# H A R V A R D U N I V E R S I T Y

Division of Geological Sciences

## S E I S M O G R A P H S T A T I O N

L. D. LEET, Seismologist in charge

| | |
|---|---|
| Latitude | 42° 30' 26" North |
| Longitude | 71° 33' 45" West |
| Foundation | Micaceous Schist |
| Height | 180 meters |

Time: Mean Greenwich. E. Howard pendulum clock corrected daily by radio time signals from Arlington, Va., 113 kc., and Ottawa, Canada, 7335 kc. Accurate to nearest .1 sec. unless otherwise noted.

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SEISMOGRAPH STATION
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BULLETIN NO. 6

1936 January 1d to June 30d

By Mary P. Collins, Observer

Paper no. 25 published under the auspices of the Committee on Geophysical Research and of the Division of Geological Sciences at Harvard University.

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One object of this station's bulletins is to give, in readily accessible form, a summary of the outstanding features of the records of its seismographs. Interpretations are given for some of the larger earthquakes, in the form of phase identifications and distance computations, which are necessarily tentative. Particularly in the case of local earthquakes, the distance given does not necessarily indicate the space separating this station from the epicenter, since the depth of focus is unknown.

The readings here reported are selected primarily for their possible usefulness to the compilers of the International Seismological Summary at Oxford, England. Another consideration is potential assistance to investigators of particular earthquakes in cases where it is not feasible to collect original seismograms from a large number of stations.

INSTRUMENTS -- FIXED CONSTANTS

| Instrument | Symbol | Registration | Damping | Mass |
|---|---|---|---|---|
| Benioff Vertical | | | | 112.7 kg |
| Short Period | ZSP | galvanometric | magnetic | |
| Long period | ZLP | galvanometric | magnetic | |
| Benioff Horizontal | North-South | | | 112.7 kg |
| Short Period | NSP | galvanometric | magnetic | |
| Long Period | NLP | galvanometric | magnetic | |
| Benioff Horizontal | East-West | | | 112.7 kg |
| Short Period | ESP | galvanometric | magnetic | |
| Long Period | ELP | galvanometric | magnetic | |

INSTRUMENTS -- NORMAL OPERATING CONSTANTS

| Instrument | $T_o$ | $T_g$ | ε | Paper Speed | Displacement for acceleration of $10^{-6}$ g winter | summer |
|---|---|---|---|---|---|---|
| ZSP | 1 | .2 | 20:1 | 30 mm/min | 5 mm | 15 mm |
| ZLP | 1 | 14 | 20:1 | 15 mm/min | 10 mm | 10 mm |
| NSP | 1 | .2 | 20:1 | 30 mm/min | 5 mm | 15 mm |
| NLP | 1 | 14 | 20:1 | 15 mm/min | 10 mm | 10 mm |
| ESP | 1 | .2 | 20:1 | 30 mm/min | 5 mm | 15 mm |
| ELP | 1 | 14 | 20:1 | 15 mm/min | 10 mm | 10 mm |

TABLES USED Macelwane's 1933 November
For local earthquakes, travel time data based on the results of the registration of quarry blasts.

DIRECTION OF MOTION Displacements of the ground upward, or toward the north or east are designated by +, downward, or toward the south or west by -.

AMPLITUDES Figures for trace amplitudes are given where possible to indicate relative importance of phases, comparative intensities, and probable accuracy of reading (which is obviously much greater for large amplitudes than small). One column gives the trace amplitude (half range) of the impulse whose time is given for the phase. The second column gives the maximum trace amplitude (half range) observed in the succeeding oscillations presumably caused by the same phase.

| PHASE | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|
| 1936 January 2d | | | | | | | | | |
| | e 00-45-22 | | 1.2 | e 00-45.5 | | | Trace | | |
| L | e 01-03.5 | | | | | | e 01-02 | | |
| | i+ 17-46-21 | 2.5 | 10 | i+ 17-46-22 | | 2.0 | e 17-46-22 | | 1.2 |
| | i- 49-43 | 1.0 | 1.5 | | | | | | |
| | i- 22-53-48 | 1.5 | 1.5 | | | | | | |
| L | e 23-68.5 | | | e 23-58 | | | e 23-57 | | |
| January 14d | | | | | | | | | |
| | | | | e 00-24-26 | | | | | |
| | e 00-26.1 | | | | | | [illegible] | | |
| | i+ 26-58 | | 2.2 | | | | [illegible] | | 1.5 |
| | i+ 05-55-50 | | | | | | | | |
| | e 06-19-08 | | | | | | | | |
| L | e 06-32 | | 4.0 | e 06-35 | | | e 06-32 | | |
| H = 14-12-27 | Δ = 71°.6 = 7955 kms. | | | Depth by Brunner Exact 600 kms | | | | | |
| | USCGS: H = 14-12.4 | | | St. Louis: H = 14-12-25 | | | | | |
| | φ = 28°.0 S | | | φ = 28°.2 S | | | | | |
| | λ = 63°.0 W | | | λ = 62°.3 W | | | | | |
| | Depth = over 600 kms | | | Depth = 590 kms. | | | | | |
| | Δ meas = 71°.6 kms. | | | | | | | | |
| P | i- 14-22-43 | 3.7 | 5.5 | i- 14-22-43 | 1.0 | 9.0 | i- 14-22-43 | 1.5 | 3.5 |
| pP | i- 24-44 | 3.7 | 12.2 | i- 24-45 | 1.5 | 4.0 | | | |
| | i- 27-10 | 1.5 | | | | | | | |
| | i+ 29-30 | | 2.5 | | | | | | |
| S | i+ 31-14 | | | i- 31-14 | 2.0 | 3.0 | i- 31-14 | 1.0 | 2.5 |
| sS | e 34-48 | | 4.5 | e 34-43 | | | e 34-50 | | |
| L | e 18-44 | | | | | | e 18-44 | | |
| January 15d | | | | | | | | | |
| L | e 17-49 | | | | | | e 17-46 | | |
| January 18d | | | | | | | | | |
| | | | | e 01-45-51 | | 1.1 | | | |
| | | | | | | | i+ 01-49-59 | | 2.0 |
| | e 01-46-01 | | 1.5 | | | | | | |
| | | | | e 46-09 | | 1.7 | e 46-07 | | 4.5 |
| | e 49-32 | | 7.0 | i+ 49-30 | | 3.5 | e 49-31 | | 4.0 |
| January 20d | | | | | | | | | |
| | e 06-03-35 | | | e 06-03-35 | | 4.5 | e 06-03-35 | | 4.2 |
| | Exact beginning confused by microseisms | | | | | | | | |

| PHASE | Z | trace mm | N | trace mm | E | trace mm |
|---|---|---|---|---|---|---|
| 1936 January 22d | | | | | | |
| i+ | 07-36-52 | 1.7 5.5 | e 07-36-52 | | e 07-36-52 Local? | 1.2 |
| e | 08-44-47 | 1.3 | Trace | | Trace | |
| January 30d | | | | | | |
| e | 16-32-35 | 2.2 | e 16-32-35 | 1.7 | e 16-32-35 | |
| e | 40-53 | 1.7 | e 40-53 | 1.7 | e 40-53 | 1.5 |
| e | 51-21 | 2.0 | e 51-20 | 1.2 | e 51-20 | |
| January 31d | | | | | | |
| i- | 15-24-35 | 2.5 4.0 | i- 15-24-35 | 1.2 1.5 | Trace | |
| | Trace | | Trace | | e [illegible] | |
| e | 17-51-48 | 2.1 | e 17-51-47 | 2.0 | [illegible] | |
| e | 18-21-55 | 1.6 | e 18-21-55 | 2.0 | [illegible] | |
| 1936 February 3d | | | | | | |
| | Trace | | e 20-21-39 | 1.2 | e 20-21-[illegible] | 2.5 |
| | | | e 22-05 | 2.7 | e 22-05 | 5.5 |
| i- | 20-24-26 1.5 3.5 | | | | | |
| February 7d | | | | | | |
| e | 05-48-5 | | | | e 05-48-5 | |
| e | 09-45 ca | | e 09-50 ca | | e 09-47 ca | |
| ebruary 12d | | | | | | |
| i- | 09-53-03 1.5 12.7 | | i- 09-53-03 [illegible] | | i+ 09-53-04 1.7 3.5 Deep Focus | |
| ebruary 14d | | | | | | |
| e | 00-44-45 | | e 00-44-42 | | e 00-44-45 | |
| ebruary 15d | | | | | | |
| USCGS: H = [illegible] φ = [illegible] S, λ = 133° E | | | | St. Louis: H = 12-46-56 φ = 4.5 S, λ = 133° E | | |
| e | 13-57 | | e 13-56 | | e 13-40 | |
| (Early phases, if any, [illegible] on missing records) | | | | | | |
| ebruary 16d | | | | | | |
| i+ | 03-20-26 2.9 10.7 | | [illegible] | | i- [illegible] | |
| ebruary 19d | | | | | | |
| e | 02-45-42 | | e 02-45-42 | | e 02-45-42 | |
| e | 48-22 | | e 49-16 | | e [illegible] | |
| ebruary 21d | | | | | | |
| i+ | 17-18-52 | 2.0 | e 17-18-49 | | e 17-18-51 | |
| e | 20-13 | | e 20-01 | | e 20-01 | |
| e | 18-02 | | e 18-05 | | e 18-02 | |
| bruary 22d | | | | | | |
| i- | 12-12-28 0.7 3.3 | | No record | | No trace | |
| = 15-31-48 | | Δ = 148.1 = 16455 kms. | | PP-P' = 3-27 | | |
| i+ | 15-51-28 1.0 20 | | | | | |
| i+ | 54-55 1.3 3.3 | | | | e 15-55-00 | 3.2 |

