

NAGASAKI, JAPAN.

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\varphi = 32^{\circ}44'03''$

$\lambda = 129^{\circ}52'31''$

$h = 130.6\text{m.}$

Lithologic foundation: Volcanic Agglomerate

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	T_0	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N - S	200	Air	4.7	0.039	4.4	100
	E - W	"	"	5.3	0.041	5.5	100
Wiechert	U - D	80	"	4.6	0.006	3.9	74
Omori	N - S	16	Magnetic	18.5	0.006	2.8	20
Omori	E - W	16	"	15.5	0.005	2.1	20
Omori	N - S	20	"	2.9	0.116		50
	E - W	20	"	2.9	0.163		50
C. M. O.	NE - W	2.3	Magnetic	3.9	0.097	2.3	2
	NW - SE	3.2	"	3.9	0.055	1.6	2
	U - D	2.3	"	4.8	0.030	1.7	2



1930

No.	Date	Phase	Time 135° E			Period	Amplitude			D	Remarks
			h.	m.	s.		Az	AE	AN		
1	2 Jan.	P	11	57	38.8		-1.0	+1.0	+0.8	34	Local shock.
		S	"	"	43.4		-5.0	+5.0	+3.0		
		ME	"	"	44.5	0.3			+22		
		MN	"	"	46.0	0.3		-21			
		F	"	59	39						
2	5 "	P	10	25	01.4	1.2	+1.0	-0.5	-1.0	2604	Distant earthquake.
		PP	"	"	34.1	3.0	+5.4	-5.0	-7.4		
		S	"	29	14.8	4.6	-1	+6	-5		
		SS	"	30	06.8	9.0	-1	+5	-10		
		F	"	40	0						
3	6 "	cP	3	56	40.6					2253	Ditto.
		cS	4	00	25.1						
		F	"	06	00						
4	9 "	P	7	16	37.5					344	Near earthquake.
		S	"	17	23.9						
		F	"	19	15.5						
5	11 "	iP	3	14	51.7	2.0	+7.4	-7.4	+5.0	193	Hiuga Nada.
		?S _{EN}	"	15	17.6	1.7		-15	-18		
		S _Z	"	"	19.6	2.0	-16				
		M _{EN}	"	"	35.5	3.6		+85	+43		
		M _Z	"	"	38.3	3.6	-31				
		C	"	"	55.7						
		F	"	26	00.0						
6	12 "	P	6	22	57.6					884	Rather distant earthquake.
		S	"	24	34.0		+2	+6	-10		
		M	"	"	35.0	3.5	-1	-11	+11		
		F	"	27	30.0						
7	13 "	P	22	54	45.3					7	Tidiva Bay.
		S	"	"	46.3						
		F	"	55	12.9						
8	" "	cP	22	59	28.5		+2.0	-1.0	+0.2	23	Tidiva Bay. Felt at the Observatory, slightly.
		iP _M	"	"	31.6	0.4	+3	+8	+20		
		F	23	01	07.9						
9	15 "	iP _Z	8	47	55.4	0.2	+3.8			21	Aitu Isthmus.
		{EN	"	"	55.8	0.2		-3.0	-2.0		
		iS _Z	"	"	58.2	0.2	+15				
		{EN	"	"	58.6	0.2		+17	-9		
		ME	"	48	00.3	0.2		-33			
		MN	"	"	03.3	0.2			-42		
		F	"	50	44.5						
10	15 "	iP _Z	12	35	20.9	0.2	+2.3			22	Ditto. Felt in the city of Nagasaki, but not at the Observatory.
		iP _{EN}	"	"	21.5	0.2		-2.3	-1.3		
		iS _Z	"	"	24.2	0.2	-6				
		iS _{EN}	"	"	24.4	0.2		+18	-9		
		MN	"	"	24.5	0.2			+86		
		ME	"	"	25.4	0.2		-45			
		MZ	"	"	26.3	0.2	-23				
		F	"	38	15.3						

