



# SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

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# KÔBE JAPAN.

## SEISMOLOGICAL BULLETIN

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

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

Instrument: Omori's Seismograph  
(Horizontal Pendulum.)

Wiechert Seismograph  
(Horizontal & Vertical)

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	$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V		$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V
AN:	20		0.003	20.0	AN:	5.1	Aperiodic	0.004	80
AE:	20		0.008	20.0	AE:	5.2	"	0.004	80
AE:	25		0.001	42.7	AZ:	4.1	"	0.006	80

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
1	Jan. 7	ME	22	13	34		$\pm 8$			648	Faint record. In Kasima-nada.
		MN	22	13	34	2.0		$\pm 20$			
		FE	22	17	$\pm$						
		FN	22	17	$\pm$						
2	Jan. 14	eP	8	36	46					648	Ditto.
		eL	8	38	11						
		ME	8	38	28	1.5	$\pm 9$				
		M <sub>1</sub> N	8	38	30	1.8		$\pm 19$			
		M <sub>2</sub> E	8	38	41	2.1		$\pm 13$			
		eFE	8	42	30						
		eFN	8	42	30						
3	Jan. 15	P	14	32	13		$+15$	$-36$	$+39$	356	Far northern off Kyōgasaki. Strong or moderate shock near epicenter.
		$\bar{P}$	14	32	14	1.7		$\pm 88$			
		L	14	32	56						
		M <sub>1</sub> E	14	32	59	2.2	$\pm 70$				
		M <sub>1</sub> N	14	32	58	2.7		$\pm 279$			
		M <sub>1</sub> Z	14	32	59	2.4			$\pm 45$		
		M <sub>2</sub> E	14	34	23	2.4	$\pm 65$				
		M <sub>2</sub> N	14	34	20	2.1		$\pm 50$			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$		
4	Jan. 17	M <sub>2</sub> Z	14 34 19	2.4			±29	750	Eastern off Kinkazan, Miyagi prefecture.
		CE	14 36 46	2.8	±23				
		CN	14 37 21	2.6		±23			
		FE	14 41 ±						
		FN	14 41 ±						
		FZ	14 41 ±						
		P	21 59 57						
		S	22 01 06						
		L	22 01 35						
		M <sub>1</sub> E	22 02 09	2.7	±114				
		M <sub>1</sub> N	22 02 04	2.9		±75			
		M <sub>1</sub> Z	22 01 51	3.6			±66		
		M <sub>2</sub> E	22 03 03	3.3	±100				
		M <sub>2</sub> N	22 03 57	3.4		±88			
M <sub>2</sub> Z	22 03 57	3.5			±31				
FE	22 11 ±								
FN	22 11 ±								
FZ	22 09 ±								
5	Jan. 19	P	13 24 00				60	In the Kii channel.	
		L	13 24 09						
		ME	13 24 11	0.9	±31				
		MN	13 24 11	0.9		±48			
		FE	13 25 ±						
		FN	13 25 ±						
6	Jan. 24	ME	4 08 37	0.9	±9			No record on the vertical component.	
		MN	4 08 38	0.9		±6			
		FE	4 09 ±						
		FN	4 09 ±						
7	Jan. 31	P	3 44 02				139	Near the mouth of Ibi river, Gifu prefecture.	
		L	3 44 21						
		ME	3 44 21	0.9	±14				
		MN	3 44 27	0.9		±11			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks	
					AE	AN	AZ			
			G. M. T.		$\mu$	$\mu$	$\mu$	km.		
			h m s	s	$\mu$	$\mu$	$\mu$			
8	Feb. 1	FE	3 47 ±				25.1	±1	The trace of a distant earthquake.	
		FN	3 47 ±							
		eP	18 04 13							
		ME	18 19 39							
		MN	18 19 25			±3				
9	Feb. 3	eP	3 53 08				2.5	±46	The beginning of the P phase was not clear. Origin in the course of Yangtsu-kiang.	
		L	3 59 34							
		ME	3 59 59							
		MN	3 59 53			±70				
		MZ	3 59 59							±25
		FE	4 13 ±							
		FN	4 13 ±							
10	Feb. 3	eP	4 53 15				2.6	±21	Ditto.	
		L	4 58 30							
		ME	4 59 14							
		MN	4 59 10			±61				
		MZ	4 59 10							±13
		FE	5 11 ±							
11	Feb. 4	ME	3 00 56	2.0	±4		3.0	±6	Trace only.	
		MN	3 01 12							
		FE	3 05 ±							
		FN	3 06 ±							
12	Feb. 16	P	1 39 36				16.6	±2400	3450 Flat wave form. SE off Kamchatka.	
		S	1 43 05							
		L	1 46 32							
		M <sub>1</sub> E	1 48 48							

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s	μ	μ	μ		
13	Feb. 16	MN	1 48 32	20.1		±2100		Ditto.	
		M <sub>2</sub> E	1 50 09	14.9	±2100				
		P	3 00 45						
		S	3 04 11						
		L	3 07 56						
		M <sub>1</sub> N	3 08 42	16.3		±19			
		M <sub>2</sub> N	3 18 16	15.6		±23			
		M <sub>2</sub> Z	3 20 14	15.0			±13		
		M <sub>3</sub> N	3 21 55	14.1		±50			
		F <sub>N</sub>	4 05 ±						
14	Feb. 18	eP	12 12 35				Upper course of Ono river, Bingo district.		
		L	12 13 19						
		ME	12 13 27	0.6	±10				
		MN	12 13 20	1.3		±8			
		FE	12 15 ±						
		eFN	12 15 30						
15	Feb. 18	MN	23 04 07	1.8		±8	Trace of a distant earthquake.		
		F <sub>N</sub>	23 06 20						
16	Feb. 20	eP	22 56 34				In the course of Maruyama river. The record of the first motion was not clear.		
		L	22 56 39						
		ME	22 56 39		±25				
		MN	33 56 39	0.3		±38			
		FE	22 57 ±						
F <sub>N</sub>	22 57 01								
17	Feb. 22	eP	19 57 07				SSE off Titizima. The amplitudes are very small except on the N-S component.		
		ME	20 04 17	5.3	±5				
		MN	20 03 50	8.0		±5			
		eFE	20 09 30						
		eFN	20 09 30						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s	μ	μ	μ		
18	Mar. 3	P	1 13 10					4498	Trace of a distant earthquake.
		S	1 16 02						
		L	1 22 47						
		ME	1 22 59	7.1	±18				
		M <sub>1</sub> N	1 22 59			±40			
		M <sub>2</sub> N	1 26 30	9.8		±52			
		F <sub>N</sub>	1 54 ±						
19	Mar. 3	P	16 54 11					3423	Ditto.
		S	16 57 35						
		L	17 01 04						
		ME	17 02 18	13.3	±5				
		MN	17 02 22	13.3		±6			
		FE	17 14 ±						
		F <sub>N</sub>	17 14 ±						

# 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: Wiechert Seismograph.

(Horizontal)

	$T_o$	$\xi$	$\frac{r}{T_o^2}$	V
AE:	6.0	Aperiodic	0.003	80
AN:	6.0	"	0.004	80
AZ:	4.1	"	0.006	80

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
1	Dec. 31	eP	19 19 18					26	In Kitan straits.
		L	19 19 22		+3	+1			
		ME	19 19 22	0.3	-3				
		MN	19 19 22	0.3		-3			
		MZ	19 19 22	0.3			+1		
		eF	19 19 55						
2	Jan. 4	eP	18 45 45					28	In the course of Arita river, Wakayama prefecture.
		L	18 45 49		-1	+1			
		ME	18 45 49	0.3	-1				
		MN	18 45 49	0.3		-3			
		eF	18 47 11						
3	Jan. 4	eP	23 32 44					42	In Kii channel.
		L	23 32 50		-1	+3			
		ME	23 32 50	0.2	+2				
		MN	23 32 50	0.2		-5			
		MZ	23 32 50	0.2			+1		
		eFE	23 33 32						
		eFN	23 33 32						
eFz	23 33 34								



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
4	Jan. 6	eP	13 33 00					33	Near the mouth of Arita river.
		L	13 33 05		+1	+1			
		ME	13 33 07	0.2	$\pm 2$				
		MN	13 33 07	0.2		$\pm 8$			
		MZ	13 33 07	0.2			$\pm 1$		
		eF	13 34 11						
5	Jan. 7	eP	22 11 33					865	Ih Kasima-nada.
		eS	22 12 31						
		eL	22 13 30						
		ME	22 13 48	15.9	+3				
		MN	22 13 43	15.9		-3			
		eF	22 21 07						
6	Jan. 7	P	22 24 52		-1	-1		12	In Kitan straits.
		L	22 24 54		+1	+2			
		M	22 24 54	0.2	+2	-5			
		F	22 25 17						
7	Jan. 15	P	14 32 17		+2	-6	+5	337	Northern off Kyōgasaki.
		L	14 33 02		-19	+11	-2		
		ME	14 33 03	1.7	+50				
		MN	14 33 03	1.7		+29			
		MZ	14 33 16	1.4			-3		
		eF	14 39 34						
8	Jan. 17	P	11 46 07		-0.2	+1		85	Near Wakayama.
		L	11 46 19		$\pm 2$	+1			
		ME	11 46 20	0.3	$\pm 3$				
		MN	11 46 20	0.3		$\pm 6$			
		MZ	11 46 20	0.3			$\pm 1$		
		eF	11 47 12						
9	Jan. 17	P	22 00 03		+1	+1	+0.3	789	Off Kinkazan.
		L	22 01 49		-5	+10	-1		
		M <sub>1</sub> E	22 02 02	3.8	+16				

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s	s	μ	μ	μ	km.	
		M <sub>1</sub> N	22	02	02	3.8		-22		37	Off Hinomisaki.
		M <sub>1</sub> Z	22	02	01	2.6			-5		
		M <sub>2</sub> E	22	02	05	3.8	+8				
		M <sub>2</sub> N	22	02	05	3.8		-18			
		M <sub>2</sub> Z	22	02	06	2.6			-4		
		eF	22	17	13						
10	Jan. 19	P	13	23	54		-0.3	+1	+0.3	37	Off Hinomisaki.
L	13	23	59			+2	-2	-1			
M	13	24	01	0.3		-7	+11	-2			
eF	13	24	38								
11	Jan. 24	eP	1	16	08					3927	Faint record.
		eS	1	18	56						
		eSR	1	21	52						
		L	1	24	18						
		F	1	56	08						
12	Feb. 3	eP	3	58	34		-1	+1			The amplitudes of P phase were very small.
		L	3	59	19		+6	+8	-1		
		ME	3	59	58	2.0	-16				
		MN	3	59	32	2.0		-18			
		MZ	3	59	47	2.0			-3		
		eF	4	25	±						
13	Feb. 3	eP	4	57	31		-1	+1			Ditto.
		L	4	58	16		+3	-4	-1		
		MEN	4	58	54	2.0	-14	-25			
		MZ	4	58	43	2.0			+2		
		eF	5	37	±						
14	Feb. 4	P	2	59	20		-0.3	-0.6	-1.0	151	Trace only.
		L	2	59	41		-3	+1	-3		
		MEN	2	59	49	1.8	-6	+2			
		MZ	2	59	49	1.8			-4		
		eF	3	10	±						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s	s	μ	μ	μ	km.	
15	Feb. 7	P	13	32	35		+0.4	-0.5		27	In Kitan straits.
		L	13	32	38		+1	+1			
		M	13	32	38	0.2	±3	±4			
		F	13	32	49						
16	Feb. 8	P	15	09	11					13	Ditto.
		L	15	09	12		+1	+2	-0.4		
		MEN	15	09	13	0.3	-4	+8			
		MZ	15	09	14	0.3			-2		
17	Feb. 10	eP	16	26	45					22	Near Wakayama.
		L	16	26	48						
		ME	16	26	48	0.3	-2				
		MN	16	26	49	0.3		-3			
		MZ	16	26	49				-1		
		FEN	16	27	20						
18	Feb. 11	P	15	27	40		-1	+1	-1	24	Ditto.
		L	15	27	43		+4	+6			
		MEN	15	27	43	0.3	+8	-7			
		MZ	15	27	44	0.3			±3		
		FEN	15	28	50						
		FZ	15	28	50						
19	Feb. 16	P	1	39	40		-2	-3	+1	2943	S.E off Kamchatka.
		S	1	41	19		-8	-5			
		SR	1	43	20		-19	+20			
		L	1	45	20		+13	-7	-1		
		M <sub>1</sub> E	1	47	16	13.2	+34				
		M <sub>1</sub> N	1	45	53	13.2		+18			
		M <sub>1</sub> Z	1	48	31	15.2			-10		
		M <sub>2</sub> E	1	47	17	13.2	+36				
		M <sub>2</sub> N	1	48	36	13.2		+22			
M <sub>2</sub> Z	1	53	07	15.2			+13				

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks	
					A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>			
			G. M. T.		μ	μ	μ	km.		
			h m s	s	μ	μ	μ			
20	Feb. 16	M <sub>3</sub> E	1 47 55	13.2	+36			3022	Ditto.	
		M <sub>3</sub> N	1 50 48	13.2		-14				
		M <sub>4</sub> E	1 50 39	13.2	+30					
		M <sub>4</sub> N	1 53 17	13.2		-19				
		eFEN	3 00 51							
		eFZ	3 00 47							
		P	3 00 51			-2	-3			+1
		S	3 01 58			-2	+8			
		SR <sub>1</sub>	3 03 17			-2	+13			
		SR <sub>2</sub>	3 04 24			-4	+13			
		L	3 06 43			-5	+19			-1
		M <sub>1</sub> E	3 08 22	13.8		-20				
		M <sub>1</sub> N	3 08 42	13.8			-18			
		M <sub>2</sub> E	3 11 41	13.8		-14				
		M <sub>2</sub> N	3 13 38	13.8			-24			
		MZ	3 09 27	14.9						+6
		M <sub>3</sub> E	3 20 27	13.8		+13				
M <sub>3</sub> N	3 22 05	13.8			-16					
eFEN	6 06 05									
eFZ	6 06 03									
21	Feb. 18	P	12 12 30		-1	+1		295	Upper course of Ōno river, Bingo district.	
		L	12 13 10							
		MEN	12 13 11	0.5	±6	+13				
		MZ	12 13 14	0.5			±2			
		eF	12 16 ±							
22	Feb. 20	P	5 01 32		-1	-3	+1	36	In Kitan straits.	
		L	5 01 36		+2	+4	-1			
		MEN	5 01 37	0.3	-3	+6				
		FEN	5 02 27							
		FZ	5 02 27							
23	Feb. 20	P	12 20 23		-1	+1	+1	26	Ditto.	
		L	12 20 26		-1	-4	-1			

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks	
					A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>			
			G. M. T.		μ	μ	μ	km.		
			h m s	s	μ	μ	μ			
		MEN	12 20 26	0.3	+2	+5				
		FEN	12 21 30							
		FZ	12 21 30							
*24	Feb. 20	P	12 23 04		+1	-1	-1	25	Ditto. Near epicentral region moderate shock was felt.	
		L	12 23 07		-9	+10	+3			
		MEN	12 23 09	0.3	+14	+23				
		MZ	12 23 08	0.3			+4			
		FEN	12 24 32							
		FZ	12 24 31							
25	Feb. 20	P	22 56 28		+1	-1	-1	69	Upper course of Hidaka river, Wakayama prefecture.	
		L	22 56 37		-3	-4				
		MEN	22 56 38	0.2	±3	±5				
		eF	22 57 17							
26	Feb. 22	eP	19 56 50				2061	SSE off Tiltzima.		
		L	20 00 15							
		eF	20 24 ±							
27	Feb. 26	P	13 25 44				29	Near Sumoto.		
		L	13 25 48							
		MEN	13 25 49	0.6	+3	+3				
		MZ	13 25 50	0.6					+3	
		FEN	13 26 38							
28	Feb. 26	FZ	13 26 39							
		P	13 26 46		-1	+1			28	Ditto.
		L	13 26 49		-3	-2				
		MEN	13 26 50	0.4	-3	+3				
29	Mar. 3	FEN	13 27 48							
		FZ	13 27 49							
		P	1 13 07						4510	Trace of a distant earthquake.
S	1 15 05		-2	+3						
SR <sub>1</sub>	1 17 09		+1	+2						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
30	Mar. 3	SR <sub>2</sub>	1	19	45		-3	-3		3136	Ditto.
		L	1	22	46		-3	+2			
		ME	1	23	01	8.0	+9				
		MN	1	23	49	8.0		+4			
		eF	2	05	±						
		P	16	54	17						
		S	16	57	37						
		L	17	00	25						
		ME	17	02	59	8.0	-4				
		MN	17	02	04	8.0		+4			
31	Mar. 4	P	4	50	23		+1.0	+1.5	+0.9	59	Near Sumoto.
		L	4	50	31		-4	+3	-1		
		ME	4	50	31	0.3	-4				
		MN	4	50	42	0.3		+5			
		FEN	4	50	58						
		FZ	4	50	57						
32	Mar. 5	P	11	59	18		-0.4	-0.6	+0.8	90	Ditto.
		L	11	59	31		+2	+3	+1		
		ME	11	59	33	0.3	±3				
		MN	11	59	32	0.3		+4			
		MZ	11	59	32	0.3			-2		
		F	11	59	57						
33	Mar. 6	P	12	24	29					42	Ditto.
		L	12	24	35		-2	-2			
		MEN	12	24	35	0.2	+6	-4			
		MZ	12	24	35				+1		
		FEN	12	24	52						
		FZ	12	24	53						
34	Mar. 6	P	23	24	46					24	Ditto.
		L	23	24	50		+1	-4	-1		

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
		MEN	23	24	50	0.3	-5	-7			
		MZ	23	24	50	0.3			+1		
		eFEN	23	25	26						
		eFZ	23	25	31						



# 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 Pendulum.)

	$T_o$	$\epsilon$	$\frac{r}{T_o^2}$	V
AE:	3.2		0.008	80.
AN:	3.4		0.013	80

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks	
					AE	AN	AZ			
			G. M. T.							
			h m s	s	$\mu$	$\mu$	$\mu$	km.		
1	Jan. 5	P	6 25 33					20	Near Toyooka.	
		L	6 25 35							
		M	6 25 36		$\pm 10$	$\pm 13$				
		FE	6 25 44							
		FN	6 25 46							
2	Jan. 5	P	18 29 29					0.3		
		ME	18 29 29		+18					
		FE	18 29 49							
		eFN	18 29 52							
*3	Jan. 5	P	20 35 55					0.3	35	In Wakasa bay.
		L	20 35 59							
		M	20 36 00		$\pm 61$	$\pm 106$				
		F	20 36 52							
4	Jan. 6	P	19 19 03					25	Near Toyooka.	
		L	19 19 06							
		eME	19 19 06		$\pm 11$					
		MN	19 19 06			$\pm 11$				
		FE	19 19 16							
		FN	19 19 21							



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.						
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
5	Jan. 8	P	20 46 14					15	Ditto.
		L	20 46 16						
		M	20 46 17	0.3	$\pm 28$	$\pm 51$			
		F	20 46 27						
6	Jan. 9	P	18 10 48					20	Ditto.
		L	18 10 51						
		eM	18 10 51		$\pm 11$	$\pm 13$			
		F	18 10 56						
7	Jan. 15	P	12 45 33					14	Ditto.
		L	12 45 35						
		M	12 45 35		$\pm 18$	$\pm 13$			
		eF	12 45 46						
8	Jan. 15	P	14 32 09					305	Far northern off Kyogasaki, Kyoto prefecture.
		L	14 32 50						
		M	14 32 51	2.5	-175	-76			
		CE	14 33 44						
		CN	14 33 35						
		F	14 36 31						
9	Jan. 17	P	21 59 55					546	Off Kinkazan, Miyagi prefecture.
		L	22 01 09						
		ME	22 01 17	2.6	+100				
		MN	22 01 17	2.6		+73			
		eF	22 09 27						
10	Jan. 31	P	3 44 08					178	Near the mouth of Ibi river, Gifu prefecture.
		L	3 44 32						
		eME	3 44 36		$\pm 20$				
		MN	3 44 36			$\pm 25$			
		eF	3 45 23						
11	Jan. 31	P	21 52 59					25	Local shock.
		L	21 53 03						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			J km.	Remarks
					AE μ	AN μ	AZ μ		
12	Feb. 3	M	21 53 03		+21	-15		The beginning of the P phase was not clear.	
		FE	21 53 20						
		eFN	21 53 16						
		eP	3 53 39						
		eFR <sub>1</sub>	3 55 45						
		S	3 56 56						
		L	3 58 15						
13	Feb. 3	eP	4 53 40				Ditto.		
		eS	4 56 59						
		eL	4 58 38						
		eF	5 08 00						
14	Feb. 3	P	17 08 12				15 Near Toyooka.		
		L	17 08 14						
		ME	17 08 15	±21					
		MN	17 08 15		±20				
		FE	17 08 26						
		FN	17 08 33						
15	Feb. 4	P	1 13 42				12 Ditto.		
		L	1 13 43						
		eME	1 13 44	±15					
		MN	1 13 44		±21				
		FE	1 13 55						
16	Feb. 10	P	5 10 14				13 Ditto.		
		L	5 10 16						
		M	5 10 16	±40	±72				
		F	5 10 26						
17	Feb. 16	P	1 39 31				2785 SE off Kamtchatka.		
		S	1 39 31						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			J km.	Remarks
					AE μ	AN μ	AZ μ		
18	Feb. 16	L	1 44 47				2698	Ditto.	
		M <sub>1</sub> E	1 48 13	15.4	+48				
		M <sub>1</sub> N	1 48 27	14.0		-74			
		M <sub>2</sub> E	1 52 17	16.7	-23				
		M <sub>2</sub> N	1 51 55	14.6		-50			
		M <sub>3</sub> N	1 52 59	14.6		+56			
		M <sub>4</sub> N	1 54 08	14.6		+48			
		eCE	2 00 34						
		eCN	2 00 06						
		eF	3 00 ±						
		P	3 00 36						
		19	Feb. 20	S	3 04 11				
L	3 05 45								
M <sub>1</sub> E	3 07 29			20.0	-15				
M <sub>1</sub> N	3 07 07			16.7		+19			
M <sub>2</sub> E	3 14 39			15.0	-13				
M <sub>2</sub> N	3 14 34			16.7		-16			
eM <sub>3</sub> E	3 21 26			15.0	-16				
M <sub>3</sub> N	3 21 14			14.6		+25			
eM <sub>4</sub> E	3 22 35			15.0	-14				
M <sub>4</sub> N	3 22 16			14.6		+24			
eCE	3 24 39								
eFE	4 20 39								
20	Mar. 1	FN	4 19 ±				17	Ditto.	
		P	22 56 58						
		L	22 57 00						
		M	22 57 01		±15	±11			
20	Mar. 1	F	22 57 15				17	Ditto.	
		P	16 14 53						
		L	16 14 56						
		ME	16 14 56		±11				
		MN	16 14 56			±14			
F	16 15 12								

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
21	Mar. 3	P	1	13	16					4176	A distant earthquake.
		S	1	19	45						
		L	1	23	03						
		ePE	2	00	03						
		eFN	1	58	03						
22	Mar. 3	P	16	54	09						Ditto.
		S	16	54	28						
		eL	17	00	03						
		eF	17	18	00						



# SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. III. No. 2.

From March 1, 1927 to April 30, 1927.

KOBE

March, 1928.

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五ノ六印刷所

## 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)

	$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V		$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V
AN:	20		0.003	20	AE:	5.1	Aperiodic	0.004	80
AE:	20		0.008	20	AN:	5.2	"	0.004	80
AE:	25		0.001	43	AZ:	4.1	"	0.006	80

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*20	Mar. 7	P	9	27	58						<p>The great earthquake which occurred near the mouth of the River Asamo, northwestern part of Tango Province. The energy of this earthquake comes after the great Sagami Sea earthquake which occurred in September, 1923; and about 3000 men were killed or wounded and 12000 houses damaged. Near the epicentral region two remarkable fault lines were found.</p> <p>Kobe felt weak shocks but its duration was comparatibly long. The Wiechert seismographs installed at the Imperial Marine Observatory were thrown out of scale during a registering the preliminary tremore, but after half an hour these were restored.</p>
*21	Mar. 7	P	9	28	05						After shock of No. 20.

\* Earthquake felt.

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
*22	Mar. 7	P	9	28	45						Ditto.
*23	Mar. 7	P	9	32	48						Ditto.
*24	Mar. 7	P	9	35	45						Ditto.
*25	Mar. 7	P	9	36	15						Ditto.
*26	Mar. 7	P	9	38	48						Ditto.
*27	Mar. 7	P	9	39	35						Ditto.
*28	Mar. 7	P	9	41	43						Ditto.
*29	Mar. 7	P	9	44	33						Ditto.
30	Mar. 7	MZ	10	01	41	1.6			±5		Ditto.
		FZ	10	02	30						
31	Mar. 7	MZ	10	06	54				±3		Ditto.
		eFZ	10	07	30						
32	Mar. 7	MZ	10	08	38				±3		Ditto.
		FZ	10	09	±						
33	Mar. 7	MZ	10	11	02				±38		Ditto.
		FZ	10	12	±						
34	Mar. 7	P	10	12	44					116	Ditto.
		L	10	12	59						
		MN	10	13	04	0.9			±8		
35	Mar. 7	P	10	14	02					111	Ditto.
		L	10	14	17						
		MZ	10	14	23						
		eFZ	10	15	30				±8		

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
36	Mar. 7	eP	10	19	36						Ditto.
		L	10	19	50						
		MZ	10	19	52	0.9				±16	
		eFZ	10	20	30						
37	Mar. 7	eP	10	22	36						Ditto.
		L	10	22	48						
38	Mar. 7	MZ	10	23	01					±11	Ditto.
		eFZ	10	23	30						
39	Mar. 7	MZ	10	25	15					±1	Ditto.
40	Mar. 7	MZ	10	29	40					±2	Ditto.
41	Mar. 7	MZ	10	30	05	1.0				±3	Ditto.
42	Mar. 7	P	10	32	43					±4	116
		L	10	32	59						
		MZ	10	33	01	1.3				±60	
		eFZ	10	36	30						
43	Mar. 7	P	10	36	39						134
		L	10	36	57						
		ME	10	36	58				±75		
		MN	10	37	00	3.1			±75		
		MZ	10	37	00					±9	
44	Mar. 7	P	10	38	04						94
		L	10	38	17						
		ME	10	38	21				±18		
		MN	10	38	21					±53	
		MZ	10	38	23					±6	
45	Mar. 7	P	10	38	51						115
		L	10	33	06						

No.	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
46	Mar. 7	ME	10 39 08		$\pm 13$			115	Ditto.
		MN	10 39 08			$\pm 13$			
		P	10 39 42						
		L	10 39 58						
		ME	10 39 59		$\pm 13$				
		MN	10 39 59			$\pm 11$			
		eFE	10 40 30						
eFN	10 40 30								
47	Mar. 7	eP	10 41 17	2.5	$\pm 63$	$\pm 106'$	$\pm 13$	Ditto.	
		L	10 41 29						
		ME	10 41 34						
		MN	10 41 40						
		MZ	10 41 29						
		eFE	10 42 30						
		eFN	10 42 30						
		eFZ	10 42 30						
48	Mar. 7	L	10 43 39		$\pm 8$	$\pm 6$		Ditto.	
		ME	10 43 41						
		MN	10 43 41						
		FE	10 44 $\pm$						
		FN	10 44 $\pm$						
49	Mar. 7	L	10 44 22					Upper course of the River Yoshino.	
		FE	10 45 $\pm$						
		FN	10 45 $\pm$						
50	Mar. 7	eP	10 46 33					After Shock of No. 20.	
*51	Mar. 7	P	10 46 44	0.5	$> \pm 1788$	$> \pm 1338$	$\pm 194$	116	Ditto.
		L	10 47 00						
		M <sub>1</sub> E	10 47 18						
		M <sub>1</sub> N	10 47 20						
		MZ	10 47 14						

No.	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			$\Delta$ km.	Remarks		
					AE $\mu$	AN $\mu$	AZ $\mu$				
52	Mar. 7	P	10 47 00						Ditto.		
53	Mar. 7	eP	10 52 02						Ditto.		
54	Mar. 7	eP	10 53 01						Ditto.		
										L	10 53 13
										MN	10 53 14
										MZ	10 52 18
55	Mar. 7	P	11 01 03					100	Ditto.		
										L	11 01 16
										MN	11 01 18
										MZ	11 01 24
56	Mar. 7	L	11 02 42						Ditto.		
										MN	11 02 43
										MZ	11 02 50
										eFN	11 03 20
										eFZ	11 03 20
57	Mar. 7	P	11 10 19						Ditto.		
										L	11 10 32
										ME	11 10 36
										MN	11 10 36
										FE	11 11 $\pm$
										FN	11 11 $\pm$
58	Mar. 7	P	11 13 25					86	Ditto.		
										L	11 13 37
										F	11 14 $\pm$

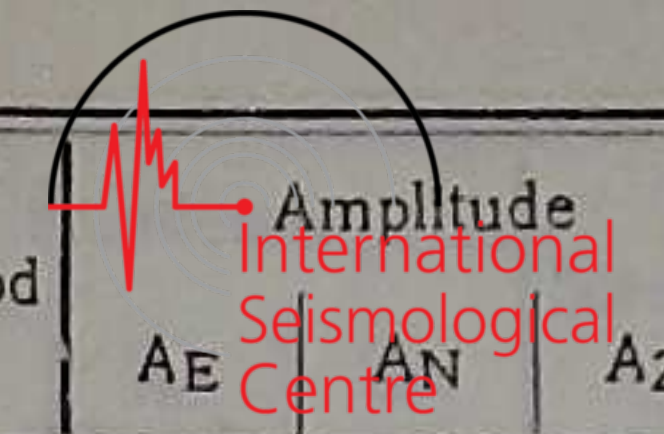
No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
59	Mar. 7	P	11 22 17					116	Ditto.
		L	11 22 33						
		ME	11 22 38		±225				
		MN	11 22 37	2.7		+313			
		MZ	11 22 35	1.2			±31		
		CE	11 26 27	3.2	±38				
		CN	11 26 15	3.2		±38			
eFZ	11 24 30								
60	Mar. 7	ME	11 23 34						Ditto.
		MN	11 27 34			±10			
61	Mar. 7	P	11 27 17					109	Ditto.
		L	11 27 31						
62	Mar. 7	P	11 28 12					98	Ditto.
		L	11 28 26						
		eFE	11 28 40						
		eFN	11 28 40						
63	Mar. 7	L	11 37 26						Ditto.
		ME	11 37 27		±15				
		MN	11 37 27			±18			
		eFE	11 37 40						
		eFN	11 37 40						
64	Mar. 7	eP	11 42 29						Ditto.
		L	11 42 43						
		ME	11 42 50		±68				
		MN	11 42 48	0.5		±31			
65	Mar. 7	ME	11 43 31						Ditto.
		MN	11 43 31		±6				
		eFE	11 43 40			±11			
		eFN	11 43 40						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
66	Mar. 7	ME	11 49 46	0.8	±18				Ditto.
		MN	11 49 43	0.8		±14			
		MZ	11 49 42				±5		
67	Mar. 7	eP	11 50 08						Ditto.
		L	11 50 20						
		ME	11 50 25	0.5	±21				
		MN	11 50 24			±28			
		MZ	11 50 26	0.9			±13		
		eFE	11 50 30						
eFN	11 50 30								
eFZ	11 50 30								
68	Mar. 7	eP	11 53 43						Ditto.
		L	11 53 56						
		ME	11 53 01		±13				
		MN	11 53 01	0.6		±15			
MZ	11 53 00				±3				
69	Mar. 7	P	11 54 23					119	Ditto.
		L	11 54 39						
		ME	11 54 43		±15				
		MN	11 54 43			±15			
		MZ	11 54 39				±6		
		eFE	11 55 30						
		eFN	11 55 30						
		eFZ	11 55 30						
70	Mar. 7	ME	12 00 56						Ditto.
		MN	12 00 56						
		FE	12 01 ±						
		FN	12 01 ±						
71	Mar. 7	eP	12 02 11						Ditto.
		L	12 02 27						
		ME	12 02 29		±6				



No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
		MN	12 03 29			±6			
		MZ	12 03 23				±3		
		FE	12 03 ±						
		FN	12 03 ±						
		FZ	12 03 ±						
72	Mar. 7	ME	12 08 35		±4			Ditto.	
		MN	12 08 35			±3			
		FE	12 09 ±						
		FN	12 09 ±						
73	Mar. 7	P	12 16 54				101	Ditto.	
		L	12 17 08						
		ME	12 17 14		±6				
		MN	12 17 14			±6			
		MZ	12 17 11				±4		
		eFE	12 17 40						
		eFN	12 17 40						
		eFZ	12 17 30						
74	Mar. 7	L	12 20 56					Ditto.	
		ME	12 20 58		±5				
		MZ	12 21 00	1.3			±25		
		eFZ	12 21 30						
75	Mar. 7	P	12 21 36				85	Ditto.	
		L	12 21 48						
		ME	12 21 56	0.9	±50				
		MN	12 21 56			±44			
		MZ	12 21 51	0.9			±16		
76	Mar. 7	P	12 22 43				82	Ditto.	
		L	12 22 54						
		ME	12 22 59		±15				
		MN	12 22 59	0.6		±16			
		MZ	12 22 58				±5		

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
		eFE	12 23 30						
		eFN	12 23 30						
		eFZ	12 23 30						
		P	12 34 13					97	Ditto.
		L	12 34 26						
		ME	12 34 33		±25				
		MN	12 34 33			±13			
		MZ	12 34 44				±3		
		eFE	12 35 30						
		eFN	12 35 30						
		eFZ	12 35 30						
78	Mar. 7	ME	13 03 41		±4			Ditto.	
		MZ	13 03 40				±3		
79	Mar. 7	P	13 04 01				81	Ditto.	
		L	13 04 12						
		ME	13 04 14	0.8	±35				
		MZ	13 04 15				±8		
		eFE	13 05 30						
		FZ	13 05 ±						
80	Mar. 7	P	13 23 59				84	Ditto.	
		L	13 24 10						
		ME	13 24 13		±19				
		MN	13 24 13			±21			
		MZ	13 24 14	0.9			±13		
81	Mar. 7	P	13 24 33				79	Ditto.	
		L	13 24 43						
		M <sub>1</sub> E	13 24 49		> ±1413				
		M <sub>1</sub> N	13 24 55			> ±1638			
		M <sub>1</sub> Z	13 24 48	0.6			±119		
		M <sub>2</sub> E	13 24 56	1.8	±663				
		M <sub>2</sub> N	13 25 03	2.6		±1113			



No.	Date	Phase	Time G. M. T.	Period s	Amplitude			D	Remarks
					AE μ	AN μ	AZ μ		
		M <sub>2</sub> Z	13 24 56				±119		
		eFE	13 33 30						
		eFN	13 33 30						
		eFz	13 30 30						
82	Mar. 7	eP	13 25 38					93	Ditto.
83	Mar. 7	eP	13 28 23						Ditto.
84	Mar. 7	P	13 45 43						Ditto.
		L	13 45 55						
		ME	13 45 56		±5				
		MN	13 45 56			±6			
85	Mar. 7	eP	13 46 01						Ditto.
		L	13 46 13						
		ME	13 46 16		±19				
		MN	13 46 17			±19			
		MZ	13 46 14				±6		
		eFE	13 47 ±						
		eFN	13 47 ±						
		eFz	13 46 40						
86	Mar. 7	P	13 52 31					93	Ditto.
		L	13 52 53						
		ME	13 53 05		±4				
		MN	13 53 05			±4			
		MZ	13 52 57				±3		
		eFE	13 55 30						
		eFN	13 55 30						
		eFz	13 55 30						
87	Mar. 7	P	14 02 51						Ditto.
87	Mar. 7	P	14 07 46						Ditto.

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			D	Remarks
					AE μ	AN μ	AZ μ		
89	Mar. 7	P	14 11 40						Ditto.
		L	14 11 54						
		ME	14 11 54		±88				
		MN	14 11 54			±88			
		MZ	14 11 55	1.0			±38		
		FE	14 15 24						
		FN	14 15 40						
		FZ	14 14 22						
90	Mar. 7	P	14 18 07						Ditto.
91	Mar. 7	P	14 20 35					100	Ditto.
		L	14 20 48						
		ME	14 20 54		±10				
		MN	14 20 53			±13			
		MZ	14 20 53						
		FE	14 21 44						
		FN	14 22 04						
92	Mar. 7	P	14 28 05						Ditto.
93	Mar. 7	P	14 31 13					101	Ditto.
		L	14 31 26						
		ME	14 31 28		±9				
		MN	14 31 27			±9			
		MZ	14 31 27						
		FE	14 32 04						
		FN	14 31 50						
94	Mar. 7	P	14 37 21					101	Ditto.
		L	14 37 35						
		MZ	14 37 37						
		FN	14 38 ±						
95	Mar. 7	P	14 45 18						Ditto.

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T		μ	μ	μ	km.	
96	Mar. 7	P	14 46 02					145	Ditto.
		L	14 46 21						
		ME	14 46 26		±19				
		MN	14 46 23			±25			
		MZ	14 46 22						
		eFE	14 47 30						
		eFN	14 47 20						
97	Mar. 7	P	14 47 26						Ditto.
98	Mar. 7	P	14 49 40						Ditto.
99	Mar. 7	MN	14 50 51						Ditto.
100	Mar. 7	P	15 03 31						Ditto.
		ME	15 03 42						
		MN	15 03 59						
		eFE	15 05 20						
		eFN	15 05 20						
101	Mar. 7	P	15 08 01						Ditto.
		F	15 09 ±						
102	Mar. 7	P	15 29 43						Ditto.
		L	15 29 57					104	In the Bay of Miho, Tottori Prefecture.
		ME	15 30 10		±26				
		MN	15 30 08			±35			
		MZ	15 29 59						
		eFE	15 31 10						
		eFN	15 31 20						
		Fz	15 31 ±				±13		
103	Mar. 7	P	15 32 04						After shock of No. 20.
104	Mar. 7	P	15 34 58						Ditto.

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
105	Mar. 7	P	15 36 32						Ditto.
		L	15 36 45						
		ME	15 36 51	4.1	±1600				
		MN	15 36 46	2.7		±938			
		MZ	15 36 50				±219		
		CE	15 38 37	3.5	±163				
		CN	15 39 02	3.6		±206			
		FE	15 44 33						
		FN	15 44 33						
		FZ	15 41 32						
106	Mar. 7	P	15 44 43					91	Ditto.
		L	15 44 56						
		ME	15 44 58	1.2	±15				
		MN	15 44 59	1.2		±16			
		MZ	15 44 57				±9		
		FE	15 46 14						
		FN	15 46 07						
107	Mar. 7	P	15 49 01					111	Ditto.
		L	15 49 16						
		ME	15 49 32	3.5	±175				
		MN	15 49 30	3.1		±154			
		MZ	15 49 21	1.2			±35		
		FE	15 55 20						
		FN	15 55 20						
108	Mar. 7	P	15 55 20						Ditto.
109	Mar. 7	P	16 03 10						Ditto.
110	Mar. 7	P	16 05 02						Ditto.
111	Mar. 7	P	16 09 26					89	Ditto.
		L	16 09 38						
		F	16 10 08						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
112	Mar. 7	P	16	15	26					111	Ditto.
		L	16	15	41						
		ME	16	15	50						
		MN	16	15	54						
		FE	16	16	52						
		FN	16	16	55						
113	Mar. 7	P	16	34	07						Ditto.
		ME	16	34	21	$\pm 19$					
		MN	16	34	21		$\pm 19$				
		MZ	16	34	20						
		FE	16	35	05						
		FN	16	35	05						
114	Mar. 7	P	16	53	57						Ditto.
		ME	16	54	10						
		MN	16	54	07						
		eFE	16	54	30						
		eFN	16	54	30						
115	Mar. 7	P	17	04	20						Ditto.
		F	17	05	13						
116	Mar. 7	P	18	03	31					111	Ditto.
		L	18	03	46						
		ME	18	03	48	$\pm 10$					
		MN	18	03	48		$\pm 13$				
		MZ	18	03	47						
		FE	18	04	21						
117	Mar. 7	P	18	41	04						Ditto.
118	Mar. 7	P	18	43	31						Ditto.
119	Mar. 7	P	18	47	27						Ditto.

