

THE
SEISMOLOGICAL
BULLETIN
OF

The Hukuoka Meteorological Observatory

OF

JAPAN

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Constants

Position of Observatory :

Longitude :	130° 25' .4 E
Latitude :	33° 34' .8 N
Height from mean sea level :	4.3 m
Underground : Alluvium.	

Seismographs :

Apparatus	Component	T_0	$\frac{r}{T_0^2}$	V
Omori's Horizontal Seismograph 15kg	E - W	28	0.002	20
Omori's Tromometer 47 kg	N - S	18	0.002	120

Symbols and Notations

1. Phases of the seismogram.

P = First preliminary tremors.

\bar{P} = Individual, or upper first preliminary tremors.

S = Second preliminary tremors.

\bar{S} = Individual, or upper second preliminary tremors.

PS = Waves changed from longitudinal to transverse oscillation, or vice versa, through reflection at the earth's surface.

L = Long waves at the beginning of the surface phase.

M = Greatest motion in the surface phase.

C = Tail or end portion.

F = End of discernible movements.

2. Nature of the motion

i. = Sudden beginning of the motion.

e = Gradual beginning of the motion.

A = Amplitude of the earth's motion in microns.

A_E = E-W component of A.

A_N = N-S component of A.

Period = Time of one complete oscillation.

3. Distance of epicenter.

Δ = Distance of epicenter calculated by prof. Omori's formula. $\Delta = 7.42t$ for the near earthquakes, $\Delta = 6.54t + 720$ for the distant earthquakes, where t is the duration of the preliminary tremor PL.

4. Time used. Greenwich mean civil time is adopted for all determinations.

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
1	Jan. 7	P _N	15	28	25				82	Probably in the Ariake gulf.
		L _N	15	28	36					
		F _N	15	30	20					
2	Jan. 10	P _N	5	54	33				45	
		L _N	5	54	39					
		F _N	5	57	19					
3	Jan. 10	P _E	13	44	39				2584	Distant earthquake.
		L _E	13	49	24					
		F _E	14	24	57					
4	Jan. 12	P _N	8	03	59				282	
		L _N	8	04	37					
		F _N	8	37	33					
5	Jan. 17	P _E	4	09	25				6744	Distant earthquake.
		S _E	4	15	26					
		L _E	4	24	46					
		F _E	5	38	18					
6	Jan. 22	P _E	22	07	44				957	
		L _E	22	09	53					
		M _E	22	10	58	6.5	-22			
		F _E	22	35	49					
7	Jan. 31	P _E	13	29	14				8973	Distant earthquake.
		S _E	13	39	15					
		L _E	13	50	16					
		M _{1E}	13	52	30	23.8	-28			
		M _{2E}	14	02	19	17.1	-23			
F _E	15	25	00							
8	Feb. 5	P _N	22	20	17				304	
		L _N	22	20	58					
		M _N	22	21	05	2.9	+13			
		F _N	22	27	01					
9	Feb. 7	P _N	20	25	02				148	
		L _N	20	25	22					
		M _N	20	25	33					
		F _N	20	29	50					

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
10	Mar. 4	P _E	13	13	06	15.3	-75		3035	Distant earthquake.
		S _E	13	17	28					
		L _E	13	19	00					
		M _E	13	19	56					
		F _E	13	52	57					
11	Mar. 7	P _N	13	58	53				267	
		L _N	13	59	29					
		F _N	14	02	02					
12	Mar. 10	P _N	11	17	03				14	Local shock.
		L _N	11	17	05					
		F _N	11	17	59					
13	Mar. 15	P _N	13	18	52				—	
		eL _N	13	18	54					
		F _N	13	20	01					
14	Mar. 16	P _N	18	36	21				—	
		L		—						
		F _N	13	40	27					
15	Mar. 17	P _N	1	21	03				237	
		L _N	1	21	35					
		F _N	1	24	04					
16	Mar. 31	P _N	15	06	09	< 0.5			59	
		L _N	15	07	17					
		M _N	17	07	18					
		F _N	15	08	11					
17	Mar. 31	P _N	17	04	07				126	
		L _N	17	04	24					
		F _N	17	06	24					
18	April 5	eP	9	58	12				7370	P wave could not be distinguished. Δ doubtful.
		L	10	15	09					
		F	11	27	08					
19	April 17	P _N	15	37	53				111	
		L _N	15	38	08					
		F _N	15	40	24					
20	April 26	P _N	1	13	33				890	
		L _N	1	15	33					

