

ANNUAL REPORT
OF THE
METEOROLOGICAL
AND THE
SEISMOLOGICAL OBSERVATIONS
MADE AT THE
INTERNATIONAL LATITUDE OBSERVATORY
OF MIZUSAWA
FOR
THE YEAR 1916.

LATITUDE 39° 8' N., LONGITUDE 141° 7' E.,

HEIGHT ABOVE MEAN SEA LEVEL 61 METRES.

PUBLISHED BY THE INTERNATIONAL LATITUDE OBSERVATORY
OF MIZUSAWA.

1917.

The present report contains the results of the meteorological and the seismological observations in the observatory during the year 1916. No alteration is done in the kinds and the methods of observations. The observations and the computations were done by Messrs. K. Aoki, T. Gôukon and S. Sato under the superintendence of Dr. M. Hashimoto.

The following are to be generally noticed with respect to the meteorological observations :

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

Air Pressure.—The barometric readings in millimetres are reduced only to freezing point of water ; the corrections to sea level and to standard gravity are given at the bottoms of the respective pages.

Air and Earth Temperatures.—The degrees are given in Centigrades.

Wind.—The velocity is expressed in metres per second. The direction is observed according to the sixteen cardinal points.

Cloud.—The amount is estimated by the scale 0-10, the forms are of the *International classification*, and the direction of motion is observed according to the eight cardinal points.

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

Relative Humidity.—It is given in percentages.

Precipitation.—The amount is given in millimetres. The number of days is counted only when the amount is 0.1 mm. or more in a day ; but for those days with either snow, hail, or graupel, the amount is not taken into consideration.

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

Duration of Sunshine.—It is recorded by a sunshine-recorder of *Jordan's* pattern.

Amount of Evaporation.—It is given in millimetres, the daily amount being, according to the instruction of the Central Meteorological Observatory in Tokio, that which results from 10h of the preceding day till 10h of the day in question.

The observation of the Amount of Evaporation "*in the Shelter*" begin with Jan. 25. 1916.

The occurrence of meteorological phenomena is recorded with the following international symbols :

●	Rain	→	Snow drift	e	Cirrus
*	Snow	←	Ice crystals	es	Cirro-stratus
⚡	Thunder storm	⊙	Solar corona	ek	Cirro-cumulus
⚡	Thunder without lightning	⊕	Solar halo	ke	Cumulo-cirrus
⚡	Lightning without thunder	☽	Lunar corona	se	Strato-cirrus
△	Graupel	☾	Lunar halo	sk	Strato-cumulus
▲	Hail	↙	Gales	n	Nimbus
≡	Mist, fog	↗	Rainbow	k	Cumulus
⊥	Hoar frost	☽	Aurora	kn	Cumulo-nimbus
⊥	Dew	∞	Dust haze	s	Stratus
∇	Silver thaw	☒	Snow Lying	~	Wave cloud
~	Glazed frost	⊥	Ice Column in the ground	☾	Zodiacal light

The *descriptions* of the *meteorological instruments* are found in the annual reports for the years 1902, 1904, 1905, and 1910.

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. The *instrumental constants* are as follows:

	EW Component	NS Component (after repair)
	Apparatus	Apparatus
Period of free oscillation	17 seconds	38 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 of suspension }	104 centimetres	104 centimetres

The *time* adopted in the observations is the Japanese Central Standard Time reckoned from midnight.

April, 1917.

H. Kimura, *Rigakuhakushi*

Director of the International Latitude Observatory
of Mizusawa.

SEISMOLOGICAL OBSERVATIONS.

TABLE A.

(Earthquakes)



