From 2nd to 24th January, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.6	0.021	3.5	70
	N—S	"	"	4.5	0.025	3.2	70
Wiechert	U—D	80	"	4.5	0.030	2.5	70
Ômori	E—W	16	Magnetic	18.7	0.008	2.8	20
Ômori	N—S	16	"	19.6	0.004	4.5	20
Ômori	N—S	20		2.9	0.116		50
	E—W	20		2.9	0.163		50
C. M. O.	NE—SW	2.3	Magnetic	3.9	0.097	2.3	2
	NW—SE	2.3	"	3.9	0.055	1.6	2
	U—D	2.3	"	4.8	0.030	1.7	2

No.	Date	Phase	Time 135° E	Period	Amplitude AZ	Amplitude AE	Amplitude AN	Δ	Remark
			h. m. s.	s.	μ	μ	μ	km.	
1	2 Jan.	P	8 55 07.8	3.3	−4.3	−3.6	−5.7	1369	*Eastern cape of Kwarenlɔ.*
		S	" 57 32.0	8.3					
		P_1?	" 59 34.0	F3.5 N2.1		−3.5	−5.0		
		S_1?	9 01 51 2	9.3					
		F	" 12 54.0						
2	4 "	$\overline{P}$	2 59 22.9		+2.9	−2.0	+2.0	28	*Local shock. Felt slightly.*
		$\overline{S}$	" " 26.6						
		F	" " 50.6						
3	13 "	P	5 40 36.6						
		S?	" 45 50.6					3455?	*Direction of Kamchatka.*
		F	" 49 28.0						
4	14 "	$\overline{P}$	0 20 56.5					16	*Local shock.*
		$\overline{S}$	" " 58.7						
		F	" 21 12.5						
5	15 "	P′	11 10 16.0				about	150°	*Mexico.*
		PPP?	" 19 54.7						
		S′	" 26 15.0						
		L	" 37 20.0						
		F	12 37 20.0						
6	" "	$\overline{P}$	22 39 04.4		− 2	+ 6	+ 1	67	*Mouth of R. Sirakawa, Kumamoto Prefecture.*
		$\overline{S}$	" " 13.4		+10	−23	−29		
		C	" " 41.9						
		F	" 44 18.3						
7	16 "	P	6 02 52.5	5.0	+ 1	+ 2	+ 4	592	*Off the NE coast of Naha.*
		Sz	" 03 57 7	5.5	+14				
		SNE	" " 59.7	5.5		−31	−29		
		MN	" 05 03.7	5.0			−350		
		ME	" " 04.5	5.0		+286			
		MN	" " 29.0	5.0			−390		
		ME	" " 29.5	5.0		+223			
		M	" " 36.5	5.0		−222	+430		
		ME	" 06 13.9	6.0		+306			
		MN	" " 17.7	6.0			+433		
		C	" 13 25.5						
		F	" 30 00.0						
8	" "	P	10 53 31.3					—	*Neighbourhood of Is. Yaku.*
		F	" 57 15.7						
9	17 "	$\overline{P}$	11 52 32.7					13	*Local shock.*
		$\overline{S}$	" " 34.5						
		F	" " 51.5						
10	" "	P	21 31 50.4					—	*Tidiwa Bay.*
		F	" 35 52.7						
11	24 "	P	22 46 13.0					2569	*Direction of Phylippine Islands.*
		S	" 50 23.6						
		F	23 14 00.0						

From 28th to 29th January, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					Az	Ae	An		
			h. m. s.	s.	μ	μ	μ	km.	
12	28 „	P	5 15 24.0					3295	*South Ocean.*
		S	„ 20 28.0	17.7			+230		
		L	„ 24 34.0	27.2		+200			
		M	„ 26 57.0	16.4		−2030			
		M	„ 28 29.0	16.4			−1765		
		F	6 50 —						
13	29 „	P	6 28 35.7					3063	*Direction of Karoline Islands.*
		S	„ 33 23.2						
		L	„ 36 34.7						
		F	7 28 50.0						
14	„ „	P	11 54 47.4					—	*Neighbourhood of Is. Yakusima.*
		F	„ 57 50.0						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ϵ	V
Wiechert	E—W	200	Air	4.1	0.023	3.0	86
	N—S	"	"	4.1	0.025	2.5	86
Wiechert	U—D	80	"	4.7	0.026	2.5	94
Ômori	E—W	16	Magnetic	18.7	0.008	2.8	20
Ômori	N—S	16	"	19.6	0.004	4.5	20
Ômori	N—S	20		2.9	0.116		50
	E—W	20		2.9	0.163		50
C. M. O.	NE—SW	2.3	Magnetic	3.9	0.097	2.3	2
	NW—SE	2.3	"	3.9	0.055	1.6	2
	U—D	2.3	"	4.8	0.030	1.7	2

