No. 1.

From 1st to 17th January, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
1	1	I_d	eP	6 46 ±					
			F	48					
2	2	I	eP	6 10 48					
			F	41					
3	4	I_r	eP	15 57 14					
			eS	16 05 23	5-6				
			L	14 38					
			F	56					
4	6	I_d	eP	11 17 02					
			iL	17 15	1				
			F	19					
5	6	I_d	eP	11 20 ±					
			eL	20 59	1-2				
			F	23					
6	8	I_d	eP	5 34 46					
			iL	35 16	2-3				2-3
			M_N	35 18	2-3	18			
			M_E	35 18	2-3		16		
			F	38					
7	8	I	eP	14 59 47					
			F	15 07					
8	10	I_r	eP	10 06 48					Egke., III in Camarines.
			F	08					
9	16	I_d	eP	22 18 26					
			eL	18 35					
			F	19					
10	17	I_d	eP	2 31 13					
			iL	31 30					
			M_N	31 44	4	42			
			F	36					

No. 2.

From 17th to 20th January, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41''$ N. $\lambda = 120°58'33''$ E. $h = 2.40$ m. Alluvium

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
11	17	I_v	eP	18 39 47					Eqke., IV at Aparri (NE of Luzon).
			eL	40 30					
			M_N	40 48	3-4	18			
			M_E	41 07	2-3		7		
			F	44					
12	18	I_v	iP	3 28 32	2				Southern Luzon and north Mindoro.
			iL	28 47					
			C_1	32 27	4	337			
			C_1	32 38	5		224		
			C_2	33 18	3-4	307			
			F	52					
3	18	I_v	eP	7 36 29					Southern Luzon and north Mindoro.
			iL	36 44	3				
			M_E	36 49	5		90		
			F	41					
4	18	I_d	eP	21 15 56					
			iL	16 09					
			F	19					
5	19	I_d	iL	1 34 56					
			F	38					
	19	I_d	e	10 35 ±					
			F	38					
	19	I_d	eP	10 50 ±					
			M_N	50 38	3		12		
			F	54					
	20	I	eP	4 07 01					
			F	55					
	20	I_d	eP	17 15 39					
			L	16 15	4-5				
			M_N	16 23	3-4	214			
			M_E	16 25	5			116	

No. 3.a

From 20th to 31st January, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date.	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
20	20	I_d	i	17 19 00					
			F	23					
21	20	I_d	e	17 25 40					
			F	28					
22	22	I_d	eP	13 10 37					
			iL	11 54	2				
			M_N	12 46	3	10			
			F	17					
23	25	I_d	eP	22 53 36					
			iL	53 54					
			M_N	53 57	2	36			
			F	56					
24	26	I_d	e	2 39 14					
			F	43					
25	26	I_r	P	14 ? ?					
			L	59 20	10-11				
			M_N	15 00 05	11	6			
			M_E	00 30	12		4		
			F'	25					
26	26	I_v	eP	17 57 53					
			M_N	18 00 42	6	16			Eqks., III, northern Mindanao.
			M_E	01 00	6-7		10		
			F	15					
27	28	I	e	1 32 12					
			F	50					

M. Saderra M.

No. 3b. January, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

January	9th	At 20h 29m	Eqke., III	at Butuan (N of Mindanao).
"	11th	At 14h 14m	Eqke., III	in Cebu and Leyte.
"	24th	At 12h 35m	Eqke., III	at Virac (Catanduanes Island).
"	25th	At 10h 10m	Eqke., III	at Butuan (N of Mindanao).
"	29th	At 11h 02m	Eqke., III	at Butuan (N of Mindanao).
"	30th	At 19h 16m	Eqke., IV,	NE Mindanao and Leyte.

No. 4. From 1st to 18th, February, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude $A_=$	Δ	Remarks.
28	1	I_r	eP	18 07 30					Pangasinan and Benguet Provinces.
			iS	07 52					
			eL	08 24					
			M_N	08 48	3	33			
			M_E	08 50	3		31		
			F	13					
29	1	I_r	eP	18 28 00					Pangasinan and Benguet Provinces.
			iS	28 23					
			L	29 10					
			M_N	29 14	3	31			
			F	33					
30	9	I	e	23 22 28					Movement in N-S component very slight.
			F	33					
31	15	I_d	eP	2 49 50					Northern Luzon.
			eL	50 42	4				
			M_E	52 08	5		300		
			F	3 12					
32	16	I_r	eP	9 33 ±					
			eL	45 00					
			M_E	46 52	11		5		
			M_N	47 14	9-10	6			
			F	10 34					
33	17	I_d	eP	13 33 49					
			M_N	34 50	4	10			
			F	39					
34	17	I_d	eP	21 16 54					
			iS	17 12					
			M_N	17 52	3-4	13			
			F	21					
35	18	I	e	0 36 51					
			F	50					

No. 5 b. February, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

Feb. 1st at $6^h\,45^m$ Earthquake, II at Legaspi (SE of Luzon).
" 2nd At $22^h\,58^m\,30^s$ Eqke., II at Butuan (N of Mindanao).
" 8th At $5^h\,48^m$ Eqke., III at Guam (Mariana Islands).
" 11th At $5^h\,15^m$ Eqke., III, eastern Bohol.
" 12th At $17^h\,15^m$ Eqke., III, eastern Bohol.
" 13th At $16^h\,23^m$ Eqke., IV, eastern Visayas.
" 13th At $16^h\,03^m$ Eqke., III at Guam (Mariana Islands).
" 15th At $19^h\,45^m$ Eqke., III, eastern Bohol.
" 21st At $15^h\,21^m$ Eqke., II at Zamboanga (W of Mindanao).
" 25th At $7^h\,15^m\,15^s$ Eqke., III at Butuan (N of Mindanao).
" 26th At $1^h\,11^m$ Eqke., III at Legaspi (SE of Luzon).

No. 5.a.

10th to 29th February, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T.	ε
A_N	7	36
A_E	7	3

No.	Date.	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
36	18	I_d	eP	11 59 00					
			iL	59 16					
			M_N	59 44	3	9			
			F	12 05					
37	20	I	e	17 03 26					
			F	16					
38	22	II_v	eP	15 40 24					Eqke., III, Benguet and Nueva Vizcaya Provinces.
			iL	40 50	2-3				
			M_N	41 18	3-4	55			
			F	49					
39	22	I	eP	19 24 14					
			iS	25 15	4				
			iL	25 47	4				
			M_N	25 53	4	61			
			F	39					
40	22	I_v	eP	22 32 23					Eqke., IV at Calapan (NE of Mindoro).
			eL	32 37	3				
			M_N	32 53	3	60			
			F	40					
41	25	I	eP	2 50 54					
			F	3 38					
42	25	I_d	eP	20 16 08					
			eL	16 23					
			M_N	16 36	3	10			
			F	19					
43	27	I	e	1 40 ±					
			F	2 04					

M. Saderra M.

No. 6. From 1st to 11th, March, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.).

