

SEISMOLOGICAL BULLETIN 1923.

BATAVIA OBSERVATORY, JAVA.

Foundation: River Quartair.

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

E. Longitude $7^{\text{h}} 7^{\text{m}} 21^{\text{s}}$.

WIECHERT Horizontal Pendulum, 1000 kilograms.

PREFACE.

The astatic seismograph of WIECHERT of 1000 K.G. is registering regularly since December 6th 1908.

The instrument is mounted on a heavy brick pillar in a room with thick walls (about 70 centimeters), that 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 through a drop of mercury.

For each month the mean constants for that month are applied. T_0 and ϵ , 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, giving the pendulum a displacement by means of the horizontal adjusting screws, the value of which can be determined easily from the pitch (a), 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 mm; (b) = 1225 mm; (c) = 895 mm.

The constants used in 1923 are given below.

1923.	E-W component.			N-S component.		
	V.	T_0 .	ϵ .	V.	T_0 .	ϵ .
January	190	8.0	4.6	188	8.0	4.5
February	"	8.0	4.8	"	8.0	4.3
March.	"	8.0	4.9	"	8.0	4.8
April.	"	8.0	4.8	"	8.0	4.5
May.	"	8.0	5.6	"	8.0	4.6
June.	"	7.2	5.6	"	8.0	4.6

The notation used 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 (less than 1000 km).

r (" " remotus) = distant (1000 to 5000 km).

u (" " ultimus) = very distant (over 5000 km).

PHASES.

P (undae primae) = 1st preliminary tremors.

S (" secundae) = 2nd

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

M (" maximae) = maximum amplitude.

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

F (finis) = end of perceptible movement.

PR₁, PR₂, SR₁, SR₂, = 1st, 2nd 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_E = E.-W. component of A.

A_N = N.-S. " " " " " "

i (impetus) = abrupt commencement, clearly defined.

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

MALABAR.

July 1911 an astatic WIECHERT pendulum of 100 K.G. which is the possession of Mr. K. A. R. BOSSCHA, chief manager of the tea estate Malabar (Preanger, Java; E. Long. 107° 37'; S. Lat. 7° 13') has been erected.

Particulars about the registrations will be found in the tables.

Month	Time	Amplitude	Period
Jan.	8.0	0.8	0.8
Feb.	8.0	0.8	0.8
Mar.	8.0	0.8	0.8
Apr.	8.0	0.8	0.8
May	8.0	0.8	0.8
June	8.0	0.8	0.8

The distances given in the Bulletin Batavia are calculated with the time tables of Dr. S. W. Visser. See Verhandelingen Batavia No. 7, 1921. The postponed table is an extract of these tables.

Distance.	S-P	P-O	S-O	Distance.	S-P	P-O	S-O
1°	m s	m s	m s	56°	m s	m s	m s
2	0 13	0 16	0 29	57	7 46	9 54	17 40
3	25	31	56	58	52	10 1	18 53
4	38	46	1 24	59	58	8	18 6
5	50	1 1	31	60	8 4	15	19
6	1 1	17	2 18		10	22	32
7	12	32	44	61	15	29	44
8	24	47	3 11	62	21	36	57
9	35	2 2	37	63	26	43	19 9
10	47	16	4 3	64	32	49	21
	57	31	28	65	38	55	33
11	2 8	45	53	66	43	11 2	45
12	19	59	5 18	67	49	8	57
13	30	3 12	42	68	55	14	20 9
14	40	26	6 6	69	9 1	20	21
15	50	39	29	70	6	26	32
16	3 0	52	52	71	11	33	44
17	10	4 4	7 14	72	16	39	55
18	19	17	36	73	21	45	21 6
19	28	29	57	74	26	51	17
20	37	41	8 18	75	32	57	29
21	46	53	39	76	37	12 3	40
22	55	5 4	59	77	42	9	51
23	4 3	16	9 19	78	47	15	22 2
24	11	27	38	79	53	20	13
25	19	38	57	80	58	26	24
26	27	48	10 15	81	10 4	31	35
27	35	58	33	82	9	37	46
28	41	6 9	50	83	14	42	56
29	48	16	11 7	84	19	47	23 6
30	56	28	24	85	24	52	16
31	5 3	37	40	86	28	58	26
32	10	46	56	87	32	13 4	36
33	17	55	12 11	88	37	9	46
34	24	7 4	28	89	41	15	56
35	30	15	45	90	46	20	24 6
36	36	22	58	91	50	25	15
37	43	30	13 13	92	55	30	25
38	50	38	28	93	59	35	34
39	57	46	43	94	11 3	40	43
40	6 5	55	58	95	7	54	52
41	11	8 1	14 12	96	11	50	25 1
42	18	9	27	97	15	55	10
43	25	17	42	98	18	14 0	18
44	32	24	56	99	22	5	27
45	40	31	15 11	100	25	10	35
46	47	39	26	101	27	15	42
47	55	47	40	102	30	20	50
48	7 0	54	51	103	32	25	57
49	6	9 2	16 8	104	34	30	26 4
50	13	9	22	105	37	34	11
51	18	17	35	106	40	39	19
52	24	24	48	107	42	44	26
53	29	32	17 1	108	45	48	33
54	35	39	14	109	47	53	40
55	40	47	27	110	50	58	46

JANUARY

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum	Remarks.
						A _E	A _N		
1	Jan. 1.	I,	P i _E F	h m s 4 29 12 4 30 12 4 35	KM.	μ	μ	KM.	Natal (Tapanoeli), Sumatra.
2	• 3	I,	i _E F	20 2 54 20 7					Padang, Sumatra.
3	• 4	I,	eP i _E i _N i F	18 33 19 18 33 34 18 33 42 18 33 48 18 38					Papandajan Tea Estate, Preanger, Java.
	• 5		iP iS	18 32 56 18 33 8				100	
	• 5		eP iS	23 52 52 23 52 57				40	Daradja (Preanger) Java.
4	• 5	I	e F	17 58 51 18 12					
5	• 6	I,	i ₁ i ₂ i _E F	8 50 11 8 51 17 8 54 15 8 57					Laboeba (Batjan) Halmheira?
			i _E i _E i _E	8 49 22 8 50 15 8 52 58					
6	• 7	I,	eP iS F	7 25.3 7 25.6 7 29				130	No minute marks. Preanger (Java).
			eP S	7 26 15 7 26 30				130	
7	• 8	I,	e F	6 56 44 6 59					Bodjong Asih (Preanger) Java.
			i	6 56 47					
8	• 11	I,	P iS F	7 19 24 7 19 59 7 27				310	
			P s _N	7 19 19 7 19 50				270	
9	• 12	I	e F	6 35 0 6 38					
10	• 14	I	P F	20 23 51 20 29					
11	Jan. 15	I	i F	19 41 35 19 53					

