

# Jesuit Seismological Service Record

of the

**Seismographic Station, Astronomical and Meteorological Observatory**  
Santa Clara College, Cal., U. S. A.



$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^h 7^m 50^s$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM SEPTEMBER 17, 1911

TO SEPTEMBER 22, 1911

| DATE. | CHAR. | COMP. | PHASES.        | TIME.          |     |     | PERIOD.<br>s. | AMP.<br>m. m. | REMARKS.  |  |
|-------|-------|-------|----------------|----------------|-----|-----|---------------|---------------|---|--|
|       |       |       |                | h.             | m.  | s.  |               |               |   |  |
| 17    | I     | N-S   | Pe             | 3:             | 36: | 00  |               |               | Pulsatory Oscillations Sept. 17-22.<br><br>Distance:— 9090 Km S. E.<br>(Epicenter by Iquique, Chile.) Sinusoid. |  |
|       |       |       | S              | 3:             | 38: | 20  |               |               |   |  |
|       |       |       | L              | 3:             | 47: | 00  |               |               |   |  |
|       |       |       | M              | 3:             | 38: | 24  | 1.5           | 1             |   |  |
|       |       |       | C              | 4:             | 07: | 00  |               |               |   |  |
|       |       |       | F              | 5:             | 30: | 00  |               |               |   |  |
|       |       | E-W   |                | P              | 3:  | 13: | 42            |               |   |  |
|       | S     |       |                | 3:             | 38: | 00  |               |               |   |  |
|       | L     |       |                | 3:             | 38: | 42  |               |               |   |  |
|       | M     |       |                | 3:             | 57: | 36  | 6             | 1             |   |  |
|       | C     |       |                | 4:             | 15: | 00  |               |               |   |  |
|       | F     |       |                | 5:             | 32: | 00  |               |               |   |  |
|       | V     |       | P              |                |     |     |               |               |   |  |
| S     |       |       |                |                |     |     |               |               |   |  |
| L     |       |       |                |                |     |     |               |               |   |  |
| M     |       |       |                |                |     |     |               |               |   |  |
| C     |       |       |                |                |     |     |               |               |   |  |
| F     |       |       |                |                |     |     |               |               |   |  |
| 21    | I     | N-S   | P <sub>1</sub> | 7:             | 23: | 34  |               |               | Distance:—  |  |
|       |       |       | S              |                |     |     |               |               |   |  |
|       |       |       | L              | 7:             | 23: | 39  |               |               |   |  |
|       |       |       | M              | 7:             | 23: | 45  | 1             | .75           |   |  |
|       |       |       | C              | 7:             | 23: | 56  |               |               |   |  |
|       |       |       | F              | 7:             | 25: | 03  |               |               |   |  |
|       |       | E-W   |                | P <sub>1</sub> | 7:  | 23: | 34            |               |   |  |
|       | S     |       |                |                |     |     |               |               |   |  |
|       | L     |       |                | 7:             | 23: | 39  |               |               |   |  |
|       | M     |       |                | 7:             | 23: | 54  | 1             | .87           |   |  |
|       | C     |       |                | 7:             | 23: | 56  |               |               |   |  |
|       | F     |       |                | 7:             | 24: | 25  |               |               |   |  |
|       | V     |       | P              |                |     |     |               |               |   |  |
| S     |       |       |                |                |     |     |               |               |   |  |
| L     |       |       |                |                |     |     |               |               |   |  |
| M     |       |       |                |                |     |     |               |               |   |  |
| C     |       |       |                |                |     |     |               |               |   |  |
| F     |       |       |                |                |     |     |               |               |   |  |