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks			
		G.	M.	T.		AE	AN	AZ					
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.				
0 Mar. 7	P	19	34	03					89	Ditto.			
	L	19	34	15									
	ME	19	34	20	$\pm 21$								
	MN	19	34	22		$\pm 24$							
	MZ	19	34	21									
	FE	19	35	31									
1 Mar. 7	P	19	44	47						Ditto.			
	2 Mar. 7	P	19	54	00							91	Ditto.
		L	19	54	12								
		ME	19	54	19	$\pm 88$							
		MN	19	54	13		$\pm 35$						
MZ		19	54	14			$\pm 10$						
3 Mar. 7	P	21	21	53						Ditto.			
	ME	21	20	12	$\pm 15$								
	MN	21	22	06		$\pm 15$							
	MZ	21	22	07									
	FE	21	23	13									
	FN	21	22	56									
24 Mar. 7	P	21	53	34						Ditto.			
	ME	21	53	49									
	MN	21	53	49		$\pm 16$							
	eFE	21	54	31									
	eFN	21	54	31									

No.	Date	Phase	Time		Period	Amplitude			Δ	Remarks	
			G. M. T.			AE	AN	AZ			
			h	m		s	μ	μ			μ
125	Mar. 7	P	22	16	31				101	Ditto.	
		L	22	16	44						
		ME	22	16	51	±63					
		MN	22	16	48		±46				
		MZ	22	16	49			±18			
		FN	22	17	43						
126	Mar. 7	P	22	17	43					Ditto.	
127	Mar. 7	P	22	32	17				111	Ditto.	
		L	22	32	32						
		MN	22	32	34		±16				
		eFN	22	33	30						
128	Mar. 7	P	23	03	38					Ditto.	
129	Mar. 7	P	23	35	14				122	Ditto.	
		L	23	35	31						
		ME	23	35	38	±50					
		MN	23	35	44		±29				
		MZ	23	35	41						
		FE	23	36	42						
		FN	23	36	42						
130	Mar. 7	eP	23	52	49					Ditto.	
131	Mar. 8	P	0	13	53				97	Ditto.	
		L	0	14	06						
		ME	0	14	13	±313					
		MN	0	14	07		±263				
		MZ	0	14	06			±113			
		FE	0	17	53						
		FN	0	17	57						
		FZ	0	17	53						
132	Mar. 8	P	0	19	54					Ditto.	

No.	Date	Phase	Time		Period	Amplitude			Δ	Remarks	
			G. M. T.			AE	AN	AZ			
			h	m		s	μ	μ			μ
		ME	0	20	12	±25					
		MN	0	20	13		±30				
		MZ	0	20	11			±9			
		FE	0	21	40						
		FN	0	21	28						
		FZ	0	21	±						
33	Mar. 8	MN	1	00	25					Ditto.	
34	Mar. 8	P	1	14	51				89	Ditto.	
		L	1	15	29						
		ME	1	15	07	±34					
		MN	1	15	07		±56				
		MZ	1	15	03			±25			
		eFE	1	16	27						
		FN	1	16	19						
		FZ	1	16	±						
35	Mar. 8	MN	1	33	18					Ditto.	
36	Mar. 8	ME	2	07	46					Ditto.	
		MN	2	07	39						
37	Mar. 8	P	2	17	22					Ditto.	
		ME	2	17	33	2.4	±25				
		MN	2	17	36	2.1		±38			
		MZ	2	17	25			±6			
		eFN	2	18	30						
38	Mar. 8	MN	3	39	07					Ditto.	
		MZ	3	39	07						
39	Mar. 8	MN	5	14	00					Ditto.	
40	Mar. 8	eP	7	28	31					Ditto.	
		F	7	29	±						

No	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
141	Mar. 8	P	7 30 01					99	Ditto.
		L	7 30 15						
		ME	7 30 16		±18				
		MN	7 30 16			±15			
		FE	7 31 ±						
		FN	7 31 ±						
142	Mar. 8	ME	7 41 56		±10				Ditto.
		MN	7 41 56			±8			
		eFE	7 42 10						
		eFN	7 42 10						
143	Mar. 8	ME	7 59 39		±4				Ditto.
		MN	7 59 39			±5			
		FE	8 00 ±						
		FN	8 00 ±						
144	Mar. 8	ME	8 49 02		±3				Ditto.
		eFE	8 49 09						
145	Mar. 8	L	9 11 04						Ditto.
		ME	9 11 07		±4				
		MN	9 11 07			±5			
		eFE	9 11 30						
		eFN	9 11 30						
146	Mar. 8	ME	9 55 20		±6				Ditto.
		MN	9 55 20			±5			
		eFE	9 55 30						
		eFN	9 55 30						
147	Mar. 8	ME	10 14 11		±6				Ditto.
		MN	10 14 11			±9			
		eFE	10 14 30						
		eFN	10 14 30						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
48	Mar. 8	P	10 33 16		-25	-38	+15	83	Ditto.
		L	10 33 28						
		ME	10 33 28		±70				
		MN	10 33 28			±100			
		MZ	10 33 34				±34		
		eFE	10 34 52						
		eFN	10 35 09						
		eFZ	10 35 29						
		49	Mar. 8	eP	12 05 00				
L	12 05 10								
ME	12 05 13				±13				
MN	12 05 13					±15			
MZ	12 05 11						±5		
FE	12 06 ±								
50	Mar. 8	ME	12 57 53						Ditto.
		eFE	12 58 08						
51	Mar. 8	eP	13 06 56						Ditto.
		ME	13 07 07		±21				
		MN	13 07 08			±19			
		FE	13 08 ±						
		FN	13 08 ±						
52	Mar. 8	ME	13 45 57		±8				Ditto.
		MN	13 45 57			±5			
		eFE	13 46 08						
		eFN	13 40 08						
53	Mar. 8	P	14 43 52		-21	-19	+9	100	Ditto.
		L	14 45 06						
		ME	14 45 07	2.7	±1500				
		MN	14 45 07	3.6		±963			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
154	Mar. 8	MZ	14 45 06				$\pm 188$	99	Ditto.
		FE	14 52 $\pm$						
		FN	14 52 $\pm$						
		FZ	14 51 $\pm$						
		P	18 00 48						
		L	18 01 02						
		ME	18 01 04			$\pm 15$			
		MN	18 01 04						
		eFE	18 01 50						
		eFN	18 01 50						
155	Mar. 8	ME	20 18 35			$\pm 8$	Ditto.		
		MN	20 18 35			$\pm 9$			
		FE	20 19 $\pm$						
		FN	20 19 $\pm$						
156	Mar. 8	P	21 33 27				105	Ditto.	
		L	21 33 41						
		ME	21 33 43			$\pm 11$			
		MN	21 33 43			$\pm 13$			
		eFE	21 34 30						
		eFN	21 34 30						
157	Mar. 8	P	23 06 27				95	Ditto.	
		ME	23 06 45	1.5	$\pm 111$				
		MN	23 06 52	2.1		$\pm 185$			
		MZ	23 06 45	1.2		$\pm 85$			
		eFE	23 10 40						
		eFN	23 10 43						
		eFz	23 09 $\pm$						
158	Mar. 9	ME	1 10 44				Ditto.		
		MN	1 10 44						
159	Mar. 9	P	1 49 43				119	Ditto.	

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
0	Mar. 9	L	1 49 59					0.9	$\pm 58$
		ME	1 50 00						
		MN	1 50 00				$\pm 31$		
		MZ	1 49 59				$\pm 23$		
		FE	1 52 $\pm$						
		FN	1 52 $\pm$						
		FZ	1 52 $\pm$						
1	Mar. 9	ME	2 54 52				Ditto.		
		MN	2 54 52						
2	Mar. 9	ME	3 50 42				Ditto.		
		MN	3 50 42						
3	Mar. 9	P	4 25 07				89	Ditto.	
		L	4 25 19						
		ME	4 25 21			$\pm 44$			
		MN	4 25 21			$\pm 44$			
		MZ	4 25 21			$\pm 23$			
		eFE	4 26 30						
		eFN	4 26 30						
		eFz	4 26 30						
4	Mar. 9	ME	4 55 55				Ditto.		
		MN	4 55 55			$\pm 5$			
5	Mar. 9	P	11 44 57				96	Ditto.	
		L	11 45 10						
		ME	11 45 12			$\pm 122$			
		MN	11 45 12			$\pm 113$			
		MZ	11 45 11			$\pm 44$			
		eFE	11 48 30						
		eFN	11 48 30						
		eFz	11 47 30						
6	Mar. 9	P	12 24 38				109	Ditto.	

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		μ	μ	μ		
166	Mar. 9	L	12	24	53				.106	Ditto.	
		ME	12	24	55	±44					
		MN	12	24	56		±25				
		MZ	12	24	58			±5			
		eFE	12	27	30						
		eFN	12	27	30						
		eFz	12	26	30						
167	Mar. 9	P	13	29	37				.106	Ditto.	
		L	13	29	51						
		ME	13	28	52	±13					
		MN	13	28	52		±11				
		eFE	13	30	20						
		eFN	13	30	20						
168	Mar. 9	ME	14	03	37				.106	Ditto.	
		MN	14	03	37						
		FE	14	04	±						
		FN	14	04	±						
169	Mar. 9	ME	15	19	21		±3		.106	Ditto.	
		MN	15	19	24			±3			
		FE	15	20	±						
		FN	15	20	±						
170	Mar. 9	P	18	54	22				.106	Ditto.	
		L	18	54	34						
		ME	18	54	34	±25					
		MN	18	54	34		±23				
170	Mar. 9	P	18	55	47				.104	Ditto.	
		L	18	56	01						
		ME	18	56	03	±19					
		MN	18	56	03			±13			
		FE	19	07	±						
		FN	19	07	±						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		μ	μ	μ		
1	Mar. 9	P	19	46	13				.102	Ditto.	
		L	19	46	27						
		ME	19	46	28	±18					
		MN	19	46	28			±15			
		eFE	19	47	20						
		eFN	19	47	20						
2	Mar. 9	eP	19	50	37				.102	Ditto.	
		eFE	19	51	20						
		eFN	19	51	20						
3	Mar. 9	eP	19	53	29				.102	Ditto.	
		eFE	19	54	±						
		eFN	19	54	±						
4	Mar. 9	P	20	26	58				.115	Ditto.	
		L	20	27	14						
		M <sub>1</sub> E	20	27	15	±77					
		M <sub>1</sub> N	20	27	15			±91			
		MZ	20	27	17						
		M <sub>2</sub> E	20	27	32	2.0	±88				
		M <sub>2</sub> N	20	27	30			±88			
		eFE	20	31	20						
eFN	20	31	20								
Fz	20	28	±								
5	Mar. 9	eP	21	02	09				.111	Ditto.	
		eFE	21	03	30						
		eFN	21	03	30						
6	Mar. 9	P	22	42	23				.111	Ditto.	
		L	22	42	38						
		ME	22	42	42	±21					
		MN	22	42	42						
		eFE	22	43	30						
		eFN	22	43	30						



No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
177	Mar. 9	eP	22 45 50					Ditto.	
178	Mar. 10	eMN	0 00 29					Ditto.	
179	Mar. 10	P	2 47 31				104	Ditto.	
		L	2 47 45						
		ME	2 47 48		$\pm 25$				
		MN	2 47 48			$\pm 38$			
		eFE	2 48 30						
		eFN	2 48 30						
180	Mar. 10	eP	3 01 27					Ditto.	
		L	3 01 42						
		ME	3 01 44		$\pm 13$				
		MN	3 01 44			$\pm 15$			
		eFE	3 02 30						
		eFN	3 02 30						
181	Mar. 10	eP	5 51 46					Ditto.	
		L	5 52 01						
		MN	5 52 07	1.8		$\pm 13$			
		eFE	5 53 30						
		eFN	5 53 30						
182	Mar. 10	ME	6 18 44					Ditto.	
		MN	6 18 41						
183	Mar. 10	ME	9 01 33					Ditto.	
		MN	9 01 23						
184	Mar. 10	ME	20 39 00		$\pm 13$			Ditto.	
		MN	20 39 00			$\pm 9$			
		eFE	20 39 20						
		eFN	20 39 20						
*185	Mar. 10	P	22 36 17		$+13$	$-23$	$+9$	98	Ditto.

Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
				AE $\mu$	AN $\mu$	AZ $\mu$		
	L	22 36 30						
	M <sub>1</sub> E	22 36 32	1.1	$\pm 606$				
	M <sub>1</sub> N	22 36 32			$\pm 375$			
	MZ	22 36 32				$\pm 125$		
	M <sub>2</sub> E	22 36 38	2.6	$\pm 1250$				
	M <sub>2</sub> N	22 36 42			$\pm 365$			
	eFE	22 45 20						
	eFN	22 45 20						
	eFZ	22 38 20						
3 Mar. 11	eP	0 37 22						Ditto.
7 Mar. 11	P	0 50 34		$-9$	$+19$	$+4$	111	Ditto.
	L	0 50 49						
	ME	0 50 54	0.5	$\pm 110$				
	MN	0 50 51			$\pm 131$			
	MZ	0 50 55				$\pm 50$		
3 Mar. 11	ME	0 55 58						Ditto.
	MN	0 55 58						
9 Mar. 11	eP	1 27 39						Ditto.
	ME	1 27 50		$\pm 6$				
	MN	1 27 53			$\pm 6$			
	eFE	1 28 20						
	eFN	1 28 20						
0 Mar. 11	eP	6 14 28						Ditto.
	L	6 14 40						
	ME	6 14 41		$\pm 13$				
	MN	6 14 41			$\pm 10$			
	eFE	6 15 20						
	eFN	6 15 20						
1 Mar. 11	ME	8 59 58						Ditto.
	MN	8 59 58						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
192	Mar. 11	eFE	9	00	50					91	Ditto.
		eFN	9	00	50						
		P	14	43	21						
		L	14	43	34						
		ME	14	43	34		±8				
		MN	14	43	35			±8			
		eFE	14	44	20						
eFN	14	44	20								
193	Mar. 11	ME	16	13	10		±3				Ditto.
		MN	16	13	10			±5			
		eFE	16	13	20						
		eFN	16	13	20						
*194	Mar. 11	P	20	30	16		+9	+15	+10	117	Ditto.
		L	20	30	32						
		ME	20	30	36	1.4	±294				
		MN	20	30	38	0.6		±240			
		MZ	20	30	44				±85		
		eFE	20	36	10						
		eFN	20	36	10						
		eFZ	20	35	10						
195	Mar. 12	ME	3	21	00		±5				Ditto.
		MN	3	20	10			±5			
		eFE	3	20	40						
		eFN	3	20	40						
196	Mar. 12	eP	6	27	14						Ditto.
		L	6	27	25						
		ME	6	27	40	1.6	±50				
		MN	6	27	40	1.6		±90			
		MZ	6	27	39				±13		
		eFE	6	32	10						
eFN	6	32	10								

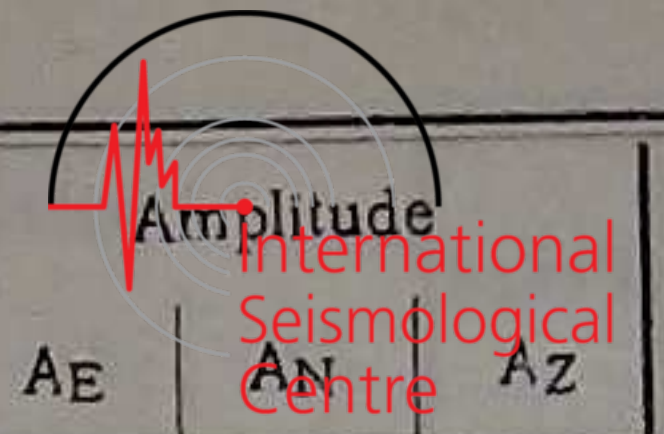
No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
7	Mar. 12	eFZ	6	29	10						Ditto.
		eP	8	15	00						
		L	8	15	13						
		ME	8	15	14		±8				
		MN	8	15	14	0.6		±10			
		eFE	8	15	40						
		eFN	8	15	40						
8	Mar. 13	L	2	47	04						In the Kitan Strait.
		ME	2	47	04		±14				
		MN	2	47	04			±15			
		FE	2	47	±						
FN	2	47	±								
9	Mar. 13	P	4	37	23					119	After shock of No. 20.
		L	4	37	39						
		ME	4	37	41		±46				
		MN	4	37	45	2.3		±83			
		MZ	4	37	48				±6		
		eFE	4	38	40						
		eFN	4	38	30						
eFZ	4	38	30								
10	Mar. 13	P	7	06	56					124	Ditto.
		L	7	07	12						
		ME	7	07	17		±6				
		MN	7	07	17	1.7		±23			
		eFE	7	07	30						
		FN	7	08	±						
11	Mar. 13	eP	11	35	11						Ditto.
		L	11	35	26						
		ME	11	35	27		±6				
		MN	11	35	27			±8			
		MZ	11	35	27						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks		
					AE	AN	AZ				
			G. M. T.		$\mu$	$\mu$	$\mu$	km.			
			h m s	s	$\mu$	$\mu$	$\mu$				
202	Mar. 13	FE	11 36 ±					Ditto.			
		FN	11 36 ±								
		ME	21 46 58								
		MN	21 46 58		±4						
		eFE	21 47 10								
		eFN	21 47 10								
203	Mar. 14	eP	1 34 30					Ditto.			
		L	1 34 40								
		ME	1 34 40	±6							
		MN	1 34 40		±6						
		FE	1 35 ±								
		FN	1 35 ±								
204	Mar. 14	P	3 49 45				87	Ditto.			
		L	3 49 57								
		ME	3 50 00	0.6	±69						
		MN	3 50 00			±44					
		MZ	3 49 58				±36				
		FE	3 52 ±								
		FN	3 52 ±								
		FZ	3 52 ±								
		205	Mar. 14	ME	11 13 32		±10				Ditto.
				MN	11 13 32				±15		
FE	11 14 ±										
FN	11 14 ±										
206	Mar. 15	ME	22 08 25	1.06	±8			In the vicinity of Mongolia, North China.			
		MN	22 09 12								
		FE	22 13 ±								
		FN	22 13 ±								
207	Mar. 16	P	6 54 48					994 NE off Miyako, Iwate Prefecture.			
		S	6 56 19								
		L	6 57 02								

Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
				AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.
			h m s	s	$\mu$	$\mu$	$\mu$	
		ME	6 58 12	3.0	±38			
		MN	6 58 02	2.7		±28		
		FE	7 03 ±					
		FN	7 03 ±					
Mar. 16		eP	19 53 52					After shock of No. 20.
		L	19 54 01					
		ME	19 54 08		±9			
		MN	19 54 08			±14		
		FE	19 55 ±					
		FN	19 55 ±					
Mar. 18		P	12 47 59				79	Ditto.
		L	12 48 10					
		ME	12 48 15		±448			
		MN	12 48 14			±175		
		MZ	12 48 19				±56	
		eFE	12 49 40					
		eFN	12 49 40					
		eFz	12 49 40					
Mar. 18		ME	20 18 52					Ditto.
		MN	20 18 52					
		eFE	20 19 40					
		eFN	20 19 40					
Mar. 18		eP	21 29 40					Ditto.
		L	21 29 52					
		MN	21 29 55					
		eFE	21 30 40					
Mar. 19		eFN	21 30 40					Ditto.
		ME	6 51 03		±15			
		MN	6 51 03			±15		
		eFE	6 51 40					
Mar. 19		eFN	6 51 40					

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
			G.	M.		T.	AE	AN			AZ
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
213	Mar. 20	P	4	45	30	0.9	$\pm 66$	$\pm 40$	$\pm 35$	108	Ditto.
		L	4	45	45						
		ME	4	45	50						
		MN	4	45	53						
		MZ	4	45	49						
		eFE	4	49	30						
		eFN	4	49	30						
		eFZ	4	48	30						
214	Mar. 20	ME	13	46	20			$\pm 3$			Ditto.
		MN	13	46	20						
		FE	13	47	$\pm$						
		FN	13	47	$\pm$						
215	Mar. 20	P	17	42	27		$\pm 10$	$\pm 10$		125	Ditto.
		L	17	42	44						
		ME	17	42	47						
		MN	17	42	47						
		eFE	17	43	30						
		eFN	17	43	30						
216	Mar. 22	eP	3	57	59		$\pm 15$	$\pm 13$			Ditto.
		L	3	58	10						
		ME	3	58	21						
		MN	3	58	21						
		eFE	3	59	30						
		eFN	3	59	30						
217	Mar. 23	ME	23	42	04		$\pm 5$	$\pm 6$			Ditto.
		MN	23	42	04						
		eFE	23	42	30						
		eFN	23	42	30						
218	Mar. 24	P	0	48	54					71	In the catchment of the Naga River, Province.
		L	0	49	04						
		ME	0	49	04						

Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks		
		G.	M.		T.	AE	AN			AZ	
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.		
	Mar. 24	MN	0	49	04	0.5		$\pm 48$			Ditto.
		FE	0	50	$\pm$						
		FN	0	50	$\pm$						
		ME	15	35	05						
	Mar. 25	MN	15	35	05	1.1	$\pm 15$	$\pm 13$			Ditto.
		eFE	15	35	50						
		eFN	15	35	50						
		P	10	13	46						
1	Mar. 26	L	10	13	57		$\pm 25$	$\pm 15$		70	In the Kii Channel.
		ME	10	14	00						
		MN	10	14	00						
		eFE	10	14	40						
		eFN	10	14	40						
		P	0	36	27						
2	Mar. 28	L	0	36	37		$\pm 15$	$\pm 13$		112	After shock of No. 20.
		ME	0	36	38						
		MN	0	36	38						
		FE	0	37	$\pm$						
		FN	0	37	$\pm$						
		P	20	06	58						
3	Mar. 30	L	20	07	13	0.5	$\pm 41$	$\pm 63$		125	Ditto.
		ME	20	07	14						
		MN	20	07	14						
		FE	20	08	$\pm$						
		FN	20	08	$\pm$						
		P	13	30	56						
	Mar. 30	L	13	31	13						Ditto.
		ME	13	31	13						
		MN	13	31	19						
		eFE	13	35	50						
		eFN	13	35	50						



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s				74	Ditto.
224	Mar. 30	P	13 57 26		$\pm 6$	$\pm 8$		74	Ditto.
		L	13 57 36						
		ME	13 57 42						
		MN	13 57 39						
		eFE	13 58 20						
		eFN	13 58 20						
225	Mar. 30	P	18 35 14				90	Ditto.	
		L	18 35 26						
		ME	18 35 27						
		MN	18 35 27						
		eFE	18 35 45						
		eFN	18 35 45						
226	Mar. 31	eP	2 45 30		$\pm 8$	$\pm 8$		96	Ditto.
		L	2 45 55						
		ME	2 45 57						
		MN	2 45 57						
		eFE	2 46 40						
		eFN	2 46 40						
*227	Mar. 31	eP	21 08 52	3.0	$+101$	$-253$	$+203$	96	The greatest aftershock of No. 20; and at epicentral region strong shocks were felt.
		L	21 09 05						
		M <sub>1</sub> E	21 09 05						
		M <sub>1</sub> N	21 09 05						
		M <sub>1</sub> Z	21 09 05						
		M <sub>2</sub> E	21 11 10						
		M <sub>2</sub> N	21 11 10						
		M <sub>2</sub> Z	21 11 10						
		eFE	21 24 40						
		eFN	21 24 40						
		eFz	21 19 40						
223	Apr. 1	P	2 42 00		$\pm 13$			91	After shock of No. 20.
		L	2 42 12						
		ME	2 42 15						

Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
				AE	AN	AZ		
		G. M. T.		$\mu$	$\mu$	$\mu$	km.	
		h m s	s					
Apr. 1	MN	2 42 14			$\pm 13$			Ditto.
	eP	5 50 12						Ditto.
	L	5 50 27						
	ME	5 50 28						
	MN	5 50 28			$\pm 13$			
	FE	5 51 $\pm$						
FN	5 51 $\pm$							
Apr. 1	P	9 23 45					68	Ditto.
	L	9 23 55						
	ME	9 24 01		$\pm 128$				
	MN	9 24 07	0.6		$\pm 206$			
	MZ	9 24 01	0.6			$\pm 40$		
	eFE	9 29 40						
Apr. 1	eFN	9 29 40						A distant earthquake.
	eFz	9 28 40						
	eP	19 16 44						
	eL	19 26 17						
	ME	19 27 17	3.0	$\pm 15$				
Apr. 1	MN	19 27 11			$\pm 14$			NErn part of the Kii Channel.
	eFE	19 29 30						
	eFN	19 29 30						
	eP	20 55 09						
	L	20 55 22						
	ME	20 55 27		$\pm 13$				
Apr. 1	MN	20 55 27			$\pm 10$			Upper course of the River Masuda, Gifu Prefecture.
	FE	20 56 $\pm$						
	FN	20 56 $\pm$						
	eP	23 26 18			$\pm 131$			
	L	23 26 34						
Apr. 1	ME	23 26 36						
	MN	23 26 36			$\pm 88$			



No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G. M. T.				AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
234	Apr. 4	MZ	23	26	35	1.5	±11	±14	±50	29	The end part was indistinct by the pulsatory motion. In the Kii Channel
		eFE	23	32	30						
		eFN	23	32	30						
		eFZ	23	31	30						
235	Apr. 6	ME	5	03	01	1.1	±13	±11			
		MN	5	02	39						
236	Apr. 6	P	9	27	43	1.1	±6	±13			
		L	9	27	46						
		ME	9	27	47						
		MN	9	27	47						
		FE	9	28	±						
		FN	9	28	±						
237	Apr. 7	L	19	47	51	1.1	±6	±13			After shock of No.
		ME	19	47	54						
		MN	19	47	52						
		eFE	19	48	20						
		eFN	19	48	20						
238	Apr. 7	ME	20	59	06	1.1	±4	±4			A Local shock.
		MN	20	59	06						
		eFE	20	59	30						
		eFN	20	59	30						
239	Apr. 8	P	8	42	39	1.2	±30	±150			After shock of No.
		L	8	42	56						
		ME	8	43	02						
		MN	8	43	02						
		FE	8	48	±						
		FN	8	48	±						
239	Apr. 8	P	13	05	41	1.5	+11	-26		128	Ditto.
		L	13	05	58						
		ME	13	06	05						
Apr. 8	Apr. 8	MN	13	06	05	1.1	±4	±6			Ditto.
		CE	13	09	23						
		CN	13	09	59						
		FE	13	16	±						
		FN	13	16	±						
		FZ	13	07	±						
Apr. 9	Apr. 9	ME	23	03	17	1.1	±5	±6			Near the mouth of the River Arita, Wakayama Prefecture.
		MN	23	03	17						
		FE	23	04	±						
Apr. 10	Apr. 10	FE	23	04	±	1.1	±5	±6			
		FN	23	04	±						
		P	15	55	39						
Apr. 10	Apr. 10	L	15	55	50	1.1	±31	±43			85 After shock of No. 20.
		ME	15	55	55						
		MN	15	55	53						
		FE	15	57	±						
		FN	15	57	±						
Apr. 12	Apr. 12	P	3	31	26	1.2	±26	±19			188 Upper course of the River Masuda, Gifu Prefecture.
		L	3	31	51						
		ME	3	32	03						
		MN	3	32	06						
		eFE	3	36	±						
Apr. 13	Apr. 13	eFN	3	36	±	1.2	±26	±19			
		eP	13	49	02						
		ME	13	54	06						
Apr. 13	Apr. 13	MN	13	54	09	1.2	±9	±6			A distant earthquake; probable origin in Micronesia, Pacific Ocean.
		FE	14	00	±						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks		
			G.	M.	T.		AE	AN	AZ				
			h	m	s	s	μ	μ	μ	km.			
245	Apr. 14	FN	13	59	±								
		eP	6	43	59							A distant earthquake.	
		ME	6	49	46		±5						
		MN	6	49	57			±5					
		FE	6	55	±								
		FN	6	55	±								
246	Apr. 14	P	16	59	56					122	After shock of No.		
		L	17	00	12								
		ME	17	00	02		±38						
		MN	17	00	22	2.0		±128					
		MZ	17	00	21				±25				
		FE	17	01	±								
		FN	17	01	±								
		FZ	17	01	±								
247	Apr. 16	P	13	34	44					98	Ditto.		
		L	13	34	57								
		ME	13	35	00		±38						
		MN	13	35	00			±25					
		FE	13	36	±								
		FN	13	36	±								
248	Apr. 17	P	6	44	09					75	Ditto.		
		L	6	44	20								
		ME	6	44	24		±6						
		MN	6	44	23			±10					
		FE	6	45	±								
		FN	6	45	±								
249	Apr. 18	P	11	25	08					60	Upper course of the River Yodo.		
		L	11	25	16								
		ME	11	25	17		±25						
		MN	11	25	17			±25					
		FE	11	26	±								
		FN	11	26	±								
		P	17	35	08						2305	A distant earthquake; probable origin in Micronesia, Pacific Ocean. From Omori's seismograph.	
		L	17	39	11								
		ME	17	40	25	12.5	±350						
		MN	17	40	25			±235					
		FE	17	45	±								
FN	17	45	±										
	Apr. 19	P	20	49	23						After shock of No. 20.		
		L	20	49	34								
		ME	20	49	36		±13						
		MN	20	49	36			±15					
		FE	20	50	±								
		FN	20	50	±								
	Apr. 20	P	7	56	54						45 In the course of the River Kinokawa, Wakayama Prefecture.		
		L	7	57	00								
		ME	7	57	03	0.6	±58						
		MN	7	57	01			±48					
		FE	8	00	±								
		FN	8	01	±								
	Apr. 21	ME	15	10	37		±6				Local shock.		
		MN	15	10	37			±6					
		FE	15	11	±								
		FN	15	11	±								
	Apr. 24	eP	1	14	58						Off Iwaki.		
		eFE	1	19	30								
		eFN	1	19	30								
	Apr. 25	P	10	27	31						73 After shock of No. 20.		
		L	10	27	41								
		ME	10	27	44		±15						
		MN	10	27	45			±13					



**SUMOTO JAPAN.**

**SEISMOLOGICAL BULLETIN**

A Branch Station of the Kobe Meteorological Observatory of Japan.  
 $\phi=34^{\circ} 21'$   $\lambda=134^{\circ} 53'$   $h=109.0$  m. Underground: Cretaceous.

Instruments: Omori's Seismograph.  
 (Horizontal Pendulum)

Wiechert Seismograph.  
 (Horizontal & Vertical)

	$T_0$	$\xi$	$\frac{r}{T_0^2}$	V	$T_0$	$\xi$	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20	AE:	4.5	Aperiodic	80
AN:	20.0	4.6	0.001	20	AN:	4.5	"	80
					AZ:	4.3	"	80

No	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
256	Apr. 27	eFE	10	28	30					1025	Northern off Bonin
		eFN	10	28	30						
		P	19	18	02						
		L	19	20	18						
257	Apr. 27	FE	19	34	$\pm$					127	Off Kumihama, Tango Province.
		FN	19	34	$\pm$						
		P	23	37	52						
		L	23	38	09						
		ME	23	38	10	$\pm 31$					
		MN	23	38	10		$\pm 15$				
FE	23	39	$\pm$								
FN	23	39	$\pm$								

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Mar. 7	P	9	27	58		+1.1	-6.7	+3.6	168	The great earthquake which occurred in the northwestern part of Tango province. At Sumoto and neighbourhood the houses were strongly shaken, and at some places a slight damage such as the crack of walls happened. All Seismographs were thrown out of order.
	eL	9	28	16						
Mar. 7	P	9	44	23					168	After shock of No. 35.
	L	9	44	46		-270	-56			
	M	9	44	56	2.3	-320	+1000			
	eF	9	51	01						
Mar. 7	P	9	51	01					168	Ditto.
	L	9	51	19		-4	+12			
	M	9	51	21		+14	+14			
	eF	9	52	29						
Mar. 7	eP	9	52	29				181	Ditto.	

Earthquake felt.





No	Date	Phase	Time			Period	Amplitude			Δ	Remarks		
			G.	M.	T.		AE	AN	AZ.				
			h	m	s	s	μ	μ	μ	km.			
39	Mar. 7	L	9	52	54					168	Ditto.		
		M	9	52	56							+133	+52
		eF	10	04	56								
		P	10	14	10								
		L	10	14	28								
40	Mar. 7	L	10	16	56	0.6				168	Ditto.		
		P	10	22	54							+6	+12
		L	10	23	12							-8	+16
		M	10	23	12								
		eF	10	24	22								
41	Mar. 7	L	10	32	51	0.6				178	Ditto.		
		P	10	32	51							+10	+10
		L	10	33	11							-10	+12
		M	10	33	12								
		eF	10	34	27								
42	Mar. 7	L	10	36	45					157	Ditto.		
		P	10	36	45							-4	-4
		L	10	37	01								
		eF	10	38	16								
		P	10	38	09								
43	Mar. 7	L	10	38	27					168	Ditto.		
		P	10	38	09								
		L	10	38	27								
		F	10	39	31								
		P	10	47	07								
*44	Mar. 7	L	10	47	25					165	Ditto.		
		P	10	47	07							+16	-30
		L	10	47	25							+67	-20
		M	10	47	32							+140	-140
		F	10	51	50								
45	Mar. 7	eP	11	01	15					168	Ditto.		
		L	11	01	36								
		eF	11	02	39								
46	Mar. 7	P	11	22	29					147	Ditto.		

Date	Phase	Time			Period	Amplitude			Δ	Remarks		
		G.	M.	T.		AE	AN	AZ				
		h	m	s	s	μ	μ	μ	km.			
Mar. 7	L	11	22	44					165	Ditto.		
	F	11	24	16								
	P	11	42	40								
	L	11	42	58								
	eF	11	44	37								
Mar. 7	P	11	50	22					130	Ditto.		
	L	11	50	35								
	F	11	52	56								
Mar. 7	P	12	21	44					165	Ditto.		
	L	12	22	01								
	F	12	22	44								
Mar. 7	P	12	22	49					167	Ditto.		
	L	12	23	06								
	F	12	25	17								
Mar. 7	P	13	04	10					156	Ditto.		
	L	13	04	26								
	eF	13	05	13								
Mar. 7	P	13	23	41	1.5				157	Ditto.		
	L	13	23	57							-3	+2
	M	13	23	58							+26	+16
	F	13	26	56							+100	+80
	P	13	28	01								
Mar. 7	L	13	28	22					186	Ditto.		
	eF	13	30	56								
	P	13	45	43								
Mar. 7	L	13	45	59					150	Ditto.		
	F	13	47	36								



No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
			G.	M. T.		AE	AN	AZ			
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*55	Mar. 7	P	14	11	46		-2	-3		168	Ditto.
		L	14	12	04		+12	-20			
		M	14	12	04	0.5	-24	+24			
		F	14	14	56						
56	Mar. 7	P	14	20	40				193	Ditto.	
		L	14	21	00						
		eF	14	22	25						
*57	Mar. 7	P	15	36	39		+6	-10	162	Ditto.	
		eL	15	36	56						
		M	15	37	01		+140	+280			
		F	15	42	20						
58	Mar. 7	P	15	49	09				167	Ditto.	
		L	15	49	26						
		eF	15	51	39						
59	Mar. 7	P	16	34	11				192	Ditto.	
		L	16	34	30						
		eF	16	37	22						
60	Mar. 7	P	17	04	23				165	Ditto.	
		L	17	04	40						
		eF	17	05	22						
61	Mar. 7	P	19	34	14				154	Ditto.	
		L	19	34	30						
		eF	19	35	21						
62	Mar. 7	P	19	54	02				168	Ditto.	
		L	19	54	20						
		eF	19	55	35						
63	Mar. 7	P	21	21	57				168	Ditto.	
		L	21	22	15						

Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks		
		G.	M. T.		AE	AN	AZ				
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Mar. 7	eF	21	23	36						154	Ditto.
	P	21	53	40							
	L	21	54	56							
Mar. 7	eF	21	55	31						168	Ditto.
	P	22	16	38							
	L	22	16	56							
Mar. 7	eFEN	22	18	22						161	Ditto.
	eFZ	22	18	26							
	P	0	14	57							
Mar. 8	L	0	15	13		+22	-94	+10		161	Ditto.
	MEN	0	15	14	0.5	-42	-98				
	MZ	0	15	15	0.8			-31			
	FEN	0	17	13							
Mar. 8	FZ	0	17	33						161	Ditto.
	P	1	14	56							
	L	1	15	12							
Mar. 8	MZ	1	15	12	0.4			-7		158	Ditto.
	eFEN	1	16	40							
	eFZ	1	16	41							
	P	9	10	57							
Mar. 8	L	9	11	14						154	Ditto.
	eF	9	12	39							
	P	10	33	26							
Mar. 8	L	10	33	41						149	Ditto.
	MEN	10	33	44	0.6	-21	-27				
	MZ	10	33	42	0.6			-6			
	FEN	10	35	08							
Mar. 8	FZ	10	35	14						149	Ditto.
	P	14	43	59							



No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
*71	Mar. 8	L	14	44	14				149	Ditto.	
		MEN	14	44	17	1.5	-194	+131			
		MZ	14	44	18	1.6		+50			
		FEN	14	06	59						
		eFZ	14	06	59						
		P	23	07	34		+2	+1			-2
	Mar. 9	L	23	07	49		+4	-17	-8		
		MEN	23	07	52	1.6	-13	+23			
		MZ	23	07	51	1.6			-14		
		eFEN	23	13	41						
		eFZ	23	13	38						
		P	4	25	16		+3	-3	+3		
	*72	Mar. 9	L	4	25	31				149	Ditto.
MEN			4	25	32	0.8	-8	+4			
MZ			4	25	32	0.4			-4		
eFEN			4	30	58						
eFZ			4	30	58						
*73	Mar. 9	P	11	45	04		+3	-2	+3	147	Ditto.
		L	11	45	19		+10	-23	-5		
		MEN	11	45	20	0.6	-16	-25			
		MZ	11	45	24	0.6			-13		
		eFEN	11	46	38						
		eFZ	11	46	33						
74	Mar. 9	P	12	24	46				180	Ditto.	
		L	12	24	45						
		eFEN	12	26	32						
		eFZ	12	26	26						
75	Mar. 9	P	13	29	46				146	Ditto.	
		L	13	30	01						
		eF	13	31	17						

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s		$\mu$	$\mu$	$\mu$		
Mar. 9	P	18	54	29				157	Ditto.	
	L	18	54	45						
	eFEN	18	55	37						
	eFZ	18	55	34						
Mar. 9	P	18	55	58				157	Ditto.	
	L	18	56	15						
	FEN	18	57	36						
	FZ	18	57	49						
Mar. 9	P	19	46	22				149	Ditto.	
	L	19	46	38						
	FEN	19	49	37						
	FZ	19	49	17						
Mar. 9	P	20	27	04		-1.3	-0.6	+1.3	160	Ditto.
	L	20	27	21		-5	-4	-13		
	MEN	20	27	23	1.8	-11	-14			
	MZ	20	27	37	1.8			+15		
	eFEN	20	30	27						
	eFZ	20	30	31						
Mar. 10	P	2	47	39				172	Ditto.	
	L	2	47	58						
	eFEN	2	49	11						
	eFZ	2	49	20						
Mar. 10	P	3	01	35				159	Ditto.	
	L	3	01	52						
	eFEN	3	02	42						
	eFZ	3	02	40						
Mar. 10	P	4	59	45				151	Ditto.	
	L	5	00	01						
	eF	5	00	44						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks		Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$								AE $\mu$	AN $\mu$	AZ $\mu$		
83	Mar. 10	P	7 02 34				157	Ditto.											
		L	7 02 50																
		eF	7 03 24																
84	Mar. 10	P	11 42 03				154	Ditto.											
		L	11 42 19																
		eF	11 42 54																
85	Mar. 10	P	11 58 10				176	Ditto.											
		L	11 58 29																
		eF	11 59 18																
86	Mar. 10	P	21 38 41				154	Ditto.											
		L	21 38 07																
		F	21 39 29																
*87	Mar. 10	P	22 36 21		+3	-9	+8	153	Ditto.										
		L	22 36 37		-58	-50	-3												
		MEN	22 36 38	1.4	+119	-191													
		MZ	22 36 41	1.6															
		CE	22 40 16	3.9	+33														
		CN	22 40 47	3.9															
		eFEN	22 46 58																
		eFZ	22 47 58																
88	Mar. 10	eP	23 43 39				154	Ditto.											
		L	23 43 54																
		F	23 44 19																
89	Mar. 11	P	0 37 16				157	Ditto.											
		L	0 37 32																
		eF	0 38 14																
*90	Mar. 11	P	0 50 41		-1.3	+1.5	+1.0	167	Ditto.										
		L	0 50 58		-24	-15	-1												
		MEN	0 50 59	0.7	+25	-23													



