

KEW OBSERVATORY  
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THE  
SEISMOLOGICAL  
BULLETIN

OF

THE HUKUOKA METEOROLOGICAL OBSERVATORY

OF

JAPAN

---

**VOL. VI**

---

FROM JANUARY TO DECEMBER, 1935

PUBLISHED BY

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## Constants

Position of Observatory :

Longitude: .....130° 25'.4 E

Latitude : .....33° 34'.8 N

Height from mean sea level : .....4.3 m

Underground : ..... Alluvium.

Seismographs :

Apparatus	Component	$T_0$	$\frac{r}{T_0^2}$	V
Ômori's Horizontal Seismograph 15kg.	E—W	22	0.014	20
Ômori's Tromometer 47kg.	N—S	15	0.090	120

## Symbols and Notations

1. Phases of the seismogram.

P = First preliminary tremors (longitudinal).

$\bar{P}$  = Individual, or upper first preliminary tremors.

PR<sub>n</sub> = Longitudinal waves n times reflected at the earth's surface.

S = Second preliminary tremors (transverse).

$\bar{S}$  = Individual, or upper second preliminary tremors.

SR<sub>n</sub> = Transverse waves n times reflected at the earth's surface.

PS = Waves changed from longitudinal to transverse oscillation, or vice versa, through reflection at the earth's surface.

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

M = Maximum Amplitude in principal phase.

C = Waves of the tail or end portion.

F = End of discernible movements.

2. Nature of the motion.

i = Sudden beginning of the motion.

e = Gradual beginning of the motion.

A = Amplitude of the earth's motion in microns.

$A_E$  = E—W component of A.

$A_N$  = N—S component of A.

Period = Time of one complete oscillation.

3. Distance of epicenter.

$\Delta$  = Distance of epicenter; for the near earthquakes calculated by the Ômori's formula

$\Delta = 7.42t$ , and for the distant earthquakes by the Wiechert's, Zoeppritz's and Zeissig's time distance curve.

4. Time used. Greenwich mean civil time is adopted for all determinations.



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No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
1	Jan. 3	eP?	1	55	53.0				-	Distant earthquake. All phases not distinct.
		eP?	2	02	46.3					
		L?	2	09	21.6					
		F	2	41	-					
2	Jan. 22	P	0	33	50.8				209	Sern part of Amakusa-nada, Kumamoto Prefecture.
		S	0	34	19.0					
		F	0	41	20.-					
3	Jan. 23	eP?	7	31	38.2				-	Distant earthquake. P phase not distinct.
		eP?	7	32	32.9					
		eS	7	39	13.3					
		F	8	14	-					
4	Feb. 9	P	19	22	31.4				1500	Near Soô, Formosa. 121.°8E, 24.°7N. Felt in the greater part of Formosa. Epicentral regions suffered slightly.
		S	19	25	08.2					
		eL	1	26	11.5					
		F	19	45	30.-					
5	Feb. 19	P	20	12	33.3				1120	Nern part of Kuzyukurihama, Tiba Prefecture. 140°.6E, 35°.7N. Felt in the greater part of Kwantô district, SEern part of Tyûbu district and Sern part of Tôhoku district.
		S	20	14	32.9					
		L	20	14	58.3					
		M <sub>E</sub>	20	15	34.9	3.4	+12			
		M <sub>N</sub>	20	15	24.7	3.4		-11		
F	20	24	-							
6	Feb. 22	eP	17	13	02.-				4400	In the neighbouring sea of Aleutians. Time is doubtful.
		eS	17	19	12.-					
		eL	17	24	39.-					
		F	18	03	-					
7	Mar. 6	P	9	47	30.8				76	Nern foot of Volcano Aso, Kumamoto Prefecture.
		S	9	47	41.1					
		M <sub>N</sub>	9	47	42.4	< 0.5		± 5		
		F	9	48	40.-					



