International Seismological Centre

SEISMOLOGICAL BULLETIN

OF THE

IMPERIAL MARINE OBSERVATORY

AND

KOBE METEOROLOGICAL OBSERVATORY.

KOBE, JAPAN.

VOL. IX No. 1.

From January 1 1933, to March 31 1933.

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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.

Instruments : Omori's Seismograph. (Horizontal Pendulum)

Wiechert Seismograph. (Horizontal & Vertical)

Jan.

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	15.4		0.001	20
A_N:	19.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	6.4	Aperiodic	0.007	95
A_N:	6.9	„	0.006	91
A_Z:	4.8	8	0.005	81

Feb.

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	15.8		0.001	20
A_N:	19.3		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	6.3	Aperiodic	0.006	98
A_N:	7.1	„	0.005	95
A_Z:	4.7	10	0.005	83

Mar.

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	15.4		0.001	20
A_N:	19.6		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	6.8	Aperiodic	0.006	99
A_N:	7.4	„	0.005	104
A_Z:	4.7	7	0.005	86

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
1	Jan. 1	iS_N	7 44 46			+1			Small movement.
		M	7 44 46	0.7	−2	−3			Higasimuro, Wakayama Prefecture.
		eF	7 46 ±						
2	Jan. 1	Se	8 08 02						
		M_E	8 08 04	0.8	+4				Local shock.
		eF	8 09 ±						

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
3	Jan. 1	iP	8	58	56		−1.6	+5.6	+6.3	6722	A distant earthquake.
		eS_E	9	07	08	5.9	+4				Near New Hebrides Ils.
		eS_N	9	07	13			−3			
		i_N	9	08	01	4.9					
		eF_E	9	45	±						
		eF_N	9	43	±						
4	Jan. 3	P_E	15	29	29		+1.8			995	ENE off Miyako, Iwate Prefecture. 40°N, 144°E.
		eP_Z	15	29	29						
		i_E	15	29	59	2.8	+4				Weak shocks were felt at Oou and Hokkaido.
		i_N	15	30	02	3.4		−5			
		eS_N	15	31	16						
		S_Z	15	31	12						
		L_E	15	32	04						
		L_N	15	32	02						
		M_{1E}	15	32	29	19.0	+17				
		M_N	15	32	29	21.1		−21			
		M_Z	15	32	15	6.3			−8		
		M_{2E}	15	33	09		−22				
		eF_E	15	49	±						
		eF_N	15	48	±						
		eF_Z	16	04	±						
5	Jan.	i_{EN}	22	43	53	5.2	+4	−3			Japan sea.
		eF?	22	46	±						Deep focus earthquake.
6	Jan. 4	P_{EN}	1	27	39						SE far off Bonin Isl. 25°.8N, 145°E.
		eP_Z	1	27	37						
		i_E	1	30	00	3.1	−17				Weak shocks were felt at Bonin Isl.
		i_N	1	30	05	3.9		+18			
		i_Z	1	29	47	3.9			−5		
		M_E	1	33	18	13.2	+4				
		M_N	1	33	08	13.0		+6			
		M_Z	1	33	49	14.2			+5		
		eF_E	2	08	±						
		eF_N	2	10	±						
		eF_Z	2	20	±						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
7	Jan. 4	eP_N	4	08	54					6474	A distant earthquake.
		eP_Z	4	08	53						Coast of Alaska.
		eS_N	4	16	56						Record is deep focus type.
		M_Z	4	30	47				+1		
		eF_N	4	31	±						
		eF_Z	4	44	±						
8	Jan. 6	P_E	10	40	22					74	Near Ryûzin, Wakayama Prefecture.
		iS_{EN}	10	40	32						
		M	10	40	33	0.9	+17	+16	−3		
		eF	10	42	±						
9	Jan. 7	eP_{EN}	4	08	53					945	ENE off Miyako, Iwate Prefecture. 40°.3N, 144°E. Weak shocks were felt in the Pacific coast of NE Japan and Hokkaido.
		eP_Z	4	08	52						
		P_{EN}	4	09	00						
		P_Z	4	08	59						
		i_E	4	09	35	3.5	+19				
		eS_{EN}	4	10	36		−22	+21			
		M_E	4	12	05	16.0	+109				
		M_N	4	12	05	15.5		−124			
		M_Z	4	13	36	12.3			±48		
		eF_E	5	30	±						
		eF_N	5	31	±						
		eF_Z	5	20	±						
10	Jan. 7	iP_N	10	41	55			−3.8		180	Near Miyosi, Hirosima Prefecture.
		P_Z	10	41	55				−1.2		
		iS_E	10	42	19		−7				Weak shocks were felt in the epicentral region.
		M_E	10	42	22	1.1	+13				
		M_N	10	42	22			−21			
		M_Z	10	42	22	1.2			+10		
		eF	10	44	±						
11	Jan. 7	eP_N?	16	45	37						Very small movement.
		iS_{EN}	16	45	46		+2	+1			In the Wakaura Bay, Kii Channel.
		M_E	16	45	48	0.7	−2				
		eF_{EN}	16	46	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
12	Jan. 8	eP_N	6	31	41						East off the Mouth of the Mabuti River, Aomori Prefecture.
		eS_N	6	32	59						
		M_{EN}	6	34	01	6.7	−13	±15			
		M_Z	6	33	59	7.4			−9		Weak shicks were felt in the Pacific coast of Oou and Hokkaido.
		eF_{EZ}	6	44	±						
		eF_N	6	47	±						
13	Jan. 9	eP_E	2	10	29					5390	A distant earthquake.
		iP_Z	2	10	29	6.2			+5.3		Turkistan region.
		eS_{EN}	2	17	33						Faint record.
		eF_{EZ}	2	37	±						
		eF_N	2	43	±						
14	Jan. 9	P_E	12	05	33					55	Mouth of the Kii River, Near Wakayama City.
		P_Z	12	05	32						
		i_Z	12	05	34				−5		
		S_E	12	05	40						
		M_{EN}	12	05	42	0.9	−8	+9			
		M_Z	12	05	46	0.6			±4		
		M_{2E}	12	05	47	0.9	+10				
		eF	12	09	±						
15	Jan. 10	eP_N	3	10	15						NW off Amami Osima, Northern part of Ryûkyû Ils.
		eP_Z	3	10	16						
		i_N	3	10	22	1.2		+3			
		e_N	3	13	08						Faint record.
		eF_E	3	20	±						
		eF_N	3	23	±						
		eF_Z	3	19	±						
16	Jan. 14	eS_N	2	12	35						Near Volcano Aso, Kyûsyû district.
		M_N	2	12	53	5.2		−4			
		eF_N	2	18	±						
17	Jan. 14	S	8	40	32		+3	+3			Mouth of the Arita R., Wakayama Prefecture.
		M	8	40	33	0.5	−3	±5			
		eF	8	42	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
18	Jan. 15	eSZ	9	58	11						Fanit record. Horizontal components not registering.
		MZ	9	58	18	1.4			−4		SE off Ariake Bay, Kagosima Prefecture.
		eFZ	9	59	±						
19	Jan. 15	ePE	12	39	05						
		ePN	12	39	10						Small movement.
		ME	12	39	13	1.5	−3				Near Sumoto, Awaji Province.
		MN	12	39	18	1.0		±2			
		eF	12	40	±						
20	Jan. 15	ePN	18	09	44					4404?	A distant earthquake. Near Brit., New Guinea.
		eSN	18	15	54						
		eFE	18	32	±						
		eFN	18	28	±						
21	Jan. 15	PE	23	46	48					131	Irregular record. Middle basin of the Toyo River, Aiti Prefecture.
		iE	23	46	55		+10				
		iZ	23	46	53				−7		
		SE	23	47	07						
		ME	23	47	17	1.4	−14				
		MN	23	47	12	1.3		−8			
		M2N	23	47	19	1.1			−9		
		eF	23	49	±						
22	Jan. 17	eSE	0	17	09						Local shock.
		ME	0	17	12	0.5	+10				
		MN	0	17	13	0.6		±3			
		eF	0	18	±						
23	Jan. 20	PEN	17	44	14					61	Near Tadono, Middle basin of the Arita R., Wakayama Prefecture.
		iPZ	17	44	13				+2.1		
		SE	17	44	22						
		SZ	17	44	23				−2		
		M1E	17	44	24	0.6	+10				
		MZ	17	44	26	1.0			±2		
		M2E	17	44	27	1.0	±7				

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_N	17	44	27	1.0		+9			
		eF	17	47	±						
24	Jan. 21	P_Z?	19	35	29						SSE far off Madagascar, Indian Ocean.
		eS_E	19	46	53						
		M_E	20	25	34	16.5	±3				37°S, 59°E (U,S,C,G,S.)
		M_Z	20	25	39	15.5			±2		
		eF_{EN}	20	51	±						
		eF_Z	20	56	±						
25	Feb. 2	e_E	6	14	35						Small movement.
		M_E	6	14	38	0.8	−5				Local shock.
		eF_E	6	16	±						
26	Feb. 3	eP_{EN}	22	15	47					1955	North off Uruppu Isl. Kurile Ils.
		eP_Z	22	15	45						
		iP_E	22	15	51		+7.5				
		P_N	22	15	50						
		iP_Z	22	15	50				−6.3		
		iS_E	22	19	06		+18				
		i_E	22	19	23	3.9	+16				
		M_E	22	22	41	22.0	−5				
		M_N	22	23	19	22.0		+2			
		M_Z	22	22	28	22.6			±1		
		eF_E	22	39	±						
		eF_N	22	43	±						
		eF_Z	22	45	±						
27	Feb. 4	i_E	6	21	13	2.9	+2				WNW off Bonin Isl. Deep focus earthquake?
		i_N	6	21	12	2.9		−3			
		i_Z	6	21	13	2.0			+2		
		eF	6	28	±						
28	Feb. 6	M_N?	7	19	19	3.0		−2			Genkai Nada? NW off Kyûsyû.
		eF	7	22	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
29	Feb. 7	P_N	1	28	47					366	Near Volcano Aso, Kyûsyû.
		S_{EN}	1	29	36		−2	+3			
		M_{1E}	1	29	39	1.9	−2				
		M_{1N}	1	29	42	1.9		−3			
		M_Z	1	29	41				+1		
		i_E	1	31	56	3.1	±2				
		i_N	1	30	48	3.9		−2			
		eF_{EN}	1	36	±						
		eF_Z	1	31	±						
30	Feb. 7	iS_N	7	20	41						Basin of the Arita R., Wakayama Prefecture.
		M_E	7	20	41	0.7	±1				
		M_N	7	20	42	0.7		−3			
		eF	7	21	±						
31	Feb. 9	P	3	58	04		−1.2	+2.6	+2.2	406	SW off Hatidyô Isl. Focal depth about 250 km. Abnormal felt area in the Kwanto district.
		i	3	58	06	1.7	+7	+7	−7		
		S_E	3	58	59		−18				
		iS_N	3	58	59			−14			
		S_Z	3	58	58				+11		
		M_E	3	59	04	5.0	−37				
		M_N	3	59	02			+36			
		M_Z	3	58	59	4.6			−13		
		eF_{EN}	4	12	±						
		eF_Z	4	08	±						
32	Feb. 13	e_E	3	05	46						A distant earthquake. Dzungaria, China.
		e_N	3	08	38						
		M_E	3	11	30	13.2	−6				
		M_N	3	11	18	13.2		−8			
		M_Z	3	11	29	13.9			±4		
		eF_E	3	30	±						
		eF_N	3	37	±						
		eF_Z	3	27	±						
33	Feb. 13	P_{EN}	6	52	09		−1.6	−1.0		695	In the Kasima Nada.

