# The International Seismological Summary for 1926 July, August, September.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present number of the Summary deals with 237 epicentres, 37 of which are new and 200 repetitions from old epicentres. In this last, however, are included a long series of 64 repetitions, Aug. 5 to 20, from the epicentre 25°·0N. 119°·5E., most of them small. They are differentiated from other cases of numerous repetitions (1) by being observed at several stations, whereas in general only one observing station, or perhaps two, have sent records; and (2) by not being aftershocks of a more violent shock. Judging by the rough criterion of the number of observing stations, the first considerable shock was on August 6d. 4h., being No. 23 in the series. It is of interest to note the number of shocks for each number of observing stations.

| Observing Stations | Shocks | Observing Stations | Shocks | Observing Stations | Shocks |
|---|---|---|---|---|---|
| 1 | 2 | 8 | 4 | 15 | 2 |
| 2 | 5 | 9 | 1 | 16 | 2 |
| 3 | 4 | 10 | 4 | 17 | 1 |
| 4 | 4 | 11 | 2 | 18 | 0 |
| 5 | 3 | 12 | 5 | 19 | 1 |
| 6 | 11 | 13 | 2 | 20 | 1 |
| 7 | 8 | 14 | 1 | 25 | 1 |

There is a well defined maximum of shocks observed at 6 or 7 stations.

The work of identifying these August shocks was rendered specially difficult by the occurrence of shocks from adjacent epicentres at 24°·0N. 124°·0E. and 25°·8N. 128°·0E. interspersed among them. Much time was expended on the separation, but it is possible that even now some errors of identification remain.

From 1926 Sept. 10d. 10h. 36m. to Sept. 14d. 8h. 32m. Batavia records that there were 176 shocks at Maron, 76 during the first 12 hours.

## Deep Foci in 1926 July-Sept.

Cases of abnormal focal depth are as follows :—

| | Date. d. | h. | m. | Epicentre. ° | ° | Focal Depth. |
|---|---|---|---|---|---|---|
| July | 26 | 18 | 54 | 36·0N. | 134·0E. | +0·050 |
| Sept. | 7 | 12 | 22 | 5·5S. | 145·0E. | +0·020 |
| Sept. | 10 | 10 | 34 | 9·0S. | 111·0E. | +0·013 |
| Sept. | 10 | 19 | 52 | 9·0S. | 111·0E. | +0·030 |
| Sept. | 11 | 12 | 27 | 9·0S. | 111·0E. | +0·013 |
| Sept. | 16 | 17 | 59 | 10·7S. | 159·7E. | +0·020 |
| Sept. | 17 | 1 | 45 | 10·7S. | 159·7E. | +0·020 |
| Sept. | 17 | 2 | 54 | 10·7S. | 159·7E. | +0·020 |
| Sept. | 17 | 5 | 41 | 10·7S. | 159·7E. | +0·020 |
| Sept. | 29 | 12 | 21 | 3·0N. | 122·0E. | +0·040 |
| Sept. | 30 | 5 | 17 | 3·0N. | 122·0E. | +0·080 |

It will be seen that there are two cases, on Sept. 10-11 and Sept. 29-30, where different focal depths are used for different shocks under the same epicentre. These are not, however, unprecedented. The case of July 26, noticed by Mr. Wadati, is referred to below.

## Deep Foci.

In the Tokyo *Geophysical Magazine* for March, 1928 (Vol. I, No. 4, p. 162) Mr. K. Wadati printed a most interesting paper on "Shallow and Deep Earthquakes." He quotes the paper (M.N.R.A.S. Geoph. Sup. I, No. 1, 1922), in which the method is developed of determining deep foci which has since been constantly used in the *International Seism. Summary*, but without showing any knowledge of these results. By an independent method he arrives at very satisfactory confirmation of them for Japanese earthquakes. A paper commenting on his, and citing the cases of independent concordant determination was written and sent to Mr. Wadati for publication in the *Geophysical Magazine*, but nothing more was heard of it. In the number of their *Geop. Mag.* for March, 1929 (Vol. II, No. 1, p. 1) Mr. Wadati prints a second paper, without any reference to that sent him. Apparently it has gone astray.* The question of the depth of focus is so important that it seems desirable to draw general attention to the independent confirmation of our results by printing here the paper sent to Mr. Wadati, suppressing only a few paragraphs which have no importance now. The occasion seems suitable since this number of the Summary contains the earthquake to which Mr. Wadati devotes his chief attention, that of 1926 July 26d. 18h.

* Since the paper was set up in type as below, a copy of the *Geophysical Magazine*, Vol. II, No. 3, for Nov. 1929, has been received in which the paper is printed in full;

# SHALLOW AND DEEP EARTHQUAKES.

Comments on the paper of K. Wadati in the *Geophysical Magazine*, Vol. I, No. 4 (sent to him in May, 1928, but apparently lost. See *Int. Seism. Summary* for 1925, p. 2).

By Professor H. H. Turner,
*Editor of the "International Seismological Summary."*

---

1.—The paper quoted above by K. Wadati is of great interest since it confirms results obtained by an entirely different method, which has been in constant use in the *International Seismological Summary* since 1922. In that year the paper was written which is duly quoted by Mr. Wadati (on p. 164 of his paper) as No. (1) (except that he quotes the *Geographical* Supplement to the Mon. Not. instead of the *Geophysical* Supplement). It explains two methods of determining the depth of focus of an earthquake :

(a) From the times of arrival of [P] waves at stations near the Antipodes ;

(b) From the times of arrival of the regular P waves at all stations which receive them.

2.—At that time (1922) only a very few examples could be given, for cases of abnormal depth are comparatively rare, as Mr. Wadati has remarked. But subsequent observations have provided a considerable wealth of material. Altogether the following *abnormal* focal depths have been assigned :—

Table I.

Numbers of Abnormal Foci noted for the International Seismological Summary (1913—1924).

| Above normal. | | Below normal. | | | |
|---|---|---|---|---|---|
| Depth. | Cases. | Depth. | Cases. | Depth. | Cases. |
| −·04 | 1 | +·01 | 14 | +·05 | 11 |
| −·03 | 5 | +·02 | 14 | +·06 | 11 |
| −·02 | 7 | +·03 | 24 | +·07 | 8 |
| −·01 | 3 | +·04 | 11 | +·08 | 2 |

The depth is given in fractions of the earth's radius.

3.—There are 111 cases in all, and though 17 of these represent only ±·01 departure from normal, there are many of considerable departure. The two extreme cases of ·08 on 1921 Dec. 18 and 1922 Sept. 4 were very carefully examined, as will be seen from the notes appended to them in the Summary. The epicentres were adopted at 2°·5S, 71°·0W, and 9°·0S, 66°·0W.,

and on 1922 Jan. 17 a focal depth of ·070 was adopted for the epicentre 2°·0S. 72°·0W., suggesting that this neighbourhood is liable to cases of very deep focus. Such points are under investigation.

4.—It is here chiefly intended to draw attention to the fact that the earthquake of July 27th, 1926 (Japanese time), or as dated in Greenwich time 1926 July 26d. 18h. 54m. 45s., which is carefully investigated by Mr. Wadati's method in the paper quoted, gives closely accordant results when treated by the independent method used in the Summary. Mr. Wadati uses observations at 50 Japanese stations within 1100 k.m. or 9° of the epicentre, which he adopts as 35°·4N. 136°·4E., and he finds a depth of 343 k.m. = ·054 of the earth's radius. In the following table is given the reduction of this same earthquake nearly as it would appear in the *International Seismological Summary* in the ordinary course,* adopting a focal depth of ·055 *below normal*. What the *normal* depth is has not yet been finally decided. Cases have presented themselves where it seems appropriate to assume a focal *height* of —0·030 (*above* normal), and even of —0·040 (on 1922 Feb. 5d. 22h.). But it must frankly be admitted that these cases are very rare and are possibly susceptible of some other explanation. Moreover there is other evidence that the *normal* depth is slight, say ·010 radius below the surface. Even this would reduce the depth, found by Mr. Wadati, as ·054 below the *surface*, to ·044 below *normal*, whereas the observations given below suggest a depth even greater than ·055 below *normal*, or say ·070 below the surface. At present we can only say that the depths found by the two methods are of the same order of magnitude; and ·055 below normal has been adopted without claiming that it represents Mr. Wadati's result accurately.

* Note added 1929 Oct. 6. The solution in the ordinary course will be found in the present number. The position of the Epicentre 36°·0N. 134°·0E. differs in longitude from Mr. Wadati's by 2°·4, but accords nearly with the position given by Mr. Wadati for the earthquake of 1927 Jan. 15 in his second paper.

## Focal Depth 0·055 Below Normal.

1926 July 26d. 18h. 54m. 45s. Epicentre 35°·4N. 136°·4E. See *Geophysical Magazine* I, 4, given by K. Wadati, p. 181.

A = −·590, B = +·562, C = +·579.

| | Corr. for Focus. | Δ | P. | O−C₁ | S. | O−C₁ | P−C₂ | S−C₂ |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | s. | s. |
| Kobe | +1·8 | 1·2 | 0 53 | +35 | — | — | + 6 | — |
| Sumoto | +1·5 | 1·6 | 1 1 | +37 | 1 35 | +50 | +12 | + 9 |
| Matuyama | +1·0 | 3·4 | 0 47 | − 6 | — | — | −25 | — |
| Mizusawa | +0·3 | 5·3 | 1 33 | +11 | 2 38 | +13 | + 6 | + 4 |
| Nagasaki | +0·2 | 6·0 | 1 31 | − 1 | — | — | − 4 | — |
| Ootomari | −1·0 | 12·2 | 2 51 | −11 | 4 15 | −69 | + 4 | −44 |
| Zi-ka-wei | −1·2 | 13·2 | 2 54 | −22 | 5 17 | −34 | − 5 | − 2 |
| Manila | −2·2 | 25·0 | e 5 1 | −37 | — | — | −14 | — |
| Irkutsk | −3·2 | 28·3 | 5 25 | −46 | e 8 34 | −150 | −14 | −91 |
| | | | 6 32 | +21 | 9 42 | −82 | +53 | −23 |
| Batavia | −5·2 | 50·0 | i 9 33 | +26 | i 15 2 | −77 | +61 | −10 |
| Ekaterinburg | −5·4 | 53·5 | e 8 54 | −36 | e 15 49 | −74 | − 1 | − 6 |
| | | | i 9 0 | −30 | i 15 52 | −71 | + 5 | − 3 |
| Baku | −6·2 | 65·6 | e 11 31 | +42 | i 18 30 | −62 | +83 | +14 |
| Leningrad | −6·3 | 67·1 | e 10 23 | −36 | i 18 46 | −65 | + 5 | +13 |
| | | | | | 19 39 | −12 | — | +66 |
| Pulkovo | −6·3 | 67·2 | e 11 25 | +26 | 19 46 | − 6 | +67 | +69 |
| Hamburg | −6·7 | 79·7 | e 12 59 | +42 | 21 44 | −36 | +83 | +42 |
| Hohenheim | −6·8 | 83·6 | — | — | e 21 41 | −84 | — | − 6 |
| Strasbourg | −6·8 | 83·8 | 12 0 | −41 | i 21 49 | −78 | − 1 | 0 |
| Uccle | −6·8 | 84·0 | e 11 56 | −46 | — | — | − 6 | — |
| Zurich | −6·9 | 85·0 | 11 51 | −57 | e 21 47 | −92 | −17 | −14 |
| Kew | −6·9 | 85·2 | 12 3 | −46 | 21 51 | −90 | − 5 | +11 |
| Paris | −6·9 | 86·3 | e 12 7 | −48 | i 21 58 | −95 | − 8 | −18 |
| Moncalieri | −6·9 | 87·1 | e 12 3 | −57 | i 22 1 | −101 | −17 | −24 |
| Rocca di Papa | −7·0 | 87·3 | e 11 26 | −95 | 21 11 | −153 | −55 | −76 |
| | | | 12 22 | −39 | 23 26 | +61 | + 1 | +59 |
| | | | 12 47 | −14 | — | — | +26 | — |
| Toronto | −7·1 | 94·6 | — | — | e 23 15 | −107 | — | −32 |
| La Paz | — | 151·1 | 19 19 | [−38] | — | — | [+ 4] | — |

5.—Let us first assume the focal depth to be normal so that the usual tables are applicable as they stand. Then Δ, the distance of the station from the epicentre as given in the 3rd column, enables us to compare the times for P and S (shown in columns 4 and 6) with the tables. The differences observed—calculated—are shown in columns 5 and 7, under headings $O-C_1$; and it will be seen that they are positive at small values of Δ, and negative at large. There are some exceptions, and it seems probable that there was a second shock about a minute later than the first, as observed at Batavia (P), Baku (P), Leningrad (S), Pulkovo (P and S), and Hamburg (P and S?). But these exceptions are easily recognised, and there is no doubt whatever about the large negative residuals at the end of the table, which approximate to 50 sec. for P and 90 sec. for S. We can correct these by moving the epicentre nearer, but the copious Japanese observations do not allow us to displace it laterally along the earth's surface; we may only displace it downwards into the earth's interior; *i.e.*, the focus must be deep. Tables for making the requisite corrections were investigated in the paper quoted by Mr. Wadati (Geophys. Supp. to Mon. Not. R.A.S., Vol. I, No. 1 (1922).

6.—In the present case a focal depth 0·055 below normal was assumed, and the corrections were obtained by interpolation between depths ·050 and ·060. They are shown in the second column of Table I; and when they are applied to the values of $\Delta$ in the third column, the new residuals for P and S are shown in the last two columns under headings $P-C_2$ and $S-C_2$. These are still positive near the epicentre and negative when $\Delta$ is large, though the numerical values are considerably reduced; that is to say the assumption ·055 is in the right direction but not large enough. (A few sentences suppressed). [But it is only fair to say that Mr. Wadati] does not claim great accuracy for his determination. Thus on p. 188 of his memoir he writes:

> "So it will be understood that the values of the depth, velocity, etc., above calculated, show only approximate values of them."

The same provisional character may be frankly admitted for the determination here made.

7.—Instead therefore of trying at present to get more closely accordant values for the same earthquake, let us rather look to accordance in the series of earthquakes picked out by the two methods. Mr. Wadati has given (on p. 177 of his paper) a list of "Deep Earthquakes observed in Japan" from 1924 to 1927. The first four of these have been dealt with in the International Summary already published, and may be briefly recalled.

1924 Feb. 21d. 22h. 42m. 50s. Epicentre 35°·0N. 139°·5E. (as on 1924 Feb. 11d.).

This is assumed to be one of the many repetitions of the great Japanese earthquakes in 1923 Sept. 1 and 2. For the first great shock (Sept. 1d. 2h. 58m. 28s.) the focus was normal, and so also for the first few repetitions; but on Sept. 2d. 2h. 46m. 40s. a focal depth +·010 below normal was assumed, and so far some other repetitions. On Feb. 21d. as above there is not sufficient material to make a determination of depth from distant stations, the only observations being of doubtful phases at Irkutsk and Ekaterinburg.

1924 April 3d. 2h. 30m. 30s. Epicentre 32°·0N. 139°·0E. *Assumed focal depth* 0·050.

This is a satisfactory determination from 3 stations between $\Delta=55°$ and $\Delta=75°$, viz., Ekaterinburg, Baku, and Pulkovo, combined with 5 Japanese stations, and confirmed by the negative [P]= −33 sec. for La Paz for which $\Delta=150°·9$.

1924 June 3d. 2h. 41m. 42s. Epicentre 34°·0N. 139°·5E.

No determination of focal depth was attempted in the Summary as the only observations outside Japan were at Ekaterinburg and Pulkovo. But the residuals for these stations are large and negative; the S for Ekaterinburg (there is no P) suggests reduction of the $\Delta$ from 56°·2 to 53°·6, indicating focal depth 0·023.

The P and S for Pulkovo suggest reductions of $\Delta$ from 69°·8 to 66°·5 and 66°·8 respectively, indicating focal depths 0·026 and 0·023. These are closely accordant determinations.