No.	Date	Phase	Time			Period	Amplitude		$\Delta$ km.	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	$\mu$	$\mu$		
8	Mar. 7	P	10	41	27.6		- 5	+ 4	79	Nern foot of Volcano Aso, Kumamoto Prefecture. 131°.1E, 33°.1N. Focus is very shallow. Felt at Kumamoto moderately.
		S	10	41	38.3		+31	+33		
		<del>i</del>	10	41	40.9					
		M <sub>E</sub>	10	41	49.7	6.3	+85			
		M <sub>N</sub>	10	41	43.8	6.0		-100		
		F	10	49	30.-					
9	Mar. 7	P	16	02	07.2			+ 1	76	Nern foot of Volcano Aso, Kumamoto Prefecture.
		S	16	02	17.4	0.5		+ 5		
10	Mar. 7	eP	16	02	57.1				76	Ditto
		S	16	03	07.3					
		F	16	03	40.-					
11	Mar. 7	P	16	28	14.2				82	Ditto
		S	16	28	25.2					
		M <sub>N</sub>	16	28	31.3	1.2		+ 6		
		F	16	29	15.-					
12	Mar. 7	P	16	32	57.2				73	Ditto
		S	16	33	07.0					
		F	16	33	50.-					
13	Mar. 7	P	20	24	22.-				82	Ditto (Time is doubtful.)
		S	20	24	33.-					
		F	20	26	30.-					
14	Mar. 8	P	0	45	23.7				87	Ditto
		S	0	45	35.4					
		F	0	48	-					
15	Mar. 8	eP	8	46	50.0				78	Ditto
		S	8	47	00.5					
		F	8	48	20.-					
16	Mar. 19	eP	13	30	55.8				74	Ditto



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No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
	Mar. 19	S	13	31	05.8			+ 3		
		F	13	32	40.-					
17	Mar. 20	eP	0	16	55.7				70	Nern foot of Volcano Aso, Kumamoto Prefecture.
		S	0	17	05.1			+ 5		
		F	0	18	20.-					
18	Mar. 25	P	19	34	20.7				187	In the Hiuga-nada.
		S	19	34	45.9					
		F	19	36	20.-					
19	Mar. 28	P	23	50	06.3				812	Nern part of Japan sea. Deep focus earthquake.
		S	23	51	55.7					
		F	23	56	-					
20	Mar. 29	P	16	45	43.6				18	Local shock.
		S	16	45	46.0					
		F	16	46	10.-					
21	Mar. 30	eP	21	22	25.2				824	NE off the cape of Sioya, Hukusima Prefecture.
		S	21	24	16.2					
		M <sub>E</sub>	21	25	05.0	6.5	- 30			141°.6E, 37°.4N. Felt over
		M <sub>N</sub>	21	25	30.2	6.5		+ 25		Kwantô, Tôhoku and
		F	21	49	-					SEern part of Tyûbu districts.
22	Apr. 9	eP	8	20	23.3				668	Middle valley of River
		eS	8	21	53.3					Tenryû, Siduoka Prefecture.
		F	8	28	-					Felt in the greater part of Tyûbu district.
23	Apr. 14	P	10	49	46.7			+ 1	148	In the Hiuga-nada.
		S	10	50	06.7					
		M <sub>E</sub>	10	50	11.6	1.1	+ 10			
		M <sub>N</sub>	10	50	07.9	0.7		+ 8		
		F	10	51	20.-					
24	Apr. 15	iP	11	16	37.3		+ 13	+ 3	553	NWern part of Hida province,