|    |   |     |    |           |     |     |
|----|---|-----|----|-----------|-----|-----|
| 22 | I | N-S | Pe | 5: 07: 12 |     |     |
|    |   |     | S  | .         |     |     |
|    |   |     | L  | 5: 07: 36 |     |     |
|    |   |     | M  | 5: 08: 30 | 1.5 | .62 |
|    |   |     | C  | 5: 09: 30 |     |     |
|    |   |     | F  | 5: 23: 00 |     |     |
|    |   | E-W | P  | 5: 07: 24 |     |     |
|    |   |     | S  |           |     |     |
|    |   |     | L  | 5: 08: 16 |     |     |
|    |   |     | M  | 5: 08: 39 | 1.5 | .75 |
|    |   |     | C  | 5: 09: 00 |     |     |
|    |   |     | F  | 5: 23: 00 |     |     |
|    |   | V   | P  |           |     |     |
|    |   |     | S  |           |     |     |
|    |   |     | L  |           |     |     |
|    |   |     | M  |           |     |     |
|    |   |     | C  |           |     |     |
|    |   |     | F  |           |     |     |

Distance:— 516 Km. N. W.

JEROME S. RICARD, S. J., Director  
by A. J. NEWLIN, Asst.

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of the  
 Seismographic Station, Astronomical and Meteorological Observatory  
 Santa Clara College, Cal., U. S. A.

$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM SEPTEMBER 29, 1911

TO OCTOBER 15, 1911

| DATE. | CHAR. | COMP. | PHASES. | TIME. |     |    | PERIOD.<br>s. | AMP.<br>m. m. | REMARKS.  |
|-------|-------|-------|---------|-------|-----|----|---------------|---------------|---|
|       |       |       |         | h.    | m.  | s. |               |               |   |
| 29    | I     | N-S   | P i     | 17:   | 12: | 32 |               |               | Pulsatory Oscillations during day.<br><br><br><br><br><br><br><br><br><br><br><br><br>Distance:— 103.4 Km. S. 38° 52' E.<br>Faint shock felt. |
|       |       |       | S       |       |     |    |               |               |   |
|       |       |       | L       | 17:   | 12: | 39 |               |               |   |
|       |       |       | M       | 17    | 12: | 43 | .8            | 3.87          |   |
|       |       |       | C       | 17:   | 13: | 38 |               |               |   |
|       |       |       | F       | 17:   | 15: | 15 |               |               |   |
|       |       | E-W   | P i     | 17:   | 12: | 30 |               |               |   |
|       |       |       | S       |       |     |    |               |               |   |
|       |       |       | L       | 17:   | 12: | 39 |               |               |   |
|       |       |       | M       | 17:   | 12: | 45 | .8            | 3.12          |   |
|       |       |       | C       | 17:   | 13: | 18 |               |               |   |
|       |       |       | F       | 17:   | 15: | 00 |               |               |   |
|       |       | V     | P       | Trace |     |    |               |               |   |
|       |       |       | S       |       |     |    |               |               |   |
|       |       |       | L       |       |     |    |               |               |   |
|       |       |       | M       |       |     |    |               |               |   |
|       |       |       | C       |       |     |    |               |               |   |
|       |       |       | F       |       |     |    |               |               |   |

|        |   |     |                |            |    |      |
|--------|---|-----|----------------|------------|----|------|
| Oct. 4 | I | N-S | P <sub>i</sub> | 6: 39: 45  |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              | 6: 39: 51  |    |      |
|        |   |     | M              | 6: 39: 56  | 1  | 1.37 |
|        |   |     | C              | 6: 40: 00  |    |      |
|        |   |     | F              | 6: 41: 06  |    |      |
|        |   | E-W | P <sub>i</sub> | 6: 39: 45  |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              | 6: 39: 51  |    |      |
|        |   |     | M              | 6: 39: 56  | 1  | 1.25 |
|        |   |     | C              | 6: 40: 15  |    |      |
|        |   |     | F              | 6: 41: 12  |    |      |
|        |   | V   | P              | Trace      |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              |            |    |      |
|        |   |     | M              |            |    |      |
|        |   |     | C              |            |    |      |
|        |   |     | F              |            |    |      |
| 6      | I | N-S | P <sub>i</sub> | 10: 25: 00 |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              | 10: 41: 00 |    |      |
|        |   |     | M              | 10: 45: 30 | 15 | .75  |
|        |   |     | C              | 10: 46: 00 |    |      |
|        |   |     | F              | 11: 00: 00 |    |      |
|        |   | E-W | P <sub>i</sub> | 10: 24: 57 |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              | 10: 41: 00 |    |      |
|        |   |     | M              | 10: 48: 30 | 15 | .5   |
|        |   |     | C              | 11: 00: 00 |    |      |
|        |   |     | F              | 11: 12: 00 |    |      |
|        |   | V   | P              |            |    |      |
|        |   |     | S              |            |    |      |
|        |   |     | L              |            |    |      |
|        |   |     | M              |            |    |      |
|        |   |     | C              |            |    |      |
|        |   |     | F              |            |    |      |

