36	16	65					
			ME ₁		36.25	16		30				
			MZ		36.51	16			15			
			MN ₂		39.25	14	63					
ME ₂		40.16	14		63							
		F	13	00								
131	" 21	I	e?	21	55.8	10?						
			e?		59.5	16?						
				22	05.52	15	2½	10				
			e		09.21	20	8	5				
			MN		10.09	20	8					
			ME		10.39	20		10				
132	" 26	I	F	23	35							
			e	7	01.6	4	½					
			e		05.4	8	1					
			M ₀		06.07	10	1½					
		F	7	30								
e	6	42.5	20									
ME	11	02.2	5	½								
MN		06.03	7		½							
133	" 29	I									A few long waves.	
			MN		06.09	7	2					
134	" 29	I	F	11	15							
			e?	3	16.4	5	½					
			eS		29.1	11	1½					
			eSR ₁		37.7	14	3					
			eL		57.6	25						
			ME ₁	4	00.33	20		5				
			MN ₁		00.56	20	21					
			MZ		06.09	15						15
			MN ₂		06.12	16	13					
			ME ₂		07.33	13		3				
			ME ₃		13.28	13		2				
			MN ₃		15.02	13	10					
			C ₁		22.04	12	4					
			C ₂		32.01	12	3					
		F	6	00								

E. F. T. Rigot

No. 7

1916 July.

Riverview College Observatory

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

 $\phi = 33^{\circ} 49' 49'' \text{ S.}$
 $\lambda = 151^{\circ} 9' 30'' \text{ E.}$
 $h = 41.9 \text{ m.}$

Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Manka 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)	142	7.8	4.8	0.02
(3)	128	10.0	3.7	0.02
A _E (1)	152	7.0	2.9	0.02
(3)	138	9.5	8.0	0.05
A _Z (2)	80	4.5	3.3	0.08

No.	Date.	Phase.	Time			Per.	Amplitude.			Δ	Remarks.
			(Greenwich)				A _N	A _E	A _Z		
			h.	m.	s.		μ	μ	μ		
136	1916 July 2	eE	21	02	23	5				EW readings from the Manka.	
		oN		02	50	6					
		MN		02	59	6	5				
		eE		03	43	4					
		oN		06	06	9	2				
137	" 8	F	21	10						Dilatation.	
		1PNE	09	40	00	4	+6	+13	-15		
		1EZ		41	32	5		+11	-3		
		1SNE		44	30	6	-8	-13			
		eE		47	19	7					
		1NE		49	34	6	+33	+8			
		MN		53	11	11	7				
138	" 13	MN		55	32	10		3		Nearby tremor. North readings from Manka.	
		F	10	43							
		eE	17	45	22						
		eNE		45	55	3		2			
139	" 17	eE		46	13	6		1		Nearby tremor. North readings from Manka.	
		MN		49	30	10	2				
		F	17	57							
		eE	00	55	23	2					
		1E		56	55	3		-2			
		1NE		59	39	5	-12	+3			
		eE	01	01	39	4					
140	" 21	eE		04	03	13				EW readings from the Manka.	
		1NE		04	54	6	+11	+6			
		eE		07	54	12					
		1N		08	54	6	-6				
		eE	21	18	43	6					
		eE		22	51	7					
		eNE		24.0		17					
141	" 23	eE		26.5		19				EW readings from the Manka.	
		MN		27	51	10	7				
		F	22	15							
		eE	10	25	41						
		eE		30	37	5					
142	" 27	eE		31.2		17				West Sumatra.	
		MN		36	36	14	17				
		F		11	09						
		eS _N	12	19	45						
		1S _N		10	49	7	8				
143	" 28	eE		11	59	9				Nearby tremor.	
		MN		23	21	15	4				
		F	12	45							
		eE	00	10	37	3					
		eE		11	14	5					
		MN		14	05	12	7			(Concluded)	
		F	00	20							

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. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. ~~Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)~~

