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551

ANNUAL REPORT

OF THE

METEOROLOGICAL

AND THE

SEISMOLOGICAL OBSERVATIONS

MADE AT THE

INTERNATIONAL LATITUDE OBSERVATORY

OF MIZUSAWA

FOR

THE YEAR 1914.

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

HEIGHT ABOVE MEAN SEA LEVEL 61 METRES.



PUBLISHED BY THE INTERNATIONAL LATITUDE OBSERVATORY

OF MIZUSAWA.

1915.



The present report contains the results of the meteorological and the seismological observations in the observatory during the year 1914. No alteration is done in the kinds and the methods of observations. The observations and the computations were done by Messrs. K. Aoki, T. Ôyama (till November), T. Gôukon and S. Sato (from November) 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 Ozone.*—It is observed by means of *Sedan's ozonometer*, and is given in scale of 0-10.

*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 a. m. of the preceding day till 10h a. m. of the day in question.

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



|   |                           |   |              |    |                |
|---|---------------------------|---|--------------|----|----------------|
| ● | Rain                      | ~ | Glazed frost | e  | Cirrus         |
| * | Snow                      | + | Snow drift   | cs | Cirro-stratus  |
| ⌘ | Thunder storm             | ← | Ice crystals | ck | Cirro-cumulus  |
| ⌘ | Thunder without lightning | ⊕ | Solar corona | kc | Cumulo-cirrus  |
| < | Lightning without thunder | ○ | Solar halo   | sc | Strato-cirrus  |
| △ | Graupel                   | ☽ | Lunar corona | sk | Strato-cumulus |
| △ | Hail                      | ☾ | Lunar halo   | n  | Nimbus         |
| ≡ | Mist, fog                 | ↙ | Gales        | k  | Cumulus        |
| ⌒ | Hoar frost                | ∩ | Rainbow      | kn | Cumulo-nimbus  |
| ⌒ | Dew                       | ☽ | Aurora       | s  | Stratus        |
| ∨ | Silver thaw               | ∞ | Dust haze    |    |                |

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      | <del>20</del> <sup>38</sup> 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 seismological observations is the Japanese Central Standard Time reckoned from midnight.

April, 1915.

H. Kimura, *Rigakuhakushi*

Director of the International Latitude Observatory  
of Mizusawa.



# SEISMOLOGICAL OBSERVATIONS.



TABLE A.

(Earthquakes)

| No. | Date<br>1914 | Time of Occurrence |       |       | Duration<br>of<br>Total<br>Earthquake<br>(mean) | Maximum Range<br>of Motion |  | Character<br>of<br>Motion | Intensity | Remarks |
|-----|--------------|--------------------|-------|-------|-------------------------------------------------|----------------------------|--|---------------------------|-----------|---------|
|     |              | (E W)              | (N S) | (E W) |                                                 | (N S)                      |  |                           |           |         |
| 1   | January 2    | h                  | m     | s     | m                                               | mm                         |  | Quick                     | Weak      | Felt    |
| 2   | 2            | 0                  | 49    | 33    | 13.0                                            | ?                          |  | "                         | Feeble    |         |
| 3   | 6            | 20                 | 48    | 13    | 1.9                                             | 0.02                       |  | "                         | "         |         |
| 4   | 8            | 6                  | 30    | 45    | 5.3                                             | 0.20                       |  | "                         | "         |         |
| 5   | 11           | 19                 | 54    | 39    | 6.1                                             | 0.13                       |  | Slow                      | "         |         |
|     |              | 7                  | 36    | 43    | 4.4                                             | 0.04                       |  | "                         | "         |         |
| 6   | 12           | 18                 | 30    | 55    | 30.8                                            | 0.14                       |  | "                         | "         |         |
| 7   | 13           | 10                 | 01    | 53    | 1.8                                             | 0.02                       |  | Quick                     | "         |         |
| 8   | 17           | 11                 | 27    | 02    | 2.7                                             | 0.03                       |  | "                         | "         |         |
| 9   | 18           | 2                  | 39    | 09    | 4.0                                             | 0.05                       |  | "                         | "         |         |
| 10  | 29           | 6                  | 46    | 28    | 4.3                                             | 0.03                       |  | Slow                      | "         |         |
| 11  | 29           | 16                 | 48    | 43    | 4.8                                             | 0.02                       |  | "                         | "         |         |
| 12  | February 7   | 15                 | 52    | ?     | ?                                               | ?                          |  | Quick                     | "         | Felt    |
| 13  | 12           | 3                  | 59    | 41    | 6.2                                             | 0.01                       |  | Slow                      | "         |         |
| 14  | 12           | 8                  | 48    | 27    | 5.0                                             | 0.03                       |  | "                         | "         |         |
| 15  | 13           | 18                 | 29    | 31    | 2.0                                             | 0.02                       |  | Quick                     | "         |         |
| 16  | 14           | 17                 | 43    | 14    | 5.9                                             | 0.02                       |  | Slow                      | "         |         |
| 17  | 16           | 10                 | 39    | 46    | 12.5                                            | 0.63                       |  | Quick                     | "         | Felt    |
| 18  | 22           | 16                 | 50    | 59    | 4.8                                             | 0.01                       |  | Slow                      | "         |         |
| 19  | 25           | 5                  | 11    | 33    | 3.0                                             | 0.01                       |  | Quick                     | "         |         |
