

## NAGASAKI, JAPAN.

## SEISMIC BULLETIN

OF THE

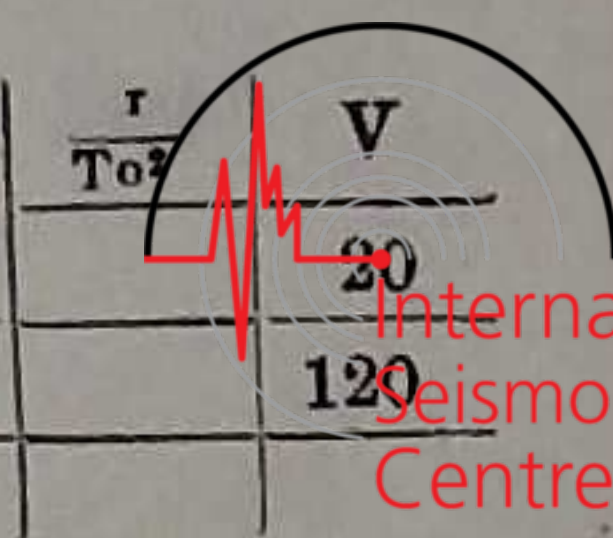
NAGASAKI METEOROLOGICAL OBSERVATORY OF JAPAN

 $\phi = 32^{\circ} 44' 03''$   $\lambda = 129^{\circ} 52' 31''$   $h = 130.6\text{m.}$ 

Lithologic foundation: Volcanic Agglomerate.

Instrument: Omori Horizontal Pendulum.

	To	$\mathcal{J}$	$\frac{r}{To^2}$	V
AN	16			20
AE	16			120
Az				


International  
Seismological  
Centre

No.	Date	Phase	Time		Period	Amplitude			$\Delta$ km.	Remarks	
			135° E			AN	AE	Az			
			h	m.		s	"	"			"
1	7	Jan.	P	14	07	11	0.2	+ 1	31	Local shock	
			S	"	"	15.2	0.2	+ 2			
			F	"	"	24					
2	9	"	P	10	29	06	0.3	- 1	18	Ditto	
			S	"	"	08.6	0.5	+ 2			
			F	"	"	19					
3	10	"	P	8	01	34	0.2		59	Ditto	
			S	"	"	42	0.3				
			F	"	"	02 12					
4	"	"	P	21	45	11	0.2	+ 1	14	Ditto	
			S	"	"	13	0.3	+ 3			
			F	"	"	37					
5	15	"	P	23	56	14	0.3	- 1	45	Ditto	
			S	"	"	20	0.3	+ 2			
			F	"	"	57					
6	16	"	P	7	57	46	0.3	- 1	37	Ditto	
			S	"	"	51	0.3	- 3			
			F	"	"	58 37					
7	"	"	P	7	59	29	0.2	+ 1	30	Ditto	
			S	"	"	33	0.3	- 3			
			F	"	"	43					
8	18	"	P	15	23	44	0.2	$\pm$ 1	22	Ditto	
			S	"	"	47	0.3	$\pm$ 2			
			F	"	"	57					
9	22	"	P	6	27	29		- 1	282	Sea of neighbouring Matsuyama	
			P	"	"	40		+ 1			
			S	"	"	53		+ 1			
			S	"	28	03	2	- 2			
			L	"	"	07	2	+ 3			
			C	"	"	45					
10	23	"	P	9	38	29	0.1	- 1	35	Local shock	
			S	"	"	31	0.1	- 1			
			L	"	"	3.38	0.2	+ 3			
11	25	"	P	9	45	25	{ N 4.5 E 3.0 N 8.5 E 7.2 N 19 E 19 N 16 E 19 N 27 E 19	- 2	- 3	6578	
			S	"	52	41		- 10	- 10		
			L	10	00	36		- 3	- 4		
			M	"	07	31		- 460	- 12		
			M	"	08	25		- 335	- 217		
			C	"	18	15					
			C <sub>1</sub>	"	23	26		E 17	+ 10		
			F	11	01	58					
12	25	"	P	23	35	44		- 1	- 1	67	Amakusa Nada. Felt in Nagasaki, (class: 1)
			P	"	"	50.5	0.2	+ 4	+ 3		
			S	"	"	53	0.4	+ 60	+ 33		
			M	"	"	53.5	0.4	+ 40	+ 54		
			C	"	36	09					
			F	"	"	41					
13	"	"	P	23	36	48			18		
			S	"	"	50.4	0.1	+ 2			
			F	"	37	02					

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	To	$\mathcal{E}$	$\frac{r}{T_0^2}$	V
AN	16			20
AE	16			120
Az				



International  
Seismological  
Centre

No.	Date	Phase	Time 135° E			Period s.	Amplitude			$\Delta$ km.	Remarks	
			h	m.	s.		AN $\mu$	AE $\mu$	Az $\mu$			
14	25 Jan.	P	23	40	02	$\left. \begin{matrix} N \\ E \\ N \\ E \\ N \\ E \\ E \end{matrix} \right\} \begin{matrix} 2 \\ 2 \\ 4 \\ 1 \\ 2 \\ 2 \\ 2 \end{matrix}$	-	1	-	1	208	Epicenter: Sea of neighbouring kagoshima Prefecture
		L	"	"	30		-	2	+	2		
		M	"	"	42		+	18	+	17		
		M	"	"	52		+	18	+	18		
		C	"	41	38							
15	" "	F	"	44	51							
		$\bar{P}$	23	43	36	0.1	-	1		26	Local shock	
		$\bar{S}$	"	"	39.6	0.1	-	2				
16	26 "	F	"	"	48							
		$\bar{P}$	8	58	50		-	1		74	Ditto	
		$\bar{S}$	"	59	00	0.1	+	2				
17	" "	F	"	"	14							
		P	11	59	17		-	1		52	Ditto	
		$\bar{P}$	"	"	21		-	1				
18	27 "	$\bar{S}$	"	"	24	0.1	-	2				
		F	"	"	26							
		$\bar{P}$	17	25	49	0.1	-	0.5		45	Ditto	
19	28 "	$\bar{S}$	"	"	55	0.1	+	1				
		F	"	26	08							
		P	9	10	12	0.5	+	0.5		141	Neighbouring kagoshima	
20	29 "	$\bar{P}$	"	"	17	1.5	+	2				
		L	"	"	31	0.6						
		C	"	"	49							
		F	"	11	11							
		$\bar{P}$	1	38	47	0.1	-	0.5		37	Local shock	
21	" "	$\bar{S}$	"	"	52		$\pm$	1				
		F	"	39	04							
		P	5	54	06	0.5	-	1		141	Neighbouring kagoshima	
22	" "	L	"	"	25	1.8	-	4				
		F	"	55	20							
		$\bar{P}$	8	10	31	0.1	-	0.5		37	Local shock	
23	29 "	S	"	"	36	0.1	$\pm$	0.7				
		F	"	"	48							
		$\bar{P}$	8	25	04	0.1	+	1		45	Local shock	
24	" "	S	"	"	08	0.3	+	3				
		L	"	"	10	0.5	-	7				
		C	"	"	18							
		F	"	"	38							
		$\bar{P}$	15	12	02	0.1	-	0.5		26	Ditto	
25	30 "	$\bar{S}$	"	"	05.6		$\pm$	1				
		F	"	"	19							
		P	20	53	59	0.2	-	1		166		
		$\bar{P}$	"	54	12	0.2	-	1				
		L	"	"	21.4	2.0	+	2				
26	31 "	M	"	"	23	1.5	-	3				
		C	"	"	54							
		F	"	55	39							
		$\bar{P}$	0	55	22	0.1	+	1		45	Local shock	
		$\bar{S}$	"	"	28	0.1	-	2				
F	"	"	58									

