

SHASTA DAM SEISMOLOGICAL STATION

INSTRUMENTAL REPORT.....April, May, June, 1946

The Shasta Dam Station continued in routine operation throughout the period of the report.

In the following report, Symbol I represents an earthquake having a small trace amplitude on the record, II represents a fairly well recorded shock, and III large trace amplitudes. Barely recorded shocks are marked "Trace". Local shocks are less than 70 mi. from the station, regional shocks from 70 to 700 mi., and distant shocks greater than 700 mi. Regional shocks of unknown distance sometimes may be classed as distant.

Seismicity in the immediate locality of the station continued light. About 7 small shocks from this area were recorded.

The Mt. Lassen area was more active during this period and into July than any time since the station was in operation. Marked periods of activity are: April 29-30 continuing until May 3 during which 156 shocks were recorded; and June 19-21 continuing to the end of the month during which more than 160 shocks were recorded. The main swarms - June 20, 19:34 PST, and another at June 21, 01:23 PST were strong enough to be recorded by the Lake Mead stations. These and others were undoubtedly felt in the National Park area.

Another activity peak in the Mt. Lassen area began about July 6, which will be covered in the next report.

Confidential-not for publication.



## SEISMOLOGICAL STATION

MONTH OF April

Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                                                                                     | Phase | G. C. T.       |      |      | Period<br>T | Trace Amplitude, .01 mm |     |    | $\Delta t$ | Remarks                                    |
|------------------------------------------------------------------------------------------|-------|----------------|------|------|-------------|-------------------------|-----|----|------------|--------------------------------------------|
|                                                                                          |       | h              | m    | s    |             | E                       | N   | Z  |            |                                            |
| 1                                                                                        | e     | 06             | 15   | 38   |             |                         |     |    | -4.8       | Trace regional?                            |
|                                                                                          | e     |                |      | 43   |             |                         |     |    |            |                                            |
| 1                                                                                        | 1P    | 07             | 17   | 14.8 |             |                         | o   | +  | -4.9       | I regional                                 |
|                                                                                          | e     |                |      | 39   |             |                         |     |    |            |                                            |
|                                                                                          | es    |                |      | 49   |             |                         |     |    |            |                                            |
| 1                                                                                        | 1P    | 11             | 00   | 40.5 |             |                         |     |    | -4.9       | I distant                                  |
| 1                                                                                        | ep    | 12             | 35   | 07   |             |                         |     | -  | -4.9       | II distant- gradual beginning; COS,        |
|                                                                                          | i     |                |      | 08   |             |                         |     | +  |            | 54° N, 164° W; o = 12:28.9; $\Delta$ = 31° |
|                                                                                          | i     |                |      | 30   | 1.0         |                         |     |    |            | First of series of shocks centered on      |
|                                                                                          | i     |                |      | 45   |             |                         |     |    |            | Unalak Island, Alaska, some of which       |
|                                                                                          | es?   |                | 39   | 40   |             |                         |     |    |            | caused severe seismic sea waves.           |
|                                                                                          | coda  |                |      |      | 7-8         |                         |     |    |            | Unless otherwise designated the fol-       |
| shocks or reflections thereof at the surface or at the core: They are being listed here- |       |                |      |      |             |                         |     |    |            |                                            |
| with; without other designation.                                                         |       |                |      |      |             |                         |     |    |            |                                            |
| 1                                                                                        | 1     | 12             | 41   | 53   |             |                         |     | +  | -4.9       | I                                          |
| 1                                                                                        | 1     | 12             | 58   | 55   |             |                         |     | -  |            | I                                          |
| 1                                                                                        | 1P    | 13             | 02   | 01.8 | 1.0         | -22                     | +25 | 60 |            | II-dilatation from the NW probably         |
|                                                                                          | i     |                | 04   | 59   | 1.0         | +45                     | 45  |    |            | main shock of swarm                        |
|                                                                                          | is    |                | 07   | 05   |             |                         |     |    |            |                                            |
|                                                                                          | is?   |                | 08   | 39   | 2.0         |                         |     |    |            |                                            |
| 1                                                                                        | 3     | 13:08 to 13:35 |      |      |             |                         |     |    |            | Traces                                     |
| 1                                                                                        | 1     | 13             | 35   | 02   |             |                         |     |    |            | I                                          |
| 1                                                                                        | 1     | 13             | 40   | 43   |             |                         |     |    |            | I                                          |
| 1                                                                                        | 1     | 13             | 46   | 47   |             |                         |     |    |            | I                                          |
| 1                                                                                        | 7     | 13:50 to 14:50 |      |      |             |                         |     |    |            | Traces                                     |
| 1                                                                                        | 1     | 14             | 53   | 56   | 1.0         |                         |     |    |            | I                                          |
|                                                                                          | 1     |                | 55   | 00   | 2.0         |                         |     |    |            |                                            |
| 1                                                                                        | 1     | 15             | 18.5 |      |             |                         |     |    |            | Trace                                      |
| 1                                                                                        | 1     | 15             | 26   | 35.5 |             |                         |     | -5 |            | I                                          |
| 1                                                                                        | e     | 15             | 56   | 47   |             |                         |     |    |            | I                                          |
|                                                                                          | i     |                | 58   | 18.5 |             |                         |     |    |            |                                            |
| 1                                                                                        | 1     | 16             | 14   | 46   |             |                         |     |    |            | Trace                                      |
|                                                                                          | 1     |                | 16   | 18   |             |                         |     |    |            |                                            |



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| Date | Phase                                                                   | G. C. T. |      |      | Period<br>T | Trace Amplitude, .01 mm |   |      | $\Delta t$ | Remarks |
|------|-------------------------------------------------------------------------|----------|------|------|-------------|-------------------------|---|------|------------|---------|
|      |                                                                         | h        | m    | s    |             | E                       | N | Z    |            |         |
| 1    | 1                                                                       | 16       | 52   | 51   |             |                         |   | -5   | I          |         |
|      | 1                                                                       |          | 56   | 21   |             |                         |   |      |            |         |
| 1    | 1                                                                       | 17       | 05   | 30   |             |                         |   |      | I          |         |
|      | 1                                                                       |          | 08   | 28   |             |                         |   |      |            |         |
| 1    | 1                                                                       | 18       | 03   | 10   |             |                         |   |      | I          |         |
|      | 1                                                                       |          | 05   | 48   |             |                         |   |      |            |         |
| 1    | 1                                                                       | 18       | 19   | 00   |             |                         |   |      | I          |         |
|      | 1                                                                       |          | 22   | 01   |             |                         |   |      |            |         |
| 1    | 1                                                                       | 18       | 34   | 07.7 |             |                         |   | -1   | I          |         |
|      | 1                                                                       |          | 35   | 49   |             |                         |   |      |            |         |
| 1    | 1                                                                       | 19       | 03   | 50   | 1           |                         |   | -5.1 | I          |         |
|      | e                                                                       |          | 04   | 59   | 2           |                         |   |      |            |         |
|      | 1                                                                       |          | 06   | 53   | 1           |                         |   |      |            |         |
|      | e                                                                       |          | 08   | 58   | 3           |                         |   |      |            |         |
|      | 1                                                                       | 10       | 34.5 |      | 2           |                         |   |      |            |         |
|      | e                                                                       |          | 14   | 25   |             |                         |   |      |            |         |
|      | coda                                                                    |          |      |      | 7.5         |                         |   |      |            |         |
| 1    | 1                                                                       | 20       | 10   | 04.5 |             |                         |   | -5.2 | I          |         |
| 1    | 1                                                                       | 20       | 44   | 12   |             |                         |   | -5.2 | I          |         |
|      | 1                                                                       |          | 49   | 31   |             |                         |   |      |            |         |
| 1-2  | 30 traces distant shocks, most of which probably belong to Alaska Swarm |          |      |      |             |                         |   |      |            |         |
| 2    | 1                                                                       | 01       | 04   | 41.0 |             |                         |   | -5.5 | I          |         |
| 2    | 1                                                                       | 01       | 36   | 56.0 |             |                         |   | -5.5 | I          |         |
| 2    | 1                                                                       | 04       | 19   | 54.5 | .8          |                         |   | -5.6 | I          |         |
|      | e                                                                       |          | 20   | 53   | 3           |                         |   |      |            |         |
|      | 1                                                                       |          | 22   | 50.5 | 1           |                         |   |      |            |         |
|      | e                                                                       |          | 25   | 00   |             |                         |   |      |            |         |
|      | e                                                                       |          | 26   | 34   |             |                         |   |      |            |         |
|      | e                                                                       |          | 30   | 40   | 3.5         |                         |   |      |            |         |
| 2    | e                                                                       | 04       | 59   | 50   |             |                         |   | -5.6 | Traces     |         |
| 2    | 1                                                                       | 05       | 44   | 28   |             |                         |   | -5.6 | I          |         |
|      | 1                                                                       |          | 47   | 28   |             |                         |   |      |            |         |
| 2    | 1                                                                       | 06       | 03   | 20   |             |                         |   | -5.7 | I          |         |
|      | 1                                                                       |          | 06   | 20   |             |                         |   |      |            |         |
| 2    | 1                                                                       | 11       | 32   | 18.5 |             |                         |   | -6   | I          |         |



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|------|-------|----------|----|------|-------------|-------------------------|---|---|------------|---------|
|      |       | h        | m  | s    |             | E                       | N | Z |            |         |
| 2    | 1     | 13       | 10 | 36.5 |             |                         |   |   | -6         | I       |
| 2    | 1     | 14       | 33 | 41.5 | 2.1         |                         |   |   | -6.1       |         |
|      | 1     |          | 36 | 42   | 1           |                         |   |   |            |         |
| 2    | 1?    | 15       | 26 | 03   |             |                         |   |   | -6.2       | I       |
|      | 1     |          |    | 16   |             |                         |   |   |            |         |
|      | 1     |          | 29 | 07.5 |             |                         |   |   |            |         |
| 2    | 1     | 16       | 36 | 42   | 1           |                         |   | - | -6.2       | I       |
|      | eE    |          | 37 | 42   | 2           |                         |   |   |            |         |
|      | eZ    |          |    | 58   |             |                         |   |   |            |         |
|      | 1     |          | 39 | 38   | 1           |                         |   |   |            |         |
|      | eE    |          | 41 | 48   |             |                         |   |   |            |         |
|      | 1     |          | 43 | 20   | 2           |                         |   |   |            |         |
|      | e     |          | 45 | 59   | 7           |                         |   |   |            |         |
|      | e     |          | 47 | 15   | 3           |                         |   |   |            |         |
| 2    | 1     | 21       | 55 | 37.5 |             |                         |   |   | -6.5       | I       |
| 2    | 1     | 23       | 07 | 00.5 |             |                         |   |   | -6.5       | I       |
|      | 1     |          | 10 | 00   |             |                         |   |   |            |         |
| 3    | 1     | 03       | 31 | 45   |             |                         |   |   | -6.6       | I       |
|      | 1     |          | 33 | 27.5 |             |                         |   |   |            |         |
| 3    | 1     | 04       | 04 | 59   | 1           |                         |   | - | -6.7       | I       |
|      | 1     |          | 07 | 31   | 1           |                         |   |   |            |         |
|      | 1     |          | 13 | 18   | 1           |                         |   |   |            |         |
| 3    | 1?    | 09       | 04 | 48   | 1           |                         |   |   | -7         | I       |
|      | 1     |          | 05 | 32   | 3           |                         |   |   |            |         |
|      | e     |          |    | 45   |             |                         |   |   |            |         |
|      | 1     |          | 07 | 46   | 1           |                         |   |   |            |         |
|      | e     |          | 15 | 22   | 2.5         |                         |   |   |            |         |
| 3    | eP    | 18       | 42 | 36.5 |             |                         |   |   | -7.4       | Trace   |
| 3    | 1P    | 19       | 15 | 36   |             |                         |   |   | -7.4       | Trace   |
| 3    | 1P    | 21       | 46 | 50.5 |             |                         |   |   | -7.5       | I       |
| 4    | 1P    | 07       | 21 | 28   |             |                         |   |   | -8.3       | I       |
| 4    | 1P    | 09       | 01 | 05.5 |             |                         |   |   | -8.4       | Trace   |
| 4    | eP    | 12       | 18 | 04.5 |             |                         |   |   | -8.5       | Trace   |
| 4    | 1P    | 16       | 37 | 22   |             |                         |   |   | -8.9       | I       |
|      | e     |          | 38 | 19   |             |                         |   |   |            |         |

May belong to earlier shock



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|------|-------|----------|----|------|-------------|-------------------------|---|---|------------|---------------|
|      |       | h        | m  | s    |             | E                       | N | Z |            |               |
| 4    | eP    | 21       | 31 | 56   |             | -                       | + | - | -9.4       | I             |
|      | iP    |          |    | 57   |             |                         |   | - |            |               |
|      | e     |          | 32 | 48   |             |                         |   |   |            |               |
|      | e     |          | 33 | 18   |             |                         |   |   |            |               |
|      | i     |          | 34 | 50.5 |             |                         |   |   |            |               |
|      | eS    |          | 37 | 00   |             |                         |   |   |            |               |
|      | e     |          | 42 | 28   |             |                         |   |   |            |               |
| 5    | iP    | 01       | 28 | 26   |             |                         |   |   | -9.7       | Trace         |
| 5    | eP    | 04       | 47 | 00   |             |                         |   |   | -9.9       | Trace         |
| 5    | iP    | 07       | 01 | 59.5 |             |                         |   |   | -10.1      | I             |
| 5    | iP    | 07       | 36 | 48.5 |             |                         |   |   | -10.1      | I             |
| 5    | i     | 08       | 12 | 20   |             |                         |   |   | -10.2      | Trace         |
| 5    | iP    | 18       | 36 | 51   |             |                         |   |   | -10.8      | I             |
| 5    | eP    | 20       | 25 | 07   |             |                         |   |   | -10.9      | Trace         |
| 5    | e     | 21       | 07 | 42   |             |                         |   |   | -10.9      | Trace distant |
| 5    | iP    | 21       | 57 | 37.5 | 1.0         | +                       |   | + | -10.9      | I distant     |
|      | i     |          |    | 52   |             |                         |   |   |            |               |
|      | iP    |          |    | 06   | 1.0         |                         |   |   |            |               |
| 6    | eP    | 03       | 25 | 47   | 2           |                         |   |   | -11        | I distant     |
|      | e     |          | 26 | 29   | 2           |                         |   |   |            |               |
| 6    | iP    | 04       | 58 | 49   | 1.2         |                         |   | - | -11.1      | I distant     |
|      | e     |          | 59 | 49   | 2           |                         |   |   |            |               |
|      | i     | 05       | 01 | 50   | 1           |                         |   |   |            |               |
|      | eS    |          | 03 | 51   |             |                         |   |   |            |               |
|      | i     |          | 05 | 25   | 1           |                         |   |   |            |               |
|      | e     |          | 08 | 19   | 3.5         |                         |   |   |            |               |
| 6    | eP    | 06       | 02 | 37   |             |                         |   |   | -11.1      | Trace distant |
|      |       |          | 05 | 25   |             |                         |   |   |            |               |
| 6    | eP    | 14       | 05 | 11   | 1.5         |                         |   | + | -11.5      | I distant     |
| 6    | iP    | 14       | 28 | 16.5 |             |                         |   | + | -11.5      | I distant     |
| 7    | eP    | 05       | 20 | 35   |             |                         |   |   | -12.2      | Trace distant |
| 7    | eP    | 07       | 23 | 20   |             |                         |   |   | -12        | Trace distant |
| 7    | i     | 10       | 13 | 42   |             |                         |   |   | -12        | Trace distant |
| 7    | i     | 14       | 35 | 18   |             |                         |   |   | -11.8      | Trace distant |



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| Date | Phase | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |   |    | $\Delta t$ | Remarks              |
|------|-------|----------|----|------|-------------|-------------------------|---|----|------------|----------------------|
|      |       | h        | m  | s    |             | E                       | N | Z  |            |                      |
| 7    | 1P    | 22       | 59 | 09.5 |             |                         |   | -  | -12        | I distant            |
| 8    | 1P    | 09       | 02 | 54   |             |                         |   |    | -12.4      | Trace distant        |
| 8    | 1P    | 15       | 23 | 23   |             |                         |   | -  | -12.5      | I distant            |
|      | 1     |          | 26 | 30.5 |             |                         |   |    |            |                      |
| 8    | 1P    | 17       | 42 | 44   |             |                         |   | -  | -12.5      | I distant            |
| 9    | 1P    | 02       | 44 | 20.5 |             |                         |   | +  | -13        | I distant            |
| 9    | ep    | 07       | 14 | 30   |             |                         |   |    | -13.2      | Trace distant        |
| 9    | 1P    | 10       | 41 | 26.5 |             |                         |   | +  | -13.4      | I distant            |
|      | 1     |          |    | 39   |             |                         |   |    |            |                      |
| 9    | 1P    | 18       | 03 | 46.1 |             | -15                     | 7 | +  | -13.7      | Trace local - 50 mi. |
|      | 1S2N  |          |    | 56.1 |             |                         |   |    |            |                      |
|      | 1SE   |          |    | 57.5 |             |                         |   |    |            |                      |
| 9    | 1     | 20       | 06 | 58   |             |                         |   |    | -13.8      | Trace distant        |
| 10   | 1P    | 17       | 13 | 33   |             |                         |   |    | -15        | I regional           |
|      | 1     |          |    | 34.5 |             |                         |   | +  |            |                      |
|      | e     |          | 14 | 17   |             |                         |   |    |            |                      |
| 10   | ep    | 23       | 00 | 11   |             |                         |   |    | -15        | I distant            |
| 11   | 1P    | 00       | 09 | 03.2 |             |                         |   | +  | -15.1      | I local - 49 mi.     |
|      | 1S    |          |    | 13   |             |                         |   |    |            |                      |
| 11   | 1P    | 00       | 22 | 20.5 |             |                         |   | -? | -15.1      | I regional           |
|      | es    |          |    | 40   |             |                         |   |    |            |                      |
| 11   | ep    | 01       | 03 | 28   |             |                         |   |    | -15.1      | Trace distant        |
| 11   | e     | 02       | 06 | 37   |             |                         |   |    | -15.2      | I distant            |
|      | ep    |          |    | 39   |             |                         |   |    |            |                      |
|      | e     |          | 08 | 29   |             |                         |   |    |            |                      |
|      | e     |          | 10 | 53   |             |                         |   |    |            |                      |
|      | coda  |          |    |      | 16          |                         |   |    |            |                      |
| 11   | e     | 06       | 20 | 00.6 |             |                         |   |    | -15.5      | I local - 51 mi.     |
|      | 1P    |          |    | 01.8 |             |                         |   |    |            |                      |
|      | 1S    |          |    | 10.8 |             |                         |   |    |            |                      |
|      | 1SE   |          |    | 12.6 |             |                         |   |    |            |                      |
| 11   | 1P    | 06       | 27 | 50.3 |             |                         |   |    | -15.4      | Trace local - 49 mi. |
|      | 1S    |          |    | 59.1 |             |                         |   |    |            |                      |
|      | es    |          |    | 60.5 |             |                         |   |    |            |                      |



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|------|-------|----------|------|------|-------------|-------------------------|----|----|------------|------------------------------------------|
|      |       | h        | m    | s    |             | E                       | N  | Z  |            |                                          |
| 11   | ep    | 13       | 33   | 41   |             |                         |    |    | -15.5      | I distant                                |
| 11   | ep    | 23       | 08   | 16.5 |             |                         |    |    | -16.4      | Trace distant                            |
|      | 1P    |          |      | 25   | 1           |                         |    |    |            |                                          |
|      | 1     |          | 11   | 10.5 | 1           |                         |    |    |            |                                          |
| 11   | 1     | 23       | 35.1 |      |             | -                       |    |    | -16.4      | I local - 8 mi.                          |
| 12   | 1     | 08       | 11   | 48.5 |             |                         |    |    | -17        | I local - probably 2 shocks              |
|      | 1P    |          |      | 52.5 |             | -25                     | +? | +  |            | ca - 50 mi. ESE                          |
|      | 1S?   |          |      | 58   |             |                         |    |    |            |                                          |
|      | 1S    |          | 12   | 01.5 |             |                         |    |    |            |                                          |
| 12   | 1P    | 09       | 58   | 42.5 |             | -                       | -? | +  | -17        | Trace local - 43 mi. E                   |
|      | 1P    |          |      | 43   |             |                         |    |    |            |                                          |
|      | 1S    |          |      | 51   |             |                         |    |    |            |                                          |
| 12   | 1P    | 14       | 48   | 41.5 |             |                         |    | +  | -17.4      | I distant                                |
| 13   | 1P    | 05       | 25   | 27   |             |                         |    |    | -18.5      | Trace distant or regional                |
| 13   | ep    | 06       | 57   | 51.5 |             |                         |    | +  | -18.5      | I distant                                |
| 13   | 1P    | 08       | 13   | 50   |             |                         |    | -  | -18.7      | Trace distant                            |
| 13   | 1P    | 19       | 09   | 21.5 | 1           |                         |    | -? | -19.6      | I distant                                |
|      | 1     |          | 10   | 22.5 | 2           |                         |    |    |            |                                          |
|      | e     |          | 18   | 55   |             |                         |    |    |            |                                          |
|      | e     |          | 19   | 10   |             |                         |    |    |            |                                          |
| 14   | 1P    | 04       | 30   | 59.5 | 1           |                         |    |    | -20.4      | Trace distant                            |
|      | 1     |          | 33   | 00.5 | 1           |                         |    |    |            |                                          |
| 14   | e     | 10       | 40   | 29   |             |                         |    |    | -20.8      | Trace distant                            |
| 15   | 1P    | 06       | 32   | 02   |             | -10                     | +? | +  | -7.3       | II local - 45? mi. ESE Probably 2 shocks |
|      | 1     |          |      | 09   |             |                         |    |    |            |                                          |
|      | 1S    |          |      | 14   |             |                         |    |    |            |                                          |
|      | 1L    |          |      | 17.5 |             |                         |    |    |            |                                          |
|      | 1S    |          |      | 18.5 |             |                         |    |    |            |                                          |
| 15   | ep    | 07       | 12   | 24.5 |             |                         |    |    | 7.2        | Trace distant                            |
| 16   | ep    | 11       | 56   | 55.5 |             |                         |    |    | 3.6        | Trace distant                            |
| 16   | 1P    | 19       | 21   | 50   | 1.3         |                         |    |    | +2.7       | Trace distant                            |
| 17   | ep    | 08       | 02   | 29   |             |                         |    |    | +1         | Trace regional                           |
|      | ep?   |          |      | 53   |             |                         |    |    |            |                                          |