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remark
			h. m. s.	s.	μ	μ	μ	km.	
15	3 Feb.	P	7 59 15.0					9195	*New Zealand.*
		S	8 09 35.5						
		L	" 19 01.1						
		F	9 17 —						
16	9 "	P	2 52 31.0	0.4	+2.1	+1.4	+1.6	23	*Local shock.*
		S	" " 34.1	0.4	−1.4	−2.3	+1.2		
		F	" 53 04.0						
17	10 "	e	10 34 25						*Distant earthquake.*
		F	11 00 55						
18	" "	P	15 42 54.2	1.6	−2.4	−0.8	−2.2	5724	*Direction of Phylippine Islands.*
		S?	" 50 15.9						
		L	16 01 06.7						
		Me	" 02 26.1	19.4		−9	+7		
		Mz	" 05 13.1	17.9	−5				
		Mn	" 06 02.2	16.0			+9		
		Me	" 07 37.0	15.2		+8			
		C	" 16 11.7						
		F	" 30 —						
19	12 "	P	2 09 00 0						*Naze.*
		F	" 12 40.0						
20	" "	P	14 52 24.0						*Distant earthquake.*
		F	15 19 10.0						
21	13 "	P	9 43 23.1	3.0	+1.1	+1.1	+2.2	1129	*Off the NE coast of Kwarenkō, Formosa.*
		S,M	" 45 24.0	6.3	−5	+18	−17		
		F	" 58 11.0						
22	" "	P	10 39 50.0					9160	*New Zealand.*
		S?	" 50 08.5						
		F	11 49 00.0						
23	17 "	P	3 51 57.4					1786	*Neighbourhood of Uraga. (Remarkable)*
		S	" 55 01.0	3.3		+5			
		F	4 07 09.0						
24	20 "	P	2 48 50.0					5420	*Direction of South Ocean.*
		S?	" 55 55.0						
		F	3 23 50.0						
25	" "	P	14 36 10.0	2.1	+100	−39	−122	1245	*Northern part of Japan Sea. (Remarkable)*
		Mp	" " 12.5	2.6	−182	+121	+226		
		S	" 38 22.5	4.9		+8			
		Ms	" " 36.0	4.6	−100	−85	+244		
		C	" 40 16.0						
		F	15 06 20.0						
26	26 "	P	5 30 39.4					236	*Off the mouth of R. Gokase, Miyazaki Prefecture.*
		S	" 31 11.2						
		F	" 35 00						
27	27 "	P	18 43 54.8					3230	*Direction of Phylippine Islands.*
		S	" 48 53.8						
		F	19 04 44						
28	28 "	eL	11 42 42.5						*Naze.*
		F	" 51 42.5						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.0	0.025	2.7	141
	N—S	"	"	4.0	0.026	2.8	127
Wiechert	U—D	80	"	4.2	0.044	2.1	64
Ômori	E—W	16	Magnetic	18.7	0.008	2.8	20
Ômori	N—S	16	"	19.6	0.004	4.5	20
Ômori	N—S	20		2.9	0.116		50
	E—W	20		2.9	0 163		50
C. M. O.	NE—SW	2.3	Magnetic	3.9	0.097	2.3	2
	NW—SE	2.3	"	3.9	0.055	1.6	2
	U—D	2.3	"	4.8	0.030	1.7	2

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude AE	Amplitude AN	Δ	Remark
			h. m. s.	s.	μ	μ	μ	km.	
29	1 Mar.	eP	23 26 42.0					1760	*Off the SW coast of Is. Risiri, Hokkaido.*
		eS	" 29 43.0						
		F	" 31 0						
30	2 "	eP	11 29 16.4					7142	*Distant earthquake.*
		eS?	" 37 53.0						
		F	" 43 —						
31	5 "	$\overline{P}$	10 51 21.3					16	*Local shock.*
		$\overline{S}$	" " 23.5						
		F	" " 31.5						
32	7 "	e	1 17 28					—	*After shock of the great earthquake of Northern Idu.?*
		F	" 19 30						
33	" "	e	1 57 44.0					—	*Ditto.*
		F	2 00 —						
34	9 "	ePN	12 51 53.4					1827	*Off E by N of the mouth of R. Umabuti. (Remarkable)*
		SN	" 55 01.1	7.0			+24		
		MN	" 56 35.8	4.1 17.7			+82		
		C	" 58 58.7						
		F	13 33 —						
35	11 "	eP	21 30 21.2					1650	*Distant earthquake.*
		PR_1	" " 27.3	EN 4.6 Z 1.8	—4.7	+3.2	−3.9		
		PR_2	" " 37.0	3.1		+3.2	−3.9		
		S	" 33 12.2	4.3		−0.7	−4.3		
		L	" 34 21.6	23.4		+7	−6		
		M	" 38 01.4	15.0		+7	−6		
		C	" 40 10.2						
		F	22 02 30						
36	12 "	eP	19 44 23.3					1551	*Ditto.*
		eS	" 47 05.4						
		eL	" " 36.1						
		F	20 10 10						
37	13 "	eP	4. 12 40.6					1759	*Ditto.*
		eS	" 15 41.5						
		F	" 24 30						
38	17 "	P	18 46 37.5	1.6	—1.9	+0.7	−1.0	175	*Ariake Bay, Kagosima Prefecture.*
		S	" 47 01.0	1.5		+10.5	+6.3		
		M	" " 03.3	3.3		—15.6	+10.0		
		C	" " 18.5						
		F	" 49 48.5						
39	19 "	P	5 19 22.3					2843	*Distant earthquake.*
		S?	" 23 53.6						
		F	" 55 20						

From 19th to 30th March, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					AZ	AE	AN		
			h. m. s.	s.	μ	μ	μ	km.	
40	19 Mar.	eP	15 28 58.6	4.2	—1.5	—0.7	—2.8	1847	*Distant earthquake.*
		PR_1	» 29 10.9	5.4		—2.1	—11.8		
		PR_2	» » 16.0	4.9		—2.8	—23.6		
		S	» 32 08.3	3.2	+5	+10	—9		
		M	» » 16.5	5.9		+15	—30		
		M	» » 36.2	3.5		—17	+24		
		L	» 36 24.2	21.4					
		C	» 41 10						
		F	13 00 10						
41	21 »	P	13 59 50.5	0.3	+3.0	+0.7	—0.8	19	*Tidiwa Bay.*
		S	» » 53.0	0.4	—6.9	—5.0	—12.2		
		F	14 00 31.0						
42	25 »	P	17 32 41.3	0.4	+1.6	—0.2?	+0.5?	19	*Ditto.*
		S	» » 43.8	0.6		—1.5	+1.6		
		F	» 33 51.7						
43	28 »	eP	21 46 05.8			—0.1	+0.5	4041	*Distant earthquake.*
		S	» 51 55.4	3.4		—4.6	+7.9		
		SS?	» 52 18.3	7.7		+14.2	—21.2		
		eL	» 58 58.7						
		F	22 23 01.5						
44	30 »	P	2 55 15.3					1907?	*Off the WSW coast of Kusiro. (Remarkable)*
		S	» 58 30.0?						
		F	3 10 21.5						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	5.5	0.009	3.5	71
	N—S	"	"	4.7	0.014	2.9	72
Wiechert	U—D	80	"	4.5	0.038	2.7	68
Ômori	E—W	16	Magnetic	19.0	0.006	3.0	20
Ômori	N—S	16	"	20.0	0.004	2.9	20
Ômori	N—S	20		2.9	0.116		50
	E—W	20		2.9	0.163		50
C. M. O.	NE—SW	2.3	Magnetic	3.3	0.008	2.0	2
	NW—SE	2.3	"	3.8	0.024	1.3	2
	U—D	2.3	"	4.9	0.001	1.4	2

