

ANNUAL REPORT  
OF THE  
METEOROLOGICAL  
AND THE  
SEISMOLOGICAL OBSERVATIONS  
MADE AT THE  
INTERNATIONAL LATITUDE OBSERVATORY  
OF MIZUSAWA  
FOR  
THE YEAR 1937.

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LATITUDE  $39^{\circ} 8' N.$ , LONGITUDE  $141^{\circ} 8' E.$ ,  
HEIGHT ABOVE MEAN SEA LEVEL 61 METRES.

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PUBLISHED BY THE INTERNATIONAL LATITUDE OBSERVATORY  
OF MIZUSAWA.

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1938.

The present report gives the results of the meteorological and seismological observations made at this observatory during the year 1937. No alteration has been made in the nature and methods of observation. But it should be remarked that the right angled thermometers measuring the earth temperature of the depths of 0.1, 0.2, and 0.3 metres were placed newly in another position, because the old place was sometimes shadowed by the thermometer shelter and rain gauge case. In the present report the results of observations obtained from both places are shown side by side. (page 29)

The observations and calculations were made by Messrs. M. Kirita, S. Satô, and I. Kumagai, under the superintendence of Mr. T. Ikeda.

The followings are to be noted with respect to the meteorological observations :

*Hours of observation*—*Japanese Central Standard Time* (i.e. mean time of the meridian 9h east from Greenwich) is adopted.

*Air Pressure*.—The barometric readings in millimetres are reduced to the freezing point of water, the corrections to sea level and to standard gravity are given at the bottom of the page for each month.

*Air and Earth Temperatures*.—The degrees are given in Centigrade.

*Wind*.—The velocity is expressed in metres per second. The direction was observed relative to the sixteen points of the compass.

*Cloud*.—The amount is estimated by the scale 0-10, the forms are those of the *International classification*, and the direction of motion is indicated relative to the sixteen points of the compass.

*Tension of Water Vapour*.—is given in millimetres.

*Relative Humidity*.—is given in percentages.

*Precipitation*.—The amount is given in millimetres.

*Clear and Cloudy Days*.—The amount of cloud is less than 2 exclusive, for the former; and more than 8 inclusive, for the latter.

*Duration of Sunshine*.—is recorded by a Jordan sunshine-recorder.

*Amount of Evaporation*.—is given in millimetres, for each day,—that is from 10h of the day in question to 10h of the next day, according to the instruction of the Central Meteorological Observatory in Tôkyô.

*The heights of the meteorological instruments* are as follows,

*Barometer*.—63.1 m above sea level.

*Air temperature thermometer*.—1.3 m above the ground.

*Anemometer*.—15.4 m above the ground.

*Wind vane*—16.6 m above the ground.

In recording the meteorological phenomena the following symbols are used:—

●	Rain	∨	Silver thaw	⌘	Oceanic noise
✱	Snow	~	Glazed frost	∞	Yellow dust
⌘	Thunder storm	⊔	Ice	∅	Unusual visibility
⊔	Thunder without lightning	⊕	Snow drift	∞	Red sky
∞	Lightning without thunder	←	Ice crystals	C	Cirrus
△	Graupel	⊙	Earthquake	CS	Cirro-stratus
▲	Hail	⊙	Solar corona	CK	Cirro-cumulus
≡	Mist, Fog	⊕	Solar halo	KC	Alto-cumulus
⊔	Hoar frost	∪	Lunar corona	SC	Alto-stratus
⊔	Ice column in ground	∪	Lunar halo	SK	Strato-cumulus
∞	Dew	∞	Gale	N	Nimbus
∞	Frozen dew	∞	Rainbow	K	Cumulus
∞	Frozen rain	∞	Aurora	KN	Cumulo-nimbus
∞	Wave cloud	∞	Zodiacal light	S	Stratus
∞	Snow lying	∞	Haze		

The descriptions of the meteorological instruments and the observing house are found in the annual reports for the years 1902, 1904, 1905, 1910, 1916, 1925, and 1936.

The seismological instruments in use are two Omori's horizontal pendulums, of the same type as that described in p. 8 of No. 5, "Publication of the Earthquake Investigation Committee in Foreign Language," one serving to register the EW component, and the other the NS component, of seismological movements.

	EW Component Apparatus	NS Component Apparatus
Period of free oscillation	16 seconds	36 seconds
Multiplication of the pointer	100 times	20 times
Weight of heavy cylinder	45.0 kilograms	17.6 kilograms
Horizontal distance of the centre of the cylinder from the point of support.	20 Centimetres	75 Centimetres
Vertical distance between the points of support and suspension.	104 Centimetres	104 Centimetres

July, 1937

H. KIMURA, *Rigakuhakushi*  
Director of the International Latitude Observatory  
of Mizusawa.

# SEISMOLOGICAL OBSERVATIONS

Remarks :—

1. The intensities of the earthquakes are divided into the following seven classes according to the Central Meteorological Observatory of Japan.

Not felt . . . . .	0.
Felt . . . . .	1. . . . . slight
	2. . . . . moderate
	3. . . . . rather strong
	4. . . . . strong
	5. . . . . very strong
	6. . . . . disastrous

2. The approximate epicentres of the chief earthquakes are given, which are extracted from the "Kisyô-Yôran" issued monthly by the Central Meteorological Observatory of Japan.
3. The time adopted in the Seismological observations is Greenwich Civil Time.
4. Symbols and notations.
  - i* Sudden beginning of the motion.
  - e* Gradual beginning of the motion.
  - ? Doubtful phase.
  - \* Out of order of the instrument.
  - ⊕ Out of the range of the instrument.