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.	
						A _E	A _N			
12	• 18	I,	iP _N S F	h m s 4 58 53 4 58 49 5 2			μ	μ	140	Preanger (Java).
			iP F	4 58 26 4 58 31					150	
13	• 22	I _u	e M ₁ i _N M ₂ L _E L _N F	1 6.1 1 12 1 1 15 29 1 16 57 1 52 24 1 35 59 1 39						Troubled by street traffic.
14	• 22	I	L _E F	11 0 8 11 18						
15	• 24	I	e F	0 13 45 0 17						
16	• 26	II _u	iP _E i _E iS i _E i _N i _E F	21 35 14 21 35 19 21 41 9 21 42 2 21 43 8 21 46 54 21 57		7.2	97.3	50.7	4310	
			i _E i _E i _E	21 35 21 21 41 8 21 41 34						
	• 31		P S	6 26 14 6 26 25					90	Preanger (Java).
	• 31		i	2 4 53						Tjikentjreng (Preanger).

FEBRUARY.

17	Febr. 1	II _u	P i ₁ i ₂ iS i L _E F	19 35.7 19 35.8 19 39.5 19 44.2 19 44.9 19 54.8 20 22		6.4 5.8	86.3 166	57.6 115	7050	No hour marks.
18	• 2	II _u	P iS M L _E M _E F	5 19.5 5 28 58 5 29 47 5 41 31 5 53 31 6 47		6.0	177	68.0	8260	P in minute eclipse.
19	• 28	III _u	eP _N iP i _E	16 13 24 16 13 32 16 14 21					9460	SW — NE.



No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
				h	m	s		A _E	A _N		
			i _E	16	21	2					
			i	16	23	37					
			iS	16	23	47	6.1	632	283		
			eL	16	35	57					
			M ₁	16	51	56	19.0	1540	807		
			M ₂	16	58	12	14.6	1060	501		
			F	19	7						
				Malabar.							
			P	16	13	58			9280		
			i	16	23	19					
			iS _E	16	23	54					
			eL	16	34.2						
			M	16	47.2						
20	Feb. 3	I	i ₁	18	54	56				in N°. 19.	
			i _E	19	4	14					
			i _N	19	4	50					
21	" 4	II _v	P	1	21	54			170	EW.	
			iS	1	21	54					
			M	1	25	20	5.8				
			F	1	27						
				Malabar.							
			iP _E	1	21	49			420		
			iS _N	1	22	56					
22	" 4	I _v	eP	14	53	7			210	EW.	
			iS	14	53	31					
			F	14	57						
				Malabar.							
			e	14	53.6						
			i	14	53.8						
23	" 5	I _v	P _E	13	36	50					
			M _E	13	38	28					
			F	13	45					Eastern Java.	
24	" 6	I _v	eP	2	23	22					
			i _N	2	24	16					
			F	2	30						
				Malabar.							Central Java.
			P	2	23	2			250		
			F	2	25	28					
25	" 10	I _v	eP	7	32	11			280		
			iS	7	32	45					
			F	7	37						
26	" 11	I _u	e	22	57	54			8530		
			iS	23	7	14	5.9	17.7	9.8		
			F	23	14						
27	" 12	I _u	e	2	10	27			8350		
			iS	2	19	59	6.4	24.4	16.2		
			F	2	29						
28	" 13	I	i	0	47	47					
			F	0	55						
29	" 15	I	i _E	9	47	25					
			i ₁	9	48	13					
			i ₂	9	51	42					

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).			Period in sec nds.	Amplitude half.		Distance of epi-centrum.	Remarks.
				h	m	s		A _E	A _N		
30	Febr. 16	I	e	9	27	16			780		
			iS	9	56	17					
			F	9	43						
31	" 18	I	i ₁	10	36.3					No minute marks.	
			i ₂	10	41.0						
			F	10	45.8						
32	" 19	I _v	iP	6	22	15			3100	E	
			i	6	22	49					
			i _N	6	26	37					
			iS _E	6	26	55					
			M	6	27	6	5.8	88.4	134	Moluccas and New Guinea.	
			F	6	47						
				Malabar.							
			e	6	22	5			2890		
			i	6	22	24					
			iS	6	26	32					
33	" 20	I	i ₁	18	25	21					
			i ₂	18	25	41					
			F	18	32						
34	" 21	I _v	eP	6	15	5			140		
			iS	6	15	21					
			F	6	19					Preanger (W Java).	
				Malabar.							
			iP	6	14	52			80		
			iS	6	15	1					
35	" 21	II	iP _E	13	41	39					
			i	13	41	57					
			M	13	44	8	5.2	37.5	41.4		
			F	13	58						
				Malabar.							
			iP _E	13	41	53					
			i	13	42	37					
36	" 22	III _v	iP	5	56	19			2120	Tandjong Redeb (NE Borneo)— Town of Manado.	
			i ₁	5	57	29					
			iS	5	59	47					
			M ₁	6	2	24	7.3	349	481		
			M ₂	6	5	8	6.1	225	407		
			F	6	47						
				Malabar.							
			P	5	56	14			2150		
			iS	5	59	45					
			L	6	3						
			i	6	7	49					
37	" 23	II _u	P	7	45	57					
			i ₁	7	47	44					
			i ₂	7	52	48					
			iS?	7	56	10					
			eL	8	10						
			M _E	8	19	52	17.3				
			M _E	8	24	50	14.6				
			M	8	29	49	14.4	241	265		
			F	9	22						
				Malabar.							
			e	7	46	47					
			i	7	50	22					
			i _N	7	5	0					
			eL ₁	8	19.2						
			eL ₂	8	32						

MARCH.