No.	Date	Phase	Time 135° E	Period	Amplitude AZ	Amplitude AE	Amplitude AN	Δ	Remark
			h. m. s.	s.	μ	μ	μ	km.	
45	10 Apr.	P	8 04 46					1640	*Nemuro Channel. (Remakable) Time is uncertain.*
		S	" 07 36						
		F	" 15 21						
46	19 "	ePN	11 32 45.9					343	*Off the WSW coast of Is Yaku. (Rather remarkable)*
		PEN	" " 57.9			+	+3		
		PZ	" " 58.2	1.8	—3				
		SEN	" 33 32.1	4.6		+11			
		SZ	" " 33.7	4.1	—13				
		ME	" " 49.4	3.2		—79			
		ME	" 34 10.2	5.0		—64			
		MZ	" " 24.1	10.3	—34				
		MN	" " 29.2	8.9			+36		
		MN	" " 44.8	6.7			+43		
		ME	" " 44.8	7.0		—40			
		c	" 35 20.0						
		F	" 55 20.0						
47	21 "	iPEN	9 03 46.4	1.2		—3.5	—7.0	739	*Central part of Japan Sea. (Remarkable)*
		iPZ	" " "	1.5	+8.8				
		eSEN	" 05 07.3	3.9		+4.2	—1.4		
		eSZ	" " 08.5	2.2	+3.0				
		F	" 12 20						
48	25 "	P	2 30 39.4	3.6	+1.4	—2.1	+0.7	4781	*Distant earthquake.*
		eSE	" 37 09.7	7.0					
		eLN	" 41 34.0	10.0			—3.5		
		F	3 05 —						
49	28 "	iPZ	2 01 30.8	2.2	+1.7			7528	*Ditto.*
		eSEN	" 10 27.2						
		eLE	" 28 26.5						
		F	22 40 18.2						
50	" "	P	14 43 44.0					122	*Neighbourhood of Kuziū, Oita prefecture.*
		S	" 44 00.4						
		F	" 46 04.0						
51	" "	P	15 07 02.2					117	*Ditto.*
		S	" " 18.0						
		F	" 09 09.0						
52	" "	P	15 32 20.4					116	*Ditto.*
		S	" " 36.1						
		F	" 33 19.0						
53	" "	P	17 47 47.9					110	*Ditto.*
		S	" 48 02.7						
		F	" 50 19.0						
54	29 "	e	14 00 00					—	*Unknown.*
		F	16 00 20						
55	30 "	eP	11 46 58.0					89	*Neighbourhood of R. Komenotu, Kagosima prefecture.*
		P	" " 59.4						
		S	" 47 10.0	0.6		+0.4	—1.6		
		F	" " 45.5	0.6			+3		

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.3	0.012	2.7	76
	N—S	"	"	4.6	0.013	2.6	76
Wiechert	U—D	80	"	4.5	0.048	2.4	63
Ômori	E—W	16	Magnetic	19.0	0.006	3.0	20
Ômori	N—S	16	"	20.0	0.004	2.9	20
Ômori	N—S	20		2.9	0.116		50
	E—W	20		2.9	0 163		50
C. M. O.	NE—SW	2.3	Magnetic	3.3	0.008	2.0	2
	NW—SE	2.3	"	3.8	0.024	1.3	2
	U—D	2.3	"	4.9	0.001	1.4	2

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remark
			h. m. s.	s.	μ	μ	μ	km.	
56	12 May	P	10 42 55.6			—0,5	—1.0	2976	*Distant earthquake.*
		S	" 47 37.0						
		F	" 53 37.0						
57	14 "	P	8 05 13.3					680	*Off the NE coast of Is. Okinawa.*
		S	" 06 28.0						
		F	" 17 38.5						
58	20 "	eP	11 41 02.6					?	*Distant earthquake.*
		eS?	" 55 27.4						
		eL	12 11 14.0						
		C	" 37 44.0						
		F	" 51 44.0						
59	23 "	P	8 22 13.2					25	*Local shock*
		S	" " 16.6						
		F	" " 44.0						
60	24 "	P	9 18 09.5					2586	*Direction of Indian China.*
		S	" 22 21.2						
		F	" 35 48.0						
61	29 "	iP	1 18 36.0					936	*Away to the SSE coast of Siomisaki.*
		eS	" 20 17.6						
		F	" 23 23.8						

No. 6 From 2nd to 30th June, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.6	0.010	3.8	76
	N—S	"	"	4.6	0.021	2.5	76
Wiechert	U—D	80	"	4.7	0.044	2.4	60
Ômori	E—W	16	Magnetic	19.0	0.006	3.0	20
Ômori	N—S	16	"	20.0	0.004	2.9	20
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic	3.3	0.008	2.0	2
	NW—SE	2.3	"	3.8	0.024	1.3	2
	U—D	2.3	"	4.9	0.001	1.4	2