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	To	$\mathcal{E}$	$\frac{r}{To^2}$	V
AN	16			20
AE	16			120
Az				

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
			135° E			AN	AE	Az			
			h	m.		s.	$\mu$	$\mu$			$\mu$
27	Feb. 4	P	15	47	18		— 0.8		1336	Eastern sea of tugaru channel.	
		L	„	50	18		— 1.8				
		M	„	51	03		— 6				
		F	„	59	43						
28	„ 6	$\bar{P}$	14	37	51		— 0.3		26	Localshock origin in tijiwa bay	
		$\bar{S}$	„	„	53		± 0.8				
		L	„	„	54.6	0.3	+ 1.0				
		F	„	38	06						
29	„ 9	$\bar{P}$	19	17	45	0.2	+ 2		33	do	
		$\bar{S}$	„	„	49.5	0.3	— 8				
		F	„	18	20						
30	„ „	$\bar{P}$	20	36	09	0.2	— 2		32	do. Felt in Nagasaki	
		$\bar{S}$	„	„	13.3	0.3	— 18				
		F	„	37	20						
31	„ 11	P	14	08	08	2	+ 2		668		
		L	„	09	38	2	+ 2				
		M	„	„	56	$\left\{ \begin{array}{l} N \\ E \end{array} \right. \begin{array}{l} 3 \\ 2 \end{array}$	— 15	— 4			
		F	„	12	47						
32	„ 22	$\bar{P}$	0	22	15	0.1	— 2		25	Local shock. Origin in tijiwa bay	
		$\bar{S}$	„	„	18.5	0.3	— 25				
		F	„	„	41						

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AN	16			20
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No.	Date	Phase	Time		Period	Amplitude			$\Delta$ km.	Remarks	
			135° E			AN	AE	Az			
			h	m.		s.	$\mu$	$\mu$			$\mu$
33	Mar. 6	P	12	55	45	0.1		+ 1	52	Local shock	
		S	"	"	47	0.1		-- 4			
		L	"	"	52	0.1		+ 10			
		F	"		56 22						
34	" 7	P	17	02	22	0.1		± 1	15	Do.	
		S	"	"	24	0.1		+ 2			
		F	"	"	33						
35	" "	P	18	01	17	0.1		± 1	15	Do.	
		S	"	"	19	0.1		+ 2			
		F	"	"	33						
36	" "	P	18	03	46	0.1		± 1	15	Do.	
		S	"	"	48	0.1		+ 2			
		F	"		04 00						
37	" 9	P	5	25	41	2		-- 1	3127		
		L	"		31 49	14		+ 2			
		F	"		41 26						
38	" 14	P	17	53	29	0.5		-- 1	534		
		P	"	"	55	0.5		+ 4			
		S	"		54 17	2		-- 4			
		S	"	"	25	2		+ 3			
		L	"	"	41	{ E 3 N 5	+ 10	-- 7			
		M	"		55 09	11		+ 16			
39	" 16	C	"		59 00				22	Local shock	
		F	18	09	27						
		P	11	59	09	0.1		+ 1			
		S	"	"	12	0.1		+ 2			
40	" 17	C	"	"	19				653		
		F	"	"	36						
		P	31	41	54	0.5		+ 1			
		P	"		42 13	0.5		-- 4			
		S	"	"	56	1.3		+ 8			
		S	"		43 07	1.3		+ 35			
41	" 19	L	"	"	22	3.4		+ 82	35	Local shock	
		M	"	"	51	4.5		-- 142			
		C	"		46 48						
		F	"		57 54						
		P	23	01	22	0.1		+ 1			
		S	"	"	26.8	0.2		+ 2			
42	" 22	F	"	"	40				35	Do.	
		P	18	12	59	0.3		+ 2			
		S	"		13 04	0.6		+ 9			
43	" 23	F	"		14 00				35	Do. Felt in Nagasaki	
		P	1	15	51	0.3		+ 2			
		S	"	"	55.8	0.8		+ 12			
		F	"		16 37						

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AN	16			20
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Az				

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	
			135° E				AN	AE	Az			
			h	m.	s.	s.	$\mu$	$\mu$	$\mu$	km.		
44	2 Apr.	P	1	05	22	1.2		+ 4		601	Epicenter, Western sea of Hatijo Is.	
		L	"	06	43	4		+ 17				
		M	"	"	48	6		+ 430				
		C	"	08	41							
		F	"	15	30							
45	7 "	P	8	46	08	$\left\{ \begin{array}{l} N \ 1.5 \\ E \ 2.0 \\ N \ 0.8 \\ E \ 0.5 \\ N \ 1.9 \\ E \ 3.0 \\ N \ 2.0 \\ E \ 3.0 \end{array} \right.$	+ 4	- 2		245	Epicenter, Hinga Nada	
		$\bar{P}$	"	"	41		- 20	- 12				
		L	"	"	47		- 30	- 92				
		M	"	"	51		+ 100	- 66				
		C	"	49	29							
		F	"	53	15							
46	" "	P	8	57	01	$\left\{ \begin{array}{l} N \ 1.2 \\ E \ 1 \end{array} \right.$	- 1	+ 3		215	Do.	
		L	"	"	30		- 10	+ 15				
		M	"	"	42		+ 2	- 24				
		C	"	59	03							
		F	"	9	01		18					
47	8 "	$\bar{P}$	10	35	01	0.1		+ 1		37	Tijiwa Bay	
		$\bar{S}$	"	"	06	0.5		+ 10				
		F	"	"	17							
48	12 "	P	17	41	41	2.4	+ 5	- 4		6122		
		S	"	49	11	$\left\{ \begin{array}{l} N \ 4.5 \\ E \ 6.0 \end{array} \right.$	+ 30	- 9				
		L	"	55	27		28.8	- 10	+ 4			
		M	"	57	49		24.0	+ 40	- 112			
		C	18	10	32							
F	"	18	25									
49	13 "	$\bar{P}$	6	13	01	0.1		+ 1		22	Tijiwa Bay	
		$\bar{S}$	"	"	04	1.0		- 3				
		F	"	"	25							
50	20 "	$\bar{P}$	17	10	9	0.1		- 2		22	Do.	
		$\bar{S}$	"	"	12	0.2		- 3				
		F	"	"	23							

No 56

From 1st to 31st May 1926

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	To	$\mathcal{E}$	$\frac{r}{To^2}$	V
AN	16			20
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Az				

No.	Date	Phase	Time 135° E			Period s.	Amplitude			$\Delta$ km.	Remarks
			h.	m.	s.		AN $\mu$	AE $\mu$	Az $\mu$		
51	May 1	$\bar{P}$	8	39	09	0.1		+ 1		45	Local Shock
		$\bar{S}$	"	"	15	0.5		- 3			
		F	"	"	42						
52	" "	$\bar{P}$	8	45	09	0.1		+ 1		45	Do
		$\bar{S}$	"	"	15	0.5		- 3			
		F	"	"	40						
53	" 5	$\bar{P}$	17	26	21	0.1		- 1		59	Do
		$\bar{S}$	"	"	29	0.2		- 5			
		F	"	"	57						
54	" 6	$\bar{P}$	23	37	27	0.2		+ 2		30	Do
		$\bar{S}$	"	"	31	0.2		+ 3			
		F	"	"	58						
55	" 7	P	15	13	26	1.		- 1		2924	
		L	15	19	03	3.5		- 13			
		F	15	35	28						
56	" 12	$\bar{P}$	6	28	45	0.3		+ 1		15	Local Shock
		$\bar{S}$	"	"	47	0.4		- 5			
		F	"	29	10						
57	" "	$\bar{P}$	23	06	23	0.2		+ 1		18	Do
		$\bar{S}$	"	"	25.4	0.8		+ 7			
		F	"	"	53						
58	" 27	eP	4	45	08	0.7		+ 1.5		70	Do
		$\bar{S}$	"	"	17	0.03		+ 7.5			
		F	"	"	45						



