SEISMOLOGICAL BULLETIN

OF THE

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CONTENTS

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SEISMOLOGICAL BULLETIN

of the Imperial Marine Observatory and the Kobe Meteorological Observatory of Japan.
$\varphi = 34^\circ\ 41'\ 18''$ $\lambda = 135^\circ\ 10'\ 51''$ h = 58.3 m Undergound : Diluvial Series.

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

Oct.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	20.0		0.0003	20
AN:	22.1		0.0004	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	6.4	Aperiodic	0.006	123
AN:	7.2	„	0.005	137
AZ:	3.6	6.5	0.005	90

Nov.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	16.3		0.001	20
AN:	19.2		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	6.5	Aperiodic	0.006	108
AN:	7.0	„	0.006	112
AZ:	5.0	6.4	0.006	77

Dec.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	15.2		0.001	20
AN:	19.0		0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	6.5	Aperiodic	0.004	103
AN:	5.8	„	0.003	109
AZ:	4.9	„	0.003	80

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
170	Oct. 1	P	6 41 54		+11	−11		51	Near Wakayama City.
		S	6 42 01						
		MEN	6 42 03	0.6	+12	+13			
		MZ	6 42 06	0.6			±4		
		eFEN	6 47 ±						
		eFZ	6 45 ±						

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	
171	Oct. 1	eP_{EN}	15	09	56					820	NW far off Bonin Isl.
		iP_Z	15	09	57						Weak shocks were felt in the Bonin Isl.
		iS_E	15	11	23						
		S_N	15	11	24						Record is deep focus type.
		iS_Z	15	11	26						
		M_{1EN}	15	11	25	2.6	−18	+26			
		M_Z	15	11	27	4.5			−20		
		M_{2N}	15	12	21	3.7		±13			
		eF_E	15	16	±						
		eF_N	15	17	±						
		eF_Z	15	15	±						
172	Oct. 2	e_N	3	38	46						A distant earthquake.
		e_N	3	51	09						Central America ; 10.°9N 86.°5E (J.S.A.)
		e_Z	3	51	14						
		eL_N	3	54	02						Very faint record.
		eL_Z	3	54	10						
		M_N?	3	55	20	14.5		+2			
		eF_E	4	02	±						
		eF_{NZ}	4	09	±						
173	Oct. 5	eP_E	14	02	12						Off the Inubô Cape.
		eP_Z	14	0	13						Tiba Prefecture.
		i_Z	14	03	08						Faint record.
		M_N	14	03	11	2.5		+3			
		M_Z	14	03	09	2.0			−3		
		M_E	14	05	19	2.7	+2				
		eF_E	14	09	±						
		eF_N	14	08	±						
		eF_Z	14	06	±						
174	Oct. 6	iP	5	02	16		−1.1	+6.3	+2.1	600	SW off Hatidyô Isl.
		i_E	5	02	16		+5.0				Record is deep focus type.
		iS_{EN}	5	03	21		−30	+19			
		S_Z	5	03	19				−8		
		M_{1E}	5	03	23	3.7	+40				

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}	5	03	29	3.7		+35			
		M_Z	5	03	21	2.7			+17		
		M_{2E}	5	04	34	3.4	+26				
		M_{2N}	5	04	31	3.4		−44			
		eF_E	5	13	±						
		eF_N	5	12	±						
		eF_Z	5	10	±						
175	Oct. 10	eP_{EN}	5	18	45						In the Wakaura Bay, Kii Channel.
		iP_Z	5	18	45				−1.1	50	
		S_{EN}	5	18	53						Small movement.
		S_Z	5	18	52						
		M_E	5	18	53	0.6	±4				
		M_N	5	18	53	0.5		−4			
		F_E	5	19	33						
		F_N	5	19	43						
		F_Z	5	20	30						
176	Oct. 10	e_E	9	04	33						Faint record.
		e_Z	9	04	32						Middle basin of the Oôtuti River, Iwate Prefecture.
		e_N	9	07	14						
		M_E	9	07	25	3.0	+5				Moderate shocks were felt at the epicentral region.
		M_N	9	07	34	3.6		±6			
		M_Z	9	07	30	3.5			−2		
		eF_{EN}	9	12	±						
		eF_Z	9	11	±						
177	Oct. 14	e_{EN}	12	37	08					402	SSW off Hatidyô Isl.
		eP_Z	12	37	08						Felt in Eastern part of Kwantô district.
		iP_{EN}	12	37	10		+8.9	+4.0			
		i_Z	12	37	10				−8.0		Focal depth about 120 km.
		S_E	12	38	02						
		S_N	12	38	01						
		eS	12	38	05						
		M_E	12	38	06	3.5	+47				
		M_{1N}	12	38	06	3.5		+28			

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	12	39	02	5.2			+3		
		M_{2N}	12	39	05	3.5		−12			
		eF_E	12	46	±						
		eF_N	12	47	±						
		eF_Z	12	45	±						
178	Oct. 16	eP_E	0	11	13						South off the Inubô Cape Tiba Prefecture.
		eS_N	0	12	05						
		eS_Z	0	12	04						
		M_E	0	12	33	3.3	+5				
		M_N	0	12	21	3.8		−6			
		M_Z	0	12	33	2.9			±2		
		eF_{EN}	0	18	±						
		eF_Z	0	16	±						
179	Oct. 16	eS_N	2	04	22						SE off the Inubô Cape, Tiba Prefecture.
		M_E	2	04	40	2.5	+2				
		M_N	2	04	39	2.5		+3			
		M_Z	2	04	38						
		eF	2	08	±						
180	Oct. 16	eP_E	12	16	48					5320	A distant earthquake. Gulf of Alaska.
		eP_N	12	16	49						
		iP_Z	12	16	47				+3.8		
		i_{EN}	12	17	01	3.5	−7	−6			
		i_Z	12	17	00						
		P_{R1}	12	18	29						
		eS_{EN}	12	23	48						
		S_Z	12	23	47						
		i_Z	12	23	59	6.0			±2		
		eL_Z	12	29	26						
		M_E	12	34	59	19.5	±1				
		M_N	12	35	30	19.2		±1			
		M_Z	12	36	37	19.6			+2		
		eF_E	12	47	±						
		eF_N	12	51	±						
		eF_Z	12	53	±						

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
181	Oct. 17	P	2	00	57					38	Upper valley of the Kako River, Hyôgo Prefecture.
		S	2	01	02						
		M_{EN}	2	01	03	0.9	+3	−4			
		M_Z	2	01	03	0.7			+3		
		F_{EN}	2	01	21						
		F_Z	2	01	26						
182	Oct. 17	eP_E	19	55	27					28	Local shock.
		S_{EN}	19	55	31						
		M_{EN}	19	55	32	0.6	+4	−6			
		F_E	19	55	48						
		F_N	19	55	50						
183	Oct. 21	e_{EN}	10	48	36					121	Near Irako-zaki, Aiti Prefecture.
		eF_Z	10	48	31						
		S_{EN}	10	48	46						
		M_E	10	48	52	1.0					
		M_N	10	48	52	1.1					
		M_Z	10	48	59	1.3					
		F_E	10	49	41						
		F_N	10	49	42						
		F_Z	10	49	34						
184	Oct. 23	eP_{EZ}	21	31	35						ENE off Kwarenkô, Formosa.
		eS_{EN}	21	34	58						
		eS_Z	21	35	00						
		M_Z	21	37	11	18.3			−2		
		eF_{EN}	21	49	±						
		eF_Z	21	46	±						
185	Oct. 25	eP_{EN}	17	05	13					1420	ENE off Nakasiretoko Cape, Sakhalin. 145.°3E 46.°3N.
		eP_Z	17	05	12						
		i_Z	17	05	15				−10		Felt in Pacific coast of Oôu and Hokkaidô.
		i_N	17	06	50						
		iS_E	17	07	42						It is recorded clearly in the deep focus type.
		S_Z	17	07	44						

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	17	07	45	3.2	±17				
		M_N	17	07	48	5.6		±35			
		M_Z	17	07	46	2.4			−9		
		eF_E	17	15	±						
		eF_N	17	19	±						
		eF_Z	17	13	±						
186	Oct. 27	eE_N	11	53	38						Upper valley of the Toyo River, Aiti Prefecture.
		M_{EN}	11	53	40	1.7	−5				
		eF_{EN}	11	57	±						
187	Oct. 30	iP_{EN}	1	02	01		+3.6	+2.4		283	Near Takayama, Gifu Prefecture.
		iP_Z	1	02	00				−2.3		
		S_E	1	02	39		+5				
		S_N	1	02	38			−4			
		iS	1	02	39						
		M_{EN}	1	02	39	3.7	+7	+9			
		M_Z	1	02	40	2.6			±2		
		eF_{EN}	1	08	±						
		eF_Z	1	05	±						
188	Oct. 30	eP_E	20	55	41					5340	A distant earthquake. Gulf of Alaska.
		P_{NZ}	20	55	41						
		PM_Z	20	55	44	3.5			−4		
		i_{EN}	20	55	52	2.7	−4	−5			
		i_Z	20	55	52						
		eS_E	21	02	42						
		eS_N	21	02	41						
		eS_Z	21	02	40						
		M_N	21	15	39	21.0		±1			
		eF_E	21	22	±						
		eF_E	21	30	±						
		eF_Z	21	29	±						
189	Nov. 3	eP_N	19	47	28					2665	A distant earthquake. Caloline Ils, North Pacific Ocean.
		eP_Z	19	47	30						