No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
	Apr. 15	iS	11	17	51.8		+ 6	- 11		Gihu Prefecture. 137°.1E, 36°.2N. Focal depth about 260km. Abnormal felt area in Kwantô and Tôhoku districts.
		F	11	22	30.-					
25	Apr. 19	e	15	47	14.3				-	Distant earthquake.
		e	15	54	11.2					all phases could not be distinguished.
		e	16	10	12.1					
		F	16	46	-					
26	Apr. 20	P	22	04	57.7				1470	Central Formosa. 120°49'E, 24°21'N. Focus is very shallow.
		S	22	07	31.7					Great damage has been done to Sintiku and Taityû
		L	22	09	02.7					provinces. About 3.300 lives were lost.
		M <sub>E</sub>	22	10	32.5	18.0	+1800			
		F	23	17	-					
27	Apr. 20	eP?	22	32	57.1				-	After shock of No. 26.
		eS?	22	35	28.5					all phases not distinct.
		eL?	22	37	04.6					
28	May 4	eP	23	05	20.3				1460	Sern part of Sintiku Province, Formosa. 120°.9E, 24°.6N.
		eS	23	07	53.6					
		eL	23	09	23.9					
		F	23	30	-					
29	May 13	eP	20	09	18.1				394	Distant earthquake.
		S	20	10	11.2					
		M <sub>N</sub>	20	10	29.7	12.5		- 36		
		F	20	25	-					
30	May 23	iP	6	10	35.7		- 45	+ 32	133	Sern part of Ooita Prefecture.
		i <sub>E</sub>	6	10	37.8	0.5	+130			
		i <sub>N</sub>	6	10	38.6	0.5		- 68		
		S	6	10	53.6					
		F	6	18	30.-					
31	May 24	eP	5	41	05.9				2620	E off Mindanao Is.
		S	5	45	20.5					



No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
	May 24	F	7	37	—					
32	May 26	eP	22	08	42.0				2495	Neighbourhood of Philippine.
		S	22	12	46.7					
		F	22	59	—					
33	May 30	P	21	42	16.7				6115	Baluchistan
		S	21	49	59.3					
		L	21	59	43.9					
		M <sub>E1</sub>	22	06	55.1	20.0	+2400			
		M <sub>F2</sub>	22	09	11.7	18.3	+2190			
		M <sub>N</sub>	22	03	45.9	20.2		> 830		
		F	23	26	—					
34	May 31	iP	8	20	11.1		-30	-19	551	Central part of Japan sea.
		S	8	21	25.4					134°.2E, 38°.6N. Focal depth
		F	8	37	—					about 450km. Felt at Hikone,
										Kakioka, Onahama and Kusiro
										abnormally.
35	June 18	eP?	22	28	28.8				—	E off Philippine.
		eS?	22	35	35.7					
		F	23	34	—					
36	June 24	eP	23	32	54.2				6840	Neighbouring sea of New
		S	23	41	15.3					Hebrides Is.
	25	F	0	32	—					
37	June 25	P	12	38	12.0				2120	SE off Iturup Is.
		S	12	41	45.9					
		M <sub>E</sub>	12	48	32.7	13.4	-23			
		F	13	08	—					
38	June 28	P	18	59	56.1				935	S off Katuura, Tiba prefecture.
		S	19	02	02.1					140°.3E, 34°.8N. Focal depth
		F	19	11	—					about 30km. Felt in the
										greater part of Kwantô district.
39	June 30	P	11	33	32.6				72	Neighbourhood of Kwanmon



No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		$A_E$	$A_N$		
			h	m	s	s	$\mu$	$\mu$	km.	
	June 30	S	11	33	42.3					straits. Felt at Mozi,
		M <sub>N</sub>	11	33	42.6	0.4		+ 3		Hukuoka Prefecture.
		F	11	35	30.-					
40	July 3	P	0	17	08.4				170	Near Miyazaki City.
		i	0	17	11.7					
		S	0	17	31.3					
		F	0	19	40.-					
41	July 3	P	0	19	42.3				171	Ditto
		i	0	19	45.4					
		S	0	20	05.4					
		F	0	21	40.-					
42	July 5	eP	9	12	48.1				536	SW off Hatizyô Is.
		iS	9	14	00.3		+20	- 9		Deep focus earthquake.
		F	9	21	-					
43	July 5	P	16	49	10.3				35	Near Hukuoka. Local shock.
		S	16	49	15.0	0.4	+32	+23		
		F	16	49	50.-					
44	July 6	iP	22	55	38.2			- 3	17	Ditto
		iS	22	55	40.5	0.4	+25	+12		
		F	22	56	20.-					
45	July 11	eP	8	26	27.3				713	Near Siduoka City. 138°.26'E,
		iP	8	26	33.0					34°59'N. Focal depth within 7
		S	8	28	03.4					km. Felt in the greater parts
		$\bar{S}$ or L	8	28	22.7					of Tyûbu, Kwantô and Kinki
		M <sub>E</sub>	8	28	35.9	5.3	-205			districts. Felt at Siduoka and
		M <sub>N</sub>	8	28	32.6	6.1		-267		Simidu disastrously. There
		F	8	47	-					were many casualties.
46	July 16	iP	15	00	48.6		+15	+23	107	Wern part of Yamaguti
		iS	15	01	03.0					Prefecture. 131°.25E, 34°.3N.



