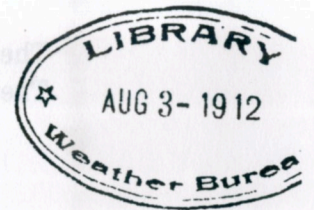


# SEISMOLOGICAL BULLETIN 1912.

## BATAVIA OBSERVATORY, JAVA.



### PREFACE.

The astatic Seismograph of WIECHERT of 1000 K.G. has been registering regularly since December 6<sup>th</sup> 1908. The results are published from the beginning of 1909 (the Messina earthquake included) in a monthly bulletin.

The instrument is mounted on a heavy brick pillar in a room with thick walls (about 70 centimeters) which is protected against the sun's heat by open galleries around it. The components are placed in E.-W. and N.-S. direction respectively.

The pins are lifted electrically every hour for a period of 10 seconds by the Javanese observer on duty. A lifting of two seconds every minute is given by an electrical clock of PEYER FAVARGER by means of the second-dial passing every minute through a drop of mercury.

For each month are applied the mean constants for that month.  $T_0$  and  $E$ , the oscillation period and the coefficient of damping, are determined every week.  $V$ , the magnification for very short waves, is determined occasionally only. It is found by direct measurement by giving the pendulum a displacement by means of the horizontal adjusting screws, of which the value can be determined easily from the pitch ( $a$ ) and the angle of displacement of the screws and the height of the screws ( $b$ ) and of the centre of gravity ( $c$ ) above the Cardanic suspension apparatus.

It was found:

( $a$ ) = 1.407 millimeters.

( $b$ ) = 1225 "

( $c$ ) = 895 "

The constants used in last year are given below.

1911.	E.-W. component.			N.-S. component.		
	V.	$T_0$ .	E.	V.	$T_0$ .	E.
January . . . . .	234	9.1	4.7	186	8.9	4.4
February . . . . .	"	9.1 <sup>5</sup>	4.4	"	8.9	4.9
March. . . . .	"	8.7	4.2	"	8.6	4.6
April. . . . .	"	8.9	4.3	"	8.7	4.4
May. . . . .	214	9.0	4.4	"	8.8	5.0
June. . . . .	"	9.0 <sup>5</sup>	4.8	"	9.0	4.6
July. . . . .	217	7.9	6.0	"	8.8	4.4
August. . . . .	"	7.9	3.1	"	8.3	4.3
September . . . . .	"	7.5	3.8	"	8.7	4.3
October. . . . .	"	7.6	4.7	"	9.1	4.7
November . . . . .	"	7.5	5.0	"	9.1	5.0
December. . . . .	"	7.5	5.0	"	9.0	5.0

The notation employed is that of the Göttingen Geophysical Institute.  
The following abbreviations are employed:

### CHARACTER OF THE EARTHQUAKE.

I = perceptible; II = moderately strong; III = strong.

d (terrae motus domesticus) = local.

v ( " " vicinus) = near (les than 1000 K.M.).

r ( " " remotus) = distant (1000 to 5000 K.M.).

u ( " " ultimus) = very distant (over 5000 K.M.).

### PHASES.

P (undae primae) = 1<sup>st</sup> preliminary tremors.

S ( " secundae) = 2<sup>nd</sup> " "

L ( " longae) = principal phase, long waves.

M ( " maximae) = maximum amplitude.

C (coda) = prominent waves among the after tremors.

F (finis) = end of perceptible movement.

PR<sub>1</sub>, PR<sub>2</sub>, ..... SR<sub>1</sub>, SR<sub>2</sub>, ..... = 1<sup>st</sup>, 2<sup>nd</sup> ..... reflected waves of P and S.

PS = Waves changed by reflection from longitudinal to transversal oscillation.

### WAVE-ELEMENTS, UNITS.

T = Complete Period in seconds.

A = Amplitude, measured from median position in microns.

A<sub>E</sub> = E.-W. component of A.

A<sub>N</sub> = N.-S. " " "

i (impetus) = abrupt commencement, clearly defined.

e (emersio) = gradual " , not clearly defined.

Year	Month	Day	Time	Location	Intensity	Duration	Direction	Remarks
1911	January	14	8.0	180	4.7	0.1	284	
	February	10	8.0		4.4	0.2		
	March	10	8.0		4.2	0.2		
	April	14	8.7		4.3	0.2		
	May	10	8.8		4.2	0.2	214	
	June	14	8.0		4.4	0.2		
	July	14	8.8		4.0	0.2	217	
	August	14	8.8		4.1	0.2		
	September	14	8.7		4.2	0.2		
	October	14	8.1		4.7	0.2		
	November	10	8.1		4.0	0.2		
	December	10	8.0		4.0	0.2		

