

SEISMOLOGICAL BULLETIN
OF THE
AITIKEN METEOROLOGICAL OBSERVATORY
NAGOYA JAPAN

VOL. III, NO. 1,

FROM JANUARY TO JUNE.

1932

NAGOYA

AUGUST 1932

CONSTANTS

Latitude and longitude of the center of the Seismographic room

$$\varphi = 35^{\circ}10' \text{ N}$$

$$\lambda = 136^{\circ}58' \text{ E from Greenwich}$$

Altitude, 51.7^m above mean sea level.

Lithologic foundation, Schottered clay (Tertiary)

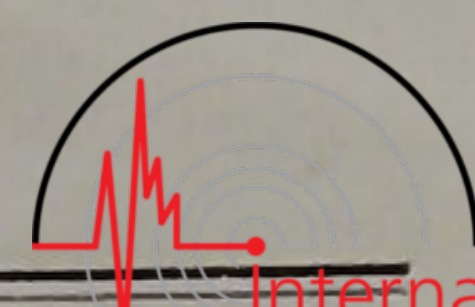
Time. All determinations are reduced to Greenwich mean civil time.

Constants of the Seismographs

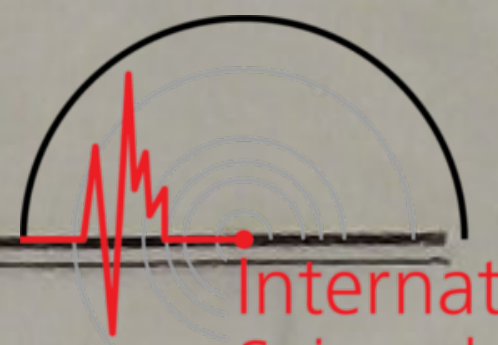
Apparatus	Component	T^0	ξ	$\frac{r}{T^2}$	V	
Wiechert 200kg	I {	N	5.1	10	0.02	74
		E	5.1	10	0.01	74
	II {	N	5.1	7	0.02	76
		E	5.0	7	0.01	73
" 80kg	I	Z	3.6	15	0.04	65
	II	Z	4.3	5	0.02	64
Omori	I {	N	18.6	4	0.02	30
		E	18.8	4	0.02	30
	II {	N	18.0	4	0.02	30
		E	18.0	4	0.01	30

Note. I, Jan. 1, to April 21

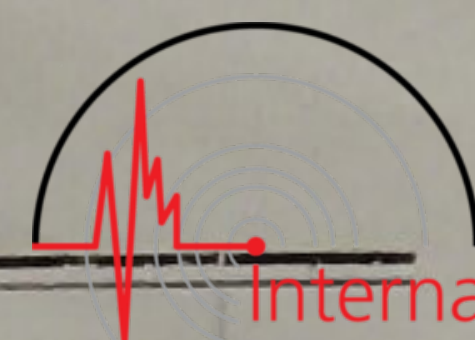
II, April. 21 June. 31.



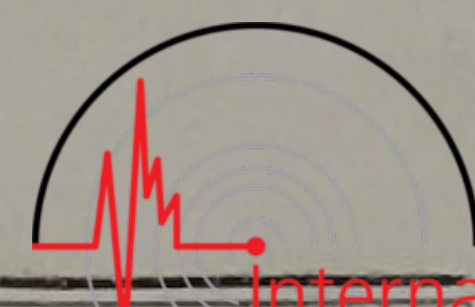
No.	Date	Phase	Time G. M. C. T	Period	Amplitude			Δ Epicentre- distance	Remarks
					AE	AN	Az		
			h m s	s	μ	μ	μ	km.	
1	Jan .5	e F	10 21 12.7 10 25 05—						S part of the Bay of Sagami.
2	" 7	eP S F	11 28 57.0 11 30 08.9 11 35 46—					660	WSW sea off Hatijyo Is. (deep center)
3	" 9	eP L F	10 29 20.9 10 35 21.6 10 53 03—						A distant shock. In the South Ocean.
4	" 11	eP S F	8 47 51.4 8 48 15.3 8 55 20—					178	Bay of Wakanoura.
5	" 11	eP S F	17 28 52.9 17 29 04.9 17 31 05—					89	N part of lake Biwa at Omi province.
6	" 12	e F	13 35 15— 13 37 45—						Near Misima.
7	" 15	eP S F	14 05 04.5 14 05 11.7 14 08 25—					53	Near Hikone at Omi province.
8	" 18	eP S F	8 32 08.7 8 32 10.5 8 34 —					13	Near Gihu. Slight shock was felt at Nagoya.
9	" 18	e F	20 31 34— 20 34 —						Near Kameyama in Mie pref.
10	" 19	e F	4 06 19— 4 10 —						NE sea off Miyako in Iwate pref.
11	" 20	e F	15 13 48— 15 18 30—						Far South off the Ensyunada.
12	" 20	e F	22 51 17— 22 54 40—						Sea off Inubo C.



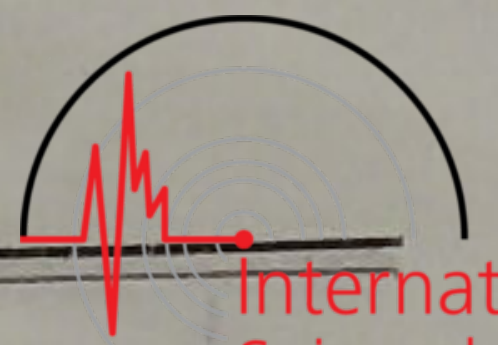
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
13	Jan. 21	eP	14 44 25.9					740	Near the Osumi channel.
		S	14 45 47.0						
		F	14 52 40-						
14	" 25	e	14 50 51-						Near the Ito in Idu peninsula.
		F	14 53 20-						
15	" 26	e	4 17 30-						At Kasumigaura
		F	4 20 20-						
16	" 27	eP	12 17 18.5					680	In the Hyuga nada.
		S	12 18 32.4						
		F	12 24 30-						
17	" 29	eP	13 49 35-						A distant shock. In the South Ocean.
		L	14 00 56-						
		F	14 50 30-						
18	" 31	eP	9 19 35.6					356	Near Tokamati in Nigata pref.
		S	9 20 23.6						
		F	9 25 40-						
19	" 31	e	19 48 03-						Middle course of the river Tesio.
		F	19 53 -						
20	Fe . 2	eP	11 00 07.6					280	N sea off Hatijyo Is.
		S	11 00 45.2						
		F	11 07 40-						
21	" 3	eP	4 25 38.2						Sea off the Ensyunada.
		L?	4 26 36.2						
		F	4 29 33-						
22	" 3	eP	7 36 20.5					375	NW off Bonin Is.
		S	7 37 11.0						
		eL	7 37 39.0						
		F	7 44 35-						
23	" 4	eP	5 44 27.4					342	Lower course of the river Kinu.
		S	5 45 13.5						
		L	5 45 27.2						
		F	5 50 44-						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks		
					AE μ	AN μ	AZ μ				
24	Feb. 8	eP	15 23 40.6					620	S sea off Kinkwasan.		
		S	15 24 49.0								
		F	15 28 37.0								
25	" 11	eP	18 13 02.6					13	Local shock.		
		S	18 13 04.4								
		F	18 13 44—								
26	" 12	eP	7 30 15.5					282	Near Tiba.		
		eS	7 30 53.4								
		F	7 34 04.0								
27	" 12	eP	19 16 49.0					15	Local shock.		
		S	19 16 51.0								
		F	19 17 38.0								
28	" 14	e	16 03 07.3						E sea off mouth of the river Abukuma.		
		F	16 07 34—								
29	" 14	eP	21 34 05.6					680	NE sea of Tane Is. in Kagosima pref.		
		S	21 35 19.1								
		F	21 39 04.0								
30	" 15	P	16 37 17.4					141	After shocks at Idu province.		
		eS	16 37 36.4								
		F	16 38 28—								
31	" 16	P	14 13 04.5					401	Off the cape of Inubo.		
		S	14 13 54.9								
		L	14 14 10.5								
		ME	14 14 12.2							3.3	+23
		MN	14 14 31.6							2.6	-29
F	14 19 14—										
32	" 17	e	21 38 11.6						N part of Idu province.		
		F	21 39 02.0								
33	" 18	P	22 36 57.0					267	Lower course of the river Kinu.		
		S	22 37 31.6								
		F	22 39 42—								