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eS$_E$	19	51	46						Faint record.
		i$_E$	19	51	52	6.0	−4				
		M$_N$	19	53	59	6.0		+1			
		eF$_E$	20	01	±						
		eF$_N$	20	02	±						
		eF$_Z$	20	01	±						
190	Nov. 6	P$_{EN}$	1	33	34		+1.3			76	In the Kii Channel.
		S$_{EN}$	1	33	44		−6	−4			
		M$_E$	1	33	52	1.1	−13				
		M$_N$	1	33	48	0.9		−11			
		eF$_{EN}$	1	35	04						
191	Nov. 6	P$_{EN}$	4	10	02					65	Near Hinomisaki, Waka-
		iS$_{EN}$	4	10	11		−4	−3			yama Prefecture.
		M$_E$	4	10	12	0.8	−10				
		M$_N$	4	10	12	0.7		−11			
		eF$_{EN}$	4	12	±						
192	Nov. 8	P$_{EN}$	22	20	22					81	Near Ryujin, Wakayama
		P$_Z$	22	20	23						Prefecture.
		S$_{EN}$	22	20	32		−5	−8			
		S$_Z$	22	20	33						
		M$_E$	22	20	33	0.7	+9				
		M$_N$	22	20	33	0.6		+17			
		M$_Z$	22	20	33	0.5			−4		
		F$_E$	22	21	31						
		F$_N$	22	21	39						
		F$_Z$	22	21	40						
193	Nov. 10	eP$_E$	10	58	03						SE off Hatidyô Isl.
		eP$_{NZ}$	10	58	08						
		e$_Z$	11	00	44						
		M$_N$	11	04	14	7.4		±2			
		M$_Z$	11	02	21	8.9			±1		

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eF$_E$	11	12	±						
		eF$_N$	11	19	±						
		eF$_Z$	11	15	±						
194	Nov. 10	P	11	30	39					64	Near Hinomisaki, Waka-
		S$_{EN}$	11	30	47		+2	+4			yama Prefecture.
		eS$_Z$	11	30	47						Small movement.
		M	11	30	48	0.4	−4	+5	+2		
		F$_E$	11	32	07						
		F$_N$	11	32	05						
		F$_Z$	11	31	51						
195	Nov. 13	iP	4	49	08		−2.5	+46.4	−98.7	940	Northern part of Japan
		i$_E$	4	49	08		+43				Sea ; 137.°3E 43.°5N.
		PM$_E$	4	49	10	2.7	−57				Focal depth about 350 km.
		PM$_N$	4	49	11	3.8		−94			Abnormally felt areas in
		PM$_Z$	4	49	10	3.6			+162		the Pacific coast of Hok-
		iS$_E$	4	50	49		−160				kaido, Oou and Kwanto
		S$_N$	4	50	50			−71			distrit
		S$_Z$	4	50	51				+74		
		M$_E$	4	50	57	6.4	−291				
		M$_N$	4	50	58	5.0		+259			
		M$_Z$	4	50	58	4.2			+270		
		i$_E$	5	01	32	6.7	−44				}
		i$_N$	5	01	32	5.4		+22			} ScS wave?
		i$_Z$	5	01	31	5.6			−16		}
		eF$_E$	5	23	±						
		eF$_N$	5	26	±						
		eF$_Z$	5	18	±						
196	Nov. 17	P$_{EN}$	20	12	52		+0.3	+1.0		408	In the Ôsumi Channel,
		eP$_Z$	20	12	52						south off Kagoshima Pre-
		i$_{EN}$	20	12	54						fecture.
		S$_{NZ}$	20	13	47			+2			Felt in southeastern Kyûsyû.
		M$_{EN}$	20	13	52	1.4	+8	−8			Focal depth about 100 km.
		M$_Z$	20	13	52	1.2			+2		

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$_{EN}$	20	18	±						
		eF$_Z$	20	17	±						
197	Nov. 18	P$_N$	13	53	36						A distant earthquake.
		P$_Z$	13	53	35						Felt in Minahasa Celebes.
		PM$_N$	13	53	38	1.4		−5			Faint record.
		PM$_Z$	13	53	37	1.4			−6		
		eF$_E$	13	59	±						
		eF$_{NZ}$	14	01	±						
198	Nov. 22	eP$_{EN}$	21	32	15						Arita River, Wakayama Prefecture.
		iE	21	32	17						
		iS$_E$	21	32	21						Small movement.
		M$_E$	21	32	22	0.8	−3				
		M$_N$	21	32	22	0.7		−3			
		F$_E$	21	33	28						
		F$_N$	21	33	33						
199	Nov. 26	eP$_{EN}$	4	26	17		+0.9	−2.0		990	Mouth of the Niikappu River, Hidaka, Hokkaido.
		eP$_Z$	4	26	15				−1.5		
		iP$_{EN}$	4	26	17		−7.3	−4.1			Small damage at the near epicentral region.
		iP$_Z$	4	26	16				+7.5		
		S$_E$	4	28	04		−35				
		M$_{1E}$	4	28	36	6.5	+56				
		M$_N$	4	28	35	7.0		+52			
		M$_Z$	4	28	23	5.0			+32		
		M$_{2E}$	4	31	10	6.6	−52				
		eF$_E$	4	59	±						
		eF$_N$	5	00	±						
		eF$_Z$	4	56	±						
200	Nov. 27	M$_E$	3	43	41		−1				NNW off Bonin Isl. Faint record.
		M$_N$	3	42	46	16.3		+2			
		M$_Z$	3	43	11	15.6			−4		
		eF$_E$	3	54	±						
		eF$_N$	3	56	±						
		eF$_Z$	4	03	±						

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.	
201	Nov. 29	eP_N	20	15	57					410	Hyuga-nada, SE off Miyazaki Prefecture.
		S_{EN}	20	16	52		+2	−2			
		S_Z	20	16	51						
		M	20	16	59	1.5	+5	+4	+3		
		eF_{EN}	20	21	±						
		eF_Z	20	20	±						
202	Dec. 1	eP	17	42	22					505	Near Mito, Ibaraki Prefecture.
		S_{NZ}	17	43	31				+11		
		M_E	17	43	46	2.2	+13				
		M_N	17	43	41	2.2		+16			
		M_Z	17	43	40	2.5			+15		
		eF_{EN}	17	52	±						
		eF_Z	17	50	±						
203	Dec. 4	eP_E	8	18	07					3748	Sea of Celebes.
		P_{NZ}	8	18	06			−3.7	−3.5		Felt in southern part of Philippine (according to Manila's report).
		iP_N	8	18	16			−9.0			
		iP_Z	8	18	17				−10.0		
		P_{RIN}	8	19	27	5.5					
		P_{RIZ}	8	19	27	4.5					
		eS_{NZ}	8	23	39						
		i_N	8	26	17			−16			
		i_Z	8	26	16	15.0			+13		
		eL_E	8	27	27	18.8					
		eL_N	8	29	41						
		M_E	8	31	34	20.0	−11				
		M_N	8	31	34	20.0		+15			
		M_Z	8	31	28	20.7			+15		
		eF_{EN}	9	21	±						
		eF_Z	9	08	±						
204	Dec. 4	eP_N	10	40	02					3800	Ditto.
		eP_Z	10	40	04						
		eS_{EN}	10	45	37						
		M_N	10	51	52	18.3		+2			

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	52	38	21.8			±1		
		eF_E	10	59	±						
		eF_N	11	04	±						
		eF_Z	10	58	±						
205	Dec. 4	eP_N	22	42	10					365	Northern foot of the Mt. Amagi, Izu Province.
		eS_E	22	42	58		+5				
		eS_N	22	43	00			+2			
		M_E	22	43	16	2.3	−8				
		M_N	22	43	11	2.3		−5			
		M_Z	22	43	17	2.4			+4		
		eF_{EN}	22	53	±						
		eF_Z	22	48	±						
206	Dec. 5	iP	0	20	22		−11.0	−2.1	+17.5	339	In the Kumano-nada, SE off Kii Peninsula.
		iS_{EZ}	0	21	08		−21		+4		
		iS_N	0	21	09			−24			Focal depth about 350 km
		M_E	0	21	10	3.2	+38				Abnormally felt areas in
		M_N	0	21	10	2.7		+32			Kwanto and Oôu districts.
		M_Z	0	21	10	1.5			+13		
		eF_{EN}	0	33	±						
		eF_Z	0	30	±						
207	Dec. 7	P_N	8	57	47					66	Near Syuzan, Kyoto Prefecture.
		F_Z	8	57	46						
		S_{EN}	8	57	56		+9	+4			
		M_E	8	57	57	0.6	−8				
		M_N	8	57	56	0.6		−7			
		M_Z	8	57	57	0.5			−5		
		eF	9	00	±						
208	Dec. 9	P	4	19	31		+4.1	+3.0	−2.0	88	Near Amabe, northeastern part of Kyoto Prefecture.
		iS_E	4	19	43		−44				
		S_Z	4	19	42				+29		Moderate shocks were felt
		M_E	4	19	45	1.0	+90				in the neighbourhood of
		M_N	4	19	48	0.9		−40			the epicentral region.