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| Date | Phase | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |     |   | $\Delta t$ | Remarks -                      |
|------|-------|----------|----|------|-------------|-------------------------|-----|---|------------|--------------------------------|
|      |       | h        | m  | s    |             | E                       | N   | Z |            |                                |
| 17   | 1P    | 11       | 23 | 48   |             |                         |     | + | +0.7       | I distant                      |
| 17   | e     | 14       | 13 | 35   |             |                         |     |   | +0.3       | Trace distant                  |
| 17   | eP    | 21       | 26 | 48   |             |                         |     |   | -0.5       | Trace distant                  |
| 18   | 1P    | 07       | 14 | 08   |             |                         |     | + | -1.7       | I distant                      |
|      | e     |          | 24 | 15   |             |                         |     |   |            |                                |
| 18   | eP    | 11       | 47 | 08   |             |                         |     |   | -2.2       | I distant                      |
| 18   | 1P    | 20       | 01 | 17   |             |                         |     | + | -3.2       | I distant                      |
|      | 1P    |          |    | 25   |             |                         |     |   |            |                                |
| 19   | eP    | 12       | 10 | 33   |             |                         |     |   | -5.8       | Trace distant                  |
| 19   | 1P    | 21       | 03 | 44.5 |             | -8                      | -   | - | -7         | I regional - 95 mi. WSB        |
|      | 1P    |          |    | 47   |             |                         |     |   |            |                                |
|      | eS    |          | 04 | 03   |             |                         |     |   |            |                                |
|      | eS    |          |    | 06.5 |             |                         |     |   |            |                                |
| 19   | Ep    | 23       | 48 | 26.7 |             |                         |     |   | -7.3       | Trace local - 45 mi.           |
|      | is    |          |    | 35.7 |             |                         |     |   |            |                                |
| 21   | 1P    | 02       | 45 | 02   |             |                         |     |   | -11.3      | Trace distant?                 |
|      | e     |          |    | 41   |             |                         |     |   |            |                                |
| 21   | eP    | 04       | 57 | 34   |             |                         |     |   | -11.7      | Trace distant                  |
| 22   | e     | 07       | 42 | 59   |             |                         |     |   | -14.1      | I distant?                     |
|      | eP    |          | 43 | 40   |             |                         |     |   |            |                                |
| 22   | eP    | 09       | 59 | 31.5 |             |                         |     |   | -14.7      | I                              |
| 23   | 1P    | 01       | 02 | 47.5 |             |                         |     | + | -11.5      | Trace distant?                 |
| 23   | eP    | 05       | 14 | 57   | 1.5         |                         |     |   | -10.9      | I distant                      |
| 23   | 1P    | 10       | 51 | 25.5 |             |                         |     |   | -10.2      | I distant                      |
|      | 1P    |          |    | 27   | 1.0         |                         |     | - |            |                                |
| 23   | 1P    | 11       | 44 | 54.3 |             | +20                     | 0   | + | +10        | II near regional - 70 mi. W    |
|      | is    |          | 45 | 08   |             | 250                     |     |   |            |                                |
| 23   | eP    | 17       | 38 | 04   |             |                         |     |   | +9.1       | Trace distant - 44             |
| 24   | eP    | 00       | 50 | 18.5 |             | +5                      | -10 | ? | +8         | II local - 44 mi. Probably SSB |
|      | is    |          |    | 27.3 |             |                         |     |   |            |                                |



SHASTA DAM

SEISMOLOGICAL STATION

MONTH OF April

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                                                                                                                                                                                                                                                                             | Phase                                      | G. C. T. |      |                                                   | Period<br>T | Trace Amplitude, .01 mm |    |     | $\Delta t$  | Remarks                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|------|---------------------------------------------------|-------------|-------------------------|----|-----|-------------|--------------------------------------|
|                                                                                                                                                                                                                                                                                  |                                            | h        | m    | s                                                 |             | E                       | N  | Z   |             |                                      |
| 24                                                                                                                                                                                                                                                                               | ep<br>is                                   | 09       | 09   | 01.5<br>36.5                                      |             |                         |    |     | +6.7        | I regional - 190 mi.                 |
| 25                                                                                                                                                                                                                                                                               | 1P                                         | 00       | 58   | 05                                                |             |                         |    | -   | +4.4        | I distant                            |
| 25                                                                                                                                                                                                                                                                               | 1P<br>e                                    | 01       | 19   | 12<br>57                                          |             |                         |    | +   | +4.3        | I distant?                           |
| 25                                                                                                                                                                                                                                                                               | 1P<br>es<br>is                             | 10       | 25   | 12<br>40<br>42                                    |             | +                       | 0  | +   | +3          | I regional - 145 mi. S               |
| 25                                                                                                                                                                                                                                                                               | 1P<br>es<br>is                             | 21       | 51   | 11<br>29.5<br>52 00                               |             |                         |    | -   | +1.3        | I regional - 280 mi.                 |
| 26                                                                                                                                                                                                                                                                               | 1P<br>is<br>1E<br>1P<br>1<br>is<br>1<br>is | 08       | 18   | 36.3<br>55<br>20 26<br>35<br>26 09<br>58<br>27 26 |             | +                       | -  | +   | -0.2<br>185 | II distant - compression from the SW |
| 26                                                                                                                                                                                                                                                                               | ep                                         | 14       | 45   | 49                                                |             |                         |    |     | -1          | I distant                            |
| 27                                                                                                                                                                                                                                                                               | 1P<br>1P<br>e                              | 00       | 18   | 22<br>44.5<br>20 26                               | 1.00        | -10                     |    | -30 | -2.4        |                                      |
| 27                                                                                                                                                                                                                                                                               | 1P<br>1P<br>is                             | 02       | 19   | 23<br>31.5<br>20 22                               |             | -                       | +  | +7  | -2.5        | II regional - 3407 mi.               |
| 28                                                                                                                                                                                                                                                                               | 1P                                         | 10       | 20.4 |                                                   |             | -32                     | -6 | -   |             | I local - 8 mi. SSW                  |
| 29                                                                                                                                                                                                                                                                               | 1P                                         | 13       | 47   | 30                                                |             |                         |    |     | -14.7       | Trace distant                        |
| 29                                                                                                                                                                                                                                                                               | 1P<br>es                                   | 15       | 32   | 53<br>15                                          |             | +                       | 0  | + - | -15         | Trace regional                       |
| 29-30 32 More than 32 traces---Probably from Mt. Lassen region and part of swarm. The stronger shocks of the swarm as listed below and are not included in this count. Unless otherwise designated, the following are part of the swarm and are about 50 mi. SSE of the station. |                                            |          |      |                                                   |             |                         |    |     |             |                                      |
| 30                                                                                                                                                                                                                                                                               | 1P<br>is                                   | 02       | 54   | 32.5<br>42.5                                      |             |                         |    |     | +13         | I local                              |



## SEISMOLOGICAL STATION

MONTH OF April



SHASTA DAM

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                  | G. C. T. |          |                            | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                    |
|------|------------------------|----------|----------|----------------------------|-------------|-------------------------|-----|-----|------------|--------------------------------------------|
|      |                        | h        | m        | s                          |             | E                       | N   | Z   |            |                                            |
| 30   | e<br>1P<br>1S          | 03       | 02       | 57.7<br>58.5<br>08.5       |             | +                       |     | -   | +12.9      | I                                          |
| 30   | 1P<br>1P<br>eS         | 05       | 33       | 36.4<br>37.8<br>46.4       |             |                         |     |     | +12.3      | I                                          |
| 30   | eP<br>1S               | 06       | 34       | 23.7<br>33.5               |             |                         |     |     | +12.2      | I                                          |
| 30   | 1P<br>1P<br>1S         | 07       | 18       | 55.8<br>57.5<br>06.4       |             | +25                     | -12 | -12 | +12        | I                                          |
| 30   | 1P<br>1S<br>1SE        | 07       | 56       | 13<br>23<br>23.8           |             |                         |     | -7  | +12        | I                                          |
| 30   | 1P<br>1S               | 10       | 53<br>54 | 59.3<br>09.3               |             |                         |     |     | +11.3      | I Three shocks 26 sec. and<br>9 sec. apart |
| 30   | 1P<br>1<br>1S          | 11       | 03       | 44.7<br>53.7<br>54.7       |             | +                       |     | -   | +11.2      | I Two shocks about 12 sec. apart           |
| 30   | 1P<br>1S               | 15       | 23       | 31<br>41.5                 |             |                         |     |     | +10.5      |                                            |
| 30   | 1P<br>1S               | 15       | 24       | 13.1<br>23.5               |             | +30<br>300              | -15 | -   | +10.5      | II Two shocks about 20 sec.<br>apart       |
| 30   | 1P<br>1SE<br>1SE       | 15       | 27       | 40.5<br>50.5<br>51.3       |             |                         |     |     | +10.5      | Trace                                      |
| 30   | 1P<br>1P<br>1SE<br>1SE | 15       | 28       | 13.5<br>15<br>23.5<br>24.3 |             |                         |     |     | +10.5      | I                                          |
| 30   | 1P<br>1<br>1S          | 15       | 30       | 40<br>41.2<br>50           |             | +                       | -   | -   | +10.4      | II                                         |
| 30   | 1P<br>1S               | 18       | 01<br>02 | 50.1<br>00.5               |             |                         |     |     | +10        | I                                          |



## SEISMOLOGICAL STATION

MONTH OF April-May



## SHASTA DAM

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                | Phase                          | G. C. T.                                                                                                    |                      |                                              | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                         |
|---------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------|-------------|-------------------------|-----|-----|------------|---------------------------------|
|                     |                                | h                                                                                                           | m                    | s                                            |             | E                       | N   | Z   |            |                                 |
| 30                  | iP<br>iZ<br>iSZN               | 18                                                                                                          | 03                   | 27.5<br>38<br>38.4                           |             | +60                     | -28 | -45 | +10        | II+                             |
| 30                  | i                              | 18                                                                                                          | 36.1                 |                                              |             |                         |     |     |            | Trace 52 mi.                    |
| 30                  | i                              | 18                                                                                                          | 36.5                 |                                              |             |                         |     |     |            | Trace - 52 mi.                  |
| 30                  | iP<br>iSZ<br>iSE               | 18                                                                                                          | 36                   | 57.1<br>07.4<br>07.9                         |             | +25                     | -   | -   | +9.9       | II 2 shocks about 27 sec. apart |
| 30                  | iP<br>iS                       | 19                                                                                                          | 46                   | 01.7<br>11.9                                 |             |                         |     |     | +9.7       | I 2 shocks about 18 sec. apart  |
| 30                  | iP                             | 22                                                                                                          | 56                   | 07                                           |             |                         |     |     | +9.3       | Trace regional                  |
| Apr. 30<br>to May 1 | 50                             | More than 50 traces from nearly same source in addition to larger measured shocks. Distance 50 - 55 mi. ESE |                      |                                              |             |                         |     |     |            |                                 |
| 1                   | iP<br>iS<br>iSE                | 10                                                                                                          | 45                   | 34.7<br>45<br>45.7                           |             |                         |     |     | +6.5       | I                               |
| 1                   | iP<br>iP<br>iS                 | 12                                                                                                          | 38                   | 10.4<br>11.9<br>20.5                         |             | +26                     | -15 | -24 | +6.1       | II                              |
| 1                   | iP<br>iP<br>e<br>iSZN<br>iSE   | 13                                                                                                          | 13                   | 03<br>04.6<br>12.8<br>13.3<br>13.8           |             |                         |     |     | +5.8       | I                               |
| 1                   | iP<br>iP<br>iE<br>iS           | 14                                                                                                          | 40                   | 24.5<br>26.2<br>33.2<br>35.1                 |             | -15                     | +7  |     | +5.7       | I                               |
| 1                   | iP<br>iP<br>i<br>iS<br>i<br>iS | 17                                                                                                          | 21                   | 49.5<br>51.3<br>59.5<br>61.3<br>07.5<br>11.2 |             | +                       |     | -   | +5         | II local 2 or 3 shocks          |
| 1                   | i<br>iP<br>i<br>i              | 17                                                                                                          | 28<br>29<br>31<br>32 | 32.5<br>17.5<br>40.5<br>46                   | .9          |                         |     | +25 | +5         | I distant?                      |



SHASTA DAM

## SEISMOLOGICAL STATION

MONTH OF May

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                                                               | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                     |
|------|---------------------------------------------------------------------|----------|----|------|-------------|-------------------------|-----|-----|------------|-----------------------------|
|      |                                                                     | h        | m  | s    |             | E                       | N   | Z   |            |                             |
| 1    | 1                                                                   | 17       | 29 | 34.5 |             |                         |     | -20 | +5         | I local - 20 mi.            |
| 1    | 1P                                                                  | 20       | 30 | 32.1 |             |                         |     |     | +4.3       | I local - ca 20 mi.         |
|      | 1P                                                                  |          |    | 35.3 |             |                         |     |     |            |                             |
|      | 1                                                                   |          |    | 36.3 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 45.2 |             |                         |     |     |            |                             |
| 1-2  | 19 or more traces from Mt. Lassen area swarm. Distance about 50 mi. |          |    |      |             |                         |     |     |            |                             |
| 2    | e                                                                   | 00       | 39 | 39   |             |                         |     |     | +3.2       | Trace regional              |
|      | e                                                                   |          |    | 46   |             |                         |     |     |            |                             |
|      | 1S                                                                  |          | 40 | 22.5 |             |                         |     |     |            |                             |
| 2    | eP                                                                  | 01       | 27 | 00   |             |                         |     | -   | +3         | II regional                 |
|      | 1                                                                   |          |    | 08.5 |             |                         |     |     |            |                             |
|      | 1                                                                   |          |    | 14   |             |                         |     |     |            |                             |
|      | eS?                                                                 |          |    | 35   |             |                         |     |     |            |                             |
|      | e                                                                   |          |    | 41   |             |                         |     |     |            |                             |
|      | 1                                                                   |          |    | 52   |             |                         |     |     |            |                             |
|      | 1                                                                   | 28       | 11 |      | 1.2         |                         |     | 410 |            |                             |
|      | coda                                                                |          |    |      | 3.2         |                         |     |     |            |                             |
| 2    | 1P                                                                  | 05       | 47 | 00   |             |                         |     |     | +2.2       | I distant                   |
| 2    | 1P                                                                  | 07       | 00 | 05   |             | +10                     | -   | -   | +1.5       | I local - 50 mi. ESE        |
|      | 1P                                                                  |          |    | 06.7 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 15   |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 15.4 |             |                         |     |     |            |                             |
| 2    | 1P                                                                  | 10       | 17 | 22.8 |             | +20                     | -10 | 0   | +0.8       | II local - 50 mi. ESE       |
|      | 1P                                                                  |          |    | 24.4 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 32.8 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 33.2 |             |                         |     |     |            |                             |
| 2    | 6 traces from Mt. Lassen area swarm                                 |          |    |      |             |                         |     |     |            |                             |
| 3    | 1P                                                                  | 02       | 05 | 59   |             | +                       | -?  | -   | -3.2       | I - 50 mi.                  |
|      | 1P                                                                  |          | 06 | 00.3 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 19   |             |                         |     |     |            |                             |
| 3    | 1P                                                                  | 03       | 57 | 30.5 |             | -30                     | +15 | +25 | -3.5       | II local - 40 or 65 mi. ESE |
|      | 1P                                                                  |          |    | 32.1 |             |                         |     |     |            |                             |
|      | 1                                                                   |          |    | 38.5 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 43.6 |             |                         |     |     |            |                             |
| 3    | 1P                                                                  | 08       | 15 | 40   |             | +                       | -   | -   | -4.5       | I - 52 mi.                  |
|      | 1P                                                                  |          |    | 41.3 |             |                         |     |     |            |                             |
|      | 1S                                                                  |          |    | 50.4 |             |                         |     |     |            |                             |



**SUMATRA DAM**

SEISMOLOGICAL STATION

MONTH OF

*May*



International  
Seismological  
Centre

Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date | Phase                               | G. C. T. |                      |                                                       | Period<br>T                        | Trace Amplitude, .01 mm |     |               | $\Delta t$ | Remarks                                                                                                           |
|------|-------------------------------------|----------|----------------------|-------------------------------------------------------|------------------------------------|-------------------------|-----|---------------|------------|-------------------------------------------------------------------------------------------------------------------|
|      |                                     | h        | m                    | s                                                     |                                    | E                       | N   | Z             |            |                                                                                                                   |
| 3    | 1P<br>1P<br>1S                      | 16       | 37                   | 39.4<br>40.7<br>51.7                                  |                                    | -                       | +?  | +             | -6.5       | I                                                                                                                 |
| 3    | eP?<br>1P<br>1P<br>e<br>e<br>e<br>i | 22       | 13                   | 46<br>56<br>14 24<br>17 48<br>21 00<br>29 00<br>33 50 | 1.4<br>1.6<br>3<br>1.3<br>3<br>1.1 |                         |     |               | -8         | I distant obscured by local disturbances                                                                          |
| 3    | eP<br>e<br>1SES<br>e<br>i<br>coda   | 22       | 36<br>37<br>47       | 39<br>22<br>15<br>34<br>27                            | 1.1;3<br>3<br>1.2<br>16            |                         |     |               | -8         | II distant; COS $9^{\circ}$ S, $153^{\circ}$ E,<br>(SE of New Guinea) $\phi = 22:23.4$ ;<br>$\Delta = 91^{\circ}$ |
| 5    | e?<br>eP<br>1P<br>eS                | 09       | 05<br>06<br>09<br>09 | 29<br>22<br>50<br>26                                  | .8                                 |                         |     |               | +15.4      | I distant - 1500? mi.                                                                                             |
| 5    | i                                   | 22       | 41                   | 57.5                                                  |                                    |                         |     |               | +12.7      | Trace local - 45? mi.                                                                                             |
| 6    | i<br>1P<br>1S                       | 15       | 32                   | 41.7<br>42.4<br>52.9                                  |                                    |                         |     |               | +8.9       | I local - 56? mi.                                                                                                 |
| 7    | 1P<br>i<br>1SEN<br>1SE              | 04       | 53                   | 05.5<br>21.1<br>31.9<br>33.4                          |                                    | +510                    | +61 | +510<br>1300+ | +6.5       | III regional - 135 mi. W by S -<br>about 30 mi. off Cape Mendocino.                                               |
| 8    | 1P<br>i<br>i<br>i<br>i              | 00       | 24                   | 54.5<br>01<br>06.5<br>14.5<br>24.5                    |                                    |                         |     |               | +2.3       | Trace II local or regional                                                                                        |
| 8    | 1P<br>ePP<br>e<br>eSES              | 05       | 39<br>41<br>43<br>46 | 23<br>17<br>01<br>21                                  |                                    |                         | +   |               | +1.2       | I distant - COS $1^{\circ}$ S, $98^{\circ}$ E,<br>(W of Sumatra) $\phi = 05:20.3$ ;<br>$\Delta = 126^{\circ}$     |
| 8    | 1P<br>1P<br>1S                      | 08       | 22                   | 10.5<br>12<br>20.5                                    |                                    |                         |     |               | +0.7       | Trace local - 50 mi.                                                                                              |



SHASTA DAM

## SEISMOLOGICAL STATION

MONTH OF May

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase | G. C. T. |      |      | Period<br>T | Trace Amplitude, .01 mm |    |     | $\Delta t$ | Remarks                            |
|------|-------|----------|------|------|-------------|-------------------------|----|-----|------------|------------------------------------|
|      |       | h        | m    | s    |             | E                       | N  | Z   |            |                                    |
| 8    | eP    | 09       | 58   | 44   |             |                         |    |     | +0.5       | Very gradual - I distant - 90°     |
|      | 1P    |          |      | 47.3 |             |                         |    |     |            |                                    |
|      | e     | 10       | 02   | 45   |             |                         |    |     | +0.3       |                                    |
|      | e     |          | 03   | 14   |             |                         |    |     |            |                                    |
|      | e     |          |      | 48   |             |                         |    |     |            |                                    |
|      | e3AS  |          | 09   | 20   |             |                         |    |     |            |                                    |
|      | e37   |          | 10   | 00   |             |                         |    |     |            |                                    |
| 8    | 1P    | 16       | 05   | 50   |             |                         |    |     | -1         |                                    |
| 8    | 1P    | 19       | 24   | 56   |             |                         |    | -   | -1.8       | I distant                          |
| 9    | 1P    | 03       | 14   | 04.3 |             | -40                     | +6 | +   | -3.5       | II local - 30 mi. E                |
|      | 13Z   |          |      | 11.2 |             |                         |    |     |            |                                    |
|      | 13EN  |          |      | 10.5 |             |                         |    |     |            |                                    |
| 9    | 1P    | 22       | 38   | 17.  | 1.5         |                         |    |     | -8         | I distant                          |
| 9    | eP    | 23       | 39   | 13.5 | 1.5         |                         |    |     | -8.4       | II distant - CGS 22° N, 108° W     |
|      | 1P    |          |      | 15.5 | 1           |                         |    |     |            | (Gulf of California) - 0 ; 23:34.4 |
|      | e     |          | 42   | 52   |             |                         |    |     |            | $\Delta = 22^\circ$                |
|      | e3    |          | 43   | 23   |             |                         |    |     |            |                                    |
|      | e     |          | 46.4 |      |             |                         |    |     |            |                                    |
|      | e     |          | 47   | 11   | 10          |                         |    |     |            |                                    |
|      | i     |          | 48   | 41   | 1.4         |                         |    |     |            |                                    |
|      | e     |          | 49   | 29   | 8           |                         |    |     |            |                                    |
|      | coda  |          |      |      | 8           |                         |    |     |            |                                    |
| 10   | 1P    | 02       | 11   | 24.5 |             | +                       |    | -   | -9.3       | Trace local - 44 or 50 mi.         |
| 10   | 1P    | 23       | 44   | 20   |             |                         |    | -   | -14        | I distant                          |
|      | i     |          |      | 34   |             |                         |    |     |            |                                    |
| 11   | 1P    | 16       | 36   | 08.5 | 1.7         |                         |    |     | -16.9      | I distant                          |
| 11   | eP    | 17       | 28   | 53   |             |                         |    |     | -17        | I distant                          |
| 11   | 1P    | 18       | 50   | 06   | 1.3         | 0                       | -  | +16 | -17.3      | I distant                          |
| 12   | eP    | 13       | 31   | 11   |             |                         |    |     | -20        | Trace distant                      |
| 13   | 1P    | 03       | 16   | 08   |             |                         |    |     | -21.6      | Trace local - 65 mi.               |
| 13   | 1P    | 06       | 29   | 13   | 1           |                         |    | -   | -22        | Trace distant                      |
| 13   | 1P    | 06       | 41   | 06   | 1.4         |                         |    | -   | -22        | Trace distant                      |
| 14   | eP    | 00       | 29   | 45   |             |                         |    |     | -22.4      | Trace regional                     |
|      | e     |          | 30   | 49   |             |                         |    |     |            |                                    |



SHASTA DAM

SEISMOLOGICAL STATION

MONTH OF

May

14.