1924 Dec. 13d. 20h. 24m. 32s. Epicentre 36°·5N. 138°·5E.

Again no determination of focal depth was made in the Summary, since the material is scanty. But the residuals at Ekaterinburg and Pulkovo are distinctly negative, assigning as focal depth ·033 and ·057 respectively. The observations at Irkutsk are inconsistent with each other, and may be neglected.

8.—These are all the cases noted by Mr. Wadati in 1924. In 1925 he notes the following 3 cases which had already been worked up before his paper was received:

1925 Mar. 16d. 8h. 52m. 54s. Epicentre 31°·5N. 141°·5E.

At the time of writing the final computations for this shock are with the printer. But beyond 4 Japanese stations only Ekaterinburg is represented for which the P residual is +49 sec. and the S residual −82 sec. The latter indicates a deep focus and the former may refer to $PR_1$ on the same supposition.

1925 Apr. 19d. 15h. 46m. 36s. Epicentre 33°·0N. 137°·5E.
Focal depth 0·045 below normal.

This case is complicated by the probable occurrence of another about 65 sec. later, the P of which was observed at Upsala, Konigsberg, Hamburg, De Bilt, Innsbruck, Uccle, Rocca di Papa, and possibly Venice and Pompeii. An erroneous reduction had in consequence been made in the ordinary course, but when attention was called to this earthquake by Mr. Wadati's paper it was seen that the assumption of a deep focus would clear up the matter. The reductions for some of the leading stations are as follows:—

TABLE IV.

| | Corr. for Focus. | Δ | P. | O—C. | S. | O—C. |
|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. |
| Osaka | +0·8 | 2·4 | 0 59 | + 9 | (1 46) | + 18 |
| Sumoto | +0·8 | 2·5 | 0 58 | + 6 | (1 42) | + 11 |
| Kobe | +0·8 | 2·6 | 1 2 | + 9 | (1 46) | + 12 |
| Nagasaki | −0·1 | 6·4 | 1 32 | − 4 | (2 56) | + 4 |
| Mizusawa | −0·2 | 6·8 | 1 40 | − 1 | 2 53 | − 7 |
| Zi-ka-wei | −1·2 | 13·7 | e 3 7 | + 1 | e 8 22 | +170 |
| Ootomari | −1·2 | 14·2 | e 3 0 | −13 | — | — |
| Taihoku | −1·4 | 16·0 | 3 12 | −22 | — | — |
| Hong Kong | −2·0 | 23·1 | 4 39 | −15 | 8 31 | − 15 |
| Manila | −2·2 | 23·8 | e 4 53 | − 7 | (11 31) | +154 |
| Phu-Lien | −2·8 | 29·6 | i 5 48 | − 8 | i 7 9 | −208 |
| Irkutsk | −2·9 | 30·7 | i 5 49 | −17 | i 10 30 | − 25 |
| Batavia | −4·3 | 48·8 | 8 17 | −13 | i 14 52 | − 17 |
| Malabar | −4·3 | 49·3 | 8 29 | − 4 | e 15 4 | − 11 |
| Ekaterinburg | −4·8 | 55·9 | i 8 12 | −62 | 15 33 | − 59 |
| Bombay | −5·0 | 58·9 | 9 37 | + 5 | — | — |
| Baku | −5·3 | 67·7 | i 10 32 | + 4 | i 19 4 | + 11 |
| Kucino | −5·4 | 68·2 | 10 36 | + 5 | e 19 6 | + 8 |
| Pulkovo | −5·4 | 69·8 | i 10 40 | − 1 | i 19 20 | + 2 |

1925 May 27d. 2h. 29m. 54s. Epicentre 36°·5N. 133°·0E.

Focal depth 0·050 below normal adopted at Oxford in the ordinary course, without any knowledge of Mr. Wadati's paper.

9.—It remains to give, from the discussion covered by the *International Seismological Summary*, any further instances of deep focus in or near Japan suggested by the method therein followed. Now I am under the impression that it is useless to go back beyond 1924, for the reason that the great activity in observation in Japan, which has made the research of Mr. Wadati possible (by providing a great number of observations near the epicentre) was initiated as a result of the terrible disasters of 1923 Sept. 1 and 2. (At any rate his own list only begins in 1924). The only cases for consideration then are as follows :

TABLE V.

| Date. | | | | Epicentre. | | Depth. | |
|---|---|---|---|---|---|---|---|
| | d. | h. | m. s. | | | | |
| 1924 Feb. | 24 | 16 | 45 55 | +45°0 | +135°0 | +·030 | |
| Mar. | 25 | 21 | 6 42 | +43·0 | +131·0 | +·060 | |
| Apr. | 3 | 2 | 30 30 | +32·0 | +139·0 | +·050 | (see above) |
| May | 28 | 9 | 51 48 | +48·0 | +148·0 | +·060 | |
| June | 30 | 15 | 44 18 | +44·7 | +147·6 | +·020 | |
| Dec. | 27 | 11 | 22 0 | +45·0 | +143·0 | +·010 | |
| 1925 Apr. | 19 | 15 | 46 36 | +33·0 | +137·5 | +·045 | (see above) |
| May | 15 | 18 | 25 36 | +30·5 | +138·5 | +·050 | |
| May | 27 | 2 | 29 54 | +36·5 | +133·0 | +·050 | (see above) |

10.—This is the complete list (of shocks anywhere near Japan) up to 1925 July 31, beyond which the computations for the Summary have not yet been made. It will be seen that those which were not noticed by Mr. Wadati are all probably too far away from his area to be noticed by him, though he may possibly find some evidence of great focal depth now that his attention is drawn to them.

11.—Mr. Wadati finds that the shocks with deep focus are collected in a little belt which crosses the general earthquake zone at right angles; the middle line of the belt extending from about 33°N. 140°E. to 37°N. 134°E. The epicentres found in the Summary extend this belt to the South-East; witness the list in Table VI.

TABLE VI.

| Date. | | | | Epicentre. Lat. N. | Long. E. | Depth (by Radius). |
|---|---|---|---|---|---|---|
| | d. | h. | m. s. | | | |
| 1923 June | 29 | 10 | 47 38 | 30°6 | 144°0 | 0·060 |
| 1924 Apr. | 3 | 2 | 30 30 | 32·0 | 139·0 | 0·050 |
| 1925 Apr. | 19 | 15 | 46 36 | 33·0 | 137·5 | 0·045 |
| 1920 July | 20 | 12 | 18 30 | 33·8 | 140·5 | 0·010 |
| 1924 June | 2 | 2 | 41 42 | 34·0 | 139·5 | 0·025 |
| 1924 Feb. | 21 | 22 | 42 50 | 35·0 | 139·5 | 0·010 |
| 1926 July | 26 | 18 | 54 45 | 35·4 | 136·4 | 0·055 |
| 1925 May | 27 | 2 | 29 54 | 36·5 | 133·0 | 0·050 |
| 1924 Mar. | 25 | 21 | 6 42 | 43·0 | 131·0 | 0·060 |
| 1918 Apr. | 10 | 2 | 3 44 | 44·0 | 131·0 | 0·070 |
| 1920 May | 6 | 9 | 40 30 | | | |
| 1924 Feb. | 24 | 16 | 45 55 | 45·0 | 135·0 | 0·030 |
| 1922 Aug. | 14 | 11 | 41 8 | 52·0 | 131·5 | 0·010 |

N.B.—This list contains no date between Aug. 14 and Feb. 21, six months.

12.—The first two in this list are in the ocean to the South-East of those shown in Mr. Wadati's map; the 8th shock (1925 May 27) shows an abrupt termination at the coast, as in Mr. Wadati's map. But there is possibly a continuation on the Asiatic coast as shown by the last four epicentres. The distribution of these epicentres over the rest of the earth's surface is being investigated.

13.—It is clear from Mr. Wadati's paper that there must be a vast amount of information collected in Japan which does not reach the *International Seismological Summary*, and I may be permitted to express the earnest hope that it may be communicated to us from as early a date as possible. This work is the lineal successor of the work started in Japan by John Milne forty years ago and carried on by him (after he left Japan in 1895) at his home at Shide in the Isle of Wight. On his death in 1913 I was permitted by Mrs. Milne to carry on the work at Shide until the end of the war, when she returned to Japan; the work was then transferred to Oxford. A copy of the *International Seismological* Summary will be sent to any observatory which will send its observations to me at the *University Observatory, Oxford, England.* I feel sure that Professor Imamura would support this request.

SUMMARY.

(*a*).—The cases of deep focus detected by Mr. Wadati from observations near the epicentre coincide very satisfactorily with those that have been detected by an independent method from observations at a distance, especially those near the Antipodes.

(*b*).—The list given by Mr. Wadati from 1924 to the middle of 1925 (see §7 of this paper) is supported in every instance by the reductions made for the *International Seismological Summary.* Beyond 1925 May the reductions have not yet been made. But since Mr. Wadati specially examines the earthquake of 1926 July 26d. 18h. (Greenwich time), the work for the Summary was carried out in advance and found to indicate a focal depth of 0·055 of the earth's radius below normal depth, agreeing fairly well with Mr. Wadati's result.

(*c*).—His belt of deep focus, crossing Japan nearly at right angles to the general earthquake belt, is confirmed and extended into Asia, with however a complete break between Japan and Asia.

(*d*).—The earnest hope is expressed that the results of the splendid activity now being shown in Japan may be communicated to the *International Seismological Summary.*

(*End of paper, written in May*, 1928).

Returning now to Mr. Wadati's second paper, it contains a list of "deep earthquakes observed in Japan from Jan. 1927 to April, 1928." It will be of great interest to investigate these as we arrive at them in the ordinary course of the work of the Summary; but in view of the complete accordance tabulated in the above paper we may confidently expect to find accordance in the future, and it seems unnecessary to turn further aside from the regular work, which is heavy. In an appendix, however, he adds the earthquake of "Jan. 15th, 1926, occurred at the Straits of Soya" writing "This earthquake is determined to be deep by the latest investigation, and must be added to those tabulated (Table II, p. 169, loc.cit.) in the former paper." In the *International Seismological Summary* for 1926, p. 15, it will be seen that this earthquake had already been credited with the rather large focal depth +·060, although there were no confirmatory available observations of [P] near the anticentre. It may be added that the earthquake of 1926 April 1d. 16h., given in Mr. Wadati's first paper, is duly confirmed in the *International Seismological Summary* as having a focal depth +·045.

Mr. Wadati's papers are full of interest; *e.g.*, he draws attention to a curious characteristic of deep earthquakes, in that they are often felt at stations far from the epicentre though not at nearer ones.

Dr. Visser, of Batavia, has also written (Sep. Proceed. IV Pacific Sci. Congress, Java, 1929) on the subject, but we do *not* find agreement between his results and ours.

## A Few Special Notes.

The earthquakes of 1926 July 30d. 13h. at 49°·2N. 1°·7W. (Channel Islands), and of 1926 Aug. 15d. 3h. at 52°·2N. 2°·7W. (Hereford) were very fully discussed by Dr. H. Jeffreys in *Geop. Supp. to Mon. Not., R.A.S.*, Vol. I, p. 483 (June, 1927). The latter was also discussed by Dr. C. Davison in the Geological Magazine LXIV, pp. 162-7 (April, 1927). See also the *International Seismological Summary* for 1923 April-June, p. 70.

The earthquake of 1926 Aug. 9d. 3h. at 52°·0N. 176°·0W. affords a good example of large negative residuals near $\Delta=35°$; see the discussion of residuals 1918—1922, in Geop. Sup. M.N.R.A.S. Vol. I, p. 425, (Dec. 1926).

The earthquake of 1926 Aug. 25 at 23°·8S. 172°·5E. has a fine series of observations of [P] by European stations.

The Dominion Observatory, Ottawa, Canada, circulated a typoscript referring to the Solomon Islands earthquake of 1926 Sept. 18, giving a letter from Dr. Svensen, stationed at Ovi Harbour Guadalcanal B.S.I. It also refers to p. 62 of the Bibliographical Bulletin, Vol. II, No. 3.

## The " Cretan " Earthquake and Past History.

Reference was made in the last number of the Summary to Sir Arthur Evans's report (in *The Times*), of the earthquake on 1926 June 26 at 36°·0N. 28°·0E. which did much damage to the Candia Museum in Crete. Sir Arthur Evans wrote again to *The Times* on 1926 Sept. 20 commenting upon Cretan earthquakes in former times which might be identified with the " bellowing of the bull," and recalling the words of the Iliad " in bulls doth the Earth-Shaker rejoice." He proceeds :

> "The discoveries connected with the 'House of the Fallen Blocks' had confirmed a mass of other data which had already convinced me that a great seismic overthrow had occurred at Knossos towards the end of the Third Middle Minoan Period."

and continues :

> " It may be possible, even to fix approximately the date of seven earthquakes, four of them of great severity, between the last century of the third millenium and the beginning of the 14th century B.C."

Professor Turner replied in *The Times* of 1925 Sept. 24, showing how impossible it was at present to predict earthquakes or to recover dates of them in the past, but drawing attention incidentally to the recent memoir of Prof. Imamura (Proc. Imp. Acad., Japan) on the four beach lines in the Tertiary cliffs in Sagami Bay, which he attributes to the action of four great earthquakes, three of them mentioned in authentic history and therein dated A.D. 818, 1703, and 1923. The fourth was too early for this history, which only begins in A.D. 416.

## Ship's Magnetic Compass Disturbance.

The earthquake of 1926 August 3d. 9h. 26m. 8s., at 35°·5N. 140°·0E. is clearly the one referred to in the following report from ss. *West Holbrook*, taken from the Georgetown Seismological Despatches, quoting the U.S. Hydrographic Office. Such cases may be of the greatest importance in throwing light on the nature of earthquakes.

" 1926 Aug. 3d. While the above-named vessel was entering the Gulf of Tokyo, 6.40 p.m. A.T.S. (apparent time of ship) on the above-named date, a slight tremor was felt, as if vessel was grounding. Vessel shivering and a noise was heard, as if touching a rocky ledge, but no reduction in speed could be noticed. Vessel heading at the time 328° P.S.C., 319° True. Deviation 3°·6W. on course. Bearings were immediately taken of Suno Saki Light, bearing N.26°E. True, and Merano Hana Light bearing N93° True ; which placed vessel in latitude 34°55′N., longitude 139°43′30″E., and by chart in from 46 to 50 fathoms of water.

From the above position to Yokohama the ship's compasses were acting queerly, having on northerly courses a deviation of o°·5W., where before they had been 3° West. Upon arrival in Yokohama we learned that an earthquake had taken place.

"The following morning, Aug. 4, azimuths were taken for recording deviation. The compasses were still found to be out. Aug. 5th azimuths were again taken and compasses were now found to be back to normal."

A case of disturbance of magnetic compasses is mentioned in this year's report to the British Association (S. African meeting), though there is some doubt as to the actual coincidence of the disturbance with the earthquake (that of 1928 April 22d. 20h. 13m. 50s., which partly destroyed Corinth).

Such cases of magnetic disturbance are clearly of great importance in several ways.

## Disturbance of Mercury Trough.

On the occasion of the earthquake of 1926 August 30d. 11h., at 36°N. 23°E., an observer at the Radcliffe Observatory, Oxford, who was taking the nadir observation found the mercury trough agitated. This is the second occasion on which agitation of this kind has been noted at the Radcliffe Observatory, the first being on 1920 Dec. 16, during the Great Earthquake in China (see *Mon. Not. R.A.S.*, LXXXI, p. 454).

A word of welcome may here be offered to the Bulletin Seismique from Tananarive which we have received from January, 1929, though the equivalent in MS. was sent in 1928. We shall not reach the discussion of these observations in the I.S.S. for another year or more, but the neatness and completeness of the publication are attractive and congratulations are due to Father Poisson, S.J., one of the many workers in Seismology, of whom the Jesuit Order may be proud.

With deep regret we note the death of the Rev. E. F. Pigot, S.J., Director of the Riverview Observatory, at the age of 79. His death was announced in *The Times* on May 22 last. Seismological stations in the southern hemisphere are all too rare, and some of them have not yet been equipped with modern instruments. The Riverview readings have been for many years a tower of strength in the difficult work of interpreting the scanty and sometimes inconsistent readings of earthquakes in or near the Antarctic. In the present number of the Summary there is a good instance of these difficulties on Sept. 19d. 20h., where scarcely any determination was possible until the single observation from Riverview came to hand.