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### INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	$\mathcal{E}$	V
Wiechert	N-S	200kg	Air	6.3	0.046	2.4	100
	E-W	"	"	6.3	0.063	3.0	100
Wiechert	U-D	80	"	7.1	0.049	2.9	73
Omori	N-S	16	Magnetic	17.0	0.004	2.7	20
Omori	E-W	16	"	15.4	0.007	1.9	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			Period	Amplitude			$\Delta$	Remarks
			135° E				AN	AE	Az		
			h.	m.	s.		$\mu$	$\mu$	$\mu$		
59	5 June	P	18	10	11	N 0.35 E 0.4	+ 3.5	- 1.8		186	N 27° W Hiuge Nada
		L	"	"	36	N 2.5 E 1.7	+ 350	+ 600			
		M	"	"	38	N 1.7 E 3.0	- 700	- 807			
		M	"	"	42	N 3.6 E 4.0	- 850	+ 730			
		C	"	12	53						
60	29 "	F	"	22	18					512	Local shock
		P	-	-	-						
61	" "	S	14	43	54	0.1	$\pm$ 25	$\pm$ 30		512	S 5° w
		F	"	"	58	H 2.3 Z 1.9	- 13	- 1.3	- 9		
		P	23	28	32	N 4.0 E 1.5	+ 100	+ 24	+ 33		
		P	"	29	7	H 7.0 Z 2.0	- 100	+ 112	$\pm$ 0		
		L	"	"	41	H 9.2 Z 6.6	+ 303	- 289	- 217		
		M	"	"	47						
		C	"	32	52						
62	10 July	eP	19	57	41	1.4	+ 2	+ 3		564	South Ocean
		F	20	29	41						
63	27 "	P	3	56	16	N 1.0 E 1.0	+ 40	+ 40		564	Kumano Nada
		L	"	57	32	N 3.2 E 3.0	+ 75	- 40			
		M	"	"	35	N 2.8 E 2.8	- 82	+ 55			
		C	4	1	10						
		F	"	7	30						

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### INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	To	$\frac{r}{T_0^2}$	$\mathcal{E}$	V
Wiechert	{ N-S	200kg	Air	6.3	0.046	2.4	100
	{ E-W	„	„	6.3	0.063	3.0	100
Wiechert	U-D	80	„	7.1	0.049	2.9	73
Omori	N-S	16	Magnetic	17.0	0.004	2.7	20
Omori	E-W	16	„	15.4	0.007	1.9	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			Period	Amplitude			$\Delta$	Remarks
			135° E				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
			h.	m.	s.	s.	$\mu$	$\mu$	$\mu$	km.	
64	2 Aug.	P	9	57	9	{ N0.12 E0.2 N0.4 E0.4	+ 1.6	+ 1.4		37	Local shock
		S	„	„	14		- 10.0	- 15.0			
		C	„	„	21.5						
		F	„	„	30						
65	„ „	P	14	6	7	1.2	+ 1	+ 1		2152	
		L	„	9	46	12.0	- 5	+ 10			
		M <sub>1</sub>	„	„	58	6.0	+ 13	- 60			
		M <sub>2</sub>	„	13	42	12.0	- 34	+ 30			
		M <sub>3</sub>	„	15	2	{ N14.0 E17.0	+ 9	- 55			
		C	„	20	00						
66	3 „	F	15	6	2					2135	
		P	12	44	43	0.6	- 2	+ 1			
		L	„	48	29	12.0	- 2	- 6			
		M	„	51	11	6.0	+ 28	- 79			
		C	„	59	40						
67	„ „	F	13	18	23					1091	Tokyo Bay
		P	18	28	18	{ H1.0 Z1.5	- 1	- 1	+ 1		
		S	„	30	18		+ 2	- 3	- 1		
		L	„	„	45	{ H2.5 Z2.3	+ 6	+ 3	- 3		
		M	„	31	10		+ 8	- 13	+ 6		
68	6 „	C	„	33	51					1031	
		F	„	37	46						
		eP	13	35	4						
		L	„	37	9	14		- 30			
		M	„	38	9	12		+ 100			
69	„ „	C	„	41	27					1031	
		F	„	47	5						
		eP	14	31	36						
		L	„	33	45	12		+ 10			
		M	„	34	46	11		- 50			
70	„ „	C	„	38	45					1031	
		F	„	44	6						
		P	15	2	53			+ 2			
		L	„	5	12	14		- 70			
		M	„	6	12	12		+ 240			
71	„ „	C	„	8	41					1031	
		F	„	28	10						
		eP	16	3	52						
		L	„	6	7	13		- 40			
		M	„	7	9	12		+ 200			
71	„ „	C	„	11	34					1031	
		F	„	25	9						



# SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			135° E				AN	AE	Az		
			h	m.	s.	s.	μ	μ	μ	km.	
72	6	"	eP	18	26	43					
			L	"	29	2	12		- 10		
			M	"	30	3	11		- 60		
			C	"	34	5					
			F	"	40	50					
73	"	"	eP	20	3	24					
			M	"	5	59	10		+ 35		
			F	"	11	24					
74	"	"	eP	20	32	19					
			L	"	33	53	14		- 5		
			M	"	34	54	14		+ 15		
			F	"	39	11					
75	"	"	eP	21	8	28					
			L	"	11	4	14		- 50		
			M	"	12	4			-160		
			C	"	14	36					
			F	"	25	7					
76	"	"	eP	23	8	17					
			L	"	10	34	13		- 20		
			M	"	11	34	12		- 60		
			C	"	15	25					
			F	"	19	10					
77	7	"	P	0	54	31	{N5 E5	+ 15	+ 10	1454	
			L	"	57	47	{N6 E20	+ 40	- 60		
			MN	"	59	18	12	- 310			
			ME	1	00	3	12		-280		
			C	"	5	14					
			F	"	33	5					
			eP	1	43	9					
78	"	"	L	"	46	39	12		- 25		
			M	"	47	48	11		- 88		
			C	"	50	5					
			F	2	00	8					
			eP	11	11	16	1	+ 2	± 1		824
L	"	13	7	6	- 2	+ 2					
M	"	14	46	6	+ 14	- 34					
C	"	19	48								
F	"	40	58								
80	"	"	eP	15	16	50	0.7	- 1	- 1	824	
			L	"	18	41	3	+ 3	- 2		
			F	"	25	31					
81	9	"	P	10	35	51	0.05	- 5	- 10	Local shock	
			F	"	"	54					
82	9	"	P	12	00	5	0.05	- 5	- 8	Local shock	
			F	"	"	10					
83	"	"	P	15	26	18	0.05	+ 6	+ 10	do	
			F	"	"	21					
84	"	"	P	16	29	13	0.05	- 4	- 4	do	
			F	"	"	16					
85	"	"	P	17	13	7	0.05	± 5	± 6		
			F	"	"	9					
86	"	"	P	21	40	23	0.05	- 2	± 1		
			F	"	"	28					
87	"	"	P	23	5	16	{N1.5 E1.5	- 2	+ 1	1150	
			L	"	7	51	{N4.0 E4.5	+ 15	- 50		
			M	"	8	1	{N5.5 E4.4	+ 16	- 50		
			M	"	9	18	{N4.0 E4.0	+ 60	+ 40		
			C	--	--	--					
88	"	"	L	23	14	30	{N3.2 E4.5	+ 15	- 20		
			M	"	15	3	{N5.0 E5.6	- 40	+ 80		
			M	"	16	3	{N4.8 E4.8	+ 80	- 90		
			C	"	21	35					
			F	"	48	28					