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		ePZ	6	52	11						
		SN	6	53	26			+6			
		ME	6	53	52	4.2	+18				
		MN	6	53	35	2.6		+10			
		MZ	6	53	51	3.2			±6		
		M2E	6	54	41		−22				
		M2N	6	55	19	3.8		+12			
		eFEN	7	05	±						
		eFZ	7	01	±						
34	Feb. 13	ePE	23	10	17					1935?	East off the Nosyappu Cape, Hokkaido.
		eSE	23	13	34						
		eSN	23	13	34						
		MN	23	18	20	15.5		±2			
		MZ	23	18	29	13.3			±2		
		eFE	23	25	±						
		eFN	23	32	±						
		eFZ	23	30	±						
*35	Feb. 18	iPEN	8	17	54		−6.5	+8.0		66	Perceptible.
		iPZ	8	17	53				−11.9		Uupper valley of the Tigusa River, Hyôgo Prefecture. Felt in Hyôgo, Okayama and Kagawa Prefecture.
		iSN	8	18	03			−274			
		ME	8	18	05	0.8	−245				
		MN	8	18	04	1.0		−250			
		MZ	8	18	01	0.8			−243		
		eFEN	8	25	±						
		eFZ	8	24	±						
36	Feb. 18	e	14	03	25						An after shock of No. 35.
		iS	14	03	26		−1	−2			
		M	14	03	26		±1	−2			
		eF	14	04	±						
37	Feb. 20	e	1	33	02						In the Wakaura Bay, Kii Channel.
		iS	1	33	05		+2	−1			
		MN	1	33	05			±1			
		eF	1	34	±						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
38	Feb. 20	PZ	9	53	05				+1.3	758	East for off Sioya Cape,
		eSE	9	54	22		+4				Hukusima Prefecture.
		eSZ	9	54	27				−2		
		ME	9	54	40	3.3	+5				
		M_{1N}	9	54	45	2.5		+4			
		MZ	9	54	36	2.9			±3		
		M_{2N}	9	56	28	4.1		−4			
		eFE	10	02	±						
		eFNZ	10	04	±						
39	Feb. 21	ePZ	2	54	59						Near Sawara, Tiba Pre-
		eSEN	2	55	43						fecture.
		iZ	2	55	49						
		ME	2	56	03	2.6	±2				
		MN	2	56	01	2.6		−2			
		MZ	2	55	59	3.4			−3		
		eFEN	3	02	±						
		eFZ	3	00	±						
40	Feb. 23	eZ	8	27	44	4.2					Northern part of Chile.
		eP′N	8	29	13						
		eP′Z	8	29	12	5.2			−5.0		
		iZ	8	33	02	7.7			+3		
		iZ	8	39	51	7.2			−2		
		eN	8	52	36	15.4		±2			
		eN	9	24	±	25.1					
		ME	9	29	36	20.2	±2				
		MN	9	31	52	18.9		±3			
		MZ	9	28	36	21.7			±2		
		eFE	10	06	±						
		eFN	10	23	±						
		eFZ	10	07	±						
41	Feb. 27	ePN	16	15	12					188	Off the Mouth of the
		iSE	16	15	36		+9				Kuzuryû River, Hukui
		iSN	16	15	37			−11			Prefecture.

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		S_Z	16	15	37				−10		
		M_E	16	15	41	0.8	−18				
		M_E	16	15	39	1.0		−11			
		eF_{EN}	16	21	±						
		eF_Z	16	19	±						
42	Feb. 28	P_N	8	47	03					282?	South off Osima, Izu Province.
		P_Z	8	47	04						
		S_{EN}	8	47	41		+2	+3			
		M_{EN}	8	47	47	1.9	−3	−2			
		M_Z	8	47	46	2.0			−1		
		eF_{EZ}	8	53	±						
		eF_N	8	54	±						
43	Feb. 28	eP_{EN}	20	46	49					70	Near Wakayama City.
		iS_N	20	46	58						
		M_{EN}	20	46	58		±1	−2			
		F_E	20	47	18						
		F_N	20	47	16						
44	Mar. 2	eP_N	8	15	54						Near Guam Isl, Pacific Ocean.
		eP_Z	8	16	10						
		e_Z	8	16	20	3.5					
		e_N	8	21	07	6.8		±1			
		eF_E	8	30	±						
		eF_N	8	31	±						
		eF_Z	8	32	±						
45	Mar. 2	P_{EN}	17	33	06	21.0	−90	−76		960	A great earthquake at about 39°N, 144°7E, east off Kamaisi, Iwate Prefecture; occured very near the earthquake 1896, accompanied by the Sanriku-tunami. Shocks were felt at the area from Kuiile Ils to the Central Japan, accompauying Tunami at the Pacific coasts of Oou and Hokkaido
		P_Z	17	33	08	25.8			+72		
		i_{EN}	17	33	21		−340	−206			
		i_Z	17	33	23				+316		
		eS_{SE}	17	34	56			−500			
		S_Z	17	34	45				−480		
		eL_{SW}	17	35	18	SW =	NE (+)	−SW(−)	Component. E		
		eL_{SE}	17	35	27	SE =	NW (+)	−SE (−)	Component. E		

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eLz	17	35	26						districts. From the beginning of shocks, observed the long period of about $\frac{1}{3}$ minutes. Phases after S were read from the Low magnification Seismometer.
		M_{1SE}	17	35	58	31.–		+2600			
		M_{1SW}	17	36	30	4.3	−2850				
		M_{2SE}	17	36	29	5.0		+3650			
		M_{1Z}	17	36	28	4.3			−5200		
		M_{2SW}	17	37	14	12.–	±2500				
		M_{2SW}	17	38	04	4.3	−3000				
		M_{3SE}	17	38	07	4.7		−4800			
		M_{2Z}	17	38	11	4.2			±3900		
		The end part were over taken by the following earthquake.									
46	Mar. 2	eLz	17	44	05						An after shock of the Provious earthquake.
		M_{SW}	17	44	59	14.–	−300				
		M_{SE}	17	45	38	13.–		+400			
		M_Z	17	45	19	16.–			−520		
		The end part were over taken by the following earthquake.									
47	Mar. 2	P	18	28	20						Ditto.
		e_E	18	30	15						
		e_N	18	31	01						
		The end part were over taken by the following earthquake.									
48	Mar. 2	eP_N	18	42	15						Ditto.
		The end part were over taken by the following earthquake.									
49	Mar. 2	eP_E	18	51	10						Ditto.
		eP_Z	18	52	17						
		e_N	18	52	47						
		The end part were over taken by the following earthquake.									
50	Mar. 2	eP_E	19	43	59						Ditto.
		eP_E	19	44	07						
		eP_Z	19	43	56						
		eL_E	19	45	57						
		M_E	19	46	57	5.3?	−31				

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_N	19	46	35	18.5		+30			
		M_Z	19	46	24	7.1			−17		
		The end	part	were		over tak	en by th	e follow	ing	earthquake.	
51	Mar. 2	eP_{EN}	20	44	56					950	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		P_Z	20	44	54						
		i_E	20	45	09		+6				
		i_N	20	45	19	4.7					
		i_Z	20	45	15						
		eS_E	20	46	43						
		S_N	20	46	39						
		eS_Z	20	46	44						
		M_E	20	47	43	19.−	+62				
		M_N	20	47	31	18.−		−52			
		M_{1Z}	20	47	46	6.8			−26		
		M_{2Z}	20	48	27	14.0			−34		
		eF	21	46	±						
52	Mar. 2	e_N	21	52	17						Very faint record.
		e_E	21	53	34	3.1					Ditto.
		e_N	21	53	19	3.8		±2			
		e_E	21	55	07	2.9	±2				
		eF_E	21	58	±						
		eF_N	21	57	±						
53	Mar. 2	eP_Z	22	37	03					890	Ditto.
		e_E	22	37	07						
		eS_N	22	38	44						
		eS_E	22	39	00						
		M_E	22	40	25	3.1	±2				
		M_N	22	40	51	4.0		±3			
		e_Z	22	40	19	3.0			±2		
		eF_{EN}	22	48	±						
		eF_Z	22	46	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
54	Mar. 3	eZ	0	20	19						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		e_N	0	20	27						
		e_E	0	20	34						
		eE	0	22	17						
		eZ	0	22	34						
		eM_E	0	23	59	3.5	±3				
		eM_N	0	23	22	3.6		±2			
		eF_E	0	42	±						
		eF_N	0	41	±						
		eFZ	0	29	±						
55	Mar. 3	P_N	2	24	41						Ditto.
		iPZ	2	24	42	1.9			−2		
		e_E	2	25	16						
		i_N	2	25	10	3.8					
		eZ	2	25	11	3.5			±2		
		eM_E	2	27	03	3.8	±3				
		eM_N	2	27	02	3.5		±3			
		i_E	2	28	51						
		i_N	2	28	50						
		i_Z	2	28	51						
		eM_{2N}	2	30	34	3.6		±2			
		eF_{EZ}	2	35	±						
		eF_N	2	34	±						
56	Mar. 3	e_{EZ}	4	39	48					850	Ditto.
		eS_E	4	41	20						
		eSZ	4	41	36						
		eM_E	4	43	02	3.3	±6				
		M_N	4	42	10	8.−		+8			
		MZ	4	44	31	12.4			±2		
		eF_E	4	58	±						
		eF_N	4	56	±						
		eFZ	5	00	±						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
57	Mar. 3	P	9	14	51					840	An after shock of the Great Earthquake., off the coast of Sanriku, on Mar. 2nd 1933.
		i_E	9	14	59		+3				
		i_N	9	14	59	3.6		−3			
		iP_Z	9	15	02				−7		
		S_N	9	16	22						
		i_E	9	17	05		+33				
		L_N	9	17	18						
		L_Z	9	17	10						
		M_E	9	17	35	6.7	−43				
		M_N	9	17	35			+44			
		M_Z	9	18	10	12.5			+18		
		The end part were over taken by the following earthquake.									
58	Mar. 3	eP_E	9	40	41					970	Ditto.
		P_Z	9	40	43						
		eS_N	9	42	26						
		i_Z	9	42	27						
		M_E	9	43	09	5.5	−12				
		M_N	9	43	36	6.5		−12			
		M_Z	9	43	35	6.3			+6		
		eF_E	10	04	±						
		eF_{NZ}	10	03	±						
59	Mar. 3	eP_N	10	06	01					?	Ditto.
		eF_Z	10	06	04						
		eP_E	10	06	15						
		i_E	10	07	10						
		i_N	10	07	28						
		$eL?_N$	10	08	52						
		M_E	10	09	35	8.6	+5				
		M_N	10	09	34			+7			
		M_Z	10	09	14	3.8			±3		
		eF_E	10	21	±						
		eF_N	10	19	±						
		eF_Z	10	20	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
60	Mar. 3	ePE	10	34	07						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar 2nd 1933.
		iN	10	34	15						
		iE	10	34	27						
		eE	10	36	05						
		eN	10	35	56						
		iZ	10	37	01						
		M_{1E}	10	37	10	7.3	±4				
		M_N	10	36	59	7.7		±3			
		M_Z	10	37	04	2.5			±3		
		M_{2E}	10	38	22	3.0	±4				
		eF	10	43	±						
61	Mar. 3	PZ	11	47	52					424	In the Kasima Nada.
		PE	11	48	01						
		PN	11	48	04						
		SN	11	48	58						
		eSZ	11	49	11						
		ME	11	49	26	2.6	±5				
		MN	11	49	10	4.0		−6			
		MZ	11	49	20	3.1			−4		
		eF_{EN}	11	58	±						
		eFZ	11	55	±						
62	Mar. 3	ePE	11	58	43					876	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		ePZ	11	58	40						
		iPZ	11	58	47						
		eN	12	00	41						
		iZ	12	00	43	5.9					
		MN	12	01	33				−3		
		MZ	12	00	53						
		eF_{EN}	12	11	±						
		eFZ	12	07	±						
63	Mar. 3	eE	12	15	57						Ditto.
		iE	12	16	26						
		eN	12	17	33	3.5					