H. H. TURNER.

University Observatory, Oxford,
1929 Oct. 6.

# 1926 JULY, AUGUST, SEPTEMBER.

**July 1d. 1h. 18m. 0s. (I)**
**2h. 59m. 0s. (II)** } Epicentre 44°·5N. 11°·0E. (as on 1926 June 30d.).

A = +·700, B = +·136, C = +·701; D = +·191, E = −·982;
G = +·688, H = +·134, K = −·713.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| II Florence | 0·7 | 166 | 0 20 | + 9 | — | — | — | — |
| I Venice | 1·3 | 45 | 0 34 | +14 | — | — | — | — |
| II | 1·3 | 45 | i 0 32 | +12 | 1 28 | +52 | — | — |
| I Moncalieri | 2·4 | 290 | e 0 30 | − 7 | 0 59 | − 7 | — | — |
| II | 2·4 | 290 | e 0 47 | +10 | 1 59 | +53 | — | — |
| II Innsbruck | 2·8 | 6 | — | — | e 1 7 | −10 | — | — |
| I Rocca di Papa | 3·0 | 154 | e 0 34 | −13 | — | — | (e 1·9) | — |
| II | 3·0 | 154 | — | — | e 1 6 | −17 | e 1·6 | — |
| I Zurich | 3·3 | 330 | e 1 0 | + 8 | e 1 37 | + 6 | — | — |
| II | 3·3 | 330 | e 0 45 | − 7 | i 1 29 | − 2 | — | — |
| I Zagreb | 3·8 | 68 | — | — | e 1 30 | −14 | — | — |
| II | 3·8 | 68 | e 1 12 | +13 | — | — | — | — |
| I Strasbourg | 4·6 | 336 | — | — | e 2 0? | − 6 | — | — |
| II | 4·6 | 336 | e 2 0? | ?S | (e 2 0?) | − 6 | — | 2·5 |
| I Vienna Z. | 5·2 | 44 | — | — | — | — | e 3·1 | — |
| II Z. | 5·2 | 44 | — | — | — | — | e 2·8 | — |
| I Uccle | 7·7 | 327 | — | — | — | — | 4·0 | — |
| II De Bilt | 8·5 | 335 | — | — | — | — | e 5·0 | — |
| I Pulkovo | 19·2 | 31 | — | — | e 8 30 | +24 | — | — |

Additional readings: Venice I iPN = +50s., II ePN = +44s. Innsbruck II iNE = +1m.13s. (O−C. = −4s.). Rocca di Papa I readings are given as e and eP respectively; II readings are given as eE and eN.

**July 1d. 14h. 8m. 45s.** Epicentre **3°·0S. 100°·9E.**
(as on 1919 July 21d.).

A = −·189, B = +·981, C = −·052; D = +·982, E = +·189;
G = +·010, H = −·051, K = −·999.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Batavia | 6·7 | 119 | i 1 40 | − 2 | i 3 6 | + 4 | — | — |
| Malabar | 7·9 | 123 | i 2 1 | + 1 | i 3 42 | + 8 | — | — |
| Colombo | 23·3 | 295 | 5 15 | − 5 | (9 40) | + 9 | 9·7 | 16·1 |
| Phu-Lien | 24·4 | 13 | 5 18 | −14 | i 9 28 | −24 | 12·2 | 13·9 |
| Manila | 26·5 | 48 | e 5 48 | − 5 | — | — | i 11·4 | — |
| Kodaikanal | 26·9 | 300 | 6 9 | +12 | — | — | 14·4 | 17·6 |
| Amboina | 27·3 | 92 | i 5 36 | −25 | (9 56) | −50 | 9·9 | — |
| Calcutta | 28·3 | 335 | 3 8 | −183 | 8 36 | −148 | 13·2 | — |
| Hong Kong | 28·4 | 27 | 5 55 | −17 | 10 55 | −11 | 14·1 | 17·2 |
| Hyderabad | 30·1 | 314 | 6 29 | 0 | 11 29 | − 7 | 14·6 | 21·0 |
| Perth | 32·2 | 155 | 7 0 | +10 | 11 48 | −23 | 13·6 | 18·0 |
| Taihoku E. | 34·4 | 34 | 7 3 | − 5 | (12 24) | −22 | 12·4 | 26·2 |
| N. | 34·4 | 34 | 7 1 | − 7 | (12 24) | −22 | 12·4 | 28·5 |
| Bombay | 35·2 | 310 | 7 1 | −14 | 12 43 | −15 | 18·3 | 20·9 |
| Zi-ka-wei | 39·4 | 28 | 4 45 | −185 | 10 40 | −197 | — | 22·2 |
| Dehra Dun | 39·8 | 329 | 14 0 | ?S | (14 0) | − 3 | 30·8 | 33·2 |
| Simla E. | 40·9 | 329 | 8 9 | + 7 | 14 9 | −11 | 19·2 | 23·0 |
| N. | 40·9 | 329 | 8 15 | +13 | 14 15 | − 5 | — | — |
| Adelaide | 47·4 | 138 | e 8 50 | 0 | i 15 38 | − 8 | 22·0 | 39·8? |
| Sumoto | 49·1 | 38 | 9 1 | 0 | (15 57) | −10 | 16·0 | — |
| Kobe N. | 49·5 | 38 | — | — | — | — | — | 34·6 |
| Osaka | 49·7 | 39 | 9 2 | − 3 | 16 15 | 0 | 28·5 | 34·8 |
| Melbourne | 53·2 | 138 | 9 21 | − 6 | i 17 39 | +40 | 28·6 | 35·8 |
| Irkutsk | 55·3 | 2 | e 9 38 | − 3 | 17 20 | − 5 | 31·2 | 40·8 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Mizusawa | E. | 56·0 | 37 | (9 50) | + 4 | 9 50 | ?P | — | — |
| Riverview | | 56·0 | 130 | e 9 43 | − 3 | e 17 30 | − 4 | e 26·8 | 32·0 |
| Sydney | | 56·0 | 130 | 9 33 | −13 | 17 27 | − 7 | 26·6 | 27·8 |
| Baku | | 63·6 | 320 | — | — | i 19 27 | +19 | 30·2 | 34·0 |
| Ekaterinburg | | 68·1 | 338 | 11 1 | − 4 | i 19 57 | − 6 | 31·8 | 35·1 |
| Piatigorsk | | 69·8 | 320 | e 11 19 | + 3 | e 20 14 | −10 | 35·2 | 44·2 |
| Helwan | | 74·0 | 303 | 11 53 | +11 | 21 28 | +14 | — | 46·7 |
| Christchurch | | 74·8 | 136 | — | — | — | — | 38·5 | 44·5 |
| Wellington | E. | 76·0 | 133 | 11 59 | + 4 | 21 26 | −11 | e 36·2 | 46·4 |
| | N. | 76·0 | 133 | 12 6 | +11 | e 21 34 | − 3 | i 32·2 | 39·8 |
| Kucino | | 77·8 | 330 | 11 54 | −12 | 21 53 | − 5 | 36·0 | 44·8 |
| Athens | | 81·8 | 310 | 12 30 | + 1 | 22 42 | − 2 | e 40·2 | 53·0 |
| Cape Town | | 82·1 | 236 | 23 49 | ?S | (23 49) | +62 | — | 59·2 |
| Pulkovo | | 83·0 | 332 | 12 30 | − 6 | 22 56 | − 1 | 40·4 | 53·0 |
| Leningrad | | 83·1 | 332 | 12 32 | − 5 | 22 56 | − 2 | 36·8 | 54·1 |
| Apia | | 86·7 | 103 | e 34 15? | ?$SR_2$ | — | — | e 45·2 | — |
| Budapest | | 86·7 | 319 | 12 56 | − 1 | 23 26 | −12 | — | 65·9 |
| Vienna | | 88·6 | 320 | e 12 58 | −10 | 23 58 | − 1 | e 46·2 | 64·2 |
| Zagreb | | 88·6 | 316 | e 13 1 | − 7 | e 23 24 | [+ 5] | 43·2 | 55·2 |
| Graz | | 89·1 | 319 | e 13 12 | + 1 | i 24 0 | − 4 | 36·2 | 57·6 |
| Pompeii | | 89·2 | 312 | e 12 20 | −51 | e 23 28 | [+ 5] | — | — |
| Upsala | | 89·3 | 330 | e 13 10 | − 2 | e 23 37 | [+13] | e 42·2 | 58·7 |
| Naples | | 89·4 | 312 | e 12 5 | −67 | e 22 50 | [−34] | — | — |
| Rocca di Papa | | 90·7 | 313 | e 13 20 | 0 | i 24 26 | + 5 | e 45·8 | — |
| Venice | | 91·1 | 316 | 13 52 | +30 | 23 32 | [− 3] | — | — |
| Cheb | | 91·3 | 320 | e 13 13 | −10 | e 23 57 | −30 | e 46·2 | 67·2 |
| Florence | | 91·8 | 314 | e 13 15 | −11 | 24 15 | −18 | 44·2 | 61·2 |
| Hamburg | | 93·0 | 324 | e 13 30 | − 2 | i 24 36 | − 9 | e 44·2 | 63·2 |
| Ravensburg | E. | 93·1 | 320 | e 13 23 | −10 | e 23 48 | [+ 1] | e 31·6 | 61·0 |
| Hohenheim | | 93·4 | 320 | e 13 31 | − 3 | i 23 57 | [+ 9] | e 51·2 | 67·3 |
| Zurich | | 93·8 | 316 | e 13 34 | − 3 | e 23 55 | [+ 4] | — | — |
| Moncalieri | | 94·3 | 315 | e 13 44 | + 4 | 23 52 | [− 1] | 40·6 | 64·4 |
| Strasbourg | | 94·4 | 319 | e 13 35 | − 5 | i 24 6 | [+12] | 39·2 | 75·2 |
| Bergen | | 95·3 | 330 | — | — | 24 15? | [+16] | — | 61·2 |
| Besançon | | 95·5 | 317 | e 16 51 | ?$PR_1$ | — | — | 61·2 | 75·2 |
| De Bilt | | 95·9 | 322 | 13 50 | + 2 | — | — | e 48·2 | 50·2 |
| Uccle | | 96·4 | 321 | e 13 45 | − 6 | i 24 59 | −21 | e 39·2 | 62·2 |
| Puy de Dôme | | 97·6 | 316 | — | — | — | — | 51·2 | — |
| Paris | | 97·7 | 320 | e 13 47 | −11 | e 24 33 | [+22] | 38·2 | 70·2 |
| Algiers | | 98·0 | 308 | e 13 47 | −13 | 24 30 | [+17] | e 45·2 | 56·2 |
| Barcelona | | 98·5 | 312 | — | — | 24 33 | [+17] | e 49·9 | 63·6 |
| Kew | | 99·3 | 322 | e 14 6 | − 1 | 24 37 | [+16] | 40·2 | 64·4 |
| Dyce | | 99·5 | 329 | — | — | e 24 41 | [+19] | 41·2 | 54·4 |
| Tortosa | E. | 99·8 | 312 | e 18 10 | ?$PR_1$ | 24 38 | [+15] | — | — |
| | N. | 99·8 | 312 | e 18 5 | ?$PR_1$ | 24 39 | [+16] | e 32·0 | 69·6 |
| Oxford | | 99·8 | 322 | e 18 11 | ?$PR_1$ | — | — | 50·2 | 67·8 |
| Stonyhurst | | 100·2 | 324 | e 14 27 | +15 | i 24 39 | [+14] | 53·2 | 61·8 |
| Edinburgh | | 100·3 | 326 | e 18 15 | ?$PR_1$ | i 24 39 | [+14] | 44·2 | 59·2 |
| Bidston | | 100·7 | 324 | 25 25? | ?S | (25 25?) | −37 | 40·6 | 54·4 |
| Alicante | | 100·8 | 310 | e 11 33 | −161 | 22 8 | [−140] | 35·0 | 61·4 |
| Honolulu | N. | 101·3 | 69 | — | — | 25 33 | −35 | 41·8 | 56·4 |
| Almeria | | 102·4 | 309 | — | — | i 24 51 | [+15] | 49·0 | 68·0 |
| Toledo | | 103·3 | 311 | — | — | e 24 40 | [+ 1] | e 32·6 | 68·8 |
| Granada | | 103·3 | 309 | e 14 5 | −22 | i 25 4 | [+25] | e 49·0 | 76·7 |
| Malaga | | 104·0 | 309 | e 12 41 | −109 | 24 53 | [+10] | 38·7 | 75·4 |
| San Fernando | | 105·5 | 309 | 19 35 | ?$PR_1$ | 30 17 | ? | 45·2 | 88·8 |
| Rio Tinto | | 105·6 | 310 | 24 15? | ?S | (24 15?) | [−35] | — | 72·2 |
| Victoria | E. | 120·9 | 32 | 21 59 | ?$PR_1$ | 33 32 | ? | 53·6 | 66·2 |
| Berkeley | E. | 127·3 | 41 | — | — | — | — | e 60·2 | — |
| La Plata | | 137·2 | 205 | — | — | — | — | 65·6 | — |
| Ottawa | | 137·5 | 356 | e 19 47 | [+12] | — | — | e 57·2 | 66·2 |
| Tucson | E. | 138·2 | 41 | e 19 40 | [+ 4] | — | — | 65·6 | 76·6 |
| Toronto | N. | 139·3 | 0 | — | — | e 45 43 | ?$SR_2$ | 69·2 | 87·2 |
| Harvard | E. | 140·0 | 350 | — | — | — | — | 64·0 | 76·4 |
| Ann Arbor | E. | 140·5 | 4 | — | — | e 47 27 | ?$SR_2$ | e 63·6 | 75·8 |
| Ithaca | | 140·5 | 357 | — | — | — | — | 58·2 | — |
| Chicago | E. | 140·5 | 10 | — | — | 23 17 | ?$PR_1$ | e 57·8 | 76·6 |
| Sucre | | 154·1 | 211 | 20 56 | [+55] | e 35 9 | ? | 62·2 | 82·7 |
| La Paz | | 157·6 | 209 | 20 17 | [+11] | e 34 16 | ? | 77·7 | 90·8 |

Additional readings and notes: Batavia i = +1m.47s. Malabar i = +2m.9s.
Phu-Lien MN = +16·0m. Perth readings have been increased by 1h.
Bombay $SR_1$ = +15m.11s. Zi-ka-wei $PR_1$ = +5m.7s., $SR_1$ = +11m.5s.,
MN = +24·5m., MZ = +25·6m. Dehra Dun S = +18m.15s. Adelaide