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.		
						A _E	A _N				
38	March 1	I _r	i	h m s		μ	μ	70	Neglasari (Preanger, Java).		
			F	14 43 38							
			P	14 44 42							
			iS	14 43 39							
39	" 1	I _r	e	19 52 10				2660			
			eS	19 56 20							
			i	19 57 52							
			F	20 1							
40	" 2	III _r	i ₁	19 52 9	6.0	21.7	8.9	2600			
			i ₂	19 52 16							
			iP	16 55 36							
			i	16 55 6							
			iS	16 57 41							
			eL	17 10							
			F	17 57							
			Malabar.								
			P	16 53 39							
			i	16 55 12							
iS	16 57 38										
L	16 59 50										
41	" 2	I	i	17 30 24							
42	" 3	III _r	P	21 54 35	5.7	529	560	1140	Azimuth WNW; Sumatra's West Coast.		
			iS	21 56 35							
			M	21 57 58							
			F	22 41							
			Malabar.								
			P	21 54 46							
43	" 3	I	e _E	23 30 3							
			i _N	23 32 3							
			F	23 37							
44	" 4	I	i _E	7 15 4							
			i ₁	7 15 38							
			i ₂	7 16 8							
			i ₃	7 18 41							
			i ₄	7 23 34							
			F	7 35							
45	" 9	I _r	eP	10 8 26				160	Preanger and Tjimiring (Banjoe- mas) Java.		
			S	10 8 49							
			M	10 9 39							
			F	10 11							
			Malabar.								
			iP	10 7 56							
46	" 10	I _r	eP _N	14 22 2				180	Preanger.		
			iS	14 22 27							
			F	14 26							
			Malabar.								
			iP	14 21 43				80			

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.		
						A _E	A _N				
47	March 10	I	e	h m s		μ	μ				
			F	17 48 54							
48	" 14	I _r	e	18 58 16					Sumatra's West Coast and Natal (Tapanoeli).		
				18 42							
49	" 14	H	iP	20 4 19					NE.		
			i _N	20 53 25							
			i	20 53 2							
			eL	21 5							
			F	21 31							
			Malabar.								
50	" 16	II _r	i _E	20 48 59					NE. Beo (Talud I.).		
			i	20 49 18							
			i _E	20 53 59							
			e _E	22 6 46							
			iP	22 6 54							
			i _E	22 10 54							
51	" 17	I	i _N	22 11 10							
			L	22 16 35							
			F	25 16							
			Malabar.								
			P	22 6 49							
			i	22 11 16							
52	" 17	I _r	L	22 15					190 Preanger Reg. (Java).		
			i	6 14 57							
			i _E	6 18 59							
53	" 17	I _r	F	6 27	5.6	58.0	37.5				
			P	9 40 30							
			iS	9 40 56							
			M	9 42 10							
			F	9 46							
			Malabar.								
54	" 20	I	P	9 40 10					100 Tjiletoeh (Preanger) Java.		
			iS	9 40 25							
			Malabar.								
55	" 22	I _r	P	15 52 52							
			iS	13 53 6							
56	" 22	I _r	P	11 13 51					Lebak Parai (Bantam) Java.		
			i	11 13 58							
			F	11 17							
57	" 24	I	i _E	0 16 3							
			i	0 16 24							
			F	0 20							
58	" 24	III _r	P	12 47 27				4290			
			i _E	12 49 15							
			eS	12 53 21							
			i	12 53 29							
			i _E	12 56 36							
			i	15 0 10							
			L _E	13 0 56							
			i	13 2 55							
			F	13 16 36							
			Malabar.								
			i _E	12 47 46	6.8	470	549				
			i	12 49 20							
			i	12 53 44							
			L	12 56 44							
			M	13 1							

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
56	March 25	I	e i F	h m s 0 22 14 0 22 18 0 29		μ	μ		
57	" 25	I _v	e F P S	16 27 40 16 30 Malabar. 16 27 14 16 27 30				110	Boenisari (Pr. R.) Java.
58	" 26	I	e i _E eL _E M F	15 31 0 15 36 32 13 58 39 14 7 0 14 16					
59	" 28	II _r	P iP i ₁ i _E F P S	4 32,4 4 32 29 4 33 48 4 36 35 5 13 Malabar. 4 32 21 4 33 31				1890	Troubled by street traffic. Timor.
60	" 28	I	e F	18 39 5 18 52					
61	" 28	I _r	iP i S F	20 34 24 20 35 4 20 38 29 20 49				2590	EW. Moluccas.
62	" 29	I _r	P _E S _N F	22 44 45 22 48 47 22 53				2570	Ternate?
63	" 31	I _v	e _N ? iS F P iS	11 11 50 11 12 1 11 14 19 Malabar. 11 11 44 11 11 59				80? 100	Bodjong Asih (Pr. R.) Java.
64	" 31	I	eP i F e i ₁ i ₂	25 37 11 25 37 32 23 42 Malabar. 25 36 42 23 37 1 23 37 7					
APRIL.									
65	April 5	I _v	P _N S F P _N iS	15 0 0 13 0 18 13 3 Malabar. 12 59 57 13 1 7				120 70	