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
					$\mu$	$\mu$	$\mu$		
			G. M. T.	s			km.		
97	Mar. 13	eFz	2 47 32						
		P	4 38 24				169	After shock of No.	
		L	4 38 42						
		ME	4 38 45	0.8	+5				
		MN	4 38 46	0.8		+4			
		eF	4 39 42						
98	Mar. 13	P	21 46 58					Ditto.	
		L	21 47 05						
		MEN	21 47 06	0.3	+2	+6			
		eFEN	21 47 36						
		eFz	21 47 33						
99	Mar. 14	P	1 34 32				156	Ditto.	
		L	1 34 48						
		ME	1 34 49		-3				
		MN	1 34 49			-4			
		eF	1 35 53						
100	Mar. 14	P	3 49 53				148	Ditto.	
		L	3 50 09						
		MEN	3 50 09	0.6	-2	-3			
		MZ	3 50 11	0.6					
		eFEN	3 54 16			-4			
		eFz	3 54 19						
101	Mar. 14	P	13 13 22		-0.6	+1.3	149	Ditto.	
		L	13 13 37		-3	-3			
		M	13 13 38		+4	+4			
		eF	13 14 46						
102	Mar. 15	P	4 40 28				175	Ditto.	
		L	4 40 47						
		eF	4 41 44						
		P	21 59 26				3576	In the vicinity of Mongolia, China.	
		L	22 07 02						
		M	22 07 12		-10	+3			
		eF	22 20 02						
Mar. 16		P	6 54 56				747	Off Miyako, Iwate Prefecture.	
		S	6 55 54						
		L	6 56 42						
		M	6 56 27	2.9	+8	-8			
		eF	7 04 02						
Mar. 16		P	19 53 55				162	After shock of No. 35.	
		L	19 54 16						
		MEN	19 54 17	0.4	-4	-6			
		eFEN	19 55 20						
		Fz	19 55 14						
Mar. 17		P	18 06 32				31	In the Kii Channel.	
		L	18 06 36						
		eF	18 07 33						
Mar. 18		P	6 17 40				140	After shock of No. 35.	
		L	6 17 54						
		M	6 17 54	0.3	-3	-4			
		F	6 18 22						
Mar. 18		P	12 48 12		+1.3	-1.9	154	Ditto.	
		L	12 48 28		-9	+14			
		ME	12 48 32	0.8	+4				
		MN	12 48 30			-41			
		MZ	12 48 29	1.2					
		FEN	12 54 40						
		eFz	12 54 42						
Mar. 18		P	20 18 49				140	Ditto.	
		L	20 19 03						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
110	Mar. 19	eF	20	19	43					157	Ditto.
		P	10	55	09						
		L	10	55	25						
111	Mar. 20	eF	10	57	24						Ditto.
		eP	1	54	52						
		L	1	54	56						
*112	Mar. 20	eF	1	55	29					179	Ditto.
		P	4	45	37		-1.3	+1.3	-2.5		
		L	4	45	56		+10	+11	-2		
		ME	4	46	05	1.1	-18				
		MN	4	46	06	1.1		-18			
		MZ	4	46	04	1.1			-4		
113	Mar. 20	eF	4	47	58					152	Ditto.
		eP	13	47	29						
		L	13	47	45						
114	Mar. 20	eF	13	48	32						South of the Kii Ch
		eP	14	09	31						
		L	14	09	46						
115	Mar. 20	eF	14	10	32					174	After shock of No
		eP	17	42	40						
		L	17	42	59						
116	Mar. 20	eF	17	44	41						In the Kitan Strait
		eP	18	17	41						
		L	18	17	57						
117	Mar. 22	F	18	18	56					160	After shock of No
		P	3	58	08		+1.3	+1.4			
		L	3	58	24		-3	-2			
		M	3	58	28	0.6	+6	-9			

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Mar. 23	eF	4	04	26					167	Ditto.
	P	13	50	45						
	L	13	51	02						
	M	13	51	04	1.2	-4	+3			
Mar. 23	eF	13	52	13					49	In the Kitan Strait.
	P	21	51	08		+1.3	-1.3	-0.6		
	L	21	51	15		+5	+8	-2		
	MEN	21	51	21	0.9	-11	+8			
Mar. 24	F	21	54	04					44	In the catchment area of the River Naga, Awa Province.
	P	0	48	49		-1.4	+3.8	-1.3		
	L	0	48	54		-9	+4	+3		
	MEN	0	49	05	0.6	-14	+35			
	MZ	0	48	56	0.6			-4		
	eF	0	53	14						
Mar. 24	eF	15	38	05					175	After shock of No. 35.
	P	15	35	00						
	L	15	35	19						
Mar. 25	eF	15	35	05					36	A local shock.
	P	1	09	53						
	L	1	09	58						
	M	1	09	58						
Mar. 25	F	1	10	56					161	After shock. of No. 35.
	P	10	13	50		-0.6	-1.3	-1.5		
	L	10	14	07		+2	-4	-1		
	MEN	10	14	07	0.5	-4	-7			
Mar. 26	F	10	16	53					48	In the Kii Channel
	P	0	36	21		+1.4	-1.3			
	L	0	36	26		+13	+10	+5		
	MEN	0	36	27	0.6	-19	-31			
		MZ	0	36	28			+5		



No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
138	April 3	M	12	19	11	0.6	-2	+4		629	NErn off Bonln
		F	12	20	21						
		P	13	48	50						
		L	13	50	15						
139	April 4	P	5	00	53	0.4	+3	+5		186	
		L	5	01	13						
		M	5	01	13						
		F	5	01	57						
140	April 4	P	18	44	16	0.4	+3	+6		38	In the Kii Chanr
		L	18	44	21						
		M	18	44	22						
		F	18	44	54						
141	April 6	P	9	27	42					22	Ditto.
		L	9	27	45						
		F	9	28	24						
142	April 6	P	19	47	47					149	Affer shock of N
		L	19	48	02						
		M	19	48	02						
		F	19	48	55						
*143	April 8	P	8	42	46	0.6	-1.4	-1.4	+1.0	160	Ditto.
		L	8	43	03						
		ME	8	43	04						
		MN	8	43	03						
		MZ	8	43	03						
		eF	8	50	35						
*144	April 8	P	13	05	49	0.8	+2.5	-10.0	+8.1	154	Ditto.
		L	13	06	05						
		ME	13	06	05						

Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s		$\mu$	$\mu$	$\mu$		
April 9	MN	13	06	13	0.8		-48		39	Near the mouth of the River Arita, Wakayama Prefecture.
	eF	13	17	35						
	P	0	18	36						
	L	0	18	42						
April 9	M	0	18	42	0.6	+1.3	-1.3		16	In the Kitan Strait.
	eF	0	19	20						
	L	0	18	42						
	F	0	18	42						
April 10	eP	3	49	26					16	Ditto.
	L	3	49	28						
	eF	3	49	41						
April 10	P	4	20	21	0.4	-0.6	+1.3	-0.6	156	After shock of No. 35.
	L	4	20	23						
	M	15	56	03						
	F	15	57	49						
April 10	P	16	00	17					158	Ditto.
	L	16	00	34						
	F	16	01	08						
April 12	P	3	31	35	0.8	-1.0	+1.1		214	Upper course of the River Masuda, Gifu Prefecture.
	L	3	32	04						
	ME	3	32	10						
	MN	3	32	15						
	MZ	3	32	11						
	eFE	3	35	32						
April 12	eP	11	21	19		+5	-2		21	In the Kitan Strait.
	L	11	21	21						
	eF	11	21	34						

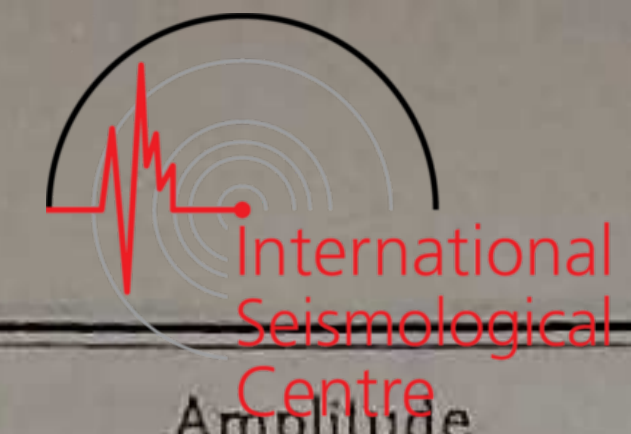


No.	Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks
					AE μ	AN μ	AZ μ		
152	April 12	eP	16 12 41				23	Local shock.	
		L	16 12 43		+5	-2			
		eF	16 13 23						
153	April 13	P	13 49 04				2261	A distant earthquake probable origin in Indonesia, Pacific Ocean	
		S	13 50 09						
		SR	13 51 20						
		L	13 53 00		-2	-3			
		ME	13 54 02	3.9	+10				
		MN	13 53 41	3.9		-6			
		eF	14 04 34						
154	April 14	P	16 59 59		-1.4	-1.3	121	After shock of No.	
		L	17 00 15		-1	+5	+3		
		ME	17 00 19	0.7	+9				
		MN	17 00 18	0.7		-18			
		MZ	17 00 18	0.7			-3		
		eF	17 03 52						
155	April 16	P	8 22 17		-1.3	-0.6	859	A distant earthquake Near Kurile Islands	
		L	8 24 13		-1	+2			
		eF	8 45 46						
156	April 16	eP	11 57 17				100	After shock of No.	
		L	11 57 30						
		ME	11 57 33	0.4	+6				
		MN	11 57 30	0.4		+3			
		eF	12 00 11						
157	April 16	eP	13 34 50				153	Ditto.	
		L	13 35 05						
		ME	13 35 07	0.4	-4	-4	-2		
		MN	13 35 06	0.4	+6				
		MZ	13 35 06	0.4		+13			
		eF	13 39 32				+4		

Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks
				AE μ	AN μ	AZ μ		
April 17	P	6 44 13		-0.6	+0.4	-0.6	157	Ditto.
	L	6 44 30		+2	+1			
	ME	6 44 31	0.4	-3				
	MN	6 44 30	0.4		+6			
	MZ	6 44 31	0.4			+1		
April 18	eP	11 25 22					53	Upper course of the River Yodo.
	L	11 25 29		+2	-3			
	ME	11 25 30	0.3	-3				
	MN	11 25 31	0.3		+2			
	eF	11 27 10						
April 18	eP	13 36 38					29	A Local shock.
	L	13 36 42		-1	+4			
	M	13 36 43	0.3	±1	±2			
	F	13 37 43						
April 18	eP	15 09 04					33	In the Kii Channel.
	L	15 09 08		+1	-3			
	eF	15 09 53						
April 19	eP	15 51 14					33	Near the mouth of River Kinokawa, Waka- yama Prefecture.
	L	15 51 19		+1	+2			
	M	15 51 19	0.4	-4	-4			
	eF	15 52 05						
April 19	P	17 35 06		-7.5	-6.3	-8.5	505	A distant earthquake.
	S	17 36 14		-4	-1			
	L	17 38 02		-15	-8			
	MEN	17 39 16	4.2	-31	+21			
	eF	18 07 13						
April 19	P	20 49 32		-0.4	-1.4		105	After shock of No. 35.
	L	20 49 46		-1.4	+1.4			
	M	20 49 48		-4	-4			

No.	Date	Phase	Time		Period	Amplitude			Δ	Remarks
			G. M. T.			AE	AN	AZ		
			h	m		s	μ	μ		
*165	April 20	eF	20	50	37				30	In the course of the Kinokawa, Wakayama Prefecture.
		P	7	56	50	+12.5	-11.3	-12.5		
		L	7	56	54	+33	+56	+6		
		MEN	7	56	50	0.8	-80	+68		
		MZ	7	56	50			-21		
		eF	7	59	20					
166	April 20	eP	12	32	41				35	Near Wakanoura Province.
		L	12	32	46	+1	+1			
		M	12	32	46	0.3	-1	+2		
		eF	12	33	04					
167	April 20	eP	20	53	09				27	Ditto.
		L	20	53	12	+1	+2			
		M	20	53	14	0.4	-5	-4		
		eF	20	53	45					
168	April 21	eP	10	47	48				33	Lower course of the Kinokawa, Wakayama Prefecture.
		L	10	47	52	-1	+1			
		M	10	47	54	0.4	-3	-3		
		F	10	48	09					
169	April 21	P	16	17	01				42	Upper course of River Gōnogawa, Bizen Province.
		L	16	17	07	-1	-1			
		ME	16	17	08	0.4	+2			
		MN	16	17	09	0.4		-2		
		eF	16	17	47					
170	April 22	eP	3	32	15				0.6	After shock of No. 35.
		L	3	32	23	-3	+6			
		M	3	32	24	+3	+7			
		F	3	32	53					
171	April 23	P	13	25	04				188	Ditto.
		L	13	25	29	-1	+1			

Date	Phase	Time		Period	Amplitude			Δ	Remarks
		G. M. T.			AE	AN	AZ		
		h	m		s	μ	μ		
April 24	eF	18	32	14				745	Off Iwaki.
	P	1	14	19					
	L	1	16	03	-2	+1			
	ME	1	16	23	2.1	-4			
	MN	1	16	38	2.1		-3		
	eF	1	35	01					
April 25	P	10	27	37				122	After shock of No. 35.
	L	10	27	53	+3	+4			
	ME	10	27	57	0.4	-6			
	MN	10	27	57	0.4		+5		
	eF	10	29	42					
April 27	P	19	18	04				1316	Near Bonin IIs.
	S	19	20	34					
	L	19	22	08					
	ME	19	24	18	8.1	-10			
	MN	19	23	07			+18		
	F	19	53	04					
April 27	P	23	37	58				149	Off Kumihama, Tango Province.
	L	23	38	18	+3	-8	-1		
	ME	23	38	19	0.7	-5			
	MN	23	38	20	0.7		-6		
	MZ	23	38	20	0.7		-2		
eF	23	41	55						
April 29	P	0	22	04				21	After shock of No. 35.
	L	0	22	07	-1	+2			
	M	0	22	07	0.4	-1	+3		
	F	0	22	24					



# TOYOOKA JAPAN.

## SEISMOLOGICAL BULLETIN

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

(Horizontal)

	$T_0$	$\xi$	$\frac{r}{T_0^3}$	V
AE:	6.2	Aperiodic	0.002	80
AN:	6.0	"	0.001	80

No.	Date	Phase	Time			Amplitude			$\Delta$	Remarks
			G.	M.	T.	AE	AN	AZ		
			h	m	s	$\mu$	$\mu$	$\mu$	km.	
*23	Mar. 7	P	9	27	44					The great earthquake which occurred near the mouth of the River Arima, northwestern part of Tango Province; Toyooka and neighbourhood experienced violent shocks, and Tajima Province included Toyooka and its vicinity. 30 men were killed, 300 wounded and 2000 houses damaged. The seismographs installed at the Toyooka Meteorological Station were all damaged, that, till these repairs, the observations after shocks were continued by the sense of human body.
*24	Mar. 7	P	9	27	50					
*25	Mar. 7	P	9	28	30					
*26	Mar. 7	P	9	32	33					

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Mar. 7	P	9	35	30						Ditto.
Mar. 7	P	9	36	00						Ditto.
Mar. 7	P	9	38	33						Ditto.
Mar. 7	P	9	39	20						Ditto.
Mar. 7	P	9	41	30						Ditto.
Mar. 7	P	9	41	33						Ditto.
Mar. 7	P	9	43	58						Ditto.
Mar. 7	P	9	44	18						Ditto.
Mar. 7	P	9	45	57						Ditto.
Mar. 7	P	9	48	45						Ditto.
Mar. 7	P	9	49	25						Ditto.
Mar. 7	P	9	49	40						Ditto.
Mar. 7	P	9	50	55						Ditto.
Mar. 7	P	9	52	24						Ditto.
Mar. 7	P	9	53	06						Ditto.
Mar. 7	P	9	54	07						Ditto.
Mar. 7	P	9	56	11						Ditto.
Mar. 7	P	9	57	39						Ditto.

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
*45	Mar. 7	P	10	06	46						Ditto.
*46	Mar. 7	P	10	10	37						Ditto.
*47	Mar. 7	P	10	12	40						Ditto.
*48	Mar. 7	P	10	14	00						Ditto.
*49	Mar. 7	P	10	16	10						Ditto.
*50	Mar. 7	P	10	18	58						Ditto.
*51	Mar. 7	P	10	22	13						Ditto.
*52	Mar. 7	P	10	22	34						Ditto.
*53	Mar. 7	P	10	24	55						Ditto.
*54	Mar. 7	P	10	27	36						Ditto.
*55	Mar. 7	P	10	30	51						Ditto.
*56	Mar. 7	P	10	32	37						Ditto.
*57	Mar. 7	P	10	36	56						Ditto.
*58	Mar. 7	P	10	38	00						Ditto.
*59	Mar. 7	P	10	38	42						Ditto.
*60	Mar. 7	P	10	41	11						Ditto.
*61	Mar. 7	P	10	43	10						Ditto.
*62	Mar. 7	P	10	45	21						Ditto.

Date	Phase	Time			Period	Amplitude			Δ	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	μ	μ	μ	km.	
Mar. 7	P	10	46	50						Ditto.
Mar. 7	P	10	49	16						Ditto.
Mar. 7	P	10	50	09						Ditto.
Mar. 7	P	10	51	56						Ditto.
Mar. 7	P	10	52	17						Ditto.
Mar. 7	P	10	53	26						Ditto.
Mar. 7	P	10	54	09						Ditto.
Mar. 7	P	11	00	31						Ditto.
Mar. 7	P	11	00	58						Ditto.
Mar. 7	P	11	02	30						Ditto.
Mar. 7	P	11	22	12						Ditto.
Mar. 7	P	11	22	25						Ditto.
Mar. 7	P	11	27	07						Ditto.
Mar. 7	P	11	42	26						Ditto.
Mar. 7	P	11	42	45						Ditto.
Mar. 7	P	11	43	08						Ditto.
Mar. 7	P	11	49	58						Ditto.
Mar. 7	P	11	54	15						Ditto.

No.	Date	Phase	Time			Period s	Amplitude			$\Delta$ km.	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
*81	Mar. 7	P	11	59	23					Ditto.	
*82	Mar. 7	P	12	02	02					Ditto.	
*83	Mar. 7	P	12	08	15					Ditto.	
*84	Mar. 7	P	12	21	30					Ditto.	
*85	Mar. 7	P	12	22	37					Ditto.	
*86	Mar. 7	P	12	34	06					Ditto.	
*87	Mar. 7	P	13	01	05					Ditto.	
*88	Mar. 7	P	13	03	55					Ditto.	
*89	Mar. 7	P	13	20	10					Ditto.	
*90	Mar. 7	P	13	23	50					Ditto.	
*91	Mar. 7	P	13	24	25					Ditto.	
*92	Mar. 7	P	13	27	25					Ditto.	
*93	Mar. 7	P	13	27	48					Ditto.	
*94	Mar. 7	P	13	45	35					Ditto.	
*95	Mar. 7	P	13	45	51					Ditto.	
*96	Mar. 7	P	14	11	27					Ditto.	
*97	Mar. 7	P	14	17	46					Ditto.	
*98	Mar. 7	P	14	20	25					Ditto.	

No.	Date	Phase	Time			Period s	Amplitude			$\Delta$ km.	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
0	Mar. 7	P	14	31	00					Ditto.	
0	Mar. 7	P	14	37	09					Ditto.	
1	Mar. 7	P	14	40	10					Ditto.	
2	Mar. 7	P	14	41	53					Ditto.	
3	Mar. 7	P	14	45	07					Ditto.	
4	Mar. 7	P	14	45	50					Ditto.	
5	Mar. 7	P	14	45	54					Ditto.	
6	Mar. 7	P	14	50	30					Ditto.	
7	Mar. 7	P	15	19	05					Ditto.	
8	Mar. 7	P	15	20	02					Ditto.	
9	Mar. 7	P	15	34	45					Ditto.	
0	Mar. 7	P	15	36	19					Ditto.	
1	Mar. 7	P	15	37	11					Ditto.	
2	Mar. 7	P	15	42	46					Ditto.	
3	Mar. 7	P	15	44	33					Ditto.	
4	Mar. 7	P	15	48	49					Ditto.	
5	Mar. 7	P	16	02	47					Ditto.	
6	Mar. 7	P	16	04	49					Ditto.	

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
*117	Mar. 7	P	16	09	12						Ditto.
*118	Mar. 7	P	16	09	43						Ditto.
*119	Mar. 7	P	16	22	05						Ditto.
*120	Mar. 7	P	16	24	08						Ditto.
*121	Mar. 7	P	16	24	49						Ditto.
*122	Mar. 7	P	16	33	58						Ditto.
*123	Mar. 7	P	16	53	37						Ditto.
*124	Mar. 7	P	16	56	40						Ditto.
*125	Mar. 7	P	17	04	07						Ditto.
*126	Mar. 7	P	17	10	15						Ditto.
*127	Mar. 7	P	17	10	45						Ditto.
*128	Mar. 7	P	18	03	15						Ditto.
*129	Mar. 7	P	18	43	10						Ditto.
*130	Mar. 7	P	18	47	13						Ditto.
*131	Mar. 7	P	18	58	02						Ditto.
*132	Mar. 7	P	18	59	31						Ditto.
*133	Mar. 7	P	19	08	03						Ditto.
*134	Mar. 7	P	19	18	47						Ditto.

Date	Phase	Time			Period	Amplitude			Δ	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	μ	μ	μ	km.	
Mar. 7	P	19	26	13						Ditto.
Mar. 7	P	19	27	39						Ditto.
Mar. 7	P	19	31	35						Ditto.
Mar. 7	P	19	34	52						Ditto.
Mar. 7	P	19	41	07						Ditto.
Mar. 7	P	19	44	16						Ditto.
Mar. 7	P	19	50	35						Ditto.
Mar. 7	P	19	53	45						Ditto.
Mar. 7	P	19	54	34						Ditto.
Mar. 7	P	20	04	35						Ditto.
Mar. 7	P	20	15	41						Ditto.
Mar. 7	P	21	02	58						Ditto.
Mar. 7	P	21	21	36						Ditto.
Mar. 7	P	21	53	19						Ditto.
Mar. 7	P	22	15	13						Ditto.
Mar. 7	P	22	32	06						Ditto.
Mar. 7	P	22	34	02						Ditto.
Mar. 7	P	23	49	39						Ditto.

No.	Date	Phase	Time			Period	Amplitude			J	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*153	Mar. 8	P	0	02	24						Ditto.
*154	Mar. 8	P	0	07	15						Ditto.
*155	Mar. 8	P	0	13	43						Ditto.
*156	Mar. 8	P	0	19	37						Ditto.
*157	Mar. 8	P	0	22	36						Ditto.
*158	Mar. 8	P	0	24	44						Ditto.
*159	Mar. 8	P	1	07	24						Ditto.
*160	Mar. 8	P	1	14	35						Ditto.
*161	Mar. 8	P	1	32	49						Ditto.
*162	Mar. 8	P	2	03	48						Ditto.
*163	Mar. 8	P	2	07	09						Ditto.
*164	Mar. 8	P	2	17	00						Ditto.
*165	Mar. 8	P	3	07	33						Ditto.
*166	Mar. 8	P	3	35	40						Ditto.
*167	Mar. 8	P	3	47	51						Ditto.
*168	Mar. 8	P	4	26	50						Ditto.
*169	Mar. 8	P	5	13	28						Ditto.
*170	Mar. 8	P	5	49	22						Ditto.

Date	Phase	Time			Period	Amplitude			J	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Mar. 8	P	6	29	34						Ditto.
Mar. 8	P	7	03	00						Ditto.
Mar. 8	P	7	28	12						Ditto.
Mar. 8	P	7	29	35						Ditto.
Mar. 8	P	7	39	24						Ditto.
Mar. 8	P	7	59	10						Ditto.
Mar. 8	P	9	10	35						Ditto.
Mar. 8	P	9	20	08						Ditto.
Mar. 8	P	10	32	59						Ditto.
Mar. 8	P	10	41	04						Ditto.
Mar. 8	P	11	50	29						Ditto.
Mar. 8	P	12	04	56					34	Ditto.
	LM	12	05	00						
	F	12	05	13						
Mar. 8	P	12	20	29					19	Ditto.
	L	12	20	31						
	F	12	20	42						
Mar. 8	P	12	25	43					36	Ditto.
	L	12	25	48						
Mar. 8	P	12	53	53					7	Ditto.
	L	12	53	54						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G	M	T		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
186	Mar. 8	P	12	53	56					14	Ditto.
		L	12	53	58						
		MN	12	54	03						
187	Mar. 8	P	12	57	32					24	Ditto.
		L	12	57	35						
188	Mar. 8	P	12	58	21					26	Ditto.
		L	12	58	25						
		MN	12	58	26						
*189	Mar. 8	P	13	06	51					22	Ditto.
		L	13	06	54						
		eMN	13	06	54						
		FN	13	07	07						
190	Mar. 8	P	13	18	32					18	Ditto.
		L	13	18	34						
191	Mar. 8	L	13	24	52						Ditto.
192	Mar. 8	P	13	25	46					19	Ditto.
		L	13	25	49						
		FN	13	25	56						
193	Mar. 8	L	13	37	26						Ditto.
194	Mar. 8	P	13	44	53					14	Ditto.
		L	13	44	55						
		MN	13	44	56						
		FN	13	45	01						
195	Mar. 8	P	13	45	37					44	Ditto.
		L	13	45	43						
		MN	13	45	43						
		FN	13	45	46						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G	M	T		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
3	Mar. 8	P	14	23	34						Ditto.
7	Mar. 8	P	14	25	36						Ditto.
3	Mar. 8	L	14	26	31						Ditto.
9	Mar. 8	P	14	28	15					31	Ditto.
		LMN	14	28	19						
9	Mar. 8	P	14	28	51						Ditto.
1	Mar. 8	P	14	36	03					24	Ditto.
		LMN	14	36	06						
2	Mar. 8	P	14	43	51					24	Ditto.
		LM	14	43	54						
3	Mar. 8	P	14	45	41					24	Ditto.
		LME	14	45	45						
		eFE	14	45	54						
4	Mar. 8	P	14	45	54					22	Ditto.
		L	14	45	57						
5	Mar. 8	P	14	50	33					19	Ditto.
		L	14	50	36						
		FE	14	50	48						
6	Mar. 8	P	14	50	46						Ditto.
		L	14	50	48						
7	Mar. 8	P	15	00	07					24	Ditto.
		L	15	00	10						
8	Mar. 8	P	15	00	54					24	Ditto.
		LME	15	00	57						



No.	Date	Phase	Time			Period	Amplitude			J	Remarks
			G. M. T.				AE	AN	AZ		
			h	m	s		μ	μ	μ		
		FE	15	01	23						
209	Mar. 8	eP	15	01	18					Ditto.	
210	Mar. 8	LE	15	07	21					Ditto.	
211	Mar. 8	LME	15	07	41					Ditto.	
212	Mar. 8	LE	15	08	11					Ditto.	
213	Mar. 8	P	15	10	31				24	Ditto.	
		L	15	10	34						
		ME	15	10	37	±45					
		FE	15	10	38						
214	Mar. 8	LME	15	18	49					Ditto.	
215	Mar. 8	LE	15	29	26					Ditto.	
216	Mar. 8	LME	15	51	25					Ditto.	
217	Mar. 8	LME	15	56	01					Ditto.	
218	Mar. 8	LE	15	58	07					Ditto.	
219	Mar. 8	LE	16	02	56					Ditto.	
220	Mar. 8	LE	16	15	53					Ditto.	
221	Mar. 8	LE	16	23	16					Ditto.	
222	Mar. 8	LE	16	47	38					Ditto.	
*223	Mar. 8	P	16	53	04						
		L	16	53	07				20	Ditto.	
		ME	16	53	07	±100					

Date	Phase	Time			Period	Amplitude			J	Remarks
		G. M. T.				AE	AN	AZ		
		h	m	s		μ	μ	μ		
Mar. 8	LE	17	19	39						Ditto.
Mar. 8	LE	17	21	18						Ditto.
Mar. 8	P	17	40	43				22		Ditto.
	LME	17	40	46	±850					
	FE	17	40	57						
Mar. 8	P	17	42	36				22		Ditto.
	LME	17	42	39	±250					
	FE	17	42	47						
Mar. 8	P	17	48	59				22		Ditto.
	LME	17	49	02						
	FE	17	49	06						
Mar. 8	P	17	52	01						Ditto.
Mar. 8	P	18	00	39				20		Ditto.
	L	18	00	42						
	ME	18	00	42	±750					
	FE	18	01	16						
Mar. 8	P	18	07	13				22		Ditto.
	LME	18	07	15						
	FE	18	07	26						
Mar. 8	P	18	24	10				22		Ditto.
	LME	18	24	13	±105					
	FE	18	24	21						
Mar. 8	P	18	25	18						Ditto.
Mar. 8	LME	19	41	35						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
235	Mar. 8	P	19	24	50		±65			22	Ditto.
		LME	19	24	53						
		FE	19	25	01						
236	Mar. 8	P	19	27	37					22	Ditto.
		L	19	27	40						
		FE	19	27	46						
237	Mar. 8	P	19	40	33		±75			22	Ditto.
		L	19	40	36						
		ME	19	40	36						
		FE	19	40	49						
*238	Mar. 8	P	19	45	32		±85			22	Ditto.
		L	19	45	35						
		ME	19	45	35						
		eFE	19	45	43						
239	Mar. 8	P	19	46	02						Ditto.
240	Mar. 8	P	19	47	20					22	Ditto.
		LME	19	47	23						
		eFE	19	47	33						
241	Mar. 8	P	19	51	48					24	Ditto.
		LME	19	51	51						
		FE	19	52	02						
242	Mar. 8	P	19	59	45					24	Ditto.
		L	19	59	48						
*243	Mar. 8	P	20	18	16					24	Ditto.
		L	20	18	19						
		eME	20	18	20						
		FE	20	18	51						

Date	Phase	Time			Period	Amplitude			Δ	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	μ	μ	μ	km.	
Mar. 8	P	20	24	17					22	Ditto.
	L	20	24	20						
Mar. 8	P	20	50	42					24	Ditto.
	L	20	50	45						
Mar. 8	P	21	10	02						Ditto.
Mar. 8	P	21	33	44					20	Ditto.
	L	21	33	47						
	ME	21	33	47						
	FE	21	33	53						
Mar. 8	P	22	19	39					27	Ditto.
	L	22	19	42						
	ME	22	19	42						
	FE	22	19	47						
Mar. 8	P	23	03	50						Ditto.
	eP	23	03	58						
Mar. 8	eP	23	04	14						Ditto.
Mar. 8	P	23	07	02					22	Ditto.
	L	23	07	05						
	M	23	07	06						
	eF	23	07	48						
Mar. 8	P	23	22	46						Ditto.
Mar. 8	P	23	36	31					36	Ditto.
	L	23	36	36						
	MN	23	36	37						
	FE	23	36	42						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s		$\mu$	$\mu$	$\mu$		
255	Mar. 9	P	0	21	00					Ditto.	
256	Mar. 9	P	1	04	00					Ditto.	
257	Mar. 9	P	1	10	04				20	Ditto.	
		L	1	10	07						
		F	1	10	10						
258	Mar. 9	P	1	10	10				8	Ditto.	
		L	1	10	11						
		ME	1	10	11						
259	Mar. 9	L	1	10	20					Ditto.	
260	Mar. 9	P	1	13	06					Ditto.	
261	Mar. 9	P	1	30	08					Ditto.	
*262	Mar. 9	P	1	49	22	+60	+50		27	Ditto.	
		L	1	49	25						
		M	1	49	26						
		F	1	49	55						
*263	Mar. 9	P	2	01	39				22	Ditto.	
		L	2	01	42						
		FE	2	01	50						
264	Mar. 9	P	2	04	31					Ditto.	
		L	2	04	34						
*265	Mar. 9	P	2	54	15					Ditto.	
		LM	2	54	19	$\pm 155$	$\pm 165$				
266	Mar. 9	P	4	02	25					Ditto.	
							+125				

No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s		$\mu$	$\mu$	$\mu$		
67	Mar. 9	P	4	24	52				3	Ditto.	
		L	4	24	55						
		MEN	4	24	55	$\pm 985$	$\pm 1450$				
		FE	4	25	21						
68	Mar. 9	PL	4	34	35					Ditto.	
69	Mar. 9	PL	4	55	09					Ditto.	
70	Mar. 9	PL	4	55	20					Ditto.	
71	Mar. 9	PL	5	54	41					Ditto.	
72	Mar. 9	PL	5	57	32					Ditto.	
73	Mar. 9	P	6	01	57				2	Ditto.	
		LM	6	01	54						
		eFE	6	02	03						
74	Mar. 9	PL	6	31	18					Ditto.	
75	Mar. 9	P	7	25	30				5	Ditto.	
		LM	7	25	33						
76	Mar. 9	PL	7	41	59					Ditto.	
77	Mar. 9	PL	9	03	55					Ditto.	
		F	9	03	58						
78	Mar. 9	P	10	36	54					Ditto.	
79	Mar. 9	PL	10	42	55					Ditto.	
80	Mar. 9	P	10	43	22					Ditto.	

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks
					AE μ	AN μ	AZ μ		
281	Mar. 9	P	11 25 52					Ditto.	
		LM	11 25 54						
		FE	11 25 57						
*282	Mar. 9	P	11 44 39			+75	3	Ditto.	
		LM	11 44 42		±2050	±2150			
		F	11 45 26						
283	Mar. 9	P	12 01 35					Ditto.	
		LM	12 01 38						
		eFE	12 01 42						
*284	Mar. 9	P	13 29 20				3	Ditto.	
		L	13 29 23						
		MEN	13 29 23		±1052	±1100			
		FEN	13 29 50						
285	Mar. 9	P	13 30 22				3	Ditto.	
		LM	13 30 25		±100	±170			
286	Mar. 9	P	13 51 54					Ditto.	
287	Mar. 9	P	14 03 12					Ditto.	
288	Mar. 9	P	14 04 46					Ditto.	
289	Mar. 9	PL	15 00 39					Ditto.	
290	Mar. 9	PL	15 06 06					Ditto.	
291	Mar. 9	P	15 18 55					Ditto.	
		LM	15 18 58						
		FE	15 19 02						
*292	Mar. 9	P	17 34 16				3	Ditto.	

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks
					AE μ	AN μ	AZ μ		
		LM	17 34 19			±180			
03	Mar. 9	P	17 58 55				2	Ditto.	
		L	17 58 58						
04	Mar. 9	P	18 54 06				3	Ditto.	
		LM	18 54 09		±350	±550			
		FE	18 54 30						
05	Mar. 9	P	18 55 28				4	Ditto.	
		L	18 55 32						
		M	18 55 32						
		F	18 55 51						
06	Mar. 9	P	19 45 53				3	Ditto.	
		M	19 45 56		±490	±750			
		F	19 46 20						
07	Mar. 9	P	19 50 11					Ditto.	
		L	19 50 14						
		F	19 51 10						
08	Mar. 9	P	20 19 54					Ditto.	
		L	20 19 57						
09	Mar. 9	P	20 26 38			+155	2	Ditto.	
		L	20 26 41						
		M	20 26 42			±2375			
		F	20 27 16						
00	Mar. 9	P	21 01 48				3	Ditto.	
		L	21 01 51						
		M	21 01 52		±25	+20			
		F	21 02 01						
01	Mar. 9	P	22 23 17					Ditto.	

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
		L	22	23	14						
302	Mar. 9	P	22	27	24						Ditto.
*303	Mar. 9	P	22	36	08					4	Ditto.
		M	22	36	12		±8				
304	Mar. 9	L	22	42	16						Ditto.
305	Mar. 9	P	22	45	26						Ditto.
		L	22	45	29						
		M	22	45	30						
306	Mar. 9	P	23	05	38						Ditto.
*307	Mar. 9	P	23	18	54						Ditto.
		LM	23	18	56						
		F	23	19	02						
308	Mar. 10	P	0	19	24						Ditto.
309	Mar. 10	P	0	21	59						Ditto.
		L	0	22	02						
310	Mar. 10	L	0	22	23						Ditto.
311	Mar. 10	P	0	28	55						Ditto.
*312	Mar. 10	P	1	43	55						Ditto.
		LM	1	43	58					3	Ditto.
313	Mar. 10	L	2	21	42						Ditto.
314	Mar. 10	P	2	41	50						Ditto.
		LM	2	42	06						Ditto.

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
15	Mar. 10	L	2	43	55						Ditto.
16	Mar. 10	P	2	47	17			+4		22	Ditto.
		LM	2	47	20		±80	±75			
		F	2	47	48						
17	Mar. 10	P	3	01	15			+4		22	Ditto.
		LM	3	01	18			±45			
		FE	3	01	28						
18	Mar. 10	PL	3	19	10						Ditto.
19	Mar. 10	P	3	26	32			+3		22	Ditto.
		L	3	26	35						
		M	3	26	35		±45	±65			
		F	3	26	46						
20	Mar. 10	P	4	59	24			-3		22	Ditto.
		LM	4	59	27						
21	Mar. 10	P	5	02	28						Ditto.
		L	5	02	29						
22	Mar. 10	P	5	51	24			-2		30	Ditto.
		LM	5	51	29		±10	±45			
		F	5	51	38						
23	Mar. 10	P	7	02	16						Ditto.
24	Mar. 10	P	7	02	24						Ditto.
25	Mar. 10	P	7	08	43					26	Ditto.
		L	7	08	57						
26	Mar. 10	P	8	49	04						Ditto.

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*327	Mar. 10	P	9	00	59					22	Ditto.
		LM	9	01	02		$\pm 25$	$\pm 25$			
		F	9	01	10						
328	Mar. 10	P	10	10	20						Ditto.
		LM	10	10	23						
329	Mar. 10	LM	10	53	31						Ditto.
330	Mar. 10	P	11	19	31		-1				Ditto.
		LM	11	19	34						
*331	Mar. 10	P	11	41	44						Ditto.
		L	11	41	46						
		M	11	41	47			$\pm 35$			
		F	11	41	53						
332	Mar. 10	P	11	50	44						Ditto.
		L	11	50	47						
		M	11	50	47		$\pm 5$				
*333	Mar. 10	P	11	57	52						Ditto.
		LM	11	57	55			$\pm 16$			
334	Mar. 10	P	12	11	04						Ditto.
335	Mar. 10	P	12	17	08						Ditto.
		L	12	17	11						
336	Mar. 10	LM	13	21	26						Ditto.
337	Mar. 10	P	13	29	08						Ditto.
		L	13	29	11						
338	Mar. 10	P	13	43	55						Ditto.
		LM	13	43	58					22	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
339	Mar. 10	P	14	20	32					10	Ditto.
		LM	14	20	33		$\pm 12$				
		F	14	20	36						
340	Mar. 10	P	16	39	52					20	Ditto.
		L	16	39	55						
		F	16	39	57						
341	Mar. 10	P	17	20	52					20	Ditto.
		L	17	20	54		$\pm 8$				
342	Mar. 10	P	18	12	40					25	Ditto.
		LM	18	12	44		$\pm 10$	$\pm 18$			
		F	18	12	50						
343	Mar. 10	P	18	25	15					15	Ditto.
		L	18	25	16						
		F	18	25	19						
344	Mar. 10	P	18	47	55						Ditto.
		LM	18	47	58		$\pm 7$				
		F	18	48	03						
345	Mar. 10	P	21	38	28					24	Ditto.
		LM	21	38	31		$\pm 19$	$\pm 20$			
		F	21	38	37						
346	Mar. 10	P	22	04	52						Ditto.
347	Mar. 10	PL	22	36	00						Ditto.
348	Mar. 11	P	0	36	55						Ditto.
		L	0	36	57						
		M	0	36	57			$\pm 15$			
		F	0	37	03						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*349	Mar. 11	P	0	50	20					28	Ditto.
		L	0	50	23						
		M	0	50	24		$\pm 100$	$\pm 83$			
		F	0	50	56						
350	Mar. 11	P	0	51	52					28	Ditto.
		L	0	51	55						
351	Mar. 11	P	1	27	17					22	Ditto.
		L	1	27	20						
		M	1	27	20		$-11$				
		F	1	27	23						
*352	Mar. 11	P	3	18	45					24	Ditto.
		L	3	18	48						
353	Mar. 11	P	4	59	36						Ditto.
*354	Mar. 11	P	6	14	16					24	Ditto.
		LM	6	14	20						
		F	6	14	48		$\pm 33$				
*355	Mar. 11	P	8	19	02					19	Ditto.
		LM	8	19	04						
*356	Mar. 11	P	8	59	16					26	Ditto.
		L	8	59	20						
357	Mar. 11	P	11	38	30						Ditto.
358	Mar. 11	P	13	20	41					22	Ditto.
		L	13	20	44						
359	Mar. 11	P	13	46	41					24	Ditto.
		L	13	46	56						

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	
		G.	M.	T.		AE	AN	AZ			
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
	M	13	46	34							
Mar. 11	PL	14	43	09							Ditto.
Mar. 11	PL	16	57	17						29	Ditto.
	LM	16	57	21		$\pm 12$	$\pm 20$				
Mar. 11	P	18	52	38						22	Ditto.
	L	18	52	41							
Mar. 11	P	20	30	01						22	Ditto.
	L	20	30	04		$\pm 965$					
Mar. 11	P	22	44	45							Ditto.
	L	22	44	48							
Mar. 12	P	0	08	02							Ditto.
	LM	0	08	05							
	F	0	08	07							
Mar. 12	P	0	30	18							Ditto.
	LM	0	30	20							
Mar. 12	P	0	37	17						36	Ditto.
	LM	0	37	22							
Mar. 12	L	1	30	43							Ditto.
Mar. 12	LM	2	03	27							Ditto.
Mar. 12	L	2	22	56							Ditto.
Mar. 12	P	2	23	12						22	Ditto.
	LM	2	23	15							
Mar. 12	P	2	30	23							Ditto.