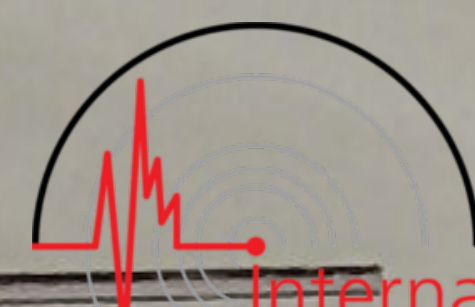
No.	Date	Phase	Time			Period	Amplitude			△ Epicentre- distance	Remarks
			G.	M.	C. T		AE	AN	Az		
			h	m	s	s	μ	μ	μ	km.	
34	Feb. 19	P	13	26	18.9					256	SE off Hatijyo Is.
		S	13	26	53.4						
		ME	13	26	57.8	3.3	+83				
		MN	13	27	03.4	2.5		-246			
		F	13	35	39.0						
35	" 19	e	13	53	28.4						Local shock.
		F	13	53	49.0						
36	" 21	e	1	38	50.7						In the Kumanonada.
		F	1	41	25-						
37	" 21	e	15	57	09.5						Near the Osumi channel.
		F	15	58	25-						
38	" 21	eP	15	58	30.0					319	Ditto
		eS	15	59	13.0						
		F	16	02	43-						
39	" 23	e	0	33	45.6						A distant shock.
		F	0	39	48-						
40	" 25	P	6	11	16.2					300	In the Iyo-nada
		S	6	11	56.7						
		L	6	12	24.6						
		F	6	14	50-						
41	" 26	P	6	12	18.8					245	Lower course of the river Tone.
		S	6	12	51.7						
		F	6	17	38-						
42	" 26	P	7	01	56.3					260	Near Mt. Myoken in Osaka pref.
		S	7	02	31.3						
		F	7	06	38-						
43	" 28	P	3	00	28.6					244	Mouth of the river Nohu in Nigata. pref.
		S	3	01	01.4						
		F	3	10	07--						
44	Mar. 1	iP	15	42	32.0					97	Middle course of the river Oi. $\psi=138$ 1E, $\lambda=35.1$ N. Slight shock was felt Kwanto and SE part of Tyubu districts.
		S	15	42	45.1						
		Mz	15	42	46.9	0.9		+29			
		MN	15	42	47.2	—		+62			
		ME	15	42	48.2	1.0	+79				
		F	15	49	59.0						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
45	Mar. 2	eP	2 50 44.8					770	ESE sea off Miyako.
		S	2 52 09.0						
		F	2 58 50—						
46	" 3	e	22 54 53.6						Near Kobe.
		F	23 01 02—						
47	" 6	P	8 09 09.6					62	Valley of the river Toyo in Aiti pref.
		S	8 09 18.0						
		F	8 11 37—						
48	" 7	e	0 52 18.6						Near Hatijyo Is.
		F	0 53 08—						
49	" 7	e	9 01 50.3						N part of the Kujukuri-hama.
		F	9 04 35—						
50	" 8	e	4 36 36.3						A distant shock. Near Kamtchatka.
		F	4 38 07—						
51	" 8	e	9 53 32.9						Near Inubanuma in Tiba pref.
		F	9 54 59—						
52	" 10	P	12 53 43.6					252	Mouth of the river Naka. Slight shock was felt at NE part of Kwanto.
		S	12 54 17.5						
		F	12 55 55—						
53	" 13	eP	15 49 32.1					240	Near Mt. Tukuba.
		S	15 50 04.3						
		F	15 53 05—						
54	" 14	eP	21 57 47.9					111	W part of Saitama pref. (after shock)
		S	21 58 02.8						
		F	21 58 55—						
55	" 15	e	4 37 42—						A distant shock.
		L?	4 44 42—						
		F	4 55 42—						
56	" 15	eP	5 37 58.0					60	Middle course of the river Ibi in Gihu pref.
		S	5 38 06.3						
		F	5 38 51—						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
			h m s						
57	Mar. 15	eP	19 28 46.4				378	Off the cape of Inubo.	
		S	19 29 37.4						
		F	19 33 10—						
58	" 16	eP	11 05 15.1			254	Coast of the Kujoyukuri-hama.		
		S	11 05 49.3						
		F	11 08 37—						
59	" 17	eP	0 52 02.8			710	S part of the Bungo st. Slight shock was felt E part of Kyusyu.		
		S	0 53 21.0						
		F	1 04 04—						
60	" 17	e	10 43 58.3				Near Mt. Hakone.		
		F	10 45 40—						
61	" 19	P	11 04 37.1			2270	A distant shock. Near Marianne Iss		
		PP	11 05 14.4						
		S	11 08 23.3						
		F	11 23 22—						
62	" 23	e	14 03 19.1				Near Oiwake.		
		F	14 09 53—						
63	" 23	eP	15 27 52.3			340	N part of the Kujoyukuri-hama.		
		S	15 28 38.1						
		F	15 31 43—						
64	" 23	eP	22 47 54.1			168	Near Urawa.		
		S	22 48 16.8						
		F	22 50 45—						
65	" 26	eP	0 07 31.8				A distant shock. Near Aleutian Iss.		
		L?	0 14 52.8						
		F	0 42 48—						
66	" 26	iPE	1 01 02.4			53	Upper course of the river Yahagi in Aiti pref.		
		S	1 01 09.5						
		F	1 02 39.5						



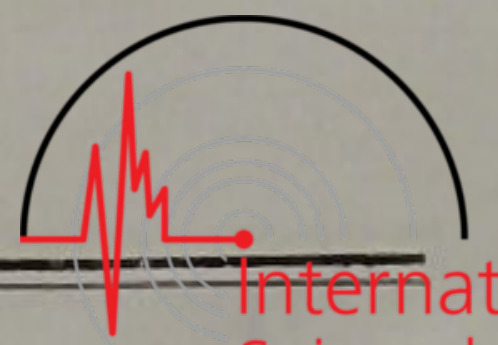
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
67	Mar. 26	eP	9 59 59.2					4315	Near Kosyun. S part of Taiwan.
		S	10 06 04.0						
		F	10 29 43-						
68	Apr. 2	eP	7 01 05.0					259	In the Kasima-nada.
		S	7 01 39.9						
		F	7 03 30-						
69	" 4	iP	19 18 04.4					590	S off Hatijyo Is. Slight was felt at all Kwanto and SE part of Tohoku district.
		S	19 19 09.3						
		ME	19 19 11.3	3.4	+192				
		MN	19 19 11.6	3.4		-132			
		Mz	19 19 29.2	1.7			-64		
		F	19 42 51-						
70	" 6	eP	9 15 22.1					4155	A distant shock. Middle course of the river Yangtze in china.
		S	9 21 17.9						
		F	9 33 -						
71	" 11	P	18 13 40.9					289	In Saitama pref.
		S	18 14 19.7						
		L	18 14 28.2						
		F	18 21 26-						
72	" 15	e	1 00 05.1						Near Kitagata in Gihu pref.
		F	1 00 28-						
73	" 15	e	9 26 14.6						Local shock.
		F	9 26 32-						
74	" 15	eP	19 47 32.4						Lower course of the river Kinu.
		S	19 47 44.1						
		F	19 48 19-						
75	" 19	eP	3 27 11.5					224	After shock. In Saitama pref.
		S	3 27 41.6						
		F	3 28 28.0						
76	" 22	eP	16 56 22.2					550	ENE off Inubo c.
		S	16 57 23.6						
		F	16 59 25.9						
77	" 23	e	10 32 56.0						Bay of Tokyo.
		F	10 34 45-						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
78	Apr. 23	e	11 02 14.3					In the Kasima-nada.	
		F	11 05 29—						
79	" 23	eP	12 01 45.2				318	Ditto.	
		S	12 02 28.0						
		F	12 03 44—						
80	" 25	e	16 59 26.9					Near Nemuro in Hokkaido.	
		F	17 03 36—						
81	" 26	eP	0 36 12.2				850	Sea off Miyako in Iwate pref.	
		S	0 37 44.0						
		F	0 41 08—						
82	" 26	eP	3 42 13.8				282	Near Tiba.	
		S	3 42 51.8						
		F	3 48 12—						
83	" 26	eP	4 03 02.7				22	Local shock.	
		S	4 03 05.6						
		F	4 03 27.5						
84	" 26	e	12 37 25.3					Sea off Boso peninsula.	
		F	12 40 08—						
85	" 26	eP	13 35 33.2				1930	A distant shock. In Okhotsk sea.	
		S	13 38 50.6						
		F	13 43 02—						
86	" 27	e	18 35 11.7					Near Gihu.	
		F	18 35 58—						
87	" 28	\bar{P}	3 43 52.7				280	In the Kumano-nada. $\psi=136.9E, \lambda=34.0N$. Epicentre about 250k m. under ground.	
		P	3 43 54.0						
		S	3 44 30.4						
		F	3 54 10—						
88	" 29	P	8 03 31.5				830	S off Hatijyo Is.	
		\bar{P}	8 03 33.9						
		S	8 05 01.0						
		F	8 10 54—						
89	" 29	eP	17 36 38.3				3015	A distant shock. In the South Ocean.	
		S	17 41 22.4						
		F	17 48 24.9						



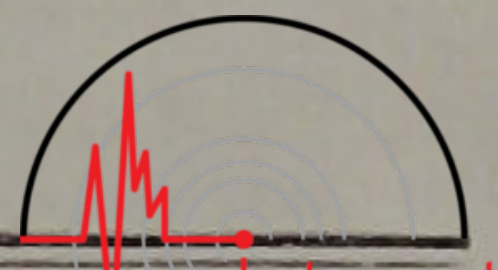
No.	Date	Phase	Time G. M. C. T h m s	Period s	Amplitude			Δ Epicentre- distance km.	Remarks		
					AE μ	AN μ	Az μ				
90	May 2	P	23 30 47.1					890	In Ariake bay in Kagosima pref. Strong shock was felt near the center.		
		\bar{P}	23 30 54.6								
		S	23 31 50.7								
		L	23 32 47.1								
		F	23 43 01.0								
91	" 5	iP	4 11 51.7	3.0	-2	-3	-27	310	Epicentre about 300k. m. under ground. $\psi=135.3$ E, $\lambda=34.6$ N. N part of the Osaka bay.		
		S	4 12 33.0								
		MN	4 12 33.5							+233	
		ME	4 12 33.9							+424	
		MZ	4 12 48.2							2.5	-93
		F	4 24 21.0								
92	" 11	P?	6 54 48.3						ESE off Hatijyo Is.		
		\bar{P} ?	6 55 22.1								
		F	7 16 45 -								
93	" 12	eP	0 27 44.8					10	Local shock.		
		S	0 27 46.1								
		F	0 27 51 -								
94	" 12	e	6 14 51.7						A distant shock.		
		F	6 18 25 -								
95	" 14	iP	13 18 06.7	4.3	-159			3945	A distant shock. In the south Ocean.		
		\bar{P}	13 18 25.3								
		S	13 23 50.9								
		ME	13 24 08.9							4.0	-174
		MN	13 24 34.2								
		L	13 26 09.3								
		F	15 06 44 -								
96	" 16	e	6 05 51.4						ENE off Hatijyo Is.		
		F	6 10 50 -								
97	" 16	eP	15 59 43.7					12	Local shock.		
		S	15 59 45.3								
		F	16 00 33 -								
98	" 20	eP	11 54 57.7					195	Middle course of the river Tone.		
		S	11 55 24.0								
		F	12 03 13 -								



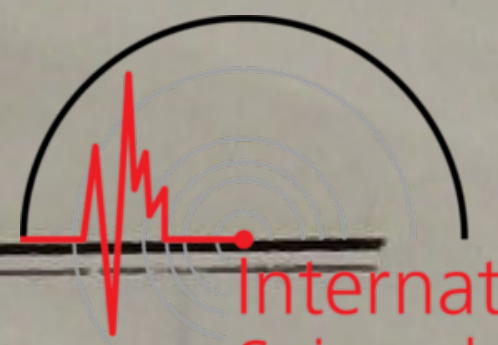
No.	Date	Phase	Time			Period	Amplitude			Δ Epicentre- distance	Remarks
			G.	M.	C. T		AE	AN	Az		
			h	m	s	s	μ	μ	μ	km	
99	May 21	e	7	04	58.8						E off Sioya c.
		F	7	07	44.0						
100	" 22	eP	17	31	07.6					160	Near Tiba.
		S	17	31	29.2						
		F	17	34	53.0						
101	" 23	eP	20	18	36.0					189	Near Hinomisaki in Wakayama pref.
		S	20	19	01.2						
		L	20	19	05.0						
		F	20	23	28—						
102	" 24	eP	2	25	08.0					97	Off mouth of the river Hidaka.
		S	2	25	21.1						
		F	2	29	21—						
103	" 26	eP	13	46	49.4					232	Far S off Ommae c.
		S	13	47	20.7						
		F	13	49	12—						
104	" 26	\bar{P}	16	20	07.8						A distant shock.
		P	16	20	20.2						
		L	16	28	55.4						
		M _E	16	29	52.5	4.2	+100				
		M _N	16	29	08.4	4.5		+67			
105	" 28	e	2	15	28.2						E off Kinkwasan.
		F	2	20	36.0						
106	" 28	iP	2	23	17.4					336	NE off Amami Osima Is. Slight shock was felt S part of Kyusyu and Ryukyu Is.
		S?	2	24	02.7						
		M _E	2	23	35.0	4.4	+53				
		L	2	27	28.9						
		F	2	47	12.1						
107	" 28	e	5	04	36.4						Ditto.
		F	5	12	23.7						
108	June 1	eP	17	33	19.5						
		F	17	35	21—						