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date | Phase                                 | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |    |     | $\Delta t$ | Remarks                                                                                                        |
|------|---------------------------------------|----------|----|------|-------------|-------------------------|----|-----|------------|----------------------------------------------------------------------------------------------------------------|
|      |                                       | h        | m  | s    |             | E                       | N  | Z   |            |                                                                                                                |
| 14   | 1<br>1                                | 06       | 09 | 17.5 | 1.2         |                         |    | -   | -22.3      | I distant                                                                                                      |
|      |                                       |          | 16 | 57   |             |                         |    | -   |            |                                                                                                                |
| 14   | 1<br>1<br>e<br>1                      | 21       | 59 | 18.5 |             |                         |    |     | -21.6      | Trace local - 50 mi.                                                                                           |
|      |                                       |          |    | 19.8 |             |                         |    |     |            |                                                                                                                |
|      |                                       |          |    | 28.3 |             |                         |    |     |            |                                                                                                                |
|      |                                       |          |    | 30.3 |             |                         |    |     |            |                                                                                                                |
| 15   | 1<br>e<br>1<br>e<br>1<br>1            | 22       | 17 | 17   | 1.3         |                         |    | +   | -20.8      | II distant - CGS 16° N, 96° W.<br>(Off Southern Mexico) $\phi = 22:10.6$<br>$\Delta = 34^\circ$                |
|      |                                       |          | 18 | 35   | 2.5         |                         |    |     |            |                                                                                                                |
|      |                                       |          | 24 | 22   | 1.3         |                         |    |     |            |                                                                                                                |
|      |                                       |          | 28 | 01   | 3           |                         |    |     |            |                                                                                                                |
|      |                                       |          | 30 | 56   | .8;1.2      |                         |    |     |            |                                                                                                                |
|      |                                       |          | 42 | 06   |             |                         |    |     |            |                                                                                                                |
| 16   | 1<br>e                                | 05       | 38 | 05   | 1.5         | +12                     |    | +60 | -20.5      | I distant                                                                                                      |
|      |                                       |          | 41 | 22   | 2.8         |                         |    |     |            |                                                                                                                |
| 17   | 1<br>e<br>1                           | 04       | 06 | 33.3 |             |                         |    | +   | -21.5      | I local - 49 mi.                                                                                               |
|      |                                       |          |    | 43   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          |    | 44   |             |                         |    |     |            |                                                                                                                |
| 17   | 1<br>1                                | 19       | 55 | 09.2 |             |                         |    |     | -21        | I local - 54 mi.                                                                                               |
|      |                                       |          |    | 20   |             |                         |    |     |            |                                                                                                                |
| 18   | e<br>e                                | 03       | 56 | 27   |             |                         |    |     | -21        | I regional                                                                                                     |
|      |                                       |          | 57 | 28   |             |                         |    |     |            |                                                                                                                |
| 18   | e<br>e                                | 06       | 46 | 42   |             |                         |    |     | -21        | Trace distant or regional                                                                                      |
|      |                                       |          | 47 | 52   |             |                         |    |     |            |                                                                                                                |
| 18   | 1<br>e                                | 21       | 56 | 25   | 1.4         |                         |    | +   | -21.5      | I distant                                                                                                      |
| 19   | 1<br>e<br>1<br>e                      | 00       | 40 | 01   | .9          | +                       | -  | +   | -21.2      | I distant                                                                                                      |
|      |                                       |          | 42 | 39   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          | 47 | 02   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          | 49 | 49   |             |                         |    |     |            |                                                                                                                |
| 20   | eP?<br>1P?<br>1                       | 22       | 02 | 40   |             |                         |    |     | -23        | I                                                                                                              |
|      |                                       |          |    | 45   | .9          |                         |    |     |            |                                                                                                                |
|      |                                       |          | 04 | 10   | 1.7         |                         |    |     |            |                                                                                                                |
| 21   | 1<br>e<br>e                           | 06       | 47 | 45   |             | -15                     | +8 | +   | -23        | I local - 53 mi. SSE                                                                                           |
|      |                                       |          |    | 55.5 |             |                         |    |     |            |                                                                                                                |
|      |                                       |          |    | 56   |             |                         |    |     |            |                                                                                                                |
| 21   | e<br>1P<br>1<br>1<br>1<br>e<br>e<br>e | 09       | 26 | 40   |             |                         |    |     | -23        | II distant, CGS 14.2° N, 60.8° W;<br>Damage on Martinique, W. Indies<br>$\phi = 09:16.6$ ; $\Delta = 60^\circ$ |
|      |                                       |          |    | 41.5 | 0.9         | -25                     | +  | +75 |            |                                                                                                                |
|      |                                       |          | 27 | 29.5 |             |                         |    |     |            |                                                                                                                |
|      |                                       |          |    | 40   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          | 34 | 45   |             | -                       | -  |     |            |                                                                                                                |
|      |                                       |          | 35 | 29   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          | 36 | 23   |             |                         |    |     |            |                                                                                                                |
|      |                                       |          | 56 | 26   | 4           |                         |    |     |            |                                                                                                                |



RYAN DAM

## SEISMOLOGICAL STATION

MONTH OF

May

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase          | G. C. T. |          |                      | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks               |
|------|----------------|----------|----------|----------------------|-------------|-------------------------|-----|-----|------------|-----------------------|
|      |                | h        | m        | s                    |             | E                       | N   | Z   |            |                       |
| 21   | 1P<br>eS       | 15       | 31       | 17<br>27             |             |                         |     |     | -23        | I local - 50 mi.      |
| 22   | 1P<br>1S       | 00       | 02       | 11<br>49             |             |                         |     |     | -23.8      | Trace regional        |
| 22   | 1P<br>1P<br>1S | 11       | 34       | 36.1<br>37.5<br>47.6 |             |                         |     |     | -25.5      | I local - 58 mi.      |
| 22   | 1P<br>1S       | 20       | 30       | 24<br>32.8           |             | -52                     | +25 | +   | -26.2      | II local - 44 mi. ESE |
| 22   | 1P<br>1S       | 20       | 34       | 12.7<br>21.4         |             |                         |     |     | -26.2      | Trace local - 44 mi.  |
| 22   | eP<br>eS       | 22       | 54<br>55 | 54.7<br>04.7         |             |                         |     |     | -26.3      | Trace local - 50 mi.  |
| 23   | eP<br>e        | 06       | 41<br>42 | 46.5<br>17           |             |                         |     |     | -26.5      | Trace regional?       |
| 23   | eP<br>eS       | 13       | 58<br>59 | 55<br>05             |             |                         |     |     | -27.1      | Trace local - 50 mi.  |
| 25   | 1P<br>1S       | 02       | 36       | 10<br>20             |             |                         |     |     | -29.4      | Trace local - 50 mi.  |
| 25   | eP<br>eS       | 03       | 49       | 3015<br>40.5         |             |                         |     |     | -29.5      | Trace local - 50 mi.  |
| 25   | eP<br>eS       | 08       | 21       | 16.5<br>26.5         |             |                         |     |     | -30        | Trace local - 50 mi.  |
| 25   | 1P             | 11       | 54       | 00.5                 | 1           |                         |     | -   | -30.4      | I distant             |
| 25   | 1P<br>1S       | 13       | 02       | 19<br>29             |             | -20                     | +8  | +12 | -30.6      | I local - 50 mi. ESE  |
| 26   | 1P<br>1S       | 09       | 35       | 25.5<br>37           |             | -24                     | +13 | +22 | -32        | I local - 58 mi. ESE  |
| 27   | 1P<br>1P       | 14       | 25       | 45<br>01.5           | 1           |                         |     |     | -33        | Trace distant?        |
| 28   | 1P<br>1S       | 07       | 23       | 25<br>54             |             |                         |     |     | -32.2      | Trace regional        |
| 28   | eP             | 13       | 23       | 46.5                 |             |                         |     |     | -31.3      | Trace distant         |



WTA-STA-DAT

SEISMOLOGICAL STATION

MONTH OF May-June



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date      | Phase                                     | G. C. T. |    |                            | Period<br>T   | Trace Amplitude, .01 mm |    |   | $\Delta t$ | Remarks                                   |
|-----------|-------------------------------------------|----------|----|----------------------------|---------------|-------------------------|----|---|------------|-------------------------------------------|
|           |                                           | h        | m  | s                          |               | E                       | N  | Z |            |                                           |
| 29        | ep<br>1<br>1<br>1<br>e3                   | 17       | 51 | 17<br>51<br>09<br>21<br>11 |               |                         |    |   | -27        | I regional - beginning indefinite         |
| 29        | 1P<br>1<br>e                              | 19       | 37 | 42<br>38<br>57             | .8<br><br>1.8 |                         |    |   | -27        | I distant                                 |
| 29        | 1P<br>1P<br>13                            | 20       | 26 | 01<br>02<br>11.5           |               | -10                     | +4 | + | -27        | I local - 53 mi.                          |
| 30        | 1P<br>1P                                  | 00       | 01 | 34<br>47                   |               |                         |    |   | -27        | I distant                                 |
| 31        | 1P                                        | 02       | 44 | 47.                        | 1             |                         |    |   | +2.3       | Trace distant                             |
| 31        | ep<br>e<br>e3                             | 03       | 26 | 26<br>29<br>24             |               |                         |    |   | +2.2       | I distant                                 |
| 31        | 1P<br>1                                   | 06       | 21 | 39<br>52                   | <br>1         |                         |    | - | +1.7       | I distant                                 |
| June<br>1 | 1P<br>1S                                  | 04       | 21 | 38.7<br>40.9               |               | -                       | o  | - | -2.5       | I local - 6 mi. E                         |
| 1         | 1P<br>1S                                  | 04       | 40 | 40<br>42.2                 |               | -                       | o  | - | -2.5       | Trace local - 61 mi. E.                   |
|           | Also several faint traces - same distance |          |    |                            |               |                         |    |   |            |                                           |
| 1         | 1P<br>13                                  | 06       | 47 | 39<br>41.2                 |               | -                       | o  | - | -2.5       | I local - 61 mi. E                        |
| 1         | 1P<br>e                                   | 09       | 03 | 31.5<br>07 32              | 1.3           |                         |    | - | -2.7       | I distant                                 |
| 1         | ep<br>e3                                  | 16       | 24 | 49<br>35 43                |               |                         |    |   | -3.2       | I distant - obscured by local disturbance |
| 2         | ep<br>e3<br>e<br>e                        | 01       | 22 | 07<br>32 37<br>33 06<br>20 |               |                         |    |   | -4.3       | I distant                                 |



## SEISMOLOGICAL STATION

MONTH OF <sup>June</sup> August

1946

27.

Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic SurveyR. M. is hour and minute of flasher mark at (center  
beginning) of record. $\Delta t$  is time correction referred to R. M.

International

Seismological

Center

| Date | Phase                         | G. C. T. |    |                                    | Period<br>T      | Trace Amplitude, .01 mm |   |     | R. M.<br>$\Delta t$ | Remarks              |
|------|-------------------------------|----------|----|------------------------------------|------------------|-------------------------|---|-----|---------------------|----------------------|
|      |                               | h        | m  | s                                  |                  | E                       | N | Z   |                     |                      |
| 3    | eP<br>eS?                     | 08       | 33 | 19.5<br>52                         |                  |                         |   |     | -6                  | I regional           |
| 3    | 1P<br>1S<br>1S                | 10       | 33 | 51.5<br>01<br>01.5                 |                  |                         |   |     | -6.1                | Trace local - 50 mi. |
| 3    | 1P<br>e<br>i                  | 13       | 51 | 03<br>56<br>57                     | .8<br>2.5<br>1.3 |                         |   | -   | -6.4                | I distant            |
| 3    | 1P                            | 17       | 16 | 41                                 |                  |                         |   |     | -6.5                | I distant            |
| 4    | 1P<br>i                       | 04       | 56 | 17<br>58                           | 1                | -                       | - | -25 | -7                  | I distant            |
| 4    | e<br>1S?                      | 12       | 07 | 38<br>09                           |                  |                         |   |     | -7                  | I distant            |
| 5    | eP<br>e                       | 01       | 05 | 38<br>16                           |                  |                         |   |     | -6.3                | I distant            |
| 5    | e                             | 13       | 25 | 54                                 |                  |                         |   |     | -4                  | Trace distant?       |
| 5    | 1P<br>1S                      | 20       | 28 | 41<br>54                           |                  |                         |   |     | -2.8                | I regional           |
| 5    | e<br>i<br>i<br>eS<br>eS<br>1S | 22       | 01 | 08<br>16<br>32.5<br>18<br>22<br>34 |                  |                         |   |     | -.27                | Trace regional       |
| 5    | 1P<br>1P<br>eS                | 23       | 19 | 28.8<br>29.3<br>42.0               |                  | +12                     | 0 | +   | -2.7                | I regional           |
| 6    | eP<br>eS                      | 00       | 09 | 31<br>48                           |                  |                         |   |     | -2.8                | Trace regional       |
| 6    | 1P                            | 00       | 40 | 42                                 |                  |                         |   | -   | -2.9                | I distant            |
| 6    | eP<br>1P?<br>eS               | 01       | 12 | 28<br>13<br>20                     |                  |                         |   |     | -3                  |                      |
| 6    | eP<br>eS                      | 18       | 16 | 51<br>17                           |                  |                         |   |     | -4                  | Trace regional       |



## SEISMOLOGICAL STATION

MONTH OF

August

19

46

18.

Shaeta Ben

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correctionInternational  
Seismological  
Centre

| Date | Phase                            | G. C. T. |      |                                              | Period<br>T | Trace Amplitude, .01 mm |    |   | $\Delta t$ | Remarks                                                                                                           |
|------|----------------------------------|----------|------|----------------------------------------------|-------------|-------------------------|----|---|------------|-------------------------------------------------------------------------------------------------------------------|
|      |                                  | h        | m    | s                                            |             | E                       | N  | Z |            |                                                                                                                   |
| 7    | 1P<br>1<br>e<br>e<br>e<br>e<br>1 | 04       | 19   | 55<br>22<br>32<br>28<br>30<br>57<br>31<br>51 | 1.2<br>2    |                         |    |   | -3         | I distant CGS 17° N, 94° W<br>(Isthmus of Tehuantepec)<br>$\phi = 4:13.3$ ; $h = 70$ mi.;<br>$\Delta = 332^\circ$ |
| 9    | 1P<br>1S                         | 07       | 02   | 19.5<br>09 00                                |             |                         |    |   | -4.4       | I distant                                                                                                         |
| 9    | 1P<br>1S                         | 09       | 39   | 56<br>40 13                                  |             |                         |    |   | -4.3       | Trace regional - 85 mi.                                                                                           |
| 9    | e                                | 10       | 36   | 51                                           |             |                         |    |   | -4.3       | Trace distant                                                                                                     |
| 11   | 1P<br>1S                         | 04       | 04   | 33.5<br>54                                   |             |                         |    |   | -6         | Trace regional - 105 mi.                                                                                          |
| 11   | eP                               | 08       | 02   | 28                                           |             |                         |    |   | 06         | I distant                                                                                                         |
| 12   | 1P<br>e<br>eS                    | 16       | 20   | 54.5<br>23 12<br>31 14                       |             |                         |    |   | -6.8       | I distant                                                                                                         |
| 15   | eP<br>eS                         | 18       | 43   | 26<br>47 45                                  |             |                         |    |   | 0          | Trace distant                                                                                                     |
| 17   | 1P<br>1S                         | 21       | 44   | 27.1<br>35.8                                 |             | -10                     | +5 | + | +2.2       | I local @ 44 mi. ESE                                                                                              |
| 17   | 1P<br>1S                         | 23       | 08   | 51.2<br>59.9                                 |             | -15                     | +5 | + | +2.2       | II local - 44 mi. ESE                                                                                             |
| 17   | 1                                | 23       | 10.0 |                                              |             |                         |    |   |            | Trace aftershock                                                                                                  |
| 17   | 1                                | 23       | 10.4 |                                              |             |                         |    |   |            | Trace aftershock                                                                                                  |
| 18   | eP<br>eP<br>1S                   | 22       | 59   | 39<br>40<br>49                               |             |                         |    |   | +3         | Trace local - 50 mi.                                                                                              |
| 19   | eP<br>1P                         | 00       | 34   | 08<br>34.5                                   |             |                         |    |   | +3         | Trace distant                                                                                                     |
| 19   | 1P<br>1S                         | 01       | 20   | 36<br>46                                     |             |                         |    |   | +3         | Trace local - 50 mi.                                                                                              |



## Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |      |      | $\Delta t$ | Remarks                     |
|------|-------|----------|----|------|-------------|-------------------------|------|------|------------|-----------------------------|
|      |       | h        | m  | s    |             | E                       | N    | Z    |            |                             |
| 19   | 1P    | 07       | 59 | 10.9 |             |                         |      |      | +3.2       | I local - 50 mi.            |
|      | 1P    |          |    | 11.9 |             |                         |      |      |            |                             |
|      | 1S    |          |    | 21   |             |                         |      |      |            |                             |
|      | 1     |          |    | 33   |             |                         |      |      |            |                             |
| 19   | 1P    | 08       | 04 | 44.2 |             |                         |      |      | +3.2       | I local - 50 mi.            |
|      | 1S    |          |    | 54.3 |             |                         |      |      |            |                             |
| 19   | 1P    | 11       | 26 | 42   |             |                         |      |      | +3.3       | Trace local - 51. mi.       |
|      | 1S    |          |    | 52.2 |             |                         |      |      |            |                             |
| 19   | 1P    | 15       | 04 | 54.5 |             |                         |      |      | +3.5       | Trace local - 50 mi.        |
|      | 1S    |          | 05 | 04.5 |             |                         |      |      |            |                             |
| 19   | 1P    | 15       | 27 | 37.4 | .18         | -125                    | +50  | +135 | +3.5       | III local - 51 mi. 282      |
|      | 1P    |          |    | 38.5 |             |                         |      |      |            |                             |
|      | 1S    |          |    | 47.5 |             |                         | +700 | 500  |            |                             |
|      | e     |          |    | 28.7 |             |                         |      |      |            |                             |
| 19   | eP    | 15       | 41 | 39.7 |             |                         |      |      | +3.5       | Trace local - 50 mi.        |
|      | eS    |          |    | 49.7 |             |                         |      |      |            |                             |
| 19   | 1P    | 15       | 51 | 46.5 |             |                         |      |      | +3.5       | Trace local - 50 mi.        |
| 19   | 1P    | 15       | 51 | 56   |             |                         |      |      | +3.5       | I local - 50 mi.            |
|      |       |          | 52 | 06   |             |                         |      |      |            |                             |
| 19   | 1P    | 16       | 10 | 07.3 |             |                         |      |      | +3.5       | I local - 51 mi.            |
|      | 1S    |          |    | 17.5 |             |                         |      |      |            |                             |
| 19   | 1P    | 22       | 54 | 52.3 |             |                         |      |      | +4.3       | Trace local - 50 mi.        |
|      | 1S    |          | 55 | 02.3 |             |                         |      |      |            |                             |
| 20   | 1P    | 00       | 09 | 56.7 |             |                         |      |      | +4.4       | Trace local - 50 mi.        |
|      | 1S    |          | 10 | 06.7 |             |                         |      |      |            |                             |
| 20   | 1P    | 00       | 34 | 38.4 |             |                         |      |      | +4.4       | Trace local - also trace at |
|      | 1S    |          |    | 48.4 |             |                         |      |      |            | 00 34.4                     |
| 20   | 1P    | 00       | 49 | 37.4 |             |                         |      |      | +4.4       | Trace local - 50 mi.        |
|      | 1S    |          |    | 47.4 |             |                         |      |      |            |                             |

On the seismograms of June 20 - 21 (17:10 to 17:07) a total of 84 shocks presumably originating in the Mt. Lassen area, were recorded. Others may have been obscured in the local disturbance. The times of the larger only are measured.

20-21 72 traces or Class I - distance about 50 mi.



## SEISMOLOGICAL STATION

MONTH OF June



Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                                                        | Phase                 | G. C. T. |          |                              | Period<br>T | Trace Amplitude, .01 mm |      |      | $\Delta t$ | Remarks                                                                                                                                    |
|-------------------------------------------------------------|-----------------------|----------|----------|------------------------------|-------------|-------------------------|------|------|------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |                       | h        | m        | s                            |             | E                       | N    | Z    |            |                                                                                                                                            |
| 21                                                          | 1P<br>1S2N<br>1SE     | 03       | 34       | 25.3<br>34.3<br>36.7         |             | +510                    | -220 | -    | +4.8       | III+ local - 50 ml. SSE - - first<br>main shock of swarm. Epicenter<br>probably in Brokeoff Mtn. Area in<br>Lassen Volcanic National Park. |
| Unless otherwise designated, the following are aftershocks. |                       |          |          |                              |             |                         |      |      |            |                                                                                                                                            |
| 21                                                          | 1P<br>1S<br>1S        | 03       | 43       | 41<br>51<br>52               |             | +8                      | ?    | -    | +4.8       | I                                                                                                                                          |
| 21                                                          | 1P<br>1S<br>1S        | 09       | 13       | 35<br>36.4<br>45             |             | +                       | -    | -    | +5.7       | I                                                                                                                                          |
| 21                                                          | 1P<br>1S<br>1S        | 09       | 13       | 42<br>52<br>55               |             |                         |      |      | +5.7       | I                                                                                                                                          |
| 21                                                          | 1P<br>1P              | 09       | 19       | 39<br>40.2<br>48.8<br>51.5   |             | +75                     | -28  | -70  | +5.7       | III-                                                                                                                                       |
| 21                                                          | 1P<br>1P<br>1S<br>1S  | 09       | 21       | 38<br>39<br>48<br>50.7       |             | -15                     | +7   | +    | +5.7       | II                                                                                                                                         |
| 21                                                          | 1P<br>1P<br>1S<br>1S  | 09       | 22       | 04.9<br>05.9<br>14.9<br>17.7 |             |                         |      |      | +5.7       | II                                                                                                                                         |
| 21                                                          | 1P<br>1P<br>1S<br>1S7 | 09       | 23       | 15.5<br>16.7<br>25.5<br>28.7 |             | +600                    | -275 | -700 | +5.7       | III + principal aftershock                                                                                                                 |
| 21                                                          | 1P<br>1S              | 10       | 47       | 39.5<br>49.4                 |             | -12                     | +5   | +    | +6         | II                                                                                                                                         |
| 21                                                          | 1P<br>1S              | 10       | 50       | 31.7<br>41.9                 |             | +52                     | -25  | -    | +6         | II                                                                                                                                         |
| 21                                                          | 0P<br>0S7             | 12       | 32<br>43 | 23<br>02                     |             |                         |      |      | +6/2       | I distant - not part of swarm                                                                                                              |



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

M-1839-4 (1)



## Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date  | Phase                                       | G. C. T. |    |                              | Period<br>T       | Trace Amplitude, .01 mm |            |              | $\Delta t$ | Remarks                                                                            |
|-------|---------------------------------------------|----------|----|------------------------------|-------------------|-------------------------|------------|--------------|------------|------------------------------------------------------------------------------------|
|       |                                             | h        | m  | s                            |                   | E                       | N          | Z            |            |                                                                                    |
| 24    | 1P<br>1S                                    | 03       | 43 | 01.3<br>11.3                 |                   | +40<br>600              | -15<br>950 | -<br>800     | +8.3       | III local                                                                          |
| 24    | 1P                                          | 12       | 29 | 26                           |                   |                         |            |              | +10        | I distant                                                                          |
| 24    | 1P<br>1P<br>1                               | 15       | 55 | 18<br>56 09<br>58 16         | 1.0<br>1.4<br>2.5 |                         |            |              | +10.3      | I distant, 000 14° W, 91° W.<br>(Guatemala) $\phi = 15:48.0$ ; $\Delta = 38^\circ$ |
| 24    | 1P                                          | 17       | 21 | 11                           |                   |                         |            |              | +10.5      | Trace distant                                                                      |
| 24-25 | 22 traces to type I - local - about 50 mi.  |          |    |                              |                   |                         |            |              |            |                                                                                    |
| 25    | 1P<br>e<br>eS<br>e                          | 00       | 09 | 03.5<br>47<br>13 31<br>14 09 |                   |                         |            |              | +11.3      | Trace distant                                                                      |
| 25    | 1P<br>1S                                    | 05       | 20 | 31.5<br>41.5                 |                   | -15                     | +8         | +            | +12        | I                                                                                  |
| 25    | 1P<br>1P<br>1S<br>1S                        | 10       | 44 | 12<br>13.5<br>23.3<br>26.4   |                   |                         |            |              | +12.8      | II                                                                                 |
| 25    | 1P<br>1S                                    | 10       | 54 | 00.1<br>10.1                 |                   | +85                     | -35        | -100<br>1120 | +12.9      | III                                                                                |
| 25    | 1P<br>1S                                    | 10       | 57 | 04<br>14                     |                   | +8                      | -4         | -            | +12.9      | II                                                                                 |
| 25    | 1P<br>1S                                    | 10       | 57 | 50.2<br>58 00.2              |                   |                         |            |              | +12.9      | I                                                                                  |
| 25    | 1P<br>1S                                    | 11       | 05 | 13.4<br>23.4                 |                   |                         |            |              | +12.9      | II                                                                                 |
| 25    | 1P<br>1S                                    | 11       | 06 | 40.3<br>50.3                 |                   | +10                     |            | -            | +12.9      | I local                                                                            |
| 25    | 1P                                          | 14       | 18 | 20                           |                   |                         |            | +            | +13.5      | I distant                                                                          |
| 25    | 1P<br>1S                                    | 18       | 09 | 43.8<br>54.3                 |                   |                         |            |              | +14.3      | I local                                                                            |
| 25    | 1P<br>1S                                    | 21       | 00 | 42.6<br>52.6                 |                   | +                       |            | -            | +15.1      | I local                                                                            |
| 25-26 | 8 traces to I - local shocks - about 50 mi. |          |    |                              |                   |                         |            |              |            |                                                                                    |



## Shasta Dam

Bureau of Reclamation and  
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| Date | Phase                                                       | G. C. T. |    |                                                                                    | Period<br>T    | Trace Amplitude, .01 mm |    |    | $\Delta t$ | Remarks                                                                             |
|------|-------------------------------------------------------------|----------|----|------------------------------------------------------------------------------------|----------------|-------------------------|----|----|------------|-------------------------------------------------------------------------------------|
|      |                                                             | h        | m  | s                                                                                  |                | E                       | N  | Z  |            |                                                                                     |
| 26   | eP<br>e                                                     | 04       | 41 | 24<br>49                                                                           |                |                         |    |    | +15.8      | Trace distant                                                                       |
| 26   | 1P<br>e<br>1<br>1PFP<br>1PcP<br>1<br>1PcS<br>1<br>1ScS<br>e | 08       | 00 | 48.5<br>01<br>28<br>03<br>05<br>11<br>06<br>53<br>07<br>34<br>10<br>55<br>13<br>41 | 1.7<br>.6<br>2 | -                       | +  | +  | +16        | I distant, COS 14° N, 91° W.<br>(Guatemala) $\Delta = 7:53.6$ ; $\Delta = 38^\circ$ |
| 27   | eP<br>eS                                                    | 11       | 40 | 37<br>43.2                                                                         |                | -10                     | -8 | +  | +16        | Trace local - 31 mi. NE                                                             |
| 27   | 1P                                                          | 21       | 52 | 25.5                                                                               |                |                         |    |    | +15        | I distant                                                                           |
| 28   | 1P<br>1S                                                    | 21       | 06 | 24<br>25.7                                                                         |                | +7                      |    | -  | +18.5      | I local - 8 mi. Direction indefinite                                                |
| 29   | 1P<br>1S                                                    | 08       | 41 | 58<br>42 08                                                                        |                | +12                     | -5 | -  | +20        | II local                                                                            |
| 29   | 1P<br>1S                                                    | 18       | 45 | 45.5<br>55.5                                                                       |                |                         |    |    | +20        | Trace local                                                                         |
| 29   | 1P<br>1P<br>1S<br>1S<br>1S                                  | 19       | 06 | 31.2<br>32.5<br>41.3<br>44.3                                                       |                |                         |    |    | +20        | I local                                                                             |
| 29   | 1S                                                          | 19       | 06 | 57.2                                                                               |                |                         |    |    | +20        | I local - P - lost in above                                                         |
| 29   | 1P<br>1P<br>1S<br>1S                                        | 23       | 43 | 02.5<br>03.7<br>12.5<br>15.4                                                       |                |                         |    |    |            | I local                                                                             |
| 30   | 1P<br>1<br>1                                                | 05       | 05 | 51.5<br>22.5<br>37                                                                 | 1.3<br>1.0     |                         |    | -? | -8.4       | I distant                                                                           |
| 30   | 1P<br>1S                                                    | 22       | 58 | 01.5<br>11.5                                                                       |                |                         |    |    | -5.5       | Trace                                                                               |
| 30   | 1P<br>1P<br>1S<br>1S                                        | 22       | 08 | 12.4<br>13.8<br>22.4<br>24.8                                                       |                | +8                      | -  | -  | -5.6       | I                                                                                   |
| 30   | 1P<br>1S                                                    | 22       | 10 | 36.5<br>46.0                                                                       |                | +10                     | -  | -  | -5.6       | I                                                                                   |
| 30   | 5 traces local shocks - distance ca 50 mi.                  |          |    |                                                                                    |                |                         |    |    |            |                                                                                     |



## SHASTA DAM SEISMOLOGICAL STATION

Instrumental Report . . . . . July, August, September 1946

1. The Shasta Dam Station continued in routine operation throughout the period of the report.
2. In the following report, Symbol I represents an earthquake having a small trace amplitude on the record, II represents a fairly well recorded shock, and III large trace amplitude. Barely recorded shocks are marked "Trace". Local shocks are less than 70 miles from this station, Regional shocks from 70 to 700 miles, and distant shocks greater than 700 miles. Regional shocks of unknown distance sometimes may be classed as distant.
3. Seismicity in the immediate locality of the Station continued light.
4. The Mt. Lassen area continued active, particularly in the first part of July.

