

ANNUAL REPORT  
OF THE  
METEOROLOGICAL  
AND THE  
SEISMOLOGICAL OBSERVATIONS  
MADE AT THE  
INTERNATIONAL LATITUDE OBSERVATORY  
OF MIZUSAWA  
FOR  
THE YEAR 1935.

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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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1936.

The present report gives the results of the meteorological and seismological observations made at this observatory during the year 1935. No alteration has been made in the nature and methods of observation. The observations and the calculations were made by Messrs. M. Uchida, 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.

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\* Note :—The wind velocity is measured by the Robinson anemometer. Since January first of the year 1925 a new factor for this instrument has been used. The ratio of the new factor to the old one is 0.7/1.0.

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

●	Rain	∇	Silver thaw	⌘	Oceanic noise
✱	Snow	~	Glazed frost	∞	Yellow dust
⌘	Thunder storm	⊞	Ice	0	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* are found in the annual reports for the years 1902, 1904, 1905, 1910, and 1916.

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, 1936

H. KIMURA, *Rigakuhakushi*  
Director of the International Latitude Observatory  
in 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 . . . . .	. . . . .	<table style="border-left: 1px solid black; border-right: 1px solid black; border-collapse: collapse;"> <tr> <td style="padding: 5px 10px 5px 10px;">1. . . . .</td> <td style="padding: 5px 10px 5px 10px;">slight</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">2. . . . .</td> <td style="padding: 5px 10px 5px 10px;">moderate</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">3. . . . .</td> <td style="padding: 5px 10px 5px 10px;">rather strong</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">4. . . . .</td> <td style="padding: 5px 10px 5px 10px;">strong</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">5. . . . .</td> <td style="padding: 5px 10px 5px 10px;">very strong</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">6. . . . .</td> <td style="padding: 5px 10px 5px 10px;">disastrous</td> </tr> </table>	1. . . . .	slight	2. . . . .	moderate	3. . . . .	rather strong	4. . . . .	strong	5. . . . .	very strong	6. . . . .	disastrous
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, 1935.