## EARTHQUAKES, 1937.

No	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
1	Jan. 3	h	m	s	m	s	m	s	m	s	m	s	m	s	mm	mm	m	0		
2	5	0			-	-	e12	42	-	-	-	-	-	-	-	-	2.7	0		
3	5	4			-	-	e54	09	-	-	-	-	-	-	-	-	2.5	0	Distant	
4	5	e 8	19	58	-	-	20	22	e20	21	-	-	-	-	0.02	0.05	4.9	0		
5	5	i11	11	44	i11	44	i13	43	i13	42	-	-	-	-	0.45	0.25	9.9	0	WNW off Titidima(deep)	
6	6	21	40	36	40	35	43	39	43	40	-	-	-	-	0.01	0.11	37.4	0	South part of Hyuga-nada.	
7	7	12			-	-	?34	43	-	-	-	-	-	-	0.01	-	3.5	0		
8	7	e 3	05	29	-	-	i06	57	e06	57	-	-	-	-	0.04	0.04	4.8	0		
9	7	i 6	12	20	i12	20	⊕		?12	34	-	-	-	-	⊕	5.60	8.4	3	E off Koidumi Bay.	
10	7	i 6	25	06	e25	06	i25	18	25	17	-	-	-	-	0.05	0.06	5.4	0	"	
11	7	i 7	00	28	00	29	i00	39	00	41	-	-	-	-	0.08	0.08	5.0	0		
12	8	e13	27	27	e27	34	32	52	32	54	36	46	36	36	⊕	8.70	63.1	0	S part of Hyuga-nada.	
13	9	e18	26	40	-	-	27	07	-	-	-	-	-	-	0.01	-	3.3	0		
14	10	e 1	53	07	-	-	53	39	e53	38	-	-	-	-	0.01	-	2.4	0		
15	10	e 7	13	33	-	-	i15	22	?15	23	-	-	-	-	0.03	0.04	4.7	0	SSW off Hatizyo Is.	
16	15	e 7	20	20	-	-	20	54	-	-	-	-	-	-	0.01	-	3.1	0		
17	15	e 4	05	56	-	-	06	21	e06	21	-	-	-	-	0.01	-	3.0	0		
18	17	5			-	-	?18	33	-	-	-	-	-	-	0.01	-	2.9	0	Distant	
19	17	e 1	55	13	-	-	i55	42	55	42	-	-	-	-	0.04	0.07	3.8	0	E off Cape Siriya	
20	17	e 4	41	06	-	-	41	17	?41	15	-	-	-	-	0.01	-	1.7	0		
21	17	e 6	02	15	-	-	02	42	02	43	-	-	-	-	0.02	-	5.0	0		
22	18	e20	02	53	-	-	03	54	-	-	-	-	-	-	0.01	-	3.8	0		
23	18	5			-	-	e16	50	-	-	-	-	-	-	-	-	1.8	0		
24	18	e 9	44	25	-	-	45	01	e45	00	-	-	-	-	0.01	-	3.8	0		
25	19	e17	33	41	-	-	33	57	-	-	-	-	-	-	-	-	2.0	0		
26	20	8			-	-	?56	09	?56	10	-	-	-	-	-	-	1.6	0		
27	20	i 0	03	44	e03	45	i04	20	i04	21	-	-	-	-	0.55	0.87	11.4	0	S off Urakawa	
28	21	e14	59	01	-	-	59	17	59	18	-	-	-	-	0.01	-	3.2	0		
29	21	3			-	-	?41	53	-	-	-	-	-	-	-	-	1.9	0		
30	21	e17	48	32	-	-	i49	01	e49	03	-	-	-	-	0.02	0.03	3.6	0		
31	22	e18	13	56	-	-	14	15	-	-	-	-	-	-	-	-	1.9	0		
32	23	1			-	-	e19	20	e19	21	-	-	-	-	0.05	-	2.9	0		
33	23	8	58	49	e58	49	59	27	e59	24	-	-	-	-	0.03	0.06	5.2	0	Near Mizukaido	
34	25	e11	04	17	e04	12	e10	53	e10	52	-	-	14	55	-	-	45.1	0	Distant	
35	25	2	50	39	e50	37	i51	18	51	17	-	-	-	-	0.05	0.05	7.7	0	SE off Cape Erimo	
36	25	6	43	24	43	23	50	59	50	54	58	20	57	52	0.05	0.83	22.7	0		
37	28	e 7	30	55	-	-	e31	29	-	-	-	-	-	-	-	-	5.0	0		
38	29	4			-	-	?35	00	-	-	-	-	-	-	-	-	1.3	0		
39	29	e17	29	35	e29	34	32	39	e32	38	-	-	-	-	0.03	0.04	15.8	0	SE off Titizima	
40	30	i22	08	20	08	20	08	33	08	34	-	-	-	-	0.06	0.06	4.9	0	NE off Kinkwazan	
41	31	e 1	11	40	e11	36	e12	52	e12	46	-	-	-	-	0.01	0.03	8.8	0		
42	Feb. 1	0			-	-	?38	22	-	-	-	-	-	-	-	-	1.5	0		
43	2	18			-	-	?27	50	-	-	-	-	-	-	-	-	1.3	0		
44	3	e16	13	04	-	-	e14	06	e14	07	-	-	-	-	0.06	0.05	7.9	0		
45	8	20	49	14	e49	14	49	54	49	53	-	-	-	-	0.08	0.09	8.2	0	SW off Urakawa	
46	10	13	41	17	-	-	41	33	-	-	-	-	-	-	0.02	-	3.2	0		
47	10	e17	14	18	-	-	i14	52	-	-	-	-	-	-	0.01	-	2.4	0		
48	10	21	00	18	e00	18	00	58	00	58	-	-	-	-	0.06	0.06	7.9	0	E off Cape Inubō	
49	11	22			-	-	?39	11	-	-	-	-	-	-	0.01	-	2.4	0		
50	12	6	45	16	e45	15	45	44	45	46	-	-	-	-	0.05	0.06	6.1	0	W off Odika Peninsula	
51	12	e 1	31	09	-	-	31	30	-	-	-	-	-	-	-	-	1.6	0		
52	12	e 7	52	21	-	-	52	45	e52	46	-	-	-	-	0.02	0.04	4.4	0		
53	14	7			-	-	?57	32	-	-	-	-	-	-	-	-	1.7	0		
54	14	1			-	-	?56	29	-	-	-	-	-	-	-	-	2.5	0		
55	14	? 3	30	53	-	-	31	35	-	-	-	-	-	-	-	-	3.0	0		
	14	? 4	50	01	-	-	?50	36	-	-	-	-	-	-	0.02	-	5.5	0		