No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G. M. T.				AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
373	Mar. 12	L	2	44	10					Ditto.	
374	Mar. 12	P	3	19	34				34	Ditto.	
		LM	3	19	39						
375	Mar. 12	LM	3	21	00					Ditto.	
376	Mar. 12	P	5	06	38				25	Ditto.	
		L	5	06	41						
377	Mar. 12	P	5	27	00				19	Ditto.	
		L	5	27	03						
378	Mar. 12	P	6	28	00				27	Ditto.	
		L	6	28	04						
379	Mar. 12	P	7	44	20					Ditto.	
380	Mar. 12	PL	8	37	24					Ditto.	
381	Mar. 12	P	8	51	25				26	Ditto.	
		L	8	51	29						
382	Mar. 12	L	9	12	43					Ditto.	
383	Mar. 12	L	9	41	20					Ditto.	
384	Mar. 12	P	11	03	22				19	Ditto.	
		LM	11	03	24						
		F	11	03	28						
385	Mar. 12	L	12	54	28					Ditto.	
386	Mar. 12	P	15	23	54					Ditto.	
		L	15	23	57						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$ km.	Remarks
			G. M. T.				AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
387	Mar. 12	P	17	05	15				24	Ditto.	
		L	17	05	18						
388	Mar. 12	L	17	10	41					Ditto.	
389	Mar. 12	L	17	40	27					Ditto.	
390	Mar. 12	P	19	10	44					Ditto.	
		L	19	10	46						
		M	19	10	46		+7	+5			
		F	19	10	48						
391	Mar. 12	LM	19	43	05					Ditto.	
392	Mar. 12	P	21	30	10				23	Ditto.	
		LM	21	20	05						
		F	21	30	25						
393	Mar. 12	LM	21	58	18		$\pm 10$	$\pm 10$		Ditto.	
394	Mar. 12	LM	22	44	18					Ditto.	
395	Mar. 12	P	22	55	46				22	Ditto.	
		L	22	55	49						
		F	22	55	54						
396	Mar. 12	LM	23	35	33					Ditto.	
		F	23	35	35						
397	Mar. 13	M	0	13	11					Ditto.	
398	Mar. 13	P	1	20	30		-2	+8	28	Ditto.	
		L	1	20	33						
		M	1	20	33		-10	$\pm 30$			
		F	1	20	48						



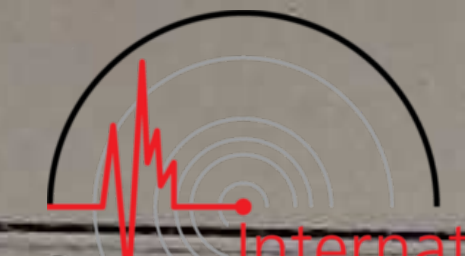
No.	Date	Phase	Time			Period	Amplitude			J	Remarks
			G	M	T		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
399	Mar. 13	P	2	09	26				27	Ditto.	
		LM	2	09	29			+3			
		F	2	09	35						
400	Mar. 13	P	2	25	03				17	Ditto.	
		L	2	25	05						
		M	2	25	05	$\pm 6$		+4			
		F	2	25	07						
401	Mar. 13	P	3	47	52				33	Ditto.	
		L	3	47	56						
*402	Mar. 13	P	4	02	50				28	Ditto.	
		L	4	02	53						
		M	4	02	53	-7		+3			
		F	4	02	56						
*403	Mar. 13	P	4	37	04	+2		+4	22	Ditto.	
		L	4	37	07						
		M	4	37	08	+20					
		F	4	37	19						
404	Mar. 13	P	6	34	41				22	Ditto.	
		LM	6	34	44						
405	Mar. 13	P	6	50	29				25	Ditto.	
		L	6	50	32						
		F	6	50	36						
406	Mar. 13	P	7	06	41	+2		+3	25	Ditto.	
		L	7	06	44						
		M	7	03	44						
		F	7	16	59	$\pm 8$					
407	Mar. 13	P	7	19	50				22	Ditto.	
						-1					

No.	Date	Phase	Time			Period	Amplitude			J	Remarks
			G	M	T		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$		
		L	7	19	52						
		F	7	19	55						
8	Mar. 13	P	0	32	39			+1	22	Ditto.	
		L	0	32	42						
		F	0	32	45						
9	Mar. 13	P	11	23	18				26	Ditto.	
		LM	11	23	21	$\pm 7$		+2			
		F	11	23	31						
0	Mar. 13	P	11	34	57				27	Ditto.	
		LM	11	35	01	$\pm 10$					
		F	11	35	15						
1	Mar. 13	P	14	27	38				7	Ditto.	
		L	14	27	39						
		M	14	27	39	+4					
		F	14	27	42						
2	Mar. 13	P	16	11	21				28	Ditto.	
		L	16	11	24						
3	Mar. 13	L	17	14	31					Ditto.	
4	Mar. 13	LM	18	53	15					Ditto.	
		F	18	53	17						
5	Mar. 13	P	21	46	29				25	Ditto.	
		L	21	46	32						
		M	21	46	32	$\pm 7$					
		F	21	46	40						
6	Mar. 13	P	21	58	19					Ditto.	
7	Mar. 13	LM	22	35	38					Ditto.	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
418	Mar. 13	LM	22	51	31						Ditto.
419	Mar. 13	LM	22	52	50						Ditto.
420	Mar. 13	P	23	35	31				22		Ditto.
		L	23	35	33						
421	Mar. 14	P	1	34	08				31		Ditto.
		LM	1	34	12		$\pm 12$	$\pm 21$			
		F	1	34	21						
422	Mar. 14	P	3	49	35				22		Ditto.
		L	3	49	37			$+5$			
		M	3	49	38						
		F	3	50	13						
423	Mar. 14	P	4	21	59				27		Ditto.
		L	4	22	03						
		ME	4	22	03		$\pm 40$				
		FE	4	22	05						
*424	Mar. 14	P	5	16	11				25		Ditto.
		L	5	16	14						
		ME	5	16	14		$\pm 75$				
		F	5	16	19						
425	Mar. 14	P	10	33	56				22		Ditto.
		L	10	33	58						
		M	10	33	58						
*426	Mar. 14	P	10	54	06				20		Ditto.
		L	10	54	08						
		M	10	54	08						
		F	10	54	12		$+60$				

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
427	Mar. 14	M	11	12	47						Ditto.
428	Mar. 14	L	13	13	13						Ditto.
		F	13	13	22						
429	Mar. 14	P	13	30	18				29		Ditto.
		L	13	30	21						
		M	13	30	21						
		F	13	30	23						
430	Mar. 14	M	18	08	32						Ditto.
		F	18	08	39						
431	Mar. 14	P	21	44	05				13		Ditto.
		L	21	44	07						
		M	21	44	07		$\pm 50$				
		F	21	44	10						
432	Mar. 14	P	22	09	22				22		Ditto.
		L	22	09	24						
		M	22	09	25		$-40$				
		F	22	09	28						
433	Mar. 15	P	4	40	12				20		Ditto.
		L	4	40	14						
		eM	4	40	15		$\pm 255$	$\pm 375$			
		F	4	40	26						
434	Mar. 15	L	4	46	47						Ditto.
		F	4	46	48						
435	Mar. 15	P	5	25	00				15		Ditto.
		L	5	25	02						
		ME	5	25	02		$\pm 90$				
		F	5	25	04						



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No.	Date	Phase	Time		Period s	Amplitude			$\Delta$ km.	Remarks
			G.	M. T.		AE	AN	AZ		
			h	m s		$\mu$	$\mu$	$\mu$		
436	Mar. 15	L	5	25 06					Ditto.	
		F	5	25 07						
*437	Mar. 15	P	7	20 24			$\pm 375$	17	Ditto.	
		L	7	21 26						
		M	7	21 26						
		F	7	21 45						
438	Mar. 15	P	7	39 42			-85	22	Ditto.	
		L	7	39 45						
		ME	7	39 45						
		MN	7	39 46						
		F	7	39 48						
439	Mar. 15	P	7	55 23				22	Ditto.	
		L	7	55 25						
		M	7	55 26						
		F	7	55 27						
440	Mar. 15	P	11	34 42			+50	22	Ditto.	
		L	11	34 45						
		ME	11	34 45						
		F	11	34 48						
441	Mar. 15	L	12	20 06					Ditto.	
		M	12	20 07						
		F	12	20 09						
442	Mar. 15	P	13	39 23				22	Ditto.	
		L	13	39 26						
		M	13	39 26						
		F	13	39 29						
443	Mar. 15	L	18	24 20					Ditto.	
		M	18	24 20						
		F	18	24 22						

Date	Phase	Time		Period s	Amplitude			$\Delta$ km.	Remarks
		G.	M. T.		AE	AN	AZ		
		h	m s		$\mu$	$\mu$	$\mu$		
Mar. 15	P	19	34 47					13	Ditto.
	L	19	34 49						
Mar. 15	P	21	36 29			$\pm 60$		24	Ditto.
	L	21	36 32						
	M	21	36 32						
	F	21	36 34						
Mar. 16	P	0	31 34			$\pm 50$		8	Ditto.
	L	0	31 35						
	M	0	31 36						
	F	0	31 45						
Mar. 16	P	1	53 15					31	Ditto.
	L	1	53 19						
	eF	1	53 29						
Mar. 16	P	2	07 52						Ditto.
	eF	2	08 01						
Mar. 16	L	2	24 33						Ditto.
	eF	2	24 35						
Mar. 16	L	3	07 28						Ditto.
	F	3	07 30						
Mar. 16	P	3	31 40					25	Ditto.
	L	3	31 43						
	F	3	31 45						
Mar. 16	L	4	40 45						Ditto.
	F	4	40 55						
Mar. 16	P	7	04 13			$\pm 90$		27	Ditto.
	L	7	04 16						
	ME	7	04 16						



No	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
454	Mar. 16	MN	7 04 16			$\pm 75$		Ditto.	
		FE	7 04 22						
		FN	7 04 22						
454	Mar. 16	L	8 05 46				Ditto.		
		M	8 05 47		-35				
		F	8 05 49						
*455	Mar. 16	P	8 12 46				Ditto.		
		L	8 12 49						
		M	8 12 49		$\pm 85$	$\pm 95$			
		F	8 12 56						
456	Mar. 16	P	8 36 37				Ditto.		
		L	8 36 40						
		M	8 36 40	0.2	+50				
		F	8 36 43						
*457	Mar. 16	P	8 55 08				Ditto.		
		L	8 55 11						
		M	8 55 12		$\pm 105$	$\pm 110$			
		FE	8 55 19						
		FN	8 55 21						
458	Mar. 16	P	12 25 10				Ditto.		
		L	12 25 13						
		M	12 25 13						
		eF	12 25 16		$\pm 30$				
459	Mar. 16	L	14 55 49				Ditto.		
		F	14 55 52						
460	Mar. 16	L	15 09 42				Ditto.		
*461	Mar. 16	P	17 32 14				Ditto.		
		L	17 32 17						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
	Mar. 16	M	17 32 17		$\pm 11.0$	$\pm 6.0$		Ditto.	
		F	17 32 23						
2	Mar. 16	P	19 17 20				9	Ditto.	
		L	19 17 21						
		M	19 17 21		+60	$\pm 15$			
		F	19 17 24						
3	Mar. 16	P	19 53 38				25	Ditto.	
		L	19 53 41						
		MN	19 53 41			$\pm 255$			
		F	19 54 16						
4	Mar. 16	P	21 18 36				22	Ditto.	
		L	21 18 39						
		eF	21 18 42						
5	Mar. 16	eP	21 52 34				32	Ditto.	
		L	21 52 37						
		M	21 52 38		$\pm 55$				
		F	21 52 40						
6	Mar. 16	P	22 40 45				24	Ditto.	
		L	22 40 48						
		eME	22 40 48		-60				
7	Mar. 16	MN	22 40 48			$\pm 90$	Ditto.		
		L	23 40 53						
		MN	22 40 53			$\pm 80$			
8	Mar. 17	P	5 14 14				26	Ditto.	
		L	5 14 17						
9	Mar. 17	M	5 14 17		$\pm 35$		Ditto.		
		FE	5 14 18			-55			
		FN	5 14 20						
		L	5 14 20						



No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
469	Mar 17	L	8	22	13						Ditto.
		F	8	22	18						
470	Mar. 17	P	8	23	08					13	Ditto.
		L	8	23	10						
		F	8	23	12						
471	Mar. 17	L	11	05	00						Ditto.
		M	11	05	00		-30				
		F	11	05	01						
472	Mar. 17	P	13	40	51						Ditto.
		L	13	40	54						
		F	13	41	01						
473	Mar. 17	P	14	41	35					35	Ditto.
		L	14	41	39						
		F	14	41	44						
*474	Mar. 17	P	15	08	16						Ditto.
		L	15	08	19						
		M	15	08	19						
		F	15	08	24		±95				
*475	Mar. 17	P	17	42	34					22	Ditto.
		L	17	42	38						
		F	17	42	50						
*476	Mar. 17	P	18	06	02					27	Ditto.
		L	18	06	06						
		M	18	06	06						
		F	18	06	16		+125				
477	Mar. 17	L	18	44	24						Ditto.
		F	18	44	26						

Date	Phase	Time			Period	Amplitude			Δ	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	μ	μ	μ	km.	
Mar. 17	L	20	13	44						Ditto.
Mar. 17	P	21	35	31					22	Ditto.
	L	21	35	34						
	M	21	35	34		-20	+15			
	F	21	35	38						
Mar. 18	P	4	42	45					22	Ditto.
	L	4	42	48						
	eM	4	42	48		±125	±135			
	F	4	42	50						
Mar. 18	P	6	17	19					27	Ditto.
	L	6	17	22						
	M	6	17	22		±60	+135			
	F	6	17	44						
Mar. 18	eP	8	29	03					22	Ditto.
	L	8	29	06						
	eM	8	29	07						
	eF	8	29	08						
Mar. 18	P	12	47	51					32	Ditto.
	L	12	47	55						
	MN	12	47	55			+550			
	eF	12	48	51						
Mar. 18	P	14	44	10					31	Ditto.
	L	14	44	14						
	M	14	44	14		+45				
	F	14	44	30						
Mar. 18	P	14	55	43					29	Ditto.
	L	14	55	47						
	M	14	55	47		±105	±80			



No.	Date	Phase	Time	Period	Amplitude			J	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
*486	Mar. 18	F	14 55 54					24	Ditto.
		P	20 07 40						
		L	20 07 43						
		M	20 07 43		±150	±280			
*487	Mar. 18	P	21 29 16					32	Ditto.
		L	21 29 20						
		MN	21 29 21	0.3		+120			
		F	21 29 28						
488	Mar. 18	P	23 10 54					10	Ditto.
		L	23 10 56						
		M	23 10 56						
		F	23 11 00						
489	Mar. 19	P	3 51 19					29	Ditto.
		L	3 51 23						
		MN	3 51 23			±60			
		F	3 51 38						
*490	Mar. 19	P	6 50 29					38	Ditto.
		L	6 50 33						
		M	6 50 33		±195	±270			
		F	6 51 12						
*491	Mar. 19	P	9 59 03					22	Ditto.
		L	9 59 06						
		ME	9 59 06		+80				
		MN	9 59 06						
		F	9 59 12			+135			
*492	Mar. 19	P	10 54 47					27	Ditto.
		L	10 54 50						
		M	10 54 50		±145	±175			

No.	Date	Phase	Time	Period	Amplitude			J	Remarks			
					AE	AN	AZ					
			G. M. T.		μ	μ	μ	km.				
			h m s	s								
3	Mar. 19	F	10 54 57					37	Ditto.			
		P	10 55 45									
		L	10 55 50									
		M	10 55 50		±45	+85						
4	Mar. 19	P	17 36 34					25	Ditto.			
		L	17 36 37									
		ME	17 36 37		+60							
		MN	17 36 38			±65						
5	Mar. 19	P	18 20 38					16	Ditto.			
		L	18 20 40									
		3	Mar. 20	P	0 52 01						22	Ditto.
				L	0 52 04							
6	Mar. 20	M	0 52 04		±130	±140		31	Ditto.			
		F	0 52 10									
		7	Mar. 20	P	1 54 16						38	Ditto.
				L	1 54 20							
M	1 54 20				±295	+135						
F	1 54 33											
8	Mar. 20	P	2 27 14					29	Ditto.			
		L	2 27 17									
		eM	2 27 18									
		F	2 27 23									
9	Mar. 20	P	4 45 14					32	Ditto.			
		L	4 45 18									
		M	4 45 18		-335	-280						
		F	4 45 50									

No	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
*500	Mar. 20	P	13	55	55					25	Ditto.
		L	13	55	58						
		M	13	55	58		±275	±180			
		F	13	56	06						
*501	Mar. 20	P	13	56	09						Ditto.
		L	13	56	12						
		M	13	56	12						
		F	13	56	24						
*502	Mar. 20	P	13	57	12					22	Ditto.
		L	13	57	15						
		M	13	57	15						
		F	13	57	26						
*503	Mar. 20	P	15	11	53					24	Ditto.
		L	15	11	56						
		M	15	11	56		±215	±180			
		F	15	12	11						
*504	Mar. 20	P	17	42	12					42	Ditto.
		L	17	42	17						
		ME	17	42	18		+90				
		MN	17	42	18			+155			
		F	17	42	33						
*505	Mar. 20	P	17	54	22						Ditto.
		F	17	54	25						
*506	Mar. 20	P	18	54	50						Ditto.
		F	18	54	56						
*507	Mar. 21	P	2	49	42					28	Ditto.
		L	2	49	45						
		MN	2	49	46						
		F	2	49	50		+65				

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
508	Mar. 21	P	13	21	36					22	Ditto.
		L	13	21	39						
		M	13	21	39						
		F	13	21	41			+65			
*509	Mar. 21	P	18	17	16					18	Ditto.
		L	18	17	18						
		ME	18	17	19		+155				
		MN	18	17	19			±185			
		F	18	17	29						
510	Mar. 21	P	20	16	44					9	Ditto.
		L	20	16	46						
		M	20	16	46						
511	Mar. 21	P	21	54	01					29	Ditto.
		L	21	54	05						
		M	21	54	05						
*512	Mar. 22	P	3	57	45					27	Ditto.
		L	3	57	49						
		M	3	57	49						
		F	3	58	19						
*513	Mar. 22	P	6	18	19					24	Ditto.
		L	6	18	22						
		M	6	18	23						
		F	6	19	28						
514	Mar. 22	L	11	55	32						Ditto.
		eF	11	55	33						
515	Mar. 22	P	19	48	40					19	Ditto.
		L	19	48	42						
516	Mar. 22	P	20	55	39					22	Ditto.

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
*517	Mar. 23	L	20 55 42					29	Ditto.
		MN	20 55 43			+45			
		F	20 55 50						
		P	3 30 33						
		L	3 30 37						
*518	Mar. 23	ME	3 30 37		-110			29	Ditto.
		MN	3 30 37			-60			
		F	3 30 35						
		P	9 52 31						
		L	9 52 35						
519	Mar. 23	M	9 52 35		+55	-95		24	Ditto.
		F	9 53 44						
		P	12 58 42						
		L	12 58 44						
		P	13 50 28						
*520	Mar. 23	L	13 50 31					27	Ditto.
		MN	13 50 31			+205			
		F	13 50 44						
		P	16 56 22						
		L	16 56 25						
*521	Mar. 23	F	16 56 30					27	Ditto.
		P	23 41 37						
		L	23 41 40						
		eMN	23 41 40						
		F	23 41 54						
523	Mar. 24	P	1 18 37					28	Ditto.
		L	1 18 40						
		eF	1 18 42						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
*524	Mar. 24	P	15 34 39					28	Ditto.
		L	15 34 42						
		M	15 34 42			+475	-400		
		F	15 35 11						
		P	19 14 11						
525	Mar. 24	L	19 14 14					27	Ditto.
		F	19 14 20						
		L	0 17 14						
		MN	0 17 14			+30			
		F	0 17 19						
*527	Mar. 25	P	4 36 12					22	Ditto.
		L	4 36 15						
		MN	4 36 15			+190			
		F	4 36 24						
		L	5 16 11						
528	Mar. 25	F	5 16 14					27	Ditto.
		P	8 40 42						
		L	8 40 45						
		eMN	8 40 45						
		F	8 40 51						
*530	Mar. 25	P	10 13 31					25	Ditto.
		L	10 13 34						
		eM	10 13 34			+325	+325		
		F	10 13 52						
		P	10 41 58						
531	Mar. 25	L	10 42 03					36	Ditto.
		ME	10 42 03			+60			
		eF	10 42 04						



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$		
532	Mar. 25	P	10 43 28					27	Ditto.
		L	10 43 31						
		MN	10 43 31			+15			
		eF	10 43 36						
533	Mar. 25	P	14 16 29					24	Ditto.
		L	14 16 32						
		ME	14 16 32			$\pm 40$			
		F	14 16 34						
534	Mar. 26	L	15 24 36						Ditto.
535	Mar. 26	P	16 41 41					28	Ditto.
		L	16 41 44						
		MN	16 41 45						
*536	Mar. 27	P	22 07 35					24	Ditto.
		L	22 07 38						
		eME	22 07 38			$\pm 40$			
		MN	22 07 38			+20			
		F	22 07 41						
537	Mar. 27	P	23 53 47					22	Ditto.
		L	23 53 50						
		eME	23 53 50						
		MN	23 53 51			$\pm 55$			
		F	23 54 00						
538	Mar. 28	P	5 03 41					23	Ditto.
		L	5 03 44						
		M	5 03 44			$\pm 40$			
		F	5 03 51			-40			
539	Mar. 28	P	15 52 43					25	Ditto.
		L	15 52 46						
		eME	15 52 47			-30			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$		
		MN	15 52 47						
		F	15 52 52			-65			
*540	Mar. 28	P	20 06 44					22	Ditto.
		L	20 06 47						
		M	20 06 47			$\pm 775$	$\pm 1175$		
		F	20 07 10						
*541	Mar. 29	P	4 21 29					12	Ditto.
		L	4 21 30						
		MN	4 21 30			$\pm 90$			
		F	4 21 33						
542	Mar. 29	P	13 02 31					31	Ditto.
		L	13 02 35						
		eME	13 02 35			$\pm 45$			
		MN	13 02 34			+35			
		FE	13 03 36						
		FN	13 02 36						
543	Mar. 29	P	19 23 28					15	Ditto.
		L	19 23 30						
		MN	19 23 30			$\pm 40$			
		F	19 23 34						
544	Mar. 30	L	7 23 56						Ditto.
		F	7 23 58						
*545	Mar. 30	P	13 30 46					28	Ditto.
		L	13 30 49						
		MN	13 30 50			$\pm 525$			
		F	13 31 18						
*546	Mar. 30	P	13 57 01					31	Ditto.
		L	13 57 05						
		M	13 57 05						

No.	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
547	Mar. 30	F	13 57 15				20	Ditto.	
		P	18 34 49						
		L	18 34 51						
		M	18 34 52	$\pm 45$	$\pm 125$				
*548	Mar. 31	F	18 34 52				27	Ditto.	
		P	0 09 34						
		L	0 09 37						
		M	0 09 37	$\pm 35$	$\pm 80$				
549	Mar. 31	P	0 13 34				26	Ditto.	
		L	0 13 38						
		F	0 13 47						
*550	Mar. 31	P	2 45 20				35	Ditto.	
		L	2 45 24						
		MN	2 45 25	$\pm 60$	$\pm 65$				
		F	2 45 35						
551	Mar. 31	P	3 14 06				22	Ditto.	
		L	3 14 09						
		eMN	3 14 09						
		eF	3 14 13		$+15$				
552	Mar. 31	L	5 53 51					Ditto.	
		eF	5 53 55						
553	Mar. 31	P	7 35 54				22	Ditto.	
		L	7 35 56						
		F	7 36 00						
*554	Mar. 31	P	21 08 43				32	The greatest after shock of No. 23; the epicentral region felt strong shocks and suffered some damages.	
		L	21 08 46						

No.	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
555	Mar. 31	P	21 23 04				27	After shock of No. 23.	
		L	21 23 07						
		eF	21 23 09						
556	Mar. 31	eP	21 23 09				16	Ditto.	
		L	21 23 11						
		MN	21 23 11		$\pm 55$				
		FN	21 23 30						
*557	Mar. 31	P	21 29 16				30	Ditto.	
		L	21 29 19						
		M	21 29 20		$-95$				
		F	21 29 28						
558	Mar. 31	P	21 29 38				29	Ditto.	
		L	21 29 42						
		M	21 29 42		$-75$				
*559	Mar. 31	P	21 31 38				33	Ditto.	
		L	21 31 42						
		M	21 31 43						
560	Mar. 31	F	21 31 52				32	Ditto.	
		P	21 34 15						
		L	21 34 19						
		M	21 34 20		$+20$				
561	Mar. 31	F	21 34 24					Ditto.	
		L	21 36 04						
		M	21 36 05		$+30$				
562	Mar. 31	F	21 36 07				28	Ditto.	
		P	21 36 19						
		L	21 36 22						
		M	21 36 22						
						$\pm 35$			

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
563	Mar. 31	F	21	36	25						
		P	21	46	43						Ditto.
		L	21	46	47						
		M	21	46	47	0.3		-10		33	Ditto.
564	Mar. 31	F	21	46	56						
		L	21	49	20						Ditto.
		M	21	49	20			+20			
565	Mar. 31	F	21	49	23						
		P	21	55	20						Ditto.
		L	21	55	24						
		M	21	55	24		-20	-15			
566	Mar. 31	F	21	55	29						
		L	22	01	29						Ditto.
		M	22	01	30			-20			
*567	Mar. 31	F	22	01	32						
		P	22	02	35						Ditto.
		L	22	02	38						
		M	22	02	38						
568	Mar. 31	F	22	02	45						
		P	22	13	46						Ditto.
		L	22	13	50						
		MN	22	13	51						
569	Mar. 31	F	22	13	56						
		P	22	15	13						Ditto.
		L	22	15	17						
		M	22	15	17						
570	Mar. 31	F	22	15	26						
		P	22	23	24						Ditto.
							-35	-65			

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
571	Mar. 31	L	22	23	28						
		MN	22	23	28						
		FN	22	23	32				-12		
572	Mar. 31	P	22	23	33						29
		L	22	23	37						Ditto.
		F	22	23	41						
573	Mar. 31	L	22	29	44						Ditto.
		F	22	29	47						
574	Mar. 31	P	22	32	33						31
		L	22	32	37						Ditto.
		M	22	32	37						
		F	22	32	46		-30	+25			
575	Mar. 31	P	22	41	50						35
		L	22	41	54						Ditto.
		M	22	41	54						
		F	22	42	00		-25	-30			
576	Mar. 31	P	22	52	40						30
		L	22	52	43						Ditto.
		M	22	52	44						
		F	22	52	54				-75		
577	Mar. 31	LM	23	13	04						38
		eF	23	13	07						Ditto.
578	Mar. 31	P	23	23	10						32
		L	23	23	15						Ditto.
		F	23	23	08						
579	Mar. 31	P	23	27	00						32
		L	23	27	04						Ditto.
		M	23	27	04						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
		F	23 27 10						
579	April 1	L	0 33 34					Ditto.	
		M	0 33 34			+25			
580	April 1	P	0 48 59				35	Ditto.	
		L	0 49 04						
		M	0 49 03						
		F	0 49 19						
581	April 1	L	0 54 41					Ditto.	
		M	0 54 41						
582	April 1	P	1 37 19				32	Ditto.	
		L	1 37 23						
		M	1 37 23						
		F	1 37 31			+45			
*583	April 1	P	2 17 36				27	Ditto.	
		L	2 17 40						
		M	2 17 40						
		F	2 17 45						
584	April 1	L	2 20 48					Ditto.	
		M	2 20 49						
		F	2 20 53						
*585	April 1	P	2 41 46				24	Ditto.	
		L	2 41 49						
		M	2 41 50						
		F	2 42 25			+22			
*586	April 1	P	4 27 40					Ditto.	
		M	4 27 40						
		F	4 27 48			+40			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
*587	April 1	P	5 50 05					28	Ditto.
		L	5 50 09						
		M	5 50 09						
		F	5 50 39			+38			
588	April 1	P	7 25 40					33	Ditto.
		L	7 25 44						
		M <sub>N</sub>	7 25 45						
		eF <sub>N</sub>	7 25 49			+75			
589	April 1	L	7 53 30					?	Ditto.
		M	7 53 30						
		F	7 53 35						
*590	April 1	P	9 23 36					32	Ditto.
		L	9 23 40						
		ME	9 23 41			+93			
		M <sub>N</sub>	9 23 41			+270			
		FE	9 25 02						
		F <sub>N</sub>	9 24 36						
591	April 1	P	10 24 59					28	Ditto.
		L	10 25 03						
		F	10 25 04						
592	April 1	P	10 53 05					26	Ditto.
		L	10 53 09						
		F	10 53 11						
593	April 1	P	11 28 41					22	Ditto.
		L	11 28 43						
		M	11 28 43						
		F	11 28 57			+95			
594	April 1	P	20 06 37					16	Ditto.
		L	20 06 39						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
595	April 1	M	20 06 40					198	Upper course of the River Masuda, Gifu Prefecture.
		eF	20 06 49						
		P	23 26 07						
		L	23 26 34						
		M	23 26 37	?	?				
		F	23 27 31						
596	April 2	P	1 29 44					34	Ditto.
		L	1 29 48						
		M	1 29 48						
		FE	1 29 52						
		FN	1 29 56						
597	April 2	P	2 35 55					34	Ditto.
		L	2 35 59						
		ME	2 35 59	$\pm 65$					
		MN	2 36 01						
		FE	2 36 13			-60			
		FN	2 36 07						
598	April 2	P	5 58 55					31	Ditto.
		L	5 58 59						
		ME	5 58 59	?					
		MN	5 58 59						
		FE	5 59 04				?		
		FN	5 59 03						
599	April 2	P	14 38 49					34	Ditto.
		LE	14 38 53						
		LN	14 38 54						
		ME	14 38 54	$+45$					
		MN	14 38 54						
		FE	14 39 02				-65		
		FN	14 39 02						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
600	April 2	P	15 05 27					33	Ditto.
		L	15 05 31						
		M	15 05 31			-40	-35		
		F	15 05 36						
601	April 2	P	15 34 54					34	Ditto.
		L	15 34 58						
		ME	15 34 59	$+50$					
		MN	15 34 59				$+55$		
		FE	15 35 12						
		F	15 35 09						
602	April 2	P	17 07 14					35	Ditto.
		L	17 07 18						
		MNE	17 07 18			-45	-50		
		eFE	17 07 45						
		FN	17 07 30						
603	April 3	P	1 22 08					35	Ditto.
		L	1 22 11						
		MEN	1 22 11			-50	+80		
		F	1 22 20						
604	April 3	eP	2 26 41					22	Ditto.
		L	2 26 44						
		M	2 26 44	$\pm 20$	$\pm 20$				
		F	2 26 49						
605	April 3	P	12 18 33					28	Ditto.
		L	12 18 36						
		M	12 18 36	$\pm 135$	$\pm 200$				
		FE	12 18 59						
		FN	12 19 15						
606	April 3	P	12 20 05					30	Ditto.
		L	12 20 09						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks		
					AE $\mu$	AN $\mu$	AZ $\mu$				
607	April 3	eME	12 20 09		$\pm 20$			32	Ditto.		
		eMN	12 20 08			$+20$					
		FE	12 20 14								
		eFN	12 20 16								
607	April 3	P	23 25 01					32	Ditto.		
		L	23 25 05								
		ME	23 25 05							$+25$	
		MN	23 25 05								
		FE	23 25 12								
		FN	23 25 12								
608	April 4	L	4 22 50		$-10$	$\pm 15$	?	Ditto.			
		M	4 22 50								
		eF	4 22 57								
609	April 4	L	6 11 47				?	Ditto.			
		F	6 11 54								
610	April 4	P	18 46 13					24	Ditto.		
		L	18 46 16								
		M	18 46 16							$\pm 30$	$\pm 60$
		F	18 46 26								
611	April 4	P	20 04 34						Ditto.		
		L	20 04 37								
		M	20 04 37							$\pm 25$	
		F	20 04 44								
612	April 5	P	2 29 26					22	Ditto.		
		L	2 29 28								
		ME	2 29 28							$\pm 30$	
		MN	2 29 29								
		eF	2 29 32							$\pm 35$	
		FN	2 29 37								

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks		
					AE $\mu$	AN $\mu$	AZ $\mu$				
613	April 5	ePN	6 53 29						Ditto.		
		L	6 53 37								
		eFE	6 53 41								
		eFN	6 53 41								
614	April 5	L	7 06 06					?	Ditto.		
		F	7 06 11								
615	April 5	P	15 51 37					37	Ditto.		
		L	15 51 42								
		M	15 51 42							$\pm 25$	$\pm 20$
		F	15 51 48								
616	April 5	P	17 58 07					32	Ditto.		
		L	17 58 11								
		M	17 58 12							?	?
		F	17 58 21								
617	April 5	P	18 20 22					8	Ditto.		
		L	18 20 23								
		ME	18 20 23							$\pm 15$	
		MN	18 20 24							$\pm 20$	
		eFE	18 20 27								
		eFN	18 20 29								
618	April 5	P	19 51 20					22	Ditto.		
		L	19 51 22								
		M	19 51 22							$\pm 30$	$\pm 20$
		FE	19 51 27								
		FN	19 51 31								
619	April 6	L	2 21 06					?	Ditto.		
		eF	2 21 09								
620	April 6	P	2 23 08								
		L	2 23 11								

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
621	April 6	eM	2 23 11		$\pm 15$			?	Ditto.
		eF	2 23 15						
		L	6 54 23						
		M	6 54 24						
622	April 6	P	9 47 05		$\pm 15$				Ditto.
		L	9 47 08						
		ME	9 47 09						
		MN	9 47 08		$\pm 25$				
*623	April 6	P	19 47 28					27	Ditto.
		L	19 47 31						
		M	19 47 31		$\pm 35$	$\pm 115$			
		FE	19 47 44						
*624	April 6	P	20 37 03					27	Ditto.
		L	20 37 06						
		M	20 37 06		$\pm 105$	$\pm 100$			
		F	20 37 19						
625	April 6	P	22 27 04					17	Ditto.
		L	22 27 06						
		M	22 27 06		$\pm 5$	$\pm 15$			
		FE	22 27 10						
626	April 7	L	0 45 12					?	Ditto.
		M	0 45 12						
		FE	0 45 17						
		FN	0 45 17						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
627	April 7	P	1 19 00		$\mu$	$\mu$	$\mu$	17	Ditto.
		L	1 19 02						
		eME	1 19 03		$\pm 5$				
		eMN	1 19 02			$+10$			
		FN	1 19 07						
628	April 7	P	4 14 04					27	Ditto.
		L	4 14 07						
		M	4 14 07		$\pm 10$	$\pm 10$			
		FE	4 14 09						
		FN	4 14 12						
629	April 7	L	7 59 10					?	Ditto.
		F	7 59 15						
630	April 7	L	10 33 32					?	Ditto.
		F	10 33 35						
631	April 7	eP	10 37 05					11	Ditto.
		L	10 37 06						
		eF	10 37 09						
632	April 7	P	20 17 02					11	Ditto.
		L	20 17 03						
		MEN	20 17 04						
		eF	20 17 08						
633	April 7	eP	22 13 41						Ditto.
		L	22 13 44						
		eME	22 13 44						
		MN	22 13 44						
		FN	22 13 49						
634	April 7	P	22 24 26					27	Ditto.
		L	22 24 29						
		M	22 24 29		$\pm 20$	$+15$			

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
635	April 8	F	22 24 35						
		L	3 42 06				?	Ditto.	
		F	3 42 12						
636	April 8	P	4 26 26				32	Ditto.	
		L	4 26 30						
		M	4 26 30	$\pm 75$	$\pm 85$				
		FE	4 26 59						
		FN	4 27 04						
637	April 8	P	6 55 45				30	Ditto.	
		L	6 55 49						
		eLN	6 55 49						
		ME	6 55 49	$\pm 35$					
		eM	6 55 49		$\pm 90$				
		FE	6 56 00						
		FN	6 56 02						
638	April 8	P	8 42 29				32	Ditto.	
		L	8 42 30						
		M	8 42 40	$\pm 400$	$\pm 350$				
		FE	8 44 04						
		FN	8 43 31						
639	April 8	P	10 27 54				32	Ditto.	
		L	10 27 58						
		M	10 27 59						
		FE	10 28 03		$\pm 15$				
		eFN	10 28 07						
640	April 8	P	10 28 35					Ditto.	
		L	10 28 39						
		eFE	10 28 45						
		eFN	10 28 47						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
*641	April 8	P	13 05 34				32	Ditto.	
		L	13 05 38						
		M	13 05 39	$\pm 925$	$\pm 1500$				
		eFE	13 08 16						
		eFN	13 07 43						
642	April 8	P	14 37 47				19	Ditto.	
		L	14 37 49						
		ME	14 37 50	$\pm 170$					
		eMN	14 37 49		$\pm 230$				
		FE	14 38 05						
		FN	14 38 01						
643	April 8	P	19 08 37				24	Ditto.	
		L	19 08 40						
		M	19 08 41	$\pm 45$	$\pm 40$				
		eF	19 08 45						
644	April 8	P	23 02 50				27	Ditto.	
		LE	23 02 53						
		LN	23 02 54						
		ME	23 02 53	$\pm 150$					
		MN	23 02 54		$+105$				
		F	23 03 09						
645	April 9	eP	0 19 00					Near the mouth of the River Arita, Wakayama Prefecture.	
		L	0 19 04						
		ME	0 19 04	$\pm 15$					
		MN	0 19 04		$\pm 10$				
		F	0 19 07						
646	April 9	P	1 33 23				30	After shock of No. 23.	
		LM	1 33 27						
		L	1 33 26						
		F	1 33 30						
		eF	1 33 30						



No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
647	April 9	L	3 04 04						Ditto.
		F	3 04 07						
648	April 9	P	5 53 15		$\pm 35$	$\pm 50$		22	Ditto.
		L	5 53 18						
		ME	5 53 18						
		MN	5 53 19						
		FE	5 53 25						
		FN	5 53 28						
649	April 9	P	11 01 25		$\pm 95$	$\pm 65$		22	Ditto.
		L	11 01 27						
		ME	11 01 28						
		MN	11 01 27						
		F	11 01 35						
650	April 9	P	17 31 43			$\pm 10$		22	Ditto.
		LM	17 31 45						
		F	17 31 53						
651	April 9	P	20 00 10		$\pm 15$			30	Ditto.
		L	20 00 14						
		ME	20 00 14						
		F	20 00 26						
652	April 9	P	21 02 57			$\pm 20$		25	Ditto.
		L	21 03 00						
		MN	21 03 00						
		FN	21 03 07						
*653	April 10	P	10 36 34		$\pm 75$	$\pm 50$		32	Ditto.
		L	10 36 38						
		M	10 36 38						
		F	10 36 54						
654	April 10	P	10 36 54					32	Ditto.

