SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. IV. No. 1.

From January 1, 1928 to March 31, 1928.

KOBE

June, 1928.

From No. 1. to No. 32, 1928.

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 Undergrouud : Diluvial Series.

Instrument : Omori's Seismograph (Horizontal Pendulum.)

	T_0	ε	$\frac{r}{T_0^2}$	V
AN:	17		0.007	20
AE:	19		0.011	20

Wiechert Seismograph (Horizontal & Vertical)

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	5.1	Aperiodic	0.004	80
AN:	5.2	,,	0.004	80
AZ:	4.1	,,	0.006	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	P	7 18 11					413	Lower course of Kinu river, Ibaraki prefecture.
		$\overline{P}$	7 18 20						
		L	7 19 07						
		ME	7 19 31	2.3	±33				
		MN	7 19 30	2.6		−139			
		MZ	7 19 27	2.1			±20		
		FEN	7 27 37						
		FZ	7 23 05						
2	Jan. 4	eP	22 13 44						Adistant earthquake.
		eF	22 23 41						
3	Jan. 9	P	5 51 49					64	In the Kii channel.
		L	5 51 58						
		M	5 51 58	0.5	±73	±88	±15		
		FEN	5 56 14						
		FZ	5 55 44						
4	Jan. 10	P	3 32 37					81	An after shock of the great North Tango earthquake on March 7th 1927.
		L	3 32 48						
		MEN	3 32 50	0.9	±56	±21			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ ±13	km.	
		MZ	3 32 52						
		FEN	3 34 27						
		FZ	3 33 48						
5	Jan. 13							68	In the Kii channel.
		P	15 10 51						
		L	15 11 01						
		MN	15 11 01			±13			
		F	15 12 10						
6	Jan. 16							378	Lower course of Kinu river. Ibaraki Prefecture.
		P	4 09 26						
		L	4 10 17						
		MN	4 10 22						
		eF	4 13 36						
7	Jan. 24								In the sea of Kasima.
		eP	21 37 34						
		L	21 38 28						
		MEN	21 38 42	E 2.4 N 2.9	±6	±10			
		F	21 42 23						
8	Jan. 25							76	Upper course of Suzuka river, Ise province.
		eP	9 44 01						
		L	9 44 11						
		MEN	9 44 11		±15	±15			
		F	9 44 49						
9	Jan. 26							1243	SSE off Bonin Ils By Ōmori's seismographs.
		eP	18 52 41						
		eL	18 55 38						
		M_1N	18 56 41	12.5		±200			
		M_2N	18 58 01	10.0		±230			
		C	19 00 36			±130			
		F	19 27 35						
10	Jan. 28								Lower course of Ibi river, Mino province.
		eP	22 21 01						
		F	22 22 03						
11	Feb. 1							329	SW off Hatizyō Ils.
		eP	9 41 55						
		eL	9 42 39						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		ME	9 43 36	2.1	±6				
		eFE	9 49 ±						
		eFN	9 50 ±						
12	Feb. 2							60	Local shock.
		eP	4 07 15						
		L	4 07 23						
		MEN	4 07 23						
		F	4 07 38						
13	Feb. 3								A distant earthquake. Near Aleutian Ils.
		P	13 54 37						
		ME	14 09 25						
		MN	14 10 10						
		F	14 21 ±						
14	Feb. 3							682	Off Kinkazan, Miyagi prefecture. Strong shocks were felt at middle part of Fukusima prefecture.
		P	18 50 41						
		L	18 52 06						
		ME	18 52 33	2.3	±16				
		MN	18 52 30			±21			
		MZ	18 52 35	2.7			±10		
		eF	18 59 ±						
15	Feb. 7								A distant earthquake. probably in the South sea.
		P	0 11 30						
		eL	0 30 49						
		MEN	0 34 06	20.5	±6	±9			
		eFE	0 45 ±						
		eFN	0 43 ±						
16	Feb. 7							65	Near Arita river, Wakayama prefecture.
		P	8 09 45						
		L	8 09 54						
		MEN	8 09 57		±35	±25			
		eF	8 10 46						
17	Feb. 7							245	Upper course of Imizu river, Toyama prefecture.
		P	13 24 15						
		L	13 24 48						
		MEN	13 25 00		±11	±8			
		MZ	13 24 58				±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.	
		F	13 29 07						
18	Feb. 11	P	21 11 14					468	Western part of the Lake of Kasumigaura, Ibaraki prefecture. Moderate shocks were felt at Mito, Tokyō and Yokohama.
		$\overline{P}$	21 11 17						
		S	21 11 59						
		L	21 12 17						
		M_1EN	21 12 26	1.8	+135	+179			
		MZ	21 12 25	1.4			+85		
		M_2E	21 12 43	2.0	+147				
		eF	21 23 17						
19	Feb. 13	eP	5 39 07						A distant earthquake.
		eS	5 42 54						
		eF	14 58 ±						
20	Feb. 15	P	14 00 13					99	Upper course of Hitaka river, Wakayama prefecture.
		L	14 00 23						
		M	14 00 24		±50	±50	±10		
		F	14 01 05						
21	Feb. 20	P	3 02 57		−0.7	+0.4	−0.9	200	Upper course of Taka hasi river, Okayama prefecture. Weak shocks were felt at Tottori and Okayama prefecture.
		L	3 03 17						
		M	3 03 17		−225	+144	−113		
		F	3 08 21						
22	Feb. 21	P	19 57 09						A distant earthquake.
		eS	20 03 48						
		eL	20 11 06						
		ME	20 14 51	18.2	±10				
		MN	20 16 38	16.7		±8			
		MZ	20 18 24	15.6					
		F	20 37 ±				±8		
23	Feb. 22	P	21 18 17						
		L	21 18 27					73	Near Toyooka, Tazima province.
		ME	21 18 31						
		MN	21 18 28			±5			
		eF	21 19 20						
24	Feb. 26	eL	1 41 10						A distant earthquake.
		ME	1 44 52						
		MN	1 46 50						
		F	2 02 ±						
25	Mar. 7	iP	22 49 05					2950	A distant earthquake. probably in the South sea.
		eS	22 53 44						
		eL	22 58 02						
		ME	23 01 51	10.0	±10				
		MN	22 58 49	14.3		±20			
		MZ	23 00 51	10.9			±5		
		eF_E	23 19 ±						
		eF_N	23 15 ±						
		eF_Z	23 11 ±						
26	Mar. 9	iP	18 15 19					6420	A distant earthquake.
		iS	18 23 18						
		eL	18 31 23						
		M_1E	18 40 06	17.2	+60				
		M_1N	18 38 42	17.3		+75			
		MZ	18 41 01	18.3			−36		
		M_2E	18 44 17	17.2	+45				
		M_2N	18 43 22			−50			
		eF_{EN}	19 23 ±						
		eF_Z	19 15 ±						
27	Mar. 16	P	5 11 51					6180	A distant earthquake. probably in the South sea.
		P_{R_1}	5 12 49						
		P_{R_2}	5 14 25						
		S	5 20 37						
		L	5 29 18						
		ME	5 32 06	23.5	±14				
		MN	5 36 58	15.4		±26			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
							±10		
		MZ	5 36 38	24.8					
		eFEN	6 38 ±						
		eFZ	6 34 ±						
28	Mar. 22	ePZ	5 01 37						A distant earthquake.
		eS	5 09 29						
		ME	5 19 13	22.0					
		eFEN	6 02 ±						
		eFZ	5 57 ±						
29	Mar. 23	eP	1 22 31					358	Upper course of Tone river, Musasi province. Weak shocks were felt at Tōkyō and Yokohama.
		S	1 22 48						
		L	1 23 19						
		ME	1 23 28	1.2	±15				
		MN	1 23 33			±15			
		eF	1 28 ±						
30	Mar. 23	iP	18 34 27					77	Off Hinomisaki, Wakayama prefecture.
		iL	18 34 38						
		MEN	18 34 40		±41	±48			
		F	18 36 43						
31	Mar. 28	P	16 45 47						
		L	16 45 50					21	Local shock.
		MEN	16 45 51	0.6	±20	±28			
		F	16 46 12						
32	Mar. 29	P	5 07 16						
		P̄	5 07 20					423	SW off Hatizyō Ils.
		L	5 08 13						
		MEN	5 08 19	4.0	+607	+531			
		MZ	5 08 25	3.4					
		eFEN	5 59 ±				−162		
		eFZ	5 46 ±						

From No. 1 to No. 70, 1928.

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
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

Wiechert Seismograph. (Horizontal & Vertical)

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.5	Aperiodic	0.003	80
AN:	4.5	"	0.003	80
AZ:	4.3	"	0.004	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	eP	7 18 13	0.5				531	Lower course of Kinu river, Musasi Province.
		L	7 19 24	1.6	+7.5	+15.6	+2.5		
		MN	7 19 29	1.6		+23.8			
		ME	7 19 35	1.6	−12.8				
		MZ	7 19 28	1.6			−7.5		
		eF	7 28 06						
2	Jan. 1	eP	17 02 24	0.2				60	In the Kii channel.
		L	17 02 32	0.4	+0.6	+1.3			
		M	17 02 32	0.4	−1.5	−2.8			
		eF	17 03 09						
3	Jan. 6	eP	20 03 43					1237	A distant earthquake.
		iL	20 24 20						
		eF	20 53 03						
*4	Jan. 9	iP	5 51 44	0.3	+5.0	−9.0	−6.4	30	In the Kii channel.
		iL	5 51 49	0.6	−8.5	−19.9	+10.3		
		M	5 51 49	0.6	−41.3	−68.8	−15.0		
		eF	5 54 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.	
5	Jan. 10	P	3 32 42	0.3	−1.3	−1.3	−0.8	104	An after shock of great North Tango earthquake on March 7th 1927.
		L	3 32 56	0.6	−1.9	+2.5	+0.5		
		M_N	3 32 57	0.6		+8.8			
		M_E	3 32 59	0.6					
		M_Z	3 32 59	0.6			−2.8		
		F	3 34 32						
6	Jan. 11	eP	16 11 02	0.2	+1.0	+1.3		13	In the Kii channel.
		L	16 11 03	0.4	+1.3	+1.5			
		M	16 11 04	0.4					
		eF	16 11 18						
7	Jan. 13	eP	13 55 04	0.2	−1.3	−1.3		50	In the Kii channel.
		L	13 55 11	0.4	+2.5	+2.5			
		M	13 55 12	0.4					
		eF	13 55 27						
8	Jan. 13	eP	15 10 46	0.2	−1.3	+3.1	+0.9	55	Ditto.
		L	15 10 53	0.4	−4.4	−3.8	+1.3		
		M	15 10 54	0.4					
		eF	15 12 04						
9	Jan. 15	eP	0 27 17	0.2	−1.3	−1.5	+0.6	28	In the course of Arita river, Wakayama prefecture.
		L	0 27 20	0.4	−1.4	+1.9	+0.9		
		M	0 27 22	0.4					
		eF	0 27 42						
10	Jan. 16	eP	4 09 53	0.9	+1.9	−1.9	+0.4		Lower course of Kinu river, Musasi province.
		L	4 10 27	1.8	−2.5	+2.5	−1.0		
		M	4 10 43	1.8					
		eF	4 10 32						
11	Jan. 17	eP	18 40 12	0.2	+1.5	+5.0	−1.3	48	In the Kii channel.
		L	18 40 18	0.4	−2.5	+6.0	+1.5		
		M	18 40 19	0.4					
		eF	18 40 55						

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	Jan. 18	eP	20 04 00	0.2				29	In the Kitan St.
		iL	20 04 04	0.4	+2.8	+2.5	−0.4		
		M	20 04 05	0.4	−5.3	+2.8	+1.5		
		eF	20 04 31						
13	Jan. 20	eP	19 17 03					22	Ditto.
		L	19 17 06	0.4	+1.5	+2.3	+0.4		
		M	19 17 07	0.4	+2.6	−2.6			
		eF	19 17 25						
14	Jan. 21	eP	9 45 12	0.2				45	In the Kitan St.
		L	9 45 18	0.4	+1.9	+2.6	+1.3		
		M	9 45 18	0.4	−4.0	−5.0			
		eF	9 45 31						
15	Jan. 22	eP	21 23 31	0.2				37	Off the mouth of Arita river, Wakayama prefecture.
		L	21 23 36	0.4	+1.3	+1.5	+1.0		
		M	21 23 36	0.4	+1.4	−2.5			
		eF	21 23 56						
16	Jan. 25	eP	9 44 02	0.2				102	Upper course of Suzuka river, Ise province.
		L	9 44 16	0.4	+1.3	+1.3	+0.6		
		M	9 44 17	0.4	−2.5	+3.9	+1.3		
		eF	9 45 03						
17	Jan. 26	eP	18 52 39	2.7				1060	SSE off Bonin Isl.
		eS	18 54 35	3.9	+1.9	+1.9			
		L	18 56 43	9.6	−1.0	+1.3			
		eF	19 32 26						
18	Jan. 28	eP	22 20 35	0.4					Lower course of Ibi river, Mino province.
		L	22 21 15	0.8	−0.8	+1.0			
		M	22 21 28	0.8	−1.5	−2.6			
		eF	22 22 23						
19	Feb. 1	eP	9 22 58	0.2				25	In the course of Arita

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	9 23 03	0.4	+1.3	+1.9	+0.6		river. Wakayama
		M	9 23 03	0.4	−2.5	+2.5			prefecture.
		eF	9 23 33						
20	Feb. 1	eP	9 41 43	0.6				401	SW off Hatizyō Isl.
		L	9 42 37	2.3	−2.5	+3.8	+0.6		
		MNZ	9 42 40	2.3		−5.0	+1.3		
		ME	9 42 42	2.3	−3.8				
		eF	9 44 38						
21	Feb. 2	eP	2 58 20	0.2					Upper course of the
		L	2 58 24	0.4	−1.0	+1.4			River Yosino, Yamato
		M	2 58 24	0.4	+1.3	+1.5			province.
		eF	2 58 58						
22	Feb. 3	eP	13 54 41	2.9					A distant earthquake.
		eL	14 06 12	12.0	+0.6	−0.6			Near Aleutian Ils.
		eF	14 23 56						
23	Feb. 3	eP	18 50 47	1.2					
		S	18 51 29	1.7	+1.3	−1.3		651	Off Kinkazan, Miyagi
		L	18 52 14	2.9	−3.1	+6.0			prefecture. Strong shocks
		MN	18 52 43	2.9		−15.6			were felt at middle part
		ME	18 52 46	2.9	−8.8				of Hukusima prefecture.
		eF	18 59 55						
24	Feb. 5	eP	3 28 44	0.2					
		L	3 28 49	0.4	−1.9	−1.4	+0.4	30	Local shock.
		M	3 28 49	0.4	−2.1	+1.9			
		eF	3 29 08						
25	Feb. 5	eP	12 49 50	0.2					
		L	12 49 54	0.4	−1.5	−2.5	+0.6	32	In the course of Arita
		M	12 49 55	0.4	+2.1	+2.8			river, Wakayama
		eF	12 50 08						prefecture.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
26	Feb. 6	eP	3 57 57	1.0					A distant earthquake.
		S	4 01 37	2.2	−1.3	+1.3			
		L	4 05 22	5.1	−1.4	+1.9			
		eF	4 59 55						
27	Feb. 7	eP	0 30 56	1.0					A distant earthquake.
		S	0 32 00	3.0	+0.6	+1.9	+0.4		
		eL	0 33 07	9.8	−1.3	−3.1	+0.6		
		eF	0 51 55						
28	Feb. 7	P	8 09 37	0.2				48	In the course of Arita
		L	8 09 44	0.4	+2.6	+3.8	+0.5		river, Wakayama
		MN	8 09 45	0.4		+7.0			prefecture.
		ME	8 09 47	0.4	−5.1				
		MZ	8 09 48	0.4			+2.3		
		F	8 10 45						
29	Feb. 7	eP	13 24 25	0.4				278	Upper course of Imizu
		L	13 25 03	0.8	−2.5	+2.5	+0.9		river, Toyama prefecture.
		M	13 25 12	0.8	−5.0	−6.4	−1.3		
		eF	13 28 07						
30	Feb. 8	P	2 40 44	0.2	+0.6	−0.9	−0.4	25	Near Wakayama.
		L	2 40 48	0.4	+1.5	+1.4	+0.6		
		ME	2 40 48	0.4	−5.8				
		MN	2 40 48	0.4		−3.1			
		MZ	2 40 49	0.4			−1.3		
		F	2 41 07						
31	Feb. 8	eP	3 04 45	0.2				23	Ditto.
		L	3 04 49	0.4	+1.0	+1.3	+0.6		
		M	3 04 49	0.4	+1.0	−1.4			
		eF	3 05 16						
32	Feb. 8	eP	3 44 47	0.2				37	Ditto.
		iL	3 44 52	0.4	−0.6	−0.4			

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	3 44 53	0.4	−2.3	+2.3			
		eF	3 45 19					16	Local shock.
33	Feb. 8	eP	21 42 50	0.2					
		L	21 42 52	0.4	−2.6	+5.1			
		M	21 42 52	0.4	−4.4	+9.0			
		eF	21 43 31						
34	Feb. 11	P	21 11 23	0.2				441	Western part of the Lake of Kasumigaura, Ibaraki prefecture. Moderate shocks were felt at Mito, Tōkyō and Yokohama.
		L	21 12 22	1.9	−14.9	+21.4			
		M_N	21 12 42	1.9		+58.9			
		M_E	21 12 51	1.9	+46.0				
		F	21 19 22						
35	Feb. 13	eP	5 38 34	0.8				2730	A distant earthquake.
		eS	5 40 57	1.9	−2.3	−0.6			
		eL	5 42 57	4.7	−1.5	−1.4			
		M_N	5 43 47	4.7		+7.3			
		M_E	5 43 33	4.7	−4.4				
		eP	5 55 56						
36	Feb. 13	P	11 42 48	0.2					
		L	11 42 52	0.4	−1.5	−0.9		27	Near Wakayama.
		M	11 42 52	0.4	±1.5	±1.5			
		eF	11 43 06						
37	Feb. 15	P	14 00 10	0.2					
		L	14 00 16	0.4	−2.6	+2.5	+0.9	46	Upper course of Hitaka river, Wakayama prefecture.
		M	14 00 19	0.4	+12.5	−12.5	−2.5		
		eF	14 01 01						
38	Feb. 16	P	8 55 40	0.2					
		L	8 55 43	0.4	+2.4	+1.4	−0.4	23	Near Wakayama.
		M	8 55 44	0.4	−2.8	−2.5	+0.8		
		eF	8 56 05						

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.	
39	Feb. 17	eP	8 25 51	0.2				42	Ditto.
		L	8 25 56	0.4	−1.0	−0.8			
		M_E	8 25 58	0.4	−1.9				
		M_N	8 25 59	0.4		+1.6			
		eF	8 26 28						
40	Feb. 18	P	9 42 19	0.2				44	Near Wakayama.
		L	9 42 25	0.4	+0.9	−1.0			
		M	9 42 26	0.4	+2.1	+2.4			
		eF	9 43 00						
41	Feb. 18	eP	9 49 29	0.2				122	An after shock of the great North tango earthquake on March 7th 1927.
		L	9 49 45	0.4	−1.4	+1.3			
		M	9 49 47	0.4	+1.9	+1.5			
		eF	9 50 10						
42	Feb. 19	iP	2 25 46	0.2	+0.9	+1.5	−0.6	24	In the Kii channel.
		L	2 25 49	0.4	−1.6	+6.4	+0.8		
		M	2 25 50	0.4	+4.1	−7.4			
		M_Z	2 25 52	0.4			−3.9		
		eF	2 26 47						
*43	Feb. 20	iP	3 02 55	0.5	−11.3	+5.0	−3.1	142	Upper course of Takahasi river, Okayama prefecture. Weak shocks were felt at Tottori and Okayama prefecture.
		iL	3 03 14	0.9	+42.5	−58.5	+9.4		
		M_N	3 03 15	0.9	+87.5				
		M_E	3 03 18	0.9	+62.5				
		M_Z	3 03 22	0.9			14.0		
		eF	3 12 57						
44	Feb. 21	eP	16 29 27	0.2					In the Bungo channel.
		L	16 29 37	0.4	−0.6	−0.4			
		M_N	16 29 37	0.4					
		M_E	16 29 38	0.4	−1.4	−1.4			
		eF	16 31 37						
45	Feb. 21	eP	19 57 20	2.5				6361	A distant earthquake.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eS	20 04 36	3.9	+1.0	+1.9			
		eL	20 11 43	17.4	+1.9	−1.3			
		ME	20 17 05	17.4	−5.6				
		MN	20 17 16	17.4	+11.0				
		eF	20 51 56						
46	Feb. 22	iP	21 18 24	0.3	+0.6	−11.1	−0.8	119	Perceptible at Toyooka.
		iL	21 18 40	0.5	−1.6	+1.4	+0.6		
		M	21 18 43	0.5	−2.5	+4.8			
		MZ	21 18 43	0.5			−2.8		
		eF	21 20 20						
47	Feb. 25	P	10 56 23	0.3				30	Local shock.
		L	10 56 27	0.6	+3.0	+5.0	+1.3		
		M	10 56 28	0.6	−8.8	+13.8			
		MZ	10 56 29	0.6			+5.0		
		F	10 57 21						
48	Feb. 26	eP	1 39 39	0.3				3310	A distant earthquake.
		L	1 44 44	19.0					
		eF	2 08 55						
49	Feb. 29	P	9 32 31	0.3				60	In the Kii channel.
		L	9 32 39	0.4	+1.4	+2.4	+1.3		
		M	9 32 40	0.4	−4.8	+3.8	+1.4		
		eF	9 33 08						
50	Mar. 3	eP	15 41 53	0.2					Upper course of Hiyosi river, Okayama prefecture.
		L	15 42 04	0.4	−1.4	−1.3	+0.9		
		MN	15 42 06	0.4		−3.8			
		ME	15 42 08	0.4	−1.5				
		MZ	15 42 06	0.4					
		eF	15 42 33				+1.3		
51	Mar. 6	P	12 23 19	0.2					
		L	12 23 27	0.4	+1.6	+3.9		59	Middle course of Hitaka river, Wakayama prefecture.