Distance:— 81.6 Km. S. 42° 23' E.

Oct. 10. Sinusoid on E-W from 13:35:18 to 14:00  
Max. 13:41:12. Amp. 1 m m. Period  
20 secs. On N-S trace of sinusoid from  
13:35:50 to 13:47:36. P. indistinguish-  
able from pulsatory oscillations.

Oct. 14. Sinusoid on E-W from 16:26 to 17:14.  
Max. 17:04:24. Amp. 1 m m. Period  
15 secs. Trace of sinusoid on N. S.

Distance:— 5578 Km. S. 33° 41' E.

Sinusoid from L. (Tidal wave at Guaymas, Mex.  
Cable broken Felt at Port au Prince, Haiti.)

Oct. 15 Very much agitation noticed on E-W  
coincident with Sicilian quakes.

# Jesuit Seismological Service

## Record

of the

Seismographic Station, Astronomical and Meteorological Observatory

Santa Clara College, Cal., U. S. A.



International  
Seismological  
Centre

$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

OCTOBER 17, 1911

NOVEMBER 1, 1911

FROM

TO

| DATE. | CHAR.          | COMP. | PHASES.        | TIME.          |     |     | PERIOD.<br>s. | AMP.<br>m. m. | REMARKS.   |  |  |
|-------|----------------|-------|----------------|----------------|-----|-----|---------------|---------------|--|--|--|
|       |                |       |                | h.             | m.  | s.  |               |               |  |  |  |
| 17    | I              | N-S   | P <sup>i</sup> | 21:            | 25: | 28  |               |               | Distance:— 68 Km. E. 40° 35' S.<br>Very faint shock felt. Pulsatory Oscillations during day. |  |  |
|       |                |       | S              |                |     |     |               |               |  |  |  |
|       |                |       | L              | 21:            | 25: | 32  |               |               |  |  |  |
|       |                |       | M              | 21:            | 25: | 38  | .75           | 1.5           |  |  |  |
|       |                |       | C              | 21:            | 26: | 00  |               |               |  |  |  |
|       |                |       | F              | 21:            | 28: | 00  |               |               |  |  |  |
|       |                | E-W   |                | P <sup>i</sup> | 21: | 25: | 28            |               |  |  |  |
|       | S              |       |                |                |     |     |               |               |  |  |  |
|       | L              |       |                | 21:            | 25: | 32  |               |               |  |  |  |
|       | M              |       |                | 21:            | 25: | 38  | .75           | 1.75          |  |  |  |
|       | C              |       |                | 21:            | 26: | 00  |               |               |  |  |  |
|       | F              |       |                | 21:            | 28: | 00  |               |               |  |  |  |
|       |                |       |                | V              |     | P   |               |               |  |  |  |
|       | S              |       |                |                |     |     |               |               |  |  |  |
|       | L <sup>i</sup> |       |                |                |     | 21: | 25:           | 30            |  |  |  |
|       |                |       | M              | 21:            | 25: | 30  | 1             | 1             |  |  |  |
|       |                |       | C              | 21:            | 25: | 50  |               |               |  |  |  |
|       |                |       | F              | 21:            | 26: | 20  |               |               |  |  |  |
| 18    | I              | N-S   | P <sup>e</sup> | 19:            | 12: | 30  |               |               | Distance:— 474 Km. S. E. (Felt at San Diego, Cal.)<br>Pulsatory Oscillations during day.     |  |  |
|       |                |       | S              |                |     |     |               |               |  |  |  |
|       |                |       | L              | 19:            | 13: | 00  |               |               |  |  |  |
|       |                |       | M              | 19:            | 13: | 56  | 1             | .75           |  |  |  |
|       |                |       | C              | 19:            | 14: | 30  |               |               |  |  |  |
|       |                |       | F              | 19:            | 17: | 00  |               |               |  |  |  |
|       |                | E-W   |                | P <sup>e</sup> | 19: | 12: | 30            |               |  |  |  |
|       | S              |       |                | 19:            | 13: | 00  |               |               |  |  |  |
|       | L              |       |                | 19:            | 13: | 30  |               |               |  |  |  |
|       | M              |       |                | 19:            | 13: | 40  | 1.2           | .75           |  |  |  |
|       | C              |       |                | 19:            | 14: | 08  |               |               |  |  |  |
|       | F              |       |                | 19:            | 14: | 55  |               |               |  |  |  |
|       |                |       |                | V              |     | P   |               |               |  |  |  |
|       | S              |       |                |                |     |     |               |               |  |  |  |
|       | L              |       |                |                |     |     |               |               |  |  |  |
|       |                |       | M              |                |     |     |               |               |  |  |  |
|       |                |       | C              |                |     |     |               |               |  |  |  |
|       |                |       | F              |                |     |     |               |               |  |  |  |