No.	Date 1935	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			
1	Jan. 1	h 13	m 07	s 06	-	-	e 08	11	-	-	-	-	-	-	0.02	0.03	6.9	0	
2	1	?13	31	14	?31	49	?38	30	?40	11	-	-	-	-	-	-	23.1	0	
3	2	1	-	-	-	-	?59	27	-	-	-	-	-	-	0.01	-	2.8	0	
4	3	? 1	58	17	?58	39	?64	35	-	-	?72	12	-	-	-	0.10	34.6	0	
5	3	e14	55	52	e55	52	i56	34	e56	33	-	-	-	-	0.03	0.03	5.1	0	$\lambda=139^{\circ}.9E, \varphi=35^{\circ}.7N$
6	4	i18	43	19	e43	18	i43	36	i43	36	-	-	-	-	0.06	0.05	3.6	0	E off Kuzi
7	8	e18	34	57	-	-	i35	36	e35	32	-	-	-	-	0.02	0.02	5.6	0	
8	8	18	-	-	-	-	e41	56	-	-	-	-	-	-	-	-	2.1	0	
9	9	e 9	51	09	-	-	e51	38	e51	30	-	-	-	-	0.01	-	5.5	0	
10	10	3	-	-	-	-	i55	07	e55	09	-	-	-	-	0.01	-	1.8	0	
11	15	11	-	-	-	-	e34	36	-	-	-	-	-	-	0.02	-	2.9	0	
12	18	?17	18	21	?18	37	?22	14	?21	57	-	-	-	-	0.01	0.04	12.3	0	
13	18	e22	44	34	e44	35	i45	21	e45	23	-	-	-	-	0.05	0.05	5.8	0	$\lambda=139^{\circ}.7E, \varphi=35^{\circ}.6N$
14	19	i11	15	09	e15	07	i15	40	i15	37	-	-	-	-	0.31	0.22	8.6	0	$\lambda=143^{\circ}.7E, \varphi=41^{\circ}.0N$
15	19	e19	11	51	-	-	e12	22	-	-	-	-	-	-	0.01	-	2.2	0	
16	20	i16	54	54	i54	54	i55	05	i55	05	-	-	-	-	0.12	0.11	5.1	1	$\lambda=141^{\circ}.6E, \varphi=38^{\circ}.7N$
17	22	e12	24	35	-	-	e25	27	-	-	-	-	-	-	-	-	5.8	0	
18	22	e14	09	42	-	-	e10	27	-	-	-	-	-	-	0.01	-	4.2	0	
19	22	e14	27	43	-	-	e28	33	-	-	-	-	-	-	0.01	-	5.0	0	
20	23	e 7	31	08	e30	59	?36	46	?36	51	?41	47	?42	12	-	-	41.5	0	
21	25	e 1	51	53	-	-	e52	21	-	-	-	-	-	-	0.01	-	3.8	0	
22	25	e 3	34	54	e34	57	i35	25	e35	24	-	-	-	-	0.03	0.02	6.4	0	E off Miyako
23	25	e16	01	25	-	-	i02	40	-	-	-	-	-	-	0.01	0.01	5.1	0	
24	25	e19	19	42	-	-	e20	35	-	-	-	-	-	-	0.01	-	4.1	0	
25	27	e 3	15	06	-	-	e15	56	-	-	-	-	-	-	0.01	-	4.6	0	
26	28	e 9	51	49	-	-	e53	10	e53	10	-	-	-	-	0.01	0.01	8.5	0	
27	29	e 9	55	06	-	-	e55	36	-	-	-	-	-	-	0.01	-	3.0	0	
28	31	1	-	-	-	-	e44	51	-	-	-	-	-	-	-	-	2.3	0	
29	31	17	-	-	-	-	e55	41	-	-	-	-	-	-	-	-	2.2	0	
30	Feb. 3	e 1	20	22	-	-	e20	58	-	-	-	-	-	-	0.01	-	4.2	0	
31	4	e21	14	18	-	-	i14	51	e14	51	-	-	-	-	0.02	-	5.3	0	
32	8	e12	15	27	e15	27	i15	51	e15	50	-	-	-	-	0.02	0.02	4.9	0	E off Cape Siriya
33	9	e 5	24	50	-	-	e25	50	-	-	-	-	-	-	0.00	-	5.0	0	
34	9	e19	24	27	e23	29	?28	31	?28	32	-	-	?32	44	-	-	19.8	0	
35	10	i18	31	47	e31	49	i33	32	i33	32	-	-	-	-	0.22	0.11	12.6	0	W off Titizima (deep)
36	10	e20	12	34	-	-	e13	33	-	-	-	-	-	-	0.01	-	6.4	0	
37	11	e 3	52	34	-	-	e53	14	-	-	-	-	-	-	0.01	-	6.6	0	
38	11	e17	20	39	-	-	i21	18	-	-	-	-	-	-	0.01	-	11.0	0	
39	12	e12	04	11	-	-	i04	31	-	-	-	-	-	-	0.01	-	2.3	0	
40	14	i 1	17	58	e17	56	i18	08	e18	09	-	-	-	-	0.03	0.01	2.6	0	
41	14	8	-	-	-	-	e37	10	-	-	-	-	-	-	-	-	1.7	0	
42	17	e 5	40	22	-	-	e41	04	-	-	-	-	-	-	-	-	2.5	0	
43	18	14	-	-	-	-	e58	01	-	-	-	-	-	-	0.00	-	2.3	0	
44	18	i15	08	14	e08	12	i09	15	e09	14	-	-	-	-	0.03	0.01	5.1	0	$\lambda=144^{\circ}.5E, \varphi=42^{\circ}.6N$
45	19	i20	11	20	e11	18	i12	04	e12	02	-	-	-	-	0.37	0.40	15.4	0	$\lambda=140^{\circ}.6E, \varphi=35^{\circ}.7N$
46	22	e17	11	40	e11	30	e16	47	e16	39	e22	44	e22	07	0.05	0.24	80.3	0	Aleutian Is.
47	24	e 9	48	34	-	-	e49	12	-	-	-	-	-	-	0.01	-	5.0	0	
48	25	e 3	03	46	-	-	e04	25	e04	25	-	-	-	-	0.01	-	5.2	0	
49	26	e12	55	02	-	-	i55	32	-	-	-	-	-	-	-	-	2.1	0	
50	27	9	-	-	-	-	e16	47	-	-	-	-	-	-	0.01	-	4.4	0	
51	Mar. 28	e 6	53	13	-	-	i53	51	-	-	-	-	-	-	0.02	0.03	5.9	0	
52	1	e18	45	54	-	-	e46	32	-	-	-	-	-	-	0.01	-	4.2	0	
53	3	e17	25	08	-	-	e25	44	e25	44	-	-	-	-	0.01	0.01	4.4	0	
54	3	e21	55	00	-	-	i55	12	i55	12	-	-	-	-	0.03	-	3.1	0	
55	4	e 4	05	52	-	-	i06	28	-	-	-	-	-	-	0.01	-	3.7	0	