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Charac.	Phase.	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ.	Remarks
44	3	I_d	eP	0 08 12					
			eL	08 26					
			M_N	08 28	1	8			
			F	11					
45	3	I_d	iL	17 52 22					
			F	54					
46	6	I	e	11 41 00					
			F	49					
47	7	I_v	eP	4 44 00					Northern part of Agusan Valley.
			eS	45 26					
			L	46 51					
			M_N	47 59	8	4			
			F	5 12					
48	8	I_v	eP	1 08 28	1-2				Northern part of Agusan Valley.
			eS	10 05	3-4				
			eL	11 42	4-5				
			M_N	12 32	9-10	11			
			F	41					
49	8	I	eP	8 20 30					
			iL	21 50					
			M_N	21 54	3-4	78			
			F	42					
50	8	I_d	eP	15 41 40					
			iL	41 57					
			M_E	42 28	3		15		
			F	47					
51	8	I_v	eP	23 20 44					Northern part of Agusan Valley.
			F	37					
52	10	I_d	eP	17 51 13					
			eL	51 35					
			M_N	51 40	3	7			
			F	54					
53	11	I	e	10 09 12					
			F	34					

No. 7.

From 11th to 21st March, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E$ $h = 2.40 m.$ Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	△	Remarks.
54	11	II_v	eP	15 34 33					Northern part of Agusan Valley.
			eS	36 07					
			iL	37 31					
			M_N	38 33	9	46			
			M_E	38 47	7		29		
			F	16 27					
55	14	I_v	eP	6 26 26					Northern part of Agusan Valley.
			eL	28 52					
			M_N	30 08					
			F	7 44					
56	14	I	eP	7 46 00					
			F	8 20					
57	16	I_d	eP	8 45 55					
			eL	46 26					
			M_N	46 39	1-2	15			
			M_E	46 39	2-3		30		
			F	51					
58	16	I_v	e	13 06 ±					Northern part of Agusan Valley.
			F	14 00					
59	17	I_v	eP	15 25 08					Northern part of Agusan Valley.
			eS	26 37	5-6				
			iL	27 48	6-7				
			M_N	29 00	7-8	25			
			F	16 25					
60	19	I_d	eP	11 11 00					
			L	11 13					
			M_E	11 16	3		11		
			F	14					
61	19	I_v	e	14 02 ±					Northern part of Agusan Valley.
			F	12					
62	19	I_v	e	15 51 ±					Northern part of Agusan Valley.
			F	16 02					
63	21	I	e	15 59 ±					
			F	16 08					

No. 8 a. From 22nd to 31st March, 1912.

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 (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
64	22	I_v	eP	4 30 38					Northern part of Agusan Valley.
			eS	32 23	4-5				
			eL	34 18					
			M_N	34 46	10	54			
			M_E	35 51	8-9		.36		
			F	5 45					
65	24	I-	e	12 23 42					
			F	54					
66	25	I_v	eP	4 59 00					
			eL	5 06 44					
			M_N	06 55	5	22			
			F	43					
67	25	I_v	eP	14 02 40					Northern part of Agusan Valley.
			eS	04 17					
			eL	05 46					
			M_N	06 36	11	17			
			F	49					
68	26	I	e	6 20 22					
			F	42					
69	27	II_v	eP	12 23 09					Central Luzon.
			iL	23 28					
			M_E	25 00	4		467		
			M_N	25 05	3-4	245			
			F	35					
70	27	I_d	e	21 40 00					
			F	42					
71	29	I_d	e	2 55 54					
			F	3 01					
72	30	II_v	eP	7 39 00					Near the northern coast of Samar.
			eL	39 55					
			M_E	40 23	3		478		
			M_N	41 49	3	322			
			F	8 33					
73	31	I	e	10 14 39					
			F	21					

No. 88. March, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

Greenwich mean time.

March 1st. At 3h 53m earthquake, intensity III at Dapitan (NW of Mindanao).

" 3rd At 5h 57m Eqke., III at Butuan (N of Mindanao).

" 7th At 4h 44m 00s Eqke., III, northern part of Agusan Valley. Repeated at 5h 04m and 5h 14m.

" 8th At 1h 08m 28s Eqke., IV, northern part of Agusan Valley.

" 8th At 23h 20m 44s Eqke., IV, northern part of Aguan Valley.

" 10th At 17h 35m Eqke., III at Butuan (N of Mindanao).

" 11th At 15h 34m 33s Eqke., IV, northern part of Agusan Valley.

" 12th At 2h 11m Eqke., II at Tacloban (NE of Leyte).

" 12th At 6h 00m Eqke., III at Butuan (N of Mindanao).

" 12th At 6h 25m Eqke., III at Borongan (E of Samar).

" 14th At 6h 26m 26s Eqke., IV, northern part of Agusan Valley.

" 16th At 13h 06m Eqke., II-IV, northern part of Aguan Valley.

" 17th At 15h 25m 08s Eqke., IV, northern part of Agusan Valley. Repeated at 15h 28m and 15h 32m.

" 18th At 2h 10m Eqke., III at Butuan (N of Mindanao).

" 19th At 14h 02m Eqke., IV, northern part of Agusan Valley. Repeated at 15h 51m.

" 20th At 17h 20m 19s Eqke., III at Aparri (NE of Luzon).

" 20th At 19h 50m Eqke., II at Tacloban (NE of Leyte).

" 22nd At 4h 30m 38s Eqke., IV, northern part of Agusan Valley.

" 25th At 14h 02m 40s Eqke., IV, northern part of Agusan Valley.

" 26th At 13h 05m Eqke., III at Catanduanes (SE of Luzon).

" 27th At 12h 23m 09s Eqke., III, Central Luzon.

" 30th At 7h 39m 00s Eqke., V near the northern coast of Samar.

" 30th At 20h 41m Eqke., III at Butuan (N of Mindanao).

M. Saderra M.

No. 9. From 1st to 15th April, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase.	Greenwich Mean Time.	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
74	1	I_d	eP	16 45 06					
			iL	45 13					
			M_E	45 18	3		12		
			F	48					
75	3	I_v	e	11 39 50					Northern part of Agusan Valley.
			F	12 17					
76	3	I_v	e	21 17 51					Northern part of Agusan Valley
			F	47					
77	4	I_d	eP	2 45 59					
			L	46 04					
			F	48					
78	4	I	e	10 40 00					
			F	11 11					
79	6	I_d	eP	5 58 02					
			i	58 15					
			L	58 24					
			F	6 02					
80	6	I_d	eP	14 28 20					
			eL	28 42					
			M_N	29 00	3	19			
			F	33					
81	7	I_v	eP	21 11 48					Eqke., III at Aparri (NE of Luzon).
			L	12 43					
			M_E	13 16	3		23		
			F	19					
82	13	I_d	eP	7 38 03					
			iL	38 18					
			M_E	38 19	2-3		34		
			F	41					
83	14	I_v	eP	12 29 28					Eqke., IV at Surigao (NE of Mindanao).
			F	41					
84	14	I	e	22 40 23					
			F	23 07					

No. 10. From 16th to 28th April, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ ms. Alluvium.

Instrument: Wiechert's static pendulum. (1.000 Kg.)