# SEISMIC BULETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time 135° E			Period s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		AN μ	AE μ	Az μ		
89	10 Aug.	P	1	8	25	0.05	± 5	± 6		Local shock	
		F	"	"	30						
90	" "	P	2	10	3	0.05	± 8	± 10		do	
		F	"	"	7						
91	15 "	eP	18	55	25	1	+ 0.3	- 0.7			
		L	"	57	8	2	+ 2	+ 5			
		M	"	"	34	1.8	+ 6	- 10			
		C	19	0	23						
		F	"	6	4						
92	18 "	P	9	45	2	{N0.28 E0.1	+ 3	± 3		Local shock	
		S	"	"	4.3	{N0.5 E0.1	+ 15	± 13			
		M	"	"	6.5	{N0.5 E0.1	+ 30	+ 25			
		C	"	"	8.0						
		F	"	"	34						
93	19 "	P	12	49	45		± 5	+ 10		do	
		F	"	"	47						
94	21 "	P	4	3	19	0.3	+ 1	+ 1	74		
		S	"	"	27	0.2	± 1	+ 2			
		L	"	"	29	0.2	+ 4	+ 4			
		C	"	"	40						
		F	"	"	47						
95	22 "	P	10	43	44	0.1	± 6	+ 8		Local shock	
		F	"	"	48						
96	22 "	P	11	59	57	0.1	± 0.5	- 2	10	"	
		S	"	"	58.3	0.1	± 3	- 2			
		F	12	00	00						
97	24 "	P	10	49	57	0.1	± 0.1	- 0.1	1.5	do	
		S	"	"	57.2	0.1	± 2	± 3			
		F	"	50	00						
98	" "	P	12	2	42	0.1	± 3	± 3		do	
		F	"	"	44						
99	" "	P	12	17	59					do	
		F	"	18	00						
100	" "	P	13	16	54	0.1	± 4	± 6		do	
		F	"	"	56						
101	" "	P	13	42	2	0.1	+ 0.3	- 0.3	6	do	
		S	"	"	2.8	0.1	- 4	± 3			
		F	"	"	4.6						
102	" "	P	14	48	12	0.1	± 4	- 6		do	
		F	"	"	18						
103	" "	P	15	54	6	0.1	- 7	- 6		do	
		F	"	"	12						
104	" "	P	16	54	16	0.1	± 3	± 3		do	
		F	"	"	17.5						
105	26 "	P	21	17	42	0.1		- 1	2	do	
		S	"	"	42.3	0.1	+ 4	+ 8			
		F	"	"	44.5						
106	29 "	P	13	3	30	0.1	- 1	± 1	16	do	
		S	"	"	32.2	0.1	- 2	+ 1			
		F	"	"	41						
107	31 "	P	21	12	42	0.1	± 0.1	± 0.2	1.5	do	
		S	"	"	42.2	0.1	± 4	± 4			
		F	"	"	44						
108	" "	P	22	31	10	0.1	- 3	+ 1	4	do	
		S	"	"	10.5	0.1	± 3	- 4			
		F	"	"	12.4						
109	" "	P	23	37	58	0.1	± 1	± 1	2	do	
		S	"	"	58.3	0.1	- 8	- 10			
		F	"	38	00						



International  
Seismological  
Centre

# NAGASAKI, JAPAN.

## SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

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

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

$h = 130.6\text{m.}$

Lithologic foundation :

Volcanic Agglomerate.

### INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	$T_0$	$\frac{r}{T_0^2}$	$\mathcal{E}$	V
Wiechert	N-S	200kg	Air	6.3	0.046	2.4	100
	E-W	"	"	6.3	0.063	3.0	100
Wiechert	U-D	80	"	7.1	0.049	2.9	73
Omori	N-S	16	Magnetic	17.0	0.004	2.7	20
Omori	E-W	16	"	15.4	0.007	1.9	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			Period	Amplitude			$\Delta$	Remarks
			135° E				AN	AE	Az		
			h.	m.	s.		$\mu$	$\mu$	$\mu$		
110	1 Sep.	P	11	30	59	0.1	± 12	- 1		3	Local shock
		S	"	"	59.4	0.1	± 4	- 8			
111	2 "	F	"	31	01					12	W. of Chijiwa Bay Felt in Nagasaki (Class: 2)
		P	22	52	14	0.1	- 9	+ 8	- 8		
112	" "	S	"	"	15.6	0.1	+ 38	+ 40		3	Local shock
		M	"	"	16.4	0.1	- 35	- 35			
113	3 "	C	"	"	32					do	
		F	"	"	53						
114	" "	P	22	53	02	0.1		+ 1		do	
		S	"	"	02.4	0.1	± 4	± 5			
115	" "	F	"	"	03.5					do	
		P	11	30	17	0.1	± 2	- 7			
116	" "	F	"	"	18					do	
		P	11	56	05	0.1	- 4	± 4			
117	" "	F	"	"	06					do	
		P	20	55	37	0.1	± 4	- 4			
118	" "	F	"	"	40					do	
		P	22	05	36	0.1	± 5	- 4			
119	" "	F	"	"	38					do	
		P	23	33	48	0.1	± 5	± 4			
120	" "	F	"	"	50					do	
		P	18	56	46	0.1	± 2	- 3			
121	4 "	F	"	"	47.5					do	
		P	21	15	42	0.1	± 4	- 2			
122	" "	F	"	"	44					do	
		P	22	49	10	0.1	+ 2	- 1			
123	" "	F	"	"	14					do	
		P	0	40	29	1	+ 2	-	1632		
124	" "	S	"	43	26	2	+ 2	+ 1		S. Sea of Hokkaido.	
		L	"	44	09	6	- 7	+ 4			
125	" "	M	"	47	13	15	- 15	+ 10		do	
		C	"	51	01						
126	" "	F	"	59	46					do	
		P	12	09	34		± 1	± 6			
127	" "	F	"	"	38					Local shock	
		P	13	19	39		± 7	± 8			
128	" "	F	"	"	43					do	
		P	18	46	15		± 2	± 1			
129	" "	F	"	"	18					do	
		P	21	30	47	NE 1.5 E 1.6	- 3	+ 3	3303		
130	" "	S	"	32	54	3.2	- 2	- 7		do	
		L	"	37	22	8	+ 6	+ 3			
131	" "	M	"	40	49	6	- 6	+ 3		do	
		C	"	48	30						
132	" "	F	"	58	41					do	

