SEISMOLOGICL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

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SEISMOLOGICAL BULLETIN

of the Imperial Marine Observatory and the Kobe Meteorological Observatory of Japan.

$\varphi = 34^\circ\ 41'\ 18''$ $\lambda = 135^\circ\ 10'\ 51''$ h = 58.3 m Underground : Diluvial Series.

Instrument : Omori's Seismograph (Horizontal Pendulum.) — Wiechert Seismograph (Horizontal & Vertical)

January

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	15.7		0.001	20
A_N:	16.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	3.8	Aperiodic	0.006	97
A_N:	3.8	"	0.006	97
A_Z:	3.4	5.3	0.004	67

February

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	16.8		0.001	20
A_N:	17.8		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	4.1	Aperiodic	0.005	85
A_N:	3.8	"	0.006	96
A_Z:	4.9	"	0.003	61

March

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	16.8		0.001	20
A_N:	15.6		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	3.7	Aperiodic	0.007	102
A_N:	3.7	"	0.007	97
A_Z:	4.3	"	0.004	64

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	P	16 41 06					438	Upper course of the Kikuti river, NW foot of Volcono Aso. Moderate shocks were felt at Near epicenter region.
		iP	16 41 14						
		L	16 42 05						
		M_E	16 42 09	5.3	+36				
		M_N	16 42 18	8.5		−44			
		eF_E	16 47 ±						
		eF_N	16 42 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
2	Jan. 4	eP	2 10 30					178	In the Bungo channel. Time is uncertain.
		L	2 10 54						
		M_E	2 10 55		+8				
		M_N	2 10 58			−5			
		F_E	2 12 18						
		F_N	2 12 29						
3	Jan. 8	P_N	18 08 44						In the Kasima sea. Perceptible at the Suthern part of Tohoku and Kanto district.
		L	18 09 55						
		M_N	18 10 12	1.7		−6			
		eF	18 13 ±						
* 4	Jan. 10	P	15 17 28					24	In the Osaka Bay. Perceptible at Kobe.
		L	15 17 31						
		M_E	15 17 32		+72				
		M_N	15 17 33			±87			
		M_Z	15 17 33				±22		
		F_{EN}	15 18 06						
		F_Z	15 18 16						
5	Jan. 10	P	19 38 31					19	In the Osaka Bay.
		L	19 38 34						
		M	19 38 35	0.4	−8	±9			
		F_E	19 38 45						
		F_N	19 38 44						
6	Jan. 11	e	1 46 01						Upper course of the Sakawa river, Western part of Sagami province.
		L	1 46 15						
		M_N	1 46 23						
		F	1 48 ±						
7	Jan. 11	eP	6 44 49						Upper course of the Kii river, Wakayama prefecture.
		eL	6 45 03						
		eF_E	6 45 44						
		eF_N	6 45 52						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
8	Jan. 13	iPZ	0 07 46					2330	North eastern Part of Okhotsk Sea, 58°N. 154°E. Felt at Eastern part of Hokkaido, Registerd all ayer the Warld.
		P_{EN}	0 07 48						
		P_{EM}	0 07 56	2.4	+96				
		P_{ZM}	0 07 55	2.3			+105		
		L	0 11 39						
		M_E	0 11 43	13.0	−170				
		M_N	0 11 46	13.0		±170			
		eF_{EN}	2 21 ±						
		eF_Z	2 01 ±						
9	Jan. 13	eP	18 53 03					2600	A distant earthquake, Suiyuanting, NW of Peking, China. The housses are damaged and there were many, casalties in the epicentral region.
		eL_{SE}	18 57 16						
		eF_E	19 03 ±						
		eF_N	19 04 ±						
10	Jan. 14	P	17 31 08					12	Locol shock.
		L	17 31 10						
		F	17 31 25						
11	Jan. 15	L_M	16 46 51						Ditto.
		F_E	16 46 58						
		F_N	16 47 04						
12	Jan. 16	iP	8 11 05		−4.1	−7.2	−6.0	2510	Near Baguio, Central Luzun.
		P_{R_1}	8 11 31						
		eS	8 13 08						
		L	8 15 11						
		M_E	8 17 04	3.7	+15				
		M_N	8 16 27	3.8		+21			
		M_Z	8 16 34	4.4			+9		
		eF_E	8 35 ±						
		eF_N	8 32 ±						
		eF_Z	8 26 ±						
13	Jan. 17	eP	22 33 57						Probable in the

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		iP	22 34 30						Micronesia, Pacfic Ocean.
		eL ?	22 38 25						
		eF_E	22 56 ±						
		eF_N	23 00 ±						
14	Jan. 20	P	15 00 59						A distant earthquake.
		e_E	15 02 13						
		e_N	15 03 25	3.7		±5			
		eF	15 13 ±						
15	Jan. 21	P	2 23 03						Upper caurse of the Sakawa river, Sagami province. Weack shocks were felt at epicentral region.
		eL	2 23 33						
		M_E	2 23 34	1.5	+20				
		M_N	2 23 48						
		M_Z	2 23 47						
		M_2E	2 23 48	1.5	+23				
		eF_{EN}	2 28 ±						
		eF_Z	2 27 ±						
16	Jan. 21	e	5 32 52						In the Kasima Sea.
		eF	5 38 ±						
17	Jan. 22	P	16 59 37					51	In the Kii channel. Perceptible at Wakayama.
		L	16 59 44						
		M	16 59 44	0.5	±5	±7			
		F_E	17 00 55						
		F_N	17 00 58						
18	Jan. 23	P	3 31 42					65	Ditto.
		L	3 31 50						
		M_E	3 31 52	0.5	−11				
		M_N	3 31 56	0.5		+21			
		F_E	3 32 53						
		F_N	3 33 00						
		F_Z	3 32 52						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
19	Jan. 23	P	18 54 54					49	In the Kii channel.
		L	18 55 01						
		M_E	18 55 01		±3				
		M_N	18 55 02			±2			
		F	18 55 26						
20	Jan. 25	P	12 41 28					21	In the Osaka Bay.
		L	12 41 31						
		M_E	12 41 31	0.4	−67				
		M_N	12 41 32	0.3		±38			
		M_Z	12 41 33	0.3			−15		
		F_E	12 42 15						
		F_N	12 42 06						
		F_Z	12 42 20						
21	Jan. 25	L	12 49 00						Ditto.
		M	12 49 00		±6	±9			
		F_E	12 49 11						
		F_N	12 49 16						
23	Jan. 28	P	0 42 54					200	Off Sionomisaki, Kii peninsula. Perceptible at Sionomisaki.
		e	0 43 04						
		L	0 43 21						
		M_1E	0 43 22	1.1	±9				
		M_N	0 43 22			±7			
		M_2E	0 43 29		±8				
		eF	0 46 ±						
24	Jan. 28	P	16 18 17					83	An after shock of Great North Tango earthquake on march 7th 1929. Felt at Toyooka.
		L	16 18 28						
		M_E	16 18 31						
		M_N	16 18 32						
		F_E	16 18 56						
		F_N	16 18 53						
25	Jan. 29	P	3 11 40					5	Local shock.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	3 11 41						
		M_N	3 11 42			±4			
		F	3 11 48						
26	Jan. 29	eP	22 15 59						Near Yasima, Sikoku district.
		L	22 16 04						
		F	22 16 29						
27	Jan. 30	P	17 01.2 —						A distant earthquake. Time is uncertain.
		P_{R_1}	17 02.2 —						
		eF	17 43 —						
28	Feb. 1	P_Z	17 23 13					5580	Epicenter, Turkistan ragion of Central Asia. Felt in Tashkent. Kokand. and Delhi. Compression.
		eS_N	17 30 27						
		iSR_{1N}	17 31 53						
		eL ?	17 42 12						
		eF_E	17 55 ±						
		eF_N	17 51 ±						
		eF_Z	17 54 ±						
29	Feb. 2	M_{SW}	1 56 23	20.3	±5				Trace of the distant earthquake. Central Atlantic Ocean, Near the Equator.
		eF	2 06 ±						
30	Feb. 3	P	2 45 58						Near Naze. Riukyu Ils. By Omoris Sismograph.
		eL	2 48 16						
		M_N	2 48 59	8.4		−30			
		eF_E	3 04 ±						
		eF_N	3 06 ±						
31	Feb. 3	P	4 58 18						In the Kii channel.
		L	4 58 26					60	
		M_E	4 58 26	0.5	+9				
		M_N	4 58 27	0.5		+8			
		F_E	4 58 58						
		F_N	4 59 00						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
32	Feb. 3	P_{SW}	7 08 33						Near Naze Riukyu Ils.
		eF	7 15 ±						
33	Feb. 5	eP	19 43 00						An after shock of Great North Tango earthquake on march 7th 1927.
		eL	19 43 09						
		M_N	19 43 10						
		F	19 43 45						
34	Feb. 6	iP_Z	6 53 26					2185	East off Iturup Ils. East of Hokkaido. P phase is remarkoble.
		L_E	6 56 55						
		L_N	6 57 05						
		F_E	7 07 ±						
		F_N	7 08 ±						
35	Feb. 9	P	12 29 01					415	Near Kumamoto, Kyusyu. Strong shocks were felt at epicentral region.
		L	12 29 57						
		M_E	12 30 10	2.1	+24				
		M_N	12 30 07	2.1		−17			
		M_Z	12 30 15	2.2			+23		
		F_E	12 36 ±						
		F_N	12 37 ±						
		F_Z	12 35 ±						
36	Feb. 10	P	21 37 03					48	In the Kii channel. Weak shocks were felt at Wakayama.
		L	21 27 10						
		M_E	21 37 10	0.8	−31				
		M_N	21 37 13	0.8		+20			
		F_E	21 41 ±						
		F_N	21 42 ±						
37	Feb. 14	P	14 41 16						ESE off Naze Ils, Riukyu Ils.
		e	14 42 37						
		eL ?	14 43 52						
		M_E	14 44 13	13.8	±3				
		M_N	14 44 13	13.8		±4			
		M_Z	14 44 18	10.2			±7		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		FEN	14 51 ±						
		FZ	14 55 ±						
38	Feb. 15	PZ	5 46 47					2960	A distant earthquake. Prabable epicenter 9°5 N 130° E.
		iPN	5 46 48						
		SE	5 51 27						
		eFE	5 58 ±						
		eFN	5 59 ±						
39	Feb. 17	P	18 32 59					48	In the Kii channel.
		L	18 33 05						
		ME	18 33 06	0.8	−16				
		MN	18 33 06	0.8		−9			
		FE	18 33 37						
		FN	18 33 35						
40	Feb. 19	P	4 04 43		+10	−19	−4		In the upper caurse of Kumano river, Western post of Nara Prefecture. P phase is Remarkable.
		eL	4 04 49						
		F	4 05 32						
41	Feb. 20	P	13 27 25					82	An after shock of Great North Tango earthquake on march 7th 1927.
		L	13 27 36						
		ME	13 27 40	0.8	−19				
		MN	13 27 39	0.9		−11			
		MZ	13 27 37	1.4			+15		
		FE	13 28 03						
		FN	13 28 01						
		FZ	13 28 17						
42	Feb. 20	iPZ	21 14 41						A distant earthquake.
		eSSW	21 25 52						
		eFE	21 40 ±						
		eFN	21 42 ±						
43	Feb. 21	eP	18 21 16						In the Kasima Sea.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eFE	18 26 ±						Faint record.
		eFN	18 25 ±						
44	Feb. 22	eP	4 03 06						Mouth off Uketo river, Hukusima prefecture.
		eL	4 04 11						
		eF	4 08 ±						
45	Feb. 22	P	21 03 58						A distant earthquake. Central North Atrantic Ocean.
		eL	22 03 ±						
		MSW	22 04 ±						
		MSE	22 09 ±						
		eF	22 19 ±						
46	Feb. 24	eP	4 50 14						In the Kii channel. Felt at Wakayama.
		L	4 50 23						
		F	4 50 54						
47	Feb. 24	P	12 19 44					180	Middle basin of Eno river, Hirosima Prefecture.
		L	12 20 08						
		ME	12 20 10	0.9	±7				
		MN	12 20 13			±7			
		FE	12 21 15						
		FN	12 21 25						
48	Feb. 26	eP	1 41 33						In the kii channel.
		ME	1 41 35		−6				
		MN	1 41 34			+5			
		eF	1 42 03						
49	Feb. 26	PZ	9 09 17						A distant earthquake. South of Alaskan peninsula, Accarding to kew.
		eL	9 23 17						
		eFE	9 48 ±						
		eFN	9 36 ±						
50	Feb 27	P	9 36 00					391	East off Hatidyo Ils.
		eL	9 36 53						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_E	9 37 27	1.6	±4				
		eF_E	9 41 ±						
		eF_N	9 42 ±						
51	Mar. 2	eP	5 22 37						Near Toyooka, Tadima Province.
		M_E	5 22 41						
		F	5 22 51						
52	Mar. 2	P	23 23 55					47	In the Kii channel.
		L	23 24 01						
		M_E	23 24 01	0.8	±3				
		M_N	23 24 02			±2			
		F_E	23 24 18						
		F_N	23 24 21						
53	Mar. 3	P	4 53 12						Near Siomisaki, South end of Kii peninsula.
		e	4 53 22						
		L	4 53 30						
		M_E	4 53 31		+9				
		M_N	4 53 31	0.8		+6			
		F_E	4 54 00						
		F_N	4 54 10						
54	Mar. 5	L	12 04 21						In the Kii channel.
		M	12 04 22		−5	±3			
		F	12 04 52						
55	Mar. 5	iP	12 05 13						
		L	12 05 23					74	Ditto.
		M_E	12 05 25	0.8	−20				
		M_{NZ}	12 05 24			−19	+6		
		F_E	12 06 27						
		F_N	12 06 25						
		F_Z	12 06 21						
56	Mar. 7	iP	1 42 37					4370	Weatern Part of Aleution

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S_E	1 48 45						Ils.
		S_N	1 49 01						S,S, Yokohama maru felt the Sea chocks.
		iL	1 52 23						
		M_1E	1 53 55	13.8	+53				
		M_1N	1 55 10	13.8		−52			
		M_1Z	1 58 18	11.4			−47		
		M_2E	2 01 18	12.8	−44				
		M_2N	1 58 45	10.9		−44			
		M_2Z	2 00 59	15.8			+47		
		M_3E	2 24 55	11.2	−20				
		M_3N	2 24 41	12.2		−18			
		eF_E	4 15 ±						
		eF_N	4 07 ±						
		eF_Z	4 00 ±						
57	Mar. 7	P	11 20 59					79	In the Kii channel.
		L	11 21 09						
		M_E	11 21 10	1.0	−14	−32	±6		
		F_{EN}	11 21 52						
		F_Z	11 21 59						
58	Mar. 9	P_Z	2 14 49					2000	Prabable epicenter West off mariamse Ils. Mcronesia. By Omori's Seismograph.
		L	2 18 10						
		M_N	2 18 33	19.6		−115			
		eF	2 58 ±						
59	Mar. 9	eP	11 03 03						NE off Newzealand, Near Kermadec Ils. ?
		eL_E	11 25 01						
		M_E	11 29 54	21.8					
		M_N	11 28 53						
		eF_E	12 00 ±						
		eF_N	11 51 ±						
60	Mar. 9	P	12 14 47					51	Perceptible at Siomisaki. Wakayama prefecture.
		L	12 14 54						
		M_N	12 14 54	0.8		±2			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	12 15 16						
								1720	SE off Bonin Ils.
61	Mar. 10	eP	14 39 11						
		S	14 42 08						
		eF_E	14 57 ±						
		eF_N	14 55 ±						
		eF_Z	14 56 ±						
62	Mar. 10	iP	22 55 05						Off Sado Ils, Japan Sea.
		eF	23 03 ±						
63	Mar. 14	iP_Z	14 17 49						ESE off Siriya cape Aomori prefecture.
		e	14 20 06						
		eF_E	14 34 ±						
		eF_{NE}	14 33 ±						
64	Mar. 14	P	18 39 11					2060	South off Bonin Ils.
		eS_E	18 42 39						
		eL_N	18 44 11						
		M_E	18 46 13	9.6	+2				
		M_N	18 46 01	8.0		±2			
		M_Z	18 47 34						
		eF_E	19 01 ±						
		eF_N	19 00 ±						
		eF_Z	18 56 ±						
65	Mar. 15	P	1 59 23						
		S	2 00 58					870	East off miyako, Iwate prefecture. Weak shocks were felt at Near epicenter coast.
		M_E	2 01 32	8.2	±8				
		M_N	2 01 23	8.2		±8			
		M_Z	2 01 31						
		eF_{EN}	2 16 ±						
		eF_Z	2 14 ±						
66	Mar. 15	P	10 14 42						
		iP_Z	10 14 46					315	In the Bungo channel.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		iL	10 15 25						
		eF_{EN}	10 19 ±						
		eF_Z	10 17 ±						
67	Mar. 15	eP	19 08 54					69	In the Kii channel.
		L	19 09 03						
		M	19 09 04	0.7	+7	−6	±2		
		F_E	19 09 35						
		F_{NZ}	19 09 36						
68	Mar. 16	eL	9 39 32						An after shock of Great North Tango earthquake, an march 7th 1927.
		M_E	9 39 36						
		M_{NZ}	9 89 35						
		F_E	9 40 10						
		F_N	9 40 11						
		F_Z	9 40 10						
69	Mar. 17	iP	0 25 52					69	In the Kitan strait.
		L	0 25 41						
		M_E	0 25 41	0.6	+9				
		M_N	0 25 42	0.5		+7			
		eF_{EN}	0 26 16						
		eF_Z	0 26 11						
70	Mar. 17	P	19 49 23						In the Kii channel.
		L	19 49 32						
		M_E	19 49 35		+8	+11			
		M_N	19 49 33	0.5					
		F_E	19 50 36						
		F_N	19 50 31						
		F_Z	19 50 18						
71	Mar. 18	P_Z	23 23 11					1000	East off Kinkazan, Miyagi prefecture.
		S	23 24 59						
		eL	23 25 37						
		M_E	23 26 58	2.9	+13				

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks.
			h m s	s	μ	μ	μ	km.	
		M_N	23 27 20	3.1		−16			
		F_E	23 37 ±						
		F_N	23 37 ±						
		F_Z	23 33 ±						
72	Mar. 20	L_E	7 25 21						Local shock.
		M_E	7 25 21	0.5	±4				
		M_N	7 25 22	0.4		±4			
		F_E	7 25 34						
		F_N	7 25 36						
73	Mar. 20	P	20 05 44					116	In the Kii channel.
		L	20 05 59						
		M_E	20 06 00		±3				
		M_N	20 06 02			±12			
		F_E	20 06 26						
		F_N	20 06 26						
74	Mar. 20	P	21 15 12						In the Farmosa strait.
		eS?	21 17 14						
		eL	21 18 50						
		eF	21 27 ±						
75	Mar. 22	eL	3 20 43						A distant earthquake. Probable epicenter in the South sea.
		eF_E	3 28 ±						
		eF_N	3 26 ±						
76	Mar. 23	eP	20 07 43						Ditto.
		e	20 10 05						
		eL	20 14 50						
		eM_E	20 15 53						
		eF	20 31 ±						
77	Mar. 24	P	3 04 34						
		L	3 04 35					8	Local shock.
		M_{EN}	3 04 36		±4	±12			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F_E	3 04 41						
		F_N	3 04 42						
78	Mar. 27	eP	9 25 59					780	Southeast off Miyako, Iwate prefecture.
		eS_N	9 27 27						
		L	9 27 39						
		M_E	9 27 44	2.5	+9				
		M_N	9 27 54						
		M_Z	9 27 48	2.7					
		F_{EN}	9 33 ±						
		F_Z	9 31 ±						
79	Mar. 27	eP	16 33 46					581	SE off Bōsō Peninsula, Weak shocks were felt at Southeastern part of the Kanto.
		S	16 34 29						
		L	16 35 05						
		M_E	16 36 19	3.1	−8				
		M_N	16 36 38	3.9		+4			
		eF_{EN}	16 44 ±						
		eF	16 39 ±						
80	Mar. 27	P	17 29 07						In the Kitan Straint.
		eF	17 29 40						
81	Mar. 27	P_N	21 40 54						Off the Kujukuri shore, Tiba prefecture.
		eL_N	21 42 01						
		eF	21 48 ±						
82	Mar. 30	eM	16 49 28		±2	±5			In the Kii channel.
		F_E	16 49 40						
		F_N	16 49 42						

SUMOTO JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

$\varphi = 34^\circ\ 21'$ $\lambda = 134^\circ\ 53'$ h = 109.0 m. Underground: Cretaceous.