	T_0	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
85	16	II_V	eP	2 08 07					Eqke., III near the Romblon Island.
			L	08 34					
			M_E	08 37	4		256		
			M_N	08 46	4				
			F	30					
86	16	I_d	e	8 57 33					
			F	9 02					
87	20	I	e	1 19 25					
			F	34					
88	20	I	e	1 35 33					
			M_N	48 07	12	4			
			F	2 43					
89	23	I_r	eP	21 49 48					
			eL	58 00					
			M_N	22 01 28	13-14	4			
			M_E	01 45	13-14		4		
			F	35					
90	24	I_d	eP	21 40 50					
			eL	41 10					
			M_N	41 12	2-3	20			
			F	44					
91	26	I_d	eP	4 13 38					
			eL	13 50					
			M_N	14 58	4	10			
			F	20					
92	26	I_V	eP	6 16 22					Eqke., III at Vigan (NW of Luzon).
			eL	16 56					
			M_N	17 28	3-4	51			
			F	25					
93	27	I	eP	3 45 36					
			F	4 06					
94	28	I_d	eP	2 46 40					
			L	46 50					
			F	49					

No. 11. From 29th to 30th, April, 1...

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

	T_0	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
95	29	I	e	9 35 ?					
			F	50					
96	30	I_d	e	0 17 00					
			F	20					
97	30	I	e	7 34 51					
			F	8 00					

Macroseisms not registered by the seismographs.

April 3rd at $11^h 39^m 50^s$ Earthquake, III, northern part of Agusan Valley. Repeated at $21^h 17^m 51^s$.

" 4th at 23^h Eqke., II at Butuan (N of Mindanao).

" 5th at $15^h 03^m$ Eqke., III at Aparri (NE of Luzon).

" 5th at $20^h 12^m$ Eqke., III at Aparri (NE of Luzon).

" 7th at $7^h 10^m$ Eqke., III at Butuan (N of Mindanao).

" 7th at $21^h 11^m 48^s$ Eqke., III at Aparri (NE of Luzon).

" 8th at $20^h 32^m$ Eqke., III-IV, northern part of Agusan Valley.

" 10th at $3^h 01^m 40^s$ Eqke., II at Butuan (N of Mindanao).

" 14th at $12^h 29^m 28^s$ Eqke., IV, northern part of Agusan Valley.

" 14th at $21^h 08^m$ Eqke., II at Butuan (N of Mindanao).

" 16th at $2^h 08^m 07^s$ Eqke., III near the Romblon Island.

" 16th at $14^h 10^m$ Eqke., II at Calbayog (W of Samar).

" 18th at $20^h 10^m$ Eqke., II at Surigao (NE of Mindanao).

" 26th at $6^h 16^m 22^s$ Eqke., III at Vigan (NW of Luzon).

" 30th at $17^h 20^m$ Eqke., III at Sarangani (S of Minda...).

No. 12. From 1st to 10th of May, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

	T_0	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
98	1	I	eP	12 43 07					
			L	48 00					
			M_N	50 42	11-12	4			
			F	13 23					
99	2	I_d	eP	6 44 39					
			iL	44 57					
			M_N	45 07	1-2	64			
			F	49					
100	3	I_r	eP	19 06 50					
			eL	11 00					
			M_N	12 02	14-15	6			
			M_E	12 09	9-10		5		
			F	37					
101	4	I_r	e	14 31 45					Eqke., III at Baguio (W of Luzon).
			eL	32 06					
			F	43					
102	6	I_u	P	19 17 11					
			S	29 37					
			L	41 48					
			M_E	55 14	15-16		4		
			M_N	20 04 36	16-17	4			
			F	41					
103	8	I_d	eP	7 01 51					
			L	02 16					
			M_E	02 26	2-3		21		
			F	05					
104	10	I_r	eP	10 05 54					Northern part of Aguscan Valley
			L	07 46					
			M_N	09 04	5-6	10			
			F	54					

No. 13. From 11th to 23rd of May, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium.

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

	T.	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
105		I	e	17 36 10					Taken from the Horizontal Pendulums. Time-marks missing on Wiechert seismograph.
			F	18 25					
106	11	I	e	20 27 20					
			F	58					
107	13	I	e	4 49 47					
			F	5 05					
108	15	I	e	0 15 35					
			F	39					
109	16	I_d	iP	0 10 09					
			F	12					
110	16	I	ePP	11 52 06					Cuyo Island.
			L	52 40					
			M_N	52 48	2-3	6			
			F	12 01					
111	20	I	ePP	7 58 54					
			F	8 20					
112	21	I_r	ePP	8 34 27					
			eS	38 55					
			eL	43 22					
			M_E	44 52	13-14		13		
			M_N	45 09	12-13	10			
			F	9 26					
113	23	II_u	ePP	2 29 30	2-3				Maldive Islands.
			iS	36 30	6-7				
			iL	43 34	10-11				
			M_E	45 12	10-11		138		
			M_N	46 13	11-12	87			
			F	4 22					

No. 114 a. From 23rd to 31st of May, 1912

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
114	23	I_r	eP	6 42 54					Western Luzon.
			eL	43 14					
			M_N	44 17	2-3	.42			
			F	52					
115	25	I_r	eP	15 49 26					
			eL	51 53					
			M_N	52 31	3	25			
			F	16 22					
116	25	I_d	eP	20 39 13					
			L	39 27					
			F	41					
117	28	I_r	e	6 59 06					As the Wiechert seismograph was not working regularly these data have been taken from the Horizontal Pendulums.
			F	7 23					
118	28	I_r	e	12 18 01					
			F	?					
119	28	I_r	e	12 50 ?					
			F	13 53					
120	28	II_d	eP	16 01 41					
			iL	01 57					
			M_N	01 59	2	170			
			F	05					

M. Cadena M.

No. 14 b. May, 1912.

Manila, P. I.
Seismological Bulletin of the Observatory.
Macroseisms not registered by the seismographs.
Greenwich mean time.

May 4th, $14^h\ 31^m\ 45^s$ earthquake, III at Baguio (W of Luzon).
" 6th, $10^h\ 40^m$ Eqke., II at Santo Domingo (Batanes Islands).
" 7th, $15^h\ 04^m$ Eqke., III, near south coast of Samar.
" 10th, $10^h\ 05^m\ 54^s$ Eqke., VII-VIII, northern part of Agusan Valley.
" 10th, $17^h\ 53^m\ 27^s$ Eqke., II at Surigao (NE of Mindanao).
" 12th, $13^h\ 45^m$ Eqke., IV at Santo Domingo (Batanes Islands).
" 15th, $23^h\ 00^m$ Eqke., III at Santo Domingo (Batanes Islands).
" 16th, $7^h\ 30^m$ Eqke., III at Sarangani (S of Mindanao).
" 16th, $11^h\ 52^m\ 06^s$ Eqke., III at Cuyo Island.
" 17th, $6^h\ 05^m$ Eqke., III at Sarangani (S of Mindanao).
" 23rd, $5^h\ 42^m\ 54^s$ Eqke., III at Baguio (W of Luzon).
" 24th, $7^h\ 25^m\ 50^s$ Eqke., II at Surigao (NE of Mindanao).
" 31st, $13^h\ 19^m$ Eqke., II at Surigao (NE of Mindanao).

