

Ref 2609

No. 1.

January 1st to 7th, 1913.

Manila, P.I.

Seismological Bulletin of the Observatory.

$\varphi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{\tau}{T_0^2}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				Mean	Time		A_N	A_E		
1	4	I_d	eP F	17	14 00 17					
2	5	I_d	eP F	5	27 22 30					
3	5	I	eP L M_E F	9	42 15 42 29 42 38 46	1-2		48		
4	5	II_r	eP S_N S_E L_N L_E M_{E1} M_{N1} M_{E2} M_{N2} M_{N3} M_{E3} M_{N4} F	17	25 24 28 56 29 00 31 50 31 58 34 47 35 10 37 18 37 58 40 14 40 25 43 44 18 21	6 6 12 9 10 11 11-12 16 13 12 12	47	39 46 52 53 56 57		
5	6	I	eP L M_N F	0	34 02 34 17 34 23 38	1	47			
6	6	I_d	eP F	6	49 44 51					
7	7	I_d	eP L F	20	48 00 48 05 50					

No. 2.

January 7th to 9th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{f}{T_0^2}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N	A_E		
8	7-8	II _r	eP	22 53 33					
			L	55 58					
			N_{E1}	56 56	7-8		276		
			M_{N1}	59 28	10	250			
			M_{E2}	23 01 28	13		324		
			M_{N2}	02 04	10	242			
			M_{E3}	04 42	10		530		
			N_{N3}	05 16	9	336			
		F	0 30						
9	8	I	eP	19 19 28					
			L	21 14					
			M_E	26 33	11		69		
			M_N	27 09	9-10	40			
			F	20 17					
10	8-9	I _r	eP	23 36 20					
			L	39 35					
			F	0 24					
11	9	II _r	eP	2 57 43					
			S	3 01 24	6-7				
			i_N	03 18	8-9				
			L_e	05 20					
			L_N	05 32	7-8				
			M_N	15 56	8	448			
			F	?					
12	9	I	e	3 33 43					
13	9	I	e	4 08					
			F	5 30					
14	9	I _r	eP	6 13 24					
			L	16 20					
			M_N	16 28	5-6	242			

E-W writing pen out of order. End overtaken by following earthquake.

End overtaken by following earthquake.

No. 3.

January 9th to 11th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 55' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A_N μ	A_E μ		
			M_E	6	16 28	5-6		352		
			F		47					
15	9	I_r	eP	11	14 50					
			F		49					
16	9	I	e	12	41 48					
			F		51					
17	9	I	e	13	49 00					
			F		56					
18	9	I	e	14	03					
			F		14					
19	9	I	eP	14	51 56					
			S		53 25					
			L		55 05					
			M_E		55 30	9-10				
			M_N		56 02	7	67	46		
			F	15	10					
20	10	I_r	eP	7	37 10					
			L		40 00					
			M_E		41 23	9		41		
			M_N		42 40	8-9	43			
			F	8	25					
21	11	II_r	eP	13	20 03					
			S_N		25 04	7-8				
			S_E		25 50	8				
			L_N		29 12	17				
			L_E		29 14	17				
			M_{E1}		30 14	15		1031		
			M_{N1}		30 23	13-14	1034			
			M_{N2}		31 30	13	621			
			M_{N3}		34 36	10-11	517			
			M_{E2}		35 24	14		822		

No. 4.

January 11th to 17th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{F_z}{F_x}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A_N r	A_E r		
	11		M_{N^o}	13	36	29	11	480		
			M_{N^o}		38	17	11	480		
			M_{E^o}		38	21	11		842	
			F	15	15					
22	11	I_d	eP	17	39	53				
			F		43					
23	13	I	eP	12	16	00				
			F		23					
24	13	I	eP	15	25	00				
			L		27	50				
			M_E		28	52	6-7		24	
			F		46					
25	13	I_d	eP	22	34	01				
			F		36					
26	14	I_d	eP	8	56	09				
			L		56	26				
			F		59					
27	15	I_r	e	2	16	45				
			F		27					
28	15	I_r	eP	11	46	26				Legaspi (SE of Luzon).
			L		47	07				
			M_E		47	26	2		15	
			F		58.					
29	15	I_r	e	19	11					
			F		39					
30	16-17	I_r	eP	23	44	34				China Sea, near the western coast of Zamboales. Early phase and maximum lost by pens, being thrown off through force of shock.
			F	0	13					

No. 5.

January 18th to 26th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 53''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{T}{T_0 \epsilon}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean	time		A_N μ	A_E μ		
31	19	I_r	eP	17	12 42					
			S_N	16	09	7				
			S_E	16	16	6-7				
			L_N	19	45	8-9				
			L_E	20	02	8-9				
			M_N	29	57	12-13	141			
		F	18	17						
32	19-20	I_r	eP	23	55 49					
			F	0	17					
33	22	I_r	e	3	11					
			F		24					
34	22	I_d	eP	4	41 07					
			F		43					
35	23	I_r	e	14	08					
			F		26					
36	25	I_d	eP	12	10 28					
			L		11 01					
			M_N		11 05	2	103			
			M_E		11 12	2		32		
			F		15					
37	26	I_r	eP	8	15 07					
			L		15 32					
			M_N		15 34	2	138			
			M_E		15 34	2		124		
			F		21					
38	26	I_d	eP	17	21 55					
			L		22 02					
			F		25					

Nueva Caceres (SE of Luzon).

No. 6.

January 27th to 31st, 1913

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{T}{T_0^2}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich mean time.	Period.	Amplitude		Δ	Remarks.
						A_N	A_E		
39	28	I	e F	4 34 40					
40	28	I_r	e F	9 09 52 25					
41	28	I	e F	9 34 44 41					
42	29	II_r	eP L F	4 17 32 17 51 24					Maximum lost by pens being thrown off through of shock.
43	29	I_d	eP F	13 50 42 53					
44	30	I_d	eP F	16 43 34 47					

Macroseisms not registered by the seismographs.
Greenwich mean time.

January 7th, 15^h 27^m earthquake, III at Baguio (W of Luzon).

" 26th, 19^h 45^m earthquake, III at Batangas (S of Luzon).

M. Caderra M.

No. 7.