# SEISMOLOGICAL BULLETIN. JANUARY 1912.

## BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude 6° 11' 0". Height above sealevel 8 M.

E. Longitude 7<sup>h</sup> 7<sup>m</sup> 19<sup>s</sup>.

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
1	2	January.	I	M	h	m	s	5	6.9	6.6	
					6	11					
2	2	"	I	M	till			6	6.8	8.2	
					6	29					
3	4	"	I	M <sub>L</sub> M <sub>L</sub> F	20	55		6	6.1	5.5	
					21	2					
					20	37					
					5	52					
4	4	"	I <sub>u</sub>	P S M F	15	59	31	7	12.3	17.8	Feeble long waves, at the maximum amplitude is the period 17 seconds.
					16	9	58				
					16	11					
					17	17					
5	5	"	I.	P S M F	6	8	15	1	7.4	10.7	
					6	8	48				
					6	9	9				
					6	14					
6	5	"	I		23	45					
					till						
7	7	"	I	P M F	23	54		5	6.9	7.6	
					7	14	9				
					7	15					
					7	18					
8	9	"	I.	P S M F	1	26	45	5	45.7	45.0	
					1	27	22				
					1	29					
					1	40					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
9	10 January.		I		h	m	s		μ	μ	
					2	48					
10	12		I,	M	3	2		6.5	8.1	8.7	
				P	14	37	39				
				S	14	37	37				
				M	14	40					6
F	14	55									
11	14		I		6	54					
					till						
12	"		I	M	11	7		5	8.1	7.1	
					10	57					
13	20		I	M	20	35		6	7.2	5.9	
					20	44					
14	20		I	P	4	7	31	5.5	17.0	15.7	
				M	4	17					
				e L	4	19					
				M <sub>L</sub>	4	25					
15	21		II,	F	5	6		2.6	32.2	47.7	
					9	30					
16	21		II,	M	9	45		5.5	4.9	5.1	
					9	55					
17	21		I,	P	10	27	21	6	258.5	211.6	During M <sub>S</sub> the pendulum is touching the adjusting screws. Felt in Bodjanglopang, Tjitiis, Tjipoetri and Tjitjoeroeg in the Preanger Regentships and Goenoeng Mas in the Residency of Batavia. In Malabar P = 10 <sup>h</sup> 27 <sup>m</sup> 24 <sup>s</sup> . S = 10 <sup>h</sup> 27 <sup>m</sup> 28 <sup>s</sup> . F = 10 <sup>h</sup> 34 <sup>m</sup> .
				S	10	27	35				
				M	10	28					
				F	10	31					
18	21		II,	P	13	18	18	5	159.0	97.0	From the same origin. Felt in Tjitiis, Tjipoetri and Goenoeng Mas. In Malabar: P-S = 4 seconds.
				S	13	18	30				
				M	13	19	12				
				F	13	29					
19	21		I,		13	35		7	-	-	Same origin. In Malabar: P-S = 7 seconds.
					13	39					

N <sup>o</sup> .	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
18	21	January.	I,	P	h	m	s	5	107.5	115.6	Same origin. Felt in Tjitiis and Goe- noeng Mas. In Malabar: P-S = 6 se- conds.
				S	14	2	59				
				M	14	3	12				
				F	14	3	55				
19	21	"	I		14	30					
					14	till	34				
20	24	"	I		16	45					
					16	till	55				
				M	16	49	5	6.5	5.2		
21	26	"	I		14	48					
					15	till	26				
				M	15	7	13	5.8	9.1		
22	26	"	I,	P	18	1	19	6	10.6	10.5	
				S	18	5	48				
				M	18	6					
				F	18	20					
23	28	"	I		1	35					
					1	till	53				
				M	1	41	6	8.0	6.4		
24	28	"	I		2	52					
					2	till	40				
				M	2	57	6	6.1	3.7		
25	29	"	I,	P	12	50	34	1	2.8	3.2	
				S	12	50	56				
				M	12	51	5				
				F	12	55					

# SEISMOLOGICAL BULLETIN. FEBRUARY 1912.

## BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
					h	m	s		μ	μ	
26	2	February.	I		12	19					
						till					
					12	25					
27	3	"	I,	P	11	9	8				
				S	11	9	27				
				M	11	11		6.5	11.9	13.0	
				F	11	15					
28	16	"	I	c P	9	54	28				
				M <sub>1</sub>	9	46		6	7.0	5.6	
				M <sub>L</sub>	9	56		22	7.5	13.7	
				F	10	57					
29	18	"	I		0	28					
						till					
					0	55					
				M	0	44		6	6.6	5.2	
30	19	"	I,	P	7	52	17				
				S	7	52	56				
				M	7	53	28	5	121.0	100.3	Felt in Tjikoeloer, Tjilangkahan, Menes and Planjar in Bantam and Tjibadak in the Preanger Regentships.
				F	7	45					
31	22	"	I	c P	1	56	20				
				M	1	59		4.5	7.2	7.3	Felt in Pager Alam, Palembang.
				F	2	5					
32	25	"	I	P	2	51	19				
				M	5	5		6.0	11.6	9.0	
				F	5	58					
33	28	"			17	2					
						till					
					17	11					
34	29	"	I	P	5	24	46				
				S ?	5	54	2				
				M	5	55		6	11.6	9.4	
				F	5	47					