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
66	April 2	I _v	e F iP	h m s 5 39 5 41 Malabar. 5 3 26		μ	μ		E. Java.
67	" 3	I _v	i F P S	20 18 21 20 20 Malabar. 20 17 49 20 17 58					Preanger.
68	" 6	I	P i	2 27,7 2 28 52					Troubled by street traffic.
69	" 13	I _r	P i i _N M F	2 29 53 2 31 14 2 34 11 2 36 2 49					Banda Neira?
70	" 13	I _v	P _N iS _E M F P	7 45 37 7 43 51 7 45 7 48 Malabar. 7 43 23				100	Preanger (Java).
71	" 13	I _u	iP i iS F	10 14 29 10 15 7 10 22 54 10 5				6990	WNW.
72	" 13	II _u	i i _N i _E eL _E M F	15 43 7 15 52 34 15 52 47 16 3 54 16 24 54 17 1	16.8	77.8	20.5		
73	" 14	I _v	P _N iS F	8 59 24 8 59 47 9 3				160	
74	" 15	I _r	P _E iS F P iS	8 23 15 8 25 42 8 31 Malabar. 8 23 7 8 23 29				1420 1370	Padang Pandjang (Sumatra).
75	" 17	I	i ₁ i ₂ F	16 59 17 17 3 55 17 21					Toli-Toli (Menado)?
76	" 19	III _r	iP S i M L F	3 12 19 3 13 19 3 16 9 3 16 58 3 33 in next.				1780	NE. NE-Borneo.



No.	Date 1925.	Character.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epicentrum.	Remarks.
						A _E	A _N		
				h m s		μ	μ		
				Malabar.					
			iP	3 12 28				1810	
			iS	3 15 31					
			i	3 16 41					
77	April 19	II _r	P	4 15 23				1890	NE Borneo.
			S	4 16 30					
			F	4 42					
				Malabar.					
			P	4 12 33					
			iS	4 16 27					
			i ₁	4 17 41					
			i ₂	4 18 16					
78	" 19	I _r	e	5 45 50					NE Borneo.
			i	5 46 45					
			F	5 52					
79	" 19	I	i ₁	16 18 51					
			i ₂	16 20 9					
			F	16 26					
80	" 20	I _v	e	15 20 23					
			i	15 20 43					
			F	15 24					
				Malabar.				250	
			P _E	15 20 31					
			S _N	15 21 3					
81	" 21	I	i	9 5 50					
			F	9 9					
82	" 21	I	i	25 45 32					
			F	25 55					
83	" 23	I _u	P	3 24 17					
			L _E	3 46.4					
			F	3 16					
84	" 24	II _r	P	5 35 27				1860	NE Borneo.
			S _N	5 38 34					
			i	5 39 46					
			F	6 1					
				Malabar.					
			P	5 35 26					
			i ₁	5 39 19					
			i ₂	5 39 41					
85	" 24	I	P	18 23 24					
			i	18 24 15					
86	" 27	I _r	iP	10 30 57					Menado and Soela I.
			i	10 34 48					
			F	10 56					
87	" 30	I _v	iP _N	9 55 40				160	Preanger (Java).
			iS	9 56 5					
			F	10 2					
				Malabar.				140	
			P	9 55 41					
			iS	9 56 1					

No.	Date 1925.	Character.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epicentrum.	Remarks.
						A _E	A _N		
				h m s		μ	μ		
88	April 30	I _v	e	12 32 4				160	SW. Preanger (Java).
			iP	12 32 6					
			iS	12 32 26					
			F	12 37					
				Malabar.				150	
			P	12 32 4					
			iS	12 32 25					
89	" 30	I _v	e _E	15 14 52					Central Java.
			F	15 15					
				Malabar.					
			e	15 12 55					
			i	15 13 53					
MAY.									
90	May 1	I	e _E	10 55 35					
			i ₁	11 0 55					
			i ₂	11 1 47					
			F	11 6					
91	" 2	I _v	P	17 1 12				140	
			iS	17 1 32					
			F	17 8					Tjiemas (Pr. R.) Java.
				Malabar.					
			P	17 1 19					
92	" 4	I _u	e _E	16 45 48					
			i _E	16 44 18					
			i	16 51 59					
			eL	17 2 19					
			M ₁	17 16 23	29.0				
			M ₂	17 34 48	16.0				
			F	18 6					
93	" 4	I _r		22 46.0					in hour mark.
			F	22 57					Tandjong Redeb (NE Borneo)?
94	" 7	II _r	P	22 20 50				160	
			iS	22 21 12					
			i	22 22 10					
			M	22 23 19	5.9	222	356		
			F	22 36					
				Malabar.					
			P	22 21 8					
95	" 11	I	e	8 33 57					
			i _E	8 42 14					
			F	8 46 20					
96	" 12	III _a	iP	1 21 52				160	WSW; pens thrown off by S; removed 1 ^h 28 ^m ; maximum motion till 1 ^h 34 ^m .
			iS	1 22 15					W Java and Lampung Districts (Sumatra).
			F	2 19					
				Malabar.					
			iP	1 20 48					
			iS?	1 20 54					
97	" 12	I	i	2 12 39					
				Malabar.					
			P	4 24 28				50?	
			iS	4 24 32					

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Periode in seconds.	Amplitude (half).		Distance of epicentrum.	Remarks.
						A _E	A _N		
98	May 12	I _v	P S F	h m s 10 56 10 10 56 30 10 0		μ	μ	140	
99	" 14	I	P _E iS _N F	17 12 57 17 13 28 17 23				570	Koeboe Praboe (Benkoelen), Sumatra.
100	" 15	III _a	eP i S? F	4 12 16 4 12 31 4 13 7 4 41				370?	Central Java; destructive at Maos (Banjoemas).
			iP Si _N S	4 12 0 4 12 16 4 12 19				110	Malabar.
101	" 15	I _v	iP i F	9 6 26 9 7 5 9 12				170	Central Java; aftershock of N° 100.
			P S	9 6 4 9 6 24					Malabar.
102	" 18	I _v	e F	7 24 52 7 28				200	Banjoemas (C. Java).
			P S	7 24 2 7 24 30					Malabar.
103	" 19	I _v	e iS	25 31,7 25 36 1					troubled by street traffic. Minahasa (NE Celebes.)
104	" 20	I _v	P iS _E F	13 1 30 13 1 52 13 10				160	Lebak Parai (Bantam) W. Java, and Lampongs (Sumatra).
			P i S	13 1 59 13 1 55 13 2 11				240	Malabar.
105	" 25	I _v	e _E i ₁ i ₂ F	22 52 54 22 54 57 22 56 6 22 59				60	troubled by street traffic.
			P iS	22 52 48 22 52 57				60	Malabar.
			P iS	25 22 52 25 22 41				60	Malabar.
106	" 25	I _u	i ₁ i ₂ i ₃ i ₄ L _E F	22 48 46 22 55 46 22 58 29 25 2 55 25 21 55 0 15				3250	Taroena, (Sangi I) and Ternate (Halmheira).
107	" 25	I _v	i _E i	25 40 41 25 41 10					