February 1st to 13th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N	5.3	1.98	0.054
A_E	6.4	3.23	0.024

No.	Date	Char-acter	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				mean time			A_N	A_E		
45	1	I_d	eP L M_N F	3 03 12 03 30 03 32 06		1	37			
46	2	I_d	eP L M_N M_E F	5 48 27 48 33 48 45 48 45 54		3 2-3	220 168			
47	2	I_d	eP L M_N M_E F	12 03 42 04 01 04 03 04 03 08		1 1-2	183 66			
48	3	I_r	eP F	2 25 48 37						
49	6	II	eP i L	9 18 31 18 47 18 49					Maximum and end lost by the pens thrown off through of the force of shock.	
50	7	I_r	eP L M_{N1} M_{N2} M_E F	3 08 00 13 32 13 54 15 53 16 10 4 28		6-7 5-6 7 11	111 69 26			
51	11	I	e F	21 51 08 22 07					Horizontal Pendulums.	
52	11	I	e F	23 38 49 59					Do.	

No. 8.

February 14th to 25th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N :	5.3	1.98	0.054
A_E :	6.4	3.23	0.024

No.	Date	Char-acter.	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N μ	A_E r		
53	<u>14</u>	I	eP M_N F	19 00 28 11 23 24	10	9			
54	<u>15</u>	I	L M_N F	19 20 02 20 28 36	7	14			
55	17	I_T	e F	4 51 5 06					
56	17	I_v	eP L M_E M_N F	22 59 00 59 13 23 00 54 01 06 16	7 5-6	75	107	Calapan (NE of Mindoro)	
57	<u>20</u>	I_T	eP L M_E M_N F	9 05 44 10 48 13 00 13 44 10 01	7 6	60	74		
58	21	I_d	eP L M_E F	17 06 21 06 44 06 47 17	1		65		
59	23	I	e F	14 33 49					
60	23	I_d	eP L F	17 29 44 30 06 33					
61	25	I_d	eP L F	6 20 14 20 29 30					

No. 9.

February 25th to 28th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

 $\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{\gamma}{T_0^2}$
A_N :	5.3	1.98	0.054
A_E :	6.4	3.23	0.024

No.	Date	Character.	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N μ	A_E μ		
62	25	I	e F	14 27 49 50					
63	27	I	e F	1 19 37					
64	27	I+	eP L M _E M _N F	21 17 34 22 52 24 00 24 04 38	6-7 7	8	15		

Macroseisms not registered by the seismographs.

Greenwich mean time.

February 3rd, 2^h 05^m earthquake, IV at Surigao (NE of Mindanao).
 " 5th, 20^h 56^m earthquake, II at Nueva Caceres (SE of Luzon).

M. Saderra H.

No. 10.

March 1st to 7th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N :	5.3	1.98	0.054
A_E :	6.4	3.23	0.024

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N	A_E		
65	1	II _r	eP	14 30 16					
			S _N	34 34	4-5				
			S _E	35 00	6-7				
			L _N	37 39	6-7				
			L _E	38 00	6-7				
			M _E	39 21	7				
			M _N	40 11	7	278	393		
F	15 22								
66	2	I _d	eP	4 44 00					
			L	44 07					
			F	47					
67	3	I	eP	20 05 47					
			L	08 42					
			M _E	08 50	6				
			M _N	08 54	6-7	148	372		
			F	55					
68	4	I _r	eP	6 58 38					
			S	7 01 20					
			L	03 36					
			M _N	06 27	12	28			
			M _E	07 22	10		30		
			F	43					
69	5	I _d	eP	5 41 49					
			L	42 03					
			F	45					
70	6	I	eP	0 50 55					
			L	51 32					
			M _N	51 47	2-3	71			
			F	1 03					
71	6	I _r	eP	11 11 28					
			S	17 26					
			L	20 44					
			M _E	29 00	15		22		
			M _N	29 02	15	16			
			F	59					

No. 11.

March 8th to 17th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{T}{T_0^2}$
A_N	5.3	1.98	0.054
A_E	6.4	3.23	0.024

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A_N	A_E		
72	8	I_d	eP L F	19 06 22 06 36 09						
73	10	I_d	eP L F	20 21 44 21 58 25						
74	11	I_d	eP F	21 33 56 37						
75	11	I_d	eP L F	23 49 50 50 05 53						
76	12	I_r	eP S L M_e F	21 41 48 44 33 46 38 48 08 22 27	16		28			
77	14	II_v	eP L M F	8 47 38 49 03 49 48 11 12	1-2				Eastern Mindanao.	
78	14	I_v	eP	9 00 48					The end is indefinite, because it is confused in the preceding earthquake. End is confused in the earthquake No. 77.	
79	14	I_v	eP	9 02 14						
80	15	I	eP F	10 04 38 15						
81	16	I	e F	6 18 28 34						
82	17	I_v	eP L M_N F	0 52 54 53 48 55 13 1 25	3	69			East of Leyte.	

No. 12.

March 17th to 22nd, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N	5.3	1.98	0.054
A_E	6.4	3.23	0.024

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean	time		A_N	A_E		
83	17	I_v	eP L M_N F	2	12 42 13 18 13 24 21	2-3	23			Southeast of Luxon.
84	18	I	e F	1	15 21 29					
85	18	I_r	e F	6	22 32 58					
86	18	I	eP L M_N F	14	10 46 11 29 13 04 40	6	54			
87	19	I_r	e L F	15	12 00 15 04 45					
88	19	I_r	eP S L M_E M_N F	18	48 02 51 06 53 32 53 58 55 00 19 50	15 14	11	12		
89	21	I_v	eP L F	2	43 19 44 03					Southeast of Luxon.
90	21	I	e F	12	30 50					
91	21	I_v	eP L M_N F	21	50 26 50 52 51 03 58	1-2	71			Central Luxon.
92	22	I_d	eP F	14	49 51 52					
93	22	I_d	eP L F	20	36 02 36 17 39					

No. 13.