M. Saderra M.

No. 15. From 1st to 8th of June, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°\,34'\,41''$ N. $\lambda = 120°\,58'\,33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Km).

	T.	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
121	2	I_r	eP	12 03 51					
			eS	06 22					
			eL	08 56					
			M_N	09 18	9–10	16			
			F	41					
122	4	I_r	eP	5 21 49					
			L	22 19					
			M_N	23 22	3	42			
			F	38 00					
123	4	I_d	eP	23 08 00					
			M_N	09 32	3	13			
			F	18					
124	5	I_r	eP	11 18 09					
			iL	22 00					
			M_E	22 45	5		48		
			F	12 10					
125	7	I_r	e	3 43 01					
			F	4 23					
126	7	I_r	e	10 07 ?					
			F	11 17					
127	7	I_r	e	18 47 35					
			F	19 34					
128	8	I_r	e	4 47 52					
			F	5 20					
129	8	I_u	e	7 48 00					
			F	9 57					
130	8	I_r	e	13 21 40					
			F	57					

As the Wiechert seismograph was not working regularly these data have been taken from the Horizontal Pendulums.

No. 16. From 9th to 15th of June, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 53''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T.	ε
A_N	7	3.6
A_E	7	3

No.	Date	Characte	Phase	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
131	10	I_d	eP	0 10 10					
			iL	10 22					
			F	15					
132	10	I_d	eP	1 06 13					
			L	06 24					
			F	09					
133	10	I_r	eP	16 17 59					
			F	18 01					
134	12	I_v	eP	0 34 12					Western Luzon
			iL	34 34					
			M_E	34 37	1-2		144		
			F	43					
135	12	I_r	eP	13 03 08					As the Wiechert seismograph was not working regularly, these data have been taken from the Horizontal Pendulums.
			F	38					
136	12	I_r	eP	14 45 33					Southeastern Luzon.
			F	15 48					
137	13	I_v	eP	20 19 54					
			eL	20 20					
			F	24					
138	14	I_r	eP	15 59 47					
			L	16 03 44					
			M_E	04 15	6		33		
			F	22					
139	15	I_r	eP	0 11 19					
			L	16 57					
			M_N	18 55	7-8	29			
			F	48					

No. 17. From 15th to 24th of June, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium

Instrument: Wiechert's static pendulum (1000 Kg.)

	T.	ε
A_N	7	3.6
A_E	7	3

Nr.	Date.	Character.	Phase.	Greenwich mean time.	Period.	Amplitude $\frac{A_N}{T}$	Amplitude $\frac{A_E}{T}$	Δ	Remarks.
140	15	I.	eP	2 16 09					
			L	18 17					
			M_N	18 59	5-6	17			
			F	27					
141	15	I_d	eP	15 45 35					
			F	48					
142	16	I	eP	16 25 56					
			L	26 19					
			M_E	26 38	3-4		23		
			F	28					
143	17	I_d	e	5 40 09					
			F	43					
144	17	I_r	e	11 27 00					
			F	68					
145	18	II_r	eP	1 32 43					Northern Luzon.
			eL	33 49					
			M_N	34 12	6-7	81			
			M_E	34 57	5-6		129		
			F	49					
146	18	I_r	eP	12 07 00					
			I.	17 19					
			M_N	20 49	12-13	6			
			F	13 07					
147	20	I_u	e	0 16 40					Wiechert seismograph was recording, this light beam was taken from the Horizontal Pendulum.
			F	46					
148	24	I	eP	15 09 59					
			eL	10 18					
			M_N	10 27	3	20			
			F	111					

No. 18 a. From 26th to 30th of June, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg)

	T_0	ε
A_N	7	3.6
A_E	7	3.

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
149	26	I	eP	10 29 33					
			L	31 03					
			M_E	31 07	6-7		15		
			F	50					
150	26	II_v	eP	14 27 29					Eqke., II at Baguio (W of Luzon).
			iL	28 19					
			M_N	29 17	7	424			
			M_E	30 02	4-5		948		
			F	15 09					
151	27	II_v	eP	1 05 54					Northern Luzon.
			iL	06 50					
			M_N	07 30	7	246			
			M_E	08 22	7		417		
			F	28					
52	27	I	eP	13 43 00					
			eS	43 44					
			L	44 27					
			M_E	44 55	5		20		
			F	56					
53	27	I	eP	18 49 30					
			eS	50 02					
			L	50 55					
			M_E	51 20	5-6		26		
			F	58					
54	29	I_v	e	2 41 20					
			F	3 05					
55	29	I_v	e	8 10 45					
			F	41					

M. Saderra M.

No. 18 b. June, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroscisms not registered by the seismographs.

Greenwich mean time.

June 3rd, 17h 18m. Earthquake, III at Aparri (NE of Luzon)
" 4th, 13h 10m. Earthquake, III at Laoag (NW of Luzon).
" 10th, 20h 32m 17s. Earthquake, III at Aparri (NE of Luzon).
" 12th, 7h 17m 24s. Earthquake, II at Baguio (W of Luzon).
" 12th, 11h 52m. Earthquake, III at Legaspi (SE of Luzon)
" 14th, 17h 45m. Earthquake, III at Capiz (N of Panay).
" 18th, 9h 30m. Earthquake, II at Cotabato (SW of Mindanao).
" 28th, 14h 20m. Earthquake, II at Nueva Caceres (SE of Luzon).
" 29th, 14h 03m. Earthquake, II at Nueva Caceres (SE of Luzon).
" 29th, 17h 05m. Earthquake, II at Tacloban (NE of Leyte).
" 29th, 19h 02m. Earthquake, III at Cotabato (SW of Mindanao).
" 30th, 17h 12m. Earthquake, V, Leyte Island.

M. Saderra M.

No. 19. From 1st. to 12th of July, 1912.

Manila, P. I.
Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 58' 33" E. h = 2.40 m. Alluvium.

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

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase.	Greenwich Mean Time	Period	Amplitude A_N	Amplitude A_E	Δ	Remarks.
156	3	I_r	e	10 55 ?					
			F	11 16					
157	4	I_v	e	5 46 06					Baguio (N of Luzon).
			F	50					
158	4	II_v	iP	12 06 56					Western Luzon.
			L	07 15					
			M_E	07 17	1-2		833		
			F	49					
159	6	I_r	e	16 22 25					From the Horizontal Pendulums.
			F	44					
160	7	II_u	eP	8 09 34					
			eS	19 09					
			eL	28 54					
			M_N	51 21	12	43			
			F	10 20					
161	8	II_v	eP	16 39 17					Northern Luzon.
			L	40 53					
			M_E	41 37	3-4		989		
			F	17 06					
162	9	I_r	e	8 35 12					
			F	57					
163	10	I_d	eP	16 41 23					
			L	41 36					
			F	44					
164	10	I_r	e	18 25 11					
			F	42					
165	11	I_r	eP	17 00 59					From the Horizontal Pendulums. Wiechert's seismograph dismounted.
			eL	03 11					
			M_E	04 52					
			F	19					

No. 20. From 13th to 20th of July, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.).