| PHASE | | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|---|
| 1936 February 22d (cont.) | | | | | | | | | | |
| PPP | e | 15-58-17 | | 1.5 | | | | e 15-58-30 | | |
| | e | 16-02-44 | | 1.5 | | | | | | |
| | e | 04-48 | | 2.2 | | | | e 16-04-47 | | |
| | e | 06-44 | | | | | | | | |
| | e | 08-32 | | | | | | e 08-32 | | |
| (SS) | e | 14-24 | | | | | | | | |
| | | | | | | | | e 18-44 | | |
| | e | 22-06 | | | | | | | | |
| | e | 26-55 | | | | | | | | |
| | e | 36-40 | | | | | | | | |
| | e | 39 | | | | | | e 40 | | |
| February 25d | | | | | | | | | | |
| | e | 12-21-17 | | | e | 12-21-12 | | e 12-21-17 | | |
| February 27d | | | | | | | | | | |
| | i+ | 10-23-19 | 1.8 | | | | | | | |
| | i- | 25 | 5.0 | | i- | 10-23-25 | | e 10-23-27 | | |
| | e | 38 | | 6.0 | | | | | | |
| | i- | 27-44 | 2.5 | 5.0 | e | 26-48 | | e 27-00 | | |
| February 28d | | | | | | | | | | |
| | e | 04-27 | | | No trace | | | e 04-37 | | |
| February 29d | | | | | | | | | | |
| | No ZSP record | | | | i+ | 20-49-05 | 0.7 | 1.5 | e 20-49-05 | 1.0 |
| 1936 March 1d | | | | | | | | | | |
| | i- | 10-33-42 | 0.7 | 6.7 | i- | 10-33-42 | 0.8 | 2.2 | e 10-33-43 | |
| | e | 12-04 ca | | | | | | | e 12-04-ca | |
| March 2d | | | | | | | | | | |
| | i+ | 02-56-36 | | | i- | 02-56-36 | 0.7 | | Trace | |
| I = 03-19-15 | | Δ = 88°.5 = 9835 kms. | | | | | | S-P = 10-47 | | |
| Strasbourg: φ = 43°.0 N, λ = 139°.0 E | | | | | | | | | | |
| | i- | 03-32-05 | 0.7 | 2.5 | Trace | | | | | |
| | | | | | | | | i+ 03-42-52 | | |
| PS | i+ | 44-20 | 1.7 | 2.7 | e | 02-44-20 | | | | |
| | e | 04-06 | | | | | | e 04-06 | | |
| March 5d | | | | | | | | | | |
| | e | 06-39 | | | | | | e 06-39 | | |
| March 6d | | | | | | | | | | |
| | e | 06-27 | | | | | | e 06-28 | | |
| | i- | 20-42-35 | 0.8 | 1.6 | | | | | | |
| March 14d | | | | | | | | | | |
| No records, 21h March 14d to 21h March 22d. | | | | | | | | | | |
| March 25d | | | | | | | | | | |
| | e | 01-31-09 | | 1.5 | e | 01-31-09 | | 1.3 | No record | |
| Aftershock of 1935 November 1d, 06-03-55 | | | | | | | | | (Ottawa) | |
| | e | 08-58 | | | | | | | | |
| | e | 09-14 | | | e | 09-13 | | | | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936, March 26d | | | | | | |
| | i- 17-24-43 | | No NSP record | | No ESP record | |
| | e 28-36 | | | | | |
| | e 47-03 | | Seee 1935 Sept. 15d, 04h06m | | | |
| March 29d | | | | | | |
| | e 00-50-37 | | e 00-50-30 | | e 00-51-38 | |
| 1936 April 1d | | | | | | |
| H = 02-09-10 | Δ = 134°0 = 14890 kms. | | | | PP-P' = 2-25 | |
| USCGS: H = 02-09.4 | | | St. Louis: H = 02-09-16 | | | |
| φ = 3°.0 N | | | φ = 2°.5 N | | | |
| λ = 124°.0 E | | | λ = 123°.5 E | | | |
| Depth slightly below normal | | | Depth = 75 kms. | | | |
| Δ meas = 132°.3 = 14700 kms | | | | | | |
| P' | i+ 02-28-28 3.5 17 | | | | | |
| | | | i- 02-28-43 | | e 02-28-41 1.5 | |
| | i- 30-11 | | | | | |
| PP | i- 30-53 3.5 8.0 | | e 30-55 | | | |
| | | | e 31-11 3.0 | | | |
| SKP | i+ 02-32-00 10 18 | | i+ 02-32-03 3.0 5.0 | | i- 02-32-04 1.5 4.0 | |
| | | | i- 33-58 2.5 | | | |
| | | | e 35-22 2.5 | | e 35-46 2.2 | |
| SKKS | | | i+ 37-46 3.2 4.0 | | | |
| | | | | | e 39-02 2.5 | |
| SKSP | | | i- 41-05 2.5 3.7 | | i- 40-48 1.2 | |
| | | | e 43-53 3.5 | | | |
| | | | e 48-24 | | | |
| SPS | | | e 50-42 | | | |
| | | | e 03-06 | | | |
| | e 21-16 | | e 21-20 | | e 21-21 | |
| April 2d | | | | | | |
| | e 07-19 | | e 07-16 | | e 07-14 | |
| April 12d | | | | | | |
| T = 20-55-18 | Δ = 135°3 = 15055 kms | | | | | |
| P | i+ 21-11-50 1.7 | | | | | |
| pP | e 14-37 | | | | | |
| PKP | e 18-04 1.7 | | | | | |
| PKS | | | e 21-21-44 | | | |
| PPS) | | | | | e 21-29-07 | |
| | e 21-55 | | | | e 21-55 | |
| April 14d | | | | | | |
| | i+ 20-01-36 8.5 9.5 | | ~~e~~ 20-01-38 1.2 1.7 | | ~~e~~ 20-01-38 1.0 | |
| | | | | | Deep Focus? | |
| April 15d | | | | | | |
| | i- 06-25-30 2.5 9.5 | | i- 06-25-30 1.2 1.7 | | i- 06-25-30 1.0 | |
| | | | | | Deep Focus? | |
| April 19d | | | | | | |
| T = 05-07-15 | Δ = 126°0 = 14000 kms. | | | | PP-P' = 1-48 | |
| USCGS: H = 05-07-14 | | | St. Louis: H = 05-07-12 | | | |
| φ = 8°S, λ = 156°E | | | φ = 9°S, λ = 156°E | | | |
| Δ meas = 14000 kms | | | | | | |

| PHASE | | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|---|
| 1936 April 19d (cont.) | | | | | | | | | | |
| P' | i- | 05-26-19 | 1.2 | 3.0 | Trace | | | Trace | | |
| PP | i+ | 28-07 | 1.7 | 2.2 | | | | i+ 05-28-07 | | |
| | i+ | 16 | 0.7 | 3.7 | | | | | | |
| SKP | i- | 29-27 | 2.0 | 4.5 | | | | e 29-30 | | |
| (PKP) | i+ | 30-38 | 1.0 | 2.5 | | | | | | |
| | i+ | 32-55 | 2.0 | | | | | | | |
| | i+ | 33-44 | 3.5 | | | | | | | |
| | | | | | | | | e 34-35 | | |
| SKKS | i+ | 34-59 | | 3.0 | | | | | | |
| SS | | | | | e | 05-38-33 | | | | |
| SPS | e | 39-37 | | | e | 39-32 | | | | |
| | | | | | | | | e 40-41 | | |
| SSPS | | | | | e | 42-00 | | e 41-56 | | |
| | | | | | e | 45-43 | | e 45-49 | | |
| | e | 06-08 | | | | | | | | |
| April 21d | | | | | | | | | | |
| | e | 10-38 ca | | | | | | e 10-38 ca | | |
| April 23d | | | | | | | | | | |
| I = 23-14-33 | | Δ = 68.2 = 7580 kms. | | | | S - P = 9-05 | | | | |
| | USCGS: H = 23-14.4 | | | | | St. Louis: H = 23-14-34 | | | | |
| | φ = 48°N | | | | | φ = 50°.5 N | | | | |
| | λ = 178°W | | | | | λ = 178° E | | | | |
| | Δ meas = 7700 kms | | | | | Depth 100 kms. | | | | |
| | i- | 23-25 29 | 5.2 | 20.7 | i+ 23-25-29 | 1.2 | 3.7 | i- 23-25-29- | 1.2 | 3.5 |
| | | | | | Trace | | | i+ 34-34 | | |
| | e | 52 | | | e 52 | | | e 50 | | |
| April 24d | | | | | | | | | | |
| | e | 14-27 | | | e 14-57 | | | e 14-57 | | |
| April 26d | | | | | | | | | | |
| | e | 09-56 | | | | | | | | |
| April 27d | | | | | | | | | | |
| | e | 00-55 | | | e 01-02 | | | | | |
| | USCGS: H = 06-30-50 | | | | | St. Louis: H = 06-31-06 | | | | |
| | φ = 16° N λ = 87°W | | | | | φ = 16°.3 N λ = 87°.7W | | | | |
| | Δ meas = 3320 kms. | | | | | | | | | |
| | | | | | e | 06-42-00 | | e 06-42-00 | | |
| | | | | | e | 43-00 | | | | |
| | e | 06-46 | | | e | 47 | | e 47 | | |
| April 28d | | | | | | | | | | |
| | e | 06-45 | | | e 06-45 | | | e 06-45 | | |
| | i- | 13-54 38 | | | Trace | | | Trace | | |
| | i- | 58-11 | 7.0 | 12.0 | | | | | | |
| April 29d | | | | | | | | | | |
| | i- | 08-33-43 | 0.7 | 7.5 | Trace | | | Trace | | |
| April 30d | | | | | | | | | | |
| = 10-55-18 | | Δ = 42.5 = 4720 kms. | | | | S-P = 6-29 | | | | |
| | i+ | 11-03-13 | | | | | | | | |
| | i- | 05-02 | | | | | | e 11-05-02 | | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 April 30d (cont.) | | | | | | |
| | e 11-09-42 | | | | e 11-09-42 | |
| | e 19 | | e 11-18 | | e 18 | |
| | No time marks | | e 17-17-32 | | Trace | |
| 1936 May 6d | | | | | | |
| | | | e 03-47-40 | | Trace | |
| | e 03-56 | | | | | |
| May 8d | | | | | | |
| | i- 09-30-04 | | i+ 09-30-04 | 2.2 .2 | i+ 09-30-04 | 0.7 11.0 |
| | i- 31-33 | | i- 31-33 | 4.0 7.0 | i- 31-33 | 1.5 3.5 |
| | i- 33-13 | | i+ 33-13 | 2.7 8.2 | i- 33-13 | 2.0 3.5 |
| | | | | | Deep Focus | |
| | e 17-30-59 | | Trace | | Trace | |
| | e 43 | | | | e 17-44 | |
| May 11d | | | | | | |
| H = 17-27-29 | Δ = 126°.2) | | | | | |
| | i- 17-46-33 | | | | | |
| P | e 48-23 | | | | | |
| | e 18-33 | | e 18-35 | | e 18-33 | |
| May 13d | | | | | | |
| | i- 04-03-03 | | e 04-03-03 | | e 04-03-03 | |
| May 14d | | | | | | |
| | i- 04-20-51 | | i- 04-20-51 | | i- 04-20-51 | |
| | e 06-06 | | No trace | | e 06-06 | |
| | i- 21-07-30 | 3.2 4.0 | e 21-07-37 | | | |
| May 16d | | | | | | |
| | Strasbourg: φ = 28° N, λ = 102° E | | | Δ = 12000 kms. ca | | |
| | e 07-32 24 | | | | e 07-32-20 | |
| S | | | e 07-34-02 | | | |
| PS | e 35-19 | | e 35-18 | | | |
| | e 36-15 | | | | | |
| S | e 39-53 | | e 39-58 | | e 39-53 | |
| | e 08-07 | | | | e 08-04 | |
| May 19d | | | | | | |
| | i- 07-40-57 | | i+ 07-40-57 | 2.0 24 | i- 07-40-57 | 1.5 11.5 |
| | i+ 43-17 | | | | i- 43-17 | |
| | e 41 | | | | | |
| | i+ 44-15 | | | | Deep Focus | |
| | e 22-42-ca | | | | e 22-42 ca | |
| May 20d | | | | | | |
| = 03-05-07 | Δ = 127° = 14110 kms. | | | PP-P' = 1-53 | | |
| | USCGS: H = 03-05.2 | | | St. Louis: H = 03-05-21 | | |
| | φ = 8°.5 S | | | φ = 7°.7 S | | |
| | λ = 140° E | | | λ = 159°.6 E | | |
| | Δ meas = 13800 kms. | | | | | |
| | i+ 03-24-13 | 1.0 4.0 | | | | |
| | i- 26-06 | 4.0 | Trace | | e 03-26-06 | |
| | e 27-36 | | | | | |