March 23rd to 31st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

 $\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{T}{T_0}$
A_N	5.3	1.98	0.054
A_E	6.4	3.23	0.024

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks	
				mean time			A_N	A_E			
94	23	II_r	eP	20	52 07	6-7	231	237			
			S_N		56 06						
			S_E		56 18						
			L _E	21	00 22						
			L _N		00 26						
			M _E		01 22						
			M _N		02 13						
F	22	44	7								
95	24	I_r	e	15	56	7					
			F	16	15						
96	26	I	eP	21	39 04	7	80			This record has been taken from the Horizontal Pendulums, because the Wiechert seismograph was under repair from 26th to 31st of March. Southeast of Luzon.	
			L		41 47						
			M _E		42 00						
			F	22	12						
97	27	I	e	9	14 27					Southwest of Mindanao.	
			F		36						
98	29	I_v	eP	17	52 52						
			F	18	03						
99	29	I_v	eP	18	57 36	1-2	30				
			L		58 26						
			M _N		58 42						
			F	19	02						
100	31	I_r	eP	3	51 28	8		73			
			S		56 14						
			L	4	00 11						
			M _E		02 20						
			F	5	08						

Macroseisms not registered by the seismographs.
Greenwich mean time.

- March 17th, 1^h 50^m earthquake, IV at Surigao (NE of Mindanao).
 " 20th, 19^h 16^m 02^s earthquake, V at Davao (SE of Mindanao).
 " 23rd, 21^h 09^m earthquake, III at Aparri (NE of Luzon).
 " 25th, 9^h 03^m earthquake, III at Cotabato (SW of Mindanao).
 " 27th, 12^h 00^m earthquake, III at Cotabato (SW of Mindanao).

No. 14.

April 1st to 10th, 1913.

Manila, P.I.

Seismological Bulletin of the Observatory

$\phi = 14^{\circ} 34' 41'' N$ $\lambda = 120^{\circ} 58' 33'' E$. $h = 2.40m$. Alluvium

Instrument: Wiechert's static pendulum (1,000 Kg)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude		Δ	Remarks.
						A_N	A_E		
101	2-3	I_r	eP L F	23 57 54 0 01 23 12					
102	4	I_r	eP L F	13 37 00 39 30 52					Southwestern Formosa.
103	7	I_r	eP S L M_N F	13 53 14 57 42 14 02 17 04 52 45	7	11			
104	7	I_r	e F	17 06 31					
105	8	I_r	eP M_N F	2 26 28 34 50 53	11	12			
106	9	I_d	eP F	2 59 41 3 02					
107	9	I_r	eP L M_E F	18 11 47 15 27 17 20 47	6		15		
108	10	II	eP L M_N M_E F	15 31 42 32 00 32 18 32 34 46	2-3 3-4	342	450		

No. 15.

April 10th to 17th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{T}{T_0}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich mean Time	Period	Amplitude		Δ	Remarks
						A_N "	A_E "		
109	10-11	I_r	eP L M_N M_E F	23 11 00 14 35 16 00 18 22 0 22	11 9-10	25	48		
110	11	I_r	e F	9 32 37 55					
111	11	I_r	eP L M_N M_E F	11 55 00 58 22 15 01 49 02 20 16 01	11-12 8-9	16	52		
112	13	I_r	eP M_E F	6 45 00 51 15 7 31	11		40		
114	14	I_r	eP L M_N M_E F	7 50 36 52 38 53 07 54 49 9 18	8 9	88	123		
114	17	I_d	eP F	12 01 00 03					
115	17	I_r	eP L M_N F	12 32 02 33 52 35 46 13 42	6	219		E of Mindanao.	
116	17	I_d	eP F	14 50 09 53					
117	17	I_d	eP F	21 48 53 52				Bolinao (W of Luzon).	

No. 16.

April 18th to 21st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	E	$\frac{r}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date.	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				Mean Time			A_N r	A_E r		
118	<u>18</u>	II _v	eP L M _N M _E F	13 15 18 16 53 18 00 18 32 14 50		5 6-7	404 575		NE of Mindanao.	
119	18	II _v	eP L M _N F	18 48 42 49 24 50 14 19 03		3-4	175		Northeastern part of Luzon.	
120	<u>18</u>	III _v	eP L M _N M _E F	19 04 25 05 50 07 23 07 36 20 35		14-15 9	1296 1284		S of Samar and NE of Mindanao.	
121	19	I _r	eP F	22 07 00 22						
122	20	I _v	eP F	3 39 00 55					NE of Mindanao.	
123	20	I _r	e F	10 15 25						
124	20	I _d	eP F	11 12 22 16						
125	20	I _d	iP F	16 58 55 17 01						
126	21	I _v	eP L M _N M _E	12 33 22 35 16 37 19 38 31		11 10	26 37		NE of Mindanao. End overtaken by following earthquake.	

No. 17.

April 21st to 24th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T	E	$\frac{T}{E}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Charact.	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				Mean Time			A_N μ	A_E μ		
127	21	I_r	eP L M_N M_E F	13 02 48 05 18 06 47 08 00 55		10-11 9	24 39			
128	23	I_r	eP L F	12 59 42 13 00 40 18						
129	24	I_r	eP L F	0 55 28 57 19 1 32						
130	24	I_v	eP	9 24 10					NE of Mindanao.	
131	24	III_v	eP L F	10 17 09 18 40 12 15					Do.	
132	24	II_v	eP L F	12 17 26 19 01 14 10					Do.	
133	24	I	eP F	14 30 44 42						
134	24	I	eP F	15 24 18 41						
135	24	I	e F	20 09 25						
136	24	I_r	eP F	22 07 53 29						
137	24-25	I_v	eP	23 41 20					NE of Mindanao. End over- taken by following earthquake.	

No. 18.

April 25th to 26th, 1913

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{\tau}{T_0^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Amplitude	Δ	Remarks.
				Mean Time	Period			
138	25	I_v	eP F	0 43 30 1 49				NE of Mindanao.
139	25	I_v	eP F	" 33 00 5 12				Do.
140	25	I	e F	6 39 7 09				
141	25	I	e F	11 50 12 02				
142	25	III_v	eP L	17 58 32 18 00 47				NE of Mindanao. End lost by pens thrown off through of the force of shock. Horizontal Pendulums.
143	25	I_r	eP F	21 02 12 37				Do.
144	25	I_r	eP F	22 52 23 23 12				Do.
145	26	I_v	eP F	0 19 48 44				S of Leyte and N of Mindanao.
146	26	I	eP F	3 49 46 4 04				
147	26	II	eP	4 08 10				End overtaken by following earthquake.
148	26	III	eP F	4 23 18 6 19				
149	26	I	eP F	9 55 02 10 11				
150	26	I	eP F	10 41 38 58				

No. 19a.