	T_o	ε
A_N	7	3.6
A_E	7	3

No.	Date	Charact.	Phase.	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
166	13	I_r	e	14 39 48					
			F	52					
167	17	I_r	e	12 30 17					
			F	13 07					
168	17	II_r	eP	23 02 55					Calapan (N of Mindoro). Maximum and end last in shifting place the pens.
			L	03 13					
169	17	I	eP	23 22 30					
			L	22 47					
			M_E	22 53	3		21		
			F	26					
170	17	I	eP	23 43 35					
			L	43 49					
			M_E	43 51	2		25		
			F	47					
171	18	I	eP	0 05 07					
			L	05 25					
			M_E	05 29	2-3		57		
			F	09					
172	18	I	eP	0 20 56					
			L	21 14					
			M_E	21 18	2-3		39		
			F	24					
173	18	I	eP	2 33 20					
			L	33 37					
			F	36					
174	19	I_d	eP	1 04 08					
			F	07					
175	20	I	eP	22 15 55					
			L	16 50					
			F	20					

No. 21 a. From 21st to 31st of July, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_0	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
176	24	II_r	eP	12 10 42					
			L	18 11					
			M_N	21 56	11	13			
			F	12 54					
177	24	I_d	eP	14 12 45					
			F	15					
178	24	I_r	eP	23 25 ±					
			F	48					
179	25-26	I_r	eP	23 14 52					
			iS	19 09					
			L	23 27					
			M_N	25 12	10-11	17			
			F	0 17					
180	26	I_r	eP	2 34 00					
			L	40 11					
			M_N	41 48	12	5			
			F	3 51					
181	26	I_r	e	7 47 10					
			F	8 31					
182	29	I	eP	3 19 48					
			L	20 03					
			F	22					

M. Cadena M.

No. 21b. July, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

Greenwich mean time.

July 2nd, $8^h\ 10^m$. Earthquake, II at Laoag (NW of Luzon).
" 4th, $5^h\ 38^m\ 39^s$. Eqke., II at Baguio (W of Luzon).
" 6th, $16^h\ 37^m$. Eqke., III at Butuan (N of Mindanao).
" 7th, $10^h\ 02^m\ 30^s$. Eqke., III at Butuan (N. of Mindanao).
" 7th, $15^h\ 55^m$. Eqke., II at Nueva Caceres (SE of Luzon).
" 12th, $2^h\ 00^m$. Eqke., II in Romblon Island.
" 15th, $16^h\ 24^m$. Eqke., II at Nueva Caceres (SE of Luzon).
" 16th, $8^h\ 07^m$. Eqke., II at Baguio (W of Luzon).
" 17th, $16^h\ 12^m$. Eqke., II at Tacloban (NE of Leyte).
" 20th, $22^h\ 07^m$. Eqke., II at Legaspi (SE of Luzon).
" 20th, $22^h\ 26^m$. Eqke., III at Baguio (W of Luzon).
" 22nd, $5^h\ 19^m\ 30^s$. Eqke., III at Butuan (N of Mindanao).
" 22nd, $16^h\ 40^m$. Eqke., III at Butuan (N of Mindanao).

M. Saderra M.

No. 22. August 1st to 15th, 1912.

Manila, P.I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E.$ $h = 2.40m.$ Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T.	ε
A_N	7	3.6
A_E	7	3

No.	Date.	Character	Phase.	Greenwich Mean Time	Period	Amplitudes. A_N	Amplitudes. A_E	Δ	Remarks.
183	2	I_d	eP	4 47 07					
			L	47 18					
			F	50					
184	3	I_r	e	9 16 ±					
			F	35					
185	4	I_r	e	19 05 ±					
			F	31					
186	6	I_r	eP	13 33 14					
			eS	37 50					
			L	42 13					
			M_N	44 32	11-12	23			
			F	14 32					
187	6	I_d	eP	19 04 00					
			F	07					
188	6	I_r	eP	21 20 24					
			eS	24 29					
			L	27 52					
			M_N	28 28	8-9	13			
			F	22 12					
189	9	I_u	eP	1 42 01					This commencement has been taken from the Horiz. Pend. Gallipoli (Turkey in Europe).
189	9	I_u	eP	1 41 05					
			eS	52 21					
			L	2 02 40					
			M_N	25 22	19-20	21			
			F	3 07					
190	15	I_r	eP	13 43 15					
			F	14 03					
191	15	II_d	eP	14 20 00					
			L	20 16					
			M_N	20 32	2-3	181			
			F	34					

No. 23. August 15th to 18th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

φ=14°34'41" N. λ=120°58'33" E. h=2.40m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T.	ε
A_{NS}	7	3.6
A_{EW}	1	3

No.	Date	Character	Phase.	Greenwich Mean Time	Period	Amplitude A_{NS} μ	Amplitude A_{EW} μ	Δ	Remarks.
192	15	I_1	eP	17 19 09					
			F	31					
193	16	I	eP	2 22 36					
			L	24 32					
			M_{NS}	25 12	1-2	152			
			F	32					
194	16	I_2	e	3 56 33					
			F	59					
195	17	II_T	eP	19 14 56					Eastern Mindanao.
			i	18 00	4-5				
			iS	19 12	6-7				
			i	21 32	6-7				
			L	23 16					
			M_{NS}	24 47	10-11	370			
			F	20 40					
196	17	I_V	e	21 21 38					
			F	33					
197	18	I_V	e	0 35 54					
			F	57					
198	18	I_V	eP	2 16 00					
			F	37					
199	18	I_V	eP	7 44 00					
			eS	46 15					
			L	47 50					
			M_E	50 16	7-8		17		
			F	8 18					
200	18	I_V	eP	13 24 14					
			L	27 25					
			M_E	28 18					
			F	43					

No. 24. August 18th to 23rd, 1918.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'\!.1$ N. $\lambda = 120°58'35''$ E. h = 2.40 m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_0	ε
A_N	7	3.6
A_E	7	3

No.	Date	Character	Phase.	Greenwich Mean Time	Period	Amplitude A_N r	Amplitude A_E r	Δ	Remarks.
201	18	I_r	eP	15 28 53					
			F	16 02					
202	18	I_r	eP	18 27 37					
			S	30 08					
			L	33 36					
			M_E	35 22	11-12		8		
			F	58					
203	18	I_r	eP	20 20 45					
			L	22 29					
			F	43					
204	18	I_r	eP	21 32 20					
			S	34 18					
			L	36 25					
			M_E	39 48	12-13		22		
			F	22 08					
205	19	I_r	eP	16 31 00					
			F	54					
206	21	I_r	e	4 30 46					From the Horizontal Pendulums.
			F	52					
207	21	I_r	eP	17 29 48					
			L	32 27					
			M_N	32 47	5-6	72			
			F	52					
208	23	I_r	e	7 46 30					From the Horizontal Pendulums.
			F	8 09					
209	23	I_r	e	14 05 ?					
			M_E	18 19	11-12		5		
			F	35					
210	23	I_r	eP	21 50 18					
			M_E	57 11	5-6		7		
			F	22 13					

No. 25. August 24th to 31st, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E.$ $h = 2.40m.$ Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg).