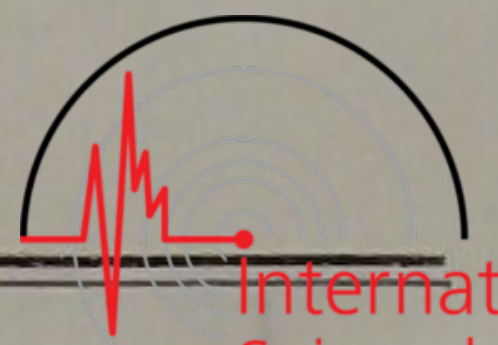
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					ΔE	ΔN	ΔZ		
					μ	μ	μ		
109	June 1	eP S ME F	19 34 02.3 19 34 30.1 19 34 31.4 19 39 10.8				206	$\psi = 135.1^\circ E, \lambda = 34.1^\circ N$. Mouth of the river Arita. Slight shock was felt W part of Kii and E part of Sikoku.	
110	" 1	eP F	21 11 33.8 21 14 11-					Upper course of the river Ma- suda in Gihu pref.	
111	" 3	eP S L ME MN F	0 20 14.1 0 21 11.1 0 21 12.1 0 21 45.9 0 21 48.9 0 31 04-	2.3		+105	423	Sea off Kinkwasan. $\psi = 141.7^\circ E, \lambda = 38.2^\circ N$. Slight shock was felt all Toho- ku, SE part of Hokkaido and N part of Kwanto district.	
112	" 3	eP L F	10 51 35.4 11 46 43.0 12 45 43-					A distant shock. In Mexico	
113	" 3	eP S F	13 44 16.5 13 45 41.5 13 51 30-				780	$\psi = 142.2^\circ E, \lambda = 39.8^\circ N$. Sea off Rikutyu province. Slight shock was felt. NE part of Kwanto and E part of Tohoku district.	
114	" 4	eP L F	2 02 44.6 2 04 37.4 2 13 24-					ESE sea off cape of Siringa. Slight shock was felt Hokkaido and E part of Tohoku district.	
115	" 4	eP S F	14 11 38.0 14 12 01.3 14 16 58.0				173	Near Tadono. Lower course of the river Arita in Wakayama pref	
116	" 8	eP S F	6 15 22.9 6 16 20.5 6 25 14-				428	In the Hyuga-nada. $\psi = 131.8^\circ E, \lambda = 31.9^\circ N$.	
117	" 8	e F	8 01 46- 8 06 42-					Near Oiwake.	
118	" 8	eP S L F	10 55 22.5 10 56 22.5 10 57 32.8 11 05 14-				540	In the Hyuga-nada. $\psi = 131.9^\circ E, \lambda = 32.2^\circ N$.	



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
119	June 8	e F	15 00 31- 15 06 03-					A distant shock. In the South Ocean.	
120	" 10	eP eS F	18 08 01.5 18 09 01.2 18 13 31.9				443	Sea off the cape of Sioya.	
121	" 10	eP S F	20 27 35.5 20 28 37.0 20 42 37.0				560	A distant shock. In the South Ocean.	
122	" 11	e F	17 05 00.2 17 12 04-					A distant shock. SW off Marianne Is.	
123	" 13	eP S F	0 47 12.9 0 47 40.8 0 52 36-				207	In the Kasima-nada. ψ=141.0E, λ=36.5 N.	
124	" 13	eP L F	21 02 38.8 21 06 54.6 21 12 29-					A distant shock. Near Philippine Is	
125	" 14	eP L? F	6 04 27.4 6 08 25.5 6 15 10-					SSE off Kosyun in Taiwan.	
126	" 14	eP L? F	11 25 22.6 11 29 35.9 11 34 26-					A distant shock. Near Philippine Is.	
127	" 16	eP F	1 27 15.4 1 31 08-					A distant shock? Faint record.	
128	" 16	iP P̄ S ME MN Mz F	8 33 08.5 8 33 16.5 8 33 46.7 8 34 09.4 8 34 18.5 8 34 20.4 8 44 07-		2.5 2.3 1.7	+101 -125		284 Lower course of the river Kinu. ψ=140.1 E, λ=36.0 N. Slight shock was felt all Kwa- nto, SE part of Tohoku and E part of Tyubu district.	



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	AZ μ		
129	June 16	eP	20 18 10.7				382	In the Kasima-nada. Slight shock was felt near the center.	
		S	20 19 02.2						
		L	20 19 10.4						
		F	20 26 18-						
130	" 17	eP	5 46 59.4				332	Sea off Inubo c.	
		S	5 47 44.0						
		F	5 51 11-						
131	" 18	eP	1 32 37.0				610	$\psi=132.1E, \lambda=32.6N$ Hyuganada. Slight shock over Kyusyu.	
		S	1 33 44.0						
		L	1 34 03.5						
		F	1 44 14-						
132	" 18	e	10 26 -					A distant shock. In Newzealand.	
			11 03 -						
		F	12 15 -						
133	" 19	eP	15 19 04.7				570	S off Hatijyo Is.	
		S	15 20 07.2						
		F	15 24 -						
134	" 22	iP	9 36 54.8				400	$\psi=141.1E, \lambda=35.9N$. Sea off the cape of Inubo. Slight shock was felt all Kwanto. SE of Tohoku and SE part of Tyubu district. Strong shock was felt near the center	
		\bar{P}	9 37 05.0						
		S	9 37 55.4						
		Mz	9 37 58.2	2.3		+139			
		ME	9 38 08.8	2.7	-329				
		MN	9 38 08.5	3.0		+484			
135	" 22	eP	3 42 32.1				343	Ditto.	
		eS	3 43 18.3						
		F	3 47 31-						
136	" 22	e	11 37 03.4					Middle course of the river Kiuu.	
		F	11 39 38-						
137	" 22	e	18 22 06.2					Near Mt. Tukuba.	
		F	18 23 35-						
138	" 23	e	2 19 22.9					Near Kusiro in Hokkaido.	
		F	2 32 46-						



No.	Date	Phase	Time			Period	Amplitude			Δ Epicentre- distance	Remarks
			G.	M.	C. T		AE	AN	AZ		
			h	m	s	s	μ	μ	μ	km.	
139	June 23	eP	3	30	52.8					444	In the Kasima-nada
		S?	3	31	52.6						
		F	3	35	09.8						
140	" 24	eP	15	56	45.5					560	Ditto.
		S	15	57	47.9						
		F	16	02	17—						
141	" 25	eP	13	33	17.6					158	Near go mura, at N part of Tango province.
		S	13	33	38.9						
		F	13	35	57—						
142	" 26	e	19	23	02—						Far SE off Otiisi c.
		F	19	29	38—						
143	" 28	eP	12	39	47.3					193	Near Mt. Hakone.
		S	12	40	07.9						
		F	12	42	53—						
144	" 28	eP	14	53	16.4					215	Near Nozima c. in Tiba pref.
		S	14	53	45.3						
		F	14	56	09—						
145	" 29	eP	1	43	24.5					15	Local shock.
		S	1	43	26.7						
		F	1	43	37—						
146	" 29	eP	1	53	16.6					23	Ditto.
		S	1	53	20.5						
		F	1	53	43—						
147	" 29	eP	3	22	46.5					285	Sea off the cape Inubo.
		S	3	23	24.9						
		F	3	25	04—						
148	" 29	eP	18	17	26.4					910	Sea off mouth of the river Mabuti. $\psi=143.3E, \lambda=40.5N$. Slight shock was felt E part of Tohoku and S part of Hokkaido.
		S	18	19	05.6						
		ME	18	19	33.5	—	-53				
		MN	18	19	40.1	2.4		+52			
		Mz	18	19	57.2	2.1			-16		
		F	18	29	19—						

Symbols and Notations

I. Phases of the Seismogram.

P = First preliminary tremors (Longitudinal)

\overline{P} = Individual or upperfirst preliminary tremors.

S = Second preliminary tremors (Transverse)

L = Long waves at the beginning of the surface phase.

M = Greatest motion in the surface phase.

F = End of discernible movements.

II. Nature of the motion.

i = Sudden beginning of the motion.

e = Gradual beginning of the motion.

III. Remarks.

Covered = Covered by following shock.

Is. = Island. C. = Cape. Pref. = Prefecture. Str. = Strait.

SEISMOLOGICAL BULLETIN
OF THE
AITIKEN METEOROLOGICAL OBSERVATORY
NAGOYA JAPAN

VOL. III, NO. 2,

FROM JULY TO ~~OCTOBER.~~ ^{DECEM}

1932

NAGOYA

MARCH 1933

CONSTANTS

Latitude and longitude of the center of the Seismographic room

$$\varphi = 35^{\circ}10' N$$

$$\lambda = 136^{\circ}58' E \text{ from Greenwich}$$

Altitude, 51.7^m above mean sea level.

Lithologic foundation, Schottered clay (Tertiary)

Time. All determinations are reduced to Greenwich mean civil time.