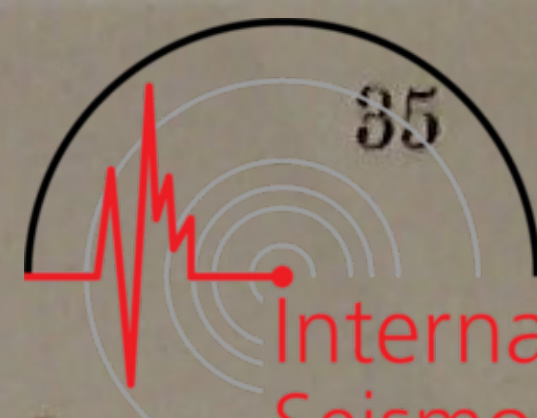
No.	Date 1916		Time of Occurrence †				Beginning of the Principal Motion				Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks		
			E	W	N	S	E	W	N	S		E	W				N	S
1	Jan.	1	22	28	56	28	57	22	35	23*	35	30*	161.5	0.63	?	Slow	Feeble	
2		7	22	09.5				22	09	50			1.8	0.01	—	"	"	
3		12	5	54	24	54	27	5	54	53	54	56	2.9	0.03	0.03	"	"	
4		13	15	26	27	26	27	15	32	43*	32	46*	75.5	0.08	0.40	"	"	
5		13	17	28	37	28	37	17	35	02*	34	56*	143.6	?	1.20	"	"	
6		13	19	58	37	58	42	20	05	08*	05	11*	?	0.02	0.05	"	"	
7		13	21	16	31	16	32	—	—	—	—	—	9.9	0.07	0.08	"	"	
8		14	11	57	40	57	39	11	58	04	58	04	8.4	0.06	0.14	Quick	"	Felt
9		20	4	05	13	—	—	—	—	—	—	—	4.0	0.01	—	Slow	"	
10		20	11	48	46	—	—	—	—	—	—	—	4.9	0.01	—	"	"	
11		21	17	06	36	06	35	17	07	39	07	39	7.5	0.10	0.15	"	"	
12		22	12	30	49	30	48	12	31	08	31	08	3.3	0.02	0.03	"	"	
13		25	18	48		48		—	—	—	—	—	3.4	0.03	0.04	"	"	
14		25	20	17.7		—	—	—	—	—	—	—	1.8	0.00	—	"	"	
15		25	20	36	53	36	53	20	38	05	38	04	15.2	0.42	0.80	"	"	Felt
16		26	8	59.0		—	—	—	—	—	—	—	2.8	0.01	—	"	"	
17		26	16	49	51	49	51	16	59	46*	59	56*	56.8	0.01	0.05	"	"	
18		26	21	33.7		34.8		21	45	06*	45	16*	70.3	0.01	0.05	"	"	
19		27	20	58	06	58	06	20	58	41	58	46	5.1	0.03	0.05	"	"	
20		28	22	28.4		—	—	—	—	—	—	—	2.1	0.01	—	"	"	
21	Feb.	1	11	25	40	—	—	—	—	—	—	—	?	0.01	—	"	"	
22		1	16	39	28	39	28	16	42	23	42	26	131.2	?	2.30	"	"	
23		1	18	21	22	21	20	—	—	—	—	—	4.3	0.02	?	"	"	
24		5	17	13.0		12.9		—	—	—	—	—	3.0	0.01	0.01	"	"	
25		5	23	34	18	—	—	—	—	—	—	—	15.5	0.01	—	"	"	
26		6	19	54	46	54	46	19	56	34	56	37	?	0.09	0.11	"	"	
27		6	20	07.2		07.1		—	—	—	—	—	10.3	0.03	0.05	"	"	
28		7	1	38	06	38.3		1	38	24	—	—	4.1	0.02	0.01	"	"	
29		7	6	57	30	57	35	7	02	21*	02	10*	102.9	0.04	0.14	"	"	
30		7	8	55	12	55	12	8	55	23	55	23	2.4	0.04	0.05	Quick	"	Felt
31		8	9	03	28	—	—	—	—	—	—	—	0.4	0.01	—	Slow	"	
32		9	23	20.2		—	—	—	—	—	—	—	1.7	0.01	—	"	"	
33		10	7	25	25	—	—	7	26	03	26	03	6.7	0.03	0.03	"	"	
34		11	13	50.4		50.5		13	50	46	50	47	3.2	0.05	0.05	"	"	
35		11	17	49.6		—	—	—	—	—	—	—	3.1	0.01	—	"	"	
36		14	19	09	03	08	54	19	14	41*	14	41*	43.7	0.01	0.04	"	"	
37		18	21	30	06	—	—	21	30	20	—	—	3.1	0.01	—	"	"	
38		20	0	54	27	—	—	0	54	41	—	—	2.1	0.01	—	"	"	
39		21	2	54	58	54	58	3	00	44*	00	44*	87.4	0.01	0.15	"	"	
40		22	18	12	18	12	17	18	13	04	13	02	?	0.49	0.71	"	"	
41		22	18	33	01	—	—	18	33	47	33	48	7.4	0.01	?	"	"	
42		22	20	31.4		31.4		20	32.1		32.2		8.1	0.02	0.03	"	"	
43		22	20	41.8		41.8		20	42.5		42.5		7.6	0.02	0.02	"	"	
44		23	0	32.7		32.6		0	33.4		33	22	5.4	0.01	0.02	"	"	
45		23	3	03.8		03.8		3	04.6		04	32	4.5	0.02	0.01	"	"	
46		23	3	08.7		08.7		3	09.5		—	—	3.7	0.01	0.01	"	"	
47		28	5	40	55	40.1		5	50	36*	50	33*	122.9	0.01	0.16	"	"	
48	Mar.	2	3	04	14	04.2		3	01	41	—	—	?	0.02	0.02	"	"	
49		2	3	06	25	—	—	3	06	47	06	45	4.2	0.06	0.10	"	"	
50		5	18	24.2		—	—	—	—	—	—	—	1.2	0.01	—	"	"	
51		6	7	26	31	26	31	7	26	47	26	47	8.6	0.18	0.25	Quick	"	
52		6	9	27	28	27	28	9	27	43	27	42	4.0	0.05	0.05	Slow	"	
53		6	18	13	01	13	01	18	16	06	16	05	9.6	0.02	0.03	"	"	
54		7	6	39.7		—	—	6	39	48	—	—	1.8	0.01	—	"	"	
55		8	17	55	43	55	43	17	56	28	56	29	7.1	0.13	0.20	"	"	

† Japanese Central standard Time (9h east from Greenwich), reckoned from midnight.