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	4	19	45	1.0			−45		Felt in the Japan Sea coast of Hokuriku, Kinki and Sanin districts.
		eF	4	28	±						
209	Dec. 9	M_E	4	57	23	1.0	−3				Near Yatabe Cape, NW coast of Tosa Bay, Sikoku district.
		M_N	4	57	25	0.8		±1			
		Mz	4	57	22	1.3			±1		
		eF	4	59	±						
210	Dec. 14	e_{EN}	16	53	09						In the Kii Channel.
		S_E	16	53	23						
		M_E	16	53	24	0.6	−3				
		eF_{EN}	16	55	±						
211	Dec. 15	eP_N	19	37	56						East of Kôsyun, Formosa.
		eP_Z	19	37	58						
		eS_N	19	41	28						
		M_N	19	48	19	18.4		±1			
		eF_E	19	54	±						
		eF_N	19	56	±						
		eF_Z	19	52	±						
212	Dec. 16	P_{NZ}	7	20	16						A distant earthquake. Mindanao, Philippine.
		eF_E	7	29	±						
		eF_N	7	30	±						Felt at Davao; according to Manila's report.
		eF_Z	7	28	±						
213	Dec. 18	eP_E	8	55	07						Near Wakayama City.
		iS_{EN}	8	55	11		−2	+2			
		M_{EN}	8	55	12	0.5	+2	−2			
		eF_{EN}	8	57							
214	Dec. 21	P_Z	6	22	28				+6.3		A distant earthquake. Nevada, U.S.A.
		i_E	6	32	28	4.5	+1				
		eL_N	6	41	50						
		M_N	6	47	59	22.3		+1			

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$_E$	7	12	±						
		eF$_N$	7	16	±						
		eF$_Z$	7	11	±						
215	Dec. 24	eP$_N$	6	38	04					4303	A distant earthquake.
		P$_Z$	6	38	04						Near Brit. New-Guinea.
		eS$_N$	6	44	08						
		eL$_{EN}$	6	47	05						
		eL$_Z$	6	47	09						
		M$_E$	6	48	26	18.8	−2				
		M$_N$	6	49	16	19.3		+2			
		M$_Z$	6	50	59				−1		
		eF$_E$	7	09	±						
		eF$_N$	7	17	±						
		eF$_Z$	7	08	±						
216	Dec. 24	M$_E$	16	48	31		±1				Upper valley of Niyodo
		M$_Z$	16	48	33	0.9			±1		River, Ehime Prefecture.
		F$_{EN}$	16	48	58						Trace of only.
		F$_Z$	16	48	51						
217	Dec. 24	iP	22	34	27					78	In the Kii Channel.
		iS	22	34	38		−12	−15			
		M$_E$	22	34	38	0.8	+13				
		M$_N$	22	34	38	0.7		−15			
		M$_Z$	22	34	38	0.9			+5		
		eF	22	36	±						
218	Dec. 25	P$_{EZ}$	2	10	44					3400	A distant earthquake.
		P$_{R_1E}$	2	12	18						Frontier of Kan-su, Sing-Kiang and Mongolia, China; 96°E 44°N.
		P$_{R_2E}$	2	12	43						
		S$_E$	2	15	55						
		S$_Z$	2	16	16				+35		Destructive at Suchow, China.
		L$^{(Q)}_E$	2	18	02	62.0					
		L$^{(Q)}_Z$	2	18	03						
		L$^{(R)}_E$	2	21	08						

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.	
		$L^{(R)}_Z$	2	21	29						
		M_E	2	23	55	14.1	$>\pm700$				
		M_N	2	21	55	21.6		$>\pm700$			
		M_{1Z}	2	24	36	15.1			−284		
		M_{2Z}	2	25	05	12.9			−290		
		$M_{?Z}$	2	26	38	10.3			−288		
		eF_E	4	15	±						
		eF_N	4	23	±						
		eF_Z	4	27	±						
219	Dec. 26	ePE_N	21	17	49					953	SW off Okinawa Isl, Ryûkyû Ils.
		F_Z	21	17	47						
		eS_N	21	19	32						Felt in southern part of Ryûkyû Ils.
		M_E	21	19	59	3.0	+5				
		M_N	21	20	01	2.5		+5			
		M_Z	21	19	59				−2		
		eF_E	21	27	±						
		eF_N	21	32	±						
		eF_Z	21	26	±						
220	Dec. 26	ePE_N	22	34	26					1497	South off Bonin Isl.
		eP_Z	22	34	22						
		iSE_N	22	37	02						
		M_E	22	37	08	2.2	+10				
		M_N	22	37	21	2.9		+9			
		M_Z	22	37	21	5.0			+6		
		eF_E	22	46	±						
		eF_N	22	48	±						
		eF_Z	22	43	±						

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)

Oct.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	18.2	1.7	0.001	20
AN:	16.6	2.9	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.8	Aperiodic	0.002	106
AN:	4.6	„	0.002	105
AZ:	4.3	„	0.002	63

Nov.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.3	1.7	0.0003	20
AE:	16.2	2.9	0.0003	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.8	Aperiodic	0.003	107
AN:	4.5	„	0.002	100
AZ:	4.2	„	0.002	65

Dec.

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	17.0	1.7	0.001	20
AN:	15.0	1.8	0.001	20

	T_o	ε	$\frac{r}{T_o^2}$	V
AE:	4.6	Aperiodic	0.002	114
AN:	4.4	„	0.003	110
AZ:	4.3	„	0.002	64

No.	Date	Phase	Time G. M. T.	Period	Amplitude AE	AN	AZ	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
*271	Oct. 1	iP	6 41 50		+2.8	−3.8	−4.0	31	Near Wakayama City.
		iS	6 41 54						Perceptible.
		ME	6 41 55	0.5	−31				
		MN	6 41 55	0.4		−44			
		MZ	6 41 55	0.7			±8		
		FEN	6 45 07						
		FZ	6 43 10						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
272	Oct. 1	iP$_{EN}$	15 09 57					621	NW far off Bonin Isl.
		iF$_Z$	15 09 56						Weak shocks were felt at
		iS$_{EN}$	15 11 20						Bonin Isl.
		M$_E$	15 11 25	3.9	−10				
		M$_N$	15 11 25	2.7		−10			
		M$_Z$	15 11 25	1.5			+2		
		F	15 17 20						
273	Oct. 1	eP	21 15 58					26	Near Wakayama City.
		S	21 16 01						
		M$_{EN}$	21 16 02		−1	±1			
		F	21 16 13						
274	Oct. 2	eP$_{EN}$	3 38 58					11550	A distant earthquake.
		eS$_E$	3 50 50						Central America.
		eS$_N$	3 51 12						
		eL$_E$	3 54 25						
		eL$_N$	3 54 39						
		eF	4 09 ±						
275	Oct. 5	eP$_E$	3 22 59					134	Northern part of the
		eP$_N$	3 23 03						Bungo Channel?
		eS$_N$	3 23 21						
		M$_E$	3 23 37	1.7	−1				
		M$_N$	3 23 23	1.5		−1			
		F	3 24 57						
276	Oct. 5	eP$_E$	3 51 36					517	ESE off Hatidyô Isl.
		eP$_N$	3 51 37						
		S$_{EN}$	3 52 46						
		eF	3 55 ±						
277	Oct. 5	eP$_N$	14 02 16					409	Off the Inubô Cape, Tiba
		S$_E$	14 03 07						Prefecture.
		S$_N$	14 03 11						
		M$_E$	14 03 45	2.6	±1				

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	14	03	36	2.4		±1			
		M_Z	14	03	29	2.1			±1		
		F_{EN}	14	07	20						
		F_Z	14	06	11						
278	Oct. 6	iP	5	02	14		−0.9	+1.0	+1.6	467	SW off Hatidyô Isl.
		S_{EN}	5	03	16						
		S_Z	5	03	18						
		M_{EN}	5	03	20	3.1	+31	−15			
		M_Z	5	03	19	2.4			+10		
		eF_{EN}	5	10	±						
		eF_Z	5	07	±						
279	Oct. 9	P	23	36	21					35	In the Kii Channel.
		S	23	36	36						
		M	23	36	37	0.4	−2	+2			
		F	23	37	04						
*280	Oct. 10	iP	5	18	39		+0.9	−1.1	−1.8	28	In the Wakaura Bay, Kii Channel.
		iS	5	18	43						Perceptible.
		M	5	18	43	0.4	+7	±8	−2		
		F_{EN}	5	19	42						
		F_Z	5	19	22						
281	Oct. 10	P_N	9	04	31					603	Middle basin of the Otuti River, Iwate Prefecture.
		P_E	9	04	44						
		P_Z	9	04	45						Moderate shocks were felt at the epicentral region.
		S_{EN}	9	05	59						
		M_E	9	06	14	2.8	+1				
		M_N	9	06	26	2.5		±1			
		M_Z	9	06	35	2.7			−1		
		eF_{EN}	9	11	±						
		eF_Z	9	08	±						
282	Oct. 13	eP_{EN}	4	39	01						Irregular record.
		e_E	4	42	14						

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.	
		eN	4	42	15						
		eF	4	43	±						
283	Oct. 14	P	5	04	36					29	Near Wakayama City.
		S	5	04	40						
		M	5	04	41		±1	−1			
		F	5	04	48						
284	Oct. 14	P	5	04	57					30	Ditto.
		S	5	05	01						
		M_E	5	05	02	0.6	−4				
		M_N	5	05	02	0.4		−8			
		M_Z	5	05	02				±2		
		F	5	05	39						
285	Oct. 14	P_{EZ}	12	37	07					402	SSW off Hatidyô Isl.
		P_N	12	37	08						Felt in eastern part of
		S_{EN}	12	38	01						Kwantô district.
		S_Z	12	38	04						
		M_E	12	38	04	2.7	−9				
		M_N	12	38	04	2.5		+11			
		M_Z	12	38	05	2.2			−2		
		eF_{EN}	12	43	±						
		eF_Z	12	40	±						
286	Oct. 16	eP_E	0	11	51						South off the Inubô Cape,
		eP_N	0	11	49						Tiba Prefecture.
		P_N	0	12	02						
		F?	0	23	±						
287	Oct. 16	eP_E	2	03	59						Ditto.
		eP_N	2	03	58						
		F?	2	06	±						
288	Oct. 16	P_{EN}	12	16	47		−0.5	−1.0		5450	A distant earthquake.
		F_Z	12	16	48				+1.6		Gulf of Alaska.