No.	Date	Fhase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M	12 23 27	0.4	+1.9	+5.0			
		eF	12 24 00						
52	Mar. 6	eP	14 47 40	0.2				39	Near Wakayama.
		L	14 47 45	0.4	+1.3	+1.4			
		M	14 47 46	0.4	+1.5	+2.6			
		eF	14 48 01						
53	Mar. 7	eP	22 50 51	3.2				2450	A distant earthquake. Probably in the South sea.
		eL	22 54 52	16.0					
		eF	23 29 52						
54	Mar. 9	eP	0 30 06	1.3				2440	A distant earthquake.
		eS	0 32 06	2.3		+2.5			
		eL	0 34 06	7.4		−2.5			
		eF	1 09 51						
55	Mar. 9	eP	18 15 15	1.8					A distant earthquake. Probably in the South sea.
		eS	18 21 07	6.5		−2.5			
		eR	18 26 51	7.5		+10.0			
		eL	18 32 01	16.0		+12.5	−2.5		
		M	18 36 34	16.0		+85.0			
		eF	19 47 51						
56	Mar. 11	eP	12 03 34	0.2				123	Upper course of Maruyama river, Tazima province.
		L	12 03 51	0.4	−1.4	+2.8	+0.4		
		M	12 03 52	0.4	+1.5	−3.1	−0.6		
		eF	12 04 28						
57	Mar. 13	eP	18 39 06	2.9				4390	A distant earthquake. Probably in the South sea.
		eS	18 42 36	3.9	−1.1	+3.5			
		eR	18 46 09	5.8	+1.1	+0.9			
		eL	18 48 26	11.8	+1.9	+5.0			
		eF	19 22 50						
58	Mar. 16	eP	5 11 51	2.0				5800	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.	
		eS	5 15 16	2.8	+3.1	+3.1			Probably in the South sea.
		eR1	5 18 24	3.8	−0.4	+1.9			
		eR2	5 21 19	4.7	+3.8	+3.1			
		eL	5 24 06	23.0	−3.1	−5.6	−1.0		
		eF	6 59 48						
59	Mar. 21	eP	8 16 42					28	Local shock.
		L	8 16 46	0.4	+2.5	−2.6			
		M	8 16 47	0.4	−2.6	−3.8			
		eF	8 17 14						
60	Mar. 21	eP	21 40 05	0.2				52	In the Kii channel.
		L	21 40 12	0.4	+3.8	+4.3			
		M	21 40 12	0.4	−3.9	+6.3			
		eF	21 40 46						
61	Mar. 21	eP	21 45 03	2.0				31	Ditto.
		L	21 45 07	0.4	−2.8	+2.4	−0.6		
		M	21 45 07	0.4	±3.1	−3.9			
		eF	21 45 27						
62	Mar. 22	eP	4 45 48	12.3					A distant earthquake.
		eL	5 11 02	20.6					
		eF	7 29 45						
63	Mar. 22	eP	20 16 48	0.2					
		L	20 17 14	0.4	+1.3	+1.4	+0.6	196	Near the mouth of the River Ota, Hirosima prefecture.
		M	20 17 19	0.4	−3.1	−2.6			
		MZ	20 17 17	0.4					
		eF	20 17 41				−1.5		
64	Mar. 23	eP	1 22 48	0.3					
		L	1 23 21	1.2	−2.0	+2.3			Upper course of Tone river, Musasi province.
		M	1 23 32	1.2	−2.9	+2.6			
		eF	1 29 05						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*65	Mar. 23	iP	18 34 22	0.2	−1.6	−2.6	−1.4	42	Off the Hinomisaki. Wakayama prefecture. The houses feebl yrettled.
		iL	18 34 27	0.4	+2.0	+2.8	+2.6		
		ME	18 34 28	0.4	+23.4				
		MN	18 34 29	0.4		+28.1			
		MZ	18 34 30	0.4			−4.1		
		eF	18 37 01						
66	Mar. 23	eP	22 49 44	0.2				30	In the Kii channel.
		L	22 49 48	0.4	−1.5	+1.8			
		M	22 49 48	0.4	±1.9	±2.0			
		eF	22 50 18						
67	Mar. 27	eP	6 28 12	0.2				58	Local shock.
		L	6 28 20	0.4	+1.3	+1.4			
		M	6 28 20	0.4	−1.4	+1.5			
		eF	6 28 50						
68	Mar. 29	P	5 07 16	0.7	−5.8	+3.8	+5.5	419	SW off Hatizyō Ils.
		L	5 08 13	3.7	−93.8	−112.5	−4.0		
		ME	5 08 13	3.7	+187.5				
		MN	5 08 13	3.7		+362.5			
		MZ	5 08 13	3.7			−51.9		
		eF	5 02 41						
69	Mar. 29	eP	6 58 57	0.7				360	Lower course of Kokai river, Ibaraki prefecture.
		L	6 59 45	3.7	−0.6	−1.3	−0.6		
		M	6 59 47	3.7	−1.3	−1.9			
		eF	7 10 41						
70	Mar. 31	eP	5 14 17	0.2				28	Local shock.
		L	5 14 20	0.4	+1.6	+3.8	−1.3		
		M	5 14 21	0.4	−4.0	+9.5	−3.6		
		eF	5 14 45						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
$\varphi = 35^\circ\ 32'$ $\lambda = 134^\circ\ 49'$ h = 23.3 m. Underground: Diluvial Series.
Instruments: Wiechert Seismograph.

(Horizontal)

	T_0	ξ	$\frac{r}{T_0^2}$	V
AE:	6.2	Aperiodic	0.002	80
AN:	6.0	,,	0.001	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iP	7 18 07					468	Lower course of Kinu river, Ibaraki prefecture.
		iL	7 19 10						
		ME	7 19 41		−31				
		MN	7 19 21			−63			
		F	7 24 23						
2	Jan. 2	iP	19 46 40					25	Local shock.
		iL	19 46 44						
		MEN	19 46 44		±19	±19			
		F	19 46 48						
3	Jan. 3	iP	7 21 56					14	Ditto.
		iL	7 21 58						
		MEN	7 21 58		±16	±20			
		F	7 22 05						
4	Jan. 3	iP	7 54 09					20	Ditto.
		iL	7 54 12						
		MEN	7 54 12		±40	±53			
		F	7 54 27						
5	Jan. 3	iP	14 34 33					23	Ditto.
		iL	14 34 36						
		MEN	14 34 37		±50	±28			
		F	14 34 57						
6	Jan. 4	iP	9 43 52					24	Local shock.
		iL	9 43 55						
		MEN	9 43 55		±24	+61			
		F	9 44 09						
7	Jan. 5	iP	2 19 09					25	Ditto.
		iL	2 19 12						
		MEN	2 19 13		±9	±11			
		F	2 19 23						
8	Jan. 5	iP	5 44 35					22	Ditto.
		iL	5 44 38						
		MEN	5 44 38		±56	±25			
		F	5 44 45						
9	Jan. 5	iP	10 48 54					27	Ditto.
		iL	10 48 58						
		F	10 49 02						
10	Jan. 7	iP	18 01 43					24	Ditto.
		iL	18 01 46						
		MEN	18 01 46		±34	±18			
		F	18 01 54						
11	Jan. 8	eP	10 09 11						S off Tyōsi, Tiba prefecture.
		eMN	10 09 43						
12	Jan. 8	iP	18 57 21					24	Local shock.
		iL	18 57 25						
		MEN	18 57 25		−10	±6			
		F	18 57 30						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
								140	In the Kii channel.
13	Jan. 9	iP	5 52 05						
		iL	5 52 24						
		MEN	5 52 26		±23	±19			
		F	5 53 39						
								24	Local shock.
14	Jan. 9	iP	6 50 44						
		iL	6 50 47						
		MEN	6 50 47		±9	±11			
		eF	6 50 54						
								22	Ditto.
15	Jan. 9	iP	8 43 23						
		iL	8 43 26						
		MEN	8 43 26		±9	±5			
		F	8 43 31						
								25	An after shock of the great North Tango earthquake, on March 7th 1927.
*16	Jan. 10	iP	3 32 26						
		iL	3 32 29						
17	Jan. 10	eLM	8 22 03		±6	±6			Local shock.
		F	8 22 07						
								22	Ditto.
18	Jan. 10	eP	19 40 46						
		iL	19 40 49						
		ME	19 40 50		±11				
		MN	19 40 49			±9			
		F	19 40 55						
								12	Ditto.
19	Jan. 12	iP	2 16 50						
		iL	2 16 52						
		MEN	2 16 52		±24	±88			
		F	2 17 04						
								23	Ditto, perceptible.
*20	Jan. 13	iP	20 40 32						
		iL	20 40 35						
		MEN	20 40 36						
		F	20 41 20			±181			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
21	Jan. 15	iP	13 27 52					22	Perceptible.
		iL	13 27 55						
		MEN	13 27 55		±9	±5			
		F	13 28 00						
*22	Jan. 19	iP	13 36 34					17	Ditto.
		iL	13 36 37						
		MEN	13 36 37		−173	−88			
		F	13 36 56						
23	Jan. 20	iP	22 34 22					17	Ditto.
		iL	22 34 25						
		ME	22 34 25		±9				
		F	22 34 29						
24	Jan. 24	eP	3 58 06					25	Ditto.
		iL	3 58 10						
		ME	3 58 10		±5				
		MN	3 58 10			±8			
		FE	3 58 13						
		FN	3 58 12						
25	Jan. 24	iP	13 28 41					22	Ditto.
		iL	13 28 44						
		MN	13 28 45			−9			
		FN	13 28 49						
26	Jan. 24	iP	21 37 24					475	In the Sea of Kasima.
		eL	21 38 28						
		MN	21 38 33	3.9		+9			
		eFN	21 41 12						
27	Jan. 24	iP	22 10 28					15	Local shock.
		iL	22 10 30						
		MEN	22 10 30		±5				
		F	22 10 35						

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.	
28	Jan. 24	iP	23 57 26					11	Local shock.
		iL	23 57 28						
		M_{EN}	23 57 28		±48	±46			
		F	23 57 48						
29	Jan. 25	eP	9 44 21						Upper course of Suzuka river, Ise province.
		iL	9 44 24						
		M_E	9 44 24		±10				
		M_N	9 44 24			−13			
		F_N	9 44 31						
30	Jan. 25	iP	11 21 29					21	Local shock.
		iL	11 21 32						
		M_E	11 21 32		±24				
		M_N	11 21 32			±23			
		F	11 21 40						
31	Jan. 26	eP	18 52 51					1350	SSE off Bonin Ils.
		eL	18 55 53						
		M_E	18 57 03	11.6	−11				
		M_N	18 56 33	15.5		+16			
		F	19 14 55						
32	Jan. 28	iP	9 37 34					28	Local shock.
		iL	9 37 38						
		M_E	9 37 38		−11				
		M_N	9 37 38			±24			
		F	9 38 07						
33	Jan. 28	iP	22 20 46					160	Lower course of Ibi River, Mino province.
		iL	22 21 07						
		M_E	22 21 12		±21				
		M_N	22 21 12			±20			
		F	22 21 42						
34	Jan. 29	iP	5 55 00					22	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.	
		iL	5 55 03						
		M_E	5 55 03		−53				
		M_N	5 55 03			−38			
		F	5 55 15						
35	Jan. 29	iP	19 58 54			−40		25	Ditto.
		iL	19 58 57						
		M_E	19 58 58		−9				
		M_N	19 58 57			±38			
		F	19 59 13						
36	Jan. 29	iP_N	22 15 19					32	Ditto.
		iL_N	22 15 23						
		M_N	22 15 23			−21			
		eF_N	22 15 25						
37	Jan. 30	iP	8 47 01					25	Ditto.
		iL	8 47 04						
		M_{EN}	8 47 04		±28	±35			
		F	8 47 18						
38	Jan. 30	iL_M	9 14 29		±10	±8			Ditto.
		F	9 14 34						
39	Jan. 30	eP	17 18 06					12	Ditto.
		iL	17 18 07						
		M_{EN}	17 18 07		−4	−4			
		F	17 18 09						
40	Jan. 30	iP	18 48 44					5	Local shock.
		iL	18 48 45						
		M_{EN}	18 48 45		+8	−10			
		F	18 48 48						
41	Jan. 30	iP	20 46 51					5	Ditto.
		iL	20 46 52						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
						±19			
		MN	20 46 52						
		F	20 46 54						
								24	An after shock of the great North Tango earthquake on March 7th 1927
42	Feb. 2	iP	2 19 12						
		iL	2 19 15						
		MEN	2 19 15						
		F	2 19 27						
								24	Ditto.
43	Feb. 3	iP	13 07 12						
		iL	13 07 15						
		MEN	13 07 16		±5	±4			
		F	13 07 19						
									A distant earthquake, Near Aleutian Ils.
44	Feb. 3	iPE	13 54 35						
		eLE	14 05 52						
		eLN	14 07 33						
		ME	14 09 08	9.7	−5				
		MN	14 09 07	17.7		+6			
		eF	14 19 ±						
								683	Off Kinkazan, Miyagi prefecture. Strong shocks were felt at middle part of Hukusima prefecture.
45	Feb. 3	iP	18 50 40						
		iS	18 51 47						
		iLN	18 52 12						
		ME	18 52 29	3.3	+13				
		MN	18 52 42			+17			
		FE	18 56 48						
		FN	18 56 51						
								26	Local shock.
46	Feb. 6	iP	0 21 33		+2.5	−1.3			
		iL	0 21 37						
		ME	0 21 37	2.9	−16				
		MN	0 21 37	2.9		−24			
		F	0 22 01						
									A distant earthquake.
47	Feb. 7	eP	0 19 31						
		eL	0 31 52						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MN	0 34 33	19.0	−38				
		eF	1 01 ±						
								191	Upper course of Imizu river, Toyama prefecture.
48	Feb. 7	iP	13 24 10						
		iL	13 24 25						
		MEN	13 24 26		±21	±25			
		eF	13 26 59						
								22	Local shock.
49	Feb. 8	iP	14 44 08						
		iL	14 44 11						
		MEN	14 44 11		−11	−9			
		F	14 44 14						
								173	Upper course of Zinzu river, Toyama prefecture.
50	Feb. 9	iP	10 13 26						
		iL	10 13 49						
		MN	10 13 49			+18			
		F	10 14 26						
								434	Western part of the Lake of Kasumigaura. Ibaraki prefecture.
51	Feb. 11	iP	21 11 20		−44	−5.0			
		iL	21 12 19						
		MEN	21 12 32		−48	−125			
		F	21 19 ±						
								26	Near Ayabe, Northrn part of Kyōto prefecture, Perceptible.
*52	Feb. 12	iP	12 27 14						
		iL	12 27 18						
		MEN	12 27 18		−116	−141			
		F	12 27 44						
									A distant earthquake.
53	Feb. 13	eP	5 39 08						
		iL	5 43 40						
		eME	5 43 56						
		eF	5 49 ±						
								17	Local shock.
54	Feb. 14	iP	1 36 57						
		iL	1 37 00						
		MEN	1 37 00	0.3	+19	−25			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F	1 37 15						
*55	Feb. 14	iP	13 48 20		+8.8	+5.0		14	Local shock, Feeble shocks were felt.
		iL	13 48 22						
		MEN	13 48 23		−190	−256			
		F	13 49 07						
*56	Feb. 14	iP	23 39 49					22	Ditto.
		iL	23 39 51						
		MEN	23 39 51						
		F	23 40 12						
57	Feb. 15	iP	14 00 26					142	Upper course of Hitaka river, Wakayama prefecture.
		iL	14 00 45						
		MEN	14 00 46	0.3	−35	+34			
		F	14 01 10						
*58	Feb. 18	iP	9 49 03					38	An after shock of great North Tango earthquake on March 7th 1927.
		iL	9 49 09						
		MN	9 49 12			−334			
		F	9 50 25						
59	Feb. 18	iP	20 27 29			−75		25	Ditto.
		iL	20 27 32						
		ME	20 27 32		−10				
		MN	20 27 32			±19			
		F	20 27 45						
60	Feb. 19	iP	8 58 15					17	Local shock.
		iL	8 58 18						
		MEN	8 58 18		−56	−54			
		F	8 58 35						
61	Feb. 19	iP	18 43 02					22	Ditto.
		iL	18 43 05						
		ME	18 43 05		+14				

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	18 43 05			−10			
		F	18 43 12						
*62	Feb. 20	iP	3 02 55		−2.5	−6.3		130	Upper course of Takahasi river, Okayama prefecture. Weak shocks were felt at Tottori and Okayama prefecture.
		iL	3 03 13						
		MN	3 03 15			+494			
		F	3 05 34						
63	Feb. 20	iP	14 16 24					12	Local shock.
		iL	14 16 25						
		MEN	14 16 26		±5	−5			
		F	14 16 31						
64	Feb. 21	eP	20 03 50						A distant earthquake.
		eL	20 11 31						
		ME	20 14 33	17.4	+10				
		MN	20 14 25	23.2		+11			
		eF	20 39 25						
65	Feb. 22	iP	19 12 16					22	Local shock.
		iL	19 12 19						
		ME	19 12 19		+6				
		MN	19 12 19			−8			
		F	19 12 23						
*66	Feb. 22	iP	21 18 05					23	Local shock. Modrate shocks were felt.
		iL	21 18 08						
		MEN	21 18 09		−238	−250			
		F	21 19 03						
67	Feb. 25	iP	22 33 53					27	Ditto.
		iL	22 33 57						
		MEN	22 33 57		±10	±10			
		F	22 34 04						
68	Feb. 26	eL	1 40 42						A distant earthpuake.