| PHASE | | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|---|
| 1936 May 20d (cont.) | | | | | | | | | | |
| PKS | e | 03-28-11 | | | | | | | | |
| | e | 29-32 | | | | | | | | |
| SKS | | | | | | | | e | 03-31-26 | |
| SKKS | | | | | | | | e | 33-09 | |
| | | | | | e | 03-36-05 | | e | 36-07 | |
| PS | e | 36-24 | | | | | | | | |
| PPS | i+ | 37-37 | | | | | | | | |
| | | | | | | | | e | 38-27 | |
| | e | 39-27 | | | | | | | | |
| | e | 40-31 | | | e | 40-59 | | | | |
| | e | 41-51 | | | | | | | | |
| L | e | 04-09 | | | e | 04-09 | | e | 04-09 | |
| May 21d | | | | | | | | | | |
| L | e | 03-56 | | | | | | e | 03-56 | |
| May 22d | | | | | | | | | | |
| H = 00-16-08 | | | Δ = 73° | | | S-P = 11-29 | | | | |
| P | i+ | 00-27-37 | 1.7 | 2.0 | i+ | 00-27-37 | | | | |
| PcP | e | 43 | | | | | | | | |
| | i+ | 28-49 | | | | | | | | |
| PP | e | 30-19 | | | | | | | | |
| S | e | 37-06 | | | | | | e | 00-37-06 | |
| L | e | 01-00 | | | e | 01-00 | | e | 01-00 | |
| May 23d | | | | | | | | | | |
| L | e | 00-26 | | | | | | | | |
| | e | 17-06-00 | | | | | | | Trace | |
| L | e | 19-06 ca | | | e | 19-07 | | e | 19-07 | |
| May 25d | | | | | | | | | | |
| L | No ZLP | | | | | | | e | 04-08 | |
| May 27d | | | | | | | | | | |
| H = 06-19-36 | | | Δ = 110°.7 = 12300 kms. | | | | | | | |
| USCGS: H = 06-19.2 | | | | | | | St. Louis: H = 06-19-27 | | | |
| φ = 29° N | | | | | | | φ = 24°.2 N | | | |
| λ = 84° E | | | | | | | λ = 85°.3 E | | | |
| Δ meas = 11700± kms. | | | | | | | | | | |
| P | e | 06-34-12 | | | | | | | | |
| PP | i- | 38-40 | | | e | 06-38-55 | | | | |
| | e | 42-33 | | | | | | | | |
| SKS | | | | | e | 45-05 | | e | 06-45-05 | |
| PS | e | 48-05 | | | e | 48-06 | | e | 48-03 | |
| L | e | 07-17 | | | | | | | | |
| May 28d | | | | | | | | | | |
| | i- | 16-59-34 | | 11 | | | | | | |
| H = 18-48-56 | | | Δ = 43.2 = 4800 kms. | | | S-P = 6-34 | | | | |
| USCGS: H = 18-49.1 | | | | | | | St. Louis: H = 18-49-11 | | | |
| φ = 10° N | | | | | | | φ = 9° N | | | |
| λ = 104° W | | | | | | | λ = 103°.5 W | | | |
| Depth normal | | | | | | | Depth 270 kms. | | | |
| Δ meas = 4800 kms. | | | | | | | | | | |

| PHASE | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|
| 1936 May 28d (cont.) | | | | | | | | | |
| P | i+ 18-56-57 | 1.5 | 4.0 | i+ 18-56-57 | | | i+ 18-56-57 | | |
| PP | | | | | | | e 58-27 | | |
| PcP | i- 58-40 | | | e 58-40 | | | i+ 58-40 | | |
| PPP | i- 59-01 | 3.0 | | | | | | | |
| S | i- 19-03-31 | 3.0 | | i+ 19-03-31 | 1.0 | 2.5 | i- 19-03-31 | 1.3 | 3.7 |
| (SS) | i- 06-33 | 1.7 | | e 06-21 | | | i+ 06-55 | | |
| | | | | | | | i- 08-29 | 1.5 | |
| L | e 15 | | | e 14 | | | e 12 | | |
| 1936 June 2d | | | | | | | | | |
| | i- 16-16-28 | | 5.0 | i+ 16-16-28 | 1.0 | 2.2 | i- 16-16-28 | 1.5 | 4.0 |
| | e 48 | | | | | | | | |
| June 3d | | | | | | | | | |
| | e 03-08-35 | | 3.0 | No trace | | | | | |
| | i+ 18-05-29 | 0.5 | 4.0 | i+ 18-05-29 | | 1.5 | Trace | | |
| | i- 38 | 1.2 | 4.5 | i- 38 | | 1.7 | | | |
| H = 09-15-18 | Δ = 39°.6 = 4400 kms. | | | | | S-P = 6-12 | | | |
| USCGS: H = 09-15-15 | | | | | | St. Louis: H = 09-15-20 | | | |
| φ = 40°.1 N | | | | | | φ = 40°.7 N | | | |
| λ = 126°.5 W | | | | | | λ = 125°.5 W | | | |
| Δ meas = 4540 kms | | | | | | | | | |
| P | i+ 09-22-50 | | | | | | i+ 09-22-50 | | |
| S | | | | e 09-29-02 | | | e 29-02 | | |
| SS | e 31-54 | | | | | | | | |
| SSS | | | | e 32-22 | | | | | |
| L | e 39 | | | e 36 | | | | | |
| June 4d | | | | | | | | | |
| | e 13-25-58 | | | Trace | | | e 13-25-52 | | |
| June 5d | | | | | | | | | |
| | i+ 14-56-34 | 1.2 | | | | | | | |
| | i+ 57-22 | 0.5 | 1.0 | No trace | | | Trace only | | |
| | i+ 59-48 | 2.2 | 3.5 | | | | | | |
| June 6d | | | | | | | | | |
| | e 16-27-19 | | | No trace | | | Trace | | |
| | e 31-31 | | | " " | | | " | | |
| L | e 34.5 | | | | | | e 16-34.5 | | |
| L | e 07-39 | | | | | | e 07-39 | | |
| June 7d | | | | | | | | | |
| L | e 05-05 | | | | | | e 05-05 | | |
| June 9d | | | | | | | | | |
| | e 16-21-30 | | | e 16-21-30 | | | Trace | | |
| H = 16-36-26 | Δ = 138.2 = 15365 kms. | | | | | PP-P' = 2-44 | | | |
| P' | i+ 16-56-51 | | | | | | | | |
| PP | i- 58-35 | | | e 16-58-35 | | | | | |
| SKP | | | | e 59-24 | | | | | |
| PPP | e 17-01-02 | | | | | | | | |
| L | e 17-58 | | | e 17-59 | | | e 17-58 | | |