## EARTHQUAKES, 1937.

No.	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter			
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S						
111	Feb. 22	h	m	s	m	s	m	s	m	s	m	s	m	s	mm	mm	m	0					
112	22	17	-	-	-	-	e12	55	-	-	-	-	-	-	-	-	3.0	0					
113	22	e19	27	45	-	-	e28	36	e28	36	-	-	-	-	-	-	6.3	0					
114	22	23	-	-	-	-	?04	47	-	-	-	-	-	-	-	-	2.0	0					
115	22	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	0					
116	23	23	-	-	-	-	?34	37	-	-	-	-	-	-	-	-	1.4	0					
117	23	i 0	50	15	50	14	i51	41	51	41	-	-	-	-	-	-	?	0	SE off Etoroff Is.				
118	23	e 1	00	09	-	-	i01	23	e01	24	-	-	-	-	-	-	62.5	0					
119	23	1	-	-	-	-	e13	05	-	-	-	-	-	-	-	-	2.2	0					
120	23	1	-	-	-	-	e30	51	-	-	-	-	-	-	-	-	1.5	0					
121	23	3	-	-	-	-	e48	54	-	-	-	-	-	-	-	-	1.7	0					
122	23	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	0					
123	23	e 7	20	48	-	-	e17	14	-	-	-	-	-	-	-	-	2.3	0					
124	23	12	-	-	-	-	21	51	e21	50	-	-	-	-	-	-	0.02	0					
125	23	e13	52	58	-	-	e20	03	-	-	-	-	-	-	-	-	0.01	0					
126	23	15	-	-	-	-	54	40	-	-	-	-	-	-	-	-	0.03	0					
127	23	16	-	-	-	-	e51	47	-	-	-	-	-	-	-	-	0.01	0					
128	23	18	-	-	-	-	e13	59	-	-	-	-	-	-	-	-	-	3.7	0				
129	24	3	-	-	-	-	e28	48	-	-	-	-	-	-	-	-	-	2.3	0				
130	24	8	-	-	-	-	?32	37	-	-	-	-	-	-	-	-	-	2.3	0				
131	24	19	-	-	-	-	?48	39	-	-	-	-	-	-	-	-	-	2.0	0				
132	24	20	-	-	-	-	?33	04	-	-	-	-	-	-	-	-	-	1.9	0				
133	24	20	-	-	-	-	?08	25	-	-	-	-	-	-	-	-	-	0.7	0				
134	25	0 41	55	-	-	-	e34	38	-	-	-	-	-	-	-	-	-	1.1	0				
135	25	4	-	-	-	-	i43	19	e43	21	-	-	-	-	-	-	0.03	0.04	7.9	0	Off Etoroff Is.		
136	25	4	-	-	-	-	e43	32	-	-	-	-	-	-	-	-	0.01	0.03	3.3	0			
137	25	12	-	-	-	-	?54	31	-	-	-	-	-	-	-	-	-	-	1.8	0			
138	26	e 4	16	39	-	-	?35	59	-	-	-	-	-	-	-	-	-	-	2.0	0			
139	26	13	-	-	-	-	17	47	17	45	-	-	-	-	-	-	0.02	0.03	13.4	0	Off Etoroff Is.		
140	26	14	-	-	-	-	02	21	-	-	-	-	-	-	-	-	-	-	2.9	0			
141	26	e15	46	25	-	-	05	10	-	-	-	-	-	-	-	-	-	-	2.3	0			
142	26	e18	16	23	-	-	46	54	-	-	-	-	-	-	-	-	-	-	3.9	0			
143	26	e23	20	27	-	-	17	55	e17	58	-	-	-	-	-	-	0.02	-	5.7	0	Off Etoroff Is.		
144	26	23	40	59	-	-	i21	53	e21	52	-	-	-	-	-	-	0.03	-	7.2	0	"		
145	27	1 16	21	16	22	i16	53	16	e41	34	-	-	-	-	-	-	0.03	-	5.4	0	Kasima-nada		
146	27	?14	44	13	?44	25	-	-	-	-	-	-	-	-	-	-	-	-	0.36	0.36	16.5	0	"
147	28	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3	0		
148	Mar. 1	10	-	-	-	-	e34	00	-	-	-	-	-	-	-	-	-	-	1.6	0			
149	4	20	57	49	e57	49	e10	40	-	-	-	-	-	-	-	-	0.01	-	2.1	0			
150	7	e 4	30	01	-	-	i58	00	i57	59	-	-	-	-	-	-	0.04	-	2.4	0			
151	9	2	-	-	-	-	30	19	30	18	-	-	-	-	-	-	0.01	-	3.4	0	Off Miyako		
152	11	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0		
153	11	e 6	57	35	-	-	e16	18	-	-	-	-	-	-	-	-	-	-	3.8	0			
154	13	11	-	-	-	-	e55	01	-	-	-	-	-	-	-	-	-	-	2.3	0			
155	14	e 7	14	11	-	-	58	03	-	-	-	-	-	-	-	-	0.01	-	3.3	0			
156	14	e10	08	12	-	-	e37	17	-	-	-	-	-	-	-	-	-	-	2.2	0			
157	14	e11	18	09	-	-	14	27	-	-	-	-	-	-	-	-	-	-	2.4	0			
158	14	e12	15	10	-	-	08	23	e08	22	-	-	-	-	-	-	0.01	-	1.6	0			
159	16	e15	50	11	-	-	18	38	-	-	-	-	-	-	-	-	0.01	-	2.8	0			
160	16	e22	10	21	-	-	16	03	?16	04	-	-	-	-	-	-	0.01	-	5.1	0			
161	16	22	-	-	-	-	51	35	e51	33	-	-	-	-	-	-	0.01	-	9.4	0			
162	16	e22	37	47	-	-	10	50	-	-	-	-	-	-	-	-	-	-	2.7	0			
163	17	e20	06	41	-	-	e25	04	-	-	-	-	-	-	-	-	-	-	1.0	0			
164	18	7	-	-	-	-	38	36	-	-	-	-	-	-	-	-	-	-	4.6	0			
165	19	5	-	-	-	-	07	34	-	-	-	-	-	-	-	-	0.01	-	5.6	0			
			-	-	-	-	?38	54	-	-	-	-	-	-	-	-	-	-	0.6	0			
			-	-	-	-	e17	28	-	-	-	-	-	-	-	-	-	-	1.4	0			