~~Confidential-not for publication.~~



Shasta Dam

## SEISMOLOGICAL STATION

MONTH OF July

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                                     | G. C. T. |    |              | Period<br>T | Trace Amplitude, .01 mm |     |               | $\Delta t$ | Remarks                                                                                           |
|------|-------------------------------------------|----------|----|--------------|-------------|-------------------------|-----|---------------|------------|---------------------------------------------------------------------------------------------------|
|      |                                           | h        | m  | s            |             | E                       | N   | Z             |            |                                                                                                   |
| 1    | 7 trace local shocks - distance CA 50 mi. |          |    |              |             |                         |     |               |            |                                                                                                   |
| 1    | 1P<br>1S                                  | 01       | 08 | 22.8<br>32.8 |             | +8                      | -   | -             | -5.2       | II local - 50 mi. ESE                                                                             |
| 1    | 1P<br>1S                                  | 01       | 26 | 29.5<br>39.3 |             |                         |     |               | -5.1       | I local - 49 mi.                                                                                  |
| 1    | 1P<br>1S                                  | 02       | 00 | 18.8<br>28.8 |             |                         |     |               | -5         | I local - 50 mi.                                                                                  |
| 1    | 1P                                        | 02       | 58 | 21.5         | 1.7         |                         |     | +             | -5         | I distant - CGS 64° N, 148° W, ne<br>Fairbanks, Alaska; $\theta = 02:52.4$ ; $\Delta = 285^\circ$ |
| 1    | 1P<br>1S                                  | 03       | 25 | 57.5<br>07.5 |             |                         |     |               | -4.8       | I local - 50 mi.                                                                                  |
| 1    | eP                                        | 10       | 05 | 08           |             |                         |     |               | -3.8       | I distant                                                                                         |
| 1    | 1P<br>1S                                  | 15       | 05 | 24.8<br>34.6 |             | +8                      | -   | -             | -3         | I local - 49 mi.                                                                                  |
| 1    | eP<br>e                                   | 22       | 48 | 25.5<br>38   |             |                         |     |               | -2         | I distant                                                                                         |
| 3    | eP                                        | 01       | 07 | 41           |             |                         |     |               | +1.2       | Trace distant                                                                                     |
| 3    | eP                                        | 04       | 59 | 20           |             |                         |     |               | +1.6       | Trace distant                                                                                     |
| 4    | 1P<br>eS                                  | 03       | 46 | 58.3<br>10.3 |             |                         |     |               | +5.3       | I local - 60 mi.                                                                                  |
| 4    | 1P                                        | 07       | 13 | 10           |             |                         |     | +             | +6         | I distant                                                                                         |
| 4    | eP<br>e                                   | 09       | 46 | 26<br>33     |             |                         |     |               | +6.3       | Trace distant                                                                                     |
| 5    | 1P<br>1P                                  | 02       | 43 | 34<br>43     |             |                         |     | -             | +10        | I distant                                                                                         |
| 5    | 1P                                        | 19       | 41 | 41           |             |                         |     |               | +12        | I distant                                                                                         |
| 5    | 1P<br>1S                                  | 22       | 54 | 20.1<br>29.1 |             | -35                     | +15 | +             |            | II local - 45 mi. ESE                                                                             |
| 5    | eS                                        | 22       | 54 | 44.5         |             |                         |     |               | +11.5      | II local                                                                                          |
| 5    | 1P<br>1S                                  | 22       | 55 | 13.6<br>22   |             | -105                    | +45 | +155<br>1200+ | +11.5      | III local - 47 mi. ESE                                                                            |



## SEISMOLOGICAL STATION

MONTH OF July



Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Phase             | G. C. T. |          |                      | Period<br>T | Trace Amplitude, .01 mm |      |     | $\Delta t$ | Remarks                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|----------|----------------------|-------------|-------------------------|------|-----|------------|-----------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   | h        | m        | s                    |             | E                       | N    | Z   |            |                                                                                                                       |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS          | 22       | 57       | 45.7<br>55.1         |             | -25                     | +10  | +   | +11.5      | II local - 47 mi. ESE                                                                                                 |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>e<br>IS     | 23       | 04<br>05 | 59.2<br>07.4<br>08.2 |             | -20                     | +8   | +   | +11.4      | II local - 45 mi. ESE                                                                                                 |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>es<br>IS    | 01       | 38       | 16.5<br>43.1<br>44.4 |             | +25                     | +3   | +30 | +11.1      | I regional - 140 mi. W                                                                                                |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS          | 04       | 09       | 31<br>58.5           |             | +10                     | -3   | +   | +11.7      | I regional - 140 mi. W                                                                                                |
| <p>Unless otherwise designated the following shocks are a part of a swarm which originated in the Mt. Lassen area. This and the swarm of beginning June 19, 1946 are by far the most extensive which came from the Mt. Lassen area since the station was in operation. In the epicentral area, the shocks were described as an almost continuous trembling of the ground, especially in the two hour period beginning 22:54 PST July 6. The strongest of these shocks were felt in Redding.</p> <p>On the first day of record, ending 1704 OCT July 7, a total of 104 shocks, recognizable as such, were counted. Of these 82 were traces and were not timed separately. The distances of all were about 50 mi. Readings of the larger shocks follow:</p> |                   |          |          |                      |             |                         |      |     |            |                                                                                                                       |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS          | 06       | 53       | 56.7<br>54 06.9      |             | -40                     | +16  | +   | +9.2       | II 51 mi. ESE                                                                                                         |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS<br>ISE   | 06       | 55       | 29.3<br>39.3<br>40   |             | +60                     | -20  | -   | +9.2       | III + - this is the main shock of the swarm. Epicenter probably in Broke Off Mtn. area in Lassen volcanic Nat'l Park. |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>ISZ<br>ISEN | 06       | 58       | 45.2<br>55.2<br>55.6 |             | -200                    | +60  | +7  | +9.2       | III                                                                                                                   |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS          | 07       | 01       | 22.8<br>32.8         |             | -95?                    | +60? | +7  | +9.2       | II - beginning obscured by earlier shock                                                                              |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>IS          | 07       | 08       | 45.4<br>55.4         |             | -25?                    | +25? | +   |            | I                                                                                                                     |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P<br>1<br>e      | 07       | 09       | 39.2<br>43.8<br>51.2 |             | -30                     | +15  | +   | II         | II may be 2 shocks                                                                                                    |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1P                | 07       | 12<br>13 | 51.7<br>01.7         |             | -25                     | +12  | +   |            | II                                                                                                                    |



Shasta Dam

## SEISMOLOGICAL STATION

MONTH OF July

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Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                 | G. C. T. |          |                              | Period<br>T | Trace Amplitude, .01 mm |     |      | $\Delta t$ | Remarks                                                                                                                                                                      |
|------|-----------------------|----------|----------|------------------------------|-------------|-------------------------|-----|------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                       | h        | m        | s                            |             | E                       | N   | Z    |            |                                                                                                                                                                              |
| 7    | 1P<br>1S              | 07       | 13       | 54.4<br>04.2                 |             |                         |     | ?    |            | I                                                                                                                                                                            |
| 7    | 1P<br>1S              | 07       | 16       | 03.9<br>13.9                 |             | -20                     | +12 | +    | -9.2       | II                                                                                                                                                                           |
| 7    | 1P<br>1P<br>1S<br>S   | 07       | 25       | 18.9<br>20.1<br>29<br>32.4   |             |                         |     |      |            | II                                                                                                                                                                           |
| 7    | 1P<br>1S              | 07       | 31       | 22.9<br>32.9                 |             | -135                    | +52 | +140 |            | II                                                                                                                                                                           |
| 7    | 1P<br>1P?<br>1S<br>1? | 07       | 48       | 41.4<br>49.2<br>51.4<br>59.2 |             |                         |     | +    |            | I - 2 shocks?                                                                                                                                                                |
| 7    | 1P<br>1S              | 08       | 14       | 18.6<br>28.8                 |             | -20                     | +10 | +    | +9.3       | I                                                                                                                                                                            |
| 7    | 1P<br>1S              | 08       | 35       | 24.7<br>34.7                 |             | -150                    | -65 | +    | +9.4       | II+                                                                                                                                                                          |
| 7    | 1P<br>1S              | 08       | 47<br>48 | 52.4<br>02.5                 |             | -42                     | +19 | +    |            | II                                                                                                                                                                           |
| 7    | 1P<br>1S              | 08       | 52       | 25.9<br>35.7                 |             | -14                     | +5  | +    |            | I                                                                                                                                                                            |
| 7    | 1P<br>1S              | 08       | 55       | 43.4<br>53.6                 |             | -80                     | +35 | +    |            | II                                                                                                                                                                           |
| 7    | 1P<br>1S              | 11       | 13       | 39<br>47.8                   |             | -                       | +   | +    | +9.8       | I - 44 mi.                                                                                                                                                                   |
| 7    | 1P<br>1S<br>1<br>e    | 11       | 17       | 08.1<br>17.5<br>37<br>47.5   |             | -19                     | +8  | +20  |            | II-47 mi. Note-these two shocks almost exactly 1 hour apart, are practically identical in appearance, even in the tail end portion 1 to 2 min. after the entry of the P-wave |
| 7    | 1P<br>1S<br>1<br>e    | 12       | 17       | 07.5<br>16.8<br>30.5<br>46   |             | -29                     | +12 | +30  | +10        | II                                                                                                                                                                           |
| 7    | 1P<br>1S              | 13       | 27       | 33.9<br>43.5                 |             | -25                     | +10 | +    | +10.3      | II                                                                                                                                                                           |



## SEISMOLOGICAL STATION

MONTH OF **July****Shasta Dam**Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date                                    | Phase                                          | G. C. T. |    |                               | Period<br>T | Trace Amplitude, .01 mm |     |      | $\Delta t$ | Remarks             |
|-----------------------------------------|------------------------------------------------|----------|----|-------------------------------|-------------|-------------------------|-----|------|------------|---------------------|
|                                         |                                                | h        | m  | s                             |             | E                       | N   | Z    |            |                     |
| 7                                       | 1P<br>e<br>1                                   | 14       | 19 | 22.3<br>32.9<br>33.5          |             | -15                     | +5  | +    | +10.5      | I                   |
| 7                                       | 1P<br>1S                                       | 10       | 35 | 20.3<br>30.7                  |             | -20                     | +7  | +    | +10.8      | II                  |
| 7                                       | 1P<br>1P?<br>e                                 | 17       | 34 | 27.8<br>32.3<br>43.2          |             |                         |     |      | +11.1      | I local - 2 shocks? |
| 7                                       | 1P<br>1S                                       | 19       | 45 | 25.5<br>35.7                  |             | -45                     | +16 | +    | +11.5      | I                   |
| 7                                       | 1P<br>1<br>1                                   | 20       | 07 | 18<br>25<br>08 12             | 1.0<br>1.7  |                         |     | -    | 11.6       | I distant           |
| 7-8                                     | 25 traces local shocks - distance about 50 mi. |          |    |                               |             |                         |     |      |            |                     |
| 8                                       | 1P<br>1S                                       | 06       | 13 | 20.8<br>31.2                  |             |                         |     |      | +13        | I local             |
| 8                                       | 1P                                             | 10       | 11 | 21                            | 1.0         |                         |     | *    | +13.3      | Trace distant       |
| 8                                       | 1P<br>1S<br>1S                                 | 11       | 25 | 28.4<br>38.4<br>38.6          |             | -39                     | +15 | +50  | +13.5      | II                  |
| 8                                       | 1P<br>1S                                       | 11       | 27 | 16.5<br>26.7                  |             |                         |     |      | +13.5      | I                   |
| 8                                       | 1P<br>1S                                       | 11       | 51 | 50.8<br>52 00.9               |             | -36                     | +14 | +45  | +13.5      | I                   |
| 8                                       | 1P<br>1S                                       | 12       | 03 | 51.6<br>04 01.5               |             | -250                    | +37 | +100 | +13.5      | III felt in Mineral |
| 8                                       | 1P<br>es                                       | 12       | 15 | 16<br>26.2                    |             | -12                     | +4  | +    | +13.5      | I                   |
| 8                                       | 1P?<br>eP                                      | 18       | 01 | 52.5<br>02 00                 |             |                         |     |      | +14        | I distant           |
| 8                                       | 1P<br>1P<br>1S<br>1S                           | 19       | 37 | 49.7<br>51<br>59.7<br>38 02.5 | ?           | -                       | -   | -    | +14.2      | I - 50 mi.          |
| 9                                       | 1P                                             | 01       | 20 | 21.5                          |             |                         |     | +    | +14.4      | I distant           |
| Remainder of record, until 17:05 - lost |                                                |          |    |                               |             |                         |     |      |            |                     |



## SEISMOLOGICAL STATION

MONTH OF July

Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date  | Phase                                         | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |     |   | $\Delta t$ | Remarks                                    |
|-------|-----------------------------------------------|----------|----|------|-------------|-------------------------|-----|---|------------|--------------------------------------------|
|       |                                               | h        | m  | s    |             | E                       | N   | Z |            |                                            |
| 9     | 1                                             | 17       | 17 | 45.5 |             |                         |     |   | +15.4      | Trace - 49 mi.                             |
| 9     | 1P                                            | 19       | 37 | 37.5 |             | -48                     | +18 | + | +15.7      | I local                                    |
|       | 1P                                            |          |    | 39.0 |             |                         |     |   |            |                                            |
|       | 1S                                            |          |    | 47.8 |             |                         |     |   |            |                                            |
|       | 1S                                            |          |    | 50.2 |             |                         |     |   |            |                                            |
| 9     | 1P                                            | 22       | 53 | 52.5 |             |                         |     |   | +16.3      | I local                                    |
|       | 1S                                            |          | 54 | 02.3 |             |                         |     |   |            |                                            |
| 10-11 | 7 traces local shocks - distance about 50 mi. |          |    |      |             |                         |     |   |            |                                            |
| 11    | 1P                                            | 01       | 18 | 33   |             |                         |     |   | -10        | Trace distant                              |
| 11    | eP                                            | 04       | 53 | 24   | 1.1         |                         |     |   | -9.2       | I distant - CGS 17° N, 94° W               |
|       | 1                                             |          | 54 | 50   |             |                         |     |   |            | (Isthmus of Tehuantepec) $\Delta = 4:46.0$ |
|       | eS                                            |          | 58 | 38   |             |                         |     |   |            | $\Delta = 34^\circ$                        |
|       | e                                             | 05       | 00 | 55   |             |                         |     |   |            |                                            |
| 11    | 1                                             | 17       | 15 | 46.5 |             |                         |     |   | -7.5       | Trace regional?                            |
| 11    | 1P                                            | 18       | 45 | 32.7 |             | +                       | -   | - | -7.5       | II local                                   |
|       | 1S                                            |          |    | 42.5 |             |                         |     |   |            |                                            |
| 11    | 1P                                            | 21       | 09 | 07   |             | +10                     | 0   | + | -7.2       | I regional - 170 mi.                       |
|       | 1S                                            |          |    | 39   |             |                         |     |   |            |                                            |
| 11    | 1P                                            | 23       | 08 | 16.5 |             | -40                     | +15 | + | -7         | I local                                    |
|       | 1S                                            |          |    | 26.5 |             |                         |     |   |            |                                            |
| 11-12 | 4 traces local - ca 50 mi.                    |          |    |      |             |                         |     |   |            |                                            |
| 12    | 1P                                            | 18       | 52 | 12.1 |             |                         |     | + | -5.4       | I local - 14 mi.                           |
|       | 1S                                            |          |    | 14.8 |             |                         |     |   |            |                                            |
| 12    | eP                                            | 19       | 01 | 13.5 |             |                         |     |   | -5.4       | Trace distant                              |
| 12    | 1P                                            | 22       | 03 | 02   | 1.0         | -10                     | +10 | - | -4.8       | I distant                                  |
|       | 1                                             |          |    | 35   |             |                         |     |   |            |                                            |
|       | 1                                             |          | 04 | 17   | 1.5         |                         |     |   |            |                                            |
|       | 1                                             |          | 08 | 20   | 2.5         |                         |     |   |            |                                            |
|       | 1P?                                           |          | 09 | 13.5 | 1.0         |                         |     | + |            | another shock?                             |
|       | 1S                                            |          | 13 | 13   | 2.5         |                         |     |   | -4.8       |                                            |
|       | 1S                                            |          |    | 56   | 2.5         |                         |     |   |            |                                            |
| 12    | e                                             | 23       | 37 | 48   |             |                         |     |   | -4.8       | Trace distant                              |
|       | 1P                                            |          | 38 | 00   |             |                         |     |   |            |                                            |
| 12-13 | 3 traces local shocks - ca 50 mi.             |          |    |      |             |                         |     |   |            |                                            |



## Shasta Dam

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 $\Delta t$  is time correction

| Date  | Phase                                           | G. C. T. |      |                            | Period<br>T | Trace Amplitude, .01 mm |     |   | $\Delta t$             | Remarks               |
|-------|-------------------------------------------------|----------|------|----------------------------|-------------|-------------------------|-----|---|------------------------|-----------------------|
|       |                                                 | h        | m    | s                          |             | E                       | N   | Z |                        |                       |
| 13    | 1<br>e<br>e                                     | 00       | 48   | 48<br>58<br>49 02.5        |             |                         |     |   | <sup>+1m</sup><br>-4.4 | Trace local           |
| 13    | eP                                              | 01       | 51   | 35                         |             |                         |     |   | -4.3                   | Trace local           |
| 13    | 1P<br>1P<br>1S<br>1S                            | 09       | 24   | 05.5<br>07<br>15.5<br>18.2 |             | -48                     | +22 | + | -3                     | II local - 50 mi. ESB |
| 14    | 1P<br>e<br>1S                                   | 13       | 37   | 46.5<br>16.5<br>20         |             |                         |     | + | +2.5                   | I regional - 175 mi.  |
| 14    | 1                                               | 14       | 15.8 |                            |             |                         |     |   |                        | I local - 13 mi.      |
| 14    | 1                                               | 16       | 36.0 |                            |             |                         |     |   |                        | Trace local - 48 mi.  |
| 14    | 1P<br>1P                                        | 23       | 11   | 26.5<br>35                 |             |                         |     |   | +4.4                   | Trace regional        |
| 14-15 | 3 traces local - ca 50 mi.                      |          |      |                            |             |                         |     |   |                        |                       |
| 15    | 1P                                              | 07       | 22   | 52                         |             |                         |     |   | +6                     | I local - 50 mi.      |
| 15    | 1P                                              | 07       | 39   | 31                         |             |                         |     |   | +6                     | Trace local - 50 mi.  |
| 15    | 1P                                              | 10       | 40   | 44.8                       |             |                         |     |   | +6.3<br>+0.0m          | I local - 50 mi.      |
| 15    | 1P<br>1                                         | 18       | 40   | 45<br>42 55                | 0.9<br>1.1  |                         |     | + | +7.3                   | I distant             |
| 16    | 1P                                              | 11       | 27.3 |                            |             |                         |     |   |                        | I local 13 mi.        |
| 16    | 1P<br>1                                         | 20       | 26   | 42<br>27 33                | 0.8         | +                       | -   | - | +11                    | I distant             |
| 16    | 1P<br>1<br>e                                    | 22       | 37   | 53.9<br>59.2<br>38 02.2    |             | +19                     | -10 | + | +11.2                  | II local ?            |
| 16-17 | 20 traces local shocks, distance - 45 to 55 mi. |          |      |                            |             |                         |     |   |                        |                       |
| 17    | 1P<br>1P<br>1S                                  | 01       | 06   | 29.9<br>31.3<br>39.5       |             |                         |     |   | +11.4                  | I local - 48 mi.      |
| 17    | eP<br>1P<br>1S                                  | 02       | 20   | 29.5<br>31.3<br>39.2       |             |                         |     |   | +11.5                  | I local - 50 mi.      |