No.	Date 1925.	Char-acter.	Phase	Time (Greenwich).	Period in seconds	Amplitude (half).		Distance op epicentrum	Remarks.
						A _E	A _N		
108	May 26	I _u	eP i F	h m s 3 22 46 3 30 12 3 36		μ	μ		
109	" 28	II _v	iP i iS F	1 30 16 1 30 44 1 53 38 2 18					Malabar.
			iP iS eL	1 30 25 1 34 0 1 37					
110	" 29	I	eP i F	2 3 30 2 5 15 2 10					Banjoemas (C. Java).
			P	2 3 11					Malabar.
111	" 31	I _u	e i F	6 5,1 6 12 30 6 18					Troubled by street traffic.
JUNE.									
112	June 1	II _u	iP i iS eL L F	17 34 0 17 38 0 17 41 26 17 50 18 5 16 18 24	6.3 17.0	187 101	91.6 33.2	5810	SW-NE.
			P	17 34 5					Malabar.
115	" 1	I _u	e i _N S i L F	20 23 0 20 24 52 20 32 15 20 32 19 20 52 15 21 8				6860	
			P	20 25 2					Malabar.
114	" 5	I _v	P iS F	3 55 21 3 55 45 4 1				170	troubled by street traffic.
			eP S	3 55 52 3 55 56				170	Malabar.
115	" 7	I _v	P iS i F	16 6 16 16 6 36 16 6 40 16 11				140	
			P S	16 6 22 16 12 45				160	Malabar.

N ^o .	Date 1923.	Char- acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half).		Distance op epi- centrum.	Remarks.
				h	m	s		A _E	A _N		
116	June 10	I _v	eP	13	45	24		μ	μ	120	Preanger, W. Java.
			iS	13	45	47					
			F	15	45						
			Malabar.								
			P	15	45	18				100	
			iS	15	55	32					
117	" 14		e _E	7	4	52					E. Java.
			F	7	8						
			Malabar.								
			P	7	3	58				340	
			S	7	4	45					
118	" 18	II	i ₁	8	27	47					
			i ₂	8	28	48					
			i ₃	8	37	52					
			F	9	6						
			Malabar.								
			i ₁	8	27	45					
			i ₂	8	37	20					
119	" 22	III _u	P	6	50	44					
			i	6	52	19					
			i _N	6	55	28					
			i	6	54	55					
			i _E	6	55	48					
			i _N	6	56	56					
			S?	7	1	8					
			M	7	1	29					
			F	8	5						
						Malabar.					
			P	6	51	2					
			Ll	6	58	15	23.0				
			iS	7	2	55	5.4				
			i	7	5	45					

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JULY

No.	Date 1923.	Char- acter.	Phase	Time (Greenwich).			Period in seconds.	Amplitude (half)		Distance of epi- centrum	Remarks.
								A _E	A _N		
120	July 1	I	e i F	h 8 8	m 1 11	s 9 51		μ			
121	" 2	I	i L F	2	38	28				SW — NE.	
				2	53	55					
				5	8						
			i	Malabar.							
				2	38	57				SW — NE.	
122	" 5	I	iP F	1	48	59				Benkoelen. I	
				1	51						
123	" 4	I	P F	2	55	48					
				3	1						
124	" 6	I	e _E i ₁ i ₂ M F	23	40	24					
				23	40	55					
				23	40,9					i ₂ in minute eclipse.	
				23	42	21	6.1	284	277		
				23	59						
125	" 12	I	i F	3	27	1				± SW.	
				5	50						
126	" 15	II	P iS L M F	11	21	41				SW — NE.	
				11	28	9	6.5			3540	
				11	39	50					
				11	41	28	19.6				
				12	9						
127	" 13	I	e i i _E	18	42	17					
				18	45	58					
				18	46	58					
128	" 13	I	eP S F	22	0	44				210	± EW.
				22	1	8					
				22	6						
				Malabar.							
			e	22	0	55				200?	
			i	22	1	16					
129	" 14	I	i _E i _N F	5	27	52					
				5	28	12					
				5	56						
				Malabar.							
			i _E	5	28	12					
130	" 16	I	P _N S	5	14	16				130	Preanger (W. Java).
				5	14	51					
				Malabar.							
			P	5	14	10				110	
			iS	5	14	25					

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
				h	m	s		A _E	A _N		
131	July 16	I	e i _E eL F	12	48,8					Troubled by street traffic.	
132	" 17	I	eP F	0	25 28					Kisar (S. Moluccas)?	
133	" 18	I	i F	2	47 37						
134	" 19	I	e i F	7	18 51						
135	" 24	I	e i F	12	49 19						
136	" 25	I _r	e i F	4	13,2					Troubled by street traffic. Menado.	
137	" 25	I _r	e i F	6	8,6					Menado.	
138	" 27	I	e i F	11	27,2					No minute marks. Menado?	

AUGUST.

139	Aug. 1	I	e i F	8	29 9					
140	" 10	I	e i F	16	4 36					
141	" 11	II _r	iP i _E iS i M ₁ M ₂ F	0	58 24				1460	NE Borneo.
			e	0	58 28	6.9	418	498		
			P	0	58 31	6.6	326	397		
			iS	1	1 58					1590
142	" 11	I _r	e i F	2	17 19				1410	NE Borneo.