## EARTHQUAKES, 1937.

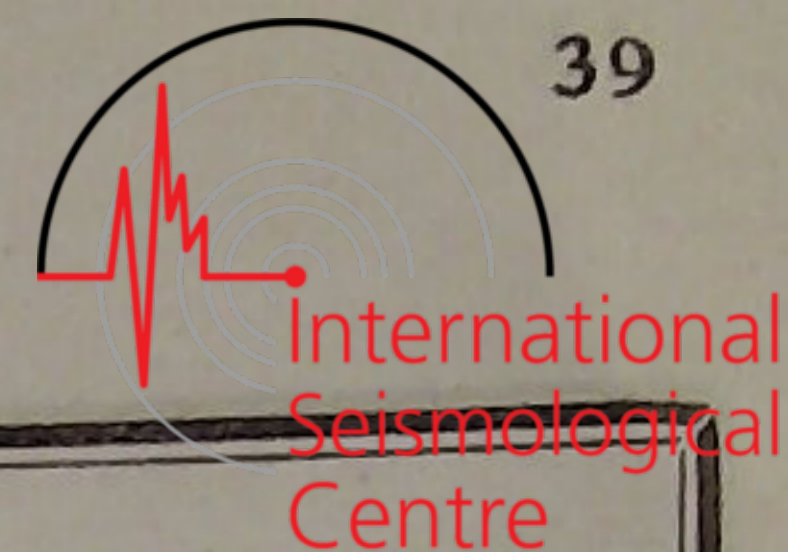


No.	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
166	Mar. 19	h	m	s	m	s	m	s	m	s	m	s	m	s	mm	mm	m	0	Off Kuzi, (Iwate)	
167	21	i19	29	50	i29	50	?42	45	-	-	-	-	-	⊕	5.57	16.8	3			
168	22	e16	12	34	-	-	13	08	-	-	-	-	-	0.01	-	2.7	0			
169	24	0	-	-	-	-	e14	01	-	-	-	-	-	0.01	-	2.4	0			
170	24	20	-	-	-	-	?21	40	-	-	-	-	-	-	-	3.2	0			
171	27	4	-	-	-	-	?09	23	-	-	-	-	-	-	-	1.2	0			
172	27	e21	11	34	-	-	12	18	e12	16	-	-	-	0.01	-	6.1	0			
173	28	e7	38	06	-	-	38	48	-	-	-	-	-	-	-	3.4	0			
174	28	e12	12	53	-	-	13	44	e13	45	-	-	-	0.02	0.02	4.2	0			
175	29	e10	03	56	-	-	i04	44	e04	45	-	-	-	0.03	0.06	7.2	0			
176	31	e2	28	56	-	-	30	07	-	-	-	-	-	0.01	-	4.7	0	Off Cape Sioya		
177	31	8	06	47	e06	47	i07	13	07	13	-	-	-	0.06	0.07	5.1	0			
178	Apr. 3	e9	55	16	-	-	55	47	-	-	-	-	-	-	-	2.7	0	Distant		
179	4	?21	16	44	?16	45	?21	42	?21	29	-	-	-	-	-	8.0	0			
180	4	e5	01	28	-	-	e03	02	e03	01	-	-	-	0.01	-	6.2	0			
181	4	e16	24	53	-	-	e25	12	-	-	-	-	-	-	-	2.8	0	NW off New Guinea		
182	5	7	04	15	04	14	10	35	10	12	?16	19	?15	49	-	49.0	0			
183	5	e12	52	06	-	-	53	09	-	-	-	-	-	0.01	-	3.4	0			
184	5	14	-	-	-	-	05	29	-	-	-	-	-	-	-	1.1	0			
185	5	14	-	-	-	-	?13	08	-	-	-	-	-	-	-	1.8	0			
186	5	15	-	-	-	-	?31	38	-	-	-	-	-	-	-	2.1	0	N off Titizima		
187	9	e2	39	18	-	-	40	29	-	-	-	-	-	-	-	4.1	0			
188	9	22	-	-	-	-	?22	58	-	-	-	-	-	-	-	3.0	0			
189	12	e20	18	35	-	-	i19	38	19	38	-	-	-	0.01	-	4.3	0			
190	13	12	-	-	-	-	e41	05	-	-	-	-	-	-	-	2.6	0			
191	13	e19	09	03	-	-	10	00	e09	58	-	-	-	0.01	-	5.4	0	ENE off Miyako		
192	14	22	49	51	-	-	i50	21	50	20	-	-	-	0.06	0.05	6.1	0			
193	15	7	-	-	-	-	?29	21	-	-	-	-	-	-	-	2.2	0	E off Cape Sioya Near Tonga Is.		
194	15	12	41	36	e41	39	i42	11	42	11	-	-	-	0.06	-	7.9	0			
195	16	i3	12	23	12	23	i21	14	21	18	-	-	-	0.56	0.24	48.0	0			
196	17	8	13	23	-	-	i13	36	13	36	-	-	-	0.03	-	2.0	0	Near Sizugawa Bay.		
197	21	e0	35	38	-	-	36	56	e36	55	-	-	-	0.02	-	6.6	0	E off the mouth of R. Ukedo (Hukusima)		
198	22	12	-	-	-	-	e16	49	-	-	-	-	-	-	-	2.2	0			
199	26	e9	33	52	-	-	34	29	e34	30	-	-	-	0.08	-	5.3	0			
200	27	12	-	-	-	-	?44	40	-	-	-	-	-	0.01	-	6.9	0			
201	29	10	-	-	-	-	?51	54	-	-	-	-	-	-	-	1.4	0	Distant N part of Japan Sea. (deep)		
202	29	19	00	18	e00	17	?10	27	?10	21	-	-	-	-	-	36.0	0			
203	29	i20	20	42	i20	42	i22	03	i22	02	-	-	-	0.64	0.55	14.8	0			
204	30	e17	52	42	-	-	53	35	-	-	-	-	-	-	-	2.8	0			
205	May 3	5	31	24	e31	22	i31	49	i31	47	-	-	-	0.06	0.08	4.9	0			
206	4	i16	31	50	i31	47	i32	25	32	22	-	-	-	0.21	0.33	7.3	0	Near Mizukaido		
207	5	i21	20	09	20	07	i23	50	i23	51	-	-	-	0.07	0.09	8.1	0	N part of Mariana Is.		
208	7	i18	07	32	07	31	i08	33	08	29	-	-	-	0.10	0.15	13.7	0	ENE off Miyako		
209	9	e14	48	48	e48	51	i50	17	50	21	-	-	-	0.11	0.11	74.4	0	Near Etoroff Is.		
210	9	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0			
211	9	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	ENE off Cape Sioya Distant		
212	10	e7	44	12	44	10	i44	36	44	34	-	-	-	0.08	0.10	4.4	0			
213	12	2	-	-	-	-	?52	53	?52	50	-	-	-	0.01	-	5.9	0			
214	15	12	23	57	-	-	i24	48	24	46	-	-	-	0.02	0.05	6.0	0			
215	19	8	37	35	-	-	i37	57	e37	56	-	-	-	0.03	-	2.4	0			
216	20	e10	21	11	-	-	21	28	21	28	-	-	-	0.01	-	2.6	0	E off Hatizyo Is.		
217	20	e12	16	15	-	-	17	15	e17	15	-	-	-	0.03	0.05	10.3	0			
218	20	20	39	11	-	-	39	34	e39	33	-	-	-	0.02	-	3.4	0	SE off Katuura (Tiba)		
219	21	e1	58	55	-	-	60	08	e60	10	-	-	-	0.04	0.04	1.6	0			
220	21	e20	11	43	-	-	12	29	-	-	-	-	-	0.01	-	4.3	0			





# EARTHQUAKES, 1937.



No.	Date 1937		P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
			E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
276	July	11	h 13	m 41	s 12	m e41	s 08	m 42	s 19	m 42	s 20	-	-	mm 0.06	mm -	m 34.5	0	ESE off Hatizyo Is. Sōya Strait ENE off Hatizyo Is. Distant			
277		11	19	20	29	e20	30	i21	34	21	33	-	-	0.05	0.06	5.2	0				
278		14	22	29	53	e29	55	31	02	31	01	-	-	0.06	0.10	44.5	0				
279		15	? 19	07	49	-	-	11	15	-	-	-	-	0.01	-	7.2	0				
280		16	e 4	42	12	-	-	42	47	42	46	-	-	0.01	-	4.9	0				
281		16	e10	19	59	e20	01	21	11	21	11	-	-	0.03	0.05	10.0	0				
282		16	17	-	-	-	-	? 29	17	-	-	-	-	-	-	4.3	0				
283		17	e18	42	22	e42	24	43	27	e43	29	-	-	0.03	0.04	10.8	0				
284		18	e20	30	39	-	-	i31	02	e31	03	-	-	-	-	3.2	0				
285		19	3	02	02	e02	00	? 02	32	? 02	29	-	-	0.01	-	3.9	0	Distant			
286		19	e 9	51	07	-	-	51	30	e51	26	-	-	-	-	2.0	0	Near Kuzumaki (Iwate)			
287		21	i 0	09	18	i09	18	i10	37	i10	37	-	-	0.10	0.10	5.9	0	E off Cape Nakasiretoko			
288		22	5	02	36	e02	35	03	00	03	00	-	-	0.06	0.11	5.7	0	NE off Cape Sioya			
289		22	e17	18	16	e18	09	-	-	? 24	46	-	-	-	0.57	18.2	0	Distant			
290		24	15	22	37	22	37	25	48	25	47	-	-	-	-	8.0	0				
291		24	e17	23	43	-	-	24	14	24	14	-	-	0.02	-	4.6	0				
292		25	22	-	-	-	-	e00	41	-	-	-	-	-	-	2.2	0				
293		26	15	56	07	e56	05	57	01	e56	59	-	-	0.01	-	5.3	0				
294		26	i19	56	53	i56	53	⊕	-	⊕	-	-	-	⊕	⊕	33.7	4	E off Kinkwazan			
295		26	20	-	-	-	-	? 21	03	-	-	-	-	-	-	1.5	0				
296		26	e22	25	48	-	-	26	46	-	-	-	-	0.02	-	3.3	0				
297		27	0	-	-	-	-	e15	33	-	-	-	-	-	-	1.0	0				
298		27	2	22	10	-	-	i22	19	22	18	-	-	0.02	-	2.3	0				
299		27	2	53	22	e53	24	53	34	e53	32	-	-	0.01	-	2.5	0				
300		27	7	35	36	-	-	35	52	-	-	-	-	-	-	2.1	0				
301		27	14	-	-	-	-	42	47	e42	47	-	-	0.02	-	1.7	0				
302		28	2	15	51	15	50	i16	03	i16	02	-	-	0.04	0.09	3.9	0	Near Kinkwazan			
303		28	9	25	20	-	-	25	33	-	-	-	-	-	-	2.5	0				
304		28	16	-	-	-	-	? 42	49	-	-	-	-	-	-	2.6	0				
305		28	21	52	01	-	-	52	27	-	-	-	-	0.01	-	3.5	0				
306		29	17	29	34	e29	34	i29	54	29	54	-	-	0.06	0.08	5.8	0	SE off Kinkwazan			
307		30	18	-	-	-	-	? 40	23	-	-	-	-	-	-	1.4	0				
308		31	10	50	54	e50	55	51	57	51	57	-	-	0.05	0.10	10.2	0	SE off Hatizyo Is.			
309		31	20	40	31	e40	32	44	15	e44	09	? 47	22	? 46	53	46.9	0	Distant			
310	Aug.	1	10	-	-	-	-	26	54	-	-	-	-	-	-	1.6	0				
311		1	10	45	52	e45	50	? 50	28	? 49	33	? 52	42	? 51	56	-	0.15	25.3	0	Distant	
312		1	18	-	-	-	-	23	34	-	-	-	-	-	-	1.7	0				
313		2	15	48	58	e48	57	51	22	e51	29	-	-	0.01	0.03	12.5	0	Distant			
314		3	13	22	16	22	18	i22	28	i22	29	-	-	0.06	0.09	3.7	1	Off Kinkwazan			
315		3	23	09	58	09	58	i10	37	10	36	-	-	0.13	0.15	10.2	0	Off Cape Inubō.			
316		4	13	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
317		4	e15	40	32	-	-	e41	12	-	-	-	-	-	-	2.5	0				
318		4	e15	45	20	-	-	e46	01	-	-	-	-	-	-	3.3	0				
319		4	23	-	-	-	-	? 44	38	-	-	-	-	-	-	4.2	0				
320		5	i 2	14	31	i14	32	i14	42	i14	42	-	-	0.28	0.37	5.5	2	Near Miyako			
321		5	e14	52	06	e52	04	? 58	36	? 58	17	-	-	0.01	-	20.9	0	Distant			
322		7	e 4	32	54	e32	54	33	13	33	13	-	-	-	-	3.2	0				
323		8	10	16	35	16	34	20	22	20	18	-	-	-	-	11.1	0	Distant			
324		8	21	40	16	40	17	i40	40	40	41	-	-	0.05	0.07	7.2	0	Off Iwaki			
325		9	e14	42	16	e42	16	e46	04	? 45	57	48	48	48	13	-	-	37.1	0		
326		11	e 0	40	27	-	-	i40	37	40	39	-	-	0.02	-	2.1	0				
327		11	1	04	06	04	07	10	34	10	33	-	-	-	-	47.4	0	Celebes Is.			
328		11	14	37	50	37	50	i38	00	38	01	-	-	-	-	2.1	0				
329		14	22	59	49	-	-	60	04	-	-	-	-	0.01	-	2.7	0				
330		15	e 4	32	50	e32	50	? 33	20	? 33	22	-	-	-	-	4.2	0				