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
		L	10 36 58			$\pm 30$	$\pm 30$		
		M	10 36 58						
		eF	10 37 02						
655	April 9	P	10 37 02					32	Ditto.
		L	10 37 06						
		M	10 37 06						
		eF	10 37 09						
*656	April 9	P	10 37 09					27	Ditto.
		L	10 37 13						
		M	10 37 13						
		F	10 37 28						
567	April 9	L	11 56 39					?	Ditto.
		eF	11 56 41						
*658	April 9	P	11 56 42			$\pm 55$	$\pm 80$	24	Ditto.
		LM	11 56 45						
		F	11 56 52						
*659	April 10	P	12 55 25					24	Ditto.
		L	12 55 28						
		M	12 55 28						
		eF	12 56 20						
*660	April 10	P	16 32 30			$\pm 315$	$\pm 350$	24	Ditto.
		L	16 32 33						
		ME	16 32 33						
		MN	16 32 33						
		eFE	16 32 49						
		FN	16 32 48						
*661	April 10	P	17 59 53					27	Ditto.
		L	17 59 56						
		M	17 59 56						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
662	April 10	FE	18 00 06					?	Ditto.
		FN	18 00 09						
		L	20 56 06						
		eF	20 56 09						
663	April 10	P	22 46 27				27	Ditto.	
		L	22 46 30						
		M	22 46 30	$\pm 30$	$\pm 25$				
		F	22 46 37						
664	April 11	P	2 03 13				27	Ditto.	
		L	2 03 16						
		M	2 03 16	$\pm 15$	$\pm 15$				
		FE	2 03 20						
		FN	2 03 20						
665	April 11	P	2 23 32				32	Ditto.	
		L	2 23 26						
		eL	2 23 35						
		ME	2 23 35						
		F	2 23 54						
666	April 11	P	3 46 06				27	Ditto.	
		LN	3 46 09						
		LE	3 46 10						
		eM	3 46 10	$\pm 25$					
		MN	3 46 10						
		eFN	3 46 21		+40				
667	April 11	P	9 54 14				27	Ditto.	
		L	9 54 17						
		ME	9 54 17						
		MN	9 54 18	$\pm 25$					
		FE	9 54 25		$\pm 30$				
		FN	9 54 24						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
*668	April 11	P	11 50 39				24	Ditto.	
		L	11 50 42						
		ME	11 50 42	$\pm 65$					
		MN	11 50 43		$\pm 35$				
		FE	11 50 55						
669	April 11	P	19 19 12				24	Ditto.	
		L	19 19 15						
		FE	19 19 18						
		FN	19 19 22						
670	April 11	P	19 30 45				22	Ditto.	
		L	19 30 47						
		eMN	19 30 47		$\pm 20$				
		eFE	19 30 50						
		eFN	19 30 52						
671	April 11	eP	20 06 47				19	Ditto.	
		L	20 06 49						
		eME	20 06 49		$\pm 20$				
		MN	20 06 50						
		F	20 06 54						
		FN	20 06 59						
672	April 12	P	0 33 58				27	Ditto.	
		L	0 34 00						
		M	0 34 00	$\pm 200$					
		F	0 34 14						
673	April 12	P	3 31 28				171	Upper course of the River Masuda, Gifu Prefecture.	
		L	3 31 51						
		F	3 33 28						
674	April 12	P	12 21 13				27	After shock of No. 23.	
		L	12 21 16						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
675	April 12	M	12 21 16		$\pm 25$	$\pm 40$		24	Ditto.
		FE	12 21 21						
		FN	12 21 20						
		P	13 19 07						
		L	13 19 10						
		M	13 19 10						
676	April 12	eF	13 19 16				25	Ditto.	
		P	14 12 18						
		L	14 12 21						
		M	14 12 22						
677	April 12	F	14 12 24				25	Ditto.	
		P	14 12 18						
		L	14 12 21						
		M	14 12 22						
678	April 12	F	14 12 24				25	Ditto.	
		P	15 28 42						
		L	15 28 46						
		ME	15 28 47						
		MN	15 28 46						
679	April 12	FN	15 23 59				?	Ditto.	
		L	16 14 09						
		F	16 14 12						
680	April 12	L	22 06 52				?	Ditto.	
		eME	22 06 52						
		eMN	22 06 52						
		eFE	22 07 02						
*681	April 13	eFE	22 07 02	$\pm 30$			24	Ditto.	
		P	8 55 17						
		L	8 55 20						
		M	8 55 20	$\pm 160$	$\pm 105$				

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
682	April 13	FE	8 55 39		$\pm 30$			24	Ditto.
		FN	8 55 31						
		P	12 00 03						
		L	12 00 06						
		eME	12 00 07						
		eMN	12 00 07						
		FE	12 00 12						
683	April 13	FN	12 00 14				24	Ditto.	
		P	12 52 18						
		L	12 52 21						
		eM	12 52 21						
684	April 13	eFE	12 52 29				24	Ditto.	
		eF	12 52 24						
		P	13 49 21						
685	April 13	eL	13 54 22				24	After shock of No. 23.	
		eF	14 06 00						
		P	14 16 34						
		L	14 16 37						
		ME	14 16 37						
686	April 13	MN	14 16 37				24	Ditto.	
		FE	14 16 43						
		FN	14 16 47						
		L	16 17 13						
		MN	16 17 13						
687	April 13	eFE	16 17 19				32	Ditto.	
		eFN	16 17 17						
		P	20 57 20						
		L	20 57 23						
		M	20 57 24						
		FE	20 57 32	$\pm 25$	$\pm 45$				

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					A E	A N	A Z		
			h m s		$\mu$	$\mu$	$\mu$		
688	April 14	FN	20 57 30					41	Ditto.
		PN	2 25 29						
		PE	2 25 28						
		L	2 25 34						
		ME	2 25 35	$\pm 25$					
		MN	2 25 34		$+25$				
		FE	2 25 47						
		FN	2 25 43						
689	April 14	PE	6 43 58						A distant earthquake.
		eS	6 48 21						
		eL	6 52 08						
		eFE	7 19 00						
690	April 14	PN	12 20 57					24	After shock of No. 23.
		ePE	12 20 59						
		L	12 21 00						
		ME	12 21 01	$+35$					
		MN	12 21 00		$\pm 25$				
		FE	12 21 07						
		FN	12 21 07						
691	April 14	P	13 02 18					24	Ditto.
		L	13 02 21						
		F	13 02 26						
*692	April 14	P	16 59 39					31	Ditto.
		L	16 59 43						
		M	16 59 44						
		FE	17 01 36	$\pm 400$	$\pm 425$				
		FN	17 00 46						
693	April 14	P	17 44 51					27	Ditto.
		L	17 44 54						
		eME	17 44 54	$\pm 50$					

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					A E	A N	A Z		
			h m s		$\mu$	$\mu$	$\mu$		
*694	April 14	eMN	17 44 54					39	Ditto.
		FE	17 45 01			$\pm 20$			
		F	17 45 01						
		P	18 51 51						
		L	18 51 56						
		M	18 51 56	$\pm 30$	$\pm 30$				
		FN	18 52 12						
695	April 14	eFE	18 52 07					22	Ditto.
		P	19 06 59						
		L	19 07 02						
		ME	19 07 02	$\pm 30$					
		MN	19 07 02		$\pm 25$				
		FE	19 07 05						
		FN	19 07 06						
696	April 14	P	19 56 04					20	Ditto.
		L	19 56 06						
		ME	19 56 07	$\pm 15$					
		eMN	19 56 06		$\pm 20$				
		FE	19 56 12						
		eFN	19 56 11						
*697	April 15	P	1 49 23					25	Ditto.
		L	1 49 26						
		M	1 49 27	$\pm 80$	$\pm 100$				
		F	1 49 37						
698	April 15	P	5 36 51						Ditto.
		L	5 36 55						
		M	5 36 55	$\pm 15$	$\pm 10$				
		FE	5 36 59						
		eF	5 37 00						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$			
699	April 15	P	19 52 54				24	Ditto.		
		L	19 52 56							
		ME	19 52 57						$\pm 65$	
		MN	19 52 57						$\pm 50$	
		FE	19 53 05							
		FN	19 53 03							
700	April 16	P	2 39 49					Ditto.		
		L	2 39 51							
		M	2 39 51						$\pm 25$	$\pm 20$
		F	2 39 56							
		eF	2 39 55							
701	April 16	P	6 36 15				22	Ditto.		
		LE	6 36 18							
		LN	6 36 18							
		ME	6 36 18						$\pm 15$	
		MN	6 36 18						$\pm 10$	
		FE	6 36 20							
		FN	6 36 22							
702	April 16	P	8 22 20					Ditto.		
		eSE	8 27 52							
		eL	8 32 14							
		eF	8 45 00							
*703	April 16	P	11 57 07				27	Ditto.		
		L	11 57 11							
		ME	11 57 11						$\pm 150$	
		MN	11 57 11						$\pm 85$	
		FE	11 57 30							
		eF	11 57 30							
704	April 16	P	11 57 34				32	Ditto.		
		L	11 57 38							
		M	11 57 39						$\pm 10$	$\pm 10$

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks		
					AE $\mu$	AN $\mu$	AZ $\mu$				
*705	April 16	eFE	11 57 42					22	Ditto.		
		eFN	11 57 45								
		P	13 34 30							$\pm 1850$	$\pm 1175$
706	April 16	L	13 34 33					19	Ditto.		
		M	13 34 34								
		eFE	13 36 50							$\pm 20$	$\pm 15$
707	April 16	eFN	13 35 51					19	Ditto.		
		P	13 59 50								
		L	13 59 52							$\pm 15$	$\pm 15$
708	April 17	M	13 59 52					22	Ditto.		
		eF	13 59 55								
		eFN	13 59 57								
*709	April 17	P	16 53 37					27	Ditto.		
		L	16 53 40								
		ME	16 53 40							$\pm 15$	
		MN	16 53 40							$\pm 15$	
		FE	16 53 44								
		eFN	16 53 45								
710	April 17	P	4 33 53					24	Ditto.		
		L	4 33 55								
		ME	4 33 56								
		FE	4 34 01								
710	April 17	LM	6 23 59					24	Ditto.		
		LM	6 24 02							$\pm 100$	
		FE	6 25 05								
		FN	6 24 51								
710	April 17	P	10 43 36					24	Ditto.		
		LM	10 43 39							$\pm 8$	$\pm 10$
		F	10 43 43								

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks		
					AE	AN	AZ				
			G. M. T.		$\mu$	$\mu$	$\mu$	km.			
711	April 17	P	14 04 19	s				24	Ditto.		
		L	14 04 21								
		ME	14 04 22								
		MN	14 04 21								
		F	14 04 16								
712	April 17	P	20 06 59					27	Ditto.		
		LM	20 07 02								
		FE	20 07 07								
		FN	20 07 05								
713	April 18	P	0 39 12					30	Ditto.		
		L	0 39 16								
		M	0 39 16							$\pm 30$	$\pm 20$
		FE	0 39 23								
		FN	0 39 24								
*714	April 18	P	9 03 05					27	Ditto.		
		L	9 03 08								
		ME	9 03 09							$\pm 115$	
		MN	9 03 09								$\pm 150$
		FE	9 03 27								
		FN	9 03 26								
715	April 18	P	11 25 14	0.3				74	Upper course of the River Yodo.		
		L	11 25 25								
		M	11 25 27							-40	$\pm 30$
		FE	11 25 36								
		FN	11 25 33								
716	April 18	P	22 18 15						After shock of No. 23.		
		L	22 18 18								
		M	22 18 18							$\pm 15$	$\pm 10$
		eFE	22 18 21								
		FN	22 18 21								

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks			
					AE	AN	AZ					
			G. M. T.		$\mu$	$\mu$	$\mu$	km.				
717	April 19	PE	17 35 14	s				2340	Adistant earthquake.			
		PN	17 35 12									
		eL	17 39 21									
		M	17 40 32							6.5	$\pm 95$	$\pm 60$
		eF	18 01 15									
*718	April 19	P	20 49 14					32	After shock of No. 23.			
		L	20 49 18									
		M <sub>1</sub>	20 49 24							$\pm 130$	$\pm 160$	
		M <sub>2</sub> E	20 49 27							$\pm 135$		
		M <sub>2</sub> N	20 49 27								$\pm 105$	
		FE	20 49 46									
719	April 20	L	7 57 32						On the districts of river Kinokawa in Wakayama Pref.			
		F	7 57 39									
*720	April 20	P	19 50 17					24	After shock of No. 23.			
		L	19 50 20									
		ME	19 50 21							$\pm 135$		
		MN	19 50 20								$\pm 135$	
		F	19 50 33									
721	April 20	P	21 32 26					24	Ditto.			
		L	21 32 28									
		M	21 32 29							$\pm 30$	$\pm 25$	
		F	21 32 35									
		F	21 32 34									
722	April 21	P	2 23 28					30	Ditto.			
		L	2 23 31									
		eM	2 23 32									
		eF	2 23 38									
723	April 21	P	7 43 34						Ditto.			

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
724	April 21	L	7 43 37		$\pm 35$	$\pm 35$		Ditto.	
		M	7 43 38						
		F	7 43 43						
725	April 22	L	3 31 49		$\pm 135$	$\pm 190$	24	Ditto.	
		M	3 31 52						
		FE	3 32 24						
726	April 22	P	14 08 50			$\pm 45$	24	Ditto.	
		L	14 08 53						
		eME	14 08 59						
727	April 22	P	15 10 00		$\pm 65$		46	Ditto.	
		L	15 10 05						
		M	15 10 06						
728	April 22	P	21 21 17		$\pm 40$		24	Ditto.	
		L	21 21 20						
		M	21 21 20						
729	April 22	eP	22 13 35				30	Ditto.	
		eL	22 13 38						
		eF	22 13 45						
730	April 23	P	8 50 52				24	Ditto.	

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
731	April 23	L	8 50 55		$-30$	$\pm 23$		Ditto.	
		M	8 50 55						
		FE	8 51 13						
		FN	8 51 12						
732	April 23	P	18 01 04		$\pm 50$	$\pm 60$	24	Ditto.	
		FN	18 01 15						
		FE	18 01 17						
733	April 23	P	19 14 01		$\pm 15$	$\pm 50$	23	Ditto.	
		L	19 14 04						
		eM	19 14 04						
		FE	19 14 11						
		eFN	19 14 07						
734	April 24	L	4 28 33		$\pm 18$	$-15$		Ditto.	
		M	4 28 34						
		FE	4 28 36						
		FN	4 28 39						
735	April 24	P	6 45 29		$\pm 28$	$\pm 30$		Ditto.	
		L	6 45 32						
		eM	6 45 33						
		FE	6 45 44						
736	April 24	P	23 37 59		$\pm 13$		31	Ditto.	
		L	23 38 03						
		eME	23 38 03						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
737	April 25	MN	23 38 03			$\pm 30$		24 Ditto.	
		FE	23 38 12						
		FN	23 38 10						
737	April 25	eP	2 58 21					24 Ditto.	
		L	2 58 24						
		M	2 58 24		$\pm 20$	$\pm 20$			
		FE	2 58 32						
		FN	2 58 31						
*738	April 25	P	10 26 22					27 Ditto.	
		LM	10 26 25		$\pm 300$	$\pm 410$			
		F	10 27 11						
		FE	10 27 04						
*739	April 25	P	13 08 54					24 Ditto.	
		LM	13 08 57		$\pm 105$	$\pm 65$			
		FE	13 09 05						
		F	13 09 08						
740	April 25	P	14 03 37					19 Ditto.	
		L	14 03 40						
		FE	14 04 04						
		FN	14 04 02						
741	April 25	P	17 45 53					22 Ditto.	
		L	17 45 56						
		M	17 45 56		$\pm 40$	$\pm 55$			
		FE	17 45 59						
		FN	17 46 00						
742	April 25	P	19 36 05					24 Ditto.	
		L	19 36 08		$\pm 45$	$\pm 40$			
		M	19 36 08						
		FE	19 36 16						
		FN	19 36 13						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
743	April 26	LM	6 53 41		$\pm 10$			Ditto.	
		F	6 53 44						
744	April 26	P	6 57 24					17 Ditto.	
		L	6 57 26						
		M	6 57 27		$\pm 20$	$\pm 35$			
		FE	6 58 33						
		FN	6 58 31						
745	April 26	P	12 43 26					24 Ditto.	
		LM	12 43 29		$-25$	$\pm 20$			
		FE	12 43 38						
		FN	12 43 34						
746	April 26	P	14 38 16					30 Ditto.	
		L	14 38 19						
		M	14 38 20		$\pm 20$	$\pm 15$			
		F	14 38 25						
		eF	14 38 26						
747	April 26	P	14 38 45					26 Ditto.	
		L	14 38 48						
		ME	14 38 49		$\pm 20$				
		MN	14 38 48			$\pm 18$			
		F	14 38 54						
748	April 26	P	17 03 24					24 Ditto.	
		L	17 03 27						
		M	17 03 27		$\pm 13$	$\pm 15$			
		FE	17 03 34						
		FN	17 03 30						
749	April 26	P	22 19 31					30 Ditto.	
		L	22 19 35						
		eF	22 19 41						



No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
750	April 26	P	22	22	37					23	Ditto.
		L	22	22	40						
		M	22	22	40		$\pm 18$	$\pm 20$			
		F	22	22	46						
751	April 26	P	23	07	45					37	Ditto.
		L	23	07	49						
		M	23	07	49		$\pm 40$	$\pm 40$			
		FE	23	08	05						
		FN	23	08	01						
752	April 26	P	23	19	52					24	Ditto.
		LM	23	19	55		$\pm 35$	$\pm 40$			
		FE	23	20	02						
		FN	23	20	03						
753	April 27	P	17	04	33					27	Off the mouth of the River Maruyama, Tajima Province.
		LM	17	04	37		$\pm 30$	$\pm 50$			
		FE	17	04	43						
		FN	17	04	59						
754	April 27	P	19	18	11						Northern off of Bonin Is.
		eL	19	20	22						
		L	19	20	59						
		M <sub>1</sub>	19	22	25		-120				
		M <sub>2</sub>	19	23	51		-130				
		M <sub>3</sub>	19	24	29		-105				
		eFE	19	48	22						
		eFN	19	40	$\pm$						
755	April 27	P	23	37	35					35	Off Kumihama, Tango Province.
		L	23	37	39						
		M	23	37	40		$\pm 180$	$\pm 250$			
		FE	23	38	38						
		FN	23	38	17						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*756	April 28	P	7	10	45					25	After shock of No. 23.
		L	7	10	48						
		M	7	10	48		$\pm 70$	$\pm 60$			
		FE	7	11	08						
		FN	7	11	01						
757	April 28	P	20	11	23					22	Ditto.
		L	20	11	30						
		M	20	11	32		$\pm 10$				
		FE	20	11	35						
		FN	20	11	36						
758	April 29	P	0	03	02						Ditto.
		L	0	03	05						
		M	0	03	06		$+50$	$+40$			
		F	0	03	16						
759	April 29	P	0	21	33					24	Ditto.
		L	0	21	35						
		M	0	21	36		$\pm 95$				
		eM	0	21	36			$\pm 75$			
		FE	0	21	46						
760	April 29	L	4	00	29						Ditto.
		FE	4	00	42						
		eFN	4	00	32						
761	April 29	P	5	36	17					22	Ditto.
		L	5	36	20						
		eFE	5	36	23						
		eFN	5	36	21						
762	April 29	P	8	34	08					27	Ditto.
		L	8	34	11						
		ME	8	34	11		$\pm 8$				

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
763	April 29	MN	8	34	12			$\pm 10$		27	Ditto.
		FE	8	34	14						
		FN	8	34	20						
		P	8	37	58						
		L	8	38	02						
		eM	8	38	02		$\pm 8$				
		MN	8	38	02			$\pm 10$			
764	April 29	FE	8	39	06				24	Ditto.	
		FN	8	39	07						
		P	22	51	38						
765	April 30	LM	22	51	41				25	Ditto.	
		F	22	51	51						
		P	0	58	32						
766	April 30	L	0	58	35				24	Ditto.	
		M	0	58	36		$\pm 10$	$\pm 10$			
		FE	0	58	38						
		FN	0	58	39						
		P	3	19	16						
767	April 30	LM	3	19	19		$\pm 85$	$\pm 125$	25	Ditto.	
		FE	3	19	30						
		FN	3	19	28						
		P	4	30	22						
768	April 30	L	4	30	25				21	Ditto.	
		ME	4	30	26		$\pm 40$	$\pm 50$			
		F	4	30	32						
		eFN	4	30	35						
		L	5	38	43						
769	April 30	F	5	38	47				22	Ditto.	
		P	13	17	42						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
770	April 30	eL	13	17	44					23	Ditto.
		FE	13	17	40						
		FN	13	17	51						
771	April 30	LM	15	29	11				24	Ditto.	
		F	15	29	17						
772	April 30	P	17	47	03				24	Ditto.	
		L	17	47	06						
		M	17	47	06		$\pm 45$	$\pm 45$			
		FE	17	47	14						
		FN	17	47	15						
773	April 30	eP	18	09	03				21	Ditto.	
		LM	18	09	06		$\pm 40$				
		L	18	09	06						
		F	18	09	08						
		eF	18	09	12						
774	April 30	L	18	26	43				21	Ditto.	
		eM	18	26	44						
		FE	18	26	52						
		FN	18	26	55						
775	April 30	P	23	49	07				21	Ditto.	
		L	23	49	09						
		M	23	49	10		$\pm 30$	$+40$			
		FE	23	49	18						
		FN	23	49	25						



SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. III. No. 3.

From May 1, 1927 to December 31, 1927.

KOBE

March, 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)

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	$T_0$	$\varepsilon$	$\frac{r}{T_0^2}$	V		$T_0$	$\varepsilon$	$\frac{r}{T_0^2}$	V
AN:	20		0.003	20	AE:	5.1	Aperiodic	0.004	80
AE:	20		0.008	20	AN:	5.2	"	0.004	80
AE:	25		0.001	43	AZ:	4.1	"	0.006	80

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	
			G.	M.	T.		AE	AN	AZ			
258	May 3	P	h	m	s	s	$\mu$	$\mu$	$\mu$	km.	After shock of No. 20.	
		L	2	48	20							109
		ME	2	48	35							
		MN	2	48	42							
		FE	2	48	±							
		FN	2	48	±							
259	May 6	eP	8	20	04	±10	±13	±8	117	Ditto.		
		L	8	20	13							
		ME	8	20	20							
		MN	8	20	21							
		eFE	8	20	40							
		eFN	8	20	40							
260	May 6	P	16	26	09	±15	±15	±15	117	Near the Mt. Mikunidake, Wakasa Province.		
		L	16	26	24							
		ME	16	26	27							
		MN	16	26	27							
		FE	16	27	±							
		FN	16	27	±							

\*Earthquake felt.

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
261	May 8	ME	0	07	53		$\pm 3$			235	After shock of No. 20.
		MN	0	07	53			$\pm 5$			
		FE	0	08	$\pm$						
		FN	0	08	$\pm$						
262	May 8	P	7	57	38					235	Upper course of Enogawa, NWrn part of Bingo Province.
		L	7	58	05						
		ME	7	58	09	0.6	$\pm 313$				
		MN	7	58	09	0.6		$\pm 418$			
		MZ	7	58	09	0.6			$\pm 198$		
		CE	8	00	28		$\pm 48$				
		CN	8	00	33	2.6		$\pm 3$			
		CZ	8	00	26	1.5			$\pm 13$		
		FE	8	06	$\pm$						
		FN	8	06	$\pm$						
263	May 9	eP	7	04	48					0.9	Upper course of the River Hii, Shimane Province.
		L	7	05	10						
		ME	7	05	13	0.9	$\pm 10$				
		MN	7	05	14	0.9		$\pm 11$			
		FE	7	06	$\pm$						
264	May 13	P	8	43	53					85	After shock of No. 20.
		L	8	44	04						
		ME	8	44	08		$\pm 25$				
		MN	8	44	08			$\pm 20$			
		eFE	8	45	30						
265	May 13	eP	15	18	15					1.6	A distant earthquake, probable origin in Micronesia, North Pacific Ocean.
		FE	15	23	$\pm$						
		FN	15	23	$\pm$						
266	May 14	ME	10	24	44		$\pm 6$				After shock of No. 20.

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
267	May 16	MN	10	24	44			$\pm 6$		8.4	A distant earthquake.
		FE	10	25	$\pm$						
		FN	10	25	$\pm$						
		P	12	02	58						
268	May 16	eL	12	05	55					2.5	Local shock.
		ME	12	08	18	8.4	$\pm 10$				
		MN	12	08	49			$\pm 6$			
		FE	12	20	$\pm$						
		FN	12	19	$\pm$						
269	May 17	MN	18	29	57			$\pm 3$		2.6	NWrn part of the Japan sea.
		FN	18	30	$\pm$						
270	May 18	L	21	48	14					2.6	In the Kii channel.
		ME	21	50	33	2.5	$\pm 10$				
		MN	21	51	18	2.6		$\pm 6$			
		FE	21	55	$\pm$						
		FN	21	56	$\pm$						
271	May 19	eP	2	43	35					1.6	Near Titibu, Saitama Prefecture.
		L	2	43	43						
		ME	2	43	44		$\pm 13$				
		MN	2	43	44			$\pm 14$			
		eFE	2	44	20						
		eFN	2	44	20						
272	May 22	P	19	19	04					1.6	Probably in the Micro
		L	19	19	52						
		M <sub>1</sub> E	19	20	07	1.6	$\pm 48$				
		M <sub>1</sub> N	19	20	01	1.6		$\pm 56$			
		M <sub>2</sub> E	19	20	14	2.6	$\pm 50$				
272	May 22	eFE	19	24	40					390	Probably in the Micro
		eFN	19	24	40						
272	May 22	P	22	38	21					3864	Probably in the Micro

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
273	May 28	PR	22	39	53					88	After shock of No. 20.
		S	22	43	03						
		L	22	46	22						
		M <sub>1</sub> E	22	49	58	12.0	±544				
		M <sub>1</sub> N	22	47	58	13.5		±715			
		M <sub>2</sub> E	22	50	58	13.5	±568				
		M <sub>2</sub> Z	22	50	58	13.5			±450		
		C <sub>E</sub>	23	01	39	10.1	±65				
		C <sub>N</sub>	23	02	07	9.8		±35			
		F <sub>E</sub>	23	50	±						
		F <sub>N</sub>	23	50	±						
		F <sub>Z</sub>	23	30	±						
274	June 3	P	19	33	37					5400	Probably in Micronesia, Pacific Ocean.
		L	19	33	49						
		M <sub>E</sub>	19	33	52	0.6	±19				
		M <sub>N</sub>	19	33	51	0.6		±15			
		eF <sub>E</sub>	19	35	20						
		eF <sub>N</sub>	19	35	20						
		P	7	19	50						
S	7	25	55								
L	7	31	48								
M <sub>1</sub> E	7	36	04	18.9	±13						
M <sub>1</sub> N	7	36	14	18.9		±11					
M <sub>1</sub> Z	7	36	44	17.5			±19				
M <sub>2</sub> N	7	44	21	16.8		±10					
M <sub>2</sub> Z	7	44	18	17.6			±13				
F <sub>E</sub>	8	16	±								
F <sub>N</sub>	8	16	±								
F <sub>Z</sub>	8	16	±								
275	June 3	P	11	11	53					23	Local shock.
		L	11	11	56						
		F <sub>E</sub>	11	11	58						
		F <sub>N</sub>	11	11	58						
		F <sub>Z</sub>	11	11	58						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
276	June 9	eP	3	25	49					307	Far off the south coast of Japan.
		M <sub>E</sub>	3	29	16	2.9	±10				
		M <sub>N</sub>	3	29	19	2.9		±6			
		F <sub>E</sub>	3	33	±						
		F <sub>N</sub>	3	33	±						
277	June 12	P	8	20	30					307	Middle part of Honsyu.
		L	8	21	07						
		M <sub>E</sub>	8	21	08	1.8	±31				
		M <sub>N</sub>	8	21	08	2.0		±90			
		C <sub>N</sub>	8	22	24	2.0		±25			
		F <sub>E</sub>	8	25	±						
		F <sub>N</sub>	8	25	±						
278	June 18	eP	2	27	32					71	In the Kii Channel.
		L	2	28	21						
		M <sub>1</sub> E	2	28	23	2.5	±90				
		M <sub>1</sub> N	2	28	23	2.5		±63			
		M <sub>2</sub> E	2	29	36	2.4	±33				
		M <sub>2</sub> N	2	29	35	2.4		±40			
		F <sub>E</sub>	2	38	±						
F <sub>N</sub>	2	38	±								
279	June 25	M <sub>E</sub>	14	35	07	0.8	±9			71	In the Kii Channel.
		M <sub>N</sub>	14	35	02	0.8		±4			
		eF <sub>E</sub>	14	38	20						
		eF <sub>N</sub>	14	38	20						
		P	3	21	55						
L	3	22	04								
M <sub>E</sub>	3	22	06	0.8	±31						
M <sub>N</sub>	3	22	06	0.8		+38					
C <sub>E</sub>	3	23	31	1.4	±19						
C <sub>N</sub>	3	23	15	1.7		±13					
F <sub>E</sub>	3	28	±								
F <sub>N</sub>	3	28	±								

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
281	July 1	P	3	41	59	0.6		$\pm 13$		75	Ditto.
		L	3	42	09						
		ME	3	42	10						
		MN	3	42	10						
		FE	3	53	$\pm$						
		FN	3	53	$\pm$						
282	July 1	P	15	28	05	0.5	$\pm 19$			76	After shock of No. 20.
		L	15	28	16						
		ME	15	28	16						
		MN	15	28	16						
		eFE	15	29	$\pm$						
		FN	15	29	$\pm$						
283	July 3	eP	8	21	37	$\pm 4$					A distant earthquake.
		eS	8	23	20						
		eME	8	27	39						
		FEN	8	33	$\pm$						
284	July 4	P	5	23	25	0.6	$\pm 16$			40	S. part of the Osaka Bay.
		L	5	23	31						
		ME	5	23	32						
		MN	5	23	23						
		FEN	5	24	$\pm$						
285	July 4	P	17	10	56	0.6	$\pm 138$			45	Near Himeji.
		L	17	11	02						
		M <sub>1</sub> E	17	11	04						
		M <sub>1</sub> N	17	11	02						
		M <sub>1</sub> Z	17	11	03						
		M <sub>2</sub> E	17	11	08						
		M <sub>2</sub> N	17	11	08						
		FE	17	14	$\pm$						
		FN	17	14	$\pm$						
		FZ	17	14	$\pm$						
						$\pm 100$					
						$\pm 113$					
										$\pm 115$	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
286	July 4	P	17	20	42					42	Ditto.
		L	17	20	48						
		ME	17	20	49						
		MN	17	20	49						
		eFEN	17	21	20						
287	July 4	P	17	41	30		$\pm 6$			42	Ditto.
		L	17	41	36						
		ME	17	41	37						
		MN	17	41	37						
		FE	17	42	1						
		FN	17	41	51						
288	July 6	P	20	34	54		$\pm 25$			100	After shock of No. 20.
		L	20	35	08						
		ME	20	35	10						
		MN	20	35	09						
		FEN	20	36	$\pm$						
289	July 7	ME	4	18	30		$\pm 5$				Near the mouth of the Kinogawa, Wakayama Prefecture.
		MN	4	18	30						
		FEN	4	19	$\pm$						
290	July 11	eP	8	10	48	3.0	$\pm 4$				E. off the Soriya cape, Aomori Prefecture.
		ME	8	15	40						
		MN	8	15	40						
		FEN	8	20	$\pm$						
291	July 12	eP	21	10	55						Off the Oti-isi cape, Hokkaido.
		eS	21	13	26						
		eL	21	15	56						
		FEN	21	25	$\pm$						
292	July 16	eP	6	50	32						Upper course of Yoshinogawa, Sikoku.
		L	6	50	34						
		MN	6	50	36						
											$\pm 28$

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
293	July 17	FEN	6	51	±						In the Kitan Strait.
		eP	8	53	33						
		FN	9	02	±						
294	July 19	ME	22	21	01		±6				Near the mouth of Maruyama, Tajima Province.
		MN	22	21	01	0.6		±6			
		eFEN	22	21	10						
295	July 20	P	3	48	11			-3		89	Upper course of Miya, Ise Province.
		L	3	48	23						
		M <sub>1</sub> E	3	48	25	0.6	±56				
		M <sub>1</sub> N	3	48	29	0.6		±75			
		M <sub>2</sub> N	3	48	39	1.3		±53			
		CE	3	50	30	1.8	±14				
		CN	3	50	30	1.8		±13			
		FEN	3	52	±						
296	July 22	ME	4	35	03	15.2	±3				A distant earthquake.
		MN	4	35	36	15.9		±6			
		eFEN	4	41	30						
297	July 22	P	4	42	19					67	Upper course of Kako, Harima Province.
		L	4	42	28						
		ME	4	42	29		±25				
		MN	4	42	29			±40			
		eFE	4	43	30						
		FN	4	43	30						
298	July 23	eP	17	22	±						S. off Kinkazan, Miyagi Prefecture.
		FN	17	30	±						
299	July 23	eP	20	27	±						Upper course of Sagami.
		FN	20	30	±						
300	July 27	P	14	53	05				499	NE. off Hatijo I.	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
301	July 30	L	14	54	13						In the Sea of Kasima.
		M <sub>1</sub> Z	14	54	16	2.4	±40				
		M <sub>1</sub> N	14	54	16	2.4		±38			
		M <sub>2</sub> Z	14	54	40	2.1		±50			
		FEN	15	00	±						
302	Aug. 1	P	14	19	44					567	After shock of No. 20.
		L	14	20	57						
		ME	14	21	14		±150				
		MN	14	21	14			±150			
		FEN	14	33	±						
303	Aug. 4	P	14	15	12					88	A distant earthquake, probably in the South Sea.
		L	14	51	23						
		ME	14	51	24		±10				
		MN	14	51	24			±9			
		FEN	14	52	±						
304	Aug. 4	P	18	12	18					58	In the Kii Channel.
		L	18	12	26						
		ME	18	12	32	0.6	±19				
		MN	18	12	31	0.6		±31			
		eFEN	18	13	30						
305	Aug. 5	P	12	41	01					96	In the Bay of Kumi-hama, Tango Province.
		L	12	41	14						
		ME	12	41	17	0.6	±90				
		MN	12	41	17	0.6		±100			
		eFEN	12	45	30						
306	Aug. 5	P	21	14	33					662	The epicenter off the mouth of the Abukuma; Isinomaki, Fuku-shima and
		L	21	16	04						
		M <sub>1</sub> E	21	16	29	3.3	±515				



No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks	
			G.	M.	T.		AE	AN	AZ			
			h	m	s	s	μ	μ	μ	km.		
307	Aug. 8	M <sub>1</sub> N	21	16	21	2.9		±788		39	neighboring places felt a strong shock. This was the moderate earthquake.	
		M <sub>2</sub> E	21	17	11	2.2	±544					
		M <sub>2</sub> N	21	16	44	2.2		±735				
		M <sub>2</sub> Z	21	16	41	2.6			±275			
		M <sub>3</sub> E	21	18	20	3.3	±750					
		M <sub>3</sub> N	21	17	45	2.2		±569				
		M <sub>3</sub> Z	21	17	43	2.3			±200			
		eFEN	21	53	30							
		eFZ	21	48	30							
		308	Aug. 10	ME	18	50	56		±3			
MN	18			50	56			±19				
FEN	18			53	±							
309	Aug. 10	P	1	12	33				0.5	39	In the Kitan Strait.	
		L	1	12	38							
		ME	1	12	40		±28					
		MN	1	12	40			±50				
		FEN	1	13	±							
310	Aug. 12	eP	11	43	19				17.3	718	A distant earthquake, probably in Micronesia. From Omori's seismograph.	
		eS	11	48	40							
		eL	11	57	37							
		ME	11	58	56	17.3	±325					
		MN	11	58	56	17.3		±725				
		FEN	12	24	±							
310	Aug. 12	P	0	35	48				1.9	718	NW. off Bonin IIs.	
		L	0	37	24							
		M <sub>1</sub> E	0	37	26	1.9	±94					
		M <sub>1</sub> N	0	37	27	2.7		±194				
		M <sub>1</sub> Z	0	37	27	2.7						±50
		M <sub>2</sub> E	0	38	15	2.7	±63					
		M <sub>2</sub> N	0	38	22	3.0						
		eFEN	0	49	20			±94				
		eFZ	0	44	20							

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks	
			G.	M.	T.		AE	AN	AZ			
			h	m	s	s	μ	μ	μ	km.		
311	Aug. 12	P	1	25	02					0.6	48	Near Himeji.
		L	1	25	08							
		ME	1	25	09		±106					
		MN	1	25	09			±106				
		MZ	1	25	09			±38				
312	Aug. 16	P	11	23	09				0.3	46	Ditto.	
		L	11	23	15							
		MEN	11	23	16			±158				
		MZ	11	23	16			±96				
		F	11	25	±							
313	Aug. 16	P	14	15	08				0.3	46	In the Sea of Harima.	
		L	14	15	14							
		ME	14	15	15							
		MN	14	15	15			±19				
		FEN	14	16	±							
314	Aug. 18	P	19	29	17				11.5	806	Far off the Bōso peninsula.	
		S	19	30	08							
		L	19	31	06							
		M <sub>1</sub> N	19	32	45			±300				
		M <sub>2</sub> N	19	33	10	10.3		±238				
315	Aug. 19	eFN	20	10	20				10.5	124	In the Bay of Kumi-hama.	
		P	3	45	06							
		L	3	45	22							
		ME	3	45	23							
		MN	3	45	23			±13				
316	Aug. 20	FEN	3	46	±				10.5	124	SSE. off Tyosi.	
		eP	21	38	58							
		L	21	41	44							
		MEN	21	42	11		±19	±30				
		eFEN	21	55	35							



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No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
							AE	AN	AZ		
			G.	M.	T.				km.		
			h	m	s	s	μ	μ	μ		
317	Aug. 20	P	22	13	41				399	In the Sea of Ensyu.	
		L	22	14	35						
		MEN	22	14	37	2.6	±50	±38			
		eFE	22	19	35						
		FN	22	19	35						
✓ 318	Aug. 23	eP	6	30	30				1020	NNE. off Bonin IIs.	
		L	6	32	47						
		M <sub>1</sub> E	6	35	04	9.0	±83				
		M <sub>1</sub> Z	6	34	55	10.4		±63			
		M <sub>2</sub> E	6	35	56	8.5	±63				
		M <sub>2</sub> N	6	35	55	9.1		±53			
		FEN	7	01	±						
		FZ	6	56	±						
319	Aug. 23	P	10	09	06				84	Lower course of the	
		L	10	09	17					Arita, Wakayama	
		FEN	10	10	±					Prefecture.	
320	Aug. 24	L	5	30	50					SW. off Hatijo I.	
		ME	5	30	50		±15				
		MN	5	30	50	0.9		±28			
		CE	5	31	44	2.2	±15				
		CN	5	31	43	2.2		±20			
		FEN	5	36	±						
✓ 321	Aug. 24	P	8	57	36					E. off the Siwoya	
		S	8	59	07					promontory.	
		ME	9	00	25		±23				
		MN	9	00	31			±23			
		MZ	9	00	32	11.9					
		FEN	9	21	±						
		FZ	9	16	±						
✓ 322	Aug. 24	P	15	19	39					A distant earthquake.	
		L	15	22	32				1282		