## EARTHQUAKES, 1935.

No.	Date 1935	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			
56	Mar. 5	i 10 28 01		e 28 00	i 28 26	e 28 25	-	-	-	-	-	-	0.07	0.05	6.4	0	ESE off Miyako			
57	5	e 17 06 23		-	i 06 55	e 06 52	-	-	-	-	-	-	0.02	-	3.5	0				
58	6	0		-	e 27 04	-	-	-	-	-	-	-	0.00	-	1.7	0				
59	7	e 17 55 10		-	e 55 46	-	-	-	-	-	-	-	0.01	-	3.6	0				
60	7	3		-	e 37 33	-	-	-	-	-	-	-	0.01	-	2.7	0				
61	7	i 10 27 18	i 27 18	i 27 45	e 27 40	-	-	-	-	-	-	0.68	0.48	14.8	0	$\lambda=139^{\circ}.6E, \varphi=40^{\circ}.0N$				
62	7	e 17 28 12	e 28 14	i 28 39	e 28 41	-	-	-	-	-	-	0.03	0.03	3.7	0	$\lambda=139^{\circ}.6E, \varphi=37^{\circ}.4N$				
63	7	i 17 32 14	e 32 13	i 32 41	e 32 41	-	-	-	-	-	-	0.14	0.16	8.5	0	" "				
64	7	e 18 45 10	-	e 45 53	-	-	-	-	-	-	-	0.01	-	4.7	0					
65	7	i 23 23 53	-	i 24 10	e 24 09	-	-	-	-	-	-	0.02	0.02	3.4	0					
66	8	e 16 00 46	-	e 01 07	-	-	-	-	-	-	-	0.00	-	1.7	0					
67	8	e 16 08 56	e 08 59	i 09 26	e 09 28	-	-	-	-	-	-	0.07	0.07	6.7	0	$\lambda=141^{\circ}.1E, \varphi=36^{\circ}.6N$				
68	9	e 10 45 42	e 45 42	i 45 51	e 45 54	-	-	-	-	-	-	0.05	0.03	3.3	0	E off Yoshihama				
69	9	e 16 02 49	-	e 03 20	-	-	-	-	-	-	-	0.00	-	2.9	0					
70	14	e 14 16 51	-	i 17 37	-	-	-	-	-	-	-	0.01	-	4.7	0					
71	18	e 12 33 07	e 33 07	i 33 45	e 33 44	-	-	-	-	-	-	0.02	0.03	4.3	0					
72	20	17	-	e 22 13	-	-	-	-	-	-	-	0.01	-	-	0					
73	21	0	-	? 12 21	-	-	-	-	-	-	-	0.01	-	3.4	0					
74	21	e 3 51 13	-	e 51 44	-	-	-	-	-	-	-	0.01	-	3.1	0					
75	24	e 8 19 08	-	e 19 44	-	-	-	-	-	-	-	0.01	-	4.1	0					
76	24	e 16 14 32	-	i 14 54	-	-	-	-	-	-	-	0.01	-	3.0	0					
77	28	i 23 49 52	e 49 53	i 51 27	e 51 26	-	-	-	-	-	-	0.12	0.08	14.6	0	N part of sea of Japan				
78	29	e 8 07 27	-	i 07 47	-	-	-	-	-	-	-	0.01	-	2.8	0	(deep)				
79	30	i 4 06 54	i 06 53	i 07 04	i 07 03	-	-	-	-	-	-	0.03	0.02	3.0	0					
80	30	i 21 20 14	i 20 14	i 20 36	i 20 38	-	-	-	-	-	-	⊕	3.30	24.7	2	$\lambda=141^{\circ}.6E, \varphi=37^{\circ}.4N$				
81	30	e 23 28 06	e 23 04	i 28 27	i 28 27	-	-	-	-	-	-	0.03	0.02	4.3	0	$\lambda=141^{\circ}.6E, \varphi=37^{\circ}.4N$				
82	30	23	-	e 49 02	-	-	-	-	-	-	-	-	-	1.6	0					
83	31	e 3 06 04	-	e 06 17	-	-	-	-	-	-	-	0.00	-	2.0	0					
84	31	i 12 14 16	-	i 14 39	-	-	-	-	-	-	-	0.03	-	4.4	0					
85	31	13	-	i 46 28	-	-	-	-	-	-	-	-	-	1.4	0					
86	Apr. 1	e 18 08 50	-	e 09 25	-	-	-	-	-	-	-	-	-	2.8	0					
87	4	i 13 22 17	i 22 17	i 22 40	i 22 40	-	-	-	-	-	-	0.22	0.20	9.3	1	$\lambda=141^{\circ}.4E, \varphi=37.3N$				
88	4	17	-	e 40 26	-	-	-	-	-	-	-	-	-	1.8	0					
89	4	e 17 47 22	e 47 27	i 47 48	e 47 52	-	-	-	-	-	-	0.03	0.02	4.5	0	Off Cape Sioya				
90	5	3	-	e 10 33	-	-	-	-	-	-	-	0.01	0.01	3.0	0					
91	6	e 16 17 33	-	e 18 08	-	-	-	-	-	-	-	-	-	3.0	0					
92	8	e 2 19 04	-	i 19 29	e 19 29	-	-	-	-	-	-	0.01	-	2.6	0					
93	8	e 20 31 03	-	i 31 28	-	-	-	-	-	-	-	0.01	-	2.8	0					
94	9	e 8 20 04	e 20 05	i 21 11	e 21 19	-	-	-	-	-	-	0.06	0.08	7.3	0	$\lambda=137^{\circ}.9E, \varphi=35^{\circ}.0N$				
95	9	21	-	e 08 53	-	-	-	-	-	-	-	0.00	-	2.1	0					
96	11	i 15 25 39	e 25 40	i 26 06	e 26 06	-	-	-	-	-	-	0.28	0.21	9.4	1	$\lambda=140^{\circ}.7E, \varphi=36^{\circ}.8N$				
97	14	e 7 40 36	-	i 41 06	e 41 06	-	-	-	-	-	-	0.01	0.01	3.2	0					
98	14	e 9 51 26	-	e 52 05	-	-	-	-	-	-	-	0.01	-	4.4	0					
99	15	i 11 16 14	i 16 14	i 17 04	i 17 03	-	-	-	-	-	-	0.26	0.17	8.0	0	$\lambda=137^{\circ}.1E, \varphi=36^{\circ}.2N$				
100	17	e 23 53 59	e 53 56	i 54 27	e 54 26	-	-	-	-	-	-	0.03	-	5.5	0	E off Kinkwasan				
101	17	e 9 56 22	-	e 57 28	-	-	-	-	-	-	-	0.01	-	5.4	0					
102	18	e 16 31 41	-	i 32 09	e 32 08	-	-	-	-	-	-	0.01	0.03	4.9	0					
103	19	? 15 37 21	? 37 31	? 47 15	? 47 15	-	-	-	-	-	-	-	0.13	95.2	0					
104	20	e 22 06 58	e 07 00	e 11 28	e 11 28	-	-	-	-	-	-	0.05	-	51.9	0	$\lambda=120^{\circ}49'E, \varphi=24^{\circ}21'N$				
105	21	i 3 24 05	e 24 05	i 24 39	e 24 38	e 14 21	e 13 16	-	-	-	-	0.05	0.05	7.4	0	$\lambda=138^{\circ}.9E, \varphi=36^{\circ}.4N$				
106	22	e 6 24 04	-	e 24 24	-	-	-	-	-	-	-	0.01	-	2.7	0					
107	22	e 13 56 43	-	i 56 58	e 56 57	-	-	-	-	-	-	0.03	0.01	2.8	0					
108	25	e 17 40 42	-	e 41 00	-	-	-	-	-	-	-	0.00	-	3.4	0					
109	27	e 2 27 59	-	i 28 37	e 28 37	-	-	-	-	-	-	0.01	0.01	3.6	0					
110	28	e 20 52 58	-	i 53 47	e 53 47	-	-	-	-	-	-	0.02	0.02	5.2	0					