| PHASE | Z | trace mm i | max | N | trace mm i | max | E | trace mm i | max |
|---|---|---|---|---|---|---|---|---|---|
| 1936 June 10d | | | | | | | | | |
| H = 08-22-27 | Δ = 136° = 15110 kms. | | | Depth = 60 kms | | | | | |
| USCGS: H = 08-22.4 | φ = 15° S | λ = 145° E | Δ meas = 15400 kms. | | | | | | |
| P' | i+ 08-42-02 | | 2.0 | Trace | | | | | |
| pP | i- 14 | 3.4 | 7.0 | | | | | | |
| PP | i+ 44-24 | 1.5 | 3.0 | e 08-44-24 | | | i+ 08-44-24 | | 1.0 |
| SKP | i+ 45-16 | 2.5 | 11+ | i+ 45-18 | 0.5 | 0.7 | i+ 45-18 | 0.5 | 0.7 |
| | | | | i+ 38 | 0.5 | | i- 36 | 1.0 | 1.5 |
| | i- 46-06 | 1.5 | | | | | | | |
| SKS | | | | | | | i+ 46-22 | 1.0 | |
| | | | | | | | e 52-26 | | |
| | i+ 52-22 | 2.0 | 2.5 | | | | | | |
| | e 59-46 | | | | | | | | |
| SS | e 09-02-26 | | 1.5 | | | | e 09-02-36 | | |
| | e 56 | | 2.0 | | | | | | |
| | | | | | | | e 03-44 | | |
| | e 22-23.5 | | | e 22-23-37 | | | e 22-23-44 | | |
| | e 33-57 | | | | | | i- 33-57 | | |
| | e 37-00 | | | No trace | | | e 37-00 | | |
| June 12d | | | | | | | | | |
| L | e 16-15 | | | | | | e 16-15 | | |
| | i+ 22-27-38 | 0.7 | 7.0 | i+ 22-27-37 | 0.5 | 1.0 | | | |
| | | | | | | | Deep Focus? | | |
| June 14d | | | | | | | | | |
| | i+ 02-39-12 | 1.7 | 4.2 | Trace | | | Trace | | |
| June 15d | | | | | | | | | |
| | e 01-28 ca | | | | | | e 01-29-ca | | |
| June 20d | | | | | | | | | |
| | i+ 03-16-28 | 0.5 | 2.5 | e 03-16-29 | | 1.5 | Trace | | |
| | e 21-51 | | 7.0 | i+ 21-50 | 1.0 | 5.0 | i- 03-21-27 | 0.5 | 3.0 |
| | i+ 03-29-14 | 1.2 | 1.7 | Trace | | | Trace | | |
| | i- 36-19 | 1.0 | 4.5 | e 03-36-22 | | 5.5 | i- 03-36-29 | 2.0 | 4.2 |
| | | | | | | | Separate disturbance? | | |
| June 23d | | | | | | | | | |
| | e 14-32-52 | | | e 14-32-49 | | 1.0 | e 14-32-52 | | 1.1 |
| June 27d | | | | | | | | | |
| | e 03-37 | | | | | | e 03-37 | | |
| | i- 11-36-37 | 1.5 | 3.0 | Trace | | | Trace | | |
| | i- 54 | 1.0 | 5.0 | | | | | | |
| June 29d | | | | | | | | | |
| | i+ 14-42-07 | | | No trace | | | Traces only | | |
| | e 45-54 | | | | | | | | |
| | e 55 | | | e 14-53 | | | | | |
| June 30d | | | | | | | | | |
| I = 15-06-44 | Δ = 76° = 8450 kms. | | | S-P = 9-47 | | | | | |
| USCGS: H = 15-06-41 | | | | St. Louis: H = 15-06-48 | | | | | |
| φ = 51°5 N | | | | φ = 51°.0 N | | | | | |
| λ = 160° E | | | | λ = 161°.1 E | | | | | |
| Δ meas = 8460 kms | | | | Depth = 50 kms. | | | | | |

| P PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 June 30d (cont.) | | | | | | |
| P | i+ 15-18-28 10 29 | | i- 15-18-28 1.7 12 | | i+ 15-18-28 1.5 7.5 | |
| PP | i- 21-19 2.0 6.0 | | i- 21-23 1.2 | | i+ 21-20 | |
| PPP | i- 23-15 4.0 8.0 | | i+ 23-15 1.5 | | e 23-15 1.7 | |
| | | | | | e 24-19 1.5 | |
| | i- 26-42 6.0 15.5 | | | | | |
| S | | | i+ 28-15 2.0 | | i+ 28-15 | |
| | e 28-31 | | i+ 28-33 | | i- 28-33 | |
| | i- 29-35 2.5 4.2 | | | | | |
| | i+ 30-51 2.0 | | | | | |
| | | | i- 31-37 | | | |
| | i- 32-18 0.7 1.5 | | e 32-31 | | | |
| | | | i- 33-13 | | e 33-29 | |
| | | | i+ 34-25 1.0 1.7 | | | |
| | | | | | e 36-53 | |
| | i- 37-27 3.7 7.0 | | | | | |
| | | | | | i+ 41-31 3.0 4.0 | |
| L | e 46 | | e 46 | | e 46 | |

## LOCAL EARTHQUAKES AND QUARRY BLASTS

Note: All H values listed here are computed from tables based on timed blasts. See "Seismological Data on Surface Layers in New England" by L. D. Leet in the Bulletin of the Seismological Society of America, Vol. 26, No. 2, April 1936, pp. 129-147

1936 January 23d

e 00-06-36 5.7 No NSP record No ESP record

January 28d

No ZSP record e 03-22-34 1.7 e 03-22-34 1.7

February 26d

i- 05-15-46 i- 05-15-46.5 4.7 i- 05-15-46.5 1.5

i+ 07-11-13.5 3.3 e 07-1 -14 e 07-11-14

April 4d

H = 20-34-54.3 Δ = 170 kms. S-P = 20 secs. Az SW

i+ 20-35-22.5 i+ 20-35-22.5 i+ 20-35-22.5
i- 42.5 i+ 42.5 i+ 42.5

April 13d

Blast at the Plainville Quarry of the New Haven Trap Rock Co.

H = 22-22-06.3 Δ = 142.2 kms. Az S 48-05-32 W S-P = 17.3 secs

i- 22-22-29 i- 22-22-29 i- 22-22-29
i- 46.3 i- 46.3 i- 46.3

April 14d

Blast at the Callanan Road Improvement Co. near Albany, N.Y.

H = 22-06-08.4 Δ = 187.8 kms. Az N 89-37.3 W S-P = 22 secs

i- 22-06-38.5 e 22-06-39 i- 22-06-38.5
i 07-00.5 i 07-00.5 i+ 07-00.5

April 15d

Blast at the Plainville Quarry. See April 13d H = 22-07-21.3

i- 22-07-44 i- 22-07-44 i- 22-07-44
i- 08-01 i- 08- 01 i- 08-01

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 April 15d | | | | | | |
| H = 22-12-09 | Δ = 111 kms. | | S-P = 13.2 secs. | | Az SW | Blast |
| P | i+ 22-12-26.5 | | i+ 22-12-26.5 | | i+ 22-12-26.5 | |
| S | i+ 39.7 | | e 40 | | i 39.7 | |
| April 16d | | | | | | |
| Blast at the Plainville Quarry. See April 13d H = 22-05-04.2 | | | | | | |
| P | i+ 22-05-26.9 | | i+ 22-05-26.9 | | i+ 22-05-26.9 | |
| S | i- 44.2 | | i- 44.2 | | i- 44.2 | |
| April 18d | | | | | | |
| Blast at the York Hill Quarry, Meriden, Connecticut. | | | | | | |
| H = 19-07-08.9 | Δ = 144.4 kms. | | Az S 42-41.6 W | | S-P = 17.2 secs. | |
| P | i+ 19-07-32 | 53.6 | i+ 19-07-32 | | i+ 19-07-32 | |
| S | i 49.2 | | i 49.2 | | i 49.2 | |
| April 21d | | | | | | |
| Blast at the Foxon Quarry near New Haven, Connecticut | | | | | | |
| H = 19-01-46.2 | Δ = 171.6 kms. | | Az S 39.1 W | | S-P = 20 secs. | |
| P | i- 19-01-14.4 | | i- 19-01-14.4 | | i- 19-01-14.4 | |
| S | i- 34.4 | | i 34.4 | | i 34.4 | |
| April 26d | | | | | | |
| H = 19-04-39.8 | Δ = 170 kms. | | S-P = 20 secs. | | Local or blast? | |
| P | i- 19-05-08 | | No trace | | i- 19-05-08 | |
| S | e 38 | | i+ 19-05-38 | 2.5 5.5 | i- 38 | 1.2 3.4 |
| April 28d | | | | | | |
| H = 19-36-56.5 | Δ = 109 kms. | | Az SW | | S-P = 13 secs. | Blast, location |
| P | i- 19-37-14.5 | | i- 19-37-14.5 | | i- 19-27-14.5 | |
| S | e 27.5 | | e 27.5 | | e 27.5 | |
| L | e 35 | | e 35 | | e 35 | |
| H = 21-03-49 | Δ = 66 kms. | | S-P = 8 secs. | | Local or blast? | |
| P | e 21-04-00 | | i 21-04-00.5 | | i 21-04-00 | |
| S | e 08 | | e 08 | | e 08 | |
| L | e 13 | | e 13 | | e 11 | |
| May 5d | | | | | | |
| Blast at the Reed's Gap Quarry of the Connecticut Quarries Co. | | | | | | |
| H = 19-40 58.3 | Δ = 152.5 kms. | | Az = S 41.1 W | | S-P = 17.5 secs. | |
| P | No record | | i+ 19-41-22.3 | | i+ 19-41-22.3 | |
| S | | | i- 39.8 | | i- 39.8 | |
| May 7d | | | | | | |
| Blast at the J. S. Lane Quarry, Westfield, Mass. | | | | | | |
| H = 19-58-07.9 | Δ = 100.6 kms. | | Az S 66.6 W | | S-P = 12.6 secs. | |
| P | No record | | i- 19-58-24.5 | | i- 19-58-24.5 | |
| S | | | i 37.1 | | i 37.1 | |
| May 8d | | | | | | |
| Blast at the Cheshire Quarry of the New Haven Trap Rock Co. | | | | | | |
| H = 21-06-34.7 | Δ = 157.8 kms. | | Az S 46.2 W | | S-P = 19.1 secs. | |
| P | i- 21-07-00.5 | | i- 21-07-00.5 | | i- 21-07-00.5 | |
| S | i 19.6 | | i+ 19.6 | | i- 19.6 | |