No.	Date	Phase	Time 135° E	Period	Amplitude AZ	Amplitude AE	Amplitude AN	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
62	2 June	P	11 39 35.5					707	*Middle valley of R. Masuda, Gihu Prefecture Deep seated. (Remarkable)*
		S	" 40 53.2	7.2		+6.6	—13.1		
		M	" 41 31.3	5.5		+42.1	—35.5		
		C	" 42 34.5						
		F	" 56 33.5						
63	4 "	ep	18 56 18.5					865	*Unknown.*
		S	" 57 43.0	5.5	—2.0	+1.6	—2.6		
		F	19 10 01.0						
64	9 "	eP	14 00 10.0					1120	*Off the E coast of the mouth of R. Kuzi, Ibaragi Prefecture. (Remarkable)*
		eS	" 12 10.0						
		F	" 19 05.0						
65	11 "	eP	15 18 32.6					784	*Eastern part of the foot of Mt. Huzi, (Remarkable)*
		eS	" 19 58.0						
		M	" 20 41.3	3.0		+5.3	—17.1		
		C	" 22 08.0						
		F	" 27 08.0						
66	17 "	P	21 11 51.1			—1.2		966	*Middle valley of R. Sagami. (Remarkable)*
		S	" 13 35.7						
		M_1EN	" 14 25.1	4.2		—42	+60		
		M_2E	" " 44.4	5.2		+54			
		M_2N	" " 45.3	5.2			—49		
		C	" 15 17.1						
		F	" 33 11						
67	23 "	P	15 17 32.7	2.8	+1.5	—2.0	—1.3	1156?	*Kasima Nada. (Remarkable)*
		S?	" 19 36 3						
		MN	" 20 37.7	6.6			—51		
		MF	" " 43.4	6.3		+46			
		C	" 22 16.0						
		F	" 38 16.0						
68	29 "	P	1 09 51.8					202	*Off the Cape Sata, Kagosima Prefecture.*
		S	" 10 19 0						
		F	" 14 22.4						
69	30 "	P	1 44 48.7	1.9	—30.2	+13.2	+4.6	660	*Kumano Nada Deep seated. (Rather Remarkable)*
		S	" 46 00.7	4.6	—4.8	+14.5	—11.8		
		M	" " 07.3	4.6	—34.8	+65.8	+12.5		
		F	" 56 23.6						

No. 7 From 1st to 31st July, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.2	0.012	4.3	78
	N—S	"	"	4.7	0.008	2.8	75
Wiechert	U—D	80	"	4.4	0.051	2.2	69
Ômori	E—W	16	Magnetic	20.0	0.005	3.0	20
Ômori	N—S	16	"	20.0	0.006	2.6	20
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic	3.3	0.008	2.0	2
	NW—SE	2.3	"	3.8	0.024	1.3	2
	U—D	2.3	"	4.9	0.001	1.4	2

No.	Date	Phase	Time 135° E			Period	Amplitude			Δ	Remarks
							AZ	AE	AN		
			h.	m.	s.	s.	μ	μ	μ	km.	
70	10 July.	eP	22	12	57.5					1390	*Northern part af Kwiûkwrigahama. (Rather remarkable)*
		eS	"	15	23.5						
		F	"	18	57.5						
71	13 "	P	1	50	11.3	2.4		+1.3	+4.0	2339	*Distant earthguake.*
		eS	"	54	03.2	6.0			+10.5		
		eL	"	56	45.4	15.4		+11.8	−7.9		
		M	"	57	51.5	12.4					
		F	2	13	49.7						
72	16 "	eP	1	32	58.0					9795?	*Ditto.*
		eS?	"	43	47.0						
		F	"	55	55.0						
73	18 "	P	20	30	03.6	3.5	+4.5	−2.0	−2.6	3254	*Ditto.*
		S	"	35	04.5	4.8			−2.0		
		F	"	43	57.9						
74	23 "	eP	23	28	52.1	3.4	−1.9	+1.3	−2.0	4434	*Sauth Ocean.*
		eS	"	35	03.8	4.8					
		F	"	44	08.3						

No. 8 From 7th to 23rd August, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	3.9	0.005	2.7	78
	N—S	"	"	4.6	0.005	2.9	76
Wiechert	U—D	80	"	4.2	0.073	4.2	82
Ômori	E—W	16	Magnetic				
Ômori	N—S	16	"				
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic				
	NW—SE	2.3	"				
	U—D	2.3	"				

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude AE	Amplitude AN	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
75	7 Aug.	eP	3 30 06.6					1614?	*Distant earthquake.*
		eS?	" 32 54.0						
		F	" 38 16.4						
76	" "	eP	11 18 48.4			+0.1	−0.1	4243	*Ditto.*
		S	" 24 49.3	4.5		+6.6	+2.6		
		eL	" 27 53.0						
		M	" 32 49.7	20.8			−14.5		
		C	" 40 47.5						
		F	" 57 47.5						
77	10 "	eP	23 36 05.1?					900?	*Middle valley of R. Ôi. (Remarkable)*
		S	" 37 43.1			−2.6	−1.6		
		M	" 38 27.4	3.2		−16			
		F	" 47 00						
78	11 "	eP	6 25 23.0					3945	*Dzungaria Basin, Mongolia. So great that needle E-W component of Wiechert's Seismograph was throughn out of scale.*
		cS	" 31 07 ?			+	−		
		eL	" 34 46 ?			*larger than* +630			
		ME	" 37 51						
		MN	" " "	15.4			+630		
		MN	" 39 01	8.6		*larger than* −610	−670		
		MZ	" " 46	16.6					
		MN	" 42 18	15.1			+690		
		C	" 44 00						
		F	8 50 —						
79	15 "	P	21 46 18.4		+2.4	−2.6	+1.3	1120	*Neighbourhood of Is. Titi.*
		S	" 48 18.4	3.7		+2.0	+2.5		
		F	" 51 44						
80	18 "	eP	2 50 14.8					567	*Off the E coast of Sima Peninsula.*
		cS	" 51 17.5						
		F	" 57 20						
81	" "	c	14 45 20					~	*Away to the coast of Kasima. (Remarkable)*
		F	" 46 50						
82	" "	eP?	23 33 14 3					4720	*Distant earthquake.*
		S?	" 39 41.3			−18	−25		
		MF	" 42 29.2	11.4		+75			
		MN	" " 29.2	12.6			−72		
		MZ	" " 33.0	12.9	+76				
		C	" 44 35.3						
		F	0 12 30						
83	19 "	eP	10 28 49.2					321	*Upper valley of Yosino, Sikoku.*
		eS	" 29 32.4						
		F	" 32 32						
84	20 "	P	9 07 41.0	3.2	−2.0	+1.6	−1.5	2101	*Away to the S coast of Is. Titi.*
		eS	" 11 13.1						
		F	" 13 30						
85	23 "	P	7 54 46.9	2.0	+1.2	−1.2	+1.8	281	*Southern part of Hiuga Nada.*
		S	" 55 24.7	3.0		−3.6	−6.7		
		F	" 57 32.5						