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| Date                                                 | Phase                              | G. C. T. |    |                                              | Period<br>T  | Trace Amplitude, .01 mm |     |      | $\Delta t$ | Remarks                                                                                                   |
|------------------------------------------------------|------------------------------------|----------|----|----------------------------------------------|--------------|-------------------------|-----|------|------------|-----------------------------------------------------------------------------------------------------------|
|                                                      |                                    | h        | m  | s                                            |              | E                       | N   | Z    |            |                                                                                                           |
| 17                                                   | eP                                 | 05       | 11 | 38                                           |              |                         |     |      | +12        | Trace distant                                                                                             |
| 17                                                   | 1P<br>1P<br>1S                     | 08       | 10 | 11.5<br>13.6<br>21.8                         |              | -125                    | +50 | +140 | +12.4      | II local - 52 mi. ESE                                                                                     |
| 17                                                   | 1S<br>1S                           | 08       | 13 | 19.4<br>29.2                                 |              | -28                     | +10 | +    | +12.4      | I local - 49 mi. ESE                                                                                      |
| 17                                                   | eP<br>1P<br>1S<br>1S               | 10       | 19 | 14.2<br>15.5<br>24.0<br>26.8                 |              |                         |     |      | +12.6      | I local - 49 mi.                                                                                          |
| 17                                                   | eP                                 | 17       | 29 | 53                                           | .9           |                         |     |      | +13.7      | Trace regional or distant                                                                                 |
| 17                                                   | e                                  | 19       | 09 | 27                                           |              |                         |     |      | +14        | Trace distant                                                                                             |
| 17-18 35 traces local shocks - distance 45 to 55 mi. |                                    |          |    |                                              |              |                         |     |      |            |                                                                                                           |
| 18                                                   | 1P<br>1P<br>eS<br>eS               | 03       | 27 | 41.6<br>43.6<br>52.1<br>54.6                 |              | -12                     | +6  | +    | +15.1      | I local - 53 mi. ESE                                                                                      |
| 18                                                   | e                                  | 05       | 05 | 05                                           |              |                         |     |      | +15.3      | Trace distant                                                                                             |
| 18                                                   | 1P<br>e<br>e<br>e<br>coda          | 06       | 09 | 29.6<br>10 29<br>11.2                        | 1.5<br><br>7 | -24                     | +40 | -    | +15.4      | II distant - D41, NNW QAS 50° N,<br>129° W; Near Queen Charlotte Island<br>O = 6:07.1; $\Delta$ = 730 mi. |
| 18                                                   | eP<br>e<br>coda                    | 07       | 18 | 57<br>21 07                                  | 6 -7         |                         |     |      | +15.5      | II distant; aftershock                                                                                    |
| 18                                                   | 1P<br>1                            | 07       | 22 | 37.5<br>33 03.5                              | 9; 2.8<br>.8 |                         |     |      | +15.5      | II distant                                                                                                |
| 18                                                   | 1P<br>1P<br>1P?<br>1S?<br>1S<br>1S | 09       | 27 | 39.8<br>41.3<br>47.8<br>49.8<br>50.8<br>53.6 |              |                         |     |      | +15.8      | I local - 50 mi.                                                                                          |
| 18                                                   | 1P<br>1P<br>1S                     | 09       | 59 | 35.3<br>37.1<br>45.4                         |              | -22                     | +10 | +    | +15.8      | I local - 51 mi. ESE                                                                                      |



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| Date  | Phase                             | G. C. T. |    |                                           | Period<br>T | Trace Amplitude, .01 mm |     |    | $\Delta t$ | Remarks                   |
|-------|-----------------------------------|----------|----|-------------------------------------------|-------------|-------------------------|-----|----|------------|---------------------------|
|       |                                   | h        | m  | s                                         |             | E                       | N   | Z  |            |                           |
| 18    | 1P<br>1P<br>eS                    | 11       | 35 | 20.3<br>21.8<br>30.3                      |             | -30                     | +14 | +  | +16        | II local - 50 mi. ESE     |
| 18    | 1P<br>1P<br>1P<br>e<br>1S?<br>1S? | 14       | 29 | 58<br>30 18<br>41<br>31 47<br>32 03<br>07 |             |                         |     |    | +16.3      | II distant?               |
| 18    | 1P                                | 15       | 24 | 37.5                                      |             |                         |     |    | +16.5      | Trace distant             |
| 18    | eP                                | 16       | 08 | 43.5                                      |             |                         |     |    | +16.6      | Trace distant             |
| 18    | 1P                                | 18       | 57 | 51                                        |             |                         |     |    | +16.8      | I local - ca 50 mi.       |
| 18    | eP                                | 23       | 48 | 50                                        |             |                         |     |    | +17.5      | Trace regional or distant |
| 18-19 | 5 traces local shocks - ca 50 mi. |          |    |                                           |             |                         |     |    |            |                           |
| 19    | 1P<br>1                           | 21       | 27 | 20.5<br>28                                |             |                         |     |    | +4.8       | I distant                 |
| 21    | 1<br>1P<br>1                      | 09       | 54 | 13<br>14<br>39                            |             |                         |     |    | +3.8       | Trace regional            |
| 21    | 1P<br>1S                          | 23       | 06 | 22<br>32                                  |             |                         |     |    | +3.5       | Trace local - 50 mi.      |
| 22    | 1P?<br>1<br>1<br>eS               | 16       | 21 | 39<br>22 11+<br>29<br>33                  |             |                         |     |    | +3         | I regional                |
| 23    | 1P?<br>eS                         | 02       | 43 | 00<br>25                                  |             | +10                     | -   | +  | +2.7       | Trace regional - 130 mi.  |
| 23    | 1P<br>e                           | 17       | 27 | 00.5<br>30 02                             | 1.3         |                         |     | +  | +2.2       | I distant                 |
| 23    | 1P<br>e                           | 17       | 44 | 03<br>45 02                               | .9          |                         |     | -? | +2.2       | I distant                 |
| 23    | 1P<br>1S                          | 22       | 43 | 14<br>24                                  |             |                         |     |    | +2         | Trace local - 50 mi.      |
| 24    | 1<br>e                            | 00       | 21 | 10<br>22 13                               |             |                         |     |    | +2         | Trace regional?           |



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| Date  | Phase                                     | G. C. T. |    |                           | Period<br>T | Trace Amplitude, .01 mm |     |   | $\Delta t$ | Remarks                                                                                         |
|-------|-------------------------------------------|----------|----|---------------------------|-------------|-------------------------|-----|---|------------|-------------------------------------------------------------------------------------------------|
|       |                                           | h        | m  | s                         |             | E                       | N   | Z |            |                                                                                                 |
| 24    | 1P<br>IS                                  | 02       | 31 | 59<br>32 32               |             | -                       |     |   | +2         | I regional                                                                                      |
| 24    | oP<br>e                                   | 11       | 12 | 56<br>16 20               |             |                         |     |   | +1.8       | Trace distant                                                                                   |
| 24    | 1P                                        | 16       | 55 | 12.5                      |             |                         |     |   | +1.6       | Trace local - 50 mi.                                                                            |
| 24    | 1P<br>IS                                  | 20       | 57 | 07<br>17                  |             | -15                     | +7  | + | +1.5       | I local - 50 mi.                                                                                |
| 24    | 1P                                        | 20       | 59 | 15                        |             |                         |     |   | +1.5       | local - 50 mi.                                                                                  |
| 24    | 1P<br>IS                                  | 21       | 00 | 04<br>14                  |             | -12                     | +6  | + | +1.5       | I local - 50 mi.                                                                                |
| 25    | 1P<br>IS                                  | 02       | 06 | 58.5<br>17.5              |             | -                       |     | + | +1.3       | I regional - 95 mi.                                                                             |
| 25    | 1P<br>oZ<br>e                             | 16       | 49 | 44.5<br>55 34<br>59 47    | 1.0         | +                       |     | + | + .9       | I distant - COS 51° N, 179° W,<br>Aleutian Islands; $\theta = 16:42.1$ ;<br>$\Delta = 40^\circ$ |
| 25    | 1P<br>IS                                  | 22       | 20 | 57.8<br>21 07.6           |             | +50                     | -20 | - | + .8       | II local - 49 mi. ESE                                                                           |
| 25    | 1P<br>IS                                  | 23       | 10 | 32.6<br>42.4              |             | +30<br>900              | -12 | - | + .8       | III local - 49 mi. ESE                                                                          |
| 25    | 1P<br>IS                                  | 23       | 24 | 49.4<br>59.4              |             | -10                     | +3  | + | + .7       | I local - 50 mi. ESE                                                                            |
| 26-27 | 8 traces local shocks - distance ca 50 mi |          |    |                           |             |                         |     |   |            |                                                                                                 |
| 26    | 1P<br>oS                                  | 04       | 20 | 29.5<br>26 42             | 1.1         |                         |     |   | + .6       | I distant                                                                                       |
| 26    | 1P<br>e<br>oS                             | 06       | 56 | 35.5<br>58 34<br>07 06 23 | 1.1         |                         |     |   | + .5       | I distant - COS 21.6° S, 70.0° W,<br>North Chile; $\theta = 6:44.7$ ; $\Delta = 78^\circ$       |
| 26    | 1P<br>e<br>oSK37                          | 22       | 44 | 26<br>54<br>55 00         |             |                         |     |   | - .2       | I distant - 90°?                                                                                |
| 27    | 1P<br>IS                                  | 20       | 44 | 19.4<br>29.4              |             |                         |     |   | -1         | I local - 50 mi.                                                                                |
| 27    | 1P                                        | 20       | 45 | 49                        |             |                         |     |   | -1         | Trace local - 50 mi.                                                                            |



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| Date                                           | Phase                                      | G. C. T. |      |      | Period<br>T | Trace Amplitude, .01 mm |    |   | $\Delta t$ | Remarks                   |
|------------------------------------------------|--------------------------------------------|----------|------|------|-------------|-------------------------|----|---|------------|---------------------------|
|                                                |                                            | h        | m    | s    |             | E                       | N  | Z |            |                           |
| 27                                             | 1P<br>es?                                  | 21       | 55   | 10.4 |             |                         |    | + | -1         | I distant                 |
|                                                |                                            | 22       | 05   | 29   |             |                         |    |   |            |                           |
| 27                                             | 1P<br>1S<br>1S                             | 22       | 17   | 59.5 |             |                         |    |   | -1         | I local - 50 mi.          |
|                                                |                                            |          | 18   | 09.5 |             |                         |    |   |            |                           |
|                                                |                                            |          |      | 12.2 |             |                         |    |   |            |                           |
| 27                                             | 1P<br>1<br>es                              | 22       | 51   | 14.5 |             |                         |    |   | -1         | I distant - 70°           |
|                                                |                                            |          | 53   | 14   |             |                         |    |   |            |                           |
|                                                |                                            | 23       | 00   | 24   |             |                         |    |   |            |                           |
| 28                                             | e                                          | 08       | 07   | 03   |             |                         |    |   | -1.5       | Trace distant             |
| 28                                             | eP                                         | 16       | 39   | 47   |             |                         |    |   | -1.8       | Trace distant             |
| 28                                             | eP                                         | 22       | 27   | 53   |             |                         |    |   | -2         | Trace distant             |
| 29                                             | e<br>e                                     | 17       | 10   | 16   |             |                         |    |   | -2.8       | Trace local - or regional |
|                                                |                                            |          |      | 27   |             |                         |    |   |            |                           |
| 30                                             | e                                          | 03       | 44   | 09   |             |                         |    |   | -3.5       | Trace distant             |
| 30                                             | 1P                                         | 05       | 29   | 08.2 |             |                         |    |   | -3.6       | Trace local - 50 mi.      |
| 31                                             | 1P                                         | 00       | 39   | 10.5 |             |                         |    | - | -4.8       | I distant                 |
| 31                                             | 1P                                         | 05       | 53   | 26   |             |                         |    |   | -5.2       | I local - 50 mi.          |
| 31                                             | 1P<br>1                                    | 06       | 29   | 39   |             |                         |    |   | -5.2       | I local - 50 mi.          |
|                                                |                                            |          | 30   | 15   |             |                         |    |   |            |                           |
| Also 2 or 3 other faint traces - same distance |                                            |          |      |      |             |                         |    |   |            |                           |
| Aug. 1                                         | 1P<br>1S                                   | 01       | 17   | 20   |             | +12                     | 04 | 0 | 06         | II local - 50 mi. ESE     |
|                                                |                                            |          |      | 30   |             |                         |    |   |            |                           |
| 1                                              | 4 traces local shocks - distance ca 50 mi. |          |      |      |             |                         |    |   |            |                           |
| 1                                              | eP                                         | 21       | 53.0 |      |             |                         |    |   |            | Trace ca 40 mi.           |
| 1                                              | 1P<br>1S                                   | 23       | 40   | 30   |             | +10                     | 0  | + | -7.1       | I regional - 115 mi. "    |
|                                                |                                            |          |      | 52   |             |                         |    |   |            |                           |
| 2                                              | e                                          | 00       | 44   | 11   |             |                         |    |   | -7.2       | Trace distant             |
| 2                                              | 1P<br>1S                                   | 12       | 33   | 49   |             |                         |    |   | -8         | I local - 50 mi.          |
|                                                |                                            |          |      | 59   |             |                         |    |   |            |                           |



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| Date                                                                 | Phase | G. C. T. |      |      | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                                                                                        |
|----------------------------------------------------------------------|-------|----------|------|------|-------------|-------------------------|-----|-----|------------|----------------------------------------------------------------------------------------------------------------|
|                                                                      |       | h        | m.   | s    |             | E                       | N   | Z   |            |                                                                                                                |
| 2                                                                    | 1P    | 19       | 31   | 07   |             | +20                     | 015 | -   | -8.4       | II distant - CGS 27° S, 70° W,<br>Near Copicapo, Chile, $\Delta = 19:18.7$<br>$\Delta = 83\frac{1}{2}^{\circ}$ |
|                                                                      | n     |          |      | 22   | 1.3         |                         |     | 260 |            |                                                                                                                |
|                                                                      | e     |          | 35   | 53   | 3           |                         |     |     |            |                                                                                                                |
|                                                                      | BSKS  |          | 41   | 35   | 4           |                         |     |     |            |                                                                                                                |
|                                                                      | es    |          |      | 42   |             |                         |     |     |            |                                                                                                                |
|                                                                      | ePKKP |          | 48   | 30   | 1.3         |                         |     |     |            |                                                                                                                |
|                                                                      | 1P'P  |          | 56   | 24   | 1.2         |                         |     |     |            |                                                                                                                |
| 2                                                                    | 1P    | 23       | 24   | 22   |             |                         |     |     | -8.7       | Trace distant                                                                                                  |
| 3                                                                    | er    | 13       | 17   | 34   |             |                         |     |     | -9.4       | I distant                                                                                                      |
|                                                                      | 1P    |          |      | 45   | 1.2         |                         |     |     |            |                                                                                                                |
| 3                                                                    | eP    | 19       | 28.8 |      |             |                         |     |     |            | Trace local - ca 48 mi.                                                                                        |
| 4                                                                    | eP    | 18       | 00   | 00.5 | 1.0         | -                       |     |     | -10.9      | III distant                                                                                                    |
|                                                                      |       |          | 00.2 |      | 15          |                         |     |     |            | Ground Roll                                                                                                    |
|                                                                      | n     |          |      |      | 1.0         |                         |     | 520 |            | CGS 19.3° N, 69° W, (Dominican                                                                                 |
|                                                                      | 1*    |          | 11   | 00   | 1.0         |                         |     | 20  |            | Republic; $\Delta = 17:51:07$ ; $\Delta = 50^{\circ}$                                                          |
|                                                                      | 1*    |          | 12   | 47   | 1.0         |                         |     | 85  |            | Extensive damage                                                                                               |
|                                                                      | e     | 14.7     | 14.7 |      | 40          | 180                     |     |     |            |                                                                                                                |
|                                                                      | M     |          | 22.0 |      | 14          | 180                     |     |     |            | *Probably aftershocks                                                                                          |
|                                                                      | e?    |          | 31   | 02   | 1.5         |                         |     |     |            |                                                                                                                |
|                                                                      | e     |          |      | 52   |             |                         |     |     |            |                                                                                                                |
|                                                                      | 1*    |          | 33   | 41   | 1.0         |                         |     |     |            |                                                                                                                |
|                                                                      | 1*    |          | 37   | .9   | 1.0         |                         |     |     |            |                                                                                                                |
|                                                                      | 1*    |          | 42   | 41   | 1.4         |                         |     | 90  |            |                                                                                                                |
|                                                                      | coda  |          |      |      | 13          |                         |     |     |            |                                                                                                                |
| Unless otherwise designated, the following are probably aftershocks. |       |          |      |      |             |                         |     |     |            |                                                                                                                |
| 4                                                                    | 1     | 20       | 21   | 12   |             |                         |     |     | -11        | Trace                                                                                                          |
| 4                                                                    | 1     | 21       | 02   | 17   |             |                         |     |     | -11        | I                                                                                                              |
| 4                                                                    | e     | 21       | 58   | 36   |             |                         |     |     | -11+       | Trace                                                                                                          |
| 5                                                                    | 1     | 00       | 01   | 54   |             |                         |     |     | -11+       | Trace                                                                                                          |
| 5                                                                    | 1     | 00       | 59.7 |      |             | +6                      | +3  | +   |            | I local - 32 mi. WSW                                                                                           |
| 5                                                                    | 1     | 01       | 00   | 44   |             |                         |     |     | -11+       | Trace                                                                                                          |
| 5                                                                    | 1     | 02       | 50   | 53   |             |                         |     |     | -11+       | Trace                                                                                                          |
| 5                                                                    | e     | 03       | 45   | 00.5 |             |                         |     |     | -11.4      | Trace                                                                                                          |
|                                                                      | 1     |          | 46   | 36   |             |                         |     |     |            |                                                                                                                |
|                                                                      | 1     |          | 48   | 25   |             |                         |     |     |            |                                                                                                                |



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| Date | Phase                                                               | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |   |     | $\Delta t$ | Remarks                            |
|------|---------------------------------------------------------------------|----------|----|------|-------------|-------------------------|---|-----|------------|------------------------------------|
|      |                                                                     | h        | m  | s    |             | E                       | N | Z   |            |                                    |
| 5    | 1                                                                   | 04       | 08 | 46   | 1.0         |                         |   |     | -11.5      | Trace                              |
|      | •                                                                   |          | 15 | 31   | 1.4         |                         |   |     |            |                                    |
| 5    | 1                                                                   | 05       | 50 | 31.5 |             |                         |   |     | -11.5      | Trace                              |
| 5    | 1                                                                   | 12       | 16 | 42   |             |                         |   |     | -12        | Trace                              |
| 5    | 1                                                                   | 12       | 42 | 11.5 |             |                         |   |     | -12.3      | Trace                              |
| 5-6  | 2 traces local - about 50 mi. and several faint traces aftershocks? |          |    |      |             |                         |   |     |            |                                    |
| 6    | •P                                                                  | 02       | 59 | 50   |             |                         |   |     | -12.8      | I distant                          |
|      | •S                                                                  |          | 10 | 17   |             |                         |   |     |            |                                    |
| 6    | 1P                                                                  | 06       | 06 | 12   |             |                         |   |     | -13        | Trace distant                      |
| 6    | 1P                                                                  | 14       | 11 | 00   | .9          | +                       | + | +25 | -13.5      | I distant from SW - not aftershock |
| 6    | •P                                                                  | 16       | 24 | 38   |             |                         |   |     | -13.7      | Trace distant                      |
| 7    | 1P                                                                  | 07       | 40 | 31   | .9          | +                       | + | +30 | -14.5      | I distant - from SW                |
|      | •                                                                   |          | 41 | 10   | 1.9         |                         |   |     |            |                                    |
| 7    | •P                                                                  | 16       | 30 | 55   |             |                         |   |     | -15        | Trace distant                      |
| 7    | 1P                                                                  | 18       | 35 | 18   | .9          |                         |   | -   | -15.2      | I distant                          |
| 7    | 1P                                                                  | 19       | 30 | 17   |             |                         |   |     | -15.3      | Trace distant                      |
| 7    | 1P                                                                  | 19       | 38 | 37   |             |                         |   |     | -15.3      | II distant - not aftershock        |
|      | 1                                                                   |          |    | 49   |             |                         |   |     |            |                                    |
| 7    | 1P                                                                  | 20       | 10 | 30   |             |                         |   |     | -15.3      | I distant                          |
| 7    | •P                                                                  | 20       | 39 | 51   |             |                         |   |     | -15.3      | I distant                          |
| 7    | 1P                                                                  | 20       | 54 | 19   |             |                         |   |     | -15.4      | I distant                          |
|      | 1                                                                   |          |    | 33   |             |                         |   |     |            |                                    |
| 8    | 1P                                                                  | 05       | 18 | 19   |             | +15                     |   | -   | -15.9      | I local - 50 mi.                   |
|      | 1P                                                                  |          |    | 20.4 |             |                         |   |     |            |                                    |
|      | 1S                                                                  |          |    | 28.9 |             |                         |   |     |            |                                    |
|      | 1S                                                                  |          |    | 31.6 |             |                         |   |     |            |                                    |
| 8    | 1P                                                                  | 10       | 06 | 13.5 |             |                         |   |     | -16.2      | I regional - 360 mi.?              |
|      | 1P                                                                  |          |    | 23   |             |                         |   |     |            |                                    |
|      | •S                                                                  |          | 07 | 16   |             |                         |   |     |            |                                    |
| 8    | 1P                                                                  | 11       | 16 | 15   | 1.0         |                         |   |     | -16.3      | Trace distant                      |
|      | 1                                                                   |          | 17 | 16   | 1.0         |                         |   |     |            |                                    |
|      | 1                                                                   |          | 18 | 18   | 1.0         |                         |   |     |            |                                    |



Shasta Dam

SEISMOLOGICAL STATION

MONTH OF

August

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date  | Phase                                     | G. C. T. |    |                        | Period<br>T  | Trace Amplitude, .01 mm |    |   | $\Delta t$ | Remarks                                                                             |
|-------|-------------------------------------------|----------|----|------------------------|--------------|-------------------------|----|---|------------|-------------------------------------------------------------------------------------|
|       |                                           | h        | m  | s                      |              | E                       | N  | Z |            |                                                                                     |
| 8     | eP<br>e<br>e<br>e<br>coda                 | 13       | 37 | 19.5<br>40<br>43<br>09 | 1.5<br>12.5+ |                         |    |   |            | -16.4 II distant - strong aftershocks<br>O = 13:28:24 $\Delta$ = 50°                |
| 8     | 1P                                        | 14       | 37 | 35                     |              |                         |    |   |            | -16.5 I distant                                                                     |
| 8     | 1P                                        | 17       | 32 | 58                     | .9           |                         |    |   |            | -16.7 I distant                                                                     |
| 8     | 1P<br>1<br>1S                             | 20       | 13 | 38.5<br>49.5<br>56.5   |              |                         |    |   |            | -16.8 I regional - 90 mi.                                                           |
| 9     | 1P                                        | 08       | 34 | 33                     |              | +                       | -  | - |            | -17.5 I distant - SE                                                                |
| 9     | 1P<br>1<br>e                              | 20       | 15 | 37<br>52<br>18         |              |                         |    | + |            | -18.2 I distant                                                                     |
| 9     | eP                                        | 21       | 02 | 12                     |              |                         |    |   |            | -18.3 Trace distant                                                                 |
| 10    | eP                                        | 02       | 19 | 19                     |              |                         |    |   |            | -18.5 I distant                                                                     |
| 10    | eP                                        | 07       | 07 | 33                     |              |                         |    |   |            | -19 Trace distant                                                                   |
| 10    | eP                                        | 09       | 09 | 10                     |              |                         |    |   |            | -19 Trace distant                                                                   |
| 10    | eP                                        | 11       | 54 | 39                     |              |                         |    |   |            | -19 Trace distant                                                                   |
| 10    | eP                                        | 13       | 43 | 02                     |              |                         |    |   |            | -19 Trace distant                                                                   |
| 10-11 | 5 traces local shocks, distance ca 50 mi. |          |    |                        |              |                         |    |   |            |                                                                                     |
| 11    | eP                                        | 02       | 07 | 21                     |              |                         |    |   |            | -19.8 I distant - CGS, 8° S, 155° E<br>(Solomon Islands) O = 1:54:3; $\Delta$ = 90° |
| 11    | 1P                                        | 03       | 49 | 55                     |              |                         |    |   |            | -19.9 Trace distant                                                                 |
| 11    | 1P<br>eS<br>1S                            | 05       | 30 | 28<br>49.5<br>51.5     |              | +15                     | -6 | + |            | -20 I regional - 115 mi. WNW                                                        |
| 12    | eP                                        | 07       | 08 | 31                     | 1.2          |                         |    |   |            | -21.2 I distant                                                                     |
| 13    | 1P<br>e<br>eS                             | 04       | 20 | 14.3<br>24.3<br>26.8   |              | -12                     | +6 | + |            | -22.2 I local - 63 mi. ESE                                                          |
| 13    | 1P<br>e                                   | 21       | 37 | 09<br>47               |              |                         |    |   |            | -23 Trace Regional                                                                  |