No.	Date	Phase	Time 135° E			Period s.	Amplitude			J km.	Remarks
			h.	m.	s.		AZ μ	AE μ	AN μ		
11	15 Jan.	\bar{P} \bar{S} F	14	40	02.7 05.9 35.7				24	<i>Ditto.</i>	
12	" "	P F	16	16	24.4 46.0				—	<i>S phase is unknown.</i>	
13	" "	P F	17	32	51.3 16.2				—	<i>Ditto.</i>	
14	" "	P F	22	37	36.2 57.2				—	<i>Ditto.</i>	
15	16 "	P M F	1	09	33.2 35.6 17.6	4.0		+11	—	<i>Ditto.</i>	
16	17 "	\bar{P}_{EN} \bar{P}_Z \bar{S}_{EN} \bar{S}_Z F	16	39	53.6 54.1 56.3 56.6 20.0		+1.0 +4.0	-1.0 +5.0	0 +15.0	20	<i>Local shock.</i>
17	" "	\bar{P} \bar{S} F	22	28	13.2 16.2 41.0			-1.0 +1.2		22	<i>Ditto.</i>
18	18 "	P S L? F	16	12	02.8 12.8 56.3 58.8	3.0 5.0 6.0		-1.5 -3.0 +2.0		4400	<i>Distant earthquake.</i>
19	23 "	P F	13	21	39.6 50.0				—	<i>Microseisms.</i>	
20	24 "	\bar{P} \bar{S} F	2	42	05.6 07.8 34.1	0.3		+4.0	-1.0	16	<i>Local shock.</i>
21	25 "	\bar{P} \bar{S} F	11	34	51.0 18.5 31.0					204	<i>Near shock.</i>
22	26 "	\bar{P} \bar{S} F	7	06	06.8 08.9 36.2					16	<i>Local shock.</i>

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SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\phi=32^{\circ}44'03''$ $\lambda=129^{\circ}52'31''$ $h=130.6m.$ Lithologic foundation: Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS*	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N - S	200	Air	4.7	0.039	4.4	100
	E - W	"	"	5.3	0.041	5.5	100
Wiechert	U - D	80	"	4.7	0.099	5.0	71
Omori	N - S	16	Magnetic	18.5	0.006	2.8	20
Omori	E - W	16	"	15.5	0.005	2.1	20
Omori	N - S	20		2.9	0.116		50
	E - W	20		2.9	0.163		50
C. M. O.	NE - W	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			Δ km.	Remarks
			h.	m.	s.		AZ	AE	AN		
23	3 Feb.	P S F	0	03	39.3	3.6	+2.0	-3.5	-1.0	4418	Direction of Okhotsk Sea.
24	5 "	iP	22	28	39.4	$\frac{NE}{\%} \frac{0.8}{0.7}$	+5.7	-2.5	-8.0	83	Neighbourhood of Mt. Kaminari in Hukuoka Prefecture. Felt in the city of Nagasaki.
		iS	"	"	50.6	NE1.2	-22	+38	+30		
		MZ	"	"	51.8	0.8	+36				
		MNE	"	"	54.2	1.2		-67	+87		
		F	"	32	25.6						
25	6 "	P	7	10	05.6					27	Neighbourhood of Unzen.
		S	"	"	09.2						
		F	"	"	42.2						
26	7 "	iP	12	34	56.9	0.8	+2.1	-1.0	-2.0	82	Neighbourhood of Mt. Kaminari.
		iS	"	35	07.9		-8	+13	-34		
		C	"	"	28.3						
		F	-								
27	" "	P	12	37	22.3					85	Ditto.
		S	"	"	33.7						
		F	"	38	33.3						
28	" "	P	20	28	50.6		+2.7	+0.7	+1.0	25	Off the coast of Nomo.
		S	"	"	54.0						
		F	"	29	14.8						
29	8 "	P	0	26	42.9						Hyuga Nada.
		S	"	"	10.5						
		F	"	28	10.5						
30	10 "	P	21	39	22.0					22	Tidiva Bay.
		S	"	"	25.0						
		F	"	"	39.0						
31	11 "	P	1	29	33.1					72	Neighbourhood of Mt. Kaminari.
		S	"	"	42.8						
		F	"	30	49.4						
32	" "	P	9	13	37.0			+1.0	+0.7	550	Off the mouth of R. Kii.
		S	"	14	38.0	$\frac{NE}{\%} \frac{3.4}{3.8}$	-0.5	-4.0	+3.0		
		ME	"	"	59.6	4.0		+10			
		MN	"	15	46.0	3.8			-9		
		C	"	16	01.0						
		F	"	19	37.0						
33	" "	P	18	54	41.6		+4.0	+1.3	+3.0	24	Off the coast of Nomo.
		S	"	"	44.8				-4.0		
		F	"	55	13.4						
34	" "	P	18	57	02.4					24	Ditto.
		S	"	"	05.6						
		F	"	"	18.4						
35	12 "	P	20	33	49.3					15	Local shock.
		S	"	"	51.3						
		F	"	34	14.3						
36	14 "	P	14	32	03.2					22	Unzendake.
		S	"	"	06.2						
		F	"	"	27.6						
37	17 "	P	3	46	56.8					25	Tidiva Bay.
		S	"	47	00.2						
		F	"	"	17.0						
38	18 "	P	22	12	50.0					16	Ditto.
		S	"	"	52.2						
		F	"	13	20.8						
39	27 "	eP	21	11	42.1					225	Hyuga Nada.
		S	"	12	12.3			+7	-5		
		M	"	"	16.5	1.0			+17		
		C	"	"	22.0						
		F	"	13	36.0						