No. 8 From 25th to 28th August, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E			Period	Amplitude			Δ	Remarks
							Az	Ae	An		
			h.	m.	s.	s.	μ	μ	μ	km.	
86	25 Aug.	eP	6	52	26.2					~	*Distant earthquake.*
		eL	7	04	33.8						
		F	"	53	36.2						
87	26 "	P	19	53	36.9					25	*Local shock.*
		S	"	"	40.2						
		F	"	54	00						
88	28 "	Pz	0	36	39.0		+0.5			5800	*Baluchistan.*
		Sn	"	44	04.5	7.0			+ 4		
		eLn	"	54	01.3	49.2					
		M_1n	"	57	09.5	20.3			+38		
		M_2n	"	59	03.4	18.9			+41		
		M_3e	1	00	00.6	17.0		—25			
		M_3n	"	"	"	16.2			+43		
		M_4z	"	01	51.6	16.2	+21				
		M_4e	"	02	19.9	13.7		+32			
		M_4n	"	"	33.5	15.4			—47		
		M_5e	"	03	17.3	13.3		+39			
		M_5n	"	"	"	12.7			—55		
		M_6e	"	04	06.0	12.5		+36			
		M_6n	"	"	17.1	12.5			—44		
		M_7z	"	05	14.0	12.0	—36				
		M_7e	"	"	32.4	12.1		+43			
		M_7n	"	"	"	10.8			—37		
		M_8z	"	06	05.9	13.9	—38				
		C	"	07	32.4						
		F	"	47	—						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.5	0.009	3.1	77
	N—S	"	"	4.4	0.030	2.4	78
Wiechert	U—D	80	"	4.4	0.026	2.5	72
Ômori	E—W	16	Magnetic				
Ômori	N—S	16	"				
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic				✓
	NW—SE	2.3	"				
	U—D	2.3	"				

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
89	5 Sept.	P	20 36 01.5					19	*Local shock. (Microseisms)*
		S	" " 04.1			+2.6	+3.9		
		F	" " 30						
90	9 "	eP	4 11 30.7					1663?	*Kasima Nada. (Remarkable)*
		eS?	" 14 23.0						
		M	" 15 00.0	3.6		+7.8	−17.0		
		C	" 17 03						
		F	" 25 00						
91	10 "	eP	5 42 40.6	5.2	− 1	+ 1	− 1	2105	*Distant earthquake.*
		i(PP?)	" 43 09.3	6.8	+17	−26	+23		
		M	" " 17.8	EN 5.1 Z 4.6	+95	−90	+77		
		PPP?	" " 51.8	3.8		+ 5	+19		
		SEN	" 46 13.1	7.0		+17	−29		
		Sz	" " 17.2	5.6	− 6				
		SS?	" " 43.2	5.2		+16	−28		
		C	" 48 53.4						
		F	6 23 —						
92	16 "	ePz	21 45 08 0		+			999	*Upper valley of R. Katura. (Remarkable)*
		eSz	" 46 55.9		− 3				
		LF	" 47 25.1			+20			
		ME	" " 36 7	3.3		+58			
		Mz	" " 37.5	4.1	−55				
		MN	" " 42.7	2.8			−65		
		C	" 48 58						
		F	22 05 —						
93	17 "	P	16 11 12.5					~	*Neighbourhood of Tanegasima.*
		F	" 16 00						
94	21 "	eP	7 43 36.0					~	*Off the NE coast of Kunisaki Peninsula.*
		F	" 44 46.0						
95	" "	P	8 35 19.2					16	*Local shock. (Microseisms)*
		S	" " 21.4						
		F	" " 34.0						
96	" "	eP	11 22 04.0	3.7	−2.8	+2.6	+1.3	998	*Neighbourhood of Mt. Sengen, Saitama Pref. (Remarkable)*
		S	" 23 51.8	E 5.8 N 3.7		+13	−13		
		Mz	" 24 28.0	4.3	+97				
		MN	" " 42.5	7.1		−80	+235		
		ME	" " 47.7	5.8		+170	+ 9		
		C	" 27 52.8						
		F	" 59 00						
97	" "	P	19 31 50.0	2.6	+0.8	+0.9	+1.3	2302	*Distant earthquake.*
		S	" 35 39.8	(11.1)		− 4	+ 9		
		M	" 40 56.0	9.8		+34	−32		
		C	" 45 00.0						
		F	20 24 00						
98	22 "	P	17 36 41.3	1.7	+2.8	−1.9	+1.0	212	*Hyūga Nada.*
		S	" 37 09.9	2.6	+10.0	−1.8	−11.6		
		M	" " 17.0	2.2		+16.8	−15.5		
		C	" " 40.3						
		F	" 41 00						

No. 9 From 24th to 30th September, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					Az	Ae	An		
			h. m. s.	s.	μ	μ	μ	km.	
99	24 Sept.	P	23 13 02.1					62	*Neighbourhood of R. Midori.*
		S	" " 10.5	1.4	−2.1	+1.3	+4.0		
		F	" " 55.0						
100	25 "	PN	15 08 17.3				+2.6	5304	*Distant earthquake.*
		SE?	" 15 15.9						
		M_1EN	" 27 47.7	21.1		+10.3	−14.2		
		M_2EN	" 30 03.0	16.0		+15.5	−16.8		
		M_3E	" 31 47.3	16.9		+19.4			
		M_4EN	" 33 32.0	13.4		+12.9	+18.7		
		M_5N	" 34 10.3	13.7			−19.4		
		M_6EN	" 35 10 4	11.8		+15.5	−19.5		
		M_7N	" " 48.7	15.0			−16.8		
		M_7E	" " 50.0	15.0		+16.8			
		F	" 55 —						
101	28 "	eP	13 58 40.0			−1.0	−1.3	~	*Neighb. of Mt. Sengen.*
		F	14 02 06.0						
102	29 "	eP	14 20 54.5	N 2.1				~	*Distant earthquake.*
		eS?	" 22 05.7	N 2.6					
		F	" 24 07						
103	30 "	P	21 29 53.2	4.0		+3.2	−1.7		*Near shock.*
		F	" 32 07.8						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.5	0.030	2.4	76
	N—S	"	"	4.5	0.013	2.6	76
Wiechert	U—D	80	"	4.5	0.064	2.3	67
Ômori	E—W	16	Magnetic				
Ômori	N—S	16	"				
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic				
	NW—SE	2.3	"				
	U—D	2.3	"				