| 20  | 26           | 10                 | 43    | 37    | 6.0                                             | 0.12                       |  | Slow                      | "         |         |
| 21  | 26           | 14                 | 17    | 48    | 6.2                                             | 0.02                       |  | "                         | "         |         |
| 22  | 28           | 8                  | 38    | 40    | 1.2                                             | 0.00                       |  | "                         | "         |         |
| 23  | March 3      | 22                 | 14    | 05    | 9.0                                             | 0.17                       |  | "                         | "         |         |
| 24  | 7            | 4                  | 10    | 05    | 7.3                                             | 0.05                       |  | "                         | "         |         |
| 25  | 7            | 4                  | 20    | 54    | 8.9                                             | 0.03                       |  | "                         | "         |         |
| 26  | 13           | 4                  | 57    | 05    | 0.2                                             | 0.01                       |  | Quick                     | "         |         |
| 27  | 13           | 8                  | 12    | 01    | 0.2                                             | 0.00                       |  | "                         | "         |         |
| 28  | 15           | 5                  | 00    | 23    | ?                                               | ?                          |  | "                         | Weak      | Felt    |
| 29  | 15           | 5                  | 21.5  |       | 0.2                                             | 0.01                       |  | "                         | Feeble    |         |
| 30  | 15           | 5                  | 23    | 44    | 0.4                                             | 0.01                       |  | "                         | "         |         |
| 31  | 15           | 5                  | 24    | 57    | 0.3                                             | 0.01                       |  | "                         | "         |         |
| 32  | 15           | 5                  | 27    | 08    | 6.6                                             | 0.36                       |  | "                         | "         | Felt    |
| 33  | 15           | 5                  | 39    | 07    | ?                                               | 0.01                       |  | "                         | "         |         |
| 34  | 15           | 5                  | 40    | 20    | ?                                               | 0.01                       |  | "                         | "         |         |
| 35  | 15           | 5                  | 42    | 10    | ?                                               | 0.02                       |  | "                         | "         |         |
| 36  | 15           | 6                  | 01    | 59    | 3.3                                             | 0.03                       |  | "                         | "         |         |
| 37  | 15           | 6                  | 05    | 44    | 2.0                                             | 0.00                       |  | "                         | "         |         |
| 38  | 15           | 6                  | 10    | 42    | ?                                               | 0.02                       |  | "                         | "         |         |
| 39  | 15           | 6                  | 13    | 21    | 1.3                                             | 0.01                       |  | "                         | "         |         |
| 40  | 15           | 6                  | 15    | 07    | ?                                               | ?                          |  | "                         | "         |         |
| 41  | 15           | 7                  | 35    | 02    | 1.6                                             | 0.01                       |  | "                         | "         |         |
| 42  | 15           | 7                  | 41    | 47    | 1.0                                             | 0.00                       |  | "                         | "         |         |
| 43  | 15           | 7                  | 59    | 50    | ?                                               | 0.00                       |  | "                         | "         |         |
| 44  | 15           | 8                  | 29    | 19    | ?                                               | 0.03                       |  | "                         | "         |         |
| 45  | 15           | 9                  | 04    | 11    | 3.2                                             | 0.03                       |  | "                         | "         |         |
| 46  | 15           | 10                 | 10    | 27    | 1.3                                             | 0.00                       |  | "                         | "         |         |
| 47  | 15           | 14                 | 45.7  |       | 0.6                                             | 0.00                       |  | "                         | "         |         |
| 48  | 15           | 14                 | 50.7  |       | 0.7                                             | 0.00                       |  | "                         | "         |         |
| 49  | 15           | 14                 | 52    | 01    | 0.4                                             | 0.00                       |  | "                         | "         |         |
| 50  | 15           | 14                 | 53.5  |       | 0.7                                             | 0.00                       |  | "                         | "         |         |
| 51  | 15           | 15                 | 10.0  |       | 1.2                                             | 0.00                       |  | "                         | "         |         |
| 52  | 15           | 15                 | 35    | 57    | 1.6                                             | 0.02                       |  | "                         | "         |         |
| 53  | 15           | 16                 | 24    | 30    | 1.3                                             | 0.01                       |  | "                         | "         |         |
| 54  | 15           | 18                 | 00    | 35    | 0.6                                             | 0.01                       |  | "                         | "         |         |
| 55  | 15           | 19                 | 21.2  |       | 0.5                                             | 0.00                       |  | "                         | "         |         |