	T_o	8
A_N	8.7	3.6
A_E	6.1	3

No.	Date	Character	Phase	Greenwich mean time.	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
211	26	I_d	eP	18 58 48					
			L	59 17					
			M_N	59 23	1-2	84			
			M_E	59 23	1-2		42		
			F	19 03					
212	27	I_v	e	0 13 11					
			F	43					
213	29	II_v	eP	13 13 52					Central Luzon.
			L	14 09					
			M_N	15 22	3-4	399			
			M_E	15 27	4-5		282		
			F	23					
214	29	I_v	eP	19 42 16					Baguio (W of Luzon).
			F	45					
215	30	II_v	eP	18 11 40					East of southeastern of Luzon
			L	12 38					
			M_E	12 50	5-6		556		
			M_N	13 11	6-7	588			
			F	37					
216	30	I_v	eP	19 31 02					
			L	31 46					
			M_N	32 20	3-4	26			
			F	38					
217	30	I_v	eP	23 43 27					Baguio (W of Luzon).
			L	44 04					
			M_N	44 44	3	40			
		F	F	52					

Macroscisms not registered by the seismographs.
Greenwich mean time.

August 17th, $20^h 30^m$ Earthquake, II at Davao (SE of Mindanao).
" 21st. $4^h 18^m$ do. , III at Cotabato (SW of Mindanao).

M. Saderra M.

No. 26. September 1st to 8th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41''N.$ $\lambda = 120°58'33''E.$ $h = 2.40\,m.$ Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

	T_o	ε
A_N	5.7	3.6
A_E	6.1	3

No.	Date	Character	Phase.	Greenwich mean Time	Period	Amplitude. A_N μ	Amplitude. A_E μ	Δ	Remarks.
218	1	I_r	eP	4 16 43					
			eS	19 52					
			L	22 07					
			M_N	22 22	7	59			
			M_E	23 21	7		99		
			F	49					
219	1	II_r	eP	13 22 23					Earthquake. Origin near the southern coast of Luzon.
			L	22 44					
			M_E	24 12	5-6		386		
			F	39					
220	2	I_d	eP	11 17 00					
			F	20					
221	2	I	eP	18 59 26					
			L	19 00 07					
			F	03					
222	2	I_d	eP	20 34 10					
			L	34 27					
			F	37					
223	4	II_r	eP	0 27 48					Earthquake. Origin near the southern coast of Luzon.
			L	28 00					
			F	49					
224	5	I_d	eP	8 11 58					
			L	12 06					
			M_N	12 19	1-2	9			
			F	13					
225	8	I_d	eP	5 06 13					
			L	06 31					
			M_N	06 49	1	14			
			F	09					

No. 27. September 8th to 19th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E.$ $h = 2.40m.$ (Alluvium.

Instrument: Wiechert's static pendulum (1.000 Kg.)

	T_o	ε
A_N	5.7	3.6
A_E	6.1	3

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
226	8	I_d	eP	6 08 02					
			L	08 16					
			M_N	08 36	1	17			
			F	11					
227	9	I	eP	7 43 47					
			L	44 10					
			M_N	44 14	2-3	37			
			M_E	44 14	2-3		28		
			F	50					
228	11	I_r	eP	0 53 19					
			eS	58 26					
			L	1 03 58					
			M_E	06 46	13		20		
			M_N	07 43	13-14	5			
			F	30					
229	11	I	e	19 48 09					
			F	57					
230	12	I	eP	8 15 05					
			L	15 29					
			M_N	15 54	2-3	14			
			F	20					
231	12	I	e	12 04 23					
			F	13					
232	16	I_d	eP	22 26 46					
			F	29					
233	17	I_d	eP	14 20 00					
			L	20 16					
			F	22					
234	19	I_d	eP	23 49 20					
			L	49 37					
			F	54					

No. 28. September 24th to 30th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"$ N. $\lambda = 120°58'33"$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulumn (1000 Kg.)

	T_0	ε
A_N	5.7	3.6
A_E	6.1	3

No.	Date	Character	Phase	Greenwich mean time.	Period.	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
235	22	I_d	i	0 51 49					
			F	53					
236	22	II_d	eP	3 29 42					
			L	29 56					
			M_N	30 19	2-3	69			
			M_E	30 19	4		93		
			F	36					
237	29	III_r	eP	20 55 22	4-5				
			S_E	21 02 36	5-6				
			S_N	02 57	5-6				
			L_N	07 40	6-7				
			L_E	07 55	6-7				
			M_E	16 26	7-8		555		
			M_N	19 48	7-8	456			
			F	22 56					

Macroseisms not registered by the seismographs.

Greenwich mean time.

September 1st, $15^h 00^m$ aftershock, II at Atimonan (SE of Luzon).
" 2nd, $1^h 10^m$ earthquake, II at Nueva Caceres (SE of Luzon).
" 5th, $15^h 10^m$ earthquake, III, in the northern part of Leyte.
" 13th, $20^h 47^m$ earthquake, III at Tacloban (NE of Leyte).
" 16th, $17^h 20^m$ earthquake, III at Butuan (N of Mindanao).
" 23rd, $1^h 30^m 30^s$ earthquake, II at Surigao (NE of Mindanao).

M. Saderra M.

No. 29. October 1st to 18th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

	T_0	ε	$\frac{\varepsilon}{T_0 z}$
A_N:	8.2	3.30	0.023
A_E:	7.9	3.12	0.034

No.	Date	Character	Phase	Greenwich Mean Time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
238	3	I_V	e	16 15 00					Cotabato (SW of Mindanao).
			M_E	18 36	15		11		
			F	52					
239	4	II_V	eP	12 53 05					Origin near Baler Bay. Maximum and end last by the form of shock.
			L	53 22					
240	5	I_d	iP	22 20 57					
			F	23					
241	6	I	eP	0 50 21					
			i	50 40					
			L	50 43					
			M_E	50 51	1		216		
			F	1 03					
242	9	I_r	e	16 36 00					
			F	17 01					
243	11	I_d	eP	2 20 32					
			F	23					
244	12	I_r	e	15 31					
			F	16 20					
245	16	I_d	eP	22 26 20					
			L	26 40					
			F	29					
246	17	I_r	e	9 56					
			F	10 30					
247	18	I_d	eP	4 01 52					
			L	02 04					
			M_N	02 05	1-2	170			
			F	06					

No. 30. October 18th to 27th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"$ N. $\lambda = 120°58'33"$ E. $h = 2.40$ m. Alluvium.