	V	T ₀	$\epsilon:1$	$\frac{r}{T_0^2}$
A _N (1)	148	7.6	4.2	0.02
A _E (1)	152	6.9	5.8	0.04
A _Z (2)	76	4.4	3.6	0.07

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.
			h.	m.	s.		A _N μ	A _E μ	A _Z μ		
144	1916 Aug. 3	ePNZ	01	35	48					3050 (27.5)	Dilatation. Azimuth 0° (due North) New Guinea. Felt at: Kerema, Papua R.F.7 (8°S., 146°E.) Madang 5-6 Nepa, Papua 5 Morobe 4-5 Fort Moresby 4 Maiera, Papua 4 (Reports from District Officers, New Guinea) EW readings from Main- ka.
		iPNZ	35	51		8	+9		-7		
		iNZ	36	15		8	+11				
		iNZ	36	44		8	-20		+50		
		iN	37	11		4	-23				
		iSN	40	21		7	+19				
		iSR ₁ N	41	26		11	+225				
		iE	41	38		13		-126			
		ng	42	19		10		206			
		eL ₂ ?	43.4								
		NR ₁	44	42		22		1660			
		NR ₂	46	11		16		550			
		NR ₃	49	13		13		310			
		NR ₁ , ML	50	27		9	187		100		
		NR ₂	51	33		11	265				
		NR ₃	53	00		10	165				
		F	03	22							
145	" 3	en?	21	34	02						
		en	36	15		13					
		NR ₁	40	29		13	5				
		NR ₂	42	46		11	6				
146	" 6	F	22	06							
		en	22	11	12						
		en	11	30		7					
		en	12	47		7					
		en	14	45		8					
		en	16	03		5					
		en	19.1			21					
		NR ₁	19	38		17	12				
		NR ₂	21	18		15	9	3			
		F	23	10							
147	" 8	eSN	04	44	55	6					
		eLN	05	01.3							
		NR	03	46		23	11				
148	" 8	F	05	12							
		e	19	29.8							
149	" 9	en	20	59	58						
		en	21	14	44	11					
		eLN	16.1								
		NR	17	24		16	8				
		NR ₂	20	43		11	3				
150	" 17	F	21	35							
		en	10	11	14						
		NR	13	55		15	2				
F	10	29							(Concluded on next sheet)		

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RIVERVIEW COLLEGE ¹⁹¹⁶ August
COLLEGE O



From the ISC collection scanned by SISMOS



No.	Date	Time	Station	Per. (s)	Amplitude.			Δ (km)	Remarks.
					A _N	A _E	A _Z		
					μ	μ	μ		
			(m. s.)						
152	"	23	eLN	05 04 09	6				
			MN	06 56	19				
			MN	09 12	11	4			
			MN	11 59	10	4			
			F	05 24					
			iPN	21 50 11	4	-3	2220		
			iN	50 13	4	+5	(20°0)		
			iPR ₁ N	50 41	4	+3			
			iSN	53 54	6	+5			
			eLN	55 28	16			Long train of sinusoidal waves.	
			MN ₁	56 06	14	15			
			MN ₂	57 02	12	15			
			F	22 38				Repetition of No.152	
153	"	23	iPN	22 40 50	4	-2			
			iN	40 54	4	-2			
			iN	40 56	4	+10			
			iPR ₁ N	41 22	4	-4			
			iN	41 24	4	+9			
			iSN	44 35	6	+4			
			eLN	45.3	24				
			eLN	46.1	16				
			MN ₁	46 47	17	30			
			MN ₂	47 16	13	21			
			F	23 44					
154	"	25	eSKSY	10 09 38	9			EW readings from the Mainka.	
			ePSNE	13 08					
			eSSNE	19 16	30				
			eSSSN	23 14					
			eLN	30 12	32				
			eLN	35 34	32				
			MN ₁	37 00	27	65			
			MNE	38 15	22	47	11		
			F	11 25				EW readings from the Mainka.	
155	"	28	ePNE	06 52 52					
			PR ₁	56 43	5				
			iSKSNE	7 03 17					
			iSE	03 44		4			
			iN	04 55					
			iN	07 17					
			SSN	09 59					
			eN	16 17					
			eLN	21 36					
			ME ₁	31 34	26	10			
			MN ₁	32 12	26	30			
			ME ₂	37 11	19	8			
			MN ₂	44 25	16	13			
			F	08 32					
156	"	28	eL?	07 58.2	26?			Central Formosa (cf. de Bilt).	
			MN	08 02 19	15	11			
157	"	30	eLN	15 20.3	21				
			MN	24 52	14	6			
			F	15 56					

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No. 9

1916, September.