* Commence Time of the 2nd preliminary tremor.

TABLE A.

(Earthquakes)



No.	Date 1916		Time of Occurrence †				Beginning of the Principal Portion				Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks		
			E	W	N	S	E	W	N	S		E	W				N	S
56	Mar.	8	h	m	s	m	s	h	m	s	m	s	m	m	m	m		
			19	51	34	51	34	19	51	51	51	52	5.8	0.07	0.06	Slow	Feeble	
57		9	10	36	50	36	49	10	37	19	37	18	7.0	0.12	0.16	"	"	
58		11	8	37	50	—	—	8	38	15	—	—	2.9	0.01	—	"	"	
59		12	1	54.8		—	—	—	—	—	—	—	0.7	0.00	—	"	"	
60		13	5	48.2		—	—	—	—	—	—	—	2.1	0.00	—	"	"	
61		12	23	31.3		—	—	—	—	—	—	—	1.8	0.01	—	"	"	
62		17	1	47.7		—	—	—	—	—	—	—	4.8	0.00	—	"	"	
63		17	14	14.6		—	—	—	—	—	—	—	1.9	0.00	—	"	"	
64		17	21	50.6		—	—	—	—	—	—	—	?	0.00	—	"	"	
65		17	21	51.8		—	—	—	—	—	—	—	2.8	0.00	—	"	"	
66		18	1	01	21	—	—	1	02	09	—	—	4.9	0.00	—	"	"	
67		18	9	57	01	—	—	9	57	46	—	—	32.0	?	—	Quick	"	Felt
68		21	8	45	27	—	—	8	46	10	—	—	4.5	0.03	—	Slow	"	
69		21	15	47	17	47	17	15	47	22	47	22	4.4	0.09	0.14	Quick	"	
70		21	16	06	21	—	—	—	—	—	—	—	0.9	0.01	—	"	"	
71		21	16	51	28	—	—	16	51	32	—	—	1.8	0.01	—	"	"	
72		25	1	06	40	06	40	1	07	15	07	15	4.3	0.07	0.10	Slow	"	
73		25	15	35	57	35	57	15	36	25	36	25	6.5	0.25	0.46	Quick	"	Felt
74		26	6	14.5		—	—	—	—	—	—	—	1.4	0.00	—	Slow	"	
75		26	8	56	57	—	—	9	00	45	—	—	28.0	0.05	—	"	"	
76		30	10	47	08	47	10	10	49	50*	49	52*	14.1	0.00	0.05	"	"	
77	Apr.	2	21	35	54	—	—	21	36	17	36.2		3.0	0.02	0.01	"	"	
78		3	1	38.6		—	—	—	—	—	—	—	1.9	0.00	—	"	"	
79		3	5	37.5		—	—	—	—	—	—	—	1.9	0.00	—	"	"	
80		6	11	04	39	04	38	11	04	50	04	50	3.9	0.08	0.10	"	"	
81		6	12	19.2		—	—	12	19	24	—	—	2.2	0.01	—	"	"	
82		6	13	49	54	50.0		13	50	52	50	53	4.5	0.03	0.05	"	"	
83		6	17	34.8		—	—	—	—	—	—	—	1.8	0.00	—	"	"	
84		7	18	45	04	45	02	18	54	10*	54	09*	89.1	0.00	0.06	"	"	
85		9	10	18	57	19.1		10	19	32	19	33	4.8	0.03	0.04	"	"	
86		10	0	15.3		—	—	—	—	—	—	—	0.7	0.00	—	"	"	
87		11	22	30.3		—	—	—	—	—	—	—	1.0	0.01	—	"	"	
88		12	4	49	46	49	47	4	50	26	50	28	5.2	0.09	0.10	"	"	
89		12	16	23	05	23.2		16	23	18	—	—	3.0	0.03	0.01	"	"	
90		14	11	41	22	41	20	11	42	39	42	39	20.3	0.92	1.45	Quick	"	
91		15	17	41	50	42.2		—	—	—	—	—	5.5	0.02	0.01	Slow	"	
92		15	19	27	40	—	—	—	—	—	—	—	3.5	0.01	—	"	"	
93		15	21	41	20	41	20	21	49	12*	49	21*	50.4	?	0.05	"	"	
94		16	0	05	35	05	36	0	11	54*	11	58*	42.7	?	0.02	"	"	
95		16	4	49.2		—	—	4	50	09	—	—	5.1	0.01	—	"	"	
96		16	12	54	33	54.8		12	55	05	55	05	3.4	0.02	0.03	"	"	
97		18	3	36	32	36.5		3	36	42	—	—	2.2	0.01	0.01	Quick	"	Felt
98		18	13	08	31	08	32	13	14	51*	13	56*	62.2	0.11	0.84	Slow	"	
99		19	2	11.9		—	—	2	11	57	—	—	0.9	0.01	—	"	"	
100		21	10	07	18	07	17	10	07	40	07	38	10.1	0.26	0.36	Quick	"	Felt
101		21	11	05	10	05.2		11	05	29	05	28	1.9	0.02	0.01	"	"	
102		21	12	04	01	03.9		12	04	18	04	17	1.8	0.01	0.01	"	"	
103		21	20	33	40	33	39	20	35	05	35	03	93.7	?	0.74	"	"	Felt
104		22	1	47	47	47	47	1	48	14	48	14	10.7	0.88	0.80	"	"	Felt
105		24	10	56.0		—	—	10	56	16	—	—	1.7	0.01	—	Slow	"	
106		24	—	—	—	—	—	18	—	—	02	01*	100.0	—	0.06	"	"	
107		24	22	26.9		—	—	—	—	—	—	—	2.2	0.01	—	"	"	
108		25	16	54	54	54	53	16	55	09	55	07	2.3	0.01	0.01	"	"	
109		26	7	44.3		—	—	—	—	—	—	—	0.8	0.01	—	"	"	
110		28	21	00	42	—	—	21	01	33	01.6		8.5	0.02	0.03	"	"	