Instruments: Omori's Seismograph. (Horizontal Pendulum)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	20.8	1.2	0.001	20
A_N:	18.4	1.2	0.001	20

Wiechert Seismograph. (Horizontal & Vertical)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.1	Aperiodic	0.004	104
A_N:	4.1	"	0.003	115
A_Z:	4.6	"	0.002	76

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iP	16 41 04						Upper Course of the Kiku river, NW foot of Volcano Aso. Kyūsyū. Moderate shocks were felt at near epicenter region.
		eL	16 41 42						
		M_E	16 42 16	4.8	+61				
		M_N	16 42 02	4.0		±55			
		M_Z	16 42 19	7.2			±26		
		F_E	16 46 59						
		F_N	16 46 43						
		F_Z	16 44 35						
2	Jan. 9	eP	3 50 42						In the Kii channel.
		eF	3 51 12						
3	Jan. 9	eP	4 25 55						Ditto.
		L	4 25 59					31	
		F	4 26 17						
4	Jan. 10	iP	15 17 29						In the Osaka Bay. Perceptible at Kobe.
		L	15 17 33					23	
		M_{EN}	15 17 33	0.4	+4	+8			
		M_Z	15 17 35	0.4					
		F_E	15 17 59				+5		

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F_N	15 18 00						
		F_Z	15 18 12						
5	Jan. 11	eP	5 20 17					23	In the Kii channel.
		L	5 20 20						
		F	5 20 29						
6	Jan. 11	eP	6 45 18					38	Upper course of the Kii river, Wakayama prefecture.
		L	6 45 23						
		F	6 46 02						
7	Jan. 11	eP	18 32 37					20	In the Kitan strait.
		L	18 32 40						
		F	18 32 55						
8	Jan. 12	P	10 09 00					44	In the Kii channel.
		L	10 09 06						
		eF	10 09 43						
9	Jan. 13	P	0 07 49					2100	North-eastern part of Okkotsk sea 58°N 154°E. Felt at eastern part of Hokkaido.
		S	0 09 37						
		L	0 11 21						
		M_E	0 11 51	5.1	−145				
		M_N	0 11 54	5.2		−198			
		M_Z	0 11 54	4.3			−148		
		eF_E	2 16 ±						
		eF_N	2 22 ±						
		eF_Z	2 00 ±						
10	Jan. 13	eP	18 53 05					1990	A distant earthquake Suiyuonting, NW of peking China. The hoasses are damaged and there were many cosalties.
		eL	18 56 27						
		eF	19 11 ±						
11	Jan. 14	eP	6 24 12					25	In the Kii channel.
		L	6 24 16						
		M	6 24 17	0.4	+10	−15	+6		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	6 25 54						
								34	In the Kii channel. Time is uncertain.
12	Jan. 15	eP	16 42 59						
		L	16 43 04						
		F	16 43 25						
13	Jan. 16	eP	8 10 54					2440	Central Luzun.
		S	8 12 54						
		L	8 14 54						
		eF	8 56 ±						
14	Jan. 20	P	4 49 31					44	In the Kii channel.
		iL	4 49 37						
		M	4 49 37	0.4	±9	+10			
		eF	4 50 20						
15	Jan. 20	eP	15 00 21						A distant earthquake.
		eF	15 18 ±						
16	Jan. 21	eP	2 22 43						
		eF	2 31 ±						Upper course of the S kawa river, Sagami pro ince. Weak shocks w felt at epicentral regio
17	Jan. 22	iP	16 59 38						
		L	16 59 43					36	In the Kii channel.
		M	16 59 44	0.6	−13	−14			
		eF	17 00 31						
*18	Jan. 23	P	3 31 36						
		iL	3 31 42					44	In the Kii channel.
		M	3 31 42	0.5	-17	±21	−6		Perceptible.
		F	3 32 44						
19	Jan. 23	P	18 54 49						
		iL	18 54 53						
		M	18 54 53	0.5	±8	±12	±5	30	In the Kii channel.
		eF	78 56 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
20	Jan. 24	P	9 10 35					32	In the Kii channel.
		iL	9 10 39						
		M	9 10 40	0.4	−11	±15	−7		
		eF	9 11 28						
21	Jan. 24	P	12 52 15					33	Ditto.
		L	12 52 19						
		M	12 52 20	0.4	±5	+8			
		eF	12 52 58						
22	Jan. 25	P	12 41 32					26	In the Osaka bay.
		L	12 41 35						
		F	12 42 03						
23	Jan. 26	eP	9 20 37					37	In the Kii channel.
		L	9 20 42						
		eF	9 21 10						
24	Jan. 28	iP	0 42 55					188	Off the Siomisaki, Kii peninsula.
		L	0 43 20						
		M	0 43 20	0.3	−4	+6			
		eF	0 44 17						
25	Jan. 29	iP	22 15 25						Near Yasima, Sikoku district.
		eL	22 15 51						
		eM_N	22 15 54	0.2					
		eF	22 16 35						
26	Jan. 30	eP	17 00 45						A distant earthquake. Faint record.
		eF	17 03 53						
27	Feb. 1	eP	17 33 10						Epicenter Turkistan region of the Central Asia.
		eF	17 48 ±						
28	Feb. 3	iP	2 45 54					863	Near Naze, Riukyu Ils.
		S	2 47 00						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	2 47 50						
		M_E	2 48 15	3.5	+22				
		M_N	2 48 25	7.1		−48			
		M_Z	2 48 21	3.3			−12		
		F	2 56 50						
29	Feb. 3	iP	4 58 13					28	In the Kii channel.
		L	4 58 17						
		M	4 58 17	0.8	+17	−46	±15		
		F	4 59 11						
30	Feb. 3	eP	7 07 41						Near Naze, Riukyu Ils.
		eF	7 11 48						
31	Feb. 6	eP	6 53 31					2024	East off Iturup Ils.
		eL	6 56 56						East off Hokkaido.
		eF	7 02 13						
32	Feb 9	P	12 28 53					374	Near Kumamoto. Strong shocks were felt at the epicentral Region.
		L	12 29 44						
		M	12 29 49	3.0	−26	−33	−21		
		eF	12 36 ±						
*33	Feb. 10	iP	21 36 39					26	In the Kii channel. Perceptible. Weak shocks were felt at Wakayama. Time is uncertain.
		L	21 36 43						
		M	21 36 43	0.3	−21	+51	±16		
		eF	21 39 ±						
34	Feb. 14	eP	14 40 00						ESE off Naze, Riukyu Ils.
		eL	14 42 35						
		eF	14 57 ±						
35	Feb. 15	eP	5 46 42						A distant earthquake.
		eL	5 51 24						
		eF	5 56 24						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
36	Feb. 17	eP	18 30 30					65	Time is uncertain. In the Kii channel.
		L	18 30 39						
		F	18 31 30						
37	Feb. 20	iP	13 27 30					126	An after shock of Great North Tango earthquake, On march 7 1927.
		L	13 27 47						
		M_E	13 27 50	1.3	±11				
		M_N	13 27 49	1.5		±8			
		F	13 28 31						
38	Feb. 24	iP	4 49 53					97	In the Kii channel.
		iL	4 50 06						
		M_E	4 50 08	0.4	±8				
		M_N	4 50 13	0.9		−4			
		eF	4 50 57						
39	Feb. 24	eP	12 19 41					186	Middle basine of the Eno river.
		eL	12 20 06						
		eF	12 20 47						
40	Feb. 25	iP	7 02 26					25	In the Kii channel.
		L	7 02 30						
		M_E	7 02 33		±3				
		M_N	7 02 32	0.4		±4			
		eF	7 02 54						
41	Feb. 26	iP	1 41 32					24	Ditto.
		L	1 41 35						
		M_N	1 41 36	0.4		±5			
		eF	1 41 53						
42	Feb. 26	eP	9 09 20						South of Alaskan peninsula. (According to Kew).
		eF	9 34 ±						
43	Feb. 27	eP	9 36 04						East off Hatidyo Ils.
		eF	9 39 ±						

No.	Date	Fhase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
								59	In the Kii channel.
44	Mar. 2	iP	23 23 42						
		L	23 23 50						
		MEN	23 23 50	0.4	−2	±5			
		FE	23 24 41						
		FN	23 24 33						
45	Mar. 3	iP	4 52 58					130	Near Siomisaki, South end of Kii peninsula.
		L	4 53 15						
		M	4 53 16	0.5	−4	±5			
		FE	4 54 09						
		FN	4 53 54						
46	Mar. 3	P	18 16 41					27	In the Kii channel.
		L	18 16 45						
		F	18 17 16						
47	Mar. 5	P	12 04 04		−1	−1		50	Ditto.
		L	12 04 10						
		ME	12 04 10	0.6	−4				
		MN	12 04 11	0.8		−4			
		MZ	12 04 11				±1		
		F	12 04 40						
*48	Mar. 5	P	12 05 07					45	Ditto. Perceptible.
		L	12 05 13						
		ME	12 05 14	0.8	−22				
		MN	12 05 13	0.6		−21			
		MZ	12 05 17	0.6					
		FE	12 06 31				±6		
		FN	12 06 32						
		FZ	12 06 09						
49	Mar. 7	iP	1 42 39	0.6	+3	+4	−13	4851	Dilatation. Westen part of Alutian Ils. S.S. Yokohama maru felt the Sea shocks.
		iS	1 49 10						
		SME	1 49 10	14.1	±33				
		SMN	1 49 34	8.4		±50			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		SMZ	1 49 25	9.2			±33		
		ME	1 52 42	12.4	±23				
		MN	1 52 53	10.7		+43			
		FEN	3 55 ±						
		FZ	3 15 ±						
50	Mar. 7	P	11 21 00		−1	−2		74	In the Kii channel.
		L	11 21 10						
		ME	11 21 10	0.9	±3				
		MN	11 21 10	0.4		±3			
		F	11 22 11						
51	Mar. 9	P	2 14 39					2290	Probable epicenter West off marianne Ils, Micronesia Pacific Ocean.
		eS	2 18 27						
		eFE	2 41 ±						
		eFN	2 42 ±						
		eFZ	2 23 ±						
52	Mar. 10	P	14 38 55					1875	SE off Bonin Ils.
		S	14 42 05						
		ME	14 42 06	3.2	+12				
		MN	14 42 08	2.2		±9			
		FEN	14 54 ±						
		FZ	14 45 ±						
53	Mar. 15	P	1 59 23					800	East off miyako, Iwate Prefecture. Weak shocks were felt at Near epicenter coast.
		S	2 00 50						
		ME	2 01 59	4.4	+5				
		MN	2 01 44	3.0		+3			
		MZ	2 01 32	2.4			−2		
		F	2 09 ±						
54	Mar. 15	iP	10 14 22					325	In the Bungo channel.
		S	10 15 06						
		ME	10 15 19	2.4	±5				
		MN	10 15 14	1.2		±4			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MZ	10 15 14	1.6			+3		
		F	10 17 57						
55	Mar. 15	P	19 09 01					15	In the Kii channel.
		L	19 09 03						
		MN	19 09 04	0.4					
		eF	19 09 36						
*56	Mar. 15	iP	23 44 37					26	Ditto.
		L	23 44 40						Perceptible.
		M	23 44 41	0.4	±4	±4			
		F	23 44 58						
57	Mar. 16	eP	17 09 19					30	Ditto.
		L	17 09 23						
		eF	17 09 45						
58	Mar. 17	iP	0 25 25					43	Ditto.
		L	0 25 31						
		M	0 25 31	0.4	+4	±6			
		F	0 26 01						
*59	Mar. 17	iP	11 05 38					34	Ditto.
		iL	11 05 43						Perceptible.
		MEZ	11 05 43	0.4	+5		+4		
		MN	11 05 44	0.4		+8			
		F	11 06 54						
60	Mar. 17	iP	18 01 54					26	Ditto.
		L	18 01 57						
		ME	18 01 58	0.2	+4				
		MN	18 01 58	0.4		−3			
		F	18 02 29						
*61	Mar. 17	iP	19 49 19					43	In the Kii channel.
		L	19 49 24						Perceptible.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M	19 49 25	0.4	+9	−14	±4		
		F	19 50 35						
62	Mar. 18	P	23 23 04					970	East off Kinkazan, Miyagi prefecture.
		S	23 24 49						
		ME	23 26 23	3.4	±8				
		MN	23 25 42	4.6		±8			
		MZ	23 25 43	4.4			±4		
		F	23 37 ±						
63	Mar. 20	iP	20 05 28		−1	+1		45	In the Kii channel.
		S	20 05 34						
		ME	20 05 35	0.6	±2				
		MN	20 05 34	0.4		+3			
		F	20 07 21						
64	Mar. 20	eP	21 14 54						In the Formosa channel.
		eF	21 24 ±						
65	Mar. 22	e	3 19 41						Prabable epicenter in the south sea.
		eF	3 31 ±						
66	Mar. 26	iP	15 05 24					25	Local shock.
		L	15 05 27						
		ME	15 05 28	0.2	±2				
		MN	15 05 27	0.2		±2			
		F	15 05 35						
67	Mar. 27	eP	9 26 27						SE off Miyako, Iwate prefecture.
		S	9 27 35						
		ME	9 28 28	2.8	−4				
		MN	9 28 23	3.0		+3			
		MZ	6 28 12	2.8			−2		
		F	9 36 ±						
68	Mar. 27	P	16 33 58					445	SE off Bōsō peninsula.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S	16 34 58						Weak shocks were felt at South-eastern part of Kanto.
		M_E	16 35 11	2.5	±3				
		M_N	16 35 16	1.8		−3			
		F	16 44 ±						
69	Mar. 27	iP	17 28 58					33	In the kitan strait.
		L	17 29 03						
		M_E	17 29 10	0.2	±2				
		M_N	17 29 05	0.4		+3			
		F	17 29 31						
70	Mar. 27	iP	20 13 42					5	Ditto.
		L	20 13 43						
		M	20 13 43	0.4	±1	±2			
		F	20 13 58						
71	Mar. 30	iP	16 49 10					45	In the Kii channel.
		L	16 49 16						
		M_E	16 49 17	0.4	−3				
		M_N	16 49 17	0.4		±3			
		F	16 49 44						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
$\varphi = 35° 32'$ $\lambda = 134° 49'$ h = 32.2 m. Underground : Diluvial Series.
Instruments : Wiechert Seismograph.

(Horizontal)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.3	Aperiodic	0.002	80
A_N:	4.1	7.1	0.002	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iP	16 41 10					405	Upper course of the Kikuti rever. NW foot of Volcono Aso, Moderate shocks were felt at Near epicenter.
		L	16 42 04						
		eM_E	16 42 57	2.0	+36				
		M_N	16 42 11	2.9		−89			
		eF	16 45 26						
2	Jan. 4	iP	2 11 04						In the Bungo channel.
		F	2 11 44						
3	Jan. 9	iP	23 20 02					5	Local shock.
		iL_E	23 20 03						
		M	23 20 03		−15	−13			
		F_E	23 20 13						
		F_N	23 20 14						
4	Jan. 10	M	15 17 55						In the Osaka bay. Parceptible at Kobe.
		F	15 18 02						
5	Jan. 10	eP	22 36 49					21	Local shock.
		iL_M	22 36 52						
		F_E	22 37 03						
		F_N	22 37 04						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
6	Jan. 13	iP	0 07 43					2240	Northeastern part of Okhotsk sea N58° E154°. Felt at Eastern part of Hokkaido.
		iL_E	0 11 33						
		iL_N	0 11 35						
		M_E	0 12 28	10.6	−12.6				
		M_1N	0 11 50	5.8		−168			
		M_2N	0 12 32	5.8		+150			
		eF_E	2 07 ±						
		eF_N	1 51 ±						
7	Jan. 16	iP	8 11 11						Central of Luzun.
		L_E	8 15 33						
		L_N	8 15 30						
		eF_E	8 28 ±						
		eF_N	8 29 ±						
8	Jan. 21	iP	2 23 06					332	Upper course of the Sakawa river. Weak shocks were felt at epicentral region.
		L	2 23 51						
		M_E	2 23 57		+9				
		M_N	2 24 00			+20			
		F_E	2 26 01						
		eF_N	2 25 51						
9	Jan. 23	iP	18 57 22					23	Local shock.
		L_M	18 57 25						
		F_E	18 57 36						
		F_N	18 57 37						
10	Jan. 23	iP	18 58 43					22	An after shock of No. 9.
		L_M	18 58 46		±3	±4			
		F	18 58 49						
*11	Jan. 28	iP	16 18 00					15	An after shock of Great North Tango earthquake, on march 7th 1927. Perceptible.
		iL	16 18 02						
		M	16 18 03						
		F	16 18 26		−94	−75			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
12	Feb. 3	iP	2 46 16					887	Near Naze, Riukyu Ils.
		iL_E	2 48 14						
		M_E	2 48 54	4.1	+41				
		M_N	2 48 52	3.2		+35			
		eF	2 54 ±						
13	Feb. 5	iP	19 42 35					16	An after shock of Great North Tango earthquake, on march 7th 1927.
		iL	19 42 37						
		M	19 42 37	0.3	−13	+30			
		F	19 43 01						
14	Feb. 6	iP	6 53 22						East off Iturup Ils.
		L_E	6 56 45						
		eL_N	6 56 48						
		M_E	6 56 58		−11				
		eF	7 01 ±						
15	Feb. 7	iP	5 35 33					22	An after shock of North Tango earthquake on march 7th 1927.
		iL	5 35 36						
		M	5 35 36		−6	+8			
		F	5 35 55						
16	Feb. 7	iP	7 11 20					22	Local shock.
		iL	7 11 23						
		M	7 11 23		−9	+20			
		F	7 11 36						
17	Feb. 8	iP	7 08 59					27	Ditto.
		iL	7 09 03						
		M	7 09 03		−4	+8			
		F	7 09 13						
18	Feb. 9	P	12 29 06					369	Near Kumamoto, Kyusyu. Strong shocks were felt at epicentral region.
		L	12 29 56						
		M	12 30 24		+29	−41			
		eF	12 32 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
19	Feb. 10	eP	21 37 27						Near Wakayama.
		L	21 37 37						
		M_E	21 37 39		−10				
		F	21 38 13						
20	Feb. 15	iP	21 05 19					14	Local shock.
		iL	21 05 21						
		M	21 05 21						
		F	21 05 31						
*21	Feb. 20	iP	13 27 13					25	An after shock of Great
		iL	13 27 17						North Tango earthquake
		M	13 27 17		−56	−75			on march 7th 1927.
		F	13 28 12						Perceptible.
22	Feb. 21	iP	3 55 44						
		iL	3 55 47					20	Local shock.
		M	3 55 47		+14	+3			
		F	3 55 56						
23	Feb. 25	iP	12 08 45						
		iL	12 08 48					19	Perceptible at North
		M	12 08 48		±4	±8			Coast of Tazima
		F	12 08 54						Province.
24	Feb. 27	iP	3 40 34						
		L_M	3 40 36		±4	±10		17	Local shock.
		F	3 40 54						
25	Mar. 2	iP_E	5 22 07						
		iL	5 22 10		−16			23	Ditto.
		M	5 22 10		±23	±10			
		F	5 22 26						
26	Mar. 7	iP	1 42 35						
		P_{R_1E}	1 44 26					4665	Western Part of Aleutian
									Ils. S.S. Yokohama-maru

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		P_{R_1N}	1 44 21						felt the Sea shocks.
		iS_E	1 48 53						
		iS_N	1 49 04						
		S_{R_1E}	1 52 16						
		S_{R_1N}	1 52 33						
		L_E	1 53 34						
		L_N	1 53 27						
		M_1E	1 57 54	14.3	−59				
		M_1N	1 54 57	15.2		−98			
		M_2E	2 00 09	13.3	−69				
		M_2N	1 57 09	11.4		−56			
		M_3E	2 01 55	11.4	−81				
		M_3N	1 58 42	13.3		−54			
		M_4N	1 59 36	15.2		+50			
		M_5N	2 00 59	10.5		+63			
		eF	3 42 ±						
27	Mar. 9	P_E	2 15 03						Prabable epicanter
		eS_E	2 17 15						west off masianne Ils.
		iS_N	2 16 49						micronesia Pacific
		L_E	2 18 50						Ocean.
		L_N	2 18 56						
		eF_E	2 37 ±						
		eF_N	2 38 ±						
28	Mar. 10	P_E	14 39 18					1970	SE off Bonin Ils.
		P_N	14 39 10						
		S	14 42 30						
		eF	14 49 ±						
29	Mar. 11	iP	13 59 56					25	Local shock.
		L	14 00 00						
		M	14 00 00		−11	±14			
		F	14 00 03						
*30	Mar. 16	iP	9 39 08		−38			18	An after shcck of Great

No.	Date	Phase	Time G. M. T.	Perlod	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
									North Tango earthquake
		iL	9 39 10						on march 7th 1927.
		M	9 39 10		−179	−91			Perceptible.
		F_E	9 39 41						
		F_N	9 39 51						
								900	East off kinkazan,
31	Mar. 18	P_E	23 22 54						Miyagi prefecture.
		S_E	23 24 30						
		S_N	23 24 34						
		eF_E	23 36 ±						
		eF_N	23 38 ±						
									East off miyako.
32	Mar. 27	P_E	9 25 15						Iwate prefecture.
		eS_E	9 26 43						
		eF	6 31 ±						
									SE off Boso peninsula
33	Mar. 27	eP_E	16 33 48						
		P_N	16 33 51						
		L_N	16 34 47						
		eM_N	16 35 03						
		eF_E	16 38 ±						
		eF_N	16 39 ±						
									Off the Kujukuri shore.
34	Mar. 27	eP	21 41 06						Tiba prefecture.
		L_E	21 41 57						
		F_E	21 42 55						
		F_N	21 42 51						
									Local shock.
35	Mar. 27	iP	23 50 41.5						
		iL	23 50 42.2					5	
		M_E	23 50 42.4						
		F	23 50 45	±9					

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SEISMOLOGICL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

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From April 1, 1929 to June 30, 1929.