# SEISMOLOGICAL BULLETIN.

## MARCH 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
35	5	March.	I	e	h	m	s	6	7.6	3.4	
				M	19	54	51				
				F	19	55	25				
36	7	"	I	c	0	25	29	6	7.2	7.5	
				M	0	25					
				F	0	30					
37	8	"	I,	P	8	25	17	5.5 6	11.7	17.5	
				S	8	26	54				
				M <sub>E</sub>	8	29					
				M <sub>N</sub>	8	28					
				F	8	47					
38	10	"	I,	P	4	18	1	2	92.8	90.8	Felt in Goenoeng Walet, Preanger-Regentships, Java. In Malabar P = $4^{\text{h}} 17^{\text{m}} 51^{\text{s}}$ . S = 4 18 18. M = 4 18 55. F = 4 24.
				S, M	4	18	54				
				F	4	54					
39	11	"	I	e	10	12		6	3.2	3.9	
				M	10	20					
				F	10	27					
40	11	"	I	e	12	14		6	2.2	2.1	
				M	12	25					
				F	12	36					
41	11	"	I	P	16	37	54	6	15.7	18.8	
				M	16	44					
				F	17	2					
42	12	"	I,	P	25	5	16	5	11.8	19.5	Felt in Goenoeng Walet, Preanger-Regentships, Java. In Malabar: P—S. = 24 seconds.
				S	25	5	58				
				M	25	4	26				
				F	25	11					
43	13	"	I	e	19	21		6	4.0	2.1	
				M	19	30					
				F	19	54					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
44	14	March.	I	P	h	m	s	5.5	24.1	21.5	
				M	6	29	39				
				F	6	56	57				
45	16	»	I	e	15	29					
				F	13	52					
46	17	»	I	e P	15	28	15	6	5.4	6.0	
				M	15	59					
				F	15	56					
47	18	»	I	e	8	56		3	6.7	2.5	
				M	8	37					
				F	8	50					
48	21	»	I	P	15	56	10	6	20.2	20.5	
				M	16	1					
				F	16	15					
49	22	»	I	c P	4	55	52	5.5	14.2	19.7	
				M	4	59					
				F	4	55					
50	24	»	I <sub>r</sub>	e P	12	21	17	6.5	37.3	50.9	
				e S	12	24	41				
				M	12	27					
				F	12	59					
51	24	»	I <sub>r</sub>	P	16	39	49	5	18.1	13.9	Felt in Manondjaja, Preanger-Regentships, Java. In Malabar: P-S. = 12 seconds.
				i S	16	40	13				
				M	16	40	50				
				F	16	46					
52	25	»	I <sub>n</sub>	i P	4	59	51	5	31.0	25.6	
				i S	5	7	57				
				M	5	25					
				F	5	59					
53	26	»	I <sub>r</sub>	i P	6	18	10	6	24.8	32.5	Felt in Tabanan and Den Pasar, Bali, in Ampenan, Lombok, and in Bima, Soembawa. In Malabar: P-S. = 10 seconds.
				e S	6	20	18				
				M	6	20	27				
				F	6	40					
54	29	»	I <sub>r</sub>	P	19	49	32	5	7.8	7.6	
				S	19	49	50				
				M	19	52					
				F	19	58					
55	30	»	I <sub>r</sub>	P	7	8	1	1	16.2	14.8	
				i S, M	7	8	25				
				F	7	15					
56	30	»	I	e P	7	43	23	6	2.9	5.6	
				M	7	51					
				F	8	5					



# SEISMOLOGICAL BULLETIN.

## APRIL 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude 6° 11' 0". Height above sealevel 8 M.

E. Longitude 7<sup>h</sup> 7<sup>m</sup> 19<sup>s</sup>.

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.



No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
57	1	April.	I,	P	h	m	s	6	15.3	8.8	Felt in Tjiamis, Cheribon and in Manondjaja, Babakan and Tjikorai, Preanger-Regentships. In Malabar P-S = 11 seconds.
				S	7	50	30				
				M	7	51	2				
				F	7	52	6				
58	1	"	I,	e P	19	5	22	1	16.2	10.1	In Malabar P-S = 10 seconds.
				i S, M	19	5	58				
				F	19	8					
59	2	"	I	e	0	29	6	4.4	4.6		
				M	0	32					
				F	0	36					
60	6	"	I,	P	11	56	55	6	64.2	48.8	In Malabar P-S = 33 seconds.
				S	11	56	49				
				M	11	59					
				F	12	8					
61	6	"	I,	e P	16	41	57	6	7.4	6.5	In Malabar P-S = 13 seconds.
				S	16	42	17				
				M	16	44					
				F	16	47					
62	14	"	I,	e P	11	1	15	2	2.2	4.6	
				S	11	1	52				
				M	11	2	24				
				F	11	6					
63	14	"	I <sub>n</sub>	e P	22	41	57	6.5	9.0	5.9	The long waves are not perceptible in the E.-W. component.
				e S	22	48	22				
				M <sub>E</sub>	22	50					
				M <sub>N</sub>	22	58					
				F	25	11					
64	15	"	I	e	16	15	6	5.9	3.8		
				M	16	20					
				F	16	52					
65	18	"	II,	P	4	59	18	5.5	146.2	139.8	The time is somewhat uncertain by defective time marks. Probably felt in Kota Agoeng, Lampong districts, Sumatra.
				S	4	40	7				
				M	4	41					
				F	4	58					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
66	18	April.	I	e	h	m	s	5	μ	μ	Uncertain for the same reason as n°. 65. The same with n°. 68, 69, 70 and 73.
				M	4	60			4.1	2.6	
				F	5	2					
67	18	»	I,	P	14	24	3	6	8.9	7.5	
				S	14	24	28				
				M	14	26					
				F	14	30					
68	18	»	I,	P	22	57	33	5.5	47.6	35.5	
				S	22	38	4				
				M	22	40					
				F	22	50					
69	19	»	I,	P	12	44	0	6	32.5	28.0	
				M	12	46					
				F	12	55					
70	19	»	I,	P	23	58	58	7.5	61.7	88.2	
				S	23	59	31				
				M	23	59	47				
				F	0	16					
71	20	»	I	e	1	24					
				F	1	32					
72	20	»	I,	e P	1	40		25	3.1	30.4	
				e S	1	46	10				
				M	1	57					
				F	2	27					
73	20	»	II,	P	3	33	9	5.5	152.8	154.6	
				S	3	33	32				
				M	3	36					
				F	3	55					
74	21	»	I	e	21	48	10				
				M	21	50					
				F	21	55					
75	22	»	I	e	8	15					
				F	8	20					
76	22	»	I	e	17	4					
				F	17	10					
77	22	»	I,	P	19	26	38	6.0	32.9	24.6	
				M	19	29					
				F	19	50					
78	23	»	I,	P	7	26	55	6	92.3	81.3	
				S	7	27	13				
				M	7	29					
				F	7	45					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
79	23	April.	I	e P	h	m	s	10	μ	μ	M is a sudden strengthening, consisting of only one wave.
				M	21	49	0		26.9	27.1	
				F	22	24	35				
80	27	"	I	P	3	43	55	5	30.7	32.5	
				M	3	48					
				F	4	14					
81	27	"	I	e	20	24	34				
				F	20	24	34				
82	29	"	I,	P	0	50	52	4	5.6	5.7	
				S	0	51	16				
				M	0	52	3				
				F	0	56					
83	29	"	I	P	21	16	42	6	16.2	17.9	
				M	21	19					
				F	21	28					