*Continued on next page.*

$SR_1$ = +19m.6s., MN = +26·6m. Osaka MN = +35·4m. Melbourne i = +21m.9s. = $SR_1$ +3s., and +26m.45s. Irkutsk MNZ = +35·5m. Riverview PS = +17m.49s., $SR_1$ = +21m.42s. ; " Love " eL wave = +23·5m. = $SR_2$ −13s., MZ = +31·7m., MN = +32·5m. Sydney $PR_2$ = +13m.15s., $SR_2$ = +22m.33s. = $SR_1$ +35s. ; all readings have been diminished by 8m. Baku MN = +33·9m., MZ = +44·3m. Ekaterinburg i = +21m.15s., i$SR_1$ = +24m.29s., MZ = +40·9m. Piatigorsk P = +11m.25s., $PR_1$ = +14m.46s., $PR_2$ = +16m.0s., PS = +20m.40s., $SR_1$ = +25m.40s., $SR_2$ = +28m.38s. Christchurch $SR_1$ = +31m.7s. = $SR_2$ −33s. Wellington $SR_1$N = +26m.21s. Kucino $P_4$P = +12m.11s., $S_4P_4$S = +22m.6s., PPS = +23m.37s., e$SR_1$ = +26m.8s., MN = +40·7m. Pulkovo MN = +48·5m., MZ = +54·1m. Leningrad i = +12m.42s., $PR_1$ = +15m.55s., $PR_2$ = +18m.12s., MN = +53·5m. Budapest MN = +61·1m. Vienna iPNZ = +13m.8s., iN = +17m.46s., $PR_2$ = +19m.49s., $S_4P_4$S = +23m.39s., PS = +24m.34s., PPS? = +26m.1s., $SR_1$? = +29m.39s. Zagreb e$PR_1$ = +16m.49s. Graz MN = +65·5m. Upsala MN = +49·6m. Rocca di Papa e = +13m.14s., iPN = +13m.29s., eSE = +23m.57s. = [S] +25s., eSN = +24m.1s. Venice eP = +14m.3s., S = +23m.55s. Hamburg iSE = +24m.1s., i$PR_2$ = +34m.39s. = $SR_2$ −52s., MN = +48·2m., MZ = +55·2m. Moncalieri L = +45·1m. Strasbourg ePEN = +13m.51s., iPS = +24m.45s. = S −15s., i = +26m.41s., MN = +53·2m., MZ = +88·8m. De Bilt eE = +24m.18s. = [S] +16s., +27m.45s., and +32m.17s. = $SR_1$ +30s., eN = +25m.0s. = S −15s., eLN = +39·2m. = $SR_2$ +18s., MZ = +67·9m., MN = +72·2m. Uccle e = +24m.2s. = [S] −3s., MN = +61·8m. Paris $PR_1$ = +17m.51s. Barcelona e = +11m.11s., PS? = +25m.37s. = S −4s., $SR_1$ = +33m.24s. = $SR_1$ +65s. Kew MN = +57·9m. Tortosa L = $SR_1$ −36s. Bidston S = +31m.25s. ; all readings having been diminished by 1h. Honolulu $PR_2$N = +22m.35s., PSE = +26m.15s. = S +7s., PSN = +26m.27s., $SR_1$N = +31m.15s. and +32m.33s., $SR_2$E = +34m.45s., and +37m.48s. = $SR_2$ −4s., $SR_2$N = +35m.57s., $SR_2$E? = +39m.35s., LE = +47·2m., ME = +55·8m. Almeria MN = +65·4m. Toledo MNW = +67·0m. Granada i = +17m.31s. = [P] −28s., +18m.22s. = $PR_1$ −13s., +19m.28s., +24m.2s. = [S] −37s., and +27m.38s. Malaga, if we increase the readings by 2min. S = +26m.53s. = S +20s. San Fernando $SR_1$ = +34m.45s., MN = +74·8m. Victoria PN = +23m.4s. Ottawa eN = +22m.22s. = $PR_1$ +3s., iN = +23m.18s., eE = +23m.33s., iE = +40m.37s. = $SR_1$ +15s., iN = +45m.45s. = $SR_2$ −32s., eLN = +61·2m., MN = +68·2m. Tucson eN = +19m.51s., e$PR_1$N = +22m.20s., e$PR_1$E = +22m.22s., $PR_2$E = +25m.15s., $SR_1$E = +29m.33s. = $PR_2$ +55s., $SR_2$E = +46m.42s., MN = +79·8m. Toronto LE = +62·2m., ME = +69·4m. Harvard LN = +65·4m., MN = +82·4m. Ann Arbor eN? = +47m.33s., and +52m.51s, eE = +55m.39s. Chicago $PR_1$E = +22m.40s., $PR_4$E = +30m.28s., $PS_6P_0$SE = +32m.47s., PSE = +33m.38s., PPSE = +34m.45s., $SR_1$E = +40m.37s., +40m.47s., and +42m.3s., $SR_4$E? = +54m.35s., and +55m.45s. La Paz $SR_2$ = +45m.41s. = $SR_1$ +81s., LN = +76·2m., MN = +87·2m.

**July 1d. 19h. 33m. 50s. Epicentre 3°·0S. 100°·9E. (as at 14h.).**

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| **Batavia** | 6·7 | 119 | i 1 42 | 0 | i 3 26 | +24 | (i 3·4) | — |
| **Malabar** | 7·9 | 123 | i 1 57 | − 3 | 4 0 | +26 | (4·0) | — |
| **Kodaikanal** | 26·9 | 300 | 13 34 | ?L | — | — | (13·6) | — |
| **Hong Kong** | 28·4 | 27 | — | — | — | — | — | 17·2 |
| **Irkutsk** | 55·3 | 2 | — | — | e 17 14 | −11 | 30·2 | — |
| **Baku** | 63·6 | 320 | — | — | e 19 12 | + 4 | e 34·2 | — |
| **Ekaterinburg** | 68·1 | 338 | 10 57 | − 8 | e 19 54 | − 9 | 32·2 | 37·2 |
| **Pulkovo** | 83·0 | 332 | — | — | — | — | e 51·2 | — |
| **Leningrad** | 83·1 | 332 | — | — | — | — | 50·2 | — |

**Additional readings: Batavia iE = +3m.29s. Baku e = +27m.10s.?**

**July 1d. 20h. 29m. 30s. Epicentre 5°·0S. 81°·5W.**

A = +·147, B = −·985, C = −·087; D = −·989, E = −·148; G = −·013, H = +·086, K = −·996.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Balboa Hts. | N. | 14·1 | 8 | 3 49 | +22 | 7 29 | +79 | 9·9 | 12·4 |
| La Paz | | 17·4 | 132 | i 4 11 | + 1 | i 7 31 | + 4 | 9·8 | 11·4 |
| Sucre | | 21·2 | 133 | i 4 53 | − 2 | i 8 54 | + 6 | 11·8 | 14·9 |
| La Plata | | 37·0 | 148 | i 7 14 | −16 | 12 56 | −28 | 20·5 | — |
| Tucson | E. | 46·5 | 325 | 8 52 | + 8 | 15 35 | 0 | 21·7 | 30·2 |
| | N. | 46·5 | 325 | 8 52 | + 8 | 15 36 | + 1 | e 24·3 | 26·2 |
| Chicago | E. | 47·1 | 354 | — | — | 15 30 | −12 | 26·1 | 27·9 |
| Ann Arbor | | 47·3 | 357 | e 8 42 | − 7 | i 15 42 | − 3 | e 23·2 | 24·4 |
| Harvard | N. | 48·3 | 10 | 8 56 | 0 | 16 1 | + 3 | 23·1 | 30·3 |
| Toronto | | 48·7 | 1 | i 9 0 | + 2 | 16 1 | − 1 | 23·5 | 29·1 |
| Ottawa | | 50·6 | 6 | i 9 14 | + 3 | i 16 28 | + 2 | e 22·9 | 32·0 |
| Victoria | | 64·7 | 330 | 10 44 | + 1 | 19 34 | +13 | 29·6 | 42·4 |
| Honolulu | E. | 79·4 | 294 | — | — | 22 42 | +26 | 39·7 | 41·4 |
| San Fernando | | 81·3 | 52 | 12 50 | +23 | 22 46 | + 8 | 44·5 | 54·5 |
| Granada | | 83·4 | 52 | i 12 42 | + 4 | 23 17 | +16 | e 34·5 | 52·5 |
| Almeria | | 84·4 | 52 | e 12 52 | + 8 | e 23 22 | +10 | — | — |
| Tortosa | N. | 87·3 | 49 | — | — | — | — | e 34·5 | 54·4 |
| Stonyhurst | | 87·4 | 37 | 12 59 | − 2 | 23 44 | − 1 | — | 49·5 |
| Edinburgh | | 87·6 | 34 | e 13 0 | − 3 | 24 0 | +12 | — | 52·5 |
| Oxford | | 87·9 | 39 | i 13 2 | − 2 | i 23 29 | [+15] | — | — |
| Kew | | 88·5 | 39 | e 13 5 | − 3 | 23 45 | −13 | 34·5 | — |
| Dyce | | 88·5 | 32 | — | — | e 23 55 | − 3 | — | — |
| Algiers | | 88·7 | 53 | e 13 34 | +25 | 23 53 | − 7 | 53·5 | 61·5 |
| Paris | | 89·8 | 40 | i 13 12 | − 3 | e 23 41 | [+14] | 44·5 | 53·5 |
| Uccle | | 91·2 | 40 | e 13 18 | − 4 | e 23 51 | [+16] | e 40·5 | — |
| De Bilt | | 91·9 | 38 | 13 22 | − 4 | e 23 56 | [+17] | e 45·5 | 50·4 |
| Moncalieri | | 93·0 | 45 | e 15 10 | +98 | 22 20 | [−86] | 26·3 | — |
| Strasbourg | | 93·2 | 42 | e 13 30 | − 3 | e 24 5 | [+18] | 35·5 | 68·5 |
| Zurich | | 93·7 | 44 | e 13 31 | − 5 | e 24 5 | [+15] | — | — |
| Hamburg | | 94·9 | 37 | e 13 45 | + 2 | e 24 12 | [+16] | e 49·5 | 54·5 |
| Cape Town | | 95·5 | 126 | — | — | — | — | — | 60·5 |
| Florence | | 95·5 | 47 | 17 0 | ?$PR_1$ | — | — | — | — |
| Cheb | | 96·4 | 40 | — | — | e 24 23 | [+19] | e 46·5 | 62·5 |
| Rocca di Papa | E. | 96·5 | 49 | e 13 43 | − 9 | e 24 20 | [+15] | — | — |
| Leningrad | | 105·1 | 29 | — | — | e 25 2 | [+14] | 48·5 | 71·7 |
| Pulkovo | | 105·2 | 29 | — | — | 25 1 | [+13] | 52·5 | 64·6 |
| Kucino | | 110·3 | 31 | e 19 12 | ?$PR_1$ | e 25 16 | [+ 5] | — | — |
| Ekaterinburg | | 120·2 | 22 | e 20 15 | ?$PR_1$ | — | — | 50·5 | 80·2 |
| Baku | | 123·9 | 42 | e 20 55 | ?$PR_1$ | e 28 58 | −20 | e 73·5 | — |
| Irkutsk | | 132·5 | 355 | e 19 46 | [+22] | — | — | 39·5 | — |
| Zi-ka-wei | | 146·1 | 323 | e 13 25 | ? | 14 54 | ? | — | — |
| Taihoku | | 150·2 | 314 | e 15 26 | ? | — | — | — | — |
| Hyderabad | | 156·8 | 56 | — | — | — | — | — | 97·0 |
| Kodaikanal | | 158·5 | 74 | 91 36 | ?L | — | — | (91·6) | — |

Additional readings and notes: La Paz i = +4m.25s., iSN? = +8m.3s., MN = +18·3m. Sucre i = +5m.27s., +6m.3s., +7m.12s., and +9m.18s. = $SR_1$ −12s.; $T_0$ = 20h.29m.17s. Tucson $PR_1N$ = +10m.53s., $SR_1N$ = +18m.35s., $SR_1E$ = +18m.37s., $SR_2N$ = +19m.37s. Chicago PSE = +15m.45s., $S_0SE$ = +18m.30s., $SR_1E$ = +19m.30s., $SR_2E$ = +20m.48s., and +21m.53s., $SR_3E$ = +22m.30s. Ann Arbor e$PR_2$ = +11m.42s., e$SR_1$ = +19m.18s., e$SR_2$ = +20m.42s., LN = +23·5m., MN = +28·3m.; $T_0$ = 20h.29m.24s. Harvard PN = +9m.13s., $PR_1N$ = +10m.56s., iPSN = +16m.11s., eN = +16m.34s., $SR_1N$ = +19m.54s. Toronto eN = +16m.13s., iE = +16m.15s., and +18m.50s., MN = +31·4m.; $T_0$ = 20h.29m.40s. Ottawa e$PR_1N$ = +11m.15s., iE = +18m.58s. and +20m.26s. = $SR_1$ +8s.; $T_0$ = 20h.29m.39s. Victoria PE = +10m.59s.: $T_0$ = 20h.29m.56s. Honolulu eE = +24m.24s. and +38m.12s., LN = +39·0m., MN = +41·0m. San Fernando MN = +52·5m. Granada $PR_1$ = +15m.24s., $PR_2$ = +18m.47s. Paris MN = +66·5m. Uccle i = +24m.18s. = S −8s. De Bilt eN = +24m.27s. = S −7s., and +25m.39s., MZ = +67·3m., MN = +71·7m. Rocca di Papa e = +13m.17s., ePN = +13m.49s., $PR_1E$ = +17m.33s. Leningrad e$PR_1$ = +18m.43s., e$SR_1$ = +33m.49s., MZ = +70·4m., MN = +73·3m. Pulkovo $PR_1$ = +18m.41s., PS = +27m.46s., $SR_1$ = +33m.42s., MN = +62·5m. Kucino e = +28m.47s., +29m.2s., and +29m.48s. Ekaterinburg i = +20m.30s. = $PR_1$ +4s., e = +25m.59s. = [S] +14s., and +30m.21s., MZ = +80·1m. Baku e = +38m.30s. Irkutsk e = +21m.52s. = $PR_1$ +5s., L is probably = $SR_1$ +9s. Zi-ka-wei and Taihoku readings may belong to an independent shock.

July 1d. Readings also at 0h. (Bergen and Zagreb), 1h. (Apia), 2h. (Granada), 4h. (Irkutsk (2), Ekaterinburg, Pulkovo, and Leningrad), 9h. (Sucre), 11h. (Apia), 14h. (near Laibach), 15h. (Batavia (2) ), 16h. (Ann Arbor, Granada, and Tokyo), 17h. (Strasbourg), 19h. (Hong Kong, Tokyo, Batavia, Irkutsk, and Ekaterinburg), 21h. (La Paz and Granada), 23h. (Batavia, La Plata, and near Algiers).

July 2d. 5h. 25m. 30s. Epicentre 38°·5N. 22°·5E. (as on 1926 June 18d.).

A = +·723, B = +·299, C = +·623 ; D = +·383, E = −·924 ;
G = +·575, H = +·238, K = −·783.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | 1·2 | 116 | 0 8 | −10 | — | — | 1 0·3 | 0·5 |
| Pompeii | 6·5 | 293 | e 3 21 | ?L | — | — | (e 3·4) | — |
| Naples | 6·8 | 293 | e 3 5 | ?S | (e 3 5) | 0 | — | — |
| Rocca di Papa | 8·1 | 296 | — | — | e 3 2 | −38 | e 5·1 | 5·7 |
| Florence | 9·9 | 306 | e 6 0 | ?L | — | — | (e 6·0) | — |
| Venice | 10·2 | 316 | e 4 28 | ?S | (e 4 28) | − 7 | (5·5) | — |
| Vienna | 10·7 | 338 | — | — | — | — | e 6·1 | — |
| Zurich | 13·4 | 316 | e 3 30 | +12 | e 8 2 | ?L | (e 8·0) | — |
| Strasbourg | 14·6 | 318 | — | — | e 6 30? | + 8 | — | 9·5 |
| Hamburg | 17·3 | 335 | — | — | — | — | e 9·5 | — |
| Paris | 17·6 | 312 | — | — | — | — | e 3·5 | — |
| Uccle | 17·7 | 320 | e 4 12 | − 1 | e 7 42 | + 9 | e 9·8 | — |
| De Bilt | 18·1 | 324 | e 4 22 | + 4 | e 7 58 | +16 | e 10·5 | — |
| Kew | 20·5 | 316 | e 6 30? | ? | — | — | — | — |
| Pulkovo | 21·8 | 9 | 5 3 | 0 | 9 0 | − 1 | 10·5 | 14·3 |
| Leningrad | 22·0 | 9 | 5 5 | 0 | e 9 2 | − 3 | 11·1 | 14·2 |

Additional readings : Rocca di Papa e =5h.24m.32s., and +3m.41s. Venice gives S as P and L as S. Leningrad MZ = +14·1m.

July 2d. 6h. 2m. 0s. Epicentre 19°·0S. 177°·0W. (as on 1926 June 27d.).