Constants of the Seismographs

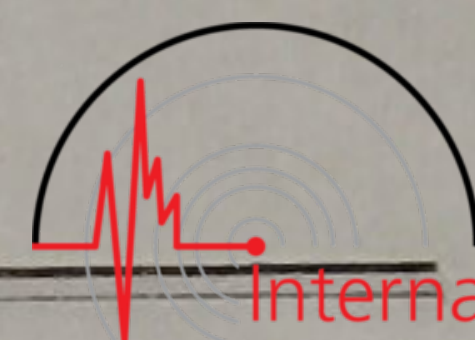
Apparatus	Component	T^0	ξ	$\frac{r}{T^{0.2}}$	V	
Wiechert 200kg	I {	N	5.1	7	0.02	76
		E	5.0	7	0.01	73
	II {	N	5.2	8	0.01	73
		E	5.2	9	0.02	72
" 80kg	I	Z	4.3	5	0.02	65
	II	Z	4.3	5	0.02	64
Omori	I {	N	18.6	4	0.02	30
		E	18.8	4	0.02	30
	II {	N	18.0	4	0.02	30
		E	18.0	4	0.01	30

Note. I, July. 1, to Dec 25

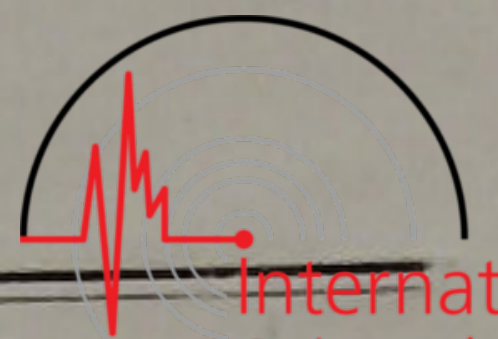
II, Dec. 26 to 31.



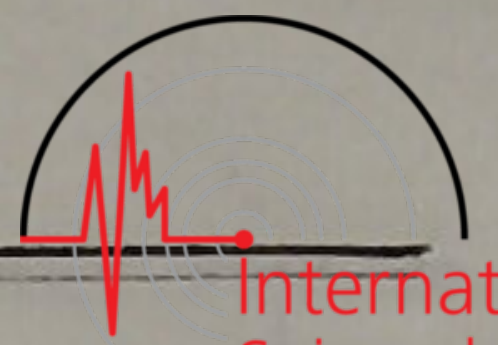
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	AZ μ		
149	July 1	eP S F	15 37 51.0 15 38 33.7 15 40 39—				317	$\psi=149.6E, \lambda=36.6N.$ Sea off mouth of the river Kuji Ibaraki pref.	
150	" 4	eP S ME MN F	7 51 13.6 7 51 17.4 7 51 17.9 7 51 17.9 7 52 39—		-13	+22	28	A local shock. near Gilu. Slight shock was felt in Aiti pref.	
151	" 5	eP S F	19 53 27.0 19 54 34.0 19 58 19.0				610	SW off Hatijyo Is. (deep focus)	
152	" 9	eP L F	13 05 49.1 13 15 35.5 13 22 47—				—	A distant shock.	
153	" 10	eP S F	3 37 51.7 3 38 37.9 3 43 16.0				342	Near Hatijyo Is.	
154	" 10	eP S F	4 01 29.7 4 01 35.3 4 02 34.0				42	Near mt. Sizuga dake in Siga pref	
155	" 10	\bar{P} P S F	7 47 09.9 7 47 15.3 7 48 36.5 8 00 0 0				800	$\psi=145.0F, \lambda=39.6N.$ Far E off Miyako in Iwate pref. Slight shock was felt Hokkaido & Tohoku district.	
156	" 11	eP S F	8 39 47.4 8 40 44.8 8 47 28—				426	SE off Inubo c.	
157	" 12	eP S F	4 19 02.9 4 19 33.5 4 22 —				228	Kii strait.	
158	" 12	eP S F	6 10 32.0 6 10 57.6 6 11 57.0				190	Valley of the river Naka in Ibaraki pref.	



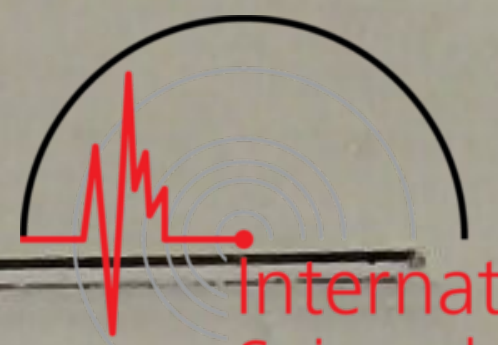
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	AZ μ		
159	July 12	eP	9 08 16.7					308	Sea off Kujukuri hama.
		S	9 08 58.3						
		F	9 10 39-						
160	" 13	eP	12 41 06.1					204	Middle course of the river Tone.
		S	12 41 33.6						
		F	12 42 57-						
161	" 15	eP	23 19 26.3					850	$\phi = 142.5E, \lambda = 41.5N$ SW sea off Erimo c. Slight shock was felt E. of Hokkaido and N. Tohoku district.
		S	23 20 58.4						
		F	23 29 38-						
162	" 18	eP	5 07 05.4					610	Sea off Kii peninsula
		S	5 08 12.3						
		F	5 15 22-						
163	" 20	eP	20 17 17.9					-	A distant shock.
		L	20 27 23.0						
		F	20 37 18-						
164	" 21	eP	12 47 13.6					-	A distant shock. Epicentre at New Guinea Is. district.
		L	12 53 00.4						
		F	13 04 14-						
165	" 22	eP	6 04 57.5					287	N part of the Kasimanada.
		S	6 05 36.1						
		F	6 07 29-						
166	" 23	eP	0 27 23.7					209	Mouth of the river Baniu.
		S	0 27 51.8						
		F	0 30 30-						
167	" 23	eP	8 48 16.9					194	Near Oiwake.
		S	8 48 43.0						
		F	8 51 35-						
168	" 24	eP	2 54 54.3					126	Near Wada in Nara pref.
		S	2 55 11.2						
		F	2 58 24-						
169	" 24	e	19 32 53.0					-	W off Ogasawara Is.
		F	19 41 36-						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	AZ μ		
170	July 25	iP	8 25 28.2				275	$\psi = 135.6E, \lambda = 35.6N.$ In the Bay of Wakasa. 300km. under ground. Slight shock at Kwanto but no felt near centre.	
		S	8 26 05.2						
		MN	8 26 08-		-1100				
		F	8 45 51-						
171	" 27	eP	0 32 09.5				440	$\psi = 139.0E, \lambda = 31.2N.$ SW off Hatijyo Is. (deep focus) Epicenter about 300km. under from level. Slight felt at Utunomiya.	
		S	0 33 08.8						
		Mz	0 33 11.2	-					
		ME	0 33 12.0	4.0	+61				
		MN	0 33 12.5	3.6		-33			
		F	0 43 20-						
172	" 27	e	8 42 09.9				-	Lower course of the river Tenjin in Tottori pref.	
		F	8 45 33-						
173	" 27	eP	21 27 25.3				-	A distant shock. New Guinea district.	
		L	21 33 28.8						
		F	21 42 20-						
174	" 28	eP	3 44 21.4				790	E off mouth of the river Mabuti.	
		S	3 45 47.7						
		F	3 51 21-						
175	" 29	e	1 32 47.4				-	A local shock.	
		F	1 38 52-						
176	" 29	eP	16 37 01.6				570	In the Kasimanada.	
		S	16 38 04.3						
		F	16 43 25-						
177	" 29	P	21 05 30.6				-	A distant shock.	
		L	21 11 03.4						
		F	21 17 58-						
178	" 29	eP	21 54 35.4				820	$\psi = 142.2E, \lambda = 40.4N.$ E off mouth of the river Mabuti.	
		S	21 56 04.1						
		F	22 03 13-						
179	August 1	eP	3 14 22.6				248	SE off Sima peninsula. Epicentre about 300km. under from surface.	
		S	3 14 56.0						
		F	3 20 28.0						
180	" 1	eP	4 36 41.7				275	$\psi = 139.6E, \lambda = 36.2N.$ Near Tatebayasi in Gunma pref.	
		S	4 37 18.7						
		F	4 41 19-						



No.	Date	Phase	Time G. M. C. T	Period	Amplitude			Δ Epicentre- distance	Remarks
					AE	AN	Az		
			h m s	s	μ	μ	μ	km.	
181	August 1	eP	20 58 56.5					287	Bay of Ise.(deep focus)
		S	20 59 35.2						
		F	21 01 26-						
182	" 2	P	4 32 25.1					—	A distant shock. New Guinea Is.
		L	4 37 49.8						
		F	4 45 —						
183	" 3	e	19 00 11.7					—	A local shock.
		F	19 03 15-						
184	" 4	eP	6 42 48.4					620	A distant shock. $\psi=16.5E, \lambda=50N.$ Near Kamutchatka Is.
		S?	6 43 56.1						
		F	6 51 07-						
185	" 5	e	0 50 38.2					—	Mt. Asama (Volcano)
		F	0 57 26-						
186	" 6	eP	9 22 41.4					163	Mouth of the river Kumano.
		S	9 23 03.3						
		F	9 24 43-						
187	" 6	eP	22 45 54.6					228	$\psi=140.2E, \lambda=36.4N.$ Near Kakioka in Ibaraki pref.
		S	22 46 25.2						
		F	22 51 10-						
188	" 8	eP	4 25 32.9					435	$\psi=141.7E, \lambda=37.4N.$ ESE off 60km. from mouth of the river Uketo.
		S	4 26 31.5						
		F	4 32 18-						
189	" 12	e	3 32 02.1					—	Near Mito.
		F	3 38 04-						
190	" 12	eP	7 48 12.9					31	Near Ogaki in Gihu pref.
		S	7 48 17.4						
		F	7 49 09-						
191	" 13	iPz	22 30 04.9					280	$\psi=137.0E, \lambda=33.9N.$ In the Kumano nada. Epicentre about 300km. under from surface.
		S	22 30 42.5						
		ME	22 30 43.3	2.7	+39				
		MN	22 30 48.0	2.2		+16			
		Mz	22 30 51.6	—			+9		
		F	22 36 05.0						