April 26th to 30th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory

$\phi = 14^{\circ}34'41''N$ $\lambda = 120^{\circ}58'33''E$. $h = 2.40m$. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich Mean Time		Period	Amplitude		Δ	Remarks.
							A_N μ	A_E μ		
151	26	I	eP F	11 30 03 51						
152	26	I	eP F	18 53 46 17 11						
153	27	I	eP F	7 59 22 8 11						
154	27	II	eP F	8 14 31 9 49						
155	27	I	eP F	11 22 00 35						
156	27	I	eP F	13 01 10 22						
157	28	II	eP F	3 31 24 4 42						
158	28	I	eP F	8 00 22 19						
159	28	III _v	eP F	18 41 18 20 16					NE of Mindanao.	
160	29	II _v	eP F	3 10 20 4 37					Do.	
161	30	I	eP F	11 45 00 12 34						

M. Saderra M.

No. 196.

April, 1913.

Manila, P. I.

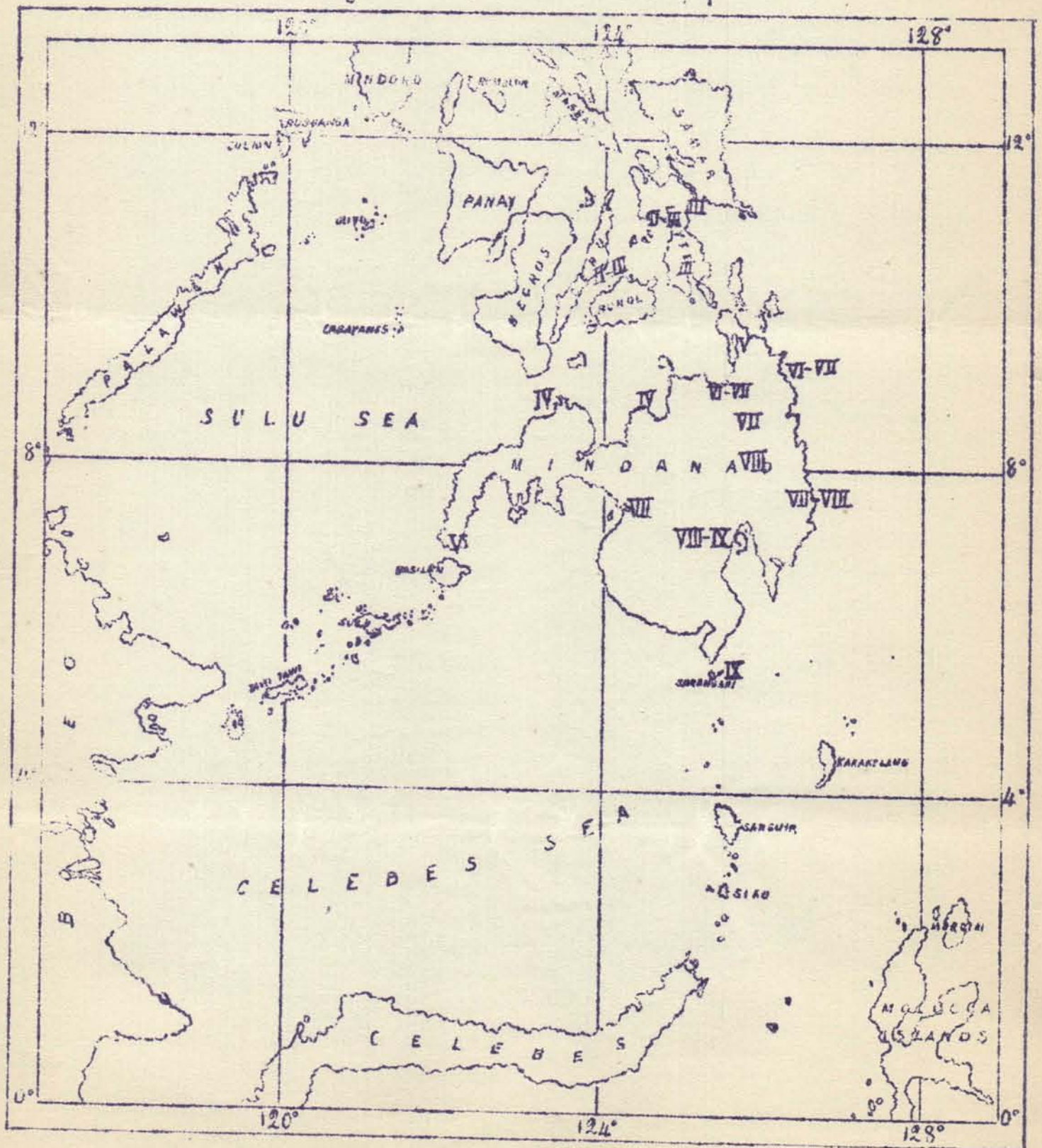
Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.
Greenwich mean time.

- April 18th, 13^h 39^m earthquake, intensity IV-V; at 18^h 36^m, IV; at 20^h 23^m, III-IV, and 20^h 30^m, III at Butuan (N of Mindanao).
- " 18th, 19^h 06^m, 19^h 12^m, 19^h 15^m and 19^h 36^m earthquake with intensity V at Surigao and with III-IV at Butuan.
- " 18th, 19^h 42^m earthquake, IV at Surigao (NE of Mindanao).
- " 20th, 5^h 34^m earthquake, III at Surigao and Butuan.
- " 20th, 5^h 45^m earthquake, III at Surigao.
- " 21st, 12^h 40^m earthquake, II, and at 14^h 07^m, III at Butuan.
- " 22nd, 0^h 15^m earthquake, II at Butuan.
- " 22nd, 20^h 52^m 15^s earthquake, V at Ormoc (W of Leyte).
- " 24th, five earthquake with intensity IV and seventeen with intensity III at Surigao.
- " 25th, 4^h 09^m earthquake, V at Ormoc.
- " 26th, 5^h 59^m earthquake, V at Surigao.
- " 26th, 16^h 10^m earthquake, IV at Surigao.

M. Saderra M.

Manila, P. I.
 Seismological Bulletin of the Observatory.
 Sangir and Siao earthquake, March 14th,
 1913, felt in the Philippine Islands.



No. 20.