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



TABLE A.

(Earthquakes)

| No. | Date<br>1914 |    | Time of Occurrence |         |         | Duration<br>of<br>Total<br>Earthquake<br>(mean) | Maximum Range<br>of Motion |       | Character<br>of<br>Motion | Intensity | Remarks |
|-----|--------------|----|--------------------|---------|---------|-------------------------------------------------|----------------------------|-------|---------------------------|-----------|---------|
|     |              |    | (E W)              | (N S)   | (E W)   |                                                 | (N S)                      |       |                           |           |         |
| 56  | March        | 15 | h<br>23            | m<br>11 | s<br>14 | m<br>0.7                                        | mm<br>0.00                 | Quick | Feeble                    |           |         |
| 57  |              | 16 | 3                  | 47.7    |         | 0.7                                             | 0.00                       | "     | "                         |           |         |
| 58  |              | 16 | 4                  | 46      | 49      | 2.0                                             | 0.01                       | "     | "                         |           |         |
| 59  |              | 16 | 6                  | 02.8    |         | 1.0                                             | 0.00                       | "     | "                         |           |         |
| 60  |              | 16 | 10                 | 26.4    |         | 1.0                                             | 0.00                       | "     | "                         |           |         |
| 61  |              | 16 | 11                 | 50.6    |         | 0.9                                             | 0.00                       | "     | "                         |           |         |
| 62  |              | 16 | 12                 | 14.2    |         | 2.2                                             | 0.00                       | "     | "                         |           |         |
| 63  |              | 16 | 12                 | 20.3    |         | 1.1                                             | 0.00                       | "     | "                         |           |         |
| 64  |              | 16 | 12                 | 58      | 49      | 6.8                                             | 0.39                       | "     | "                         | Felt      |         |
| 65  |              | 16 | 13                 | 11.8    |         | 1.8                                             | 0.00                       | "     | "                         |           |         |
| 66  |              | 16 | 13                 | 26.4    |         | 0.8                                             | 0.00                       | "     | "                         |           |         |
| 67  |              | 16 | 13                 | 35      | 44      | 3.7                                             | 0.03                       | "     | "                         |           |         |
| 68  |              | 16 | 14                 | 46      | 15      | 3.6                                             | 0.03                       | "     | "                         |           |         |
| 69  |              | 16 | 17                 | 48.9    |         | 0.9                                             | 0.00                       | "     | "                         |           |         |
| 70  |              | 16 | 18                 | 54      | 13      | 1.9                                             | 0.02                       | "     | "                         |           |         |
| 71  |              | 16 | 18                 | 58      | 34      | 0.7                                             | 0.00                       | "     | "                         |           |         |
| 72  |              | 17 | 5                  | 04      | 20      | 3.7                                             | 0.01                       | "     | "                         |           |         |
| 73  |              | 17 | 6                  | 07.8    |         | 0.8                                             | 0.00                       | "     | "                         |           |         |
| 74  |              | 17 | 7                  | 49      | 31      | 14.5                                            | 0.01                       | "     | "                         |           |         |
| 75  |              | 17 | 9                  | 46.5    |         | 0.4                                             | 0.00                       | "     | "                         |           |         |
| 76  |              | 17 | 12                 | 21      | 08      | 0.3                                             | 0.00                       | "     | "                         |           |         |
| 77  |              | 17 | 15                 | 53      | 48      | 4.0                                             | 0.03                       | "     | "                         | Felt      |         |
| 78  |              | 17 | 17                 | 36      | 32      | 2.2                                             | 0.02                       | "     | "                         |           |         |
| 79  |              | 17 | 17                 | 53.3    |         | 0.7                                             | 0.00                       | "     | "                         |           |         |
| 80  |              | 17 | 19                 | 24.8    |         | 0.5                                             | 0.00                       | "     | "                         |           |         |
| 81  |              | 17 | 19                 | 39      | 56      | 2.4                                             | 0.01                       | "     | "                         |           |         |
| 82  |              | 17 | 20                 | 05      | 45      | ?                                               | 0.21                       | "     | "                         |           |         |
| 83  |              | 17 | 20                 | 12      | 01      | 2.3                                             | 0.01                       | "     | "                         |           |         |
| 84  |              | 17 | 20                 | 28.8    |         | 0.5                                             | 0.01                       | "     | "                         |           |         |
| 85  |              | 17 | 23                 | 19      | 59      | 3.2                                             | 0.01                       | "     | "                         |           |         |
| 86  |              | 18 | 1                  | 00      | 02      | 4.0                                             | 0.03                       | Slow  | "                         |           |         |
| 87  |              | 18 | 13                 | 25      | 04      | 58.3                                            | ?                          | "     | "                         |           |         |
| 88  |              | 18 | 14                 | 09      | 35      | 1.8                                             | 0.01                       | "     | "                         |           |         |
| 89  |              | 18 | 15                 | 22      | 17      | 25.0                                            | ?                          | "     | "                         |           |         |
| 90  |              | 20 | 5                  | 24      | 19      | 3.1                                             | 0.01                       | "     | "                         |           |         |
| 91  |              | 20 | 20                 | 13      | 36      | 9.0                                             | 0.16                       | Quick | "                         |           |         |
| 92  |              | 21 | 7                  | 49      | 58      | ?                                               | ?                          | "     | Weak                      | Felt      |         |
| 93  |              | 21 | 10                 | 39      | 10      | 2.4                                             | 0.01                       | Slow  | Feeble                    |           |         |
| 94  |              | 22 | 1                  | 31      | 57      | 4.8                                             | 0.10                       | Quick | "                         | Felt      |         |
| 95  |              | 23 | 2                  | 10      | 14      | ?                                               | 0.01                       | "     | "                         |           |         |
| 96  |              | 23 | 2                  | 12      | 06      | 5.1                                             | 0.08                       | "     | "                         | Felt      |         |
| 97  |              | 24 | 12                 | 04      | 47      | 1.3                                             | 0.01                       | "     | "                         |           |         |
| 98  |              | 24 | 19                 | 20      | 45      | 3.3                                             | 0.02                       | Slow  | "                         |           |         |
| 99  |              | 25 | 1                  | 16      | 10      | 2.0                                             | 0.01                       | Quick | "                         |           |         |
| 100 |              | 26 | 14                 | 45      | 53      | 2.9                                             | 0.01                       | Slow  | "                         |           |         |
| 101 |              | 28 | 2                  | 49      | 29      | 18.7                                            | ?                          | Quick | Weak                      | Felt      |         |
| 102 |              | 28 | 3                  | 06      | 19      | 0.2                                             | 0.00                       | "     | Feeble                    |           |         |
| 103 |              | 28 | 19                 | 52      | 19      | 29.0                                            | 0.00                       | Slow  | "                         |           |         |
| 104 |              | 28 | 20                 | 12      | 55      | 4.1                                             | 0.02                       | Quick | "                         |           |         |
| 105 |              | 28 | 20                 | 22      | 20      | 3.0                                             | 0.01                       | "     | "                         |           |         |
| 106 |              | 28 | 21                 | 06      | 58      | 2.8                                             | 0.01                       | "     | "                         |           |         |
| 107 |              | 29 | 2                  | 17      | 38      | 9.4                                             | 0.06                       | Slow  | "                         |           |         |
| 108 |              | 29 | 15                 | 01      | 52      | 1.5                                             | 0.01                       | Quick | "                         |           |         |
| 109 |              | 29 | 17                 | 34      | 27      | 1.9                                             | 0.01                       | "     | "                         |           |         |
| 110 |              | 30 | 3                  | 23      | 23      | 4.0                                             | 0.07                       | "     | "                         |           |         |

The instrument has been removed for some modification in its construction



TABLE A.

(Earthquakes)