No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
	July 16	M <sub>E</sub>	15	01	06.1	—	+800			Shallow focus earthquake. Felt in the greater parts of Tyûgoku and Sikoku districts and Nern half of kyûsyû.
		M <sub>N</sub>	15	01	03.5	0.5		+800		
		M <sub>Z</sub>	15	01	06.5	1.2	to D	300		
		F	15	11	—					
47	July 16	P	15	37	48.2				109	After shock of No. 46.
		S	15	38	02.9					
		F	15	38	30.—					
48	July 16	P	16	21	56.4				1480	Near Sitan, Sintiku Province, Formosa. 120°.9E, 24°.6N.
		L	16	24	31.0					
		M <sub>E</sub>	16	28	54.8	10.3	—45			Focus is very shallow. Felt in the greater part of Formosa.
		M <sub>N</sub>	16	28	18.0	10.1		—10		44 lives were lost.
		F	16	57	—					
49	July 16	P	16	44	04.1				113	After shock of No. 46.
		S	16	44	19.3	0.5		+13		
		F	16	45	05.—					
50	July 19	P	0	52	05.6				1490	In the Kasima-nada. 141°.3E, 36°.65N. Felt in the greater parts of Kwantô and Tôhoku districts, Eern half of Tyûbu district and a part of Hokkaidô.
		L	0	54	41.2					
		M <sub>E</sub>	0	55	30.1	—	+150			
		M <sub>N</sub>	0	55	06.8	6.3		—140		
		F	1	37	—					
51	July 23	P	18	01	49.1				349	Near Hama, Tottori prefecture. 134°.1E, 35°.5N. Focus is very shallow. Felt in the greater parts of Tyûgoku, Sikoku and kinki districts.
		S	18	02	36.1					
		M <sub>E</sub>	18	02	42.1	1.0	—30			
		M <sub>N</sub>	18	02	48.4	1.5		+35		
52	July 23	eP	18	03	27.4				344	After shock of No. 51. The end part overlaped by the following earthquake.
		S	18	04	13.7					
		M <sub>N</sub>	18	04	21.4	1.5		—18		
53	July 23	eS	18	05	47.6				—	Ditto
		M <sub>N</sub>	18	05	51.8	1.6		—8		



No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		$A_E$	$A_N$		
			h	m	s	s	$\mu$	$\mu$	km.	
	July 23	F	18	09	—					
54	July 26	e <sub>WN</sub>	10	42	08.8				—	Distant earthquake. All phases could not be distinguished.
		e <sub>N</sub>	10	46	03.5					
		e <sub>E</sub>	10	47	40.5					
		F	11	08	—					
55	July 29	eP?	4	17	38.2				—	Neighbourhood of Mariana Is. All phases not distinct.
		eS?	4	20	36.0					
		F	4	31	—					
56	July 29	eP	7	49	39.9				—	Distant earthquake. S phase could not be distinguished.
		e	7	58	28.1					
		e	8	01	34.0					
		F	8	30	—					
57	Aug. 1	eP	14	11	32.9				2430	E off Philippine.
		S	14	15	32.3					
		F	14	37	—					
58	Aug. 3	eP	1	17	42.9				4820	Neighbourhood of Sumatra.
		eS	1	24	15.2					
		SR <sub>1</sub>	1	27	53.0					
		eL	1	31	49.4					
		M <sub>E</sub>	1	39	58.6	16.6	+100			
		M <sub>N1</sub>	1	35	12.8	17.7		±133		
		M <sub>N2</sub>	1	40	11.8	12.7		-133		
F	2	52	—							
59	Aug. 17	P	1	55	39.7				7480	Distant earthquake.
		S	2	04	33.7					
		F	2	35	—					
60	Aug. 17	eP	23	25	22.1				168	In the Hiuga-nada.
		S	23	25	44.7					
		F	23	27	20.—					