## EARTHQUAKES, 1935.

No.	Date 1935	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			
		h	m	s	m	s	m	s	m	s	m	s	m	s	mm	mm	m		
111	May 4	e 1	07	04	-	-	i 07	21	e 07	21	-	-	-	-	0.02	0.02	3.1	0	
112	9	i 9	18	20	e 18	21	i 19	24	e 19	22	-	-	-	-	0.01	0.01	5.7	0	
113	10	e 16	14	12	-	-	e 14	47	e 14	48	-	-	-	-	0.01	0.01	4.4	0	
114	11	e 14	35	17	-	-	i 36	00	e 35	59	-	-	-	-	0.01	0.02	4.0	0	
115	12	1	-	-	-	-	e 27	52	-	-	-	-	-	-	0.00	-	2.9	0	
116	13	? 20	07	09	-	-	? 14	16	? 13	20	-	-	-	-	-	-	29.1	0	
117	15	14	-	-	-	-	i 28	03	-	-	-	-	-	-	0.01	-	2.1	0	
118	16	e 23	09	54	-	-	i 10	28	-	-	-	-	-	-	0.01	-	4.1	0	
119	18	21	-	-	-	-	e 12	42	-	-	-	-	-	-	-	-	1.6	0	
120	21	e 6	58	51	? 59	43	? 65	46	? 66	13	-	-	-	-	-	-	41.6	0	
121	21	13	-	-	-	-	e 14	25	-	-	-	-	-	-	0.00	-	3.9	0	
122	23	i 2	10	17	i 10	17	i 10	31	i 10	33	-	-	-	-	0.31	0.21	10.4	1	$\lambda=142^{\circ}.3E, \varphi=38^{\circ}.2N$
123	23	e 11	39	54	-	-	e 40	27	-	-	-	-	-	-	0.01	-	4.6	0	
124	24	e 5	42	06	e 42	50	? 47	58	? 47	44	-	-	-	-	-	-	135.4	0	
125	24	e 16	18	25	e 18	27	i 18	56	e 18	54	-	-	-	-	0.02	0.01	5.0	0	SW off Urakawa
126	25	i 20	36	42	e 36	41	i 36	54	e 36	54	-	-	-	-	0.05	0.04	4.7	0	Off Sizugawa Bay
127	27	5	-	-	-	-	i 50	18	e 50	18	-	-	-	-	0.02	-	3.2	0	
128	28	e 17	04	17	-	-	e 05	13	e 05	12	-	-	-	-	0.01	-	6.0	0	
129	29	e 11	09	09	-	-	e 09	38	-	-	-	-	-	-	0.00	-	3.3	0	
130	29	17	-	-	-	-	e 16	24	-	-	-	-	-	-	0.00	-	1.3	0	
131	30	e 19	09	57	✗	-	i 10	46	✗	-	-	-	-	0.01	✗	4.7	0		
132	30	e 21	43	06	e 43	13	e 51	37	e 51	37	e 64	36	e 63	24	-	2.09	96.1	0	Baluchistan
133	31	i 8	20	11	i 20	11	i 21	22	i 21	22	-	-	-	-	0.38	0.30	11.1	0	$\lambda=134^{\circ}.2E, \varphi=38^{\circ}.6N$
134	31	20	-	-	-	-	e 10	21	-	-	-	-	-	-	-	-	2.4	0	(deep)
135	June 1	0	-	-	-	-	e 43	38	-	-	-	-	-	-	-	-	1.1	0	
136	1	14	-	-	-	-	? 46	32	-	-	-	-	-	-	0.01	-	3.8	0	
137	2	e 9	56	39	? 56	35	e 60	39	? 60	42	-	-	-	-	-	-	12.7	0	
138	4	e 20	34	39	-	-	e 35	14	-	-	-	-	-	-	0.01	-	3.7	0	
139	6	e 0	44	43	-	-	e 46	09	e 46	09	-	-	-	-	0.01	-	6.0	0	
140	6	e 13	00	26	-	-	e 01	37	e 01	40	-	-	-	-	0.00	-	3.6	0	
141	8	e 4	58	00	e 58	02	i 58	38	i 58	39	-	-	-	-	0.03	0.04	4.8	0	$\lambda=140^{\circ}.1E, \varphi=36^{\circ}.1N$
142	10	e 6	53	29	e 53	29	i 54	30	e 54	30	-	-	-	-	0.03	0.03	8.2	0	$\lambda=139^{\circ}.4E, \varphi=33^{\circ}.5N$
143	12	e 19	08	10	-	-	i 08	42	-	-	-	-	-	-	0.01	-	2.4	0	
144	14	i 21	10	36	i 10	35	i 11	19	i 11	22	-	-	-	-	0.12	0.11	11.3	0	$\lambda=140^{\circ}.3E, \varphi=34^{\circ}.7N$
145	15	15	-	-	-	-	e 07	54	-	-	-	-	-	-	0.01	-	1.3	0	
146	16	6	-	-	-	-	e 26	52	? 26	47	-	-	-	-	0.01	-	4.9	0	
147	20	i 19	30	24	e 30	24	i 30	59	i 30	59	-	-	-	-	0.07	0.06	6.0	0	Neighbourhood of Mt. Tukuba
148	24	i 23	33	08	i 33	08	i 41	10	i 41	09	e 47	54	47	51	-	-	50.4	0	
149	25	e 12	35	57	✗	-	i 37	36	✗	-	-	-	-	-	0.05	✗	16.0	0	SE off Etoroff
150	26	e 15	00	54	-	-	i 01	04	i 01	04	-	-	-	-	0.05	0.05	3.7	0	
151	26	16	-	-	-	-	e 30	09	-	-	-	-	-	-	-	-	1.3	0	
152	26	e 16	55	30	-	-	i 56	44	-	-	-	-	-	-	0.01	-	2.7	0	
153	27	e 5	45	04	-	-	i 45	21	-	-	-	-	-	-	0.00	-	2.1	0	
154	27	e 5	48	40	-	-	i 48	53	-	-	-	-	-	-	0.02	-	2.5	0	
155	28	i 18	49	23	-	-	i 50	14	50	17	-	-	-	-	0.03	0.03	6.7	0	$\lambda=140^{\circ}.3E, \varphi=34^{\circ}.8N$
156	28	e 18	58	55	e 58	56	i 59	45	i 59	46	-	-	-	-	0.47	0.20	13.2	0	„ „
157	29	e 5	45	08	-	-	i 45	49	-	-	-	-	-	-	0.01	-	3.4	0	
158	29	e 21	14	04	-	-	e 15	00	-	-	-	-	-	-	0.00	-	3.6	0	
159	July 2	e 23	31	22	-	-	i 31	57	e 31	57	-	-	-	-	0.01	-	2.4	0	
160	3	e 1	37	08	-	-	i 37	33	e 37	33	-	-	-	-	0.01	0.01	4.4	0	
161	3	i 16	32	30	e 32	29	i 33	10	e 33	10	-	-	-	-	0.07	0.06	8.4	0	$\lambda=142^{\circ}.8E, \varphi=42^{\circ}.0N$
162	4	e 18	50	39	50	39	i 51	15	51	14	-	-	-	-	0.01	0.02	3.8	0	
163	4	18	-	-	-	-	i 55	41	i 55	42	-	-	-	-	0.02	0.01	3.3	0	
164	5	i 3	08	44	e 08	43	i 10	02	e 10	02	-	-	-	-	0.01	-	5.2	0	off Etoroff
165	5	i 9	13	01	e 13	03	i 14	20	i 14	20	-	-	-	-	0.04	0.03	6.5	0	SW off Hatizyozima (deep)