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# SEISMOLOGICAL BULLETIN. MAY 1912.

## BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.



No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.	
									A <sub>E</sub> .	A <sub>N</sub> .		
					h	m	s		μ	μ		
84	3	May.	I	e	19	6	38	6	15.5	8.7		
					M	19	10					
					F	19	35					
85	5	"	I	P	21	56	30	5.5	17.9	10.7		
					M	22	1					
					F	22	7					
86	6	"	I	e	19	29		20	18.8	17.1		
					M	20	14					
					F	20	35					
87	10	"	I	e	10	9		5.5	3.0	4.4	Earthquake in Auguson Valley, Philippines.	
					M	10	17					
					F	10	25					
88	11	"	I	P	13	45	26	6	78.5	48.5	Felt in Waroengbadang, Kawoenggading, Patjet, Goenoeng Walet, Soekagara and Malabar, Preanger Regentships, Java.	
					S	13	45					40
					M <sub>N</sub>	13	46					19
					M <sub>E</sub>	13	46					56
					F	13	56					
89	11	"	I	e P	17	33	38	6	24.3	16.9		
					M <sub>I</sub>	17	56					
					M <sub>L</sub>	18	5					
					F	18	56					
90	13	"	I	e	4	49	50					
					F	4	51					
91	13	"	I	e	19	47						
					F	20	5					
92	15	"	I	P?				6	11.2	10.0	The earthquake setts in during the changing of paper.	
					M <sub>I</sub>	0	27					
					M <sub>L</sub>	0	46					
					F	1	4					
93	18	"	I	P	7	15	18	6	12.7	6.5		
					S	7	15					49
					M	7	16					55
					F	7	27					
						7	27					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
94	19	May.	I.	P	h	m	s	6	5.6	8.2	
				S	7	23	2				
				M	7	25	37				
				F	7	25	30				
95	20	"	I	e	8	7					
				F	8	14					
96	21	"	II.	P	8	35	15	7.5	195.6	128.9	
				S	8	40	30				
				M	8	45					
				F	9	56					
97	22	"	I	e	23	24	5	3.8	4.1		
				M	23	26					
				F	23	34					
98	23	"	III.	P	2	30	13	11	>634.4	>466.5	In Malabar P—S = 4 <sup>m</sup> 52 <sup>s</sup> . Earthquake in Maldiv Islands.
				S?	2	37	37				
				M	4	32					
				F							
99	23	"	II.	P	11	8	40	6.5	116.9	130.5	
				S	11	9	0				
				M	11	11	2				
				F	11	29					
100	24	"	I.	P	7	29	14	6	35.5	26.4	Felt in Babakan, Tjikorai, Goenoeng Walet and Ma- nondjaja, Preanger Re- gentships, Java. In Malabar: P = 7 <sup>h</sup> 29 <sup>m</sup> 8 <sup>s</sup> . S = 7 <sup>h</sup> 29 <sup>m</sup> 19 <sup>s</sup> .
				S	7	29	42				
				M	7	30					
				F	7	39					
101	25	"	I.	e P	15	55	30	6.5	8.4	10.7	
				S	15	59	5				
				M	15	59	24				
				F	16	12					
102	26	"	I	e	3	17	6	2.2	4.8		
				M	3	22					
				F	3	31					
103	26	"	I.	P	10	56	15	6	9.4	12.1	
				S	10	56	26				
				M	10	57					
				F	11	8					
104	26	"	I	e	18	10					
				F	18	24					
105	27	"	I.	P	19	55	25	6	24.3	16.0	Felt in Manpa in Benkoe- len and Moeara Doea in Palembang, Sumatra.
				S	19	54	2				
				M	19	55	5				
				F	20	4					

N <sup>o</sup> .	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
106	28	May.	II <sub>v</sub>	P	h	m	s	5.5	134.6	153.1	
				S	6	4	25				
				M	6	4	45				
				F	6	6					
107	28	"	II <sub>v</sub>	P	6	54	25	9	314.0	165.9	P <sub>E</sub> strong. P <sub>N</sub> weak.
				S	6	55	17				
				M	6	59					
				F	8	2					
108	28	"	I	e	8	54					
				F	8	40					
109	28	"	I	e	12	23					
				F	12	35					
110	28	"	I	e	12	52	16	3.8	6.4		
				M <sub>L</sub>	13	17					
				F	13	39					
111	28	"	I	e	18	9				Felt in Geger and Takeran in Madiun, Java.	
				F	18	18					
112	50	"	I	e	12	58				Felt in Sidikalong, Koeta Tjane, Bireuen, Singkel and Tjalang, North Su- matra.	
				M	15	5					
				F	13	17					