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.	
		S_E	12	23	51						
		S_N	12	23	57						
		eL_E	12	29	12						
		M_E	12	35	14	20.6	±18				
		M_N	12	35	12	22.5		±20			
		M_Z	12	35	12	21.5			±13		
		eF_{EN}	12	57	±						
		eF_Z	12	52	±						
289	Oct. 17	P_N	1	23	03					51	Local shock?
		S_{EN}	1	23	10						
		M_{EN}	1	23	11	0.3	+1	−2			
		F	1	23	27						
290	Oct. 17	S_{EN}	2	01	11						Upper valley of the Kako
		M_E	2	01	11		−2				River, Hyôgo Prefecture.
		M_N	2	01	11	0.3		+5			
		F	2	01	29						
291	Oct. 17	P	13	03	57		−1.4	+1.0		28	Near Wakayama City.
		S	13	04	01						
		M_E	13	04	02	0.8	−5				
		M_N	13	04	01	0.5		−8			
		M_Z	13	04	01				±2		
		F	13	04	40						
292	Oct. 21	P	10	48	50					82	Near Irako Zaki, Aiti Pre-
		S	10	49	01						fecture.
		M_E	10	49	03	0.7	±1				
		M_N	10	49	03	0.8		±2			
		F	10	49	23						
293	Oct. 23	P_E	21	31	29					1640	ENE off Kwarenkô,
		P_N	21	31	32						Formosa.
		eS_E	21	34	11						Felt in NE Formosa.
		eS_N	21	34	30						(By Omori's Seismograph)
		eL_E	21	36	33						

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	
		eL$_N$	21	36	44						
		M$_E$	21	38	36	14.0	+35				
		M$_N$	21	39	03	14.5		−30			
		M$_Z$	21	36	58	21.8			−10		
		eF$_{EN}$	22	00	±						
		eF$_Z$	21	46	±						
294	Oct. 25	P$_E$	17	05	19		−0.9			1440	ENE off Naka-Siretoko Cape, Kalafuto.
		P$_{NZ}$	17	05	18			−1.9	+0.8		
		S$_{EN}$	17	07	49						Felt in Pacific coast of Ôôu and Hakkaidô.
		S$_Z$	17	07	50						
		M$_E$	17	07	54	3.3	+8				
		M$_N$	17	07	58	3.3		−8			
		M$_Z$	17	07	56	2.2			+5		
		eF$_{EN}$	17	18	±						
		eF$_Z$	17	15	±						
295	Oct. 26	eP	14	38	38					36?	Near Hatiman, upper valley of the Arita R., Wakayama Prefecture.
		S	14	38	43						
		M$_E$	14	38	45	0.4	±1				
		M$_N$	14	38	45			−2			
		F	14	39	23						
296	Oct. 26	P	20	33	44					25	Near Wakayama City.
		S	20	33	48						
		M$_E$	20	33	48	0.4	−1				
		M$_N$	20	33	48	0.2		+4			
		F	20	34	29						
297	Oct. 27	S	8	37	23						Local shock.
		M$_E$	8	37	24		±1				
		M$_N$	8	37	23	0.3		−2			
		F	8	37	32						
298	Oct. 27	P	8	37	51					26?	Local shock.
		S	8	37	55						

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	S	37	56	0.4	−2	+2			
		F	S	38	29						
299	Oct. 27	P	11	53	42						Local shock.
		eF	11	56	±						
300	Oct. 29	iP	11	12	24		+1.9	−2.0	−1.6	27	Off the mouth of Arita River, Wakayama Prefecture.
		iS	11	12	28						
		M_E	11	12	29	0.3	−8				
		M_N	11	12	28	0.4		−17			
		M_Z	11	12	28	0.3			±3		
		F_{EN}	11	13	29						
		F_Z	11	13	18						
301	Oct. 30	P	1	02	04					296	Near Takayama, Gifu Prefecture.
		S	1	02	44						
		M_E	1	02	47	2.9	−3				
		M_N	1	02	45	1.1		−1			
		F	1	06	19						
302	Oct. 30	P_E	20	55	43					5540	A distant earthquake. Gulf of Alaska.
		P_N	20	55	44						
		P_Z	20	55	44						
		eS_E	21	02	45						
		eS_N	21	03	06						
		eF_E	21	22	±						
		eF_N	21	17	±						
303	Nov. 2	P	2	00	05					19	Siga, near Hinomisaki, Wakayama Prefecture.
		S	2	00	07						
		M_E	2	00	08		±1				
		M_N	2	00	08	0.3		+1			
		F	2	00	22						
304	Nov. 2	P	5	12	10					31	In the Wakaura Bay, Kii Channel.
		S	5	12	14						

No.	Date	Phase	Time G. M. T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remarks
			h m s	s	μ	μ	μ	km.	
		M_E	5 12 14	0.3	−4				
		M_N	5 12 14	0.4		−5			
		F	5 12 57						
305	Nov. 3	P_{EZ}	19 47 18					2120	Caloline Ils. North Pacific Ocean.
		P_N	19 47 16						
		S_E	19 50 49						
		S_N	19 50 53						
		eS_Z	19 50 49						
		M_E	19 51 45	8.4	−8				
		M_N	19 51 45	6.8		−11			
		eF_{EN}	20 01 ±						
		eF_Z	19 59 ±						
306	Nov. 4	P	12 29 05					32	Near Wakayama City.
		S	12 29 10						
		M	12 29 10	0.3	±1	−2			
		F	12 29 28						
307	Nov. 6	iP_E	1 33 29		−1.4			45	In the Kii Channel.
		iP_{NZ}	1 33 30			−2.5	−3.1		
		iS_{EN}	1 33 36						
		eS_Z	1 33 36						
		M_E	1 33 36	0.4	−14				
		M_N	1 33 37	0.7		−14			
		M_Z	1 33 37	0.8			−5		
		M_{2EN}	1 33 41	0.8	−9	−13			
		F_{EN}	1 35 37						
		F_Z	1 34 38						
*308	Nov. 6	P_{EN}	4 09 57			−1.5		39	Near Hinomisaki, Wakayama Prefecture.
		F_Z	4 09 56						
		S	4 10 02						Perceptible.
		M_E	4 10 02	0.4	±21				
		M_{NZ}	4 10 03	0.3		±32	−6		

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.	
		FEN	4	12	05						
		FZ	4	11	33						
309	Nov. 6	eP_N	16	36	37					32	In the Wakaura Bay,
		SEN	16	36	41						Kii Channel.
		M	16	36	42		−1	−2			
		F	16	37	04						
310	Nov. 7	S	15	55	48						Local shock.
		M	15	55	48		±1	−2			
		F	15	55	57						
311	Nov. 8	P	14	38	41					30	In the Kii Channel.
		S	14	38	45						
		MEN	14	38	46	0.2	−3	+5			
		MZ	14	38	46				±1		
		F	14	39	15						
312	Nov. 8	eP	19	33	24					229	In the Aki Nada, Inland
		S	19	33	54						Sea.
		ME	19	33	57	1.0	±1				
		MN	19	34	01	1.0		±1			
		F	19	34	43						
313	Nov. 8	P	22	20	21			−2.0		68	Ryujin, Wakayama Prefec-
		S	22	20	30						ture.
		M_{1E}	22	20	30	0.5	+4				
		M_{1N}	22	20	30	0.6		±8			
		M_{2EN}	22	20	31	0.4	−6	±8			
		F	22	21	20						
314	Nov. 9	eP_N	21	38	04						In the Wakaura Bay.
		SEN	21	38	14						Kii Channel.
		ME	21	38	15		−1				
		MN	21	38	15	0.5		+2			
		F	21	38	38						

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.	
315	Nov. 10	P	10	58	07					2000	SE off Hatidyô Isl.
		S	11	01	30						
		M_E	11	03	55	9.1	−2				
		M_N	11	03	19	10.0		±2			
		eF_{EN}	11	16	±						
		eF_Z	11	12	±						
316	Nov. 10	P	11	30	33					48	Near Hinomisaki, Waka-
		S	11	30	39						yama Prefecture.
		M	11	30	40	0.4	−11	−18	−3		
		F_{EN}	11	31	41						
		F_Z	11	31	36						
317	Nov. 12	eP_N	2	10	05					37	Local shock.
		S_{EN}	2	10	09						
		M	2	10	09		+1	−2			
		F	2	10	18						
318	Nov. 12	eP_N	23	54	14					44	Arita River, Wakayama
		S_{EN}	23	54	20						Prefecture.
		M	23	54	20		−1	±2			
		F	23	54	35						
319	Nov. 13	iP	4	49	12		+3.7	+42.0	−29.2	777	Northern part of the Japan Sea, 137.°3E, 43.°5N.
		PM_E	4	49	17	1.8	+26				
		PM_N	4	49	15	3.6		−75			Deep focus earthquake.
		PM_Z	4	49	15	2.2			+54		Focal depth about 350 km.
		iS	4	50	57						Abnormally felt areas in
		M_{1E}	4	51	03	6.8	+197				the Pacific coast of NE
		M_{1N}	4	51	05	3.0		+83			Japan and Hokkaidô.
		M_Z	4	51	00	4.7			−28		
		M_{2E}	4	51	46	8.3	+151				
		M_{2N}	4	51	55	6.4		+69			
		eF_E	5	32	±						
		eF_N	5	38	±						
		eF_Z	5	17	±						