# SEISMIC BULETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN



No.	Date	Phase	Time 135° E			Period s.	Amplitude			Δ km.	Remarks
			h.	m.	s.		AN μ	AE μ	Az μ		
126	8 Sept.	P	9	11	19		± 1	± 2		Local shock	
		F	"	"	26						
127	" "	P	11	57	36		± 4	± 7		do	
		F	"	"	39						
128	" "	P	12	00	02		± 1	± 1	15	do	
		S	"	"	04		± 2	± 3			
		F	"	"	07						
129	" "	P	12	10	02		± 0	± 5		do	
		F	"	"	04						
130	" "	P	12	42	02		± 5	± 8		do	
		F	"	"	04						
131	" "	P	13	40	43		± 1	± 2	6	do	
		S	"	"	43.8		± 6	± 7			
		F	"	"	46						
132	" "	P	15	04	04		± 5	± 5		do	
		F	"	"	06						
133	" "	P	16	21	05		± 3	± 4		do	
		F	"	"	07						
134	12 "	P	19	40	09		± 5	— 7		do	
		F	"	"	13						
135	13 "	eP	0	46	21				2368		
		L	"	50	33	16	— 5				
		M1	"	53	41	13	— 22	+ 25			
		M2	"	57	03	9	— 15	+ 7			
		C	"	59	15						
		F	1	16	18						
136	16 "	P	10	25	59		± 7	± 10		Local shock	
		F	"	26	05						
137	" "	P	19	01	23		— 1	+ 1	6	do	
		S	"	"	23.8		± 10	± 9			
		F	"	"	26						
138	" "	P	23	12	48		— 1	+ 1	22	do	
		S	"	"	51	0.1	+ 7	+ 4			
		C	"	"	56						
		F	"	13	04						
139	17 "	P	3	08	10		+ 1	— 1	5032		
		S	"	15	25	4.5	— 13	— 4			
		L	"	19	08	22	— 5	+ 5			
		M1	"	27	16	20	— 23	+ 11			
		M2	"	29	24	14	— 20	+ 10			
		C	"	44	00						
140	" "	F	4	24	15						
		P	7	17	46			± 8		Local shock	
141	19 "	F	"	"	48					do	
		P	14	47	33		± 6	± 5			
142	" "	F	"	"	37					do	
		P	22	33	39		+ 1	+ 7			
		S	"	"	39.3		± 7				
143	20 "	F	"	"	43					do	
		P	21	43	10		± 7	± 6			
144	" "	F	"	"	12					do	
		P	22	52	52		± 7	± 5			
		F	"	"	55						

# NAGASAKI, JAPAN.

## SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY

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

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

$h = 130.6\text{m.}$

Lithologic foundation :

Volcanic Agglomerate.

### INSTRUMENTAL CONSTANTS

INSTRUMENT	COMPONENT	MASS	DAMPING	$T_0$	$\frac{r}{T_0^2}$	$\mathcal{E}$	V
Wiechert	N-S	200kg	Air	6.3	0.046	2.4	100
	E-W	"	"	6.3	0.063	3.0	100
Wiechert	U-D	80	"	7.1	0.049	2.9	73
Omori	N-S	16	Magnetic	17.0	0.004	2.7	20
Omori	E-W	16	"	15.4	0.007	1.9	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			Period	Amplitude			$\Delta$ km.	Remarks
			135° E				AN	AE	Az		
			h.	m.	s.						
145	Oct 1	P	2	41	38		± 4	± 4		Local shock	
		F	"	"	40						
146	" "	P	3	37	19		± 3	± 4		do	
		F	"	"	21						
147	" "	P	10	1	35		± 4	± 4		do	
		F	"	"	37						
148	" "	P	14	9	3		± 3	± 3		do	
		F	"	"	5						
149	" 2	P	8	50	50		± 7	- 2 + 7		do	
		F	"	"	53						
150	" "	P	10	31	10		± 7	- 2 + 7		do	
		F	"	"	14						
151	" "	P	11	24	22		± 10	+ 7		do	
		F	"	"	26						
152	" "	P	22	9	18		± 7	± 7		do	
		F	"	"	21						
153	" "	P	14	7	15		± 7	- 2 + 8		do	
		F	"	"	18						
154	" "	P	21	00	43		± 6	± 4		do	
		F	"	"	45						
155	" "	P	22	57	55		- 3 + 7	± 7		do	
		F	"	"	58						
156	" 3	eP	17	32	15.8						
		L	"	34	04.5	10		+ 50			
		M	"	"	33	15		- 50			
		C	"	37	46						
		F	"	47	50						
157	" "	P	23	45	4		± 7	± 10		Local shock	
		F	"	"	7						
158	" 4	P	0	51	52		± 8	± 8		do	
		F	"	"	55						
159	" "	P	2	22	10		± 8	± 8		do	
		F	"	"	13						
160	" "	eF	4	51	52	2.4		+ 2	14100	By Omori Typo.	
		S	5	2	26	7.		- 7			
		L	"	25	59	10.		+ 50			
		M	"	28	1	14.		+ 45			
		F	7	27	55						
161	" "	P	10	5	1		± 4	- 3 + 5		Local shock	
		F	"	"	3						
162	" 5	P	16	33	46		± 7	+ 7 - 2		do	
		F	"	"	48						
163	" 6	P	1	16	45		± 8	± 8		do	
		F	"	"	48						
164	" "	P	3	23	41		± 4	± 7		do	
		F	"	"	44						

# SEISMIC BULLETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			135° E				AN	AE	Az		
			h	m.	s	s.	μ	μ	μ	km.	
165	Oct 6	P	14	46	27		± 7	+ 5			Local shock
		F	"	"	29						
166	" 9	P	17	17	25		± 3	± 4			do
		F	"	"	28						
167	" "	P	21	43	19		± 6	± 7			do
		F	"	"	21						
168	" "	P	22	18	20		± 5	± 5			do
		F	"	"	22						
169	" 10	P	6	39	13		± 8	± 7			do
		F	"	"	16						
170	" "	P	7	56	31		± 2				do
		F	"	"	33						
171	" "	P	14	44	36		± 2	± 2			do
		F	"	"	38						
172	" "	P	18	28	54		± 5	± 4			do
		F	"	"	56						
173	" "	P	22	19	12		± 5	± 7			do
		F	"	"	14						
174	" 11	P	20	15	25		± 4	+ 2			do
		F	"	"	27						
175	" 12	P	21	51	45		± 2	- 1			do
		F	"	"	47						
176	" 12	P	22	18	37		± 7				do
		F	"	"	39						
177	" "	P	23	29	57		± 6	± 2			do
		F	"	"	59						
178	" 13	P	0	43	55		± 8	+ 8			do
		F	"	"	57						
179	" "	P	15	10	9	3		- 6		5230	
		S	"	16	28	10		+ 40			Neighbouring New guinea.
		L	"	21	38	17		+ 50			By Omori Typo.
		M <sub>1</sub>	"	22	51	19		- 100			
		M <sub>2</sub>	"	25	19	22		+ 90			
		C	16	"	44						
		F	"	30	40						
180	" "	P	17	47	49		± 3	± 3			
		F	"	"	51						
181	" "	P	18	30	32		± 5	± 10			
		F	"	"	34						
182	" "	P	20	41	29		± 9	+ 10			
		F	"	"	31						
183	" "	P	23	21	52		± 3	± 2			
		F	"	"	54						
184	" "	eP	23	25	33	3		- 1		5250	Okhotsk sea.
		S	"	31	55	8		+ 10			By Omori Typo.
		L	"	37	6	20		+ 20			
		M	"	40	59	21		+ 60			
		F	0	4	2						
185	" 14	P	4	16	17	5		- 10		5400	Okhotsk sea.
		S	"	22	53	9		+ 60			By Omori Typo.
		L	"	28	13	18		+ 50			
		M <sub>1</sub>	"	30	2	25		+ 125			
		M <sub>2</sub>	"	33	3	21		- 125			
		C	5	00	6						
		F	6	29	52						
186	" "	P	20	46	59		± 5	± 3			Local shock
		F	"	47	1						
187	" "	P	22	45	13		± 6	± 5			do
		F	"	"	15						
188	" 15	P	12	14	12		± 8	± 7			do
		F	"	"	18						