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Oct 1929.

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From No. 83. to No. 167, 1929.

KÔBE JAPAN.

SEISMOLOGICAL BULLETIN

of the Imperial Marine Observatory and the Kobe Meteorological Observatory of Japan.

$\varphi = 34^\circ\ 41'\ 18''$ $\lambda = 135^\circ\ 10'\ 51''$ h = 58.3 m Underground : Diluvial Series.

Instrument : Omori's Seismograph (Horizontal Pendulum.) — Wiechert Seismograph (Horizontal & Vertical)

April

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	16.7		0.001	20
A_N:	16.8		0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.0	Aperiodic	0.004	92
A_N:	3.8	,,	0.005	98
A_Z:	4.1	,,	0.004	78

May

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	15.9		0.001	20
A_N:	15.6		0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	3.7	Aperiodic	0.008	105
A_N:	3.7	,,	0.006	100
A_Z:	3.4	,,	0.003	78

June

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	16.9		0.001	20
A_N:	15.6		0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	3.8	Aperiodic	0.005	95
A_N:	3.8	,,	0.005	103
A_Z:	3.6	,,	0.002	67

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
83	Mar 31	P	20 00 08					59	In the Kii channel.
		L	20 00 16						
		M_{EN}	20 00 17		±5	±4			
		F_{EN}	20 00 48						
		F_Z	20 00 49						
84	Mar 31	P	20 19 27					1100	ESE off kinkazan,

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S	20 21 25						Miyagi prefectur.
		ME	20 22 54	14.0	+16				Felt at NE rn Pacific coast
		MN	20 22 53			+20			of Honshū.
		MZ	20 23 01	12.2			+14		
		FEN	20 36 ±						
		FZ	20 31 ±						
85	April 3	L	4 27 42						Basin of the Arita river,
		M	4 27 54	0.6	±4	±5			Wakayama prefectur.
		F	4 28 45						
86	April 6	P	20 34 32					149	Middle basin of the Kuz
		L	20 34 52						uryu river, Toyama prefec
		MEN	20 34 53	0.6	+21	−20			ture. Weak shocks ware
		MZ	20 34 52	0.9			+12		felt at epicentral region.
		eE	20 36 18	2.0	+9				
		eFEN	20 39 ±						
		eFZ	20 37 ±						
87	April 8	iP	10 22 11					2425	A distant earthquake.
		SE	10 26 21						Lanao, mindanao. Philip-
		SN	10 26 10	3.1					pin Ils.
		eE	10 29 40	3.5					
		eFEN	10 39 ±						
		eFZ	10 35 ±						
88	April 9	L	4 15 53						Local shock,
		MEN	4 15 56	1.2	±3	±5			
		FE	4 16 15						
		FN	4 16 37						
89	April 9	P	7 25 47						
		L	7 25 54					54	Lower basin of the Kii
		MEN	7 25 54		±14	±11			river, Wakayama prefe-
		FE	7 28 55						cture.
		FN	7 28 40						
		FZ	7 28 40						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
90	April 10	P	6 06 20					2070	A distant earthquake.
		L	6 09 49						By Omoris seismograph.
		ME	6 09 55	13.7	±30				
		MN	6 10 08	12.2					
		FE	6 31 ±			±27			
		FN	6 32 ±						
91	April 10	P	20 39 57					194	Upper basin of the Eno
		L	20 40 23						river. Hirosima prefectur.
		MEN	20 40 26	1.1	±4	±2			
		FE	20 41 17						
		FN	20 41 21						
92	April 11	P	13 08 01					42	In the Kii channel.
		eL	13 08 06						
		ME	13 08 7						
		F	13 08 16						
93	April 11	ePN	21 03 19					93	Ditto.
		iL	21 03 31						
		M	21 03 32	0.4	±12	±23	±4		
		F	21 04 05						
94	April 12	P	20 18 18					139	In the Kii channel.
		L	20 18 37						
		ME	20 18 39	0.6	±4				
		MN	20 18 38			±5			
		FE	20 19 25						
		FN	20 19 29						
95	April 13	P	16 15 25					73	In the Kitan strait.
		L	16 15 35						
		MEN	16 15 38	0.6	±8	±9			
		FE	16 16 00						
		FN	16 16 06						
96	April 15	eP	2 15 36						Off Sima peninsula,

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	2 15 43						Ise province.
		MEN	2 15 44	0.5	+17	−15			
		MZ	2 15 45						
		F	2 16 17						
97	April 16	P	0 50 32					81	Lower basin of the Arita river, Wakayama prefecture.
		e	0 50 40						
		L	0 50 43						
		M	0 50 44	0.6	+17	±11			
		FE	0 51 44						
		FN	0 51 48						
98	April 16	P	0 54 16					565	In the Kasima sea. Moderate shocks were felt at the coast near the epicenter.
		$\overline{P}$	0 54 30						
		S	0 55 20						
		LE	0 55 39						
		LN	0 55 32						
		M_1E	0 56 08	2.4	+74				
		M_1N	0 55 41	2.3		−72			
		MZ	0 55 27				+49		
		M_2E	0 57 45	3.2	+76				
		M_2N	0 57 25	3.5		−49			
		eFE	1 09 ±						
		eFN	1 10 ±						
		eFZ	1 07 ±						
99	April 16	eP	5 50 19					20	Upper basin of the Ina river, NE of Kōbe.
		LZ	5 50 22						
		MEN	5 50 24		±7	±10			
		MZ	5 50 22				±6		
		F	5 50 52						
100	April 16	MN	6 06 17						Local shock.
		F	6 06 30						
101	April 17	P	18 35 25					557	In the Kasima sea. Moderate shocks were felt at
		$\overline{P}$E	18 35 35						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	hm.	
		eS	18 36 01						the coast near the epicenter.
		L	18 36 40						
		ME	18 37 49	3.2	−33				
		MN	18 36 56	2.9		−4.4			
		MZ	18 36 56	3.3			−16		
		eF	18 45 ±						
102	April 23	P	2 54 01					26	In the Kitan strait.
		L	2 54 05						
		M	2 54 05	0.3	±5	±9			
		FE	2 54 40						
		FN	2 54 30						
103	April 23	P	14 17 10					392	Middle basin of the Kokai river, Ibaraki prefecture. Weak shock were felt at the epicentral region.
		$\overline{P}$	14 17 19						
		LE	14 18 02						
		ME	14 18 32		−25				
		MN	14 18 29			−25			
		MZ	14 18 11	2.0			−12		
		F	14 24 ±						
104	April 25	P	4 29 20					65	Basin of the Arita river. Wakayama prefefecture.
		L	4 29 28						
		M	4 29 29		±5	±8			
		FE	4 30 13						
105	April 28	M	2 38 46	0.7	−3				Local shock.
		F	2 39 14						
106	May 1	P	7 44 02						A distant earthquake.
		L	7 50 55						
		MN	7 52 21						
		MZ	7 52 17						
		eFEN	8 05 ±						
		eFZ	8 01 ±						
107	May 1	P	15 47 49					6700	Epicenter, Northeastern

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S	15 56 03						part of Persia.
		eL	16 06 13	43.4					Destructive at the epicentral region.
		M_E	16 13 10	15.8	−53				
		M_N	16 14 37	17.5		−56			
		M_Z	16 14 26	13.7			+26		
		M_2E	16 29 13	15.0	+7				
		M_2N	16 32 16	15.0		−8			
		M_2Z	16 27 18	11.1			+4		
		eF_E	16 58 ±						
		eF_N	17 00 ±						
		eF_Z	16 58 ±						
108	May 2	P_Z	14 29 28						Near kunasiri strait, east off Hokkaido.
		S_{SW}	14 32 34						
		eS_N	14 32 36						
		eL	14 35 08						
		M_E	14 36 28	17.6	±2				
		eF_{EN}	14 49 ±						
		eF_Z	14 45 ±						
109	May 5	eP	9 41 09						Near Kyoto.
		L	9 41 13						
		M_E	9 41 14		±7				
		M_N	9 41 14			±5			
		F_E	9 41 22						
		F_N	9 41 23						
110	May 6	P	5 16 32						A distant earthquake. Upper basin of the Yang-tse-Kiang river, China.?
		eS_N	5 22 32					4245	
		L	5 28 34						
		eM_E	5 33 11						
		M_N	5 31 14			−2			
		eF_{EN}	5 44 ±						
		eF_Z	5 41 ±						
111	May 7	eZ	16 42 15						A distant earthquake.
		eL	16 53 33						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	hm.	
		M_E	16 55 38						
		M_N	16 55 23	19.2		−14			
		M_Z	16 55 18	20.0			+9		
		eF_{EN}	17 01 ±						
		eF_Z	17 03 ±						
112	May 7	eP	21 19 22					701	NE off Sioya cape.
		eS	21 20 16						
		L	21 20 56						
		M_E	21 20 58		−5				
		M_N	21 21 04	1.9		±8			
		M_Z	21 21 03	1.8			±6		
		F_{EN}	21 22 25						
		F_Z	21 22 16						
113	May 9	P	17 59 47					55	In the Kitan strait.
		L	17 59 54						
		M_E	18 00 00		±8				
		M_N	18 00 01	0.6		−9			
		F_{EN}	18 00 43						
		F_Z	18 00 23						
114	May 15	eP	8 43 16						Off Tanegasima, Kagosima prefecture.
		eL	8 44 39						
		eF	8 48 ±						
115	May 18	eL	7 15 13						Destructive at the Terdjan, Armenia.
		eM	7 18 39						
		eF_{EN}	7 35 ±						
		eF_Z	7 33 ±						
116	May 19	P	18 41 16					92	In the Kii channel.
		iL	18 41 28						
		M_E	18 41 29	0.5	+23				
		M_N	18 41 29	0.5		−19			
		M_Z	18 41 28				±4		
		F_{EN}	18 42 09						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ		
		F_Z	18 42 03						
117	May 20	eP	2 04 41					45	In the Kitan strait.
		L	2 04 47						
		M_{EN}	2 04 49	0.4	±3	±3			
		F	2 05 02						
118	May 20	P	5 00 23					4135	A distant earthquake. Aleutian Ils.
		S	5 06 18						
		eL	5 09 19						
		M_E	5 13 30						
		M_N	5 12 45	20.5					
		M_Z	5 13 16						
		eF_{EN}	5 26 ±						
		eF_Z	5 24 ±						
119	May 20	eL	14 38 10						Basin of the Kinu river.
		eM	14 38 12						
		eF	14 38 41						
120	May 21	P	9 18 06						North China sea.
		eF	9 26 ±						
121	May 21	P	16 36 35					519	Hiuga sea, Off Miyazaki. Strong shocks were felt at Miyazaki.
		eP	16 36 48						
		S	16 37 31						
		L	16 37 44						
		M_1E	16 38 07	3.1	−685				
		M_1N	16 38 08	2.9		−930			
		M_1Z	16 38 09	3.5			−372		
		M_2E	16 39 36	3.9	−389				
		M_2N	16 39 30	3.7		−672			
		M_2Z	16 39 09	2.6			−353		
		M_3E	16 40 26	5.1	−413				
		M_3N	16 40 16	5.5		−430			
		M_3Z	16 40 16	8.0			−200		
		eF	17 19 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
122	May 21	eP	16 59 34						An after shock of No 121.
		eF	17 01 32						
123	May 21	P	17 11 41						Ditto.
		S	17 12 28						
		M_E	17 12 55	1.4	+10				
		F	17 16 19						
124	May 21	P	17 22 25						Ditto.
		eF	17 27 ±						
125	May 22	eP	0 36 05						Sagami sea.
		eF	0 55 ±						
126	May 23	iP	3 23 20					188	Lower basin of the Kuzuryu river, Toyama prefefecture.
		L	3 23 46						
		M_E	3 24 03		±10				
		M_N	3 24 05			−15			
		F	3 25 43						
127	May 26	P	8 49 46					4135	A distant earthquake. Sunda Ils?
		eS_E	8 55 41						
		eL	8 58 15						
		eF	9 14 ±						
128	May 26	eP	22 50 43					7300	East off Canada.
		S	22 59 28						
		eL	23 07 25	32.7					
		M_1E	23 17 36	23.2	+9				
		M_1N	23 17 06	23.2		−13			
		M_Z	23 23 15	18.0			+12		
		M_2E	23 24 17	16.4	+10				
		M_2N	23 24 30	16.4		−11			
		eF_{EN}	0 33 ±						
		eF_Z	0 21 ±						
129	May 27	eP	15 05 17						Near Gifu.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
									Time is Uncertain.
		eL	15 05 29						
		eM	15 05 30						
		F	15 05 51						
130	May 29	L	4 54 45						Local shock.
		M_E	4 54 47	0.6	±2				
		M_N	4 54 47	0.9		±4			
		F_E	4 55 09						
		F_N	4 54 58						
131	May 29	M_E	6 30 25						Local shock.
		M_N	6 30 29						
		F	6 30 49						
132	May 31	P	0 12 28					922	WSW off Erimo cape, Hokkaido.
		eS	0 14 32						
		eF_E	0 23 ±						
		eF_N	0 27 ±						
133	May 31	P	1 39 03						Lower basin of the Kuzuryu river, Toyama prefecture.
		L	1 39 11						
		M_E	1 39 12		±5				
		M_N	1 39 12			±4			
		F	1 39 44						
134	May 31	L	4 15 34						Local shock.
		M_E	4 15 35		±4	±3			
		F	4 15 46						
135	June 1	P	18 00 53						SE off Okinawa Ils. Riukiu Ils.
		eS	18 03 24						
		e	18 07 25						
		eF	18 23 ±						
136	June 2	iP	21 39 26					300	The mouth of the Ise bay. P phace is remarkable. Weak shocks were felt at Kanto and Oōu district.
		L	21 40 06		−1	+8			
		M_E	21 40 09	2.8	−512				
		M_N	21 40 11			−460			depth of Origin 300 km. Z compornet aut of Order.
		eF	22 11 ±						
137	June 3	P	5 03 15					82	Lower basin of the Arita river, Wakayama prefecture.
		L	5 03 26						
		M_E	5 03 29	0.5	+13				
		M_N	5 03 32	0.5		−16			
		M_Z	5 03 26						
		F_{EN}	5 05 58						
		F_Z	5 05 25						
138	June 3	P	20 39 04						A distant earthquake. Afghanistan and Turkistan.
		e	20 46 31						
		eL	20 58 35						
		M_E	21 02 20	12.6					
		eF_{EN}	21 27 ±						
		eF_Z	21 18 ±						
139	June 3	P	21 51 00					57	Basin of the Arita river, Wakayama prefecture.
		L	21 51 07						
		M	21 51 08						
		F_{EN}	21 51 41						
		F_Z	21 51 36						
140	June 4	P	15 21 30					2850	A distant earthquake. Time is Uncertain.
		L	15 26 02		+4	−4	−4		
		eF	15 37 ±						
141	June 7	P	19 53 53					236	In the Bungo channel.
		L	19 54 25						
		M_E	19 54 37	1.7	+14				
		M_N	19 54 39	1.7		+8			
		F_{EN}	19 57 19						
142	June 8	P	12 25 19					81	Mineyama, Tango province.
		L	12 25 29						
		M_{EN}	12 25 34		±5	±7			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	hm.	
		MZ	12 25 33						
		FEN	12 26 12						
		FZ	12 26 07						
143	June 9	P	9 11 46					1990	SE off Etrup Ils, Kurile Ils. Perceptible at Eastrn part of Hokkido.
		SSW	9 15 07						
		eLSE	9 17 24						
		eLSW	9 17 35						
		MSE	9 18 27	15.9	−22				
		MSW	9 20 11	13.0		−27			
		MZ	9 21 51	13.6			−8		
		M_2SE	9 23 57	15.6	−13				
		M_2SW	9 24 57	16.1		+20			
		eFEN	10 15 ±						
		eFZ	9 51 ±						
144	June 10	P	4 37 36					62	In the basin of the Arita river, Wakayama prefecture.
		L	4 37 44						
		ME	4 37 49		±12				
		MN	4 37 48			±14			
		F	4 40 ±						
145	June 11	eP	19 33 37						In the Hiuga nada.
		eL	19 34 20						
		ME	19 34 35		−6				
		MN	19 34 31			−7			
		MZ	19 34 31				+6		
		eF	19 39 ±						
146	June 12	P	11 50 027					4300	A distant earthquake. South China sea?
		iPRN	11 52 22						
		eSN	11 56 31						
		eL	12 01 41	31.7					
		eFE	12 07 ±						
		eFN	12 09 ±						
		eFZ	12 11 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
147	June 13	P	0 16 13					1860	SE off Etrup Ils. An after shock of No 143? the end parts were overtaken by following earthquake.
		SSW	0 19 24						
		eLE	0 21 20						
		ME	0 25 19	19.1	−16				
		MN	0 23 00	19.0		+22			
148	June 13	P	0 18 06					2120	Ditto.
		S	0 21 40						
		ME	0 27 26	16.2	+27				
		MN	0 26 34	15.7		+24			
		MZ	0 27 45	19.6			−22		
149	June 13	eFE	0 29 47					1920	Ditto.
		iPN	0 29 53						
		iS	0 33 04						
		eLN	0 34 11						
		ME	0 38 13	15.0	+32				
		M_1N	0 36 12	18.2		+32			
		M_1Z	0 36 08	19.3			−22		
		M_2E	0 41 52	16.1	−22				
		M_2Z	0 39 28	18.4					
		eFE	2 11 ±				−21		
		eFN	2 09 ±						
		eFZ	2 02 ±						
150	June 13	ePN	9 30 19					3205	East of Philippin Ils.
		iPZ	9 30 22						
		SE	9 35 16						
		LZ	9 37 47						
		ME	9 42 52	20.0	+15				
		M_1N	9 40 37	19.9		−30			
		MZ	9 40 32	20.2			+30		
		M_2N	9 43 01	17.6		−43			
		eFE	11 02 ±						
		eFN	11 06 ±						
		eFZ	10 53 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
151	June 13	P_Z	19 53 25						Ditto.
		eS_E	20 02 50						The end parto were over taken by following easrthquake.
		eL_{SE}	20 05 20						
		M_{SE}	20 09 41	17.2		±6			
152	June 13	P	20 24 53					539	ENE off Sioya cape. Moderate shocks were felt at Ibaraki and Hukusima prefecture.
		L	20 26 06						
		M_{SW}	20 26 21	2.1	±23				
		M_{SE}	20 26 13	2.9		±23			
		eF	20 33 ±						
153	June 13	P	23 06 27						Related to No 150.
		eS_E	23 13 50						
		eL	23 22 ±						
		M_{EN}	23 23 17	16.4					
		M_Z	23 23 20	16.8					
		eF	23 43 ±						
154	June 15	eP	19 41 26						Related to No 150.
		e_N	19 49 53						
		eF	20 08 ±						
155	June 16/17	P	22 59 53					10560	Northern part of South island, New Zealand. Destructive at epicentral region.
		eS_E	23 10 33						
		S_N	23 11 16						
		S_{R_1N}	23 15 41						
		eL_E	23 22 46						
		M_1E	23 26 44	25.8	−13				
		M_1N	23 26 29	21.8					
		M_1Z	23 33 33	22·1		+14			
		M_2E	23 33 50	18.4	+16		−12		
		M_2N	23 35 52	16.4					
		eF	0 29 ±			−18			
		eF_N	0 26 ±						
		eF_Z	0 17 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
156	June 17	iP	6 45 18					96	Off Tanabe, Kii channel. Weak shocks were felt at epicentral region.
		iL	6 45 31						
		M_{EN}	6 45 32	0.9	±53	±50			
		M_Z	6 45 33				±10		
		F_E	6 48 36						
		F_N	6 48 18						
		F_Z	6 48 18						
157	June 17	P	10 22 16						Related to No 150.
		eS_N	10 27 12						
		eL_N	10 31 11						
		eF	11 06 ±						
158	June 19	P_Z	7 36 34					6420	Probable in the South sea.
		S_E	7 44 34						
		S_Z	7 43 31						
		eS_{R_1N}?	7 49 50						
		eF	8 22 ±						
159	June 20	P_Z	18 31 09					5275	A distant earthquake.
		S_N	18 38 05						
		eF	18 47 ±						
160	June 21	M_E	4 22 52	0.8	±2				Local shock.
		M_N	4 22 51			±4			
		F	4 23 09						
161	June 21	eP	4 47 30						Related to No 150.
		eF	5 00 ±						
162	June 23	eP	21 52 33						Ditto.
		eF	22 23 ±						
163	June 24	eP_Z	2 05 43					610	ENE off Sioya cape. Moderate shocks were felt at Ibaraki and Huknsima prefecture.
		L	2 07 16						
		M_E	2 07 29						
		M_N	2 07 24	2.8		+33			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_Z	2 07 23	3.0			−19		
		F	2 13 ±						
164	June 26	e_E	8 47 41						Suō nada, Western part of the Inland sea.
		e_Z	8 47 38						
		M	8 47 48	1.4	±8	±8			
		eF	8 51 ±						
165	June 26	P	16 50 38					595	NE off Tyosi. Weak shocks were felt at Tokyo, Yokohama, and Tyosi.
		S	16 51 29						
		L	16 51 58						
		M_E	16 53 15	3.3	+82				
		M_N	16 52 28	3.3		±85			
		M_Z	16 52 21	3.0			+58		
		eF_{EN}	17 09 ±						
		eF_Z	17 08 ±						
166	June 27	P_Z	13 07 02					17200	A distant earthquake. Southern part of Sosth Atlantic Ocean. North of the Sandwich Ils. (Sharbourg)
		P_{EN}	13 07 12						
		iPR_1Z	13 11 12						
		eZ	13 16 02						
		SR_1N	13 32 31	44.0		−15			
		eL_N	13 47 ±						
		M_1E	14 19 52	24.3	−8				
		M_1N	14 16 18	21.0		−14			
		M_1Z	14 15 05	23.7			+13		
		M_2Z	14 16 31	21.2			−15		
		M_2E	14 41 39			−8			
		M_2N	14 42 18	17.7			−10		
		M_3Z	14 42 11	17.0					
		eF_E	15 08 ±						
		eF_N	15 11 ±						
		eF_Z	15 07 ±						
167	June 30	P_Z	2 05 26						
		eP_N	2 50 32					3030	Near philippin.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S_E	2 55 11						
		eL_N	2 59 28						
		M_E	3 07 28	16.4					
		M_{NZ}	3 07 25	16.8					
		eF_{EN}	3 43 ±						
		eF_Z	3 36 ±						

SUMOTO JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

φ=34° 21′ λ=134° 53′ h=109.0 m. Underground: Cretaceous.