## EARTHQUAKES, 1935.

No.	Date 1935	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	Sept. 13	h m s				m s				m s				mm		mm		m	0	λ=141°.4E, φ=36°.7N
277	14	e 15 36 25				- -				i 37 03				0.01		0.02		4.2	0	
278	14	e 8 29 43				- -				e 30 59				0.01		-		5.7	0	
279	15	i 14 20 15				i 20 10				i 20 41				0.42		0.27		9.8	0	
280	15	? 11 23 47				? 23 24				? 31 50				-		0.04		37.2	0	
		e 13 52 15				- -				e 52 38				-		-		2.0	0	
281	15	15				- -				- -				-		-		-	0	
282	16	e 14 50 25				e 50 29				i 50 59				0.03		0.03		7.3	0	SE off Katura
283	16	i 15 16 37				e 16 39				i 17 04				0.10		0.07		5.8	0	ESE off Miyako
284	16	e 20 52 46				e 52 47				i 53 26				0.09		0.06		7.2	0	λ=140°.5E, φ=36°.0N
285	18	i 8 24 45				i 24 45				i 25 19				⊕		1.12		19.2	1-	γ=142°.6E, φ=42°.0N
286	18	i 8 51 00				i 51 00				i 51 40				0.48		0.50		13.5	0	λ=142°.6E, φ=42°.0N
287	18	i 20 09 56				i 09 56				i 10 26				0.72		0.56		12.5	0	λ=142°.8E, φ=41°.1N
288	18	e 21 10 40				- -				i 11 11				0.02		0.02		3.5	0	SE off Miyako
289	18	e 21 47 05				- -				i 47 45				0.01		0.01		2.9	0	
290	18	i 23 36 03				e 36 01				i 36 41				0.07		0.05		6.5	0	SW off Urakawa
291	19	e 2 31 14				e 31 19				e 35 00				-		-		32.2	0	
292	20	i 1 54 41				i 54 39				i 60 57				i 64 27		i 64 39		192.1	0	
293	20	e 5 31 01				i 31 01				e 37 20				e 40 42		e 40 53		71.1	0	
294	21	e 13 08 13				- -				i 08 38				0.02		0.01		5.1	0	
295	22	e 7 06 05				- -				e 06 40				0.00		-		3.5	0	
296	22	e 10 46 17				- -				i 47 00				0.02		0.01		3.8	0	
297	22	i 14 40 45				e 40 46				i 41 25				0.02		0.02		5.6	0	λ=139°.4E, φ=36°.2N
298	22	e 16 03 09				- -				i 04 49				0.01		0.02		7.8	0	
299	23	e 9 26 15				e 26 16				e 32 36				e 35 59		e 36 02		49.4	0	
300	23	e 17 33 17				e 33 16				i 34 03				0.02		0.01		5.9	0	
301	24	5				- -				e 09 05				0.01		-		4.7	0	
302	24	e 16 40 03				e 40 03				e 40 48				0.03		0.04		8.9	0	
303	24	e 16 55 56				e 55 55				i 56 53				0.03		0.04		14.7	0	
304	25	10				- -				e 27 38				0.01		-		5.0	0	
305	25	e 14 27 11				- -				e 27 45				0.00		-		3.5	0	
306	25	e 16 43 05				- -				e 43 45				0.01		-		3.2	0	
307	27	e 18 47 54				e 47 54				i 48 33				0.06		0.06		5.8	0	λ=142°.4E, φ=42°.4N
308	28	i 3 46 32				- -				i 47 09				0.03		0.02		3.9	0	
309	29	8				- -				i 25 11				0.01		-		2.4	0	
310	29	11				- -				? 44 37				0.00		-		2.0	0	
311	30	0 07 59				e 07 58				08 46				i 08 47		-		9.4	0	
312	30	e 13 37 37				- -				e 38 35				0.01		-		4.8	0	
313	30	e 15 04 21				- -				e 05 03				0.01		-		3.2	0	
314	Oct. 2	i 5 34 27				i 34 26				i 35 26				1.19		1.05		35.5	1	λ=145°.8E, φ=42°.9N
315	4	e 5 22 02				- -				i 27 13				i 31 34		e 31 19		16.9	0	
316	4	e 17 47 39				- -				e 48 33				0.00		-		4.0	0	
317	6	e 5 29 21				- -				i 29 56				0.01		0.02		4.0	0	
318	11	i 22 23 52				e 23 52				e 30 16				e 33 19		e 33 41		33.1	0	
319	12	i 16 45 56				i 45 57				⊕				⊕		6.66		-	3	λ=143°.3E, φ=40°.4N
320	12	i 17 01 02				i 01 00				i 01 24				⊕		1.25		-	1	λ=143°.2E, φ=40°.2N
321	12	17 ⊕				? 06 20				⊕				⊕		0.49		-	0	
322	12	i 17 13 46				e 13 45				i 14 15				0.28		0.25		-	0	λ=143°.7E, N=40°.2N
323	12	17				- -				i 20 30				0.04		0.04		4.5	0	
324	12	e 17 25 57				- -				e 26 28				0.00		-		3.2	0	
325	12	i 18 07 11				07 12				i 07 41				0.25		0.29		6.9	0	λ=143°.3E, φ=40°.6N
326	12	i 18 14 43				i 14 43				i 15 04				1.88		1.36		19.4	0	λ=143°.0E, φ=40°.1N
327	12	i 18 37 31				e 37 31				i 37 58				0.05		0.05		5.2	0	Off Miyako
328	12	e 19 05 38				- -				i 06 04				0.01		-		2.1	0	
329	12	19				- -				e 08 17				-		-		1.5	0	
330	12	e 19 13 18				- -				e 13 42				0.01		-		2.8	0	

EARTHQUAKES, 1935.

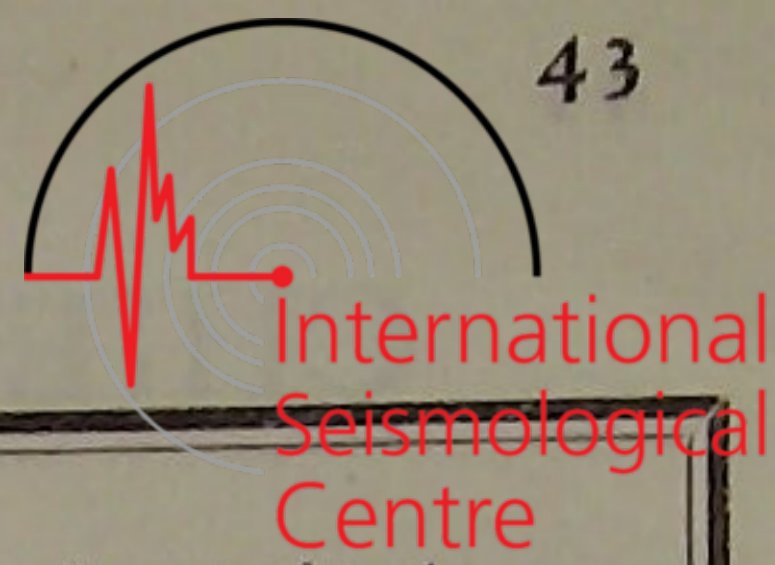


Table with columns: No., Date 1935, P (E, W, N, S), S (E, W, N, S), L (E, W, N, S), Maximum Range of Motion (E, W, N, S), Duration of Total Earthquake (m), Intensity, and Approximate Epicenter. It lists 55 earthquakes (No. 331-385) with detailed seismic data.