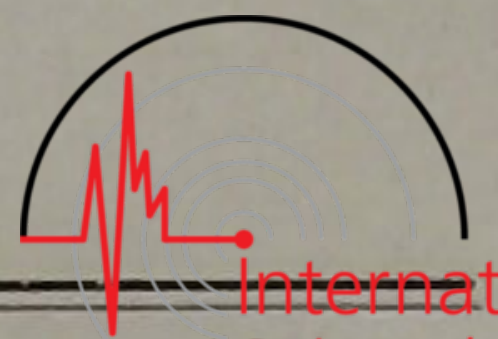


No.	Date	Phase	Time G. M. C. T	Period	Amplitude			Δ Epicentre- distance	Remarks
					AE	AN	Az		
			h m s	s	μ	μ	μ	km.	
192	Aug. 14	P	4 46 32.2					3725	A distant shock. $\psi=95.E, \lambda=30N.$ SE part of Tibet.
		\bar{P}	4 46 59.5						
		S	4 52 02.8						
		M _N	4 52 06.0	3.6		+68			
		M _E	4 52 06.1	3.9	-55				
		F	5 19 —						
193	" 14	iPz	10 17 24.9				212	$\psi=139.3E, \lambda=36.2N.$ Near Fukaya in Saitama pref. Slight shock over all Kwanto.	
		S	10 17 53.4						
		F	10 20 47—						
194	" 14	eP	12 58 47.6				560	S off Inubo c.	
		S	12 59 49.2						
		F	13 15 48—						
195	" 16	e	9 53 45.4				—	Near Yasiro in Nagano pref.	
		F	9 54 37—						
196	" 20	eP	9 40 38.2				314	Near Takada.	
		S	9 41 20.4						
		F	9 46 57—						
197	" 20	eP	14 54 21.0				97	W part at bay of Suruga.	
		S	14 54 34.1						
		M _N	14 54 47.0	1.6		+23			
		F	15 00 58—						
198	" 21	P	4 19 43.1				—	$\psi=122.4E, \lambda=23.9N.$ E off Kwarenko in Taiwan.	
		L?	4 26 05—						
		F	4 46 30—						
199	" 21	eP	9 04 43.6				174	Near Hanazono in Saitama pref. (120km. under ground).	
		S	9 05 07.0						
		F	9 07 22—						
200	" 21	eP	9 08 12.5				45	Lower course of the river Kiso.	
		S	9 08 19.2						
		M _E	9 08 19.6	—	+8				
		M _N	9 08 19.6	—		-8			
		F	9 09 53.0						
201	" 22	e	3 53 07.4				—	Kasumigaura.	
		F	3 54 47.0						

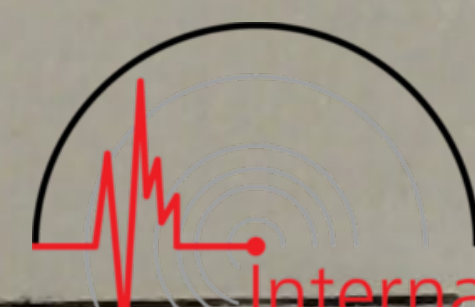
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
202	Aug. 22	P	11 15 37.8				2985	$\psi=121.3E, \lambda=35.3N.$ SE off Shan-Tung peninsula.	
		S	11 20 20—						
		F	11 43 44—						
203	" 22	eP	11 23 44.7				19	Near Itinomiya in Aiti pref.	
		S	11 23 47.3						
		MN	11 23 47.6	—		-178			
		Mz	11 23 48.0	—		-78			
		M _E	11 23 48.2	—	-141				
		F	11 25 37—						
204	" 24	eS?	12 15 46.6				—	A distant shock. Near Philippine Is.	
		F	12 25 47—						
205	" 27	eP	14 57 06.5				194	SW foot of mt. Tukumu	
		eS	14 57 32.6						
		F	14 58 56—						
206	" 29	eP	21 45 55.1				11	Near Gihu. Slight shock was felt in NW part of Aiti pref.	
		S	21 45 56.6						
		M _E	21 45 56.9	—	-36				
		M _N	21 45 57.0	—		+34			
		F	21 47 15—						
207	" 30	eP	16 23 36.6				1700	Near Okinawa Is.	
		S	16 26 32.3						
		F	16 28 49—						
208	Sept. 2	eP	2 42 39.1				426	Sea off Inubo c.	
		S	2 43 36.5						
		F	2 47 15—						
209	" 2	eP	12 59 28.9				1030	$\psi=142.0E, \lambda=24.0N.$ Far S off Ogasawara	
		S	13 01 20.1						
		F	13 08 53—						
210	" 2	e	18 36 40.2				—	Off Sicbukisaki in Idu province.	
		F	18 38 23—						
211	" 3	eP	0 58 04.1				432	E off Sioya c.	
		S	0 59 02.4						
		F	1 04 —						
212	" 3	e	8 52 36.4				—	Near Ogiwa in Saitama pref.	
		F	8 53 54—						



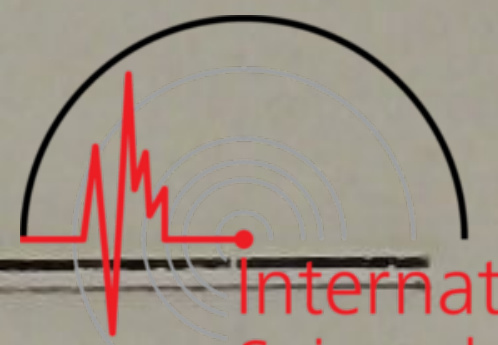
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
213	Sept. 3	iP	12 00 45.9					990 $\psi=143.1E, \lambda=41.0N.$ ESE off Siritia c. Slight shock was felt Kwanto. Tohoku & Hokkaido district.	
		\bar{P}	12 00 52.8						
		eS	12 02 33.0						
		ME	12 02 48.7	3.8	-156				
		Mz	12 03 01.3	3.1		-44			
		MN	12 03 20.9	2.9		-224			
		F	12 21 47-						
214	" 4	eP	12 30 37.8				900 $\psi=142.9E, \lambda=40.9N.$ ENE off mouth of the river Mabuti.		
		S	12 32 15.5						
		F	12 37 52-						
215	" 5	eP	1 03 04.7				81 Valley of the river Moko.		
		S	1 03 15.6						
		F	1 04 10.0						
216	" 5	eP	3 10 01.9				970 $\psi=142.1E, \lambda=40.4N.$ E off mouth of the river Mabuti. Slight shock was felt at Tohoku and Hokkaido.		
		S	3 11 46.5						
		ME	3 12 05.3	3.0	+29				
		MN	3 12 10.9	2.6		-29			
		F	3 20 24-						
217	" 5	eP	12 58 01.3				820 Ditto.		
		S	12 59 29.8						
		F	13 02 21-						
218	" 7	eP	11 32 36.5				294 $\psi=140.6E, \lambda=35.9N.$ Near Kasumigaura course of the river Tone.		
		S	11 33 16.1						
		F	11 34 53-						
219	" 7	eP	18 23 00.5				328 Far E off the Kasima nada.		
		S	18 23 44.6						
		F	18 27 37-						
220	" 9	eP	4 13 29.1				91 Near Iida in Nagano pref.		
		S	4 13 41.4						
		F	4 14 12-						
221	" 9	P	13 46 34.2				— A distant shock. Near New Guinea Is.		
		L	13 52 33.1						
		F	14 02 46-						
222	" 11	eP	13 21 24.8				187 NE off Amami Osima.		
		eS	13 21 49.9						
		F	Covered						



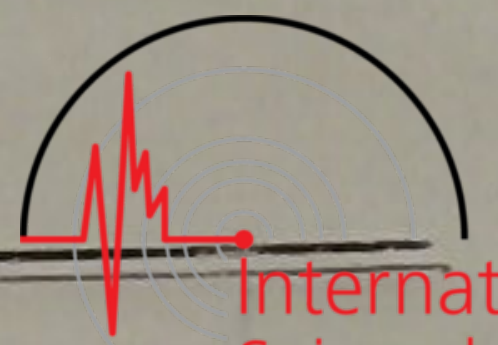
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks		
					AE μ	AN μ	Az μ				
223	Sept. 11	eP	13 23 10.0					249	Near Naze.		
		eS	13 23 43.5								
		F	13 24 45-								
224	" 12	eP	8 47 23.6					317	S off Boso peninsula.		
		S	8 48 06.3								
		F	8 51 34-								
225	" 13	eP	6 17 22.3					276	Kitaura in Ibaraki pref.		
		S	6 17 59.4								
		F	6 19 41-								
226	" 13	eP	22 19 30.7					405	In the Kasimanada.		
		S	22 20 25.2								
		F	22 22 05-								
227	" 14	eP	4 07 55.1					123	Upper course of the river Oi.		
		S	4 08 11.6								
		F	4 09 03-								
228	" 15	eP	4 48 56.4					8	Near Gihu. Local shock.		
		S	4 48 57.5								
		F	4 49 27-								
229	" 15	eP	8 10 13.4					126	The Bay of Nanao in Isikawa pref.		
		S	8 10 30.3								
		F	8 11 07-								
230	" 15	e	14 07 17.4					-	A distant shock.		
		F	14 08 48-								
231	" 17	eP	13 40 49.8					379	Sea of Ensyunada.		
		S	13 41 40.9								
		F	13 45 13-								
232	" 18	eP	18 17 47.1					600	NW off Hatijyo Is		
		S	18 18 53.2								
		ME	18 18 54.7							2.7	+42
		MN	18 18 55.5							2.7	±37
		F	18 25 21-								
233	" 19	eP	14 13 17.7					244	Middle course of the river Tone		
		S	14 13 50.5								
		F	14 18 28-								



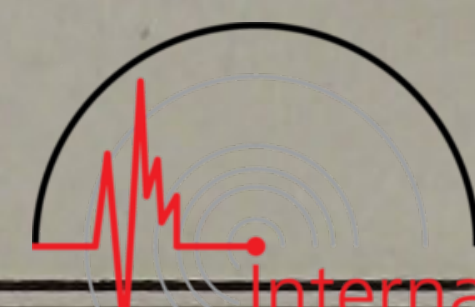
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
234	Sept. 22	e	11 00 37.8					Near Tanabe in Kyoto pref.	
		F	11 01 38-						
235	" 22	eP	13 34 23.4				103	ESE off Nagaturo of Idu peninsula.	
		S	13 34 37.3						
		F	13 36 19-						
236	" 23	iPz	14 24 26.5				980	$\psi=139.0E, \lambda=44.7N$. N part of Japan sea. A strong sea shock. Slight shock was felt E chubu, E Kwanto Tohoku and Hokka- ido.	
		S	14 26 12.9						
		ME	14 26 20.5	3.3	-255				
		Mz	14 26 20.7	2.2		-64			
		MN	14 27 08.9	3.7		+158			
		F	14 53 45-						
237	" 24	eP	2 31 35.0				150	Near Tanabe in Kyoto pref.	
		S	2 31 55.2						
		F	2 32 35-						
238	" 24	e	14 52 50.1				-	Near Yuki, middle course of the river Kinu.	
		F	14 54 09-						
239	" 24	eP	14 53 10.4				10	A local shock.	
		S	14 53 11.7						
		eF	14 53 35-						
240	" 25	eP	14 15 29.9				330	Near Sioya c.	
		S	14 16 14.4						
		F	14 17 32-						
241	" 26	eP	10 24 15.5				260	In the Kasimanada.	
		S	10 24 50.5						
		F	10 27 37-						
242	" 26	eP	19 33 08.4				12810	A distant shock. Macedonia district of Greece.	
		eS	19 45 57.9						
		F	20 36 32-						
243	" 26	e	21 39 11.3				-	A local shock.	
		F	21 42 16-						
244	" 28	eP	18 41 29.6				49	Upper course of the river Yahagi in Aiti pref.	
		S	18 41 36.2						
		ME	18 41 37.1	-	± 29				
		MN?	18 41 37.2	-		+18			
		F	18 44 51-						