Instruments: Omori's Seismograph. (Horizontal Pendulum)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	20.8	1.2	0.001	20
A_N:	18.4	1.2	0.001	20

Wiechert Seismograph. (Horizontal & Vertical)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.5	4.0	0.006	110
A_N:	4.5	3.8	0.006	108
A_Z:	4.5	4.1	0.006	73

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*72	Mar. 31	iP	20 00 00		+2	−2	−2	35	In the Kii channel.
		L	20 00 05						Perceptible.
		M	20 00 06	0.4	+10	−17	+7		
		F	20 01 00						
73	Mar. 31	P	20 19 25					811	ESE off the Kinkazan, Miyagi prefecture. Felt at the Pacific coast of Ouu district.
		S	20 21 15						
		M_E	20 22 23	2.5	+13				
		M_N	20 22 32	5.2		+22			
		M_Z	20 23 09	6.2					
		eF	20 38 ±				±12		
74	April 2	P	19 32 38					25	In the Kitan strait.
		L	19 32 41						
		F	19 33 02						
75	April 3	P	4 27 35					39	Basin of the Arita river, Wakayama prefecture.
		L	4 27 40						
		M	4 27 41	0.4	+4	+6			
		F	4 28 24						
76	April 6	P	20 34 40					167	Middle basin of the Kuz-

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	20 35 03						uryu river, Toyama prefecture.
		M	20 35 07	1.1	±3	+3			Weak shocks were felt at
		F	20 36 08						the epicentral region.
77	April 7	P	8 42 53					47	Basin of the Arita river,
		L	8 42 59						Wakayama prefecture.
		F	8 43 26						
78	April 8	P	10 22 06					2500	A distant earthquake.
		S	10 26 11						Lanao, mindanao,
		M_E	10 26 26	3.2	±3				Philippin.
		M_N	10 26 14	5.1		±9			
		eF	10 39 ±						
*79	April 9	P	7 25 42					32	Lower basin of the Kii river, Wakayama prefecture.
		L	7 25 46						
		M_{EN}	7 25 47	0.4	±17	±29			Weak shocks were felt at
		M_Z	7 25 48	0.3			+13		the epicentral region.
		F	7 27 22						Perceptible.
80	April 10	eP	6 06 32						A distant earthquake.
		eF	6 22 10						
81	April 11	eP	13 07 52						In the Kitan strait. Very small.
		eF	13 08 22						
82	April 11	P	21 03 13					40	In the Kii channel.
		L	21 03 18						
		M	21 03 19	0.3	±3	±4	±2		
		F	21 04 01						
83	April 12	eP	0 52 30						Off the Ariake bay, Kagosima prefecture.
		S	0 53 19						
		M	0 53 26	1.7	−3	−2			
		eF	0 55 56						
84	April 12	P	20 17 55					111	In the Kii channel,

No.	Date	Fhase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	20 18 10						
		M	20 18 12						
		F	20 19 10						
*85	April 13	P	16 15 22					39	Ditto. Perceqtible. Time is uncertain.
		L	16 15 27						
		M	16 15 27	0.4	±9	+10	−5		
		F	16 16 42						
86	April 14	P	7 58 52					52	In the Kii channel.
		L	7 58 59						
		M	7 58 59	0.4	−4	−4			
		F	7 59 35						
87	April 14	P	9 09 27					56	Basin of the Arita river, Wakayama prefecture.
		L	9 09 35						
		F	9 09 53						
88	April 15	iP	2 15 28		−0.7	+0.4		137	Off the Sima peninsula Ise province.
		S	2 15 47						
		M	2 15 47	0.8					
		F	2 16 54	0.3	−4	−2			
89	April 15	eP	6 00 35						Southern part of the Amakusa sea, West off Kyūsyū.
		eF	6 05 37						
*90	April 16	iP	0 50 27					45	Lower basin of the Arita river, Wakayama prefecture. Perceptible.
		L	0 50 33		−0.8	+0.9	+1.3		
		M	0 50 34	0.6					
		F	0 51 32	0.4	-13	+8	−3		
91	April 16	P	0 54 18					591	In the Kasima sea. Moderate shocks were felt at the coast near the epicentr.
		S	0 55 38						
		M_E	0 56 01	2.9	±37				
		M_N	0 55 59	5.6					
		M_Z	0 56 05	3.8		+46			
		F	1 08 ±				−38		

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
92	April 17	P	18 35 23					637	In the Kasima Sea.
		S	18 36 49						
		M_E	18 37 27	3.1	±17				
		M_N	18 36 54	3.1		−19			
		M_Z	18 37 04	4.8			−17		
		eF	18 47 ±						
*93	April 23	P	2 53 47					32	In the Kitan strait. Perceptible.
		L	2 53 51						
		M_E	2 53 51	0.6	+8				
		M_N	2 53 52	0.4		−10			
		M_Z	2 53 56	0.2			±3		
		F	2 54 45						
94	April 23	P	14 17 17					410	Middle basin of the Kokai river, Ibaraki prefecture. Weak shocks were felt at the epicentral region.
		S	14 18 13						
		M_E	14 18 32	2.7	±12				
		M_N	14 18 24	2.3		−8			
		M_Z	14 18 38	2.3			−4		
		F	14 23 47						
*95	April 24	iP	13 37 16			+1		36	In the Kii channel. Perceptible.
		L	13 37 21						
		M	13 37 21	0.4	±5	−9	±2		
		F	13 37 50						
*96	April 24	P	14 17 07					34	Ditto.
		L	14 17 12						
		M_{EN}	14 17 12	0.4	±2	+4			
		M_Z	14 17 14				±1		
		F	14 17 38						
*97	April 25	iP	4 29 15		−1	−1	−1	39	Basin of the Arita river, Wakayama prefecture. Perceftible.
		L	4 29 20						
		M_{EN}	4 29 21	0.4	+6	−9			
		M_Z	4 29 22	0.4			±2		
		F	4 30 14						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
98	April 25	P	16 26 57					15	In the Kilan strait.
		L	16 26 59						
		M	16 26 59	0.6 0.4	−3	±3	±1		
		F	17 27 46						
99	April 26	P	6 19 30					25	In the Kii channel.
		L	6 19 33						
		M	6 19 34	0.4 0.5	±1	−3	±1		
		F	6 19 54						
100	April 28	iP	22 44 42					45	Ditto.
		L	22 44 48						
		M	22 44 48	0.3 0.4	+7	−10	±3		
		F	22 45 33						
101	April 29	P	15 42 44						Hiuga sea, Off Miyazaki.
		eF	15 43 ±						
102	April 29	P	16 26 43					19	In the Kii channel.
		L	16 26 46						
		M_E	16 26 47	0.4	+2				
		M_N	16 26 46	0.3		±3			
		F	16 26 58						
103	April 29	eP	18 55 12					575	Off Katuura, Tiba prefecture.
		S	18 56 29						
		eF	19 11 ±						Time is uncertain.
104	May 1	eF	7 44 34						
		eF	7 55 ±						A distant earthquake.
105	May 1	eP	15 47 40						
		eL	16 04 35						NErn part of Persia.
		M_E	16 14 56	15.2	±107				Destractive at the epicentral region.
		M_N	16 15 08	15.2					
		M_Z	16 14 57	12.9		±349			
		eF	17 16 ±				±89		

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
106	May 3	iP	0 16 43					25	Near Wakayama.
		iS	0 16 46						
		M_{EZ}	0 16 46	0.6	±2		−2		
		M_N	0 16 47	0.4		+4			
		F	0 17 21						
107	May 3	iP	6 22 47					40	In the Kii channel.
		iS	6 22 52						
		M_{EZ}	6 22 52	0.3	±1	±2			
		F	6 23 23						
108	May 7	eP	16 51 49						A distant earthquake.
		M_N	16 54 57	20.0		±10			
		M_Z	16 55 11	20.6			±8		
		eF	17 02 ±						
109	May 7	eP	21 19 34						NE off Sioya cape.
		eF	21 24 50						
*110	May 9	iP	17 59 41		+2	−2	−4	24	In the Kitan Strait. Perceptible.
		iS	17 59 44						
		M	17 59 45	0.5	±32	±69	±31		
		F	18 01 53						
111	May 15	eP	8 41 48						Off Tanegasima, Northern part of Riukiu Ils.
		eF	8 45 28						
112	May 19	iP	18 41 10					59	In the Kii channel.
		iS	18 41 18						
		M	18 41 18	0.4	+10	−12	+5		
		F	18 42 30						
113	May 20	iP	2 04 30					24	In the Kitan strait.
		iS	2 04 33						
		M	2 04 34	0.6	+1	±2			
		eF	2 05 22						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
114	May 20	eP	5 00 10						Aleutian Ils.
		eF	5 16 26						
115	May 21	iP	16 36 30		−1	−12	−13	408	Hiuga nada, Off Miyazaki. Strong Shocks were felt at Miyazaki.
		iS	16 37 25						
		M_E	16 37 57	3.7	−346				
		M_N	16 38 02	3.1		−557			
		M_Z	16 38 21	2.7			−368		
		eF	17 39 50						
116	May $^{26}/_{27}$	eP	22 51 04					7420	East off Canada.
		eS	22 59 54						
		eL	23 08 41						
		M_E	23 14 46	22.5	±10				
		M_N	23 18 47	21.6		±10			
		M_Z	23 15 05	21.0			±8		
		eF	0 29 43						
117	May 31	eP	0 12 31					913	WSW off Erimo cape, Hokkaido.
		eS	0 14 35						
		M_E	0 15 43	4.8	+7				
		M_N	0 15 54	5.4		+12			
		M_Z	0 16 01	5.4			+7		
		eF	0 30 ±						
118	June 1	eP	6 37 46						Near shock,?
		eS	6 38 22						
		M_E	6 38 25	2.4	+2				
		M_N	6 38 37	3.0		−4			
		eF	6 40 ±						
119	June 1	eP	18 00 46						
		eS	18 02 26					743	SE off Okinawa Ils, Riukiu Ils.
		M_E	18 03 24	2.6	+3				
		M_N	18 03 38	2.9		±4			
		M_Z	18 03 12	2.6			±3		
		eF	18 15 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
120	June 2	iP	21 39 23		−200	−56	+438	297	The mouth of the Ise bay P phase is remarkable and clear. Weak shocks were felt at Kanto, and Oou district. The depth of Origin 300 km.
		S	21 40 03						
		M_E	21 40 07	4.0	−316				
		M_N	21 40 07	3.6		+154			
		M_Z	21 40 06	4.0			+171		
		eF	22 23 ±						
121	June 3	P	5 03 10					47	Lower basin of the Arita river, Wakayama prefecture.
		S	5 03 17						
		M_{EZ}	5 03 17	0.4	+7		−4		
		M_N	5 03 18	0.4		−10			
		F	5 04 33						
122	June 3	eP	20 39 01					5865	A distant earthquake. Afghanistan.
		eS	20 46 30						
		eF	21 12 ±						
123	June 3	P	21 50 54					39	Basin of the Arita river, Wakayama prefecture.
		S	21 50 59						
		M_{EN}	21 50 59	0.4	+5	±6			
		M_Z	21 51 00	0.4			+3		
		F	21 52 14						
124	June 4	P	15 21 34		+1	+1	−1	2150	A distant earthquake.
		eS	15 25 10						
		eM_{EN}	15 25 54	6.4	−9	+12			
		eM_Z	15 26 29	3.8			±2		
		eF	15 42 ±						
125	June 6	P	9 13 21					301	In the Kii channel.
		S	9 13 25						
		M	9 13 25	0.4	−1	−3			
		F	9 13 52						
126	June 6	eP	15 48 40						Local shock.
		eF	15 49 04						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	hm.	
127	June 7	P	19 53 39					192	In the Bungo channel.
		S	19 54 13						
		M_{EZ}	19 54 20	1.6	±5		±4		
		M_N	19 54 19	1.6		±6			
		eF	19 58 ±						
128	June 8	eP	12 25 40						An after shock of Great north Tango quake, On 7th Mar 1927
		eF	21 26 29						
129	June 9	iP	9 11 52					1983	SE off Etrup Ils, Kurile Ils. Perceptible at Eastern part of Hokkaido.
		iS	9 15 14						
		L	9 18 27						
		M_E	9 19 59	13.3	−14				
		M_N	9 20 17	14.3		−10			
		eF	10 11 ±						
*130	June 10	iP	4 37 31					46	In the basin of the Arita river, Wakayama prefecture.
		S	4 37 38						
		M_{EN}	4 37 39	0.4	+13	±21			
		M_Z	4 37 38	0.4			+7		
		F	4 39 07						
131	June 11	P	19 33 39					215	In the Hiuga nada.
		S	19 34 08						
		M_{EN}	19 34 22	2.0	±2		−2		
		M_Z	19 34 23	2.5		±2			
		eF	19 40 ±						
132	June 12	P	11 49 54						A distant earthquake. South China sea,?
		eE	11 56 44	10.0	±3				
		M_N	12 01 49	19.4		−7			
		eF	12 18 ±						
133	June 13	P	0 16 12					2120	An after shock of No 129. Felt at Eastern part of Hokkaido.
		S	0 19 46						
		L	0 22 29						
		M_{1E}	0 24 49	15.5	±19				

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	hm.	
		M_1N	0 24 40	18.0		±20			
		M_Z	0 26 38	15.4			+10		
		M_2E	0 27 24	15.5	±25				
		M_2N	0 26 36	15.5		±21			
		eF	2 00 ±						
134	June 13	P	9 30 21					0553	East off Philippin.
		S	9 35 08						
		M_E	9 38 20	10.0	+24				
		M_N	9 42 17	16.3		±23			
		M_Z	9 42 18	17.1			±33		
		eF	10 59 ±						
135	June 13	P	19 52 40					3385	Ditto.
		S	19 57 50						
		M_E	20 03 11	8.7	±3				
		M_N	20 04 10	5.8		±2			
		eF	20 23 ±						
136	June 13	P	20 24 44					658	ENE off Sioya cape. Moderate shocks were felt at Ibarski and Hukusima prefecture.
		S	20 26 12						
		M_E	20 26 34	3.2	+7				
		M_N	20 26 41	2.8		±8			
		M_Z	20 26 42	3.0			±4		
		eF	20 35 ±						
137	June 13/14	P	23 06 20					3070	Related to No 135.
		S	23 11 09						
		M_E	23 16 14	8.6	±5				
		M_N	23 17 00	10.0		±4			
		M_Z	23 21 24	18.0			±4		
		eF	0 10 ±						
138	June 15	eP	19 40 25						Ditto.
		eF	19 59 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
139	June 16/17	P	22 59 47					9600	Northern part of south island, New Zealand. Destructive at epicentral region.
		eS	23 10 28						
		ME	23 33 29	17.4	±12				
		MN	23 33 20	17·6		±12			
		MZ	23 33 12	21.4			±8		
		eF	0 30 ±						
140	June 17	iP	6 45 14					68	Off Tanabe, Kii channel. Weak shocks were felt at the coast near the epicenter.
		S	6 45 23						
		ME	6 45 24	0.6	+8				
		MN	6 45 23	0.5		−21			
		MZ	6 45 24	0.4			+7		
		F	6 47 54						
141	June 17	eP	10 22 09						Related to No 135.
		ME	10 31 35	7.7	±4				
		MN	10 32 24	8.7		±3			
		MZ	10 32 36	11.6			±2		
		eF	11 01 ±						
142	June 19	P	7 36 34					5920	Probable in the South sea.
		eS	7 44 06						
		ME	7 46 27	9.6	±9				
		MN	7 46 01	10.4		±9			
		eF	8 34 ±						
143	June 21	P	4 46 43						A distant earthquake.
		ME	4 48 01	3.5	±1				
		MN	4 47 50	3.1		±1			
		MZ	4 47 33	2.9			±1		
		eF	4 56 ±						
144	June 24	P	2 05 50					545	ENE off Sioya cape. Moderate shocks were felt at Ibaraki and Hukusima prefecture.
		S	2 07 03						
		ME	2 07 38	3.6	+7				
		MN	2 07 37	3.2		±6			
		MZ	2 07 35	3.5			±4		
		F	2 16 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
145	June 25	P	2 54 35					26	In the Kii channel.
		S	2 54 39						
		ME	2 54 39	0.4	±4				
		MNZ	2 54 40	0.4		±3	±4		
		F	2 55 07						
146	June 26	P	8 46 55					295	Suō nada, Western part of the Inland sea.
		S	8 47 35						
		ME	8 47 47	2.3	+2				
		MN	8 47 47	2.1		−3			
		MZ	8 47 48	1.4			±1		
		eF	8 54 ±						
147	June 26	P	16 50 36					656	NE of Tyosi, Weak shocks were felt at Tokyo, Yokohama, and Tyosi.
		S	16 52 04						
		ME	16 52 25	5.2	±21				
		MN	16 52 40	3.2		±21			
		MZ	16 52 36	3.8			+19		
		F	17 14 ±						
148	June 26	iP	18 47 18					18	In the Kii chanlnel.
		S	18 47 21						
		M	18 47 21	0.4	−6	+9	−3		
		F	18 47 53						
149	June 27	P	13 07 04						A distant earthquake. Southern part of South Atlantic Ocean.
		i	13 17 40						
		MEZ	13 32 40	14.0	±38		±38		
		MN	13 32 50	14.0		±58			
		eF	15 14 ±						
150	June 30	P	2 50 24						Near Philippin.
		S	2 57 13						
		ME	3 07 08	14.8	±27				
		MN	3 06 40	17.0		±38			
		MZ	3 00 06	16.5			±33		
		eF	3 31 ±						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
φ=35° 32′ λ=134° 49′ h=32.2 m. Underground: Diluvial Series.
Instruments: Wiechert Seismograph.