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	1 44 32	17.1	+10				
		MN	1 44 15						
		eF	1 55 ±						
69	Feb. 26	iP	13 36 31					156	Upper course of Ibi river, Mino province.
		iL	13 36 52						
		MEN	13 36 54		+9	±5			
		F	13 36 20						
70	Feb. 27	iP	16 26 51					8	Local shock.
		eL	16 26 52						
		MEN	16 26 53		+6	−5			
		F	16 26 58						
71	Feb. 27	iP	22 22 57					19	Ditto.
		iL	22 22 59			±3			
		F	22 23 03						
72	Feb. 27	iP	23 41 05					17	Ditto.
		iL	23 41 07						
		MEN	23 41 08		±6	±28			
		F	23 41 16						
73	Feb. 28	iL	0 18 07						Local shock.
		MEN	0 18 08		±8	±14			
		F	0 18 13						
74	Feb. 29	iP	1 38 02					25	An after shock of great North Tango earthquake on March 7th 1927.
		iL	1 38 05						
		MEN	1 38 05	0.3	−31	−46			
		F	1 38 24						
75	Feb. 29	ePN	9 32 29						In the Kii channel.
		iL	9 32 37						
		ME	9 32 37		+13	−13			
		F	9 32 48						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
76	Feb. 29	iPN	21 18 18					20	An after shock of great North Tango earthquake on March 7th 1927.
		iLN	21 18 20			±8			
		MN	21 18 21						
		FN	21 18 30						
*77	Mar. 1	iP	13 34 45					22	Local shock, percepible.
		iL	13 34 47						
		MEN	13 34 47		−140	±69			
		FE	13 35 31						
		FN	13 35 25						
78	Mar. 1	iP	23 55 24					13	Ditto.
		iL	23 55 26						
		MEN	23 55 26		+8	±11			
		F	23 55 31						
79	Mar. 3	iP	15 41 43					75	Upper course of Hiyosi river, Okayama prefecture.
		iL	15 41 53						
		MEN	15 41 53		±30	±50			
		F	15 42 25						
80	Mar. 4	iP	3 02 31					20	Local shock.
		iL	3 02 34						
		eMEN	3 02 34		±8	±9			
		F	3 02 48						
81	Mar. 4	iP	13 54 21					16	Ditto.
		iL	13 54 23						
		ME	13 54 23		−24				
		MN	13 54 24			−35			
		F	13 54 32						
82	Mar. 5	iP	8 59 12					23	Ditto.
		iL	8 59 15						
		MEN	8 59 15		−46	±25			
		F	8 59 24						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
									Ditto.
83	Mar. 5	iL	8 59 50						
		MEN	8 59 50		−6	±4			
		F	8 59 54						
84	Mar. 5	iP	22 55 06					26	Ditto.
		iL	22 55 10						
		ME	22 55 10		±8				
		F	22, 55 16						
85	Mar. 9	iP	18 15 21					6515	A distant earthquake.
		iS	18 23 25						
		eL	18 30 09						
		M_1E	18 37 54	18.1	−73				
		M_1N	18 37 52	20.0		+278			
		M_2E	18 39 40	17.1	−138				
		M_2N	18 38 23	16.2		+213			
		M_3E	18 45 23	15.2	−164				
		M_4E	18 46 21	15.2	+113				
		eFE	19 19 ±						
		eFN	19 25 ±						
*86	Mar. 11	iP	12 03 03					26	Upper course of Maruyama river, Tazima province. The houses feebly rattled.
		iL	12 03 06						
		ME	12 03 07		−191	−246			
		F	12 04 16						
87	Mar. 12	iP	6 29 12					22	Local shock.
		iL	6 29 15						
		MEN	6 29 16		±19	±18			
		F	6 29 23						
88	Mar. 12	iLM	18 21 24						
		eF	18 21 28		±4	±8			Ditto.
89	Mar. 13	iP	4 40 49						
		iL	4 40 52					19	Ditto.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MEN	4 40 52		±18	±10			
		F	4 40 59						
90	Mar. 13	iP	13 49 37					23	Ditto.
		iL	13 49 40						
		MEN	13 49 40		±13	±8			
		F	13 49 47						
*91	Mar. 14	iP	10 18 16					19	Ditto. perceptible.
		iL	10 18 19						
		MEN	10 18 19		−88	−40			
		F	10 18 50						
92	Mar. 16	iP	5 12 01					7390	A distant earthquake. probably in the South sea.
		iS	5 20 50						
		iLE	5 28 12						
		M_1E	5 32 07	22.9	+35				
		M_1N	5 32 06	22.9		−16			
		M_2E	5 37 37	17.1	+25				
		M_2N	5 36 38	22.9		+38			
		eF	7 20 ±						
93	Mar. 18	iP	11 04 23					28	Local shock.
		iL	11 04 27						
		MEN	11 04 27		±18	±15			
		F	11 04 49						
94	Mar. 19	iP	6 02 32					26	Ditto.
		iL	6 02 35						
		ME	6 02 36		±34				
		MN	6 02 35			±49			
		eF	6 02 56						
95	Mar. 20	eP	20 49 10						Off the Cape Erimo, Hokkaidō.
		eF	20 54 ±						

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.	
96	Mar. 21	iP	8 39 04					89	Near Kyōto.
		iL	8 39 16						
		M_E	8 39 19		±20				
		M_N	8 39 17			±31			
		F	8 39 54						
97	Mar. 22	iP	20 16 50					233	Felt at Hirosima.
		iL	20 17 21						
		eF	20 18 15						
98	Mar. 23	iP	1 22 33					381	Upper course of Tone river, Musasi province.
		iL	1 23 25						
		M_E	1 23 44		−11				
		M_N	1 23 40			+18			
		eF_E	1 25 37						
		eF_N	1 25 49						
99	Mar. 23	iP	3 43 57						Local shock.
		iL	3 44 01						
		iM	3 44 01		±10				
100	Mar. 23	iL	3 44 07						Ditto.
		M_E	2 44 07		±11				
		F_E	3 44 14						
101	Mar. 23	iP	4 39 10					16	Ditto.
		iL	4 39 12						
		M_{EN}	4 39 12		−45	±52			
		F	4 39 28						
102	Mar. 23	iP	9 01 35					22	Ditto.
		iL	9 01 38						
		F	9 01 47						
103	Mar. 23	iP_N	18 34 42					156	Off the Hinomisaki, Kii province.
		iL	18 35 03						

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_{EN}	18 35 06	0.4	−11	+13			
		F	18 36 08						
104	Mar. 26	iP	15 57 42					25	An after shock of great North Tango earthquake on March 7th 1927.
		iL	15 57 45						
		M_{EN}	15 57 45		±85	±59			
		F	15 58 22						
105	Mar. 26	iP	23 06 39					24	Ditto.
		iL	23 06 42						
		M_{EN}	23 06 42		−65	−61			
		F	23 06 58						
106	Mar. 27	iP	14 10 27					28	Ditto.
		iL	14 10 31						
		M_{EN}	14 10 31		±45	±40			
		eF	14 10 51						
107	Mar. 29	iP	3 02 27					23	Local shock.
		iL	3 02 30						
		M_N	3 02 31			+9			
		F	3 02 35						
108	Mar. 29	iP	5 07 27		−1.9	−5.0		473	SW off Hatizyō Ils.
		iL	5 08 30						
		M_{EN}	5 08 35	E 3.4 N 3.5	−250	−513			
		F_E	5 45 18						
		F_N	5 45 33						

昭和三年六月二十五日印刷
昭和三年六月三十日發行

神戸市中山手通七丁目
神戸測候所

印刷者 神戸市楠町三丁目一一一番屋敷
綱干種吉

印刷所 神戸市楠町三丁目一五ノ六
綱干製版印刷所

SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. IV. No. 2.

From April 1, 1928 to June 30, 1928.

KOBE

September, 1928.

CONTENTS

From No. 33. to No. 106, 1928.

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 Undergrouud : Diluvial Series.

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

April

	T_o	ε	$\frac{r}{T_o^2}$	V
AN:	17		0.007	20
AE:	19		0.011	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	5.1	Aperiodic	0.004	80
AN:	5.2	,,	0.004	80
AZ:	4.1	,,	0.006	80

May

	T_o	ε	$\frac{r}{T_o^2}$	V
AN:	14		0.001	20
AE:	14		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	3.9	Aperiodic	0.004	80
AN:	4.0	,,	0.005	80
AZ:	4.0	5.0	0.003	80

June

	T_o	ε	$\frac{r}{T_o^2}$	V
AN:	16.2		0.001	20
AE:	16.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.2	Aperiodic	0.003	86
AN:	4.1	,,	0.003	86
AZ:	3.9	3.6	0.003	74

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
33	April 5	eP	16 49 16					102	An after shock of great North Tango earthquake on March 7th, 1927.
		L	16 49 30						
		MEN	16 49 32	1.3	±8	±5			
		FE	16 49 58						
		FN	16 50 02						
34	April 11	P	16 24 12					65	South end of the Lake

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		L	16 24 21						Biwa.
		MN	16 24 21	0.8		−15			
		MZ	16 24 22	0.8			±4		
		F	16 25 12						
35	April 12	P	16 37 40					380	Middle Course of Kokai river, Musasi province Moderat shocks were felt at Musasi province.
		L	16 38 31						
		ME	16 38 50		±7				
		MN	16 38 50	1.7		±9			
		MZ	16 38 43						
		F	16 42 ±						
36	April 14	ME	8 53 52						Local shock.
		MN	8 53 53						
		F	8 54 07						
37	April 14	ME	9 44 14	18.2	±7				A distant earthquake. Epicenter, middle part of Bulgaria.
		MN	9 44 31	15.1		±6			
		eF	10 07 ±						
38	April 14	ME	14 23 03		±4				Local shock.
		MN	14 23 03			±4			
		FE	14 23 28						
		FN	14 23 27						
39	April 17	P	2 22 40					97	An after shock of great North Tango earthquake on March 7th, 1927.
		L	2 22 53						
		ME	2 22 54	1.1	±5				
		F	2 23 17						
40	April 17	ME	2 26 27		±5				Local shock.
		MN	2 26 28			±6			
		F	2 26 41						
41	April 17	ME	5 46 28		±6				Ditto.
		MN	5 46 28			±6			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F	5 46 35						
42	April 18	eP	19 35 11						A distant earthquake. Epicenter, middle Part of Bulgaria.
		eL	20 06 00						
		M_1E	20 07 21	16.1	±12				
		M_1N	20 07 21	16.1		±12			
		MZ	20 14 14	14.2			±8		
		M_2E	20 13 51	12.6	±11				
		M_2N	20 13 11	14.7		±15			
		eF	20 30 ±						
43	April 21	ME	14 42 25		±6				In the Kii channel.
		MN	14 42 25			±4			
		F	14 42 48						
44	April 22	iP	4 58 02					1375	SE off Nemuro, Hokkaido.
		iL	5 00 27						
		ME	5 00 30	3.4	+16				
		MN	5 00 30	3.7		+38			
		MZ	5 00 29	3.7			−11		
		FH	5 16 ±						
		FZ	5 06 ±						
45	April 25	iP	21 58 46					164	Middle course of Yosino river, Tokusima prefecture.
		iL	21 59 08						
		M	21 59 09	0.6	−50	−44	−10		
		FH	22 02 ±						
		FZ	22 01 ±						
46	May 5	eP	14 22 11					20	Middle course of Yodo river, Osaka prefecture.
		L	14 22 14						
		eF	14 22 23						
47	May 8	iP	4 49 49					1880	N off Eturup, Kurile Ils. The end part was overlaped by the following earthquake.
		iL	4 52 46						
		ME	4 53 44	4.2	−14				

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 52 48	4.2		+19			
48	May 8	iP	4 56 30					2160	Near No 47?.
		iL	5 00 11						
		MN	5 00 12						
		eF	5 08 ±						
49	May 8	P	14 25 21					9	Local shock. plenty of the macrosisms.
		L	14 25 22						
		ME	14 25 23		±5				
		MN	14 25 23			±5			
		F	14 25 27						
50	May 8	P	14 29 12					10	Ditto.
		LM	14 29 13		±10	±9			
		F	14 29 17						
51	May 8	P	16 07 06					9	Ditto.
		L	16 07 07						
		MEN	16 07 08		±13	±16			
		F	16 07 17						
52	May 14	eP	2 06 03					14	Local shock.
		L	2 06 05						
		MEN	2 06 06	0.5	+8	+4			
		F	2 06 15						
53	May 14	eP	6 57 38						NNW off Bonin Ils.
		eF	7 04 ±						
54	May 14	iPZ	22 34 13					12800	Probable epicenter Northern peru, South America.
		PR1	22 34 48						
		e	22 55 37						
		eL	23 20 13						
		ME	23 21 45	26.5	±13				
		MN	23 22 46	25.1		±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.	
		MZ	23 21 12	32.0			±8		
	May 15	eF	0 17 ±						
55	May 17	eP	11 02 12						A distant earthquake. Faint record.
		eF	11 12 ±						
56	May 17	P	16 56 58					400	S off Mera, Awa province. By Omori's seismograph.
		L	16 57 46						
		eF	17 03 ±						
57	May 19	e	9 33 26					638	In the Kasima sea. Moderate shocks were felt at Hukusima and Ibalagi prefecture. From Omori's seismograph.
		iP	9 33 42						
		L	9 35 08						
		ME	9 35 29	15.0	−250				
		MN	9 35 28	14.5		+180			
		MZ	9 35 13				−21		
		eF	9 51 ±						
58	May 20	iP	16 30 13		+38	+6	−19	453	Mouth of Edo river, Near Tokyo. In the epicentral region strong shocks were felt.
		L	16 31 14						
		M_1E	16 31 20	2.5	−265				
		M_1N	16 31 41	2.4		−307			
		MZ	16 31 49	2.8			−195		
		M_2E	16 32 00	2.2	+278				
		M_2N	16 32 00	2.8		−265			
		eFE	16 50 ±						
		eFN	16 48 ±						
59	May 20	P	17 33 04					434	An after shock of No 58.
		L	17 34 03						
		ME	17 35 41	2.5	±10				
		MN	17 34 10	2.3		±8			
		eFEN	17 39 ±						
60	May 20	P	17 59 36					461	Ditto.
		L	18 00 38						

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	18 05 ±						
61	May 20	P	19 24 43					432	Ditto.
		L	19 25 41						
		ME	19 26 59	2.7	±11				
		MN	19 25 48	2.1		±10			
		eFE	19 32 ±						
		eFN	19 31 ±						
62	May 27	ePE	5 44 13						Off Miyako. Perceptible at Miyako and Morioka, Iwate prefecture.
		eF	5 51 ±						
63	May 27	P	7 13 46					22	Local shock.
		L	7 13 49						
		MN	7 13 51		±4				
		F	7 14 02						
64	May 27	iP	9 52 22					1007	NE off miyako, Iwate prefecture.
		iSN	9 53 55						Strong shocks were felt at the sea coast of Iwate and Aomori prefecture.
		L	9 54 38						
		ME	9 54 49	20.3	−438				S,S, Kitakata-maru felt the sea shocks at
		MN	9 55 18	19.7		−700			Lat 39° 36' N
		MZ	9 55 42	17.2			+390		Long 143° 20' E
		eFEN	11 35 ±						
		eFZ	11 19 ±						
65	May 28	iP	15 37 41						
		iS	15 39 21					908	An after shock of No 64.
		eL	15 39 43						
		ME	15 39 59	8.5	±59				
		MN	15 39 53	5.6		+65			
		MZ	15 40 11	7.8			+41		
		eFEN	16 02 ±						
		eFZ	15 59 ±						
66	May 28	eP	15 55 04						Ditto.

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	15 58 18	3.1	±7				
		eF	16 02 ±						
67	May 28	eP	19 33 51						Ditto.
		eF	19 38 ±						
68	May 28	ME	21 11 39						Lower course of Kinu river, Musasi province.
		MN	21 11 42						
		eF	21 15 ±						
69	May 29	P	6 31 05					42	Upper course of Kako river, NW of Kobe.
		L	6 31 10						
		ME	6 31 10		±6				
		MN	6 31 11			±6			
		F	6 31 21						
70	May 30	eP	12 37 17						In the Kasima sea.
		eFE	12 43 ±						
		eFN	12 42 ±						
71	May 30	ME	17 49 55						Upper course of Yodo river, Yamasiro province.
		MN	17 49 54						
		F	17 50 09						
72	May 31	eP	7 27 51					896	An after shock of No 64.
		L	7 29 51						
		ME	7 30 36	8.0	±14				
		eFE	7 45 ±						
		eFN	7 41 ±						
73	May 31	eP	8 38 08						Ditto.
		eF	8 47 ±						
74	May 31	ePN	12 34 24					518	In the Kasima sea.
		LN	12 35 34						
		ME	12 35 52	2.7	+36				

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	12 35 52	2.7		+28			
		M_Z	12 35 48				+10		
		eF_{EN}	12 43 ±						
		eF_Z	12 41 ±						
75	May 31	eP	13 51 33						Faint record.
		eF	13 59 ±						
76	May 31	eP	21 00 20						Faint record.
		eF	21 08 ±						
77	May 31	P	23 34 52					121	Near Toyooka, Tazima province.
		L	23 35 09						
		M_E	23 35 10		+8				
		M_N	23 35 09			±5			
		M_Z	23 35 12				±4		
		eF_E	23 35 55						
		eF_N	23 35 53						
		eF_Z	23 35 47						
78	June 1	eP	11 44 25					32	In the Kii channel.
		L	11 44 29						
		M_E	11 44 30		±5				
		M_N	11 44 30			±4			
		F_E	11 44 57						
		F_N	11 44 59						
79	June 1	eP	12 25 34					846	An after shock of No 64.
		eL	12 27 27						
		M_E	12 28 06	6.7	−18				
		M_N	12 28 13	4.3		−15			
		M_Z	12 27 42						
		eF	12 34 ±						
80	June 1	P	13 14 20					784	An after shock of No 64.
		L	13 16 05						