| No. | Date  |    | Time of Occurrence |       |       | Duration of Total Earthquake (mean) | Maximum Range of Motion |       | Character of Motion | Intensity                                                                 | Remarks |
|-----|-------|----|--------------------|-------|-------|-------------------------------------|-------------------------|-------|---------------------|---------------------------------------------------------------------------|---------|
|     | 1914  |    | (E W)              | (N S) | (E W) |                                     | (N S)                   |       |                     |                                                                           |         |
| 111 | March | 30 | h                  | m     | s     | m                                   | mm                      | Quick | Feeble              | The instrument has been removed for some modification in its construction |         |
| 112 |       | 31 | 8                  | 40    | 33    | 4.6                                 | 0.05                    | "     | "                   |                                                                           |         |
| 113 |       | 31 | 9                  | 46    | 25    | 2.7                                 | 0.25                    | "     | "                   |                                                                           |         |
| 114 | April | 1  | 14                 | 52.3  |       | 0.4                                 | 0.00                    | Slow  | "                   |                                                                           |         |
| 115 |       | 1  | 12                 | 21    | 55    | 2.7                                 | 0.02                    | "     | "                   |                                                                           |         |
|     |       |    | 19                 | 54    | 02    | 1.8                                 | 0.01                    | "     | "                   |                                                                           |         |
| 116 |       | 2  | 4                  | 57    | 52    | 0.7                                 | 0.00                    | "     | "                   |                                                                           |         |
| 117 |       | 3  | 7                  | 26    | 40    | 1.6                                 | 0.00                    | "     | "                   |                                                                           |         |
| 118 |       | 5  | 9                  | 04    | 43    | 3.6                                 | 0.04                    | "     | "                   |                                                                           |         |
| 119 |       | 6  | 4                  | 29    | 47    | 1.8                                 | 0.02                    | Quick | "                   |                                                                           |         |
| 120 |       | 10 | 9                  | 56    | 57    | 3.3                                 | 0.02                    | Slow  | "                   |                                                                           |         |
| 121 |       | 10 | 23                 | 46    | 50    | 2.0                                 | 0.01                    | "     | "                   |                                                                           |         |
| 122 |       | 12 | 1                  | 39    | 37    | 60.0                                | ?                       | "     | "                   |                                                                           |         |
| 123 |       | 12 | 2                  | 17    | 47    | 1.0                                 | 0.00                    | "     | "                   |                                                                           |         |
| 124 |       | 12 | 16                 | 13    | 55    | 0.9                                 | 0.01                    | "     | "                   |                                                                           |         |
| 125 |       | 13 | 5                  | 28    | 21    | 1.5                                 | 0.01                    | "     | "                   |                                                                           |         |
| 126 |       | 13 | 16                 | 49    | 18    | 2.9                                 | 0.02                    | "     | "                   |                                                                           |         |
| 127 |       | 16 | 17                 | 46    | 50    | 2.1                                 | 0.01                    | "     | "                   |                                                                           |         |
| 128 |       | 19 | 18                 | 42    | 29    | 2.3                                 | 0.02                    | "     | "                   |                                                                           |         |
| 129 |       | 20 | 1                  | 02    | 44    | 0.2                                 | 0.00                    | "     | "                   |                                                                           |         |
| 130 |       | 22 | 22                 | 35.8  |       | 1.9                                 | 0.00                    | "     | "                   |                                                                           |         |
| 131 |       | 23 | 0                  | 27    | 19    | 2.8                                 | 0.00                    | "     | "                   |                                                                           |         |
| 132 |       | 24 | 9                  | 34    | 14    | 9.4                                 | 0.09                    | Quick | "                   |                                                                           |         |
| 133 |       | 25 | 14                 | 30    | 52    | 2.9                                 | 0.01                    | Slow  | "                   |                                                                           |         |
| 134 |       | 26 | 8                  | 43    | 12    | 3.8                                 | 0.03                    | Quick | "                   |                                                                           |         |
| 135 |       | 28 | 10                 | 20    | 25    | 3.1                                 | 0.03                    | Slow  | "                   |                                                                           |         |
| 136 |       | 28 | 20                 | 24    | 33    | 1.5                                 | 0.00                    | "     | "                   |                                                                           |         |
| 137 |       | 28 | 20                 | 39    | 14    | 6.3                                 | 0.01                    | "     | "                   |                                                                           |         |
| 138 |       | 29 | 11                 | 15    | 26    | 3.1                                 | 0.03                    | "     | "                   |                                                                           |         |
| 139 |       | 29 | 12                 | 29    | 06    | 3.2                                 | 0.01                    | "     | "                   |                                                                           |         |
| 140 |       | 29 | 17                 | 34.2  |       | 4.9                                 | 0.01                    | "     | "                   |                                                                           |         |
| 141 | May   | 30 | 19                 | 12    | 15    | 6.8                                 | ?                       | "     | "                   |                                                                           |         |
| 142 |       | 3  | 7                  | 13    | 00    | 1.9                                 | 0.01                    | "     | "                   |                                                                           |         |
| 143 |       | 3  | 16                 | 47    | 00    | 1.7                                 | 0.01                    | "     | "                   |                                                                           |         |
| 144 |       | 4  | 18                 | 31    | 12    | 2.6                                 | 0.02                    | "     | "                   |                                                                           |         |
| 145 |       | 5  | 19                 | 28    | 46    | 2.6                                 | 0.01                    | "     | "                   |                                                                           |         |
| 146 |       | 7  | 9                  | 08    | 50    | 2.1                                 | 0.01                    | "     | "                   |                                                                           |         |
| 147 |       | 8  | 6                  | 04    | 10    | 2.5                                 | 0.01                    | "     | "                   |                                                                           |         |
| 148 |       | 9  | 0                  | 08.0  |       | 3.8                                 | 0.01                    | "     | "                   |                                                                           |         |
| 149 |       | 9  | 0                  | 39.2  |       | 2.2                                 | 0.01                    | "     | "                   |                                                                           |         |
| 150 |       | 9  | 9                  | 45.4  |       | 11.7                                | ?                       | "     | "                   |                                                                           |         |
| 151 |       | 11 | 1                  | 17    | 01    | 19.1                                | 0.88                    | Quick | "                   |                                                                           |         |
| 152 |       | 11 | 20                 | 15    | 55    | 1.6                                 | 0.01                    | Slow  | "                   |                                                                           |         |
| 153 |       | 13 | 3                  | 38.8  |       | 1.5                                 | 0.01                    | "     | "                   |                                                                           |         |
| 154 |       | 17 | 2                  | 28    | 11    | ?                                   | 0.01                    | "     | "                   |                                                                           |         |
| 155 |       | 17 | 2                  | 28.3  |       | ?                                   | 0.01                    | "     | "                   |                                                                           |         |
| 156 |       | 19 | 8                  | 50.3  |       | 12.5                                | ?                       | "     | "                   |                                                                           |         |
| 157 |       | 19 | 9                  | 34    | 47    | 4.2                                 | 0.01                    | "     | "                   |                                                                           |         |
| 158 |       | 19 | 13                 | 47    | 13    | 12.7                                | ?                       | "     | "                   |                                                                           |         |
| 159 |       | 20 | 4                  | 18    | 43    | 3.2                                 | 0.00                    | "     | "                   |                                                                           |         |
| 160 |       | 21 | 0                  | 14    | 31    | 3.6                                 | 0.01                    | "     | "                   |                                                                           |         |
| 161 |       | 22 | 16                 | 37    | 32    | 2.8                                 | 0.01                    | "     | "                   |                                                                           |         |
| 162 |       | 25 | 3                  | 58    | 42    | 3.0                                 | 0.01                    | "     | "                   |                                                                           |         |
| 163 |       | 25 | 6                  | 58    | 05    | 2.2                                 | 0.01                    | "     | "                   |                                                                           |         |
| 164 |       | 25 | 21                 | 58    | 05    | 9.0                                 | 0.10                    | "     | "                   |                                                                           |         |
| 165 |       | 26 | 10                 | 02    | 25    | 3.8                                 | 0.02                    | Quick | "                   |                                                                           |         |



TABLE A.