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
104	3 Oct.	P	2 41 02.0					~	*After shock of West Saitama earthquake ? (Rather remarkable)*
		F	" 44 38.0						
105	4 "	ePE	4 22 30.4					5865	*Neighbourhood of Gilbert Is., South Ocean.*
		S	" 25 59.4			+ 6	− 3		
		eL	" 34 11.6						
		M_1N	" 39 18.3				−35		
		M_1E	" " 21.7			+28			
		M_1Z	" " 36.3		−32				
		M_2E	" 41 10 6			−49			
		M_2N	" " 12.7				+45		
		M_3Z	" 43 09.6		+44				
		M_3E	" " 12.2			+28			
		M_3N	" " 14.6				−32		
		M_4Z	" 45 16.6		+38				
		M_4E	" " 18.8			+65			
		M_4N	" " 19 8				−62		
		M_5Z	" 46 10.1		+39				
		M_5E	" " 16.4			+45			
		M_5N	" " 17.5				−37		
		M_6Z	" 47 35.9		+30				
		M_6E	" " 41.7			+39			
		M_6N	" " 42.6				−54		
106	" "	P	7 15 16.6					5768	*Ditto.*
		S	" 22 40.5						
107	" "	P	7 57 00.2					5788	*Ditto.*
		S	8 04 25.1						
		F	" 59 37.7						
108	5 "	P	21 44 37.5		−1.4	±0.0	−1.6	346	*Neighbourhood of Yokozima, (about 50 km. NW to Naze)*
		iSE	" 45 24.1			+8.4			
		iSN	" " 25.2				+4.1		
		iSZ	" " 25.6		+11.1				
		F	" 50 38.2						
109	10 "	P	1 51 41.8					~	*Ditto.*
		F	" 56 11.8						
110	" "	P	9 29 04.9			−2.6	+1.9	5685	*Neighb. of Salomon Is., South Ocean.*
		S	" 36 24.6	7.0		−15.5	+7.8		
		L	" 42 01.0	29.2					
		M_1E	" 45 44.9	20.6		+ 3			
		M_1N	" " 48.4	21.5			−25		
		M_2E	" 46 44.0	20.0		+25			
		M_2N	" " 49.9	20.0			−15		
		M_3E	" 47 43.9	15.8		−19			
		M_3N	" " 45.6	15.8			+26		
		M_4EN	" 51 01.5	17.1		+30	−32		
		M_5EN	" 53 22.2	15.0		+13	−32		
		M_6EN	" 54 42.0	15.2		+21	−30		
111	" "	P	9 53 28.2					5728	*Ditto.*
		S	10 00 50.1						
112	" "	P	10 17 29.8					5734	*Ditto.*
		S	" 24 52 0						

No. 10 From 10th to 29th October, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					AZ	AE	AN		
			h. m. s.	s.	μ	μ	μ	km.	
113	10 Oct.	P	10 40 01.0					5652	*Neighb. of Salomon Is., South Ocean.*
		S	" 47 18.6						
114	" "	P	11 21 17.5					5656	*Ditto.*
		S	" 28 35.3						
115	" "	P	11 25 57.4					5772	*Ditto.*
		S	" 33 21.5						
116	" "	P	12 05 01.8					5670	*Ditto.*
		S	" 12 20.5						
		F	" 30 —						
117	11 "	eL	1 51 25.0					~	*Okhotsk Sea.*
		F	2 19 55 0						
118	12 "	P	7 10 23.5					~	*Neighb. of Yokozima.*
		F	" 15 12.5						
119	18 "	P	0 37 45.2			+2.6	−0.1	1371	*Off the SSE coast of Is. Titi.*
		S	" 40 10.0			+2.0			
		F	" 47 45.5						
120	20 "	P	23 45 01.5					15	*Local shock. Felt slightly accompanying an earthquake-sound like a distant thunder.*
		S	" " 03.5						
		F	" " 26.5						
121	21 "	P	9 29 39.0					13	*Local Shock.*
		S	" " 40.7						
		F	" 30 06.0						
122	24 "	e	21 39 17.6					~	*Kasima Nada.*
		F	" 50 18.0						
123	25 "	P	16 24 46.6					68	*Neighbourhood of Kumamoto.*
		S	" " 55.7						
		F	" 27 47						
124	28 "	eP	14 39 05.5					1772	*Away to the S coast of Taiwan.*
		eS	" 42 07.7						
		eL	" 44 39.2						
		F	" 55 38.7						
125	29 "	P	17 43 31.9					1324	*Distant earthquake.*
		S	" 45 53.3						
		F	" 51 08.5						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ϵ	V
Wiechert	E—W	200	Air	4.5	0.030	2.4	76
	N—S	"	"	4.5	0.013	2.6	76
Wiechert	U—D	80	"	4.5	0.064	2.3	67
Ômori	E—W	16	Magnetic	20.0	0.005	3.0	20
Ômori	N—S	16	"	20.0	0.006	2.6	20
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic	3.3	0.008	2.0	2
	NW—SE	2.3	"	3.8	0.024	1.3	2
	U—D	2.3	"	4.9	0.001	1.4	2