|    |   |     |                |            |       |     |
|----|---|-----|----------------|------------|-------|-----|
| 20 | I | N-S | P <sup>i</sup> | 17: 56: 05 |       |     |
|    |   |     | S              |            |       |     |
|    |   |     | L              | 18: 21: 55 | Trace |     |
|    |   |     | M              |            |       |     |
|    |   |     | C              |            |       |     |
|    |   |     | F              |            |       |     |
|    |   | E-W | P <sup>i</sup> | 17: 55: 55 |       |     |
|    |   |     | S              |            |       |     |
|    |   |     | L              | 18: 21: 55 |       |     |
|    |   |     | M              | 18: 29: 55 | 20    | .25 |
|    |   |     | C              | 18: 40: 25 |       |     |
|    |   |     | F              | 19: 50: 55 |       |     |
|    |   | V   | P              |            |       |     |
|    |   |     | S              |            |       |     |
|    |   |     | L              |            |       |     |
|    |   |     | M              |            |       |     |
|    |   |     | C              |            |       |     |
|    |   |     | F              |            |       |     |

Distance:— 9482 Km. W., slightly N. Sinusoid.

Oct. 29. Trace of Sinusoid, P. 18:16, L. 18:26.  
F. 19:00. E-W more pronounced.

Nov. 1. Trace of Sinusoid, P. 9:49, F. 10:06.  
E-W more pronounced. (Felt at Nicaragua.)

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by A. J. NEWLIN, Asst.

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$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^h 7^m 50^s$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM NOVEMBER 18, 1911