## Shasta Dam

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date  | Phase                             | G. C. T. |    |                           | Period<br>T | Trace Amplitude, .01 mm |     |   | $\Delta t$ | Remarks                                                                     |
|-------|-----------------------------------|----------|----|---------------------------|-------------|-------------------------|-----|---|------------|-----------------------------------------------------------------------------|
|       |                                   | h        | m  | s                         |             | E                       | N   | Z |            |                                                                             |
| 13-14 | 3 traces local shocks - ca 50 mi. |          |    |                           |             |                         |     |   |            |                                                                             |
| 14    | 1P<br>•<br>•                      | 02       | 50 | 51<br>51<br>02.6          |             |                         |     |   | 023.4      | I local - 50 mi.?                                                           |
| 14    | oP<br>oP                          | 09       | 51 | 41<br>54                  |             |                         |     |   | -23.7      | I distant                                                                   |
| 14    | 1P<br>es                          | 22       | 52 | 56<br>53 12               |             |                         |     |   | -24.3      | I regional - 80 mi.                                                         |
| 15    | 1P                                | 01       | 10 | 22                        | 1.0         |                         |     | - | -24.4      | Trace distant                                                               |
| 15    | oP                                | 15       | 36 | 58                        | 2.0         |                         |     |   | -25        | I distant 008 22° S, 170° E<br>(Loyalty Islands) 0 = 15:23.9; $\Delta$ = 89 |
| 17    | 1P                                | 11       | 28 | 44                        | 1.0         |                         |     | + | -28.3      | Trace distant                                                               |
| 17    | •<br>1                            | 19       | 31 | 35<br>44                  |             |                         |     |   | -28.7      | Trace regional?                                                             |
| 18    | 1P<br>1S                          | 04       | 24 | 42.6<br>46.6              |             | +30                     | -19 | - | -29.2      | II local - 20 mi. ESE                                                       |
| 18    | 1P<br>1<br>1                      | 06       | 58 | 51.5<br>59 19<br>07 01 37 | 1.3         | -                       | +   | - | -29.4      | I distant                                                                   |
| 18    | 1P                                | 10       | 00 | 42                        |             | -                       |     | + | -29.5      | Trace local - 40 mi. E                                                      |
| 18    | oP<br>oP<br>•                     | 21       | 31 | 38<br>46<br>32 38         |             |                         |     |   | -30.4      | I regional?                                                                 |
| 19    | 1                                 | 01       | 13 | 04                        |             |                         |     |   | -30.7      | Trace regional?                                                             |
| 19    | 1<br>1P                           | 04       | 11 | 57<br>12 01               |             |                         |     |   | -30.9      | Trace distant                                                               |
| 19    | 1P<br>1                           | 05       | 49 | 39<br>55                  |             |                         |     |   | -31        | I distant                                                                   |
| 19    | 1P<br>•                           | 20       | 10 | 49<br>14 24               | 1.2<br>1.5  |                         |     | + | -31.8      | I distant                                                                   |
| 20    | oP<br>•                           | 09       | 54 | 43.5<br>57                |             |                         |     |   | -32.5      | I distant                                                                   |
| 20    | 1P<br>1P                          | 12       | 58 | 14<br>20                  |             |                         |     |   | -32.7      | I distant                                                                   |



Shasta Dam

## SEISMOLOGICAL STATION

MONTH OF August

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase   | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |    |     | $\Delta t$ | Remarks                                                                                          |
|------|---------|----------|----|------|-------------|-------------------------|----|-----|------------|--------------------------------------------------------------------------------------------------|
|      |         | h        | m  | s    |             | E                       | N  | Z   |            |                                                                                                  |
| 21   | eP      | 16       | 33 | 18   |             |                         |    |     | +25.3      | Trace distant                                                                                    |
| 21   | 1P      | 18       | 12 | 32   |             |                         |    | -   | +25.3      | I distant                                                                                        |
|      | i       |          |    | 56   |             |                         |    |     |            |                                                                                                  |
|      | e       |          | 22 | 42   |             |                         |    |     |            |                                                                                                  |
|      | e       |          | 23 | 00   |             |                         |    |     |            |                                                                                                  |
| 21   | 1P      | 19       | 26 | 33   | .8          |                         |    | +   | +25.2      | I distant - after shock of<br>Dominican Republic Earthquake.<br>O = 19:17.6; $\Delta = 50^\circ$ |
|      | e       |          | 29 | 25   | 3           |                         |    |     |            |                                                                                                  |
|      | e       |          | 30 | 35   | 3           |                         |    |     |            |                                                                                                  |
|      | e       |          | 35 | 37   |             |                         |    |     |            |                                                                                                  |
|      | e       |          | 36 | 25   |             |                         |    |     |            |                                                                                                  |
| 22   | 1P      | 18       | 06 | 18.2 |             | +15                     | +3 | +   | +23.7      | II regional - 90 mi. W                                                                           |
|      | eS      |          |    | 12.2 |             |                         |    |     |            |                                                                                                  |
| 22   | 1P      | 20       | 22 | 21   |             | +8                      | 0  | +   | +23.6      | I regional - 145 mi. W                                                                           |
|      | eS      |          |    | 49   |             |                         |    |     |            |                                                                                                  |
| 23   | eP      | 08       | 32 | 54   |             |                         |    |     | +22.7      | Trace distant                                                                                    |
| 23   | 1P      | 18       | 00 | 32.1 |             | +12                     | +4 | +   | +22        | I local - 64 mi. WSW - not a<br>Lassen shock                                                     |
|      | i       |          |    | 41.5 |             |                         |    |     |            |                                                                                                  |
|      | 1S      |          |    | 44.8 |             |                         |    |     |            |                                                                                                  |
| 24   | 1P      | 14       | 27 | 09   |             |                         |    |     | +20.3      | I distant                                                                                        |
| 25   | 1P      | 22       | 30 | 54   |             |                         |    |     | +17.7      | Faint trace local - 45 mi.                                                                       |
| 26   | 1P      | 00       | 42 | 44   |             |                         |    |     | +17.5      | Faint trace local - 45 mi.                                                                       |
| 27   | 1P      | 00       | 20 | 35.2 |             | +                       |    | +   | +15.6      | I - regional - 100 mi. W                                                                         |
|      | i       |          |    | 42   |             |                         |    |     |            |                                                                                                  |
|      | e       |          |    | 50   |             |                         |    |     |            |                                                                                                  |
|      | eS      |          |    | 55   |             |                         |    |     |            |                                                                                                  |
| 28   | eP      | 01       | 53 | 06   | 1.6         |                         |    |     | +13.8      | I distant                                                                                        |
| 28   | eP      | 20       | 18 | 40   |             |                         |    |     | +12.4      | I distant                                                                                        |
| 28   | e       | 22       | 40 | 02.4 |             |                         |    |     | +12.3      | I distant - $80^\circ$ SE, Probably N. Ch.                                                       |
|      | 1P      |          |    | 03.4 | .8          | -                       | +  | +64 |            |                                                                                                  |
|      | i       |          | 42 | 06   |             |                         |    |     |            |                                                                                                  |
|      | e       |          | 49 | 32   |             |                         |    |     |            |                                                                                                  |
|      | 1S      |          |    | 48   |             |                         |    |     |            |                                                                                                  |
|      | 1P&KP   |          | 57 | 57   | 1.0         |                         |    |     |            |                                                                                                  |
|      | i       |          | 58 | 51.5 | 1.3         |                         |    |     |            |                                                                                                  |
|      | eP'P'23 |          | 05 | 54   |             |                         |    |     |            |                                                                                                  |
| 29   | eP      | 04       | 06 | 10   |             |                         |    |     | +12        | I distant                                                                                        |
|      | 1P      |          |    | 21.5 |             |                         |    |     |            |                                                                                                  |



Shasta Dam

SEISMOLOGICAL STATION

MONTH OF August

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase | G. C. T. |      |      | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                   |
|------|-------|----------|------|------|-------------|-------------------------|---|---|------------|---------------------------|
|      |       | h        | m    | s    |             | E                       | N | Z |            |                           |
| 29   | 1P    | 05       | 21.6 |      |             | -                       | - | + |            | Trace local - 17 mi. N27  |
| 29   | eP    | 23       | 08   | 18   |             |                         |   |   | +10.5      | Trace distant             |
| 30   | eP    | 05       | 41   | 44   |             |                         |   |   | +10        | Trace distant             |
| 30   | 1P    | 10       | 22   | 50   |             |                         |   |   | +9.6       | I regional - 160 mi.      |
|      | 1P    |          |      | 56   |             |                         |   |   |            |                           |
|      | es    |          | 23   | 20   |             |                         |   |   |            |                           |
| 30   | e     | 11       | 19   | 47.5 |             |                         |   |   | +9.5       | Trace regional            |
|      | es    |          | 21   | 36.5 |             |                         |   |   |            |                           |
| 30   | 1P    | 16       | 16   | 19   | 1.0         |                         |   | + | +9.2       | I distant                 |
| 30   | eP    | 20       | 28   | 08   |             |                         |   |   | +8.8       | Trace distant             |
| 30   | 1P    | 23       | 46   | 09   |             |                         |   | - | 8.7        | I distant or far regional |
|      | es?   |          | 48   | 23   |             |                         |   |   |            |                           |
| 31   | eP    | 09       | 12   | 08.5 |             |                         |   |   | +8         | Trace regional            |
|      | e     |          |      | 57   |             |                         |   |   |            |                           |
|      | es?   |          | 13   | 16   |             |                         |   |   |            |                           |
| 31   | 1P    | 10       | 32   | 40   |             |                         |   |   | +7.8       | Trace local - 50 mi.      |
| 31   | 1P    | 22       | 18   | 02.5 |             |                         |   |   | +7         | I local - 48 mi.          |
|      | is    |          |      | 12   |             |                         |   |   |            |                           |



Shasta

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date<br>Sept. | Phase             | G. C. T. |          |                          | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                  |
|---------------|-------------------|----------|----------|--------------------------|-------------|-------------------------|---|---|------------|--------------------------|
|               |                   | h        | m        | s                        |             | E                       | N | Z |            |                          |
| 2             | 1<br>1<br>1S      | 11       | 50       | 55.5<br>09<br>18         |             |                         |   |   | +4.0       | Trace Regional 115 miles |
| 2             | •                 | 21       | 58       | 20                       |             |                         |   |   | +3.4       | Trace Distant            |
| 3             | 1P                | 04       | 29       | 15                       |             |                         |   |   | +2.8       | Trace Distant            |
| 3             | 1<br>1S           | 19       | 57       | 11<br>44                 |             |                         |   |   | +1.8       | Trace Regional           |
| 3             | 1<br>1<br>1S      | 21       | 45       | 08.6<br>14.6<br>56.6     |             |                         |   |   | +1.6       | Trace Regional           |
| 4             | 1P                | 00       | 21       | 55                       |             |                         |   |   | +1.5       | Trace Distant            |
| 4             | 1P<br>1S          | 18       | 54       | 24.2<br>33.2             |             |                         |   |   | +0.2       | Trace Local 45 miles     |
| 4             | 1<br>1P<br>1<br>1 | 19       | 15       | 41<br>42.5<br>45<br>50.5 |             |                         |   |   | 0.0        | I Local                  |
| 4             | 1P                | 21       | 36       | 54.9                     |             |                         |   |   | -0.1       | Trace Local              |
| 4             | 1<br>1            | 23       | 05       | 50.8<br>52.8             |             |                         |   |   | -0.2       | Trace Local              |
| 5             | •<br>•            | 01       | 47       | 18.5<br>52.5             |             |                         |   |   | -0.5       | Trace Distant            |
| 5             | 1P                | 12       | 51       | 40                       |             |                         |   |   | -1.5       | Trace Distant            |
| 5             | •<br>•S           | 18       | 26<br>27 | 57<br>44                 |             |                         |   |   | -2.0       | Trace Regional           |
| 5             | •<br>•            | 21       | 31<br>32 | 14<br>07                 |             |                         |   |   | -2.2       | Trace Regional           |
| 6             | •                 | 07       | 59       | 52                       |             |                         |   |   | -3.0       | Trace Distant            |
| 6             | •P                | 11       | 05       | 41                       |             |                         |   |   | -3.2       | Trace Distant            |
| 6             | 1P                | 22       | 08       | 06                       |             |                         |   |   | -4.0       | Trace Distant            |
| 7             | 1P                | 08       | 10       | 10                       |             |                         |   |   | -4.6       | Trace Distant            |
| 7             | 1<br>1            | 12       | 29       | 28<br>45.5               |             |                         |   |   | -5.0       | Trace Local              |



SEISMOLOGICAL STATION  
Shasta

MONTH OF September 1944



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date<br>Sept. | Phase         | G. C. T. |                |                 | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                                                          |
|---------------|---------------|----------|----------------|-----------------|-------------|-------------------------|---|---|------------|------------------------------------------------------------------|
|               |               | h        | m              | s               |             | E                       | N | Z |            |                                                                  |
| 7             | eP            | 12       | 33             | 57              |             |                         |   |   | -5.0       | Trace Distant                                                    |
| 9             | 1P<br>1S      | 16       | 34             | 39.7<br>48.7    |             |                         |   | + | -8.8       | I Local 45 miles                                                 |
| 9             | 1P<br>1S      | 17       | 22             | 50.7<br>23 00.2 |             |                         |   |   | -8.8       | Trace Local 45 miles                                             |
| 9             | e             | 19       | 00             | 36              |             |                         |   |   | -9.0       | Trace Regional                                                   |
| 10            | 1P            | 00       | 31             | 33              |             |                         |   |   | -9.4       | Trace Distant                                                    |
| 10            | 1P<br>e       | 21       | 36             | 57<br>24        |             |                         |   |   | -10.8      | Trace Distant                                                    |
| 11            | e             | 06       | 42             | 10              |             |                         |   |   | -11.5      | Trace Distant                                                    |
| 11            | 1P            | 09       | 31             | 43              |             |                         |   |   | -11.7      | Trace Distant                                                    |
| 11            | 1P            | 12       | 36             | 02              |             |                         |   |   | -11.9      | Trace Distant                                                    |
| 11            | 1P            | 13       | 13             | 42              |             |                         |   |   | -12.0      | Trace Distant                                                    |
| 12            | 1P<br>1S      | 06       | 47             | 32<br>41        |             |                         |   | + | -13.0      | I Local 45 miles                                                 |
| 12            | 1P            | 14       | 08             | 45              |             |                         |   |   | -13.5      | Trace Distant                                                    |
| 12            | 1P            | 14       | 18             | 04              |             |                         |   |   | -13.5      | Trace Distant                                                    |
| 12            | eP<br>e<br>1  | 15       | 34<br>36<br>38 | 24<br>07<br>55  |             |                         |   |   | -13.5      | I Distant<br>C.G.S. 25.5°N, 89°E<br>(Northwest Bengal) 0-15:16.9 |
| 12            | eP            | 17       | 48             | 19.5            |             |                         |   |   | -13.8      | I Distant                                                        |
| 12            | 1P            | 18       | 52             | 41              |             |                         |   |   | -13.8      | I Distant                                                        |
| 13            | eP            | 05       | 04             | 33              |             |                         |   |   | -14.8      | Trace Distant                                                    |
| 13            | 1P<br>1S      | 07       | 42             | 35.5<br>43 00   |             |                         |   |   | -15.0      | I Regional 125 miles                                             |
| 13            | e<br>1        | 16       | 00             | 14<br>35        |             |                         |   |   | -15.0      | Trace Distant                                                    |
| 13            | 1P<br>1<br>eS | 19       | 08<br>08<br>15 | 25<br>42<br>54  |             |                         |   |   | -15.8      | I Distant                                                        |
| 13            | 1P            | 19       | 47             | 57              |             |                         |   |   | -15.8      | Trace Distant                                                    |



SEISMOLOGICAL STATION  
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MONTH OF September



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date<br>Sept. | Phase    | G. C. T. |    |                 | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks              |
|---------------|----------|----------|----|-----------------|-------------|-------------------------|---|---|------------|----------------------|
|               |          | h        | m  | s               |             | E                       | N | Z |            |                      |
| 13            | eP       | 20       | 10 | 43              |             |                         |   |   | -15.9      | Trace Distant        |
| 13            | e        | 22       | 05 | 49              |             |                         |   |   | -16.0      | Trace Regional       |
| 14            | e        | 01       | 54 | 54              |             |                         |   |   | -16.2      | Trace Distant        |
| 14            | 1P       | 02       | 56 | 57              |             |                         |   |   | -16.2      | Trace Distant        |
| 14            | 1P       | 05       | 18 | 43              |             |                         |   |   | -16.4      | Trace Distant        |
| 14            | e        | 06       | 20 | 33              |             |                         |   |   | -16.5      | Trace Distant        |
| 14            | e        | 09       | 06 | 27              |             |                         |   |   | -16.6      | Trace Distant        |
| 14            | 1P<br>1S | 19       | 01 | 55<br>04        |             |                         |   |   | -17.2      | I Local 45 miles     |
| 14            | eP       | 22       | 10 | 47              |             |                         |   |   | -17.5      | Trace Distant        |
| 15            | 1P       | 03       | 34 | 21.5            |             |                         |   |   | -17.9      | Trace Distant        |
| 15            | eP       | 08       | 01 | 10              |             |                         |   |   | -18.2      | Trace Distant        |
| 15            | 1P<br>eS | 16       | 19 | 04.5<br>22 13   |             |                         |   |   | -18.9      | Trace Distant        |
| 16            | e        | 01       | 45 | 36              |             |                         |   |   | -19.5      | Trace Distant        |
| 16            | eP       | 10       | 02 | 39              |             |                         |   |   | -20.2      | Trace Distant        |
| 16            | 1P<br>1S | 11       | 51 | 33.8<br>51 42.8 |             |                         |   |   | -20.2      | I Local 45 miles     |
| 16            | 1P<br>1S | 18       | 03 | 53<br>04 21     |             |                         |   |   | -20.8      | I Regional 140 miles |
| 17            | e<br>1   | 19       | 46 | 27<br>46 56     |             |                         |   |   | -23.0      | Trace Distant        |
| 19            | e        | 02       | 10 | 43              |             |                         |   |   | -25.3      | Trace Distant        |
| 19            | 1P       | 07       | 05 | 48              |             |                         |   |   | -25.8      | Trace Distant        |
| 19            | eP       | 08       | 34 | 24              |             |                         |   |   | -25.9      | Trace Regional       |
| 20            | e        | 05       | 57 | 17              |             |                         |   |   | -27.6      | Trace Distant        |
| 20            | 1P       | 12       | 02 | 51              |             |                         |   |   | -28.2      | Trace Distant        |
| 20            | e        | 23       | 54 | 42              |             |                         |   |   | -29.0      | Trace Distant        |



SEISMOLOGICAL STATION  
Shasta

MONTH OF September



Bureau of Reclamation and  
Coast and Geodetic Survey

$\Delta t$  is time correction

| Date<br>Sept. | Phase         | G. C. T. |                |                | Period<br>T | Trace Amplitude, .01 mm |    |     | $\Delta t$ | Remarks                                                                |
|---------------|---------------|----------|----------------|----------------|-------------|-------------------------|----|-----|------------|------------------------------------------------------------------------|
|               |               | h        | m              | s              |             | E                       | N  | Z   |            |                                                                        |
| 21            | eP            | 21       | 40             | 26             |             |                         |    |     | -31.0      | Trace Distant                                                          |
| 21            | e             | 22       | 50             | 29             |             |                         |    |     | -31.0      | Trace Regional                                                         |
| 22            | e             | 06       | 15             | 48             |             |                         |    |     | -31.6      | Trace Distant                                                          |
| 22            | eP<br>1       | 08       | 02             | 22<br>35       |             |                         |    |     | -31.8      | I Distant                                                              |
| 23            | e             | 22       | 06             | 14             |             |                         |    |     | -34.6      | I Distant                                                              |
| 23            | 1P<br>1<br>eS | 23       | 43<br>47<br>53 | 14<br>07<br>41 |             | -                       | -? | -12 | -34.8      | I Distant<br>C.G.S. 3°S., 144°E.<br>(North of New Guinea)<br>O-23:29.8 |
| 25            | eP            | 10       | 14             | 25             |             |                         |    |     | -38.0      | Trace Distant                                                          |
| 25            | 1P            | 15       | 06             | 52             |             |                         |    |     | -38.2      | I Distant                                                              |
| 26            | 1P<br>1<br>eS | 11       | 04<br>07<br>14 | 54<br>00<br>25 |             |                         |    |     | -40.0      | I Distant                                                              |
| 26            | e             | 11       | 37             | 50             |             |                         |    |     | -41.1      | Trace Distant                                                          |
| 28            | 1P<br>1S      | 06<br>07 | 59<br>00       | 47.6<br>07.1   |             |                         |    | +   | -44.4      | I Regional (100 miles)                                                 |
| 28            | e<br>1        | 07       | 21<br>23       | 12<br>17       |             |                         |    |     | -44.4      | I Distant                                                              |
| 28            | 1P            | 13       | 29             | 24.5           |             |                         |    |     | -45.0      | Trace Distant                                                          |
| 28            | e<br>1        | 19       | 44<br>48       | 02<br>08       |             |                         |    |     | -45.6      | Trace Distant                                                          |
| 29            | 1P            | 00       | 27             | 50.5           |             |                         |    |     | -46.1      | Trace Distant                                                          |
| 29            | eP<br>eS<br>e | 03       | 14<br>25<br>40 | 51<br>39<br>34 |             |                         |    |     | -46.5      | I Distant<br>C.G.S. 5°S. 154°E<br>Solomon Islands Region<br>O-03:02.0  |
| 29            | e             | 09       | 01             | 16             |             |                         |    |     | -46.8      | Trace Distant                                                          |
| 29            | e             | 09       | 22             | 27             |             |                         |    |     | -46.8      | Trace Distant                                                          |
| 29            | 1             | 12       | 03             | 23             |             |                         |    |     | -47.2      | Trace Regional                                                         |
| 29            | 1P            | 17       | 08             | 47             |             |                         |    |     | -47.8      | Trace Regional                                                         |



SEISMOLOGICAL STATION  
Shasta

MONTH OF September



Bureau of Reclamation and  
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$\Delta t$  is time correction

| Date<br>Sept. | Phase    | G. C. T. |          |          | Period<br>T | Trace Amplitude, .01 mm |   |     | $\Delta t$ | Remarks                                                         |
|---------------|----------|----------|----------|----------|-------------|-------------------------|---|-----|------------|-----------------------------------------------------------------|
|               |          | h        | m        | s        |             | E                       | N | Z   |            |                                                                 |
| 29            | e        | 19       | 37       | 57       |             |                         |   |     | -48.0      | Trace Distant                                                   |
| 29            | 1P       | 20       | 57       | 38       |             |                         |   |     | -48.1      | Trace Distant                                                   |
| 29            | 1P<br>1S | 22       | 14       | 20<br>40 |             |                         |   |     | -48.2      | Trace Regional<br>100 miles                                     |
| 30            | 1P<br>eS | 01       | 10<br>19 | 37<br>38 |             | ?                       |   | -12 | -48.5      | I Distant<br>C.G.S. 12°S, 76°W<br>West Central Peru<br>O=0:59.7 |
| 30            | e        | 01       | 38       | 44       |             |                         |   |     | -48.5      | Trace Distant                                                   |
| 30            | eP       | 17       | 08       | 47       |             |                         |   |     | +10.0      | Trace Distant                                                   |



## SHASTA DAM SEISMOLOGICAL STATION

INSTRUMENTAL REPORT . . . . . October, November, December, 1946

The Shasta Dam station continued in routine operation throughout the period of the report.

In the following report, Symbol I represents an earthquake having a small trace amplitude on the record, II represents a fairly well recorded shock, and III large trace amplitudes. Barely recorded shocks are marked "Trace". Local shocks are less than 70 mi. from the station, regional shocks from 70 to 700 mi., and distant shocks greater than 700 mi. Regional shocks of unknown distance sometimes may be classed as distant.

Seismicity in the immediate locality of the station continued light. About 8 small shocks from this area were recorded.