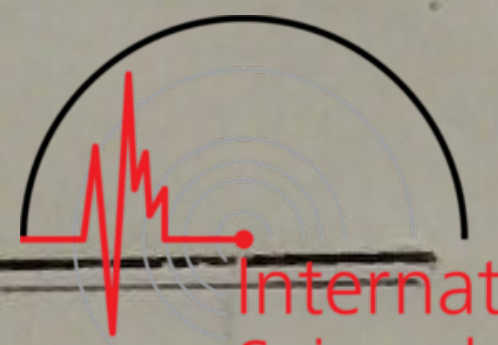
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks		
					AE μ	AN μ	Az μ				
245	Sept. 29	e	3 44 14.6					740	Near Nōgata in Hukuoka pref.		
		eS	3 45 35.7								
		F	3 47 52—								
246	" 29	eP	4 09 04.7					367	A distant shock. P: S: uncertain		
		eS	4 09 54.1								
		F	4 14 04—								
247	" 29	eP?	6 15 56.2					1050	eP: uncertain. Kumanonada.?		
		S	6 17 49.6								
		F	6 21 31—								
248	" 29	e	6 51 22.5					—	Upper course of the river Hijikawa in Ehime pref.		
		F	6 53 35—								
249	" 29	eP	10 35 43.3					70	A local shock.		
		S	10 35 52.7								
		F	10 36 18—								
250	" 29	eP	17 50 23.4					—	S off Etrou Is.		
		L	17 59 39.4								
		F	18 58 39—								
251	" 30	eP	4 56 26.2					358	SW off Hatijyo Is.		
		S	4 57 14.4								
		ME	4 57 17.2							3.1	±16
		MN	4 57 17.6							2.2	+8
		F	5 03 04—								
252	" 30	eP	6 24 55.6					170	Near Nagano.		
		eS	6 25 18.5								
		F	6 26 29—								
253	October 1	eP	3 02 00.3					33	Valley of the river Yahagi in Aiti pref.		
		S	3 02 04.7								
		F	3 02 31—								
254	" 1	eP	6 42 15.7					189	Near Wakayama		
		S	6 42 41.1								
		F	6 47 03—								



No	Date	Phase	Time			Period	Amplitude			Δ Epicentre distance	Remarks
			G.	M.	C T		ΔE	ΔN	Az		
			h	m	s	s	μ	μ	μ	km.	
255	October 1	iP	15	09	56.0					770	$\psi = 140.5E, \lambda = 29.5N.$ Near NW off Ogasawara Is. (deep focus)
		S	15	11	20.2						
		ME	15	11	22.3	2.8	+12				
		MN	15	11	22.8	2.8		± 11			
		F	15	18	22-						
256	" 2	e	3	30	59.7					-	A distant shock.
		F	3	35	31-						
257	" 2	e	3	39	13.1					-	L place of No. 256 shock?
		F	3	42	06-						
258	" 2	eP	14	37	15.7					338	$\psi = 141.0E, \lambda = 37.0N.$ Near Sioya c.
		S	14	38	01.2						
		F	14	40	52-						
259	" 3	eP	5	53	06.3					49	Near Kanayama in Gihu pref.
		S	5	53	12.8						
		F	5	54	37-						
260	" 3	eP	13	14	26.2					7	A local shock.
		S	13	14	27.2						
		F	13	14	53-						
261	" 3	eP	16	43	20.8					20	Near Gihu. Local shock.
		S	16	43	23.6						
		F	16	44	28-						
262	" 3	eP	23	07	27.5					15	A local shock.
		S	23	07	29.6						
		F	23	08	27-						
263	" 4	eP	18	45	01.4					260	Near Mitukaido in Ibaraki pref.
		S	18	45	36.5						
		F	18	47	05-						
264	" 5	eP	3	51	12.1					430	ESE off Hatijyo Is.
		S	3	52	10.0						
		F	3	57	17-						
265	" 5	eP	14	01	04.6					560	$\psi = 141.3E, \lambda = 35.2N.$ SE off Inubo c.
		S	14	02	06.7						
		ME	14	02	47.5	1.9	-14				
		MN	14	02	51.0	2.1		+19			
		F			Coverd						



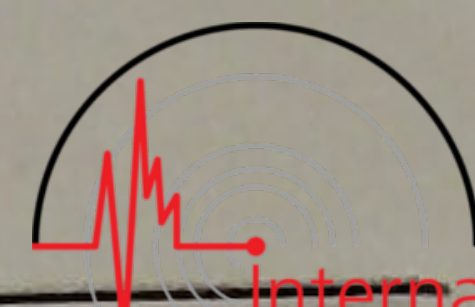
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
266	October 5	eP	14 09 36.3					433	Sea off Inubo e.
		S	14 10 34.7						
		F	14 14 35—						
267	" 6	eP	5 02 15.6					610	SW off Hatijyo Is.
		S	5 03 22.2						
		ME	5 03 23.8	3.9	+66				
		MN	5 03 24.7	3.5		-30			
		F	5 12 17—						
268	" 9	eP	3 28 16.1					149	Valley of the river Imidu in Toyama pref.
		S	3 28 36.2						
		F	3 30 41—						
269	" 10	eP	9 04 04.6					620	$\psi=141.8E, \lambda=39.4N.$ Middle course of the river Oduki in Iwate pref.
		S	9 05 12.5						
		F	9 12 46.1						
270	" 12	e	19 40 16.4					—	Near Tisima Is.
		F	19 47 30—						
271	" 13	iP	17 54 31.8					19	Near Gihu. Slight shock was felt NW part of Aiti pref.
		S	17 54 34.4			-1	+5		
		Mz	17 54 34.5	—			+12		
		ME	17 54 35.1	—	-53				
		MN	17 54 35.1	—		+29			
		F	17 57 14—						
272	" 14	eP	5 36 41.2					392	Middle course of the river Tone. Slight shock over all Kwanto district
		S	5 37 34.0						
		F	5 42 18—						
273	" 14	e	12 20 38.1					—	Bay of Tokyo.
		F	12 21 41—						
274	" 14	eP	12 37 06.7					392	$\psi=138.8E, \lambda=31.6N.$ SSW about 200km. from Hati- jyo Is. Focus about 120km. under the ground.
		S	12 37 59.5						
		ME	12 38 01.5	3.4	+39				
		MN	12 38 03.1	3.1		+23			
		Mz	12 38 06.8	1.0			± 5		
		F	12 46 14—						
275	" 15	eP	12 45 44.4					39	Near Mt Syakadake in Mie pref.
		S	12 45 49.6						
		F	12 46 33.0						



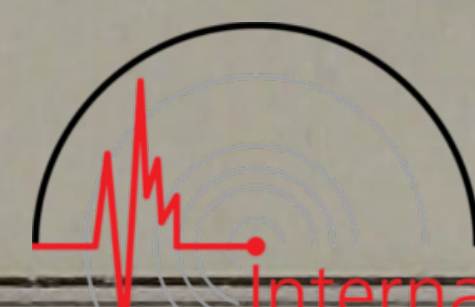
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					A _E μ	A _N μ	A _Z μ		
276	Octo. 16	eP	0 10 28.2	— 2.8	+18	± 37		570	S off Inubo c.
		S	0 11 30.9						
		ME	0 11 43.9						
		MN	0 11 44.5						
		F	0 21 30—						
277	" 16	eP?	1 53 04.9				323	Sea off Kujukuri hama.	
		S?	1 53 48.4						
		F	1 55 44—						
278	" 16	eP	2 02 40.0				580	SE off Inubo c.	
		S	2 03 44.0						
		F	2 09 42—						
279	" 16	P	2 33 41.5				550	Ditto.	
		eS	2 34 42.5						
		F	2 37 27—						
280	" 16	P	5 17 09.6				285	Ditto.	
		eS	5 17 48.0						
		F	5 19 36—						
281	" 16	e	7 33 51.3				—	A local shock.?	
		F	7 35 24—						
282	" 16	e	7 36 43.8				—	Ditto.	
		F	7 38 28—						
283	" 16	e	7 38 55.8				—	Ditto.	
		F	7 41 13—						
284	" 16	e	7 41 34.3				—	Ditto.	
		F	7 44 14—						
285	" 16	eP	7 45 13.8				710	Epicenter unknown.	
		S	7 46 31.8						
		F	7 50 16—						
286	" 16	eP	10 18 26.7				280	In the Kasimanada.	
		S	10 19 04.4						
		F	10 21 24—						
287	" 16	e	12 16 31.5				—	Epicentre unknown.	
		F	12 21 40—						



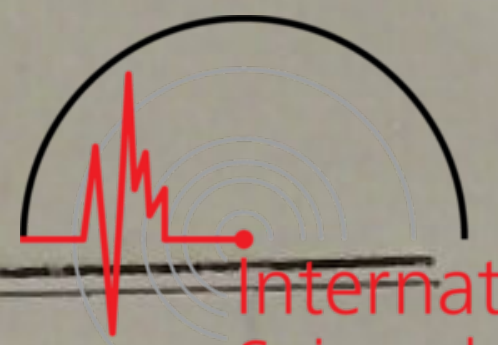
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance km.	Remarks
					ΔE μ	ΔN μ	ΔZ μ		
288	Octo. 16	e	12 22 27.9					Ditto.	
		F	12 29 29-						
289	" 16	eP	15 20 44.6				350	Sea off Inubo c.	
		S	15 21 31.7						
		F	15 23 50-						
290	" 17	e	13 04 50.4				-	Near Wakayama.	
		F	13 05 33-						
291	" 17	e	13 33 57.1				-	Central Japan.	
		F	13 39 13-						
292	" 18	eP	3 56 16.3				42	Near Hikone.	
		S	3 56 21.9						
		ME	3 56 22.1	-	-7				
		MN	3 56 22.1	-		+4			
		F	3 57 05-						
293	" 19	e	4 12 53.5				-	Near Miyake Is.	
		S	4 13 03.1						
		F	4 14 05-						
294	" 19	eP	10 59 17.2				210	Near Ryugasaki in Ibaraki pref.	
		S	10 59 45.5						
		F	11 03 22-						
295	" 21	eP	8 50 30.0				208	Near Mt. Tukuba.	
		S	8 50 57.9						
		F	8 52 52-						
296	" 21	iP	10 48 11.8				61	Near Irako c. in Aiti pref.	
		S	10 48 20.0						
		Mz	10 48 20.0	-					-16
		ME	10 48 20.2	0.5	-21				
		MN	10 48 20.7	-					+23
		F	10 52 39-						
297	" 23	eP	4 36 37.8				212	Lower course of the river Kinu.	
		eS	4 37 06.3						
		F	4 39 18-						
298	" 23	e	5 24 10.2				-	A local shock.	
		F	5 24 46-						