TO DECEMBER 20, 1911

| DATE. | CHAR. | COMP. | PHASES. | TIME. |     |      | PERIOD. | AMP. | REMARKS.   |   |     |
|-------|-------|-------|---------|-------|-----|------|---------|------|--|---|-----|
|       |       |       |         | h.    | m.  | s.   |         |      |  |   |     |
| 16    | IIIr  | N-S   | pi      | 19:   | 20: | 18   | 1.5     |      | Nov. 18. E-W. P. 7:36:10, S. 7:39, L. 7:46:48, M. 7:50:50; Amp. .5 mm., Per. 10 secs.; C 7:58:30, F. 8:02.<br>Distance, 3400 Km. W. Sinusoid.<br>Nov. 20. E-W. P. 13:55:24, L. 14:07:42, F. 14:18.<br>Distance 4106 Km. W.<br>Nov. 21. E-W. P. 4:23:55, L. 4:24, M. 4:24:15; Amp. .8 mm. Per. 1.5 secs.; F. 4:25 |   |     |
|       |       |       | S       | 19:   | 27: | 00   |         |      |  |   |     |
|       |       |       | L       | 19:   | 28: | 05   |         |      |  |   |     |
|       |       |       | M       | 19:   | :30 | 40   |         |      |  | 6 | 7.5 |
|       |       |       | C       | 19:   | 33: | 00   |         |      |  |   |     |
|       |       |       | F       | 20:   | 15: | 00   |         |      |  |   |     |
|       | E-W   | pi    | 19:     | 20:   | 09  | 1.5  |         |      |  |   |     |
|       |       | S     | 19:     | 27:   | 00  |      |         |      |  |   |     |
|       |       | L     | 19:     | 28:   | 05  |      |         |      |  |   |     |
|       |       | M     | 19:     | 33:   | 05  |      | 6       | 12   |  |   |     |
|       |       | C     | 19:     | 34:   | 30  |      |         |      |  |   |     |
|       |       | F     | 21:     | 00:   | 00  |      |         |      |  |   |     |
| v     | pe    | 19:   | 14:     | 20    | 9   | 1.25 |         |      |  |   |     |
|       | S     |       |         |       |     |      |         |      |  |   |     |
|       | L     | 19:   | 29:     | 48    |     |      |         |      |  |   |     |
|       | M     | 19:   | 31:     | 00    |     |      |         |      |  |   |     |
|       | C     |       |         |       |     |      |         |      |  |   |     |
|       | F     | 19:   | 35:     | 42    |     |      |         |      |  |   |     |
| 17    | Id    | N-S   | pi      | 22:   | 02: | 48   | .5      | 4.25 | Distance:— 1301 Km. F .32° S.<br>Sinusoid from 19:46. Much agitation after F. (Mexico quake).<br>Distance:— 52.48 Km. S. 32° 54' E.<br>Very faint shock felt.  |   |     |
|       |       |       | S       |       |     |      |         |      |  |   |     |
|       |       |       | L       | 22:   | 02: | 50   |         |      |  |   |     |
|       |       |       | M       | 22:   | 02: | 57   |         |      |  |   |     |
|       |       |       | C       | 22:   | 03: | 30   |         |      |  |   |     |
|       |       |       | F       | 22:   | 04: | 00   |         |      |  |   |     |
|       | E-W   | pi    | 22:     | 02:   | 48  | .5   | 2.75    |      |  |   |     |
|       |       | S     |         |       |     |      |         |      |  |   |     |
|       |       | L     | 22:     | 02:   | 50  |      |         |      |  |   |     |
|       |       | M     | 22:     | 02:   | 50  |      |         |      |  |   |     |
|       |       | C     | 22:     | 03:   | 30  |      |         |      |  |   |     |
|       |       | F     | 22:     | 03:   | 45  |      |         |      |  |   |     |
| v     | P     |       |         |       | .5  | 1    |         |      |  |   |     |
|       | S     |       |         |       |     |      |         |      |  |   |     |
|       | li    | 22:   | 02:     | 48    |     |      |         |      |  |   |     |
|       | M     | 22:   | 02:     | 48    |     |      |         |      |  |   |     |
|       | C     |       |         |       |     |      |         |      |  |   |     |
|       |       |       |         |       |     |      |         |      |  |   |     |