May 1st. to 6th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ξ	$\frac{T}{T_0}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Phase	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				mean time			A_N	A_E		
163	1	I	eP M _E F	13 45 00 53 22 14 14		8-9		15		
164	2	I _d	eP F	14 09 30 12						
165	3	I _r	eP L M _N M _E F	5 56 10 56 47 57 35 57 39 6 09		5 5	158	225		Felt northern Luzon.
166	5-6	I	e F	23 50 0 35						
167	6	I	e F	1 31 59						
168	6	I	e F	6 25 16 55						
169	6	II _r	eP L M _N M _E F	9 28 54 29 19 29 24 29 24 40		0.5 1	428	380		Felt western Luzon.
170	6	I _r	eP L F	11 23 30 28 31 12 01						
171	6	I	e L M _E F	15 07 11 28 14 46 53		11-12		12		

No. 21.

May 6th to 8th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T _c	ϵ	$\frac{r}{T_c^2}$
A _N	6.2	2.21	0.055
A _E	6.4	2.64	0.034

No.	Date	Charac.	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				m.	time		A _N	A _E		
172	6-7	II _T	eP	23	54 02				345	End overtaken by following earthquake.
			L		55 56					
			M _E		57 21	5-6				
			M _N		57 27	10-11	254			
173	7	I _V	e	0	03 29				237	Felt northeastern Mindanao.
			M _E		04 38	7				
			M _N		04 49	11	175			
			F	1	05					
174	7	I _V	e	20	04 27				27	Felt northeastern Mindanao.
			F		13					
175	7	I	eP	20	50 01				30	27
			L		52 35					
			M _N		53 07	13				
			M _E		53 56	8				
			F	21	28					
176	8	I	eP	5	38 40				28	
			L		39 54					
			M _E		41 25	13				
			F		58					
177	8	I _d	eP	14	54 02					
			L		54 12					
			F		57					
178	8	I _T	eP	17	35 09				20	
			L		37 41					
			M _N		38 06	9				
			F	18	02					
179	8	I _T	eP	18	46 22				38	
			L		49 47					
			S		54 16					
			M _E		58 29	9				
			F	19	29					

No. 23.

May 16th to 20th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N$. $\lambda = 120^{\circ} 58' 33'' E$ $h = 2.40 m$. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T	ϵ	$\frac{r}{T^2}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Amplitude		Δ	Remarks
				mean time	Period	A_N	A_E		
190	16	I	eP	12 00 32					
			L	01 11					
			F	05					
191	16	I _d	eP	0 27 00					
			F	30					
192	17	I _r	eP	10 28 07	8-9		25		Felt northeastern Mindanao.
			L	30 32					
			S	33 24					
			M _E	34 33					
			F	11 14					
193	17	I	eP	22 23 12	1	38			
			L	23 40					
			M _N	23 55					
			F	29					
194	18	II _r	eP	2 14 26	9	125	150		
			L	18 00					
			M _N	19 52					
			M _E	20 40					
			F	3 07					
195	18	I _v	eP	20 55 00	8		17		Felt northeastern Mindanao.
			L	57 19					
			M _E	59 29					
			F	21 19					
196	19	I	e	11 54					
			F	12 16					
197	20	I _r	eP	3 53 51	11		63		
			L	55 45					
			S	57 50					
			M _E	4 00 36					
			F	30					

No. 24.

May 20th to 31st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T _c	ϵ	$\frac{r}{T_c^2}$
A _N	6.2	2.21	0.055
A _E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A _N	A _E		
198	20	I	e F	10 30 58						
199	20	I _r	e F	16 45 56						Felt northern Luxon.
200	21	I	e F	13 55 14 40						
201	25	I	eP eS eL M _N M _E F	10 22 58 24 35 27 11 28 08 28 27 54	8 6-7	11	15			
202	29	I	eP F	10 18 34 39						
203	29	III _r	eP L	13 30 11 30 59						Felt northern Luxon.- Maximum and end not recorded owing to the ampli- tude of the shock throwing the pens off the record.
204	30	II _r	eP L S M _{E1} M _{N1} M _{N2} M _{E2} F	11 54 30 12 00 32 06 12 07 23 07 48 14 18 15 47 14 03	21-22 14-15 13-14 12-13	189 125	295 107			

M. Ladera M.

No. 25.

June 1st. to 10th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ϵ	$\frac{\epsilon^2}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date.	Character	Phase.	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N μ	A_E μ		
205	1	I	eP L M _E M _N F	0 38 41 38 56 38 58 39 16 49	1 1-2	473	825		
206	4	II _r	eP eS eL M _{E1} M _{N1} M _{N2} M _{E2} F	10 03 30 07 20 11 30 14 38 14 53 19 54 21 09 11 53	5-6 7-8 7 7 7-8 11	209 149	128 150		
207	6	I _r	e F	2 47 54 3 12					
208	6	I	eP L M _E F	5 46 29 46 47 46 49 50	1		68		
209	6	I _v	eP L M _E F	20 32 03 32 14 32 16 35	1		125		
210	7	I	e F	14 28 40 50					
211	9	I _d	eP L F	6 57 34 57 49 7 00					
212	10	I _r	eP S L M _N M _F F	22 51 20 53 32 54 51 55 24 56 34 23 25	9 9	21	22		
213	10	I _d	eP L F	23 39 45 40 03 43					

No. 26.

June 11th to 19th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 58' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{F_2}{F_1}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean	time		A_N r	A_E r		
214	11	I_r	eP M_N M_E F	6 03 00 11 11 14 48 53		7-8 7-8	23	27		
215	12	I_r	eP L M_E M_N F	2 16 16 18 20 18 47 19 25 33		11 8	21	45		
216	12	I_d	eP L F	22 46 21 46 37 50						
217	14	I_r	e F	8 55 9 31						
218	14	I_u	e L? M_E F	9 58 10 19 24 38 11 04						
219	17	I_d	eP L	2 59 31 59 42						
220	17	I_v	eP L M_E F	3 02 09 02 18 03 08 08		4-5		30	End overtaken by following earthquake. Felt southern Luzon.	
221	17	I_r	eP F	9 09 09 27						
222	18	I_v	eP F	8 46 28 9 03						
223	18	I_r	e F	21 46 15 22 39						
224	19	I_v	e F	3 08 10 22						
225	19	I_d	eP F	20 59 14 21 01						

No. 27.