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
126	2 Nov.	P	3 53 44.6	E 2.7	+10.4	—17.1	+10.5	220	*Hûga Nada.*
		S	" 54 14.2	E 3.5 N 2.0 Z 3.1	+94	+188	—90		
		Mz	" " 23.1	3.3	—298				
		Mn	" " 24.7	2.3			+344		
		Me	" " 29.3	4.1		+316			
		C	" 59 58.3						
		F	4 19 00						
127	" "	P	6 31 16.0					232	*Ditto.*
		S	" " 47.3						
		F	" 32 57.8						
128	" "	P	17 32 26.0					223	*Ditto.*
		S	" " 56.0						
		F	" 35 26 0						
129	" "	P	19 03 31.1	3.3	+29.9	—38.2	+23.4	225	*Ditto. Felt rather strong. Needles of Wiechert's & Ômori's Seismometres were all thrown out of scale at about 19h 3m 5s.*
		C Snw	" 04 01.3			2000			
		C Sne	" " "			1000			
		M Lsw	" " 04.8			3500			
		M Lse	" " "			2000			
		O Mnw	" " 06.8			4300			
		O Mne	" " 12.5			9300			
		O Md	" " 17.1		—8400				
		F	continuous						
130	" "	P	19 32 10.5					222	*After shock.*
		S	" " 40.4						
		F	" 35 55.6						
131	" "	P	20 01 08.3	4.4	+22.4	—29.6	+15.1	217	*Ditto.*
		S	" " 37.5	E 3.2 N 2.7	+28	—132	+67		
		Mn	" " 54.6	3.2			—620		
		Me	scale out						
		Mz	" " 56.2	4.9	—478				
		F	continuous						
132	" "	P	20 11 12.9					~	*Ditto.*
		F	" 15 00						
133	" "	P	20 16 50.0					~	*Ditto.*
		F	" 17 25.5						
134	" "	P	20 24 13.0					210	*Ditto.*
		S	" " 41.2						
		F	" 31 55.5						
135	" "	P	20 33 44.2	2.0	+3.0	—3.3	+2.1	213	*Ditto.*
		S	" 34 12.8			+13	— 5		
		Mn	" " 20.4	2.3			+40		
		Me	" " 25.7	2.3		—41			
		C	" " 55.5						
		F	" 40 55.5						
136	" "	P	20 41 50.8					~	*Ditto.*
		F	" 42 55.5						
137	" "	P	20 46 03.8					~	*Ditto.*
		F	" 47 25.5						
138	" "	P	20 47 52.4	Z 2.0 E 2.2 N 2.5	+13	—17	+ 8	224	*Ditto.*
		S	" 48 22.1	Z 1.6	—30	+71	+63		
		Mn	" " 28.4	1.9			—309		
		Mz	" " 29.4	4.5	—104				
		Me	" " 32.0	1.9		—224			
		C	" 50 55.5						
		F	21 00 15.5						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					AZ	AE	AN		
			h. m. s.	s.	μ	μ	μ	km.	
139	2 Nov.	P	21 11 33.0					210	*Ditto.*
		S	" 12 01.2						
		F	" 16 25.5						
140	" "	P	22 45 39.0					217	*Ditto.*
		S	" 46 08.2						
		F	" 47 55.2						
141	3 "	P	0 13 48.8					~	*Ditto.*
		F	" 14 55.0						
142	" "	P	0 15 47.3					221	*Ditto.*
		S	" 16 17.1						
		F	" 18 55.0						
143	" "	P	0 27 11.4					220	*Ditto.*
		S	" " 41.1						
		F	" 29 45.9						
144	" "	P	0 48 45.2					217	*Ditto.*
		S	" 49 14.5						
		F	" 51 24.8						
145	" "	eP	2 11 00.6					4703?	*Distant earthquake.*
		eS?	" 17 32.0						
		F	" 37 54.6						
146	" "	P	4 34 40.3					209	*Hiūga Nada.*
		S	" 35 08.4						
		F	" 37 54.2						
147	" "	P	4 57 37.1					~	*Away to the NNE coast of Is. Hatizīō.*
		F	" 58 24.1						
148	" "	P	5 50 17.7					220	*Hiūga Nada.*
		S	" " 47.3						
		F	" 52 53.9						
149	" "	P	9 41 46.5					229	*Ditto.*
		S	" 42 17.3						
		F	" 43 53.0						
150	" "	P	10 16 08.0					19	*Tidiwa Bay.*
		S	" " 10.5						
		F	" " 48.0						
151	" "	eP	11 40 34.5					1642?	*Distant earthquake.*
		eS?	" 43 24.7						
		F	" 47 53.0						
152	4 "	P	0 24 41.5					212	*Hiūga Nada.*
		S	" 25 10.0						
		F	" 27 51.2						
153	" "	eP	1 22 57.8					1405?	*Oguui, Iwate Prefecture. (Remarkable*
		eS?	" 25 25.3						
		F	" 38 51.2						
154	" "	P	4 59 52.8					220	*Hiūga Nada.*
		S	5 00 22.5						
		F	" 01 51.1						
155	5 "	eP?	21 33 55.9					2264?	*Distant earthquake.*
		eS?	" 37 41.3						
		L	" 40 24.7						
		Mz	" " 35.4	8.8	—				
		MN	" " 37.1	9.5			—13		
		ME	" " 37.9	10.0		+12			
		C	" 45 45.0						
		F	" 45 45.0						
156	9 "	P	12 34 38.5					15	*Local shock.*
		S	" " 40.5						
		F	" " 48.5						
157	10 "	P	11 39 34.7					13	*Ditto.*
		S	" " 36.5						
		F	" " 50.0						
158	11 "	P	16 45 20.0					22	*Ditto.*
		S	" " 23.0						
		F	" " 41.0						
159	12 "	P	21 30 23.7					~	*Ditto.*
		F	" " 40.0						
160	14 "	P	2 50 23.1					17	*Ditto.*
		S	" " 25.4						
		F	" " 38.0						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					AZ	AE	AN		
			h. m. s.	s.	μ	μ	μ	km.	
161	16Nov.	P	21 39 02.5	0.3	+10.4	−5.3	+7.0	22	*Tidiwa Bay. Felt slightly accompanying an earthquake-sound like a wind's noise.*
		S	" " 05.5	0.4		+30.3	−14.5		
		M	" " 06.6	0.5	+19.4	−22.4	−52.7		
		C	" " 13.6						
		F	" 40 54.0						
162	" "	P	22 01 25.9					20	*Local shock.*
		S	" " 28.6						
		F	" " 54.1						
163	17 "	P	5 52 54.8					24	*Tidiwa Bay.*
		S	" " 58.0						
		F	" 53 18.5						
164	18 "	P	22 37 06.8					23	*Unzendake. Felt slightly.*
		S	" " 09.9						
		F	" " 39.8						
165	" "	P	22 38 01.1					23	*Ditto.*
		S	" " 04.2						
		F	" " 26.1						
166	19 "	P	0 47 54.0					19	*Ditto.*
		S	" " 56.6						
		F	" 48 17.0						
167	" "	P	2 27 10.7					22	*Ditto.*
		S	" " 13.7						
		F	" " 26.5						
168	20 "	eP	23 25 45.5					5770	*Distant earthquake.*
		S	" 33 09.5						
		eL	" 39 43.0						
		F	" 58 46.0						
169	24 "	eP	18 14 39.5					~	*Okhotsk Sea.*
		F	" 20 07.0						
170	29 "	P	13 53 58.0					~	*Neighbourhood of Naze.*
		F	" 59 58.0						