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		L_N	12	17	39						
		eF_E	12	31	±						
		eF_Z	12	33	±						
64	Mar. 3	eP	15	04	34						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eP_N	15	04	31						
		eS_N	15	06	14	8.3					
		e_E	15	06	35						
		eM_E	15	07	00	6.7					
65	Mar. 3	eS_N	15	11	06						Ditto.
		M_E	15	12	11	6.1	±6				
		M_N	15	11	26	4.2		+4			
		i_E	15	13	18	3.4	+10				
		eF_E	15	26	±						
		eF_N	15	25	±						
66	Mar. 3	e_E	15	54	23						Ditto.
		eL_E	15	55	15	7.3					
		e_N	15	55	33			+3			
		eM_E	15	56	11	3.3	±4				
		eM_N	15	56	28	3.2		±2			
		eF	16	03	±						
67	Mar. 3	e_E	16	15	59						Ditto.
		e_N	16	15	14	3.8					
		eM_N	16	17	20	7.6		±2			
		eF	16	26	±						
68	Mar. 3	eL_E	18	51	58						Ditto.
		eM_E	18	52	55	6.6					
		eM_N	18	52	56						
		eF_E	18	59	±						
		eF_N	18	58	±						
69	Mar. 3	eP_E	19	09	45					950	Ditto.
		eP_N	19	09	53						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eS_N	19	11	28						
		M_{1E}	19	12	12	8.6	±3				
		M_N	19	12	11	8.6		±5			
		M_{2E}	19	13	58	3.2	±5				
		eF	19	22	±						
70	Mar. 3	e_E	19	56	39	2.9	±2				Confused by microseisms.
		eF	20	02	±						
71	Mar. 3	eL_N	20	24	26						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eM_E	20	26	45	3.4	±3				
		eM_N	20	27	02			±2			
		eF_E	20	31	±						
		eF_N	20	32	±						
72	Mar. 4	eP_{EN}	6	46	51					950	Ditto.
		eP_Z	6	46	50						
		eS_N	6	48	23						
		M_N	6	48	50	6.6		±2			
		M_Z	6	50	11	3.1			±1		
		eF_{EN}	6	57	±						
		eF_Z	6	55	±						
73	Mar. 6	e_{EN}	13	13	03		+1	+1			In the Tosa Bay?
		e_Z	13	13	02	1.8			−1		
		eM_N	13	13	21	1.7		±2			
		eM_Z	13	13	17	1.8			±3		
		eF	13	15	±						
74	Mar. 6	i_N	17	07	49			+1			Very small movement. Local shock.
		M_E	17	07	56	0.5	±1				
		M_N	17	07	55			±1			
		F_E	17	08	14						
		F_N	17	08	20						
75	Mar, 6	P_{EN}	22	45	07		−2	+2		58	In the Wakaura Bay, Kii Channel.
		P_Z	22	45	08				+3		

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		i_{EN}	22	45	09						Moderate shocks were felt at Wakayama City.
		iS_{EN}	22	45	15		−40	−23			
		M_{1E}	22	45	20	0.7	±45				
		M_{1N}	22	55	23	1.0		−40			
		M_{1Z}	22	45	25	3.6			−28		
		M_{2E}	22	47	33	2.3	−23				
		M_{2Z}	22	47	25	2.2			−13		
		eF_{EN}	22	55	±						
		eF_Z	22	54	±						
76	Mar. 8	P_E	1	37	44					990	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eP_N	1	37	46						
		eP_Z	1	37	43						
		eS_N	1	39	32						
		M_{1E}	1	40	15	6.6	±5				
		M_N	1	40	18	5.2		±7			
		M_Z	1	40	48	4.1			±5		
		M_{2E}	1	42	16	3.5	±7				
		eF_E	1	49	±						
		eF_N	1	50	±						
		eF_Z	1	52	±						
77	Mar. 8	eP_E	10	28	05					266	In the Iyo Nada, Inland Sea. Felt in Sanyô and Sikoku district.
		i_N	10	28	15						
		i_{EN}	10	28	21						
		i_Z	10	28	22						
		S_E	10	28	41						
		eZ	10	28	37						
		M_E	10	28	47	0.5	−6				
		M_N	10	28	49			+3			
		M_Z	10	28	45	1.7			+6		
		eF	10	31	±						
78	Mar. 8	i_N	19	23	18			+1			In the Wakaura Bay, Kii Channel.
		M_E	19	23	22		±1				
		M_N	19	23	23			±1			

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No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		F_E	19 23 .40						
		F_N	19 23 41						
79	Mar. 9	P_{EN}	4 23 38		+0.7	−2.0		205	In the Kumano Nada, SE off Kii Peninsula.
		iP_Z	4 23 37				−3		
		iS_{EZ}	4 24 06		−15		−8		
		S_N	4 24 06			−20			
		M_E	4 24 07	0.8	+30				
		M_N	4 24 07	1.2		+35			
		M_Z	4 24 07	1.7			+11		
		eF_E	4 34 ±						
		eF_N	4 31 ±						
80	Mar. 9	eP_E	19 37 16					210	Mouth of the Kuzuryû River, Fukui Prefecture.
		S_{EN}	19 37 44						
		M_E	19 37 49	0.8	−9				
		M_N	19 37 46			−9			
		eF_E	19 40 ±						
		eF_N	19 41 ±						
81	Mar. 11	e_N	14 27 40						A distant earthquake. Dzungaria district?
		e_Z	14 27 33						
		M_E	14 33 05	15.4	−13				
		M_N	14 32 17	15.4		+12			
		M_Z	14 33 04	13.6			−8		
		eF_{EZ}	15 32 ±						
		eF_N	15 29 ±						
82	Mar. 11	iP_{EN}	19 34 53		+3.2	−3.6		890	WNW off Bonin Isl. 28°N, 140°E.
		iP_Z	19 34 54				−7.5		
		PM_N	19 34 55	3.1		+13			Abnormal felt area in the Kwanto district.
		PM_Z	19 34 54	2.7			+15		
		S_N	19 36 30			+23			Focal depth about 350 km.
		S_Z	19 36 28				+15		
		i_E	19 36 35		+95				
		M_{1E}	19 36 37	4.5	−183				

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_{1N}	19	36	38	3.9		−112			
		M_Z	19	36	37	3.0			−145		
		M_{2E}	19	37	28	2.5	−92				
		M_{2N}	19	37	32	2.3		−84			
		M_{3E}	19	38	10	2.6	+112				
		i_E	19	46	36	5.0	+17				ScS.?
		eF_E	20	11	±						
		eF_N	20	15	±						
		eF_Z	20	18	±						
83	Mar. 12	ϵ_N	5	09	13						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		ϵ_E	5	09	51						
		ϵ_Z	5	09	54						
		M_E	5	11	23		±3				
		M_N	5	11	21	4.0		−4			
		eF_E	5	23	±						
		eF_N	5	21	±						
		eF_Z	5	19	±						
84	Mar. 12	eP_E	7	38	44					238	In the Aki Nada.
		P_{NZ}	7	38	43						Felt in the coast of Inland Sea.
		i_N	7	38	56	1.0		+5			
		S_N	7	39	15			−9			
		S_Z	7	39	14				−4		
		M_{1E}	7	39	19	1.0	−6				
		M_N	7	39	17	1.7		−7			
		M_Z	7	39	16	1.8			+6		
		M_{2E}	7	39	24	1.5	+8				
		eF_E	7	47	±						
		eF_N	7	46	±						
		eF_Z	7	44	±						
85	Mar. 12	iP_{EN}	22	25	19		−2.2	+3.3		311	WNW off Hatidyo Isl.
		iP_Z	22	25	20				+2.2		
		eS_{EN}	22	26	01						
		M_{EN}	22	26	20	0.9	±3	+4			

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_Z	22	26	21	0.7			±3		
		eF_{EN}	22	29	±						
		eF_Z	22	28	±						
86	Mar. 13	eS_N	7	18	23	9.7					In the Kasima Nada.
		eS_Z	7	18	23						
		M_{EN}	7	19	30		+9	−6			
		M_Z	7	19	20				+4		
		eF_E	7	33	±						
		eF_N	7	31	±						
		eF_Z	7	28	±						
87	Mar. 13	iS_N	9	12	08			−1			In the Wakaura Bay, Kii Channel.
		M_{1N}	9	12	08	0.5		+4			
		M_Z	9	12	10	1.4			−2		
		M_{2N}	9	12	12	0.5		±3			
		eF	9	14	±						
88	Mar. 14	eP_N	8	47	11					58	In the Kii Channel.
		iS_E	8	47	19						
		M_E	8	47	24	0.7	+4				
		M_N	8	47	22	0.6		−3			
		eF	8	49	±						
89	Mar. 14	e_N	13	03	33						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eF_E	13	05	±	Confused by microseismss.					
		eF_N	13	06	±						
90	Mar. 14	eP_E	16	09	42					63	In the Kii Channel.
		P_Z	16	09	42						
		S_{EN}	16	09	51		+3	+2			
		M_{EN}	16	09	50	0.6	−5	−4			
		M_Z	16	09	54	0.6			+2		
		eF	16	11	±						
91	Mar. 17	eP_{EZ}	16	01	10					2920	P phase in Minute gap. Near Kamchatka district.
		P_{R1N}	16	02	18						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		P_{R_2EN}	16	02	42						
		eS_E	16	05	46						
		S_{NZ}	16	05	48						
		eL_E	16	08	28						
		eL_N	16	08	00						
		M_{1N}	16	10	43	23.1		±8			
		M_Z	16	10	36	22.4			−6		
		M_E	16	11	25	21.6	−3				
		M_{2N}	16	11	51	20.4		+10			
		eF_E	16	57	±						
		eF_N	17	15	±						
		eF_Z	17	03	±						
92	Mar. 17	eP_E	19	38	32					2810	Felt in Eastern Mindanao.
		P_N	19	38	30						
		P_Z	19	38	29						
		P_{R_1N}	19	39	29						
		ϵ_Z	19	40	02						
		eS_N	19	42	59						
		eL_E	19	44	33						
		e_Z	19	44	27						
		M_E	19	51	18	18.3	+6				
		M_N	19	51	20	18.3		+30			
		M_Z	19	51	22	19.6			−13		
		eF_E	20	32	±						
		eF_N	20	54	±						
		eF_Z	20	39	±						
93	Mar. 18	iP_{EN}	15	42	41		+20.2	−18.3		334	South off Hatidyô Isl. Abnormal felt area in the Kwanto district. Record is deep focus type.
		iP_Z	15	52	39				−27.6		
		PM_E	15	42	42	2.3	−37				
		PM_N	15	52	42	2.1		+25			
		i_E	15	52	51		−41				
		i_E	15	53	03		+29				
		S_E	15	53	25		+15				