| Phase | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 May 11d | | | | | | |
| L | | | i | 14-28-45 | i | 14-28-46 |
| L | | | i | 16-06-03.5 | i | 16-06-03.5 |
| May 12d | | | | | | |
| H = 19-28-01 | | Δ = 96 kms. | | S-P = 11.5 secs. | | |
| P | i+ | 19-28-17 | | | | |
| S | e | 28.5 | i | 19-28-28.5 | i | 19-28-28.5 |
| L | i+ | 32 | | | | |
| May 15d | | | | | | |
| H = 16-30-44.5 | | Δ = 33.6 kms. | | S-P = 4 secs. | | |
| P | i- | 16-30-50.1 | e | 16-30-50.1 | i | 16-30-50.1 |
| S | i- | 54.1 | i- | 54.1 | i- | 54.1 |
| May 16d | | | | | | |
| H = 18-31-07.3 | | Δ = 50.4 kms. | | S-P = 6 secs. | | |
| P | i- | 18-31-15.7 | i+ | 18-31-15.7 | i- | 18-31-15.7 |
| S | i | 21.7 | i- | 21.7 | i | 21.7 |
| L | i+ | 26 | i- | 26 | i- | 26 |
| May 18d | | | | | | |
| L | i- | 13-45-11.5 | i | 13-45-11.5 | i | 13-45-11.5 |
| | i- | 19-15-14 | | | | |
| L | i- | 21 | e | 19-15-21 | e | 19-15-21 |
| May 23d | | | | | | |
| H = 20-34-19.6 | | Δ = 118 kms. | | S-P = 14 secs. | | |
| P | i+ | 20-34-39.3 | i | 2-34-39.3 | i+ | 20-34-39.3 |
| S | i | 51.3 | i+ | 51.3 | i+ | 51.3 |
| May 25d | | | | | | |
| H = 16-57-22.9 | | Δ = 112 kms | | S-P = 13.5 secs. | | |
| P | i- | 16-57-41.5 | i- | 16-57-41.5 | i | 16-57-41.5 |
| S | e | 55 | e | 55 | e | 55 |
| May 28d | | | | | | |
| The following three disturbances have been interpreted from record character and grouping as blasts at the General Crushed Stone Co., Blueberry Mountain, Winchester, Mass. See 1934, July 13d | | | | | | |
| S | e | 16-44-36 | e | 16-44-36 | | |
| L | i+ | 38.5 | i+ | 38.5 | i+ | 16-44-38.5 |
| H = 16-58-23.4 | | Δ = 35.2 kms | | S-P = 4.1 secs. | | |
| P | e | 16-53-29.5 | e | 16-53-29.5 | | |
| S | e | 33.6 | e | 33.6 | e | 16-53-33.6 |
| H = 16-58-23.4 | | Δ = 35.2 kms. | | S-P = 4 secs. | | |
| P | i | 16-58-29 | | | | |
| S | e | 33 | | | | |
| June 3d | | | | | | |
| | e | 14-58-23 | e | 14-58-23 | | |
| | e | 27 | e | 27 | e | 14-58-27 |
| H = 16-22-03.7 | | Δ = 105 kms. | | S-P = 12.5 secs. | | |
| P | i- | 16-22-21.2 | | Trace | i | 16-22-21.2 |
| S | e | 33.7 | e | 16-22-33.7 | e | 33.7 |
| I | i- | 38 | i- | 37 | i- | 37 |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 June 6d | | | | | | |
| | Blast at the North Branford Quarry of the New Haven Trap Rock Co. | | | | | |
| H = 21-09-29.0 | Δ = 165.3 kms. | | Az = S 37.7 W | | S-P = 19.5 secs. | |
| P | i+ 21-09-55.8 | | i+ 21-09-55.8 | | i+ 21-09-55.8 | |
| S | i 10-15.3 | | i 10-15.3 | | i 10-15.3 | |
| June 9d | | | | | | |
| H = 16-14-56 | Δ = 74 kms. | | S-P = 9 secs. | | | |
| P | i+ 16-15-09.5 | | No trace | | e 16-15-09.5 | |
| S | e 18.5 | | i 16-15-18.5 | | i 18.5 | |
| L | i+ 22 | | i+ 20.5 | | i+ 22 | |
| | Δ = 200 kms. ca | | S-P = 23.5 secs. | | | |
| P | i+ 22-55-46 | | No NSP record | | No ESP record | |
| S | i- 56-09.5 | | | | | |
| June 13d | | | | | | |
| H = 16-19-54.6 | Δ = 188 kms. | | S-P = 21 secs. | | | |
| P | i+ 16-19-24.7 | | e 16-19-25 | | i+ 16-19-24.7 | |
| S | e 45.7 | | i+ 45.7 | | i- 45.7 | |
| June 14d | | | | | | |
| H = 05-39-51.4 | Δ = 128 kms. | | Az NNE | | S-P = 15.2 secs/ | |
| | Felt throughout wide are in central New Hampshire | | | | | |
| P | i+ 05-40-12.7 | | i- 05-40-12.7 | | i- 05-40-12.7 | |
| S | i 27.9 | | i 27.9 | | i 27.9 | |
| June 15d | | | | | | |
| H = 21-37-52 | Δ = 166 kms. | | S-P = 19.5 secs. | | | |
| P | i+ 21-38-00 | | e 21-38-00 | | e 21-38-00 | |
| S | i+ 19.5 | | i+ 19.5 | | i 19.5 | |
| June 22d | | | | | | |
| H = 17-08-24.5 | Δ = 110 kms. | | S-P = 13.3 secs. | | | |
| P | i- 17-08-42.7 | | i+ 17-08-42.7 | | i+ 17-08-42.7 | |
| | e 53.6 | | | | | |
| S | e 56 | | e 56 | | i- 56 | |
| L | e 58.4 | | e 59 | | e 59 | |

End of Oak Ridge Bulletin 6

Harvard, Mass.
1936 July 6d

# HARVARD UNIVERSITY

## Division of Geological Sciences

## SEISMOGRAPH STATION

L. D. LEET, Seismologist in Charge

| | |
|---|---|
| Latitude | 42° 30' 26" North |
| Longitude | 71° 33' 45" West |
| Foundation | Micaceous Schist |
| Height | 1200 meters |

Time: Mean Greenwich
E. Howard pendulum clock corrected daily by radio time signals from Arlington, Va., 113 kc., and Ottawa, Canada 7335 kc. Accurate to nearest .1 sec. unless otherwise noted.

---

Mail Address:

SEISMOGRAPH STATION
c/o L.D.LEET
HARVARD, MASS., U.S.A.

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# BULLETIN NO. 7

1936 July 1d to December 31d

By Mary P. Collins, Observer

Paper no. 34 published under the auspices of the Committee on Geophysical Research and of the Division of Geological Sciences at Harvard University.

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One object of this station's bulletins is to give, in readily accessible form, a summary of the outstanding features of the records of its seismographs. Interpretations are given for some of the larger earthquakes, in the form of phase identifications and distance computations, which are necessarily tentative. Particularly in the case of local earthquakes, the distance given does not necessarily indicate the space separating this station from the epicenter, since the depth of focus is unknown.

The readings here reported are selected primarily for their possible usefulness to the compilers of the International Seismological Summary at Oxford, England. Another consideration is potential assistance to investigators of particular earthquakes in cases where it is not feasible to collect original seismograms from a large number of stations.

INSTRUMENTS -- FIXED CONSTANTS

| Instrument | Symbol | Registration | Damping | Mass |
|---|---|---|---|---|
| Benioff Vertical | | | | 112.7 kg |
| Short Period | ZSP | galvanometric | magnetic | |
| Long Period | ZLP | galvanometric | magnetic | |
| Benioff Horizontal North-South | | | | 112.7 kg |
| Short Period | NSP | galvanometric | magnetic | |
| Long Period | NLP | galvanometric | magnetic | |
| Benioff Horizontal East-West | | | | 112.7 kg |
| Short Period | ESP | galvanometric | magnetic | |
| Long Period | ELP | galvanometric | magnetic | |

INSTRUMENTS -- NORMAL OPERATING CONSTANTS

| Instrument | $T_o$ | $T_g$ | $\epsilon$ | Paper Speed | Displacement for acceleration of $10^{-6}$ g |
|---|---|---|---|---|---|
| ZSP | 1 | .2 | 20:1 | 30 mm/ min | 15 mm |
| ZLP | 1 | 14 | 20:1 | 15 mm/ min | 10 mm |
| NSP | 1 | .2 | 20:1 | 30 mm/ min | 15 mm |
| NLP | 1 | 14 | 20:1 | 15 mm/ min | 10 mm |
| ESP | 1 | .2 | 20:1 | 30 mm/ min | 15 mm |
| ELP | 1 | 14 | 20:1 | 15 mm/ min | 10 mm |

TABLES USED: Macelwane's 1933 November
Jeffreys - Bullen 1935
For local earthquakes, travel time data based on the results of the registration of quarry blasts.

DIRECTION OF MOTION: Displacements of the ground upward, or toward the North or East are designated by +, downward, or toward the South or West by -.