(Earthquakes)

| No. | Date   |    | Time of Occurrence |         |                 | Duration of Total Earthquake (mean) | Maximum Range of Motion |       | Character of Motion | Intensity | Remarks |
|-----|--------|----|--------------------|---------|-----------------|-------------------------------------|-------------------------|-------|---------------------|-----------|---------|
|     | 1911   |    | (E W)              | (N S)   | (E W)           |                                     | (N S)                   |       |                     |           |         |
| 166 | May    | 26 | h<br>23            | m<br>30 | s<br>33         | m<br>?                              | mm<br>?                 | Slow  | Feeble              |           |         |
| 167 |        | 27 | 8                  | 35      | 19              | 6.5                                 | 0.06                    | "     | "                   |           |         |
| 168 |        | 27 | 11                 | 39      | 12              | 12.5                                | 0.28                    | "     | "                   |           |         |
| 169 |        | 27 | 15                 | 15      | 51              | 6.8                                 | 0.01                    | "     | "                   |           |         |
| 170 |        | 28 | 17                 | 26      | 24              | 3.2                                 | 0.02                    | Quick | "                   |           |         |
| 171 |        | 29 | 13                 | 56      | 52              | 48.7                                | ?                       | Slow  | "                   |           |         |
| 172 |        | 30 | 2                  | 48      | 19              | 3.5                                 | 0.01                    | "     | "                   |           |         |
| 173 |        | 31 | 11                 | 57      | 48              | 6.5                                 | 0.14                    | Quick | "                   | Felt      |         |
| 174 |        | 31 | 18                 | 05      | 15              | 10.9                                | ?                       | "     | "                   | Felt      |         |
| 175 | June   | 1  | 3                  | 44      | 57              | 2.1                                 | 0.01                    | Slow  | "                   |           |         |
| 176 |        | 8  | 20                 | 18      | 38              | 6.5                                 | 0.02                    | "     | "                   |           |         |
| 177 |        | 9  | 2                  | 39      | 40              | 3.7                                 | 0.02                    | "     | "                   |           |         |
| 178 |        | 15 | 3                  | 48      | 18              | 3.4                                 | 0.00                    | "     | "                   |           |         |
| 179 |        | 15 | 5                  | 31.4    | ?               | 16.0                                | ?                       | "     | "                   |           |         |
| 180 |        | 17 | 8                  | 31      | 33 <sup>?</sup> | 2.9                                 | 0.02                    | Quick | "                   |           |         |
| 181 |        | 17 | 17                 | 24      | 47              | 6.9                                 | 0.02                    | Slow  | "                   |           |         |
| 182 |        | 18 | 5                  | 27      | 44              | 2.2                                 | 0.01                    | "     | "                   |           |         |
| 183 |        | 18 | 8                  | 32      | 05              | 3.7                                 | 0.06                    | "     | "                   |           |         |
| 184 |        | 19 | 17                 | 08      | 55              | 5.2                                 | 0.04                    | "     | "                   |           |         |
| 185 |        | 20 | 6                  | 48      | 06              | 4.5                                 | 0.01                    | "     | "                   |           |         |
| 186 |        | 20 | 16                 | 30      | 13              | 56.0                                | 0.03                    | "     | "                   |           |         |
| 187 |        | 23 | 11                 | 05      | 30              | 9.0                                 | 0.14                    | Quick | "                   | Felt      |         |
| 188 |        | 23 | 16                 | 44      | 34              | 13.4                                | 0.11                    | "     | "                   |           |         |
| 189 |        | 23 | 19                 | 34      | 25              | 3.0                                 | 0.01                    | Slow  | "                   |           |         |
| 190 |        | 24 | 11                 | 10      | 15              | 8.8                                 | 0.21                    | Quick | "                   |           |         |
| 191 |        | 24 | 14                 | 03      | 10              | 3.5                                 | 0.06                    | "     | "                   | Felt      |         |
| 192 |        | 24 | 16                 | 12      | 02              | 2.6                                 | 0.02                    | "     | "                   |           |         |
| 193 |        | 25 | 17                 | 07      | 57              | 4.0                                 | 0.01                    | Slow  | "                   |           |         |
| 194 |        | 26 | 4                  | 16      | 58              | 58.2                                | ?                       | "     | "                   |           |         |
| 195 |        | 26 | 10                 | 35      | 40              | 2.0                                 | 0.01                    | "     | "                   |           |         |
| 196 |        | 26 | 14                 | 00      | 19              | 47.3                                | ?                       | "     | "                   |           |         |
| 197 |        | 26 | 15                 | 02      | 47              | 6.1                                 | ?                       | "     | "                   |           |         |
| 198 | July   | 2  | 4                  | 19      | 30              | 3.7                                 | 0.01                    | "     | "                   |           |         |
| 199 |        | 5  | 2                  | 51      | 49              | ?                                   | ?                       | "     | "                   |           |         |
| 200 |        | 5  | 8                  | 46      | 55              | 16.5                                | ?                       | "     | "                   |           |         |
| 201 |        | 6  | 6                  | 58      | 54              | 23.0                                | ?                       | "     | "                   |           |         |
| 202 |        | 6  | 15                 | 42      | 15              | 14.9                                | ?                       | "     | "                   |           |         |
| 203 |        | 9  | 3                  | 41      | 47              | 6.9                                 | 0.08                    | "     | "                   |           |         |
| 204 |        | 10 | 2                  | 21      | 37              | 2.0                                 | 0.00                    | "     | "                   |           |         |
| 205 |        | 10 | 8                  | 03      | 04              | 1.3                                 | 0.01                    | "     | "                   |           |         |
| 206 |        | 13 | 2                  | 59      | 24              | 5.7                                 | ?                       | "     | "                   |           |         |
| 207 |        | 13 | 5                  | 21      | 03              | 1.1                                 | 0.00                    | "     | "                   |           |         |
| 208 |        | 13 | 6                  | 35      | 04              | 17.4                                | 0.40                    | "     | "                   |           |         |
| 209 |        | 15 | 8                  | 42.9    |                 | 2.9                                 | 0.00                    | "     | "                   |           |         |
| 210 |        | 17 | 16                 | 13      | 27              | 11.4                                | ?                       | "     | "                   |           |         |
| 211 |        | 18 | 17                 | 10      | 58              | 8.5                                 | 0.09                    | "     | "                   |           |         |
| 212 |        | 21 | 4                  | 21      | 32              | 2.5                                 | 0.00                    | "     | "                   |           |         |
| 213 |        | 21 | 4                  | 25.8    |                 | 7.4                                 | 0.00                    | "     | "                   |           |         |
| 214 |        | 21 | 6                  | 22      | 12              | 5.0                                 | 0.01                    | "     | "                   |           |         |
| 215 |        | 27 | 1                  | 43      | 59              | 1.9                                 | 0.01                    | "     | "                   |           |         |
| 216 |        | 27 | 22                 | 47      | 58              | 3.3                                 | 0.03                    | "     | "                   |           |         |
| 217 |        | 28 | 19                 | 21      | 41              | 1.4                                 | 0.01                    | "     | "                   |           |         |
| 218 |        | 28 | 20                 | 53      | 36              | 1.2                                 | 0.01                    | "     | "                   |           |         |
| 219 |        | 1  | 14                 | 33      | 18              | 6.9                                 | 0.06                    | "     | "                   |           |         |
| 220 | August | 2  | 10                 | 16      | 08              | 7.1                                 | 0.03                    | "     | "                   |           |         |