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	μ	
		S_N	15	53	26			+10			
		eS_Z	15	53	23						
		i_{EN}	15	53	31		+167	+83			
		i_Z	15	53	32				−61		
		M_{1E}	15	53	35	6.3	+125				
		M_N	15	53	42	4.3		+100			
		M_Z	15	53	55	3.3			−53		
		M_{2E}	15	55	09	4.0	±93				
		eF_{EN}	16	16	±						
		eF_Z	16	15	±						
94	Mar. 21	e_E	8	46	03						Local shock.
		M_E	8	46	06	0.6	+4				
		eF_E	8	47	±						
95	Mar. 21	eP_E	23	19	10					555	Near Volcano Aso, Kyûsyu.
		eP_N	23	19	18						
		S_E	23	20	25						
		S_N	23	20	23						
		eS_Z	23	20	32						
		M_N	23	20	59	5.9		−7			
		M_Z	23	20	58	3.1			−2		
		eF_E	23	26	±						
		eF_N	23	29	±						
		eF_Z	23	28	±						
96	Mar. 23	P	12	51	08		+2	(−)	+1	126	Lower basin of the Ota River, Wakayama Prefecture.
		S_E	12	51	24		+3				
		iS_N	12	51	25			−4			
		M_E	12	51	33	1.5	+5				
		M_N	12	51	32	1.9		−6			
		M_Z	12	51	33	1.7			−5		
		eF_E	12	57	±						
		eF_{NZ}	12	56	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
97	Mar. 24	eL_N	17	52	32						A distant earthquake.
		M_E	17	55	02	11.9	+4				China.?
		M_N	17	54	42	11.3		−4			
		M_Z	17	55	20	11.3			−2		
		eF_{EN}	18	08	±						
		eF_Z	18	12	±						
98	Mar. 25	e_{EN}	12	51	36						Near Volcano Aso, Kyûsyû.
		eS_E	12	52	23						Felt in al Kyûsyû.
		eS_N	12	52	22						
		i_N	12	52	34			−29			
		M_E	12	52	43	8.2	+9				
		M_N	12	52	39	8.5		−19			
		eF_E	13	00	±						
		eF_N	13	02	±						
99	Mar. 26	P	5	50	16		+1.−	−1.5	−1.0	75	Upper basin of the Arita River, Wakayama Prefecture.
		iS_{EN}	5	50	27		+7	+9			
		S_Z	5	50	26				+1		
		M_E	5	50	27	0.9	±7				
		M_N	5	50	27	1.0		−13			
		M_Z	5	50	23	0.5			+4		
		eF_E	5	52	±						
		eF_{NZ}	5	51	±						
100	Mar. 29	eP_E	7	40	36					91?	Local shock ?
		S_E	7	40	49		+3				
		M_E	7	40	51	0.8	+3				
		eF_{EN}	7	42	±						

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SUMOTO JAPAN.

SEISMOLOGICAL BULLENTIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

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

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

Jan.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	16.7	2.0	0.001	20
AN:	16.3	1.7	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.5	Aperiodic	0.002	123
AN:	4.4	„	0.002	116
AZ:	4.3	„	0.002	63

Feb.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.3	1.8	0.001	20
AE:	17.8	2.1	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.6	Aperiodic	0.003	109
AN:	4.4	„	0.001	108
AZ:	4.3	„	0.001	66

Mar.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.0	1.9	0.001	20
AN:	16.4	2.0	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.5	Aperiodic	0.003	115
AN:	4.5	„	0.001	110
AZ:	4.2	„	0.001	64

No.	Date	Phase	Time G. M. T.			Period	Amplitude AE	AN	AZ	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
1	Jan. 1	PE	8	58	22					7250	A distant earthquake.
		PN	8	58	27						Near New Hebrides.
		PZ	8	58	23						
		SE	9	07	06						
		SN	9	07	07						
		FE	9	52	±						
		FN	10	06	±						

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
2	Jan. 3	eP_N	15	29	28					817	ENE of Miyako, Iwate Prefecture.
		eF_E	15	29	32						
		P	15	29	36						Weak shocks were felt at the Ōou and Hokkaido.
		eS_E	15	31	21						
		S_N	15	31	26						
		S_Z	15	31	20						
		M_E	15	32	14	18.2	−100				
		M_N	15	32	35	14.0		+114			
		M_Z	15	33	19	10.0			−15		
		eF_E	15	52	±						
		eF_N	16	00	±						
		eF_Z	15	46	±						
3	Jan. 3	ePE_N	22	43	55						Japan Sea.
		F_E	22	53	±						Deep focus earthquake.
		eF_N	22	48	±						
4	Jan. 4	P_E	1	27	38					1670	SE far off Bonin Isl, 24.°8N 145°E.
		P_{NZ}	1	27	36						
		S_E	1	30	29						Weak shocks were felt in Bonin Isl.
		S_N	1	30	30						
		L_E	1	32	53						
		L_N	1	31	58						
		L_Z	1	30	57						
		M_E	1	39	27	11.8	−8				
		M_N	1	35	25	11.8		+25			
		M_Z	1	37	14	12.7			−19		
		eF_{EN}	2	19	±						
		eF_Z	1	57	±						
5	Jan. 6	iP	10	40	17		−4.1	+1.7	−3.2	70	Near Ryûzin, Wakayama Prefecture.
		iS	10	40	26						
		M_E	10	40	26	0.5	−15				
		M_N	10	40	26	0.4		±16			
		M_Z	10	40	27	0.8			−4		
		F_{EN}	10	41	45						
		F_Z	10	41	13						

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No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
6	Jan. 6	P	12 38 00					30	In the Wakaura Bay, K i Channel.
		S	12 38 04						
		M_{EN}	12 38 04	0.4	±1	±2			
		F	12 38 25						
7	Jan. 7	P_{EN}	4 08 57		−0.4	−0.9	+0.8	1050	ENE off Miyako, Iwate Prefecture.
		P_Z	4 08 58						
		S_{EZ}	4 10 51						Weak shocks were felt in Pacific coast of NE Japan and Hokkaido.
		S_N	4 10 50						
		M_E	4 12 20	13.7	+769				
		M_N	4 12 20	12.3		−720			
		M_Z	4 13 54	12.7			−138		
		eF_E	5 25 ±						
		eF_N	5 39 ±						
		eF_Z	5 10 ±						
8	Jan. 7	P	10 41 50			+0.8		184	Near Miyosi, Hiros ma Prefecture.
		S_E	10 42 15						
		S_N	10 42 13						Weak shocks were felt at the epicentral region.
		S_Z	10 42 16						
		M_E	10 42 21	0.8	±2				
		M_N	10 42 17	0.8		−4			
		M_Z	10 42 18	1.3			±1		
		F_E	10 44 18						
		F_N	10 43 43						
		F_Z	10 43 11						
9	Jan. 7	P_{EN}	16 45 32					30	In the Wakaura Bay, Kii Channel.
		S	16 45 36						
		M_E	16 45 36	0.3	±2				
		M_N	16 45 36	0.4		+3			
		M_Z	16 45 36				±1		
		F	16 46 09						
10	Jan. 8	P	6 31 19					1060	East off the Mouth of Mabuti River, Aomori Pre-
		S_E	6 33 13						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	's	μ	μ	μ	km.	
		S_N	6	33	14						fecture.
		S_Z	6	33	12						Weak shocks were felt in
		M_E	6	34	32	4.6	−3				the Pacific coast of Ōou
		M_N	6	34	09	3.8		−9			and Hokkaido.
		M_Z	6	33	55	3.0			±2		
		eF_E	6	45	±						
		eF_N	6	48	±						
		eF_Z	6	41	±						
11	Jan. 9	iP_{EN}	2	10	29					5400	A distant earthquake.
		iP_Z	2	10	28						Turkestan region.
		eS_E	2	17	29						
		eS_N	2	17	36						
		eL_E	2	21	23						
		eL_N	2	22	36						
		eF_{EN}	2	35	±						
		eF_Z	2	32	±						
*12	Jan. 9	iP	12	05	27		−0.8	−4.3	−6.3	33	Mouth of the Kii R.,
		iS	12	05	32						Near Wakayama city.
		M_E	12	05	32	0.6	−35				Perceptible.
		M_N	12	05	32	1.0		−64			
		M_Z	12	05	33	0.6			±14		
		F_E	12	08	29						
		F_N	12	07	53						
		F_Z	12	06	42						
13	Jan. 10	ePE_N	3	09	54						
		P	3	10	11		+1.6	−0.9	+1.9		NW off Amami - Ōsima,
		eS_E	3	12	50						Northern part of Ryûkyu I.
		eS_N	3	12	38						
		M_E	3	14	10	3.9	−1				
		M_N	3	13	45	8.5		±2			
		eF_E	3	19	±						
		eF_N	3	22	±						

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No.	Date	Phase	Time G. M. T	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
14	Jan. 14	P_E	2 11 28					380	Near Volcano Aso, Kyûsyû.
		P_N	2 11 27						
		S_E	2 12 17						
		S_N	2 12 20						
		M_E	2 12 37	1.7	+2				
		M_N	2 12 32	2.1		−3			
		F	2 16 44						
15	Jan. 14	P_{EN}	8 40 18					40	Mouth of the Arita R., Wakayama Prefecture.
		S	8 40 23						
		M_E	8 40 23	0.4	−5				
		M_{1N}	8 40 24	0.4		±7			
		M_Z	8 40 26				±2		
		M_{2N}	8 40 28	0.4		±3			
		F	8 41 19						
16	Jan. 15	eP_E	9 57 11						SE off Ariake Bay, Kagosima Prefecture.
		P_N	9 57 12						
		S_{EN}	9 57 50						
		M_E	9 58 01	1.8	−4				
		M_N	9 58 17	2.2		−3			
		F	10 01 32						
17	Jan. 15	eP_N	12 38 44					22	Local shock.
		S_{EN}	12 38 47						
		M_{EN}	12 38 47		−1	+3			
		The end	part over la	ped by	the follo	wing ear	thquake.		
18	Jan. 15	eP_{EN}	12 39 00					33	Local Shock.
		S	12 39 04						
		M_{EN}	12 39 05	0.4	−3	−7			
		F	12 39 33						
19	Jan. 15	P_E	18 09 42					4380	Near British New-Guenea.
		eP_N	18 09 42						