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No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		$A_E$	$A_N$		
			h	m	s	s	$\mu$	$\mu$	km.	
61	Sept. 4	P	1	40	58.9				1650	SE off Taitô, Formosa. 121°.6E, 22°.4N. Felt in the greater part of Formosa.
		eS	1	43	50.1					
		M <sub>E</sub>	1	49	09.6	11.4	+100			
		M <sub>N</sub>	1	47	32.4	16.6		+143		
		F	2	29	—					
62	Sept. 4	eP	3	31	22.3				1640	After shock of No. 61. 121°.4E, 22°.4N.
		eS	3	34	12.3					
		F	3	44	—					
63	Sept. 9	iP	5	13	45.6		+ 5	+ 7	130	Neighbourhood of Amakusa Is. Kumamoto Prefecture. Felt at places in Sern part of Hukuoka Prefecture.
		S	5	14	03.1					
		M <sub>E</sub>	5	14	07.5	1.5	+155			
		M <sub>N</sub>	5	14	08.2	1.4		-58		
		F	5	19	—					
64	Sept. 9	P	6	23	27.5				—	Distant earthquake.
		L	6	29	36.0					
		F	7	33	—					
65	Sept. 11	P	14	07	44.8				1870	SE off Kusiro, Hokkaidô. 145°.1E, 42°.7N. Felt in the greater parts of Hokkaidô and Tôhoku districts and NEern part of Kwantô district.
		i <sub>N</sub>	14	07	54.0			-10		
		i <sub>E</sub>	14	07	54.6		-25			
		S	14	10	56.5					
		M <sub>E</sub>	14	13	09.4	24.5	+250			
		M <sub>N</sub>	14	12	33.1	23.0		+64		
F	15	21	—							
66	Sept. 12	P	11	00	39.8				175	Upper valley of River Komenotu, Kagosima Prefecture.
		S	11	01	03.4					
		F	11	03	10.—					
67	Sept. 18	eP	8	26	54.4				1330	SW off Urakawa, Hokkaidô. 142°.6E, 42°.0N. Felt in the greater part of Hokkaidô and NEern part of Tôhoku district.
		eS	8	29	15.4					
		F	8	41	—					



No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	$\mu$	$\mu$	km.	
68	Sept. 19	P	17	35	30.0				80	Near Unzen-dake, Nagasaki Prefecture.
		S	17	35	40.8					
		F	17	36	20.-					
69	Sept. 19	P	17	37	17.1				80	Ditto Felt at Ginsui, Hukuoka Prefecture.
		S	17	37	27.9					
		M <sub>N</sub>	17	37	28.0	0.3		+ 8		
		F	17	39	20.-					
70	Sept. 20	P	1	54	04.4				4490	Neighbouring sea of New Guinea Is. ?
		S	2	00	19.0					
		i <sub>E</sub>	2	03	01.0			+1335		
		M <sub>E</sub>	2	03	34.7	46.5		-2875		
		M <sub>N</sub>	2	13	02.8	19.4		-308		
		F	3	30	-					
71	Sept. 20	P	5	30	06.1				4550	Ditto
		S	5	36	23.5					
		i <sub>E</sub>	5	39	27.4			+45		
		F	6	26	-					
72	Sept. 30	eP	0	09	30.8				920	Near Tiba City.
		S	0	11	34.7					
		F	0	16	30.-					
73	Oct. 2	P	5	36	46.1				1710	SE off the cape of Otiisi, Hokkaidô. 145°.8E, 42°.9N. Felt in Sern half of Hokkaidô and Eern half of Tôhoku district.
		S	5	39	42.7					
		F	6	00	-					
74	Oct. 2	iP	9	28	24.3			- 3	237	Off the cape of Sata, Kagosima Prefecture. 130°.7E, 31°.0N. Focal depth about 120km. Felt at places in Kyûsyû and Sikoku and a part of Tyûgoku district.
		iS	9	28	56.3			+60		
		M <sub>E</sub>	9	28	58.2	2.3		-60		
		M <sub>N</sub>	9	28	58.3	2.3		+33		
		F	9	38	-					
75	Oct. 3	eP	4	31	08.9				143	NEern part of Miyazaki