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.	
320	Nov. 13	e_{EN}	5	01	31		+25.2	−19.0			ScS wave of previous
		e_Z	5	01	32				+4.6		earthquake?
		M_E	5	01	34	5.4	−37				
		M_N	5	01	33	3.1		−17			
		M_Z	5	01	35	2.8			±23		
		eF_E	5	32	±						
		eF_N	5	38	±						
		eF_Z	5	17	±						
321	Nov. 16	P_{EN}	6	13	11						West off Siomisaki, South
		S	6	13	24						off Kii Peninsula.
		M_E	6	13	25		±1				
		M_N	6	13	25	0.4		+3			
		M_Z	6	13	26	1.1			+1		
		F_{EN}	6	14	19						
		eF_Z	6	14	±						
322	Nov. 17	P	20	12	47		+0.9	−1.0?	+0.9	389	In the Ôsumi Channel,
		S_E	20	13	41						South of Kagosima Prefec-
		S_N	20	13	39						ture.
		S_Z	20	13	40						Focal depth about 100 km.
		SM_E	20	13	41	0.6	−7				Felt in Southern Kyûsyû.
		SM_N	20	13	45	0.5		−7			
		SM_Z	20	13	43	0.8			±2		
		L	20	13	53						
		M_E	20	14	17	2.0	±2				
		M_N	20	13	58	0.8		+6			
		M_Z	20	13	54	0.9			±2		
		F_E	20	17	52						
		F_N	20	17	30						
		F_Z	20	15	26						
323	Nov. 18	eP_{EN}	12	03	44						In the Kii Channel.
		S	12	03	45						
		M_E	12	03	46	0.5	±1				
		M_N	12	03	46			−1			
		F	12	04	00						

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.	
324	Nov. 18	P	13	52	55						A distant earthquake.
		i_E	13	55	00						Felt in Minahasa, Celebes.
		e_N	13	54	50						
		e_Z	13	54	29						
		eF_{EN}	14	04	±						
		eF_Z	14	00	±						
325	Nov. 22	eP_{EN}	21	31	57		−1.9	+1.5		73	Arita River, Wakayama Prefecture.
		P	21	32	01						
		S	21	32	07						
		M_{EN}	21	32	07	0.4	+2	−4			
		M_Z	21	32	08	0.3			±2		
		F	21	32	41						
326	Nov. 23	P_{EN}	4	50	25					32	In the Wakaura Bay, Kii Channel.
		S	4	50	29						
		M_{EN}	4	50	30	0.4	±1	±3			
		F	4	51	03						
327	Nov. 24	P_{EN}	12	07	46					29	Near Wakayama City.
		S	12	07	50						
		M_E	12	07	50	0.4	±2				
		M_N	12	07	51	0.3		−4			
		F	12	08	12						
328	Nov. 26	P	4	26	21		−1.5	−2.0	+1.5	1200	Mouth of the Niikappu River, Hidaka Province, Hokkaidô.
		S_{EN}	4	28	33						
		S_Z	4	28	20						
		M_{1E}	4	28	57	6.2	+27				Small damage at the near epicentral region.
		M_{1N}	4	29	33	6.6		+43			
		M_Z	4	28	41	6.4			−12		
		M_{2E}	4	29	42	6 0	−30				
		M_{2N}	4	29	54	7.1		+33			
		eF_{EZ}	4	52	±						
		eF_N	4	55	±						

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.	
329	Nov. 26	eP_N	8	19	42					38	Local shock.
		S_{EN}	8	19	47						
		M_E	8	19	47	0.3	+2				
		M_N	8	19	47	0.4		+2			
		F	8	20	06						
											NNW off Bonin Isl.
330	Nov. 27	eP_E	3	35	19						
		eP_N	3	35	29						
		eS_E	3	39	33						
		L_E	3	41	27						
		L_N	3	41	34						
		M_E	3	42	32	16.8	±20				
		M_N	3	43	04	15.0		±25			
		M_Z	3	45	17						
		eF_E	4	27	±						
		eF_N	4	24	±						
		eF_Z	3	58	±						
331	Nov. 29	eP_E	20	15	54					368	Hyûga Nada, SE off Miyazaki Prefecture.
		eP_N	20	15	48						
		S_E	20	16	41						
		S_{NZ}	20	16	40						
		M_E	20	16	44	1.9	+2				
		M_N	20	16	53	2.3		−4			
		M_Z	20	16	48	1.9			±2		
		F_{EN}	20	20	00						
		eF_Z	20	18	±						
332	Dec. 1	P_{EZ}	17	42	17					554	Near Mito, Ibaraki Prefecture.
		P_N	17	42	21						
		S_{EN}	17	43	31						
		S_Z	17	43	36						
		M_E	17	43	51	2.3	−7				
		M_N	17	43	39	2.5		−7			
		M_Z	17	43	53	1.9			−2		
		F_{EN}	17	51	01						
		F_Z	17	46	23						

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.	
333	Dec. 4	FEN	8	18	02					3725	A distant earthquake.
		FZ	8	18	03						Sea of Celebes.
		SE	8	23	36						
		SN	8	23	34						
		SZ	8	23	31						
		LE	8	28	13						
		LN	8	28	03						
		LZ	8	26	01						
		ME	8	32	11	19.3	+86				
		MN	8	31	15	21.0		−260			
		MZ	8	31	00	20.6			+267		
		eFE	9	18	±						
		eFN	9	16	±						
		eFZ	9	05	±						
334	Dec. 4	PE	10	39	57					3485	Ditto ?
		FN	10	39	55						
		PZ	10	39	54						
		SN	10	45	11						
		MN	10	52	55	18.2		±25			
		MZ	10	52	59	20.0			±33		
		eFE	10	57	±						
		eFN	11	08	±						
		eFZ	11	05	±						
335	Dec. 4	e	22	43	41						Nothern foot of the Mt. Amagi, Izu Province.
		SE	22	44	04						
		SN	22	44	06						
		SZ	22	44	03						
		ME	22	44	26	2.4	−2				
		MN	22	44	16	2.2		±2			
		MZ	22	44	24	2.0			+1		
		FEN	22	48	14						
		eFZ	22	46	±						
336	Dec. 5	iP	0	20	21		−5.3	+0.9	+8.6	346	In the Kumano Nada, SE off the Kii Peninsula.

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.	
		iSEN	0	21	07						Focal depth about 350 km.
		iSZ	0	21	08						Abnormally felt areas in
		ME	0	21	08	2.2	−12				Kwanto and Oôu districts.
		MN	0	21	08	2.9		−15			
		MZ	0	21	09	2.2			+3		
		FEN	0	27	14						
		FZ	0	25	23						
337	Dec. 5	P	20	16	52					28	Near Wakayama City.
		S	20	16	56						
		ME	20	16	57		±2				
		MN	20	16	57	0.3		+4			
		F	20	17	33						
338	Dec. 5	eP	23	43	21					18	Hasikami, near mouth of
		S	23	43	24						the Arita River, Wakayama
		ME	23	43	25	0.4	±1				Prefecture.
		MN	23	43	24	0.3		±2			
		F	23	43	39						
339	Dec. 7	iP	6	00	24					33	Near Isigaki, middle basin
		S	6	00	29						of the Arita R., Wakayama
		ME	6	00	29	0.3	±5				Prefecture.
		MN	6	00	30	0.4		+6			
		MZ	6	00	30				−2		
		F	6	01	23						
340	Dec. 7	PEN	8	58	01					62	Near Syuzan, Kyôto Pre-
		S	8	58	09						fecture.
		ME	8	58	10	0.4	−2				
		MN	8	58	14	0.1		−1			
		MZ	8	58	10				±1		
		F	8	59	11						
*346	Dec. 9	iPEN	4	19	37		−1.9	−0.4		121	Near Amabe, northwestern
		iPZ	4	19	36				+1.6		part of Kyôto Prefecture.

No.	Date	Phase	Time C.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		iS	4	19	53						Moderate shocks were felt at the near epicentral region.
		M_E	4	19	55	1.0	−26				
		M_N	4	19	54	1.2		−38			
		M_Z	4	19	55	1.3			+14		Perceptible.
		eF_{EN}	4	28	±						
342	Dec. 9	P_{EN}	4	56	45					125	Near Yatabe Cape, NW coast of Tosa Bay.
		S	4	57	02						
		M_E	4	57	09	1.5	−1				
		M_N	4	57	08	1.2		−3			
		F_E	4	57	40						
		F_N	4	57	53						
343	Dec. 11	P_{EN}	22	53	29					32	Local shock.
		S	22	53	33						
		M_E	22	53	33	0.3	−2				
		M_N	22	53	34	0.3		−4			
		F	22	53	55						
344	Dec. 12	S_{EN}	5	13	14						Ditto.
		M_E	5	13	15		±0.4				
		M_N	5	13	15	0.4		±1			
		F	5	13	25						
345	Dec. 12	eP_{EN}	19	02	10					129	In the Kumano-Nada, SE off Kii Peninsula.
		S	19	02	28						
		M_E	19	02	28	0.5	−4				
		M_{NZ}	19	02	28	0.3		±4	±1		
		F	19	03	03						
346	Dec. 12	S	21	44	12						North off Yaku Isl., northern part of Ryûkyû Ils.
		M_E	21	44	17	1.0	±1				
		M_N	21	44	16	0.5		±1			
		F	21	44	49						
347	Dec. 12	eP_{EN}	21	45	00					79	Local shock ?