June 20th to 30th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	E	$\frac{r}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N r	A_E r		
226	22	I_v	eP F	11 26 36 41					
227	22	I_u	eP L? M _N M _E F	14 00 33 08 30 17 50 20 25 15 34	15 20	9	12		
228	26	II_r	eP eS L _E L _N M _N M _E C _E C _N F	5 09 03 13 38 18 14 18 22 19 48 19 58 36 22 36 34 6 56	6-7 7-8 6-7 6 7	254	425		
229	27	I_v	e F	15 08 07 20					

M. Paderna H.

No. 28

July 1st to 11th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ϵ	$\frac{T}{T_0}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.	
						A_N	A_E			
230	2	I_v	eP F	12 36 34 40					Felt southeastern Luzon.	
231	6	II_r	eP eS i_N eL M_N M_{E1} M_{E2} F	16 16 53 20 03 20 54 22 48 24 00 26 10 27 26 17 24	9 11 13	67		112 111		
232	7	I_r	e F	9 27 14 10 00						
233	7	I_d	iP F	9 49 39 52						
234	7	I_r	eP S L M_E M_N F	17 44 07 49 18 52 48 56 11 56 30 18 47	19 16	25		37		
235	8	I_r	eP eS eL M_E M_N F	22 15 25 19 42 24 00 26 04 26 36 23 11	7-8 11	21		37		
236	11	II_v	eP iL M_N M_E F	10 43 22 43 33 44 37 44 38 58	2-3 3-4	372		675	Felt southern Luzon.	

No. 29.

July 12th to 18th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ϵ	$\frac{r}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks
						A_N μ	A_E μ		
237	12	II _r	eP	10 29 05	7-8	54	100		
			iS _E	33 14					
			eS _N	33 29					
			eL _E	37 26					
			eL _N	37 34					
			M _E	41 43					
			M _N	42 13					
F	11 46								
238	13	I _d	iP	4 02 53					
			F	05					
239	13	I _v	eP	7 59 55	1	174	192		
			L	8 00 15					
			M _N	00 21					
			M _E	00 21					
			F	06					
240	14	I	eP	4 06 14	1		52		
			L	06 23					
			M _E	06 29					
			F	10					
241	14	I	eP	6 00 58	1		58		
			L	01 10					
			M _E	01 13					
			F	04					
242	16	I _d	eP	7 56 51					
			F	59					
243	16	I	eP	8 06 29					
			F	12					
244	18	I	eP	15 02 35	0.5		120		
			L	02 47					
			M _E	02 57					
			F	06					

No. 30.

July 19th to 31st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ}34'41''N.$ $\lambda = 120^{\circ}58'33''E.$ $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	δ	$\frac{r}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date.	Character	Phase.	Greenwich mean time	Period.	Amplitude		Δ	Remarks.
						A_N P	A_E P		
245	21	I_d	eP L F	6 02 00 02 09 04					
246	22	I_r	eP L F	6 41 40 47 37 7 12					
247	23	I_d	eP L M_E F	8 38 24 38 39 38 56 41	1		45		
248	24	I_v	eP L M_N F	10 05 31 05 47 05 58 10	0.5	228			Felt in western Luzon.
249	29	I_r	e S L M_N F	22 06 45 10 13 12 06 12 48 23 03	6	158			Early phases are confused by pulsatory oscillations.
250	30	I_d	eP F	13 11 16 14					
251	30	I_d	eP F	21 00 40 03					

M. Cordero M.

No. 31.

August 1st to 10th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41'' N.$ $\lambda = 120^{\circ} 55' 33'' E.$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1,000 kg)

	T.	ξ	$\frac{r}{T^2}$
A_N :	6.2	2.21	0.055
A_E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich			Period	Amplitude		Δ	Remarks.
				mean time				A_N	A_E		
252	1	I_7	e F	17 18	19 12	15					
253	2	I_d	iP M_E M_N F	5 43 43 50	07 14 25		2 5	39	75		
254	4	I_7	eP eS iL M_N M_E F	21 21 23 24 24 34	19 24 32 33 55	16	4 5	26	20		
255	6-7	I_u	cP S L M_{N1} M_{N2} M_{N3} M_{N4} M_{N5} M_{N6} F	22 34 46 23 06 39 55 01 08 51	00 22 20 03 49 46 44 26 30		14 11 19 26 20 18	28 28 21 21 26 28			
256	7	I_7	eP L M_N F	14 46 46 15	23 37 53		13	21			
257	8	I_d	eP F	4 5	58 02	14					
258	9	I_7	eP F	9 50	56						
259	10	I_d	eP F	23 57	25						

No. 32.

August 11th to 23rd, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ϵ	$\frac{r}{T^2}$
A _N :	6.2	2.21	0.055
A _E :	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A _N	A _E		
260	11	I _r	e	6	30	56				
			L		35	50				
			M _{N1}		42	19	11	37		
			M _{N2}		50	53	7	79		
			F	8	09					
261	13	I _r	eP	4	31	18				
			(S?)		33	41				
			L		36	56				
			M _N		38	40	7	70		
			F	5	14					
262	13	I	e	8	32					
			F		43					
263	14	I	e	14	36					
			F	15	24					
264	15	I	eP	19	08	22				
			M _N		16	39	11	100		
			F		43					
265	16	I _d	eP	16	40	11				
			L		40	28				
			M _N		40	30	0.5	233		
			M _F		40	30	0.5		250	
			F		44					
266	18	I _d	eP	4	11	30				
			F		15					
267	18	I	e	4	19					
			F	5	16					
268	18	I	e	6	38					
			F	7	06					
269	19	I	e	5	08					
			F		34					
270	23	I _v	eP	2	10	44				
			I _d		11	11				
			M _E		12	03	4		245	
			M _N		12	14	5	441		

End overtaken by following earthquake. Felt at Dagupan.

No. 33.