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
21	April 26	M _N	1	15	53	8.4	-82	-233	3977	Distant earthquake.
		F _N	1	33	26					
		P _E	4	08	07	20.0				
		S _E	4	11	33					
		L _E	4	16	25					
		M _E	4	18	11					
F _E	5	48	38							
22	April 27	P		—				—	P phase not distinct.	
		L _N	9	20	45					
		F _N	9	25	46					
23	April 27	P _N	22	59	53			163		
		L _N	23	00	15					
		F _N	23	03	01					
24	April 30	P _N	9	51	13			200		
		L _N	9	51	40					
		F _N	9	55	07					
25	May 2	P _E	11	20	10	10.3	-68		3945	Distant earthquake.
		L _E	11	28	23					
		M _E	11	31	13					
		F _E	11	56	13					
26	May 3	P _N	12	08	09	0.6			89	Near Kumamoto.
		L _N	12	08	21					
		M _N	12	08	22					
		F _N	12	11	11					
27	May 4	P _E	18	10	31	17.8	+68		2904	Distant earthquake.
		S _E	18	14	39					
		L _E	18	16	15					
		M _E	18	18	52					
		F _E	19	57	18					
28	May 5	P _N	22	14	18			82		
		L _N	22	14	29					
		F _N	22	15	46					
29	May 9	P _N	3	30	57			913		
		L _N	3	33	00					
		F _N	3	40	56					

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
30	May 9	eP	13	57	11				—	
		eL	14	04	58					
		F	14	29	25					
31	May 17	P _N	18	52	41				260	
		L _N	18	53	16					
		F _N	18	55	36					
32	May 20	eP	21	46	47				—	L and F phases not distinct.
		L		—						
		F		—						
33	May 22	eF _E	18	01	40				—	
		L _E	18	13	17					
		F _E	18	42	29					
34	June 2	P _E	20	17	24				4291	Distant earthquake.
		S _E	20	23	09					
		L _E	20	26	30					
		M _{1E}	20	27	29	15.7	+25			
		M _{2E}	20	32	07	17.7	+33			
		F _E	21	58	45					
35	June 3	P _E	4	59	31				853	
		L _E	5	01	26					
		F _E	5	26	51					
36	June 5	P		—					—	P phase not distinct.
		L _E	14	06	04					
		M _E	14	08	13	14.0	+23			
		F _E	14	43	27					
37	June 18	P _N	12	18	51				594	
		L _N	12	20	11					
		M _E	12	20	29	2.9		—13		
		F _E	12	29	34					
38	June 20	F		—					—	P phase not distinct.
		L _E	8	48	29					
		F _E	9	06	55					
39	June 27	P _E	14	35	16				4298	Distant earthquake.
		L _E	14	44	23					
		F _E	15	36	26					

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			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
40	June 30	P	—						—	P phase not distinct.
		L _N	12	17	38					
		F _N	12	19	01					
41	July 2	eP _E	13	33	12				7973	All phases could not be distinguished. △ doubtful.
		eL _E	13	51	41					
		eF _E	14	11	24					
42	July 5	P _E	20	22	47				1662	
		L _E	20	25	11					
		F _E	20	49	13					
43	July 12	P _N	4	31	20				89	
		L _N	4	31	32					
		M _N	4	31	32	0.6		+60		
		F _N	4	33	41					
44	July 12	P _E	14	17	04				—	L phase not distinct.
		L	—							
		M _E	14	20	09	6.6		+105		
		F _E	14	37	36					
45	July 13	P	—						—	P phase not distinct.
		L _E	5	09	37					
		M _{1E}	5	14	01	13.7		+25		
		M _{2E}	5	15	34	14.6		-35		
		F _E	7	00	16					
46	July 14	P _N	16	00	09				126	
		L _N	16	00	26					
		F _N	16	02	45					
47	July 17	P _N	5	52	15				104	
		L _N	5	52	29					
		F _N	5	53	44					
48	July 19	P _E	12	47	31				668	
		L _E	12	49	11					
		F _E	13	10	06					
49	Aug 8	P _N	21	07	24				119	
		L _N	21	07	40					
		F _N	21	11	39					
50	Aug 21	P	—					—	P phase not distinct.	