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No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
	Oct. 3	S	4	31	28.1		+ 4	-10		Prefecture.
		F	4	32	50.-					
76	Oct. 4	eP	2	06	18.0				108	Near Mt. Sobo, Kyûsyû.
		S	2	06	32.6			- 8		
		F	2	08	10.-					
77	Oct. 11	P	22	23	21.7				4245	Distant earthquake.
		S	22	29	22.6					
		F	22	57	-					
78	Oct. 12	P	16	48	18.7			to S	1530	NE off Miyako, Iwate
		S	16	50	58.6					Prefecture. 143°.3E, 40°.4N.
		M <sub>E</sub>	16	53	37.9	15.7	- 300			Felt in the greater part of
		M <sub>N</sub>	16	53	50.6	13.6		±665		Tôhoku district, Sern part
		F	17	48	-					of Hokkaidô and a part of
										Kwantô district.
79	Oct. 13	eP	2	00	20.6				1850	After shock of No. 78.
		S	2	03	30.3					143°.4E, 40°.2N. Felt in
		F	2	25	-					NEern part of Tôhoku district
										and Sern part of Hokkaidô.
80	Oct. 15	P	14	36	37.3				517	NW off Noto peninsula.
		S	14	37	46.9					135°.4E, 37°.7N. Focal depth
		F	14	42	40.-					about 280km. Abnormal felt
										area in Kwantô district.
81	Oct. 15	P	18	23	34.8				122	Sern part of Yatusiro Bay,
		S	18	23	51.3					Kumamoto Prefecture.
		F	18	25	15.-					
82	Oct. 18	eP	0	14	43.9				1510	NE off Miyako, Iwate
		S	0	17	21.9					Prefecture. 143°.8E, 40°.2N.
		M <sub>E</sub>	0	21	51.6	15.7	+280			Felt in the greater part of
		M <sub>N</sub>	0	21	55.5	10.5		> 275		Tôhoku district and Sern
		F	1	07	-					part of Hokkaidô.
83	Oct. 18	P	11	10	31.5				2700	Distant earthquake.



No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	$\mu$	$\mu$	km.	
	Oct. 18	S	11	14	52.1					
		F	12	10	-					
84	Oct. 18	S?	14	59	39.8				-	NE off Miyako, Iwate
		M <sub>E</sub>	15	02	41.8	13.7	+65			Prefecture. 143°.9E, 40°.4N.
		M <sub>N</sub>	15	04	02.1	12.2		+20		Felt in NEern part of Tôhoku
		F	15	28	-					district and Sern part of
										Hokkaidô. All phases not
										distinct.
85	Oct. 18	eS	21	56	41.3				-	Ditto
		F	22	13	-					
86	Nov. 1	P	16	32	36.-				2650	In the Celebes Sea.
		S	16	36	53.-					Time is doubtful.
		L	16	38	48.-					
		M <sub>E</sub>	16	39	30.-	10.8	+300			
		F	17	10	-					
87	Nov. 9	P	4	00	49.0		- 2	+ 4	240	Near Kuro-sima Is., Kagosima
		S	4	01	21.3			-10		Prefecture.
		M <sub>E</sub>	4	01	22.0	2.0	-22			
		M <sub>N</sub>	4	01	22.7	2.4		+23		
		F	4	05	-					
88	Nov. 23	iP	0	14	28.1		+10	- 3	45	SEern part of Hukuoka
		iS	0	14	34.1					Prefecture. Felt at places in
		M <sub>E</sub>	0	14	35.0	-	+155			Hukuoka Prefecture.
		M <sub>N</sub>	0	14	35.1	0.5		+93		
		F	0	17	30.-					
89	Nov. 25	e	10	18	32.7				-	Distant earthquake. All
		L?	10	27	56.5					phases could not be
		F	10	48	-					distinguished.
90	Dec. 1	P	23	46	24.9				598	Neighbouring sea of
		eS	23	47	45.5					Amami-oosima Is., Kagosima
		L	23	47	57.9					Prefecture.