No.	Date	Phase	Time G. M. C. T h m s			Period s	Amplitude			△ Epicentre- distance km.	Remarks
							AE μ	AN μ	Az μ		
299	Octo. 23	eP	21	30	40.5				660	ψ=122.3E, λ=24.2N. ENE off Kworengo Taiwan.	
		S	21	31	52.2						
		F	21	48	35-						
300	" 24	eP	18	36	56.5				343	ψ=140.6E, λ=36.8N. Upper course of the river Hananuki in Ibaraki pref.	
		S	18	37	42.7						
		F	18	40	26-						
301	" 25	e	2	50	06.9				-	Near Mt. Tukuba.	
		F	2	51	57-						
302	" 25	eP	17	05	03.5				1330	ψ=145.3E, λ=46.3N. ENE about 150km. off Naka Siret-ko c. at Karahuto.	
		S	17	07	24.9						
		MN	17	07	26.8	3.9		±55			
		ME	17	07	29.1	3.3	+33				
		F	17	16	40-						
303	" 26	e	3	23	35.5				-	Tisima Is.	
		F	3	25	53.0						
304	" 27	eP	11	52	54.3				260?	Upper course of the river Toyo in Aiti pref.	
		S	11	53	29.3						
		ME	11	53	30.1	2.6	+13				
		MN	11	53	32.0	2.8		+12			
		F	11	58	59-						
305	" 29	e	11	13	14.5				-	Off mouth of the river Arita.	
		F	11	14	27-						
306	" 29	eP	17	08	18.6				321	In the Sagami nada	
		S?	17	09	01.9						
		F	17	09	53-						
307	" 30	P	1	01	53.5				225	Near Takayama in Gihu pref.	
		S	1	02	23.8						
		ME	1	02	25.4	3.2		±13			
		F	1	08	32.0						
308	" 30	e	1	51	31.1				-	Kasumiura.	
		F	1	53	20-						
309	" 30	eP	3	24	59.3				122?	Near Kameyama in mie pref.	
		S	3	25	15.7						
		F	3	26	04-						



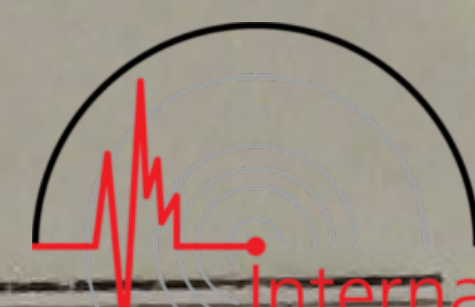
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	AZ μ		
			h m s						
310	Octo. 30	eP	11 30 22.0				47	Near Kanayama in Gilu pref.	
		S	11 30 28.3						
		F	11 31 06-						
311	" 30	eP?	20 53 47.6				1240	A distant shock.	
		S?	20 55 59.4						
		F	21 08 42-						
312	" 31	eP	2 19 04.4				165	Near Mt. Tukuba.	
		eS	2 19 26.9						
		F	2 21 40-						
313	" 31	eP	14 13 50.2				157	Ditto.	
		eS	14 14 11.3						
		F	14 15 24-						
314	Nove. 1	eP	8 31 50.3				210	Middle cours of the river Kinu	
		S	8 32 18.5						
		F	8 33 32-						
315	" 2	eP	22 37 28.0				5	A local shock near Nagoya.	
		S	22 37 28.6						
		F	22 37 58-						
316	" 3	eP	19 47 18.9				670	A distant shocks. $\psi = 149E, \lambda = 10N.$ Near Caroline Is.	
		S	19 48 31.9						
		F	19 58 01-						
317	" 3	e	20 55 52.4				—	Sea off Noto peninsula. (in Japan Sea)	
		F	20 56 44.0						
318	" 6	P	1 33 59.4				180	Kii strait.	
		S	1 34 23.7						
		F	1 38 37-						
319	" 6	eP	3 35 33.3				109	Middle course of the river Ara.	
		S	3 35 48.0						
		F	3 37 04-						
320	" 6	eP	4 10 33.9				106	Near Hinomisaki in Wakayama pref.	
		S	4 10 48.1						
		F	4 12 48-						



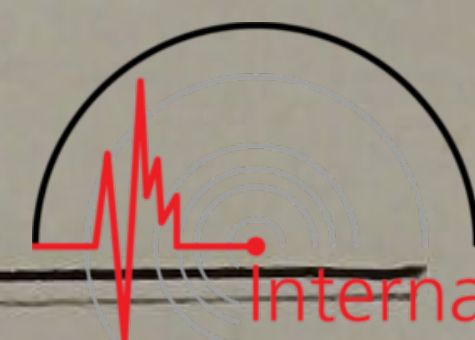
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance, s	Remarks
					AE μ	AN μ	Az μ		
321	Nov. 6	eP	12 51 35.1					1170	Tisima Is.
		eS	12 54 25.6						
		F	13 00 40—						
322	" 7	eP	2 26 00.4					265	Epicentre unknown.
		eS	2 26 36.0						
		F	2 28 02—						
323	" 7	eP	3 23 22.9					237	Ditto.
		eS	3 23 34.8						
		F	3 26 —						
324	" 7	e	3 56 55.7					—	A local shock?
		eF	3 57 19—						
325	" 8	eP	12 34 44.4					139	Upper course of the river Dosi in Yamanasi pref.
		S	12 35 03.0						
		F	12 37 11—						
326	" 8	eP	22 20 54.7					51	Near Ryuzin in Wakayama pref.
		S	22 21 01.6						
		F	22 22 05—						
327	" 8	eP	23 57 03.9					39	Lower course of the river Ki-o.
		S	23 57 09.1						
		F	23 58 34—						
328	" 10	e	5 44 52.6					—	A local shock.
		F	5 45 33—						
329	" 10	eP	10 57 49.3					590	SE off Hatijyo Is.
		S	10 58 54.7						
		F	11 05 04—						
330	" 10	e	11 31 22.1					—	Near Hinomisaki in Wakayama pref.
		F	11 32 36—						
331	" 11	P	1 30 51.2					156	Upper course of the river Dosi in Yamanasi pref.
		S	1 31 12.2						
		F	1 32 43.0						
332	" 11	eP	19 50 05.9					162	Bay of Suruga.
		S	19 50 27.7						
		F	19 51 37—						



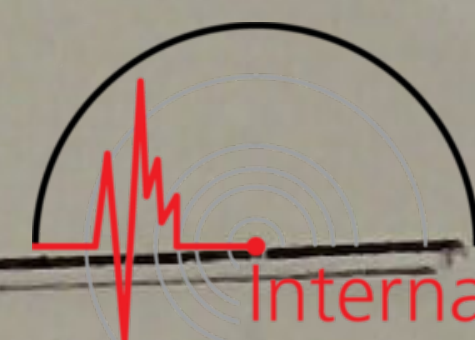
No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
333	Nov. 12	P S F	6 41 55.9 6 42 06.7 6 43 42-				80	In the Ensyu nada.	
334	" 13	iP P S MN MZ ME F	4 49 01.4 4 49 07.6 4 50 35.7 4 50 43.0 4 50 43.3 4 51 28.6 5 17 17-	3.2 3.3 4.1	+345	+78 +383	860	$\psi = 137.3E$ $\lambda = 43.5N$. N part of Japan sea. Slight shock was felt E part of Hokkaido and Tohoku, Kwanto district.	
335	" 13	S	5 01 31.6				—	P: covered by No. 334. Epicenter unknown.	
336	" 15	e F	6 34 41.6 6 36 25-				—	A local shock.	
337	" 17	P S F	20 13 15.2 20 14 26.8 20 19 54-				660	$\psi = 130.4E$, $\lambda = 31.1N$. In the Osumi canal. Slight shock was felt SE Kyusyu and Sikoku.	
338	" 18	e S? F	13 53 45.1 13 58 59.3 14 06 05-				3455	A distant shock.	
339	" 18	eP S F	19 42 44.7 19 43 01.0 19 44 44-				121	Lower course of the river Abe in Siduoka pref.	
340	" 18	eP eS? F	19 49 16.2 19 50 06.7 19 53 17-				408	SE off Idu Is.	
341	" 21	e F	8 29 57.2 8 31 30-				—	Near Ogawa in Saitama pref.	
342	" 22	P S? F	14 59 12.6 15 05 26.6 15 12 —				4480	A distant earthquake.	
343	" 23	P S F	8 58 16.6 8 58 46.7 9 01 48-				224	$\psi = 139.9E$, $\lambda = 36.2N$. Middle course of the river Kinu. Slight shock was felt at Kwanto.	



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			△ Epicentre- distance mk.	Remarks
					AE μ	AN μ	Az μ		
344	Nov. 24	eP	13 43 23.5					41	A local shock.
		S	13 43 29.0						
		F	13 43 44-						
345	" 24	eP	13 45 41.7					4	Ditto.
		S	13 45 42.2						
		F	13 45 48-						
346	" 24	eP	14 39 15.8					23	Ditto.
		S	14 39 18.9						
		F	14 39 37-						
347	" 24	eP	14 41 32.8					3	Ditto.
		S	14 41 33.2						
		F	14 41 50-						
348	" 26	eP	4 25 59.3					1150	ψ = 142.3E, λ = 42.4N. Mouth of the river Nikapu in Hokkaido. Slight was felt from Hokkaido to Kwanto. Slight damaze was done near center.
		S	4 28 02.2						
		Mz	4 28 44.4	1.7		+34			
		MN	4 28 57.1	4.6	+208				
		ME	4 29 04.9	3.8	+229				
		F	4 50 28-						
349	" 26	eP	12 03 01.7					1170	Ditto. After shock. ψ = 142.5E, λ = 42.3N.
		S	12 05 06.2						
		F	12 11 20-						
350	" 27	eP	3 39 31.1					-	NW off Hatijyo Is.
		L?	3 42 24.0						
		F	3 53 26-						
351	" 29	e	11 31 23.2					-	Near Yuasa in Wakayama pref.
		F	11 32 20-						
352	" 29	eP	20 17 09.0					283	In the Hinga-nada. ψ = 131.1E, λ = 32.6N.
		eS	20 17 47.1						
		F	20 21 09-						
353	" 30	eP	8 40 55.0					217	SE sea off Siomisaki at Kii peninsula.
		S	8 41 24.2						
		F	8 42 57-						