A = −·944, B = −·049, C = −·326 ; D = −·052, E = +·999 ;
G = +·325, H = +·017, K = −·946.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Apia | | 7·3 | 45 | 1 46 | − 5 | — | — | 6·2 | 20·5 |
| Riverview | | 31·9 | 236 | — | — | — | — | e 14·9 | 19·4 |
| Adelaide | | 42·2 | 238 | e 9 0? | +48 | e 15 30 | +52 | e 19·8? | 25·2 |
| Honolulu | E. | 44·4 | 26 | — | — | — | — | e 21·6 | 23·5 |
| Irkutsk | | 98·3 | 322 | — | — | e 24 30 | [+15] | — | — |
| Chicago | E. | 102·3 | 50 | — | — | e 30 31 | ? | 57·1 | 57·8 |
| Toronto | E. | 108·4 | 49 | — | — | — | — | 62·0 | — |
| Ottawa | E. | 111·0 | 48 | — | — | e 25 12 | [− 2] | e 63·0 | — |
| Leningrad | | 134·6 | 340 | — | — | — | — | e 80·0 | — |
| Baku | | 134·7 | 309 | — | — | — | — | e 90·1 | — |
| Pulkovo | | 134·8 | 340 | — | — | — | — | e 81·3 | — |
| De Bilt | | 146·9 | 358 | e 20 0 | [+ 9] | — | — | e 103·0 | — |
| Kew | | 147·5 | 4 | e 20 0? | [+ 8] | — | — | e 85·0 | — |
| Strasbourg | | 150·2 | 352 | e 22 0? | ? | — | — | e 88·0 | — |
| Paris | | 150·3 | 1 | e 20 0? | [+ 4] | — | — | e 88·0 | — |
| San Fernando | | 160·8 | 23 | — | — | — | — | e 88·0 | 128·0 |
| Granada | | 161·0 | 16 | e 20 24 | [+15] | 1 31 33 | ?PR, | e 65·0 | 88·5 |

Additional readings : Apia +3m.37s. and +4m.28s. Riverview MN = +16·6m. Adelaide MN = +23·5m. Irkutsk e = +23m.24s. Chicago eE = +38m.10s. =$SR_2$+8s., and +50m.18s. Ottawa eE = +36m.0s.?, eN = +54m.0s. Granada 1 = +21m.0s., and +24m.50s. =$PR_1$+6s. San Fernando MN = +126·0m.

July 2d. Readings also at 1h. (near Berkeley), 2h. (near Manila), 5h. (Tokyo), 7h. (Granada and Irkutsk), 8h. (Ottawa), 9h. (Irkutsk), 13h. (Ekaterinburg, Irkutsk, Pulkovo, and Leningrad), 15h. and 18h. (Apia), 19h. (Ekaterinburg and Granada), 20h. and 21h. (Ekaterinburg), 22h. (Florence, Venice, Strasbourg, Zagreb, near Moncalieri, and Zurich), 23h. (Ekaterinburg).

**July 3d. 3h. 46m. 54s. Epicentre 8°·7S. 111°·0E. (given by Batavia).**

A = −·354, B = +·923, C = −·151; D = +·934, E = +·358; G = +·054, H = −·141, K = −·988.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | 3·7 | 293 | i 1 4 | + 6 | i 1 52 | +10 | — | — |
| Batavia | 4·8 | 300 | 1 21 | + 7 | 2 7 | − 4 | — | — |
| Amboina | 17·8 | 75 | 3 36 | −39 | 6 52 | −44 | — | — |
| Manila | 25·3 | 23 | e 5 43 | + 2 | — | — | 6·7 | — |
| Phu-Lien | 29·8 | 352 | — | — | — | — | 13·1 | — |
| Irkutsk | 61·2 | 355 | 10 12 | − 8 | 18 27 | −11 | 33·1 | — |
| Baku | 74·6 | 317 | 11 42 | − 4 | 21 13 | − 8 | 35·8 | 42·0 |
| Ekaterinburg | 77·3 | 334 | i 11 55 | − 8 | i 21 36 | −16 | 32·6 | 47·8 |
| Pulkovo | 92·9 | 330 | i 13 11 | −21 | i 24 10 | −34 | 46·1 | 58·9 |
| Leningrad | 93·0 | 330 | i 13 14 | −18 | 24 14 | [+28] | 49·1 | 59·5 |
| De Bilt | 106·6 | 321 | — | — | e 25 20 | [+25] | e 60·1 | — |
| Granada | 114·8 | 306 | — | — | — | — | e 66·1 | 72·8 |
| Ottawa | 142·8 | 6 | — | — | — | — | e 77·1 | — |
| Toronto | 143·9 | 12 | — | — | — | — | 77·1 | — |
| Sucre | 152·0 | 188 | 20 24 | [+25] | — | — | — | — |
| La Paz | 154·8 | 182 | 20 0 | [− 2] | — | — | — | — |

Additional readings: Batavia i = +1m.52s., Irkutsk $PR_2$ = +13m.59s. Baku MN = +40·8m., MZ = +51·6m. Pulkovo $PR_1$ = +16m.57s., $S_4P_4S$ = +23m.38s. = [S] −7s., $SR_1$ = +30m.36s., MN = +55·5m. Leningrad $S_4P_4S$ = +23m.42s. = [S] −4s., e = +25m.23s.

July 3d. Readings also at 0h. (Ekaterinburg), 1h. (near Amboina), 7h. (La Paz and Sucre), 8h. (Colombo and near Tucson), 10h. (Irkutsk and Perth), 11h. (Tokyo), 13h. (La Paz), 17h. (Florence), 18h. (La Paz, Sucre, Ottawa, Toronto, and Granada), 19h. (Strasbourg, Kew, Leningrad, Florence, Kucino, and Baku), 23h. (Sucre).

July 4d. Readings at 1h. (Leningrad), 2h. (Ottawa, Toronto, and Tucson), 4h. (Baku), 5h. (Batavia), 6h. (Tokyo and near Nagoya), 10h. (near Christchurch), 11h. (Puebla, Oaxaca, and Tacubaya), 13h. (Batavia and Sucre), 16h. (Uccle, Strasbourg, and near Athens (2)), 19h. (near Balboa Heights), 22h. (Strasbourg and near Amboina), 23h. (Strasbourg, Granada, Zagreb, near Sarajevo, and Belgrade, also Tacubaya).

**July 5d. 9h. 21m. 42s. Epicentre 37°·5N. 27°·5E. (as on 1925 July 29d.).**

A = +·704, B = +·366, C = +·609; D = +·462, E = −·887; G = +·540, H = +·281, K = −·793.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | 3·0 | 278 | i 1 1 | +14 | 1 31 | + 8 | i 1·6 | 1·9 |
| Helwan | 8·3 | 156 | i 2 2 | − 4 | i 3 21 | −24 | — | 3·4 |
| Pompeii | 10·5 | 294 | e 4 26 | ?S | (e 4 26) | −17 | — | — |
| Naples | 10·8 | 292 | e 1 51 | −50 | — | — | — | — |
| Budapest | 11·7 | 331 | i 3 3 | + 8 | — | — | — | — |
| Zagreb | 11·9 | 318 | e 3 3 | + 5 | — | — | e 6·7 | — |
| Rocca di Papa | 12·1 | 295 | e 2 56 | − 4 | e 8 27 | ? | — | — |
| Florence | 13·8 | 302 | (e 3 43) | +20 | (8 28) | ? | — | (12·8) |
| Venice | 13·8 | 310 | 2 32 | −51 | — | — | — | — |
| Moncalieri | 16·6 | 303 | 3 26 | −34 | 7 28 | +19 | — | — |
| Ravensburg | 16·6 | 314 | i 3 41 | −19 | — | — | — | — |
| Zurich | 17·0 | 312 | i 4 6 | + 1 | e 7 18 | 0 | — | — |
| Baku | 17·6 | 74 | e 4 48 | +36 | e 7 50 | +19 | e 8·5 | — |
| Strasbourg | 18·1 | 314 | i 4 17 | − 1 | — | — | 7·3 | — |
| Besançon | 18·5 | 308 | 4 22 | − 1 | — | — | — | — |
| Kucino | 19·6 | 18 | e 4 41 | + 5 | 8 19 | + 4 | — | — |
| Hamburg | 20·1 | 328 | e 4 42 | 0 | e 8 18 | − 7 | — | — |
| Tortosa E. | 21·0 | 287 | 4 43 | −10 | 8 28 | −16 | — | — |
| N. | 21·0 | 287 | 4 44 | − 9 | 8 29 | −15 | — | — |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Uccle | 21·1 | 316 | e 4 49 | − 5 | — | — | — | — |
| De Bilt | 21·4 | 320 | e 4 53 | − 5 | e 8 44 | − 9 | e 9·3 | — |
| Pulkovo | 22·3 | 4 | i 5 8 | − 1 | i 9 5 | − 6 | — | — |
| Leningrad | 22·6 | 4 | 5 11 | − 1 | e 9 8 | − 9 | 10·2 | — |
| Upsala | 23·2 | 347 | — | — | e 9 38 | + 9 | — | — |
| Granada | 24·6 | 279 | e 4 45 | −49 | i 8 44 | −71 | — | 12·6 |
| Ekaterinburg | 29·2 | 38 | — | — | — | — | 19·8 | — |

Additional readings and notes: Athens MN = +1·6m. Zagreb e = +3m.41s. Rocca di Papa iP = +3m.4s. Florence readings have been increased by 5m. Strasbourg i = +5m.27s. Kucino i = +5m.5s. and +5m.23s. Leningrad eP = +4m.10s., but the e given above seems better. Upsala e = +9m.18s. Granada i = +5m.20s.

July 5s. Readings also at 6h. (Nagoya), 8h. (Ravensburg), 10h. (Wellington), 11h. (Wellington (3) and near Rocca di Papa), 12h. (near Tacubaya), 13h. (Ekaterinburg and Pulkovo), 15h. (Wellington), 18h. (Irkutsk), 19h. (Ekaterinburg, Amboina, near Batavia, and Malabar), 23h. (Ekaterinburg and La Paz).

July 6d. 7h. 39m. 8s. Epicentre 47°·5N. 15°·8E. (as on 1919 Sept. 5d.).

A = +·650, B = +·184, C = +·737; D = +·272, E = −·962;
G = +·709, H = +·201, K = −·676.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Graz | 0·5 | 209 | i 0 7 | − 1 | — | — | — | 0·2 |
| Vienna | 0·8 | 26 | i 0 12 | 0 | 0 25 | + 3 | — | 0·6 |
| Zagreb | 1·7 | 176 | e 0 32 | + 6 | i 0 55 | + 7 | — | — |
| Laibach | 1·7 | 221 | (e 0 29) | + 3 | (i 0 51) | + 3 | — | (1·1) |
| Innsbruck N.W. | 3·0 | 268 | e 0 48 | + 1 | e 1 24 | + 1 | — | — |
| Venice | 3·1 | 230 | 0 49 | 0 | 1 48 | +22 | — | — |
| Ravensburg E. | 4·2 | 277 | i 1 15 | +10 | i 1 49 | − 6 | i 2·0 | 2·5 |
| Hohenheim | 4·5 | 289 | 1 25 | +15 | i 2 4 | 0 | — | 2·5 |
| Zurich | 4·9 | 272 | i 1 9 | − 7 | e 2 27 | +13 | — | — |
| Strasbourg | 5·5 | 285 | e 1 11 | −14 | 2 26 | − 5 | e 2·9 | — |
| Moncalieri | 6·1 | 249 | e 1 10 | −23 | 3 11 | +25 | 5·9 | — |
| Rocca di Papa | 6·2 | 202 | — | — | — | — | e 3·3 | — |
| Besançon | 6·6 | 272 | — | — | — | — | 3·4 | — |
| Hamburg | 7·1 | 331 | — | — | — | — | e 3·8 | — |
| Uccle | 8·2 | 298 | — | — | — | — | e 4·2 | — |
| De Bilt | 8·3 | 308 | — | — | — | — | e 4·4 | — |
| Paris N. | 9·0 | 284 | — | — | — | — | e 4·6 | — |
| Pulkovo | 14·9 | 29 | — | — | — | — | e 8·0 | — |

Additional readings: Vienna iE = +15s., $PR_1$ = +16s. Zagreb i$PR_1$ = +33s., iPS = +37s., and +53s. Laibach e = +45s.; all readings have been increased by 1m. Venice P = +59s., and +1m.12s., S = +3m.29s. Hohenheim PN = +1m.27s. Rocca di Papa ePN = +3m.31s., ePE = +3m.34s., $PR_1$N = +3m.46s., $PR_1$E = +3m.48s. De Bilt gives epicentre 47°·6N. 15°·7E. Paris eE = +4m.48s.

**July 6d. 16h. 28m. 5s. Epicentre 38°·5N. 71°·0E. (as on 1923 Aug. 31d.).**

A = +·255, B = +·740, C = +·623; D = +·946, E = −·326;
G = +·203, H = +·589, K = −·783.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Simla | | 9·0 | 143 | e 2 13 | − 3 | — | — | 4·4 | — |
| Baku | | 16·4 | 283 | e 4 29 | +32 | — | — | e 8·9 | — |
| Ekaterinburg | | 19·5 | 343 | i 4 40 | + 5 | 8 17 | + 4 | i 10·4 | 11·3 |
| Irkutsk | | 26·8 | 48 | e 5 56 | 0 | e 10 0 | −37 | 13·9 | — |
| Pulkovo | | 33·2 | 325 | e 6 56 | − 2 | e 12 23 | − 4 | 15·2 | 21·3 |
| Leningrad | | 33·3 | 325 | e 7 0 | + 1 | — | — | 15·9 | 21·8 |
| Upsala | | 39·4 | 322 | — | — | — | — | 20·9 | — |
| Zi-ka-wei | | 41·5 | 84 | — | — | — | — | e 22·0 | — |
| Hamburg | | 43·4 | 312 | — | — | — | — | e 19·9 | — |
| Strasbourg | | 45·6 | 305 | — | — | — | — | 19·9 | — |
| De Bilt | E. | 46·5 | 310 | — | — | — | — | e 25·9 | — |
| Uccle | | 47·3 | 308 | — | — | — | — | e 18·9 | — |
| Kew | | 49·9 | 310 | — | — | — | — | e 25·9 | — |

Additional readings: Simla PN = +3m.31s. Baku P would accord better with $PR_1$, i = +10m.52s. Ekaterinburg MZ = +12·1m. Leningrad MZ = +20·8m., MN = +21·0m. De Bilt eLN = +24·9m.

**July 6d. 21h. 20m. 30s. Epicentre 12°·7N. 94°·5E.**

A = −·077, B = +·973, C = +·220; D = +·997, E = +·078;
G = −·017, H = +·219, K = −·976.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Phu-Lien | | 14·1 | 53 | 4 30? | +63 | — | — | — | — |
| Kodaikanal | | 16·9 | 264 | 2 0 | −124 | — | — | — | — |
| Irkutsk | | 40·4 | 9 | 7 57 | − 1 | 14 13 | 0 | 23·5 | — |
| Baku | | 47·9 | 314 | — | — | e 15 38 | −15 | 27·0 | — |
| Ekaterinburg | | 51·2 | 337 | i 9 13 | − 1 | 16 30 | − 4 | 23·5 | 29·7 |
| Kucino | | 61·1 | 327 | — | — | 18 37 | 0 | 34·6 | 43·4 |
| Pulkovo | | 66·2 | 330 | i 10 55 | + 2 | i 19 42 | + 2 | 34·2 | 42·7 |
| Leningrad | | 66·3 | 330 | i 10 56 | + 2 | i 19 44 | + 3 | 34·5 | — |
| Vienna | Z. | 72·7 | 317 | e 11 33 | − 1 | — | — | — | — |
| De Bilt | | 79·3 | 321 | — | — | — | — | e 44·5 | — |
| Ottawa | N. | 121·2 | 352 | — | — | — | — | e 65·5 | — |
| Toronto | N. | 123·4 | 355 | — | — | — | — | 62·5 | — |

Additional readings: Ekaterinburg MZ = +32·1m., MN = +33·0m. Kucino e = +22m.44s. = $SR_1$ −43s., MN = +38·3m. Pulkovo MN = +43·1m.

**July 6d.** Readings also at 0h. (Pulkovo and Leningrad), 1h. (Pulkovo, Leningrad, Baku, and Ekaterinburg), 5h. (near Kobe and Sumoto), 9h. (Paris), 10h. (Leningrad, Pulkovo, Baku, and Ekaterinburg), 11h. (Agana), 13h. (Ekaterinburg), 14h. (Ottawa and Toronto), 15h. (Agana), 16h. (near Tacubaya), 17h. (Ekaterinburg), 19h. (Irkutsk), 20h. (near Amboina).