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
				h	m	s		A _E	A _N		
143	Aug. 11	I _r	eP iS F	12	58 46					560	
			P S	12	58 44					550	Malabar.
144	" 12	I	i ₁ i ₂ i ₃ F	10	15 25						
145	" 13	I _r	eP iS i F	20	20 7					460	± EW.
			eP S	20	20 27					540	Malabar.
146	" 13	I _r	i ₁ i ₂ F	21	50 58					170?	Bantam (W. Java).
			P S	21	31 11					200	Malabar.
147	" 17	I	e F	12	18 43						
148	" 19	I _r	P _E iS F	1	16 19					150	
			i _E	1	16 28						Malabar.
149	" 20	I	i ₁ i ₂ i ₃ L _N F	18	14 10						
150	" 20	I	i _E L F	19	18 27						
151	" 22	I	iP i M F	1	45 51						± EW.
			P _E	1	44 11	4.8	271	318			Malabar.
152	" 23	I _r	P iS F	22	21 0					150	
			iP S	22	21 17						Malabar.
153	" 27	I _r	i F	17	56 21						

Tjimiring (Banjoemas C. Java.)

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SEPTEMBER 1 - 2, 1923.

No	Date.	Char.	Phase.	G.M.T.			km
				h	m	s	
156	1	III _u	iP	3	7	37	5750
			S	3	14	59	
			i	3	15	24	
			M	3	15	44	
			i	3	16	48	
			M	3	17	12	
			eL	3	25		
			ML	3	29	39	
			M ^E	3	32	48	
			M ^E	3	36		
			M ^E	3	37		
F	in next						
157	1	I _u	eP	5	51	44	5550
			S	5	38	56	
			F	6	13		
158	1	I _u	eP	7	47	30	5400
			S	7	54	33	
			L ^E	8	14	6	
			F ^E	9	5		
159	1	I	e	9	5	6	-
			i ₁	9	6	46	
			i ₂	9	7	25	
			F ²	9	10		
160	2	II _u	e	2	55	37	5790
			iP	2	55	54	
			iS	3	3	1	
			L	3	11	24	
			M	3	25	35	
			F	5	5		
161	2	I _u	P	9	36	2	5680
			iS	9	43	20	
			L ^E	9	58	12	
			F ^E	10	20		
162	2	I	e	23	58	1	-
				23	10		

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
154	Aug. 30	I _r	i iS F	h m s 2 52 48 2 57 17 5 6		μ μ	2920		
155	" 31	I	i _E F	11 25 28 11 34					
SEPTEMBER.									
156	Sept. 1	III _u	iP S i M i M eL ML M _E M _E M _N F P L M	5 7 37 5 14 39 5 15 24 5 15 44 5 16 48 5 17 12 5 25 4 5 29 39 5 32 49 5 36 4 5 37 4 5 7 41 5 17 52 5 30 5			5750	Azimuth NNE.	
					6.5	105	353		
					6.5	137	403		
					23.0	1490	1660		
					21.0	1945	—		
					16.0	1229	—		
					16.0	—	1157		
				Malabar.					
157	" 1	I _u	eP S F	5 31 34 5 38 36 6 13			5550		
158	" 1	I _u	eP	7 47 30 7 54 33 8 14 6 8 26			5400		
159	" 1	I	e i ₁ i ₂ F	9 5 6 9 6 46 9 7 25 9 10					
160	" 2	II _u	e iP iS L M F	2 55 37 2 55 54 3 3 1 3 11 24 5 25 35 5 5			5790	NNE.	
					13.9	538	129		
161	" 2	I _u	P iS L _E F	9 36 2 9 43 21 9 58 12 10 20			5680		
162	" 2	I	e F	22 58 1 25 10					
165	" 9	I _v	i F P S	7 12 59 7 17 7 12 47 7 13 8			180	Bantam and W. Preanger (Java).	

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude half.		Distance of epi-centrum.	Remarks.
						A _E	A _N		
164	Sept. 9	II _r	e i i _N i eL F	h m s 22 10 34 22 12 5 22 14 41 22 18 45 22 28 55 25 1		μ μ			
				Malabar.					
				i ₁ i ₂ L	22 10 45 22 12 5 22 21 14				
165	" 12	I _u	i ₁ i ₂ iS _N i F	6 5 59 6 7 12 6 14 59 6 16 57 6 19			8100		
166	" 15	I	i L	16 41.2 16 36.2				No minute marks.	
167	" 17	I	i ₁ i ₂ F	5 48.5 5 54 29 5 57				Troubled by street traffic.	
168	" 17	I _v	e F e i	20 43 31 20 49 20 42 20 20 43 11				E. Java.	
				Malabar.					
169	" 19	I	i F	8 41 48 8 48 8 41 52	5.9	9.1	17.2	NE.	
170	" 22	I _u	e i ₁ i ₂ i ₃ eL F	20 57 45 21 0 15 21 7 19 21 7 41 21 15 25 21 45					
				Malabar.					
	" 22		P _N iS _E	15 36 5 15 36 14			80	Daradjat (Preanger, Java).	
171	" 25	I	i _E i F	17 41 5 17 44 28 17 49				Tapanoeli (Sumatra).	
172	" 24	I	eP i ₁ i ₂ F	8 6 32 8 7 16 8 10 27 8 18					
173	" 25	I _v	e i i _N F P S	10 52 24 10 55 33 10 54 11 11 0 10 52 10 10 53 1			460	E. Java.	
				Malabar.					

