

Department of Geology
University of California

EXCHANGE
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SEISMOGRAPHIC STATION

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Magnetic Observatory, Christchurch.

SEISMOLOGICAL RECORDS.

BY

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Magnetic Observatory, Christchurch. — Seismological Records.

EARTHQUAKE RECORDS BY MILNE SEISMOGRAPH No. 16 FOR THE
YEAR 1915.

By H. F. SKEY, B.Sc., Director of Observatory.
(Communicated by the Surveyor-General.)

REGISTER FROM MAGNETIC OBSERVATORY, CHRISTCHURCH, NEW ZEALAND.
(Longitude, 11 h. 30 min. 29 sec. E. ; latitude, 43° 31·8' S.)

Notes relating to preliminary tremors or first phase, P_1 ; second phase, P_2 ; third phase or large waves, P_3 ; duration, D ; amplitude, A. Time is Greenwich civil mean time. 0 h. or 24 h. = midnight. The boom period is generally maintained at 16 seconds.

| No. | Date. | Commence- ment. | Maximum. | Maximum Amplitude. | Duration. | Remarks. |
|-----|-----------------|--------------------|----------|-----------------------|-----------|---------------------------------|
| | | | | | | |
| 1 | 1915. Jan. 3 | 0 03·9 | .. | .. | .. | P_1 . |
| | | 0 06·8 | 0 11·1 | 5·0 | .. | P_3 . |
| 2 | Jan. 5 | 14 09·0 | .. | .. | 1 35 | D. |
| | | 14 34·0 | .. | .. | .. | P_1 . |
| | | 14 45·0 | 14 49·9 | 4·9 | .. | P_2 . |
| | | 14 59·6 | .. | .. | .. | P_3 . |
| 3 | Jan. 5 | 23 39·0 | .. | .. | 1 00 | P_4 . |
| | | 23 49·2 | 23 50·0 | 2·9 | .. | D. |
| | | | 24 08·0 | 2·8 | .. | P_1 . |
| 4 | Jan. 10 | 23 33·0 | .. | .. | 1 50 | P_3 ; commencement uncertain. |
| | | 23 34·5 | .. | .. | .. | D. |
| | | 23 37·0 | 23 41·3 | 1·3 | .. | P_1 . |
| 5 | Feb. 25 | 20 40·5 | .. | .. | 1 20 | P_2 ? |
| | | 20 43·0 | .. | .. | .. | P_3 . |
| | | 20 47·5 | 20 48·1 | 4·9 | .. | D. |
| | | 20 51·2 | 20 53·5 | 2·0 | .. | P_1 . |
| 6 | April 25 | 5 56·1 | .. | .. | 1 55 | P_2 . |
| | | 5 57·0 | 5 57·4 | 1·2 | .. | P_3 . |
| 7 | May 1 | 5 13·5 | .. | .. | 0 28 | D. |
| | | 5 24·2 | .. | .. | .. | P_1 . |
| | | 5 43·6 | 5 57·0 | 11·0 | .. | P_2 . |
| 8 | May 3 | 3 34·2 | .. | .. | 6+ | P_3 . |
| | | 4 28·6 | 4 32·1 | 12·0 | .. | D. |
| 9 | May 5 | 11 25·7 | .. | .. | 3 10 | P_1 . |
| | | 11 36·2 | 11 39·3 | 7·2 | .. | P_3 (P_2 indeterminate). |
| | | | 11 42·9 | 7·6 | .. | D. |
| | | | | | .. | Second maximum, interference. |
| | | | | | .. | D indeterminate. |

| No. | Date. | Commence- ment. | Maximum. | Maximum Amplitude. | Duration. | Remarks. |
|-----|-----------------|--------------------|----------|-----------------------|-----------|---|
| | | | | | | |
| 10 | 1915. June 6 | 7 12.5 | .. | .. | .. | P ₁ . |
| | | 7 20.0 | .. | .. | .. | P ₂ . |
| | | 7 25.1 | 7 29.5 | 1.0 | .. | P ₃ . D uncertain. |
| 11 | June 11 | 3 37.8 | .. | .. | .. | P ₁ . |
| | | 3 41.5 | .. | .. | .. | P ₂ . |
| | | 3 44.0 | 3 45.0 | 0.3 | .. | P ₃ . |
| | | | 3 49.0 | 0.4 | .. | Second maximum. D. |
| 12 | July 28 | 9 06.8 | .. | .. | .. | P ₁ . |
| | | 9 08.5 | .. | .. | .. | P ₂ . |
| | | 9 09.5 | 9 13.0 | 2.0 | .. | P ₃ . |
| | | | 9 16.6 | 2.5 | .. | Second maximum. D. |
| 13 | July 31 | 1 47.5 | .. | .. | .. | P ₁ . |
| | | 1 56.0 | .. | .. | .. | P ₂ . |
| | | 2 19.2 | 2 32.4 | 5.0 | .. | P ₃ . |
| | | | | | 3 00 | D approximate. |
| 14 | Aug. 1 | .. | 2 57.0 | <0.2 | .. | Quite local shock; felt Sumner. |
| 15 | Aug. 3 | 13 13.4 | .. | .. | .. | P ₁ . |
| | | 13 20.6 | .. | .. | .. | P ₂ . |
| | | 13 32.0 | 13 39.7 | 6.6 | .. | P ₃ . D. |
| 16 | Sept. 7 | 1 35.5 | .. | .. | .. | P ₁ . |
| | | 1 39.8 | .. | .. | .. | P ₂ . |
| | | 1 46.0 | 1 47.0 | 3.0 | .. | S. (Guatemala earthquake.) |
| | | 1 49.4 | 1 50.5 | 3.0 | .. | Y. |
| | | 2 09.0 | 2 19.0 | 15.0 | .. | P ₃ . |
| | | | | | 5 33 | D (B.P. 16.3 seconds). |
| 17 | Sept. 13 | 18 14.6 | .. | .. | .. | P ₁ ? |
| | | 18 16.0 | 18 18.0 | 1.4 | .. | P ₃ . D. |
| 18 | Oct. 3 | 7 56.0 | 8 05.0 | 4.0 | .. | P ₃ . D uncertain. |
| | | | | | .. | Near felt shock. |
| 19 | Oct. 20 | 22 26.6 | 22 27.3 | 22.0 | .. | D uncertain. |
| 20 | Oct. 20 | 23 20.6 | 23 21.7 | <0.2 | .. | Local shock; minute. |
| 21 | Oct. 31 | 8 31.2 | .. | .. | 0 04 | D. |
| | | 8 35.0 | 8 38.3 | 3.0 | .. | P ₁ . P ₃ . |
| 22 | Nov. 1 | 7 37.2 | .. | .. | 1 00 | D approximate. |
| | | 7 47.0 | .. | .. | .. | P ₁ . |
| | | 7 58.6 | 8 20.6 | .. | .. | P ₂ . P ₃ . |
| 23 | Nov. 1 | 17 57.0 | .. | .. | .. | D approximate. |
| | | 17 57.4 | 17 58.7 | .. | .. | P ₁ . Near shock. Record like No. 19. P ₃ . D uncertain. |

NOTE.—The record of the Guatemala shock (Sept. 7) is of especial interest. The distance of origin is approximately 105° , and the S and Y phenomena are well marked (British Association adopted notation). The difference of times of the S and Y phenomena exceeds three minutes contrary to expectation. PR_1 (B.A. notation) is at 1 39.8, agreeing well with Malta and Iskutate records. S agrees well with B.A. calculated time of arrival; Y, however, appears later than theoretical time of arrival. A Milne-Shaw instrument would probably be better for the identification of these more delicate phenomena.