**July 7d. 2h. 38m. 57s. Epicentre 8°·7S. 111°·0E. (as on July 3d.).**

A = −·354, B = +·923, C = −·151; D = +·934, E = +·358;
G = +·054, H = −·141, K = −·988.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | 3·7 | 293 | 0 58 | 0 | i 1 43 | + 1 | — | — |
| Batavia | 4·8 | 300 | 1 18 | + 4 | 2 8 | + 3 | — | — |
| Ekaterinburg | 77·3 | 334 | i 11 45 | −18 | 21 27 | −25 | 39·0 | — |
| Pulkovo | 92·9 | 330 | — | — | — | — | e 56·0 | — |
| Leningrad | 93·0 | 330 | — | — | — | — | e 55·0 | — |

**Malabar gives also i = +1m.4s.**

July 7d. 11h. 41m. 24s. Epicentre 8°·7S. 111°·0E. (as at 2h.).

A = −·354, B = +·923, C = −·151; D = +·934, E = +·358;
G = +·054, H = −·141, K = −·988.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | 3·7 | 293 | i 1 0 | + 2 | i 1 48 | + 6 | — | — |
| Batavia | 4·8 | 300 | i 1 20 | + 6 | 2 19 | + 8 | — | — |
| Manila | 25·3 | 23 | e 5 52 | +11 | — | — | — | — |
| Phu-Lien | 29·8 | 352 | 7 36? | +70 | — | — | — | — |
| Hong Kong | 31·2 | 5 | — | — | — | — | — | 20·6 |
| Adelaide | 36·5 | 140 | — | — | — | — | e 19·1 | 22·8 |
| Zi-ka-wei | 41·1 | 14 | e 7 36? | −28 | e 14 8 | −14 | — | 23·6 |
| Melbourne | 42·2 | 140 | — | — | — | — | e 22·1 | 26·2 |
| Riverview | 44·7 | 131 | — | — | — | — | e 26·1 | 30·1 |
| Sydney | 44·7 | 131 | 23 18 | ?L | — | — | (27·3) | 28·6 |
| Irkutsk | 61·2 | 355 | e 10 19 | − 1 | 18 36 | − 2 | 33·6 | — |
| Baku | 74·6 | 317 | 11 39 | − 7 | 21 11 | −10 | 37·6 | — |
| Ekaterinburg | 77·3 | 334 | i 11 57 | − 6 | 21 40 | −12 | 33·6 | 48·6 |
| Pulkovo | 92·9 | 330 | — | — | — | — | 54·1 | 60·5 |
| Leningrad | 93·0 | 330 | — | — | — | — | e 55·6 | — |
| De Bilt | 106·6 | 321 | — | — | e 24 57 | [+ 2] | e 54·6 | — |
| Uccle | 107·2 | 320 | — | — | — | — | e 55·6 | — |

Additional readings and notes: Malabar i = +1m.5s., and +1m.42s. Batavia i = +1m.41s. Adelaide MN = +22·4m. Riverview MN = +27·0m. Ekaterinburg MN = +45·3m.

July 7d. Readings also at 2h. (Ekaterinburg), 3h. (Victoria), 4h. (Sydney and Ekaterinburg), 6h. (Sydney), 14h. (near Algiers), 16h. (near Sarajevo).

July 8d. 7h. 16m. 10s. Epicentre 34°·0S. 57°·0E. (as on 1926 May 31d.).

A = +·452, B = +·695, C = −·559; D = +·839, E = −·545;
G = −·305, H = −·469, K = −·829.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Baku | | 74·7 | 355 | e 11 41 | − 6 | 21 24 | + 2 | 35·8 | — |
| Granada | | 90·8 | 317 | — | — | i 24 28 | + 6 | 43·8 | 52·5 |
| Ekaterinburg | | 90·9 | 3 | 13 7 | −14 | i 24 20 | − 3 | 35·8 | — |
| San Fernando | | 91·8 | 315 | — | — | — | — | — | 58·3 |
| Irkutsk | | 95·6 | 27 | e 16 51 | ?$PR_1$ | — | — | e 49·8 | — |
| Pulkovo | | 96·3 | 348 | e 22 8 | ?$PR_2$ | — | — | — | — |
| Uccle | | 96·6 | 330 | — | — | — | — | e 47·8 | — |
| De Bilt | | 97·3 | 332 | — | — | — | — | e 49·8 | — |
| La Paz | | 107·4 | 235 | 37 46 | ?$SR_1$ | — | — | — | — |
| Ottawa | | 142·5 | 302 | — | — | — | — | e 73·8 | — |
| Toronto | E. | 145·1 | 299 | — | — | — | — | 84·1 | — |
| Chicago | E. | 151·2 | 296 | — | — | — | — | e 86·8 | — |

Additional readings: San Fernando MN = +50·8m. Irkutsk e = +44m.31s.

July 8d. 14h. 59m. 12s. Epicentre 39°·7N. 44°·0E.

A = +·553, B = +·535, C = +·639; D = +·695, E = −·719;
G = +·459, H = +·444, K = −·769.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Platigorsk | 4·4 | 351 | e 1 19 | +11 | — | — | 1·6 | 3·0 |
| Baku | 4·5 | 80 | e 1 11 | + 1 | 2 2 | − 2 | — | 5·2 |
| Kucino | 16·5 | 348 | 4 0 | + 1 | (i 7 7) | 0 | 8·9 | — |
| Ekaterinburg | 20·3 | 27 | 4 40 | − 5 | 8 25 | − 4 | 9·8 | 13·7 |
| Pulkovo | 21·8 | 341 | e 5 6 | + 3 | 9 4 | + 3 | 10·8 | 13·7 |
| Leningrad | 22·0 | 341 | 5 4 | − 1 | e 9 6 | + 1 | 10·7 | 14·2 |
| Hamburg | 26·8 | 312 | — | — | — | — | e 13·8 | 16·8 |
| De Bilt | 29·3 | 308 | — | — | — | — | e 15·8 | — |
| Uccle | 29·6 | 305 | — | — | — | — | — | 16·8 |
| Irkutsk | 42·4 | 52 | — | — | — | — | 16·8 | — |

Additional readings: Platigorsk iP = +1m.28s. Baku e = +1m.35s. Kucino P = +4m.4s.; S is given as $iP_4P$. Ekaterinburg MN = +14·2m., MZ = +15·1m.

July 8d. Readings also 5h. (near Algiers), 11h. (Manila), 13h. (Malaga), 15h. (Baku), 16h. (Ekaterinburg (2) and Baku), 20h. (Tokyo), 23h. (Batavia).

July 9d. 15h. 5m. 24s. Epicentre 38°·5N. 30°·5W.

A = +·674, B = −·397, C = +·623; D = −·508, E = −·862; G = +·536, H = −·316, K = −·783.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Azores | 3·9 | 99 | 0 6 | −55 | — | — | — | 1·8 |
| San Fernando | 19·3 | 88 | 4 33 | 0 | 8 21 | +13 | — | 10·6 |
| Toledo | 20·5 | 78 | e 4 48 | + 1 | e 8 32 | − 2 | e 9·3 | 10·7 |
| Malaga | 20·6 | 87 | 4 50 | + 2 | 8 40 | + 4 | 10·8 | — |
| Granada | 21·2 | 85 | i 4 58 | + 3 | i 8 46 | − 2 | i 9·7 | 11·5 |
| Almeria | 22·2 | 85 | e 4 50 | −17 | e 8 29 | −40 | e 10·4 | — |
| Alicante | 23·4 | 81 | 4 56 | −25 | 8 51 | −42 | 10·4 | — |
| Tortosa | 23·9 | 75 | 5 37 | +10 | e 9 35 | − 7 | 11·0 | 12·6 |
| Stonyhurst | 24·5 | 42 | e 4 17 | −76 | 9 52 | − 2 | — | — |
| Kew | 24·7 | 48 | e 5 37 | + 2 | — | — | 12·6 | — |
| Barcelona | 25·0 | 73 | e 5 33 | − 5 | e 10 7 | + 4 | e 12·5 | 13·6 |
| Edinburgh | 25·1 | 37 | — | — | e 10 6 | + 1 | — | — |
| Paris | 25·8 | 55 | e 5 36? | −10 | (9 36?) | −42 | 9·6 | 11·6 |
| Dyce | 26·3 | 36 | — | — | e 10 19 | − 9 | 12·6 | 15·6 |
| Uccle | 27·3 | 52 | e 6 30 | +29 | e 10 36 | −10 | e 11·6 | 13·7 |
| De Bilt | 28·1 | 49 | — | — | e 10 55 | − 6 | e 12·6 | 15·8 |
| Strasbourg | 29·1 | 57 | e 6 8 | −11 | e 9 36? | −103 | 12·6 | — |
| Hamburg | 31·3 | 48 | — | — | e 9 36? | −140 | — | 16·6 |
| Florence | 31·5 | 67 | 8 18 | +95 | 11 48 | −12 | — | 15·9 |
| Ottawa | 33·9 | 297 | — | — | — | — | e 17·2 | — |
| Pulkovo | 43·1 | 40 | e 8 17 | − 2 | 14 42 | − 7 | 20·6 | 25·8 |
| Leningrad | 43·1 | 40 | e 8 19 | 0 | — | — | 21·2 | 25·7 |
| Kucino | 47·4 | 45 | — | — | e 15 44 | − 2 | 23·9 | 24·3 |

Additional readings: San Fernando MN = +11·1m. Toledo MNW = +10·8m. Tortosa eSN = +9m.37s. Uccle, is L really $SR_1$?, as also for De Bilt and Strasbourg? De Bilt MN = +14·4m., MZ = +15·8m. Florence, is P really $PR_2$? Pulkovo $SR_2$ = +18·0m., MZ = +25·2m. Kucino e = +19m.13s. = $SR_1$ −3s.

July 9d. Readings also at 1h. (near Sumoto), 5h. (Baku), 9h. (La Plata), 11h. (Baku), 13h. (Phu-Lien, Hong Kong, and near Batavia), 14h. (Irkutsk, Baku, and Pulkovo), 15h. (Athens and Irkutsk), 20h. (near Mostar).

July 10d. 1h. 17m. 0s. Epicentre 3°·5S. 129°·0E. (as on 1926 April 27d.).

A = −·628, B = +·776, C = −·061; D = +·777, E = +·629; G = +·038, H = −·047, K = −·998.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | 0·8 | 256 | i 0 19 | + 7 | i 0 58 | +36 | — | — |
| Manila | | 19·8 | 336 | i 4 50 | +11 | (8 24) | + 5 | 8·4 | — |
| Batavia | | 22·2 | 262 | e 4 42 | −25 | i 9 29 | +20 | 15·0 | — |
| Hong Kong | | 29·6 | 331 | — | — | — | — | — | 14·5 |
| Phu-Lien | | 32·7 | 319 | — | — | 12 0? | −19 | — | — |
| Adelaide | | 32·7 | 165 | — | — | — | — | — | 18·2? |
| Riverview | | 36·7 | 148 | e 15 39 | ?$SR_1$ | — | — | 23·0 | 27·6 |
| Sydney | | 36·7 | 148 | — | — | 20 30 | ?L | 24·4 | 25·3 |
| Melbourne | | 37·3 | 159 | (7 42) | +10 | 13 0 | −28 | i 21·0 | 23·5 |
| Osaka | | 38·7 | 10 | 7 24 | −20 | (14 15) | +27· | 14·2 | 19·4 |
| Kodaikanal | | 53·1 | 285 | 34 24 | ?L | — | — | (34·4) | — |
| Irkutsk | | 59·6 | 342 | e 10 14 | + 5 | — | — | 26·0 | — |
| Honolulu | E. | 75·5 | 67 | — | — | 21 25 | − 7 | 34·8 | 42·6 |
| Baku | | 84·0 | 311 | e 12 44 | + 2 | 23 12 | + 4 | 42·0 | 55·3 |
| Piatigorsk | | 89·5 | 315 | — | — | i 23 51 | −18 | — | — |
| Pulkovo | | 97·4 | 330 | e 13 45 | −11 | 24 37 | [+27] | 47·0 | 53·5 |
| Leningrad | | 97·4 | 330 | — | — | — | — | e 50·0 | 59·2 |
| Upsala | | 103·6 | 332 | — | — | — | — | 52·0 | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Victoria | E. | 104·3 | 40 | 27 37 | ?S | (27 37) | +61 | 47·4 | 54·8 |
| Strasbourg | | 112·8 | 320 | — | — | — | — | 60·0 | — |
| De Bilt | | 112·9 | 325 | — | — | — | — | e 57·0 | 60·4 |
| Uccle | | 113·9 | 324 | — | — | e 32 0? | ? | e 58·0 | — |
| Dyce | | 114·0 | 333 | — | — | — | — | 57·5 | — |
| Edinburgh | | 115·2 | 330 | — | — | — | — | 61·0 | — |
| Paris | | 115·9 | 322 | — | — | — | — | e 66·0 | — |
| Kew | | 116·2 | 327 | — | — | — | — | e 74·0 | — |
| Granada | | 125·1 | 312 | — | — | — | — | e 75·0 | 78·0 |
| San Fernando | E. | 127·3 | 312 | — | — | — | — | — | 78·5 |
| Toronto | E. | 132·7 | 27 | — | — | — | — | 72·4 | — |
| Ottawa | | 132·9 | 21 | — | — | — | — | e 62·0 | — |
| La Paz | | 153·8 | 140 | 20 25 | [+24] | — | — | — | — |

Additional readings: Amboina iN = +28s. Adelaide MN = +25·9m. Melbourne $SR_1$ = +17m.30s., i = +19m.36s., P is given as $PR_1$. Baku MN = +48·2m. Irkutsk L = $SR_2$ +0s. Pulkovo e = +18m.21s. = $PR_1$ +25s., MZ = +70·6m. De Bilt MN = +62·2m., MZ = +78·4m. Granada e = +59m.0s. San Fernando MN = +88·5m.

## July 10d. 10h. 51m. 3s. Epicentre 1°·0N. 126°·0E.

A = −·588, B = +·809, C = +·017; D = +·809, E = +·588; G = −·010, H = +·014, K = −1·000.