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
							AE	AN	AZ		
			G.	M.	T.				km.		
			h	m	s	s	μ	μ	μ		
		ME	15	22	48	14.4	±5				
		FEN	15	31	±						
323	Aug. 24	eP	18	13	16					In the southern part of	
		L	18	20	46					Formosa; at Tainan a	
		ME	18	21	23	13.9	±6			strong shock was felt.	
		MN	18	21	20	13.9		±4			
		FEN	18	31	±						
324	Aug. 26	P	6	00	19					18 Local shock.	
		L	6	00	21						
		ME	6	00	21		±36				
		MN	6	00	21	0.6		±38			
		FEN	6	00	39						
325	Aug. 29	eP	5	35	27					E. off the Siwoya	
		ME	5	39	40	7.1	±8			promontory.	
		MN	5	39	09			±5			
		FEN	5	52	±						
326	Sept. 4	P	16	09	33					75 In the Kii Channel.	
		L	16	09	43						
		ME	16	09	44	0.5	±31				
		MN	16	09	45	0.5		±88			
		MZ	16	09	44				±9		
		F	16	11	±						
327	Sept. 5	P	0	34	19					485 Near the mouth of	
		L	0	35	24					Naka, Ibaraki Prefecture.	
		ME	0	35	38	1.4	±28			Mito and its vicinity felt	
		MN	0	35	36	1.4		±60		a moderate shock.	
		MZ	0	35	35	1.8			±24		
		CE	0	37	35	2.5	±16				
		CN	0	37	22	2.2		±15			
		FEN	0	41	±						
		FZ	0	39	±						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
328	Sept. 5	ME	22 41 15	1.8	$\pm 25$			Near the Mt. Tanzawa Sagami Prefecture.	
		MN	22 41 13	1.8		$\pm 18$			
		FEN	22 42 $\pm$						
329	Sept. 7	eP	10 34 52				Lower course of the Kinu.		
		L	10 35 44						
		ME	10 35 46	2.2	$\pm 15$				
		MN	10 35 52	2.2		$\pm 16$			
		FEN	10 40 $\pm$						
330	Sept. 8	P	9 23 31				47 Lower course of the Kinokawa, Wakayama Prefecture.		
		L	9 23 37						
		ME	9 23 38	0.6	$\pm 9$				
		MN	9 23 38	0.6		$\pm 13$			
		FEN	9 24 $\pm$						
331	Sept. 11	M <sub>1</sub> E	22 57 35	23.7	$\pm 6$		A distant earthquake.		
		M <sub>1</sub> N	22 57 47	23.7		$\pm 6$			
		M <sub>2</sub> E	23 05 40	14.2	$\pm 5$				
		M <sub>2</sub> N	23 05 24	14.2		$\pm 9$			
		M <sub>2</sub> Z	23 05 31	15.0				$\pm 10$	
		FEN	23 18 $\pm$						
		FZ	23 13 $\pm$						
332	Sept. 12	P	15 30 09				291 S. off the Onmae cap		
		L	15 30 48						
		M <sub>1</sub> EN	15 30 50	2.3	$\pm 81$	$\pm 103$			
		M <sub>1</sub> Z	15 30 50	2.3				$\pm 31$	
		M <sub>2</sub> E	15 32 35	2.9	$\pm 40$				
		M <sub>2</sub> N	15 31 59	2.3		$\pm 59$			
		M <sub>2</sub> Z	15 32 34	2.9				$\pm 15$	
		F	15 36 $\pm$						
333	Sept. 17	M <sub>1</sub> E	15 13 17	3.0	$\pm 10$		W. off Yaku I, Kago- sima Prefecture.		
		M <sub>1</sub> N	15 13 22	3.0		$\pm 10$			
		M <sub>2</sub> E	15 13 55	3.4	$\pm 16$				

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
334	Sept. 21	M <sub>2</sub> N	15 13 58	3.4		$\pm 9$		In the Sea of Harima.	
		eFEN	15 18 30						
		P	12 14 18						
		eL	12 14 21						
335	Sept. 23	eMEN	12 14 23		$\pm 15$	$\pm 16$		Upper course of the Masuda, Gifu Pre- fecture.	
		eFE	12 14 30						
		P	2 49 12						
		S	2 49 56						
336	Sept. 23	ME	2 50 13		$\pm 15$		Near Wakayama.		
		FE	2 51 03						
		P	3 52 28						
337	Sept. 23	ME	3 52 33				Near Wakayama.		
		FE	3 53 16						
		ME	14 20 29						
338	Sept. 30	P	7 40 39				1072 Off the Sirlya cape.		
		S	7 42 13						
		L	7 43 03						
		M <sub>1</sub> E	7 44 39	2.8	$\pm 18$				
		M <sub>1</sub> N	7 44 41	2.8		$\pm 12$			
		M <sub>1</sub> Z	7 43 26	2.8				$\pm 5$	
		M <sub>2</sub> E	7 45 16	2.9	$\pm 15$				
		M <sub>2</sub> N	7 46 20	2.9		$\pm 15$			
		FE	7 54 22						
FZ	7 49 46								
339	Oct. 7	eP	3 12 45				Local shock.		
340	Oct. 8	eP	9 31 33				19 Near Kyoto.		
		L	9 31 36						
		MEN	9 31 36		$\pm 15$	$\pm 15$			

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
341	Oct. 8	FE	9 32 03						1024 E. off Bōso Peninsula
		FN	9 32 08						
		P	12 27 50						
		L	12 30 08						
		ME	12 31 08	14.4	±110				
		MN	12 30 34	12.0		±55			
		FE	12 46 08						
342	Oct. 11	FN	12 43 00					503 In the Sea of Kasima	
		P	1 14 24						
		P	1 14 28						
		S	1 15 02						
		L	1 15 32						
		ME	1 17 06	3.1	±35				
		MN	1 16 59	3.3		±65			
343	Oct. 11	FE	1 24 32					62 In the Kitan Strait.	
		FN	1 25 27						
		P	6 55 16						
		L	6 55 24						
		ME	6 55 24		±5				
		MN	6 55 26			±8			
344	Oct. 11	FE	6 56 03					1230 E. off the Erimo promontory.	
		FN	6 55 58						
		P	17 33 01						
		S	17 34 15						
		L	17 35 47						
345	Oct. 16	ME	17 37 34					Near Gifu.	
		FE	17 44 42						
		P	6 07 44						
		ME	6 08 21	2.1	±10				
		MN	6 08 21	2.2		±12			

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
46	Oct. 16	FN	6 12 47					565 In the Kitan Strait.	
		P	19 57 06						
		eL	19 57 11						
		FE	20 01 05						
		FN	20 00 47						
47	Oct. 18	P	12 47 07					565 In the Sea of Amakusa.	
		S	12 48 14						
		L	12 48 23						
		ME	12 49 53		±160				
		MN	12 50 18			±220			
48	Oct. 24	FE	12 58 23					3970 A distant earthquake.	
		eP	16 10 13						
		S	16 14 24						
		L	16 18 23						
		eFE	17 34 22						
49	Oct. 24	eP	19 07 10					1020 SE. far off Bōso Peninsula, From Omori's seismograph.	
		eS	19 08 13						
		L	19 09 26						
		M <sub>1</sub> E	19 10 21	13.5	±1065				
		M <sub>1</sub> N	19 10 51	13.5		±815			
		M <sub>2</sub> E	19 12 22		±685				
		C <sub>1</sub> E	19 14 36						
		C <sub>1</sub> N	19 13 21						
		C <sub>2</sub> E	19 17 50						
		FE	19 39 21						
FN	19 44 21								
350	Oct. 25	P	14 28 49					57 Near Wakayama.	
		L	14 28 56						
		ME	14 28 58		±10				
		MN	14 28 59						
		FEN	14 30 ±						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$								AE $\mu$	AN $\mu$	AZ $\mu$		
351	Oct. 27	eP eME FE	1 54 54 1 56 28 1 58 40					Misima district, Elgu Province.			FEN FZ	19 56 $\pm$ 19 54 $\pm$							
352	Oct. 28	P L ME MN FE	15 24 48 15 27 01 15 27 20 15 27 20 15 42 40	14.4 8.4	$\pm 38$	$\pm 38$	990	SE. far off Bōso Peninsula.	358	Nov. 11	P L MEN MZ eFE eFZ	2 47 57 2 48 18 2 48 19 2 48 17 2 51 $\pm$ 2 50 $\pm$		$\pm 19$	$\pm 25$	$\pm 19$	120 After shock of No. 20.		
353	Nov. 4	eP	14 03 18					A distant earthquake, record indistinct (from Omori's seismograph.)	359	Nov. 14	eP L ME CE eFE	5 09 06 5 18 25 5 18 54 5 20 21 5 38 $\pm$	13.3	$\pm 550$			4880 A distant earthquake. From the Omori's seismograph.		
354	Nov. 4	eP FN	14 13 25 14 22 $\pm$					Ditto.											
355	Nov. 4	eP M <sub>1</sub> N M <sub>2</sub> N C <sub>1</sub> N C <sub>2</sub> N C <sub>3</sub> N C <sub>4</sub> N eF	14 24 31 14 28 55 14 29 31 14 31 50 14 32 52 14 36 51 14 39 41 14 47 $\pm$	12.0 12.0 8.4 7.2 7.5 7.5	$\pm 35$ $\pm 40$			Ditto.	360	Nov. 14	eP eFE	19 47 29 20 15 $\pm$					SE. off Bonin IIs.		
356	Nov. 5	P ME MZ FE FZ	6 41 21 6 43 40 6 41 44 6 48 46 6 43 45		$\pm 10$			W. off Isigaki I.	361	Nov. 16	P S L MN CN FN	21 16 09 21 20 05 21 23 34 21 25 40 21 26 19 21 38 $\pm$	22.2		$\pm 625$		3640 A distant earthquake.		
357	Nov. 10	P L ME MN MZ	19 49 07 19 49 45 19 49 45 19 49 45 19 49 46		$+25$	$+34$	288	Upper course of the Tenryu.	362	Nov. 17	eP L MEN FEN	17 05 15 17 05 16 17 05 17 17 06 18		$\pm 8$	$\pm 6$		In the Kitan Strait.		
									363	Nov. 18	eP eME eFE	3 29 51 3 41 02 4 25 30					A distant earthquake.		
									364	Dec. 2	P	6 55 15				104	Middle course of the		

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
365	Dec. 4	L	6	55	29					572	Arita, Wakayama Prefecture. In the Bay of Tjijima
		ME	6	55	29	1.2	+225				
		MN	6	55	32	1.2		-175			
		MZ	6	55	31	1.1			-104		
		C <sub>1</sub> E	6	56	34						
		C <sub>1</sub> N	6	56	32						
		C <sub>2</sub> EN	6	57	02						
		eFEN	7	07	±						
		FZ	7	05	±						
		P	3	54	29						
L	3	55	46								
ME	3	55	48	2.0	±25						
MN	3	56	07	2.1		±38					
MZ	3	55	50	1.9			±9				
FEN	4	03	±								
366	Dec. 4	P	12	19	33					599	Ditto.
		L	12	20	54						
		MN	12	21	02	1.5		±13			
		MZ	12	20	57	1.6			±8		
		FNZ	12	26	±						
367	Dec. 7	P	9	35	03					445	On the coast of the Sea of Kasima.
		L	9	36	03						
		ME	9	36	30	2.0	±6				
		MN	9	36	22	2.4		±7			
		MZ	9	36	28	2.1			±3		
		FE	9	39	12						
		FN	9	39	30						
		FZ	9	39	12						
368	Dec. 9	eP	3	34	58						Local shock.
		MN	3	35	01						
		FN	3	35	06			±6			

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
69	Dec. 10	eP	19	21	44					655	In the Kitan Strait.
		L	19	21	45						
		ME	19	21	45		±61				
		MN	19	21	45			±20			
		FE	19	22	06						
		FN	19	21	58						
70	Dec. 18	P	19	51	09					655	Middle part of the Japan Sea.
		L	19	52	37						
		ME	19	52	43	1.8	±7				
		MN	19	52	40	2.0		±12			
		FE	19	57	02						
FN	19	57	37								
71	Dec. 28	eP	18	26	16					655	A distant earthquake, From the Omori's seismograph.
		S	18	31	13						
		L	18	34	32						
		M <sub>1</sub> E	18	35	23	19.2	-80				
		M <sub>1</sub> N	18	38	03	15.6		+275			
		M <sub>2</sub> E	18	36	33	19.1	+61				
		C <sub>1</sub> E	18	39	23						
		C <sub>1</sub> N	18	38	38						
		C <sub>2</sub> E	18	43	53						
		C <sub>2</sub> N	18	45	09						
FE	20	09	45								
FN	20	09	43								
72	Dec. 30	P	7	20	27					49	In the Kii channel.
		L	7	20	33						
		ME	7	20	34	0.6	±23				
		MN	7	20	34	0.6		±18			
		eFE	7	21	±						
		FN	7	21	23						
73	Dec. 31	eP	5	51	40					297	Upper course of the Arakawa.
		L	5	52	21						

# 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)

	$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V		$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V
AE:	20.0	4.6	0.001	20	AE:	4.5	Aperiodic	0.003	80
AN:	20.0	4.6	0.001	20	AN:	4.5	"	0.003	80
					AZ:	4.3	"	0.004	80

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks
			G.	M.		T.	AE	AN		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.
		M <sub>1</sub> E	5	52	45	2.8	$\pm 13$			
		M <sub>1</sub> N	5	52	36	2.0		$\pm 28$		
		M <sub>2</sub> E	5	53	34	2.8	$\pm 29$			
		M <sub>2</sub> N	5	52	47	2.0		$\pm 10$		
		FN	5	58	28					
		FZ	5	58	58					

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
			G.	M.		T.	AE	AN			AZ
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
77	May 1	P	22	54	49				-1	27	Near the mouth of the Kinokawa.
		L	22	54	53		+5	+6	-1		
		MEN	22	54	55	0.4	-9	-9			
		MZ	22	54	55	0.4			+2		
		eF	22	55	49						
78	May 3	P	2	48	03					61	In the Kii channel.
		L	2	48	11		+2	+1			
		MEN	2	48	11	0.3	+3	-5			
		MZ	2	48	12						
		eFEN	2	48	41						
		eFZ	2	48	41						
79	May 3	eP	2	48	41						An after shock of No. 35 (the great North Tango earthquake)
		L	2	48	47		+2	+1			
		MEN	2	48	50	0.3	+3	+3			
		eF	2	49	23						
80	May 4	eP	16	57	47					50	In the Kii channel.
		L	16	57	54		+2	+1			
		ME	16	57	54	0.3	+2				

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$								AE $\mu$	AN $\mu$	AZ $\mu$		
181	May 6	MN	16 57 55	0.3		-3		152	Near the Mt. Mikuridake, Wakasa Province	187	May 13	P	15 18 20					2457	A distant earthquake, probably in the South Seas.
		eF	16 58 18																
		P	16 26 19		-1.1	-0.5													
		L	16 26 39		-2	+1													
		M	16 26 40		-2	+3													
182	May 8	F	16 27 55	1.0				184	Upper course of the Enogawa, NWrn Part of Bingo Province.	188	May 13	P	23 16 36	5.0	-5.0	-3.8		966	Ditto.
		P	7 57 36		-7.5	+3.8	-2.5												
		L	7 58 00																
		ME	7 58 06		+46														
		MN	7 58 03			+100													
183	May 9	MZ	7 58 03	1.0				30	Lower course of the Kinokawa.	189	May 16	eP	12 02 58					2283	A distant earthquake.
		eF	8 09 12																
		P	6 01 27		-0.6	-1.3	-0.4												
		L	6 01 31		-3	+4	+1												
		M	6 01 31		-4	$\pm 5$	-2												
184	May 10	F	6 02 09	0.4				253	In the Bay of Beppu	190	May 16	P	16 25 47					28	In the Kitan St.
		P	8 40 22		-1	+3	+1												
		L	8 40 56																
		M	8 40 59		-3	+5	$\pm 1$												
		eF	8 44 13																
185	May 11	F	6 02 09	0.4				14	In the Kitan St.	191	May 17	P	21 46 33	2.5	-1.4	+1.4		797	NW.rn part of the Japan Sea.
		P	0 58 59		+1	-2													
		L	0 59 00																
		MEN	0 59 03		-8	-10													
		MZ	0 59 06																
186	May 13	F	0 59 33	0.4				111	After shock of No. 35	192	May 18	P	2 43 30	0.4	+1.3	-1.3	-1.9	32	In the Kii channel.
		P	8 43 59		-1.3	+1.3	+1.0												
		L	8 44 14		-6	-3	-1												
		MEN	8 44 15		-9	-23													
		MZ	8 44 16																
F	8 45 36																		
187	May 13	F	8 45 36	0.4				111	After shock of No. 35	193	May 18	eP	17 19 46					94	West. part of the Aki Bay.
		P	15 18 20																
		eS	15 20 46																
		eL	15 22 45																
		eF	16 00 17																
188	May 13	F	16 00 17	0.4				111	After shock of No. 35	193	May 18	L	17 19 50		-1	+1		94	West. part of the Aki Bay.
		P	23 16 36		-2	+1													
		S	23 17 33		-1	+1													
		L	23 18 37																
		MEN	23 22 29																
189	May 16	eF	23 16 36	1.0				111	After shock of No. 35	193	May 18	eP	17 19 46					94	West. part of the Aki Bay.
		P	12 02 58																
		eS	12 05 10																
		eL	12 06 57																
		ME	12 07 59																
190	May 16	MN	12 08 16	1.0				111	After shock of No. 35	193	May 18	L	17 19 50					94	West. part of the Aki Bay.
		F	12 55 41																
		P	16 25 47																
		L	16 25 50																
		M	16 25 51																
191	May 17	F	16 26 37	0.4				111	After shock of No. 35	193	May 18	eP	17 19 46					94	West. part of the Aki Bay.
		P	21 46 33																
		L	21 48 21																
		M	21 48 21																
		F	22 00 21																
192	May 18	F	22 00 21	0.4				111	After shock of No. 35	193	May 18	L	17 19 50					94	West. part of the Aki Bay.
		P	2 43 30																
		L	2 43 34																
		MEN	2 43 34																
		MZ	2 43 36																
193	May 18	F	2 44 37	0.4				111	After shock of No. 35	193	May 18	L	17 19 50					94	West. part of the Aki Bay.
		P	2 43 36																
		L	2 43 37																
		MEN	2 43 34																
		MZ	2 43 36																



No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$							AE $\mu$	AN $\mu$	AZ $\mu$		
194	May 19	eF	17 22 29					418	In the environs of Titibu, Saitama Prefecture.	June 3	P	7 19 47		-1.3	-1.5	-1.5	3031	In Micronesia, North pacific Ocean.
		eP	19 19 10								S	7 22 40	+9	+17				
		L	19 20 06		-13	+8					L	7 25 41	-29	+52				
		M	19 20 06		$\pm 17$	+23					M <sub>1</sub> EN	7 25 41	-119	-148				
		F	19 28 58								MZ	7 26 10			-20			
195	May 21	P	17 06 54		+1.3	+1.5	-0.6	38	Upper course of the Arita, kii Province,	June 5	P	15 33 10					23	In the Kitan St.
		L	17 06 59		+3	+3	+1				L	15 33 13	+2	+4	-1			
		M	17 07 00	0.6	$\pm 4$	-6	+2				MEN	15 33 13	0.3	-4	+5			
		FEN	17 08 05								MZ	15 33 15	0.3			-1		
		FZ	17 07 14								F	15 33 36						
196	May 22	P	3 27 17					25	In the Kitan St.	June 9	P	3 25 34		-1.4	-1.3	-0.6	602	Far off the south coast of Japan.
		L	3 27 20		+4	+4					L	3 26 55	-1	+1	+1			
		ME	3 27 20		$\pm 4$						MEN	3 27 30	+4	+6				
		MN	3 27 21			-7					MZ	3 27 41				-3		
		MZ	3 27 21				-2				eF	3 34 17						
		eF	3 27 51															
197	May 22	P	12 01 37					2354	A distant earthquake probably in Micronesia North pacific Ocean.	June 10	P	18 16 42		+0.4	-0.4	+0.4	1751	SE. off Nemuro.
		L	12 05 47								L	18 19 20	-1	-1	-1			
		eF	12 35 24								M	18 19 21	+3	-1				
198	May 22	P	22 38 25					4055	Ditto.	June 12	eP	8 20 49					282	Middle part of Honsyu.
		S	22 42 55		+69	-75	+53				L	8 21 27	+13	-6	+3			
		L	22 46 55		+275	-625	-338				ME	8 21 28	1.6	-23				
		M	22 49 25	12.0	-6400	-4926	-525				MN	8 21 29	1.6		+16			
		eF	1 00 25								MZ	8 21 28	1.6			-3		
199	May 28	P	19 33 41		-0.6	-0.4	+0.4	122	An after shock of No 35.	June 16	P	9 03 34		+1.0	-1.3	-0.6	19	In the Kitan St.
		L	19 33 58		+2	-2	-1				L	9 03 36	+30	+16	+3			
		MEN	19 33 58	0.6	-3	+3					MEN	9 03 37	0.4	+34	+36			
		MZ	19 33 59	0.6							MZ	9 03 37	0.4			+8		
		eF	19 35 11				-1											

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G	M	T.		AE	AN	AZ					G	M	T.		AE	AN	AZ		
			h	m	s		$\mu$	$\mu$	$\mu$					km.	h	m		s	$\mu$	$\mu$		
206	June 17	eF	9	04	44				36	In the Kii channel	June 25	P	14	34	33		+0.6	-0.8	0.6	154	S. off Izu Peninsula.	
		P	14	41	42	+0.6	-0.6	-1				+1										
		L	14	41	46	-1	+1															
		MEN	14	41	48	+2	+2															
		MZ	14	41	50			+1														
207	June 18	eF	14	42	21				343	W. off Hatijo I.	July 1	eP	3	21	47				0.4	53	In the Kii Channel.	
		P	2	27	20	-7.9	+2.8	+6.3														
		L	2	28	06	-3	-2	-2														
		MEN	2	28	12	-11	+26															
		MZ	2	28	19			-2														
208	June 20	eP	14	18	34				3403	A distant earthquake	July 1	P	3	41	51		+0.6	+0.4	0.5	46	Ditto.	
		eS	14	21	16																	
		eL	14	25	24																	
		F	14	40	04																	
		eF	2	36	00																	
209	June 21	eP	9	07	51				72	In the Kii channel.	July 3	P	8	21	44		-1.3	-2.5	8.0	965	A distant earthquake.	
		L	9	08	01	-3	+3															
		MEN	9	08	01	-3	+5															
		MZ	9	08	02			+1														
		eF	9	08	41																	
210	June 22	eP	1	36	25				35	A Local Shock.	July 3	P	12	26	54				0.3	24	Near the mouth of the Kinokawa, Wakayama Prefecture.	
		L	1	36	30	-1	+5	-1														
		M	1	36	30	+4	-8	+1														
		F	1	36	51																	
		eF	1	04	53			+1														
211	June 24	eP	1	04	10				31	Ditto.	July 4	P	5	23	14		+0.6	-1.0	0.3	31	S. Part of the Osaka Bay.	
		L	1	04	14	+1	+1	+1														
		MEN	1	04	15	-3	-5															
		MZ	1	04	16																	
		eF	1	04	53			+1														

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks	No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks		
					AE	AN	AZ								AE	AN	AZ				
			G. M. T.		$\mu$	$\mu$	$\mu$	km.				G. M. T.			$\mu$	$\mu$	$\mu$	km.			
			h m s	s								h m s	s								
219	July 4	MZ	5 23 19	0.3			-3			25	July 8	eF	4 19 22								
		F	5 26 11									eP	21 12 58			-0.4	+0.6		395		
		P	13 06 51		-1.6	+1.3	+2.5					L	21 13 51			+0.4	+0.6				
		L	13 07 30		-6	-3	-1					eF	21 16 28								
		M	13 07 32	2.0	+8	+5	+2														
220	July 4	F	13 12 43							26	July 11	eP	8 11 35					2097	E. off the Shirtwo cape.		
		P	17 11 00		+6.5	-8.8	+8.8	64	Near Himeji.			S	8 13 35			+1	+1				
		L	17 11 08		+18	+13	-3					L	8 15 05			+2	+3				
		MEN	17 11 09	0.8	-24	-25						eF	8 25 46								
		MZ	17 11 10	0.8			-8														
221	July 4	F	17 19 54							27	July 12	P	20 50 30					-0.4	36	In the Kii Channel.	
		P	17 20 45		+0.4	-0.6	+0.4	64	Ditto.			L	20 50 34			-1	+3	+1			
		L	17 20 54		-1	+1	-1					M	20 50 35	0.3		-3	-4	-2			
		M	17 20 55	0.3	-2	+4	+1					eF	20 51 09								
		F	17 23 37																		
222	July 4	P	17 41 34		+0.4	-1.2	+0.6	61	Ditto.	28	July 12	P	21 10 59			+0.4	-0.9	-0.6	2735	Off the Oti-ishi cape.	
		L	17 41 42		+2	+3	+1					S	21 13 37			-6	+6	+1			
		MEN	17 41 43	0.3	$\pm 2$	+3						L	21 16 04			+4	-10	+1			
		MZ	17 41 43	0.3			-1					F	21 35 46								
		F	17 42 04																		
223	July 6	P	20 35 00		-0.3	+0.6	-0.4	166	An after shock of No. 35.	29	July 14	eP	23 25 13						2895	A distant earthquake.	
		L	20 35 18		+8	+3	+1					L	23 30 46			-1	+2				
		MEN	20 35 18	0.4	-10	-8						eF	23 44 46								
		MZ	20 35 19	0.4			-3														
		F	20 36 18																		
224	July 7	P	4 18 11		+1.0	-0.8	-1.3	27	Near the mouth of the Kinokawa, Wakayama Prefecture.	30	July 16	P	6 50 08			-1.0	+0.6	-0.4	93	Upper course of the river Yoshino, Shikoku.	
		L	4 18 14		-3	-5	+2					L	6 50 21			-4	+4	+1			
		ME	4 18 15	0.4	+9							M	6 50 23	0.4		-11	+6	+2			
		MN	4 18 15	0.4			-15					F	6 51 55								
		MZ	4 18 15	0.4																	
231	July 16	P	10 18 51							31	July 16	P	10 18 51			+0.8	-1.1	-0.4	28	Near the mouth of the Kinokawa.	
		L	4 18 14									L	10 18 55			+1	+3	+1			
		ME	4 18 15	0.4								M	10 18 55	0.4		-3	+3	+1			
		MN	4 18 15	0.4								F	10 20 05								
		MZ	4 18 15	0.4																	
232	July 16	P	16 53 30							32	July 16	P	16 53 30			+0.4	-0.4	-0.4	23	Ditto.	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks		
			G.	M.	T.		AE	AN	AZ					AE	AN	AZ		G.	M.	T.			AE	AN
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.			h	m	s	s	$\mu$	$\mu$	$\mu$	km.				
233	July 16	L	16	53	33		+3	+4	+1	25	Ditto.	July 20	eF	3	52	40				91	In the basin of the river Arita, Wakayama Prefecture.			
		ME	16	53	35	0.4	$\pm 3$							eP	15	23	49							
		MN	16	53	34	0.4		-7						L	15	24	02	0.3	-1			-1		
		MZ	16	53	34	0.4			+2					M	15	24	02		-1			-2		
		eF	16	54	17									eF	15	25	20							
234	July 16	P	16	54	17		+0.4	-1.3	-1.4	25	Ditto.	July 22	eP	4	14	35				6941	A distant earthquake.			
		L	16	54	21		+9	+13	+2					eL	4	30	03							
		ME	16	54	22	0.4	-9							eF	4	59	44							
		MN	16	54	21	0.4		-14						P	4	42	23					+0.6	-1.0	
		MZ	16	54	22	0.4			+4					eL	4	42	39		-4			+3	+2	
235	July 16	F	16	55	06					25	Ditto.	July 22	ME	4	42	40	0.5	+6			31	Near the mouth of river Arita, Kii Province.		
		P	16	55	06									MN	4	42	39	0.5		-9				
		L	16	55	09									MZ	4	42	40	0.5					+3	
		M	16	55	10									eF	4	43	44							
		F	16	55	56									P	18	06	33							
236	July 17	P	20	12	32		-0.4	-0.4		31	Near the mouth of river Arita, Kii Province.	July 22	eP	18	06	33				67	In the basin of the river Arita, Wakayama Prefecture.			
		L	20	12	36		-1	-1						L	18	06	40							
		MEN	20	12	36	0.4	-2	-3						M	18	06	40	0.5	-3			+3	+3	
		F	20	13	10									eF	18	07	18							
		P	8	53	30		-1.9	-1.9	-1.5					3	In the Kitan Strait.	July 23	P	11	37			11		-0.4
eL	8	54	05						L	11	37	20					+2	+3						
eF	8	57	31						M	11	37	20	0.4				$\pm 2$	+3						
P	8	57	31		-1.9	-2.5			F	11	38	14												
eL	8	58	08						eP	17	22	22												
237	July 17	eF	8	10	45					4	Ditto.	July 23	eS	17	24	25				985	S. off Kinkazan, Miyagi Prefecture.			
		P	8	57	31									eL	17	26	44							
		eL	8	58	08									eF	17	40	44							
		eF	8	10	45									P	20	27	30		-0.6			+0.6		
		P	3	48	18		-1.3	-1.3	+0.4				92	Upper course of the Miya, Ise Province.	July 23	L	20	28	27				+2	+3
L	3	48	31		+4	-4	-5			eF	20	33				36								
ME	3	48	34	0.6	+15																			
MN	3	48	35	0.6		+22																		
MZ	3	48	40	0.6																				

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$								AE $\mu$	AN $\mu$	AZ $\mu$		
246	July 26	eP	1 54 42	0.5				79	Upper course of Watari. Tosa Provin	53	Aug. 1	M	13 50 09	0.6	-15	+18	+4		
		L	1 54 53		-1	+1													
		M	1 55 07		-1	+2													
		eF	1 56 05																
247	July 27	P	14 52 57		+4.8	-0.4	-2.5		NE. off Hatijo I.	54	Aug. 1	L	14 51 35	0.4	-2	-6	+1		
		eL	14 53 49		-11	+3	+1												
		ME	14 54 30		+13														
		MN	14 54 33			+14													
		MZ	14 54 08				-3												
		eF	15 11 46																
248	July 30	eP	14 19 48	2.8	-0.4	+0.4	+0.4		In the Sea of Kas	55	Aug. 1	P	18 08 16	0.2	-0.4	+0.6		20	Local shock.
		L	14 21 11		-8	-33	-3												
		ME	14 21 24		-30														
		MN	14 21 30			+50													
		MZ	14 21 24				-13												
		eF	14 35 12																
249	July 30	eP	23 02 01					54	In the Kii Channel.	56	Aug. 4	eP	15 55 09	0.2		-1.5	-3.8	2942	A distant earthquake; probably in Micronesia, Pacific Ocean.
		L	23 02 08																
		M	23 02 08		-1	+1													
		eF	23 02 43		-1	+2													
250	July 31	eP	5 21 13	0.4				27	In the Kitan Strait.	57	Aug. 4	P	18 12 12	0.6	+5.0	-8.8	-6.4	36	In the Kii Channel.
		L	5 21 16		-1	+1													
		M	5 21 17		+1	+2													
		F	5 22 13																
251	Aug. 1	P	3 59 14	0.6				31	Ditto.	58	Aug. 5	eP	2 45 32	0.4				132	After shock of No. 35.
		L	3 59 18		-0.6	-0.8	-0.6												
		M	3 59 18		+1	-2	+1												
		F	3 59 40		-3	+4	-1												
*252	Aug. 1	P	13 50 05					22	Ditto.	59	Aug. 5	P	12 41 06	0.6	+0.4	-1.5	+1.5	131	In the Bay of Kumi- hama, Tango Province.
		L	13 50 08		+1.5	+1.6	-1.5												
					+9	+8	+3												

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$							AE $\mu$	AN $\mu$	AZ $\mu$			
260	Aug. 5	MN	12 41 26	0.6		+23			Off the mouth of river Abukuma.	Aug. 10	L	18 56 29		+1	-3	+1	61	In the Kitan strait.	
		MZ	12 41 26	0.6			+5				MEN	18 56 30		-2	+8				
		eF	12 47 38								eF	19 49 36							
		eP	21 14 40		-1.1	-0.7	+0.5					P	1 12 36		-2.5	+2.3			+1.4
		S	21 15 40		-16	-28						L	1 12 44		+4	+4			-1
		L	21 16 40		-69	+113	+6					ME	1 12 46	0.4	-4				
		ME	21 16 55	3.4	+259							MN	1 12 44	0.4		+6			
		MN	21 16 58	3.4		+325						MZ	1 12 48	0.4					-2
MZ	21 16 40	3.4			-8		eF	1 13 23											
eF	21 17 38																		
261	Aug. 6	eP	1 47 17				16	Local shock.	Aug. 10	P	11 43 03		-0.6	+3.1	+1.3	2863	A distant earthquake; probably in Micronesia, Pacific Ocean.		
		L	9 47 20							S	11 45 23		-1	+1					
		M	9 47 20							L	11 48 31		-4	-9					
		eF	9 47 47							M <sub>1</sub> E	11 50 25	14.0	+6						
262	Aug. 6	eP	5 36 25				22	Ditto.	Aug. 10	M <sub>1</sub> N	11 48 47	14.0		+24					
		L	5 36 28		-1	+2				M <sub>1</sub> Z	11 52 56	14.0			+9				
		M	5 36 28		$\pm 1$	-2				M <sub>2</sub> E	11 56 05	14.0	-14						
		eF	5 36 49							M <sub>2</sub> N	11 56 04	14.0		+23					
263	Aug. 7	eP	1 41 04				575	Lower course of the river Tone.	Aug. 12	P	0 35 46		-0.6	-0.6	+0.4	696	NW. off Bonin IIs.		
		L	1 42 21		+1	+2				L	0 37 20		-14	-9	-3				
		eF	2 15 36							M	0 37 26	3.6	-19	+50	-4				
264	Aug. 8	eP	1 02 30				2324	In the basin of river Ishikari, Hokkaido	Aug. 12	eP	1 24 56		-0.4	+0.4	-0.4	59	Near Himeji.		
		eS	1 03 59		+1	-1				L	1 25 04		-3	-4	+1				
		eSR	1 05 22		-1	+1				ME	1 25 05	0.5	-7						
		L	1 06 35		-1	+5				MN	1 25 05	0.5		-13					
		M	1 06 54	6.0	-4	+9				eF	1 26 48								
		eF	1 59 35																
265	Aug. 8	eP	18 50 50					In the Sea of Ariake	Aug. 12	P	17 32 16		+1.4	-1.4	-1.4	285	Far off in the Sea of Kumano.		
		eS	18 52 53		+1	-1				L	17 32 54		-5	+3	+1				
		eSR	18 54 53		-1	+1				M	17 32 55	1.1	+6	+3					
										F	17 34 51								

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks											
			G.	M.	T.		AE	AN	AZ						G.	M.	T.		AE	AN	AZ													
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.				h	m	s	s	$\mu$	$\mu$	$\mu$	km.													
271	Aug. 16	P	11	23	18		+38	-5.3	+4.0	62	Near Himeji.	8	Aug. 20	P	22	13	40		-1.3	+1.3	+1.3	396	In the Sea of Enshu.											
		L	11	23	27		+14	-20	-3				$\bar{P}$	22	13	41		+8	-8															
		M	11	23	27	0.6	-28	-30	-10				L	22	14	33		+2	-2	-2														
		F	11	25	25								M	22	14	34	3.1	-8	+15	-4														
272	Aug. 16	P	14	15	16		-1.0	+1.3	-0.4	56	In the Sea of Haru		eF	22	58	33																		
		L	14	15	24		+2	+2	+1			9	Aug. 21	S	2	13	00		-0.4	+0.4	-0.4	56	SE. off Cape Muroto.											
		M	14	15	25	0.4	-5	+5	+1				L	2	13	08		-2	-2	+1														
		eF	14	16	29								M	2	13	09	0.4	$\pm 3$	$\pm 4$	+1														
273	Aug. 18	eP	5	04	52					32	Local shock.		F	2	13	39																		
		L	5	04	56							10	Aug. 21	P	3	37	10		+0.5	+0.6	+0.4	692	SW. off Kyusyu.											
		M	5	04	56								L	3	38	43		-1	+2	-1														
		eF	5	05	17								MEN	3	38	48	2.0	-3	+3															
274	Aug. 18	eP	19	29	18		-1.9	-0.6		1102	Far off the Bōso Peninsula.		eF	3	59	33																		
		eS	19	30	34		-14	-8	+1			11	Aug. 21	P	14	08	16		-1.0	+0.6	-0.4	67	In the Kii Channel.											
		L	19	31	46		+35	-75	-33				L	14	08	25		+1	-3	+1														
		M	19	32	02	12.6	+144	-394	+65				M	14	08	26	0.4	$\pm 4$	$\pm 6$															
		eF	21	44	34								F	14	09	05																		
275	Aug. 19	eP	12	44	41					715	In the Sea of Kasai		32	Aug. 21	P	19	33	13		-1.3	-1.3	+1.1	32	Local shock.										
		L	12	46	17	2.0	-2	-1					L	19	33	17		-2	+2	-1														
		eF	12	54	36								ME	19	33	18	0.4	$\pm 6$																
												MN	19	33	18	0.4		+6																
276	Aug. 19	eP	23	18	22		-0.4	-0.4	+0.4	1053	Far off the Bōso Peninsula.		MZ	19	33	18	0.4			-2														
		eS	23	19	23		+1	+1					eF	19	34	33																		
		eSR	23	20	23		-1	-1				83	Aug. 23	eP	6	30	30		+0.6	+0.6	+0.4	1054	NNE. off Bonin IIs.											
		eL	23	20	51		-1	+1					L	6	32	52		+5	-8	-1														
		eF	23	40	57								ME	6	34	46	11.4	+46																
277	Aug. 20	eP	21	38	57		-1.0	-0.6	+0.4	988	SSE. off Tyoshi.		MN	6	34	44	11.4		-50															
		L	21	41	17		-1	+1					MZ	6	33	53	11.4			-26														
		ME	21	41	56	12.0	-13						eF	7	16	32																		
		MN	21	42	18	12.0																												
		eF	22	09	33		-24					84	Aug. 23	P	10	09	01		+0.4	-0.6	-0.5	34	Lower course of the											





No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
*299	Sept. 4	eF	20	01	00						
		P	16	09	27		+0.6	-2.5	-1.9	47	In the Kii Channel
		L	16	09	32		-3	-9	+2		
		MEN	16	09	33	0.4	-31	-36			
		MZ	16	09	35	0.4			+7		
F	16	12	33								
300	Sept. 5	P	0	34	29		-0.6	-0.8	+0.4	417	Near the mouth of Naka.
		L	0	35	25		+2	-3	-1		
		MEN	0	35	42	1.8	-9	+9			
		MZ	0	35	49						
		eF	0	41	23						
301	Sept. 5	P	19	34	37		-0.4	-1.3	-0.4	27	In the Kii Channel
		L	19	34	40		-1	+5	+2		
		M	19	34	50	0.4	-7	+11	-3		
		F	19	35	28						
302	Sept. 7	P	10	34	35		-0.6	-1.1	-0.4	403	Lower course of Kinu.
		L	10	35	29		+2	-1	+1		
		M	10	35	49	1.5	$\pm 3$	$\pm 8$	-2		
		eF	10	41	56						
303	Sept. 7	P	16	34	52		+0.6	-1.1	-0.4		In the Kii Channel
		L	16	34	56		+4	+5	+1		
		M	16	34	57	0.5	-5	-9	-2		
		eF	16	35	30						
304	Sept. 8	eP	3	38	41					62	Ditto.
		L	3	38	49		+2	+2			
		M	3	38	49	0.4	-2	+3			
		eF	3	39	11						
305	Sept. 8	P	9	23	15		+0.4	-1.3	+0.9	53	Lower course of Kinokawa, Wakayama Prefecture.
		L	9	23	23		-1	+4	-1		

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Sept. 11	MEN	9	23	24	0.6	-5	-6			
	MZ	9	23	23	0.6			+1		
	eF	9	24	37						
Sept. 11	eP	6	55	31		-0.8	-1.0	+0.4	424	Upper course of the Oyodo.
	L	6	56	28		+1	-2	-1		
	M	6	56	29	1.3	$\pm 3$	$\pm 4$	$\pm 1$		
	eF	7	00	06						
Sept. 11	eP	22	04	13			+0.6	+0.4	94	In the Kii Channel.
	L	22	04	24		-1	-3	-1		
	MEN	22	04	25						
	MZ	22	04	26						
	eF	22	05	34						
Sept. 11	eP	22	36	19					1084	A distant earthquake.
	eL	22	55	53						
	eF	22	00	06						
Sept. 12	P	12	13	17		-0.4	-0.6	-0.4	30	
	L	12	13	21			-1	+1		
	M	12	13	22	0.4	+1	-2	-1		
	eF	12	13	46						
Sept. 12	P	15	30	10		+2.5	-1.9	-4.1	301	S. off the Omae cape.
	L	15	30	50		+2.9	+15	+6		
	M	15	30	53	2.9	+2.9	-2.4	-8		
	eF	15	47	05						
Sept. 12	eP	23	26	39					15	In the Kitan Strait.
	L	23	26	41		+2	+3			
	MEN	23	26	42	0.4	+3	-5			
	MZ	23	26	42	0.4			-1		
	eF	23	27	15						
Sept. 16	P	15	50	54		+0.4	-0.9			S. far off the Erimo cape.