# SEISMOLOGICAL BULLETIN.

## JUNE 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

N <sup>o</sup> .	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.		
									A <sub>E</sub> .	A <sub>N</sub> .			
113	1	June.	I <sub>r</sub>	P	h	m	s	5	10.6	9.6			
				S	21	6	21					μ	μ
				M	21	6	54						
				F	21	7	18						
114	2	"	I <sub>r</sub>	P	12	2	36	15	57.2	44.7			
				S?	12	6	27						
				e L	12	7	52						
				M <sub>L</sub>	12	10							
				F	12	50							
115	5	"	II <sub>r</sub>	P	11	18	18	13	75.9	85.0			
				S	11	22	21						
				M	11	26							
				F	12	15							
116	6	"	I <sub>r</sub>	P	15	48	54	1	4.6	5.5			
				S, M	15	49	11						
				F	15	52							
117	7	"	I <sub>r</sub>	e P	18	46	52	6 and 12	16.7	20.1			
				S?	18	49	49						
				M	19	2							
				F	19	51							
118	8	"	I	e	4	51	12	6	8.0	21.0			
				e	4	58	45						
				M	5	0							
				F	5	12							
119	8	"	I	e P	7	48	55	5	9.1	8.6			
				M	7	51							
				F?	7	56							
120	8	"	I	M <sub>L</sub>	8	47		15	9.8	11.8	It is not quite sure, wether n <sup>o</sup> . 120 is a new one or a continuation of n <sup>o</sup> . 119.		
			F?										
121	8	"	I	M <sub>L</sub>	9	57		14	7.0	7.0			





# SEISMOLOGICAL BULLETIN.

## JULY 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quair.

 Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

 E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

N <sup>o</sup> .	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.	
									A <sub>E</sub> .	A <sub>N</sub> .		
138	4	July.	I <sub>v</sub>	P	h	m	s	5	13.3	5.9	Felt in Manondjaja, Preanger Regentships, Java. In Malabar P—S = 12 seconds.	
					19	38	18					
					19	38	45					
					19	59	44					
139	4	"	I	e P	20	52	48	5	5.8	1.8	In Malabar P—S = 52 seconds.	
					20	55						
					21	1						
140	7	"	II <sub>v</sub>	P	6	15	19	5.5	100.5	118.0		
					i S	6	15					54
					M	6	15					8
					F	6	53					
141	7	"	II <sub>u</sub>	e P	8	16		13	79.5	99.7		
					M	9	4					
					F	10	26					
142	8	"	I	e	16	45						
					M	17	11					
143	8	"	I	e	22	52						
					F	23	9					
144	11	"	I	e	5	11		5.5	13.5	7.5		
					M	5	16					
					F	5	27					
145	11	"	I <sub>r</sub>	i P	17	1	59	6	28.4	26.1		
					i	17	5					29
					i S, M	17	5					17
					F	17	21					
146	14	"	I <sub>v</sub>	P	17	16	48	6.5	16.5	8.8		
					S	17	17					10
					M	17	18					16
					F	17	25					
147	15	"	I <sub>v</sub>	P	4	47	24	6.5	11.7	8.8	Felt in Kertasarie, Manondjaja and Tjikorai, Preanger Regentships Java. In Malabar P—S = 12 seconds.	
					S	4	47					55
					M	4	49					10
					F	4	54					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
					h	m	s		μ	μ	
148	18	July.	I	e	21	59					
				L	22	20					
				M <sub>L</sub>	22	27		20	5.1	4.6	
				F	22	37					
149	22	"	I <sub>v</sub>	P	6	8	19				In Malabar P—S = 27 seconds.
				S	6	8	38				
				M	6	10		5	56.8	90.9	
				F	6	26					
150	22	"	I	e	9	15	6				
				M	9	18		5	4.2	2.7	
				F	9	24					
151	24	"	II <sub>r</sub>	e P	12	9	5				At 12 <sup>h</sup> 12 again short waves of 6—10 seconds period, as if a second earthquake has set in. At 13 <sup>h</sup> 18 again some very flat long waves.
				S	12	12	29				
				M <sub>L</sub>	12	17		19	153.5	154.2	
				L	13	18		24			
				F	14	2					
152	24	"	I <sub>v</sub>	P	15	57	31				
				S	15	57	52				
				M	16	0		7.5	33.0	33.4	
				F	16	10					
153	24	"	I	e	23	32					
				M	23	39		6	14.2	10.3	
				F	23	49					
154	25	"	I	P	25	15	31				
				M <sub>L</sub>	25	33		56	94.2	161.3	
	26	"		F	0	17					
155	26	"		?							The record is unreadable because the clock has stopped.
156	26	"	I	c P	7	48	35				
				M	7	51		13	9.2	8.5	
				F	8	12					
157	27	"	I <sub>r</sub>	e P	1	8	7				
				S	1	10	15				
				M	1	15		6	41.6	54.5	
				F	1	41					
158	31	"	I	e	11	45					
				M	11	50		5	3.4	2.7	
				F	12	0					