The instrument has been removed for some modification in its construction



TABLE A.

(Earthquakes)

| No. | Date<br>1914 | Time of Occurrence |       |       | Duration<br>of<br>Total<br>Earthquake<br>(mean) | Maximum Range<br>of Motion |    | Character<br>of<br>Motion | Intens'y | Remarks |       |        |      |
|-----|--------------|--------------------|-------|-------|-------------------------------------------------|----------------------------|----|---------------------------|----------|---------|-------|--------|------|
|     |              | (E W)              | (N S) | (E W) |                                                 | (N S)                      |    |                           |          |         |       |        |      |
| 221 | August 3     | h                  | m     | s     | h                                               | m                          | s  | m                         | mm       | mm      | Slow  | Feeble |      |
| 222 | 3            | 13                 | 26.1  |       |                                                 |                            |    | 1.5                       | 0.00     |         |       |        |      |
| 223 | 3            | 13                 | 56    | 14    |                                                 |                            |    | 14.2                      | 0.02     |         |       |        |      |
| 224 | 4            | 7                  | 57    | 43    |                                                 |                            |    | 1.3                       | 0.00     |         |       |        |      |
| 225 | 4            | 8                  | 35.7  |       |                                                 |                            |    | 0.8                       | 0.00     |         |       |        |      |
|     | 5            | 7                  | 46    | 22    |                                                 |                            |    | ?                         | 2.10     |         |       |        |      |
| 226 | 5            | 17                 | 16    | 27    |                                                 |                            |    | 0.8                       | 0.01     |         |       |        |      |
| 227 | 7            | 18                 | 22    | 33    |                                                 |                            |    | 9.1                       | 0.01     |         |       |        |      |
| 228 | 9            | 0                  | 06    | 04    |                                                 |                            |    | 2.4                       | 0.00     |         |       |        |      |
| 229 | 10           | 15                 | 55    | 04    |                                                 |                            |    | 5.1                       | 0.02     |         |       |        |      |
| 230 | 11           | 14                 | 40.7  |       |                                                 |                            |    | 2.1                       | 0.00     |         |       |        |      |
| 231 | 12           | 3                  | 09    | 46    |                                                 |                            |    | 4.0                       | 0.01     |         |       |        |      |
| 232 | 13           | 21                 | 17    | 43    |                                                 |                            |    | 3.6                       | 0.02     |         |       |        |      |
| 233 | 14           | 5                  | 29    | 15    |                                                 |                            |    | 1.5                       | ?        |         |       |        |      |
| 234 | 14           | 17                 | 35    | 23    |                                                 |                            |    | 2.3                       | 0.02     |         |       |        |      |
| 235 | 15           | 4                  | 54    | 55    |                                                 |                            |    | 15.3                      | 0.05     |         |       |        |      |
| 236 | 15           | 9                  | 31    | 23    |                                                 |                            |    | 2.2                       | 0.01     |         |       |        |      |
| 237 | 16           | 0                  | 28    | 14    |                                                 |                            |    | 2.3                       | 0.02     |         |       |        |      |
| 238 | 16           | 4                  | 12    | 06    |                                                 |                            |    | 5.0                       | 0.01     |         |       |        |      |
| 239 | 16           | 20                 | 42    | 28    |                                                 |                            |    | 5.2                       | 0.04     |         |       |        |      |
| 240 | 16           | 21                 | 04    | 40    |                                                 |                            |    | 5.9                       | 0.03     |         |       |        |      |
| 241 | 16           | 21                 | 17    | 16    |                                                 |                            |    | 6.1                       | 0.05     |         |       |        |      |
| 242 | 17           | 7                  | 42    | 24    |                                                 |                            |    | 2.8                       | 0.03     |         |       |        |      |
| 243 | 19           | 11                 | 45    | 55    |                                                 |                            |    | 6.2                       | 0.06     |         |       |        |      |
| 244 | 22           | 10                 | 45    | 29    |                                                 |                            |    | 3.3                       | 0.01     |         |       |        |      |
| 245 | 24           | 3                  | 52.9  |       |                                                 |                            |    | 3.8                       | 0.02     |         |       |        |      |
| 246 | September 27 | 1                  | 55    | 56    |                                                 |                            |    | 1.5                       | 0.03     |         |       |        |      |
| 247 | 4            | 6                  | 42    | 12    | 6                                               | 42                         | 14 | 5.0                       | 0.13     | 0.14    | Quick |        | Felt |
| 248 | 7            | 9                  | 03    | 44    | 9                                               | 01.1                       |    | 4.2                       | 0.01     | 0.01    | Slow  |        |      |
| 249 | 8            | 7                  | 04    | 43    | 7                                               | 04                         | 55 | ?                         | ?        | ?       |       |        |      |
| 250 | 10           | 6                  | 22    | 34    | 6                                               | 22                         | 34 | 4.7                       | 0.05     | 0.06    | Quick |        |      |
| 251 | 12           | 1                  | 53    | 48    | 1                                               | 53                         | 49 | 9.9                       | 0.38     | 0.64    | Slow  |        |      |
| 252 | 14           | 4                  | 58    | 13    | —                                               | —                          | —  | 1.8                       | 0.01     | —       |       |        |      |
| 253 | 14           | 23                 | 41    | 42    | —                                               | —                          | —  | 5.4                       | 0.10     | —       |       |        |      |
| 254 | 16           | 3                  | 54    | 17    | 3                                               | 54.8                       |    | 4.6                       | 0.03     | 0.02    |       |        |      |
| 255 | 17           | 2                  | 30    | 45    | 2                                               | 30.8                       |    | 3.8                       | 0.02     | 0.01    |       |        |      |
| 256 | 18           | 3                  | 27    | 14    | —                                               | —                          | —  | 3.1                       | 0.00     | —       |       |        |      |
| 257 | 19           | 6                  | 04    | 19    | 6                                               | 04                         | 17 | 4.7                       | 0.03     | 0.03    |       |        |      |
| 258 | 19           | 11                 | 41    | 56    | 11                                              | 41                         | 56 | 3.9                       | 0.02     | 0.02    |       |        |      |
| 259 | 20           | 1                  | 06    | 17    | —                                               | —                          | —  | 2.5                       | 0.00     | —       |       |        |      |
| 260 | 22           | —                  | —     | —     | 12                                              | 52                         | 40 | 7.0                       | —        | 0.06    |       |        |      |
| 261 | October 25   | —                  | —     | —     | 14                                              | 29                         | 30 | 6.0                       | —        | 0.07    |       |        |      |
| 262 | 8            | 2                  | 07    | 30    | —                                               | —                          | —  | 8.5                       | 0.01     | —       |       |        |      |
| 263 | 8            | 3                  | 35    | 25    | —                                               | —                          | —  | ?                         | ?        | —       |       |        |      |
| 264 | 8            | 6                  | 32.5  |       | —                                               | —                          | —  | ?                         | ?        | —       |       |        |      |
| 265 | 8            | 10                 | 39    | 03    | —                                               | —                          | —  | 5.6                       | 0.03     | 0.03    |       |        |      |
| 266 | 8            | 14                 | 30.4  |       | —                                               | —                          | —  | 2.3                       | ?        | —       |       |        |      |
| 267 | 9            | 14                 | 20    | 54    | —                                               | —                          | —  | 3.7                       | 0.01     | —       |       |        |      |
| 268 | 10           | 7                  | 41.2  |       | —                                               | —                          | —  | 2.6                       | 0.01     | —       |       |        |      |
| 269 | 10           | 16                 | 54.2  |       | —                                               | —                          | —  | 1.8                       | 0.01     | —       |       |        |      |
| 270 | 12           | 1                  | 25    | 54    | —                                               | —                          | —  | ?                         | ?        | —       |       |        |      |
| 271 | 12           | 2                  | 29.6  |       | —                                               | —                          | —  | 5.0                       | 0.02     | —       |       |        |      |
| 272 | 14           | 1                  | 18    | 16    | 1                                               | 18                         | 16 | 2.4                       | 0.07     | 0.11    | Quick |        | Felt |
| 273 | 14           | 1                  | 21.3  |       | —                                               | —                          | —  | 1.0                       | 0.00     | —       |       |        |      |
| 274 | 14           | 10                 | 43    | 39    | —                                               | —                          | —  | 1.9                       | 0.00     | —       |       |        |      |
| 275 | 14           | 17                 | 54    | 42    | —                                               | —                          | —  | 2.5                       | 0.01     | —       | Quick |        |      |