## EARTHQUAKES, 1935.



No.	Date 1935	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			
496	Dec. 20	i 5 47 17	e 47 15	i 47 47	e 47 47	-	-	-	-	e 59 51	e 59 28	-	-	0.19	0.20	8.3	0	$\lambda=141^{\circ}.4E, \varphi=36^{\circ}.7N$		
497	20	e 18 46 01	e 46 08	e 53 25	e 53 25	-	-	-	-	-	-	-	-	0.07	54.4	0				
498	21	e 16 22 55	-	e 23 49	-	-	-	-	-	-	-	-	0.00	-	4.5	0	$\lambda=143^{\circ}.8E, \varphi=41^{\circ}.4N$			
499	22	i 10 55 08	e 55 08	i 55 41	i 55 41	-	-	-	-	-	-	-	0.09	0.08	7.9	0				
500	23	e 14 48 13	-	i 48 43	-	-	-	-	-	-	-	-	0.01	-	7.0	0				
501	25	i 2 40 08	e 40 08	i 40 29	e 40 30	-	-	-	-	-	-	-	0.02	0.03	4.2	0	Off Cape Sioya S part of Okhotsk Sea			
502	27	e 12 21 44	-	i 23 39	e 23 41	-	-	-	-	-	-	-	0.02	-	4.8	0				
503	28	e 2 44 59	e 44 59	e 53 11	e 53 07	e 61 40	e 61 39	1.13	6.35	5.9	0									
504	28	i 4 08 41	e 08 39	e 09 05	e 09 09	-	-	-	-	-	-	-	0.11	0.10	6.5	0				
505	28	i 19 30 24	e 30 24	i 32 12	i 32 09	-	-	-	-	-	-	-	0.08	0.08	7.4	0				
506	29	e 23 45 34	e 45 32	e 52 12	e 52 16	e 57 59	e 57 57	0.01	-	23.9	0									
507	30	e 9 34 43	-	i 35 04	e 35 06	-	-	-	-	-	-	-	0.01	0.01	4.3	0				
508	30	e 19 38 48	-	i 39 11	-	-	-	-	-	-	-	-	0.01	-	3.7	0				



# CHIEF EARTHQUAKES OBSERVED WITH NASU'S SEISMOGRAPH, 1935.

Instrument; Nasu's seismograph with three components.

Remarks:

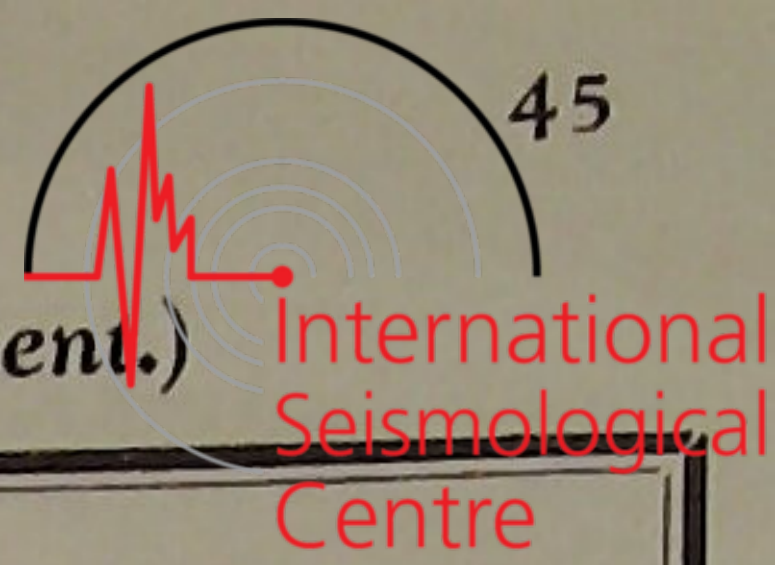
Instrumental constants

Component	V	T <sub>0</sub>	γ/T <sub>0</sub> <sup>2</sup>	Mass
E-W	25	6.1	0.007	7.2 kgr.
N-S	25	6.0	0.013	7.2
Vertical	25	5.3	0.048	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		
		h	m	s	m	s	μ	μ	μ	μ	μ	μ			
14	Jan. 19	11	15	07	15	37	+ 280	- 332	- 142	×	×	+ 8	λ <sub>E</sub> =143°.7, φ <sub>E</sub> =41°.0	141°.6 38°.7	
16	20	16	54	51	55	05	+ 120	+ 98	+ 57	+ 10	- 11	- 24			
45	Feb. 19	20	11	19	12	05	+ 328	+ 466	- 184	×	×	×	140°.6	35°.7	
61	Mar. 7	10	27	16	27	41	- 510	- 558	- 300	+ 18	- 12	+ 24	139°.6 40°.0	141°.6 37°.4	
80	30	21	20	13	20	36	⊕	⊕	⊕	- 56	+ 120	?			
87	Apr. 4	13	22	16	22	42	- 130	- 200	+ 144	0	+ 4	+ 6	141°.4 37°.3	140°.7 36°.8	
96	11	15	25	41	26	07	+ 160	- 210	+ 100	×	×	×			
122	May 23	2	10	17	10	31	+ 186	+ 236	- 100	+ 20	- 20	- 44	142°.3 38°.2	134°.2 38°.6 [deep]	
133	31	8	20	12	21	23	+ 360	- 512	+ 80	- 40	+ 24	- 24			
156	June 28	18	58	57	59	45	+ 424	+ 266	- 90	×	×	×	140°.3	34°.8	
176	July 11	8	26	01	27	06	+ 440	+ 740	+ 180	- 14	- 24	- 10	138°26' 34°59'	141°.3 36°.65	
186	19	0	50	27	51	04	⊕	⊕	⊕	+ 4	- 44	- 20			
225	Aug. 17	7	23	32	23	53	- 260	+ 336	+ 166	- 10	+ 32	+ 40	141°.6 37°.2	143°.0 39°.5	
228	21	11	29	18	29	31	- 60	+ 70	- 40	+ 4	+ 6	- 4			
235	27	14	30	46	31	12	+ 380	+ 320	+ 200	- 20	- 2	+ 10			
271	Sept. 11	14	05	30	06	30	-2320	✕	+ 860	+ 32	+ 28	- 8	145°.1 42°.7	142°.6 42°.0	
285	18	8	24	45	25	24	-1480	+1080	- 422	+ 24	+ 40	- 28			
286	18	8	51	00	51	39	+ 384	+ 608	+ 206	- 40	- 80	+ 20	142°.6 42°.0	142°.8 41°.1	
287	18	20	09	56	10	27	- 492	- 700	+ 270	+ 20	+ 16	- 28			
314	Oct. 2	5	34	26	35	29	+ 828	✕	- 436	+ 4	×	- 4	145°.8 42°.9	143°.3 40°.4	
319	12	16	45	55	46	24	⊕	⊕	⊕	- 48	- 28	+ 32			
320	12	17	01	00	01	24	⊕	-2380	- 490	+ 200	+ 184	- 84	143°.2 40°.2	143°.0 40°.1	
326	12	18	14	42	15	03	-1728	-2092	+ 400	- 48	- 16	+ 24			
336	13	1	58	06	58	32	-1892	+1872	- 740	- 20	- 20	+ 24	143°.4	40°.2	
381	18	14	54	32	55	08	+1325	+1615	- 840	- 128	- 76	+ 80	143°.9 40°.4	143°.5 40°.0	