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INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	T_0	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N — S	200	Air	4.7	0.039	4.4	100
	E — W	„	„	5.3	0.041	5.5	100
Wiechert	U — D	80	„	4.6	0.006	3.9	74
Omori	N — S	16	Magnetic	18.5	0.006	2.8	20
Omori	E — W	16	„	15.5	0.005	2.1	20
Omori	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 s.	Amplitude			Δ km.	Remarks		
			h.	m.	s.		Az μ	AE μ	AN μ				
40	6 Mar.	P	12	33	43.4		-3.0	+2.0	-1.0	1043	Off the NNW coast of Tirisima.		
		S	„	35	35.7							+6.0	+8.0
		F	„	39	14.4								
41	7 „	P	19	52	16.6					225	Off the S coast of Yakusima.		
		F	„	58	53.0								
42	11 „	P	1	31	43.3	6.0		+6	+1.0	1971	Off the E coast of the Cape Kitasiretoko, Karakuto.		
		S	„	35	0.34							-20	+8
		M	„	„	0.84								
		F	„	42	55.0								
43	20 „	\bar{P}	0	30	15.5					225	Hiuga Nada.		
		S	„	„	45.7								
		F	„	33	53.7								
44	23 „	\bar{P}	7	10	28.5		-10.0	+6.2	-1.0	28	Tidiva Bay.		
		S	„	„	32.2							-38	+58
		F	„	12	26.3								
45	26 „	eP	16	19	46.4	19.0		-1	+8	4270	South Ocean.		
		PP	„	21	31.1							+8	
		eS	„	25	48.7								
		F	17	05	40.0								
46	30 „	\bar{P}	14	58	29.4					23	Local shock.		
		S	„	„	32.5								
		F	„	„	49.4								
47	31 „	eP	0	27	07.0					4229	Distant Earthquake.		
		eS	„	33	07.2								
		F	„	51	15.2								
48	„ „	\bar{P}	5	09	55.2					128?	N part of Bungo channel.		
		S?	„	10	12.5								
		F	„	12	16.7								

No.4

From 1 st to 23 rd April 1930

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	E — W	"	"	5.3	0.041	5.5	100
Wiechert	U — D	80	"	4.6	0.006	3.9	74
Omori	N — S	16	Magnetic	18.5	0.006	2.8	20
Omori	E — W	16	"	15.5	0.005	2.1	20
Omori	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 s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		Az μ	Ae μ	An μ		
49	9 April	\bar{P} \bar{S} F	20	00	14.1 17.4 56.1				25	Tidawa Bay.	
50	12 "	\bar{P} F	3	23	31.5 43.1					Ditto.	
51	19 "	$i\bar{P}$ $i\bar{S}$ F	13	31	18.2 21.6 11.5	0.3 0.4	-7.3 -28	+5.0 +20	-1.3 +56	25	Ditto.
52	" "	$i\bar{P}$ $i\bar{S}$ ^N F	14	09	46.1 49.6 51.8	0.3 0.4		+4 +33	-1	26	Ditto.
53	" "	$e\bar{P}$ \bar{S} F	14	39	41.5 44.8 11.9				+12	25	Ditto.
54	" "	$e\bar{P}$ $e\bar{S}$ F	22	31	26.3 28.9 45.1					19	Ditto.
55	21 "	eP eS F	19	23	51.5 49.0 31.5					2405	Away to the SE coast of the Cape Otisi.
56	23 "	$e\bar{P}$ F	0	18	28.7 37.4						Local shock, microseisms
57	" "	$e\bar{P}$ $e\bar{S}$ F	2	02	28.8 32.1 43.0					25	Ditto.
58	" "	\bar{P} \bar{S} F	22	54	47.8 50.9 19.0			+1.0 -5.0	+7.3	23	Tidawa Bay.