AMPLITUDES: Figures for trace amplitudes are given where possible to indicate the relative importance of phases, comparative intensities, and probable accuracy of reading (which is obviously much greater for large amplitudes than small). One column gives the trace amplitude (half range) of the impulse whose time is given for the phase. The second column gives the maximum trace amplitude (half range) observed in the succeeding oscillations presumably caused by the same phase.

| PHASE | trace mm i max | N trace mm i max | E trace mm i max |
|---|---|---|---|
| 1936, July 1d | | | |
| S | i- 15-51-42.5 | i+ 15-51-42.5 | i- 15-51-42.5 |
| L | e 44.5 | e 44.5 | e 44.5 |
| | | | Local, blast? |
| July 3d | | | |
| | i- 03-17-38 | No trace | No trace |
| | e 04-22-18 | e 04-22-16 | e 04-22-16 |
| July 4d | | | |
| | i- 09-02-35 0.7 19 | i+ 09-02-35 1.5 7.5 | i+ 09-02-35 1.0 5.5 |
| | | | Deep Focus? |
| | i+ 09-16-06 1.5 | Trace | Trace |
| | i+ 19-13 1.0 5.5 | | Same quake? |
| July 5d | | | |
| H = 18-55-11 | Δ = 129°.1 = 14345 kms. | | PP-P' = 2-04 |
| | USCGS: H = 18-54.7 | St. Louis: | H = 18-55-04 |
| | φ = 20°N | | φ = 4°N |
| | λ = 123°E | | λ = 124°.9 E |
| | Δ meas = 14850 kms. | | Depth = 70 kms. |
| P' | i- 19-14-20 | | |
| PP | | i- 19-16-24 | |
| S-P | e 17-40 | i+ 17-40 | |
| SKKS | | e 23-26 | |
| S | | e 26-24 | |
| SS | | e 33-56 | |
| | | | e 19-34-04 |
| | | e 36-44 | e 36-44 |
| L | e 57 | e 57 | e 57 |
| July 9d | | | |
| | No ZSP record | i- 17-39-59 0.7 2.7 | i- 17-39-59 1.0 1.5 |
| July 11d | | | |
| P | i- 19-03-15 | i- 19-03-15 | i- 19-03-15 |
| S | i 22.5 | i 22.5 | i 22.5 |
| | H = 19-03-04.5 | Δ = 63 kms. Azimuth SW | Local |
| July 12d | | | |
| I | e 03-41 | | e 03-41 |
| July 13d | | | |
| | H = 11-12-23 | Δ = 66°.0 = 7335 km. | S-P . 8-54 |
| | USCGS: H = 11-12-3 | St. Louis: | H = 11-12-29 |
| | φ = 24°S | | φ = 23°S |
| | λ = 70°W | | λ = 70°.2 W |
| | Δ meas = 7320 kms. | | Depth = 60 kms |
| P | i+ 11-23-05 0.7 40+ | i+ 11-23-05 1.2 20 | i+ 11-23-20 1.2 17 |
| S | i+ 32-05 3.5 8.0 | i+ 31-59 5.0 | i+ 32-01 1.5 6.5 |
| | | i- 33-07 1.5 5.7 | |
| | | i- 34-01 1.1 3.0 | |
| L | e 47 | e 47 | e 47 |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 July 13d (cont.) | | | | | | |
| | i+ 11-49-18 | 1.5 20+ | i- 11-49-18 | 1.0 1.5 | i- 11-49-18 | 2.0 3.7 |
| F | 14-30 ca | | | | | |
| July 16d | | | | | | |
| | USCGS: H = 07-07.9 | | St. Louis: H = 07-07-50 | | | |
| | φ = 46.2 N | | φ = 46.0 N | | | |
| | λ = 118.2 W | | λ = 118.1 W | | | |
| | Δ meas = 3670± kms. | | | | | |
| | e 07-23-18 | | | | | |
| | i+ 25-15 | 1.5 | i- 07-25-15 | | i+ 07-25-15 | |
| L | e 26.5 | | e 26.5 | | e 26.5 | |
| July 19d | | | | | | |
| | i+ 02-45-51 | 3.0 5.4 | i+ 02-45-51 | 0.7 1.5 | Trace | |
| July 20d | | | | | | |
| | H = 13-44-38.7 | | Δ = 38 kms Azimuth NE | | Local | |
| P | i- 13-44-45 | | i+ 13-44-45 | | i+ 13-44-45 | |
| S | i- 49.7 | | i- 49.7 | | i- 49.7 | |
| July 22d | | | | | | |
| L | e 07-19 | | Trace only | | e 07-19 | |
| L | e 19-20 | | e 19-17 | | e 19-20 | |
| July 26d | | | | | | |
| | H = 07-37-02 | | Δ = 65°.8 = 7310 kms | | | |
| | USCGS: H = 07-36.9 | | St. Louis: H = 07-37-08 | | | |
| | φ = 24.0 S | | φ = 22°.8 S | | | |
| | λ = 71.0 W | | λ = 70°.8 W | | | |
| | Δ meas = 7350 kms. | | Depth = 40 kms. | | | |
| P | i- 07-47-43 | 2.0 | i- 07-47-43 | | e 07-47-43 | |
| | i+ 46 | 9.0 24 | i+ 46 | 1.7 5.0 | i+ 46 | 1.0 2.0 |
| | i+ 54-09 | | i+ 54-09 | | | |
| S | e 56-36 | | e 56-36 | | i+ 56-36 | |
| I | e 08-05 | | e 08-05 | | e 08-05 | |
| July 28d | | | | | | |
| | e 05-39-51 | | | | | |
| | i- 40-44 | | | | | |
| I | e 06-25 | | e | | e 06-25 | |
| | e 08-11-49 | | Trace only | | No trace | |
| | i+ 14-09 | | | | | |
| | e 15-10 | | | | | |
| I | e 09-00 | | | | | |
| | H = 17-45-10.9 Δ = 188 kms. S-P = 21 secs. Local, probably blast at φ = 42°31.2N, λ = 73° 51.3 W | | | | | |
| P | e 17-45-41 | | No trace | | e 17-45-41 | |
| S | e 46-02 | | e 17-46-02 | | e 46-02 | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 July 31d | | | | | | |
| | H = 17-41-33 | | Δ = 34°.4 = 3820 kms. | | | |
| | USCGS: H = 17-40.8 | | | St. Louis: H = 17-41-00 | | |
| | φ = 22°N | | | φ = 22°.6 N | | |
| | λ = 111°W | | | λ = 110°.7 W | | |
| | Δ meas = 4300 kms | | | Depth = 40 kms. | | |
| P | e 17-48-24 | | | | | |
| | e 49-44 | | | | | |
| S | | | e 17-54-00 | | | |
| | e 59-58 | | | | | |
| I | e 18-01 | | e 18-01 | | e 18-01 | |
| P | i+ 21-29-40.5 | | i- 21-29-40.5 | | i- 21-29-40.5 | |
| S | e 48.5 | | e 48.5 | | e 48.5 | |
| L | e 48 | | e 48 | | e 48 | |
| | H = 21-29-33.5 | | Δ = 42 kms. Azimuth NNE | | Local | |
| 1936 August 1d | | | | | | |
| I | e 07-24 | | No trace | | Trace only | |
| | e 08-21-36 | | | | | |
| | e 25-28 | | | | e 08-25-28 | |
| I | e 27 | | e 08-27 | | e 27 | |
| August 2d | | | | | | |
| | No ZSP record | | e 22-23-23 | | e 22-23-23 | |
| August 5d | | | | | | |
| I | e 15-26-28 | | e 15-26-28 | | e 15-26-28 | |
| | | | | | Local | |
| August 11d | | | | | | |
| | H = 20-31-40 | | Δ = 110 kms. | Azimuth SW | | Local |
| P | i- 20-31-58 | | i- 20-31-58 | | i- 21-31-58 | |
| S | i+ 32-11 | | i- 32-11 | | e 32-11 | |
| I | i 19 | | i 17 | | i 19 | |
| August 12d | | | | | | |
| | i- 12-06-19.7 | | i- 12-06-19.7 | | i- 12-06-19.7 | |
| | i 22 | | i 22 | | i 22 | |
| | i- 30 | | i- 30 | | i- 30 | |
| L | e 15-30-38 | | e 15-30-38 | | e 15-30-38 | |
| | | | | | Local | |
| | i- 19-46-16.2 | | i- 19-46-16.2 | | i- 19-46-16.2 | |
| | i 29.2 | | | | | |
| | i- 39 | | | | Local | |
| August 13d | | | | | | |
| | H = 20-02-40 | | Δ = 126°.8 = 14090 kms. | | | |
| | USCGS: H = 20-02.3 | | φ = 8° N, λ = 127°E | | | |
| | Δ meas = 14150 kms. (Location by Manila) | | | | | |
| P' | e 20-21-45 | | | | | |
| PP | i+ 23-37 | | e 2-23-35 | | e 20-23-38 | |
| SS | | | | | e 40-39 | |
| I | e 21-00 | | e 21-00 | | e 21-00 | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 August 15d | | | | | | |
| L | e 03-23 | | Trace only | | Trace only | |
| L | e 06-20 | | Trace only | | Trace only | |
| August 16d | | | | | | |
| L | e 07-16 | | e 07-16 | | e 07-16 | |
| L | e 15-02 | | e 15-02 | | e 15-02 | |
| August 18d | | | | | | |
| | St. Louis: H = 07-07-04 $\varphi$ = 17°N, $\lambda$ = 104°.5 W Depth 80 kms. $\Delta_{P-H}$ = 4200 kms | | | | | |
| P | i+ 07-14-22 | 1.5 11.5 | i+ 07-14-22 | 1.0 2.2 | i+ 07-14-22 | 0.5 4.5 |
| L | e 07-28 | | e 07-28 | | e 07-28 | |
| August 19d | | | | | | |
| L | e 15-36-22 | | e 15-36-22 | | e 15-36-22 Local | |
| | H = 21-40-17 $\Delta$ = 18$ kms. S-P = 21 secs. | | | | Local | |
| P | i+ 21-40-47 | | e 21-40-47 | | i- 21-40-47 | |
| S | i 41-09 | | i 41-09 | | i 41-09 | |
| August 22d | | | | | | |
| | H = 06-51-40 $\Delta$ = 115°.5 = 12835 kms. | | | | | |
| | USC&GS: H = 06-51.5 $\varphi$ = 22°N $\lambda$ = 121°.3 E (Formosa) | | | St. Louis: H = 06-51-38 $\varphi$ = 22°.3 N $\lambda$ = 121°.5 E Depth 50-60 kms. | | |
| P' | e 07-10-18 | | | | | |
| PP | e 11-19 | | | | | |
| (PPP) | e 15-25 | | | | | |
| | | | i- 07-20-55 | 0.5 1.0 | e 07-20-55 | |
| | e 21-59 | | e 21-59 | | | |
| | i+ 22-19 | | | | | |
| L | e 47 | | e 47 | | e 47 | |
| August 23d | | | | | | |
| | H = 21-12-12 $\Delta$ = 12900 kms | | | | | |
| | Strasbourg H = 21-12-14 $\varphi$ = 7° N $\lambda$ = 94° E | | | St. Louis: H = 21-12-19 $\varphi$ = 5°.8 N $\lambda$ = 95°.4 E | | |
| | (Iles Nicobar. Felt in Sumatra, many injured, much damage) | | | | | |
| P' | i- 21-31-21 | 1.2 7.5 | i- 21-31-21 | 0.5 1.0 | i+ 21-31-21 | 0.7 1.2 |
| PP | i- 33-24 | 2.2 5.0 | | | | |
| SKP | i+ 34-38 | 6.0 15.5 | i+ 34-38 | 2.0 3.5 | i- 34-38 | 1.0 1.7 |
| | i- 35-07 | 1.5 3.2 | i+ 35-07 | 0.7 1.2 | | |
| | | | i+ 51-08 | | i+ 51-06 | 1.0 2.5 |
| | | | i- 53-22 | | | |
| I | e 22-20 | | e 22-20 | | e 22-20 | |