# SEISMOLOGICAL BULLETIN.

## AUGUSTUS 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
159	3	Augustus.	I	e	h	m	s	6	μ	μ	
				M	9	11	11		9.3	9.7	
				F	9	20	33				
160	4	»	I	e P	19	10		6	6.9	3.1	
				M	19	13					
				F	19	29					
161	4	»	I <sub>v</sub>	P	20	43	47	1	10.2	8.5	Probably felt in Labak Parai, Bantam.
				S	20	44	0				
				M	20	44	4				
				F	20	49					
162	6	»	I	e P	15	51	21	12	164.8	98.0	
				e L	15	57	38				
				M	15	45					
				F	14	56					
165	6	»	I <sub>u</sub>	P	21	21	4	5.5	74.7	66.7	
				S	21	28	55				
				M <sub>1</sub>	21	50	55				
				e L	21	52	50				
				M <sub>L</sub>	21	45					
F	22	25		27	41.5	38.4					
164	9	»	H <sub>u</sub>	e P	1	42	0	17	196.7	159.1	Earthquake in Turkey.
				S	1	52	56				
				e L	1	58	47				
				M <sub>L</sub>	2	25					
				F	5	58					
165	10	»	I <sub>v</sub>	P	20	15	51	1	54.2	35.9	Felt in Java's 4 <sup>e</sup> punt, Bantam.
				S	20	15	51				
				M	20	16	46				
				F	20	24					
166	13	»	III <sub>v</sub>	P	22	59	44	2	>400	>400	After S has set in, the pendulum is put out of work. Felt in Goenoeng Walet and Tjikorai, Pre- anger Regentships and in Lebak Parai, Bantam.
				S	25	0	8				

N <sup>o</sup> .	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.		Amplitude (half)		Remarks.
								A <sub>E</sub> .	A <sub>N</sub> .	A <sub>E</sub> .	A <sub>N</sub> .	
167	14	Augustus.	I	P	h	m	s	5	22.1	21.1		
					16	52	25					
					16	55						
168	15	"	I <sub>v</sub>	P	15	44	19	5.5	45.2	65.0		
					15	48	18					
					15	49	10					
169	15	"	I <sub>v</sub>	e P	17	15	26	5.5	54.7	113.1		
					17	15	15					
					17	17						
170	17	"	II <sub>v</sub>	P	19	16	45	16	409.0	354.4	Earthquake in Eastern Mindanao, Philippines.	
					19	21	22					
					19	52						
171	18	"	I	e M	0	58		6	5.1	3.8		
					0	44						
					0	52						
172	18	"	I	e M	7	46	52	5	26.2	25.4		
					7	52						
					8	17						
173	18	"	I <sub>v</sub>	P	15	25	20	6	67.4	50.7	Felt in Seba, isle of Savoe near Timor, and in Bima, isle of Soembawa.	
					13	25	50					
					15	28						
174	18	"	I	e F	15	51						
					16	7						
175	18	"	I	e M	18	50		5.5	8.8	6.1		
					18	57						
					18	57						
176	18	"	I	e F	20	22						
					20	42						
177	18	"	I	e F	21	56						
					21	52						
178	19	"	I	e P	16	52		6	5.5	4.2		
					16	41						
					16	56						
179	20	"	I <sub>v</sub>	P	12	52	41	1	24.5	21.7		
					12	55	2					
					12	55	12					
180	21	"	I	P	17	51	53	5.5	52.8	54.7		
					17	58						
					18	7						

N <sup>o</sup> .	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
181	22	Augustus.	I <sub>v</sub>	P	h	m	s	6	18.2	24.5	
					10	14	50				
					10	15	15				
					10	16	15				
182	25	"	I	e M	14	6		15	41.2	56.2	
					14	25					
					14	47					
183	25	"	I	e M	21	51		5.5	17.1	16.0	
					22	0					
					22	17					
184	27	"	I <sub>v</sub>	P	6	26	5	1	9.7	19.6	In nos. 184, 185, 186 and 187 S <sub>N</sub> has a relatively large amplitude, the registered movement is of entirely the same form in all the four cases.
					6	26	29				
					6	32					
185	27	"	I <sub>v</sub>	P	11	52	58	1	11.6	29.1	
					11	55	2				
186	27	"	III <sub>v</sub>	P	11	54	20	1	> 500	400	F has not been registered as the pendulum is put out of work by the strong movement. Felt as a weak shock in Batavia. Also felt in Java's 4 <sup>o</sup> punt and Pandeglang, Bantam, and in Goenoeng Walet, Preanger Regentships.
					11	54	44				
187	27	"	I <sub>v</sub>	i S, M	12	45	49	1	2.8	7.4	
					12	48					
188	30	"	I	e P	18	15	44	5.5	6.6	3.9	Earthquake in Luzon, Philippines.
					18	25					
					18	59					
189	31	"	I <sub>v</sub>	i P	8	41	51	6	70.4	52.8	Felt in Lebak Parai, Bantam, and in Goenoeng Walet, Preanger Regentships.
					8	42	10				
					8	45					
					9	56					

# SEISMOLOGICAL BULLETIN.

## SEPTEMBER 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.  
 Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.  
 E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.  
 The symbols are according to WIECHERT.