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	21	45	11						
		M_N	21	45	11	0.6		−3			
		F	21	45	57						
348	Dec. 14	P_{EN}	16	53	01					77	In the Kii Channel.
		eS_{EN}	16	53	11						
		M_E	16	53	13	0.5	−1				
		M_N	16	53	13	0.2		−2			
		F	16	53	50						
349	Dec. 15	P_{EN}	19	37	52					2170	East off Kôsyun, Formosa.
		F_Z	19	37	53						
		S_E	19	41	28						
		S_N	19	41	31						
		L_E	19	45	05						
		L_N	19	44	24						
		M_E	19	49	31	14.1	±4				
		M_N	19	48	40	13.1		±5			
		eF_E	20	13	±						
		eF_N	20	08	±						
350	Dec. 16	P_{EN}	7	20	13					3240?	A distant earthquake.
		P_Z	7	20	12						Mindanao, Philippine.
		eS_N	7	25	13						Felt at Davao.
		eL_N	7	27	21						
		eF_{EN}	7	34	±						
		eF_Z	7	38	±						
351	Dec. 18	P	8	55	00		−0.4	−0.9	—	27	Near Wakayama City.
		S	8	55	03						
		M_{EN}	8	55	04	0.2	±5	+14			
		M_Z	8	55	04				±3		
		F	8	55	53						
352	Dec. 21	P_E	6	22	22					—	A distant earthquake.
		P_N	6	22	30						Navada, U.S.A.

No.	Date	Phase	Time G.	Time M.	Time T.	Period	Amplitude A_E	Amplitude A_N	Amplitude A_Z	Δ	Remark
			h	m	s	s	μ	μ	μ	km.	
		P_Z	6	22	30						
		eL_E	6	45	24						
		eL_N	6	45	32	23.2	−17				
		M_E	6	46	23	27.1		−125			
		M_N	6	46	07	16.6			−13		
		M_Z	6	52	26						
		eF_E	8	31	±						
		eF_N	8	18	±						
353	Dec. 24	P_E	6	38	03					4265	A distant earthquake. Near Brit. New-Guinea.
		P_{NZ}	6	38	02						
		eS_E	6	44	04						
		eS_N	6	44	03						
		eL_E	6	46	56						
		eL_N	6	46	50						
		M_E	6	52	45	9.4	−9				
		M_N	6	53	09	10.3		+7			
		M_Z	6	50	41	12.7			−9		
		eF_E	7	25	±						
		eF_N	7	35	±						
		eF_Z	7	14	±						
354	Dec. 24	S	13	57	41						In the Kii Channel.
		M	13	57	41		+1	−3			
		F	13	58	00						
355	Dec. 24	eP_{EN}	16	47	56					155	Upper valley of the Niyodo River, Ehime Prefecture.
		eS_{EN}	16	48	17						
		M_E	16	48	20	0.9	±1				
		M_N	16	48	22	0.9		−1			
		F	16	48	54						
356	Dec. 24	iP	22	34	22		−0.9	+2.3	+3.1	54	In the Kii Channel.
		S	22	34	29						
		M_{EN}	22	34	29	0.4	−3	−6			
		F	22	35	48						

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.	
357	Dec. 25	iP_{EN}	2	10	43		+2.6	−1.4?		3405	Compression.
		iP_Z	2	10	44				+3.1		Frontier of Kan-Su, Sing-Kiang, and Mongolia, China. 96°E 44°N.
		iS_E	2	15	56						
		iS_N	2	15	55						
		S_Z	2	15	52						Destructive at Suchow, China.
		L_E	2	19	45						
		L_N	2	19	04						S-N component scale out at M phase.
		L_Z	2	20	40						
		M_{1E}	2	22	12	16.1	−4170				
		M_{1N}	2	23	03	12.7		−6060			
		M_{1Z}	2	25	29	11.8			+1433		
		M_{2E}	2	25	24	12.2	+1500				
		M_{2N}	2	25	59	12.8		+1846			
		M_{3E}	2	27	18	9.4	−691				
		M_{3N}	2	26	48	12.0		+953			
		M_{2Z}	2	27	51	12.8			−725		
		M_{4E}	2	28	42	12.2	+928				
		M_{4N}	2	28	24	12.6		−1677			
		eF_E	4	14	±						
		eF_N	4	10	±						
		eF_Z	4	04	±						
358	Dec. 26	P_{EN}	21	17	43					1490	SW off Okinawa Isl, Ryûkyû Ils.
		eS_N	21	23	31						
		eF_E	21	50	±						Felt in Southern part of Ryûkyû Ils.
		eF_N	21	42	±						
359	Dec. 26	P	22	34	23						South of the Bonin Isl.
		S_{EN}	22	36	58						
		S_Z	22	36	59						
		M_E	22	37	07	2.4	±6				
		M_N	22	37	03	2.6		+14			
		M_Z	22	37	01	4.1			±3		
		F_{EN}	22	44	01						
		F_Z	22	41	49						

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.	
360	Dec. 28	P	20	00	20					36	In the Wakaura Bay, Kii Channel.
		S	20	00	25						
		M_E	20	00	25	0.3	+2				
		M_N	20	00	25	0.4		−6			
		M_Z	20	00	25				±1		
		F	20	00	56						
361	Dec. 29	eP_{EN}	11	18	44					49	Ditto.
		S_{EN}	11	18	50						
		M_E	11	18	51	0.5	+1				
		M_N	11	18	51	0.4		±1			
		F	11	19	07						
362	Dec. 29	eP_{EN}	20	34	16						Upper valley of the Gokase River, Miyazaki Prefecture.
		S_{EN}	20	34	54						
		M_E	20	34	55	0.4	±1				
		M_N	20	34	55	0.8		±2			
		F	20	35	46						
363	Dec. 30	eP_{EN}	5	00	24					50	In the Kii Channel.
		S	5	00	31						
		M_E	5	00	31	0.2	+1				
		M_N	5	00	31	0.4		+4			
		F	5	00	45						

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 : Diluvial Series.

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

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	20.8	3.0	0.0002	20
A_N:	9.9	3.0	0.0002	20

	T_o	ε	$\frac{r}{T_o^2}$	V
A_E:	5.8	10.0	0.003	94
A_N:	6.3	10.0	0.005	88
A_Z:	3.4	3.3	0.004	65

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.	
77	Oct. 1	iP_{EN}	15 10 05					694	NW far off Bonin Isl. Weak shocks were felt at the Bonin Isl.
		iP_Z	15 10 04						
		iS	15 11 40						
		M_{EZ}	15 11 44		+7		+4		
		M_N	15 11 43	3.4		+40			
		F_E	15 16 00						
		F_N	15 14 55						
		F_Z	15 15 59						
78	Oct. 5	iP_N	14 01 48					567	Off the Inubô Cape, Tiba Prefecture.
		eP_E	14 01 56						
		eP_Z	14 02 04						
		eS_E	14 02 56						
		iS_N	14 03 04						
		iS_Z	14 03 00						
		M_E	14 03 21		−2				
		M_N	14 03 16	2.1		−5			
		M_Z	14 03 18				+3		
		F_E	14 04 41						
		F_N	14 04 59						
		F_Z	14 03 54						

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.	
79	Oct. 6	iP$_{EN}$	5	02	24					520	SW off Hatidyô Isl.
		iP$_Z$	5	02	23						
		iS$_{EN}$	5	03	34						
		iS$_Z$	5	03	35						
		M$_{EN}$	5	03	38		+9	−13			
		M$_Z$	5	03	44				+5		
		F$_E$	5	07	54						
		F$_N$	5	06	26						
		F$_Z$	5	06	48						
80	Oct. 9	eP$_E$	3	28	15					205	Upper valley of the Imizu River, Toyama Prefecture.
		iP$_N$	3	28	23						
		iS$_{EN}$	3	28	51						
		M$_E$	3	28	52		+2				
		M$_N$	3	28	51			+3			
		F$_E$	3	29	44						
		F$_N$	3	29	41						
81	Oct. 10	iP$_{EN}$	9	04	20		(−)	(−)		730	Middle basin of the Otuti River, Iwate Prefecture.
		iS$_E$	9	05	39						Moderate shocks were felt at the epicentral region.
		iS$_N$	9	05	41						
		M$_E$	9	05	40		−4				
		M$_N$	9	05	42			+3			
		F$_E$	9	08	02						
		F$_N$	9	08	23						
82	Oct. 14	iP$_{EN}$	12	37	18		(+)	(−)		455	SSW off Hatidyô Isl.
		iP$_Z$	12	37	17				(−)		Felt in eastern part of Kwantô district.
		iS	12	38	20						Focal depth about 120 km.
		M$_E$	12	38	23	2.5	−9				
		M$_N$	12	38	24	3.1		−23			
		M$_Z$	12	38	25	2.2			+4		
		F$_E$	12	41	37						
		F$_{NZ}$	12	41	43						
83	Oct. 16	eP$_E$	0	11	01					586	South off the Inubô Cape, Tiba Prefecture.
		iP$_N$	0	11	13						

No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		eS$_E$	0	12	35						
		iS$_N$	0	12	32						
		M$_E$	0	12	50		+3				
		M$_N$	0	12	36	2.3		+9			
		F$_E$	0	15	39						
		F$_N$	0	15	21						
84	Oct. 16	eP$_E$	2	03	09						SE off Inubô Cape, Tiba Prefecture.
		iS$_E$	2	04	37						
		iS$_N$	2	04	34						Faint record.
		F$_E$	2	08	42						
		F$_N$	2	08	31						
85	Oct. 16	eP$_E$	12	16	09					4365	A distant earthquake. Gulf of Alaska.
		iP$_{EZ}$	12	16	45						
		iP$_N$	12	16	44						
		eS$_E$	12	22	53						
		eL$_E$	12	30	23						
		eF$_E$	12	48	±						
		eF$_N$	12	47	±						
		eF$_Z$	12	45	±						
86	Oct. 17	iP	2	00	58					45	Upper valley of the Kako River, Hyogo Prefecture.
		iS	2	01	04						
		M	2	01	05		±4	±6	±3		
		F$_E$	2	01	21						
		F$_N$	2	01	17						
		F$_Z$	2	01	29						
87	Oct. 25	iP	17	05	07		−1.0	−1.9	−1.5	1360	ENE off the Naka-Siretoko Cape, Karafuto.
		i$_{EN}$	17	05	10		+16	+22			
		i$_Z$	17	05	09				+24		Felt in Pacific coast of Oou and Hokkaidô.
		i$_N$	17	05	20						
		iS$_{EN}$	17	07	31						
		iS$_Z$	17	07	30						
		M$_E$	17	07	35	3.0	+24				