## EARTHQUAKES, 1937.

No.	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
331	Aug. 15																			
		h	m	s	m	s	m	s	m	s	m	s	mm	mm	m					
332	15	e 9 59 01	e 58 59	e 59 46	e 59 47	-	-	-	-	-	-	-	0.01	-	10.5	0				
333	15	12 18 44	e 18 44	19 11	e 19 14	-	-	-	-	-	-	-	0.01	0.03	5.0	0				
334	15	19 41 59	e 41 58	42 18	42 18	-	-	-	-	-	-	-	0.02	-	3.6	0				
335	16	0	-	-	? 07 39	-	-	-	-	-	-	-	-	-	2.5	0				
	16	e 16 40 11	e 40 12	e 41 19	e 41 18	-	-	-	-	-	-	-	-	-	5.8	0				
336	16	21	-	-	e 53 05	e 53 07	-	-	-	-	-	-	-	-	2.8	0				
337	17	13 11 57	e 11 56	13 19	13 17	-	-	-	-	-	-	-	0.06	0.05	14.1	0	ESE off Hatizyo Is.			
338	18	e 6 25 52	-	-	i 26 16	e 26 17	-	-	-	-	-	-	0.02	-	3.1	0				
339	18	i 17 54 08	i 54 09	i 54 24	i 54 27	-	-	-	-	-	-	-	0.36	0.60	9.1	2	Off Kuzi (Iwate)			
340	19	e 10 15 41	-	-	16 34	-	-	-	-	-	-	-	-	-	5.2	0				
341	20	12 05 28	e 05 30	11 58	12 04	-	-	-	-	-	-	-	1.40	11.28	20.8	0	Manila (Distant)			
342	21	8 07 58	e 07 56	08 21	08 24	-	-	-	-	-	-	-	-	-	4.4	0				
343	21	e 8 39 22	-	-	39 48	-	-	-	-	-	-	-	-	-	3.7	0				
344	21	i 17 39 39	39 38	i 39 52	i 39 51	-	-	-	-	-	-	-	0.20	0.18	6.6	2	Off Kinkwazan			
345	21	23 04 06	e 04 09	05 31	e 05 34	-	-	-	-	-	-	-	0.03	-	14.2	0	SE off Hatizyo Is.			
346	24	22	-	-	51 51	-	-	-	-	-	-	-	-	-	1.7	0				
347	25	e 16 45 42	-	-	46 55	e 46 56	-	-	-	-	-	-	-	-	6.3	0				
348	26	2	-	-	e 19 43	-	-	-	-	-	-	-	-	-	2.8	0				
349	26	e 14 40 32	-	-	40 56	-	-	-	-	-	-	-	-	-	3.8	0				
350	26	15	-	-	39 23	-	-	-	-	-	-	-	-	-	5.1	0				
351	26	e 15 45 03	-	-	46 17	-	-	-	-	-	-	-	-	-	5.5	0				
352	26	18 56 50	56 50	? 61 53	-	-	-	-	-	-	-	-	-	-	16.5	0				
353	31	14 22 40	e 22 41	28 41	e 28 36	-	-	34 23	-	-	-	-	-	0.15	36.7	0	Distant			
354	31	e 17 03 13	-	-	03 37	-	-	-	-	-	-	-	-	-	2.5	0				
355	31	22 06 00	e 06 01	06 30	e 06 29	-	-	-	-	-	-	-	0.03	0.09	5.9	0				
356	Sept. 1	9	? 13 16	? 20 39	? 20 30	-	-	-	-	-	-	-	-	-	12.1	0	Distant			
357	3	18 54 29	54 30	59 27	59 26	65 09	65 02	0.09	0.17	74.9	0					Aleutian Is.				
358	4	19	-	-	? 28 59	-	-	-	-	-	-	-	-	-	1.5	0				
359	5	? 21 02 03	-	-	? 03 34	-	-	-	-	-	-	-	-	-	5.5	0				
360	6	e 16 03 28	e 03 27	i 04 01	04 00	-	-	-	-	-	-	-	0.07	0.10	6.4	0	Near the mouth of R. Naka			
361	7	e 0 32 42	-	-	32 53	-	-	-	-	-	-	-	-	-	1.8	0				
362	7	22 52 47	e 52 51	53 22	53 24	-	-	-	-	-	-	-	0.03	0.05	5.0	0				
363	9	? 2 10 58	-	-	11 19	e 11 18	-	-	-	-	-	-	0.02	-	1.7	0				
364	9	e 7 38 50	-	-	39 16	e 39 15	-	-	-	-	-	-	0.01	-	4.3	0				
365	10	i 15 04 12	04 12	i 04 23	i 04 24	-	-	-	-	-	-	-	0.07	0.12	4.1	1	SE off Kinkwazan			
366	11	7 41 35	41 35	41 47	41 49	-	-	-	-	-	-	-	0.03	-	2.1	0				
367	12	? 11 59 15	-	-	? 62 40	-	-	-	-	-	-	-	0.02	-	9.0	0	Distant			
368	12	i 19 36 29	i 36 30	i 36 44	i 36 44	-	-	-	-	-	-	-	0.20	0.36	7.0	2	ENE off Kinkwazan			
369	13	21	-	-	? 27 02	-	-	-	-	-	-	-	-	-	1.1	0				
370	15	e 4 01 53	-	-	02 30	-	-	-	-	-	-	-	-	-	3.3	0				
371	15	7	-	-	e 37 12	e 37 12	-	-	-	-	-	-	-	-	3.5	0				
372	15	12 36 46	36 44	44 08	44 07	51 55	51 27	0.03	-	23.6	0					New Guinea				
373	15	14 36 39	e 36 36	37 47	37 46	-	-	-	-	-	-	-	0.05	0.06	9.7	0	Near Kunasiri Is.			
374	15	19	-	-	e 04 34	e 04 33	-	-	-	-	-	-	-	-	1.6	0				
375	16	e 4 48 53	-	-	49 11	49 11	-	-	-	-	-	-	-	-	2.7	0				
376	16	10 00 58	-	-	02 57	02 58	-	-	-	-	-	-	0.01	-	6.0	0				
377	16	10 26 34	-	-	? 27 00	? 27 03	-	-	-	-	-	-	0.03	0.06	6.2	0				
378	17	7	-	-	? 19 14	-	-	-	-	-	-	-	-	-	2.4	0				
379	21	9 47 19	47 18	53 20	53 20	-	-	-	-	-	-	-	0.02	-	16.7	0	Distant			
380	22	e 8 26 55	-	-	27 14	e 27 13	-	-	-	-	-	-	-	-	2.7	0				
381	23	13 14 31	14 31	21 23	21 20	29 33	29 17	0.06	0.26	80.2	0					N off Solomon Is.				
382	23	e 16 08 26	-	-	e 08 50	-	-	-	-	-	-	-	-	-	1.8	0				
383	27	e 6 15 27	e 15 28	16 05	16 03	-	-	-	-	-	-	-	0.04	0.10	5.7	0	SE off Cape Sioya			
384	27	i 9 04 51	i 04 50	i 12 27	i 12 26	-	-	-	-	-	-	-	0.06	0.16	44.1	0	Sumatra			
385	27	e 13 24 34	-	-	25 13	-	-	-	-	-	-	-	-	-	4.2	0				