No.	Date	Phase	Time G. M. T	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		SEN	18 15 51						
		F	18 25 ±						
20	Jan. 15	PEN	23 46 54						
		eSE	23 47 22					203	Middle basin of the Toyo River, Aiti Prefecture.
		SN	23 47 22						
		ME	23 47 26	1.3	+2				
		MN	23 47 28	1.3		−4			
		FE	23 49 55						
		FN	23 49 42						
*21	Jan. 20	P	17 44 09					40	Perceptible.
		S	17 44 15						Near Tadono, middle basin of the Arita River, Wakayama Prefecture.
		ME	17 44 15	0.3	+11				
		MN	17 44 15	0.4		−22			
		MZ	17 44 15				+5		
		FEN	17 45 21						
22	Jan. 21	ePN	19 34 14					9370	SSE far off Madagascar, Indian Ocean, 37°S 59°E. (U,S,C,G,S.)
		PE	19 34 55						
		SE	19 45 23						
		SN	19 45 12						
		eLN	19 52 ±						
		eLE	19 57 ±						
		ME	20 31 25	14.3	±17				
		MN	20 21 32	18.8		+42			
		eFEN	20 45 ±						
23	Jan. 21	PEN	20 35 37					9	Locak shock.
		S	20 35 38						
		ME	20 35 38	0.2	±0.4				
		MN	20 35 38			±1			
		F	20 35 57						
24	Jan. 23	FEN	12 35 03					19	Middle basin of the Arita River, Wakayama Prefecture.
		S	12 35 05						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M	12	35	06	0.3	+1	+3	±1		
		F	12	35	44						
25	Jan. 26	eP_N	12	09	25						Near Wakayama City.
		S_{EN}	12	09	27						
		M_N	12	09	27	0.3		−2			
		F	12	09	40						
26	Jan. 26	eP_N	22	00	45						Ditto.
		S	22	00	47						
		M	22	00	47	0.4	+2	−3	−2		
		F	22	01	11						
27	Jan. 27	eP_N	9	58	19					28	Local shock.
		S_{EN}	9	58	23						
		F	9	58	37						
28	Jan. 28	P_{EN}	0	11	40					36	Near the Mouth of the Arita River, Wakayama Prefecture.
		S_{EN}	0	11	44						
		M_E	0	11	45	0.4	±1				
		M_N	0	11	45	0.3		+3			
		F	0	12	08						
29	Feb. 1	eP_E	3	22	01					56	Near Wakayama City.
		eP_N	3	22	00						
		S_{EN}	3	22	08						
		M_E	3	22	09	0.3	±1				
		M_N	3	22	10	0.4		±1			
		F	3	22	40						
30	Feb. 2	P_{EN}	0	01	32					45	Basin of the Arita R., Wakayama Prefecture.
		S	0	01	38						
		M_E	0	01	38	0.4	−4				
		M_N	0	01	39	0.4		−5			
		M_Z	0	01	39				±1		
		F	0	02	13						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
31	Feb. 3	P_{EN}	16	46	37					22	Local shock.
		S	16	46	40						Time is uncertain.
		M_{EN}	16	46	41	0.4	±1	+3			
		F	16	47	03						
32	Feb. 3	P_E	22	15	51					2010	North off Uruppu Isl., Kurile Ils.
		P_{NZ}	22	15	53						
		S_E	22	19	12						
		S_N	22	19	13						
		S_Z	22	19	20						
		L_E	22	21	57						
		L_Z	22	22	07						
		M_E	22	27	32	15.9	−15				
		M_N	22	25	29	15.0		+15			
		M_Z	22	23	04	22.5			±25		
		eF_{EN}	22	40	±						
		eF_Z	22	34	±						
33	Feb. 4	P	6	21	06						WNW off the Bonin Isl.
		eF_E	6	25	±						
		eF_N	6	29	±						
		eF_Z	6	23	±						
34	Feb. 6	P_N	0	07	27					39	Basin of the Arita R., Wakayama Prefecture.
		S_{EN}	0	07	32						
		M_E	0	07	33	0.4	+2				
		M_N	0	07	33	0.5		+3			
		F	0	08	23						
35	Feb. 6	P_N	2	26	53					42	In the Wakaura Bay, Kii Channel.
		S_{EN}	2	26	59						
		M_E	2	26	59		±1				
		M_N	2	26	59	0.4		−2			
		F	2	27	16						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
36	Feb. 6	SEN	3	53	41						Basin of the Arita R., Wakayama Prefecture.
		MEN	3	53	41	0.4	±1	±2			
		FEN	3	54	09						
37	Feb. 6	PE	7	18	09					358	Genkai Nada? NW off Kyûsyû.
		PN	7	18	10						
		PZ	7	18	11						
		SE	7	18	59						
		SNZ	7	18	58						
		ME	7	19	11	2.1	±2				
		MN	7	19	00	2.3		−2			
		MZ	7	19	00	1.7			−1		
		FEN	7	21	28						
		eFZ	7	20	±						
38	Feb. 7	PE	1	28	41					378	Near Volcano Aso Kyûsyû.
		PNZ	1	28	42						
		SE	1	29	36						
		SN	1	29	29						
		SZ	1	29	33						
		ME	1	29	41	1.9	+2				
		MN	1	29	36	1.9		+3			
		MZ	1	29	38	2.2			±2		
		FEN	1	32	51						
		eFZ	1	31	±						
39	Feb. 7	P	7	20	21					49	Basin of the Arita R., Wakayama Prefecture.
		SEN	7	20	27						
		MEN	7	20	28	0.4	+2	−2			
		F	7	21	02						
40	Feb. 8	PN	5	10	39					36	In the Wakaura Bay, Kii Channel.
		SEN	5	10	44						
		MN	5	10	45	0.3		−1			
		F	5	11	04						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
41	Feb. 9	iP_E	3	58	03		−1.8	−2.3	+3.0	398	SW off Hatidyô Isl. Focal depth about 250 km. Abnormal felt area in the Kwantô district.
		iP_N	3	58	04						
		iP_Z	3	58	02						
		iS_E	3	58	57						
		iS_N	3	58	56						
		iS_Z	3	58	58						
		M_E	3	58	58	2.9	+14				
		M_N	3	59	00	4.8		+26			
		M_Z	3	58	58	1.8			+5		
		F_E	4	08	09						
		F_N	4	09	59						
		eF_Z	4	06	±						
42	Feb. 13	e_N	3	06	18						A distant earthquake.
		e_E	3	06	26						
		z	3	08	15						
		e_{EN}	3	09	12						
		L_E	3	11	31						
		L_N	3	11	13						
		M_E	3	12	27	11.3	−7				
		M_N	3	11	51	10.5		−29			
		M_Z	3	11	48	11.6			±18		
		eF_{EZ}	3	26	±						
		eF_N	3	27	±						
43	Feb. 13	P_{EN}	6	52	18					790	In the Kasima Nada.
		P_Z	6	52	16						
		S_{EZ}	6	53	43						
		S_N	6	53	44						
		M_E	6	53	51	2.9	+9				
		M_N	6	53	49	2.7		+10			
		M_Z	6	53	51	3.1			−3		
		F_{EN}	7	02	±						
		eF_Z	6	59	±						
44	Feb. 13	P_{EN}	13	02	59						Near Volcano Aso, Kyûsyû.
		F	13	06	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
45	Feb. 13	e_N	23	13	41					1540?	East off the Nosyappu Cape, Hokkaido.
		eL_N	23	16	22						
		M_E	23	17	51	13.1	±4				
		M_N	23	18	29	13.1		±4			
		M_Z	23	18	47	12.7			±6		
		eF_{EN}	23	27	±						
		eF_Z	23	24	±						
46	Feb. 14	P	3	13	30					35	Near Wakayama City.
		S	3	13	35						
		M_E	3	13	35	0.4	±1				
		M_N	3	13	36	0.4		−3			
		M_Z	3	13	37				±1		
		F	3	14	08						
*47	Feb. 18	iP	8	17	55		+10.1	−8.8	+.91	72	Perceptible.
		iS	8	18	04						Upper valley of the Tigusa River, Hyôgo Prefecture. Felt in Hyôgo, Okayama and Kagawa Prefecture.
		M_E	8	18	06	1.0	+59				
		M_N	8	18	05	0.9		−93			
		M_Z	8	18	06	1.3			+39		
		F_E	8	25	57						
		F_N	8	26	25						
		F_Z	8	23	42						
48	Feb. 19	P	4	29	38					2450	WSW off Yonakuni Isl., Southern part of the Ryûkyû Ils.
		eS_N	4	33	38						
		eF_{EN}	4	51	±						
		eF_Z	4	45	±						
49	Feb. 20	P_{EN}	1	32	51					22	In the Wakaura Bay, Kii Channel.
		S_{EN}	1	32	54						
		M_{EN}	1	32	54	0.4	±1	+4			
		F	1	33	19						
50	Feb. 20	eP_N	5	34	28					54	Basin of the Yosino R., Sikoku district.
		S	5	34	35						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		MEZ	5	34	36		+3		±1		
		MN	5	34	36	0.4		+4			
		F	5	34	55						
51	Feb. 20	PEN	9	52	45					708	East far off Sioya Cape Hukusima Prefecture.
		ePZ	9	52	56						
		SE	9	54	19						
		SN	9	54	22						
		eS?Z	9	54	49						
		ME	9	54	52	2.4	−2				
		MN	9	55	20	2.7		+2			
		MZ	9	55	12	3.1			±2		
		eFEZ	9	59	±						
		eFN	10	02	±						
52	Feb. 20	ePE	14	20	24						Ditto.
		iE	14	20	58						
		iN	14	20	53						
		MN	14	21	47						
		eFEN	14	25	±						
53	Feb. 21	ePEN	2	55	22					344	Near Sawara, Tiba Prefecture.
		SEN	2	56	09						
		SZ	2	56	08						
		ME	2	56	20	2.5	±1				
		MN	2	56	15	3.1		±1			
		MZ	2	56	11	2.7			±1		
		F	2	58	45						
54	Feb. 23	PE	8	29	17						Northern part of Chile.
		PNZ	8	29	19						
		N	8	48	18						
		E	8	50	15						
		eLE	8	52	35						
		eLN	8	51	46						
		ME	9	29	27	18.2	−25				