|    |    |     |    |            |    |      |
|----|----|-----|----|------------|----|------|
| 19 | ld | N-S | pi | 12: 39: 42 |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  | 12: 39: 44 |    |      |
|    |    |     | M  | 12: 39: 57 | 1  | 3.5  |
|    |    |     | C  | 12: 40: 30 |    |      |
|    |    |     | F  | 12: 41: 00 |    |      |
|    |    | E-W | pi | 12: 39: 36 |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  | 12: 39: 40 |    |      |
|    |    |     | M  | 12: 39: 57 | .8 | 1.75 |
|    |    |     | C  | 12: 40: 12 |    |      |
|    |    |     | F  | 12: 40: 56 |    |      |
|    |    | v   | P  | Trace      |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  |            |    |      |
|    |    |     | M  |            |    |      |
|    |    |     | C  |            |    |      |
|    |    |     | F  |            |    |      |

Distance:— 67 Km. S. 26° 34' E.

Dec. 20. E-W. 5:08 to 5:41, trace of Sinusoidal Pulsatory oscillations during day.

JEROME S. RICARD, S. J., Director  
by A. J. NEWLIN, Asst.



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of the

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Santa Clara College, Cal., U. S. A.



$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM DECEMBER 21, 1911

TO DECEMBER 26, 1911

| DATE. | CHAR. | COMP. | PHASES. | TIME. |     |    | PERIOD. | AMP. | REMARKS.  |
|-------|-------|-------|---------|-------|-----|----|---------|------|---|
|       |       |       |         | h.    | m.  | s. |         |      |   |
| 21    | Id    | N-S   | pe      | 15:   | 27: | 10 |         |      | Distance:— 125 Km. E. 9° S.<br>Very faint shock felt. |
|       |       |       | S       |       |     |    |         |      |   |
|       |       |       | L       | 15:   | 27: | 20 |         |      |   |
|       |       |       | M       | 15:   | 27: | 30 | .5      | .75  |   |
|       |       |       | C       | 15:   | 27: | 42 |         |      |   |
|       |       |       | F       | 15:   | 28: | 00 |         |      |   |
|       | E-W   | Pe    | 15:     | 27:   | 00  |    |         |      |   |
|       |       | S     |         |       |     |    |         |      |   |
|       |       | L     | 15:     | 27:   | 12  |    |         |      |   |
|       |       | M     | 15:     | 27:   | 24  | .5 | 1       |      |   |
|       |       | C     | 15:     | 27:   | 36  |    |         |      |   |
|       |       | F     | 15:     | 28:   | 00  |    |         |      |   |
|       | V     | P     | Trace   |       |     |    |         |      |   |
|       |       | S     |         |       |     |    |         |      |   |
|       |       | L     |         |       |     |    |         |      |   |
| M     |       |       |         |       |     |    |         |      |   |
| C     |       |       |         |       |     |    |         |      |   |
| F     |       |       |         |       |     |    |         |      |   |
| 22    | Ir    | N-S   | Pe      | 13:   | 00: | 00 |         |      | Distance:— 3890 Km. E 29° 45' S.                      |
|       |       |       | S       |       |     |    |         |      |   |
|       |       |       | L       | 13:   | 11: | 45 |         |      |   |
|       |       |       | M       | 13:   | 12: | 20 | 3       | 1    |   |
|       |       |       | C       | 13:   | 15: | 36 |         |      |   |
|       |       |       | F       | 13:   | 26: | 00 |         |      |   |
|       | E-W   | Pe    | 13:     | 00:   | 00  |    |         |      |   |
|       |       | S     |         |       |     |    |         |      |   |
|       |       | L     | 13:     | 11:   | 45  |    |         |      |   |
|       |       | M     | 13:     | 15:   | 30  | 5  | 1.75    |      |   |
|       |       | C     | 13:     | 15:   | 45  |    |         |      |   |
|       |       | F     | 13:     | 31:   | 00  |    |         |      |   |
|       | V     | P     |         |       |     |    |         |      |   |
|       |       | S     |         |       |     |    |         |      |   |
|       |       | L     |         |       |     |    |         |      |   |
| M     |       |       |         |       |     |    |         |      |   |
| C     |       |       |         |       |     |    |         |      |   |
| F     |       |       |         |       |     |    |         |      |   |