No.	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
190	1	Sept.	I.	P	h	m	s	6	51.5	56.5	
				S	4	17	14				
				M	4	23	30				
				F	4	25	57				
191	4	"	I	e	0	27	5.5	6.8	10.7		
				M	0	34					
				F	0	47					
192	8	"	I.	P	19	33	30	1	3.7	4.8	P very small, uncertain.
				S, M	19	33	45				
				F	19	40					
193	10	"	I.	P	11	21	47	5	29.2	33.2	
				S	11	22	15				
				M	11	25	13				
				F	11	34					
194	11	"	I.	e P	0	51	13	6 and 18	46.2	54.6	Probably felt in Tjalang and Blang Kedjeren in Atjeh, Sumatra.
				e S	0	54	57				
				M	0	57					
				F	1	59					
195	11	"	I	e	18	46					
				F	18	50					
196	11	"	I.	P	19	46	27	5	18.2	24.1	
				S	19	48	53				
				M	19	51					
				F	20	7					
197	12	"	I	e P	12	4	7	5.5	10.7	9.8	Probably felt in Ambon, Moluccas.
				M	12	9					
				F	12	23					
198	14	"	I.	P	11	8	50	1	13.7	13.9	
				S	11	9	7				
				M	11	9	47				
				F	11	16					
199	14	"	I.	P	20	18	26	7	104.1	70.6	Felt in Tandjong Sakti, Benkoelen, Sumatra.
				S	20	19	1				
				M	20	21					
				F	20	33					

No.	Date 1912.	Character.	Phase.	Time (Greenwich).			Period in seconds.		Amplitude (half)		Remarks.
							A <sub>E</sub> .	A <sub>N</sub> .	A <sub>E</sub> .	A <sub>N</sub> .	
200	17	Sept.	I	i	19	2	6	5	4.2	4.5	
				M	19	6					
				F	19	20					
201	19	"	I	e	4	5					
				M	4	20					
				F	4	28					
202	21	"	I	e	12	38	15	3	6.5	11.6	
				M	12	41					
				F	12	49					
203	22	"	I	e	4	40		20	16.1	11.5	
				M	5	20					
				F	5	45					
204	23	"	I <sub>v</sub>	P	11	37	11				
				S	11	37	52				
				M	11	39		5	16.0	15.0	
				F	11	47					
205	25	"	I	e	1	53	45				
				M	1	57		6	7.1	10.4	
				F	2	5					
206	26	"	I	P	19	13	25				
				M	19	19		11	50.5	50.1	
				F	19	44					
207	26	"	I	e	22	26					
				M	22	33		6	5.5	2.2	
				F	22	45					
208	28	"	II <sub>v</sub>	P	9	6	9				
				S	9	6	27				
				M	9	8		5	135.0	119.1	
				F	9	27					
209	28	"	II <sub>r</sub>	P	20	58	0				
				S	21	5	10				
				M	21	7		6.5	115.1	174.5	
				F	22	24					

In the second half of the diagram very indistinct flat long waves emerge with strengthenings of short period.

# SEISMOLOGICAL BULLETIN.

## OCTOBER 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
210	1	October.	I <sub>v</sub>	P	h	m	s	6	12.8	10.4	
				S	19	46	48				
				M	19	47	48				
				F	19	49	56				
211	3	"	I	e	16	17	40	6	3.6	1.7	Mindanao, Philippines
				M	16	18	48				
				F	16	31					
212	7	"	I	P?				5	9.7	3.6	
				S, M	2	56	12				
				F	5	4					
213	14	"	I <sub>v</sub>	P	17	39	53	5	21.5	15.6	
				S	17	40	54				
				M	17	43					
				F	17	56					
214	16	"	I	e	6	47	27	4	5.9	4.5	
				M	6	49					
				F	6	56					
215	17	"	I	e	9	58					
				F	10	14					
216	18	"	I <sub>v</sub>	P	2	8	6	5.5	40.8	40.4	Felt in Tandjong Sakti, Benkoelen, and in Moe- ara Doea, Palembang, Sumatra.
				S	2	8	55				
				M	2	11					
				F	2	27					
217	18	"	I	e	12	8		6	5.7	5.6	
				M	12	18					
				F	13	12					
218	21	"	I	e	8	46		6	1.8	1.7	
				M	8	52					
				F	9	2					
219	21	"	I	e	11	57		6	2.8	1.7	
				M	12	6					
				F	12	17					
220	21	"	I	e	16	51		6	3.2	2.2	
				M	17	2					
				F	17	15					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
					h	m	s		μ	μ	
221	22	October.	I	e	10	21					
				M	10	25		6	3.6	2.2	
				F	10	52					
222	25	"	I <sub>v</sub>	P	11	5	19				Felt in Tjikorai, Preanger Regentships, Java.
				S	11	5	41				In Malabar:
				M	11	6	47	5	9.4	6.4	P-S = 8 seconds.
				F	11	12					
223	26	"	I	e P	9	8	57				
				M	9	21		5.5	22.2	28.9	
				F	9	59					
224	27	"	I <sub>v</sub>	P	16	41	46				
				S	16	44	19				
				M	16	46	29	6	55.3	51.1	
				F	16	59					
225	28	"	I <sub>v</sub>	P	14	42	45				
				S	14	42	57				
				M	14	45	10	5	9.7	2.7	
				F	14	49					
226	30	"	I <sub>v</sub>	i P	22	49	28				Felt in Pendjaloe, Cheri- bon and in Tjiboengoer, Kertasarie, Goenoeng Walet, Friesland and Tji- korai, Preanger Regent- ships, Java.
				S	22	49	48				In Malabar:
				M	22	51	19	5	81.9	85.5	P-S = 11 seconds.
				F	25	2					
227	31	"	I <sub>v</sub>	P	7	44	58				
				S	7	44	56				
				M	7	46	19	6	90.9	117.0	
				F	8	4					