TABLE A.

(Earthquakes)

No.	Date		Time of Occurrence †				Beginning of the Principal Motion				Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks	
	1916		E W		N S		E W		N S			E W	N S				
111	Apr.	30	h	m	s	m	s	h	m	s	m	s	m	m	Slow	Feeble	
			4	28	38	28	36	4	29	06	29	05	6.4	0.06	0.07		
112	May	3	13	41	23	41	28	—	—	—	—	—	32.2	?	0.01	''	''
113		3	17	48	22	48	19	—	—	—	—	—	1.2	0.01	0.01	''	''
114		7	3	12	18	—	—	6	12	51	12.8	—	3.5	0.02	0.02	''	''
115		7	6	15	09	—	—	6	15	34	—	—	1.7	0.01	—	''	''
116		9	18	49	09	49	09	18	49	36	49	35	2.4	0.03	0.03	''	''
117		10	2	25.1		—	—	—	—	—	—	—	0.9	0.00	—	''	''
118		12	0	50.9		—	—	0	51	05	—	—	1.1	0.00	—	''	''
119		15	8	54	42	—	—	8	54	56	—	—	26.2	?	—	Quick	''
120		15	9	17	23	17.4		9	17	36	17	36	2.4	0.05	0.02	''	''
121		18	19	06.0		—	—	—	—	—	—	—	1.1	0.01	—	Slow	''
122		21	10	44.2		—	—	—	—	—	—	—	2.0	0.00	—	''	''
123		21	20	59	27	59.5		21	06	05*	06	05*	?	0.05	0.02	''	''
124		29	23	42	34	42	33	23	43	28	43	28	5.4	0.02	0.02	''	''
125		30	18	19	49	19	50	18	21	02	21	02	9.7	0.08	0.14	''	''
126	June	10	6	31	21	31	24	6	37	11*	37	10*	38.0	?	0.02	''	''
127		13	7	00	06	00	07	7	00	32	00	32	8.8	0.03	0.10	''	''
128		14	12	51	16	51	15	12	51	43	51	43	6.3	0.03	0.02	''	''
129		17	19	20	06	20.0		19	20	17	20	17	1.9	0.02	0.02	''	''
130		20	0	41	14	—	—	0	41	29	—	—	1.9	0.00	—	''	''
131		21	22	37	48	37	48	22	38	13	38	13	4.7	0.03	0.04	''	''
132		22	3	12	41	12	40	3	13	07	13	07	8.3	0.11	0.15	''	''
133		22	5	25	23	—	—	5	25	58	—	—	3.4	0.01	—	''	''
134		22	6	51	29	53	55	—	—	—	—	—	81.9	0.00	0.04	''	''
135		22	9	41	33	41	33	9	41	57	41	57	11.3	0.14	0.20	''	''
136		22	23	42	06	—	—	23	42	30	—	—	5.3	0.01	—	''	''
137		25	2	21.6		21	27	2	22	26	22	14	4.9	0.01	0.01	''	''
138		26	4	10	56	—	—	4	11	19	11.2	—	4.1	0.01	0.01	''	''
139		26	9	00	06	00	06	9	00	34	00	30	7.5	0.07	0.16	''	''
140		27	0	51	39	51	39	0	51	53	51	52	3.2	0.07	0.06	''	''
141		27	23	15	23	—	—	23	15	39	—	—	4.5	0.01	—	''	''
142		30	2	35	32	35.5		2	35	41	35	40	2.3	0.01	0.00	''	''
143	July	8	18	25	21	25	20	18	26	03	26	00	7.2	0.04	0.04	''	''
144		8	18	44	29	44	29	18	52	40*	52	38*	?	0.04	0.05	''	''
145		10	5	20	54	20	55	5	21	16	21	17	4.3	0.01	0.01	''	''
146		10	20	31	50	31.9		20	32	02	—	—	2.6	0.01	0.00	''	''
147		10	20	34	46	34.9		20	35	09	—	—	5.4	0.02	0.01	''	''
148		13	1	35	45	35	45	1	39	20	39	20	7.5	0.02	0.02	''	''
149		17	3	15	09	15	10	3	15	30	15	30	42.8	?	5.26	Quick	''
150		17	6	43	11	43.3		6	43	33	43	33	3.9	0.01	0.01	Slow	''
151		17	7	42	23	42.5		7	42	45	—	—	3.7	0.01	0.01	''	''
152		17	10	00	16	—	—	—	—	—	—	—	5.1	0.01	—	''	''
153		17	10	54	06	—	—	—	—	—	—	—	1.3	0.00	—	''	''
154		17	10	59	41	59	45	11	00	04	00	04	4.1	0.03	0.05	''	''
155		17	14	00.6		—	—	—	—	—	—	—	1.0	0.00	—	''	''
156		18	14	56.1		—	—	—	—	—	—	—	1.2	0.00	—	''	''
157		19	3	40	40	40	38	3	40	50	40	50	6.2	0.17	0.28	Quick	''
158		19	5	20	52	—	—	5	21	14	—	—	4.7	0.01	—	Slow	''
159		19	16	43	40	—	—	16	44	02	—	—	2.9	0.01	—	''	''
160		19	21	28	00	28.7		21	29	42	29	43	6.3	0.02	0.03	''	''
161		21	11	04	01	04.1		11	04	43	04	43	6.1	0.01	0.01	''	''
162		21	11	22	11	22.3		11	23	00	22	59	5.8	0.00	0.00	''	''
163		21	23	52	45	52.8		23	53	08	53	06	5.2	0.02	0.01	''	''
164		22	6	35	39	35	41	6	36	00	36	01	6.8	0.08	0.12	''	''
165		22	7	00.7		01.0		7	01	58	—	—	1.7	0.01	0.01	''	''