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

	T_0	ε	$\frac{V}{T_0^2}$
A_N:	8.2	3.30	0.023
A_E:	7.9	3.12	0.034

No.	Date	Character	Phase	Greenwich Mean Time	Period.	Amplitude A_N	Amplitude A_E	Δ	Remarks.
248	18	I_r	eP	12 05 51					
			eS	12 14					
			L	17 48					
			M_E	20 21	12-13		34		
			M_N	24 28	10-11	58			
			F	13 17					
249	18	I_v	eP	12 27 46					Calapan (NE of Mindoro).
			L	28 04					
			F	34					
250	24	I_d	eP	17 58 42					
			L	58 57					
			M_N	59 08	1	71			
			F	18 03					
251	26	I_r	eP	9 05 58					End overtaken by following earthquake.
			S	08 30					
			L	10 58					
			M_N	11 40	8-9	559			
			M_E	15 02	9-10		184		
252	26	I_v	e	9 16 30					Lasag (NW of Luzon).
			M_N	16 54	6-7	274			
			F	10 02					
253	27	I_d	eP	11 09 52					
			L	10 07					
			M_N	10 17	3	22			
			F	13					
254	27	I	eP	16 40 21					
			i	42 09					
			L	42 24					
			M_N	42 41	5	304			
			M_E	42 53	5-6		367		
			F	17 11					

No. 31. October 28th to 31st, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

	T_0	ε	$\frac{V}{T_0^2}$
A_N	8.2	3.30	0.023
A_E	7.9	3.12	0.034

No.	Date	Character	Phase.	Greenwich Mean time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
255	29	I_r	e	6 25					
			F	7 04					
256	29	I_r	e	19 08					
			F	19 30					
257	31	II_r	eP	17 27 50					
			iS	31 18					
			L	34 18					
			M_E	37 27	9		313		
			M_N	37 29	9	310			
			F	19 20					

Macroseisms not registered by the seismographs.

Greenwich mean time.

October 3rd, $16^h 48^m$ aftershock II at Cotabato (SW of Mindanao).
" 7th, 14^h short sharp quake at Guam (Mariana Islands).
" 11th, $23^h 53^m$ earthquake, II at Tacloban (NE of Leyte).
" 18th, $15^h 57^m$ earthquake, II at Tacloban (NE of Leyte).
" 18th, $21^h 52^m$ earthquake, III at Butuan (N of Mindanao).

M. Saderra M.

No. 32. November 1st to 6th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 35''$ E. $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1.000 Kg).

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

No.	Date	Character	Phase.	Greenwich mean time	Period.	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
258	1	I_r	eP	21 28 22					
			L	30 36					
			M_N	32 00	6	12			
			F	54					
259	2	I_r	e	13 32					
			F	14 15					
260	2	I_d	eP	23 05 05					
			L	05 18					
			F	08					
261	3	I_r	eP	6 07 07					
			L	09 03					
			M_N	09 19	7	137			
			F	39					
262	5	I_d	eP	4 55 00					
			F	58					
263	5	I_r	eP	12 35 39					Legaspi (SE of Luzon).
			eL	36 38					
			M_N	37 12	6-7	167			
			M_E	38 11	5-6		43		
			F	51					
264	6	I_r	eP	6 22 20					Nueva Caceres and Legaspi (SE of Luzon).
			L	23 00					
			M_N	23 35	2-3	28			
			F	31					
265	6	I_d	eP	7 20 48					
			eL	20 57					
			M_N	21 03	-1-2	24			
			F	23					

No. 33. November 7th to 11th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

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

No.	Date	Character	Phase	Greenwich mean time	Period.	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
266	7	I_r	eP	7 52 00					
			eS	56 47					
			L_E	8 00 04					
			L_N	01 10					
			M_E	04 52	6		58		
			M_N	05 00	6	42			
			F	9 06					
267	8	III_r	eP	7 54 30					Origin Sorsogon (SE of Luzon). Maximum lost by pens being thrown off through force of shock.
			L	55 12					
			F	8 53					
268	8	I_r	eP	8 57 43					Aftershock. End overtaken by following earthquake.
			L	58 22					
			M_E	59 07	6-7		31		
269	8	I_r	eP	9 00 46					Aftershock.
			L	01 27					
			M_E	02 11	6-7		105		
			F	11					
270	8	I_d	eP	22 53 45					
			L	54 01					
			F	57					
271	9	I_r	eP	1 22 00					Aftershock.
			L	22 42					
			M_E	22 57	2-3		92		
			M_N	23 13	3-4	62			
			F	34					
272	9	I	eP	2 07 50					
			F	13					
273	10-11	I_d	L	23 59 25					Horizontal Pendulums.
			F	0 04					

No. 34. November 11th to 19th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E.$ $h = 2.40$ m. Alluvium.

Instrument: Wiechert's static pendulum (1000 Kg.)

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

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude $A_{\mu N}$	Amplitude $A_{\mu E}$	Δ	Remarks.
274	11	I_v	eP	11 55 20					Aparri (NE of Luzon).
			F	12 00					
275	12	I	eP	0 31 00					
			L	31 54					
			F	37					
276	12	I_r	M	15 29 00					
			F	42					
277	13	I_r	eP	5 19 00					
			S	21 30					
			L	22 39					
			M_E	23 34	7-8		110		
			M_N	24 18	8-9	77			
			F	6 45					
278	13	I_d	eP	20 39 06					
			L	39 26					
			F	42					
279	17	I_d	eP	10 38 00					
			F	40					
280	17	I_d	eP	14 07 27					
			L	07 44					
			F	11					
281	17	I	eP	20 34 00					
			eL	34 27					
			M_N	34 46	1-2	45			
			F	39					
282	19	I_u	L	15 10 55					Mexico?
			F	40					

No. 35a. November 19th to 30th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14° 34' 41''$ N. $\lambda = 120° 56' 33''$ E. $h = 2.40$ m. Alluvium.

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

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

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
283	19	I_d	eP	21 55 46					
			L	56 02					
			M_E	56 06	1-2		46		
			F	59					
284	23	I_d	eP	8 05 23					
			L	05 40					
			M_E	05 43	1-2		78		
			F	09					
285	23	I_d	eP	10 31 08					
			L	31 24					
			M_N	31 31	1-2	66			
			F	36					
286	25	I_d	eP	14 28 49					
			L	29 05					
			M_N	29 24	2-3	117			
			F	35					
287	29	I_v	eP	22 47 27					Origin, Sorsogon (SE of Luzon), aftershock.
			L	48 06					
			M_N	48 50	4-5	147			
			F	59					
288	30	I_d	eP	22 15 03					
			L	15 13					
			F	17 00					

M. Saderra M.

No. 35 b. November, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

Greenwich mean time.

November 5th, $12^h 14^m$ earthquake, III at Legaspi (SE of Luzon).
" 5th, $12^h 44^m$ earthquake, III at Legaspi (SE of Luzon).
" 8th, $7^h 47^m$ earthquake, III at Legaspi (SE of Luzon).
" 8th, $8^h 06^m$ aftershock corresponding to the strong quake No. 267 felt in Albay and Sorsogon Provinces (SE of Luzon).
" 8th, $9^h 49^m$ aftershock, III, SE of Luzon.
" 8th, $11^h 26^m$ aftershock, II, SE of Luzon.
" 9th, $5^h 55^m$ earthquake, IV at Catbalogan (W of Samar).
" 9th, $6^h 05^m$ earthquake, IV at Catbalogan (W of Samar).
" 9th, $12^h 54^m 30^s$ aftershock, II, SE of Luzon.
" 11th, $9^h 56^m$ aftershock, II, SE of Luzon.
" 11th, $11^h 54^m$ aftershock, II, SE of Luzon.)
" 12th, $13^h 41^m$ aftershock, II, SE of Luzon.
" 13th, $5^h 49^m$ earthquake, IV at Butuan (N of Mindanao).
" 15th, $1^h 25^m$ aftershock, II, SE of Luzon.
" 23rd, $1^h 31^m$ earthquake, IV at Catbalogan (W of Samar) and II at Tacloban (NE of Leyte).
" 25th, $2^h 50^m$ earthquake, III at Batangas (S of Luzon).
" 30th, $12^h 46^m 30^s$ aftershock, II, SE of Luzon.