Form 24 th to 30 th April 1930

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time 130° E			Period s.	Amplitude			Δ km.	Remarks
			h	m	s.		AZ μ	AE μ	AN μ		
59	24 April	P	6	53	38.0	4.8		-1.5	-4.0	2342	<i>Away to the SE coast of Is. Kunaziri.</i>
		S	"	57	30.2	13.2		+17	-15		
		LE	"	59	24.9	26.4		-15			
		MN	7	01	21.1	16.8			-80		
		ME	"	03	24.3	17.5		-125			
		CF	"	05	39.5						
			8	00	04.5						
60	" "	eP	9	28	20.9					2372	<i>Ditto.</i>
		eS	"	32	15.7						
		F	"	53	04.5						
61	25 "	\bar{P}	1	8	27.6					100	<i>Off the mouth of R. Yorumo.</i>
		\bar{S} ?	"	"	51.1						
		F	"	21	02.7						
62	25 "	\bar{P}	21	32	05.6					93	<i>Upper valley of R. Tate.</i>
		\bar{S} ?	"	"	18.1						
		F	"	36	03.0						
63	26 "	\bar{P}	11	36	06.6						<i>Local shock.</i>
		F	"	"	16.2						
64	" "	\bar{P}	20	59	26.4					22	<i>Tidawa Bay.</i>
		e \bar{S}	"	"	29.4						
		F	"	"	45.1						
65	27 "	eP	1	25	52.3					4492	<i>Okhotsk sea.</i>
		eS	"	32	06.9			+5			
		eL	"	37	47.9						
		F	2	27	12.1						
66	29 "	eP ?	3	40	11.4					4203	<i>South Ocean.</i>
		eS	"	46	09.9						
		eL	"	48	28.2						
		M	"	49	19.1	15.3		+13			
		C	"	50	15.0						
		F	4	05	28.2						
67	30 "	\bar{P}	2	36	18.1					26	<i>Tidawa Bay.</i>
		\bar{S}	"	"	21.6						
		F	"	37	05.4						



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Omori	N — S	20		2.9	0.116		50
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	NW — SE	2.3	„	3.9	0.055	1.6	2
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No.	Date	Phase	Time 135° E			Period s.	Amplitude			Δ km.	Remarks	
			h.	m.	s.		Az μ	Ae μ	An μ			
68	1 May	P S? F	1	17	26.7	3.0		+15	+1.3	1468		
			„	20	0.05							
			„	28	42.7							
69	„ „	eP S M _N M _E C F	10	00	14.2			-0.8	-0.4	1122	<i>Kasima Nada</i>	
			„	02	14.4	9.0		-2.5	+3.0			
			„	03	17.6	4.8			+45			
			„	„	38.6	5.0		-41				
			„	07	15.4							
			„	27	20.2							
70	„ „	e F	13	24	08.9						<i>Ditto.</i>	
			„	30	47.2							
71	„ „	P̄ S F	16	28	10.9					24	<i>Local shock</i>	
			„	„	14.1							
			„	„	31.0							
72	„ „	P̄ S F	22	41	42.3					26	<i>Ditto.</i>	
			„	„	45.8							
			„	„	49.7							
73	5 „	P? eS _N eS _E PS? SS _N SS _E SS _S M ₁ M ₂ M ₃ M ₄ M ₅ M ₆ M ₇ M ₈ M ₉ M ₁₀ C F	22	50	53.7						5500	<i>Neighbourhood of Rangoon, Burma.</i>
			„	58	03.0			+8				
			„	„	05.4				-9			
			„	„	36.9							
			23	02	18.5							
			„	„	20.4							
			„	03	12.4							
			„	04	44	16.5		+80	-160			
			„	05	58	14.0		+143	-350			
			„	06	21	13.5		+88	-304			
			„	08	15	11.5		+175	+90			
			„	09	49	14.5			-165			
			„	11	00	E10.3 N12.4		-75	+112			
			„	12	41	13.4		-45	+120			
			„	14	18	12.2		+55	+97			
			„	16	29	12.0		-36	+80			
			„	19	50	16.2			-83			
			„	26	19							
			„	23	—							

From 19 th to 24 th May 1930.



SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time 130° E			Period s.	Amplitude			Δ km.	Remarks
			h	m	s.		Az μ	AE μ	AN μ		
74	7 May	eP	7	45	21.3		-1.4	-0.4	-0.6	7550	<i>South Ocen.</i>
		S	"	51	18.8			-4	+3		
		eL	8	03	00.7						
		M	"	14	18.0	18.1	0	-8	+30		
		M	"	15	12.6	19.3	0	-7	+20		
		M	"	17	30.9	15.8	+15	-8	-31		
		M	"	19	30.0	16.4	-15	+19	+28		
		F	"	25	29.0	16.1	+27	-20	-13		
	"	57	59.0								
75	17 "	P	5	18	06.8					2674	
		S?	"	22	25.4						
		F	"	29	06.8						
76	19 "	P	11	27	15.8					26	<i>Local shock</i>
		S	"	"	19.3						
		F	"	"	40.2						
77	" "	P	12	57	13.0					349 ?	
		S?	"	58	00.0						
		F	13	03	30.9						
78	20 "	P	0	07	03.7	2.2	+3.0	+2.1	-9.0	1453	
		S	"	09	36.0	9.0	+7.0	+22	-12		
		F	"	28	36.0						
79	" "	P	20	22	35.2					4400	
		S	"	28	45.2						
		L	"	34	31.2						
		F	"	51	45.2						
80	23 "	P	3	47	30.4						<i>Local shock</i>
		F	"	"	42.9						
81	24 "	iP	1	40	04.5		-5.4	+7.4	+1.5	892	<i>Neighbourhood of Mis.</i>
		S	"	41	41.7			-1.5	+2.0		
		F	"	58	23.0						



SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\phi = 32^{\circ}44'03''$ $\lambda = 129^{\circ}52'31''$ $h = 130.6m.$ Lithologic foundation: Volcanic Agglomerate.