(Horizontal)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.1	Aperiodic	0.003	104
A_N:	3.9	3.1	0.002	100

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
36	Mar. 31	iP	20 19 16						ESE off Kinkazan, Miyagi prefecture. Felt at the Pacific coaot of Ōuu district.
		eS_E	20 21 13						
		eS_N	20 21 05						
		eL_E	20 22 06						
		eL_N	20 22 03						
		eF	20 36 ±						
*37	April 6	iP	20 34 28					128	Perceqtible. In the. Middle basin of the Kuzuryu river, Toyama prefecture. Weak shocks were felt at the epicentral region.
		iL	20 34 45						
		M_E	20 34 46		−44				
		M_N	20 34 47	2.9		+38			
		F	20 36 05						
38	April 16	iP	0 54 17					495	In the Kasima sea. Moderate shocks were felt at near epicenter coast.
		L	0 55 23						
		M_E	0 55 28	2.1	−78				
		M_N	0 56 07	2.9		+94			
		eF	1 04 ±						
39	April 16	iP	18 59 41					22	Local shock.
		iL	18 59 44						
		M	18 59 45		±10	±10			

No.	Date	Fhase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F	18 59 54						
40	April 17	eP	18 35 26					477	In the Kasima sea. Moderate shocks were felt at the coast near the epicenter.
		L	18 36 30						
		M_E	18 37 03	2.8	−28				
		M_N	18 37 00	1.9		+54			
		eF_E	18 42 44						
		eF_N	18 44 35						
41	April 17	P	22 11 21					14	Local shock,
		LM	22 11 23		±23	±20			
		F	22 11 30						
42	Apilr 23	P	11 10 36					25	Local shock.
		L	11 10 39						
		M	11 10 39		±4	−16			
		eF	11 11 17						
43	April 23	eP_E	14 17 12					398	Middle basin of the Kokai river, Ibaraki prefecture. Wesk shock were felt At the epicentral region.
		P_N	14 17 14						
		L_N	14 18 08						
		M_N	14 18 14			−26			
		F_E	14 20 41						
		F_N	14 20 43						
*44	April 24	P	4 30 01					14	Local shock. Perceptible.
		L	4 30 03						
		M	4 30 03		−104	±83			
		F	4 30 21						
45	April 26	P_N	15 48 58					15	Local shock.
		L_N	15 49 00						
		M_N	15 49 00			−11			
		F	15 49 06						
46	May 1	iP_N	15 47 37					6705	Northeastern part of

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		iS	15 55 55						Persia. Dstructive at the epicentral region.
		L	16 05 48						
		M_1E	16 12 35	15.3	+69				
		M_1N	16 12 35			+61			
		M_2E	16 13 58	14.2	+69				
		M_2N	16 13 58	18.3		−66			
		M_3N	16 14 35	14.2		+78			
		M_4N	16 15 31	14.2		+59			
		eF	16 53 ±						
*47	May 4	P	13 37 03					16	Local shock. Perceptible.
		L	13 37 05						
		M_N	13 37 05			±29			
		F	13 37 13						
48	May 7	eL_E	16 53 44						A distant earthquake. E-W no record.
		M_N	16 56 19						
		eF	17 10 ±						
49	May 9	iP	18 00 01					139	In the Kitan strait. Modrate shocks were felt at Wakayama.
		iL	18 00 20						
		eF	18 00 54						
50	May 20	eP	4 59 56						Aleutian Ils. Faint record.
		eF	5 03 ±						
*51	May 21	iP_n	16 36 41						
		iL	16 37 42					453	Hiuga nada, off miyazaki. Strong shocks were felt at Miyazaki.
		M_1E	16 38 11			−492			
		M_1N	16 38 13	2.0			−625		
		M_2E	16 39 07	4.1	+390				
		M_2N	16 38 48	4.3			−570		
		eF	17 12 ±						
52	May 21	eP	17 11 49						An after shock of No52.
		eL	17 12 47						
		eF	171 6 01						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
53	May 21	eP	17 22 37						Ditto.
		eF	17 25 16						
54	May 23	iP	3 23 15						Lower basin of the Kuzuryu river, Toyama prefecture.
		iL	3 23 36						
		M	3 23 38		+10	+22			
		eF	3 26 ±						
55	May 26/27	iP_N	22 59 41					6100	East off Canada.
		eS_E	23 07 38						
		eS_N	23 07 26						
		eL_E	23 11 33						
		L_N	23 11 27						
		M_1E	23 15 06	22.4	+15				
		M_1N	23 16 32	21.4		+25			
		M_2E	23 17 22	20.3	−12				
		M_2N	23 28 32	18.3		−18			
		M_3E	23 20 37	18.3	+15				
		M_3N	23 22 20	16.3		+13			
		M_4E	23 23 47	16.3	−17				
		eF_E	0 01 ±						
		eF_N	0 13 ±						
56	May 28	iP	16 45 00					32	Local shock.
		iL	16 45 04						
		M	16 45 04		±5	+10			
		F	16 45 15						
57	May 31	iP	0 12 22					1150	WSW off Erimo cape, Hokkaido. Faint record.
		P_{R_1}	0 12 38						
		iS_E	0 14 25						
		eL_N	0 15 33						
		eF_E	0 21 ±						
		eF_N	0 22 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
58	May 31	iP	1 38 47					121	Lower basin of the Kuzuryu river, Toyama prefecture.
		L	1 39 03						
		eM	1 39 04		±4	±5			
		F	1 39 21						
59	June 1	P	18 01 04						SE off Okinawa Ils, Riukiu Ils.
		eL_E	18 03 23						
		eL_N	18 03 07						
		eF_E	18 06 00						
		eF_N	18 13 06						
*60	June 2	iP	21 39 30					323	The mouth of Ise bay p phase is remarkable and clear. Weak shocks were felt at Kanto and Ōuu district. The depth of Origin 300 km.
		iL	21 40 13						
		M_E	21 40 16	3.1	−323				
		M_N	21 40 18	4.3		+548			
		eF_E	22 04 ±						
		eF_N	22 11 ±						
*61	June 8	iP	12 25 04					16	Perceptible. An after shock of Great North Tango quake on 7th March 1927.
		iL	12 25 06						
		M	12 25 07		−219	+100			
		F_E	12 25 59						
		F_N	12 26 17						
62	Jnne 8	P	16 19 43					14	Ditto.
		L	16 19 45						
		M	16 19 45		−12	−15			
		F	16 20 03						
63	June 9	iP_N	9 11 42					1910	SE off Etrup Ils. Pereptible at Eastern part of Hokkaido.
		ePR_1E	9 12 19						
		iS_N	9 15 00						
		L_E	9 16 43						
		L_N	9 16 41						
		M_1E	9 18 42		+16				
		M_1N	9 19 34	12.2					
		M_2E	9 22 26	13.2	−17	−25			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_2N	9 23 08	14.2		−21			
		eF_E	9 42 ±						
		eF_N	9 50 ±						
64	Jnne 13	eP	0 16 01						Ditto.
		ePR_1N	0 18 00						
		eS_E	0 19 05						
		eS_N	0 19 08						
		eL_E	0 21 07						
		M_1E	0 24 42	14.2	−43				
		M_1N	0 23 26	16.3		−40			
		M_2E	0 26 03	16.3	−46				
		M_2N	0 25 56	16.3		−38			
		eF	1 10 ±						
65	June 13	iP	9 30 30						East off Philippin.
		ePR_1	9 31 36						
		eS_E	9 35 26						
		eL_E	9 37 02						
		eF_E	10 40 ±						
		eF_N	10 45 ±						
66	June 13	P	20 24 37					656	ENE off Sioya cape. Moderate shocks were felt at Ibaraki and Hukusima prefecture.
		S	20 25 40						
		L_N	20 26 06						
		M_N	20 26 33			−16			
		eF_E	20 29 ±						
		eF_N	20 31 ±						
67	June 13	ePR_N	23 06 31						Related to No 65.
		eS_E	23 11 15						
		eF	23 45 ±						
68	June 16/17	P	23 00 05					9450	Northern part of South island, New Zealand. Destructive at epicentral region.
		S_E	23 10 40						
		S_N	23 10 35						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eLE	23 23 36						
		eLN	23 23 56						
		ME	23 28 27		+14				
		M1N	23 30 24			−19			
		M2N	23 33 26	22.2		+18			
		M3N	23 35 09	18.0		+18			
		eFE	0 12 ±						
		eFN	0 16 ±						
69	June 17	PN	6 45 31					161	Off Tanabe, Kii channel.
		L	6 45 53						
		F	6 46 53						
70	June 17	ePN	10 22 13						Related to No 65.
		eFN	11 05 ±						
71	June 23	P	13 12 54					28	Mineyama, Tango provi-
		L	13 12 58						nce.
		M	13 12 58		±16	±10			
		F	13 13 06						
72	June 24	P	2 05 50						
		SN	2 06 50					540	ENE off sioya cape.
		LE	2 07 27						Moderate shocks were felt
		LN	2 07 25						at Ibaraki and Hukusima
		ME	2 07 38						prepecture.
		MN	2 07 32		−8				
		eF	2 13 ±			+15			
73	Jnne 26	P	16 50 49						
		eLE	16 52 03					559	NE off Tyosi.
		iLN	16 52 04						Weak shocks were felt at
		ME	16 52 57						Tokyo, Yokohama, and
		MN	16 52 39		+30				Tyosi.
		eF	17 00 ±			+75			
74	June 27	ePE	13 07 23						Southern part of South
		iPN	13 07 17						Atlantic Ocean.
		iE	13 32 45						
		iN	13 32 54						
		eF	14 54 ±						

昭和四年十月十日印刷
昭和四年十月十三日發行

神戸市中山手通七丁目
神戸測候所

神戸市楠町三丁目一一番屋敷
印刷者 綱干一郎

神戸市楠町三丁目一一五ノ六
印刷所 綱干印刷所

SEISMOLOGICL BULLETIN

OF THE

IMPERAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. V. No. 3.

From July 1, 1929 to September 30, 1929.

KOBE

December, 1929.

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KÔBE JAPAN.

SEISMOLOGICAL BULLETIN

of the Imperial Marine Observatory and the Kobe Meteorological Observatory of Japan.

$\varphi = 34^\circ\ 41'\ 18''$ $\lambda = 135^\circ\ 10'\ 51''$ h=58.3 m Underground : Diluvial Series.

Instrument : Omori's Seismograph (Horizontal Pendulum.) Wiechert Seismograph (Horizontal & Vertical)

July

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	16.8		0.001	20
AN:	14.5		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.1	Aperiodic	0.006	82
AN:	3.9	,,	0.007	89
AZ:	3.5	,,	0.003	77

Aug.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.5		0.001	20
AN:	15.5		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.0	Aperiodic	0.008	87
AN:	4.0	,,	0.007	92
AZ:	3.9	,,	0.002	58

Sept.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.2		0.001	20
AN:	15.5		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.2	Aperiodic	0.005	79
AN:	4.2	,,	0.005	78
AZ:	3.6	,,	0.002	69

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
168	July 2	P	6 29 24					106	An after shock of the North Tango earthquake, march, 7 th, 1927. Perceptible at Toyooka.
		L_N	6 29 39						
		F	6 30 06						
*169	July 3	iP	20 02 41		−	+	−	83	Upper Basin of the Hida-ka river, Moderate shocks were felt at epicentral region. Perceptible.
		iL	20 02 52						
		M_1E	20 02 54		±511				

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_1N	20 02 53			±410			
		M_1Z	20 02 56				±164		
		M_2E	20 03 48	2.4	−100				
		M_2N	20 03 52	2.4		−133			
		M_2Z	20 03 49	2.3			−90		
		eF	20 12 ±						
170	July 5	iP	5 09 17	2.3	−0.6	−0.4	+0.2		NW off Sado Ils, Japan sea.
		eF_{EN}	5 15 ±						
		eF_Z	5 14 ±						
171	July 5	P_Z	14 26 16					4300	Kamchatka.
		P_N	14 26 16						The end part were overetaken by following earthquake.
		eS_N	14 32 20						
		eL_E	14 34 52						
		M_E	14 39 07	22.6	−8				
		M_N	14 39 16	22.6		−7			
		M_Z	14 38 46	27.2			+7		
172	July 5	eP_E	14 42 24						Ditto.
		P_Z	14 42 26						
		M_E	14 48 10	20.6					
		eF_{EN}	15 33 ±						
		eF_Z	15 27 ±						
173	July 5	eP_Z	22 43 34						Ditto.
		P_E	22 43 37						
		S_E	22 49 22						
		M_E	22 56 35	23.3	±3				
		M_N	23 01 20	18.6		±6			
		eF_{EN}	23 15 ±						
		eF_Z	23 08 ±						
174	July 6	iP_Z	2 11 07						Ditto.
		eN	2 20 18						
		eF_E	3 06 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF_N	3 07 ±						
		eF_Z	2 49 ±						
175	July 7	P	21 30 27		−2	−1	+3	4105	Kamchatka.
		iS	21 36 20						
		eL_N	21 38 49						
		M_E	21 43 23	22.9	−35				
		M_N	21 43 24			−16			
		M_Z	21 43 27	22.3			+13		
		eF_{EN}	23 11 ±						
		eF_Z	22 46 ±						
176	July 8	M_E	13 21 17	0.9	±3				Hiuti Nada, Inland sea. Faint record.
		M_N	13 21 14	0.9		±2			
		M_Z	13 21 15	1.1			±2		
		F_{EN}	13 21 38						
		F_Z	13 21 43						
177	July 8	P	16 11 02						In the Kii channel.
		eF	16 16 ±						
178	July 9	P	3 46 31					42	Ditto.
		L	3 46 37						
		M_E	3 46 38		±8				
		M_N	3 46 42			±8			
		F_{EN}	3 47 18						
		F_Z	3 47 06						
179	July 11	eE	21 04 17						Faint record, Recorded at strasbourg. Zagreb, and Tortosa.
		eF	21 09 ±						
180	July 13	P	14 58 28					5070	A distant earthquake. Prabably in the South sea.
		S	15 05 13						
		F_E	15 21 ±						
		F_N	15 23 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	μ	μ	μ	μ	km.	
181	July 14	iPZ	9 41 25		−2	−1	+1	2360	A distant earthquake. Kamchatka.
		iP	9 41 26						
		iSZ	9 45 14						
		iSN	9 45 20						
		LE	9 47 44						
		ME	9 49 52						
		MN	9 50 08	17.7		−12			
		MZ	9 50 04	18.3			±3		
		eFEN	10 20 ±						
		eFZ	10 08 ±						
182	July 15	eN	8 04 21						A distant earthquake. Near Bagdad, 46° E 33° N. (strausburg). By Omoris seismograph.
		eLE	8 26 41						
		ME	8 28 57	14.4	−10				
		MN	8 30 25	14.7		+15			
		eFE	8 40 ±						
		eFN	8 39 ±						
183	July 15	e	22 47 24						Off the Inubo cape.
		L	22 48 29						
		MN	22 48 33	2.5		±3			
		eFEN	22 52 ±						
		eFZ	22 51 ±						
184	July 17	PZ	8 45 14						
		S	8 50 56					3925	A distant earthquake. Kamchatka.
		eL	8 54 03						
		ME	8 57 29	23.7					
		eFE	9 12 ±						
		eFN	9 09 ±						
		eFZ	9 07 ±						
185	July 17	eP	10 50 46						
		S	10 51 28						
		ME	10 51 31	1.5	+24				Lower basin of the Kinu river, Ibaraki prefecture. Moderate shocks were felt at the epicentral region.
		MN	10 51 31			+16			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MZ	10 51 30	1.5			−8		
		eFEN	10 56 ±						
		eFZ	10 55 ±						
186	July 19	L	7 05 38						Local shocks.
		ME	7 05 43	0.8	±3				
		MN	7 05 41	0.9		±4			
		FE	7 06 00						
		FN	7 05 51						
187	July 21	P	13 21 02						A distant earthquake. SErn part of Luzon, Phibppin.
		L	13 25 13	12.2					
		eFE	13 40 ±						
		eFN	13 41 ±						
		eFZ	13 33 ±						
188	July 26	eP	1 46 19						In the Kii chnnel.
		L	1 46 25						
		ME	1 46 26	0.8	±12				
		MN	1 46 25	0.8		±7			
		FE	1 46 58						
		FN	1 46 52						
189	July 26	P	22 49 07					395	Near Mt. Tanzawa, NWrn part of Sagami province. Strong shocks were felt at the Kanto district. Little damages were happened at the epicential region.
		S	22 49 50						
		LN	22 50 01						
		ME	22 50 06	1.9	±634				
		MN	22 50 03			±483			
		MZ	22 50 07	1.7			±260		
		eFEN	23 11 ±						
		eFZ	23 07 ±						
190	July 27	P	4 12 21					6	Local shock.
		L	4 12 23						
		M	4 12 22		±3	±8			
		F	4 12 29						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
191	July 28	PN	17 34 01						An after shock of No. 189.
		SE	17 34 45						
		LN	17 34 50						
		ME	17 34 58						
		MN	17 35 03			±10			
		eF	17 38 ±						
192	Aug. 1	e	1 59 31						SE off Izu peninsula.
		P	1 59 46						
		eL	2 00 15						
		F	2 03 03						
193	Aug. 1	iP	5 10 10						Bay of Bengal, India.
		eFEN	5 30 ±						
		eFZ	5 33 ±						
194	Aug. 1	eP	6 02 38						Faint record.
		eF	6 12 ±						NE off Miyako, Iwate prefecture.
195	Aug. 1	P	16 04 58						
		L	16 05 13					111	Middle valley of the Kiso river.
		ME	16 05 14		±7				
		MN	16 05 14			±4			
		FE	16 06 11						
		FN	16 06 14						
		FZ	16 05 53						
196	Aug. 2	P	2 48 44						
		eL	2 48 51					51	In the Kii channel.
		ME	2 48 56						
		MN	2 48 58						
		FEN	2 49 29						
		FZ	2 49 31						
197	Aug. 3	P	16 01 15						
		L	16 02 01					330	NW off simonoseki, West mouth of the

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		ME	16 02 08	2.4	−86				Inland sea. Moderate shocks were felt at the mear epicenter coast.
		MN	16 02 10	2.4		+82			
		MZ	16 02 10	1.6			−45		
		FEN	16 08 ±						
		FZ	16 07 ±						
198	Aug. 8	P	4 49 40					280	NWrn foot of Mt Fuji.
		L	4 50 18						
		ME	4 50 23	1.8	−12				
		MN	4 50 20	2.1		+12			
		MZ	4 50 21	1.5			+12		
		eF	4 54 ±						
199	Aug. 8	PZ	13 04 31					4105	A distant earthquake. Burma, 22° N 95° E. Destructire at the epicentral region.
		PN	13 04 32						
		SZ	13 10 22						
		SN	13 10 24						
		eLN	13 15 45						
		ME	13 20 49	12.7	−11				
		MN	13 18 05	17.2		−16			
		MZ	13 21 22				±10		
		eFEN	13 42 ±						
		eFZ	13 35 ±						
200	Aug. 8	P	13 34 40					376	Near Kanayama, SW of Fukuoka city. weak shocks were felt at the epicentral region.
		L	13 35 31						
		ME	13 35 39	1.9	−14				
		MN	13 35 46						
		MZ	13 35 38	1.5			±10		
		eF	13 40 ±						
201	Aug. 9	eP	20 22 39						Very faint record. SE off Hatidyo Ils.
		eF	20 27 ±						
202	Aug. 10	ME	3 48 29	0.8	±3				Near Sumoto. ?
		MN	3 48 33	0.8		±2			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		FE	3 49 00						
		FN	3 48 52						
203	Aug. 12	P	4 21 49					49	In the Kii channel.
		L	4 21 56						
		M	4 22 01		±11	±11			
		FE	4 22 33						
		FN	4 22 37						
204	Aug. 16	e	13 23 ±						Upper course of the Kinu rever, Totigi prefecture.
		eF	13 28 ±		Disguised by microseisms.				
205	Aug. 19	P	2 46 54					1920	East off Karenko, Formosa. Strong shocks were felt at the northern part of Formosa. By Omoris Seismograph.
		S	2 50 10						
		ME	2 52 56	16.0	+80				
		M_1N	2 54 16	15.0		−350			
		M_2N	2 58 36	16.1		+450			
		eFE	3 15 ±						
		eFN	3 28 ±						
206	Aug. 19	ePSW	20 49 53						An after shock of No 205.
		eL	20 56 11						
		eF	21 09 ±						
207	Aug. 20	PSW	16 42 20						Ditto.
		SSE	16 45 51						
		eLSE	16 48 27						
		eF	17 02 ±						
208	Aug. 21	eP	9 32 08						Ditto.
		eF	9 40 ±						
209	Aug. 24	PE	5 51 11						
		L	5 51 18					50	Off the Mouth of Kii river, near Wakayama.
		ME	5 51 18	0.5	±9				
		MN	5 51 19			±5			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		FE	5 51 54						
		FN	5 52 09						
210	Aug 25	eP	1 57 49					190	Upper Valley of the Eno river, Hirosima prefecture.
		L	1 58 14						
		MEN	1 58 17	0.7	±4	±5			
		MZ	1 58 18				±4		
		FE	1 59 07						
		FN	1 59 02						
		FZ	1 58 47						
211	Aug. 28	PE	18 53 48					950	South off Erimo cape. Felt at Ōuu and Hokkaido.
		PZ	18 53 48						
		i	18 54 02						
		SN	18 55 31						
		ME	18 57 02	15.5	−45				
		MN	18 56 55			−87			
		eFE	19 34 ±						
		eFN	19 32 ±						
		eFZ	19 18 ±						
212	Aug. 29	e	19 51 ±						Faint record. An after shock of No 205.
		eF	20 13 ±						
213	Aug. 31	eE	3 09 13						Related to No 107.
		eF	3 12 ±						
214	Sept. 2	PN	11 18 25						Near Philippin.
		e	11 23 09						
		eL	11 27 19						
		MSE	11 34 24						
		MSW	11 35 30	11.5	–	±3			
		eFSE	11 59 ±						
		eFSW	11 55 ±						
		eFZ	11 45 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
215	Sept. 2	P	20 16 23					106	Off Tanabe.
		L	20 16 37						Wakayama prefecture.
		M	20 16 38	0.6	−51	+21	±12		
		F_{EN}	20 20 ±						
		F_Z	20 19 ±						
216	Sept. 8	P	8 37 16						Faint record.
		eF	8 42 ±						West off Hatidyo Ils.
217	Sept. 8	eP	17 12 58						NE off Hatidyo Ils.
		M_{SW}	17 14 52						
		eF	17 22 ±						
218	Sept. 10	P_N	8 49 06					26	Local shock.
		L	8 49 10						
		M_E	8 49 14						
		M_N	8 49 15						
		F_{EN}	8 49 23						
		F_Z	8 49 26						
219	Sept. 11	e	22 26 03						Off Karenko, Formosa.
		eL	22 32 02	9.9					
		M_N	22 35 48	9.2			±35		
		eF	22 46 ±						
220	Sept. 13	eP	5 35 51						Local shock.
		eL	5 35 53						
		eF	5 36 10						
221	Sept. 17	eP	16 10 31						The explosion at Mt Asama, Nagano prefecture.
		eF	16 18 ±						
222	Sept. 17	eP_{R_1}?	19 30 ±						A distant earthquake. East off Canada. 53° N 133° W. (J. S. A.)
		eM	19 53 ±						
		eF	21 13 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
223	Sept. 20	iSW	4 12 30						North off Yaku Ils, Ryukyu Ils.
		iMSW	4 12 43						
		eFSE	4 22 ±						
224	Sept. 21	e	7 23 08						Upper Valley of the Eno river, Hirosima prefecture.
		i	7 23 14						
		L	7 23 16						
		M_E	7 23 18	0.7	±24				
		M_N	7 23 17	0.8		±25			
		F_E	7 23 52						
		F_N	7 24 02						
225	Sept. 27	eP	3 42 09						Local shock.
		M_E	3 42 15	0.9	±3				
		M_N	3 42 15	1.1		±5			
		F	3 42 37						
226	Sept. 28	P	14 59 34						SSE off Otiisi cape, Hokkaido. Deep earthquake, Felt at Eastern part of Hokkaido.
		S	15 02 15	5.3	±15				
		eF	15 12 ±						

SUMOTO JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

φ=34° 21′ λ=134° 53′ h=109.0 m. Underground: Cretaceous.