M. Saderra M.

No. 36. December 1st to 7th, 1912

Manila, P. I.

Seismological Bulletin of the Observatory.

φ = 14° 34' 41" N. λ = 120° 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	Characta	Phase.	Greenwich mean time.	Period.	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
289	1	I_d	eP	7 54 59					
			F	57					
290	1	II	eP	8 26 21					
			L	27 52					
			M_E	31 25	11-12		620		
			M_N	31 48	10-11	603			
			F	9 51					
291	1	I	eP	9 22 37					The end is indefinite because it is interwove in the preceding quake.
292	1	I	eP	9 32 43					Do.
293	3	I_d	eP	16 19 43					
			L	20 04					
			F	23					
294	5	I_d	eP	17 01 09					
			L	01 23					
			F	04					
295	6	I	eP	1 02 36					
			L	02 55					
			M_N	03 07	0.5	164			
			F	08					
296	6	I	L	14 41					Early phases are confused by pulsatory oscillations.
			F	15 00					
297	7	II	eP	0 13 04					
			L	13 35					
			M_E	13 54	1-2		618		
			F	23					
298	7	I	eP	21 32 31					
			L	32 45					
			M_N	32 47	1-2	250			
			M_E	32 47	1		120		
			F	40					

No. 37. December 7th to 17th, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41''N.$ $\lambda = 120°58'33''E.$ $h = 2.40m.$ Alluvium.

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

	T_0	ε	$\frac{V}{T_0 \varepsilon}$
A_N	7.3	3	0.027
A_E	7.8	3	0.040

No.	Date	Character	Phase.	Greenwich mean time	Period	Amplitude A_N $\frac{}{T}$	Amplitude A_E $\frac{}{T}$	Δ	Remarks.
299	7	I	e	23 06					
			S	12 58					
			L	19 27					
			M_N	21 12	6	28			
			M_E	21 12	6-7		37		
			F	57					
300	8	I	eP	11 27 22					End overtaken by following earthquake.
			L	27 48					
301	8	I_d	eP	11 31 00					
			L	31 17					
			F	37					
302	8-9	II_r	eP	23 54 56					
			S_N	0 00 07					
			S_E	00 25					
			L_N	05 59	5-6				
			L_E	06 08	6				
			M_N	13 50	14	47			
			M_E	16 45	13-14		54		
			F	56					
303	9	I_r	e	8 54 13					
			F	9 26					
304	9	I_r	e	9 57					
			F	10 25					
305	16-17	I_r	e	23 40					
			F	0 07					
306	17	I_d	eP	7 24 25					
			L	24 40					
			M_N	24 42	1	33			
			F	29					
307	17	I_d	eP	9 17 58					
			F	21					

No. 38. December 17th to 28th, 1912.

Manila, P.I.

Seismological Bulletin of the Observatory.

$\varphi = 14°34'41"N.$ $\lambda = 120°58'33"E.$ $h = 2.40$ mv. Alluvium.

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

	T_0	ε	$\frac{\varepsilon}{T_0^2}$
A_N	7.3	3	0.024
A_E	7.8	3	0.040

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
308	17	I_d	eP	15 19 16					
			L	19 30					
			F	22					
309	17	I_d	iP	16 10 50					
			F	12					
310	19	I_d	eP	11 36 02		/			Record barely discernible by pulsatory oscillations
			F	40					
311	20	I_r	e	20 06					Motions of a distant earthquake confused by pulsatory oscillations.
			F	49					
312	22	I_r	e	9 06					
			F	39					
313	24	II	eP	0 00 00					
			L	00 50					
			M_N	02 06	6	476			
			M_E	03 36	11		482		
			F	1 24					
314	24	II_r	eP	18 09 43					Formosa.
			S_E	11 34					
			S_N	11 36					
			L_N	13 32					
			L_E	13 40					
			M_N	15 38	13	152			
			M_E	17 51	11-12		224		
			F	19 48					
315	26	II_r	eP	3 10 26					Southeastern Luzon and Samar.
			L	11 20					
			M_N	11 56	6	328			
			F	20					
316	28	III_r	eP	8 01 10					Samar and Leyte.
			L	02 09					
			F	9 55					

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$\varphi = 14° 34' 41''$ N. $\lambda = 120° 58' 33''$ E. $h = 2.40$ m. Alluvium.

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

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

No.	Date	Character	Phase	Greenwich mean time	Period	Amplitude A_N μ	Amplitude A_E μ	Δ	Remarks.
317	28	I	eP	15 55 50					
			L	56 50					
			M_N	57 28	8	138			
			M_E	57 47	8		100		
			F	16 16					
318	29	I	eP	10 30 24					
			L	30 40					
			M_E	30 51	1-2		252		
			F	41					
319	29	I_T	e	21 46					
			M_E	58 30	10-11		30		
			F	22 17					
320	30	II	eP	8 29 23					
			L	30 35					
			M_{N1}	31 12	6-7	595			
			M_{E1}	31 12	4		194		
			M_{N2}	33 08	7	471			
			M_{E2}	34 14	5-6		191		
			M_{N3}	34 28	7	459			
			F	9 35					
321	31	II	eP	8 16 15					
			F	18					
322	31	I_T	eP	14 34 28					
			M_N	40 07	7	17			
			F	57					

M. Saderra M.

No. 396. December, 1912.

Manila, P. I.

Seismological Bulletin of the Observatory.

Macroseisms not registered by the seismographs.

Greenwich mean time.

December 1st, $5^h\ 36^m$ earthquake, III at Legaspi (SE of Luzon).
" 1st, $12^h\ 46^m$ earthquake, II at Legaspi (SE of Luzon).
" 6th, $15^h\ 11^m$ (local time) earthquake, III at Yap (Western Carolines).
" 6th, $18^h\ 55^m$ earthquake, II at Nueva Caceres (SE of Luzon).
" 6th, $20^h\ 21^m$ earthquake, III, SE of Luzon.
" 21st, $3^h\ 29^m$ earthquake, II at Legaspi (SE of Luzon).
" 23rd, $9^h\ 14^m$ earthquake, III at Sumay (Guam, Mariana Islands).
" 23rd, $10^h\ 39^m$ earthquake IV at Butuan (N of Mindanao). Repeated at $11^h\ 56^m$ with intensity II.
" 26th, $3^h\ 22^m$ earthquake, III at Gubat (SE of Luzon).
" 27th, $16^h\ 10^m$ earthquake, III at Laoang (N of Samar).
" 28th, $7^h\ 12^m$ earthquake, III at Tacloban (NE of Leyte).
" 28th, $8^h\ 55^m$ earthquake, II at Laoang (N of Samar).
" 28th, $11^h\ 48^m$ earthquake, III, NE of Mindanao.
" 30th, $8^h\ 55^m$ earthquake, II at Laoang (N of Samar).

M. Saderra M.