## EARTHQUAKES, 1937.

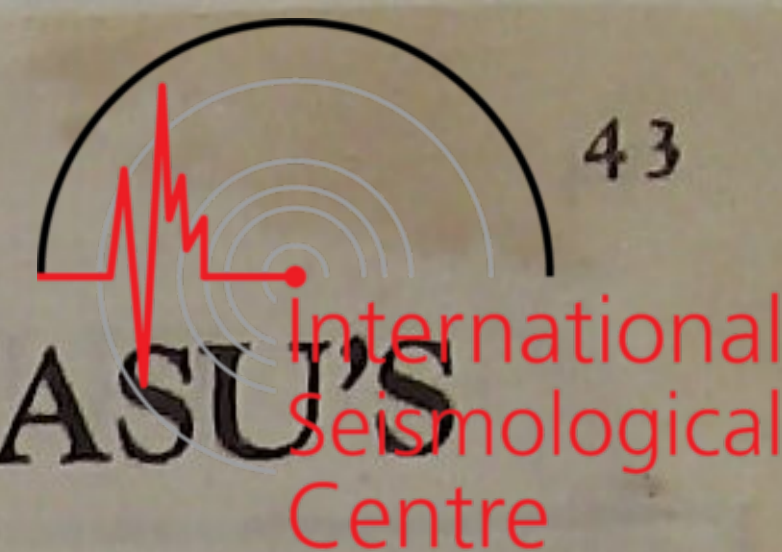


No.	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
386	Sept. 28	h	m	s	m	s	m	s	m	s	m	s	mm	mm	m	0	Distant			
387	28	i22	55	40	i55	42	i56	16	i56	17	-	-	0.12	0.18	6.9	0	Near Yūki (Ibaragi)			
388	30	e15	17	35	-	-	18	50	18	50	-	-	-	-	5.3	0				
389	Oct. 2	e23	49	35	-	-	50	01	50	00	-	-	0.01	-	5.6	0				
390	6	e17	13	21	e13	16	e20	06	e20	04	-	-	-	-	28.0	0	Distant			
391	6	e21	05	41	-	-	06	18	-	-	-	-	-	-	4.4	0				
392	7	4	-	-	-	-	?44	37	-	-	-	-	-	-	1.8	0				
393	9	8	04	05	-	-	04	18	-	-	-	-	-	-	2.3	0				
394	9	17	24	20	e24	19	24	47	24	48	-	-	-	-	4.5	0				
395	10	4	-	-	-	-	e26	20	-	-	-	-	-	-	3.0	0				
396	10	7	-	-	-	-	e36	04	e36	02	-	-	-	-	2.1	0				
397	10	e 8	50	53	-	-	51	42	-	-	-	-	-	-	5.2	0				
398	11	i17	10	15	10	13	i11	11	i11	12	-	-	0.13	0.14	9.2	0	E off Cape Nasyappu			
399	12	18	-	-	-	-	?02	24	-	-	-	-	-	-	2.1	0				
400	12	e21	10	30	-	-	10	52	-	-	-	-	-	-	2.6	0				
401	13	19	10	45	-	-	?11	30	-	-	-	-	-	-	2.7	0				
402	16	7	-	-	-	-	e07	22	-	-	-	-	-	-	1.1	0				
403	17	i 4	48	02	i47	59	48	34	48	31	-	-	1.04	1.44	20.3	0	SE off Cape Inubō			
404	17	5	11	34	-	-	12	25	-	-	-	-	-	-	5.3	0				
405	17	e 5	23	25	-	-	29	16	-	-	-	-	0.01	-	5.1	0				
406	17	13	33	40	33	38	34	31	34	30	-	-	0.11	0.16	9.4	0	SE off Cape Inubō			
407	17	e14	05	59	-	-	06	30	-	-	-	-	0.01	-	5.8	0				
408	17	i19	10	06	e10	08	10	48	e10	52	-	-	0.06	0.10	8.1	0	Off Cape Inubō			
409	20	e20	22	45	-	-	23	30	-	-	-	-	-	-	4.4	0				
410	23	e 3	03	36	e03	34	04	50	04	49	-	-	-	-	9.5	0				
411	23	e 3	13	00	-	-	e14	03	-	-	-	-	-	-	5.9	0				
412	24	10	-	-	-	-	e11	58	-	-	-	-	-	-	3.5	0				
413	24	11	-	-	-	-	e44	42	-	-	-	-	-	-	4.5	0				
414	24	23	-	-	-	-	e11	58	-	-	-	-	-	-	2.5	0				
415	25	e23	24	28	-	-	26	42	-	-	-	-	-	-	12.5	0	Distant			
416	28	e11	20	26	-	-	20	49	20	48	-	-	-	-	3.1	0				
417	29	7	-	-	-	-	?35	47	-	-	-	-	-	-	3.8	0	Distant			
418	30	10	-	-	-	-	?02	20	-	-	-	-	-	-	1.2	0				
419	31	e14	00	16	-	-	00	42	e00	40	-	-	-	-	3.8	0				
420	31	16	-	-	-	-	?09	06	-	-	-	-	-	-	1.8	0				
421	Nov. 1	12	11	07	-	-	11	30	e11	29	-	-	-	-	4.0	0				
422	3	23	59	54	-	-	60	41	-	-	-	-	0.02	-	5.5	0				
423	4	2	-	-	-	-	?01	15	-	-	-	-	-	-	1.8	0				
424	5	9	-	-	-	-	?36	35	-	-	-	-	-	-	2.9	0				
425	6	14	-	-	-	-	e19	38	-	-	-	-	-	-	2.8	0				
426	7	0	-	-	-	-	e11	01	-	-	-	-	-	-	-	0				
427	9	3	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
428	9	19	35	41	e35	41	i36	08	36	07	-	-	0.04	0.09	5.5	0	ENE off Hatinohe			
429	12	15	-	-	-	-	12	34	-	-	-	-	-	-	1.5	0				
430	12	e17	11	50	-	-	13	00	-	-	-	-	0.01	-	6.8	0				
431	14	i11	07	20	i07	20	i14	43	i14	41	-	-	0.15	0.43	42.8	0	Distant (Iran)			
432	14	12	57	57	-	-	58	26	58	25	-	-	0.01	-	3.0	0				
433	14	18	-	-	-	-	e40	19	-	-	-	-	-	-	1.2	0				
434	15	0	14	43	14	43	i15	32	15	32	-	-	0.06	0.09	7.8	0				
435	15	20	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
436	15	21	46	19	e46	07	e53	16	e53	20	-	-	-	-	32.7	0	Distant			
437	15	22	-	-	-	-	e52	26	e52	27	-	-	-	-	14.8	0				
438	16	1	-	-	-	-	-	-	-	-	-	-	-	-	-	0				
439	16	16	-	-	-	-	e20	23	-	-	-	-	-	-	3.4	0				
440	18	e 2	56	24	e56	27	63	01	63	02	-	-	-	-	17.7	0	Distant			