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	13 16 49	6.6	+158				The strong shocks were felt at the near coast of epicenter.
		M_N	13 16 34	5.5		+161			
		M_Z	13 17 00	5.7			+95		
		F_{EN}	13 54 ±						
		F_Z	13 48 ±						
81	June 1	eP	15 07 17						An after shock of No 64.
		eL	15 09 11						
		M_E	15 09 34	3.8	±7				
		eF	15 14 ±						
82	June 1	eP_E	18 23 51					803	Ditto.
		eL	18 25 39						
		eF	18 32 ±						
83	June 1	eP	22 09 19						Ditto.
		eF	22 17 ±						
84	June 3	P	8 32 28					714	W off Kosiki Ils, Kagosima prefecture. Moderat shocks were felt at Kagosima. The P phase began with a flat wave.
		P_{R_1}	8 32 58						
		L	8 34 04						
		M_1E	8 34 32	4.1	+370				
		M_1N	8 34 40	4.9		−453			
		M_Z	8 34 30	4.8			−209		
		M_2E	8 35 25		+337				
		M_2N	8 35 19	5.5		−342			
		F_{EN}	9 14 ±						
		F_Z	9 09 ±						
85	June 3	eP	9 20 15					803	An after shock of No 84. The P phase is not clear.
		P_{R_1}	9 20 42						
		L	9 22 03						
		M_E	9 22 14	4.6	+57				
		M_N	9 22 25	4.7		−57			
		M_Z	9 22 29				±23		
		F_{EN}	9 40 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		FZ	9 34 ±						
86	June 3	eP	10 07 21						An after shock of No 84.
		F	10 12 ±						
87	June 3	P	17 41 50					63	In the Kii channel.
		L	17 41 59						
		MEN	17 42 00	0.6	+13	−7			
		FE	17 42 27						
		FN	17 42 31						
88	June 5	iP	5 56 59					754	An after shock of No 84.
		L	5 58 40						
		ME	5 58 57	2.9	−93				
		MN	5 58 53	2.8		−46			
		MZ	5 58 54	2.7			−27		
		FEN	6 13 ±						
		FZ	6 11 ±						
89	June 5	P	8 31 32						Local shock.
		L	8 31 35						
		MN	8 31 35			±2			
		FE	8 31 45						
90	June 6	MEN	17 18 48	3.7	+3	−3			Lower course of Tenryu river, Sizuoka prefecture.
		F	17 19 37						
91	Jnue 7	P	6 26 39						
		iL	6 28 30					1030	Near Aomori.
		ME	6 28 33	2.6	+15				
		MN	6 28 39	2.6		+10			
		MZ	6 28 36	3.7			+9		
		FEN	6 35 ±						
		FZ	6 34 ±						
92	June 8	eP	9 35 26						An after shock of No 84.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eL	9 36 17						
		FE	9 43 ±						
		FN	9 44 ±						
93	June 9	P	14 52 20					94	In Kumihama bay, NWrn part of Tango province.
		L	14 52 33						
		ME	14 52 35		±19				
		MN	14 52 33			±26			
		MZ	14 52 34				±20		
		FE	14 53 39						
		FN	14 53 43						
94	June 10	P	10 09 01					42	In Kitan strait.
		L	10 09 07						
		ME	10 09 07	0.7	+6				
		MN	10 09 07	0.6		−7			
		FE	10 09 37						
		FN	10 09 35						
95	June 11	P	4 16 14					116	Near Odaigahara, Eastrn part of Nara prefecture.
		L	4 16 29						
		ME	4 16 30		±17				
		MN	4 16 31	0.6		±16			
		F	4 19 ±						
96	June 13	iP	8 06 39					85	Middle course of Hidaka river, Wakayama prefecture. The weak shocks were felt at the epicentral region.
		iLN	8 06 51						
		ME	8 06 52	1.1	−182				
		MN	8 06 51	1.1		−110			
		FE	8 10 ±						
		FN	8 11 ±						
97	June 14	iP	0 28 50					542	Off the Noma cape, Kagosima prefecture.
		iL	0 30 03						
		F	0 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.	
98	June 15	iP	6 18 03					3015	A distant earthquake, probably in the South China sea.
		iSE	6 22 47						
		eL	6 31 01						
		ME	6 37 01	13.0	+14				
		MN	6 31 46	15.4		−17			
		MZ	6 31 59	15.6			+13		
		FE	7 12 ±						
		FN	7 21 ±						
		FZ	7 10 ±						
99	June 15	P	17 21 53					2920	Ditto.
		P_{R_1}	17 22 26						
		S	17 26 29						
		eFE	17 58 ±						
		eFN	17 59 ±						
100	June 16	eP	3 06 58						Near Toyooka, Tazima province.
		eF	3 07 31						
101	June 17	eP	3 38 40						Probable epicenter, SW off Central America.
		eS	3 47 51						
		eL	4 05 24						
		M_1N	4 06 41	44.1		−18			
		ME	4 22 52	20.3	+13				
		M_2N	4 24 34	18.3		−17			
		MZ	4 19 04	21.1					
		FEN	5 08 ±						
		FZ	5 01 ±						
102	June 17	eP	23 31 19						S off Sioisaki, Wakayama prefecture.
		L	23 31 26						
		ME	23 31 26	0.8	±8				
		MN	23 31 29	0.7		±5			
		eF	23 32 44						
103	June 19	P	7 36 39					82	In the Kii 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.	
		L	7 36 50						
		ME	7 36 51	0.8	±6				
		MN	7 36 51	0.7		±7			
		F	7 37 32						
104	June 21	P	10 51 14						Near Fiji Ils, South Pacific ocean.
		eS	11 00 54						
		L	11 11 45						
		eF	11 59 ±						
105	June 21	P	16 36 46					6090	Probable epicenter, in the Alasca.
		iS	16 44 27						
		eL	16 56 27						
		MN	16 57 06	24.2		±6			
		MZ	17 01 53	19.6			±6		
		FEN	17 22 ±						
		FZ	17 15 ±						
106	June 29	P	22 59 51					6720	Near Fiji Ils, South Pacific ocean.
		S	23 08 06						
		LZ	23 17 47						
		ME	23 19 08	24.4	±7				
		F	23 41 ±						

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)

April

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.5	Aperiodic	0.003	80
AN:	4.5	"	0.003	80
AZ:	4.3	"	0.004	80

May

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.5	Aperiodic	0.003	80
AN:	4.5	"	0.003	80
AZ:	4.3	"	0.003	80

June

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.1	Aperiodic	0.003	80
AN:	4.1	"	0.002	80
AZ:	4.6	"	0.002	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
71	April 5	eP	16 49 35						An after shock of great North Tango earthquake on March 7th 1927.
		L	16 49 40						
		MEN	16 49 40	0.4	+3	+3			
		eF	16 49 57						
72	April 11	eP	16 24 13						South end of the Lake Biwa.
		iL	16 24 31					134	
		M	16 24 35	0.4	+2	+2	+1		

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eF	16 25 28						
73	April 12	eP	16 37 44					373	Course of Kokai river, Musasi province. Moderate shocks were felt at Musasi province.
		iL	16 38 34						
		M	16 38 34	0.8	−3	+3	+1		
		eF	16 41 22						
74	April 14	eP	9 11 00						A distant earthquake. Epicanter, middle part of Bulgaria.
		iL	9 43 55	17.5					
		eF	10 31 55						
75	April 14	iP	14 22 47					26	Local shock.
		iL	14 22 50						
		MEN	14 22 50	0.4	−3	+3			
		MZ	14 22 51	0.4			+1		
		eF	14 23 18						
76	April 16	iP	4 33 14					41	In the Kii channel.
		iL	4 33 20						
		M	4 33 21	0.8	±3	±3			
		F	4 33 53						
77	April 16	iP	5 24 55					15	Local shock.
		iL	5 24 57						
		MEN	5 24 58	0.4	+1	+1			
		F	5 25 26						
78	April 16	iP	13 42 34					28	Ditto.
		iL	13 42 38						
		MEN	13 42 40	0.4	+2	−1			
		eF	13 42 58						
79	April 16	eP	13 43 16					16	Ditto.
		iL	13 43 18						
		MEN	13 43 19	0.4	+1	+3			
		eF	13 43 39						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
80	April 16	eP	13 43 43						
		iL	13 44 09						
		ME	13 44 16	1.1	−3				
		MN	13 44 13	1.1		+4			
		eF	13 45 59						
*81	April 16	iP	20 08 29					32	In the Kii channel. Perceptible.
		iL	20 08 33						
		MEN	20 08 33	0.4	−7	−10			
		eF	20 09 09						
82	April 18	eP	19 35 06						A distant earthquake. Epcenter middle part of Bulgaria.
		eL	20 05 26	16.5	−1	−1			
		eF	20 38 47						
83	April 19	eP	23 07 09					197	Gulf of Aki, Inland sea.
		iL	23 07 35						
		MEN	23 07 43	0.4	±1	+2			
		eF	23 08 34						
84	April 20	eP	11 29 00					36	Near Wakayama.
		iL	11 29 05						
		MEN	11 29 05	0.4	+1	+1			
		eF	11 29 30						
*85	April 21	iP	14 42 09					35	Local shock. Perceptible.
		iL	14 42 14						
		M	14 42 14	0.4	+10	−11	+2		
		eF	14 42 47						
86	April 22	eP	4 58 06					1470	SE off Nemuro, Hokkaido.
		iL	5 00 41						
		M	5 00 42	2.8	+6	+6	+2		
		eF	5 10 57						
87	April 25	iP	21 58 35					91	Middle course of Yosino river, Tokusima Prefecture.
		iL	21 58 48						
		M	21 58 49	0.5	+24	−21	−8		
		F	22 00 55						
88	April 28	iP	9 38 02					28	In the Kii channel.
		iL	9 38 06						
		MEN	9 38 06	0.4	−8	−10			
		eF	9 38 37						
89	May 5	eP	14 22 17		−1	+1	−0.4	31	Middle course of Yodo river, Osaka prefecture.
		iL	14 22 21						
		MEN	14 22 22	0.4	−1	−2			
		eF	14 23 04						
90	May 7	eP	12 37 10					23	In the Kii channel.
		iL	12 37 13						
		MEN	12 37 13	0.4	+2	+2			
		eF	12 37 58						
91	May 8	eP	4 49 51					1330	N off Etrup, Kurile Ils.
		eS	4 51 03						
		eL	4 52 12						
		MEN	4 52 54	2.4	−7	+5			
		eF	5 23 12						
92	May 9	iP	9 16 09					28	In the Kii channel.
		iL	9 16 13						
		M	9 16 14	0.4	±2	±3	−1		
		eF	9 16 29						
93	May 10	eP	8 48 31					42	Upper course of Hidaka river, Wakayama prefecture.
		iL	8 48 36						
		M	8 48 37	0.4	−3	−5	−1		
		eF	8 49 08						
94	May 10	eP	18 02 51					47	In the Kitan St.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		iL	18 02 58						
		MEN	18 02 58	0.4	+2	−2			
		eF	18 04 07						
95	May 14	eP	22 34 14						Probable epcenter Northern Peru, South America.
		eS	22 50 14						
		e	23 06 14						
		eL	23 22 14	18.0					
	May 15	eF	1 14 ±						
96	May 17	iP	16 56 59					364	S off Meri, AWa province.
		iL	16 57 48						
		MEZ	16 58 01	1.6	±4		−2		
		eF	17 02 11						
97	May 18	eP	19 14 59					28	In the Kii channel.
		iL	19 15 02						
		M	19 15 02	0.4	−4	+6	−1		
		eF	19 16 15						
98	May 18	eP	20 05 32						
		iL	20 05 36					28	Local shock.
		M	20 05 36	0.4	−2	−3	+1		
		eF	20 06 19						
99	May 19	eP	9 33 34						
		iL	9 34 58					627	In the Kasima sea. Moderate shocks were felt at Hukusima and Ibaragi prefecture.
		ME	9 35 40	2.0	−18				
		MN	9 35 19	2.0		+25			
		MZ	9 35 39	2.0			−9		
		eF	9 54 11						
100	May 19	eP	13 05 14						
		iL	13 05 18					33	Local shock.
		M	13 05 19	0.4	+2	+4			
		eF	13 06 33						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
101	May 20	iP	16 30 17					485	Mouth of Edo river, Near Tokyo. In the epicentral region the strong shocks were felt.
		iL	16 31 23						
		MEN	16 32 12	2.3	+56	−81			
		MZ	16 32 26	2.3			−19		
		eF	16 59 11						
102	May 20	eP	17 33 07					539	An after shock of No 101.
		iL	17 34 19	2.0	+3	−3			
		eF	17 43 11						
103	May 20	eP	19 24 19					586	Ditto.
		iL	19 25 38	2.0	+3	−2			
		eF	19 37 11						
104	May 27	eP	9 52 28					890	NE off Miyako, Iwate prefecture. The Strong shocks were felt at sea coast of Iwate and Aomori prefecture. S,S, Kitakata-maru felt a sea shocks at Lat 39° 36′ N, Long 143° 20′ E.
		eS	9 53 28						
		eL	9 54 28						
		MEN	9 55 06	9.8	−269	−373			
		MZ	9 54 56	9.8			−150		
		eF	12 00 10						
105	May 28	eP	15 37 41					898	An after shock No 104.
		eS	15 38 34						
		eL	15 39 42						
		ME	15 40 21	2.9	+20				
		MN	15 40 38	2.9		−31			
		MZ	15 40 24	2.9			−8		
		eF	16 25 10						
106	May 31	eP	7 28 06					869	Ditto.
		eS	7 29 04						
		eL	7 30 03						
		MEN	7 30 55	2.4	±5	±8			
		eF	8 52 08						
107	May 31	eP	12 33 58						In the Kasima sea.

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.	
		eS	12 34 47						
		eL	12 35 46						
		M_E	12 36 20	3.4	+6				
		M_N	12 36 14	3.4		+6			
		eF	13 12 08						
108	May 31	iP	13 51 28					929	Faint reeord.
		eL	13 53 32	2.5	+2	−2			
		eF	14 30 08						
109	May 31	P	23 34 55					154	Near Toyooka, Tazima province.
		L	23 35 16						
		M	23 35 21	0.4	±3	+3	+1		
		eF	23 35 59						
110	June 1	eP	11 44 15					37	In the Kii channel.
		iL	11 44 20						
		M	11 44 20	0.4	−8	−9	±1		
		eF	11 45 02						
111	June 1	eP	12 25 25					894	An after shock of No 104.
		eS	12 26 24						
		eL	12 27 25						
		M_E	12 28 24	2.9	+8				
		M_N	12 28 10	2.9		−8			
		eF	13 03 08						
112	June 1	eP	13 14 23					824	Ditto.
		eS	13 15 22						
		eL	13 16 14	4.0					
		M_{EN}	13 17 22	4.0	−78	−113			
		eF	14 30 08						
113	June 1	eP	18 24 11					890	Ditto.
		eS	18 25 11						
		eL	18 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.	
		eF	19 00 07						
114	June 1	eP	22 08 29					898	Ditto.
		eS	22 09 30						
		eL	22 10 30						
		M	22 10 59	2.9	−3	−3			
		eF	22 40 07						
115	June 3	eP	8 32 25		−2.4	−1.3	−0.6	676	WSW off simokosiki Isl Kagosima prefecture. Moderat shocks were felt at Kagosima.
		iL	8 33 56						
		M_E	8 34 12	5.8	+338				
		M_N	8 34 20	5.8		+300			
		M_Z	8 34 16	5.8			+64		
		eF	9 13 06						
116	June 3	eP	9 20 12					663	An after shock of No 115.
		L	9 21 41						
		M_E	9 22 02	3.1	−36				
		M_N	9 22 00	3.1		+54			
		M_Z	9 22 01	3.1			−8		
		eF	9 40 06						
117	June 3	eP	17 41 42					48	In the Kii channel.
		L	17 41 49						
		M_E	17 41 50	0.4	−6				
		M_N	17 41 49	0.4		±8			
		M_Z	17 41 50	0.4			+1		
		eF	17 42 28						
118	June 5	eP	5 56 54					718	An after shock of No 115.
		iS	5 57 43						
		iL	5 58 31						
		M_E	5 58 46	2.5	+41				
		M_N	5 58 35	2.5		+49			
		M_Z	5 58 47	2.5			−14		
		eF	6 25 28						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
								29	In the Kii channel.
119	June 5	iP	14 47 49						
		iL	14 47 53						
		MEN	14 47 54	0.4	+2	+4			
		MZ	14 47 55	0.4			+1		
		eF	14 48 15						
120	June 6	eP	2 08 22					42	Local shock.
		L	2 08 28						
		ME	2 08 28	0.4	±2				
		MN	2 08 29	0.4		±3			
		MZ	2 08 28	0.4			−1		
		eF	2 08 56						
121	June 7	eP	6 26 51					790	Near Aomori.
		eS	6 27 48						
		L	6 28 38						
		M	6 28 39	2.0	+7	+5	−2		
		eF	7 07 05						
122	June 8	eP	9 33 50					925	An after shock of No 115.
		iL	9 35 55						
		eF	9 58 05						
123	June 9	eP	14 52 24					131	On the Kumihama bay, NW rn part of Tango province.
		L	14 52 42						
		MEN	14 52 42	0 4	+4	+9			
		MZ	14 52 46				±1		
		eF	14 56 03						
*124	June 10	iP	10 08 54					22	In the Kitan strait. perceptible.
		eL	10 08 57						
		MEN	10 08 58	0.4	+27	−31			
		MZ	10 08 58	0.4					
		eF	10 09 47				−8		
125	June 10	eP	12 42 27					65	Near Wakayama.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		iL	12 42 36						
		M	12 42 37	0.4	−2	−2	−1		
		F	12 43 00						
126	June 10	iP	13 31 57					43	Ditto.
		iL	13 32 02						
		M	13 32 03	0.4	−3	−4	±1		
		F	13 32 31						
127	June 11	eP	4 16 17					86	Near Odaigahara, Eastern part of Nara prefecture.
		L	4 16 29						
		M	4 16 32	0.4	−6	+9	+2		
		eF	4 17 38						
128	June 11	eP	17 52 16					46	Local shock.
		L	17 52 22						
		M	17 52 23	0.4	−6	+5	−1		
		eF	17 52 54						
*129	Jnne 13	iP	8 06 37					60	Middle course of Hidaka river, Wakayama prefecture. Perceptible.
		iL	8 06 46						
		M	8 06 46	0.4	+129	+169	−29		
		eF	8 09 50						
130	June 14	P	0 28 45					390	Off Noma eape, Kagosima Prefecture.
		L	0 29 38						
		M	0 29 40	0.9	+5	±5	−2		
		eF	0 32 00						
131	June 15	eP	6 18 03						A distant earthquake. prabable epicenter, in the South China sea.
		eS	6 22 28						
		eL	6 26 15	12.0					
		eF	7 46 00						
132	June 15	eP	17 21 45						Ditto.
		eS	17 26 11						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		eL	17 31 06	12.0					
		eF	17 58 59						
133	June 15	eP	22 33 26					168	In the Kii Channel.
		iL	22 33 49						
		MEN	22 33 49	0.4	−7	−10			
		MZ	22 33. 50	0.4			+2		
		eF	22 34 50						
134	June 17	eP	3 38 23						Faint record. proboble
		eS	3 48 14	12.0					epicenter SW off Centra
		eL	4 05 06	16.9					America.
		eF	6 05 06						
135	June 17	eP	23 31 07					183	S off Siomisaki,
		iL	23 31 32						Wakayama prefecture
		MEN	23 31 34	0.4	−2	+3			
		eF	23 32 21						
*136	June 19	eP	7 36 35					42	In the Kii cannel.
		iL	7 36 41						Perceptible.
		ME	7 36 41	0.4	+6				
		MNZ	7 36 41	0.4		−13	+3		
		eF	7 37 31						
137	June 20	eP	8 30 16						Near Toyooka.
		iL	8 30 18						
		MEN	8 30 18	0.4	−2	+3			
		MZ	8 30 19				−1		
		eF	8 30 50						
138	June 20	eP	20 42 53					42	In the Kii channel.
		iL	20 42 59						
		MEN	20 43 00	0.4	+2	±5			
		MZ	20 43 01	0.4			−1		
		eF	20 43 31						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
139	June 21	eP	10 51 18						A distant earthquake.
		eL	11 07 51	10.0					Near Fiji Ils, South
		eF	20 36 04						Pacific ocean.
140	June 21	eP	16 44 31						A distant earthquake.
		eL	16 55 32	19.6					Probable epicenter
		eF	17 23 04						South coast of Alasca.
141	June 28	eP	4 23 37					29	In the Kitan strait.
		iL	4 23 41						
		M	4 23 42	0.4	−7	−10	−2		
		eF	4 24 31						
142	June 28	eP	4 58 56					35	Ditto.
		iL	4 59 01						
		MEN	4 59 01	0.4	−1	−3			
		MZ	4 59 02	0.4			+1		
		eF	4 59 42						
143	June 29	eP	0 52 14						On the course of Arita
		iL	0 52 18						river, Wakayama
		MEN	0 52 18	0.4	−3	+4			Prefecture.
		MZ	0 52 19	0.4			+1		
		eF	0 53 07						
144	June 29	iP	12 06 29					56	In the Kii channel.
		iL	12 06 36						
		MEN	12 06 37	0.4	±5	−4			
		MZ	12 06 37	0.4			−2		
		eF	12 07 24						
145	Jnne 29	eP	22 59 54						A distant earthquake.
		eL	23 08 19	13.0					Near Fiji Ils, South
	June 30	eF	0 07 54						Pacific ocean.