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No.	Date	Phase	Time			Period	Amplitude		△	Epicenter and Remarks
			G.	M.	T.		A <sub>E</sub>	A <sub>N</sub>		
			h	m	s	s	μ	μ	km.	
✓	Dec.	1	M <sub>E</sub>	23	48	40.0	11.5	±560		
			M <sub>N</sub>	23	48	25.7	15.0		-125	
			C <sub>N</sub>	23	51	47.1				
		2	F	0	11	-				
✓ 91	Dec.	2	P	16	44	05.7			634	Neighbouring sea of Amami-oosima Is., Kagosima Prefecture.
			eS	16	45	31.1				
			L	16	45	44.0				
			M <sub>E</sub>	16	46	16.3	12.0	±550		
			M <sub>N</sub>	16	46	40.6	9.4		±58	
			C <sub>N</sub>	16	48	45.1				
			F	17	04	-				
92	Dec.	4	P	14	48	01.0			45	SEern part of Hukuoka Prefecture.
			S	14	48	07.0				
			M <sub>N</sub>	14	48	08.0	0.4		+ 8	
			C <sub>N</sub>	14	48	14.3				
			F	14	48	30.-				
93	Dec.	7	eP?	11	12	14.0			-	Wern part of Keisyô-hokudô, Korea. P phase not distinct.
			eS	11	12	57.0				
			F	11	14	20.-			+40	
94	Dec.	14	P	12	51	12.2			+ 3	S off Titi-zima Is., 143°.0E, 22°.5N. Deep focus earthquake. Felt at Titi-zima slightly.
			S	12	54	06.5				
			M <sub>E</sub>	12	54	11.7	5.6	+40		
			M <sub>N</sub>	12	54	11.0	3.6		-20	
			F	13	02	-				
✓ 95	Dec.	15	P	7	17	03.2			5660	Distant earthquake.
			S	7	24	21.2				
			L	7	30	19.8				
			M <sub>E</sub>	7	33	31.3	29.5	+250		
			M <sub>N</sub>	7	33	27.0	29.5		-200	
			F	8	43	-				



No.	Date	Phase	Time			Period	Amplitude		$\Delta$	Epicenter and Remarks
			G.	M.	T.		$A_E$	$A_N$		
			h	m	s	s	$\mu$	$\mu$	km.	
96	Dec. 17	P	19	20	21.5				1190	S off Miyako Is., Okinawa Prefecture. 125°.3E, 23°.9N. Rather strong shock was felt at Isigaki-zima.
		S	19	22	28.2					
		L	19	23	08.9					
		$M_E$	19	24	29.3	19.3	-1695			
		$M_N$	19	27	11.9	13.0		>680		
		F	20	03	-					
97	Dec. 18	eP?	7	19	37.5				-	Distant earthquake. All phases could not be distinguished.
		F	7	36	-					
98	Dec. 18	eP?	17	08	54.9				-	Ditto
		F	17	24	-					
99	Dec. 28	P	2	43	42.0				5320	Distant earthquake.
		S	2	50	42.3					
		L	2	57	06.5					
		$M_E$	3	02	26.4	21.8	-3325			
		$M_N$	3	00	57.3	26.0		>475		
		F	4	24	-					