## EARTHQUAKES, 1937.

No.	Date 1937	P				S				L				Maximum Range of Motion				Duration of Total Earthquake	Intensity	Approximate Epicenter
		E	W	N	S	E	W	N	S	E	W	N	S	E	W	N	S			
441	Nov. 20	h	m	s	m	s	m	s	m	s	m	s	m	s	mm	mm	m	0	Near Komagadake (Kai) Near the mouth of R. Nikappu S off Yonakunisima	
442	22	15	50	00	-	-	50	12	50	14	-	-	-	-	-	-	5.0	0		
443	22	4	-	-	-	-	?55	40.	-	-	-	-	-	-	-	-	2.1	0		
444	26	e17	40	25	e40	25	i41	21	41	22	-	-	-	0.07	0.15	7.6	0			
445	26	3	45	06	45	06	45	46	45	45	-	-	-	0.10	0.15	8.4	0			
446	26	e10	49	57	e49	57	i53	45	i53	44	-	-	-	0.07	0.10	4.8	0			
446	26	15	37	33	37	30	38	12	38	15	-	-	-	0.19	0.35	11.5	0	Near Cape Inubō		
447	27	e 9	11	11	-	-	11	47	11	47	-	-	-	-	-	-	2.3	0		
448	28	e22	42	06	-	-	42	32	e42	33	-	-	-	-	-	-	3.2	0		
449	29	8	26	58	e26	59	27	20	27	20	-	-	-	0.01	0.03	3.0	0	Distant		
450	30	0	-	-	-	-	?50	10	-	-	-	-	-	-	-	-	3.4		0	
451	30	16	-	-	-	-	?26	38	-	-	-	-	-	-	-	-	3.5	0		
452	Dec. 1	e 2	49	39	49	39	i50	16	50	15	-	-	-	0.03	0.07	7.2	0	Near Cape Inubō		
453	2	3	55	50	55	49	i56	01	56	01	-	-	-	0.03	0.06	2.5	0	Near Cape Inubō		
454	4	5	-	-	-	-	?29	55	-	-	-	-	-	-	-	-	1.8		0	
455	4	e 6	19	59	-	-	i20	55	-	-	-	-	-	0.02	-	4.1	0			
456	4	e15	25	25	-	-	i26	30	-	-	-	-	-	0.01	-	4.1	0			
457	5	17	04	06	-	-	04	41	04	40	-	-	-	-	-	-	3.4	0		
458	5	18	15	01	-	-	15	17	15	18	-	-	-	0.02	-	3.1	0	ESE off Cape Inubō		
459	5	20	-	-	-	-	53	00	-	-	-	-	-	-	-	-	2.9		0	
460	6	4	35	23	35	23	35	52	35	52	-	-	-	1.12	0.72	45.4	0			
461	8	i 8	37	17	37	17	i41	30	41	29	45	34	45	51	0.14	0.40	35.9	0	NE off Daito	
462	8	?20	43	55	-	-	-	-	-	-	-	-	-	-	-	-	2.4	0		
463	10	e13	29	50	e29	48	i30	29	30	32	-	-	-	0.62	0.45	47.8	0	ESE off Inubō		
464	11	i13	39	58	i39	58	i40	16	i40	16	-	-	-	0.43	0.76	10.0	2	E off Kuzi (Iwate)		
465	12	17	27	37	-	-	27	54	-	-	-	-	-	-	-	-	3.0	0		
466	13	i18	59	13	i59	11	i63	23	i63	23	67	19	67	22	0.15	0.10	25.5	0	SE off Daito	
467	14	e 4	13	38	-	-	14	26	-	-	-	-	-	-	-	-	6.1	0		
468	14	e 7	39	19	e39	20	i39	34	i39	34	-	-	-	0.03	0.09	2.8	0	ENE off Cape Siriya SSE off Cape Nozima		
469	15	11	33	16	33	16	33	44	33	46	-	-	-	0.23	0.21	8.8	2			
470	16	i 9	37	10	37	10	i38	03	38	02	-	-	-	0.13	0.32	12.2	0			
471	17	9	37	26	37	25	41	34	41	33	-	-	?46	13	0.04	-	24.6	0		
472	17	14	-	-	-	-	51	22	-	-	-	-	-	-	-	-	2.0	0		
473	17	19	-	-	-	-	?08	23	?08	23	-	-	-	-	-	-	5.6	0		
474	18	5	-	-	-	-	e03	19	-	-	-	-	-	-	-	-	2.8	0		
475	18	e10	44	07	-	-	44	45	-	-	-	-	-	-	-	-	5.1	0		
476	18	13	-	-	-	-	?27	11	-	-	-	-	-	-	-	-	2.2	0		
477	18	13	45	47	-	-	-	-	54	06	-	-	-	-	-	-	18.1	0		
473	19	e 4	44	23	e44	22	44	59	44	59	-	-	-	0.03	0.05	5.5	0	Off the mouth of R. Naka		
479	19	14	-	-	-	-	58	47	-	-	-	-	-	-	-	-	1.6	0		
480	19	16	05	58	-	-	07	05	-	-	-	-	-	0.01	-	4.5	0			
481	21	14	-	-	-	-	e40	57	-	-	-	-	-	-	-	-	1.2	0		
482	21	15	-	-	-	-	57	22	-	-	-	-	-	-	-	-	2.0	0		
483	23	e 0	16	12	-	-	i16	35	i16	35	-	-	-	0.01	0.03	22.8	0	Distant Off the mouth of R. Ukedo (Hokusima)		
484	23	?13	36	13	?36	03	-	-	?44	26	-	-	?51	43	-	-	109.8		0	
485	25	i 0	03	41	03	40	i03	59	i04	01	-	-	-	0.13	0.10	5.4	0			
486	27	e17	33	12	-	-	33	41	-	-	-	-	-	-	-	-	3.4	0		
487	28	? 3	18	25	-	-	-	-	-	-	-	-	-	0.01	-	4.7	0			
488	28	20	04	56	-	-	06	11	e06	08	-	-	-	-	-	-	4.0	0		
489	29	e20	24	20	-	-	24	45	e24	47	-	-	-	0.02	-	3.3	0	E off Cape Erimo		
490	29	22	42	14	42	13	42	53	42	54	-	-	-	0.08	0.11	5.4	0			
491	30	e18	40	12	-	-	40	40	-	-	-	-	-	-	-	-	3.3	0		
492	31	1	57	58	57	57	58	08	58	08	-	-	-	0.01	-	2.2	0			

# CHIEF EARTHQUAKES OBSERVED WITH NASU'S SEISMOGRAPH, 1937.



Instrument; Nasu's seismograph with three components.