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
φ=35° 32′ λ=134° 49′ h=23.3 m. Underground: Diluvial Series.
Instruments: Wiechert Seismograph.

(Horizontal)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.1	Aperiodic	0.004	80
A_N:	4.0	7.1	0.005	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.	
109	Mar. 31	iP	16 08 39					17	Local shock.
		iL	16 08 42						
		M_{EN}	16 08 42		±8	−10			
		F	16 08 46						
110	April 1	iP	18 32 03					35	Ditto.
		iL	18 32 08						
		M_{EN}	18 32 08		+13	−18			
		F	18 32 26						
111	April 3	iL	3 04 55						Ditto.
		F	3 05 00						
112	April 3	iP	3 05 08					10	Ditto.
		iL	3 05 10						
		M_N	3 05 10						
		F	3 05 13			±5			
113	April 3	eP_N	9 24 46					19	Ditto.
		iL	9 24 48						
		F	9 24 51						

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	April 5	iP	16 49 01					25	An after shock of great North Tango earthquake on March, 7th, 1927.
		iL	16 49 04						
		M_{EN}	16 49 05		±199	±225			
115	April 5	iP	16 49 42						An after shock of No 114.
		iL	16 49 45						
		M_E	16 49 46		+10				
		M_N	16 49 45			−10			
		F	16 50 00						
116	April 6	iP	1 34 12					11	Local shock.
		eL	1 34 14						
		M_N	1 34 14			±18			
		F	1 34 22						
117	April 8	iP	1 49 27					17	Ditto.
		iL	1 49 29						
		M_{EN}	1 49 29		±20	±38			
		F_E	1 49 36						
		F_N	1 49 38						
118	April 8	iP	8 17 04					23	An after shock of great North Tango earthquake on March, 7th, 1927.
		iL	8 17 07						
		F	8 17 15						
119	April 9	iP	0 01 37					25	Ditto.
		iL	0 01 40						
		M_{EN}	0 01 40		±11	±8			
		F	0 01 49						
120	April 9	iP_N	3 20 58					22	Local shock.
		iL	3 21 01						
		M_{EN}	3 21 01		±9	±10			
		F	3 21 08						
121	April 9	iP	5 07 17					22	Ditto.

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	5 07 20						
		F	5 07 23						
122	April 9	iP	15 48 29					23	Ditto.
		iL	15 48 32						
		F	15 48 35						
123	April 10	iL	11 55 10						Local shock.
		F	11 55 17						
124	April 11	iP	13 49 28					92	
		iL	13 49 40						
		M_{EN}	13 49 42		±43	±73			
		F	13 50 09						
125	April 11	iP	16 24 22					125	South end of the Lake Biwa.
		iL	16 24 39						
		M_E	16 24 40		±21				
		M_N	16 24 41			±20			
		F	16 25 05						
126	April 12	iP	12 23 06					28	Local shock.
		iLM	12 23 10						
		F	12 23 14						
127	April 13	iP	21 07 06					20	Ditto.
		iL	21 07 09						
		M_{EN}	21 07 09		±8	±15			
		eF_E	21 07 13						
		F_N	21 07 16						
128	April 14	iP_N	1 31 03					17	Ditto.
		iL	1 31 05						
		M_E	1 31 05		±8				
		F	1 31 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	km.	
129	April 14	ePN	9 12 07						A distant earthquake. Epicenter, middle part of Bulgaria.
		eS_N	9 22 18						
		eL_N	9 43 15						
		eF	10 10 ±						
130	April 14	iL	12 55 36						Local shock.
		M_N	12 55 36			−6			
		F	12 55 41						
*131	April 16	iP	4 25 38					21	Ditto. Perceptible.
		iL	4 25 41						
		M_E	4 25 42		±48				
		M_N	4 25 41			±94			
		F	4 25 49						
132	April 16	iP	9 31 26					23	Ditto.
		iL	9 31 29						
		M_E	9 31 29		±8				
		F	9 31 33						
133	April 16	eP_E	13 43 41						Ditto.
		eF_N	13 44 29						
*134	April 17	iP	2 22 31					25	An after shock of great North Tango earthquake on March, 7th, 1927. Perceptible.
		iL	2 22 34						
		M_{EN}	2 22 35		±113	±181			
		F_E	2 23 04						
		F_N	2 23 09						
135	April 18	iP_N	19 35 09						A distant earthquake. Epicenter, middle part of Bulgaria.
		iS_N	19 45 14						
		iL_E	20 05 06						
		eF_E	20 33 15						
		eF_N	20 34 15						
136	April 19	iP	12 03 28					19	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.	
		iL	12 03 31						
		iF	12 03 36						
137	April 21	iP	18 20 53					23	Local shock.
		iL	18 20 56						
		M_E	18 20 57		±13				
		M_N	18 20 56			+33			
		F	18 21 10						
138	April 22	iP	4 57 56					1320	SE off Nemuro, Hokkaido.
		iL	5 00 16						
		M_E	5 00 22		+30				
		M_N	5 00 25			+22			
		F	5 02 53						
*139	April 23	iP	7 41 24					15	Mouth of Maruyama river, Tazima province. Weak shocks were felt in the lower course of Maruyama river.
		iL	7 41 26						
		M_{EN}	7 41 26		−121	−96			
		F	7 41 46						
140	April 23	iP	11 54 55						Local shock.
		eM_E	11 55 34						
141	April 23	iP	13 21 24					23	Ditto.
		iL	13 21 27						
		M_{EN}	13 21 28		±7	+13			
		F	13 21 31						
*142	April 24	iP	10 20 37					16	Mouth of Maruyama river, Tazima province. Weak shocks were felt In the lower course of Maruyama river.
		iL	10 20 39						
		M_{EN}	10 20 39		−278	−188			
		F	10 21 14						
143	April 25	P	10 40 43					92	South end of the Lake Biwa.
		L	10 40 55						
		eM_{EN}	10 40 59		±15	+10			

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	10 41 13						
144	April 27	P	18 12 44					170	Upper course of Ota river, Hirosima prefecture.
		L	18 13 05						
		eM	18 13 08						
		F	18 13 37						
145	April 28	iL	17 30 39						Local shock.
		F	17 30 44						
146	April 29	eP	16 34 19					27	Ditto.
		L	16 34 22						
		M_E	16 34 22		±8				
		F	16 34 28						
147	April 30	iP	7 22 27					23	Ditto.
		iL	7 22 30						
		M_{EN}	7 22 31		±9	±14			
		F	7 22 37						
148	April 30	eP	10 57 56					25	Ditto.
		L	10 58 00						
		F	10 58 08						
149	May 4	iP	1 36 59					22	Ditto.
		iL	1 37 01						
		M_N	1 37 02			±18			
		F	1 37 06						
150	May 4	iP	14 01 21					16	Ditto.
		iL	14 01 23						
		M_{EN}	14 01 23		±8	±11			
		F	14 01 26						
151	May 4	iP	14 10 35					17	Ditto.
		iL	14 10 38						

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	14 10 38			±23			
		F	14 10 43						
*152	May 4	iP	21 41 32					52	Local shock. Perceptible.
		iL	21 41 39						
		MEN	21 41 40		±124	±53			
		F	21 42 15						
153	May 5	eP	14 22 14					111	Middle course of Yodo river, Osaka prefectur.
		iL	14 22 28						
		eF	14 22 51						
154	May 8	iP	4 49 53					1200	N off Etrup Isl.
		iL	4 52 20						
		ME	4 52 40		+15				
		MN	4 52 41			−21			
		eF	5 01 41						
155	May 9	iPN	14 03 48					22	Local shock.
		iL	14 03 51						
		eMN	14 03 51		±9				
		F	14 03 58						
156	May 9	iP	15 25 05					19	Ditto.
		iL	15 25 07						
		MN	15 25 07		±6				
		F	15 25 12						
157	May 9	iP	22 36 34					57	Upper course of Hino river, Tottori prefecture.
		iL	22 36 42						
		ME	22 36 42		±20				
		MN	22 36 43			±34			
		F	22 37 07						
158	May 10	iP	2 43 22					59	An after shock of No 157.
		iL	2 43 30						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MEN	2 43 30		±7	±14			
		F	2 43 47						
159	May 12	iP	2 53 49					80	An after shock of great north Tango earthquake on March, 7th, 1927.
		iL	2 54 00						
		ME	2 54 01		±21				
		F	2 54 21						
160	May 17	ePE	16 57 05					481	S off Mera, Awa province.
		iL	16 58 10						
		eFE	16 59 32						
		eFN	16 59 50						
161	May 19	iPE	9 33 31					534	In the Kasima sea. Moderate shocks were felt at Hukusima and Ibaragi prefecture.
		L	9 34 41						
		ME	9 35 29		+24				
		MN	9 35 40			−45			
		eF	9 48 53						
162	May 20	iPN	0 58 51					13	Local shock. E-W component is not distinct.
		iL	0 58 53						
		eMN	0 58 53		±9				
		F	0 58 55						
*163	May 20	iP	16 30 15					466	Mouth of Edo river, Near Tokyo. In the epicentral region a strong shocks were felt.
		iL	16 31 17						
		ME	16 31 48	1.9	−150				
		MN	16 31 51	2.3		−328			
		FE	16 43 48						
		FN	16 45 47						
164	May 20	P	17 33 19						An after shock of No 163.
		eL	17 34 07						
		MN	17 34 24						
		FE	17 35 55						
		FN	17 36 55						

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.	
165	May 20	P	18 00 17						An after shock of No 163.
		eF	18 01 48						
166	May 20	iP	19 24 48					456	Ditto.
		iL	19 25 49						
		M_N	19 26 01			+12			
		eF	19 27 55						
167	May 21	iP	21 25 16					23	Local shock.
		iL	21 25 19						
		M_{EN}	21 25 20		±31	±18			
		F	21 25 27						
168	May 23	eP_N	10 29 22					18	Ditto.
		iL	10 29 24						
		M_N	10 29 25			±9			
		eF	10 29 31						
169	May 27	iP	9 52 19					810	NE off Miyako, Iwat prefecture. Strong shock were felt at the sea coas of Iwate and Aomo prefectures. S.S. Kitakat maru felt the sea shock at Lat 39° 36′ N. Lon 143° 20′ E.
		S	9 53 47						
		M_E	9 55 49	12.8	+303				
		M_N	9 55 26	10.3		−408			
		F_E	10 33 00						
		F_N	10 37 56						
170	May 27	iP	18 15 46						Local shock.
		iL	18 15 49						
		M_N	18 15 49			−9			
		F	18 15 55						
171	May 28	iP	14 15 24					18	Ditto.
		iL	14 15 27						
		M_N	14 15 27			±5			
		F	14 15 33						
172	May 28	eP	15 04 33					7	Ditto.

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	15 04 34						
		M_E	15 04 34		±8				
		F	15 04 36						
173	May 28	iP	15 35 58					28	Local shock.
		iL	15 36 01						
		M_N	15 36 02			±8			
		F	15 36 12						
174	May 28	P	15 37 36						An after shock of No 169. Faint record.
		eL	15 39 12						
		M_N	15 40 05						
		eF	15 54 12						
175	May 28	eP	15 54 16						Ditto.
		eF_E	15 58 53						
		eF_N	16 03 52						
176	May 28	eP	21 11 17						Ditto.
		eF	21 13 58						
177	May 29	iP	6 31 08					55	Upper course of Kako river, NW of Kobe.
		iL	6 31 16						
		M_E	6 31 16		±15				
		M_N	6 31 16			±19			
		F	6 31 31						
178	May 30	eP_N	3 37 27						In the Kasima sea.
		F_E	3 39 31						
		F_N	3 40 08						
179	May 31	P	7 27 50					950	An after shock of No 169.
		S_E	7 29 33						
		eL	7 31 20						
		eF_E	7 46 ±						
		eF_N	7 45 ±						

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.	
									Ditto.
180	May 31	eP	8 37 41						
		eF	8 42 ±						
								22	Local shock.
181	May 31	iP	12 33 39						
		iL	12 33 42						
		M_E	12 33 42		±6				
		F	12 33 49						
									In the Kasima sea.
182	May 31	eP	12 34 34						
		L	12 35 44						
		M_N	12 36 12	2.9		+25			
		eF	12 40 ±						
									Faint record.
183	May 31	P	13 51 42						
		eF	14 02 ±						
									On the mouth of Maruyama river, Tazima province. Perceptible. The end part was overlaped by the following earthquake.
*184	May 31	iP	23 34 38						
		iL	23 34 41						
		eM_E	23 34 42		±73				
		M_N	23 34 41			±94			
									An after shock of No 184.
185	May 31	iL	23 35 08						
		M_E	23 35 09		±24				
		M_N	23 35 08			±29			
		F	23 35 39						
									An after shock of No 169.
186	June 1	iP	12 25 25						
		eS_E	12 27 03						
		eS_N	12 27 09						
		iL_N	12 27 45						
		eF_E	12 35 ±						
		eF_N	12 37 ±						
									Ditto.
187	June 1	iP	13 14 15						
		iS_N	13 15 50					890	
		eL_N	13 17 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.	
		M_N	13 18 20	3.8		+106			
		eF	13 51 ±						
188	June 1	P	15 07 04						Ditto.
		eF	15 11 ±						
189	June 1	P	18 23 38						Ditto.
		eF_E	18 29 ±						
		eF_N	18 28 ±						
190	June 1	P	22 09 13					940	Ditto.
		S	22 10 54						
		eF	22 16 ±						
191	June 3	iP	8 32 34		−1.9	−2.5		705	WSW off Simokosiki Ils, Kagosima prefecture. Moderate shocks were felt at Kagosima.
		iL	8 34 09						
		M_1E	8 34 32	4.2	−203				
		M_1N	8 34 31	4.3		+351			
		M_2E	8 35 36	7.9	+208				
		M_2N	8 35 53	6.8		−225			
		eF_E	9 04 ±						
		eF_N	9 05 ±						
192	June 3	P	9 20 21					810	An after shock of No 191.
		L	9 22 10						
		M_E	9 22 42		−24				
		M_N	9 22 34			+45			
		F_E	9 33 05						
		eF_N	9 37 ±						
193	June 5	iP	5 57 05		+1.3	+1.9		776	Ditto.
		iL	5 58 50						
		M_E	5 58 11		+35				
		M_N	5 58 12			+51			
		F_E	6 06 46						
		eF_N	6 09 43						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
194	Juue 6	iP	18 20 26					26	Local shock.
		iL	18 20 30						
		MN	18 20 30			±9			
		FN	18 20 36						
195	June 6	iP	21 31 49					26	Ditto.
		iL	21 31 52						
		MEN	21 31 53		±20	±20			
		FE	21 32 02						
		FN	21 32 06						
196	June 7	P	6 26 41					711	Near Aomori.
		L	6 28 17						
		MN	6 28 21			−40			
		eFE	6 34 ±						
		FN	6 34 58						
197	June 7	iP	13 45 40					23	Local shock.
		iL	13 45 43						
		ME	13 45 43		±7				
		eMN	13 45 44			±10			
		F	13 45 53						
198	June 8	iP	5 20 53					25	Ditto.
		iL	5 20 57						
		MEN	5 20 57		±9	±14			
		F	5 21 05						
*199	June 9	iP	14 52 05					13	In the Kumihama bay, NWrn Tango province. The wiecherat seimograph were scale out euen by the preliminary tremore. The houses were strong -lg shocked.
		L	14 52 06						
		M			±600	±350	±450		
200	June 9	iP	15 28 06						An after shock of No 199.

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
201	June 9	iPL	15 28 53						Local shock.
		eF	15 29 −						
202	June 9	iPL	15 33 15						Ditto.
		eFN	15 33 21						
203	June 9	iP	19 32 23					14	Ditto.
		iL	19 32 25						
		eME	19 32 25		±6				
		eMN	19 32 26			±9			
		FE	19 32 27						
204	June 10	iP	1 41 30					14	Ditto.
		iL	1 41 32						
		ME	1 41 32		±18				
		MN	1 41 33			±14			
		F	1 41 38						
205	June 10	iP	10 54 57					11	Ditto.
		iLME	10 54 58		±9				
		F	10 55 02						
206	June 11	iP	4 16 24					171	Near Odaigahara, Eastern part of Nara prefecture.
		iL	4 16 47						
		MEN	4 16 49		+10	±11			
		F	4 17 29						
*207	June 13	iP	8 06 53					154	On the middle course of Hidaka river, Wakayama prefecture. The doors feebly shock.
		iL	8 07 14						
		MEN	8 07 16						
		F	8 08 36						
208	June 14	P	0 28 56						Faint record. Off Noma cape, Kagosima prefecture.
		eL	0 30 00						
		eF	0 31 ±						

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.	
								26	Local shock.
209	June 14	iP	15 06 15						
		iL	15 06 18						
		M_{EN}	15 06 19		±11	±23			
		F	15 06 33						
210	June 15	iP	6 18 12					3080	A distant earthquake. Probably in the South china sea.
		iS_N	6 23 01						
		eL_E	6 25 50						
		M_1E	6 28 37	15.9	+15				
		M_2N	6 33 49	15.0	−14				
		eF	6 58 20						
211	June 15	iP	17 21 58					2890	Ditto.
		iS_E	17 26 31						
		eF_E	17 42 ±						
		eF_N	17 55 ±						
*212	June 16	iP	3 06 34					28	Local shock. Perceptible.
		iL	3 06 38						
		M_{EN}	3 06 38		±71	±83			
		F_E	3 07 24						
		F_N	3 07 13						
213	June 17	iP	3 38 42						A distant earthquake. Probable epicenter, SW off Central America.
		eS_E	3 48 02						
*214	June 20	iP	1 30 26						
		iL	1 30 29					22	Local shock. Perceptible.
		M_E	1 30 29		±144				
		M_N	1 30 29			±156			
		F_E	1 30 59						
		F_N	1 31 06						
215	June 20	iP	8 26 56						
		iL	8 26 59					21	Local shock.
		M_{EN}	8 26 59		±8	±11			

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	8 27 05						
*216	June 20	iP	8 29 11						Local shock. With the after shock. Perceptible.
		iL	8 29 14						
		M_{EN}	8 29 14		±65	±131			
*217	June 20	iP	8 29 40					22	An after shock of No 216. Perceptible.
		iL	8 29 43						
		M_{EN}	8 29 44						
		F	8 30 32						
218	June 21	iP	16 36 42						A distant earthquake. Near Fiji Ils, South Pacific ocean.
		iL	16 44 22						
		eF_E	17 16 ±						
		eF_N	17 22 ±						
*219	June 22	iP	4 07 16					21	Local shock.
		iL	4 07 19						
		M_{EN}	4 07 19		±29	±31			
		F	4 07 36						
220	June 23	iP	15 11 33					24	Ditto.
		iL	15 11 36						
		M_{EN}	15 11 36		−13	±13			
		F	15 11 43						
*221	June 25	iP	0 29 03					15	Local shock. Perceptible.
		iL	0 29 05						
		M_{EN}	0 29 05		−58	−59			
		F	0 29 30						
222	June 25	iP	18 10 18					17	Local shock.
		iL	18 10 20						
		M_N	18 10 20			±10			
		F_N	18 10 26						

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	June 25	iP	19 00 05					19	Local shock.
		iL	19 00 08						
		M_N	19 00 08			±4			
		F_N	19 00 10						
224	June 26	iP	2 22 24					15	Ditto.
		iL	2 22 27						
		M_E	2 22 27			±6			
		F	2 22 30						
225	June 27	iP	10 20 26					13	Ditto.
		iL	10 20 28						
		M_N	10 20 28			±11			
		F_N	10 20 35						
226	June 29	eP	8 42 25					9	Ditto.
		iL	8 42 26						
		M_E	8 42 27		±20				
		M_N	8 42 27			±11			
		F	4 82 30						
227	June 29	iP_E	22 59 53						A distant earthquake. Near Fiji Ils, South Pacific ocean.
		eL_E	23 08 33						
		eF_N	23 43 ±						
228	June 29	iP	23 08 15						
		iL	23 08 18					24	Local shock.
		M_{EN}	23 08 18		±9	±8			
		F	23 08 23						

昭和二年九月五日印刷
昭和三年九月十日發行

神戸市中山手通七丁目
神戸測候所

印刷者 神戸市楠町三丁目一一番屋敷
網干千種吉

印刷所 神戸市楠町三丁目一一番屋敷
網干製版印刷所

SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. IV. No. 3.