# SEISMOLOGICAL BULLETIN.

## NOVEMBER 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
228	2	Nov.	I	e	h	m	s		μ	μ	
				F	3	20					
					3	26					
229	3	"	I	e	6	11					
				M	6	17		5	6.0	3.2	
				F	6	31					
230	7	"	I <sub>u</sub>	e P	7	54	14				
				S?	8	4	11				
				M <sub>L</sub>	8	11	51	6.5	58.3	21.9	
				e L	8	28	19				
				M <sub>L</sub>	8	35		25	9.3	7.0	
				F	9	12					
231	8	"	I	P	7	59	19				
				M	8	8		6	8.5	8.3	Origin Sorsogon, S E. of Luzon, Philippines.
				F	8	30					
232	10	"	I	e	23	57	39				
				M	0	3		6	6.8	3.5	
				F	0	14					
233	12	"	I	e	15	25	24				
				M	15	33		5.5	3.6	3.6	
				F	15	47					
234	13	"	I	e	5	23	9				
				M	5	31		6	8.9	9.2	
				F	5	53					
235	18	"	I	e	0	17					
				M	0	21		5	4.4	3.2	
				F	0	34					
236	20	"	I	e	15	23					
				F	15	28					
237	23	"	I	e	17	50					
				F	17	54					
238	26	"	I	e	23	53					
	27	"		F	0	2					

# SEISMOLOGICAL BULLETIN.

## DECEMBER 1912.

### BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

Mean Greenwich time. S. Latitude  $6^{\circ} 11' 0''$ . Height above sealevel 8 M.

E. Longitude  $7^{\text{h}} 7^{\text{m}} 19^{\text{s}}$ .

WIECHERT Horizontal Pendulum, 1000 kilograms.

The symbols are according to WIECHERT.

N <sup>o</sup> .	Date 1912.		Cha- racter.	Phase.	Time (Greenwich).			Amplitude (half)		Remarks.	
								A <sub>E</sub> .	A <sub>N</sub> .		
					h	m	s	μ	μ		
239	1	Dec.	I <sub>r</sub>	P	8	31	8	6	12.8	13.8	
				S	8	36	17				
				M	8	38					
				F	9	7					
240	4	»	I	e	5	7		5	3.9	2.3	
				M	5	15					
				F	5	27					
241	4	»	I <sub>r</sub>	P	20	9	47	5	6.7	4.0	
				S?	20	10	31				
				M	20	11	23				
				F	20	16					
242	6	»	I	e	14	54		6	4.2	3.1	
				M	14	46					
				F	15	1					
243	7	»	I <sub>r</sub>	P	23	5	8	5	17.4	15.0	
				S	23	5	45				
				M	23	6	8				
				F	23	55					
244	8	»	I	e P	11	25	32	5	9.6	6.8	
				M	11	33					
				F	11	45					
245	8	»	I	P	21	38	24				Very small, however is P distinct.
				F	21	47					
246	8	»	I	e P	23	58	34	6	12.1	13.4	
				e S?	0	6	42				
				M	0	7	11				
				F	0	52					
247	9	»	I <sub>r</sub>	e P	8	52	38	18	8.1	7.7	
				e L	9	57					
				M <sub>L</sub>	10	12					
				F	10	54					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
248	11	Dec.	I <sub>v</sub>	P	9	47	45	6	13.5	17.1	
				S	9	47	59				
				M	9	49	8				
				F	9	56					
249	11	»	I <sub>v</sub>	P	18	7	41	5	5.5	15.6	
				S, M <sub>N</sub>	18	8	6				
				M <sub>E</sub>	18	9	50				
				F	18	12					
250	16	»	I <sub>v</sub>	P	18	12	57	6	2.8	2.2	Felt in Moeara Bliti and Moesi Oeloe in Palembang, Sumatra.
				S	18	15	54				
				M	18	14	6				
				F	18	18					
251	16	»	I	e	25	58	5.5	5.1	6.2		
				M	25	51					
				F	0	20					
252	20	»	I	e	1	52	6	4.5	8.5		
				M	1	56					
				F	1	47					
253	20	»	II <sub>v</sub>	P	19	59	21	6	210.9	285.0	
				S	20	1	7				
				M	20	2	58				
				F	20	56					
254	21	»	I <sub>v</sub>	P	2	10	58	2	6.2	4.7	
				S	2	11	27				
				M	2	11	56				
				F	2	17					
255	23	»	I	e P	9	52	41	3	4.2	2.5	
				M	9	54					
				F	10	4					
256	24	»	II <sub>v</sub>	P	0	0	4	6	179.8	171.0	
				S	0	4	1				
				M	0	4	12				
				e L	0	9	12				
				F	0	46					
257	24	»	I <sub>v</sub>	P	16	1	4	1	7.4	6.9	Felt in Goenoeng Mas, Residency of Batavia, Java.
				S	16	1	17				
				M	16	1	24				
				F	16	6					
258	24	»	I	e	18	14	5	3.6	3.6		
				M	18	21					
				F	18	55					
259	27	»	I <sub>v</sub>	P	10	27	1	5	59.5	71.4	
				S	10	27	22				
				M	10	28	54				
				F	10	59					

No.	Date 1912.		Character.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Remarks.
									A <sub>E</sub> .	A <sub>N</sub> .	
260	28	Dec.	I	P	8	5	26	6	18.0	19.7	
				M <sub>L</sub>	9	12					
				M <sub>L</sub>	8	17					
				F	8	55					
261	30	»	I	e	8	55	6	3.8	3.5		
				M	8	59					
				F	8	47					

The constants, that were used during this year, will be given in the next bulletin.