Remarks:

Instrumental constants

Component	V	T <sub>0</sub>	$\gamma/T_0^2$	Mass
E-W	25	5.7	0.025	7.2 kgr.
N-S	25	6.0	0.005	7.2
Vertical	25	5.3	0.021	4.4

1. Direction of the earth's displacement; positive towards north, east, and upward respectively.
2. ⊕ Out of the range of the instrument.
3. × Too feeble to measure.
4. ✖ Out of order of the instrument.

No.	Date	P			S		Maximum Amplitude			First Motion			Epicenter	
		mean of 3 comp.			mean of 3 comp.		E-W	N-S	Vertical	E-W	N-S	Vertical		
8 26	Jan. 7 20	h 6 0	m 12 3	s 19.9 43.1	m 12 4	s 33.6 20.9	$\mu$ ✖ +1000	$\mu$ - 424 + 618	$\mu$ - 428 + 180	$\mu$ ✖ ×	$\mu$ ×	$\mu$ ×	$\lambda_E=142^\circ 0$ $\lambda_E=142^\circ 8$	$\varphi_N=38^\circ 8$ $\varphi_N=42^\circ 0$
63	Feb. 21	7	4	39.4	6	5.9	-1860	-1160	+ 450	+ 12	+ 20	- 8	$\lambda_E=150^\circ 0$	$\varphi_N=44^\circ 5$
167	Mar. 21	19	29	49.6	30	7.9	>3660	>3440	>3560	+ 76	+ 100	- 152	$\lambda_E=142^\circ 2$	$\varphi_N=40^\circ 2$
203	Apr. 29	20	20	42.0	22	2.0	+ 570	- 420	+ 294	- 8	+ 24	- 36	$\lambda_E=137^\circ 3$	$\varphi_N=45^\circ 7$
206 222 226	May 4 25 28	16 6 19	31 33 59	45.8 10.3 16.4	32 33 61	23.3 26.6 50.5	+ 182 + 230 + 220	- 200 - 281 + 122	+ 80 + 120 - 44	×	×	×	$\lambda_E=140^\circ 0$ $\lambda_E=142^\circ 9$ $\lambda_E=142^\circ 5$ (deep)	$\varphi_N=36^\circ 1$ $\varphi_N=40^\circ 0$ $\varphi_N=24^\circ 0$
237	June 8	20	4	30.3	4	41.0	+1544	+ 750	- 542	- 40	0	+ 100	$\lambda_E=141^\circ 9$	$\varphi_N=39^\circ 2$
294	July 26	19	56	52.9	57	7.3	>3760	>3560	>4400	+ 356	- 576	- 452	$\lambda_E=141^\circ 97$	$\varphi_N=38^\circ 23$
314 320 339 344	Aug. 3 5 18 21	13 2 17 17	22 14 54 39	17.6 30.6 8.4 38.7	22 14 54 39	29.0 40.6 24.7 50.8	+ 24 - 164 - 342 + 64	+ 40 + 140 - 420 - 100	✖ + 70 - 104 - 38	×	×	×	Off Kinkwazan $\lambda_E=142^\circ 00'$ $\lambda_E=142^\circ 3$ $\lambda_E=141^\circ 7$	$\varphi_N=39^\circ 33'$ $\varphi_N=40^\circ 2$ $\varphi_N=38^\circ 0$
365 368	Sept. 10 12	15 19	4 36	10.3 31.0	4 36	23.3 44.3	- 44 + 120	- 40 + 150	- 20 ✖	×	×	×	SE off Kinkwazan $\lambda_E=142^\circ 1$	$\varphi_N=38.4$
403	Oct. 17	4	47	59.9	48	50.5	+1484	✖	- 330	×	×	✖	$\lambda_E=141^\circ 0$	$\varphi_N=35^\circ 5$
446	Nov. 26	15	37	24.6	38	10.0	+ 340	- 218	- 48	×	×	×	$\lambda_E=141^\circ 0$	$\varphi_N=35^\circ 7$
460 463 464 469 470	Dec. 6 10 11 15 16	4 13 13 11 9	35 29 39 33 37	23.0 49.5 57.9 16.2 10.7	35 30 40 33 38	52.2 30.4 15.8 46.3 2.0	- 560 - 481 - 368 + 118 + 184	- 360 + 330 - 480 + 80 - 200	- 122 - 64 - 118 + 44 + 42	×	×	×	ESE off Cape Inubō " $\lambda_E=142.3$ $\lambda_E=142.0$ $\lambda_E=140.1$	$\varphi_N=40^\circ 2$ $\varphi_N=41^\circ 6$ $\varphi_N=34^\circ 3$

## PULSATORY OSCILLATIONS, 1937 (EW Component.)



No.	Beginning			Ending			Maximum				Double Amplitude
	Date			Date			Date				
	Month	Day	Hour	Month	Day	Hour	Day	Hour	Day	Hour	
1	January	1	3	January	2	21	1	13	1	15	7
2		5	9		7	9	6	6	6	8	8
3		10	2		12	1	10	11	10	13	4
4		29	2		30	25	30	0	30	2	4
5	February	1	20	February	4	15	2	10	2	12	40
6		12	2		15	5	13	15	13	17	35
7		16	0		17	22	16	5	16	7	4
8		23	15		24	20	24	1	24	3	6
9	March	3	20	March	6	15	4	1	4	3	10
10		11	6		13	20	11	10	11	13	10
11		16	23		18	24	17	2	17	5	13
12		22	19		23	22	23	4	23	6	4
13		24	10		27	23	25	5	25	8	14
14		29	1		30	21	29	21	29	23	6
15	April	4	17	April	6	9	5	1	5	3	5
16		7	0		8	8	7	11	7	13	6
17		21	3		22	14	22	0	22	3	10
18		25	22		28	2	26	17	26	20	6
19	May	1	3	May	3	15	2	22	3	1	10
20		4	9		5	23	5	1	5	3	4
21		18	0		19	21	19	0	19	2	9
22		20	9		22	10	20	21	20	24	16
23	June	28	0	June	30	24	29	4	29	7	21
24	September	10	20	September	13	13	11	17	11	20	11
25		15	5		18	22	17	4	17	7	6
26		26	10		27	21	26	22	27	1	4
27	October	8	14	October	9	2	8	22	8	24	3
28		12	4		12	23	12	13	12	15	5
29		14	0		15	15	15	5	15	8	4
30		15	22		18	9	17	8	17	10	4
31		29	10		30	20	30	8	30	10	5
32	November	1	0	November	2	16	1	15	1	18	4
33		6	12		8	1	7	4	7	7	5
34		9	2		11	3	9	14	9	18	6
35		21	7		22	24	22	0	22	3	6
36	December	2	13	December	4	11	3	7	3	10	26
37		5	6		6	18	6	5	6	8	4
38		18	10		19	24	19	1	19	4	10
39		20	2		21	22	21	4	21	7	4
40		24	8		26	10	24	21	24	23	15
41		27	0		30	6	28	20	28	23	6