From July 1, 1928 to September 30, 1928.

KOBE

November, 1928.

CONTENTS

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
AN:	16.2		0.001	20
AE:	16.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.1	Aperiodic	0.005	89
AN:	4.0	"	0.005	90
AZ:	3.9	"	0.003	70

Aug.

	T_o	ε	$\frac{r}{T_o^2}$	V
AN:	15.6		0.001	20
AE:	17.6		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	3.8	Aperiodic	0.005	109
AN:	3.8	"	0.005	101
AZ:	3.3	"	0.003	82

Sept.

	T_o	ε	$\frac{r}{T_o^2}$	V
AN:	16.5		0.001	20
AE:	17.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.0	Aperiodic	0.005	94
AN:	4.0	"	0.005	90
AZ:	4.1	"	0.003	60

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*107	July 7	iP	8 39 47		−4.7	+3.5	−23.5	82	Middle part of the Kii channel. Weak shacks were felt at the near Coast of epicenter. Perceptibl at Kobe.
		iL	8 39 58						
		ME	8 39 58		±1480				
		MN	8 39 59			±394			
		MZ	8 39 58				±205		
		CE	8 41 56	2.5	−91				
		CN	8 41 48	3.3		−81			

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.	
		FEN	8 49 ±						
		FZ	8 48 ±						
108	July 7	ePZ	18 02 57						E off Cape Erimo, Hokkaido.
		MN	18 06 42	5.5		±10			
		eF	18 12 ±						
109	July 9	iP	21 32 30	4.6	+1.1	−1.3	−1.4		A distant earthquake. P phase was clear. dilataion. probably in the South see.
		eL	21 47 23						
		ME	21 49 51	18.8	±5				
		MN	21 51 04	14.6		±9			
		eMZ	21 51 11						
		eFE	22 27 ±						
		eFN	22 13 ±						
		eFZ	22 11 ±						
110	July 12	eP	15 19 04						An after shock of No 64.
		MN	15 21 38	2.4		±4			
		eFN	15 30 ±						
		eFE	15 28 ±						
		eFZ	15 26 ±						
111	July 18	P	17 58 26						
		LM	17 58 27		±7	±4		7	Local shock.
		F	17 58 38						
112	July 18	ePZ	19 24 33						
		e	19 46 11						A distant earthquake. Probable epicenter, Northern Peru, South America.
		eLE	20 10 08						
		ME	20 10 44	30.1					
		MZ	20 10 48	30.0					
		eFE	21 30 ±						
		eFN	21 00 ±						
113	July 25	P	5 37 58						
		L	5 38 00						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.	
		MEN	5 38 00		±4	±5			
		F	5 38 10						
114	July 31	P	19 30 33						E off miyako, Iwate Prefecture.
		eSE	19 32 13						
		eLE	19 33 28						
		MN	19 34 42	4.5		±9			
		eFE	19 39 ±						
		eFN	19 38 ±						
115	Aug. 4	ME	19 43 47	17.0	±10				Truce of the earthquake. which occured in Orxaea, mexico.
		MN	19 42 55	18.2					
		eF	20 09 ±						
116	Aug. 5	ePN	14 46 12					2700	Near manila.
		$P_{R_1}N$	14 47 07						
		eS	14 49 05						
		eLE	14 51 16						
		ME	14 51 57	7.9	±6				
		eF	14 58 ±						
117	Aug. 5	iP	15 14 26						SE off kii Peninsula. ? P Phase is very remarkable.
		eL	15 14 29						
		ME	15 14 30	0.8	±7				
		MN	15 14 32			±6			
		FE	15 15 33				±4		
		FN	15 15 24						
118	Aug. 9	P	13 43 16					113	Upper course of Suzuka river, Ise Province.
		L	13 43 32						
		ME	13 43 33	0.8	±10				
		MN	13 43 37	0.8		±6			
		MZ	13 43 34				±4		
		eFE	13 45 18						
		eFN	13 45 16						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
119	Aug. 10	ePZ	5 40 50					104	Upper course of Arita river, Wakayama prefecture.
		iL	5 41 04						
		ME	5 41 04	0.5	±10				
		MN	5 41 04	0.5		±22			
		F	5 41 45						
120	Aug. 12	ePN	8 15 25						A distant. earthquake. probably in the South sea.
		PR1N	8 15 52						
		PR2N	8 16 55	3.5					
		eF	8 35 ±						
121	Aug. 14	ePN	8 28 07						Near Hamamatu, Shizuoka Prefecture.
		eF	8 33 ±						
122	Aug. 16	iP	3 51 01					655	W off Bonin Ils.
		L	3 52 29	2.4	±5				
		eF	3 57 ±						
123	Aug. 22	P	1 31 46					420	Near Kumamoto. Strong shocks were felt at the epicentral region.
		L	1 32 42						
		ME	1 33 00	1.8	±13				
		MN	1 33 01	2.5		±20			
		CE	1 35 11	2.5	±16				
		CN	1 34 11	3.0		±12			
		eF	1 41 ±						
124	Aug 23	iP	1 21 22						
		iL	1 24 16					1680	NE off Kulile Ils.
		MN	1 24 18	3.9	±8				
		eF	1 33 ±						
125	Aug. 24	iPE	21 53 09						A distant earthquake. Compression.
		PR1E	21 54 10		−1	+4	+1.5	6160	
		SN	22 00 53						
		eF	22 18 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
126	Aug. 25	iP	7 03 14					74	Near Wakayama.
		iL	7 03 24						
		ME	7 03 24	0.5	±87				
		MN	7 03 24	0.5		±60			
		MZ	7 03 25				±24		
		FE	7 07 00						
		FN	7 06 36						
		FZ	7 06 06						
127	Aug. 26	eP	18 13 00					505	In the Kasima sea. Weak shacks were felt at Mito.
		L	18 14 08						
		ME	18 15 20	3.5	−28				
		MN	18 14 16	3.2		+19			
		MZ	18 14 36	3.5			+13		
		eFE	18 22 ±						
		eFNZ	18 21 ±						
128	Aug. 27	PE	17 59 45	1.3				315	SW off Hatidyo Ils. Perceptible at Tokyo. Compression. Origin depth of 300 KM.
		iPZ	17 59 47						
		L	18 00 28						
		ME	18 00 32		−17				
		MN	18 00 32	2.9		+22			
		eFE	18 06 ±						
		eFN	18 07 ±						
129	Sept. 1	PE	6 18 38					6180	A distant earthquake. Western part of India. ?
		S	6 26 25						
		L	6 38 37						
		ME	6 45 30	13.1	±9				
		eFE	7 08 ±						
		eFN	7 05 ±						
		eFZ	7 02 ±						
130	Sept. 3	P	23 29 08					119	Upper course of yosino river, Sikoku district.
		iL	23 29 24						
		ME	23 29 26	0.3	+9				

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_N	23 29 25	0.3		−13			
		F	23 30 07						
131	Sept. 6	eP_Z	6 30 52						E off miyako, Iwate prefecture.
		L_N	6 32 34						
		M_E	6 33 41	3.9	+18				
		M_N	6 32 39	4.0		−8			
		M_Z	6 32 53	3.2			±7		
		$eF_{E.Z.}$	6 38 ±						
		eF_N	6 39 ±						
132	Sept. 13	iP_N	3 33 03						A distant earthquake. Probablby in the south China sea.
		eS_E	3 38 16						
		eL_N	3 42 19						
		M_N	3 44 14	25.2					
		eF_E	3 49 ±						
		eF_{NZ}	3 54 ±						
133	Sept. 18	P	7 56 35						In the Kii channel.
		L	7 56 40					39	
		M	7 56 41	0.6	+14	−10			
		F	7 57 31						
134	Sept. 19	eP_N	8 17 54						SSW off Hatidyo Ils.
		L_N	8 18 56					457	
		M_N	8 19 48	2.7		±8			
		M_Z	8 19 03	2.7			±8		
		F_{EN}	8 27 ±						
		F_Z	8 23 ±						
135	Sept. 22	P	7 41 06						A distant earthquake. Near New caledonia Ils, South Pacific Ocean.
		S	7 48 47					6090	
		eL	7 55 09						
		M_1E	7 57 06	24.9	±7				
		M_1N	7 56 35	24.8		±6			
		M_Z	8 02 58	20.6			±3		

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_2E	7 58 58	19.2	±11				
		M_2N	8 00 02	18.1		±11			
		eF_{EN}	8 34 ±						
		eF_Z	8 25 ±						
136	Sept. 23	P	6 57 19					840	Koizumi Bay, Northern coast of miyagi Prefecture. Moderate shocks were felt at epicentral region.
		P_{R_1}	6 57 37						
		L	6 59 13						
		eM	6 59 23						
		eF_E	7 03 ±						
		eF_N	7 04 ±						
137	Sept. 25	iP_E	4 59 25		+6	−2	+15	356	Suō nada, Western part of Inland sea. Weak shocks were felt at epicentral region.
		iP_Z	4 59 26						
		L	5 00 12						
		M_E	5 00 18	2.6	+74				
		M_1N	5 00 14	2.8		−126			
		M_Z	5 00 16	2.7			−112		
		M_2N	5 00 51	3.7		−167			
		F_{EN}	5 13 ±						
		F_Z	5 09 ±						
138	Sept. 25	P	8 06 42					1970	SE off Hokkaido, 42° N. 149° E.
		S	8 10 07						
		eL	8 13 02						
		M_E	8 15 19	13.2	±6				
		eF	8 20 ±						
*139	Sept. 26	P	17 31 42					65	Middle course of Ibo river, NW of Kobe. Perceptible at Kobe.
		L	17 31 51						
		M_{EN}	17 31 52		±53	±63			
		M_Z	17 31 51	0.2			±37		
		F_E	17 32 40						
		F_N	17 32 45						
		F_Z	17 32 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.	
140	Sept. 29	eP	21 20 08						ESE off sioya cape. Hukusima prefecture. Weak shocks were felt at near epicenter coast.
		eL	21 21 58						
		eF	21 24 ±						

SUMOTO JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

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

Instruments: Omori's Seismograph. (Horizontal Pendulum)

Wiechert Seismograph. (Horizontal & Vertical)

July

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	20.0	4.6	0.001	20
A_N:	20.0	4.6	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	4.1	Aperiodic	0.002	80
A_N:	4.1	"	0.002	80
A_Z:	4.6	"	0.002	80

Aug.

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	20.0	4.6	0.001	20
A_N:	20.0	4.6	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	4.1	Aperiodic	0.002	80
A_N:	4.1	"	0.002	80
A_Z:	4.1	"	0.002	80

Sept.

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	20.0	4.6	0.001	20
A_N:	20.0	4.6	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	4.1	Aperiodic	0.002	80
A_N:	4.1	"	0.002	80
A_Z:	4.1	"	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.	
146	July 3	eP	23 35 34					27	Local shock.
		iL	23 35 38						
		M	23 35 38	0.4	±3	±5			
		eF	23 36 10						
147	July 7	eP	0 50 48					48	On the course of Arita river, wakayama Prefecture.
		iL	0 50 54						
		M	0 50 55	0.4	−2	−3			

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	0 51 24						
148	July 7	eP	3 12 43					24	In the Kii channel.
		iL	3 12 46						
		M	3 12 47	0.4	±4	±5			
		F	3 13 16						
*149	July 7	iP	8 39 43		−4.0	+1.3	−5.3	51	Middle part of the Kii channel. Weak shocks were felt at the near coast of epicenter. perceptible.
		iL	8 39 50						
		M	8 39 51	0.4	±369	±438	±91		
		eF	8 45 52						
150	July 7	eP	15 38 07					28	In the Kii channel.
		iL	15 38 11						
		M	15 38 11	0.4	−2	−3			
		eF	15 38 40						
151	July 7	eP	18 03 02					1440	E off Erimo cape, Hokkaido.
		eS	18 05 32						
		eL	18 08 07	4.4					
		eF	18 29 52						
152	July 8	eP	16 37 38					16	In the Kii channel.
		iL	16 37 41						
		M	16 37 41	0.4	−3	−6			
		eF	16 38 16						
153	July 9	eP	1 24 18					44	Ditto.
		iL	1 24 24						
		M	1 24 25	0.4	+2	+2			
		eF	1 25 15						
154	July 9	iP	21 32 29	2.8	−3	+3	+4		A distant earthquake. Probable in the South sea.
		eS	21 39 43	7.0					
		eL	21 46 40	11.8					
		eF	22 25 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.	
155	July 12	eP	15 19 08					830	E off miyako, Iwate prefecture.
		eL	15 21 00	1.8					
		eF	15 30 53						
156	July 14	eP	11 48 27					54	Local shock.
		eL	11 48 35						
		M	11 48 35	0.4	−2	−2			
		eF	11 49 11						
157	July 15	eP	2 35 04					56	In the Kii channel.
		eL	2 35 12						
		M	2 35 13	0.4	±2	±4			
		eF	2 36 18						
158	July 17	eP	3 38 37					35	Ditto.
		iL	3 38 42						
		M	3 38 44	0.4	−2	+2	−1		
		eF	3 39 22						
159	July 17	eP	5 16 00					36	Ditto.
		iL	5 16 04						
		M	5 16 05	0.4	−1	−2			
		eF	5 16 41						
160	July 18	eP	18 38 43					55	In the Kii channel.
		iL	18 38 51						
		M	18 38 51	0.4	±5	±5	+2		
		eF	18 39 26						
161	July 18	e	19 24 42						A distant earthquake. Probable epicenter North Peru, South America.
		P_{R_1}?	19 26 26	2.2					
		e	19 28 09	5.0					
		eF	19 59 52						
162	Aug 5	eP	14 47 00					2350	Near Manila.
		eL	14 50 53	4.1					

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	15 29 50						
163	Aug. 5	eP	15 14 23					42	SE off Kii peninsula.?
		iL	15 14 28						
		M_{EN}	15 14 29	0.4	±3	±3			
		M_Z	15 14 28	0.4			+3		
		eF	15 15 30						
164	Aug. 6	eP	14 44 18					44	In the Kitan strait.
		iL	14 44 24						
		M	14 44 24	0.4	±2	±1			
		eF	14 44 42						
165	Aug. 7	iP	19 03 21					24	In the Kii channel.
		iL	19 03 24						
		M	19 03 24	0.4	−3	−4			
		F	19 04 09						
166	Aug. 8	eP	5 15 59					76	Ditto.
		iL	5 16 09						
		M	5 16 09	0.4	−5	+6	−2		
		eF	5 17 03						
167	Aug. 12	iP_N	8 15 21						A distant earthquake. Probably in the South sea.
		eL	8 20 33						
		eF_E	8 35 ±						
		eF_N	8 38 ±						
168	Aug. 13	P	17 43 13					19	In the Kii channel.
		L	17 43 15						
		M_{EN}	17 43 16	0.3	±10	±13			
		F_E	17 43 33						
		F_N	17 43 39						
		F_Z	17 43 40						
169	Aug. 14	P_N	20 26 34					21	Ditto.

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 26 37						
		M_{EN}	20 26 38		−13	−19			
		M_Z	20 26 37						
		F_E	20 26 59						
		F_N	20 27 05						
		F_Z	20 27 02						
170	Aug. 14	P	21 00 03					24	In the Kii channel.
		L	21 00 06						
		M_{EN}	21 00 06	0.4	−10	±15			
		F_E	21 00 23						
		F_N	21 00 26						
171	Aug. 16	iP	3 50 59					646	W off Bonin Ils.
		iL	3 52 26	3.6					
		e	3 56 11						
		eF_E	4 19 ±						
		eF_N	4 26 ±						
172	Aug. 17	iP	14 28 55					30	In the Kii channel.
		L	14 28 59						
		M	14 28 59		−21	−24			
		F	14 29 32						
173	Aug. 20	eP	16 53 34					33	Ditto.
		L	16 53 38						
		M_{EN}	16 53 39		+8	±6			
		F	16 53 55						
174	Aug. 22	iP	1 31 43					418	Near Kumamoto. Strong shocks were felt at the epicenter region.
		S	1 32 05						
		iL	1 32 39						
		M_E	1 32 45	2.2	−26				
		M_N	1 32 42	2.2		−43			
		M_Z	1 32 44						
		F_E	1 39 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		FN	1 40 ±						
		FZ	1 35 ±						
175	Aug. 23	ePN	1 21 30						NE off kulilu Ils.
		eF	1 29 ±						
*176	Aug. 25	iP	7 03 10					47	In the Kii channel.
		iL	7 03 16						Perceptible.
		MEN	7 03 16		±9	±39			
		FE	7 05 36						
		FN	7 05 41						
		FZ	7 05 43						
177	Aug. 26	iP	18 13 16					446	In the Kasima sea.
		iL	18 14 13						
		ME	18 14 34	2.4	−16				
		MN	18 14 31	2.6		−26			
		FE	18 19 42						
		FN	18 20 30						
178	Aug. 27	iP	2 09 05					24	In the Kii channel.
		iL	2 09 08						
		MN	2 09 09			−0.4			
		F	2 09 16						
179	Aug. 27	iPE	17 59 46	1.0	−11	+5	+9	330	SW off Hatidyo Ils.
		iLE	18 00 30						Perceptible at Tokyo.
		FN	18 06 28						Origin depth of 300km.
		FE	18 05 15						
		eFZ	18 02 20						
180	Sept. 1	iPE	6 18 58						
		SN	6 26 22					5770	A distant earthquake.
		LN	6 39 11						
		M1N	6 42 15	14.6		+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.	
		ME	6 45 20	13.0	+1				
		M2N	6 46 15	12.0		+1			
		eFE	7 05 ±						
		eFN	7 06 ±						
181	Sept. 3	iPEN	23 29 02					74	Upper course of Yosino river. Sikoku district.
		iLN	23 29 12						
		MEN	23 29 16	0.5		−28			
		MZ	23 29 19				−4		
		FEN	23 31 39						
		FZ	23 30 05						
182	Sept. 6	PN	6 30 49					879	E off Miyako, Iwate prefecture.
		L	6 32 48						
		MN	6 33 19	6.0		−6			
		F	6 39 ±						
183	Sept. 8	eP	13 26 15					7	Local shock.
		L	13 26 16						
		M	13 26 16		±4	±5			
		F	13 26 20						
184	Sept. 13	ePN	3 30 00						A distant earthquake.
		eF	3 38 ±						
185	Sept. 15	P	0 28 11					71	In the Kii channel.
		L	0 28 20						
		MN	0 28 21	0.5		−6			
		FE	0 28 44						
		FN	0 28 40						
186	Sept. 15	P	11 05 20					349	Lower course of Tenriyuu river. Sizuoka prefecture.
		L	11 06 08						
		FE	11 08 34						
		FN	11 08 40						

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	Sept. 16	iP	20 23 33					15	Local shock.
		iL	20 23 35						
		M	20 23 35		±4	±9			
		F	20 23 45						
188	Sept. 18	P	7 56 29					28	In the Kitan strait.
		L	7 56 33						
		M	7 56 34	0.4	±36	±38	−10		
		F_E	7 58 12						
		F_N	7 58 19						
		F_Z	7 57 27						
189	Sept. 19	P_N	8 17 50						SSW off Hatidyo Ils.
		e	8 19 25						
		eF	8 28 ±						
190	Sept. 22	iP	7 41 02						A distant earthquake. Near New Caledonia Ils, South Pacific Ocean.
		eS_N	7 48 42						
		eL	7 56 01						
		F_E	8 22 ±						
		F_N	8 26 ±						
		F_Z	8 14 ±						
191	Sept. 23	P_E	2 09 07						Northern part of the Bungo channel.
		L_N	2 09 17						
		M_N	2 09 19	0.5		+4			
		F_E	2 10 21						
		F_N	2 10 15						
192	Sept. 23	P	6 57 21						Koizumi Bay, Narthern part of Miyagi prefecture. Weack shocks were felt at the epicentral coast.
		L	6 58 56						
		F	7 04 ±						
*193	Sept. 25	P	4 59 20						Suō nada, Western part of the Inland sea. Weack shocks were felt
		L	4 59 49					215	
		M_E	5 00 20	3.4	−138				

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	5 00 31	3.0		−125			at the epicentral region. Perceptible.
		M_Z	5 00 12	1.1			−48		
		F_{EN}	5 12 ±						
		F_Z	5 09 ±						
194	Sept. 26	iP	17 31 42						Middle course of Ibo river, Harima province.
		iL	17 31 53						
		M_E	17 31 54	0.4	+12				
		M_N	17 31 56	0.5		+13			
		F_E	17 32 47						
		F_N	17 32 44						
195	Sept. 30	iP	14 53 54					38	In the Kii channel.
		iL	14 54 00						
		M_N	14 54 00	0.4		−8			
		eF	14 54 22						

TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.
$\varphi = 35° 32'$ $\lambda = 134° 49'$ h=23.3 m. Underground: Diluvial Series.
Instruments: Wiechert Seismograph.