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
51	Aug. 16	eL _E	0	59	36	19.9	-48		3866	Distant earthquake.
		F _E	1	36	20					
		P _E	16	02	23					
		S _E	16	07	08					
		L _E	16	10	24					
		M _E	16	12	42					
52	Aug. 19	F _E	17	18	26					
		P _N	5	33	47				171	
		L _N	5	34	10					
53	Aug. 25	F _N	5	38	00					
		eP _E	19	43	49				2185	Distant earthquake.
		L _E	19	47	33					
54	Aug. 28	F _E	20	13	03					
		P	—	—	—				—	
		L _E	11	14	53					
55	Aug. 29	F _E	11	32	34					
		P _E	16	58	38				2375	Distant earthquake.
		L _E	17	02	51					
56	Sept. 1	F _E	17	40	23					
		P _E	19	19	01				1031	
		L _E	19	21	20					
57	Sept. 4	M _{1E}	19	22	45	24.1	-2675			
		M _{1N}	19	21	44	24.0		> 823		
		M _{2E}	19	25	07	20.0	-2125			
		M _{2N}	19	26	13	18.0		- 700		
		M _{3E}	19	27	42	20.2	+1250			
		M _{3N}	19	30	50	24.0	+708			
		F _E	21	26	23					
		P _E	17	56	12				2224	Distant earthquake.
		L _E	18	00	02					
		M _E	18	01	37	12.7	+43			
58	Sept. 6	F _E	18	32	03					
		P _E	22	15	10				2205	Ditto.
		L _E	22	18	57					
59	Sept. 7	F _E	22	54	56					
		P _N	21	35	54				74	

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	<i>M</i>	<i>M</i>	km.	
60	Sept. 14	LN	21	36	04				1682	
		FN	21	36	47					
		PE	19	34	28					
		LE	19	36	55					
		ME	19	38	50	22.7	+1825			
		MN	19	40	06	14.4		±908		
		FE	21	42	02					
61	Sept. 16	PN	0	34	28				111	
		LN	0	34	43					
		FN	0	36	29					
62	Sept. 16	PE	22	47	36				2303	Distant earthquake.
		SE	22	50	01					
		LE	22	51	38					
		ME	22	53	44	19.2	+275			
		FE	23	59	03					
63	Sept. 17	PE	7	25	52				2132	Ditto.
		SE	7	28	08					
		LE	7	29	28					
		ME	7	32	28	14.1	+200			
		FE		—						
64	Sept. 17	ePE	7	57	21				1818	
		LE	8	00	09					
		FE	9	02	09					
65	Sept. 17	PE	10	00	10				2263	Distant earthquake.
		SE	10	02	34					
		LE	10	04	06					
		ME	10	06	29	14.2	-225			
		FE	10	28	28					
66	Sept. 18	PE	6	22	45				3029	Ditto.
		eLE	6	28	38					
		FN		—						
67	Sept. 28	PE	22	06	33				2185	Ditto.
		LE	22	10	17					
		MN	22	10	45	4.1		-13		
		FE	22	45	43					