# SEISMIC BULETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

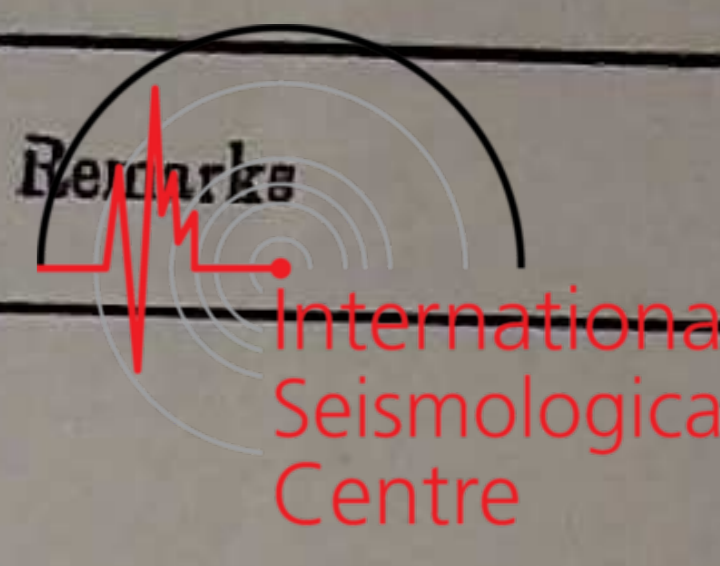


No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			135° E				AN	AE	Az		
			h	m.	s.		μ	μ	μ		
189	Oct 15	P̄	12	57	59	s.	± 10	± 10		Local shock	
		F	"	58	1						
190	" 16	P̄	11	00	9		± 4	± 4		do	
		F	"	"	11						
191	" "	P̄	11	13	54		+ 1	± 1	22	do	
		S̄	"	"	57		+ 2	+ 2			
		F	"	14	3						
192	" "	P̄	11	28	21		± 4	— 4		do	
		F	"	"	23						
193	" "	P̄	13	50	44		± 3	± 2		do	
		F	"	"	46						
194	" "	P̄	14	45	42		+ 4	+ 3		do	
		F	"	"	45						
195	" "	P̄	20	31	10		± 3			do	
		F	"	"	13						
196	" "	P̄	21	14	4		+ 1			do	
		S̄	"	"	5		± 5	± 5			
		F	"	"	7						
197	" "	P̄	22	31	1		± 3	± 3		do	
		F	"	"	3						
198	" 17	P̄	7	24	36		± 3	± 2		do	
		F	"	"	38						
199	" 18	P̄	15	1	22		± 2	± 2		do	
		F	"	"	24						
200	" "	P̄	"	"	49		± 4	± 3		do	
		F	16	8	47						
201	" "	P̄	17	10	15		± 5	± 8		do	
		F	"	"	17						
202	" "	P̄	23	22	21		± 2	± 2		do	
		F	"	"	23						
203	" 20	P̄	14	17	41		± 7	± 7		do	
		F	"	"	44						
204	" "	P̄	17	32	2		± 4	± 4		do	
		F	"	"	4						
205	" 21	P̄	21	40	37		± 8	± 4		do	
		F	"	"	39						
206	" "	P̄	22	43	22		± 7	± 5		do	
		F	"	"	24						
207	" 22	P̄	0	3	12		± 8	+ 7 — 4		do	
		F	"	"	14						
208	" "	P̄	3	34	28		± 3	± 3		do	
		F	"	"	30						
209	" "	P̄	10	28	21		± 5	+ 7 — 4		do	
		F	"	"	23						
210	" "	P̄	19	18	40		± 7	— 2 + 7		do	
		F	"	"	42						
211	" "	P̄	20	38	16		± 7	± 2		do	
		F	"	"	18						
212	" 23	P̄	9	4	33		± 6	± 6		do	
		F	"	"	35						
213	" "	P̄	10	3	30		+ 2 — 1	— 2 + 1	10	do	
		S̄	"	"	31.4		— 7	+ 3			
		F	"	"	40						
214	" "	P̄	11	14	36		± 4	± 2		do	
		F	"	"	38						
215	" "	P̄	13	49	55		± 6	± 3		do	
		F	"	"	57						
216	" "	P̄	15	33	9		± 8	± 4		do	
		F	"	"	11						

# SEISMIC BULETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			135° E				AN	AE	Az		
			h	m.	s.	s.	μ	μ	μ	km.	
217	Oct 24	P	20	53	33		± 8	± 3			Local shock
		F	"	"	35						
218	" "	P	22	56	45		± 7	+ 7			do
		F	"	"	47			- 2			
219	" "	P	12	00	4		± 7	± 7			do
		F	"	"	6						
220	" 25	P	16	15	31		± 7	± 5			do
		F	"	"	33						
221	" "	P	17	12	46		+ 9	± 3			do
		F	"	"	48		- 6				
222	" 26	P	12	51	49	4.	+ 15	- 5		4088	South Ocean.
		S	"	57	34	10.	+ 135	- 110			By Omori Typo.
		L	13	00	24	22.5	- 130	- 485			
		M	"	3	5	27.	- 850	- 525			
		C	"	18	44						
		F	14	6	15						
223	" "	P	21	17	58		± 3	+ 3			Local shock
		F	"	18	00			- 2			
224	" "	P	22	37	7		± 6	+ 7			do
		F	"	"	9			- 2			
225	" 27	P	10	56	14		± 3	- 5			do
		F	"	"	19						
226	" "	P	12	27	25		± 2	- 2			do
		F	"	"	28						
227	" "	P	13	41	15		± 8	± 7			do
		F	"	"	18						
228	" "	P	16	11	46		± 3	± 3			do
		F	"	"	48						
229	" "	P	17	13	10		+ 5	± 3			do
		F	"	"	12						
230	" 28	P	13	29	53		± 6	± 6			do
		F	"	"	55						
231	" 29	P	20	1	22		± 3	± 3			do
		F	"	"	24						
232	" "	P	22	53	58		± 3	± 4			do
		F	"	54	00						
233	" "	P	13	10	11		± 3	- 2			do
		F	"	"	13						
234	" "	P	21	7	4		± 3	± 8			do
		F	"	"	6						
235	" 30	P	-	-	-						
		M	10	47	41	7	- 11	+ 20			
		F	-	-	-						
236	" "	P	19	40	36		- 7	- 5			Local shock
		F	"	"	38						
237	" 31	P	0	18	45		± 8	± 7			do
		F	"	"	47						
238	" 31	P	2	19	41		- 1	± 1		45	do
		P	"	"	44						
		S	"	"	47		± 2	± 1			
		F	"	"	50						
239	" "	P	14	54	55		± 3	± 2			do
		F	"	"	57						
240	" "	P	21	55	10		± 6	± 6			do
		F	"	"	12						
241	" "	P	23	19	50		± 3	+ 2			do
		F	"	"	52			- 7			





# NAGASAKI, JAPAN.

## 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	$T_0$	$\frac{r}{T_0^2}$	$\mathcal{J}$	V
Wiechert	N-S	200kg	Air	6.3	0.046	2.4	100
	E-W	„	„	6.3	0.063	3.0	100
Wiechert	U-D	80	„	7.1	0.049	2.9	73
Ōmori	N-S	16	Magnetic	17.0	0.004	2.7	20
Ōmori	E-W	16	„	15.4	0.007	1.9	20
Ōmori	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			$\Delta$ km.	Remarks
			h.	m.	s.		AN μ	AE μ	Az μ		
242	Nov. 1	P	0	28	11					Local shock (Neighbouring Nagasaki)	
243	„	P	1	16	31					do	
244	„	P	2	20	10					do	
245	„	P	16	19	41					do	
246	„	P	17	38	35					do	
247	„	P	21	14	13					do	
248	„ 2	P	13	55	44					do	
249	„ 3	P	7	14	40	0.7	+2	+2		Distant	
		S	„	18	58	6.7	+5	+5			
		L	„	22	27	17.0	-2	+2			
		M	„	24	25	15.0	-5	+8			
		C	„	32	41						
		F	„	44	52						
250	„ 3	P	17	53	52					Local shock (Neighbouring Nagasaki)	
251	„	P	21	43	11					do	
252	„	P	22	59	33					do	
253	„ 4	P	0	19	36					do	
254	„	P	3	54	56					do	
255	„	P	20	36	22					do	
256	„	P	20	42	42					do	
257	„	P	22	04	36					do	
258	„ 5	P	20	57	41					do	
259	„	P	23	29	36					do	
260	„ 6	P	12	7	50					do	
261	„	P	13	3	55					do	
262	„ 8	P	14	45	52					do	
263	„	P	15	42	23					do	
264	„ 9	P	11	28	57					do	
265	„	P	13	12	52					do	
266	„	P	14	43	11					do	
267	„	P	15	48	22					do	
268	„	P	19	8	46					do	
279	„ 10	P	13	38	7					do	
270	„	P	17	36	10					do	
271	„	P	14	44	45					do	
272	„	P	21	52	30					do	
273	„ 11	P	23	36	34					do	
274	„ 12	P	0	49	00					do	
275	„	P	13	33	34					do	
276	„ 13	P	10	12	39					do	
277	„	P	10	38	27					do	
278	„	P	11	53	18					do	
279	„	P	23	24	00					do	
280	„ 14	P	0	35	40					do	
281	„	P	15	38	57					do	
282	„	P	16	25	54					do	