Instruments: Ōmori's Seismograph. Wiechert Seismograph.

(Horizontal Pendulum) (Horizontal & Vertical)

	T	ε	$\frac{r}{T_0^2}$	V		T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.8	1.2	0.001	20	AE:	4.5	4.0	0.006	110
AN:	18.4	1.2	0.001	20	AN:	4.5	3.8	0.006	108
					AZ:	4.5	4.1	0.006	73

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*151	July 3	iP	20 02 40		+21	−19	−64	75	Perceptible.
		S	20 02 50						Upper basin of the
		ME	20 02 53	0.6	−139				Hidaka river, Wakayama
		MN	20 02 52	0.6		+181			prefecture.
		MZ	20 02 51	0.5			+60		moderate shocks were
		F	20 14 52						felt at the epicentral
									region.
152	July 3	P	21 27 57					33	In the Kii channel.
		S	21 28 02						
		MEN	21 28 02	0.4	±1	±4			
		MZ	21 28 03	0.4			±1		
		F	21 28 51						
153	July 5	P	14 26 18		−2	−1	+1		Kamchatka.
		eL	14 34 39						
		ME	14 38 48	24.6	±150				
		MN	14 44 16	20.9		±83			
		MZ	14 44 11	20.9			±100		
		eF	15 30 ±						
154	July 5	P	22 43 24						Ditto.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eL	22 51 52						
		ME	22 56 22	20.9	±80				
		MN	23 01 28	22.4		±125			
		MZ	23 01 15	17.4			±75		
		eF	23 15 ±						
155	July 6	P	2 11 11					4330	Kamchatka.
		eS	2 17 16						
		ME	2 28 22	14.1	±11				
		MN	2 28 21	14.7		±8			
		eF	2 53 ±						
156	July 7	P	17 15 10					28	In the Kii channel.
		S	17 15 14						
		MEN	17 15 14	0.4	−2	±3			
		MZ	17 15 15	0.4			±1		
		F	17 15 48						
157	July 7	P	21 30 28					4035	Kamchatka.
		S	21 36 17						
		ME	21 42 40	25.0	±450				
		MN	21 42 16	24.0		±129			
		MZ	21 42 32	20.0			±300		
		eF	23 06 ±						
158	July 8	iP	16 10 51		−1	−1	−2	28	In the Kii channel.
		S	16 10 55						
		MEN	16 10 55	0.4	+3	±5			
		MZ	16 10 57	0.4			−2		
		F	16 11 49						
159	July 9	iP	3 46 24		+1	−2	−2	27	Ditto.
		S	3 46 28						
		M	3 46 29	0.3	±7	−14	−5		
		F	3 49 26						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
160	July 9	P	3 51 20					22	In the Kii channel.
		S	3 51 22						
		F	3 51 41						
161	July 9	P	21 29 00					14	Local shock. Time is uncertain.
		S	21 29 02						
		M	21 29 02	0.4	−1	±2			
		F	21 29 26						
162	July 12	P	18 01 06						NE off Naze, Riyukyu Ils.
		e	18 03 58						
		M_N	18 06 25	8.4		+8			
		eF	18 17 ±						
163	July 12	P	22 39 29					29	In the Kii channel.
		S	22 39 33						
		M	22 39 34	0.4	+1	+3			
		F	22 40 10						
164	July 13	P	14 58 28					5055	A distant earthquake. Probable in the South sea.
		eS	15 05 14						
		eM_N	15 06 06						
		eF	15 23 ±						
165	July 14	P	9 41 30					2345	Kamchatka.
		S	9 45 22						
		M_E	9 49 18	20.0	±133				
		M_N	9 49 19	20.0		±167			
		M_Z	9 49 22	21.0			±182		
		eF	10 09 ±						
166	July 15	eP	8 04 21	4.1					Near Bagdad 46° E 33° N. (Strausburg). By Omoris Seismograph.
		eL	8 24 47						
		M_N	8 32 37						
		eF	8 48 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
167	July 15	eP	22 47 53					417	Off the Inubo cope.
		eS	22 48 49						
		M_E	22 48 51	2.9	±1				
		M_N	22 49 07	2.7		±1			
		eF	22 51 ±						
168	July 17	eP	8 44 29						Kamchatka.
		M_N	8 51 09	3.7		±1			
		eF	10 00 ±						
169	July 17	P	10 50 10						Lower basin of the Kinu river, Ibaraki prefecture. Moderate shocks were felt at the epicentral region.
		S	10 51 30						
		M_E	10 51 51	1.7	+4				
		M_N	10 51 44	2.1		±5			
		M_Z	10 51 44	1.8			±3		
		eF	11 00 02						
170	July 20	P	3 20 41					26	In the Kii channel.
		S	3 20 45						
		M	3 20 45	0.3	±3	±4	±2		
		F	3 21 10						
171	July 20	P	22 54 32					19	In the kitan strait.
		S	22 54 34						
		M	22 54 34	0.2	±1	+2			
		F	22 54 45						
172	July 21	eP	13 20 56					2410	SErn part of Luzon, Philippin.
		eS	13 24 54						
		M_E	13 25 13	6.8	±2				
		M_N	13 25 21	4.6		±1			
		eF	13 32 ±						
173	July 22	P	2 59 42					9	In the Kitan strait.
		S	2 59 44						
		M	2 59 44		−4	±2			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F	2 59 56						
174	July 26	eP	1 04 48						Local shock.
		M_E	1 05 18	1.8	±0.6				
		M_N	1 05 52	2.0		±0.8			
		eF	1 08 ±						
175	July 26	P	1 46 03					54	In the Kii channel.
		S	1 46 10						
		M	1 46 11	0.4	±2	−4	±2		
		F	1 46 55						
176	July 26	P	22 49 12		−1	−1	+1.5	313	Near Mt Tanzawa, NWrn part of Sagami province. Strong shocks were felt at the Kanto district. Minute break at the epicentral region.
		S	22 49 54						
		L	22 50 09						
		M_E	22 50 37	2.4	−125				
		M_N	22 50 23	2.9		+156			
		M_Z	22 50 25	4.4			−79		
		F	23 13 ±						
177	July 28	eP	17 34 25						An after shock of No. 178.
		eF	17 36 23						
178	July 31	P	5 41 58					37	Near Wakayama.
		S	5 42 03						
		M_{EN}	5 42 04	0.3	−4	±4			
		M_Z	5 42 03	0.2			−1		
		F	5 42 37						
179	Aug. 1	P	1 59 50						
		eS	2 00 26					266	SE off Izu peninsula.
		M_{EN}	2 00 45	1.6	±1				
		eF	2 05 ±	2.9		±1			
180	Aug. 1	eP	5 10 08						
		e	5 12 56						In the Bengal bay.

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	5 23 ±						
181	Aug. 1	eP	6 02 40						NE off Miyako, Iwate prefecture. Felt at Northern part of the Ouu district.
		eS	6 03 23						
		M_{EN}	6 03 51	2.4	±1	±2			
		eF	6 09 ±						
182	Aug. 1	P	18 17 20.6					5	In the Kitan strait.
		S	18 17 21.3						
		M_E	18 17 21.5	0.4	−4				
		M_N	18 17 21.7	0.2		±2			
		M_Z	18 17 22.3	0.2			±1		
		F	18 17 43						
183	Aug. 2	P	2 48 39					45	In the Kii channel.
		S	2 48 45						
		M_E	2 48 46	0.5	±5				
		M_N	2 48 46	0.4		±8			
		F	2 49 34						
184	Aug. 3	P	14 17 22					29	Ditto.
		S	14 17 26						
		M	14 17 26	0.4	±1	±3			
		F	14 17 59						
185	Aug. 3	P	16 01 04					891	West mouth of the Inland sea, NW off Simonoseki. Moderate shocks were felt at the near epicentral coast.
		S	16 01 57						
		M_E	16 02 30	3.7	±11				
		M_N	16 01 57	2.5		+29			
		M_Z	16 02 26	3.3			±5		
		F	16 08 25						
186	Aug. 5	eP	2 50 59					13	In the Kii channel.
		S	2 51 00						
		M	2 51 00	0.4	±1	±1			
		F	2 51 32						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
187	Aug. 8	P	4 49 39					371	NWrn foot of Mt Fuji.
		S	4 50 29						
		M_E	4 50 29	1.5	±3				
		M_N	4 50 31	1.3		±3			
		M_Z	4 50 30	1.7			±1		
		eF	4 54 ±						
188	Aug. 8	eS	13 10 19						Burma, 22° N 95° E. Destructive at the epicentral region. The end part Over taken by the folloing earthquake.
✓		eL	13 16 10						
		M_1E	13 18 24	15.7	±60				
		M_N	13 18 03	14.6		±125			
		M_2E	13 21 19	10.6	±22				
		M_Z	13 21 44	8.0			±11		
189	Aug. 8	P	13 34 20					449	Near Kanayama, SWrn part of Fukuoka prefecture. Moderate shocks were felt at the epicentral region.
		S	13 35 21						
		M_E	13 35 25	2.1	±7				
		M_N	13 35 27	1.8		±8			
		M_Z	13 35 21	2.5			±4		
		eF	13 42 ±						
190	Aug. 9	P	7 41 53					20	In the Kii channel.
		S	7 41 56						
		M_E	7 41 56	0.4	±2				
		M_N	7 41 57	0.3		±3			
		M_Z	7 41 56						
		F	7 46 28						
191	Aug. 9	P	11 38 41						Ditto.
		S	11 38 45						
		M_{EN}	11 38 45	0.4	−3	−4			
		F	11 39 15						
192	Aug. 9	eP	20 22 34						SE off Hatidyo Ills.
		eF	20 25 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
193	Aug. 10	P	3 48 25					19	Local shosk. ?
		S	3 48 27						
		M	3 48 27	0.4	+2	±2			
		F	3 48 49						
194	Aug. 12	P	4 21 42					30	In the Kii channel.
		S	4 21 46						
		M_E	4 21 46	0.5	+12				
		M_{NZ}	4 21 47	0.4		±13	±3		
		F	4 23 45						
195	Aug. 12	P	16 30 36					8	In the Kitan strait.
		S	16 30 37						
		M_E	16 30 37	0.4	±1				
		M_N	16 30 38	0.4		±1			
		F	16 31 04						
196	Aug. 16	eP	13 22 51					535	Upper course of the Kinu river, Totigi prefecture.
		S	13 24 03						
		M_E	13 24 18	1.9	±1				
		M_N	13 24 25	1.9		±2			
		M_Z	13 24 07	2.4			±1		
		eF	13 29 ±						
197	Aug. 16	P	16 59 06					25	In the Kitan strait.
		S	16 59 09						
		M	16 59 10	0.4	−5	+5			
		F	16 59 38						
198	Aug. 19	P	2 46 45						East off the Karenko, Formosa. Strong shocks were felt at the Northern part of Formosa.
		eL	2 53 24						
		M_E	2 55 15	12.6	±53				
		M_N	2 55 26	11.3		±40			
		M_Z	2 55 16	12.0			±50		
		eF	3 19 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
199	Aug. 19	P	20 48 12						An after shock of No. 198.
		eL	20 55 01						
		ME	20 56 52	14.9	±14				
		MN	20 58 38	13.7		±25			
		MZ	20 56 12	16.0			±17		
		eF	21 10 ±						
200	Aug. 20	P	16 42 15						Ditto.
		eS	16 45 41						
		eF	17 02 ±						
201	Aug. 24	iP	5 51 06					33	Off the mouth of Kii river, Near Wakayama.
		iS	5 51 11						
		M	5 51 11	0.4	±4	+5	±1		
		F	5 51 59						
202	Aug. 24	P	15 45 52					54	In the Kitan strait.
		S	15 46 00						
		M	15 46 00	0.4					
		F	15 46 35						
203	Aug. 25	e	1 58 06						Upper Valley of the Eno river, Hirosima prefecture.
		S	1 58 11						
		ME	1 58 12	0.4	±1				
		MN	1 58 11	0.4		±2			
		F	1 58 41						
204	Aug. 28	P	18 54 05						
		S	18 56 13					965	South off Erimo cape. Felt at the Ōuu and Hokkaido.
		MEN	18 56 39	9.3	±126	±133			
		MZ	18 58 21	8.5					
		eF	19 31 ±				±42		
205	Aug. 31	eP	3 08 56						
		e	3 09 01						Related to No. 185.
		MEZ	3 09 06	1.6	±1		±1		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MN	3 09 05	1.8		±2			
		eF	3 09 47						
206	Sept. 1	eP	21 19 14					13	Local shock.
		S	21 19 16						
		M	21 19 17	0.4	+3	±1			
		F	21 19 46						
207	Sept. 2	eP	11 18 18					2890	Near Philippin.
		eS	11 22 52						
		ME	11 29 28	10.9	±7				
		MN	11 29 07	8.1		±5			
		MZ	11 29 08	8.0			±5		
		eF	11 49 ±						
208	Sept. 2	iP	20 16 20					73	Off Tanabe, Wakayama prefecture.
		S	20 16 29						
		ME	20 16 31	0.5	−14				
		MN	20 16 30	0.5		−13	±3		
		F	20 18 24						
209	Sept. 5	P	2 48 16		+2	−1	−	29	In the Kitan strait.
		S	2 48 20						
		ME	2 48 20	0.5	−6				
		MNZ	2 48 21	0.4		−7	±1		
		F	2 49 18						
210	Sept. 5	P	12 57 14						Iyo nada, Western part of the Inland sea.
		ME	12 57 22	0.6	±1				
		MN	12 57 20	0.6		±1			
		F	12 57 52						
211	Sept. 8	P	17 12 10					497	NE off Hatidyo Ils.
		S	17 13 17						
		M	17 13 30	2.3	−2	−3	±1		
		eF	17 19 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
212	Sept. 9	S	2 45 39						An after shock of Great North Tango earthquake, on morch, 7 th, 1927.
		M	2 45 39	0.3	±1	+3			
		F	2 46 00						
213	Sept. 9	S	3 52 42						In the Kii channel.
		M	3 52 42	0.3	±1	−3			
		F	3 53 11						
214	Sept. 11	S	15 22 31						Local shock.
		MN	15 22 31	0.4	±2				
		F	15 22 46						
215	Sept. 11	eP	22 22 42						East off Karenko, Formosa.
		e	22 29 18						
		ME	22 30 01	11.3	±12				
		MN	22 31 00	9.4		±12			
		MZ	22 29 44	9.0			±6		
		eF	22 45 ±						
216	Sept. 12	P	5 07 29						In the Kitan strait.
		S	5 07 30					10	
		M	5 07 31	0.4	±1	±2			
		F	5 07 53						
217	Sept. 14	P	3 33 32						Local shock.
		S	3 33 34					13	
		M	3 33 34		±1	±1			
		F	3 33 58						
218	Sept. 14	P	6 53 27						In the Kii channel.
		S	6 53 34					50	
		ME	6 53 34	0.3	±1				
		MN	6 53 35	0.3					
		MZ	6 53 36	0.3		±1			
		F	6 54 00				±1		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
219	Sept. 16	P	5 29 26					8	In the Kitan strait.
		S	5 29 28						
		M	5 29 28	0.4	±1	±1			
		F	5 29 44						
220	Sept. 17	eS	20 37 26						Upper Valley of the Hidaka river, Wakayama prefectuse.
		M	20 37 26						
		F	20 37 50						
221	Sept. 20	P	2 07 10					13	In the Kii channel.
		S	2 07 12						
		M	2 07 12	0.2	±2	±3			
		F	2 07 35						
222	Sept. 20	eP	4 11 26						North off Yaku Ils, Ryukyu Ils.
		S	4 12 15						
		MEN	4 12 27	3.1 2.7	+9	±7			
		MZ	4 12 33	2.7			±2		
		F	4 17 23						
223	Sept. 21	S	7 23 10						Upper valley of the Eno river, Hirosima prefecture.
		MEZ	7 23 12	1.1 0.9	±2		±1		
		MN	7 23 13	0.8		±7			
		F	7 24 27						
224	Sept. 21	P	8 03 59					18	In the Kii channel.
		S	8 04 01						
		M	8 04 02	0.4	±1	±3			
		F	8 04 42						
225	Sept. 24	P	2 57 59					18	In the Kitan strait.
		S	2 58 02						
		M	2 58 02	0.5	±1	±2			
		F	2 58 28						
226	Sept. 28	eP	14 59 42		+1	+2	−2	1570	SSE of Otiisi cape,

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S	15 02 26						Hokkaido. Felt at Eastern part of Hokkaido. Deep earthquake.
		M_{EN}	15 02 28	3.4 2.9	+8	−3			
		M_Z	15 02 33						
		eF	15 07 ±						
227	Sept. 29	P	0 17 17		+0.4	−1		10	Local shock.
		S	0 17 18						
		M_E	0 17 20	0.4	±2				
		M_N	0 17 19	0.4		±3			
		M_Z	0 17 22				±1		
		F	0 17 44						
228	Sept. 30	P	5 53 31						In the Kii channel.
		S	5 53 32						
		M_E	5 53 33	0.3	±1				
		M_N	5 53 32	0.5		±2			
		F	5 53 45						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
$\varphi = 35° 32'$ $\lambda = 134° 49'$ h = 32.2 m. Underground: Diluvial Series.
Instruments: Wiechert Seismograph.

(Horizontal)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.4	Aperiodic	0.003	118
A_N:	4.2	3.1	0.002	115

No.	Date	Phase	Time G M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*75	July 2	iP	6 29 09					22	An after shock of Great Nouth Tango earthquake, on March 7th 1927. Perceptible.
		iL	6 29 12						
		M	6 29 13		+39	−51			
		F_E	6 29 50						
		F_N	6 30 00						
*76	July 3	iP	20 02 55					151	Upper basin of the Hitaka river, Wakayama prefecture. Moderate shocks were felt at the epicentral region.
		iL	20 03 15						
		M_E	20 03 17		−128				
		M_N	20 03 16			−148			
		F	20 06 43						
77	July 5	P	14 26 13					3965	Kamchatka.
		eS_N	14 31 57						
		L_E	14 34 12						
		M_N	14 39 10						
		eF	14 30 ±						
78	July 7	P	21 30 24					4065	Ditto.
		S_E	21 36 15						
		L_E	21 39 03						
		L_N	21 38 55						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_1N	21 40 54			+25			
		M_2N	21 43 15			−32			
		eF	22 27 ±						
79	July 8	PE	13 20 34					153	In the Hiuchi nada, Western part of Inland sea.
		L	13 20 54						
		M	13 20 55						
		F	13 21 22						
80	July 12	P	13 30 38					22	An after shock of Great Nonth Tango earthquake on march 7th 1927.
		L	13 30 41						
		M	13 30 42		−9	+20			
		FE	13 30 58						
		FN	13 31 01						
81	July 13	PN	14 58 37						A distant earthquake. Probable in the South sea. Faint record.
		SN	15 05 31						
		eF	15 12 ±						
82	July 14	PN	9 41 20					2220	Kamchatka.
		SN	9 45 02						
		LN	9 47 15						
		MN	9 48 22	21.7		−16			
		eF	10 13 ±						
83	July 17	eP	10 50 33						Lower basin of the Kinu river, Ibaraki prefecture. Moderate shocks were felt at the epicentral region.
		L	10 51 32						
		ME	10 51 42			+6			
		FE	10 53 02						
		FN	10 54 00						
84	July 21	PN	13 21 07						Near philippine. Faint record.
		LN	13 25 23						
		eF	13 33 ±						
*85	July 26	iP	22 49 09						Near Mt Tanzawa, NWm