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
68	Oct. 5	eP _E	5	21	25				—	
		F _E	5	58	48					
69	Oct. 7	eP _E	0	16	12				2015	Distant earthquake.
		L _E	0	19	30					
		F _E	1	01	25					
70	Oct. 7	P _E	13	40	16				1662	
		L _E	13	42	40					
		F _E	—							
71	Oct. 7	P	—						—	
		L _E	13	48	32					
		F _E	14	11	29					
72	Oct. 14	P _E	3	59	20				1740	
		L _E	4	01	56					
		F _E	4	49	26					
73	Oct. 14	P _N	23	49	45				1031	
		L _N	23	52	04					
	M _{1N}	23	56	11	14.4		+618			
	M _{2N}	23	57	25	13.7		-275			
	15	F _N	0	52	49					
74	Oct. 16	P _E	—						—	
		L _E	—							
		M _E	16	20	36	14.7		+18		
		F _E	16	49	37					
75	Oct. 17	P _E	—						—	
		eL _E	6	57	49					
		M _E	7	00	04	10.4		+28		
		F _E	7	39	15					
76	Oct. 22	P _N	17	47	47				111	
		L _N	17	48	02					
		F _N	17	50	53					
77	Oct. 24	P _E	21	25	43				2205	Distant earthquake.
		L _E	21	29	30					
		M _E	21	32	24	18.6		-250		

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
78	Oct. 27	M _N	21	29	46	8.4		+117	1034	
		F _E	23	25	05					
		P _E	14	25	09					
		L _E	14	27	26					
		M _E	14	29	43					
		F _E	15	23	26	18.3	-183			
79	Nov. 7	eP _E	0	16	55	18.8			-	
		L _E		-						
		M _E	0	33	49					
		F _E	1	20	02					
80	Nov. 11	P _E	4	52	54	25.2			10733	In Chili, South America. A very strong shock was felt at the epicentral regions.
		L _E	5	18	25					
		M _{1E}	5	25	11					
		M _{2E}	5	49	58					
		M _{3E}	5	58	46					
		M _{4E}	6	18	06					
		F _E	9	37	47					
81	Nov. 17	P _E		-		17.8			-	
		L _E		-						
		M _E	12	35	22					
		F _E	13	11	12					
82	Nov. 18	P _E		-					-	
		L _E		-						
		M _E	19	06	23					
		F _E	19	25	14					
83	Nov. 29	eP _E	7	34	50				883	
		eL _E	7	36	49					
		F _E	7	57	09					
84	Dec. 2	P _E	3	49	42	12.0			2375	Distant earthquake.
		S _E	3	52	06					
		L _E	3	53	55					
		M _E	3	56	20					
		F _E	4	50	24					
85	Dec. 6	P _E	14	03	46				3767	Ditto.

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
86	Dec. 7	LE	14	11	32					
		FE	14	42	23					
		PN	7	00	17				89	Near Simabara, Nagasaki prefecture.
		LN	7	00	29					
FN	7	02	14							
87	Dec. 7	PN	7	09	44				—	Ditto.
		LN	—	—	—					
		FN	7	10	17					
88	Dec. 7	PN	7	16	57				89	Ditto.
		LN	7	17	09					
		MN	7	17	11	1.0		+79		
		FN	7	25	22					
89	Dec. 7	PN	7	36	49				—	Ditto.
		LN	—	—	—					
		FN	7	37	19					
90	Dec. 7	PN	16	50	28				82	Ditto.
		LN	16	50	39					
		MN	16	51	32			+983		
		FN	—	—	—					
91	Dec. 7	PN	16	58	16				—	Ditto.
		LN	—	—	—					
		FN	—	—	—					
92	Dec. 7	PN	17	05	08				89	Ditto.
		LN	17	05	20					
		MN	17	05	23	1.0		-42		
		FN	17	07	44					
93	Dec. 7	PN	17	10	47				89	Ditto.
		LN	17	10	59					
		MN	17	11	03	1.0		-83		
		FN	—	—	—					
94	Dec. 7	PN	17	14	37				82	Ditto.
		LN	17	14	48					
		FN	—	—	—					