# SEISMIC BULLETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time 135° E			Period s.	Amplitude			Δ km.	Remarks
			h	m.	s.		AN μ	AE μ	Az μ		
283	Nov.14	P̄	17	23	10					Local shock (Neighbouring Nagasaki)	
284	" 16	P̄	18	39	1						
285	" 17	P̄	4	10	25					do	
286	" "	P̄	18	29	46					do	
287	" "	P̄	19	33	13					do	
288	" 20	P̄	1	10	30					do	
289	" "	P̄	22	20	55					do	
290	" "	P̄	22	59	07					do	
291	" 21	P̄	0	57	42					do	
292	" "	P̄	3	47	10					do	
293	" "	P̄	13	32	9					do	
294	" 22	P̄	23	18	33					do	
295	" 23	P̄	10	25	10					do	
296	" "	P̄	11	00	36					do	
297	" "	P̄	11	57	46					do	
298	" "	P̄	14	47	35					do	
299	" "	P̄	14	48	26					do	
300	" 24	P̄	14	45	31					do	
301	" "	P̄	16	01	25					do	
302	" 25	P̄	20	8	25					do	
303	" "	P̄	21	31	44					do	
304	" 26	P̄	1	43	48					do	
305	" "	P̄	10	11	46					do	
306	" "	P̄	11	54	44					do	
307	" 27	P̄	1	56	40					do	
308	" "	P̄	5	3	4					do	
309	" "	eP	13	29	31.5						
		L	"	33	31.7						
		M	"	34	12.2	14.4	-30	+110			
		F	14	14	16.7						
310	" "	P̄	15	18	24					Local shock (Neighbouring Nagasaki)	
311	" "	P̄	21	9	24						
312	" 28	P̄	23	45	41					do	
313	" "	P̄	0	26	4					do	
314	" "	P̄	3	45	10					do	
315	" "	P̄	4	51	12					do	
316	" "	P̄	5	59	2					do	
317	" "	P̄	8	21	16					do	
318	" "	P̄	8	55	48					do	
319	" "	P̄	10	27	31.5					do	
320	" "	P̄	10	43	34					do	
321	" "	P̄	11	43	15					do	
322	" 29	P̄	6	14	58					do	
323	" "	P̄	6	36	43					do	
324	" "	P̄	11	57	33					do	
325	" "	P̄	12	14	15					do	
326	" "	P̄	18	25	11					do	
327	" "	P̄	19	7	11					do	
328	" 30	P̄	8	39	30					do	
329	" "	P̄	11	6	10					do	
330	" "	P̄	12	50	46					do	
331	" "	P̄	14	6	41					do	
332	" "	P̄	15	21	24					do	
333	" "	P̄	16	34	54					do	
334	" "	P̄	22	42	30					do	
335	" "	P̄	23	51	40					do	



# NAGASAKI, JAPAN.

## 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	$T_0$	$\frac{1}{T_0^2}$	$\mathcal{J}$	V
Wiechert	N-S	200kg	Air	6.3	0.046	2.4	100
	E-W	"	"	6.3	0.063	3.0	100
Wiechert	U-D	80	"	7.1	0.049	2.9	73
Omori	N-S	16	Magnetic	17.0	0.004	2.7	20
Omori	E-W	16	"	15.4	0.007	1.9	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			$\Delta$ km.	Remarks
			h.	m.	s.		AN $\mu$	AE $\mu$	Az $\mu$		
336	Dec 1	P	1	1	57		± 7	± 8		Microseisms.	
337	" "	P	12	55	50		+ 4	+ 3		do	
338	" "	P	13	58	39	0.5		+ 2	445	Off the coast of Izumo.	
		S	"	59	39	0.6		+ 4			
		L	"	"	44	2.0		+ 6			
		F	14	1	21						
339	" 1	P	14	7	9		± 6	+ 11		Microseisms	
340	" "	P	16	3	40		+ 2	- 4		do	
341	" "	P	21	39	7		- 2	+ 8		do	
342	" 2	P	5	11	2		± 5	+ 7		do	
343	" "	P	9	59	44		- 1	+ 2		do	
344	" "	P	10	43	16		- 3	+ 4		do	
345	" "	P	11	28	55		- 13	+ 13		do	
346	" "	P	13	8	53		± 3	- 5		do	
347	" "	P	14	18	24		+ 5	- 4		do	
348	" 3	P	7	26	50					Distant earthquake	
349	" "	P	16	47	26			± 1		Microseisms	
350	" "	P	17	27	11			± 1		do	
351	" "	P	22	24	36		+ 3	± 6		do	
352	" 4	P	3	16	52			- 2		do	
353	" "	P	5	41	48		± 1	± 2		do	
354	" "	P	6	25	38			± 1		do	
355	" "	P	8	57	16		+ 1	± 4		do	
356	" "	P	13	16	57		+ 4	± 4		do	
357	" "	P	15	46	41		- 4	- 10		do	
358	" "	P	18	6	37		- 1	+ 8		do	
359	" 5	P	11	9	47		- 3	+ 2		do	
360	" "	P	12	10	28		+ 4	- 4		do	
361	" "	P	14	59	42		± 4	- 7		do	
362	" 6	P	10	15	15		± 2	± 2		do	
363	" "	P	10	50	59		± 2	+ 3		do	
364	" "	P	13	18	54		+ 2	± 6		do	
365	" "	P	18	21	32		± 2	± 2		do	
366	" "	P	18	46	23		± 3	- 2		do	
367	" "	P	20	41	52		+ 2	± 4		do	
368	" "	P	21	26	15		+ 4	± 5		do	
369	" "	P	22	31	43		- 2	+ 7		do	
370	" 7	P	11	5	1		± 3	+ 2		do	
371	" "	P	11	23	3		± 3	- 2		do	
372	" "	P	17	43	58		+ 2	± 4		do	
373	" "	P	17	54	5				± 3	do	
374	" "	P	20	59	11		± 4	- 4		do	
375	" "	P	23	25	27		± 1	± 2		do	
376	" 8	P	13	25	52			± 4		do	
377	" "	P	18	3	40		- 1	± 1		do	