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half).		Distance op epi-centrum.	Remarks.	
				h	m	s		A _E	A _N			
174	Sept. 26	I	i ₁ i ₂ L _E F	8	32	45		μ	μ			
				8	40	1						
				8	36	1						
				9	17							
175	" 27	II	i i _N F i _{EN}	7	6	55						
				7	11	4						
				7	50							
				7	6	29						
176	" 29	I _v	e _E i _S F P S	21	51	53				90?		
				21	52	3						
				21	54							
				Malabar.								
				21	51	26						
				21	51	35						
OCTOBER.												
177	Oct. 1	I	P _E i F	22	58	17						
				22	48	42						
				22	57							
178	" 3	I	i _E F	1	56	42						
				2	3							
179	" 4	I _r	P _E i _S F	7	42,2							
				7	46	19						
				7	55							
180	" 4	I	i _E F P S _E	17	50	41					100	
				17	56							
				Malabar.								
				17	50	35						
				17	50	47						
181	" 7	III _r	P i _E i _N i _S ? M L F P i _E i _S L	3	34	41	6.0	501	574	2890?	Azimuth ± E. New Guinea?	
				3	34	48						
				3	35	0						
				3	39	7						
				3	39	32						
				3	52	18						
				3	1							
				Malabar.								
				3	34	34						
				3	34	54						
				3	38	48						
3	41	2										
182	" 7	I _r	i _E i _N F	8	5	54				2850?	New Guinea?	
				8	10	18						
				8	21							
185	" 10	I	e i L F	7	50	53						
				7	59	53						
				8	13	6						
				8	27							

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half).		Distance of epi-centrum.	Remarks.	
				h	m	s		A _E	A _N			
184	Oct. 11	I _v	P S F P S	12	23	37		μ	μ	500		
				12	24	15						
				12	53							
				Malabar.								
				12	23	56						
				12	24	28						
185	" 13	I _v	eP _E S F P i S	1	46	50				570	Central and Eastern Java.	
				1	47	52						
				1	54							
				Malabar.								
				1	46	14						
				1	46	18						
186	" 15	II _r	P _E i _N i _E i _E L F P i ₁ i ₂ eL	7	35	9						
				7	37	45						
				7	58	54						
				7	40	25						
				7	42	30						
				Malabar.								
				7	35	6						
				7	57	1						
				7	37	50						
				7	41	2						
187	" 15	II _r	P i L F	8	1	27						
				8	4	27						
				8	7	57						
				8	46							
				Malabar.								
8	0	58										
188	" 15	I	P i F	8	5	11						
				8	5	50						
				8	5	35						
				12	55	42						
189	" 15	I _v	P i _S	12	57	44						
				15	5							
				23	27	19						
190	" 17	I _r	P S F	23	27	19				90	Other phases troubled by street traffic. Preanger (W Java).	
				23	27	44						
				23	27	55						
				Malabar.								
191	" 18	I _v	P i _S	13	10	1				2310	Menado.	
				13	13	45						
				13	18	31						
192	" 20	I _a	eP S F P i _S iP i ₁ i ₂ i _S F	9	18	19				250	Preanger and Banjoemas (Java).	
				9	18	47						
				9	22							
				Malabar.								
9	17	50										
9	18	13										
192	" 20	I _a	iP i ₁ i ₂ i _S F	5	26	14				200		
				5	27	44						
				5	52	6						
				5	40	52						
				5	54							
				5	54							



No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
195	Oct. 20	I	e i _E i _E F	h m s 10 8 40 10 14 15 10 15 29 10 27		μ	μ		
194	" 21	I _r	e _E F	13 19 22 13 25				130	SW-Celebes.
195	" 26	II _v	iP _E iS _N M F	12 12 40 12 12 57 12 14 27 12 28	6.0	209	257	130	EW.
				Malabar.				400	
			iP _E S	12 12 51 12 13 37					
196	" 29	I	i ₁ i ₂ F	15 56 41 14 1 1 14 3					
OCTOBER									
NOVEMBER.									
197	Nov. 1	I _v	iP iS F	1 54 25 1 54 45 2 1				170	Tjiletoeh (Preanger, Java).
				Malabar.					
			P S	1 54 24 1 54 42				130	
198	" 1	I	i ₁ i ₂ F	8 4 35 8 6 0 8 20					NE.
199	" 2	II _u	iP i _N i S L F	21 16 25 21 16 57 21 18 9 21 25 11 21 31 35 22 50		5.2 6.2 58.0	108 85.0 1052	145 117 943	5130 E.
				Malabar.					
			P i ₁ i ₂ S L	21 16 21 21 16 26 21 17 10 21 25 4 21 54 12				5060	
200	" 5	I	i _E i F	4 57 58 5 4 8 5 15					
				Malabar.					
			e i	4 57 26 5 3 59					
201	" 5	II	iP i iS eL F	16 27 9 16 27 58 16 53 25 16 45 58 17 11				4610	NE.
				Malabar.					
			iP	16 27 11				4660	

No.	Date 1925.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
202	Nov. 5	I _v	e F	h m s 25 45 9 23 45		μ	μ		Bodja and Limbangan (Sema-rang, C. Java).
				Malabar.				100	
			iP iS	25 42 35 25 42 45					
203	" 4	I	i iS _N ? eL M ₂ F	0 12 52 0 19 35 0 27 5 0 35 3 0 55	22.0		353	5060?	E.
				Malabar.					
			i S eL	0 12 54 0 26 16					S during changing of sheet.
204	" 4	I	e i eL F	20 11 52 20 18 24 20 30 24 20 36					
205	" 4	I	i i _N ? F	22 21 22 22 28 42 22 34					
206	" 5	I	i ₁ i ₂ i ₃ L F	21 55 46 21 57 41 21 43 41 21 52 42 22 29					
				Malabar.					
			i ₁ i ₂ i ₃	21 55 50 21 57 29 21 42 25					
				Malabar.					
	" 6		P	6 12 12					Tjilatjap, (Banjoemas C. Java).
207	" 8	I	i F	22 48 20 23 2					
208	" 13	II _v	iP i iS F	20 28 52 20 28 41 20 29 40 20 45				650	E. W. and C. Java.
				Malabar.					
			iP i S i ₁ i ₂	20 28 29 20 28 58 20 29 54 20 51 18 20 52 35					
209	" 15	I _r	P S? F	21 18 59 21 21 55 21 25				1740?	
				Malabar.					
									Tapanoeli and Sumatra's West-kust.
210	" 17	I	i ₁ i ₂ F	5 6 4 5 16 17 5 25					
211	" 18	I	i ₁ i ₂ i _E i _N F	21 56 58 21 57 55 21 41 46 21 41 59 21 48 58					