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			G.	M.	T.		AE	AN		
			h	m	s	s	μ	μ	km.	
95	Dec. 7	P _N	17	16	28				82	Ditto.
		L _N	17	16	39					
		F _N	17	17	49					
96	Dec. 7	P _N	17	20	21				—	Ditto.
		L _N		—						
		F _N		—						
97	Dec. 7	P _N	17	21	03				—	Ditto.
		L _N		—						
		F _N		—						
98	Dec. 7	P _N	17	25	15				—	Ditto.
		L _N		—						
		F _N		—						
99	Dec. 7	P _N	17	26	33				89	Ditto.
		L _N	17	26	45					
		F _N		—						
100	Dec. 7	P _N	17	27	41				—	Ditto.
		L _N		—						
		F _N		—						
101	Dec. 7	P _N	17	37	19				—	Ditto.
		L _N		—						
		F _N	17	38	24					
102	Dec. 7	P _N	18	15	21				82	Ditto.
		L _N	18	15	32					
		F _N	18	15	57					
103	Dec. 7	P _N	18	17	40				82	Ditto.
		L _N	18	17	51					
		F _N	18	18	47					
104	Dec. 7	P _N	18	29	48				82	Ditto.
		L _N	18	29	59					
		F _N	18	30	47					
105	Dec. 7	P _N	18	36	58				82	Ditto.
		L _N	18	37	09					
		M _N	18	37	10	0.5	—24			
		F _N	18	40	40					

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		AE	AN		
			h	m	s	s	μ	μ	km.	
106	Dec. 7	P _N	18	45	28				89	Near Simabara, Nagasaki Prefecture
		L _N	18	45	40					
		F _N	18	46	03					
107	Dec. 7	P _N	18	46	59				89	Ditto.
		L _N	18	47	11					
		F _N	18	47	25					
108	Dec. 7	P _N	18	50	11				82	Ditto.
		L _N	18	50	22					
		F _N	18	50	47					
109	Dec. 7	P _N	18	58	02				89	Ditto.
		L _N	18	58	14					
		F _N	18	58	55					
110	Dec. 7	P _N	19	21	57				89	Ditto.
		L _N	19	22	09					
		F _N	19	23	53					
111	Dec. 7	P _N	20	05	33				89	Ditto.
		L _N	20	05	45					
		F _N								
112	Dec. 7	P _N	20	07	08				74	Ditto. (Slight shock felt at Hukuoka.)
		L _N	20	07	18					
		M _E	20	07	35	0.5	-65			
		M _N	20	07	26	0.5	-83			
		F _N	20	13	01					
113	Dec. 7	P _N	20	18	51				89	Ditto.
		L _N	20	19	03					
		F _N	20	19	55					
114	Dec. 7	P							—	Ditto.
		L								
		F	20	20	58					
115	Dec. 7	P _N	20	27	58				89	Ditto.
		L _N	20	28	10					
		F _N	20	30	03					
116	Dec. 7	P _N	20	33	33				—	Ditto.

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
117	Dec. 7	L		—						
		F _N	20	34	45					
		P _N	20	37	40				—	Ditto.
118	Dec. 7	L		—						
		F _N	20	39	03					
		P _N	20	45	03				—	Ditto.
119	Dec. 7	L		—						
		F _N	20	45	45					
		P _N	20	59	22				82	Ditto.
120	Dec. 7	L _N	20	59	33					
		F _N	21	00	10					
		P _N	21	10	34				—	Ditto.
121	Dec. 7	L		—						
		F _N	21	11	07					
		P _N	21	26	05				82	Ditto.
122	Dec. 7	L _N	21	26	16					
		F _N	21	27	55					
		P _N	21	50	07				89	Ditto.
123	Dec. 7	L _N	21	50	19					
		F _N	21	51	19					
		P _N	21	57	59				89	Ditto.
124	Dec. 7	L _N	21	58	11					
		F _N	22	00	30					
		P _N	22	14	13				—	Ditto.
125	Dec. 7	L		—						
		F _N	22	14	48					
		P _N	22	21	41				82	Ditto.
		L _N	22	21	52					(Slight shock felt at Hukuoka)
126	Dec. 7	M _N	22	21	59	0.5		—333		
		F _N	22	30	11					
		P _N	22	40	34				—	Ditto.
		L		—						