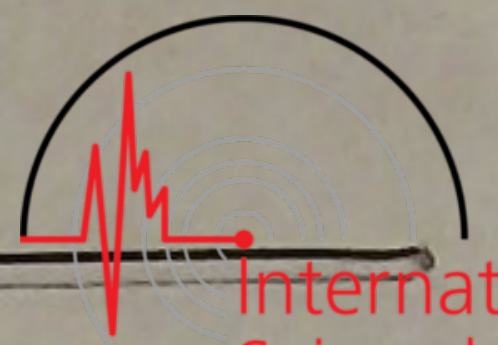


No.	Date	Phase	Time G. M. C. T	Per'od	Amplitude			Δ Epicentre- distance	Remarks
					AE	AN	Az		
			h m s	s	μ	μ	μ	km.	
354	Nov. 30	eP	16 49 07.5					50	Course of the river Masuda.
		S	16 49 14.3						
		F	16 49 57—						
355	Dec. 1	eP	3 09 44.9					10	A local shock.
		S	3 09 46.2						
		F	3 10 03—						
356	" 1	eP	3 37 14.1					50	Near Akanuma in Totigi pref.
		S?	3 37 20.9						
		F	3 38 33—						
357	" 1	eP	4 46 20.6					43	A local shock.
		S	4 46 27.1						
		F	4 46 58.0						
358	" 1	eP	13 36 17.0					13	Ditto.
		S	13 36 18.8						
		F	13 36 37—						
359	" 1	P	17 41 52.0					319	$\psi = 140.5E, \lambda = 36.4N.$ Near Mito. Slight over all Kwanto, SE of Tohoku & E of Chubu district. Strong was felt near center.
		S	17 42 34.9						
		Mz	17 42 50.5	1.4			-63		
		MN	17 42 57.8	1.3	+111				
		ME	17 43 00.0	1.7	+86				
360	" 2	e	9 13 14.5					—	A local shock
		F	9 14 14—						
361	" 3	eP	9 09 16.9					35	Ditto.
		S?	9 09 21.6						
		F	9 10 05.0						
362	" 4	P	8 18 16.5					—	$\psi = 122E, \lambda = 2N.$ A distant shock near Colebes Is.
		L	8 27 11—						
		F	8 55 17—						
363	" 4	eP	10 40 00.6					750	Ditto.
		S	10 41 22.4						
		F	10 47 08.0						
364	" 4	e	20 51 40.0					—	Near Tuketi in Gihu pref.
		F	20 52 11—						



No.	Date	Phase	Time G. M. C. T			Period s	Amplitude			△ Epicentre- distance km.	Remarks
							AE μ	AN μ	Az μ		
365	Dec. 4	P	22	41	58.7				195	ψ=139.0E, λ=34.9N. Foot of Mt. Amagi in Siduoka pref. Slight shock was felt Near centre	
		S	22	42	24.9						
		MN	22	42	23.7	1.9		+67			
		Mz	22	42	26.4	1.7		+19			
		ME	22	42	38.7	1.9	-47				
		F	22	52	08-						
366	" 5	P	0	20	21.4				353	ψ=137.0E, λ=33.7N. In the Kumanonada. Slight shock was felt at N part of Kwanto. No felt near centre. Orizin about 350km. from surface.	
		S	0	21	08.9						
		ME	0	21	09.9	3.2	+116				
		Mz	0	21	16.1	1.8		+14			
		MN	0	21	19.1	2.5		+44			
		F	0	29	23-						
367	" 5	P	1	12	17.2				177	Near Ito in Idu province.	
		S	1	12	41.0						
		F	1	17	00.0						
368	" 5	eP	20	17	47.4				28	Near Wakayama.	
		S	20	17	51.2						
		F	20	18	07-						
369	" 5	eP	20	19	53.2				168	Sea off Siobukisaki in Idu.	
		S	20	20	15.8						
		F	20	21	20.0						
370	" 6	eP	11	50	38.4				317	Near Kitaura in Ibaraki pref.	
		S	11	51	21.0						
		F	11	53	30-						
371	" 7	P	8	57	58.5				120	Near Syuzan in Kyoto pref.	
		S	8	58	14.6						
		F	8	59	40-						
372	" 8	eP	14	23	34.1				145	Near Matumoto.	
		S	14	23	53.6						
		F	14	24	47-						
373	" 9	Pz	4	19	44.0				157	ψ=134.9E, λ35.6N. N part of Tango province. Slight shock was felt Kinki district.	
		S	4	20	05.1						
		Mz	4	20	06.4	-		+31			
		ME	4	20	07.6	1.0	-58				
		MN	4	20	08.9	0.8		+56			
		F	4	28	29-						

No.	Date	Phase	Time			Period	Amplitude			Δ Epicentre- distance	Remarks
			G.	M.	C. T		ΔE	ΔN	ΔZ		
			h	m	s	s	μ	μ	μ	km.	
374	Dec. 10	e	4	08	25.5					—	Central Japan.
		S	4	11	18.7						
		F	4	19	19—						
375	" 10	eP	5	05	51.3					237	Sea off Kasimanada.
		S	5	06	23.2						
		F	5	07	37—						
376	" 11	e	4	34	31.8					—	Sea off Ensyunada.
		F	4	40	17—						
377	" 11	e	10	40	55.2					—	Epicenter unknown.
		F	10	42	25—						
378	" 12	eP	21	44	40.1					243	N off Yakusima in Kagosima pref.
		eS?	21	45	12.8						
		F	Covered								
379	" 12	eP	21	45	56.4					104	Epicenter unknown.
		eS?	21	46	10.4						
		F	21	47	33—						
380	" 15	P	19	38	13.2					2540	$\psi = 122.1E, \lambda = 21.6N.$ Near Kosyun at Taiwan.
		S	19	42	21.3						
		F	uncertain								
381	" 15	eP	20	24	14.4					320	Near Kisarazu.
		S	20	24	57.5						
		F	20	26	50—						
382	" 16	eP	4	05	32.2					342	Near Kanosan in Tita pref.
		S	4	06	18.3						
		F	4	08	12—						
383	" 16	iP _E	7	20	25.6					680	A distant shock. Near philippine Is.
		S	7	21	40.7						
		F	7	28	27—						
384	" 16	eP	15	31	40.9					59	A local shock.
		S	15	31	48.8						
		F	15	33	03—						
385	" 17	e	5	10	15.4					870	$\psi = 142.6E, \lambda = 42.0N.$ ESE off Urakawa in Hokkaido.
		eS	5	11	50.3						
		F	5	18	26—						



No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks		
					AE μ	AN μ	Az μ				
386	Dec. 17	e	8 02 35.2					403	S off Hatijyo Is.		
		S	8 03 29.4								
		F	8 08 20-								
387	" 17	eP	14 04 58.3					371	$\psi=140.5E, \lambda=37.2N.$ Upper course of the river Abukuma.		
		S	14 05 48.3								
		F	14 11 16--								
388	" 18	eP	17 20 55.6					57	A local shock?		
		eS	17 21 03.2								
		F	17 21 31-								
389	" 20	P	12 34 45.5					790	$\psi=144.3E, \lambda=41.6N.$ SE off Erimo c. Slight shock was felt at SE of Hokkaido.		
		S	12 36 11.1								
		F	12 41 25-								
390	" 21	e	6 22 00.1					—	A distant shock.		
		F	6 25 55.0								
391	" 22	eP	20 03 21.5					590	$\psi=141.5E, \lambda=38.0N.$ S off Kinkwasan.		
		S	20 04 26.7								
		F	20 09 09-								
392	" 23	eP	7 47 06.6					351	Sea off Inubo c.		
		S	7 47 53.9								
		F	7 53 30-								
393	" 24	P	6 38 08.7					—	A distant shock. Near New Guinea.		
		L	6 47 02.1								
		F	7 07 03-								
394	" 24	eP	22 34 48.4					162	In the Kii strait.		
		S	22 35 10.2								
		F	22 37 20-								
395	" 25	P	2 10 59.9					3260	$\psi=96E, \lambda=44N.$ A distant shock. W part of Mongolia.		
		PP	2 12 14.0								
		S	2 16 25.2								
		SS	2 18 37.9								
		eL	2 19 57.3								
		ME	2 22 06.6							24.2	+7550
		Mz	2 23 52.4							17.0	
F	3 40 29-										

No.	Date	Phase	Time G. M. C. T	Period s	Amplitude			Δ Epicentre- distance km.	Remarks
					AE μ	AN μ	Az μ		
396	Dec. 26	eP	6 09 44.6					356	$\psi=140.5E, \lambda=36.9N.$ Upper course of the river Kuji in Hukusima pref.
		S	6 10 32.5						
		F	6 13 39—						
397	" 26	P	21 18 10.5					1280	$\psi=126.3E, \lambda=25.2N.$ Near Okinawa Is.
		S	21 20 26.4						
		F	21 30 49—						
398	" 26	P	22 34 21.9					1450	SSE off Hatijyo Is.
		S	22 36 54.2						
		F	22 50 38—						
399	" 28	eP	2 18 39.5					194	Near Tokyo.
		S	2 19 05.6						
		F	2 21 35.0						
400	" 28	P	12 48 39.7					80	Near Mase in Gifu pref.
		S	12 48 50.5						
		F	12 50 07—						
401	" 29	eP	3 16 04.9					346	Near Miyake sima. Idu Is)
		S	3 16 51.5						
		F	3 19 27—						
402	" 29	eP	9 27 16.1					1130	$\psi=142.3E, \lambda=42.3N.$ Near mouth of the river Nikapu.
		S	9 29 17.1						
		F	9 34 25—						
403	" 29	e	20 35 41.0					—	Upper course of the river Gokase in Miyazaki pref.
		F	20 36 50—						
404	" 30	e	0 38 27.0					—	Near Tiba.
		F	0 40 14—						
405	" 30	eP	19 25 34.4					570	SSE off Hatijyo Is.
		S	19 26 36.9						
		F	19 34 18—						
406	" 31	e	3 01 56.8					—	Sea off Kujukuri Hama.
		F	3 04 01—						

Symbols and Notations

I. Phases of the Seismogram.

P = First preliminary tremors (Longitudinal)

\overline{P} = Individual or upperfirst preliminary tremors.

S = Second preliminary tremors (Transverse)

L = Long waves at the beginning of the surface phase.

M = Greatest motion in the surface phase.

F = End of discernible movements.

II. Nature of the motion.

i = Sudden beginning of the motion.

e = Gradual beginning of the motion.

III. Remarks.

Covered = Covered by following shock.

Is. = Island. C. = Cape. Pref. = Prefecture. Str. = Strait.