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	μ	
		M_N	9	24	54	21.8		+40			
		M_Z	9	24	59	21.2			±50		
		eF_E	10	11	±						
		eF_N	10	18	±						
		eF_Z	10	06	±						
55	Feb. 27	P	16	15	24					198	Off the mouth of the Kuzuryû River, Hukui Prefecture.
		S_{EN}	16	15	51						
		S_Z	16	15	50						
		M_E	16	15	51	0.8	−6				
		M_N	16	15	52	0.5		+6			
		M_Z	16	15	55	1.1			−2		
		F_{EN}	16	17	22						
		F_Z	16	16	29						
56	Feb. 28	eP_{EN}	4	10	17					48	Near Wakayama City.
		S_{EN}	4	10	23						
		M_E	4	10	24	0.6	−3				
		M_N	4	10	24	0.3		−3			
		F	4	10	53						
57	Feb. 28	eP_E	8	47	06					293	South off Ōsima, Izu Province.
		eP_N	8	47	07						
		eS_E	8	47	45						
		eS_N	8	47	48						
		M_E	8	48	05	2.0	+1				
		M_N	8	48	38	2.4		−1			
		eF_{EN}	8	51	±						
58	Feb. 28	P_{EN}	20	46	45					35	Near Wakayama City.
		S_{EN}	20	46	50						
		M_E	20	46	50	0.8	±1				
		M_N	20	46	50	0.3		+2			
		F	20	47	19						
										31	Local shock.
59	Mar. 1	eP_{EN}	2	23	32						
		S_{EN}	2	23	27						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_E	2	23	37	0.4	−2				
		M_N	2	23	37	0.6		−2			
		F	2	24	01						
60	Mar. 2	iP	17	33	11		−26	−2.7	+1.6	1009	A great earthquake at about 39°N, 144°7E, east off Kamaisi, Iwate Prefecture; occured very near the earthquake 1896, accompanied by the Sanriku - tunami. Shocks were felt at the area from Kurile Ils to the Central Japan, accompauying Tunami at the Pacific coast of Oôu and Hokkaido districts. From the beginning of shocks, observed the long period of about $\frac{1}{3}$ minutes. Phases after S were read from the Low magnification Seismometer.
		S_E	17	35	27						
		S_N	17	35	22						
		S_Z	17	35	33						
		M_{1E}	17	36	34	10.3	+1400				
		M_{1N}	17	36	25	9.8		−2000			
		M_{2N}	17	37	25	4.9		+1600			
		M_{1Z}	17	37	24	15.8			+745		
		M_{2E}	17	37	54	10.3	+1200				
		M_{2Z}	17	38	01	14.6			−586		
		M_{3Z}	17	41	27	16.9			+503		
		The end part overlapde by the next earthquake.									
61	Mar. 2	P_E	19	43	51					816	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		P_N	19	44	01						
		eP_Z	19	44	05						
		S_E	19	45	45						
		S_N	19	45	48						
		M_E	19	46	54	9.8	−17				
		M_N	19	46	42	6.3		−29			
		M_Z	19	46	13	9.6			±6		
		The end part overlaped by the next earthquake.									
62	Mar. 2	P_{EN}	20	44	54					908	Ditto.
		P_Z	20	44	59						
		S_E	20	46	54						
		S_N	20	46	50						
		S_Z	20	47	10						
		M_E	20	47	43	5.3	−37				
		M_N	20	47	57	8.3		+189			
		M_Z	20	48	41	10.6			−167		
		eF_E	21	40	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eF_N	20	47	±						
		eF_Z	21	18	±						
63	Mar. 2	P_E	22	37	07					903	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		eP_N	22	37	18						
		eS_E	22	39	07						
		S_N	22	39	22						
		S_Z	22	39	11						
		M_E	22	39	49	3.0	±1				
		M_N	22	39	59	3.8		±1			
		M_Z	22	39	50	4.0			−1		
		eF	22	47	±						
64	Mar. 3	eP_E	0	20	41					884	Ditto.
		eP_N	0	20	48						
		S_N	0	22	47						
		M_N	0	23	01	2.8		+1			
		M_E	0	24	47	2.8	+1				
		F	0	28	18						
65	Mar. 3	e	2	24	38						Ditto. The end part overlaped by the following earthquake.
		S_E	2	25	10						
		S_N	2	25	01						
		S_Z	2	25	02						
		M_E	2	25	16	2.9	−2				
		M_N	2	25	33	3.1		+2			
		M_Z	2	25	16	2.5			+1		
66	Mar. 3	S_{EN}	2	28	38						Ditto.
		M_E	2	26	02	3.5	±1				
		M_N	2	28	48	3.2		+1			
		eF	2	34	±						
67	Mar. 3	eP_{EN}	4	39	56						Ditto.
		i_N	4	40	31						
		e_Z	4	40	44						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eSN	4	44	25						
		eSZ	4	44	23						
		eFEN	4	57	±						
		eFZ	4	53	±						
68	Mar. 3	PEZ	9	14	55					925	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		PN	9	15	08						
		SE	9	17	02						
		SN	9	17	10						
		SZ	9	17	00						
		ME	9	17	35	6.0	−17				
		MN	9	17	36	6.0		−29			
		MZ	9	17	43	4.0			−11		
		The end part overlapped by the following earthquake.									
69	Mar. 3	PE	9	40	48					963	Ditto.
		PNZ	9	40	49						
		eSE	9	42	56						
		SN	9	42	57						
		eSZ	9	43	03						
		ME	9	44	15	4.2	−4				
		MN	9	43	34	3.0		−8			
		MZ	9	43	14	4.0			−3		
		eFEN	10	01	±						
		eFZ	9	52	±						
70	Mar. 3	PE	10	06	48					885	Ditto.
		PN	10	06	50						
		SE	10	08	49						
		SN	10	08	48						
		ME	10	09	38	3.1	+3				
		MN	10	06	50	4.8		+4			
		MZ	10	09	29	2.9			−1		
		eFEN	10	19	±						
		e Z	10	14	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
71	Mar. 3	ePEN	10	34	24					930	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		SE	10	36	32						
		SN	10	36	26						
		ME	10	37	13	3.0	−1				
		MN	10	37	06	4.4		+1			
		MZ	10	36	52	3.0			±1		
		eFEN	10	44	±						
		eFZ	10	40	±						
72	Mar. 3	ePE	11	48	11					475	In the Kasima Nada.
		ePN	11	48	10						
		SE	11	49	13						
		SN	11	4	16						
		SZ	11	49	22						
		ME	11	49	53	3.0	−2				
		MN	11	49	26	3.8		±3			
		MZ	11	49	29	4.0			±2		
		eFE	11	54	±						
		eFN	11	55	±						
		eFZ	11	52	±						
73	Mar. 3	eE	12	00	13						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eN	12	00	15						
		eSN	12	01	23						
		eSZ	12	01	14						
		ME	12	01	37	2.8	±1				
		MN	12	01	37	4.8		+2			
		MZ	12	01	23	3.4			±1		
		eFE	12	06	±						
		eFN	12	08	±						
		eFZ	12	04	±						
74	Mar. 3	eP	12	17	30						Ditto.
		eF	12	23	±						
75	Mar. 3	eP	12	24	45						Ditto.
		eF	12	26	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
76	Mar. 3	P	14	08	41					33	In the Wakaura Bay, Kii Channel.
		S	14	08	45						
		M	14	08	46	0.4	+3	+6	±1		
		F	12	09	10						
77	Mar. 3	P_{EN}	15	04	38					896	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		S_N	15	06	39						
		M_E	15	06	49	3.4	−2				
		M_N	15	07	13	4.9		+2			
		M_Z	15	06	58	3.5			+1		
		The and	part	overlap	ed by	the	follo	wing	ea	rthquak	e.
78	Mar. 3	S	15	11	30						Ditto.
		M_E	15	12	16	3.2	±2				
		M_N	15	12	15	5.1		+3			
		M_Z	15	12	00	5.0			+1		
		eF_{EN}	15	23	±						
		eF_Z	15	17	±						
79	Mar. 3	e_{EN}	15	54	46						Ditto.
		M_E	15	56	21	3.8	+1				
		M_N	15	55	26	3.4		±1			
		eF	16	03	±						
80	Mar. 3	eP_E	16	14	13					980	Ditto.
		e_N	16	14	27						
		S_E	16	16	25						
		S_N	16	16	23						
		M_E	16	17	17	4.0	+1				
		M_N	16	17	23	3.6		+1			
		eF	16	22	±						
81	Mar. 3	e_E	18	50	52						Ditto.
		e_N	18	50	48						
		S_{EN}	18	51	41						

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No.	Date	Phase	Time G.	M.	T	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_E	18	51	53	3.2	±1				
		M_N	18	52	56	2.9		±1			
		eF_N	18	57	±						
		eF_N	18	56	±						
82	Mar. 3	eP_E	19	09	54					804	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd 1933.
		eP_N	19	09	53						
		S_E	19	11	38						
		S_N	19	11	46						
		M_E	19	12	14	2.4	−2				
		M_N	19	12	26	4.9		+3			
		M_Z	19	12	19	4.0			+1		
		eF_{EN}	19	24	±						
		eF_Z	19	17	±						
83	Mar. 3	eP_E	19	54	47						Ditto.
		eP_N	19	54	48						
		eF_{EN}	19	59	±						
84	Mar. 3	eP_E	20	24	08						Ditto.
		eP_N	20	24	07						
		eF	20	29	±						
85	Mar. 4	eP_E	6	48	15						Ditto.
		eP_N	6	48	07						
		eF_{EN}	6	53	±						
86	Mar. 6	P	17	07	35					28	Local shock.
		S	17	07	39						
		M_E	17	07	39	0.2	+3				
		M_N	17	07	39	0.4		−5			
		M_Z	17	07	39	0.3			±1		
		F	17	08	05						
*87	Mar. 6	iP	22	45	01		+2.6	−7.3	−4.7	28	Perceptible. In the Wakaura Bay, Kii Channel.
		iS	22	45	04						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		MEN	22	45	06	0.4	−104	+73			Moderate shocks were felt
		MZ	22	45	06	0.6			+47		at Wakayama City.
		FEN	22	51	14						
		FZ	22	49	17						
88	Mar. 6	PEN	22	48	25					33	An after shock of No. 87?
		S	22	48	30						
		M	22	48	30	0.4	+3	−5	±1		
		F	22	48	52						
89	Mar. 7	P	3	06	02					26	Basin of the Arita R.,
		S	3	06	05						Wakayama Prefecture.
		ME	3	06	05	0.4	+3				
		MN	3	06	06	0.5		−6			
		F	3	06	42						
90	Mar. 8	PE	1	37	57					851	An after shock of the
		PN	1	37	58						Great Earthquake, off the
		PZ	1	37	56						coast of Sanriku, on Mar.
		S	1	39	52						2nd, 1933.
		MEN	1	40	16	3.6	−3	+2			
		MZ	1	40	14	2.2			+2		
		eFEN	1	50	±						
		eFZ	1	45	±						
91	Mar. 8	P	10	28	02					210	In the Iyo Nada. Felt in
		eZ	10	28	15						the Sanyô and Shikoku
		S	10	28	30						district.
		ME	10	28	37	1.8	−5				
		MN	10	28	37	0.7		+8			
		MZ	10	28	40	0.8			±2		
		FEN	10	34	11						
		eFZ	10	32	±						
92	Mar. 8	P	19	23	04					29	In the Wakaura Bay, Kii
		S	19	23	08						Channel.

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_E	19	23	08	0.2	+5				
		M_N	19	23	08	0.4		−7			
		M_Z	19	23	08	0.6			±1		
		F	19	23	59						
93	Mar. 9	P	4	23	38					185	In the Kumano Nada, SE off the Kii Peninsura.
		S	4	24	03						
		M_E	4	24	03	0.6	−12				
		M_N	4	24	05	0.4		−18			
		M_Z	4	24	04	1.1			±2		
		F_E	4	28	27						
		F_N	4	28	31						
		F_Z	4	26	26.						
94	Mar. 9	eP	19	37	33					177	Mouth of the Kuzuryû River, Hukui Prefecture.
		S	19	37	57						
		M_E	19	38	00	0.8	+3				
		M_N	19	37	58	0.6		±4			
		M_Z	19	38	02	0.9			±1		
		F_E	19	40	28						
		F_N	19	40	00						
		F_Z	19	39	±						
95	Mar. 11	eP_E	2	16	15						Destructive at Los-Angels, U.S.A. By Omori's Seismograph.
		eP_N	2	11	42						
		eF_N	3	40	±						
96	Mar. 11	eP_E	14	24	29					2825	A distant earthquake. Dzungaria district?
		eP_N	14	24	31						
		e_Z	14	25	47						
		S_{EZ}	14	29	02						
		S_N	14	28	59						
		eL_E	14	32	34						
		eL_N	14	31	54						
		M_E	14	33	41	13.5	−43				
		M_N	14	33	11	14.6		−91			

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		Mz	14	33	13	14.2			+42		
		eFEN	15	20	±						
		eFz	15	07	±						
97	Mar. 11	iPEN	19	34	51		+2.6	−2.7	−4.7	751	WNW of the Bonin Isl. 28°N 140°E.
		iPz	19	34	50						
		iSE	19	36	33						Abnormal felt area in the Kwanto district.
		iSN	19	36	32						
		iSz	19	36	31						
		ME	19	36	37	4.5	−186				
		MN	19	36	35	3.8		−64			
		Mz	19	36	35	3.3			−17		
		FE	20	05	34						
		FN	20	12	53						
		Fz	20	03	46						
98	Mar. 12	eE	5	07	13						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		eN	5	07	20						
		eSEN	5	10	27						
		ez	5	10	51						
		eFEz	5	17	±						
		eFN	5	19	±						
99	Mar. 12	ePEN	7	38	34						In the Aki Nada. Felt in the coast of Inland Sea.
		eFz	7	38	33						
		SE?	7	38	46						
		SN?	7	38	49						
		Sz?	7	38	45						
		ME	7	38	51	1.2	+4				
		eN	7	39	01						
		MN	7	39	10	1.0		−10			
		Mz	7	39	09	0.9			+3		
		FE	7	43	49						
		FN	7	43	40						
		Fz	7	40	54						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
100	Mar. 12	eP	13	12	16					30	Near Yuasa, Wakayama Prefecture.
		S	13	12	20						
		M	13	12	21	0.3	±1	±3	±1		
		F	13	12	44						
101	Mar. 13	P_E	7	16	51					890	In the Kasima Nada? East off Hitati Province.
		e_Z	7	17	46						
		e_N	7	17	54						
		eS_{EN}	7	18	51						
		eS_Z	7	18	51						
		M_E	7	19	55	3.2	±1				
		M_N	7	19	55	3.0		±2			
		M_Z	7	20	34	8.4			±1		
		F_E	7	29	34						
		F_N	7	30	43						
		eF_Z	7	29	±						
102	Mar. 13	P	9	11	53					33	In the Wakaura Bay, Kii Channel.
		S	9	11	58						
		M_E	9	11	58	0.2	+6				
		M_{NZ}	9	11	58	0.4		−8	±2		
		F	9	12	46						
103	Mar. 14	P	8	47	04					34	In the Kii Channel.
		S	8	47	09						
		M_E	8	47	10	0.6	−6				
		M_{NZ}	8	47	10	0.4		−8	+3		
		F_{EN}	8	48	01						
		F_Z	8	47	56						
104	Mar. 14	P	16	09	36					37	Ditto.
		S	16	09	41						
		M_{EN}	16	09	42	0.4	−10	−14	−3		
		M_Z	16	09	43	0.4					
		F_{EN}	16	10	42						
		F_Z	16	10	16						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
105	Mar. 17	P	16	01	13					3055	Near Kamchatka.
		SEN	16	05	56						
		eSZ	16	06	09						
		LEZ	16	10	34						
		LN	16	10	24						
		ME	16	12	53	13.2	+7				
		MN	16	10	48	13.2		−31			
		MZ	16	12	11	17.7			−43		
		eFEN	16	47	±						
		eFZ	16	33	±						
106	Mar. 17	P	19	38	25					4420?	Felt in eastern Mindanao, Philippine.
		eSE	19	44	21						
		eSN	19	44	50						
		LE	19	46	21						
		LN	19	46	34						
		LZ	19	47	21						
		ME	19	49	50	15.5	±14				
		MN	19	50	36	17.4		+143			
		MZ	19	52	14	18.2			±138		
		eFE	20	34	±						
		eFN	20	42	±						
		eFZ	20	28	±						
107	Mar. 18	eE	3	25	18						Local shock.
		eN	3	25	20						
		eZ	3	25	15						
		eF	3	28	±						
108	Mar. 18	iP	15	52	39		+10.4	−4.5	−12.5	359	South off Hatidyô Isl. Abnormal felt area in Kwantô district.
		iSEN	15	53	27						
		iSZ	15	53	28						
		M_{1E}	15	53	33	3.3	+45				
		M_{1N}	15	53	33	3.9		+64			
		M_{1Z}	15	53	35	4.1			−27		
		M_{2E}	15	53	53	3.3	−43				