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
127	Dec. 7	FN	22	42	10	0.5		-33	89	Near Simabara, Nagasaki prefecture.
		PN	22	48	51					
		LN	22	49	03					
		MN	22	49	13					
		FN	22	52	42					
128	Dec. 7	PN	22	56	57	0.5		-13	89	Ditto.
		LN	22	57	09					
		MN	22	57	12					
		F								
129	Dec. 7	PN	22	57	57				82	Ditto.
		LN	22	58	08					
		FN	22	58	24					
130	Dec. 7	PN	23	16	54				-	Ditto.
		L								
		FN	23	17	33					
131	Dec. 7	PN	23	44	51				89	Ditto.
		LN	23	45	03					
		FN	23	46	07					
132	Dec. 7	PN	23	51	09				89	Ditto.
		LN	23	51	21					
		FN	23	52	31					
133	Dec. 8	PN	1	14	33				89	Ditto.
		LN	1	14	45					
		FN	1	15	19					
134	Dec. 8	PN	1	17	18				82	Ditto.
		LN	1	17	29					
		FN	1	18	23					
135	Dec. 8	PE	2	02	27	3.0	+2070		82	Ditto. (Slight shock felt at Hukuoka)
		LE	2	02	38					
		ME	2	02	41					
		FE	2	27	47					
136	Dec. 8	PN	2	13	17				82	Ditto.

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		AE	AN		
			h	m	s	s	μ	μ	km.	
137	Dec. 8	LN	2	13	28					
		FN	2	21	01					
		P		—					—	Ditto.
		LN	2	27	11					
138	Dec. 8	FN	2	27	51					
		PN	2	40	41				82	Ditto.
		LN	2	40	52					
139	Dec. 8	FN	2	41	45					
		PN	2	44	45				89	Ditto.
		LN	2	44	57					
140	Dec. 8	F		—						
		PN	2	46	09				89	Ditto.
		LN	2	46	21					
		MN	2	46	25	0.5		-79		
141	Dec. 8	FN	2	52	35					
		PN	3	17	37				89	Ditto.
		LN	3	17	49					
		MN	3	17	53	0.5		+33		
142	Dec. 8	FN	3	20	30					
		P		—					—	Ditto.
		LN	3	35	51					
143	Dec. 8	FN	3	36	29					
		PN	3	43	55				89	Ditto.
		LN	3	44	07					
144	Dec. 8	F		—						
		PN	3	45	06				82	Ditto.
		LN	3	45	17					
		MN	3	45	18	0.5		-15		
145	Dec. 8	F		—						
		PN	3	47	29				82	Ditto.
		LN	3	47	40					
		F		—						

No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		AE	AN		
			h	m	s	s	μ	μ	km.	
146	Dec. 8	P _N	3	47	59				89	Near Simabara, Nagasaki prefecture.
		L _N	3	48	11					
		F _N	3	49	55					
147	Dec. 8	P _N	4	57	12				82	Ditto.
		L _N	4	57	23					
		F _N	4	58	32					
148	Dec. 8	P		—					—	Ditto.
		L _N	4	59	48					
		F _N	5	00	30					
149	Dec. 8	P _N	5	17	00				82	Ditto. (Slight shock felt at Hukuoka.)
		L _N	5	17	11					
		M _E	5	17	13	0.5	+350			
		M _{1N}	5	17	15	0.5		+500		
		M _{2N}	5	17	31	0.5		-375		
		F _N	5	26	23					
150	Dec. 8	P		—					—	Ditto.
		L _N	5	34	10					
		F _N	5	34	51					
151	Dec. 8	P _N	5	43	35				89	Ditto.
		L _N	5	43	47					
		F _N	5	46	12					
152	Dec. 8	P _N	5	46	39				89	Ditto.
		L _N	5	46	51					
		M _N	5	46	53	0.5		-22		
		F _N	5	48	53					
153	Dec. 8	P _N	6	45	05				82	Ditto.
		L _N	6	45	16					
		M _E	6	45	19	0.5	-68			
		M _N	6	45	26	0.5		+117		
		F _N	6	53	51					
154	Dec. 8	P _N	7	14	21				89	Ditto.
		L _N	7	14	33					
		F		—						