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N — S	200	Air	4.7	0.030	3.0	125
	E — W	"	"	4.7	0.030	3.1	125
Wiechert	U — D	80	"	4.7	0.026	2.5	72
Omori	N — S	16	Magnetic	18.7	0.008	2.8	20
Omori	E — W	16	"	19.6	0.004	4.5	20
Omori	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			Δ	Remarks
			h.	m.	s.		Az	AE	AN		
									km.		
82	1 June	iP	3	00	41.2		+1.0	-2.2	-1.0	1083	<i>Distant earthquake.</i>
		eS	"	02	37.5						
		M	"	03	50.5	4.0		+40			
		M	"	03	52.0	4.0			-42		
		F	"	18	00.0						
83	2 "	P	8	33	54.3				22	<i>Local shock,</i>	
		S	"	"	57.3						
		F	"	34	15.3						
84	4 "	P	18	57	24.0				3698	<i>Distant earthquake.</i>	
		eS	19	02	53.5						
		F	"	06	42.6						
85	8 "	P	4	21	32.6		+4.7	+1.7	+2.3	21	<i>Off the coast of Nomo. Felt slightly.</i>
		S, M	"	"	35.4	0.4	-5	+13	+12		
		C	"	"	45.2						
		F	"	22	25.7						
86	11 "	eP	9	57	31.1				5211	<i>Distant earthquake.</i>	
		ePP	"	59	34.1						
		eS	10	04	24.9						
		eL	"	07	47.5						
		M	"	11	17.1	24.2		-6			+12
		F	"	29	57.5						
87	14 "	P	18	24	43.7	0.2	+25.0	-1.3	+6.7	25	<i>Northern part of Amakusa Nada. Felt moderately, and earthquake sound was heard.</i>
		S	"	"	47.0	0.3	-20.0	+44.8	+31.2		
		C	"	"	56.6						
		F	"	26	08.2						
88	19 "	eP	5	46	19.0	1.7	+0.6	-0.4	+0.4	220	<i>Iyuga Nada.</i>
		S	"	"	48.7	0.7	+6.0	-2.4	-8.0		
		C	"	47	32.4						
		F	"	49	56.4						
89	21 "	P	18	48	01.1		+1.5	-1.3	+0.8	223	<i>Ditto.</i>
		S	"	"	31.1			-4.0	+8.7		
		M	"	"	41.0	1.3		-1	-16		
		C	"	49	23.0						
		F	"	51	53.0						
90	24 "	P	6	37	20.7				10	<i>Microseisms.</i>	
		S	"	"	22.0						
		F	"	"	25.9						
91	" "	P	7	10	02.3				10	<i>Ditto,</i>	
		S	"	"	03.6						
		F	"	"	10.3						
92	29 "	P	15	59	26.1			+2.6	+0.0	10	<i>Felt slightly.</i>
		S	"	"	27.4						
		F	"	"	42.1						