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S?	22 50 04						part of Sagami province. Strong shocks were felt at the Kanto district. Little damages happened at the epicentral region.
		L	22 50 07						
		ME	22 50 10		−169				
		MN	22 50 13			+425			
		eF	23 07 ±						
86	July 28	PE	17 34 12					356	An after shock of No. 85.
		LN	17 35 00						
		MN	17 35 02						
		eF	17 36 ±						
87	July 30	iP	18 59 08					24	An after shock of Great North Tango earthquake, On March 7th 1927.
		iL	18 59 11						
		M	18 59 11		−5	+5			
		F	18 59 37						
88	Aug. 3	eP	16 01 08					366	West mouth of the Inland sea, NW off Simonoseki. Moderate shocks were felt at the epicentral coast.
		LE	16 01 57						
		LN	16 01 58						
		M	16 02 08	1.9	+28	−40			
		eFE	16 06 ±						
		eFN	16 08 ±						
89	Aug. 8	iP	4 49 40					280	North western foot of Mt Fuji.
		L	4 50 17						
		ME	4 50 18	0.9	+10				
		MN	4 50 20	0.9		−10			
		F	4 51 49						
90	Aug. 8	PE	13 04 33						Faint record. Burma. 22° N 95° E Destructive at the epicentral region.
		PN	13 04 36						
		eS	13 09 27						
		eLE	13 16 09						
		eLN	13 16 36						
		M_1E	13 20 08	10.3	−9				
		MN	13 17 27			+10			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_2E	13 22 20	12.4	−11				
		eF	13 34 ±						
91	Aug. 8	P	13 34 33					409	Near Kanayama, SW part of Fukuoka prefecture. Moderate shocks were felt at the epicentral region.
		L	13 35 28						
		M_E	13 35 30	2.1	−12				
		M_N	13 35 38	1.9		+17			
		F_E	13 37 48						
		F_N	13 39 38						
92	Aug. 10	P_E	3 47 58					146	Near Sumoto. ?
		L	3 48 18						
		M_E	3 48 20		±3				
		F_E	3 48 50						
		F_N	3 48 56						
93	Aug. 10	P	16 00 28					23	Local shock.
		L_M	16 00 31			±4			
		F	16 00 42						
94	Aug. 10	P_E	20 57 49					26	Ditto.
		L_M	20 57 52		±6				
		F	20 58 11						
95	Aug. 14	iP	12 39 07					20	Ditto.
		iL	12 39 10						
		M	12 39 10		−5	+5			
		F	12 39 17						
96	Aug. 16	P_E	13 22 37						Upper basin of the Kinu river, Totigi prefecture.
		iL_E	13 23 26						
		L_N	13 23 28						
		M_E	13 24 08		−3				
		M_N	13 23 48						
		eF_E	13 25 22			−6			
		eF_N	13 26 11						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
97	Aug. 17	P	13 20 36					20	An after shock of Great North Tango earthquake, on march 7th 1927.
		L	13 20 39						
		M	13 20 39		±4				
		F	13 20 49						
98	Aug. 18	P	14 10 16					24	Ditto.
		L	14 10 19						
		M	14 10 19		±6	±4			
		F	14 10 27						
99	Aug. 19	P_N	2 46 52					2270	East of Karenko, Formosa. Strong shocks were felt at the Northern part of Formosa.
		S_E	2 50 36						
		S_N	2 50 38						
		L_E	2 51 55						
		M_E	2 53 20		+10				
		M_1N	2 54 10	15.8		+15			
		M_2N	2 56 13	12.2		+17			
		M_3N	2 57 45	10.6		+11			
		eF	3 16 ±						
100	Aug. 28	P	18 53 42					1080	South of Erimo cape. Felt at Ōuu and Hokkaido.
		P_{R_1N}	18 54 24						
		S_E	18 55 39						
		L_N	18 56 18						
		M_1E	18 57 52	12.6	−33				
		M_1N	18 57 11			−29			
		M_2E	18 59 21	11.6	+20				
		M_2N	18 59 11			−21			
		eF	19 20 ±						
101	Aug. 31	eP	3 08 23						Related to No. 88.
		L_N	3 09 07						
		M_E	3 09 11		+5				
		M_N	3 09 10			+7			
		eF_E	3 09 47						
		eF_N	3 10 00						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
102	Sept. 2	eP_N	11 18 33						Faint record. Near philippine.
		eL_N ?	11 29 00						
		eF	11 59 ±						
103	Sept. 9	iP	2 45 05		+7			21	An after shock of Great North Tango earthquake, on march 7th 1927.
		L	2 45 08						
		M	2 45 08		−11	±10			
		F_E	2 45 29						
		F_N	2 45 32						
104	Sept. 16	iP	10 20 33		−10			21	Ditto.
		L	10 20 36						
		M	10 20 36		+14	±9			
		F	10 20 55						
105	Sept. 20	eP	4 11 04						P phase is not distinct North of Yaku Ils, Ryukyu.
		L	4 12 34						
		M_E	4 12 51	1.7	+9				
		M_N	4 12 52	1.5		+6			
		eF	4 17 ±						
106	Sept. 21	P	7 22 44					168	Upper Valley of the Eno siver, Hirosima. prefecture.
		L	7 23 07						
		M_E	7 23 09		+6				
		M_N	7 23 08			±7			
		F	7 24 08						
107	Sept. 24	P_N	1 46 26					44	Local shock.
		L	1 46 32						
		M_N	1 46 32			±4			
		F	1 46 36						
108	Sept. 25	P	16 50 00					10	Ditto.
		L	16 50 02						
		M	16 50 02		±2	±3			
		F	16 50 58						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
109	Sept. 28	P	14 59 32					1718	SSE off Otiisi cape, Fela at Eastern part of Hokkaido, Decp earthquake.
		L	15 02 05						
		M_E	15 02 12		−12				
		M_N	15 02 12			+4			
		eF	15 06 ±						

昭和四年十二月十八日發行

神戸市中山手通七丁目
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SEISMOLOGICL BULLETIN

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From October 1, 1929 to December 31, 1929.

KOBE

March, 1930.

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KÔBE JAPAN.

SEISMOLOGICAL BULLETIN

of the Imperial Marine Observatory and the Kobe Meteorological Observatory of Japan.

$\varphi = 34^\circ\ 41'\ 18''$ $\lambda = 135^\circ\ 10'\ 51''$ h=58.3 m Underground : Diluvial Series.

Instrument : Omori's Seismograph (Horizontal Pendulum.) — Wiechert Seismograph (Horizontal & Vertical)

Oct.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.5		0.001	20
AN:	15.6		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	3.8	Aperiodic	0.007	95
AN:	3.7	"	0.006	109
AZ:	3.7	6.5	0.002	61

Nov.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.0		0.001	20
AN:	15.4		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.1	Aperiodic	0.005	83
AN:	3.9	"	0.007	90
AZ:	3.8	6.9	0.002	57

Dec.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	16.8		0.001	20
AN:	18.0		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	3.8	Aperiodic	0.005	95
AN:	3.9	"	0.006	92
AZ:	3.8	4.6	0.002	61

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
227	Sept. 30	P	15 59 26					271	Iyo nada, Western Part of the Inland Sea.
		L	16 00 03						
		ME	16 00 05	0.5	±6				
		MN	16 00 33	1.1		±6			
		eF	15 02 ±						
228	Oct. 2	P	19 16 53					51	In the Kii channel.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	19 17 00						
		ME	19 17 05		±6				
		MN	19 17 02	1.2		±6			
		F	19 17 34						
229	Oct. 5	P	17 05 24						Kamchatka district. 55° N 160° E (J. S. A.)
		eLN	17 13 05						
		MN	17 14 12	23.0					
		MZ	17 14 27	25.3					
		eFEN	17 29 ±						
		eFZ	17 30 ±						
230	Oct. 5	iPZ	19 03 49					1290	South off Otiisi Cape, Hokkaido.
		eSN	19 06 16						Perceptible at Hokkaido.
		iSZ?	19 06 06						
		eF	19 12 ±						
231	Oct. 6	P	8 01 56					6960	A distant earthquake. Near Hawai, Pacific Ocean.
		iS	8 10 23	6.8	−3	+1			
		ME	8 30 58	17.1					
		eF	9 00 ±						
232	Oct. 8	eP	17 27 55					7290	A distant earthquake. South Pacific Ocean, Neighbaurhood off Fiji Ils. ?
		SN	17 36 39						
		eF	17 57 ±						
233	Oct. 9	eP	15 32 31						In the kitan strait.
		e	15 32 45						
		F	15 33 10						
234	Oct. 9	e	19 46 57						Near Mt Aso, Kumamoto Prefecture. Depth of Origin 110KM.? Moderate shocks were felt at the epicentral region. perceptible at Kyusyu, Sikoku and Tyugoku district.
		L	19 47 10						
		ME	19 47 18	0.9	±7				
		MN	19 47 20	0.8					
		eF	19 49 ±			±6			
235	Oct. 12	ePZ	5 40 43						A distant earthquake. ?

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	5 57 ±						Heavy micro Seisms.
236	Oct. 14	e	8 29 35						SW off Hatidyo Ils. Faint record.
		eF	8 36 ±						
237	Oct. 16	eL	20 44 19						A distant earthquake. Burma. according to Manila's report.
		ME	20 46 40	15.8					
		MN	20 46 20	15.8		±5			
		eFEN	21 05 ±						
		eFZ	20 56 ±						
238	Oct. 19	PZ	10 32 52					170° ?	South Pacifie Ocean off Northern Chile. 21° S 72° W. according to Kew's report.
		PE	10 33 16						
		iP′N	10 34 32	3.1					
		iP′Z	10 33 50	4.0					
		eP	11 36 ±						
239	Oct. 21	P	17 34 13					82	Upper basin of the Hidaka river, Wakayama prefecture.
		L	17 34 24						
		M	17 34 25	0.7	±3	±3			
		F	17 34 42						
240	Oct. 22	iLE	5 41 31		−5		−1		Very small recard. In the Kii channel.
		FE	5 41 53						
		FN	5 41 58						
241	Oct. 22	e	14 00 17						A distant earthquake. Faint recard.
		eF	14 09 ±						
242	Oct. 23	eSW	17 50 01						Off Inubo cape. Faint Record.
		eSE	17 50 53						
		eF	17 56 ±						
243	Oct. 24	P	6 38 53						Felt all over the Formosa Ils. stronger toward South. Felt at Hongkong.
		eS	6 42 05						
		eL	6 45 23						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MSW	6 48 49	13.5	±11				
		MSE	6 47 39	15.6		±8			
		MZ	6 48 53	14.7					
		eF	6 59 ±						
244	Oct. 24	eP	18 58 50					400	Near Mt. Unzen, Kyusyu district. Felt all over Kyusyu.
		S	19 59 43						
		eL	18 59 57						
		MN	19 00 15	3.7		±14			
		eF	19 05 ±						
245	Oct. 26	P	21 27 26					47	In the Kii channel.
		iL	21 27 32						
		ME	21 27 32	0.6	−11				
		MN	21 27 38	0.8		+11			
		eF	21 30 ±						
246	Oct. 29	P	20 33 41					79	Ditto.
		L	20 33 52						
		M	20 33 53	0.6	±5	±7			
		F	20 34 31						
247	Nov. 2	eP	1 35 53						Off Kosyun, Formosa.
		i	1 36 57						
		eF	1 43 ±						
248	Nov. 2	P	17 10 08						An after shock of North Tango earthquake.
		F	17 10 42						
249	Nov. 3	e	11 41 26						In the Tanabe bay, Wakayama prefecture.
		L	11 41 33						
		M	11 41 33	0.7	±10	±7			
		F	11 42 15						
250	Nov. 5	L	5 29 33						Local shock.
		F	5 29 55						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
251	Nov. 5	iP	11 43 54						Philippine. 10° N 126° 30ᵐE (manila)
		eSW	11 52 53						
		eFEN	12 03 ±						
		eFZ	11 59 ±						
252	Nov. 5	P	23 34 12						Near Hatidyo Ils.
		F	23 40 ±						
253	Nov. 8	P	10 29 20					48	In the Kii channel.
		L	10 29 26						
		ME	10 29 27	0.7	±3				
		F	10 29 55						
254	Nov. 13	P	1 31 16					654	South off Hatidyo Ils.
		L	1 32 44						
		M1E	1 32 49	3.3	±13				
		MN	1 33 19						
		MZ	1 33 10	2.9			±9		
		M2E	1 33 35	4.6	±7				
		eFEN	1 41 ±						
		eFZ	1 37 ±						
255	Nov. 15	iP	18 56 22					2930	A distant earthquake. Near the Yape Ils, Micronesia, North Pacific Ocean.
		PR1	18 57 23						
		S	19 01 00						
		LE	19 02 46						
		M1E	19 06 59	17.4	+51				
		MN	19 08 07	17.2		−20			
		MZ	19 07 00	17.2			+16		
		M2E	19 11 10	12.6					
		eFE	20 14 ±						
		eFN	20 06 ±						
256	Nov. 16	ME	11 26 20		±2				In the Kii channel.
		MN	11 26 18			±3			
		F	11 26 38						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
257	Nov. 17	P	3 49 12					3455	A distant earthquake. Felt in Eastern Half of Mindanao. Epicenter probably in upper Aguspro valley. according to Manila's report.
		PZ	3 49 11						
		PR1	3 50 12						
		SE	3 54 25						
		eL	3 56 46						
		M1N	3 57 57	27.4		±14			
		MZ	3 58 14	23.6			−16		
		ME	4 06 57	18.2	±8				
		M2N	4 05 25	18.7		±8			
		eFE	4 46 ±						
		eFN	4 43 ±						
		eFZ	4 37 ±						
258	Nov. 18	ePN	5 46 56						A distant earthquake. Felt at Butuan and Davao, Mindanao Philippine.
		ePZ	5 46 51						
		eL	5 57 48						
		MN	6 00 35	17.6					
		MZ	6 00 04	19.6					
		eFN	6 13 ±						
		eFZ	6 11 ±						
259	Nov. 18	eP ?	20 50 03						Near Newfound land. Destructive near the epicentral coast.
		ePR1	20 56 25						
		e	21 29 ±	22.0					
		e	21 36 ±	15.4	±9				
		eF	22 14 ±						
260	Nov. 19	P	7 15 30						Basin of the Arita river. Very feeble.
		L	7 15 33						
		ME	7 15 34	0.7	±3				
		F	7 15 55						
261	Nov. 19	e	16 33 08						Middle basin of the Edo river, Musasi province.
		eF	16 36 ±	(Strong shocks were felt at the epicentral region.)					
262	Nov. 19	e	22 34 48						Near Miyake Ils. South

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		i	22 36 08						off Izu peninsula.
		eF	22 44 ±						
*263	Nov. 20	P	5 54 42					62	Perceptible. Lower basin of the Arita river, Strong shocks were felt at the epicentral region.
		L	5 54 50						
		M1E	5 54 54		±1022				
		M1N	5 54 57			±531			
		M1Z	5 54 56				−339		
		M2E	5 56 04	2.0	+345				
		M2N	5 55 57	2.0		−422			
		M2Z	5 55 59	2.9			+240		
		eF	6 05 ±						
264	Nov. 22	P	4 22 08					69	Basin of the Arita river.
		L	4 22 17						
		ME	4 22 18		±24				
		MN	4 22 18	0.7		±22			
		MZ	4 22 19	0.6			±8		
		F	4 23 20						
265	Nov. 23	P	0 09 10					4315	A distant earthquake. about 2° S 140° E according to Manila's. report.
		S	0 15 15						
		eL	0 20 33						
		MN	0 21 29	23.0					
		MZ	0 22 19	24.3					
		eFEN	0 29 ±						
		eFZ	0 28 ±						
266	Nov. 26	P	13 10 18						Upper basin of the Kinu river.
		S	13 11 10						
		ME	13 11 11	2.4	+6				
		eF	13 16 ±						
267	Dec. 3	MN	7 55 54						A distant earthquake. Very faint.
		eF	8 06 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
268	Dce. 3	eLE	8 38 05						Upper basin of the Eno river, Hirosima prefecture. Faint Record.
		ME	8 38 06						
		MN	8 38 08						
		MZ	8 38 06	1.1			±5		
		FE	8 38 28						
		FN	8 38 31						
		FZ	8 38 29						
269	Dce. 3	P	14 06 47					68	In the Kii channel.
		L	14 06 56						
		ME	14 06 57	1.0	±5	±5			
		F	14 07 37						
270	Dce. 6	PE	4 17 04					529	Off Kujukuri shore, Tiba prefecture.
		SE	4 17 52						
		LN	4 18 15						
		ME	4 18 25	1.9	±8				
		MN	4 18 28	2.4		±9			
		MZ	4 18 29	2.0			±8		
		eFEN	4 24 ±						
		eFZ	4 22 ±						
√ 271	Dce. 9	PZ	6 68 39					5275	A distant earthquake. 5° N 88° E, acording to Manila's report.
		SNW	7 05 36						
		LN	7 12 ±						
		eLNW	7 11 51						
		ME	7 19 02	20.6	±4				
		MN	7 17 12	24.3		±8			
		M1Z	7 18 57	21.7			±7		
		M2Z	7 21 05	21.6			±6		
		eFEN	7 42 ±						
		eFZ	7 43 ±						
227	Dce. 9	iN	10 55 22						In the Kii channel.
		F	10 55 53				−7		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
273	Dec. 13	PSW	9 44 24						West off Naze. Ryukyu Ils.
		eF	9 58 ±						
274	Dec. 13	eP	13 44 03						Faint recard, North off Bonin Ils.
		e	13 45 17						
		eN	13 46 10	3.6		±10			
		eF	13 50 ±						
275	Dec. 17	P	11 05 00		−1	−1	+1	3620	Eastern part of Kamchatka, 60° N 170° E. Compsession.
		i	11 05 08		−5	−4	+10		
		i	11 05 19		−7	−1	+17		
		iS	11 10 26						
		iN	11 11 41						
		LE	11 12 06						
		M1E	11 13 52	25.8	±70				
		M1N	11 14 00	19.6		±120			
		M1Z	11 16 25	15.7			±49		
		M2E	11 17 32	11.6	±50				
		M2N	11 18 35	13.2		±53			
		M2Z	11 20 56	16.4			±54		
		M3E	11 24 28	12.7	±59				
		M3N	11 23 50	14.0		±70			
		M3Z	11 23 41	12.9			±61		
			into	the	Next	earth	quake.		
276	Dec. 17	P	12 18 33					2985	Ditto.
		eS	12 23 15						
		ME	12 28 34	13.7	±13				
		eF	14 06 ±						
277	Dec. 18	eMN	7 10 30						East off Karenko, Formosa.
		eFN	7 22 ±						
278	Dec. 21	eL	11 04 14						Southern part of the Biwa lake.
		ME	11 04 15						
		F	11 04 28						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
279	Dec. 27	i_N	13 39 19	2.1		±10			A distant earthquake.
		i_Z	13 39 19	2.0			±10		
		eF_E	13 49 ±						
		eF_N	13 48 ±						
280	Dec. 31	P_N	1 09 19						A distant earthquake. Probable in the South sea.
		eP_Z	1 09 18						
		eS_Z	1 13 49						
		eF	1 28 ±						
281	Dec. 31	eP	4 08 39						Local shock. Very feeble.
		eL	4 48 44						
		M_N	4 48 44			±3			
		F	4 48 57						
282	Dec. 31	eP	4 52 58						A distant earthquake. Prabable in the South sea.
		eF	5 05 ±						

SUMOTO JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

φ=34° 21′ λ=134° 53′ h=109.0 m. Underground: Cretaceous.

Instruments: Omori's Seismograph. (Horizontal Pendulum) — Wiechert Seismograph. (Horizontal & Vertical)

Oct.

	Omori T_o	Omori ε	Omori $\frac{r}{T_o^2}$	Omori V	Wiechert T_o	Wiechert ε	Wiechert $\frac{r}{T_o^2}$	Wiechert V
A_E:	21.7	2.5	0.004	20	4.3	3.1	0.003	116
A_N:	17.8	2.8	0.001	20	4.7	2.8	0.002	99
A_Z:					5.2	4.2	0.002	67

Nov.

	Omori T_o	Omori β	Omori $\frac{r}{T_o^2}$	Omori V	Wiechert T_o	Wiechert β	Wiechert $\frac{r}{T_o^2}$	Wiechert V
A_E:	21.7	2.5	0.004	20	4.3	3.1	0.003	116
A_N:	17.8	2.8	0.001	20	4.7	2.8	0.002	99
A_Z:					5.2	4.2	0.002	67

Dec.