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$							AE $\mu$	AN $\mu$	AZ $\mu$		
313	Sept. 17	eL	15 51 06		-1	-1		649	S. off Makurazaki Kagosima Prefecture	Sept. 23	eP	14 11 03					22	A distant earthquake.
		eF	16 19 03															
		eP	12 21 28		-1.0	-1.1												
		eL	12 22 55		-1	+1												
		eF	12 30 00															
314	Sept. 17	P	15 11 10		-0.4	-0.4	+1.0	641	W. off Yaku I., K sima Prefecture.	Sept. 24	eP	4 46 05		+0.6	+1.0	+0.9	24	In the Kitan Strait.
		L	15 12 36		-1.3	+1.9	-1.0											
		ME	15 13 07	2.7	-6.3													
		MN	15 13 15	2.7		+19												
		MZ	15 12 12	2.7														
eF	15 25 ±																	
315	Sept. 19	eP	18 17 57					17	In the Kii Channel	Sept. 30	eP	7 40 33					175	Off the Siriya Promontory.
		L	18 17 59															
		M	18 18 00	0.3	+3	-2	+1											
		eF	18 18 32															
316	Sept. 21	eP	12 14 17					102	In the Sea of Haru	Oct. 1	eP	4 55 20					20	In the Kii Channel.
		L	12 14 31		+1	+1	+1											
		M	12 14 31	0.3	+1	-2	+1											
		eF	12 14 48															
317	Sept. 23	eP	2 50 14		+0.9	-0.6		0.5	Upper course of the Masuda.	Oct. 3	P	14 19 37					53	Ditto.
		L	2 50 20		-1	-1												
		M	2 50 27		-2	+2												
		F	2 51 06															
318	Sept. 23	P	3 52 25		+0.6	-1.4	+1.1	0.6	Near Wakayama.	Oct. 7	eP	18 46 17					53	Ditto.
		L	3 52 29		+6	+7	-3											
		ME	3 52 31		+6													
		MN	3 52 29	0.6														
		MZ	3 52 31	0.6		+11												
		eF	3 54 10	0.6			+3											

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
326	Oct. 8	P	0 24 16	0.6	-0.4	-1.0	+0.4	30	Ditto.
		L	0 24 20		+4	-3	-1		
		M	0 24 21		-4	-5	+1		
		eF	0 25 19						
327	Oct. 8	eP	9 32 31		-1	-1		89	Near Kyoto.
		L	9 32 43						
		eF	9 33 37						
328	Oct. 9	eP	12 28 00					2290	A distant earthquake
		eS	12 30 00						
		eL	12 32 00						
		eF	12 54 00						
329	Oct. 10	P	5 37 50	0.4	+0.4	-1.3		10	In the Kitan Stra
		L	5 37 51		-6	+2			
		M	5 37 52		-8	+6	+1		
		F	5 38 11						
330	Oct. 11	P	1 14 21	2.2	-10	+9	-3	586	In the Sea of Ka
		L	1 15 40						
		M	1 15 40						
		eF	1 26 19						
*331	Oct. 11	P	6 55 10		+13	+16	+3	23	In the Kitan Stra
		L	6 55 13						
		MEN	6 55 13						
		MZ	6 55 15						
		eF	6 56 12						
332	Oct. 11	P	17 33 03	2.9	-2	+4			E. off the Erimo Promontory.
		eS	17 34 00						
		eL	17 34 59						
		M	17 36 04						
		eF	17 10 51						

Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
				AE $\mu$	AN $\mu$	AZ $\mu$		
Oct. 16	$\bar{P}$	6 07 51	2.1	-6	+8	-4	263	Near Gifu.
	$\bar{S}$	6 08 27						
	M	6 08 28						
	F	6 11 25						
Oct. 16	P	19 57 02	0.8	-37	+71	+14	30	In the Kitan Strait.
	L	19 57 06						
	M	19 57 07						
	F	20 00 10						
Oct. 17	eP	10 28 32		-2	-2			Ditto.
	L	10 28 48						
	M	10 28 48						
	eF	10 29 13						
Oct. 18	eP	12 47 10	1.8	-11	+7	+3	449	In the Sea fo Amakusa.
	L	12 48 11						
	ME	12 48 15						
	MN	12 48 13						
	MZ	12 48 14						
Oct. 20	P	0 10 44	0.4	+5	+5	+1	27	In the Kitan Strait.
	L	0 10 47						
	ME	0 10 47						
	MNZ	0 10 48						
Oct. 21	F	0 11 32	0.4		+6	$\pm 1$		Near Wakayama.
	eP	0 54 32						
	L	0 54 36						
	ME	0 54 36						
Oct. 24	MN	0 54 36		-2		-3		A distant earthquake.
	eF	0 54 57						
	eP	16 10 10						
	eS	16 14 20						

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
			G.	M.		T.	AE	AN			AZ
			h	m	s		$\mu$	$\mu$	$\mu$	km.	
340	Oct. 24	eL	16	18	28		+3	+4		1766	S. far off the Bōso Peninsula.
		eF	18	00	08						
		eP	19	07	12						
		eS	19	08	30						
		L	19	09	52		+9	-6	+4		
		ME	19	10	27	8.7	+21				
		MN	19	11	01	8.7		-29			
		MZ	19	10	28	8.7			-13		
341	Oct. 25	eP	6	03	43					377	In the Bay of Tokushima
		L	6	04	33		-1	+1			
		ME	6	04	51		-2				
		MN	6	04	55			-3			
		eF	6	07	15						
342	Oct. 25	P	14	22	11					27	Near Wakayama.
		L	14	22	15		+6	-8	+2		
		M	14	22	15	0.4	-7	-9	+3		
		F	14	22	59						
*343	Oct. 25	P	14	28	45					28	Ditto.
		L	14	28	49		+15	+31	+4		
		M	14	28	49		+24	-35	±8		
		F	14	30	23						
344	Oct. 25	eP	14	37	26					25	In the Kii Channel
		L	14	37	29		+3	+4	+1		
		M	14	37	30	0.4	-8	+5	+2		
		F	14	37	58						
345	Oct. 25	eP	21	38	09						E. far off Bonin Is.
		eL	21	45	22						
		eF	22	17	57						

Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks	
		G.	M.		T.	AE	AN			AZ
		h	m	s		$\mu$	$\mu$	$\mu$	km.	
Oct. 27	eP	1	55	24					568	Misima district, Etogo Province.
	eL	1	56	40		-3	+2			
	ME	1	56	48	2.9	+3				
	MN	1	56	50	2.9		-3			
	eF	2	01	24						
Oct. 28	eP	15	24	32					971	SE. far off the Bōso Peninsula.
	eS	15	25	36		-2	+2			
	eL	15	26	43		-4	-3	+1		
	ME	15	27	18	7.1	-10				
	MN	15	28	30	7.1		-15			
	MZ	15	27	16	7.1			+5		
Nov. 2	eP	2	14	49					45	In the Kii Channel.
	L	2	14	55		-1	+3			
	M	2	14	56	0.5	+2	-4			
	eF	2	15	23						
Nov. 2	eP	22	58	18					627	E. off Amami Osima I.
	L	22	59	43						
	eF	23	16	53						
Nov. 4	eP	0	47	06					30	In the Kitan Strait.
	L	0	47	10		+1	-2	+1		
	MEN	0	47	11	0.6	-3	-5			
	MZ	0	47	11	0.6			±1		
	eF	0	47	55						
Nov. 4	eP	14	01	03					5866	A distant earthquake.
	eS	14	14	15						
	eL	14	24	10						
	F	16	04	58						
Nov. 5	eP	6	41	00						W. off Isigaki Is.
	eL	6	41	18		-5	+3	+3		

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks		
					AE $\mu$	AN $\mu$	AZ $\mu$							AE $\mu$	AN $\mu$	AZ $\mu$				
353	Nov. 6	M	6 41 20					22	In the Kitan Stra	Nov. 16	eP	11 29 41				3866	After shock of No. 35.			
		F	6 45 41																	
		eP	16 33 12																	
		eL	16 33 15																	
		eF	16 33 48																	
354	Nov. 10	P	19 49 12					295	Upper course of Tenryu.	Nov. 16	eP	21 15 28				3866	A distant earthquake.			
		L	19 49 51																	
		M	19 49 53	1.6	-9	-12	+4													
		F	19 55 50		-10	+21	+5													
355	Nov. 11	eP	2 48 05					144	After shock of No	Nov. 17	P	17 05 04				28	In the Kitan Strait.			
		L	2 48 24																	
		M	2 48 25	0.8	+4	+2	+1													
		F	2 49 57		-7	-9	-2													
356	Nov. 14	eP	0 19 11					6176	A distant earthqua	Nov. 18	eP	3 30 15				3455	A distant earthquake.			
		eL	0 33 06																	
		ME	0 34 07	13.7	-8															
		MN	0 34 40																	
		eF	0 10 56				+15													
357	Nov. 14	eP	5 03 36					Ditto.	Nov. 20	eP	8 54 27				38	In the Kil Channel.				
		eL	5 15 49																	
		ME	5 19 18	12.6	-13															
		MN	5 19 17	12.6																
		MZ	5 19 48	12.6			+36													
		eF	6 02 56							+9										
358	Nov. 14	P	19 47 00					3467	SE. off Bonin Is.	Nov. 23	eP	16 55 02				46	Ditto.			
		L	19 54 00																	
		ME	19 54 47	6.7	-3															
		MN	19 55 00	6.7																
		eF	20 51 56								-3									
359	Nov. 25	P	20 49 03					32	In the Kitan Strait.	Nov. 25	P	20 49 03				32	In the Kitan Strait.			
		L	20 49 07																	

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	
			G.	M.	T.		AE	AN	AZ			
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.		
366	Dec. 2	M	20	49	09	0.4	-7	+7	+2	42	Middle course of river Arita.	
		eF	20	49	45							
		P	5	54	08							
		L	5	54	13		0.4	+4	+5			+1
		M	5	54	16							
F	5	54	37									
*367	Dec. 2	P	6	55	04	0.8				25	Ditto.	
		L	6	55	11		+23	+84	+29			
		ME	6	55	16		-288					
		MNZ	6	55	20			+250	-94			
		eF	6	06	36							
368	Dec. 2	P	7	33	31	0.4				25	Ditto.	
		L	7	33	35		+1	+3	+1			
		M	7	33	35		-3	+3	-1			
		F	7	33	57							
369	Dec. 2	P	14	44	11					41	Ditto.	
		L	14	44	17		+1	+3	+1			
		M	14	44	17		-4	+6	-1			
		F	14	44	47							
370	Dec. 3	eP	17	12	29	0.4				32	Ditto.	
		L	17	12	33		+1	+2				
		M	17	12	34		-1	-3				
		F	17	12	54							
371	Dec. 4	eP	0	56	55	0.4					After shock of No.	
		L	0	56	59		+1	-1				
		M	0	56	59		$\pm 1$	$\pm 1$				
		eF	0	56	25							
372	Dec. 4	eP	3	34	20						Ditto.	
		L	3	34	24		-1	-1				

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	
		G.	M.	T.		AE	AN	AZ			
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
Dec. 4	M	3	34	25	0.4	+2	+3		505	In the Bay of Tijiwa.	
	eF	3	34	46							
	eP	3	53	42							
	L	3	54	50		-9	-11	-2			
	MEZ	3	54	54		-14		-6			
Dec. 4	MN	3	54	56	2.3		-23		456	Ditto.	
	eF	4	02	34							
	eP	12	19	44							
	L	12	20	46		+5	-8	-2			
	M	12	20	46		+7	+14	+3			
Dec. 7	eF	12	29	37	0.4				42	Near the mouth of the river Arita, Wakayama Prefecture.	
	eP	8	13	59							
	L	8	14	04		-2	+5	-1			
	M	8	14	05		-4	-6				
	eF	8	14	40							
Dec. 7	eP	9	35	30						On the coast of the Sea of Kasima.	
	L	9	36	14		-2	+1				
	eF	9	39	18							
	eP	16	18	45							
	L	16	18	49		-1	+5				
Dec. 9	eF	16	19	29						After shock of No. 35.	
	eP	0	26	28							
	L	0	27	12		+3	+4				
	M	0	27	13		+4	+6				
	eF	0	27	55							
Dec. 9	P	0	35	33					18	In the Kitan Strait.	
	L	0	35	40		-1	+1				
	M	0	35	41		$\pm 1$	+3				
	eF	0	36	35							

No.	Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks
			G.	M. T.		AE	AN	AZ		
			h	m s	s	$\mu$	$\mu$	$\mu$	km.	
380	Dec. 10	eP	2	45 31					393	Middle course of Sinano.
		eL	2	46 24		-2	-3	-1		
		M	2	46 31	2.4	-5	-5	+2		
		F	2	53 14						
381	Dec. 10	P	19	21 02					64	In the Kitan Stra
		L	19	21 10		+3	+2	-1		
		M	19	21 11	0.5	-3	-5			
		eF	19	21 50						
382	Dec. 18	eP	19	51 01					651	Middle part of the Japan Sea.
		L	19	52 29		+4	-4	+1		
		ME	19	52 30	2.9	+4				
		MNZ	19	52 34	2.9		-5	-1		
383	Dec. 21	eP	2	48 58					30	Near the mouth of river Arita.
		L	2	49 02		-1	+1	+1		
		M	2	49 03	0.4	+3	-7	-1		
		F	2	49 28						
384	Dec. 27	eP	11	14 42					25	In the Kii Channel
		L	11	14 45		+1	+1			
		M	11	14 46	0.4	+3	+3			
		F	11	14 58						
385	Dec. 28	eP	1	50 47					28	Ditto.
		L	1	50 51		+2	+2	+1		
		M	1	50 51		+2	-4	+1		
		F	1	51 09						
386	Dec. 28	eP	11	09 10					24	Ditto.
		L	11	09 13		-2	+3			
		M	11	09 14	0.4	+2	+4			
		eF	11	10 07						

Date	Phase	Time		Period	Amplitude			$\Delta$	Remarks
		G.	M. T.		AE	AN	AZ		
		h	m s	s	$\mu$	$\mu$	$\mu$	km.	
Dec. 28	eP	14	35 12					604	In the Sea of Kasima.
	L	14	36 34		+2	+3			
	M	14	36 40	2.3	-3	-6			
	eF	14	54 07						
Dec. 28	eP	18	26 21					19	A distant earthquake.
	S	18	31 23						
	L	18	35 23		+28	+38	-3		
	ME	18	38 16		+41				
	MN	18	38 02			+65			
	MZ	18	37 41				+19		
Dec. 29	eP	17	59 39					19	In the Kitan Strait.
	L	17	59 41		+3	+3	-1		
	M	17	59 42	0.4	+3	+5	+1		
	eF	18	00 12						
Dec. 29	eP	21	44 21					25	Local Shock.
	L	21	44 25		+2	-3			
	M	21	44 25	0.4	-4	+5			
	eF	21	44 50						
Dec. 29	eP	23	21 45					25	Ditto.
	L	23	21 50		-11	-9			
	M	23	21 50	0.4	-12	+11			
	eF	23	22 27						
Dec. 30	P	7	20 19					25	In the Kii Channel.
	L	7	20 23		+6	+14			
	M	7	20 24	0.7	+20	+18			
	eF	7	21 37						
Dec. 31	eP	5	51 46					304	Upper course of Arakawa.
	L	5	52 27		-3	-3	+1		
	ME	5	52 53	0.9	-4				

# 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)

	$T_0$	$\epsilon$	$\frac{r}{T_0^2}$	V
AE:	6.2	Aperiodic	0.002	80
AN:	6.0	"	0.002	80

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
		MN	5	52	57	0.9		+8			
		MZ	5	52	50	0.9			+2		
		eF	6	02	06						

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
May 1	P	9	20	43					30	After shock of the great North Tango earthquake (No. 23.)
	LM	9	20	47		$\pm 10$	$\pm 20$			
	FE	9	20	53						
	FN	9	20	33						
May 1	P	11	32	38					41	Ditto.
	L	11	32	43						
	M	11	32	43		$\pm 20$	$\pm 30$			
	FE	11	32	59						
	FN	11	32	56						
May 1	eP	11	47	28					17	Ditto.
	L	11	47	31						
	M	11	47	31			$\pm 15$			
	FE	11	47	35						
	FN	11	47	36						
May 2	L	12	06	41					?	Ditto.
	F	12	06	44						
May 2	P	22	15	13					24	Ditto.
	LM	22	15	15		?				

Earthquake felt.



No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
*780	May 3	eFE	23 15 19					25	Ditto.
		eFN	23 15 22						
		P	2 48 09						
		L	2 48 13						
		M	2 48 13	$\pm 450$	$\pm 200$				
		FN	2 49 14						
		FE	2 49 52						
781	May 3	P	3 21 26				24	Ditto.	
		LM	3 21 28						
		F	3 21 32						
782	May 3	L	18 36 35				?	Ditto.	
		ME	18 36 36						
		MN	18 36 35						
		F	18 36 38						
783	May 4	P	0 01 43				24	Ditto.	
		L	0 01 46						
		M	0 01 47						
		FE	0 01 55	$\pm 25$	$\pm 20$				
		eFN	0 02 11						
784	May 4	P	0 28 28				24	Ditto.	
		L	0 28 30						
		ME	0 28 31						
		eMN	0 28 31	$-25$					
		FE	0 28 34		$\pm 20$				
		eFN	0 28 35						
785	May 4	eP	1 57 19				24	Ditto.	
		L	1 57 22						
		eM	1 57 22						
		F	1 57 25	$-20$	$\pm 30$				

Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
				AE $\mu$	AN $\mu$	AZ $\mu$		
May 4	L	21 13 57					?	Ditto.
	M	21 13 58	$\pm 18$					
	eMN	21 13 58		$\pm 15$				
	F	21 14 02						
May 4	P	22 04 13					17	Ditto.
	L	22 04 15						
	M	22 04 15	$\pm 115$	$\pm 165$				
	CE	22 04 18						
	CN	22 04 20						
	FE	22 04 27						
May 5	P	21 33 08					27	Ditto.
	L	21 33 11						
	M	21 33 11	$\pm 23$	$\pm 30$				
	FE	21 33 40						
	FN	21 34 16						
May 6	P	8 19 49					19	Ditto.
	LM	8 19 52	$\pm 160$	$\pm 350$				
	FE	8 20 14						
	FN	8 20 22						
May 6	P	8 35 03					27	Ditto.
	L	8 35 07						
	M	8 35 07	$\pm 25$	$\pm 30$				
	FE	8 35 19						
	eFN	8 35 14						
May 6	P	8 52 42					32	Ditto.
	L	8 52 46						
	F	8 52 49						
May 6	P	16 26 05					93	Near the Mt. Mikuni, Wakasa Province.
	L	16 26 18						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ					G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.			h	m	s	s	$\mu$	$\mu$	$\mu$	km.		
793	May 6	M	16	26	21		$\pm 40$	$\pm 35$		28	After shock of	May 8	P	2	44	41		$\pm 20$	$\pm 60$	22	Ditto.	
		F	16	26	41								L	2	44	44						
		P	23	13	33								eM	2	44	44						
		L	23	13	36								FE	2	44	48						
		M	23	13	36		$\pm 10$						FN	2	44	52						
794	May 6	F	23	13	41				27	Ditto.	May 8	P	7	56	37		$\pm 425$	$\pm 500$	194	Upper course of Enoga- wa, north western part of Bingo Province.		
		P	23	54	42								L	7	56	58						
		L	23	54	41								M	7	57	08						
		M	23	54	46		?	?					eFE	7	57	08						
795	May 7	F	23	55	02				24	Ditto.	May 8	eFN	7	57	51		$\pm 30$	$\pm 30$	?	After shock of No. 23.		
		P	0	00	13								L	8	00	15						
		LM	0	00	16		$\pm 10$						ME	8	00	16						
796	May 7	F	0	00	21				27	Ditto.	May 8	eMN	8	00	15		$\pm 30$	$\pm 30$	22	Ditto.		
		eP	10	39	35								P	8	06	13						
		LM	10	39	39		$\pm 10$						LM	8	06	15						
797	May 7	F	10	39	45				25	Ditto.	May 8	F	8	06	19		$\pm 35$	$\pm 40$	?	Ditto.		
		P	12	15	33								L	18	13	09						
		L	12	15	36								eF	18	13	12						
		M	12	15	36		$\pm 10$	$\pm 15$					P	18	52	37						
798	May 7	F	12	15	40				24	Ditto.	May 8	L	18	52	40		$\pm 35$	$\pm 40$	27	Ditto.		
		P	21	02	23								M	18	52	40						
		LM	21	02	26		$\pm 310$	$\pm 165$					FE	18	52	44						
*799	May 8	F	21	02	43				22	Ditto.	May 8	FN	18	52	45		$\pm 10$	$\pm 10$	35	Ditto.		
		P	0	07	26								P	20	39	57						
		L	0	07	28								LM	20	40	00						
		ME	0	07	28								eF	20	40	05						
		MN	0	07	29		$\pm 83$	$\pm 140$					P	20	46	59						
F	0	07	48					L	20	47	03											

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks	
					AE	AN	AZ							AE	AN	AZ			
			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.			
808	May 9	F	20 47 17						Ditto.										
		P	1 25 08				13												
		L	1 25 10																
		ME	1 25 10	$\pm 25$															
		MN	1 25 11		$\pm 15$														
		FE	1 25 15																
		FN	1 25 17																
809	May 9	L	6 55 41					Ditto.											
		eM	6 55 42																
		eF	6 55 44																
810	May 9	P	7 05 02					?	Ditto.										
		eF	7 05 09																
811	May 9	P	12 01 22					24	Ditto.										
		L	12 01 25																
		F	12 01 30																
812	May 9	P	13 49 55					19	Ditto.										
		L	13 49 57																
		ME	13 49 57	$\pm 20$															
		MN	13 49 58		$+15$														
		FE	13 50 01																
		FN	13 50 03																
813	May 9	P	16 05 36					26	Ditto.										
		L	16 05 39																
		ME	16 05 39	$\pm 15$															
		MN	16 05 40		$\pm 25$														
		FE	16 05 48																
		FN	16 05 46																
*814	May 9	P	16 33 34					19	Ditto.										
		L	16 33 37																
		ME	16 33 37																
		MN	16 33 38																
		F	16 33 51																
5	May 9	P	16 35 45					19	Ditto.										
		L	16 35 47																
		M	16 35 48	$\pm 25$	$\pm 20$														
		F	16 35 54																
3	May 10	eP	6 25 42					19	Ditto.										
		eL	6 25 45																
		F	6 25 52																
7	May 10	P	17 30 44					37	Ditto.										
		L	17 30 48																
		M	17 30 48	$\pm 13$	$\pm 10$														
		FE	17 30 53																
		FN	17 30 51																
		P	0 28 27																
		L	0 28 30																
		M	0 28 30	$\pm 40$	$\pm 25$														
5	May 11	FE	0 28 34					24	Ditto.										
		eFN	0 28 35																
	May 11	LM	5 13 34						Ditto.										
		F	5 13 36																
	May 11	P	14 48 31					22	Ditto.										
		L	14 48 33																
		F	14 48 35																
	May 11	P	16 30 14					27	Ditto.										
		L	16 30 17																
		M	16 30 18	$\pm 11$	$\pm 15$														
		F	16 30 21																

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
822	May 11	P	22 40 58					27	Ditto.
		L	22 41 01						
		FE	22 41 06						
		eFN	22 41 09						
823	May 12	P	11 38 37					22	Ditto.
		L	11 38 40						
		F	11 38 42						
824	May 13	P	8 43 38					24	Ditto.
		L	8 43 41						
		M	8 43 42	±450	±510				
		C	8 43 46						
		FE	8 44 25						
		FN	8 44 43						
825	May 13	P	15 01 08					26	Ditto.
		L	15 01 11						
		M	15 01 11	±20					
		FE	15 01 14						
		FN	15 01 13						
826	May 14	P	2 43 23					24	Ditto.
		L	2 43 25						
		M	2 43 26	±10	±30				
		FE	2 43 32						
		FN	2 43 31						
827	May 14	P	6 08 56					24	Ditto.
		L	6 08 58						
		M	6 08 58	±20	±30				
		F	6 09 03						
*828	May 14	P	10 24 10					30	Ditto.
		L	10 24 13						
		M	10 24 14	±75	±80				

Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
				A <sub>E</sub>	A <sub>N</sub>	A <sub>Z</sub>		
		G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
	FE	10 24 29						
	eFN	10 24 21						
May 14	L	17 24 04					?	Ditto.
	M	17 24 04	±40					
	F	17 24 07						
May 14	P	18 56 37					13	Ditto.
	L	18 56 39						
	M	18 56 39	±20	±20				
	FE	18 56 42						
May 14	P	20 34 55					27	Ditto.
	L	20 34 58						
	M	20 34 58	±20	±20				
	F	20 35 03						
May 15	P	18 29 49					24	Ditto.
	L	18 29 51						
	M	18 29 52	±20	±35				
	F	18 29 59						
May 16	P	2 24 25					27	Ditto.
	L	2 24 51						
	M	2 24 52	±35	±60				
	FE	2 24 57						
	eFN	2 24 58						
May 16	L	5 17 32					?	Ditto.
	M	5 17 55	±25	±30				
	F	5 17 58						
May 16	P	12 03 05					?	A distant earthquake.
	eSE	12 05 22						
	SN	12 06 05						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
836	May 16	ME	12 09 38	8.8	$\pm 85$			25	After shock of N
		MN	12 10 12	8.8		$\pm 80$			
		eFE	12 39 $\pm$						
		P	13 57 17						
		eL	13 57 20						
		FE	13 57 30						
837	May 17	FN	13 57 27				24	Ditto.	
		P	12 42 13						
		L	12 42 16						
		ME	12 42 16	$\pm 13$					
		MN	12 42 16		$\pm 18$				
		eFE	12 42 23						
838	May 17	FN	12 42 20				?	Ditto.	
		L	14 01 38						
		ME	14 01 38	$\pm 10$					
		MN	14 01 39		$\pm 10$				
		FE	14 01 48						
		FN	14 01 42						
839	May 17	P	14 52 47				26	Ditto.	
		L	14 52 50						
		M	14 52 50	$\pm 10$					
		F	14 52 55						
840	May 17	L	21 47 59	7.1	$\pm 95$			NW. part of the Sea.	
		M	21 48 08						
841	May 18	P	11 47 22				17	After shock of N	
		L	11 47 24						
		M	11 47 25						
		eFE	11 47 34						$+10$
		FN	11 47 28						

Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
				AE $\mu$	AN $\mu$	AZ $\mu$		
May 19	P	5 07 36					24	Ditto.
	L	5 07 39						
	M	5 07 39	$\pm 15$	$\pm 20$				
	FE	5 07 44						
	FN	5 07 42						
May 19	eP	6 57 16				?	Ditto.	
	L	6 57 18						
	M	6 57 18	$\pm 10$					
	FE	6 57 21						
	FN	6 57 20						
May 19	L	12 53 23				?	Ditto.	
	FE	12 53 25						
	FN	12 53 26						
May 19	P	19 19 12				356	Near Titibu district, Saitama Prefecture.	
	L	19 19 56						
	M	19 19 59	1.3	$+33$	$-55$			
	FE	19 21 17						
	FN	19 21 51						
May 20	L	0 12 44				?	After shock of No. 23.	
	ME	0 12 05	$\pm 9$					
	FE	0 12 06						
May 20	L	6 12 04				?	Ditto.	
	ME	6 12 04	$\pm 13$					
	eMN	6 12 05		$\pm 10$				
	FE	0 12 06						
	eF	6 12 08						
May 20	P	7 51 20				27	Ditto.	
	L	7 51 05						
	M	7 51 08	$\pm 73$	$\pm 50$				
	FE	7 51 15						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
*849	May 20	FN	7 51 17					31	Ditto.
		P	7 52 02						
		L	7 52 06						
		M	7 52 06	$\pm 145$	$\pm 105$				
		CE	7 52 09						
		CN	7 52 07						
		FE	7 52 23						
FN	7 52 18								
850	May 20	P	10 32 07				27	Ditto.	
		L	10 32 10						
		M	10 32 10	$\pm 23$	$\pm 15$				
		FE	10 32 15						
		eFN	10 32 18						
851	May 21	P	0 06 18				13	Ditto.	
		L	0 06 19						
		M	0 06 19	$\pm 20$	$\pm 40$				
		FE	0 06 23						
		FN	0 06 22						
852	May 21	P	6 39 20				17	Ditto.	
		L	6 39 22						
		eM	6 39 22	$\pm 10$					
		FE	6 39 25						
		FN	6 39 26						
853	May 22	P	5 21 29				17	Ditto.	
		L	5 21 31						
		M	5 21 31	$\pm 18$	$\pm 23$				
		FE	5 21 35						
		eFN	5 21 35						
854	May 22	P	9 35 43				23	Ditto.	
		L	9 35 46						

Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
				AE $\mu$	AN $\mu$	AZ $\mu$		
May 22	eM	9 35 46					26	Ditto.
	FE	9 35 49						
	P	16 36 38						
	L	16 36 41						
	M	16 36 42	$\pm 315$	$\pm 320$				
	FE	16 37 38						
FN	16 37 14							
May 22	eP	16 55 37				22	Ditto.	
	L	16 55 39						
	M	16 55 40						
	FE	16 55 44						
	FN	16 55 41						
May 22	L	16 55 45				?	Ditto.	
	M	16 55 45						
May 22	L	16 55 47				20	Ditto.	
	M	16 55 08	$\pm 20$					
	F	16 55 53						
May 22	PE	22 38 26				11.4	-2500	In Micronesia, Pacific Ocean.
	ePN	22 38 23						
	SE	22 43 05						
	SN	22 42 52						
	LE	22 46 31						
	LN	22 46 22						
	M <sub>1</sub> E	22 48 58	6.5					
	M <sub>1</sub> N	22 48 10			-2650			
	M <sub>2</sub> E	22 49 37	8.1		-2775			
	M <sub>2</sub> N	22 49 09	8.1		+3325			
M <sub>3</sub> E	22 50 18	8.1		+2350				
M <sub>3</sub> N	22 50 06	6.0		-1600				
M <sub>4</sub> E	22 51 04	11.4		+2100				
M <sub>4</sub> N	22 50 39	6.5		+2840				

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
			h m s						
860	May 23	M <sub>5</sub> E	22 52 36	9.4	+2425			18	After shock of M
		M <sub>5</sub> N	22 51 57	7.1		+1500			
		M <sub>6</sub> E	22 54 08	8.1	+4150				
		M <sub>6</sub> N	22 53 15	8.1		-1425			
		CE	23 04 58	6.2					
		CN	23 03 23						
		eFE	23 59 ±						
		eFN	23 59 ±						
		P	3 27 48						
		L	3 27 50						
861	May 23	M	3 27 51		±13		15	Ditto.	
		eM	3 27 52			±15			
		FE	3 27 56						
		FN	3 27 54						
		eP	12 47 01						
		L	12 47 03						
		M	12 47 03						
862	May 24	FE	12 47 06		±15		28	Ditto.	
		P	12 18 08						
		L	12 18 11						
		ME	12 18 12		±40				
		eMN	12 18 11			±50			
863	May 24	F	12 18 26				24	Ditto.	
		P	14 01 52						
		L	14 01 55						
		M	14 01 55						
		FE	14 01 59		±10	±15			
864	May 24	FN	14 02 03				?	Ditto.	
		L	18 29 38						
		M	18 29 38						
		F	18 29 42		±18	±10			

Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
				AE	AN	AZ		
		G. M. T.	s	$\mu$	$\mu$	$\mu$	km.	
		h m s						
	eF	18 29 43						
May 25	P	5 54 34					22	Ditto.
	L	5 54 37						
	M	5 54 38		±18	±15			
	F	5 54 43						
May 25	P	5 57 12					27	Ditto.
	L	5 57 16						
	M	5 57 16		±8				
	FE	5 57 18						
May 25	FN	5 57 22						
	P	7 07 38						Ditto.
	L	7 07 40						
	M	7 07 40		±15				
May 25	F	7 07 43						
	P	23 25 45					27	Ditto.
	L	23 25 48						
	M	23 25 49		±30	±55			
May 25	FE	23 25 54						
	FN	23 25 56						
	P	23 36 06					24	Ditto.
	L	23 36 09						
May 25	M	23 36 09		±20	±20			
	FE	23 36 13						
	FN	23 36 13						
	P	21 34 23					13	Ditto.
May 26	L	21 34 25						
	M	21 34 25		±60	±65			
	F	21 34 32						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
871	May 27	P	2	15	21						Ditto.
		L	2	15	25						
		eM	2	15	25						
		FE	2	15	29						
		FN	2	15	32						
872	May 27	P	8	35	17					14	Ditto.
		L	8	35	18						
		M	8	35	18		$\pm 30$	$\pm 30$			
		FE	8	35	22						
		FN	8	35	28						
873	May 27	P	16	41	50					19	Ditto.
		L	16	41	53						
		M	16	41	53		$\pm 15$	$\pm 30$			
		FE	16	42	02						
		FN	16	41	55						
874	May 28	P	16	29	50					17	Ditto.
		L	16	29	52						
		M	16	29	52		$\pm 475$	$\pm 550$			
		CE	16	29	56						
		FE	16	30	10						
		FN	16	30	13						
875	May 28	P	16	30	45					24	Ditto.
		L	16	30	48		$\pm 55$				
		M	16	30	51						
		F	16	30	56			$\pm 70$			
876	May 28	P	19	33	20					13	Ditto.
		L	19	33	22						
		M	19	33	22		$\pm 1185$	$\pm 1025$			
		FE	19	34	35						
		FN	19	34	09						

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
May 29	P	1	30	59					13	Ditto.
	L	1	31	00						
	M	1	31	00		$\pm 80$	$\pm 85$			
	FE	1	31	07						
	FN	1	31	08						
May 29	LM	3	06	22						Ditto.
	F	3	06	25						
May 29	eP	3	16	14					39	Ditto.
	L	3	16	18						
	eM	3	16	19		$\pm 18$	$\pm 20$			
	eF	3	16	23						
	eF	3	16	23						
May 29	P	21	35	26					24	Ditto.
	L	21	35	29						
	M	21	35	29		$\pm 10$	$\pm 15$			
	FE	21	35	32						
	FN	21	35	33						
May 30	eP	1	05	22					11	Ditto.
	L	1	05	23						
	M	1	05	24		$\pm 20$	$\pm 20$			
	FE	1	05	30						
	FN	1	05	28						
May 30	eP	2	23	18					8	Ditto.
	L	2	23	19						
	M	2	23	19		$\pm 20$	$\pm 20$			
	FE	2	23	25						
	FN	2	23	21						
May 30	P	2	25	39					11	Ditto.
	L	2	25	41						
	M	2	25	41		$\pm 20$	$\pm 20$			





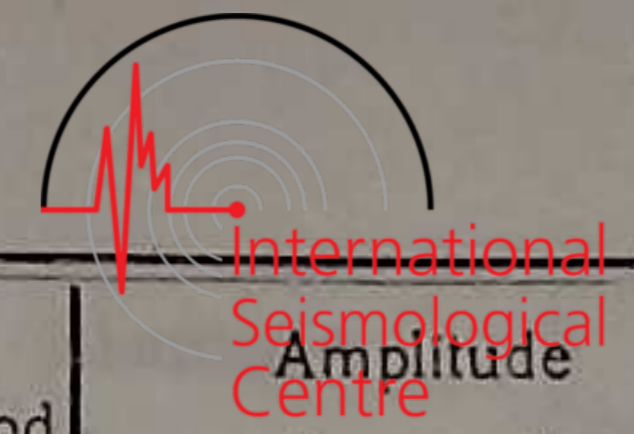


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No	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			Δ km.	Remarks	Date	Phase	Time G. M. T. h m s	Period s	Amplitude			Δ km.	Remarks
					AE μ	AN μ	AZ μ							AE μ	AN μ	AZ μ		
897	June 10	LM	13 52 48						Ditto.	June 14	P	18 07 29				28	Ditto.	
		FN	13 52 50								L	18 07 32						
898	June 10	P	18 35 42						Ditto.	June 14	M	18 07 33		±15	±25			
		LM	18 35 46								F	18 07 39						
		FE	18 36 03								June 14	P						23 28 09
		FN	18 36 02									L						23 28 13
899	June 11	P	23 52 33				28	Ditto.	June 14	M	23 28 13		±10		37	Ditto.		
		L	23 52 36							F	23 28 19							
		M	23 52 37							June 17	P						9 30 07	
		FE	23 53 18								L						9 30 10	
		FN	23 53 51								M						9 30 11	
900	June 12	L	8 20 46					Central part of	June 17	FE	9 30 35		±35	±75				
		F	8 20 59							FN	9 30 22							
901	June 12	eP	19 03 38				28	After shock of	June 17	P	17 50 36				22	Ditto.		
		L	19 03 42							L	17 50 39							
		M	19 03 42							M	17 50 39							
		FE	19 03 49							FE	17 50 41							
		FN	19 03 47							FN	17 50 43							
902	June 13	P	17 46 17				15	Ditto.	June 17	P	22 02 26				27	Ditto.		
		L	17 46 19							L	22 02 29							
		M	17 46 20							M	22 02 30							
		CE	17 46 22							C	22 02 33							
		CN	17 46 24							FE	22 03 24							
		FE	17 47 14							FN	22 03 18							
		FN	17 46 44							June 17	L						22 03 51	
											M						22 03 52	
903	June 14	eP	1 16 30				35	Ditto.	June 17	F	22 03 54		±14		?	Ditto.		
		L	1 16 34							June 18	P						2 27 32	
		M	1 16 34								SE						2 28 31	
		eFE	1 16 42															
		eFN	1 16 37															

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
911	June 18	SN	2	28	27						
		L	2	28	59						
		eF	2	29	00						
		LM	7	01	32		$\pm 15$	$\pm 15$			After shock of 8
		FE	7	01	36						
		FN	7	01	37						
912	June 18	P	20	53	40					24	Ditto.
		LM	20	53	43		$\pm 50$	$\pm 65$			
		FE	20	54	32						
		FN	20	54	58						
913	June 19	P	9	33	39					30	Ditto.
		LM	9	33	43		$\pm 20$	$\pm 40$			
		FE	9	33	55						
		FN	9	33	58						
914	June 19	L	11	04	11					?	Ditto.
		ME	11	04	11		$\pm 15$				
		F	11	04	15						
915	June 19	P	12	24	13					30	Ditto.
		L	12	24	16						
		eM	12	24	16		?	$\pm 20$			
		F	12	24	23						
916	June 19	eP	16	37	06						
		L	16	37	09					24	Ditto.
		M	16	37	10						
		FE	16	37	13		$+8$				
		FN	16	37	15						
917	June 20	eP	0	56	33						
		L	0	56	36					22	Ditto.
		M	0	56	37		$\pm 10$	$\pm 28$			
	June 20	FE	0	56	42						
		FN	0	56	39						
918	June 20	L	2	24	56						Ditto.
		M	2	24	56						
		F	2	24	59						
919	June 21	P	5	27	28					28	Ditto.
		L	5	27	31						
		M	5	27	32		$\pm 20$	$\pm 20$			
		FE	5	27	35						
		FN	5	27	36						
920	June 22	P	1	33	52					23	Ditto.
		L	1	33	55						
		M	1	33	55		$\pm 50$	$\pm 85$			
		FE	1	34	18						
		FN	1	34	19						
921	June 24	P	10	42	17					27	Ditto.
		L	10	42	20						
		M	10	42	20		$\pm 78$	$\pm 60$			
		FE	10	43	14						
		FN	10	42	44						
922	June 24	P	14	22	48						Ditto.
		L	14	22	51						
		M	14	22	51		$\pm 10$	$\pm 18$			
		eFE	14	22	53						
		FN	14	22	56						
923	June 25	P	6	04	19					35	Ditto.
		L	6	04	23						
		M	6	04	23		$\pm 10$	?			
		F	6	04	38						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
924	June 25	eP	8	02	56					7	Ditto.
		L	8	02	57						
		ME	8	02	57		$\pm 35$				
		MN	8	02	57			$\pm 55$			
		FE	8	03	00						
		FN	8	03	01						
*925	June 25	P	11	19	05					29	Ditto.
		L	11	19	09						
		M	11	19	09		$+33$	$\pm 75$			
		FE	11	19	23						
		FN	11	19	20						
*926	June 28	P	18	32	48					22	Ditto.
		L	18	32	50						
		M	18	32	51		$\pm 90$	$\pm 55$			
		FE	18	33	44						
		FN	18	33	09						
927	June 29	P	0	28	10					31	Ditto.
		L	0	28	14						
		eM	0	28	14		$\pm 10$				
		FE	0	28	22						
		eFN	0	28	26						
*928	June 29	P	0	54	33					19	Ditto.
		L	0	54	35						
		M	0	54	35		$\pm 85$	$\pm 65$			
		FE	0	55	05						
		FN	0	55	07						
929	July 1	P	13	38	41					19	Ditto.
		L	13	38	43						
		M	13	38	43		$\pm 38$	$\pm 25$			
		FE	13	38	49						
		eFN	13	38	52						
0	July 1	P	15	27	43					31	Ditto.
		L	15	27	47						
		eM	15	27	48		$\pm 85$	$\pm 125$			
		FE	15	29	03						
		FN	15	28	29						
1	July 2	P	10	16	12					26	Ditto.
		L	10	16	16						
		M	10	16	16		$\pm 20$	$\pm 15$			
		FE	10	16	21						
		eFN	10	16	22						
2	July 3	eP	8	21	35						Ditto.
		S	8	26	09						
		eF	8	45	$\pm$						
3	July 3	P	19	42	40					17	Ditto.
		L	19	42	42						
		M	19	42	42		$\pm 25$	$\pm 25$			
		FE	19	43	00						
		FN	19	43	55						
4	July 4	eP	8	00	47					17	Ditto.
		L	8	00	49						
		M	8	00	50		$\pm 30$	$\pm 10$			
		FE	8	00	54						
		FN	8	00	56						
5	July 4	eP	15	54	32					22	Ditto.
		L	15	54	34						
		M	15	54	34		$-10$	$\pm 20$			
		FE	15	54	40						
		FN	15	54	35						
6	July 4	P	17	10	54					56	Near Himeji.
		L	17	11	01						



No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
937	July 5	M	17	11	01		$\pm 340$	$\pm 325$		27	After shock of 11
		FE	17	12	36						
		FN	17	12	10						
		P	14	50	22						
		L	14	50	26						
		M	14	50	26		$\pm 25$	$\pm 35$			
938	July 5	FE	14	50	39					27	Ditto.
		FN	14	50	35						
		P	18	05	48						
		L	18	05	51						
		M	18	05	51		$\pm 20$	$\pm 8$			
		FE	18	05	56						
939	July 5	FN	18	06	01					55	Ditto.
		P	20	04	08						
		L	20	04	15						
		M	20	04	15		$\pm 20$	$\pm 35$			
		FE	20	04	34						
		FN	20	04	30						
940	July 5	P	21	41	46					20	Ditto.
		L	21	41	48						
		M	21	41	49						
		F	21	41	57		$\pm 58$	$\pm 40$			
		P	1	11	44						
941	July 6	L	1	11	45					13	Ditto.
		M	1	11	46						
		FE	1	11	50		$\pm 13$	?			
		FN	1	11	48						
		P	2	14	57						
		L	2	14	59						
942	July 6	M	2	14	59		$\pm 10$	$\pm 15$		28	Ditto.