地震観測表
SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

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



INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N - S	200	Air	4.7	0.030	3.0	125
	E - W	"	"	4.7	0.030	3.1	125
Wiechert	U - D	80	"	4.7	0.026	2.5	72
Omori	N - S	16	Magnetic	18.7	0.008	2.8	20
Omori	E - W	16	"	19.6	0.004	4.5	20
Omori	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 s.	Amplitude			J km.	Remarks
			h.	m.	s.		Az μ	AE μ	AN μ		
93	3 July	P	6	10	36.2	2.0	-5.0	-6.4	-3.2	3734	South Ocean.
		PPE	"	12	04.5			+7.5			
		PPPE	"	"	15.5	3.5		-10.7			
		eSN	"	16	04.6	4.4			-2.1		
		eSSN	"	18	18.7	11					
		eLN	"	20	25	30					
		M ₁	"	24	02	17	0	+17	-64		
		M _{2N}	"	25	41	13			-35		
		M _{2E}	"	"	43	13		+16			
		M _{3Z}	"	26	28	13		-24			
		M _{3E}	"	"	28	13		+20			
		M _{3N}	"	"	29	13			-17		
		M _{4Z}	"	"	50	13	+24				
		M _{4EN}	"	"	52	13		-32	+11		
		M _{5Z}	"	27	26	11	-50				
M _{5EN}	"	"	29	12		+31	-17				
C	"	28	35								
F	"	57	15								
94	8 "	eP	4	56	20.5				-	Off Nase.	
		F	5	01	37.5						
95	14 "	e	4	37	34.2				-	Distant earthquake.	
		eL	"	41	05.0						
		M _N	"	42	01.2	18					-17
		M _N	"	"	59.9	17					-20
96	18 "	eP	18	43	03.6				88	Upper valley of Sirakawa in Kumamoto Prefecture.	
		S	"	"	15.4						
		F	"	44	02.6						
97	" "	eP	19	22	18.5		-1.0	+1.0	87	Ditto.	
		S	"	"	30.2						
		C	"	"	47.0						
		F	"	24	03.0						
98	21 "	eP	18	21	21.9					Bungo Channel.	
		F	"	22	50.6						
99	" "	eP	20	35	52.1				327	Off the W coast of Is. Yaku.	
		eS	"	36	36.1						
		F	"	38	52.1						
100	23 "	P	4	29	58.5		-0.9	+1.0	2028	Off the SE coast of Is. Itrup,	
		S	"	33	24.3	6.0		+5.3			+5.0
		F	"	51	17.7						
101	" "	e	9	57	39					Neighbourhood of Napoli Italy.	
		F	10	13	29						



地震観測表
SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

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

INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	T_0	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N—S	200	Air	4.7	0.030	2.8	70
	E—W	„	„	4.5	0.030	3.5	70
Wiechert	U—D	80	„	4.0	0.026	2.5	70
Omori	N—S	16	Magnetic	18.7	0.008	2.8	20
Omori	E—W	16	„	19.6	0.004	4.5	20
Omori	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 s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		Az μ	A _E μ	A _N μ		
102	1 Aug	eP	9	11	58.0				1317	<i>Off the NW coast of Naze.</i>	
		F	„	14	43.5						
103	5 „	e	12	19	14.0				11	<i>Ariahe Bay, Kagoshima Prefecture.</i>	
		F	„	22	14.0						
104	17 „	P	18	30	42.7				10	<i>Northern part of Uraga Channel.</i>	
		F	„	40	46.0						
105	21 „	P	5	56	42.9	3.6	—2	—4	1317	<i>Off the W coast of Is. Yonakuni.</i>	
		S	„	59	02.6	6.0	+6	—10			
		L	„	„	47.0	21.6	+25	—10			
		M ₁	6	00	43.7	17.0	—50	+50			
		M ₂	„	03	19.5	12.0	—40	+50			
106	22 „	\bar{P}	13	38	46.9				11	<i>Local shock.</i>	
		\bar{S}	„	„	48.4						
		F	„	„	56.4						
107	„ „	\bar{P}	16	05	28.9				10	<i>Ditto.</i>	
		\bar{S}	„	„	30.3						
		F	„	„	43.9						

地震觀測表 SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\phi=32^{\circ}44'03''$ $\lambda=129^{\circ}52'31''$ $h=130.6m.$ Lithologic foundation: Volcanic Agglomerate.



INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	T_0	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N — S	200	Air	4.6	0.012	3.2	73
	E — W	"	"	5.1	0.007	3.8	66
Wiechert	U — D	80	"	4.5	0.043	2.5	67
Omori	N — S	16	Magnetic	18.7	0.008	2.8	20
Omori	E — W	16	"	19.6	0.004	4.5	20
Omori	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			J	Remarks
			h.	m.	s.		Az	A _E	A _N		
							μ	μ	μ		
108	2 Sept.	eP	23	04	17.7				10	Local shock.	
		iS	"	"	20.1	+2.3	+3.3				
		F	"	"	48.3						
109	12 "	eP	23	52	25.1				421	Off the S coast of Tanegasima.	
		eS	"	53	21.8						
		F	"	54	54.0						
110	15 "	P	10	09	41.1				44	Tidiva Bay.	
		S	"	"	47.0						
		F	"	10	43.8						
111	22 "	P	8	09	56.2				3399	Direction of the Himalayas?	
		S	"	15	06.9						
		L	"	18	49.2	27					
		M	"	19	57.4	15	-13	+37			
		C	"	31	28.2						
		F	"	53	43.2						
112	" "	eP?	23	25	45.5				3616?	Ditto.	
		eS	"	31	10.2						
		F	"	51	04.0						
113	24 "	P	21	12	03.5				2590	Distant earthquake.	
		S	"	16	15.5						
		F	"	33	52.7						
114	26 "	eP	0	48	30.2				—	Unknown.	
		F	"	53	32.3						
115	" "	e	3	48	46.0				—	Distant earthquake.	
		F	"	59	46.0						
116	28 "	P	14	59	45.7				732	Off the SSE coast of Is. Osima, Idu.	
		S	15	01	05.9						
		F	"	06	37.0						
117	29 "	P	13	53	06.5				233	Neighbourhood of Kagosima.	
		iP	"	"	06.9	+1.3					
		iP	"	"	08.5	+15.8					
		S	"	"	40.9		+29	+11.4			
		S	"	"	41.9	3.1	+24	-2.9			
		M	"	"	42.2	3.0	-18				
F	"	59	34.7	3.1		-36	+57				