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
212	Nov. 21	I _v	iP _N	18 20 5		μ	μ	140	
			iS _E	18 20 21					
			F	18 21					
				Malabar.					
213	" 21	I _v	P	18 20 1				100	
			iS	18 20 13					
			iP _E	18 40 1					
				Malabar.					
214	" 21	I _v	iS _N	18 40 20				160	W.
			F	18 52					
			P	18 40 22					
				Malabar.					
215	" 24	I	iS _N ?	18 41 3				560?	
			P	23 21 35					
			S	25 22 0					
				Malabar.					
216	" 25	I	F	25 30				220	SE. Preanger and Banjoemas.
			P	23 21 17					
			iS	25 21 30					
				Malabar.					
217	" 26	I	eP	5 21 4				150	Batavia records troubled by street traffic. Tjikentjreng (Preanger).
			S	5 21 21					
			i ₁	17 10 7					
				Malabar.					
218	" 26	I	i ₂	17 20				5940?	
			i ₃ (S?)	12 27 51					
			F	12 28 31					
				Malabar.					
219	" 30	I _v	F	12 40				180?	Banjoemas (C. Java).
			eP	1 0 13					
			i ₁	1 0 45					
				Malabar.					
220	" 2	I _v	i ₂	1 1 5				2810	
			F	1 9					
			P	0 59 52					
				Malabar.					
221	Dec. 2	I _v	S?	1 0 13				3470	
			eP	12 5 0					
			i _E	12 6 5					
				Malabar.					
222	" 2	I	iS?	12 7 21				4610	
			i	12 9 18					
			F	12 18					
				Malabar.					
223	" 2	I	P _N	12 2 48				6810	
			iP _E	12 2 49					
			eS	12 7 52					
				Malabar.					
224	" 2	I _v	e	14 21 57					
			i	14 22 17					
			F	14 25					
				Malabar.					
225	" 2	I _v	i ₁	14 46 46					
			i	14 47 45					
			F	14 25					
				Malabar.					

DECEMBER.

No.	Date 1923.	Char-acter.	Phase.	Time (Greenwich).	Period in seconds.	Amplitude (half)		Distance of epi-centrum.	Remarks.
						A _E	A _N		
221	Dec. 3	I _v	iP	11 12 32		μ	μ	1000	E. Bali (Minor Sunda I).
			iS	11 14 19					
			F	11 24					
				Malabar.					
222	" 5	III _v	iP _E	11 12 33				950	NE. Menado (N. Celebes).
			S	11 14 12					
			iP	22 58 37					
				Malabar.					
223	" 5	III _v	eS	22 42 22	6.9	427	159	2530	
			M ₁	22 45 52					
			M ₂	22 45 7					
				Malabar.					
224	" 7	I _v	M ₃	22 46 5	6.1	555	326	2440?	
			M ₄	22 48 57					
			F	22 20					
				Malabar.					
225	" 7	I _v	P _E	22 38 40				160	Preanger.
			S?	22 41 34					
			eL	22 45 50					
				Malabar.					
226	" 7	I _v	iP	0 59 51				180	
			iS	1 0 9					
			F	1 9					
				Malabar.					
227	" 7	I	P	0 59 55				180	
			iS	1 0 16					
			e	4 20 27					
				Malabar.					
228	" 7	II _v	F	4 27	6.0	153	391	820	Eastern Java, Bali and Lombok.
			P	25 38 55					
			iP	25 38 59					
				Malabar.					
229	" 8	I	eS?	25 40 5				690	
			M	25 41 55					
			F	0 10					
				Malabar.					
230	" 7	I	P	25 38 26				250	S. Sumatra.
			iP	25 38 27					
			eS	25 39 40					
				Malabar.					
231	" 9	I _v	iS _N	20 59 27				290	
			F	20 50					
			P	20 59 16					
				Malabar.					
232	" 11	I	S	20 59 49				300	C. Java.
			e	15 51 29					
			i	15 32 11					
				Malabar.					
233	" 12	I	F	15 42				300	
			e	2 57 59					
			S	2 58 13					
				Malabar.					
234	" 13	I _v	i _N	10 9 11				180	
			i ₁	10 9 16					
			i ₂	10 10 6					
				Malabar.					
235	" 13	I	F	10 14				180	
			P _N	10 8 53					
			S	10 9 14					
				Malabar.					
236	" 15	I	e	6 56 22					
			F	7 4					

N ^o .	Date 1923.	Char- acter.	Phase.	Time (Greenwich).			Period in seconds.	Amplitude (half).		Distance op epi- centrum.	Remarks.
				h	m	s		A _E	A _N		
250	Dec. 16	I _v	eP _N iS F	5	42	21			90		
				5	42	31					
				5	45						
				Malabar.							
			P	5	42	19			90		
			S	5	42	29					
251	" 19	I _r	eP eS? F	15	44	5			1750?	Menado?	
				15	46	58					
				15	51						
252	" 19	I _r	P S L F	19	6	50			2190	Menado?	
				19	10	24					
				19	16	54					
				19	21						
				Malabar.							
			P	19	6	40			2350		
			S _N	19	10	25					
253	" 19	I _r	eP i F	21	1	57				Menado?	
				21	5	16					
				21	12						
254	" 21	I	i _E i _N F	14	32	31					
				14	35	48					
				14	40						
255	" 22	I	i M F	10	28	53				Troubled by street traffic.	
				10	30,8						
				10	34						
256	" 25	I _v	P iS F	4	14	27			170		
				4	14	47					
				4	19						
				Malabar.							
			P	4	14	42			250		
			S	4	15	8					
257	" 25	I	i _E M F	16	57	44					
				17	0	27					
				17	9						
258	" 27	I	i ₁ i ₂ F	10	38	14					
				10	45	56					
				10	54						
259	" 27	I	i ₁ i ₂ F	14	48	20					
				14	55	45					
				15	1						
240	" 29	II _v	iP S M F	20	45	45	5.2	345	310	220	
				20	46	8					
				20	48	14					
				21	0						
				Malabar.							
			P _E	20	46	5					
241	" 31	I	P F	15	19	26					
				15	24						
242	" 31	I	P _N M F	15	21	41	5.8	124	132		
				15	24	39					
				15	29						
				Malabar.							
									1010?		