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	07	40			−30			
		eF_{EN}	17	13	±						
		eF_Z	17	12	±						
88	Oct. 27	iP_E	11	53	07					277	Upper valley of rhe Toyo River, Aiti Prefecture.
		eP_N	11	53	08						
		iS_{EN}	11	53	45						
		M_{EN}	11	53	46		−3	−2			
		F_E	11	53	35						
		F_N	11	53	34						
89	Oct. 30	iP	1	01	57		+2.1	+1.4	−3.7	261	Near Takayama, Gifu Prefecture.
		iS_E	1	02	33						
		iS_N	1	02	32						
		M_E	1	02	34		−2				
		M_N	1	02	33			+2			
		F_E	1	03	50						
		F_N	1	04	04						
90	Nov. 6	eP_E	1	33	43					204	In the Kii Channel.
		eP_N	1	33	44						
		iS_{EN}	1	34	11						
		F_E	1	35	31						
		F_N	1	35	36						
91	Nov. 6	eP_N	4	10	11					194	Near Hinomisaki, Wakayama Prefecture.
		iS_{EN}	4	10	37						
		M_E	4	10	40		+3				
		M_N	4	10	45			+2			
		F_E	4	11	27						
		F_N	4	11	32						
92	Nov. 13	iP_{EN}	4	48	59					704	Northern part of Japan Sea. 137.°3E 43.°5N. Focal depth about 350 km. Abnormally felt areas in the Pacific coast of NE Japan and Hokkaidô.
		iP_Z	4	48	58						
		iS_E	4	50	32						
		iS_N	4	50	35						

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.	
		iSZ	4	50	33						
		M_{1E}	4	50	44		+276				
		M_{1N}	4	50	45			+291			
		M_{1Z}	4	50	43				+128		
		M_{2E}	4	50	57		−210				
		M_{2N}	4	52	20			−190			
		eF_E	5	15	±						
		eF_{NZ}	5	10	±						
93	Nov. 13	e_E	4	59	53						
		e_Z	5	00	27						
		iS_E	5	01	29						ScS wave of No. 92
		iS_N	5	01	30						
		M_E	5	01	34		−39				
		M_N	5	01	33			+55			
		eF_E	5	15	±						
		eF_{NZ}	5	10	±						
94	Nov. 26	iP_{EN}	4	26	10		+1.1	+2.9		.831	Mouh of the Niikappu River, Hidaka Province, Hokkaidô.
		iP_Z	4	26	07				−3.1		
		eS_E	4	27	58						Small damage at the near epicentral region.
		iS_N	4	28	01						
		iS_Z	4	28	02						
		M_{1E}	4	29	11		−63				
		M_{1N}	4	29	11	6.0		−63			
		M_Z	4	28	06				+28		
		M_{2N}	4	29	25			+63			
		M_{3N}	4	30	29			+57			
		eF_E	4	41	±						
		eF_N	4	39	±						
		eF_Z	4	42	±						
95	Nov. 26	i_N	21	16	33					249	Hyûga Nada, SE off Miyazaki Prefecture.
		iS_{EN}	21	17	07						
		iS_Z	21	17	08						
		M_E	21	17	15		+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.	
		M_N	21	17	17			+5			
		F_E	21	18	15						
		F_N	21	18	11						
		F_Z	21	18	00						
96	Dec. 1	iP	17	42	±					432	On account of the defct of time recording.
97	Dec. 4	eP_E	8	18	17					?	A distant earthquake. Sea of Celebes. Felt in southern part of Philippine.
		eP_N	8	18	16						
		eP_Z	8	18	12						
		iP	8	18	27						
		i_E	8	19	35						
		i_N	8	19	36						
		i_Z	8	19	37						
		eL_E	8	23	52						
		eL_N	8	24	03						
		eL_Z	8	28	19						
		M_E	8	32	18	22.0	−17				
		M_N	8	32	09			+14			
		M_Z	8	31	12				+11		
		eF_E	8	43	±						
		eF_N	8	38	±						
		eF_Z	8	42	±						
98	Dec. 4	iP_E	22	42	31		−3.2	+2.3	+9.2	365	Northern part of the Mt. Amagi, Izu Province.
		iS_{EN}	22	43	20						
		eS_Z	22	43	19						
		M_E	22	43	28	2.0	−7				
		M_N	22	43	22			+13			
		F_E	22	45	32						
		F_N	22	45	50						
		F_Z	22	45	36						
99	Dec. 5	iP_{EN}	0	20	29						In the Kumano Nada, SE off Kii Peninsula. Abnormally felt areas in Kwanto and Oou district.
		iP_Z	0	20	28						
		iS_{EN}	0	21	21						

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.	
		eSZ	0	21	20						Focal depth about 350 km.
		ME	0	21	22		+18				
		MN	0	21	23			+17			
		eFE	0	23	33						
		eFNZ	0	23	24						
100	Dec. 7	iPEN	8	57	50					65	Near Syûzan, Kyôto Pre
		iFZ	8	57	49						fecture.
		iS	8	57	59						
		ME	8	58	03		−7				
		M1N	8	58	02			+9			
		eM2N	8	58	06			±4			
		FE	8	58	50						
		FN	8	58	36						
		FZ	8	58	51						
*101	Dec. 9	iP	4	19	16.6		+21.3	+18.2	−35.4	13	Near Amabe, NW-tern part
		iSEN	4	19	18.4						of Kyôto Prefecture.
		iSZ	4	19	18.6						Moderate shocks were felt
		MEN	4	19	20		> ±660	±966	±517		at Toyooka.
		MZ	4	19	21						Felt in Japan sea coast of
		eF	4	23	±						Hokuriku, Kinki and San'in district.
102	Dec. 9	iP	5	11	37					13	An after shock of No. 101.
		iS	5	11	38						
		MEN	5	11	38		±5	±3			
		F	5	11	49						
103	Dec. 25	iPE	2	10	40					3280	A distant earthquake.
		iPNZ	2	10	45						Frontier of Kan-Su, Sing-
		iSE	2	15	47						Kiang and Mongolia, China.
		iSN	2	15	44						96.°E 44.°N.
		iSZ	2	15	58						Destructive at Suchow,
		iLE	2	19	43						China.
		iLN	2	18	30						
		iLZ	2	21	01						

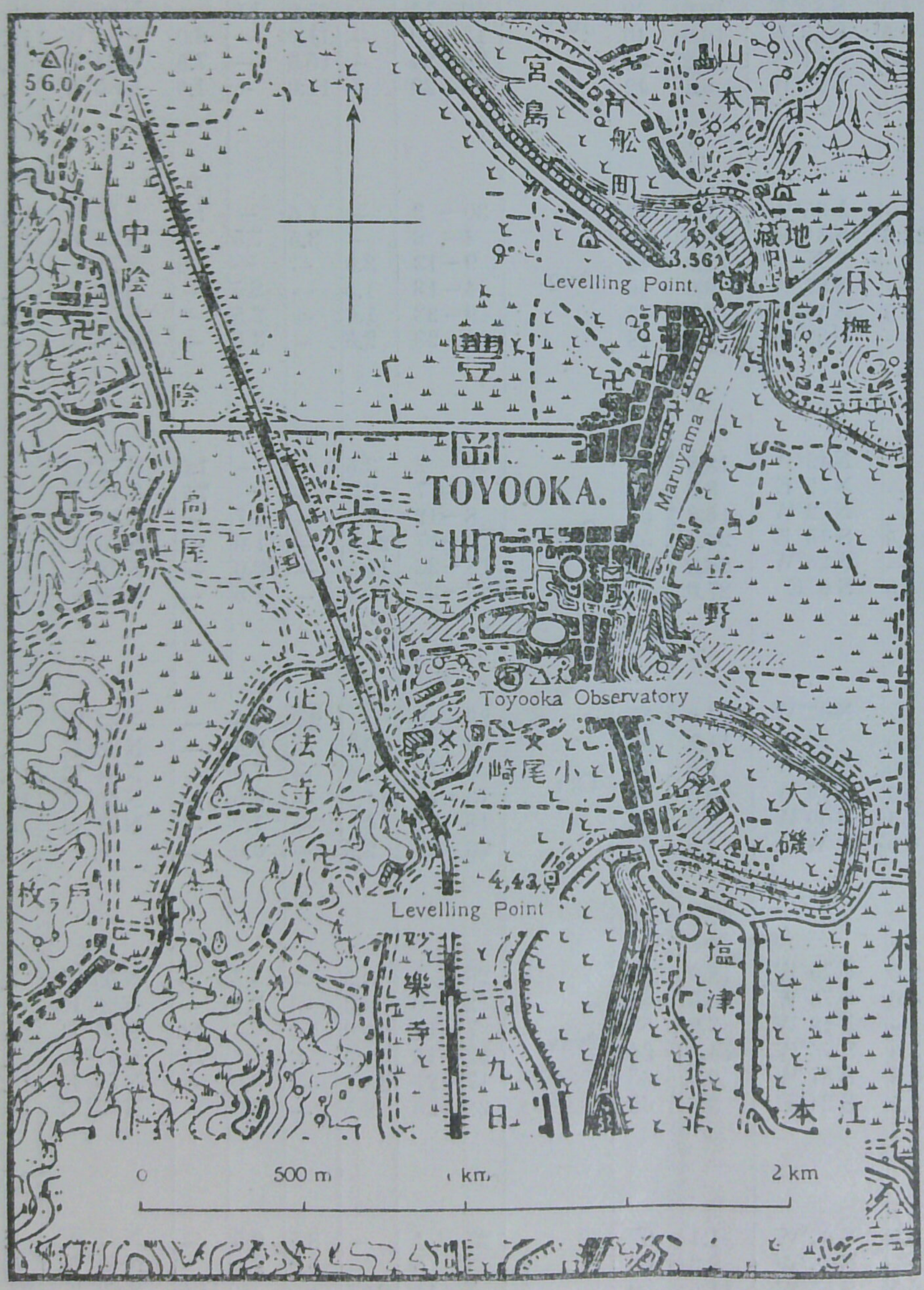
No.	Date	Phase	Time G.	M.	T.	Period	Amplitude A_E	A_N	A_Z	Δ	Remarks
			h	m	s	s	μ	μ	μ	km.	
		M_{1E}	2	21	47		> −1060				
		M_{1N}	2	22	25	16.6		> −1200			
		M_{1Z}	2	22	50	15.8			+358		
		M_{2E}	2	24	07	14.0	+968				
		M_{2N}	2	25	57	12.0		−972			
		M_{2Z}	2	24	02	13.4			−400		
		M_{3E}	2	25	30	12.8	−968				
		M_{3N}	2	28	23	11.4		−632			
		M_{3Z}	2	25	14	11.7			+328		
		M_{4N}	2	31	38	11.4		−632			
		eF_E	3	42	±						
		eF_N	3	43	±						
		eF_Z	3	22	±						
104	Dec. 26	iP_{EN}	4	51	08					28	Local shock.
		iP_Z	4	51	09						
		iS	4	51	12						
		M_{EN}	4	51	12		−5	±19			
		M_Z	4	51	13				±4		
		F_{EN}	4	51	31						
		F_Z	4	51	41						
105	Dec. 26	iP_E	22	34	33					1560	South of the Bonin Isl.
		iP_N	22	34	36						
		iP_Z	22	34	37						
		iS_E	22	37	18						
		iS_N	22	37	17						
		iS_Z	22	37	20						
		M_{EN}	22	37	21		−9	+36			
		M_Z	22	37	22				+5		
		F_E	22	40	00						
		F_N	22	40	30						
		F_Z	22	39	30						