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\phi=32^{\circ}44'03''$ $\lambda=129^{\circ}52'31''$ $h=130.6m.$ Lithologic foundation: Volcanic Agglomerate.



INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N — S	200	Air	4.6	0.012	3.2	73
	E — W	„	„	5.1	0.007	3.8	66
Wiechert	U — D	80	„	4.5	0.043	2.5	67
Omori	N — S	16	Magnetic	18.7	0.008	2.8	20
Omori	E — W	16	„	19.6	0.004	4.5	20
Omori	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 s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		Az μ	Ae μ	An μ		
118	1 Oct.	P S F	6	28	25.0 30.0 30.0				4315	South Ocean.	
119	8 „	P F	19	29	20.2 05.7				—	Direction of Is. Guam	
120	17 „	S F	6	35	31.0				—	Neighbourhood of Daishozitio, Isikawa Prefecture.	
121	„ „	P S M F	6	37	50.0 04.5 25.0 13.0	3.3		-36 +36	680	Ditto.	
122	21 „	P S F	14	25	55.0 35.0 35.0				297	Off the N coast of Misaki Peninsula. Iyo.	
123	25 „	P S M SS C F	5	19	49.2 37.8 44.7 00.6 45.6 00	3.3	Z EN 5.6 4.3 5.6 4.3 5.6 6.4	-7.2 +9 +72 +144 +204	2299	Neighbourhood of Mariana.	
124	29 „	eP eS L C F	6	15	00.0 49.3 45.1 00.0 00.0	19		-6 +6	2310	Ditto.	
125	31 „	e	19	56	00				—	Unknown.	

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

$\phi=32^{\circ}44'03''$ $\lambda=129^{\circ}52'31''$ $h=130.6m.$ Lithologic foundation: Volcanic Agglomerate.



INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N — S	200	Air	4.6	0.012	3.2	73
	E — W	„	„	5.1	0.007	3.8	66
Wiechert	U — D	80	„	4.5	0.043	2.5	67
Omori	N — S	16	Magnetic	18.7	0.008	2.8	20
Omori	E — W	16	„	19.6	0.004	4.5	20
Omori	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			Δ	Remarks	
			h.	m.	s.		Az	AE	AN			
									km.			
126	10 Nov.	P	4	15	03.0					3183	<i>Distant earthquake.</i>	
		S	„	19	58.5							
		L	„	22	44.0							
		C	„	38	18.0							
		F	„	25	18.0							
127	„ „	eP	22	51	13.5					3845	<i>Ditto.</i>	
		eS	„	56	51.8							
		eL	23	00	50.0							
		C	„	20	25.0							
128	11 „	P	17	32	16.2	1.5	+3	+3	+3	1122	<i>Direction of Taiwan.</i>	
		PP	„	„	18.3	3.4	-11	-8	-20			
		PPP	„	„	23.4	3.1		-7	-16			
		S	„	34	16.4	5.0	+10	+14	-13			
		SS	„	„	24.1	5.0		+8	-12			
		F	„	43	31.4							
129	17 „	e	21	09	03.0					—	<i>Near earthquake.</i>	
		F	„	15	10.4							
130	18 „	eP	0	16	46.9					287		
		S	„	17	25.5							
		F	„	9	42.6							
131	26 „	ep	4	04	43.8			to W		947	<i>The Great earthquake of Idu.</i>	
		PP	„	„	48.1		-4	+7	+1			
		S	„	06	26.5	10.3			+30			
		L	„	07	03.2	7.4	-34	-90	+80			
		M	„	„	22.8	14.5			-715			
		M	„	08	09.3	9.2	-314					
		C	„	16	50.0							
		F	5	15	—							
		{M	4	07	15.9	3.9						
		{M	„	„	30.8	9.1	{SW	300				
{M	„	„	52.2	4.2	{SE	600						
					+500							