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
July 7	FE	2	15	06					26	Ditto.
	FN	2	15	03						
	P	20	34	39						
July 7	L	20	34	42					24	Ditto.
	M	20	34	43		$\pm 665$	$\pm 675$			
	FE	20	36	06						
	FN	20	35	59						
	P	20	58	44						
	L	20	58	47						
July 7	M	20	58	47		$\pm 10$	$\pm 23$		28	Ditto.
	FE	20	58	50						
	FN	20	58	50						
	P	8	42	55						
	L	8	42	58						
July 7	M	8	42	59		$\pm 95$	$\pm 115$		23	Ditto.
	FE	8	43	29						
	FN	8	44	14						
	P	19	38	12						
	LM	19	38	15		$\pm 10$	$\pm 25$			
July 8	FE	19	38	22					19	Ditto.
	FN	19	38	21						
	P	13	14	41						
	L	13	14	44						
July 9	M	13	14	44		$\pm 35$	$\pm 45$		19	Ditto.
	FE	13	14	51						
	FN	13	14	49						
	L	2	25	07						
July 10	F	2	25	12					19	Ditto.
	P	8	09	30						

No.	Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
950	July 11	eP	8	09	27					23	Ditto.
		eFE	8	27	±						
		eFN	8	23	±						
		P	13	39	49						
		L	13	37	52						
		M	13	37	52	±200	±270				
951	July 12	FE	13	38	26					17	Ditto.
		FN	13	38	15						
		P	4	24	53						
		L	4	24	55						
		M	4	24	55	±58	±38				
		FE	4	25	06						
952	July 12	FN	4	25	07					13	Ditto.
		P	15	46	59						
		L	15	47	02						
		M	15	47	02	±23	±35				
		eFE	15	47	06						
		FN	15	47	05						
*953	July 12	P	16	02	10					+85	+60
		L	16	02	13						
		M	16	02	13						
		F	16	02	48						
		P	16	02	10						
954	July 12	L	16	02	13					13.0	+50
		M	16	02	13						
		F	16	02	48						
		P	21	10	44						
		S	21	12	51						
		L	21	15	13						
		ME	21	16	53						
955	July 14	eFE	21	32	-					2000	17
		eFN	21	23	-						
		P	19	56	38						

Off the Oti-isi P  
tory, Hokkaido.

After shock of N

Date	Phase	Time			Period	Amplitude			$\Delta$	Remarks
		G.	M.	T.		AE	AN	AZ		
		h	m	s	s	$\mu$	$\mu$	$\mu$	km.	
July 14	L	19	56	40					±15	±18
	M	19	56	40						
	F	19	56	48						
July 14	L	21	00	51					±15	±15
	eM	21	00	51						
	F	21	00	56						
July 16	L	3	28	56					±18	±20
	M	3	28	56						
	FE	3	29	02						
July 17	FN	3	29	58					±15	±15
	P	8	53	40						
	eP	16	00	36						
July 17	L	16	00	39					±15	±20
	ME	16	00	39						
	eMN	16	00	39						
	F	16	00	47						
	P	13	26	22						
July 18	L	13	26	25					±70	±55
	M	13	26	26						
	FE	13	26	43						
	FN	13	26	35						
	P	18	13	53						
July 18	L	18	13	56					±15	±15
	M	18	13	56						
	F	18	14	01						
	P	18	16	09						
July 18	L	18	16	11					±15	±15
	eM	18	16	11						
	eF	18	16	17						
	P	18	16	09						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks	No.	Date	Phase	Time G. M. T.	Period s	Amplitude			Δ km.	Remarks
					AE μ	AN μ	AZ μ								AE μ	AN μ	AZ μ		
963	July 19	P	22 20 33		±15			22	Near the mouth of River Maruyama Province.	1	July 24	P	4 55 46				27	Ditto.	
		L	22 20 36									FN	0 23 54						
		ME	22 20 36																
		F	22 20 54																
964	July 20	P	3 48 23		-20	±15		196	Upper course of Miya, Ise Province.	2	July 25	P	8 40 52	±15	±20		19	Ditto.	
		L	3 48 44									FE	4 55 57						
		M	3 48 57									FN	4 55 54						
		FE	3 49 44																
		FN	3 49 34																
965	July 21	P	15 57 47		-55	±35			After shock of	3	July 27	P	14 53 04	±155	±125		599	NE. off Hatijo I.	
		LM	15 57 51									FE	8 41 07						
		F	15 58 00									FN	8 41 22						
966	July 22	P	4 42 02		±680			22	Upper course of Kako, Harima P.	4	July 29	P	18 07 18	-48	+65		20	After shock of No. 23.	
		L	4 42 05									eL	14 54 44						
		ME	4 42 05									ME	14 55 21						
		eMN	4 42 06									MN	14 55 10						
		FE	4 43 37									CE	14 56 21						
		FN	4 42 59									CN	14 55 39						
												F	15 00 37						
967	July 22	P	17 28 43		±15			22	After shock of	4	July 29	L	18 07 20	±13	±20				
		LM	17 28 46									eM	18 07 21						
		F	17 28 55									FE	18 07 31						
968	July 22	L	22 08 05		±15	±15			Ditto.	5	July 30	P	14 19 44	-90	+365		445	In the sea of Kasima.	
		M	22 08 06									L	14 20 39						
		FE	22 08 10									M	14 21 22						
969	July 23	eP	17 24 00						Ditto.		July 30	F	14 30 52						
970	July 24	P	0 23 34		±13	±15		39	Ditto.	6	July 30	P	19 09 20	±43	±30		23	After shock of No. 23.	
		L	0 23 39									L	19 09 23						
		M	0 23 39									M	19 09 22						
		FE	0 23 47									F	19 09 30						

No.	Date	Phase	Time	Period	Amplitude			J	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$		
*977	July 30	P	22 56 32					26	Ditto.
		L	22 56 34						
		M	22 56 36		$\pm 11$	$\pm 60$			
		F	22 57 13						
*978	Aug. 1	P	14 50 59					31	Ditto.
		L	14 51 03						
		M	14 51 03		$\pm 100$	$\pm 150$			
		FE	14 51 46						
		FN	14 51 22						
979	Aug. 2	LM	15 24 31						Ditto.
		FE	15 24 34						
		eFN	15 24 34						
980	Aug. 3	P	9 53 48					24	Ditto.
		L	9 53 51						
		M	9 53 51		$\pm 25$				
		F	9 54 06						
981	Aug. 3	P	22 38 34					24	Ditto.
		L	22 38 37						
		M	22 38 38		$\pm 100$				
		F	22 38 49						
982	Aug. 5	P	2 45 15					24	Ditto.
		L	2 45 18						
		M	2 45 18		$\pm 265$	$\pm 115$			
		FE	2 46 23						
		FN	2 46 54						
983	Aug. 5	P	12 40 47					26	In the Bay of Kumihama.
		L	12 40 51		$\pm 450$	$\pm 1840$			
		M	12 40 52						
		FE	12 43 07						
		FN	12 42 54						

No.	Date	Phase	Time	Period	Amplitude			J	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$		
984	Aug. 5	P	13 19 29					22	After shock of No. 23.
		L	13 19 31						
		eM	13 19 31						
		F	13 19 34						
985	Aug. 5	P	21 14 32					753	Off the mouth of the Abukuma River.
		S	21 15 44						
		L	21 16 15						
		M	21 17 08	8.4	$\pm 1925$	$+4550$			
		C	21 22 44						
		F	22 09 17						
986	Aug. 6	L	1 56 41						After shock of No. 23.
		M	1 56 42		$\pm 10$	$\pm 15$			
		F	1 56 50						
987	Aug. 6	P	4 31 40					27	Ditto.
		L	4 31 07						
		M	4 31 07		$\pm 35$	$\pm 25$			
		F	4 31 15						
988	Aug. 6	P	7 26 45					23	Ditto.
		L	7 26 48						
		M	7 26 48	0.3	$\pm 85$	$\pm 66$			
		F	7 27 06						
989	Aug. 6	P	15 20 05					20	Ditto.
		L	15 20 07						
		M	15 20 07		$\pm 170$	$\pm 110$			
		FE	15 20 27						
		FN	15 20 36						
990	Aug. 6	L	23 59 53						Ditto.
		M	23 59 54		$\pm 10$	$\pm 35$			
		F	23 59 58						



No.	Date	Phase	Time			Period	Amplitude			D	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
991	Aug. 7	L	1	43	07					17	Ditto.
		M	1	43	07		±9	±30			
		F	1	43	10						
992	Aug. 7	P	8	27	55					17	Ditto.
		L	8	27	57						
		M	8	27	57		±16	±45			
		F	8	28	01						
993	Aug. 7	eP	11	08	43					18	Ditto.
		L	11	08	45						
		M	11	08	45		±39	±35			
		F	11	08	59						
994	Aug. 8	eP	1	02	34					2290	In the basin of the Isikari, Hokkaido.
		L	1	06	23						
		M	1	06	23	6.8	±33	±15			
		FE	1	17	32						
		FN	1	16	56						
995	Aug. 8	P	14	02	12					24	After shock of No. 23.
		L	14	02	15						
		M	14	02	15		±17	±17			
		F	14	02	23						
996	Aug. 9	P	1	14	36					50	Ditto.
		L	1	14	43						
		M	1	14	43		±40	±53			
		F	1	15	11						
997	Aug. 10	P	11	43	11					5280	A distant earthquake; probably in Micronesia, Pacific Ocean.
		S	11	48	50						
		L	11	54	47						
		M	11	56	27		±45	±50	±14		
		F	12	29	±						

No.	Date	Phase	Time			Period	Amplitude			D	Remarks	
			G.	M.	T.		AE	AN	AZ			
			h	m	s	s	μ	μ	μ	km.		
998	Aug. 12	eP	0	36	00					6.2	±85	-175
		L	0	37	41							
		M	0	37	46							
		FE	0	55	±							
		FN	0	57	±							
*999	Aug. 12	P	1	25	07					58	Near Himeji.	
		L	1	25	14							
		M	1	25	15		±185	±170				
		F	1	26	23							
1000	Aug. 13	P	5	13	14					22	After shock of No. 23.	
		L	5	13	16							
		M	5	13	18		±20	±35				
		FE	5	13	43							
1001	Aug. 13	L	23	26	51					22	Ditto.	
		M	23	26	51		±13	±20				
		F	23	26	55							
1002	Aug. 15	P	13	41	16					30	Ditto.	
		L	13	41	20							
		M	13	41	20		±18	±25				
		F	13	41	26							
1003	Aug. 16	P	11	23	20					56	Near Himeji.	
		L	11	23	27							
		M	11	23	28		±165	±150				
		FE	11	24	46							
		FN	11	24	47							
1004	Aug. 16	P	14	25	15					60	After shock of No. 23.	
		L	14	25	23							
		M	14	25	23		±25	±40				
		FE	14	25	58							
		FN	14	25	58							

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1005	Aug. 17	FN	14 25 43					58	Ditto.
		P	3 12 18						
		L	3 12 26						
		M	3 12 26	±10	±16				
1006	Aug. 17	P	22 24 11					36	Ditto.
		L	22 24 16						
		M	22 24 16	±25	±31				
		F	22 24 53						
1007	Aug. 18	P	9 06 48					17	Ditto.
		L	9 06 50						
		M	9 06 50	±43	±45				
		FE	9 06 55						
		FN	9 06 51						
1008	Aug. 18	P	19 29 20	9.0	±2285	-1375		1046	Far off the Bōso Peninsula.
		L	19 31 41						
		M	19 33 14						
		C	19 40 26						
		F	21 21 ±						
1009	Aug. 19	P	3 45 52					30	In the Bay of Kumihama.
		L	3 45 55						
		M	3 45 58	±93	±100				
		F	3 46 34						
1010	Aug. 19	P	14 03 11					23	After shock of No. 23.
		L	14 03 13						
		M	14 03 14						
		F	14 03 22	±23	±20				
1011	Aug. 19	eP	23 19 44						Far off the Bōso Peninsula.
		eL	23 20 37						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1012	Aug. 20	eFE	23 27 21					13	After shock of No. 23.
		P	6 20 43						
		L	6 20 44						
		M	6 20 44	±20	±35				
		FE	6 20 52						
1013	Aug. 20	P	21 38 52	8.1	-225	-175			SSE. off Tyosi.
		eL	21 40 39						
		M	21 42 49						
		C	21 46 47						
		F	22 27 39						
1014	Aug. 22	iP	4 58 27					17	After shock of No. 23.
		iL	4 58 29						
		M	4 58 30	±20	±13				
		iFE	4 58 38						
		eFN	4 58 40						
1015	Aug. 23	iP	6 30 28						NNE. off Bonin IIs.
		eS	6 31 55						
		eL	6 33 42						
		ME	6 36 25	8.3	-1300				
		MN	6 35 36	8.9	-450				
		CE	6 39 46						
		eCN	6 38 19						
		eFE	7 11 ±						
		eFN	7 01 ±						
*1016	Aug. 23	P	9 31 28					23	After shock of No. 23.
		L	9 31 31						
		M	9 31 31	±120	±115				
		FE	9 31 46						
		FN	9 31 40						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
1017	Aug 24	P	8 57 38					1158	E. off Cape Siwoya, Iwaki Province.
		L	9 00 12						
		ME	9 01 26	8.6	+165				
		MN	9 00 21	6.5		-325			
		eFE	9 56 38						
		eFN	9 23 24						
1018	Aug. 24	P	18 13 19						S. part of Formosa.
		eS	18 19 16						
		L	18 22 55						
		eFE	18 36 38						
		eFN	18 35 24						
1019	Aug. 28	P	0 57 27					27	After shock of No. 23.
		L	0 57 30						
		iME	0 57 31		±13				
		eMN	0 57 30			±20			
		FE	0 57 38						
		FN	0 57 35						
1020	Aug. 28	P	7 28 01					24	Ditto.
		L	7 28 04						
		eME	7 28 05		±15				
		eMN	7 28 04						
		FE	7 28 08						
		eFN	7 28 06						
1021	Aug. 29	L	5 37 30						E. off Cape Siwoya.
		ME	5 39 23	18.0	-35				
		eMN	5 39 14	6.5		-40			
		eFE	5 51 37						
		eFN	5 50 ±						
1022	Aug 29	P	7 44 32						S. off Cape Erimo.
		L	7 48 19						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
1023	Aug. 30	P	14 03 35						After shock of No. 23.
		L	14 03 38					31	
		M	14 03 39		±20	±15			
		iFE	14 04 10						
		eFN	14 03 44						
*1024	Sept. 1	P	19 59 01		-20	-15		24	Ditto.
		L	19 59 04						
		ME	19 59 04		+110				
		eMN	19 59 05			±145			
		FE	19 59 37						
		FN	19 59 40						
1025	Sept. 3	P	19 27 34					24	Ditto.
		L	19 27 36						
		M	19 27 37		±18	±18			
		FE	18 27 45						
		FN	19 27 43						
1026	Sept. 5	P	0 34 08					445	Near the mouth of the Naka River.
		L	0 35 08						
		eME	0 35 44		+18				
		eMN	0 35 42			+13			
		eFN	0 39 ±						
1027	Sept. 5	P	13 58 10						After shock of No. 23.
		L	13 58 13						
		ME	13 58 14		±20				
		MN	13 58 15			±30			
		FE	13 58 28						
		FN	13 58 18						
1028	Sept. 5	P	21 15 00					27	Ditto.
		L	21 15 03						
		M	21 15 03		±13	±20			
		FE	21 15 18						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
		FN	21 15 13						
1029	Sept. 5	P	22 40 36					Near Mt. Tanzawa.	
		eL	22 41 16						
1030	Sept. 6	P	7 47 50				22	After shock of No. 23.	
		L	7 47 53						
		eM	7 47 53		$\pm 10$	$\pm 10$			
		FE	7 48 13						
		FN	7 48 09						
*1031	Sept. 6	P	21 07 08				19	Ditto.	
		L	21 07 10						
		M	21 07 10		$\pm 25$	$\pm 35$			
		FE	21 07 22						
		FN	21 07 16						
1032	Sept. 12	P	15 30 16				316	S. off Cape Onmae.	
		L	15 30 59						
		ME	15 31 01		-85				
		MN	15 30 59			-30			
		FE	15 35 41						
		eFN	15 35 56						
1033	Sept. 17	L	15 13 05					W. off Yaku I, Kagosima Prefecture.	
		ME	15 13 57		+65				
		MN	15 13 18			-60			
		FE	15 19 24						
		FN	15 19 34						
*1034	Sept. 17	P	22 17 52				19	After shock of No. 23.	
		L	22 17 54						
		M	22 17 55		$\pm 35$	$\pm 95$			
		F	22 18 05						
1035	Sept. 18	LM	12 33 10		$\pm 20$	$\pm 18$		Ditto.	

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s					
		F	12 33 15						
*1036	Sept. 19	P	12 22 31				24	Ditto.	
		L	12 22 34						
		M	12 22 34		$\pm 45$	$\pm 43$			
		FE	12 22 45						
		eFN	12 22 40						
1037	Sept. 22	P	17 17 59				22	Ditto.	
		L	17 18 02						
		M	17 18 02		$\pm 35$	$\pm 35$			
		FE	17 18 12						
		FN	17 18 09						
*1038	Sept. 22	P	20 11 19				20	Ditto.	
		L	20 11 22						
		M	20 11 22		$\pm 45$	$\pm 163$			
		F	20 12 ±						
1039	Sept. 22	P	20 12 07				22	Ditto.	
		L	20 12 10						
		M	20 12 10		$\pm 10$	$\pm 30$			
		FE	20 12 19						
		FN	20 12 27						
1040	Sept. 22	P	20 18 21				19	Ditto.	
		L	20 18 23						
		MN	20 18 23			$\pm 45$			
		eFE	20 18 36						
		FN	20 18 34						
1041	Sept. 23	P	1 29 49				3	Local shock.	
		L	1 29 49						
		M	1 29 50		$\pm 17$	$\pm 20$			
		F	1 30 ±						

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
1042	Sept. 23	L	12 54 41						
		M	12 54 41						
		F	12 54 43						
1043	Sept. 24	P	20 09 39				24	After shock of No. 23.	
		L	20 09 42						
		M	20 09 42		$\pm 15$	$\pm 18$			
		F	20 09 44						
*1044	Sept. 24	eP	21 09 18				22	Ditto.	
		L	21 09 21						
		ME	21 09 21		$\pm 60$				
		eMN	21 09 22			$\pm 25$			
		FE	21 10 31						
		eFN	21 09 25						
1045	Sept. 26	P	23 38 43				29	Ditto.	
		L	23 38 47						
		M	23 38 47		$\pm 10$	$\pm 15$			
		F	23 38 51						
1046	Sept. 30	P	7 40 27		$+5$	$+5$		Off Cape Siriya.	
		eL	7 43 32						
		MN	7 43 45			$+75$			
		eF	7 51 30						
1047	Oct. 1	P	5 52 31				27	After shock of No. 23.	
		L	5 52 34						
		ME	5 52 34		$\pm 15$				
		FE	5 52 40						
*1048	Oct. 2	P	23 29 50				30	Ditto.	
		L	23 29 54						
		ME	23 29 54		$\pm 55$				
		MN	23 29 56						
		FE	23 30 28			$\pm 125$			

No.	Date	Phase	Time	Period	Amplitude			$\Delta$	Remarks
					AE	AN	AZ		
			G. M. T.		$\mu$	$\mu$	$\mu$	km.	
			h m s	s	$\mu$	$\mu$	$\mu$	km.	
1049	Oct. 8	P	12 28 01						
		FE	12 48 $\pm$						Ditto.
1050	Oct. 11	P	1 14 20				570	In the Sea of Kasima.	
		S	1 15 23						
		L	1 15 43						
		ME	1 15 49		$-38$				
		MN	1 15 51	5.2		$-140$			
		eFE	1 22 $\pm$						
1051	Oct. 11	eFN	1 24 $\pm$						
		L	1 32 57					Off Noto Peninsula.	
		ME	1 32 57		$\pm 18$				
		MN	1 32 58			$\pm 15$			
		FE	1 33 00						
		eFN	1 33 01						
1052	Oct. 11	P	11 33 46				19	After shock of No. 23.	
		L	11 33 48						
		M	11 33 49		$\pm 17$	$\pm 20$			
		FE	11 33 51						
		eFN	11 33 50						
1053	Oct. 11	P	17 32 55				1046	E. off Cape Erimo.	
		S	17 34 47						
		eL	17 35 16						
		eFE	17 44 37						
		eFN	17 43 $\pm$						
1054	Oct. 14	P	3 36 55				24	After shock of No. 23.	
		L	3 36 58						
		M	3 36 59		$\pm 25$	$\pm 20$			
		F	3 37 05						
1055	Oct. 17	eP	2 10 57				13	Ditto.	

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$			
1056	Oct. 19	L	2 10 59				15	Ditto.		
		M	2 10 59						$\pm 65$	$\pm 55$
		FE	2 11 07							
		FN	2 11 05							
1057	Oct. 21	P	14 41 10	8.3	+471		28	Ditto.		
		L	14 41 12						$\pm 13$	-20
		M	14 41 12							
		FE	14 41 20							
		FN	14 41 16							
1058	Oct. 24	P	19 07 19				1744	S. far off Bōso Peninsula.		
		eS	19 08 49							
		eL	19 09 54							
		ME	19 13 01							
1059	Oct. 27	eFE	19 34 -							
		eFN	19 26 -							
		P	2 26 05	6	Local shock.					
		L	2 26 05							
M	2 26 06									
FE	2 26 24	$\pm 48$	$\pm 50$							
1060	Oct. 27	FN	2 26 26							
		P	15 18 26	25	After shock of No. 23.					
		L	15 18 29							
		M	15 13 30							
		FE	15 14 39			$\pm 13$	$\pm 15$			
FN	15 14 34									
1061	Oct. 28	eP	15 23 12							

SE. far off Bōso Peninsula.

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$			
1062	Oct. 31	P	21 18 54				28	After shock of No. 23.		
		L	21 18 57							
		M	21 18 58						$\pm 15$	$\pm 23$
		F	21 19 -							
1063	Nov. 4	P	14 03 18	16.5			24	A distant earthquake.		
		S	14 13 29						+3	+4
		eL	14 25 12							
		eMN	14 25 45							-11
		eF	14 55 -							
1064	Nov. 5	P	11 52 08				24	In the basin of the Maruyama, Tajima Province.		
		L	11 52 11							
		ME	11 52 12							
		FE	11 52 26							
1065	Nov. 5	P	15 26 37				27	Ditto.		
		L	15 26 41							
		M	15 26 41						$\pm 11$	$\pm 6$
		F	15 26 49							
1066	Nov. 5	P	23 23 45				32	After shock of No. 23.		
		L	23 23 50							
		M	23 23 50						$\pm 31$	$\pm 14$
		F	23 24 26							
1067	Nov. 6	P	16 57 38				21	In the basin of the Maruyama River.		
		L	16 57 41							
		M	16 57 41						$\pm 28$	$\pm 24$
		F	16 58 ±							
1068	Nov. 6	P	20 42 04				21	Ditto.		
		L	20 42 07							
		M	20 42 12						$\pm 11$	$\pm 11$

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$			
1069	Nov. 7	FE	20 42 12				21	Ditto.		
		FN	20 42 15							
		P	19 48 53							
		L	19 48 56							
		M	19 48 56						$\pm 4$	$\pm 5$
	F	19 49 00								
1070	Nov. 8	eP	23 50 52				11	After shock of No. 23.		
		L	23 50 53							
		MN	23 50 54						$\pm 8$	
		FN	23 50 59							
1071	Nov. 9	P	6 25 44				22	Ditto.		
		L	6 25 47							
		M	6 25 47						$\pm 12$	$\pm 14$
		FE	6 25 55							
		FN	6 25 53							
*1072	Nov. 10	P	2 43 31				23	Ditto.		
		L	2 43 34							
		M	2 43 34						$\pm 94$	$\pm 113$
		F	2 44 ±							
1073	Nov. 10	P	7 23 36				22	Ditto.		
		L	7 23 39							
		M	7 23 39						$\pm 8$	$\pm 6$
		F	7 23 44							
1074	Nov. 10	P	14 37 18				23	In the basin of the Maruyama River.		
		L	14 37 21							
		M	14 37 22						$\pm 35$	$\pm 15$
		F	14 37 30							
1075	Nov. 10	P	19 49 05				7	Ditto.		
		L	19 49 06							

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks	
					AE $\mu$	AN $\mu$	AZ $\mu$			
*1076	Nov. 11	M	19 49 06				36	After shock of No. 23.		
		F	19 53 -						$+60$	$-44$
		P	2 47 35							
		L	2 47 48							
		M	2 47 48						$\pm 100$	$\pm 233$
		FE	2 49 20							
	FN	2 49 19								
1077	Nov. 11	P	15 02 57				23	In the basin of the Maruyama River.		
		L	15 03 00							
		ME	15 03 00						$\pm 5$	
		F	15 03 05							
1078	Nov. 11	P	15 44 33				23	Ditto.		
		L	15 44 36							
		M	15 44 36						$\pm 19$	$\pm 39$
		F	15 44 50							
1079	Nov. 11	P	18 48 53				18	Ditto.		
		L	18 48 55							
		M	18 48 55						$\pm 5$	$\pm 5$
		eFE	18 48 58							
		eFN	18 48 59							
1080	Nov. 12	P	0 24 21				23	Ditto.		
		L	0 24 24							
		M	0 24 25						$\pm 10$	$\pm 31$
		F	0 24 38							
1081	Nov. 12	P	19 12 25				22	In the basin of the Maruyama River.		
		L	19 12 28							
		ME	19 12 28						$\pm 13$	$\pm 9$
		MN	19 12 29							
		F	19 12 32							

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
1082	Nov. 14	eP	0 22 36					A distant earthquake.	
		L	0 20 28						
		M <sub>1</sub> E	0 30 56	12.6	-12				
		M <sub>2</sub> E	0 33 23	12.6	+24				
		M <sub>3</sub> N	0 33 25	17.4		-31			
		eFE	0 52 ±						
		eFN	0 54 ±						
1083	Nov. 14	eP	5 06 28				A distant earthquake.		
		L	5 14 23						
		M <sub>1</sub> E	5 18 37	11.6	+41				
		M <sub>1</sub> N	5 18 16	14.5		+75			
		M <sub>2</sub> E	5 21 24	12.6	-9				
		M <sub>2</sub> N	5 21 26	12.6		-23			
		M <sub>3</sub> N	5 23 13	10.6		-20			
eFE	5 37 21								
1084	Nov. 14	P	19 47 07				3125 SE. off Bonin IIs.		
		L	19 53 14						
		ME	19 55 33	7.7	+8				
		eFN	20 04 47						
1085	Nov. 14	P	21 10 14				17 In the basin of the Maruyama River.		
		LM	21 10 17		±10	±15			
		F	21 10 23						
1086	Nov. 15	P	4 14 18				23 Ditto.		
		L	4 14 21						
		M	4 14 21		±10	±12			
		F	4 14 23						
*1087	Nov. 15	P	15 01 47				11 After shock of No. 23.		
		L	15 01 48						
		M	15 01 48		-125	+75			
		F	15 02 04						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
1088	Nov. 16	P	0 58 29				12 Ditto.		
		L	0 58 30						
		M	0 58 31		±31	±34			
		F	0 58 41						
*1089	Nov. 16	P	11 29 05		+4	+10	26 Ditto.		
		LM	11 30 08		±456	±403			
		FN	11 30 50						
1090	Nov. 16	P	19 14 58				17 Ditto.		
		L	19 15 00						
		M	19 15 00		±4	±9			
		F	19 15 04						
1091	Nov. 16	P	19 39 44				Ditto.		
		F	19 39 54						
1092	Nov. 17	P	10 11 23				10 In the basin of the Maruyama River.		
		LM	10 11 24			±4			
		F	10 11 28						
1093	Nov. 18	P	15 48 00				24 Ditto.		
		L	15 48 04						
		M	15 48 04		±15	+10			
		F	15 48 08						
1094	Nov. 22	P	6 31 03				26 After shock of No. 23.		
		L	6 31 07						
		M	6 31 07		±10				
		F	6 31 12						
1095	Nov. 22	P	19 14 26				19 In the basin of the Maruyama River.		
		L	19 14 28						
		M	19 14 29		±13				
		FE	19 14 34						



No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1096	Nov. 24	P	14 09 50					25	After shock of No. 23.
		L	14 09 53						
		eM	14 09 54		±8				
		eFE	14 09 59						
		FN	14 09 59						
1097	Nov. 25	P	13 43 41					20	In the basin of the Maruyama River.
		L	13 43 44						
		M	13 43 44	±6	±5				
		FE	14 43 50						
1098	Nov. 26	P	11 10 54					24	After shock of No. 23.
		L	11 10 57						
		ME	11 10 58	±91					
		eMN	11 10 57		±50				
		FE	11 11 16						
		FN	11 11 17						
1099	Nov. 26	P	15 15 54					17	In the basin of the Maruyama River.
		L	15 15 56						
		eM	15 15 57	±5	±5				
		eFE	15 16 02						
		eFN	15 16 03						
1100	Nov. 26	LM	21 47 19						Ditto.
		eF	21 47 24		±8				
1101	Nov. 27	P	2 18 08					27	After shock of No. 23.
		L	2 18 11						
		M	2 18 14	±71	±34				
		F	2 18 27						
1102	Nov. 27	P	21 28 18					15	In the basin of the Maruyama River.
		L	21 28 20						
		F	21 28 24						

No.	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1103	Nov. 23	P	0 20 55					22	Ditto.
		L	0 20 58						
		M	0 20 58	±39	±14				
		F	0 21 12						
1104	Nov. 28	P	20 26 04					20	Ditto.
		LM	20 26 07	±4					
		eF	20 26 11						
1105	Nov. 29	P	17 54 34					28	Ditto.
		L	17 54 38						
		M	17 54 38	±18	±13				
		FE	17 54 48						
1106	Nov. 29	FN	17 54 43					25	Ditto.
		P	23 08 58						
		L	23 09 02						
		M	23 09 02	±11	+14				
1107	Nov. 30	F	23 09 10					25	Upper course of the River Gōnogawa, NW. part of Bingo Province.
		P	9 16 37						
		M	9 17 38	±5					
1108	Nov. 30	F	9 17 49					25	In the basin of the Maruyama River.
		P	17 45 13						
		L	17 45 16						
		M	17 45 17	±5					
*1109	Dec. 2	FE	17 45 19					146	Middle course of the Arita, Wakayama Prefecture.
		eFN	17 45 18						
		P	6 55 38						
		L	6 55 57						
1109	Dec. 2	M	6 55 02	1.6	-109	-81			
		FE	6 01 01						
		FN	6 01 20						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
1110	Dec. 2	P	7	00	05	s				23	In the basin of the Maruyama River.
		L	7	00	08						
		M	7	00	08		±32	±11			
		F	7	00	15						
1111	Dec. 2	P	19	31	30	s				20	Ditto.
		L	19	31	32						
		M	19	31	33		±21	±15			
		F	19	31	41						
*1112	Dec. 4	P	0	56	04	s				25	After shock of No. 23.
		LM	0	56	07		±530				
*1113	Dec. 4	P	3	34	13	s				25	Ditto.
		L	3	34	16						
		M	3	34	16						
		FE	3	34	42		±169	±75			
		FN	3	34	38						
1114	Dec. 4	P	3	54	28	3.3				492	In the Bay of Tiji-iwa.
		L	3	55	34						
		M	3	55	47		+26	-44			
		FE	3	01	46						
		FN	3	02	11						
*1115	Dec. 4	P	9	28	16	s				24	After a shock of No. 23.
		L	9	28	19						
		M	9	28	19						
		FE	9	28	40		±96	±54			
		FN	9	28	41						
1116	Dec. 4	P	12	16	44	s				480	In the Bay of Tiji-iwa.
		L	12	20	48						
		M	12	20	51						
		eFE	12	24	59		-19	-31			
		eFN	12	24	49						

No.	Date	Phase	Time			Period	Amplitude			Δ	Remarks
			G.	M.	T.		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
1117	Dec. 7	P	1	17	30	s				23	In the basin of the Maruyama.
		L	1	17	34						
		M	1	17	34		±11	±11			
		F	1	17	37						
1118	Dec. 7	P	16	18	13	s				25	After shock of No. 23.
		L	16	18	16						
		M	16	18	18		±178	±153			
		FE	16	19	07						
		FN	16	18	55						
1119	Dec. 7	P	17	14	05	s				23	Ditto.
		LM	17	14	08		±8	±8			
		eF	17	14	25						
1120	Dec. 10	P	2	45	26	s				393	Middle course of the Sinano.
		L	2	46	19						
		M	2	46	21		-25	-29			
		eF	2	48	58						
1121	Dec. 10	P	20	17	24	s				22	In the basin of the Maruyama.
		L	20	17	27						
		M	20	17	27		±8	±5			
		F	20	17	33						
1122	Dec. 10	eP	20	17	42	s				41	Ditto.
		L	20	17	48						
		M	20	17	48		±8	±4			
		F	20	17	51						
1123	Dec. 11	P	2	20	19	s				19	Ditto.
		L	2	20	22						
		M	2	20	22		±9	±35			
		FE	2	20	47						
		FN	2	20	33						

No	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1124	Dec. 11	P	7 27 34					25	Ditto.
		L	7 27 38						
		ME	7 27 38		±25				
		MN	7 27 38			±20			
		FE	7 27 52						
		FN	7 27 46						
1125	Dec. 13	P	5 55 48					19	Ditto.
		L	5 55 51						
		M	5 55 51		+6	+13			
		F	5 55 59						
1126	Dec. 15	P	21 59 56					24	Ditto.
		L	21 59 59						
		M	21 59 59		±11	±9			
		eF	22 00 05						
1127	Dec. 16	P	2 35 46					24	Ditto.
		L	2 35 49						
		M	2 35 50		±13	±18			
		F	2 35 56						
1128	Dec. 16	P	12 38 33					21	Ditto.
		L	12 38 36						
		M	12 38 36						
		FE	12 38 49		±23	±27			
		FN	12 38 48						
1129	Dec. 17	P	2 37 22					19	Ditto.
		L	2 37 25						
		eM	2 37 25						
		F	2 37 41		±9	±9			
1130	Dec. 17	P	5 28 59					19	After shock of No. 23.
		L	5 29 02						
		M	5 29 02		-188	-198			

No	Date	Phase	Time	Period	Amplitude			Δ	Remarks
					AE	AN	AZ		
			G. M. T.		μ	μ	μ	km.	
			h m s	s					
1181	Dec. 17	FE	5 29 34					8	In the basin of the Maruyama.
		eP	15 10 10						
		LM	15 10 11		±5	±4			
		F	15 10 15						
1182	Dec. 18	P	13 41 07					17	Ditto.
		LM	13 41 10		±6	±6			
		F	13 41 11						
1183	Dec. 18	eP	19 51 03					22	Central part of the Japan Sea.
		L	19 52 19						
		M	19 52 25		-9	-23			
		eF	19 55 00						
1184	Dec. 20	P	14 13 30					22	After shock of No. 23.
		L	14 13 33						
		M	14 13 34		±58	±34			
		F	14 13 49						
1185	Dec. 21	P	21 58 06					22	In the basin of the Maruyama.
		L	21 58 09						
		M	21 58 09		+16				
		eMN	21 58 09			±14			
		F	21 58 15						
1186	Dec. 22	P	11 42 20					28	After shock of No. 23.
		L	11 42 24						
		M	11 42 24		-119	-56			
		F	11 42 49						
1187	Dec. 23	eP	11 00 35					14	In the basin of the Maruyama.
		LM	11 00 37			±8			
		eF	11 00 41						
1188	Dec. 28	P	0 44 53					22	Ditto.

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
*1139	Dec. 28	LM	0 44 51				22	Ditto.	
		F	0 45 41						
		P	3 35 00						
		L	3 35 03						
		M	3 35 04						
1140	Dec. 28	M	3 35 04				22	Ditto.	
		F	3 35 18						
1141	Dec. 28	F	3 35 18				22	Ditto.	
		L	13 02 34						
1142	Dec. 28	F	13 02 37				20	Ditto.	
		L	13 02 43						
1143	Dec. 28	P	13 02 43	20.0			20	Ditto.	
		LME	13 02 48						
		eMN	13 02 48						
		F	13 02 55						
1144	Dec. 28	P	17 03 24				20	Ditto.	
		L	17 03 26						
		M	17 03 27						
		F	17 03 31						
1143	Dec. 28	eP	18 26 26				20.0	A distant earthquake.	
		L	18 31 01						
		M	18 36 41						
		C	18 48 04						
		eF	19 37 26						
1144	Dec. 29	P	11 49 46				28	After shock of No. 23.	
		L	11 49 50						
		M	11 49 50						
		FE	11 50 07						
		FN	11 50 12						
1145	Dec. 29	P	13 15 02					In the basin of the Maruyama.	
		L	13 15 06						
		M	13 15 06						

No.	Date	Phase	Time G. M. T.	Period s	Amplitude			$\Delta$ km.	Remarks
					AE $\mu$	AN $\mu$	AZ $\mu$		
1146	Dec. 29	F	13 15 27				22	Ditto.	
		P	13 16 28						
		L	13 16 31						
		M	13 16 32						
1147	Dec. 29	M	13 16 32				23	After shock of No. 23.	
		F	13 16 46						
		P	18 18 43						
		LM	18 18 46						
1148	Dec. 29	F	18 18 53				22	In the basin of the Maruyama.	
		P	22 11 15						
		L	22 11 18						
*1149	Dec. 30	M	22 11 18				21	Ditto.	
		F	22 11 24						
		P	4 52 33						
		L	4 52 36						
1150	Dec. 30	M	4 52 36				24	Ditto.	
		FE	4 53 05						
		FN	4 52 59						
		P	19 49 57						
1150	Dec. 30	L	19 50 01						
		M	19 50 10						
		FE	19 50 07						
		P	19 50 07						

### Corrigenda

Page	No.	For	Read
167	302	P 14 15 12	P 14 51 12
173	334	Phase P	Phase iP
183	192	AN +16	AN -16
245	973	CE 14 56 21	CE 14 55 21
266	1116	P 12 16 44	P 12 19 44