| PHASE | Z trace mm i max | N trace mm i max | E trace mm i max |
|---|---|---|---|
| 1936 August 23d | | | |
| | e 22-42-28 | | |
| L | e 23-40 | e 23-40 | e 23-40 |
| August 24d | | | |
| | e 06-17-56 | e 06-17-48 | |
| L | e 19-40 | e 19-40 | e 19-40 |
| August 26d | | | |
| L | e 21-48 | e 21-48 | e 21-48 |
| August 27d | | | |
| | H = 17-22-00.4 | Δ = 174 kms. S-P = 20.2 secs. | Local |
| P | i+ 17-22-28.9 | i- 17-22-28.9 | i- 17-22-28.9 |
| S | i- 49.1 | i- 49.1 | i 49.1 |
| August 28d | | | |
| I | e 15-42-20 | e 15-42-20 | e 15-42-20 |
| | | | Local |
| August 29d | | | |
| | i+ 09-32-58 1.2 5.5 | | Deep Focus? |
| | H = 14-06-59 | Δ = 42 kms. S-P = 5 secs. | Local |
| P | e 14-07-06 | i+ 14-07-06 | i+ 14-07-06 |
| S | e 11 | i+ 11 | i+ 11 |
| | e 14-07-24 | e 14-07-24 | i+ 14-07-24 |
| | e 26 | i- 26 | i+ 26 |
| | | | Local |
| 1936 September 2d | | | |
| | Quarry blasts, General Crushed Stone Co., Blueberry Mt., Winchester, Mass. φ = 42-28-25 N λ = 71-08-15 W Δ = 35.2 km. | | |
| | | H = 14- 19-39.7 | |
| P | i 14-19-45.3 | | i 14-19-45.3 |
| S | i 49.5 | i 14-19-49.5 | i 49.6 |
| S | i 14-49-35.7 | i 14-49-35.7 | i 14-49-35.7 |
| | | H = 14-59-37.4 | |
| P | i 14-59-43.0 | | i 14-59-43.0 |
| S | i 47.3 | i 14-59-47.3 | i 47.3 |
| S | i 15-05- 32.1 | i 15-05-32.1 | i 15-05-32.1 |
| September 3d | | | |
| L | e 05-26 | Trace only | e 05-26 |
| L | e 13-31 | Trace only | e 13-31 |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 September 4d | | | | | | |
| I | e 11-04 | | e 11-04 | | e 11-04 | |
| | e 06-13-13 | | Trace | | e 06-13-13 | |
| | e 43 | | e 06-13-43 | | e 43 | |
| | | | | | Local? | |
| September 5d | | | | | | |
| S | e 17-26-51.5 | | i- 17-26-51.5 | | i+ 17-26- 51.5 | |
| L | e 54 | | e 54 | | e 54 | |
| | | | | | Local | |
| September 6d | | | | | | |
| | e 03-08-20 | | No MSP record | | e 03-07-23 | |
| | | | | | e 08-20 | |
| I | e 18-39 | | e 18-39 | | e 18-39 | |
| September 9d | | | | | | |
| | H = 20-40-49.4 | | Δ = 110 kms. | | S-P = 13.5 | Local |
| P | i- 20-41-07.7 | | i- 20-41-07.7 | | i- 20-41-07.7 | |
| S | i 21.2 | | i 21.2 | | i 21.2 | |
| September 11d | | | | | | |
| | H = 20-14-01.7 | | Δ = 106 kms. | | S-P = 13 secs | Local |
| P | i- 20-14-19.3 | | i- 20-14-19.3 | | i- 20-14-19.3 | |
| S | i 32.2 | | i 32.2 | | i 32.2 | |
| September 13d | | | | | | |
| L | e 21-49-42 | | e 21-49-42 | | e 21-49-42 | |
| | | | | | Local | |
| September 15d | | | | | | |
| | i+ 22-00-49 | 1.2 8.5 | i- 22-00-49 | | Trace only | |
| L | e 20-04-32 | | e 20-04-32 | | e 20-04-32 | |
| | | | | | Local | |
| September 16d | | | | | | |
| | i+ 17-53-56 | 3.2 4.0 | | | | |
| September 17d | | | | | | |
| | Timed blast at the Quabbin Dam Project, Greenwich Village, Mass. | | | | | |
| | H = 12-00-26.2 | | Δ = 63.1 kms. | | | |
| P | i 12-00-38.5 | | i 12-00-38.5 | | i 12-00-38.5 | |
| S | i 46.4 | | i 45.6 | | i 46.4 | |
| L | i 52 | | i 52 | | i 52 | |
| September 19d | | | | | | |
| | St. Louis: H = 01-01-58 | | φ = 4°.3 N, λ = 97°.8 E | | | |
| L | e 02-00 ca | | e 02-00 ca | | e 02-00 ca | |
| | (Earlier traces, if any, lost in very large microseisms) | | | | | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 September 21d | | | | | | |
| | e 23-51-06 | | e 23-51-06 | | e 23-51-06 | |
| | e 53-57 | 10 | e 53-57 | 8.0 | e 53-57 | 14 |
| September 23d | | | | | | |
| | | | e 17-57-13 | | e 17-57-13 | |
| | i 17-57-19 | | i 17-57-19 | | i 19 | |
| | i 23 | | i 23 | | e 23 | |
| | | | | | Local | |
| September 25d | USCGS: H = 12-53.6 | | St. Louis: H = 12-53-30 | | | |
| | φ = 43°.5 N | | φ = 42°.5 N | | | |
| | λ = 128°.2 W | | λ = 131°.0 W | | | |
| L | e 13-18 ca | | e 13-18 ca | | e 13-19 ca | |
| September 28d | | | | | | |
| | e 14-18-55 | | e 14-18-55 | | e 14-18-55 | |
| 1936 October 3d | | | | | | |
| | e 22-09-23 | | | | | |
| | e 11-57 | | | | | |
| | i- 12-53 | | | | | |
| I | e 23-00 | | e 23-00 | | e 22-12-53 | |
| | | | | | e 23-00 | |
| October 5d | | | | | | |
| | e 00-14-06 | | | | | |
| | | | | | Trace | |
| | | | | | e 00-19-24 | |
| | | | e 00-20-58 | | | |
| | e 24-04 | | | | | |
| | e 25-20 | | | | | |
| L | e 52 | | e 52 | | e 30-52 | |
| | | | | | e 52 | |
| | H = 09-44-22 | Δ = 134°.3 = 14920 kms. | | PP-P' = 2-27 | | |
| | USCGS: H = 09-44.3 | St. Louis: H = 09-44-34 | | | | |
| | φ = 1°.0 N | φ = 3°.0 N | | | | |
| | λ = 127°.0 E | λ = 126°.4 E | | | | |
| | Δ meas = 14900 kms. | Depth = 100 kms. | | | | |
| P' | i- 10-03-40 | | | | | |
| | i+ 04-02 | | | | | |
| | i- 05-46 | | | | | |
| PP | i+ 06-07 | | i+ 10-06-07 | | i- 10-06-07 | |
| | | | | | i+ 30 | |
| (PPS) | e 17-34 | | | | | |
| L | e 50 | | e 50 | | e 24-42 | |
| | | | | | e 50 | |
| October 10d | | | | | | |
| I | e 00-49 | | e 00-49 | | e 00-49 | |
| October 14d | | | | | | |
| | i+ 13-57-09.3 | | e 13-57-10 | | e 13-57-10 | |
| | i 10.8 | | | | | |
| | | | | | Local | |