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

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



INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	ϵ	V
Wiechert	N - S	200	Air	4.6	0.012	3.2	73
	E - W	"	"	5.1	0.007	3.8	66
Wiechert	U - D	80	"	4.5	0.043	2.5	67
Omori	N - S	16	Magnetic	18.7	0.008	2.8	20
Omori	E - W	16	"	19.6	0.004	4.5	20
Omori	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			Δ	Remarks
			h.	m.	s.		Az	AE	AN		
						s.	μ	μ	μ	km.	
132	2 Dec.	eP eS F	16	12	20.9					2760	Distant earthquake.
			"	16	45.9						
			"	30	—						
133	4 "	e F	2	54	43						Ditto.
			"	58	00						
134	" "	eP eS eSS eL M M M M F	3	58	22.0					3715	Ditto.
			4	03	52.5			-10	+11		
			"	06	21.4	14		-16	+2		
			"	07	49.0	32		+20	-30		
			"	10	43.9	14		-134	+307		
			"	12	53.4	13		+200	-63		
			"	13	23.3	13		+190	-100		
			"	"	24.4	12	+220				
			5	08	—						
135	" "	P S? F	5	33	11.0					406?	Near shock.
			"	34	05.6						
			"	36	28.0						
136	8 "	P S F	15	22	58.6					1388	Neighbourhood of Sobunkei, Taiwan.
			"	25	24.1						
			"	38	—						
137	" "	P S L M C F	17	04	00.5					1445	Ditto.
			"	06	32.0						
			"	08	33.7						
			"	09	04.5						
			"	17	00.0						
			"	27	—						
138	12 "	\bar{P} \bar{S} F	22	54	39.1					82	Central valley of R. Sirakawa, Kumamoto Prefecture.
			"	"	50.1						
			"	56	50						
139	13 "	i \bar{P} \bar{S} F	1	02	12.0					82	Ditto.
			"	"	23.0						
			"	05	30						
140	" "	i \bar{P} \bar{S} F	4	43	12.5	0.9	-1.4	+2.9	+1.6	82	Ditto.
			"	"	23.6	1.1		-4.5	+4.5		
			"	45	50						
141	14 "	eP S? F	0	26	18.7					1407?	Distant earthquake
			"	28	46.4						
			"	33	50.0						
142	" "	P S F	18	29	50.7					339	Off the N coast of Amami Osima.
			"	30	36.3						
			"	36	02.7						
143	18 "	P \bar{P} \bar{S} C F	19	41	36.0	1.1	+3.4	+3.0	+4.3	90	Amakusa Nada.
			"	"	40.4	0.8	-10.0	-4.3	-6.5		
			"	"	48.1	0.7	-6	-17	+19		
			"	42	13.0						
			"	47	13.0						

From 20th to 22nd Dec. 1930

SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time 130° E			Period s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		Az	AE	AN		
							μ	μ	μ		
144	20Dec.	eP	23	03	18.3 ?					314	<i>Neighbourhood of Miyosi, Hiroshima Prefecture.</i>
		iP	"	"	24.8	1.0	+2.0	-1.4	-5.0		
		iS	"	04	07.1	2.5	+14	-29	+57		
		M	"	"	23.5	4.9		+126	-106		
		M	"	"	26.2	3.7	+49				
		F	"	05	00.0						
		F	"	19	00.0						
145	" "	P	23	44	01.2					313	<i>Ditto.</i>
		S	"	"	43.3						
		F	"	47	40.0						
146	21 "	P	8	27	41.0					312	<i>Ditto.</i>
		S	"	28	23.0						
		F	"	32	41.0						
147	" "	P	21	15	19.3					313	<i>Ditto.</i>
		P	"	"	25.8						
		S	"	16	07.9	3.2		+14	-32		
		M	"	"	20.8	2.8		-97	+110		
		M	"	"	33.7	3.6			-120		
		M	"	"	38.5	4.8	-43				
		C	"	17	41.0						
		F	"	30	00						
148	" "	P	21	19	03.8					312	<i>Ditto.</i>
		S	"	"	45.8						
149	" "	P	23	54	43.6	3.1	-15.0	-5.7	-28.6	1491	<i>Central valley of Sobunkei, Taiwan.</i>
		S	"	57	19.7	6.3		+5.5	-9.3		
		M	"	"	30.2	E4.6 N4.2		+63	-37		
		M	"	"	31.7	4.8	-20				
		SS?	"	"	43.1	4.8		-17	+9		
		F	"	58	00.0						
		F	24	20	—						
150	22 "	e	9	00	33.7						<i>Taiwa Bay</i>
		F	"	06	10.0						
151	" "	P?	9	11	22.0					3005	<i>Distant earthquake.</i>
		S?	"	16	05.3						
		F	"	28	40.0						
152	" "	e	13	27	51.8						<i>Ditto.</i>
		F	"	39	40.0						