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_{2N}	15	53	44	3.5		−67			
		M_{2Z}	15	53	43	3.8			+25		
		F_E	16	05	57						
		F_N	16	08	05						
		F_Z	16	02	23						
109	Mar. 20	eP_N	17	09	54						In the Bungo Channel.
		P_{EN}	17	10	04						
		S_{EN}	17	10	14						
		M_E	17	10	25	1.2	±1				
		M_N	17	10	24	1.2		±1			
		F_E	17	11	39						
		F_N	17	11	12						
110	Mar. 20	eP	20	17	04					31	Near Wakayama City.
		S	20	17	08						
		M_E	20	17	09	0.3	±1				
		M_N	20	17	09			±2			
		F	20	17	29						
111	Mar. 21	P	12	03	16					40	Lower basin of the Hidaka River, Wakayama Prefecture.
		S	12	03	21						
		M_{EZ}	12	03	22	0.4	−3		±1		
		M_N	12	03	23	0.4		±3			
		F	12	04	03						
112	Mar. 21	P	16	54	40					25	In the Kii Channel.
		S	16	54	43						
		M_E	16	54	43	0.4	−4				
		M_N	16	54	43	0.3		−6			
		M_Z	16	54	43				±1		
		F	16	55	14						
113	Mar. 21	eP_N	23	18	46					616	Near Volcano Aso, Kyûsyu.
		e_E	23	19	12						
		e_Z	23	19	23						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		S_E	23	20	11						
		S_N	23	20	09						
		S_Z	23	20	13						
		M_E	23	20	15	1.6	−2				
		M_N	23	20	13	2.9		−6			
		M_Z	23	20	41	4.1			+3		
		F_E	23	26	39						
		F_N	23	26	32						
		F_Z	23	25	±						
114	Mar. 23	P	12	51	04					109	Lower basin of the Ōta River, Wakayama Prefecture.
		S_{EN}	12	51	19						
		S_Z	12	51	20						
		M_E	12	51	20	0.6	±4				
		M_N	12	51	20	1.4		−5			
		M_Z	12	51	22	0.8			−2		
		F_{EN}	12	55	23						
		eFZ	12	53	±						
115	Mar. 23	e_N	17	51	16					?	A distant earthquake. China ?
		e_E	17	51	17						
		S_E?	17	53	48						
		S_N?	17	53	49						
		S_Z?	17	53	34						
		M_E	17	55	14	4.1	+1				
		M_N	17	55	49	11.3		+2			
		eF_{EN}	18	03	±						
		eFZ	17	57	±						
116	Mar. 25	eP_{EZ}	12	51	26						Near Volcano Aso, Kyûshû. Felt in the all Kyûsyû.
		eP_N	12	51	27						
		S_{EN}	12	52	11						
		S_Z	12	52	13						
		M_E	12	52	18	1.8	−10				
		M_N	12	52	15	1.8		−12			
		M_Z	12	52	42	3.4			−9		

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		F_E	13	01	27						
		F_N	13	02	24						
		eFz	13	00	±						
117	Mar. 26	P	5	50	16					69	Upper basin of the Arita River, Wakayama Prefecture.
		S	5	50	25						
		M_E	5	50	25	0.4	+1				
		M_N	5	50	25	0.5		−3			
		F	5	51	01						
118	Mar. 27	eP	12	24	46					33	In the Kii Channel.
		S	12	24	51						
		M_E	12	24	52	0.4	+1				
		M_N	12	24	52	0.3		−3			
		F	12	25	48						
119	Mar. 28	P	23	02	32					31	Near Wakayama City.
		S	23	02	36						
		M_E	23	02	36	0.5	+3				
		M_N	23	02	37	0.4		−6			
		M_Z	23	02	37				±1		
		F	23	03	19						

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TOYOOKA JAPAN.

SEISMOLOGICAL BULLETIN

A Branch Station of the Kobe Meteorological Observatory of Japan.

$\varphi = 35^\circ\ 32'$ $\lambda = 134^\circ\ 49'$ h = 32.2 m. Underground : Tertiary.

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

Jan.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	20.8	3.0	0.002	20
AN:	9.3	3.0	0.002	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	5.8	10.0	0.003	94
AN:	6.3	10.0	0.005	88
AZ:	4.2	3.3	0.004	65

Feb.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	20.8	3.0	0.002	20
AN:	9.9	3.0	0.002	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	5.8	10.0	0.004	98
AN:	6.0	3.3	0.004	108
AZ:	3.8	2.7	0.001	50

Mar.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	20.8	3.0	0.002	20
AN:	9.9	3.0	0.002	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	5.8	10.0	0.004	95
AN:	6.2	3.6	0.004	91
AZ:	4.4	4.1	0.002	41

No.	Date	Phase	Time G. M. T.			Period	Amplitude AE	Amplitude AN	Amplitude AZ	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
1	Jan. 3	iP_E	15	28	11					852	ENE off Miyako, Iwate Prefecture. 40°N, 144°E. Weak shocks were felt in the Oôu and Hokkaidô.
		iP_N	15	28	24						
		iP_Z	15	28	13						
		iS_E	15	30	06						
		iS_N	15	30	03						
		iS_Z	15	30	09						
		iL_E	15	31	02						

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		iL_N	15	31	00						
		M_E	15	32	20	13.6	+25				
		M_Z	15	32	22				−5		
		eF_E	15	41	±						
		eF_N	15	37	±						
		eF_Z	15	38	±						
2	Jan. 4	eP_E	1	27	46					1300	SE far off Bonin Isl. 28°N, 145°E. Weak shocks were felt in Bonin Isl.
		iP_Z	1	27	43						
		iS_E	1	30	04						
		iS_N	1	30	06						
		iS_Z	1	30	06						
		eL_E	1	31	02						
		eF_E	2	00	±						
		eF_N	1	40	±						
		eF_Z	1	50	±						
3	Jan. 7	iP_E	4	08	47					780	ENE off Miyako, Iwate Prefecture. Weak shocks were felt in the Pacific coast of NE Japan and Hokkaidô.
		iP_{NZ}	4	08	49						
		iS_E	4	10	32						
		iS_N	4	10	33						
		iL_E	4	11	21						
		eL_N	4	11	26						
		eL_Z	4	11	25						
		M_E	4	12	57	14.3	+213				
		M_N	4	12	37	13.7		+176			
		M_Z	4	13	09				−40		
		eF_E	4	48	±						
		eF_N	4	41	±						
		eF_Z	4	31	±						
4	Jan. 7	iP_{EN}	10	41	52					146	Near Miyosi, Hirosima Prefecture. Weak shocks were felt in the epicentral region.
		iP_Z	10	41	53						
		iS_E	10	42	11						
		iS_{NZ}	10	42	13						
		M_{EN}	10	42	17		+15	−29			

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_Z	10	42	15				−8		
		F_E	10	43	39						
		F_N	10	43	38						
		F_Z	10	42	56						
5	Jan. 8	eP_E	6	31	01						East off the mouth of Mabuti River, Aomori Prefecture. Weak shocks were felt in the Pacific coast of Oôu and Hokkaidô.
		iP_Z	6	31	00						
		iP_E	6	31	07						
		iP_N	6	31	08						
		eF_E	6	38	±						
		eF_N	6	36	±						
		eF_Z	6	40	±						
6	Jan. 16	iP_{EZ}	23	46	56					182	Middle basin of the Toyo River, Aiti Prefecture.
		eP_N	23	46	59						
		iS_N	23	47	21						
		M_E	23	47	29		−6				
		M_Z	23	47	26				±5		
		M_N	23	49	28			−9			
		F_E	23	48	34						
		F_N	23	48	15						
		F_Z	23	48	24						
7	Feb. 3	iP_E	22	15	47					1830	North off Uruppu Isl, Kuriles Ils.
		iP_N	22	15	49						
		iS_E	22	18	54						
		iS_N	22	18	58						
		eL_E	22	22	16						
		iL_N	22	22	19						
		eF_E	22	31	±						
		eF_N	22	32	±						
8	Feb. 7	eP_E	1	28	53					373	Near Volcano Aso, Kyûsyû.
		eP_N	1	28	56						
		iS_E	1	29	44						
		iS_N	1	29	45						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		F_E	1	30	41						
		F_N	1	31	00						
9	Feb. 13	iL_E	3	08	09						Faint record.
		iL_N	3	08	12						a distant earthquake.
		M_E	3	11	05		−4				Dzungaria, Chaina.
		M_N	3	11	03			+6			
		eF_E	3	19	±						
		eF_N	3	20	±						
10	Feb. 13	iP	6	52	13					634	In the Kasima Nada.
		i_N	6	53	26						
		iS_N	6	53	38						
		iS_Z	6	53	43						
		eM_E	6	53	38		−7				
		M_N	6	53	43	2.1		−32			
		M_Z	6	53	49				+10		
		eF_{EN}	6	56	±						
		eF_Z	6	55	±						
*11	Feb. 18	iP	8	17	53		+4.6	+8.3	+13.0	61	Perceptible.
		iS	8	18	01						Upper valley of the Tigusa River, Hyôgo Prefecture Felt in the Hyôgo, Okayama and Kagawa Prefecture.
		M_E	8	18	03		+214	+137			
		M_N	8	18	05						
		M_Z	8	18	02						
		F_{EN}	8	20	46						
		F_Z	8	20	46						
12	Feb. 20	iP_{EN}	9	52	45					646	East far off Sioya Cape, Hukusima Prefecture.
		eS_E	9	54	14						
		iS_N	9	54	12						
		M_E	9	54	40		+3				
		M_N	9	54	32			−7			
		F_E	9	57	57						
		F_N	9	58	07						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
13	Feb. 21	eP_E	2	55	01						Near Sawara, Tiba Prefecture.
		eP_N	2	54	50						
		iS_N	2	55	58						
		M_N	2	55	59			−5			
		F_E	2	57	11						
		F_N	2	57	15						
14	Feb. 23	eP_{EN}	8	29	32						Northern part of Chile.
		iP_Z	8	29	11						
		eL_E	9	21	51						
		eL_N	9	22	14						
		M_E	9	24	55	23.5	−7				
		M_N	9	24	59	25.8		+6			
		eF_E	10	00	±						
		eF_N	10	07	±						
15	Feb. 27	iP	16	15	04					126	Off the mouth of the Kuzuryû river, Fukui Prefecture.
		iS_{EN}	16	15	21						
		iS_Z	16	15	22						
		M_E	16	15	22	0.4	+31				
		M_N	16	15	22	0.6		+94			
		M_Z	16	15	24				−16		
		F_{EN}	16	17	24						
		F_Z	16	16	38						
16	Mar. 2	iP_{EN}	17	33	03		−13.7	−9.9	−22.0	1010	A great earthquake at about 39°N, 144°7E, east off Kamaisi, Iwate Prefecture; occured very near the earthquake 1896, accompanied by the Sanriku-tunami. Shocks were felt at the area from Kurile Ils to the Central Japan, accompuying Tunami at the Pacific coast of Oôu and Hokkaido districts. From the beginning of shocks, observed the long period of about $\frac{1}{3}$ minutes.
		eP_Z	17	33	01				−2.4		
		i_Z	17	33	02				+9.8		
		iP_Z	17	33	03						
		i_{EN}	17	33	07		−163.2	−100.5			
		i_Z	17	33	04				+97.7		
		iS_{EN}	17	34	52						
		iS_Z	17	35	00						
		M_{1E}	17	37	27		> ±1600				
		M_N	17	36	48	15.8		−6000			
		M_Z	17	37	37	4.6			±1953		