August 23rd to 27th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T_0	ϵ	$\frac{\tau}{T_0^2}$
A_{23}	6.2	2.21	0.055
A_{27}	6.4	2.64	0.034

No.	Date.	Character	Phase	Greenwich mean time.	Period	Amplitude		Δ	Remarks.
						$\frac{\Delta_N}{\mu}$	$\frac{\Delta_E}{\mu}$		
271	23	III_v	eP I	2 15 53 16 16					Baguio (W of Luzon). - Maximum not recorded owing to the amplitude of the shock throwing the pens off the record. End overtaken by following quake.
272	23	I_d	eP F	2 41 01 45					
273	23	I_d	eP F	3 12 20 17					Baguio (W of Luzon).
274	23	I_v	eP F	17 53 32 18 02					Baguio (W of Luzon).
275	24	I_v	eP F	1 53 08 58					Do.
276	24	I_v	eP I M_N F	2 20 01 20 23 20 40 29	0.5	74			Do.
277	24	I_v	eP F	4 34 22 35					Do.
278	24	I	eP I M_E	6 57 07 57 36 58 19	3		38		Do. - end overtaken by following earthquake.
279	24	I	e F	7 01 20					
280	24	I_v	eP F	12 47 32 54					Baguio (W of Luzon).
281	25	I_v	eP I M_E M_N F	0 11 27 11 52 11 54 11 58 17	0.5 0.5	206	141		Do.
282	26	I_v	eP I M_E F	0 57 58 58 21 58 46 1 01	0.5		23		Do.
283	27	I_v	eP F	12 12 16 17					Do.

No. 34.

August 27th to 31st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kg.)

	T.	ϵ	$\frac{T}{T_0}$
A_N	6.2	2.21	0.055
A_E	6.4	2.64	0.034

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks.
				mean time			A_N	A_E		
284	27	I_v	eP L M_F F	20 56 45 57 11 57 25 21 00		0.5		28		Baguio (W of Luzon).
285	27	I_d	eP F	23 41 00 43						
286	28	I_v	eP L M_E F	21 19 09 20 05 20 24 27		2-3		31		Batag (N of Samar).
287	29	I_v	eP F	17 13 28 17						Baguio (W of Luzon).
288	29	I_d	eP F	20 34 00 36						
289	30	I_v	eP L M_N F	4 04 48 05 35 06 27 21		9	197			SE of Luzon.
290	31	I	e F	6 18 35						Horizontal Pendulums.
291	31	I_v	eP L M_N M_E F	17 18 34 26 20 28 38 29 02 18 10		9-10 9-10	44	46		

M. Caldera M.

No. 35.

September 1st to 5th, 1913.

Manila, P.I.

Seismological Bulletin of the Observatory.

 $\phi = 14^{\circ} 34' 41'' \text{N.}$ $\lambda = 120^{\circ} 58' 33'' \text{E.}$ $h = 2.4 \text{ m.}$

Alluvium.

Instrument: Wiechert's static pendulum (4,000 Kgs.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date.	Character.	Phas.	Greenwich			Period.	Amplitude		Δ	Remarks.
				mean time.				A_N	A_E		
292	2	I	eP L M _E M _N F	8	31	11 45 06 14 39	1 2	162	115		Baguio (W. of Luzon).
293	2	I	e F	19	09	32 32					
294	3	I _v	e L M _E M _N F	20	57	54 23 45 14 38	6 5-6	77	83		
295	4	II _v	eP L M _N F	10	44	12 36 43 55	5	382			
296	4	III _v	eP L	11	46	13 38					Baguio (W of Luzon). Maximum and end lost by the pens thrown off through of the force of shock.
297	4	II _v	eP L F	11	58	26 47 07					Baguio (W of Luzon). Taken from Vicentini.
298	4	I _v	eP L M _E F	15	00	58 50 49 09	2-3	146			Samar Island.
299	4	I	eP F	15	33	24 44					
300	5	I _d	eP F	14	15	36 18					Baguio (W of Luzon).
301	5	I _d	eP F	14	52	08 56					Do.

No. 36.

September 5th to 12th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T_0	ϵ	$\frac{T}{T_0^2}$
A_{N}	6.4	2.21	0.081
A_{E}	6.5	3.79	0.094

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						$\frac{A_{\text{N}}}{\mu}$	$\frac{A_{\text{E}}}{\mu}$		
302	5	I_v	eP F	15 53 18 57					Baguio (W of Luzon).
303	5	II_v	eP L F	19 51 33 51 57 59					Do.
304	5	I_v	eP F	23 29 25 33					Do.
305	6	I_v	eP F	11 10 23 13					Do.
306	6	I_v	eP F	19 10 10 12					Do.
307	7	I	eP F	10 27 12 31					
308	7	I_v	eP F	16 03 43 07					Do.
309	7	I_v	eP F	21 11 11 14					Do.
310	8	I_d	eP F	8 37 41 41					Do.
311	9	I_v	eP F	10 07 20 09					Do.
312	9	I_v	eP F	11 20 43 24					Do.
313	9	I_v	eP F	19 07 52 11					Do.
314	11	I_d	eP L F	21 08 41 09 02 12					

No. 37.

September 13th to 24th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ ms. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T _c	E	$\frac{T}{2.2}$
A _N :	6.4	2.21	0.081
A _E :	6.5	3.79	0.024

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				Mean time			A _N μ	A _E μ		
315	13	I _r	eP	2	06	32	8	47	59	
			eS		10	26				
			eL		13	47				
			M _N		15	47				
			M _E		15	52				
			F		43					
316	14	I _v	eP	1	15	18				Baguio (W of Luzon).
			L		15	54				
			F		25					
317	19	I _d	eP	14	57	09	1	85	56	
			L		57	29				
			M _E		57	33				
			M _N		57	42				
			F	15	02					
318	19	I _o	eP	17	42	44				
			F		44					
319	20	I _d	eP	3	27	15				
			L		27	28				
			F		31					
320	22	I	eP	16	54	54	3-4	50	46	
			M _N		57	36				
			M _E		58	11				
			F	17	10					
321	24	II _v	eP	1	31	40	5-6	794		Felt in western Luzon. - Eand overtaken by following earthquake.
			L		32	08				
			M _N		33	38				
322	24	I	eP	1	39	06	4	353		
			L		39	33				
			M _N		39	46				
			F		57					
323	24	I	e	2	53	45				
			F	3	02					

No. 38.

September 24th to 30th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N.

$\lambda = 120^{\circ} 58' 33''$ E.

$h = 2.20$ ms.

Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T_0	ϵ	$\frac{f}{T_0^2}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date.	Charact.	Phase.	Approximate mean time.	Period.	Amplitude.		Δ	Remarks.
						A_N μ	A_E μ		
324	24	I _d	eP	15 17 51					
			L	18 09					
			F	20					
325	25	I	e	15 10 21					
			F	33					
326	26	I	e	7 46					
			F	8 17					
327	29	I	e	7 05 09					
			F	24					

M. Ladera H.

No. 39.