384	18	21	52	05	52	39	+1445	-1325	+ 589	- 44	- 32	+ 40			
408	24	16	45	47	45	58	+ 60	+ 98	+ 36	×	×	×	141°.8 38°.7	143°.1 41°.5	
416	30	2	04	47	05	17	- 210	- 180	+ 140	×	×	×			
444	Nov. 13	20	04	16	04	25	- 100	- 76	+ 80	+ 18	- 8	- 32	141°.9 39°.0	141°.6 37°.9	
446	15	9	57	22	57	36	- 80	- 88	+ 30	- 8	+ 12	+ 24			
490	Dec. 17	19	22	19	26	12	- 84	+ 360	- 20	- 16	- 20	- 20	125°.3 23°.9	141°.4 36°.7	
496	20	5	47	17	47	46	- 132	- 180	- 86	×	×	×			

PULSATORY OSCILLATIONS, 1935 (EW Component.)



No.	Beginning			Ending			Maximum				Double Amplitude
	Date			Date			Date				
	Month	Day	Hour	Month	Day	Hour	Day	Hour	Day	Hour	
1	January	4	3	January	6	12	4	21	4	23	7
2		10	21		11	24	11	6	11	8	10
3		14	21		20	4	16	23	17	2	20
4		21	16		25	17	22	0	22	3	5
5		31	1	February	2	1	1	2	1	4	3
6	February	4	2		9	7	7	14	7	16	2
7		10	8		12	14	11	7	11	9	6
8		22	11		24	2	22	23	24	1	2
9	March	4	23	March	8	10	6	22	6	24	4
10		9	11		11	16	10	18	10	20	5
11		16	1		17	18	16	13	16	15	10
12		19	2		21	3	20	5	20	7	5
13		24	0		27	23	25	0	25	8	30
14	April	1	20	April	3	14	2	7	2	10	4
15		4	23		6	22	5	17	5	19	5
16		10	1		12	16	11	20	11	23	6
17		14	19		16	18	15	13	15	15	31
18		17	22		18	20	18	9	18	11	4
19		22	21		24	9	23	7	23	9	5
20		29	5		30	15	30	7	30	11	10
21		30	21	May	3	8	1	19	1	22	8
22	May	14	20		16	24	15	21	15	23	3
23		18	22		19	15	19	5	19	7	2
24	June	4	6	June	6	19	4	22	4	24	3
25		16	15		19	14	17	9	17	11	3
26	July	17	2	July	20	4	18	5	18	8	3
27	August	6	10	August	7	10	6	17	6	20	3
28		29	0		30	16	30	4	30	6	8
29	September	9	12	September	11	13	10	13	10	16	13
30		13	19		14	23	14	3	14	5	10
31		23	0		27	15	25	5	25	9	19
32	October	26	2	October	30	3	27	21	27	23	18
33	November	2	16	November	3	20	3	6	3	8	2
34		4	15		6	11	5	23	6	2	6
35		10	2		11	10	10	21	10	24	5
36		11	18		13	14	12	1	12	3	6
37		15	10		17	8	16	6	16	8	14
38		19	17		20	19	20	1	20	4	3
39		21	23		23	22	23	0	23	3	6
40		25	1		27	18	26	9	26	11	9
41	December	1	11	December	3	14	2	4	2	6	12
42		8	4		10	2	8	18	8	21	12
43		10	18		12	12	11	14	11	17	4
44		17	14		20	16	18	18	18	20	11
45		28	23		31	9	30	5	30	7	4