TOYOOKA JAPAN

The Observation of the Tilting of the Earth Crust

at the Toyooka Observatory.

On the 23rd May, 1925 there occured a great earthquake at the northern part of the Tazima province, the epicenter was 13 kilometers north of Toyooka, and on the 7th March, 1927 again a destructive earthquake occured at the northern part of the Tazima and Tango Provinces and its epicenter was about 22 kilometers east of Toyooka. To investigate the after effects of those earthquakes, the observations of the tilting of the earth surface were made at the Toyooka observatory by the Ishimoto's tiltmeter. The details of the instrument was described by Dr. M. Ishimoto in Jap. Journ. Astro. Geophys. 6 (1928) 83. The Toyooka observatory is the branch office of the Kobe Met. Observatory, and is situated at the western part of the hill Zimmu-yama, Toyooka. The instruments were installed in the seismometre house of the observatory, in which the temperature is kept nearly constant. Topographical features of the neighbourhood of Toyooka can be seen in the figure, in which the site of the observatory is indicated by ⊙. The next tables are the results of the observations, which were made by Mr. Hyôzirô Yamazaki, the superintendent of the Toyooka observatory.



TOYOOKA JAPAN.

Tilting of Eearth at Toyooka (1932)

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

Instruments : Isimoto's Tiltmeter.

Constants	
Component	T°
E—W	15.0s
S—N	15.7s

The reading are expressed with milimeters and 10m.m corresponds to the tilting of 1″.

No.	Period	Component (downward)				Tilting	No.	Period	Component (downward)				Tilting
		E	W	N	S				E	W	N	S	
		m.m	m.m	m.m	m.m				m.m	m.m	m.m	m.m	
1	Dec.	31 – 5	0.5	—	3.5	—	N14°E	3.6	37		30 – 4	5.0	—	—	2.5	S63°E	7.4
2	(1931)	6 – 10	2.0	—	—	2.0	SE	2.8	38		5 – 9	—	0.5	—	0.0	W	0.5
3		11 – 15	1.05	—	—	1.5	S82°E	10.6	39	July	10 – 14	—	15.0	1.0	—	N86°W	16.0
4	Jan.	16 – 20	1.35	—	—	8.5	S58°E	16.0	40		15 – 19	—	11.0	—	6.0	S61°W	12.6
5		21 – 25	—	10.5	6.0	—	N61°W	12.2	41		20 – 24	—	15.5	—	7.5	S64°W	17.2
6		26 – 30	—	2.0	5.0	—	N22°W	5.4	42		25 – 29	—	11.0	—	1.0	S85°W	11.1
7		31 – 4	—	5.5	8.0	—	N35°W	9.7	43		30 – 3	—	1.5	—	1.0	S56°W	1.8
8		5 – 9	15.5	—	—	22.5	S31°E	29.8	44		4 – 8	—	3.5	7.5	—	N25°W	8.3
9		10 – 14	—	0.0	12.0	—	N	12.0	45		9 – 13	3.0	—	—	1.0	S71°E	3.2
10	Feb.	15 – 19	—	9.0	0.5	—	N87°W	9.0	46	Aug.	14 – 18	1.5	—	2.5	—	N32°E	2.9
11		20 – 24	5.0	—	—	3.5	S55°E	6.1	47		19 – 23	1.0	—	2.5	—	N22°E	2.7
12		25 – 1	5.0	—	3.0	—	N59°E	5.9	48		24 – 28	2.5	—	3.5	—	N36°E	4.3
13		2 – 6	—	12.5	14.0	—	N42°W	18.8	49		29 – 2	3.5	—	—	1.0	S74°E	3.6
14		7 – 11	8.5	—	2.0	—	N77°E	8.8	50		3 – 7	2.3	—	—	7.7	S17°E	8.0
15		12 – 16	—	15.0	5.0	—	N72°W	15.8	51	Sept.	8 – 12	14.2	—	0.7	—	N87°E	14.2
16	Mar.	17 – 21	5.0	—	—	19.5	S15°E	20.1	52		13 – 17	25.0	—	11.0	—	N66°E	27.4
17		22 – 26	—	10.5	21.5	—	N26°W	23.9	53		18 – 22	11.5	—	22.0	—	N28°E	24.8
18		27 – 31	2.5	—	—	27.0	S6°E	27.0	54		23 – 27	11.0	—	1.5	—	N82°E	11.1
19		1 – 5	—	22.0	9.5	—	N67°W	24.0	55		28 – 2	—	2.3	1.5	—	N57°W	1.8
20		6 – 10	—	8.0	—	8.0	SW	11.3	56		3 – 7	6.7	—	0.5	—	N86°E	6.7
21		10 – 15	—	7.0	—	3.0	S67°W	7.6	57	Oct.	8 – 12	14.0	—	7.0	—	N64°E	15.7
22	April	16 – 20	—	3.0	—	9.0	S19°W	9.5	58		13 – 17	11.5	—	4.5	—	N69°E	12.4
23		21 – 25	—	3.0	—	2.5	S50°W	3.9	59		18 – 22	4.5	—	1.0	—	N77°E	4.6
24		26 – 30	—	4.5	—	0.0	W	4.5	60		23 – 27	2.5	—	0.0	—	E	2.5
25		1 – 5	—	18.5	—	3.5	S79°W	18.9	61		28 – 1	6.5	—	5.5	—	N50°E	8.5
26		6 – 10	—	15.0	—	4.0	S75°W	15.5	62		2 – 6	3.0	—	7.0	—	N23°E	7.6
27		11 – 15	—	1.0	3.0	—	N18°W	3.2	63	Nov.	7 – 11	6.0	—	—	3.0	S64°E	6.7
28	May	16 – 20	—	14.0	—	3.0	S78°W	14.3	64		12 – 16	12.5	—	—	17.0	S37°E	21.2
29		21 – 25	—	9.0	—	0.5	S87°W	9.0	65		17 – 21	15.0	—	3.0	—	N79°E	15.3
30		26 – 30	1.5	—	—	3.5	S24°E	3.8	66		22 – 26	8.5	—	6.5	—	N53°E	10.7
31		31 – 4	—	1.0	—	0.5	S63°W	1.1	67		27 – 1	—	8.5	0.5	—	N87°W	8.5
32		5 – 9	—	5.5	6.0	—	N43°W	8.2	68		2 – 6	—	5.0	2.0	—	N69°W	5.4
33		10 – 14	—	9.5	—	6.5	S56°W	11.5	69		7 – 11	21.5	—	—	11.0	S62°E	23.7
34	June	15 – 19	—	11.0	—	4.0	S70°W	11.7	70	Dec.	12 – 16	7.5	—	7.0	—	N47°E	10.3
35		20 – 24	—	0.5	—	0.5	SW	0.7	71		17 – 21	—	1.0	1.0	—	NW	1.4
36		25 – 29	—	0.0	3.0	—	N	3.0	72		22 – 26	—	2.0	0.0	—	W	2.0
									73		27 – 31	2.0	—	—	7.0	S16°E	7.3

1931 Dec. 31 | 1932 Jan. 30 | 1932 Mar. 1 | 1932 Mar. 31 | 1932 Apr. 30 | 1932 May. 30 | 1932 Jun. 29 | 1932 Jul. 29 | 1932 Sep. 2 | 1932 Oct. 2 | 1932 Nov. 1 | 1932 Dec. 1 | 1932 Dec. 31

1"=5mm

E

W

S

N

1932
1Cm = 1"

N

W

E

S

31 st Dec
1932

31 st. Dec.
1931.