The instrument has been removed for some modification in its construction



## TABLE A.

(Earthquakes)

| No. | Date     |    | Time of Occurrence |      |    |       |      |    | Duration of Total Earthquake (mean) | Maximum Range of Motion |       | Character of Motion | Intensity | Remarks |
|-----|----------|----|--------------------|------|----|-------|------|----|-------------------------------------|-------------------------|-------|---------------------|-----------|---------|
|     | 1914     |    | (E W)              |      |    | (N S) |      |    |                                     | (E W)                   | (N S) |                     |           |         |
|     |          |    | h                  | m    | s  | h     | m    | s  | m                                   | mm                      | mm    |                     |           |         |
| 276 | October  | 14 | 20                 | 39   | 37 | —     | —    | —  | 1.7                                 | 0.00                    | —     | Slow                | Feeble    |         |
| 277 |          | 15 | 10                 | 11   | 43 | 10    | 11.9 | —  | 2.0                                 | 0.01                    | 0.02  | "                   | "         |         |
| 278 |          | 17 | 7                  | 08   | 53 | 7     | 08   | 52 | 11.6                                | 0.15                    | 0.17  | "                   | "         |         |
| 279 |          | 17 | 13                 | 51   | 18 | —     | —    | —  | 2.3                                 | 0.01                    | —     | "                   | "         |         |
| 280 |          | 17 | 14                 | 41   | 07 | —     | —    | —  | 2.3                                 | 0.01                    | —     | Quick               | "         |         |
| 281 |          | 21 | 9                  | 27   | 40 | 9     | 27   | 46 | 4.0                                 | 0.04                    | 0.02  | Slow                | "         |         |
| 282 |          | 22 | 19                 | 46   | 46 | 19    | 47.2 | —  | 2.8                                 | 0.01                    | 0.00  | "                   | "         |         |
| 283 |          | 23 | 15                 | 25   | 53 | 15    | 25   | 55 | 66.4                                | ?                       | ?     | "                   | "         |         |
| 284 |          | 23 | 22                 | 14   | 50 | 22    | 14.8 | —  | 2.2                                 | 0.01                    | 0.00  | "                   | "         |         |
| 285 |          | 26 | 7                  | 14   | 44 | 7     | 14   | 40 | 7.7                                 | 0.04                    | 0.04  | "                   | "         |         |
| 286 |          | 31 | 6                  | 59   | 33 | —     | —    | —  | 2.2                                 | 0.02                    | —     | "                   | "         |         |
| 287 | November | 1  | 4                  | 40   | 52 | —     | —    | —  | 1.6                                 | 0.01                    | —     | Quick               | "         |         |
| 288 |          | 15 | —                  | —    | —  | 22    | 29   | 00 | 5.0                                 | —                       | 0.19  | Slow                | "         |         |
| 289 |          | 23 | 6                  | 27   | 25 | 6     | 27.7 | —  | 3.8                                 | 0.01                    | ?     | "                   | "         |         |
| 290 |          | 24 | —                  | —    | —  | 20    | 57   | 17 | 108.4                               | —                       | 0.45  | "                   | "         |         |
| 291 |          | 26 | —                  | —    | —  | 13    | 20   | 17 | 8.4                                 | —                       | 1.04  | "                   | "         |         |
| 292 |          | 28 | 22                 | 22   | 56 | 22    | 22   | 45 | ?                                   | ?                       | 0.02  | "                   | "         |         |
| 293 |          | 29 | 14                 | 07   | 27 | 14    | 07   | 24 | 11.5                                | 0.05                    | 0.09  | "                   | "         |         |
| 294 |          | 29 | 17                 | 27   | 27 | 17    | 27   | 24 | 6.7                                 | 0.07                    | 0.08  | "                   | "         |         |
| 295 | December | 4  | 14                 | 45   | 39 | 14    | 45   | 39 | 5.2                                 | 0.09                    | 0.12  | Quick               | "         | Felt    |
| 296 |          | 7  | 15                 | 49   | 51 | —     | —    | —  | 1.3                                 | 0.01                    | —     | Slow                | "         |         |
| 297 |          | 8  | 5                  | 48?  | —  | —     | —    | —  | ?                                   | ?                       | —     | "                   | "         |         |
| 298 |          | 10 | 4                  | 59   | 46 | 4     | 59   | 47 | 4.0                                 | 0.04                    | 0.04  | Quick               | "         |         |
| 299 |          | 10 | 6                  | 02   | 09 | 6     | 02.1 | —  | 4.6                                 | 0.04                    | 0.04  | "                   | "         |         |
| 300 |          | 11 | 3                  | 36   | 19 | —     | —    | —  | 4.7                                 | 0.01                    | —     | Slow                | "         |         |
| 301 |          | 15 | 10                 | 49   | 58 | 10    | 49   | 58 | 2.5                                 | 0.04                    | 0.01  | Quick               | "         | Felt    |
| 302 |          | 20 | 12                 | 47   | 59 | 12    | 47   | 57 | 11.9                                | 0.11                    | 0.19  | Slow                | "         |         |
| 303 |          | 20 | 23                 | 20   | 05 | 23    | 20   | 10 | 39.3                                | ?                       | 0.03  | "                   | "         |         |
| 304 |          | 22 | 17                 | 56   | 28 | 17    | 56   | 28 | 18.3                                | 0.93                    | 0.91  | Quick               | "         | Felt    |
| 305 |          | 23 | 15                 | 10.5 | —  | —     | —    | —  | 3.2                                 | 0.01                    | —     | Slow                | "         |         |
| 306 |          | 24 | 2                  | 20   | 43 | —     | —    | —  | 2.4                                 | 0.00                    | —     | "                   | "         |         |
| 307 |          | 24 | 5                  | 17.5 | —  | —     | —    | —  | 0.9                                 | 0.00                    | —     | "                   | "         |         |
| 308 |          | 24 | 6                  | 46   | 11 | —     | —    | —  | 2.2                                 | 0.01                    | —     | "                   | "         |         |
| 309 |          | 26 | 2                  | 06   | 22 | 2     | 06   | 20 | 8.5                                 | 0.08                    | 0.10  | "                   | "         |         |
| 310 |          | 26 | 3                  | 17   | 19 | 3     | 17   | 19 | 11.7                                | ?                       | 3.65  | Quick               | Weak      | Felt    |
| 311 |          | 29 | 9                  | 37   | 48 | —     | —    | —  | 4.1                                 | 0.01                    | —     | Slow                | Feeble    |         |