	Omori T_o	Omori β	Omori $\frac{r}{T_o^2}$	Omori V	Wiechert T_o	Wiechert β	Wiechert $\frac{r}{T_o^2}$	Wiechert V
A_E:	16.5	2.4	0.001	20	4.6	Aperiodic	0.004	115
A_N:	17.2	2.3	0.001	20	4.8	,,	0.004	114
A_Z:					4.3	3.0	0.003	96

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
229	Sept. 30	P	15 59 22		+2	+2	+1	234	Iyo Nada, Western part of the Inland Sea.
		S	15 59 53						
		M_E	15 59 54	0.5	+4				
		M_N	15 59 53	0.5		+11			
		M_Z	16 00 02	0.3			±1		
		F	16 01 49						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
230	Oct. 2	iP	19 16 46					36	In the Kii channel.
		S	19 16 51						
		ME	19 16 51	0.4	+6				
		MN	19 16 51	0.5		−15			
		MZ	19 16 52	0.4			−4		
		F	19 17 54						
231	Oct. 3	P	13 48 24					8	In the Kitan strait.
		S	13 48 25						
		MEN	13 48 25	0.4	±2	±3			
		F	13 48 49						
232	Oct. 5	P	17 05 29					3295	Kamchatka district. according to J. S. A.
		eS	17 10 33						
		ME	17 13 23	13.3	±5				
		MN	17 14 43	16.7		±11			
		MZ	17 12 00	22.3			±12		
		eF	17 30 ±						
233	Oct. 5	P	19 03 50					1520	South off Otiisi cape, Hokkaido. Perceptible at Hokkaido.
		S	19 06 29						
		ME	19 06 58	3.3	±2				
		MN	19 07 12	2.4		±2			
		MZ	19 06 36	3.4			±1		
		eF	19 15 ±						
234	Oct. 6	P	8 01 57					7015	Near Hawai. Pacific Ocean.
		S	8 10 27						
		eL	8 20 ±						
		ME	8 30 03	18.5	±33				
		MN	8 29 51	18.6		±5			
		MZ	8 30 44				±15		
		eF	8 57 ±						
235	Oct. 8	P	17 27 51						South pacific Ocean, Neighbourhood of Fiji Ils?
		eSE	17 37 48	6.7	±16				

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eSN	17 38 14	5.0		+33			
		eF	17 44 ±						
236	Oct. 9	P	15 32 25					46	In the Kitan Strait.
		S	15 32 31						
		ME	15 32 31	0.3	±4				
		MN	15 32 32	0.3		±9			
		MZ	15 32 32				±3		
		F	15 33 18						
237	Oct. 9	P	19 46 17						Near Mt. Aso, Kumamoto Prefecture. Depth of Origin 110KM?. Moderate shocks were felt at the epicentral region.
		e	19 46 53						
		MEN	19 46 53	0.7	+5	+13			
		MZ	19 46 55	1.0			−4		
		F	19 49 42						
238	Oct. 14	eP	8 28 58					301	SW off Hatidyo Ils.
		S	8 29 38						
		ME	8 29 40	2.7	±2				
		MN	8 29 40	2.5		±2			
		eF	8 32 ±						
239	Oct. 16	eP	20 39 32					3855	Burma. acconding to Manila's report.
		eS	20 45 11						
		M1E	20 46 58	15.4	±40				
		MN	20 46 10	15.4		±45			
		MZ	20 47 21	10.6			±10		
		M2E	20 51 22	12.0	±29				
		eF	21 03 ±						
240	Oct. 19	ePE	10 32 42						South Pacific Ocean, off Northen chile.
		ePN	10 32 43						
		ePZ	10 32 40						
		eF	10 59 ±						
241	Oct. 21	e	14 16 20						Kurisugawa, Wakayama

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		S	14 16 21						prefecture.
		ME	14 16 22	0.4	±1				
		MN	14 16 21	0.5		±2			
		F	14 16 38						
242	Oct. 21	e	17 34 08						Upper basin of the Hidaka river, Wakayama.
		S	17 34 09						
		ME	17 34 10	0.4	±2				
		MN	17 34 09	0.6		±2			
		F	17 34 31						
243	Oct. 22	P	5 41 12					74	In the Kii channel. Time is uncertain.
		S	5 41 22						
		ME	5 41 22	0.5	±2				
		MN	5 41 23	0.6		±4			
		F	5 41 54						
244	Oct. 22	P	6 08 40					13	In the Kitan strait.
		S	6 08 42						
		ME	6 08 43	0.5	±1				
		MN	6 08 43	0.4		±2			
		F	6 09 00						
245	Oct. 22	eP	13 59 22						A distant earthquake.
		M_1E	14 00 30	3.5	±1				
		eMN	14 00 27	2.8		±2			
		eMZ	14 00 00				±1		
		M_2E	14 03 02	3.0	±2				
		M_2N	14 03 04	3.5		±2			
		eF	14 07 ±						
246	Oct. 23	eP	17 50 30						Off Inubo cape. Tiba prefecture.
		eS	17 51 02						
		ME	17 51 17	2.5	±1				
		MN	17 51 15	2.5		±1			
		eF	17 56 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
247	Oct. 24	P	6 38 15						Felt all over the Formosa Ils. Stronger towerd Shouth. Felt at Hongkong.
		eL ?	6 47 02						
		ME	6 48 33	14.1	+42				
		MN	6 48 42	15.9		±67			
		MZ	6 48 25	14.5			±32		
		eF	7 03 ±						
248	Oct. 24	P	18 58 38		−2	−3	−1	378 ?	Near Mt. Unzen, Kyusyu district. Felt all over the Kyusyu.
		S	18 59 29						
		ME	18 59 37	2.9	±11				
		MN	18 59 39	2.9		−14			
		MZ	18 59 37	2.7			±5		
		eF	19 06 ±						
*249	Oct. 26	iP	21 27 18		+2	−4	−4	26	In the Kii channel. Perceptible.
		S	21 27 22						
		MEN	21 27 22	0.6	+24	+25			
		MZ	21 27 22	0.7			−9		
		F	21 29 30						
250	Oct. 27	P	16 16 23					7	In the Kitan strait.
		S	16 16 24						
		ME	16 16 24	0.4	−1				
		MN	16 16 25	0.4		−1			
		F	16 16 48						
251	Oct. 29	P	20 33 35					43	In the Kii channel.
		S	20 33 41						
		ME	20 33 41	0.5	+6				
		MN	20 33 42	0.6		−9			
		MZ	20 33 44	0.8			±2		
		F	20 34 47						
252	Nov. 1	eP	16 04 11					216	In the Hiuga Nada, SE off Miyazaki.
		S	16 04 40						
		ME	16 04 44	1.2	±2				

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_N	16 04 40	1.5		±1			
		eF	16 06 ±						
253	Nov. 2	e	17 44 44					37	Local shock.
		S	17 44 49						Time is uncertain.
		M_E	17 44 49	0.4	−3				
		M_N	17 44 50	0.4		±5			
		F	17 45 36						
*254	Nov. 3	P	11 41 16					81	Tanabe bay,
		S	11 41 27						Wakayama prefecture.
		M_E	11 41 27	0.4	±3				Perceptible.
		M_N	11 41 27	0.4		±5			
		M_Z	11 41 27				±1		
		F	11 42 09						
255	Nov. 5	P	11 43 51					3875	Near Philippine.
		eS	11 49 31						
		M_E	11 54 25	11.5	±5				
		M_N	11 54 20	11.5		±5			
		M_Z	11 55 20	15.0			±3		
		eF	12 07 ±						
256	Nov. 7	i	15 49 57						Local shock.
		M_E	15 46 58	0.3	±1				
		M_N	15 49 57	0.5		±2			
		F	15 50 10						
257	Nov. 8	P	10 29 05					48	In the Kii channel.
		S	10 29 12						
		M_E	10 29 12	0.4	±2				
		M_N	10 29 12	0.5		±2			
		F	10 29 53						
258	Nov. 13	P	1 31 19					637	South off Hatidyo Is.
		S	1 32 44						

No.	Date	Phase	Time G. M. T.	Perlod	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_E	1 32 47	4.1	−15				
		M_N	1 32 44	2.7		−12			
		M_Z	1 32 45	3.5			+5		
		F	1 40 ±						
259	Nov. 15	P	18 56 20					2945	Western part of Micronesia, North Pacific Ocean.
		S	19 01 00						
		M_1E	19 03 33	15.9	±450				
		M_1N	19 03 20	12.0		+222			
		M_1Z	19 04 24	15.5			±214		
		M_2E	19 06 42	12.5	−376				
		M_2N	19 06 39	9.3		±81			
		M_2Z	19 07 22	11.6			±154		
		M_3E	19 10 58	11.7	±183				
		M_3N	19 11 05	11.0		±181			
		eF	20 38 ±						
260	Nov. 16	P	11 26 03					39	In the Kii channel.
		S	11 26 09						
		M_E	11 26 09	0.4	+2				
		M_N	11 26 09	0.3		+4			
		F	11 26 31						
261	Nov. 17	P	3 49 10					3730	Felt at Mindanao, Philippine.
		L	3 56 49						
		M_1E	3 57 48	13.7	±50				
		M_1N	3 58 08	18.9		±186			
		M_1Z	3 57 59	20.6			±150		
		M_2E	4 04 42	15.1	±55				
		M_2N	4 04 46	15.9		±90			
		M_2Z	4 03 53	19.1			±150		
		M_3N	4 09 04	13.5		±90			
		eF	5 16 ±						
262	Nov. 18	eP	5 46 38						Ditto.
		eS	5 56 44						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
	√	ME	6 01 24	18.0	±30				
		MN	6 00 24	18.3		±36			
		MZ	6 00 37	19.1			±45		
		eF	6 26 ±						
263	Nov. 18	e	21 20 14						Near off New Faundland. Destructive near the epicentral coast.
		eS	21 30 52						
		ME	21 34 37	20.0	±58				
		MN	21 36 02	17.5		±44			
		MZ	21 36 00	18.2			±20		
		eF	22 01 ±						
264	Nov. 19	P	7 15 17					45	Basin of the Arita river Wakayama Prefecture.
		S	7 15 23						
		ME	7 15 25	0.5	±2				
		MN	7 15 24	0.4		±4			
		MZ	7 15 26				±1		
		F	7 16 01						
265	Nov. 19	eP	16 32 59						Middle basine of the Edo eiver, Kanto district. Strong shocks were felt the epicentral region.
		eS	19 33 56						
		eME	16 34 09	2.3	±1				
		eMN	16 34 12	2.3		±2			
		eMZ	16 34 03	2.3			±1		
		eF	16 36 ±						
*266	Nov. 20	iP	5 54 37					32	Lowere basine of the Arita river, Wakayama prefecture. With earth Sound, Strong shocks were felt at the epicentral region.
		S	5 54 42						
		ME	5 54 44	0.7	+800				
		MN	5 54 42	1.4		−1700			
		MZ	5 54 45	0.8					
		F	6 08 28						
267	Nov. 22	P	4 22 05					62	Basin of the Arita river. Wakayama prefecture.
		S	4 22 13						
		ME	4 22 13		+6				

No.	Date	Phase	Time G. M T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MN	4 22 14	0.4		+6			
		MZ	4 22 20	0.4			−2		
		F	4 22 43						
268	Dec. 2	P	1 37 12					25	Near Wakayama.
		S	1 37 16						
		ME	1 37 16	0.4	+3				
		MN	1 37 16	0.4		−4			
		MZ	1 37 16				±1		
		F	1 37 45						
269	Dec. 3	e	14 06 54						In the Kii channel.
		S	14 06 55						
		ME	14 06 55	0.5	±2				
		MN	14 06 57	0.5		±2			
		F	14 07 32						
270	Dec. 6	eP	4 17 26						Off Kujukuri shore Tiba prefecture.
		eF	4 23 ±						
271	Dec. 6	P	12 00 30					26	In the Kii channel.
		S	12 00 34						
		ME	12 00 34		±1				
		MN	12 00 35	0.4		±1			
		F	12 00 49						
272	Dec. 9	P	6 58 34						A distant earthquake. 5° N 88° E. According to manila's report.
		L	7 09 21						
		ME	7 22 05	18.0	±64				
		MN	7 22 05	15.0		±73			
		MZ	7 21 00	15.6			±50		
		eF	7 50 ±						
273	Dec. 11	P	5 34 39						Lccal shock.
		S	5 34 40						
		ME	5 34 41		±1				

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MN	5 34 40	0.3		±1			
		F	5 34 58						
274	Dec. 11	P	9 30 34					29	In the Kii channel.
		S	9 30 38						
		ME	9 30 39		±1				
		MN	9 30 39	0.3		±2			
		F	9 30 59						
275	Dec. 13	P	9 44 12					1585	West off Naze, Ryukyu Ils.
		S	9 46 57						
		ME	9 48 28	12.2	±8				
		MN	9 49 01	12.2		±4			
		MZ	9 47 49	10.0			±8		
		eF	9 59 ±						
276	Dec. 13	P	13 45 15						North off Bonin Ils.
		eF	13 53 ±						
277	Dec. 14	P	4 04 31					33	In the Kii channel.
		S	4 04 36						
		ME	4 04 36	0.4	±1				
		MN	4 04 36	0.4		±2			
		F	4 04 58						
278	Dec. 17	P	11 05 05					3790	East off Kamchatka. 60° N 170° E. Compsession.
		S	11 10 40						
		M_1E	11 14 04	16.5	−825				
		M_1N	11 14 11	18.8		−1700			
		MZ	11 15 07	20.4			−680		
		M_2E	11 17 46	13.5	−429				
		M_2N	11 16 52	12.0		−563			
		eF	14 19 ±						
279	Dec 18	eP	7 01 22						East off Karenko, Formosa.
		e	7 08 00						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	7 20 ±						
280	Dec. 18	iP	15 06 30					9	In the Kii channel.
		S	15 06 31						
		ME	15 06 32	0.4	±2				
		MN	15 06 31	0.4		±2			
		F	15 07 04						
281	Dec. 18	iP	15 17 45					23	Ditto.
		S	15 17 48						
		ME	15 17 49	0.3	−10				
		MN	15 17 49	0.3		±10			
		MZ	15 17 51	0.3			±4		
		F	15 18 46						
282	Dec. 19	P	2 08 10					35	Ditto.
		S	2 08 15						
		ME	2 08 15	0.4	−5				
		MN	2 08 15	0.4		−5			
		MZ	2 08 16	0.2			±2		
		F	2 08 56						
283	Dec 27	eS	13 39 15						A distant earthquake.
		eN	13 39 17	2.6		±4			
		eZ	13 39 17	2.6			+15		
		eF	13 43 ±						
284	Dec. 28	P	8 40 46					25	Local shock.
		S	8 40 50						
		ME	8 40 50	0.2	±2				
		MN	8 40 50	0.3		±3			
		MZ	8 40 50	0.2			+1		
		F	8 41 14						
285	Dec. 28	P	18 18 41					34	In the Kii channel.
		S	18 18 45						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		ME	18 18 45	0.2	+1				
		MN	18 18 45	0.2		−3			
		MZ	18 18 45				−1		
		F	18 19 06						
286	Dec. 30	P	7 48 34					19	In the Kii channel.
		S	7 48 30						
		ME	7 48 37	0.4	−1				
		MN	7 48 39	0.3		−3			
		F	7 49 03						
287	Dec. 31	eP	1 09 16					3995	A distant earthquake. Probable in the South sea.
		eS	1 15 01						
		MN	1 18 12	9.3		±10			
		MZ	1 17 06	13.9			±5		
		eF	1 40 ±						
288	Dec. 31	eP	4 51 11						Ditto.
		eF	5 04 ±						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

φ=35° 32′ λ=134° 49′ h=32.2 m. Underground : Diluvial Series.

Instruments : Wiechert Seismograph.

(Horizontal)

Oct.

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.4	Aperiodic	0.003	118
AN:	4.2	3.1	0.002	115

Nov.

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.2	Aperiodic	0.003	85
AN:	4.0	3.1	0.002	110

Dec.

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.2	Aperiodic	0.003	110
AN:	4.1	2.7	0.002	102

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
110	Sept. 30	e	15 59 50						Iyo Nada, Western part of the Inland Sea.
		LE	16 00 28						
		LN	16 00 07						
		ME	16 00 23		+8				
		MN	16 00 18			+5			
		eFE	16 02 ±						
		eFN	16 01 32						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
111	Oct. 5	iPEN	17 05 19						Kamchatka disrict. According to J. S. A.
		eFEN	17 21 ±						
112	Oct. 5	iP	19 03 43						South off Otiisi cape, Hokkaido.
		SE	19 05 58						Perceptible at Hokkaido.
		SN	19 05 37						
		FE	19 12 33						
		eFN	19 13 ±						
113	Oct. 9	eP	19 46 38					328	Near Mt. Aso, Kumamoto Prefecture. Depth of origin 110KM.?
		iSE	19 47 11						Moderate shocks were felt at the epicentral region, Perceptible at Kyusyu, Sikoku and Tyugoku distict.
		iSN	19 47 10						
		iL	19 47 23						
		ME	19 47 27		+6				
		MN	19 47 24			+6			
		eFE	19 49 ±						
		eFN	19 50 ±						
114	Oct. 16	iLN	20 44 12						Burma. According to Manila's report.
		M_1N	20 46 50	14.6		−6			
		M_2N	20 49 18	11.5		−6			
		eFN	21 08 ±						
115	Oct. 24	iPE	6 38 42					2719	Felt all over the Formosa. Stronger in Southern part. Felt at Hongkong.
		eSE	6 42 16						
		eSN	6 42 11						
		iLE	6 44 47						
		eLN	6 45 09	16.3					
		ME	6 47 11	19.3		−1			
		MN	6 46 26						
		eFEN	6 57 ±						
116	Oct. 24	iP	18 58 48					466	Near Mt. Unzen, Kyushyu district. Felt all Over the Kyusyu.
		iL	18 59 50						
		ME	18 59 56	1.2	−11				
		MN	19 00 05	1.0		+12			
		eFEN	19 01 39						
117	Nov. 5	iP	11 44 01						Near Philippine.
		eLN	11 54 01						
		eF	12 03 ±						
118	Nov. 5	ePE	23 33 35					401	Near Hatidyo Ils. P phase are not distinot.
		ePN	23 33 29						
		iLE	23 34 27						
		iLN	23 34 26						
		eME	23 34 40						
		MN	23 34 40	1.2		−8			
		FE	23 36 12						
		FN	23 35 30						
119	Nov. 6	iP	18 11 40					16	Local shock.
		iL	18 11 43						
		M	18 11 43		?	+7			
		F	18 11 53						
120	Nov. 13	iP	1 31 28					693	South off Hatidyo Ils. Faint record.
		iLN	1 33 02						
		MN	1 33 07			+9			
		FN	1 34 33						
121	Nov. 15	eP	18 57 30						Western part of Micronesia, North Pacific Ocean.
		ePPE	18 58 08						
		iPPN	18 58 15						
		iSE	19 01 21						
		iSN	19 01 23						
		iLE	19 03 09						
		iLN	19 03 05						
		M_1E	19 07 45	19.0	+45				
		M_1N	19 07 36	11.0		+39			
		M_2E	19 08 42	11.6	−74				
		M_2N	19 08 21	13.7		+39			

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_3E	19 11 02	10.5	−33				
		M_3N	19 11 03	12.6		−42			
		M_4E	19 12 21	12.6	+34				
		eF	20 23 ±						
*122	Nov 16	eP	16 01 00					19	Perceptible, An after shock of North Tango earthquake. Time is uncertain.
		eL	16 01 03						
		M_E	16 01 03		+24				
		M_N	16 01 03			±30			
		eF_{EN}	16 02 04						
123	Nov. 17	eP_E	3 50 13					2825	Felt in eastern half of Mindanao, Philippine.
		eP_N	3 50 05						
		iPF_N	3 51 23						
		iS_E	3 54 38						
		iS_N	3 54 40						
		iL_N	3 57 34						
		eF_N	4 34 ±						
124	Nov. 17	iP	11 42 23						Near Syuzan, NW of Kyoto City.
		F	11 42 49						
125	Nov. 18	eL	21 31 05						Near off New foundland, Dastructive Near the epicentral Coast.
		M_1N	21 35 05			−1			
		M_2N	21 37 23			−1			
		eF	22 07 ±						
126	Nov. 19	iP_E	16 32 43						Middle basin of the Edo river, Kanto disrict. Strong shocks were felt at the epicentral region.
		F_E	16 35 06						
		F_N	16 34 36						
*127	Nov. 20	iP_E	5 54 57						
		iL_E	5 55 15					136	Lowere basin of the Arita river. Strong shocks were felt at the epicentral region.
		M_E	5 55 18		−352				
		F_E	6 01 27						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
128	Dec. 6	iP	4 17 04					521	Off Kujukuri shore, Tiba prefecture.
		iS_E	4 17 47						
		L	4 18 14						
		M_E	4 18 32		−1				
		M_N	4 18 35			+1			
		F_E	4 20 21						
		F_N	4 20 29						
129	Dec. 9	iP_E	6 58 40					5960	A distant earthquake. 5° N 88° E. According to Manila's report.
		eL_E	7 12 18						
		iL_N	7 12 00						
		M_1E	7 17 53						
		M_1N	7 17 48			−2			
		M_2E	7 19 45						
		M_2N	7 19 45			−1			
		M_3N	7 22 34			+1			
		eF	7 41 ±						
130	Dec. 11	iP_N	4 26 37					19	Local shock.
		iL	4 26 40						
		M	4 26 40		±9	±13			
		F_E	4 26 47						
		F_N	4 26 46						
131	Dec. 12	iP	16 11 34					19	An after shock of Great North Tango earthquake.
		iL	16 11 37						
		M	16 11 37		−19	−13			
		F	16 11 52						
132	Dec. 17	iP	5 07 04					18	Very small. Local shock.
		iL_N	5 07 06						
		M_N	5 07 06			±3			
		F_N	5 07 09						
133	Dec. 17	iP	11 05 04					3470	60° N. 170° E. Eastern part of Kamchatka.
		iN	11 05 15						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		i_N	11 05 47						
		iS_E	11 10 18						
		iS_N	11 10 20						
		iL_E	11 12 24						
		iL_N	11 12 22						
		M_1E	11 13 46	24.8	−48				
		M_1N	11 14 07	15.6		+97			
		M_2E	11 15 04	14.9	+51				
		M_2N	11 15 31	15.9		−76			
		M_3E	11 17 08	18.2	+59				
		M_3N	11 17 13	14.5		+59			
		M_4E	11 18 15	18.2	+38				
		M_4N	11 18 36	14.5		+50			
		M_5E	11 20 16		+40				
		M_5N	11 19 58	14.5		+52			
		M_6E	11 22 12	12.4	+42				
		M_6N	11 21 41	12.4		+63			
		eF	13 22 ±						
134	Dec. 31	eP_E	1 08 45						Faint record.
		eP_N	1 08 42						
		iS_E	1 14 21						
		iS_N	1 14 13						
		eL_N	1 17 21						
		eF_N	1 37 ±						