(Horizontal)

	T_0	ε	$\frac{r}{T_0^2}$	V
A_E:	4.1	Aperiodic	0.004	80
A_N:	4.0	7.1	0.005	80

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	June 30	iP	21 25 31					25	Local shock.
		iL	21 25 34						
		M_N	21 25 35			±8			
		F_N	21 25 39						
230	June 30	iP	21 26 08					24	Ditto. The end part overe laped by the folloing earthquake.
		iL	21 26 11						
		M	21 26 11		±11	−18			
231	June 30	iP	21 26 15					17	Ditto.
		iL	21 26 17						
		M	21 26 17		±4	±9			
		F	21 26 22						
*232	July 2	iP	12 31 14					21	Ditto.
		iL	12 31 17						
		M	12 31 18		±40	±60			
		F	12 31 38						
233	July 3	iP	8 05 11					18	Ditto.
		iL	8 05 13						
		M	8 05 13			+16			

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.	
		F	8 05 21						
234	July 3	iP	21 22 36					22	Local shock.
		iL	21 22 39						
		M	21 22 40		±54	±106			
		F	21 22 54						
235	July 4	iP	5 16 57					19	Ditto.
		iL	5 17 00						
		M	5 17 00		±13	±21			
		F	5 17 05						
236	July 5	iP	14 25 02					26	Ditto.
		iL	14 25 06						
		M	14 25 06		±8	−15			
		F	14 25 10						
237	July 7	iP	8 39 59					155	Middle part on the Kii channel. Weak shocks were felt at the near coast of epicenter.
		iL	8 40 20						
		M	8 40 21		+73	+140			
		F	8 44 58						
*238	July 8	iP	15 19 14		−50	−150		10	Local shock. Parceptible.
		iL	15 19 16						
		M	15 19 16		−125	−155			
		F	15 19 26						
239	July 8	P	17 48 02						Ditto.
		F	17 48 11						
240	July 9	iP	18 02 26					19	Ditto.
		iL	18 02 29						
		M	18 02 30		−10	±8			
		F	18 02 34						
241	July 9	iP	20 38 47					21	Ditto.

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	20 38 50						
		M	20 38 50	03	±21	−15			
		F	20 38 51						
242	July 9	iP	21 32 29					5770	A distant earthquake. Probable in the South sea.
		iSE	21 39 51						
		iSN	21 39 55						
		LE	21 48 27						
		ME	21 50 22	18.3	+8				
		eF	22 10 ±						
243	July 10	iP	4 50 37					22	Local shock.
		iL	4 50 40						
		M	4 50 41		±25	±20			
		F	4 50 47						
244	July 13	iP	10 42 46					41	Ditto.
		iL	10 42 52						
		M	10 42 52		±9	±8			
		F	10 43 03						
245	July 13	iP	11 40 47					16	Ditto.
		iL	11 40 49						
		ME	11 40 49		−8				
		MN	11 40 50			±5			
		F	11 40 55						
*246	July 14	iP	6 30 31					22	Ditto. Perceptible.
		iL	6 30 34						
		M	6 30 35		±35	±68			
		FE	6 30 53						
		FN	6 30 57						
247	July 14	iP	23 40 03					37	Ditto.
		L	23 40 08						
		ME	23 40 08		−23				

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.	
		MN	23 40 09			±15			
		FEN	23 40 22						
248	July 15	iP	21 31 41					18	Ditto.
		iL	21 31 43						
		M	21 31 44		±6	±4			
		FEN	21 31 48						
249	July 15	L	19 17 06						Ditto.
		eME	19 17 06						
		eFE	19 17 09						
250	July 18	iP	9 10 42					27	Ditto.
		L	9 10 46						
		M	9 10 46		±21	±21			
		F	9 10 54						
251	July 19	iP	15 23 17					25	Ditto.
		iL	15 23 20						
		M	15 23 20		±6	±8			
		F	15 23 27						
252	July 25	iP	18 55 11					105	Ditto. ?
		iL	18 55 25						
		MN	18 55 26			+9			
		F	18 55 41						
253	July 26	iP	8 51 35					20	Ditto.
		iL	8 51 38						
		M	8 51 38		±13	±6			
		F	8 51 46						

For the reconstruction of this Observatory, the seismological observations were suspended after August.

昭和三年十一月二十二日印刷
昭和三年十一月二十六日發行

神戸市中山手通七丁目
神戸測候所

印刷者 神戸市橋町三丁目一一番屋敷
綱干種吉

印刷所 神戸市橋町三丁目一一五ノ六
綱干製版印刷所

SEISMOLOGICL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. IV. No. 4.

From October 1, 1928 to December 31, 1928.

KOBE

May, 1929.

CONTENTS

From No. 141. to No. 198, 1928.

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)

October

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

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	3.9	Aperiodic	0.005	93
A_N:	3.8	,,	0.005	98
A_Z:	3.1	,,	0.002	77

November

	T_o	ε	$\frac{r}{T_o^2}$	V
A_N:	16.1		0.001	20
A_E:	15.7		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	3.8	Aperiodic	0.005	100
A_N:	3.8	,,	0.006	94
A_Z:	3.3	5.2	0.003	66

December

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

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	4.0	Aperiodic	0.006	97
A_N:	4.0	,,	0.006	97
A_Z:	4.1	5.3	0.004	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.	
141	Oct. 1	P	20 27 48					76	The Sea of Harima, Inland sea.
		L	20 27 57						
		M_E	20 28 01	0.6	±34				
		M_N	20 27 59			±38			
		M_Z	20 27 58				±26		
		F_{EN}	20 28 40						
		F_Z	20 28 36						

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.	
142	Oct. 5	P	6 59 40					378	Middle basin of the Ar
		S	7 00 17						kawa, Musasi Province.
		L	7 00 31						Strong shocks were fel
		M_E	7 01 32	2.7	−26				at the epicentral region.
		M_N	7 01 37	2.2		−24			
		eF_{EN}	7 08 ±						
		eF_Z	7 06 ±						
143	Oct. 9	ePz	3 19 41					13600 (P−L)	A distant earthquake.
		eS?	3 29 33						Oaxaca, Mexico.
		eL	3 52 34						
		M_1E	3 57 50	41.0	±3				
		M_1N	3 58 23						
		M_2E	4 06 08	22.8	±6				
		M_2N	4 04 46	23.0		±5			
		eF	5 04 ±						
144	Oct. 10	ePz	20 41 45						A distant earthquake.
		eS_E	20 46 20						Faint record.
		eS_N	20 46 28						
		eL_E	20 50 02						
		eF	21 01 ±						
145	Oct. 12	Pz	7 33 44					2260	A distant earthquake.
		eN	7 35 16						the Okhotsk sea.
		eS_E	7 37 29						
		eL	7 40 36						
		eM_E	7 41 06	19.7					
		eF_E	8 11 ±						
		eF_N	8 01 ±						
		eF_Z	8 03 ±						
146	Oct. 12	Pz	12 23 36					230	Near miyosi, Hirosima
		L_E	12 24 07						prefecture.
		M_E	12 24 10	1.6	−25				
		M_N	12 24 12	2.4		+31			

o.	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	12 24 13	1.9			±23		
		eF	12 27 ±						
47	Oct. 13	P	15 23 52					3675	A distant earthquake.
		S	15 29 20						Faint record.
		eF	15 39 ±						
48	Oct. 15	ePE	8 40 18						Ditto.
		eF_E	9 02 ±						
		eF_N	9 00 ±						
49	Oct. 15	Pz	14 29 32					6400	Southern Coast of
		iS	14 37 30						India. Dilatation.
		eL_N	14 48 45						
		M_E	14 56 34	15.8	±9				
		M_N	14 51 59	23.2		±9			
		M_Z	14 58 45	15.3			±4		
		eF_E	15 19 ±						
		eF_N	15 13 ±						
		eF_Z	15 08 ±						
50	Oct. 17	eN	3 29 51						Upper Coruse of the
		iL	3 30 29						Sakaho River, Sagami
		M_1E	3 30 30		+17				province.
		M_1N	3 30 29	1.1		+8			
		M_2E	3 30 44	1.3			+16		
		eF	3 34 ±						
51	Oct. 20	P	12 48 16					670	S off Yaku Ils, Kago-
		$\overline{P}$	12 48 26						sima prefecture. Felt at
		S_N	12 49 29						southern Part of Kyūsyū.
		$\overline{S}_E$?	12 49 43						
		L_E	12 50 12						
		M_1E	12 50 29	3.5	+63				
		M_1N	12 50 40	4.1		−93			
		M_2E	12 51 53						

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_2N	12 51 55						
		eF	13 03 ±						
152	Oct. 21	P	0 10 50					92	In the Kii channel.
		L	0 11 03						
		M_E	0 11 03	0.4	±14	±8			
		F	0 11 56						
153	Oct. 21	eP	13 37 16					117	Near Takamatu, Sikoku districts.
		L	13 37 32						
		M_E	13 37 34		±2				
		F_E	13 37 51						
		F_N	13 37 53						
154	Oct. 23	P	17 57 15					2550	The Sea of Okhotsk.
		S	18 01 24						
		eL	18 05 04						
		eF_E	18 20 ±						
		eF_N	18 17 ±						
155	Oct. 24	eP	3 38 41					157	Near Kure, Hirosima prefecture.
		L	3 39 03						
		eM_E	3 39 03	0.4	−3				
		eM_N	3 39 03	0.5		−2			
		eF	3 40 ±						
156	Oct. 24	eP	5 20 02					90	Upper basin of the Hidaka river, Wakayar prefecture.
		L	5 20 15						
		M_E	5 20 15	0.8	+6				
		F_E	5 20 49						
		F_N	5 20 54						
157	Oct. 31	e_E	20 08 43						SE off Hokkaido.
		eL	20 12 08						
		M_E	20 13 41	16.0					
		eF	20 19 ±						

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	
158	Nov. 1	iP	16 30 04	1.5	+4.3	−6.1	−5.2	650	SSE off Hatidyo Ils.
		S_{NZ}	16 31 15						
		M_N	16 32 10	4.6					
		eF_{EN}	16 36 ±						
		eF_Z	16 35 ±						
159	Nov. 3	P	11 05 09					810	South off Vladiostok. Trace only.
		L	11 06 38						
		M_E	11 06 50	1.7	+5				
		M_N	11 06 52	2.0		−7			
		M_Z	11 06 49	2.3			+10		
		eF	11 11 ±						
160	Nov. 5	eP_E	4 42 54						Upper basin of the Tikugo river, North foot of Volcano Aso, kyusyu. Moderate shocks were felt at epicentral region. Faint record.
		eL_N	4 44 20						
		M_N	4 44 22	2.8	−5				
		M_Z	4 44 22	2.5		−4			
		eF	4 48 ±						
		Volcano Aso began its' activity from the end of October.							
161	Nov. 6	P_Z	4 15 28					7200	A distant earthquake. Near New Hebrides.
		P_{R_1E}	4 18 01						
		eS	4 24 07						
		S_{R_1E} ?	4 27 12						
		eL	4 32 02						
		M_E	4 37 12	19.7	+3				
		M_N	4 39 12	19.6		−5			
		eF	4 53 ±						
162	Nov. 10	P	23 45 33					33	Central part of Osaka bay.
		L	23 45 38						
		F	23 46 03						
163	Nov. 11	eP	11 18 00						Very faint. Near Wakayama.
		eL	11 18 05						
		F	11 18 23						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
164	Nov. 14	P	15 42 02					10	Central part of Osaka bay.
		L	15 42 03						
		M	15 42 03						
		F	15 42 13						
165	Nov. 16	L	7 21 46						Strong shocks were felt at Gifu.
		M_E	7 21 47	1.9	+8				
		M_N	7 21 47	0.8		+5			
		M_Z	7 21 47	1.8			+7		
		eF	7 23 ±						
166	Nov. 16	eP	11 04 37						A distant earthquake.
		e	11 08 29						
		e	11 08 59						
		M_E	11 13 30						
		eF_E	11 26 ±						
		eF_N	11 27 ±						
		eF_Z	11 24 ±						
167	Nov. 21	eP	17 05 15						Central Luzun. Faint record.
		e	17 07 06	3.9					
		eF_{EN}	17 13 ±						
		eF_Z	17 12 ±						
168	Nov. 23	P	17 49 11					235	South off Tosa province
		L	17 49 41						
		M_E	17 49 51	2.4	−64				
		M_N	17 49 52	1.7		+63			
		M_Z	17 49 51	2.8			±35		
		eF_{EN}	17 58 ±						
		eF_Z	17 55 ±						
169	Nov. 24	P	22 23 22					33	Upper basin of the Mu river, North of Kobe.
		L	22 23 26						
		M_E	22 23 27	0.9	+24				
		M_N	22 23 28	0.6		+14			

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_Z	22 23 26	0.6			+20		
		eF	22 24 25						
170	Nov. 24	P_N	22 24 38					21	An after shock of No. 169.
		L_N	22 24 41						
		F_N	22 24 49						
171	Nov. 25	eP	23 48 48					77	In the Kii channel.
		iL	23 48 59						
		M_E	23 49 00	0.6	−18				
		M_N	23 49 00	0.7		−20			
		M_Z	23 49 00	0.6			+5		
		F_E	23 49 35						
		F_N	23 49 40						
		F_Z	23 49 21						
172	Nov. 28	P_Z	10 51 27					5000	A distant earthquake. SW off Celebes.
		P_{R_1}	10 53 27						
		eS	10 58 15						
		eL ?	11 01 24						
		M_E	11 04 28	16.0	−4				
		M_N	11 03 03	18.6		+7			
		M_Z	11 07 42	19.6					
		eF_{EN}	11 31 ±						
		eF_Z	11 25 ±						
173	Dec. 1	eP_Z	4 26 07					16800	Great earthquake at Talca, chile.
		eP_N	4 26 17						
		eS_E	4 39 14						
		e	4 51 22						
		eL	5 19 06	35.8	±9				
		M_1E	5 27 34	19.6	±10				
		M_1N	5 25 28	19.5		±6			
		M_1Z	5 26 28	20.7			±12		
		M_2E	6 07 44	18.9	±6				
		M_2N	6 04 00	20.0		±12			

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_2Z	5 54 44	21.2			±12		
		eF_E	6 36 ±						
		eF_N	6 37 ±						
		eF_Z	6 33 ±						
174	Dec. 2	eL	5 40 ±						An after shock of No. 173.
		M_E	5 47 27	17.6					
		M_Z	5 41 50	19.2					
		eF_{EN}	6 16 ±						
		eF_Z	6 02 ±						
175	Dec. 3	eM_N	16 37 20						West off Simokosiki I. Kagosima prefecture.
		eF_{EN}	16 42 ±						
		eF_Z	16 43 ±						
176	Dec. 6	P	10 23 19					81	In the Kii channel.
		L	10 23 30						
		M_E	10 23 32	0.3	+10				
		M_N	10 23 32	0.3		+12			
		F_E	10 24 23						
		F_N	10 24 16						
177	Dec. 7	P	9 21 45					4500	A distant earthquake. Near New Guinea ?
		P_{R_1}	9 23 28						
		eS_E	9 27 25						
		L_E	9 30 15						
		M_N	9 34 20	21.8	±6				
		M_Z	9 40 30						
		eF	10 02 ±						
178	Dec. 9	M_E	0 24 06	16.0					Ditto.
		M_N	0 24 37	14.2					
		eF	0 31 ±						
179	Dec. 9	eL_N	5 31 12						Ditto.
		M_E	5 31 54	12.7	±4				

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_N	5 32 11	15.6		±4			
		eF_E	5 45 ±						
		eF_N	5 44 ±						
80	Dec. 11	LM_N	12 00 41						In the Kii channel.
		eF	12 01 12						
81	Dec. 12	iP_Z	20 31 41		+3	−4	+	9300	A distant earthquake. Near New zealand, South pacific Ocean.
		iP_E	20 31 42						
		S_E	20 42 08						
		eL	20 57 47						
		M_E	20 59 32	19.0					
		eM_Z	20 58 40						
		eF_{EN}	21 42 ±						
		eF_Z	21 24 ±						
82	Dec. 13	eP_N	20 07 12					527	Off kujukuri shore, Tiba prefecture. Weak shocks were felt near the coast of epicenter.
		S	20 08 23						
		L_Z	20 08 38						
		M_E	20 08 48		−16				
		M_N	20 08 41	2.9		+35			
		M_Z	20 08 55	3.2			−25		
		eF_{EN}	20 16 ±						
		eF_Z	20 13 ±						
83	Dec. 15	eP_N	21 05 23					53	Month of the Arita river, Wakayama prefecture.
		L	21 05 30						
		F_E	21 06 06						
		F_N	21 06 23						
84	Dec. 18	P	6 56 10			+	−	71	In the Kii channel.
		L	6 56 20						
		M_{EN}	6 56 22	07	−28	−22			
		F_E	6 57 39						
		F_N	6 57 29						