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
155	Dec. 8	P _N	7	15	32	0.5	—	—	82	Ditto.
		L _N	7	15	43					
		M _N	7	16	22					
		F	—	—	—					
156	Dec. 8	P	—	—	—	—	—	—	82	Ditto.
		L _N	7	21	40					
		F _N	7	22	36					
157	Dec. 8	P _N	9	58	18	—	—	—	82	Ditto.
		L _N	9	58	29					
		F _N	9	59	39					
158	Dec. 8	P _N	12	01	03	—	—	—	82	Ditto.
		L _N	12	01	14					
		F _N	12	02	32					
159	Dec. 8	P _N	13	33	26	—	—	—	82	Ditto.
		L _N	13	33	37					
		F _N	13	35	05					
160	Dec. 8	P _N	13	39	09	1.0	—100	—	89	Ditto. (Slight shock felt at Hukuoka.)
		L _N	13	39	21					
		M _E	13	39	22					
		M _N	13	39	23					
		F _N	13	46	05					
161	Dec. 8	P _N	14	38	03	—	—	—	89	Ditto.
		S _N	14	38	24					
		L	—	—	—					
		F _N	14	42	20					
162	Dec. 9	P _N	15	32	16	—	—	—	89	Near Simabara, Nagasaki prefecture.
		L _N	15	32	28					
		F _N	15	32	53					
163	Dec. 9	P _N	16	02	05	—	—	—	89	Ditto.
		L _N	16	02	17					
		F _N	16	02	58					
164	Dec. 9	P _N	18	20	06	—	—	—	89	Ditto.
		L _N	18	20	18					

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
165	Dec. 8	F _N	18	20	53				89	Near Simabara, Nagasaki prefecture.
		P _N	19	58	51					
		L _N	19	59	03					
		F _N	20	00	30					
166	Dec. 8	P _N	20	18	20				82	Ditto.
		L _N	20	18	31					
		F		—						
167	Dec. 8	P _N	20	19	15				82	Ditto. (Slight shock felt at Hukuoka.)
		L _N	20	19	26					
		M _E	20	19	29	1.0	-108			
		M _N	20	19	30	0.5		-75		
		F _N	20	24	55					
168	Dec. 8	P _N	21	56	10				82	Ditto.
		L _N	21	56	21					
		F _N	21	58	37					
169	Dec. 8	P _E	22	36	00				1688	
		L _E	22	38	28					
		M _E	22	40	36	20.0	-138			
		F _E	23	07	11					
170	Dec. 9	P _N	1	56	33				82	Near Simabara, Nagasaki prefecture.
		L _N	1	56	44					
		F _N	1	57	45					
171	Dec.	P _N	3	12	11				89	Ditto.
		L _N	3	12	23					
		M _N	3	12	25	0.5		-27		
		F _N	3	17	09					
172	Dec. 9	P _N	4	03	07				82	Ditto.
		L _N	4	03	18					
		M _N	4	03	23	0.5		+22		
		F _N	4	08	20					
173	Dec. 9	P _N	12	27	07				82	Ditto.
		L _N	12	27	18					
		F _N	12	28	36					

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
174	Dec. 9	P	—						—	Ditto.
		L _N	13	37	23					
		F _N	13	38	23					
175	Dec. 9	P _N	16	27	28				82	Ditto.
		L _N	16	27	39					
		F _N	16	28	21					
176	Dec. 9	P _N	22	53	49				89	Ditto.
		L _N	22	54	01					
		M _N	22	54	15	0.5		-16		
		F _N	22	55	45					
177	Dec. 10	P _N	0	40	26				89	Ditto.
		M _N	0	40	38					
		F _N	0	41	34					
178	Dec. 10	P _N	8	51	10				89	Ditto.
		L _N	8	51	22					
		F _N	8	53	39					
179	Dec. 10	P _N	16	49	46				82	Ditto.
		L _N	16	49	57					
		M _E	16	50	01	0.7	+55			
		M _N	16	50	00	0.5		-21		
		F _N		—						
180	Dec. 10	P	—						—	Ditto.
		L _N	16	52	45					
		F _N	16	56	48					
181	Dec. 10	P	—						—	Ditto.
		L _N	17	28	40					
		F _N	17	29	09					
182	Dec. 10	P _N	17	29	47				89	Ditto.
		L _N	17	29	59					
		F _N	17	31	44					
183	Dec. 10	P _N	17	37	19				89	Ditto.
		L _N	17	37	31					
		M _N	17	37	40	0.5		-20		