|    |    |     |    |            |    |      |
|----|----|-----|----|------------|----|------|
| 22 | Id | N-S | Pe | 16: 38: 23 |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  | 16: 38: 36 |    |      |
|    |    |     | M  | 16: 38: 44 | .5 | .75  |
|    |    |     | C  |            |    |      |
|    |    |     | F  | 16: 39: 18 |    |      |
|    |    | E-W | Pe | 16: 38: 23 |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  | 16: 38: 32 |    |      |
|    |    |     | M  | 16: 38: 37 | .5 | 1.25 |
|    |    |     | C  | 16: 38: 46 |    |      |
|    |    |     | F  | 16: 39: 06 |    |      |
|    |    | V   | P  | Trace      |    |      |
|    |    |     | S  |            |    |      |
|    |    |     | L  |            |    |      |
|    |    |     | M  |            |    |      |
|    |    |     | C  |            |    |      |
|    |    |     | F  |            |    |      |

Distance:— 132 Km. E. 30° 58' S.

Dec. 26. N-S. P. 2:18:10, L. 2:18:21, M. 2:18:54; Per. 1 sec., Amp. 1.5 mm.; C 2:19, F. 2:20.  
 E-W. P. 2:18:12, L. 2:18:22, M. 2:18:43; Per. 1 sec., Amp. 1.5 mm.; C. 2:19 F. 2:20. Distance 118 Km. S. W.

JEROME S. RICARD, S. J., Director  
 by Albert J. NEWLIN, Asst.

19 11-12

# Jesuit Seismological Service Record

of the  
Seismographic Station, Astronomical and Meteorological Observatory  
Santa Clara College, Cal., U. S. A.

$\phi = 37^{\circ} 26' 36''$  N  $\lambda = 121^{\circ} 57' 03'' = 8^{\text{h}} 7^{\text{m}} 50^{\text{s}}$  W; elevation 27.43 M.

TIME: Mean Civil Greenwich, midnight to midnight, 0-24 hrs.

INSTRUMENTS: Wiechert 80 kg., astatic, horizontal and vertical pendulums.

NOMENCLATURE: International.

FROM DECEMBER 31, 1911 TO FEBRUARY 1, 1912

| DATE. | CHAR. | COMP. | PHASES. | TIME. |     |    | PERIOD.<br>s. | AMP.<br>m. m. | REMARKS.                                     |
|-------|-------|-------|---------|-------|-----|----|---------------|---------------|--|
|       |       |       |         | h.    | m.  | s. |               |               |  |
| 31    | IId   | N-S   | P i     | 21:   | 40: | 52 |               |               | Distance:— 74 Km. S. E.<br>Light shock felt. |
|       |       |       | S       |       |     |    |               |               |  |
|       |       |       | L       | 21:   | 40: | 57 |               |               |  |
|       |       |       | M       | 21:   | 41: | 08 | .8            | 6.5           |  |
|       |       |       | C       | 21:   | 41: | 55 |               |               |  |
|       |       |       | F       | 21:   | 43: | 40 |               |               |  |
|       |       | E-W   | P i     | 21:   | 40: | 52 |               |               |  |
|       |       |       | S       |       |     |    |               |               |  |
|       |       |       | L       | 21:   | 40: | 57 |               |               |  |
|       |       |       | M       | 21:   | 41: | 12 | .8            | 6.5           |  |
|       |       |       | C       | 21:   | 41: | 30 |               |               |  |
|       |       |       | F       | 21:   | 44  |    |               |               |  |
|       |       | V     | P       |       |     |    |               |               |  |
|       |       |       | S       |       |     |    |               |               |  |
|       |       |       | L i     | 21:   | 40: | 51 |               |               |  |
|       |       |       | M       | 21:   | 41: | 13 | .8            | 2.75          |  |
|       |       |       | C       | 21:   | 41: | 30 |               |               |  |
|       |       |       | F       | 21:   | 42  |    |               |               |  |