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_{2E}	17	42	15		> +1105				
		eF_E	20	19	±						
		eF_N	20	20	±						
		eF_Z	20	12	±						
17	Mar. 2	iP_E	18	28	18						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		iP_Z	18	28	17						
		ePN	18	28	32						
		eF_E	18	32	±						
		eF_N	18	33	±						
		eF_Z	18	34	±						
18	Mar. 2	iP_{EN}	19	43	51					930	Ditto.
		iP_Z	19	43	49						
		iS_E	19	45	32						
		eS_N	19	45	33						
		iS_Z	19	45	39						
		M_N	19	46	28			+79			
		M_Z	19	47	42						
		eF_E	19	48	±						
		eF_N	19	49	±						
		eF_Z	19	45	±						
19	Mar. 2	iP_{EZ}	20	44	51					940	Ditto.
		ePN	20	44	49						
		iP_N	20	44	52						
		iS_E	20	46	33						
		iS_N	20	46	28						
		iS_Z	26	46	40						
		M_E	20	48	05	16.6	+58				
		M_N	20	47	48	15.5		−191			
		M_Z	20	48	29				+59		
		eF_E	21	20	±						
		eF_N	21	21	±						
		eF_Z	20	59	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
20	Mar. 3	P_{EN}	2	24	47						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		eF_E	2	30	±						
		eF_N	2	32	±						
21	Mar. 3	iP_E	4	40	06					940	Ditto.
		iP_N	4	40	10						
		iS_N	4	41	48						
		eF	4	51	±						
22	Mar. 3	iP	9	14	49					920	Ditto.
		iS_E	9	16	36						
		iS_N	9	16	23						
		iS_Z	9	16	31						
		M_E	9	18	50		+29				
		M_{NZ}	9	17	20			−93	−24		
		eF_{EN}	9	40	±						
		eF_Z	9	27	±						
23	Mar. 3	ePz	9	40	41					840	Ditto.
		iP_E	9	40	50						
		iP_N	9	40	49						
		iP_Z	9	40	51						
		iS_E	9	42	24						
		iS_N	9	42	16						
		M_N	9	44	31			+34			
		eF_E	9	50	±						
		eF_N	9	51	±						
		eF_Z	9	45	±						
24	Mar. 3	ePE_N	10	06	11						Ditto.
		iP_Z	10	06	10						
		eM_N	10	09	50						
		eF_{EN}	10	14	±						
		eF_Z	10	13	±						

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
25	Mar. 3	iP$_{EZ}$	10	34	13						An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933.
		iP$_N$	10	34	14						
		eF	10	39	±						
26	Mar. 3	iP$_{EN}$	11	48	08						In the Kasima Nada.
		iP$_Z$	11	48	11						
		eS$_E$	11	49	21						
		iS$_{NZ}$	11	49	10						
		M$_N$	11	49	18			−7			
		M$_Z$	11	49	25				−10		
		eF$_{EN}$	11	51	±						
		eF$_Z$	11	50	±						
27	Mar. 3	iP	11	58	42					910	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933
		eS$_E$	12	00	21						
		iS$_{NZ}$	12	00	22						
		M$_E$	12	00	25		±3				
		eF$_E$	12	02	±						
		eF$_{NZ}$	12	03	±						
28	Mar. 3	iP$_{EN}$	12	16	07						Very faint record.
		eF$_{EN}$	12	25	±						
29	Mar. 3	iP$_{EN}$	15	04	21					860	An after shock of the Great Earthquake, off the coast of Sanriku, on Mar. 2nd, 1933. Faint record.
		iS$_{EN}$	15	05	54						
		eF$_{EN}$	15	09	±						
30	Mar. 3	iP$_{EN}$	15	09	24					850	Ditto.
		iS$_{EN}$	15	10	56						
		M$_N$	15	11	44			−6			
		eF$_{EN}$	15	16	±						
31	Mar. 3	iP	19	09	25					880	Ditto.
		iS$_{EN}$	19	11	11						
		iS$_Z$	19	11	10						
		M$_N$	19	12	26			+8			

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eF$_{EN}$	19	15	±						
		eF$_Z$	19	14	±						
32	Mar. 6	iP$_E$	22	45	25		−2.1			133	In the Wakaura Bay, Kii Channel.
		iP$_N$	22	45	24			−4.4			
		iP$_Z$	22	45	23				+2.4?		Moderate shocks were felt at Wakayama City.
		iS	22	45	43						
		M	22	45	45		+12	−24	−15		
		F$_E$	22	47	47						
		F$_N$	22	48	01						
		F$_Z$	22	47	00						
33	Mar. 8	eP$_Z$	1	37	39				−2.4	880	An after shock of the Great Earthquake off the coast of Sanriku, on Mar. 2nd, 1933.
		iP	1	37	42		+1.6	+1.1			
		iS$_E$	1	39	15						
		iS$_N$	1	39	19						
		iS$_Z$	1	39	16						
		eF$_{EN}$	1	45	±						
		eF$_Z$	1	43	±						
34	Mar. 8	iP$_{EN}$	10	28	15					224	In the Iyo Nada, Inland Sea.
		iP$_Z$	10	28	19						Felt in Sanyô and Sikoku districts.
		iS$_E$	10	28	45						
		iS$_N$	10	28	46						
		M$_{EN}$	10	28	54	1.1	+11	+11			
		M$_Z$	10	28	56				±5		
		F$_E$	10	30.	03						
		F$_N$	10	30	06						
		F$_Z$	10	30	31						
35	ar. 9	eP$_E$	4	23	52					247	In the Kumano Nada, SE off Kii Peninsula.
		eP$_N$	4	23	51						
		iP$_Z$	4	23	54						
		iS$_{EN}$	4	24	25						
		M$_E$	4	24	30		−8				
		M$_N$	4	24	28			−10			

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		F_E	4	26	06						
		F_N	4	26	10						
		F_Z	4	26	08						
36	Mar. 9	iP_{EN}	19	37	12					117	Mouth of the Kuzuryû River, Hukui Prefecture.
		iP_Z	19	37	14						
		iS_{EN}	19	37	28						
		iS_Z	19	37	29						
		M_E	19	37	28	0.5	−24				
		M_N	19	37	29	0.6		+66			
		M_Z	19	37	30						
		F_{EN}	19	39	00						
		F_Z	19	38	32						
37	Mar. 11	eP_N	14	24	32						A distant earthquake. Dzungaria ?
		eP_E	14	25	14						P phase confused by micro-seisms.
		eL_E	14	30	32						
		eL_N	14	30	38						
		iL_Z	14	30	39						
		M_E	14	33	44	12.5	+16				
		M_N	14	31	59	14.6		−39			
		M_Z	14	32	53				−5		
		eF_E	14	49	±						
		eF_N	14	53	±						
		eF_Z	14	41	±						
38	Mar. 11	iP	19	35	02		+1.8	−4.3	−6.1	1000	WNW off Bonin Isl. Abnormal felt area in Kwanto district.
		iS	19	36	50						
		M_E	19	36	55	5.1	−101				
		M_N	19	36	56	4.9		+240			
		M_Z	19	37	24	3.2			−71		
		eF_E	19	52	±						
		eF_N	19	54	±						
		eF_Z	19	45	±						

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No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
39	Mar. 12	iP	7	38	47					201	In the Aki Nada.
		iS	7	39	15						Felt in the coast of the
		M_E	7	39	24		−9				western part of the Inland
		M_N	7	39	23	2.1		+15			Sea.
		M_Z	7	39	25				−8		
		F_E	7	41	[illegible]0						
		F_N	7	40	45						
		F_Z	7	40	24						
40	Mar. 17	iP_Z	16	01	06					2705?	Faint record.
		iP_E	16	01	13						Near Kamchatka district.
		iP_N	16	01	15						
		eS_E	16	05	50						
		iS_N	16	06	37						
		iL_E	16	10	33						
		eL_N	16	09	23						
		eF_E	16	42	±						
		eF_N	16	44	±						
		eF_Z	16	27	±						
41	Mar. 17	iP_N	19	38	38						Felt in eastern Mindanao,
		iP_Z	19	38	37						Philippine.
		eP_E	19	38	44						
		eS_N	19	44	11						
		iL_N	19	47	01						
		eL_N	19	47	44						
		M_{1N}	19	49	26	20.7		+14			
		M_{2N}	19	52	16	18.6		+15			
		M_Z	19	53	28	16.7			−7		
		eF_E	20	17	±						
		eF_N	20	21	±						
		eF_Z	20	10	±						
42	Mar. 18	iP	15	52	47		+14.7	−16.5	−29.3	397	Record is deep focus type. South off Hatidyô Isl.
		iS_{EN}	15	53	41						Abnormal felt area in the
		iS_Z	15	53	47						Kwanto district.

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No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		i_E	15	53	47						
		i_N	15	53	49						
		M_{EN}	15	54	02		−38	−69			
		M_Z	15	54	02				+107		
		eF_E	16	03	±						
		eF_N	16	06	±						
		eF_Z	16	01	±						
43	Mar. 21	iP_E	23	19	21					519	Near Volcano Aso, Kyûsyû.
		iP_N	23	19	22						
		eS_N	23	20	32						
		M_N	23	20	46			−8			
		eF	23	23	±						
44	Mar. 23	eP_N	17	44	32						A distant earthquake.
		eL_E	17	52	00						China ?
		eL_N	17	52	06						
		eF_E	18	05	±						
		eF_N	18	04	±						
45	Mar. 25	iP_E	12	51	33					411	Near Volcano Aso.
		iP_N	12	51	35						Felt in the all Kyûsyû.
		iP_Z	12	51	31						
		iS_{EN}	12	52	29						
		iS_Z	12	52	27						
		M_E	12	52	47		−18				
		M_N	12	52	50	6.2		−37			
		M_Z	12	52	45				−7		
		eF	12	56	±						

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