No.	Date	Fhase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
185	Dec. 19	P	2 30 04						In the Kii channel.
		L	2 30 13						
		MEN	2 30 13		±11	±14			
		FE	2 30 47						
		FN	2 30 40						
186	Dec. 19	P	11 43 16					2985	South off Mindanao.
		FZ	11 43 19						
		SN	11 47 59						
		LE	11 49 50						
		M_1E	11 50 28	28.7	−33				
		M_1N	11 52 26	23.5		−33			
		M_1Z	11 54 31	19.9			+45		
		M_2E	11 55 44	15.6	+43				
		M_2N	11 58 03	19.8		+53			
		M_2Z	11 57 49	21.1			+40		
		eFEN	13 11 ±						
		eFZ	13 09 ±						
187	Dec. 19	PN	15 19 14					1560	South off Bonin Ils.
		L	15 21 57						
		MN	15 22 01						
		eFE	15 17 ±						
		eFN	15 26 ±						
188	Dec. 19	ePN	17 58 43						In the Kii channel.
		L	17 58 47						
		MN	17 58 48						
		F	17 59 08			±4			
189	Dec. 20	P	2 34 49					69	Middle basin of the Arita river, Wakayama prefecture.
		L	2 34 58						
		ME	2 34 59	0.8	−9				
		MN	2 35 00	0.8		−7			
		F	2 35 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.	
0	Dec. 21	eP	1 42 22					382	NE off Tyosi, Tiba prefecture. Moderate shocks were felt at Tyosi.
		L	1 43 13						
		ME	1 43 25	2.7	−9				
		MN	1 43 25	3.5		+10			
		MZ	1 43 29	2.4			−9		
		eF	1 49 ±						
1	Dec. 21	eP	23 18 29					435	North western foot of Volcano Aso. Felt at Northern Kyusyu.
		eL	23 19 38						
		MSW	23 20 57	3.2	±7				
		F	23 25 ±						
2	Dec. 22	P	7 15 55					43	Near Sumoto, Awaji province.
		L	7 16 00						
		MN	7 16 01	0.5		±5			
		FE	7 16 22						
		FN	7 16 24						
3	Dec. 25	ePN	10 43 26						Kitan streat.
		FN	10 43 35						
4	Dec. 25	eP	10 43 47					78	Ditto.
		L	10 43 58						
		ME	10 43 58	0.7	−6				
		MN	10 43 58	0.8		+5			
		F	10 44 12						
5	Dec. 28	LM	9 23 24	0.4	±3	±3			Southern part of Kii channel.
		F	9 23 43						
6	Dec. 28	P	14 25 40					3200	Near Mindanao, Philippin.
		PR1	14 26 32						
		L	14 32 02						
		ME	14 32 35	29.3	−12				
		eFE	15 10 ±						
		eFN	15 07 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
197	Dec. 29	eP	22 01 16					87	In the Kii channel.
		i	22 01 22						
		L	22 01 27						
		MEN	22 01 28	0.4	±8	±7			
		FE	22 02 02						
		FN	22 02 13						
198	Dec. 30	P	0 14 47						Near Sumoto, Awaji province.
		L	0 14 57						
		MEN	0 14 57	0.6	+12	+7			
		FE	0 15 23						
		FN	0 15 20						

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)
Wiechert Seismograph. (Horizontal & Vertical)

October

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.1	Aperiodic	0.002	80
AN:	4.1	"	0.002	80
AZ:	4.6	"	0.002	80

November

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.1	Aperiodic	0.002	80
AN:	4.1	"	0.002	80
AZ:	4.1	"	0.002	80

December

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20
AN:	20.0	4.6	0.001	20

	T_0	ε	$\frac{r}{T_0^2}$	V
AE:	4.4	3.8	0.004	118
AN:	4.4	4.3	0.003	118
AZ:	4.4	4.7	0.002	68

o.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
6	Oct. 1	P	20 27 51					73	Sea of Harima, the Inland sea.
		L	20 28 01						
		ME	20 28 01		+3				
		MN	20 28 04	0.6		+4			
		eFE	20 28 32						
		eFN	20 28 39						
7	Oct. 5	eP	6 59 43					382	Middle basin 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.	
		iLE	7 00 33						Arakawa, musasi p
		iLN	7 00 34						ince. Strong shocks
		MEN	7 00 43	2.2	+14	+25			felt at the epicentral
		eF	7 05 ±						region.
198	Oct. 9	e	3 46 14						Trace of the earthqu
		eL	4 05 33						which occered in Or
		eF	4 47 ±						mexico.
199	Oct. 12	eP	12 23 39					183	Near Miyosi, Hirosi
		iL	12 24 04						prefecture.
		M	12 24 07	1.3	±6	±9			
		eF	12 27 ±						
200	Oct. 13	eP	15 23 49						A distant earthquake
		e	15 25 19						
		eL	15 29 13						
		eF	15 35 ±						
201	Oct. 15	eP	14 29 30					6440	A distant earthquake
		eS	14 37 30						Southern Coast of Ind
		eL	14 49 54	36.6					
		eF	15 13 ±						
202	Oct. 18	eP	18 33 32					22	In the Kitan st. Felt
		iL	18 33 35						at wakayama.
		MEN	18 33 45		±5	±8			
		F	18 33 52						
203	Oct. 20	P	12 48 14					580	S off Yaku Ils. Ka
		S	12 49 19						sima prefecture. Fel
		L	12 49 59						Southern part of Kyus
		MEZ	12 50 32	3.4	+91		+21		
		MN	12 50 25	3.4		−21			
		eFEN	13 06 ±						
		eFZ	12 59 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Oct. 21	iP	0 10 45					60	In the Kii channel.
		iL	0 10 53						
		M	0 10 53		±53	±91	±19		
		FEN	0 12 29						
		FZ	0 11 45						
5	Oct. 21	eP	13 37 11					71	Near Takamatu.
		iL	13 37 20						Sikoku district.
		M	13 37 21			±4			
		eF	13 38 12						
6	Oct. 23	eP	17 57 21					2560	The Sea of Okhotsk.
		eL	18 01 30						
		eF	18 14 ±						
7	Oct. 24	eP	3 38 41						Near Kure, Hirosima
		eF	3 39 30						prefecture.
8	Oct. 24	iP	5 19 57					61	Upper basin of the
		iL	5 20 05						Hidaka river, Wakayama
		M	5 20 06	0.2	±14	±27			prefecture.
		eF	5 20 49						
9	Oct. 26	PEN	15 44 59	0.6	+1.3	−1.3		284	In the Atumi Bay,
		L	15 45 37	2.4					Mikawa province.
		eF	15 48 ±						
10	Oct. 28	eP	10 09 08					45	Near Wakayama.
		iL	10 09 14						
		M	10 09 15	0.4	±4	±6			
		eF	10 09 32						
11	Oct. 31	eP	20 08 44					1800	SE off Hokkaido.
		S	20 09 49						
		L	20 00 49						
		MEN	20 13 26		±9	±6			

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	20 23 ±						
212	Nov. 1	iP	16 30 04					630	SSE off Hatidyo Ila.
		L	16 31 13						
		eF_{EN}	16 37 ±						
		eF_Z	16 33 ±						
213	Nov. 3	iP	11 06 44						South off Vladivostok
		eS	11 07 21						
		L	11 07 47						
		eF_{EN}	11 19 ±						
		eF_Z	11 13 ±						
214	Nov. 5	P_N	4 42 03						Upper course of Tikuma river, North foot of Volcano Aso, kyusyu. Moderate shocks were felt near epicentral region.
		L_N	4 42 46						
		eM_N	4 42 58	2.7		+8			
		eF_E	4 46 42						
		eF_N	4 45 13						
		eF_Z	4 44 37						
		Volcano Aso began its' activity from the end of October.							
215	Nov. 5	P	13 33 01						Off Hinomisaki, Simane prefecture.
		eS?	13 33 41						
		eF	13 39 ±						
216	Nov. 10	P	23 45 24					39	Central part of Osaka Bay.
		iL	23 45 30						
		M	23 45 30						
		eF	23 48 ±						
217	Nov. 11	P	11 17 55	0.2				38	Near Wakayama.
		iL	11 18 00						
		M_E	11 18 03			+8			
		M_{NZ}	11 18 01	0.4					
		eF_{EN}	11 19 05			±10	±3		

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.	
	Nov. 12	eP	11 49 29	1.0				442	
		S	11 49 59	2.3					
		L	11 50 28						
		eF	11 55 ±						
	Nov. 16	eP	11 03 22					2890	A distant earthquake.
		iN	11 03 59						
		S	11 06 17						
		L	11 07 57						
		M_E	11 08 47	10.5	−7				
		M_N	11 09 48	8.0		−7			
		eF_E	11 42 ±						
		eF_N	11 46 ±						
		eF_Z	11 28 ±						
	Nov. 23	P	17 49 02					190	South off Tosa province.
		L	17 49 27						
		M_E	17 49 40	2.2	−56				
		M_N	17 49 34	2.4		−103			
		M_Z	17 49 35	2.1			+23		
		eF_E	17 59 ±						
		eF_N	18 00 ±						
		eF_Z	17 53 ±						
	Nov. 24	eP	22 23 29					62	Upper basin of the Muko river, North of Kobe.
		L	22 23 38						
		M	22 23 39	0.5	±3	−6			
		F_E	22 24 49						
		F_N	22 24 56						
	Nov. 25	P	23 48 42					62	In the Kii channel.
		iL	23 48 51						
		M_E	23 48 51	0.4	+38				
		M_N	23 48 51	0.5		+20			
		M_Z	23 48 53	0.4			+5		
		F	23 50 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
223	Nov. 28	P	2 24 35					30	In the Kii channel.
		iL	2 24 39						
		M	2 24 39	0.4	−13	+18	−4		
		FE	2 25 19						
		FN	2 26 02						
		FZ	2 24 35						
224	Nov. 28	P	10 51 21	2.7				5600	A distant earthquake
		eSN	10 53 54	3.1					
		eLN	10 57 36	6.1					
		eFE	11 37 ±						
		eFN	11 44 ±						
		eFZ	11 29 ±						
225	Dec. 1	P	3 38 27					22	In the Kii channel.
		iL	3 39 30						
		MEN	3 39 30	0.3 0.2	+13	+19			
		MZ	3 39 31				±5		
		FE	3 40 02						
		FN	3 40 10						
		FZ	3 39 54						
226	Dec. 1	eP	4 26 16	5.0					A distant earthquake
		eS	4 37 18	8.5					Great earthquake at
		eL	4 50 41						Talca, chile.
		eF	6 33 ±						
227	Dec. 3	eP	16 35 35					405	West off Kosiki Ils,
		eL	16 36 29						Kagosima prefecture.
		eFE	16 41 ±						
		eFN	16 42 ±						
		eFZ	16 38 ±						
228	Dec. 6	P	10 23 05					89	In the Kii channel.
		L	10 23 17						
		MEN	10 23 18	0.5	+7	−9			

Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
		h m s	s	μ	μ	μ	km.	
	MZ	10 23 19	0.4			+2		
	FE	10 23 50						
	FN	10 23 57						
	FZ	10 23 48						
Dec. 7	eP	9 21 10	5.8				8750	A distant earthquake.
	eS	9 26 27	7.7					
	eL	9 31 08						
	eF	10 39 ±						
Dec. 11	P	12 00 29					25	In the Kii channel.
	L	12 00 33						
	M	12 00 33	0.3	+3	+3	±2		
	FEN	12 00 55						
	FZ	12 00 47						
Dec. 12	eP	20 31 42	2.3				–	A distant earthquake.
	eS	20 41 42	3.9					Near New Zealand,
	eL	20 58 05						South Pacific Ocean.
	eF	21 50 ±						
Dec. 13	P	20 07 40					467	Off Kujukuri shore, Tiba
	S	20 08 14						prefecture. Weak shocks
	L	20 08 43						were felt near the Coast
	ME	20 09 02	3.2	−14				of epicentere.
	M1N	20 08 58	3.2		−15			
	M2N	20 09 15	3.2		−20			
	MZ	20 08 52	3.2			+10		
	eFE	20 19 ±						
	eFN	20 22 ±						
	eFZ	20 16 ±						
Dec. 15	P	21 05 18					37	Mouth of the Arita river,
	L	21 05 23						Wakayama prefecture.
	ME	21 05 23	0.3	+5				
	MN	21 05 25	0.3		−10			

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		MZ	21 05 22	0.3			−4		
		FEN	21 05 54						
		FZ	21 05 52						
*234	Dec. 18	iP	6 56 04					45	In the Kii channel, perceptible.
		iL	6 56 10						
		MEN	6 56 11	0.4	−19	−53			
		MZ	6 56 12	0.3			+15		
		FEN	6 57 59						
		FZ	6 57 25						
235	Dec. 19	P	2 30 02					65	In the Kii channel.
		iL	2 30 10						
		M	2 30 11	0.4	+2	−4			
		F	2 30 35						
236	Dec. 19	eP	11 42 54					3230	A distant earthquak
		S	11 45 25						
		eL	11 47 53						
		ME	11 51 01		−89				
		MN	11 54 19			−63			
		MZ	11 52 28				+62		
		eF	13 06 ±						
237	Dec. 19	P	15 19 12					1400	South off Bonin Is
		S	15 20 23						
		L	15 21 39						
		FEN	15 28 ±						
		FZ	15 26 ±						
238	Dec. 19	P	17 58 35					33	In the Kii channel.
		iL	17 58 39						
		M	17 58 40	0.4	+10	+8	+3		
		FE	17 59 09						
		FN	17 59 21						
		FZ	17 59 11						

Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
		h m s	s	μ	μ	μ	km.	
Dec. 20	P	2 34 41					44	Middle basin of the Arita river, Wakayama prefecture. Perecptible.
	iL	2 34 47						
	ME	2 34 49	0.3	+9				
	MN	2 34 48	0.3		+12			
	MZ	2 34 50	0.2			−6		
	FE	2 36 15						
	FN	2 36 21						
	FZ	2 35 43						
Dec. 21	eP	1 42 23					462	NE off Tyosi, Tiba prefecture. Moderate shocks were felt at Tyosi.
	eL	1 43 25						
	ME	1 43 47	3.1	−6				
	MN	1 43 46	3.1		−5			
	MZ	1 43 45	3.4			+5		
	eFEN	1 51 ±						
	eFZ	1 49 ±						
Dec. 21	P	23 18 34					335	North Western foot of Voleano Aso, Kysyu. felt at Northern Kysyu.
	L	23 19 19						
	MEN	23 19 26	1.9	+5	−10			
	MZ	23 19 24	1.7			+4		
	FE	23 25 ±						
	FN	23 36 ±						
	FZ	23 22 ±						
Dec. 22	eP	7 15 58						Local shock.
	iL	7 16 06						
	MEN	7 16 06		±4	±4			
	FEN	7 16 37						
Dec. 22	P	15 42 05					27	In the Kii channel.
	iL	15 42 08						
	MEN	15 42 09	0.3	+4	+4			
	FEN	15 42 44						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
244	Dec. 23	P	6 23 56					24	Basin of the Arita
		L	6 23 59						Wakayama prefecture
		MEN	6 23 59	0.3	−3	−3			
		F	6 24 45						
245	Dec. 25	iP	0 05 02					27	Local shock.
		L	0 05 05						
		F	0 05 23						
246	Dec. 25	iP	10 43 23					19	Ditto.
		iL	10 43 26						
		M	10 43 27	0.3	−7	−8			
		F	10 43 51						
247	Dec. 25	eP	10 43 56					43	In the Kitan strait
		eL	10 44 02						
		ME	10 44 02	0.3	±9				
		MN	10 44 03	0.3		±5			
		eF	10 44 37						
248	Dec. 27	eP	3 59 11					45	Local shock.
		eL	3 59 17						
		eF	3 59 40						
249	Dec. 28	eP	9 22 58					100	Southern part of the
		eL	9 23 11						Kii channel.
		eF	9 23 38						
250	Dec. 28	iP	14 24 47					–	A distant earthquake
		iS	14 28 58						Near Mindanao, Phil
		iL	14 30 48						
		ME	14 31 36	28.8	−8				
		MN	14 31 53	12.8		−11			
		MZ	14 31 36	7.2			−5		
		eF	14 57 ±						

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
251	Dec. 28	iP	19 19 12					46	In the Kii channel.
		L	19 19 18						
		F	19 19 37						
252	Dec. 29	iP	22 05 36					36	Ditto.
		L	22 05 41						
		MEN	22 05 44		±5	±11			
		F	22 06 14						
253	Dec. 30	iP	0 21 16						Time is uncertain
		L	0 21 31						Local shock.
		ME	0 21 37		−13				
		MN	0 21 31			±17			
		F	0 22 47						
254	Dec. 30	eP	5 36 40						Ditto.
		eF	5 37 18						

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:	4.4	Aperiodic	0.001	80
A_N:	4.0	7.1	0.002	80

No.	Dato	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.	

The seismograph ef Wieachert type has again set in motion from 23th November after its removal to the new institute.

269	Nov. 24	iP	22 23 30					70	Upper basin of the Muko river, North of Kobe.
		iL	22 23 39		−10	+14			
		M_{EN}	22 23 39						
		F_{EN}							
270	Nov. 25	iL	12 50 16						Near Gifu. ?
		F_{EN}	12 50 48						
271	Nov. 28	iP_N	10 51 27					5035	A distant earthquake
		iS_E	10 58 11						
		L	11 01 37						
		eF	11 40 ±						
272	Nov. 30	iP	16 26 25					25	Local shock.
		iL	16 26 28						
		M	16 26 28		±8	±5			
		F	16 26 36						
273	Dec. 1	eP	4 26 25						Great earthquake at Talca, chile.
		L_E	5 20 20						

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_N	5 21 20						
	eF	6 25 ±						
Dec. 1	iP	6 15 12					20	Near Miyazu Northern part of Kyoto Prefecture.
	iL	6 15 14						
	M	6 15 15		+8	±7			
	F_E	6 15 29						
	F_N	6 15 30						
Dec. 5	iP_N	6 54 15					8	Local shock.
	iL	6 54 16						
	M	6 54 16		±4	±9			
	F	6 54 21						
Dec. 13	iP	20 07 27					477	Off kujukuri shore. Tiba prefecture. Weak shocks were felt near the coast of epicenter.
	L	20 08 32						
	M_E	20 08 55	2.3	+33				
	M_N	20 08 44			+63			
	F	20 11 18						
Dec. 18	eP	6 56 35						In the Kii channel.
	F	6 57 11						
Dec. 19	iP_N	11 43 27					3300	A distant earthquake. South of Mindanao, Philippin.
	iS	11 48 31						
	iL_E	11 50 31						
	M_1E	11 55 51		+56				
	M_1N	11 55 20			−75			
	M_2E	11 58 50	19.7	−81				
	M_2N	11 56 47	21.6		+100			
	M_3E	12 01 18	17.7	−56				
	eF	12 35 ±						
Dec. 19	iP	15 19 25					1640	South off Bonin Ils.
	L	15 22 15						
	M_N	15 22 18						

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	15 25 16						
280	Dec. 21	eP	1 42 10					434	NE off Tyosi, Tiba prefecture. Moderate shocks were felt at Tyosi.
		iL	1 43 09						
		M_E	1 43 36		+10				
		M_N	1 43 11			−21			
		F_E	1 45 14						
281	Dec. 28	P	14 26 34						A distant earthquake. Faint Record. Near Mindanao, Philippin.
		eS_E	14 32 15						
		eS_N	14 32 03						
		eL_N	14 38 05						
		eF_E	14 52 ±						
		eF_N	14 57 ±						