TABLE A.

(Earthquakes)

No.	Date 1916		Time of Occurrence †				Beginning of the Principal Motion				Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks		
			E	W	N	S	E	W	N	S		E	W				N	S
166	July	23	h 4	m 17	s 20	m —	s —	h 4	m 18	s 02	m —	s —	7.5	m 0.00	m —	Slow	Feeble	
167		24	5	06	57	06	58	5	07	19	07	21	5.1	0.02	0.02	"	"	
168		26	5	12	30	12	31	5	12	56	12	58	5.3	0.03	0.03	"	"	
169		26	7	39	24	—	—	7	40	02	40	02	2.9	0.01	0.00	"	"	
170		26	14	46	07	46.5		14	47	12	47	15	5.7	0.02	0.02	"	"	
171		28	18	32	28	32	31	18	32	45	32	52	4.6	0.08	0.10	"	"	
172	Aug.	1	5	55	22	55	22	5	55	58	55	58	10.7	0.11	0.14	"	"	
173		1	14	12	21	—	—	14	12	38	12.6		3.0	0.00	0.00	"	"	
174		2	3	02	44	03.0		3	03	10	—	—	3.5	0.01	0.00	"	"	
175		3	9	10	57	—	—	9	11	41	—	—	3.0	0.01	—	"	"	
176		3	10	38	21	38	21	10	44	50*	44	52*	85.3	0.27	0.50	"	"	
177		4	9	50	16	51.2		9	50	25	—	—	1.5	0.01	0.00	"	"	
178		5	12	58	49	58	59	13	04	33	04	33	11.5	0.02	0.01	"	"	
179		6	7	53	32	53.3		7	55	57	—	—	8.0	0.01	0.00	"	"	
180		8	13	25	21	25	19	13	26	07	26	07	32.2	?	1.85	Quick	"	Felt
181		9	3	58	51	58	49	4	03	30	03	24	8.4	0.01	0.01	Slow	"	
182		10	12	44	58	—	—	12	45	26	—	—	6.3	0.06	—	"	"	
183		11	0	48	32	48	32	0	49	44	49	44	5.0	0.04	0.05	"	"	
184		11	5	03	14	03	17	5	03	49	03	51	2.1	0.02	0.02	"	"	
185		11	6	05	21	05	21	6	05	48	05	50	3.7	0.04	0.07	"	"	
186		12	12	55	48	56.0		12	56	15	—	—	3.8	0.01	0.01	"	"	
187		15	1	39	34	39	32	1	40	15	—	—	3.4	0.03	0.03	"	"	
188		18	13	49	51	49	59	13	50	27	50	34	5.1	0.02	0.01	"	"	
189		19	8	—	—	56	58	8	—	—	57	10	2.7	0.02	0.05	"	"	
190		21	23	33	22	33	22	23	33	56	33	56	19.0	0.66	0.76	Quick	"	Felt
191		23	3	56.3		—	—	—	—	—	—	—	3.1	0.00	—	Slow	"	
192		24	1	01.7		01.7		1	01	57	—	—	4.6	0.01	0.01	"	"	
193		24	10	38.3		—	—	10	38	44	38.7		2.1	0.01	0.00	"	"	
194		24	12	29	40	29	40	12	30	06	30	06	3.3	0.01	0.01	"	"	
195		25	12	31.8		—	—	—	—	—	—	—	0.9	0.00	—	"	"	
196		25	19	04	04	04.2		19	04	32	—	—	7.2	0.01	0.01	"	"	
197		28	7	43	00	42	59	7	43	25	43	24	48.7	?	3.80	Quick	"	Felt
198		28	7	55	29	55	28	7	55	57	55	49	4.7	0.12	0.15	Slow	"	
199		28	8	07.4		—	—	8	07	35	—	—	2.0	0.00	—	"	"	
200		28	8	31.5		—	—	8	31	46	—	—	1.3	0.00	—	"	"	
201		28	9	54	50	—	—	—	—	—	—	—	1.7	0.00	—	"	"	
202		28	10	10.4		—	—	—	—	—	—	—	1.7	0.00	—	"	"	
203		28	15	48	35	48	32	15	55	43*	55	39*	?	?	0.28	"	"	
204		28	16	32	15	32	14	16	36	17	36	14	74.5	0.05	0.24	"	"	
205		28	23	38.4		—	—	23	38	49	—	—	2.7	0.00	—	"	"	
206		29	5	29	45	—	—	5	30	06	—	—	4.8	0.01	—	"	"	
207		30	2	14.5		15.1		2	18	46	18	45	8.5	0.01	0.01	"	"	
208		31	8	14	09	14	09	8	17	48	17	48	7.1	0.04	0.02	"	"	
209	Sept.	1	23	19	48	19	48	23	20	25	20	27	6.0	0.04	0.06	"	"	
210		2	0	51	44	51	45	0	52	23	52	20	3.7	0.01	0.02	"	"	
211		2	4	49	59	49	59	4	50	18	50	19	5.8	0.12	0.15	Quick	"	Felt
212		2	6	24	31	24.6		6	24	53	—	—	2.0	0.01	0.00	"	"	
213		2	19	28	12	28	12	19	29	46	29	46	5.5	0.04	0.04	"	"	
214		3	16	22	15	22	01	16	29	01*	29	00*	47.4	0.00	0.03	"	"	
215		4	14	34	50	34	49	14	35	19	35	19	11.7	0.12	0.10	Slow	"	
216		6	4	19	13	19.3		4	19	35	19	36	2.2	0.01	0.01	"	"	
217		9	0	41	45	—	—	0	42	01	42.0		2.2	0.00	0.00	"	"	
218		9	10	54	55	54	54	10	55	20	55	20	6.4	0.12	0.25	"	"	
219		10	0	19	23	19.4		0	19	49	19	48	2.6	0.01	0.01	"	"	
220		11	15	39	55	39	54	15	47	20*	47	20*	32.1	?	0.02	"	"	