|        |     |     |     |            |    |      |
|--------|-----|-----|-----|------------|----|------|
| Jan. 5 | Ilv | N-S | P i | 3: 52: 58  |    |      |
|        |     |     | S   | 3: 53: 15  |    |      |
|        |     |     | L   | 3: 53: 42  |    |      |
|        |     |     | M   | 3: 53: 49  | 1  | 10.5 |
|        |     |     | C   | 3: 54: 58  |    |      |
|        |     |     | F   | 4: 01      |    |      |
|        |     | E-W | P i | 3: 52: 57  |    |      |
|        |     |     | S   | 3: 53: 15  |    |      |
|        |     |     | L   | 3: 53: 30  |    |      |
|        |     |     | M   | 3: 53: 48  | 1  | 8    |
|        |     |     | C   | 3: 55: 24  |    |      |
|        |     |     | F   | 4: 01      |    |      |
|        |     | V   | P   |            |    |      |
|        |     |     | S   |            |    |      |
|        |     |     | L   |            |    |      |
|        |     |     | M   |            |    |      |
|        |     |     | C   |            |    |      |
|        |     |     | F   |            |    |      |
| 21     | lld | N-S | P i | 14: 07: 30 |    |      |
|        |     |     | S   |            |    |      |
|        |     |     | L   | 14: 07: 34 |    |      |
|        |     |     | M   | 14: 07: 39 | .8 | 5.75 |
|        |     |     | C   | 14: 08: 20 |    |      |
|        |     |     | F   | 14: 10: 30 |    |      |
|        |     | E-W | P i | 14: 07: 30 |    |      |
|        |     |     | S   |            |    |      |
|        |     |     | L   | 14: 07: 34 |    |      |
|        |     |     | M   | 14: 07: 54 | .8 | 5.75 |
|        |     |     | C   | 14: 07: 55 |    |      |
|        |     |     | F   | 14: 10: 30 |    |      |
|        |     | V   | P   |            |    |      |
|        |     |     | S   |            |    |      |
|        |     |     | L i | 14: 07: 31 |    |      |
|        |     |     | M   | 14: 07: 31 | .8 | 3.75 |
|        |     |     | C   | 14: 08     |    |      |
|        |     |     | F   | 14: 08: 20 |    |      |

Jan. 14. <sup>n</sup>lv. N-S. Pe. 15:54:56, S. 15:58:18, L. 16:01:09, M. 16:11:11, per. 6 secs., amp. .25 mm., C. 16:11:06, F. 16:51:11. E-W: Pe. 15:54:55, S. 15:58:18, C. 16:01:09, M. 16:09, per. 6 secs., amp. .62 mm., C. 16:09:50, F. 17:30. Distance: 1726 Km. W 21°58' N. Sinusoid. (Alaska quake)

Distance:— 358 Km. S. 37° 18' E.  
(Felt at Fresno and along border of central California and Nevada.)

Jan. 15. Ilv. N-S. Pi. 19:08:14, L. 19:08:25, M. 19:08:37, per. 1 sec., amp. 12.25 mm., C. 19:09:40, F. 19:12. E-W. Pi. 19:08:13, L. 19:08:24, M. 19:08:36, per. 1 sec., amp. 10.5 mm., C. 19:09:20, F. 19:13. Distance: 85 Km. N. 40° 36' W.  
Oscillations during day.

Distance:— 67 Km. S. E.  
Light shock felt.

Feb. 1. <sup>n</sup>lv. N-S. Trace. E-W. Pe. 8:17:38, L. 8:26, per. 6 secs., M. 8:18:16, per. 1.5 secs., Amp. 1 mm., F. 9:00. Irregular sinusoid. (Alaska quake.)