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32°44'03''$ $\lambda = 129°52'31''$ h = 130.6m. Lithologic foundation : Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{To^2}$	ε	V
Wiechert	E—W	200	Air	4.3	0.023	2.5	77
	N—S	"	"	4.4	0.014	2.5	77
Wiechert	U—D	80	"	5.0	0.021	2.8	46
Ômori	E—W	16	Magnetic				
Ômori	N—S	16	"				
Ômori	N—S	20					
	E—W	20					
C. M. O.	NE—SW	2.3	Magnetic				
	NW—SE	2.3	"				
	U—D	2.3	"				

No.	Date	Phase	Time 135° E	Period	Amplitude Az	Amplitude Ae	Amplitude An	Δ	Remarks
			h. m. s.	s.	μ	μ	μ	km.	
171	19 Dec.	P	2 46 23.0?	2.0	+3.8	−4.0	+2.6	234	*Hyūga Nada.*
		S	" " 54.5	2 3		−45	+21		
		M	" 47 01.8	2.4		+26	+47		
		C	" " 23.0						
		F	" 53 30.0						
172	21 "	eP	14 47 23.3		+0.7	−1.3	+0.5	63	*Neighbourhood of Is. Ôyano. (Rather remarkable)*
		iP	" " 23.9	1.3	+8.7	−11.7	+2.6		*Felt rather strong accompanying an earthquake-sound like a wind's noise.*
		S	" " 31.8			+78	+312		
		M_1	" " 35.1	1.3	−172	−239	−490		
		M_2	" " 53.1	3.8		+338			
		C	" 48 21.8						
		F	15 07 31.8						
173	" "	eP	15 11 57.7					~	*After shock.*
		F	" 12 31.7						
174	" "	eP	19 18 57.5					~	*Ditto.*
		F	" 19 26.5						
175	" "	eP	20 10 50.4					~	*Off the W. coast of Is. Isigaki.*
		F	" 20 50.4						
176	" "	eP	21 36 03.2					55	*Neighb. of Is. Ôyano.*
		eS	" " 10.6						
		F	" 37 41.4						
177	22 "	P	12 11 51.2					~	*Local shock.*
		F	" 12 13.4						
178	" "	P	17 37 01.5					56	*Neighb. of Is. Ôyano.*
		S	" " 09.0						
		F	" 38 10.0						
179	" "	P	22 08 06.3	2.0	−2.2	+3.0	−3.0	60	*Ditto. (Rather remarkable)*
		S	" " 14.4	E 1.0 N 1.7		+60	+104		*Felt slightly.*
		MEN	" " 18.4	1.1		−110	+282		
		MEN	" " 33.1	1.1		+192	+156		
		MZ	" " 44.5	4.6					
		C	" 09 09.3						
		F	" 22 09.3						
180	" "	P	23 16 47.2					51	*Ditto.*
		S	" " 54.0						
		F	" 17 20.0						
181	23 "	P	6 12 50.5					63	*Ditto.*
		S	" " 59.0						
		F	" 14 00.0						
182	" "	P	11 10 21.5					51	*Ditto.*
		S	" " 28.4						
		F	" 11 04.0						
183	" "	P	11 13 01.6					64	*Ditto.*
		S	" " 10.2						
		F	" 14 09.0						
184	" "	P	13 50 18.4					~	*Neighb. of Is. Yaku.*
		F	" 51 5.02						

No. 12 From 26th to 31st December, 1931.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

No.	Date	Phase	Time 135° E	Period	Amplitude			Δ	Remarks
					Az	Ae	An		
			h. m. s.	s.	μ	μ	μ	km.	
185	26 Dec.	P	10 43 04.0	Z 1.8, E 2.3	+6.5	−18.2	−2.6	61	*Neighb. of Is. Ôyano. (Rather remarkable) Felt rather strong accompanying an earthquake-sound like a wind's noise.*
		S	„ „ 12.2		−165	+158	+49.5		
		Men	„ „ 19.1			+600	+625		
		Mz	„ „ 20.2		+348				
		C	„ 46 00.0						
		F	11 07 00.0						
186	„	„	P 15 21 31.3					~	*Ditto.*
			F „ 22 03.3						
187	29	„	eP 11 50 11.2		−0.7	+0.5	−	53	*Ditto. Felt at some low places in the city of Nagasaki.*
			S „ „ 18.3			+5.2	+17.5		
			F „ 52 50						
188	30	„	P 22 26 24.2					~	*Ditto.*
			F „ 27 08.0						
189	31	„	P 2 21 01.9					~	*Ditto.*
			F „ „ 18.0						