TABLE A.

(Earthquakes)



No.	Date 1916	Time of Occurrence †					Beginning of the Principal Portion					Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks
		E	W	N	S		E	W	N	S	E		W	N			
221	Sept. 12	h	m	s	m	s	h	m	s	m	s	m	m	m	Slow	Feeble	
222	15	14	41	16	41	16	14	41	37	41	36	2.5	0.04	0.04	Slow	Feeble	
223	16	16	02	28	02	28	16	03	25	03	27	74.1	?	1.90	Quick	"	Felt
224	16	18	34	47	—	—	18	35	27	35	26	3.2	0.01	0.00	Slow	"	
225	17	18	44	03	—	—	18	44	26	44.4		2.5	0.00	0.00	"	"	
226	17	5	28	02	28	01	5	28	20	28	21	3.4	0.01	0.01	"	"	
227	18	14	04	55	04	55	14	05	04	05	04	2.2	0.01	0.01	"	"	
228	18	1	09	12	09	12	1	09	21	09	21	2.4	0.01	0.01	"	"	
229	21	21	03	44	—	—	21	04	01	—	—	2.5	0.01	—	"	"	
230	21	13	03	20	—	—	13	03	42	—	—	5.0	0.04	—	"	"	
231	22	20	41	13	41.3		20	41	34	41	33	2.4	0.01	0.01	"	"	
232	22	14	54.7		—	—	14	55.0		—	—	1.9	0.01	0.01	"	"	
233	26	15	06	56	—	—	15	07.1		—	—	2.3	0.01	0.01	"	"	
234	28	20	24	14	24	14	20	24	23	24	24	2.4	0.13	0.14	"	"	
235	Oct. 2	15	17	00	17.0		15	17	07	—	—	1.7	0.01	0.01	"	"	
236	3	19	16	13	16	13	19	17	44	17	44	8.7	0.04	0.06	"	"	
237	4	10	45	59	46.1		—	—	—	—	—	113.4	0.01	0.04	"	"	
238	5	13	45	38	45	38	13	45	51	45	51	2.4	0.02	0.01	"	"	
239	5	10	53	54	53	54	10	54	19	54	20	5.4	0.01	0.01	"	"	
240	6	21	35	44	35	44	21	36	13	36	14	6.6	0.06	0.12	"	"	
241	9	4	15	29	15	29	4	16	01	16	01	6.3	0.03	0.04	"	"	
242	10	19	33	20	33	19	19	33	52	33	52	7.4	0.12	0.11	"	"	
243	12	2	40	22	—	—	2	40	57	40	57	2.8	0.01	0.00	"	"	
244	12	0	05	47	05.8		0	06	04	—	—	2.9	0.01	0.01	"	"	
245	12	3	16	39	16	36	3	25	36*	25	32*	39.6	?	0.04	"	"	
246	17	4	27.2		—	—	—	—	—	—	—	2.0	0.00	—	"	"	
247	17	11	49	49	49	50	—	—	—	—	—	0.3	0.02	0.02	"	"	
248	20	15	12	12	12	14	15	13	03	13	04	5.4	0.05	0.05	"	"	
249	20	6	16	33	16	32	6	17	03	17	03	3.9	0.03	0.03	"	"	
250	21	6	50	33	50	33	6	51	41	51	40	7.0	0.02	0.03	"	"	
251	21	2	16	07	16	10	2	25.6	*	25	26*	53.5	?	0.03	"	"	
252	22	10	55	33	55	32	10	55	54	55	55	2.2	0.01	0.01	"	"	
253	22	4	34	29	34	23	4	41	41	41	46	?	?	0.01	"	"	
254	23	21	53	11	53.4		21	53	54	53	49	8.0	0.01	0.01	"	"	
255	24	14	46	50	46	51	14	47	04	47	04	6.7	0.13	0.14	"	"	
256	25	15	34	01	—	—	15	34	14	34	14	2.1	0.01	0.01	"	"	
257	25	2	06	33	06	33	2	06	44	06	44	1.5	0.03	0.03	Quick	"	Felt
258	25	13	27	38	27.6		—	—	—	—	—	0.9	0.01	0.00	Slow	"	
259	25	21	23	33	23	33	21	23	58	23	59	16.5	0.72	0.86	Quick	"	Felt
260	26	22	03	44	03	44	22	04	07	04	09	4.1	0.01	0.01	Slow	"	
261	26	6	31	37	31	36	6	32	01	32	01	3.3	0.02	0.02	"	"	
262	26	10	01	34	—	—	10	01	48	—	—	1.5	0.01	—	"	"	
263	26	12	24	40	24	41	12	31	55*	31	48*	18.4	?	?	"	"	
264	27	14	46	25	46	27	14	49	04	49	04	3.9	0.03	0.03	"	"	
265	27	3	26	02	26	03	3	30	55*	30	36*	32.3	?	0.02	"	"	
266	27	4	23	52	23	53	4	24	17	24	18	4.9	0.04	0.05	"	"	
267	27	12	51	26	51	26	12	52	12	52	14	7.4	0.09	0.11	"	"	
268	28	18	05	36	05	32	18	06	19	06	17	6.5	0.03	0.04	"	"	
269	30	12	18	41	18	41	12	20	14	20	14	12.7	0.19	0.20	"	"	
270	30	4	13	43	13	42	4	14	03	14	04	7.7	0.20	0.27	"	"	
271	31	5	22	03	22	05	5	22	29	22	29	4.1	0.03	0.03	"	"	
272	Nov. 1	9	53.1		53	04	—	—	—	—	—	2.1	0.01	0.01	"	"	
273	4	0	34	45	34	45	0	38	02	38	05	101.2	1.48	3.00	"	"	
274	4	0	53	31	53	31	0	53	46	53	45	2.6	0.01	0.01	"	"	
275	6	6	56	44	56	44	6	59	17*	59	18*	32.4	?	0.05	"	"	
		6	4	14	14	10	4	14	31	14	32	6.6	0.05	0.04	"	"	

TABLE A.

(Earthquakes)