# SEISMIC BULLETIN

## NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN

No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			135° E				AN	AE	Az		
			h	m.	s.		$\mu$	$\mu$	$\mu$		
378	Dec 8	$\bar{P}$	20	42	19	s.	± 3	± 2		Microseisms	
379	" "	$\bar{P}$	21	1	25		± 3	+ 4		do	
380	" "	$\bar{P}$	22	28	21			+ 2		do	
381	" "	$\bar{P}$	23	25	5		± 4	- 2		do	
382	" 9	$\bar{P}$	0	49	4		+ 3	- 2		do	
383	" "	$\bar{P}$	1	50	55		± 5	+ 11		do	
384	" "	$\bar{P}$	3	6	51		± 4	+ 8		do	
385	" "	$\bar{P}$	4	28	49		± 1	+ 2		do	
386	" "	$\bar{P}$	11	54	44		± 3	- 3		do	
387	" "	$\bar{P}$	16	17	26		± 2	± 4		do	
388	" "	$\bar{P}$	17	22	7		- 4	+ 8		do	
389	" "	$\bar{P}$	17	39	18		± 1	± 1		do	
390	" "	eP	18	15	58						
		eM	"	18	23						
		F	"	20	21						
391	" "	$\bar{P}$	18	18	28		± 3	± 5		Microseisms	
392	" "	$\bar{P}$	22	29	16		- 3	± 6		do	
393	" "	$\bar{P}$	23	41	40		± 4	- 5		do	
394	" 11	$\bar{P}$	4	43	22		± 4	± 3		do	
395	" "	$\bar{P}$	21	49	57		- 2	- 1		do	
396	" "	$\bar{P}$	22	27	6		- 3	+ 2		do	
397	" 12	$\bar{P}$	15	19	35			- 5		do	
398	" "	$\bar{P}$	16	48	50		+ 3	+ 4		do	
399	" 13	$\bar{P}$	23	30	11		± 4	+ 2		do	
400	" 14	$\bar{P}$	0	25	58		± 7	- 2		do	
401	" 15	eP	8	33	56				564		
		L	"	35	10						
		F	"	37	58						
402	" 16	$\bar{P}$	3	54	21			- 4		Microseisms	
403	" "	$\bar{P}$	17	9	49		- 3	± 3		do	
404	" "	$\bar{P}$	17	49	9		- 5			do	
405	" 17	$\bar{P}$	13	50	5		+ 4	- 4		do	
406	" "	$\bar{P}$	17	17	17		+ 6	+ 2		do	
407	" "	$\bar{P}$	19	50	7		± 4	± 7		do	
408	" "	$\bar{P}$	20	54	23		+ 1	± 10		do	
409	" 18	$\bar{P}$	18	38	50		± 3	+ 5		do	
410	" "	$\bar{P}$	19	42	41		± 2	- 4		do	
411	" 19	$\bar{P}$	0	3	29		+ 5	+ 5		do	
412	" "	$\bar{P}$	1	38	2		+ 5	+ 10		do	
413	" "	$\bar{P}$	9	59	7		+ 2	- 4		do	
414	" "	$\bar{P}$	11	11	25		± 4	+ 4		do	
415	" "	$\bar{P}$	11	44	23		+ 3	- 7		do	
416	" "	$\bar{P}$	11	57	24		- 4	- 1	22	Local shock	
		S	"	"	27		± 2				
		F	"	"	30						
417	" "	$\bar{P}$	14	19	46		± 6	- 2		Microseisms	
418	" "	$\bar{P}$	16	00	26		± 3	- 2		do	
419	" 20	$\bar{P}$	10	43	26		+ 6	± 8		do	
420	" "	$\bar{P}$	11	14	43		+ 6	± 8		do	
421	" "	$\bar{P}$	11	45	38		± 3	+ 2		do	
422	" 21	$\bar{P}$	0	36	58		± 5	± 5		do	
423	" "	$\bar{P}$	1	40	57		- 3	+ 10		do	
424	" "	$\bar{P}$	5	58	47		- 4	+ 8		do	
425	" "	$\bar{P}$	6	3	29		± 5			do	
426	" "	$\bar{P}$	22	41	7		± 1	± 6		do	
427	" "	$\bar{P}$	23	52	18		± 3	± 8		do	
428	" 22	$\bar{P}$	2	29	4		± 6	± 9		do	
429	" "	$\bar{P}$	3	55	51		± 2	± 4		do	



# SEISMIC BULLETIN

NAGASAKI METEOROLOGICAL OBSERVATORY JAPAN



No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			135° E				AN	AE	Az		
			h	m.	s.		μ	μ	μ		
430	Dec 22	P̄	4	55	59	s.	± 5	— 3		do	
431	" "	P̄	6	25	22		+ 5	± 7		do	
432	" "	P̄	7	19	31		— 5	— 7		do	
433	" "	P̄	8	9	32		± 1	± 2		do	
434	" "	P̄	10	23	55		+ 4	— 4		do	
435	" "	P̄	11	29	37		— 4	+ 12		do	
436	" "	P̄	13	00	22		— 4	— 4		do	
437	" "	P̄	13	35	55		± 7	± 9		do	
438	" "	P̄	13	37	7		± 4	— 3		do	
439	" "	P̄	14	42	3		+ 6	+ 10		do	
440	" "	P̄	14	59	53		± 6	— 7		do	
441	" "	P̄	15	52	7		+ 7	+ 12		do	
442	" "	P̄	17	3	4		± 7	+ 11		do	
443	" "	P̄	19	29	20		± 4	± 4		do	
444	" "	P̄	23	26	49		— 3			do	
445	" 23	P̄	10	48	57		— 9	+ 9		do	
446	" "	P̄	14	11	14		— 1			do	
447	" "	P̄	21	31	59		± 4	+ 12		do	
448	" "	P̄	22	54	46		— 3	+ 5		do	
449	" "	P̄	23	59	1		— 4	— 5		do	
450	" 24	P̄	1	7	35		— 3	— 7		do	
451	" 26	P̄	1	53	18		± 4	— 3		do	
452	" "	P̄	3	7	1			± 2		do	
453	" "	P̄	10	29	54		± 2	+ 3		do	
454	" "	P̄	13	28	53		— 4	+ 8		do	
455	" "	P̄	16	7	36		± 6	± 6		do	
456	" "	P̄	21	49	44		+ 1	± 7		do	
457	" "	P̄	23	57	54		— 3	+ 4		do	
458	" 27	P̄	1	8	3		— 4	— 7		do	
459	" "	P̄	2	55	58			± 4		do	
460	" "	P̄	3	25	37			± 1	22	Local shock	
		S̄	"	"	40		± 5	± 5			
		F	"	"	44						
461	" "	P̄	3	58	53		+ 7	± 7		Microseisms	
462	" "	P̄	4	44	39		± 1	± 1	15	Local shock	
		S̄	"	"	41			— 2			
		F	"	"	45						
463	" 27	P̄	17	17	36		— 3	± 5		Microseisms.	
464	" "	P̄	19	40	47			— 3		do	
465	" 28	P̄	14	2	55		+ 4	— 8		do	
466	" 29	P̄	11	38	52			± 4		do	
467	" "	P̄	11	41	10			— 2	7.4	Local shock	
		S̄	"	"	11		+ 8	± 8			
		F	"	"	14						
468	" "	P̄	12	42	46		— 3	+ 7		Microseisms	
469	" "	P̄	13	16	12		+ 1	+ 8		do	
470	" "	P̄	14	37	19		+ 4	+ 4		do	
471	" "	P̄	15	47	55			— 3		do	
472	" "	P̄	16	6	45		± 2	— 5		do	
473	" "	P̄	21	15	8		+ 4	+ 8		do	
474	" 30	P̄	0	20	28		+ 1	+ 8		do	
475	" "	P̄	2	59	45		+ 6	+ 7		do	
476	" "	P̄	6	35	51		± 1	± 4		do	
477	" "	P̄	11	7	9		± 2	± 3		do	
478	" "	P̄	11	32	11		+ 3	+ 11		do	
479	" "	P̄	12	45	59		+ 3	+ 8		do	
480	" 31	P̄	13	12	26		± 3	+ 8		do	
481	" "	P̄	17	35	55		± 2	± 3		do	