**TABLE B.**  
(Pulsatory Oscillation)  
(E W Component.)



| Beginning    |      | Ending       |      | Maximum      |       |                     |
|--------------|------|--------------|------|--------------|-------|---------------------|
| Date<br>1914 | Hour | Date<br>1914 | Hour | Date<br>1914 | Hour  | Double<br>Amplitudo |
| January      | 1    | January      | 5    | January      | 2     | 0.01                |
|              | 7    |              | 14   |              | 3     |                     |
|              | 11   |              | 23   |              | 8     |                     |
|              | 14   |              | 7    |              | 11    |                     |
|              | 25   |              | 3    |              | 15    |                     |
| February     | 7    | February     | 8    | February     | 7-8   | 0.01                |
|              | 9    |              | 11   |              | 9     |                     |
|              | 26   |              | 28   |              | 27    |                     |
| March        | 3    | March        | 5    | Merch        | 4     | 0.01                |
|              | 6    |              | 9    |              | 8     |                     |
| April        | 12   | April        | 15   | April        | 14    | 0.01                |
|              | 18   |              | 20   |              | 19    |                     |
|              | 24   |              | 26   |              | 24    |                     |
|              | 30   |              | 2    |              | 31    |                     |
|              | 8    |              | 10   |              | 8-9   |                     |
| May          | 14   | May          | 16   | May          | 14-15 | 0.01                |
|              | 17   |              | 18   |              | 17    |                     |
|              | 23   |              | 23   |              | 23    |                     |
|              | 1    |              | 3    |              | 2     |                     |
| June         | 23   | June         | 24   | June         | 24    | 0.01                |
|              | 31   |              | 1    |              | 31    |                     |
|              | 3    |              | 5    |              | 4     |                     |
|              | 16   |              | 19   |              | 18    |                     |
| July         | 28   | July         | 29   | July         | 29    | 0.01                |
|              | 4    |              | 5    |              | 5     |                     |
| August       | 10   | August       | 12   | August       | 10    | 0.01                |
|              | 24   |              | 27   |              | 11    |                     |
|              | 28   |              | 30   |              | 25    |                     |
|              | 4    |              | 6    |              | 29    |                     |
|              | 12   |              | 16   |              | 14    |                     |
| September    | 23   | September    | 28   | September    | 25    | 0.01                |
|              | 29   |              | 1    |              | 30    |                     |
|              | 12   |              | 16   |              | 15    |                     |
| October      | 20   | October      | 22   | October      | 21-22 | 0.01                |
|              | 1    |              | 2    |              | 1     |                     |
| November     | 18   | November     | 22   | November     | 21    | 0.01                |
|              | 28   |              | 1    |              | 29    |                     |
|              | 3    |              | 8    |              | 5-6   |                     |
|              | 9    |              | 11   |              | 10    |                     |
| December     | 14   | December     | 17   | December     | 16    | 0.01                |
|              | 18   |              | 22   |              | 21    |                     |
|              | 23   |              | 24   |              | 24    |                     |
|              | 30   |              | 1    |              | 1     |                     |
|              | 2    |              | 4    |              | 2-3   |                     |
| December     | 12   | December     | 20   | December     | 16    | 0.01                |
|              | 21   |              | 23   |              | 18    |                     |
|              | 31   |              | 31   |              | 18    |                     |