No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
184	Dec. 11	FN	17	42	57	0.5		-21	89	Near Simabara, Nagasaki prefecture.
		PN	6	31	20					
		LN	6	31	32					
		MN	6	31	36					
		FN	6	34	48					
185	Dec. 12	PN	14	34	27				89	Ditto.
		LN	14	34	39					
		FN	14	36	34					
186	Dec. 14	PN	17	03	27				89	Ditto.
		LN	17	03	39					
		FN	17	06	03					
187	Dec. 14	PN	17	06	40				89	Ditto.
		LN	17	06	52					
		FN	17	07	46					
188	Dec. 15	PN	14	48	39				89	Ditto.
		LN	14	48	51					
		FN	14	50	18					
189	Dec. 15	PN	19	46	40				89	Ditto.
		LN	19	46	52					
		FN	19	48	13					
190	Dec. 16	eP _E	10	44	40				1904	Distant earthquake.
		eL _E	10	47	41					
		F _E	10	58	43					
191	Dec. 16	PN	11	39	46				82	Near Simabara, Nagasaki prefecture.
		LN	11	39	57					
		FN	11	42	38					
192	Dec. 16	PN	13	33	04				82	Ditto.
		LN	13	33	15					
		FN	13	35	32					
193	Dec. 18	PN	22	30	06				601	
		LN	22	31	27					
		FN	22	38	15					

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No.	Date	Phase	Time			Period	Amplitude		△	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
194	Dec. 19	P		—					—	Near Simabara, Nagasaki prefecture.
		L _N	21	24	58					
		F _N	21	26	05					
195	Dec. 21	P _N	1	11	56				74	Ditto.
		L _N	1	12	06					
		F _N	1	12	56					
196	Dec. 21	P _N	15	27	48				208	
		L _N	15	28	16					
		F _N	15	29	38					
197	Dec. 21	P _N	18	48	47				82	Near Simabara, Nagasaki prefecture.
		L _N	18	48	58					
		F		—						
198	Dec. 21	P _N	18	49	30				82	Ditto.
		L _N	18	49	41					
		M _N	18	49	43	0.5		+10		
		F _N	18	51	33					
199	Dec. 22	P		—					—	Ditto.
		L _N	0	13	57					
		F _N	0	14	35					
200	Dec. 22	P _N	9	10	18				82	Ditto.
		L _N	9	10	29					
		F _N	9	12	28					
201	Dec. 23	P		—					—	Ditto.
		L _N	4	07	20					
		F _N	4	08	25					
202	Dec. 23	P		—					—	Ditto.
		L _N	4	09	23					
		F _N	4	10	01					
203	Dec. 24	P		—					—	
		L _E	0	24	02					
		F _E	0	44	07					
204	Dec. 27	P _N	16	41	37				89	Near Simabara,

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No.	Date	Phase	Time			Period	Amplitude		Δ	Remarks
			G.	M.	T.		A _E	A _N		
			h	m	s	s	μ	μ	km.	
205	Dec. 28	LN	16	41	49					Nagasaki prefecture.
		FN	16	44	02					
		P		—					—	Ditto.
		LN	23	09	14					
		F		—						
206	Dec. 31	P _E	7	24	34				2839	Distant earthquake.
		L _E	7	29	58					
		M _{1E}	7	31	03	24.4	+625			
		M _{1N}	7	30	47	25.0		+67		
		M _{2E}	7	34	12	20.0	+655			
		M _{2N}	7	34	09	17.0		-68		
		F _E	9	50	58					