No.	Date		Time of Occurrence †				Beginning of the Principal Portion				Duration of Total Earthquake (mean)	Maximum Range of Motion		Character of Motion	Intensity	Remarks		
	1916		E	W	N	S	E	W	N	S		E	W				N	S
276	Nov.	6	21	35	48	35.8	21	36	08	36	08	3.0	0.01	0.01	Slow	Feeble		
277		10	4	16.2		16.6	4	17	42	17	39	4.5	0.02	0.01	"	"		
278		11	16	42.7		42	55	—	—	—	—	1.9	0.01	0.01	"	"		
279		12	15	52	37	52	40	15	53	47	53	47	5.8	0.05	0.05	"	"	
280		12	16	14	37	14	37	16	14	49	14	49	2.0	0.02	0.02	"	"	
281		14	8	20	57	20	57	8	21	16	21	16	3.7	0.03	0.02	"	"	
282		14	22	52.7		—	—	—	—	—	—	1.9	00.0	—	"	"		
283		15	7	36	35	36	39	7	40	39	40	36	?	?	0.06	"	"	
284		15	8	02.3		02	18	—	—	—	—	2.1	0.01	0.00	"	"		
285		22	3	20	30	20	30	3	20	51	20	51	3.5	0.03	0.04	"	"	
286		22	23	04	57	04	57	23	06	36	06	37	8.3	0.09	0.15	"	"	
287		23	17	05.1		05.2		—	—	—	—	6.8	0.01	0.01	"	"		
288		24	13	03	35	03	35	13	—	—	03	51	28.9	?	4.00	Quick	Weak	Felt
289		24	14	29	59	—	—	14	30	10	—	—	2.0	0.00	—	Slow	Feeble	
290		24	14	35.2		—	—	—	—	—	—	1.8	0.00	—	"	"		
291		24	18	29.4		—	—	—	—	—	—	3.2	0.00	—	"	"		
292		25	17	19	54	19	54	17	20	11	20	11	2.5	0.02	0.02	"	"	
293		25	20	57	44	57	44	20	58	03	58	03	3.2	0.02	0.01	"	"	
294		26	15	09	31	09	31	15	10	43	10	44	11.5	0.04	0.10	"	"	
295		27	2	48	06	48.3		2	48	29	48	26	2.4	0.02	0.01	"	"	
296		27	9	00	35	—	—	9	00	52	—	—	1.9	0.01	—	"	"	
297		30	21	16	31	16	31	21	16	50	16	49	4.6	0.06	0.06	"	"	
298	Dec.	8	15	09	51	09	52	15	09	57	10	00	1.7	0.01	0.02	"	"	
299		10	22	03	29	03	29	22	03	41	03	41	3.7	0.15	0.10	Quick	"	Felt
300		11	16	05	04	05.1		16	05	54	05	54	7.4	0.01	0.01	Slow	"	
301		12	1	34	28	34.8		1	35	03	—	—	2.9	0.02	0.01	"	"	
302		14	6	30	40	30	43	6	33	35*	33	35*	29.0	?	0.01	"	"	
303		14	9	27	14	27	14	—	—	—	—	—	0.8	0.01	0.00	Quick	"	
304		15	1	58	19	58	19	2	02	53*	02	53*	25.2	?	0.01	Slow	"	
305		17	6	21	26	21	26	6	23	04	23	04	8.5	0.05	0.06	"	"	
306		17	19	10	15	10	14	19	10	36	10	37	5.2	0.07	0.07	"	"	
307		18	14	21	35	21	35	14	22	21	22	21	4.3	0.07	0.06	"	"	