Confidential - not for publication



## SHASTA DAM SEISMOLOGICAL STATION

Instrumental Report . . . . October, November, December 1946

1. The Shasta Dam Station continued in routine operation throughout the period of the report, with exception of approximately 20 hours recording lost on 8 and 9 November, due to a broken recorder drum drive belt.
2. In the following report, Symbol I represents an earthquake having a small trace amplitude on the record, II represents a fairly well recorded shock, and III large trace amplitude. Barely recorded shocks are marked "Trace". Local shocks are less than 70 miles from this station, Regional shocks from 70 to 700 miles, and distant shocks greater than 700 miles. Regional shocks of unknown distance sometimes may be classed as distant.
3. Seismicity in the immediate locality of the station was moderate during the period of the report. About sixty-one local shocks were recorded. Eleven shocks were classified as "Trace", forty-one as "I", eight as "II", and one as "III".

Confidential-not for publication.



## SEISMOLOGICAL STATION

MONTH OF October

SHASTABureau of Reclamation and  
Coast and Geodetic Survey

Note: BCIS = Bureau Central International, Strasbourg

 $\Delta t$  is time correction

| Date | Phase | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                                            |
|------|-------|----------|----|------|-------------|-------------------------|---|---|------------|----------------------------------------------------|
|      |       | h        | m  | s    |             | E                       | N | Z |            |                                                    |
| 1    | eP    | 18       | 08 | 27   |             |                         |   |   |            | I Distant                                          |
| 1    | eP    | 19       | 23 | 54   |             |                         |   |   |            | I Regional                                         |
| 2    | eP    | 00       | 03 | 25   |             |                         |   |   |            | I Distant                                          |
| 2    | iP    | 04       | 55 | 26   |             |                         |   |   |            | II Distant                                         |
|      | ipP   |          |    | 38   |             |                         |   |   |            | CGS 0 = 04-45-57 51°N. 157°E                       |
|      | eS    | 05       | 02 | 54   |             |                         |   |   |            | Magnitude $6\frac{1}{2}$ - $6\frac{1}{2}$ Pasadena |
|      | ess   |          | 03 | 21   |             |                         |   |   |            | (Depth 35 mi)                                      |
| 2    | iP    | 05       | 54 | 19   |             |                         |   |   |            | Aftershock                                         |
|      | eS    | 06       | 01 | 36   |             |                         |   |   |            |                                                    |
| 2    | eP    | 06       | 08 | 08   |             |                         |   |   |            | Aftershock                                         |
| 2    | iP    | 06       | 52 | 34   |             |                         |   |   |            | II Distant                                         |
|      | ipP   |          |    | 45   |             |                         |   |   |            | CGS 0 = 06-43-03 51°N. 157°E                       |
|      | i     |          | 53 | 02   |             |                         |   |   |            | Magnitude $6\frac{1}{2}$ - $6\frac{1}{2}$ Pasadena |
|      | eS    | 07       | 00 | 03   |             |                         |   |   |            | (Depth about 50 km)                                |
|      | ess   |          |    | 27   |             |                         |   |   |            |                                                    |
| 3    | eP    | 04       | 40 | 34   |             |                         |   |   |            | I Distant                                          |
| 3    | eP    | 12       | 13 | 21   |             |                         |   |   |            | I Distant                                          |
| 3    | eP    | 19       | 58 | 08   |             |                         |   |   |            | I Distant                                          |
| 4    | e     | 07       | 59 | 56   |             |                         |   |   |            | I Regional ?                                       |
| 4    | iP    | 14       | 54 | 18.5 |             |                         |   |   |            | I Distant                                          |
|      | iP    |          |    | 23.5 |             |                         |   |   |            | Dominican Republic - Aftershock                    |
|      | eS    | 15       | 01 | 43   |             |                         |   |   |            | JSA: 19°.2N, 68°.9W h = 50 <sup>+</sup>            |
| 5    | iP    | 06       | 50 | 09.5 |             |                         |   |   |            | I Local - 30 mi                                    |
|      | iS    |          |    | 15.2 |             |                         |   |   |            |                                                    |
| 5    | eP    | 18       | 59 | 20   |             |                         |   |   |            | Trace Distant                                      |
| 6    | eP    | 08       | 53 | 46   |             |                         |   |   |            | Trace Distant                                      |
| 6    | eP    | 10       | 54 | 35   |             |                         |   |   |            | Trace Distant                                      |
| 6    | e     | 12       | 53 | 05.6 |             |                         |   |   |            | Trace Regional                                     |
|      | e     |          |    | 17.3 |             |                         |   |   |            |                                                    |
| 7    | eP    | 19       | 58 | 21.9 |             |                         |   | + |            | I Regional                                         |
|      | i     |          |    | 29.5 |             |                         |   |   |            |                                                    |
|      | iS    |          |    | 59.1 |             |                         |   |   |            |                                                    |
|      | i     |          | 59 | 02.9 |             |                         |   |   |            |                                                    |



SHASTA

## SEISMOLOGICAL STATION

MONTH OF October

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase              | G. C. T. |    |                              | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                                                         |
|------|--------------------|----------|----|------------------------------|-------------|-------------------------|-----|-----|------------|---------------------------------------------------------------------------------|
|      |                    | h        | m  | s                            |             | E                       | N   | Z   |            |                                                                                 |
| 8    | 1P<br>i<br>i<br>1S | 05       | 31 | 19.3<br>21.4<br>25.8<br>29.3 |             | -17                     | +15 | +   |            | I Local - 50 mi SE                                                              |
| 8    | 1P                 | 14       | 07 | 59                           |             |                         |     |     |            | I Distant<br>25°S, 178°E 0 = 13-56-25<br>h = 670 km Pasadena<br>Magnitude 6-3/4 |
| 9    | 1P<br>i<br>i       | 20       | 37 | 52<br>38 01<br>12            |             |                         |     |     |            | I Distant                                                                       |
| 10   | e                  | 04       | 36 | 07                           |             |                         |     |     |            | I Distant<br>So. Pacific (BCIS)                                                 |
| 10   | 1P<br>1S           | 06       | 00 | 31.2<br>55.5                 |             | +                       | -   | +   |            | I Regional - 130 mi W                                                           |
| 10   | 1P<br>i<br>1S      | 07       | 42 | 31.3<br>37.1<br>37.4         |             | +10                     | 0   | -   |            | I Local - 30 mi E                                                               |
| 11   | 1P                 | 00       | 27 | 06.5                         |             |                         |     |     |            | I Distant                                                                       |
| 12   | eP                 | 02       | 17 | 59                           |             |                         |     |     |            | I Distant                                                                       |
| 12   | 1P<br>i(s)<br>1S   | 15       | 24 | 28.4<br>37.2<br>38.8         |             | -67                     | 0   | +57 |            | II Local - 52 mi E                                                              |
| 12   | eP<br>e            | 18       | 00 | 06<br>02 08                  |             |                         |     |     |            | I Distant                                                                       |
| 13   | eP                 | 00       | 58 | 27                           |             |                         |     |     |            | I Distant                                                                       |
| 13   | 1P<br>1pP          | 23       | 25 | 03.5<br>23                   |             |                         |     |     |            | I Distant<br>24°S, 66°W h = 200 (BCIS)                                          |
| 14   | eP                 | 04       | 57 | 28.5                         |             |                         |     |     |            | I Distant<br>JSA: 30°.7S, 178°W                                                 |
| 14   | eP                 | 21       | 50 | 45                           |             |                         |     |     |            | Trace Distant                                                                   |
| 14   | eP                 | 22       | 57 | 41                           |             |                         |     |     |            | I Distant                                                                       |
| 14   | eP                 | 23       | 07 | 42                           |             |                         |     |     |            | I Distant                                                                       |



SHASTA

## SEISMOLOGICAL STATION

MONTH OF October

Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase               | G. C. T. |                |                      | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                          |
|------|---------------------|----------|----------------|----------------------|-------------|-------------------------|-----|-----|------------|----------------------------------|
|      |                     | h        | m              | s                    |             | E                       | N   | Z   |            |                                  |
| 15   | 1P<br>1(s)<br>1S    | 00       | 13             | 23.3<br>31.5<br>32.5 |             | -47.5                   |     | +38 |            | I Local - 46 mi E                |
| 15   | 1P<br>1S<br>1       | 00       | 46             | 02.4<br>11.2<br>13.2 |             | -30                     |     | +30 |            | I Local - 44 mi E                |
| 15   | eP<br>1S            | 01       | 45             | 22.6<br>30.8         |             |                         |     |     |            | Trace Local - 40 mi E            |
| 15   | 1P<br>1S<br>1S      | 01       | 55             | 02.3<br>11.1<br>11.4 |             | -15                     |     | +20 |            | I Local - 45 mi E                |
| 15   | 1P<br>1S            | 03       | 43             | 32.5<br>41.6         |             | -5                      |     | +   |            | I Local - 46 mi E                |
| 15   | eP                  | 06       | 44             | 10                   |             |                         |     |     |            | I Distant                        |
| 15   | eP<br>epP<br>e<br>e | 06       | 51<br>52<br>55 | 44<br>16<br>27<br>43 |             |                         |     |     |            | I Distant<br>New Hebrides (BCIS) |
| 15   | eP                  | 07       | 58             | 19                   |             |                         |     |     |            | I Distant<br>So. Pacific (BCIS)  |
| 15   | eP                  | 12       | 18             | 28                   |             |                         |     |     |            | Trace Distant                    |
| 15   | eP                  | 14       | 58             | 43                   |             |                         |     |     |            | Trace Distant                    |
| 15   | 1P<br>1S            | 17       | 37             | 48.5<br>38 08.9      |             | -30                     | -15 | -40 |            | I Regional                       |
| 15   | eP                  | 20       | 49             | 26                   |             |                         |     |     |            | I Distant                        |
| 17   | eP                  | 06       | 13             | 48                   |             |                         |     |     |            | Trace Distant                    |
| 17   | eP                  | 12       | 01             | 44                   |             |                         |     |     |            | Trace Distant                    |
| 18   | eP                  | 00       | 58             | 03                   |             |                         |     |     |            | I Distant                        |
| 18   | eP                  | 10       | 23             | 15                   |             |                         |     |     |            | Trace Distant                    |
| 18   | 1P                  | 18       | 06             | 29                   |             |                         |     |     |            | Trace Distant                    |
| 18   | 1P<br>1             | 20       | 51             | 33<br>42             |             |                         |     |     |            | I Distant                        |
| 18   | eP                  | 22       | 35             | 19                   |             |                         |     |     |            | Trace Distant                    |



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## SEISMOLOGICAL STATION

MONTH OF October


 1946  
 International  
 Seismological  
 Centre

 Bureau of Reclamation and  
 Coast and Geodetic Survey
 $\Delta t$  is time correction

| Date | Phase                            | G. C. T. |    |                                              | Period<br>T | Trace Amplitude, .01 mm |   |     | $\Delta t$ | Remarks                                                                                                      |
|------|----------------------------------|----------|----|----------------------------------------------|-------------|-------------------------|---|-----|------------|--------------------------------------------------------------------------------------------------------------|
|      |                                  | h        | m  | s                                            |             | E                       | N | Z   |            |                                                                                                              |
| 19   | eP                               | 04       | 07 | 27                                           |             |                         |   |     |            | Trace Distant                                                                                                |
| 19   | iP<br>eS                         | 14       | 28 | 43<br>33 25                                  |             |                         |   |     |            | I Distant                                                                                                    |
| 19   | iP<br>i<br>i<br>i<br>iS<br>i     | 19       | 17 | 37.2<br>38.0<br>40.0<br>43.0<br>46.3<br>47.7 |             | -20                     | ? | -20 |            | II Local - 46 mi E                                                                                           |
| 21   | eP                               | 00       | 15 | 58                                           |             |                         |   |     |            | Trace Distant                                                                                                |
| 21   | eP                               | 13       | 53 | 49                                           |             |                         |   |     |            | I Distant<br>(Panama)                                                                                        |
| 21   | iP<br>iS?                        | 18       | 05 | 21<br>32                                     |             |                         |   |     |            | I Local - 55 mi                                                                                              |
| 21   | iP<br>iS                         | 18       | 10 | 20<br>29                                     |             |                         |   |     |            | I Local - 45 mi                                                                                              |
| 22   | eP<br>i<br>i<br>ipP<br>es<br>ePS | 10       | 12 | 30<br>47<br>13 18<br>24<br>22 12<br>23 36    |             |                         |   |     |            | II Distant<br>C&GS - Fiji Islands<br>15°S, 167½°E h = 150-200<br>O = 10-00.5 (BCIS)<br>Magnitude 6½ Pasadena |
| 22   | eP                               | 17       | 39 | 44                                           |             |                         |   |     |            | I Distant                                                                                                    |
| 24   | iP<br>ipP<br>eS                  | 08       | 49 | 23<br>51 22<br>58 32                         |             |                         |   |     |            | I Distant<br>Tonga (Pasadena)<br>Depth about 500 km                                                          |
| 24   | eP<br>e                          | 18       | 43 | 31<br>40                                     |             |                         |   |     |            | Trace Distant                                                                                                |
| 25   | iP<br>iS                         | 00       | 06 | 52.6<br>07 02.6                              |             | -                       |   |     |            | I Local - 50 mi                                                                                              |
| 25   | iP<br>iS                         | 03       | 28 | 44.7<br>55.4                                 |             | -                       |   |     |            | I Local - 54 mi                                                                                              |
| 25   | iP<br>iS                         | 03       | 46 | 53.4<br>47 04.2                              |             | -8                      |   | +20 |            | I Local-54 mi E                                                                                              |
| 25   | iP<br>iS                         | 21       | 22 | 42.0<br>52.0                                 |             |                         |   |     |            | I Local - 50 mi                                                                                              |



SHASTABureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                | G. C. T. |    |                      | Period<br>T | Trace Amplitude, .01 mm |     |      | $\Delta t$ | Remarks                                                    |
|------|----------------------|----------|----|----------------------|-------------|-------------------------|-----|------|------------|------------------------------------------------------------|
|      |                      | h        | m  | s                    |             | E                       | N   | Z    |            |                                                            |
| 25   | iP<br>ipP<br>e<br>eS | 21       | 59 | 14<br>46<br>10<br>26 |             |                         |     |      |            | II Distant<br>57°N, 161°W h = 150 km<br>M = 21-50.5 (BCIS) |
| 26   | eP                   | 00       | 39 | 56                   |             |                         |     |      |            | I Distant                                                  |
| 26   | iP<br>i<br>iS        | 00       | 47 | 29.4<br>31.3<br>33.2 |             | +12                     | -   | -20  |            | I Local 18 mi ESE                                          |
| 26   | eP                   | 00       | 49 | 48                   |             |                         |     |      |            | I Distant                                                  |
| 26   | iP<br>iS             | 01       | 16 | 23.7<br>27.7         |             | +94                     | -54 | -120 |            | III Local - 20 mi ESE                                      |
| 26   | eP                   | 11       | 03 | 24                   |             |                         |     |      |            | Trace Distant                                              |
| 26   | iP<br>iS             | 11       | 48 | 06.2<br>09.9         |             | +                       | -   | -    |            | I Local - 19 mi ESE                                        |
| 26   | iP<br>iS             | 12       | 23 | 33<br>36.7           |             |                         |     | -    |            | I Local - 19 mi                                            |
| 28   | eP                   | 02       | 01 | 05.5                 |             |                         |     |      |            | Trace Distant                                              |
| 28   | eP                   | 07       | 37 | 08                   |             |                         |     |      |            | Trace Distant                                              |
| 28   | eP                   | 11       | 31 | 32                   |             |                         |     |      |            | I Distant                                                  |
| 28   | iP<br>eS             | 14       | 09 | 21<br>15 47          |             |                         |     |      |            | II Distant                                                 |
| 28   | iP                   | 21       | 53 | 57                   |             |                         |     |      |            | I Distant                                                  |
| 29   | eP                   | 03       | 33 | 34                   |             |                         |     |      |            | I Distant                                                  |
| 29   | iP                   | 11       | 51 | 13                   |             |                         |     |      |            | I Distant                                                  |
| 30   | eP<br>i<br>eS        | 07       | 53 | 53<br>54<br>59 00    |             |                         |     |      |            | II Distant<br>C&GS: 54°N, 164°W<br>Pasadena Magnitude = 7  |
| 30   | eP                   | 09       | 35 | 55                   |             |                         |     |      |            | I Distant                                                  |
| 30   | iP                   | 14       | 22 | 23                   |             |                         |     |      |            | I Distant                                                  |
| 31   | iP                   | 04       | 26 | 08                   |             |                         |     |      |            | I Distant                                                  |
| 31   | eP<br>iS             | 14       | 15 | 15.6<br>25.3         |             |                         |     |      |            | I Local - 49 mi                                            |



SHASTA

## SEISMOLOGICAL STATION

MONTH OF **October**  
& **November**Bureau of Reclamation and  
Coast and Geodetic Survey $\Delta t$  is time correction

6.

| Date            | Phase | G. C. T. |    |    | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                            |
|-----------------|-------|----------|----|----|-------------|-------------------------|---|---|------------|------------------------------------|
|                 |       | h        | m  | s  |             | E                       | N | Z |            |                                    |
| 31              | iP    | 20       | 02 | 41 |             |                         |   |   |            | I Distant                          |
| <u>November</u> |       |          |    |    |             |                         |   |   |            |                                    |
| 1               | eP    | 11       | 21 | 34 |             |                         |   |   |            | III Distant                        |
|                 | i     |          |    | 35 |             |                         |   |   |            | C&GS: 52°N, 174°W                  |
|                 | eS    |          | 27 | 25 |             |                         |   |   |            | Magnitude 7 $\frac{1}{4}$ Pasadena |
|                 | eSS   |          | 30 | 13 |             |                         |   |   |            |                                    |
|                 | e     | 12       | 23 | 03 |             |                         |   |   |            |                                    |
| 1               | eP    | 11       | 49 | 47 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 11       | 55 | 34 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 12       | 12 | 58 |             |                         |   |   |            | Aftershock                         |
| 1               | iP    | 12       | 15 | 47 |             |                         |   |   |            | Aftershock                         |
| 1               | iP    | 12       | 17 | 25 |             |                         |   |   |            | Aftershock                         |
| 1               | iP    | 12       | 28 | 49 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 12       | 48 | 47 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 12       | 58 | 53 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 13       | 09 | 02 |             |                         |   |   |            | Aftershock                         |
| 1               | iP    | 13       | 24 | 24 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 13       | 50 | 17 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 14       | 03 | 47 |             |                         |   |   |            | Aftershock                         |
| 1               | eP    | 17       | 24 | 10 |             |                         |   |   |            | Trace Distant                      |
| 1               | iP    | 19       | 11 | 39 |             |                         |   |   |            | Trace Distant                      |
| 1               | iP    | 20       | 22 | 11 |             |                         |   |   |            | I Distant                          |
|                 | i     |          |    | 34 |             |                         |   |   |            |                                    |
|                 | i     |          |    | 58 |             |                         |   |   |            |                                    |
| 1               | eP    | 20       | 33 | 10 |             |                         |   |   |            | Trace Distant                      |
| 2               | eP    | 14       | 17 | 56 |             |                         |   |   |            | Trace Distant                      |
| 2               | eP    | 14       | 34 | 08 |             |                         |   |   |            | Trace Distant                      |



SHASTA

## SEISMOLOGICAL STATION

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Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase                             | G. C. T. |          |                                                    | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                                                                               |
|------|-----------------------------------|----------|----------|----------------------------------------------------|-------------|-------------------------|-----|-----|------------|-------------------------------------------------------------------------------------------------------|
|      |                                   | h        | m        | s                                                  |             | E                       | N   | Z   |            |                                                                                                       |
| 2    | iP<br>i<br>i<br>i<br>eS<br>e<br>e | 18       | 41       | 26<br>42 01<br>10<br>31<br>52 45<br>53 01<br>57 33 |             |                         |     |     |            | II Distant<br>C&GS: 41°N. 76°E<br>O = 18:28.4 GCT<br>Destructive - 150 miles<br>southeast of Tashkent |
| 2    | e                                 | 19       | 40       | 56                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 3    | iP                                | 05       | 04       | 49                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 3    | eP                                | 23       | 31       | 41                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 4    | eP<br>iPP<br>i<br>iS?             | 22       | 01       | 30<br>05 36<br>06 07<br>12 31                      |             |                         |     |     |            | II Distant<br>C&GS: 40°N. 54°E<br>O = 21:47.8<br>Magnitude 7½ (Pasadena)                              |
| 4    | eP<br>eS                          | 22       | 17       | 50<br>26 01                                        |             |                         |     |     |            | Trace Distant                                                                                         |
| 4    | eP<br>i<br>i<br>i                 | 23       | 58       | 05<br>13<br>27<br>00 01 22                         |             |                         |     |     |            | Aftershock                                                                                            |
| 5    | eP<br>e                           | 05       | 28       | 07<br>18                                           |             |                         |     |     |            | Trace Distant                                                                                         |
| 5    | iP<br>i                           | 07       | 11       | 52<br>12 02                                        |             |                         |     |     |            | Trace Distant                                                                                         |
| 5    | eP                                | 12       | 15       | 53                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 5    | iP<br>eS                          | 22<br>23 | 51<br>01 | 37<br>23                                           |             | -12                     | +12 | -72 |            | II Distant                                                                                            |
| 6    | eP                                | 20       | 10       | 17                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 7    | eP                                | 02       | 24       | 31                                                 |             |                         |     |     |            | I Distant                                                                                             |
| 7    | eP                                | 03       | 28       | 42                                                 |             |                         |     |     |            | Trace Distant                                                                                         |
| 7    | iP                                | 05       | 57       | 43                                                 |             |                         |     | +19 |            | I Distant                                                                                             |
| 7    | iP                                | 14       | 00       | 58                                                 |             |                         |     | +   |            | Trace Distant                                                                                         |



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| Date | Phase                    | G. C. T.                                                      |                |                            | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                                                       |
|------|--------------------------|---------------------------------------------------------------|----------------|----------------------------|-------------|-------------------------|-----|-----|------------|-------------------------------------------------------------------------------|
|      |                          | h                                                             | m              | s                          |             | E                       | N   | Z   |            |                                                                               |
| 7    | eP                       | 18                                                            | 14             | 55                         |             |                         |     |     |            | Trace Distant                                                                 |
| 8    | iP<br>iS                 | 09                                                            | 11             | 00<br>08                   |             |                         |     |     |            | I Local - 40 mi                                                               |
|      |                          | Drum drive belt broken 20h 32m - repaired 18h 37 m November 9 |                |                            |             |                         |     |     |            |                                                                               |
| 9    | iP<br>i                  | 21                                                            | 51<br>52       | 57<br>23                   |             |                         |     |     |            | I Distant                                                                     |
| 10   | eP                       | 01                                                            | 00             | 07                         |             |                         |     |     |            | Trace Distant                                                                 |
| 10   | iP<br>ipP                | 13                                                            | 07             | 27<br>59                   |             |                         |     |     |            | Distant - Deep focus                                                          |
| 10   | eP<br>iP<br>i<br>eS<br>e | 17<br>18                                                      | 53<br>54<br>02 | 24<br>27<br>08<br>10<br>44 |             |                         |     |     |            | II Distant<br>C&GS: 9°S, 77½°W:<br>O = 17:42.8 GCT<br>Magnitude 7½ (Pasadena) |
| 10   | eP                       | 18                                                            | 22             | 12                         |             |                         |     |     |            | I Distant                                                                     |
| 10   | eP                       | 21                                                            | 13             | 07                         |             |                         |     |     |            | Trace Distant                                                                 |
| 10   | iP                       | 22                                                            | 13             | 03                         |             |                         |     |     |            | Trace Distant                                                                 |
| 10   | eP                       | 23                                                            | 22             | 02                         |             |                         |     |     |            | Trace Distant                                                                 |
| 11   | eP<br>i                  | 21                                                            | 06             | 07<br>20                   |             |                         |     |     |            | Trace Distant                                                                 |
| 11   | iP<br>i                  | 23                                                            | 00<br>01       | 22<br>02                   |             |                         |     | -30 |            | I Distant                                                                     |
| 12   | eP<br>i                  | 06                                                            | 02<br>03       | 37<br>49                   |             |                         |     |     |            | I Distant                                                                     |
| 12   | iP<br>i<br>e             | 14                                                            | 38<br>41       | 02<br>28<br>43             |             |                         | -35 | +45 |            | II Distant                                                                    |
| 12   | eP<br>eS<br>e            | 17                                                            | 40<br>50<br>51 | 33<br>48<br>22             |             |                         |     |     |            | I Distant<br>C&GS: 21°S, 173°W<br>O = 17:28.7                                 |
| 12   | eP<br>i<br>eS            | 23                                                            | 44<br>46<br>54 | 20<br>47<br>45             |             |                         |     |     |            | I Distant<br>Aftershock ?                                                     |