Riverview College Observatory

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN

 $\phi = 33^\circ 49' 49'' \text{ S.}$
 $\lambda = 151^\circ 9' 30'' \text{ E.}$
 $h = 41.9 \text{ m.}$

Foundation: Triassic sandstone.

INSTRUMENTS:

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

	V	T ₀	$\epsilon:1$	$\frac{r}{T_0^2}$
A _N (1)	146	7.7	5.5	0.02
A _E (1)	157	6.9	4.0	0.04
A _Z (2)	76	4.4	3.6	0.07

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.				
			h.	m.	s.		A _N μ	A _E μ	A _Z μ						
158	1916 Sept. 3	iPN	07	19	15	3	+2			2940 (26°5)					
		iN		19	44	5	+3								
		iSN		23	45	19	-57								
		L		28	3	20									
		MN ₁		29	39	15	100								
		MN ₂		34	50	12	30								
		F	08	44											
159	" 3	e(S)	09	51	06					Repetition of No. 158.					
		L		56	3	20									
		MN		57	31	14	10								
160	" 3	eN	17	46	24										
		MN		53	03	11	4								
161	" 5	eN	21	15	05										
		MN		21	09	13	5								
162	" 5	iPN	22	19	36	4	-2½			4010 (36°1)	H 22 12.6				
		ePN ₁ N		21	03	6									
		eN		23	33										
		eSN		25	15	11									
		SR ₂ NE		27	17										
		L		29	06	14									
		MN ₁		29	24	14	26								
		MN		30	52	15		19							
		MN ₂		31	07	13	53								
		MN ₃		35	39	12	48								
		MN ₄		40	02	11	39								
		MN ₅		48	26	10	21								
		F	23	50											
		63	" 6	e(P) _N	08	15	48	5	2½						
				i(S) _N		20	20	7	+3						
eL				24	9	15									
MN ₁				25	40	15	15								
MN ₂				26	56	10	9								
MN ₃				30	20	12	14								
F	09			05											

(Concluded on next sheet)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			Δ km.	Remarks.	
			h.	m.	s.		A_N μ	A_E μ	A_Z μ			
164	1916 Sept. 11	iPNE	06	38	35	3	-2	+3		4800 (45°2)	Indian Ocean south of East Java. Felt in Java. EW readings from the Mainka.	
		iE		38	58	2		+1				
		eN		39	10							
		i(PR1)N		40	42	5	+5					
		iSNE		44	59	5	-28	+7				
		iN		45	37	5	+10					
		iN		46	35	5	+5					
		i(SR1)N		48	16	9	+14					
		i(SR1)E		48	20	7		-18				
		ME		48	27	7		+35				
		eLg		52.8			31					
		eLN		56.7			23					
		MN1		57	34		11	+42				
		MN2	07	03	48		9	+18				
		ME		03	54		13		8			
F	08	08										
165	" 14	eN	18	35	45							
		eL		38	06	15						
		EN		42	08	11	4					
166	" 15	F	16	55						7570 (68°1)	Felt in Mizusawa.	
		iPN	07	12	06	4	+3					
		e(PR1)N		14	35	7						
		iSE		21	02	3		-8				
		iN		27	05	6	+5					
		iE		27	05	3		+2				
		eLg		31.6			24					
		ME		34	05	15			2			
		MN		37	14	26	29					
		F	08	05								
67	" 17	iP	12	46	14	0.8					Local shock.	
		F		47.6								
68	" 28	eL	11	23.5								
		MN		24	23	13	5					
		F	11	40								

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