De Bilt gives 0°·3N. 126°·0E., Zurich 2°·0N. 126°·0E., but neither suits very well, and the above is a compromise between the two.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m, s. | s. | m. s. | s. | m. | m. |
| Amboina | | 5·1 | 155 | (i 1 22) | + 3 | (1 59) | −21 | — | — |
| Manila | | 14·5 | 340 | e 3 39 | + 6 | — | — | i 7·7 | 8·7 |
| Malabar | | 20·1 | 246 | 4 44 | + 2 | i 8 30 | + 5 | e 11·0 | — |
| Batavia | | 20·4 | 249 | i 4 43 | − 3 | i 8 28 | − 4 | — | — |
| Hong Kong | | 24·3 | 332 | 5 25 | − 6 | (9 55) | + 5 | 9·9 | 11·6 |
| Taihoku | | 24·4 | 350 | e 5 45 | +13 | 9 49 | − 3 | 15·2 | 17·1 |
| Phu-Lien | | 27·4 | 318 | e 5 54 | − 8 | i 10 34 | −14 | 12·0 | 17·2 |
| Zi-ka-wei | | 30·6 | 354 | e 6 37 | + 3 | 11 22 | −22 | — | 25·0 |
| Nagasaki | | 32·0 | 7 | e 6 38 | − 9 | — | — | — | — |
| Hukuoka | | 32·9 | 8 | 6 48 | − 8 | 12 46 | +24 | 20·0 | — |
| Sumoto | | 34·4 | 14 | 7 7 | − 1 | (12 30) | −16 | 12·5 | — |
| Osaka | | 34·8 | 14 | 7 15 | + 4 | 12 58 | + 6 | 21·8 | 24·2 |
| Kobe | | 34·8 | 14 | e 6 59 | −12 | — | — | — | — |
| Nagoya | | 35·7 | 16 | e 3 1 | −258 | — | — | — | — |
| Adelaide | | 37·8 | 164 | 6 57? | −39 | i 12 57 | −38 | 16·7? | 28·6 |
| Mizusawa | E. | 40·6 | 20 | 7 51 | − 9 | 14 0 | −15 | 19·9 | — |
| Riverview | | 42·1 | 149 | e 7 55 | −17 | i 14 5 | −31 | e 19·6 | 30·1 |
| Sydney | | 42·1 | 149 | 9 27 | +75 | 17 9 | +153 | 26·2 | 27·0 |
| Melbourne | | 42·5 | 158 | e 8 9 | − 6 | e 14 9 | −33 | i 26·8 | 29·6 |
| Colombo | | 46·4 | 279 | — | — | 16 57 | +84 | 28·4 | 29·0 |
| Kodaikanal | | 49·2 | 283 | 12 33 | ?$PR_2$ | — | — | 31·8 | 39·8 |
| Hyderabad | | 49·6 | 294 | 8 59 | − 5 | 15 59 | −15 | 23·6 | 31·6 |
| Irkutsk | | 54·4 | 345 | 9 35 | 0 | 17 12 | − 2 | 26·0 | 32·0 |
| Bombay | | 55·1 | 294 | 9 56 | +16 | 17 11 | −11 | 27·5 | 36·2 |
| Simla | E. | 55·1 | 310 | e 9 51 | +11 | 17 33 | +11 | 32·6 | 36·6 |
| | N. | 55·1 | 310 | e 9 51 | +11 | 17 21 | − 1 | 25·0 | — |
| Christchurch | | 60·9 | 143 | — | — | — | — | 29·4 | 47·2 |
| Wellington | | 61·1 | 140 | — | — | e 18 57? | +20 | — | — |
| Apia | | 63·4 | 105 | 10 51 | +17 | 19 41 | +35 | 33·0 | 36·0 |
| Honolulu | E. | 76·6 | 69 | e 12 4 | + 5 | e 21 45 | + 1 | 35·4 | 39·2 |
| Baku | | 78·8 | 312 | i 12 10 | − 2 | i 22 8 | − 2 | 37·4 | 47·6 |
| Piatigorsk | | 84·3 | 316 | i 12 38 | − 6 | i 22 56 | −15 | — | 48·0 |
| Kucino | | 88·1 | 327 | 12 58 | − 8 | 23 39 | −14 | 42·6 | 53·5 |
| Leningrad | | 92·0 | 331 | e 13 17 | −10 | i 24 22 | −13 | 43·4 | 56·2 |
| Pulkovo | | 92·1 | 331 | 13 14 | −14 | 24 14 | −22 | 44·0 | 56·2 |
| Heiwan | | 93·6 | 300 | e 13 25 | −11 | 23 56 | [+ 6] | — | 58·2 |
| Lemberg | | 96·9 | 321 | e 14 33 | +39 | (24 21) | [+14] | — | 24·4 |
| Upsala | | 98·2 | 332 | e 16 57? | ? | e 24 18 | [+ 4] | e 46·0 | 61·3 |
| Athens | | 99·0 | 310 | e 13 52 | −13 | i 24 29 | [+10] | 42·0 | 60·4 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Budapest | | 100·6 | 320 | e 23 57? | ? | — | — | e 51·0 | 59·5 |
| Vienna | Z. | 102·2 | 321 | e 14 6 | −15 | i 19 12 | ?$PR_1$ | — | 65·0 |
| Victoria | E. | 102·8 | 40 | 18 25 | ?$PR_1$ | 27 45 | +83 | 43·2 | 57·8 |
| | N. | 102·8 | 40 | 18 20 | ?$PR_1$ | 26 0 | −22 | — | 43·1 |
| Zagreb | | 103·1 | 318 | e 14 11 | −15 | e 24 45 | [+ 7] | 55·0 | — |
| Graz | | 103·1 | 320 | e 14 57 | +31 | i 24 42 | [+ 4] | 36·0 | 63·3 |
| Bergen | | 103·7 | 335 | — | — | i 24 57? | [+16] | — | — |
| Cheb | | 104·1 | 323 | e 18 38 | ?$PR_1$ | e 24 50 | [+ 7] | e 49·0 | 65·0 |
| Hamburg | | 104·3 | 327 | e 14 57? | +26 | i 24 53 | [+ 9] | e 53·0 | 64·0 |
| Pompeii | | 105·4 | 314 | e 18 57? | ?$PR_1$ | e 24 57? | [+ 8] | — | — |
| Venice | | 105·6 | 319 | 15 15 | +38 | 24 51 | [+ 1] | — | — |
| Naples | | 105·6 | 314 | e 18 51 | ?$PR_1$ | e 24 1 | [−49] | — | — |
| Rocca di Papa | | 106·5 | 315 | e 17 4 | ? | e 24 57 | [+ 3] | e 50·4 | — |
| Hohenheim | | 106·5 | 322 | e 18 17 | [+ 7] | i 24 59 | [+ 5] | e 34·2 | 65·5 |
| Ravensburg | E. | 106·6 | 321 | e 18 57 | ?$PR_1$ | i 24 59 | [+ 4] | e 38·8 | 58·6 |
| Florence | | 106·9 | 315 | e 14 7 | −37 | 25 52 | −68 | 49·0 | 59·8 |
| Zurich | | 107·4 | 320 | — | — | e 24 53 | [− 6] | — | — |
| De Bilt | | 107·6 | 326 | 14 44 | − 2 | e 25 7 | [+ 8] | e 55·0 | 68·0 |
| Uccle | | 108·6 | 325 | — | — | e 25 12 | [+ 8] | e 45·0 | 67·0 |
| Dyce | | 108·6 | 334 | e 19 15 | ?$PR_1$ | e 25 7 | [+ 3] | 41·0 | 61·8 |
| Moncalieri | | 108·8 | 319 | 14 28 | −24 | 25 1 | [− 4] | 50·8 | 68·2 |
| Edinburgh | | 109·9 | 332 | e 13 57? | −60 | — | — | 49·0 | 60·4 |
| Paris | | 110·5 | 323 | e 14 58 | − 2 | e 26 47 | −46 | 38·0 | 68·0 |
| Stonyhurst | | 110·6 | 330 | — | — | — | — | — | 67·0 |
| Kew | | 110·8 | 328 | e 14 43 | −18 | — | — | 43·0 | 71·0 |
| Bidston | | 111·2 | 331 | e 19 35 | ?$PR_1$ | 26 9 | [+54] | 52·5 | 65·4 |
| Strasbourg | | 112·6 | 321 | e 14 39 | −30 | e 26 5 | [+45] | 44·0 | 66·0 |
| Barcelona | | 114·0 | 316 | — | — | e 19 51 | ?$PR_1$ | e 54·0 | 82·3 |
| Algiers | | 115·1 | 311 | e 15 10 | −11 | 25 32 | [+ 3] | e 46·0 | 73·0 |
| Tortosa | N. | 115·3 | 316 | 19 38 | ?$PR_1$ | — | — | — | 84·4 |
| Alicante | | 117·2 | 314 | — | — | 19 52 | ?$PR_1$ | 58·6 | 72·4 |
| Toledo | | 118·8 | 317 | e 20 17 | ?$PR_1$ | e 25 33 | [− 9] | — | 51·4 |
| Almeria | | 119·1 | 314 | e 16 5 | +27 | — | — | 64·5 | 71·9 |
| Granada | | 119·8 | 314 | i 18 15 | [−37] | i 20 39 | ?$PR_1$ | 64·6 | 75·6 |
| Malaga | | 120·6 | 314 | e 19 19 | [+25] | e 20 48 | ?$PR_1$ | — | — |
| Rio Tinto | | 121·7 | 316 | 18 57? | [ 0] | — | — | — | 30·0 |
| San Fernando | | 122·0 | 315 | — | — | — | — | — | 75·0 |
| Lisbon | | 122·9 | 318 | — | — | e 32 22 | ? | — | — |
| Chicago | E. | 127·6 | 30 | — | — | — | — | e 54·0 | 69·6 |
| Ann Arbor | | 129·1 | 27 | — | — | — | — | e 57·0 | 78·0 |
| Ottawa | | 129·8 | 19 | e 21 32 | ?$PR_1$ | e 33 13 | ? | e 56·4 | 75·0 |
| Toronto | E. | 129·9 | 23 | e 22 8 | ?$PR_1$ | e 30 9 | + 9 | 57·0 | 78·6 |
| Ithaca | | 132·1 | 21 | e 22 57 | ?$PR_1$ | — | — | e 59·0 | — |
| Fordham | | 134·4 | 20 | i 18 27 | [−62] | — | — | 57·6 | 83·4 |
| La Plata | | 145·9 | 175 | i 19 48 | [− 2] | — | — | 64·0 | — |
| Sucre | | 158·8 | 149 | i 20 17 | [+10] | 34 25 | ? | 84·0 | 91·6 |
| La Paz | | 159·1 | 139 | i 20 14 | [+ 7] | 34 19 | ? | 79·8 | 91·4 |

Additional readings and notes: Amboina readings have been increased by 2m. Phu-Lien MN = +12·6m. Osaka MN = +28·7m. Adelaide $SR_1$ = +15m.24s., L = $SR_2$ exactly, MN = +27·0m. Mizusawa PN = +7m.54s., LN = +20·0m. Riverview eSR = +17m.17s., +17m.33s., and +18m.20s. = $SR_2$ −6s., MN = +30·0m., MZ = +33·4m. Sydney $SR_2$ = +23m.9s. Are P and S really $PR_1$ and $SR_1$? Melbourne i = 10h.34m.12s., e = 10h.49m.42s. Colombo P = 10h.48m.0s., S = +11m.37s. and the value entered. Irkutsk MZ = +36·5m., MN = +37·8m. Christchurch $PR_1$? = +7m.27s., $SR_2$? = +22m.21s. Ekaterinburg (Δ = 76°·0) gives S−P = 9m.38s. Honolulu eE = +13m.10s. and 22m.3s. = [S]+3s., $PR_1E$ = +16m.47s., eN = +21m.39s., SN = +22m.0s., iPSE = +22m.46s., $SR_1E$ = +26m.57s., MN = +32·4m.; $T_0$ = 10h.51m.9s. and 10h.51m.13s. Baku MN = +48·3m., MZ = +52·0m. Kucino P = +13m.13s., $PR_1$ = +16m.12s., $S_4P_4S$ = +23m.23s. = [S]+8s., PS = +24m.19s., $SR_1$ = +30m.17s., MN = +56·5m. Leningrad i$PR_1$ = +17m.18s., e$PR_2$ = +19m.34s., i = +23m.50s. = [S]+10s., $SR_1$ = +30m.27s., MN = +49·2m., MZ = +56·1m. Pulkovo iP = +13m.28s., $PR_1$ = +17m.8s., $PR_2$ = +21m.19s., $S_4P_4S$ = +23m.47s. = [S]+7s., $SR_1$ = +31m.33s., $SR_2$ = +35m.9s., MZ = +56·1m. Upsala MN = +56·7m. Athens e$SR_1$ = +30m.47s., MN = +48·1m. Zagreb $PR_1$ = +18m.51s., ePS = +25m.56s. Vienna $PR_1Z$? = +18m.20s. Graz MN = +63·7m. Hamburg e = +18m.49s. = $PR_1$+7s., MN = +60·0m. Rocca di Papa ePZ = +17m.47s. = [P]−13s., ePEN = +18m.0s. = [P]−10s., ePE = +18m.4s. Ravensburg eE = 10h.48m.32s. De Bilt e$PR_1$ = +18m.59s., MN = +66·6m. Uccle e$PR_1$ = +19m.9s., i = +27m.52s. = S+37s. Dyce e = +26m.32s. = S−43s. Moncalieri L = +43·0m., MN = +68·8m. Paris $PR_1$ = +19m.35s., iS = +26m.59s., MN = +63·0m.

*Continued on next page.*

Kew $PR_1 = +20$m.30s., MN $= +70 \cdot 3$m. Bidston S $= +28$m.51s. Strasbourg $PR_1 = +18$m.55s. $=$[P] $+25$s., ePS $= +27$m.23s. $=$S $+28$s. Barcelona $SR_1 = +28$m.24s. $=$S $+22$s. Tortosa PE $= +19$m.41s. $= PR_1 - 11$s. Alicante MN $= +64 \cdot 2$m. Toledo eNE $= +29$m.43s. MNW $= +59 \cdot 3$m. Malaga readings are given as eN and eE respectively. Ottawa i $= +22$m.49s., $eSR_1$? $= +40$m.21s., eN $= +45$m.57s., MN $= +74 \cdot 0$m. Toronto MN $= +73 \cdot 6$m. Fordham i $= +22$m.29s. $= PR_1 - 30$s., e $= +23$m.4s. Sucre $PR_1 = +25$m.3s., $PR_2 = +30$m.15s., $SR_1 = +42$m.57s. $SR_2 = +48$m.3s.

July 10d. 12h. 40m. 4s. Epicentre 1°·0N. 126°·0E. (as at 10h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | 5·1 | 155 | (i 1 15) | − 4 | (2 12) | − 8 | — | — |
| Manila | | 14·5 | 340 | e 4 3 | +30 | — | — | — | — |
| Batavia | | 20·4 | 249 | 4 46 | 0 | i 8 32 | 0 | — | — |
| Adelaide | | 37·8 | 164 | — | — | e 15 6 | ? | e 21·3? | 27·4 |
| Riverview | | 42·1 | 149 | — | — | — | — | e 21·0 | 28·4 |
| Melbourne | | 42·5 | 158 | — | — | — | — | — | 29·9 |
| Irkutsk | | 54·4 | 345 | 9 41 | + 6 | 17 19 | + 5 | 23·9 | — |
| Ekaterinburg | | 76·0 | 330 | 29 56? | ?L | — | — | (29·9) | — |
| Piatigorsk | | 84·3 | 316 | i 12 36 | − 8 | — | — | — | — |
| Leningrad | | 92·0 | 331 | — | — | e 24 38 | + 3 | 44·9 | 61·4 |
| Pulkovo | | 92·1 | 331 | — | — | i 24 20 | −16 | 45·9 | 60·5 |
| De Bilt | E. | 107·6 | 326 | — | — | — | — | e 67·9 | 69·3 |
| Paris | | 110·5 | 323 | — | — | — | — | e 67·9 | — |
| Kew | | 110·8 | 328 | (e 18 56?) | ?$PR_1$ | — | — | e 18·9 | — |
| La Plata | | 145·9 | 175 | i 19 46 | [− 4] | — | — | — | — |

Additional readings and notes: Amboina readings have been increased by 1m. Riverview MN $= +28 \cdot 0$m. Ekaterinburg gives S−P $= 9$m.38s. Leningrad MZ $= +60 \cdot 6$m. Pulkovo MN $= +59 \cdot 8$m., MZ $= +60 \cdot 1$m. De Bilt eLN $= +64 \cdot 9$m.

July 10d. 23h. 1m. 32s. Epicentre 36°·5N. 139°·5E. (as on 1925 Jan. 9d.).