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| Date | Phase              | G. C. T. |    |                              | Period<br>T | Trace Amplitude, .01 mm |     |       | $\Delta t$ | Remarks                        |
|------|--------------------|----------|----|------------------------------|-------------|-------------------------|-----|-------|------------|--------------------------------|
|      |                    | h        | m  | s                            |             | E                       | N   | Z     |            |                                |
| 13   | eP                 | 04       | 09 | 09                           |             |                         |     |       |            | Trace Distant                  |
| 13   | iP<br>iS           | 12       | 26 | 07<br>17.0                   |             |                         |     |       |            | I Local - 50 mi                |
| 14   | iP<br>iS           | 06       | 32 | 59.0<br>33 08.4              |             |                         |     |       |            | I Local - 47 mi                |
| 14   | eP                 | 11       | 44 | 37                           |             |                         |     |       |            | I Distant                      |
| 14   | iP<br>iS           | 13       | 09 | 04.4<br>12.0                 |             |                         |     |       |            | I Local - 38 mi                |
| 14   | iP<br>i<br>i<br>iS | 13       | 18 | 35.9<br>44.9<br>45.3<br>45.8 |             | -65                     | +30 | +75   |            | II Local - 50 mi               |
| 14   | eP                 | 22       | 00 | 13                           |             |                         |     |       |            | Trace Distant                  |
| 15   | eP                 | 01       | 33 | 21                           |             |                         |     |       |            | Trace Distant                  |
| 15   | eP                 | 08       | 04 | 20                           |             |                         |     |       |            | Trace Distant                  |
| 15   | iP                 | 18       | 34 | 13                           |             |                         |     |       |            | Regional ?                     |
| 16   | eP<br>iS           | 05       | 09 | 17.4<br>25.8                 |             |                         |     |       |            | I Local - 42 mi                |
| 16   | eP                 | 05       | 49 | 35                           |             |                         |     |       |            | Trace Distant                  |
| 16   | eP                 | 12       | 03 | 36                           |             |                         |     |       |            | Trace Distant                  |
| 17   | eP<br>e            | 03       | 03 | 20<br>18 49                  |             |                         |     |       |            | Trace Distant<br>(Same Quake?) |
| 17   | eP                 | 22       | 43 | 26                           |             |                         |     |       |            | Trace Distant                  |
| 18   | eP<br>i<br>e       | 02       | 51 | 53<br>54<br>53 59            |             | -20                     | -30 | -1.70 |            | Distant; deep focus            |
| 18   | eP                 | 13       | 58 | 00                           |             |                         |     |       |            | Trace Distant                  |
| 20   | iP<br>iS           | 21       | 01 | 14.3<br>24.5                 |             | -94                     | +37 | +106  |            | II Local - 51 mi ESE           |
| 21   | iP<br>iS           | 00       | 37 | 16.2<br>26.3                 |             |                         |     |       |            | I Local - 51 mi                |



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| Date | Phase              | G. C. T. |          |                      | Period<br>T | Trace Amplitude, .01 mm |          |             | $\Delta t$ | Remarks                              |
|------|--------------------|----------|----------|----------------------|-------------|-------------------------|----------|-------------|------------|--------------------------------------|
|      |                    | h        | m        | s                    |             | E                       | N        | Z           |            |                                      |
| 21   | iP<br>iS<br>iS     | 20       | 37       | 08.0<br>16.7<br>17.2 |             | -36<br>-75              | +15      | +40<br>+105 |            | I Local - 44 mi ESE                  |
| 21   | i                  | 21       | 27       |                      |             |                         |          |             |            | Trace Local                          |
| 21   | i                  | 22       | 29       |                      |             |                         |          |             |            | Trace Local                          |
| 22   | iP<br>i<br>iS      | 03       | 05       | 18.0<br>25.0<br>26.8 |             |                         |          |             |            | I Local - 44 mi                      |
| 22   | i                  | 03       | 27       |                      |             |                         |          |             |            | Trace Local                          |
| 22   | iP<br>iS           | 06       | 27       | 20.2<br>43.1         |             | -10                     |          | +14         |            | I Regional - 120 mi W                |
| 23   | iP                 | 08       | 35       | 57                   |             |                         |          |             |            | Trace Distant                        |
| 23   | iP                 | 11       | 25       | 01                   |             |                         |          |             |            | Trace Distant<br>Possibly deep focus |
| 23   | iP<br>iS           | 13       | 18       | 20.8<br>52.7         |             | +25<br>-56              | 0<br>+25 | +35<br>+48  |            | I Regional - 60 mi                   |
| 23   | iP                 | 19       | 09       | 43                   |             |                         |          |             |            | Trace Distant                        |
| 23   | iP<br>iS           | 19       | 21<br>22 | 56.4<br>06.1         |             | -10                     |          | +8          |            | I Local - 49 mi                      |
| 23   | iP                 | 20       | 04       | 44                   |             |                         |          |             |            | I Distant                            |
| 23   | i                  | 21       | 24       |                      |             |                         |          |             |            | Trace Local                          |
| 24   | iP<br>i(S)<br>i(S) | 01       | 02       | 21.8<br>28.5<br>42.2 |             | +87.5                   | -60      | +145        |            | II Regional - 110 mi WNW             |
| 24   | iP<br>iS           | 06       | 45<br>46 | 51.3<br>00.8         |             | -20                     |          | +22<br>+37  |            | I Local - 48 mi E                    |
| 24   | eP<br>e            | 21       | 31<br>33 | 44<br>01             |             |                         |          |             |            | I Distant                            |
| 25   | eP                 | 16       | 39       | 19                   |             |                         |          |             |            | I Distant                            |
| 25   | iP<br>i<br>iS      | 18       | 14<br>15 | 51.6<br>52.0<br>24.8 | 1.0         | +                       | +        | +           |            | I Regional                           |



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| Date            | Phase                   | G. C. T. |    |                                  | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks             |
|-----------------|-------------------------|----------|----|----------------------------------|-------------|-------------------------|-----|-----|------------|---------------------|
|                 |                         | h        | m  | s                                |             | E                       | N   | Z   |            |                     |
| 27              | iP<br>iS                | 09       | 12 | 29.6<br>38.6                     |             | -56                     | +25 | +56 |            | I Local - 45 mi ESE |
| 27              | iP                      | 09       | 32 | 34                               |             |                         |     |     |            | Trace Distant       |
| 28              | iP<br>iS                | 10       | 06 | 32.1<br>33.6                     |             | -70                     | -12 | -50 |            | I Local - 7 mi W    |
| 28              | iP<br>i<br>e<br>eS<br>e | 16       | 02 | 51<br>03 56<br>12 01<br>12<br>46 |             |                         |     | +   |            | I Distant           |
| 28              | iP<br>iS                | 16       | 29 | 03.2<br>30 06.4                  |             | +25                     | -12 | +25 |            | II Local 16 mi WNW  |
| 29              | iP                      | 06       | 55 | 02                               |             |                         |     |     |            | I Distant           |
| 29              | e<br>i                  | 11       | 38 | 54<br>39 11                      |             |                         |     |     |            | I Distant           |
| 29              | eP                      | 19       | 26 | 16                               |             |                         |     |     |            | I Distant           |
| 30              | e                       | 00       | 56 | 01                               |             |                         |     |     |            | Trace Distant       |
| 30              | iP<br>iS                | 05       | 25 | 57.0<br>26 07.2                  |             | -20                     |     | +20 |            | I Local - 50 mi E   |
| 30              | iP<br>iS                | 07       | 42 | 29.5<br>32.9                     |             | +25                     | -20 | +30 |            | I Local - 17 mi NW  |
| 30              | iP<br>iS                | 21       | 00 | 21.4<br>30.9                     |             |                         |     |     |            | Trace Local - 48 mi |
| <u>December</u> |                         |          |    |                                  |             |                         |     |     |            |                     |
| 1               | eP                      | 03       | 08 | 18                               |             |                         |     |     |            | Trace Distant       |
| 1               | iP<br>iS                | 05       | 52 | 19.8<br>29.5                     |             |                         |     |     |            | I Local - 49 mi     |
| 1               | eP                      | 06       | 24 | 37                               |             |                         |     |     |            | Trace Distant       |
| 1               | iP<br>i                 | 11       | 42 | 24<br>37                         |             |                         |     |     |            | I Distant           |
| 2               | eP                      | 20       | 05 | 03                               |             |                         |     |     |            | I Distant           |
| 3               | iP<br>iS                | 01       | 20 | 15.2<br>25.0                     |             |                         |     |     |            | Trace Local - 49 mi |



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| Date | Phase    | G. C. T. |    |              | Period<br>T | Trace Amplitude, .01 mm |   |   | $\Delta t$ | Remarks                                                |
|------|----------|----------|----|--------------|-------------|-------------------------|---|---|------------|--------------------------------------------------------|
|      |          | h        | m  | s            |             | E                       | N | Z |            |                                                        |
| 3    | iP       | 19       | 24 | 44           |             |                         |   |   |            | Trace Distant                                          |
| 4    | eP       | 20       | 59 | 44           |             |                         |   |   |            | Trace Distant                                          |
| 5    | eP       | 06       | 57 | 00           |             |                         |   |   |            | Trace Distant<br>4.7°S, 145.8°E (BCIS)<br>O = 06:44:37 |
| 5    | iP<br>i  | 17       | 24 | 01.5<br>02.6 |             |                         |   |   |            | I Local - ca 50 mi                                     |
| 6    | eP       | 08       | 33 | 11           |             |                         |   |   |            | Trace Distant                                          |
| 6    | eP<br>iS | 19       | 48 | 23.0<br>36.0 |             |                         |   |   |            | I Regional                                             |
| 7    | eP       | 00       | 59 | 39           |             |                         |   |   |            | Trace Distant                                          |
| 7    | eP       | 02       | 04 | 03           |             |                         |   |   |            | Trace Regional or Distant                              |
| 7    | eP       | 07       | 01 | 08           |             |                         |   |   |            | Trace Distant                                          |
| 7    | iP<br>iS | 12       | 07 | 08.0<br>16.8 |             |                         |   |   |            | I Local - 44 mi                                        |
| 7    | i        | 12       | 45 | 25.6         |             |                         |   |   |            | Trace Regional                                         |
| 7    | i        | 12       | 50 | 28.3         |             |                         |   |   |            | Trace Regional                                         |
| 7    | iP       | 17       | 35 | 57           |             |                         |   |   |            | I Distant<br>16°S, 169°E (BCIS)<br>O = 17:18.2         |
| 8    | iP<br>iS | 00       | 02 | 00.4<br>37.7 |             |                         |   |   |            | I Local - 38 mi                                        |
| 8    | iP<br>eS | 12       | 19 | 22<br>26 18  |             |                         |   |   |            | I Distant                                              |
| 9    | eP       | 00       | 57 | 16           |             |                         |   |   |            | Trace Distant                                          |
| 9    | eP       | 08       | 39 | 16           |             |                         |   |   |            | Trace Distant                                          |
| 9    | iP<br>iS | 11       | 43 | 21.8<br>32.0 |             |                         |   |   |            | I Local - 51 mi                                        |
| 9    | eP       | 12       | 40 | 08           |             |                         |   |   |            | Trace Distant                                          |
| 9    | iP<br>iS | 21       | 21 | 16.4<br>24.9 |             |                         |   |   |            | I Local - 43 mi                                        |



## SEISMOLOGICAL STATION

MONTH OF December



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| Date | Phase        | G. C. T. |    |                      | Period<br>T | Trace Amplitude, .01 mm |   |    | $\Delta t$ | Remarks                                                                      |
|------|--------------|----------|----|----------------------|-------------|-------------------------|---|----|------------|------------------------------------------------------------------------------|
|      |              | h        | m  | s                    |             | E                       | N | Z  |            |                                                                              |
| 9    | 1P<br>1<br>1 | 21       | 21 | 55.2<br>02.0<br>10.6 |             |                         |   |    |            | I Local - 357 mi                                                             |
| 10   | eP           | 04       | 03 | 29                   |             |                         |   |    |            | I Distant                                                                    |
| 10   | 1P<br>eS     | 07       | 33 | 40<br>42 25          |             |                         |   |    |            | I Distant<br>45 $\frac{1}{2}$ °N, 140 $\frac{1}{2}$ °E (BCIS)<br>O = 07:22.8 |
| 10   | 1P           | 09       | 00 | 55                   |             |                         |   |    |            | I Regional                                                                   |
| 10   | 1P<br>1<br>1 | 16       | 44 | 04<br>21<br>31       |             |                         |   |    |            | I Distant                                                                    |
| 11   | 1P           | 04       | 57 | 12                   |             |                         |   |    |            | I Distant                                                                    |
| 11   | 1P<br>1S     | 05       | 06 | 16.4<br>25.9         |             |                         |   |    |            | I Local - 48 mi                                                              |
| 11   | 1P<br>eS     | 13       | 10 | 47<br>17 26          |             |                         |   |    |            | I Distant<br>N of Flathead Lake in W Montana                                 |
| 11   | eP           | 22       | 55 | 47                   |             |                         |   |    |            | Trace Distant                                                                |
| 12   | eP           | 23       | 52 | 58                   |             |                         |   |    |            | Trace Distant                                                                |
| 13   | 1            | 05       | 07 | 42.8                 |             |                         |   |    |            | Trace Local                                                                  |
| 13   | 1            | 06       | 25 | 21                   |             |                         |   |    |            | Trace Distant                                                                |
| 13   | 1P           | 10       | 30 | 57.5                 |             |                         |   |    |            | I Distant                                                                    |
| 13   | eP           | 12       | 59 | 07                   |             |                         |   |    |            | I Distant                                                                    |
| 13   | e<br>e<br>e  | 13       | 52 | 24<br>53 09<br>55 42 |             |                         |   |    |            | II Distant                                                                   |
| 13   | 1P<br>1S     | 14       | 29 | 28.4<br>30 50.2      |             | +2                      | 0 | +2 |            | II Regional                                                                  |
| 15   | eP           | 00       | 42 | 04                   |             |                         |   |    |            | Trace Distant                                                                |
| 15   | 1            | 13       | 56 | 38                   |             |                         |   |    |            | Trace Local                                                                  |
| 16   | eP           | 01       | 05 | 41                   |             |                         |   |    |            | Trace Distant                                                                |
| 17   | 1P<br>e      | 22       | 52 | 17<br>23 01 33       |             |                         |   |    |            | II Distant, Deep focus<br>(BCIS) 20°S, 178°W: h = 600 km<br>O = 22:41.2      |



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$\Delta t$  is time correction

| Date | Phase                | G. C. T. |      |                              | Period<br>T | Trace Amplitude, .01 mm |     |      | $\Delta t$ | Remarks                                                                  |
|------|----------------------|----------|------|------------------------------|-------------|-------------------------|-----|------|------------|--------------------------------------------------------------------------|
|      |                      | h        | m    | s                            |             | E                       | N   | Z    |            |                                                                          |
| 18   | eP                   | 00       | 30   | 19                           |             |                         |     |      |            | I Distant<br>JSA: 55.3N, 151.4W<br>O = 00:24:52                          |
| 18   | iP                   | 02       | 04   | 03                           |             |                         |     |      |            | I Distant                                                                |
| 18   | iP<br>iS             | 06       | 00   | 36<br>45.5                   |             |                         |     |      |            | I Local                                                                  |
| 18   | iP                   | 06       | 30.6 |                              |             |                         |     |      |            | I Local - 48 mi                                                          |
| 18   | iP<br>(iS)           | 14       | 20   | 51.8<br>21 09.3              |             | +581                    | +63 | +825 |            | III Regional - 90 ? mi W                                                 |
| 18   | i                    | 23       | 02   | 15.4                         |             |                         |     |      |            | Trace Local                                                              |
| 19   | eP ?                 | 01       | 02   | 58                           |             |                         |     |      |            | Trace Distant<br>Ohrst Church: 7° 35', 127° SE<br>h = 100 O = 00:44:08   |
| 19   | iP<br>ipP<br>eS<br>e | 03       | 10   | 17<br>45.5<br>20 39<br>21 10 |             |                         |     |      |            | II Distant (deep focus)<br>JSA: 25.1N, 123.9E<br>O = 02:57:24 h = 100 km |
| 20   | iP<br>e<br>e         | 19       | 31   | 01<br>40 52<br>41 50         |             |                         |     |      |            | III Distant<br>CGS 33.5N, 133.7E<br>(Off Shipokn, Japan)<br>O = 19:19:02 |
| 20   | e                    | 22       | 57   | 58                           |             |                         |     |      |            | I Distant - Aftershock                                                   |
| 20   | e                    | 23       | 55   | 12                           |             |                         |     |      |            | Trace Distant - Aftershock                                               |
| 21   | i                    | 03       | 49   | 45                           |             |                         |     |      |            | I Distant - Aftershock                                                   |
| 21   | i                    | 04       | 23   | 55.7                         |             | +350                    | +30 | +475 |            | III Regional - 110 mi W                                                  |
| 21   | e                    | 07       | 39   | 08                           |             |                         |     |      |            | I Distant                                                                |
| 21   | e                    | 10       | 22   | 09                           |             |                         |     |      |            | I Distant                                                                |
| 21   | e                    | 10       | 29   | 13                           |             |                         |     |      |            | II Distant - CGS: 44N, 148E<br>Northeast of Hokkaido)<br>O = 10:18.8     |
| 21   | e                    | 10       | 40   | 28                           |             |                         |     |      |            | I Distant                                                                |
| 21   | e                    | 10       | 48   | 59                           |             |                         |     |      |            | I Distant                                                                |
| 21   | e                    | 10       | 57   | 07                           |             |                         |     |      |            | I Distant                                                                |



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Coast and Geodetic Survey $\Delta t$  is time correction

| Date | Phase | G. C. T. |    |      | Period<br>T | Trace Amplitude, .01 mm |   |      | $\Delta t$ | Remarks                 |
|------|-------|----------|----|------|-------------|-------------------------|---|------|------------|-------------------------|
|      |       | h        | m  | s    |             | E                       | N | Z    |            |                         |
| 21   | e     | 11       | 01 | 54   |             |                         |   |      |            | I Distant               |
| 21   | e     | 12       | 18 | 05   |             |                         |   |      |            | I Distant               |
| 21   | i     | 12       | 49 | 52   |             |                         |   |      |            | I Distant               |
| 21   | i     | 12       | 54 | 42   |             |                         |   |      |            | I Distant               |
| 21   | e     | 13       | 06 | 41   |             |                         |   |      |            | I Distant               |
| 21   | i     | 13       | 32 | 56   |             |                         |   |      |            | I Distant               |
| 21   | e     | 17       | 20 | 12   |             |                         |   |      |            | I Distant               |
| 21   | iP    | 19       | 59 | 09   |             |                         |   | +    |            | I Distant - Aftershock  |
|      | i     |          |    | 38   |             |                         |   |      |            |                         |
|      | i     | 20       | 04 | 33   |             |                         |   |      |            |                         |
|      | eS    |          | 07 | 38   |             |                         |   |      |            |                         |
|      | e     |          | 09 | 02   |             |                         |   |      |            |                         |
| 21   | eP    | 20       | 15 | 17   |             |                         |   |      |            | Trace Distant           |
| 21   | iP    | 20       | 30 | 56   |             |                         |   |      |            | I Distant - Aftershock  |
|      | i     |          | 31 | 14   |             |                         |   |      |            |                         |
| 21   | iP    | 23       | 23 | 32   |             |                         |   | -50  |            | I Distant (deep focus?) |
| 21   | eP    | 23       | 36 | 27   |             |                         |   |      |            | Trace Distant           |
|      | e     |          | 37 | 33   |             |                         |   |      |            |                         |
| 21   | eP    | 23       | 59 | 00   |             |                         |   |      |            | Trace Distant           |
| 22   | iP    | 01       | 12 | 04.6 |             | +20                     |   | +20  |            | II Local - 43 mi W      |
|      | i     |          |    | 12.0 |             |                         |   |      |            |                         |
|      | i     |          |    | 16.5 |             |                         |   |      |            |                         |
|      | iS    |          |    | 23.2 |             | +188                    |   |      |            |                         |
|      | iS    |          |    | 23.5 |             |                         |   | +250 |            |                         |
| 22   | eP    | 03       | 06 | 50   |             |                         |   |      |            | Trace Distant           |
| 22   | eP    | 05       | 01 | 45   |             |                         |   |      |            | Trace Distant           |
| 22   | eP    | 08       | 19 | 45   |             |                         |   |      |            | Trace Distant           |
| 22   | e     | 13       | 29 | 42   |             |                         |   |      |            | Trace Distant           |
| 22   | e     | 13       | 35 | 01   |             |                         |   |      |            | Trace Distant           |
| 22   | eP    | 23       | 24 | 51   |             |                         |   |      |            | Trace Distant           |



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| Date | Phase         | G. C. T. |          |                | Period<br>T | Trace Amplitude, .01 mm |     |     | $\Delta t$ | Remarks                                                    |
|------|---------------|----------|----------|----------------|-------------|-------------------------|-----|-----|------------|------------------------------------------------------------|
|      |               | h        | m        | s              |             | E                       | N   | Z   |            |                                                            |
| 24   | eP            | 04       | 13       | 12             |             |                         |     |     |            | I Distant<br>3.°S, 147°.0E (BCIS)<br>O = 03:59.9           |
| 24   | eP            | 16       | 47       | 49             |             |                         |     |     |            | Aftershock                                                 |
| 24   | eP            | 19       | 48       | 24             |             |                         |     |     |            | Aftershock                                                 |
| 24   | 1P<br>1S      | 22       | 56       | 00.9<br>07.5   |             |                         |     |     |            | Trace Local - 33 mi                                        |
| 25   | 1P<br>e<br>eS | 11       | 20       | 46<br>26<br>52 |             |                         |     | +50 |            | I Distant<br>JSA: 51°N, 180°<br>O = 11:13:14<br>h = 100 km |
| 26   | eP            | 00       | 08       | 15             |             |                         |     |     |            | Trace Distant                                              |
| 26   | eP<br>e<br>e  | 04<br>05 | 59<br>00 | 48<br>07<br>54 |             |                         |     |     |            | Trace Distant                                              |
| 26   | eP            | 12       | 11       | 50             |             |                         |     |     |            | Trace Distant                                              |
| 26   | eP            | 19       | 46       | 23             |             |                         |     |     |            | Trace Distant                                              |
| 27   | eP            | 07       | 07       | 38             |             |                         |     |     |            | Trace Distant                                              |
| 27   | eP            | 17       | 09       | 15             |             |                         |     |     |            | Trace Distant                                              |
| 27   | 1P<br>1S      | 23       | 36       | 32.6<br>34.8   | +40         | +27                     | +30 |     |            | I Local - 11 mi SW                                         |
| 28   | eP            | 01       | 07       | 00             |             |                         |     |     |            | Trace Distant                                              |
| 28   | eP            | 10       | 19       | 45             |             |                         |     |     |            | Aftershock                                                 |
| 29   | eP            | 04       | 26       | 00             |             |                         |     |     |            | Aftershock                                                 |
| 30   | 1P<br>1S      | 03       | 09       | 29.8<br>35.1   | -50         | +12                     | +42 |     |            | II Local - 27 mi E by S                                    |
| 31   | e<br>e        | 11       | 21       | 58<br>24<br>08 |             |                         |     |     |            | Trace Distant                                              |
| 31   | 1P            | 23       | 09       | 22             |             |                         |     |     |            | Trace Distant                                              |