| PHASE | Z trace mm i max | N trace mm i max | E trace mm i max |
|---|---|---|---|
| 1936 October 14d | | | |
| | i- 14-04-20.3 | e 14-04-21 | e 14-04-21 Lcoal |
| | i+ 14-09-23.8 | e 14-09-24 | e 14-09-24 |
| | i+ 25.3 | | Local |
| October 19d | | | |
| L | e 13-14 ca | e 13-14 | e 13-14 |
| October 22d | | | |
| | | e 17-04-59 | e 17-04-59 |
| | e 17-05-01 | | |
| I | e 05 | e 05-05 | e 05-05 Local |
| October 23d | | | |
| | H = 06-24-18 | Δ = 49°.4 = 5490 kms. | S-P = 7-12 |
| | USCGS: H = 06-24-21 | φ = 61°.1N. λ = 149°.2W | $\Delta_{meas}$ = 5380± kms. |
| P | i+ 06-33-06 1.7 25 | i+ 06-33-06 1.0 11 | i- 06-33-06 2.2 9 |
| PcP | i+ 34-31 | | |
| PP | i- 35-01 | | e 35-01 |
| PcS | i+ 38-29 | | |
| S | e 40-18 (T=8secs) | e 40-18 | e 40-18 |
| | | e 42-17 | |
| ScS | i+ 43-04 | i+ 43-04 | i+ 43-03 |
| SS | i- 44-07 | e 44-07 | i- 44-07 |
| L | e 46 | e 46 | e 46 |
| October 24d | | | |
| L | e 00-10 ca | e 00-10 ca | e 00-10 ca |
| L | e 03-53 | e 03-53 | e 03-53 |
| October 26d | | | |
| L | e 20-52 | e 20-52 | e 20-52 |
| | | e 23-20-10 | e 23-20-10 |
| L | e 23-25 | e 25 | e 25 |
| | (Earlier phases confused by very large microseisms) | | |
| October 29d | | | |
| | i- 06-00-10 | i- 06-00-10 | e 06-00-10 |
| L | e 07 | e 07 | e 07 |
| | USCGS: H = 18-38.6 | φ = 12°.0 N λ = 146°.0 E | $\Delta_{meas}$ = 12900± kms. |
| PP | e 18-58-31 | | |
| | e 59-01 | | All phases obscured |
| PS | | e 19-08-19 | |
| PPS | e 19-09-03 | e 09-03 | by microseisms |
| | | e 12-21 | |
| SS | e 14-23 | | |
| | e 17-17 | | |
| L | e 33 | e 33 | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 November 2d | | | | | | |
| | H = 20-45-58 | | Δ = 94°2 = 10465 kms. | | | |
| | USCGS: H = 20-45.9 | | φ = 37°.5 N λ = 142° E | | $\Delta_{meas}$ = 10500± kms. | |
| P | i+ 20-59-16 | 1.5 7.5 | e 20-59-16 | | e 20-59-16 | |
| PP | i+ 21-03-07 | | | | | |
| SKKS | e 10-17 | | | | i+ 21-10-17 | 3.0 9.0 |
| PS | i- 11-35 | 3.0 5.5 | i- 21-11-35 | 3.0 | | |
| L | e 33 | | e 33 | | e 33 | |
| November 3d | | | | | | |
| | e 05-47-36 | | | | e 05-47-36 | |
| | e 46 | | i+ 05-47-46 | 0.7 1.7 | | |
| | | | | | e 50-58 | |
| | i+ 52-51 | | | | e 52-52 | |
| November 7d | | | | | | |
| | H = 12-18-05.3 | | Δ = 66 kms | | Local | |
| P | i 12-18-16.4 | | i 12-18-16.4 | | i 12-18-16.4 | |
| S | i 25.5 | | i 25.3 | | i 24.4 | |
| November 8d | | | | | | |
| L | e 13-27 ca | | e 13-27 ca | | e 13-27 ca | |
| November 9d | | | | | | |
| | H = 02-45- (31) | | Δ = 116.5 kms. | | Local | |
| | Felt in region about Lake Winnepesaukee, New Hampshire. | | | | | |
| | Harvard approximate location from field reports and S-P: | | | | | |
| | φ = 43-33 N, λ = 71-26 W | | | | | |
| P | i 02-45-50.9 | | i 02-45-50.4 | | i 02-45-51.0 | |
| S | i 46-04.1 | | i 46-04.2 | | i 46-03.6 | |
| | The following shock was felt widely throughout northern New Hampshire and northeastern Vermont. Harvard approximate location from field reports: φ = 44-39 N, λ = 71-40 W | | | | | |
| | Δ = 238 kms. | | | | Local | |
| P | i 04-06-26.2 | | i 04-06-26.2 | | i 04-06-26.2 | |
| | i 27.2 | | i 27.2 | | i 27.2 | |
| S | i 50.8 | | i 51.8 | | i 51.8 | |
| November 12d | | | | | | |
| I | e 04-51 | | e 04-51 | | e 04-51 | |
| | e 16-59-28 | | | | | |
| | e 58 | | e 16-59-58 | | e 16-59-59 | |
| | e 17-00-10 | | e 17-00-10 | | e 17-00-10 | |
| | i+ 20-17-11 | 6.0 12 | i+ 20-17-1.. | 2.0 4.0 | | |
| | e 49 | | | | e 20-17-49 | |
| November 13d | | | | | | |
| | H = 12-31-48 | | Δ = 68.7 = 7635 k s. | | S-P = 9-08 | |
| | USCGS: H = 12-31.5 | | φ = 57 N, λ = 163° E | | $\Delta_{meas}$ = 7530 kms | |
| P | i- 12-42-48 | 2.0 32 | i+ 12-42-48 | 2.5 17 | i+ 12-42-48 | 1.0 15 |
| | | | e 46-20 | | | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 November 13d (cont.) | | | | | | |
| (PPP) | | | | | i- 12-47-18 | 3.0 6.0 |
| S | | | e 12-51-56 | | | |
| PS | | | e 52-20 | | e 52-20 | |
| | i+ 13-03-56 | 1.5 8.0 | e 13-03-56 | | | |
| November 14d | | | | | | |
| L | e 01-57 | | e 01-57 | | e 01-57 | |
| November 19d | | | | | | |
| | H = 21-10-30 | | Δ = 31°5 = 3500 kms. | | S-P = 5-16 | |
| | USCGS: H = 21-10.3 | | | St. Louis: | H = 21-10-30 | |
| | φ = 14°N | | | | φ = 14°3 N | |
| | λ = 91° W | | | | λ = 90°7 W | |
| | Δmeas=3650 kms. | | | | Depth - nearly 100 kms. | |
| P | i+ 21-16-56 | 2.0 | i+ 21-16-56 | 2.0 4.0 | i+ 21-16-56 | 1.0 3.5 |
| | | | i- 17-14 | | i- 17-14 | |
| | | | | | i+ 20-52 | |
| | | | i- 21-24 | | | |
| | i- 21-37 | 1.0 4.0 | | | | |
| | | | i+ 22-02 | | e 22-05 | |
| S | i+ 22-12 | | i+ 22-12 | | i+ 22-12 | |
| | e 23-12 | | i+ 23-12 | | | |
| L | e 24.5 | | e 24 | | e 24 | |
| November 20d | | | | | | |
| L | e 15-44 | | e 15-44 | | e 15-44 | |
| | H = 18-19-24 | | Δ = 32.0 = 3555 kms. | | | |
| | USCGS: H = 18-1 .3 | | | St. Louis: | H = 18-19-25 | |
| | φ = 14°5 N | | | | φ = 13°7 N | |
| | λ = 90°5 W | | | | λ = 90°7 W | |
| | Δmeas= 3590 kms | | | | Depth - nearly 100 kms. | |
| P | i+ 18-25-54 | | i+ 18-25-54 | | i+ 18-25-54 | |
| PPP | | | | | i- 27-13 | |
| S | i- 31-13 | | i+ 31-13 | | i+ 31-13 | |
| L | e 34 | | e 34 | | e 34 | |
| November 26d | | | | | | |
| | e 03-18-50 | 1.5 | e 03-18-50 | | e 03-18-50 | |
| I | e 23 | | e 23 | | e 23 | |
| November 29d | | | | | | |
| L | e 06-57 | | e 06-57 | | e 06-57 | |
| | i- 15-05-30 | | i- 15-05-30 | | i- 15-05-30 | |
| 1936 December 5d | | | | | | |
| | i+ 00-48-12 | 2.5 7.0 | i+ 00-48-12 | 1.0 2.0 | Trace only | |
| | i+ 36 | 3.0 6.0 | i+ 36 | 1.0 2.5 | e 00-48-36 | |
| | | | | | Local? | |

| PHASE | Z | trace mm i max | N | trace mm i max | E | trace mm i max |
|---|---|---|---|---|---|---|
| 1936 December 9d | | | e 17-34-10 | | e 17-34-11 Local | |
| December 12d | ( H = 02-19-31 Δ = 23°.6 Interpretation doubtful. Record similar to those of 1935 September 15d 04h06m and 1935 November 10d 1°h 27m, q.v.) | | | | | |
| (P) | i+ 02-24-42 | 0.7 2.5 | e 02-24-42 | | | |
| | i+ 25-01 | 2.5 5.0 | i+ 25-01 | 1.5 4.0 | e 02-25-01 | 2.5 |
| (S) | e 29-03 | | e 29-03 | 5.0 | | |
| | i+ 11 | 2.0 6.0 | | | e 29-11 | 5.0 |
| | e 47-01 | | e 47-01 | | e 47-01 | 5.0 |
| December 20d | H = 02-43-11 | | Δ = 33°5 = 3720 kms | | S-P = 5-30 | |
| | USCGS: H = 02-43.4 | | φ = 13°.4N λ = 88°.8 W | | $\Delta_{meas}$ = 3610 km. | |
| P | i+ 02-49-54 | | i+ 02-49-56 | | e 02-49-55 | |
| | e 50-07 | | e 50-08 | | i+ 50-07 | |
| | e 50-18 | | i+ 50-17 | | i+ 50-22 | |
| | i 36 | | i- 34 | | | |
| S | | | e 55-24 | | | |
| | | | | | e 57-38 | |
| | | | | | e 58-32 | |
| L | e 03-00.5 | | e 03-00.5 | | e 03-00.5 | |
| December 21d | USCGS: H = 19-03.1 | | φ = 53°.1 N λ = 132°.2 W | | | |
| | e 19-24-31 | | i+ 19-24-31 | 8.0 | i+ 19-24-31 | 8.0 |
| | | | i+ 49 | 6.0 22.0 | | |
| | e 27-50 | | i+ 27-50 | 12.0 43. | e 27-50 | 7.0 |
| | USCGS: H = 19-27.9 | | φ = 53° N λ = 132° W | | $\Delta_{meas}$ = 4550 kms. | |
| | e 19-32-05 | | i- 19-32-03 | 3.0 7.0 | e 1932-03 | |
| | e 49-09 | | i+ 49-09 | | e 49-09 | |
| | | | Both records confused by large microseisms | | | |
| December 25d | i+ 20-21-21 | | Trace | | i+ 20-21-21 | |
| L | e 21-05 | | e 21-05 | | e 21-05 | |
| L | e 23-52 | | e 23-52 | | e 23-52 | |
| December 29d | | | | | | |
| L | e 15-45 | | e 15-45 | | e 15-45 | |

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