308		23	1	07	24	—	—	1	08	35	—	—	12.0	0.02	—	"	"	
309		23	18	44	09	44	10	—	—	—	—	—	?	?	?	"	"	
310		23	23	45	44	46.0		23	46	16	46	20	4.1	0.01	0.01	"	"	
311		25	8	37	36	—	—	8	38	07	—	—	3.8	00.2	—	"	"	
312		31	15	08	43	08	43	15	09	06	09	06	4.4	0.03	0.04	"	"	

TABLE B.

(Pulsatory Oscillation EWComponent.)



Beginning		Ending		Maximum					
Date 1916	Hour	Date 1916	Hour	Date 1916	Hour	Double Amplitude			
	h		h		h h	m m			
January	1	23	January	9	2	21-23	0.01		
	9	21		12	5	2-4	0.01		
	16	7		20	10	15-19	0.02		
	22	15		25	17	14-15	0.01		
					23	23	14-16	0.01	
February	3	10	February	5	4	9-10	0.01		
	6	14		14	8	8-19	0.02		
	16	18		18	17	3-5	0.01		
	24	4		27	24	19-21	0.01		
	29	4							
March	11	12	March	7	1	1-9	0.03		
	22	5		14	13	11-12	0.01		
	27	7		26	22	16-18	0.01		
	30	9		28	24	9-12	0.01		
				31	28	28	9-10	0.01	
April	1	10	April	3	2	14-16	0.01		
	4	2		5	4	8-12	0.01		
	8	2		8	8	11-14	0.01		
	10	12		12	11	11-12	0.01		
	16	5		17	16	5-7	0.01		
	20	12		22	21	13-15	0.01		
	24	1		25	24	4-6	0.01		
	30	7							
	May	6		13	May	2	1	11-13	0.00
		12		3		10	7	8-11	0.01
17		19	13	12		1-8	0.02		
24		7	21	19		18-20	0.01		
			26	25		9-12	0.01		
June	16	8	June	18	17	20-23	0.01		
	24	12		26	25	13-15	0.01		
	27	3		30	25	14-15	0.00		
					29	12-14	0.00		
July	1	8	July	4	3	14-15	0.01		
	5	9		6	6	10-11	0.01		
	14	1		16	14	15-17	0.01		
	26	21		31	28	11-13	0.01		
August	7	7	August	17	7	9-10	0.01		
	19	9		21	11	10-14	0.01		
				21	14	10-15	0.01		
September	1	8	September	2	17	20	9-12	0.01	
	11	1		13	1	12-13	0.00		
	22	3		24	12	5-7	0.01		
	25	8		30	23	5-9	0.01		
					25	25	13-17	0.01	
October	13	11	October	18	7	26	9-10	0.01	
	21	2		22	14	2-7	0.01		
	24	16		26	16	15-18	0.01		
	29	12			21	13-16	0.01		
November	7	8	November	2	15	25	9-10	0.00	
	17	20		13	30	16-21	0.02		
	26	14		21	9	6-9	0.01		
				21	11	14-18	0.01		
					18	18	14-17	0.01	
December	5	4	December	1	9	27	21-23	0.01	
	7	22		6	5	16-18	0.01		
	11	19		10	8	16-19	0.01		
	14	9		12	12	7-8	0.01		
	17	10		16	15	9-12	0.01		
				19	18	13-14	0.01		
				31	26	7-15	0.02		