October 1st to 10th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ ms. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T.	ϵ	$\frac{r}{T_0^2}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date.	Character.	Phase.	Greenwich		Period.	Amplitude		Δ	Remarks.
				mean time.			A_N "	A_E "		
328	2	I	e F	4 43 33 5 02						
329	2	I_v	eP L M_N F	9 16 48 17 31 18 35 30	5-6	74			Felt at Aparri (NE of Luzon).	
330	7	I_v	eP L M_N F	2 12 39 13 48 15 04 28	4	74			SW of Negros Island.	
331	7	I_d	eP L F	19 23 31 24 03 27						
332	9	I_d	eP L M_N F	7 28 03 28 32 28 43 32	3	88				
333	9	I	e F	22 44 23 11						
334	10	I_v	eP L M_N F	12 54 24 54 51 55 07 58	1	77			Felt at Tuguegarao (NE of Luzon).	
335	10	I_d	eP M_N F	13 00 11 00 45 04	1-2	118				
336	10	I_d	eP L M_E F	14 47 26 47 39 47 45 50	1-2		77			

No. 40.

October 11th to 22nd, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kys.)

	T_0	ϵ	$\frac{\tau}{T_0}$
A_{T_0}	6.4	2.21	0.081
A_T	6.5	3.79	0.024

No.	Date	Character	Phase	Greenwich		Period	Amplitude		Δ	Remarks
				mean time			A_N	A_E		
337	11	I_T	e	1	42					
	//		L		50 15					
			M_N		54 05	16	41			
			F	2	23					
338	11	I_T	e	4	13 51					
	//		L		22 00					
			M_N		26 09	13	65			
			F	5	20					
339	11	I_T	eP	9	16 45					
	//		S		23 26					
			L		28 32					
			M_E		33 59	10		18		
			M_N		34 28	14	50			
			F	10	14					
340	12	I_d	eP	15	52 17					
			L		52 42					
			M_N		53 22	3	44			
			F		57					
341	12	I_T	e	17	16					
			F		39					
342	14	II_T	eP	8	18 31					
	//		L		26 18					
			M_E		26 46	4-5		623		
			M_N		28 08	5-6	756			
			F		53					
343	18	I_v	eP	21	59 33					
			F	22	02					Felt at Baguio (W of Luzon).
344	21	I	e	8	23					
			F		33					
345	22	I_d	eP	5	57 28					
			F	6	01					

No. 41.

October 22nd to 31st, 1913.

Munila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ ms. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T_0	ϵ	$\frac{T}{T_0^2}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date.	Character	Phase	Greenwich		Period.	Amplitude		Δ	Remarks.	
				mean time.			A_N	A_E			
346	22	I_r	e	6	57					From Horizontal Pendulum.	
			F	7	16						
347	23	I_v	eP	10	52 20					Felt in Panay Island.	
			F		56						
348	23	I_d	eP	13	49 45						
			F		52						
349	24	I_d	eP	12	29 13						
			F		33						
350	29	I_r	eP	4	37 32		7	6			
			M_N		51 48						14
			M_E		52 08						14
			F	5	02						

M. Padua M.

No. 42.

November 1st to 18th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.).

	T	E	$\frac{T}{T_0}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude		Δ	Remarks.
						A_N	A_E		
353	3	I	eP L M _E F	14 51 23 51 41 51 52 55	0.5		51		
354	6	I	e F	10 35 39 47					
355	9	I	e F	3 53 43 4 16				From the Horizontal Pen- dulum.	
356	10		eP F	21 22 08 22 02				From the Vicentini.	
357	12	I _v	eP L F	19 36 43 37 20 41				Northern Luzon.	
358	13	II _v	eP L M _N M _E F	7 41 13 41 41 41 48 41 50 51	1 0.5	162	141	Northern Luzon.	
359	14	I _d	eP F	17 58 58 18 02					
360	17	I _v	eP F	14 18 22 21				Benquet (W of Luzon).	
361	18	I _d	eP L M _N F	17 43 45 44 10 44 15 49	3	60			

No. 43.

November 19th to 30th, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T_0	ϵ	$\frac{r}{T_0^2}$
A_N :	6.4	2.21	0.081
A_E :	6.5	3.79	0.024

No.	Date	Character	Phase	Greenwich mean time		Period	Amplitude		Δ	Remarks.
							A_N μ	A_E μ		
362	19	II_r	eP	3	24 26	12-13	105			
			S		27 22					
			L		30 28					
			M_e		33 52					
			F	4	16					
363	23	I	eP	23	25 54					
			L		26 27					
			F		30					
364	26	II_v	eP	18	57 00	6-7	897	115	Felt at Guinan (SE of Samar).	
			S		58 32					
			L		59 35					
			M_N	19	01 27					
			M_E		02 35					
			F		55					
365	30	I_d	eP	18	40 18					
			L		40 38					
			F		42					

M. Padua M.

No. 44.

December 1st to 31st, 1913.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\phi = 14^{\circ} 34' 41''$ N. $\lambda = 120^{\circ} 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1,000 Kgs.)

	T ₀	E	F _{0.2}
A _N :	6.4	2.21	0.081
A _E :	6.5	3.79	0.024

No.	Date	Character	Phase	Wiechert mean time.	Period	Amplitude		Δ	Remarks.
						A _N μ	A _E μ		
366	1	I _v	eP L M _E F	23 12 14 14 48 14 51 19	0.5		59		
367	3	I _v	eP eS eL M _E F	8 05 30 06 19 08 54 12 26 36	8		18		
368	7	I _v	eP L M _E F	12 03 02 03 20 03 29 08	1		67		
369	21	II _r	eP eS eL M _E M _N F	15 42 33 46 23 49 07 51 58 52 07 16 55	10 10	1.667	1.200	From the Horizontal Pendulums. From 15th to end of this month the Wiechert seismograph was being transferred to another locality.	
370	21	I	e M _E M _N F	17 08 50 15 48 17 22 43	14 13	40	27	From the Horizontal Pendulums.	
371	30	I _v	eP L M _E M _N F	3 21 18 21 31 21 38 22 06 27	0.5 0.5	150	235	From the Vicentini.	