A $= -\cdot 611$, B $= +\cdot 522$, C $= +\cdot 595$; D $= +\cdot 649$, E $= +\cdot 760$; G $= -\cdot 452$, H $= +\cdot 386$, K $= -\cdot 804$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Tokyo | | 0·9 | 166 | 0 8 | − 6 | — | — | — | — |
| Nagoya | | 2·5 | 238 | 0 40 | + 1 | — | — | 1·5 | 2·0 |
| Mizusawa | E. | 2·9 | 26 | 0 42 | − 3 | 1 17 | − 3 | — | — |
| | N. | 2·9 | 26 | 0 44 | − 1 | 1 19 | − 1 | — | — |
| Osaka | | 3·8 | 242 | 1 15 | +16 | — | — | 2·4 | 3·1 |
| Toyooka | | 3·9 | 265 | e 1 29 | +28 | — | — | 2·6 | 2·8 |
| Kobe | | 4·0 | 244 | 1 2 | 0 | — | — | 2·2 | 3·8 |
| Sumoto | | 4·3 | 242 | 1 6 | − 1 | — | — | 2·4 | 2·7 |
| Hukuoka | N. | 8·0 | 251 | e 3 13 | ?S | (e 3 13) | −24 | 4·6 | 4·8 |
| Manila | | 27·5 | 222 | e 6 57 | +54 | — | — | — | — |
| Irkutsk | | 29·2 | 314 | e 6 13 | − 7 | e 11 2 | −18 | 14·5 | 19·4 |
| Ekaterinburg | | 54·3 | 320 | 28 28 | ?L | — | — | (28·5) | — |
| Kucino | | 66·4 | 323 | — | — | e 18 29 | −73 | 33·3 | 37·5 |
| Baku | | 67·1 | 304 | e 10 56 | − 3 | e 19 55 | + 4 | 32·5 | 36·5 |
| Leningrad | | 67·5 | 330 | e 10 59 | − 2 | e 19 49 | − 7 | 34·0 | — |
| Pulkovo | | 67·6 | 330 | e 11 0 | − 2 | e 19 50 | − 7 | 36·5 | 47·8 |
| De Bilt | | 82·8 | 334 | — | — | e 23 2 | + 7 | e 44·5 | — |
| Uccle | | 84·2 | 334 | — | — | — | — | e 43·5 | — |
| Strasbourg | | 84·8 | 330 | — | — | — | — | e 38·5 | — |
| Kew | | 85·2 | 337 | — | — | — | — | e 43·5 | — |
| Paris | | 86·5 | 334 | — | — | — | — | e 52·5 | — |
| Florence | | 86·9 | 325 | — | — | — | — | e 44·5 | 50·5 |
| Granada | | 98·7 | 331 | — | — | e 50 28? | ? | 53·9 | 59·1 |
| San Fernando | | 100·4 | 333 | — | — | — | — | — | 57·5 |
| La Paz | | 148·4 | 58 | i 19 40 | [−13] | — | — | — | — |

Additional readings: Nagoya MN $= +1 \cdot 9$m. Osaka MN $= +3 \cdot 0$m. Kobe MN $= +2 \cdot 6$m. Sumoto MZ $= +3 \cdot 1$m. Ekaterinburg S−P $= +7$m.34s. Kucino e $= +19$m.55s. Baku MN $= +37 \cdot 0$m., MZ $= +37 \cdot 9$m.

July 10d. Readings also at 0h. (Melbourne), 2h. (near Amboina and near Manila), 3h. (Toronto, Ottawa, and Victoria), 4h. (Pulkovo, Honolulu, and near Apia (2) ), 5h. (Ekaterinburg and Ottawa), 6h. (near Tacubaya), 9h. (near Nagoya, Osaka, Kobe, and Sumoto), 11h. (Apia and near Sumoto).

July 11d. Readings at 1h. (Tokyo and near Amboina), 2h. (Granada, Ekaterinburg, and Tokyo), 4h. (Budapest), 7h. (Tokyo), 9h. (Tokyo and near Mizusawa), 10h. (Phu-Lien and Irkutsk), 11h. (Ekaterinburg, Leningrad, Pulkovo, and Chicago), 13h. (Ekaterinburg), 14h. (near Amboina), 15h. (Pulkovo, Leningrad, Ekaterinburg, Harvard, Toronto, Ottawa, Ann Arbor, Ithaca, Tucson, Sitka, Spokane, and Victoria), 18h. (La Paz), 19h. (Tokyo), 21h. (Piatigorsk).

July 12d. 14h. 32m. 8s. (I) } Epicentre 1°·0N. 126°·0E. (as on 1926 July 10d.).
16h. 51m. 30s. (II) }

A = −·588, B = +·809, C = +·017 ; D = +·809, E = +·588 ;
G = −·010, H = +·014, K = −·1·000.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Manila | 14·5 | 340 | e 3 52? | +19 | — | — | — | — |
| II | | 14·5 | 340 | e 3 30? | − 3 | — | — | — | — |
| I | Batavia | 20·4 | 249 | e 5 28 | +42 | — | — | — | — |
| II | | 20·4 | 249 | e 5 12 | +26 | — | — | — | — |
| II | Melbourne | 42·5 | 158 | — | — | — | — | e 18·2 | 32·2 |
| I | Irkutsk | 54·4 | 345 | e 9 39 | + 4 | e 17 15 | + 1 | 28·9 | — |
| II | | 54·4 | 345 | e 9 37 | + 2 | e 17 15 | + 1 | 28·5 | — |
| I | Ekaterinburg | 76·0 | 330 | 11 54 | − 1 | 21 33 | − 4 | 33·9 | — |
| II | | 76·0 | 330 | 11 54 | − 1 | 21 32 | − 5 | 32·5 | 41·7 |
| II | Honolulu E. | 76·6 | 69 | e 16 50 | ?$PR_2$ | 21 12 | −32 | 38·0 | 40·0 |
| II | Baku | 78·8 | 312 | e 12 8 | − 4 | e 22 9 | − 1 | 39·5 | — |
| II | Leningrad | 92·0 | 331 | — | — | — | — | e 54·0 | — |
| I | Pulkovo | 92·1 | 331 | — | — | — | — | e 54·4 | — |
| II | | 92·1 | 331 | — | — | — | — | e 55·0 | 59·3 |
| I | De Bilt | 107·6 | 326 | — | — | — | — | e 67·9 | — |
| II | | 107·6 | 326 | — | — | — | — | e 56·5 | — |
| I | Uccle | 108·6 | 325 | — | — | — | — | e 59·9 | — |
| II | | 108·6 | 325 | — | — | — | — | e 56·5 | — |
| I | Ottawa | 129·8 | 19 | — | — | — | — | e 71·9 | — |
| II | | 129·8 | 19 | — | — | e 36 35 | ?$SR_1$ | e 71·5 | — |
| II | Toronto N. | 129·9 | 23 | — | — | e 37 45 | ?$SR_1$ | 74·5 | — |

Additional readings: Melbourne II L = $SR_2$ − 24s. Ekaterinburg II MN = +45·0m. De Bilt I eLN = +65·9m. Ottawa II e = +51m.6s.

July 12d. 22h. 12m. 30s. Epicentre 15°·5N. 92°·5E. (as on 1926 May 29d.).

A = −·042, B = +·963, C = +·267 ; D = +·999, E = +·044 ;
G = −·015, H = +·267, K = −·964.

No importance is attached to this solution, which is introduced simply to illustrate the difficulties which sometimes occur in suggesting even an approximation.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Irkutsk | 38·0 | 11 | 2 36 | ? | — | — | 19·5 | — |
| Baku | 44·5 | 313 | (8 47) | +17 | (15 37) | +28 | (22·5) | (34·5) |
| Ekaterinburg | 47·8 | 336 | e 16 51 | ?S | e 19 54 | +243 | 25·5 | 32·8 |
| Kucino | 57·7 | 326 | e 14 51 | +294 | e 18 58 | +63 | 37·3 | 38·0 |
| Pulkovo | 62·8 | 330 | 10 22 | − 9 | 18 42 | −16 | 30·5 | 35·8 |
| Leningrad | 62·9 | 330 | 10 26 | − 5 | — | — | 31·1 | 39·5 |
| Florence | 73·1 | 311 | — | — | — | — | e 42·5 | 55·5 |
| Strasbourg | 75·1 | 318 | — | — | — | — | 40·5 | — |
| De Bilt | 76·3 | 320 | — | — | — | — | 38·5 | 43·5 |
| Uccle | 76·9 | 320 | — | — | — | — | e 36·5 | — |
| Paris | 78·4 | 319 | — | — | — | — | e49·5 | — |
| Kew | 79·7 | 321 | — | — | — | — | e 42·5 | — |
| Granada | 85·4 | 308 | — | — | — | — | — | 52·3 |
| San Fernando | 87·7 | 308 | — | — | — | — | — | 47·5 |

*For Notes see next page.*

NOTES TO JULY 12d. 22h. 12m. 30s.

Additional readings and notes : Baku gives also MN = +32·7m., MZ = +35·9m.; all readings have been decreased by 13min. Ekaterinburg MN = +33·2m.; if we decrease the readings by 1m., then e = +15m.51s. =S exactly, and e = +18m.54s. =$SR_1$ −30s. Kucino MN = +38·1m. Is Pulkovo MN = +35·6m.,MZ = +39·5m. ? Leningrad MZ = +40·3m., MN = +40·5m. De Bilt eLN = +41·5m.

July 12d. Readings also at 0h. (Irkutsk and Ekaterinburg), 1h. (Tokyo and Ekaterinburg (2) ), 2h. (Moncalieri and near Amboina), 3h. (near Sumoto), 5h. (Tokyo), 9h. (Manila and near Amboina), 10h. (Nagoya, Tokyo, and near Amboina), 11h. (Ekaterinburg), 12h. (Strasbourg), 14h. (Tokyo (2) and near Amboina), 16h. (Batavia and near Sumoto), 17h. (near Amboina), 19h. (Ekaterinburg, Toronto, Ottawa, Taihoku, and near Apia), 20h. (Taihoku, Tokyo, and La Paz), 21h. (Tokyo), 22h. (Ottawa, Toronto, and Victoria), 23h. (Honolulu and Adelaide).

July 13d. 7h. 27m. 35s. Epicentre 0°·0 125°·0E. (as on 1925 Nov. 19d.).

A = −·574, B = +·819, C = ·000 ; D = +·819, E = +·574 ; G = ·000, H = ·000, K = −1·000.

Epicentre apparently *not* the same as that on July 12 and July 10.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | 4·8 | 139 | i 1 12 | − 2 | i 2 21 | +10 | — | — |
| Manila | 15·1 | 345 | i 3 58 | +18 | (i 6 44) | +10 | i 6·7 | — |
| Malabar | 18·8 | 247 | i 4 27 | 0 | — | — | — | — |
| Batavia | 19·2 | 251 | i 4 24 | − 7 | — | — | — | — |
| Hong Kong | 24·7 | 335 | 5 34 | − 1 | — | — | — | 10·4 |
| Irkutsk | 55·1 | 345 | e 9 43 | + 3 | e 18 16 | +54 | 30·4 | — |
| Baku | 78·8 | 313 | e 12 47 | +35 | e 23 8 | +58 | e 31·4 | — |
| Pulkovo | 92·4 | 330 | — | — | e 18 4 | ?$PR_1$ | e 45·9 | — |
| De Bilt | 107·8 | 326 | — | — | — | — | e 55·4 | — |
| La Paz | 159·0 | 142 | 20 18 | [+11] | — | — | — | — |

Additional readings : Batavia e = +4m.38s. De Bilt eLN = +56·4m.

July 13d. 15h. 17m. 36s. Epicentre 38°·5N. 30°·5W. (as on July 9d.).

A = +·674, B = −·397, C = +·623 ; D = −·508, E = −·862 ; G = +·536, H = −·316, K = −·783.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Azores | 3·9 | 99 | 1 24 | +23 | — | — | — | 3·4 |
| San Fernando | 19·3 | 88 | — | — | — | — | — | 10·4 |
| Toledo N.E. | 20·5 | 78 | — | — | e 8 8 | −26 | — | 9·9 |
| Granada | 21·2 | 85 | i 5 6 | +11 | — | — | 9·0 | 11·5 |
| Tortosa N. | 23·9 | 75 | — | — | — | — | e 10·4 | 12·5 |
| Edinburgh | 25·1 | 37 | — | — | — | — | e 13·9 | — |
| Paris | 25·8 | 55 | — | — | e 10 27 | + 9 | 12·4 | — |
| Uccle | 27·3 | 52 | — | — | e 10 42 | − 4 | e 12·4 | 13·9 |
| De Bilt | 28·1 | 49 | — | — | — | — | e 12·4 | — |
| Moncalieri | 28·9 | 65 | — | — | 3 2 | ? | 13·0 | — |
| Strasbourg | 29·1 | 57 | — | — | — | — | 12·4 | 15·4 |
| Hamburg | 31·3 | 48 | — | — | — | — | e 15·4 | — |
| Florence | 31·5 | 67 | — | — | — | — | — | 15·4 |
| Ottawa | 33·9 | 297 | — | — | — | — | e 17·4 | — |
| Pulkovo | 43·1 | 40 | — | — | — | — | e 22·4 | 25·4 |
| Ekaterinburg | 59·2 | 40 | — | — | e 18 35 | +22 | 48·9 | 51·8 |
| Baku | 59·8 | 60 | e 9 24? | −47 | — | — | — | — |

Additional readings : Toledo MNW = +10·8m. Moncalieri eP? =15h. 9m.51s.

July 13d. Readings also at 0h. (Ottawa, Toronto, Victoria, La Paz, Granada, De Bilt, Uccle, Pulkovo, Leningrad, Baku, and Ekaterinburg), 2h. (Ekaterinburg, Irkutsk, and Baku), 4h. (Tokyo and near Mostar), 5h. (La Paz), 12h. and 14h. (Leningrad), 15h. (Ekaterinburg), 16h. (Zi-ka-wei), 18h. (Apia), 19h. (Nagoya, Tokyo, and near Irkutsk), 22h. (Chicago), 23h. (La Paz and Tokyo).

**July 14d. 1h. 38m. 40s. Epicentre 2°·5S. 71°·0W. (as on 1921 Dec. 18d.).**

A = +·325, B = −·945, C = −·044; D = −·946, E = −·326;
G = −·014, H = +·041, K = −·999.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| La Paz | 14·3 | 169 | i 3 30 | 0 | i 6 13 | − 2 | i 7·1 | 7·8 |
| Sucre | 17·4 | 161 | 4 11 | + 1 | i 7 20 | − 7 | 9·2 | 10·2 |
| Ottawa | 48·1 | 357 | — | — | e 15 56 | + 1 | 21·3 | — |
| Granada | 73·8 | 51 | i 12 1 | +20 | 23 6 | +114 | e 45·3 | 51·9 |
| Almeria | 74·7 | 51 | e 11 47 | 0 | e 22 28 | +66 | — | 54·6 |
| Ekaterinburg | 113·6 | 25 | — | — | e 49 54 | ? | 56·3 | — |

Additional readings: La Paz MNZ = +8·6m.; $T_o$ = 1h.38m.43s. Granada PS = +23m.57s.

**July 14d. 6h. 40m. 14s. Epicentre 35°·7N. 134°·8E. (as on 1925 Dec. 22d.).**

A = −·572, B = +·576, C = +·584; D = +·710, E = +·705;
G = −·411, H = +·414, K = −·812.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Toyooka | 0·2 | 175 | 0 1 | − 3 | (0 3) | − 3 | — | 0·1 |
| Kobe | 1·1 | 163 | 0 16 | − 1 | (0 30) | − 1 | 0·5 | 0·5 |
| Osaka | 1·2 | 154 | 0 18 | 0 | (0 33) | 0 | 0·6 | 1·6 |
| Sumoto | 1·4 | 177 | 0 28 | + 7 | (0 46) | + 7 | 0·8 | 0·8 |
| Nagoya | 1·8 | 107 | 0 24 | − 4 | (0 46) | − 5 | 0·8 | 0·9 |

Additional readings: Kobe MN = +0·7m. Osaka MN = +2·1m.

**July 14d. 16h. 46m. 18s. (I)**
**16h. 58m. 54s. (II)** } **Epicentre 0°·5N. 130°·0E. (as on 1922 June 17d.).**

A = −·643, B = +·766, C = +·009; D = +·766, E = +·643;
G = −·006, H = +·007, K = −1·000.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Amboina | 4·6 | 204 | 2 11 | +60 | 3 22 | +76 | — | — |
| II | | 4·6 | 204 | i 2 26 | +75 | 3 44 | +98 | — | — |
| I | Manila | 16·7 | 328 | e 3 51 | −10 | (i 6 27) | −44 | i 6·4 | — |
| II | | 16·7 | 328 | e 4 7 | + 6 | (i 6 41) | −30 | i 6·7 | — |
| I | Malabar | 23·7 | 250 | 5 31 | + 6 | 9 40 | + 2 | — | — |
| II | | 23·7 | 250 | 5 34 | + 9 | e 9 34 | − 4 | — | — |
| I | Batavia | 24·1 | 253 | i 5 31 | + 2 | i 9 45 | − 1 | — | — |
| II | | 24·1 | 253 | i 5 33 | + 4 | i 9 37 | − 9 | — | — |
| I | Hong Kong | 26·7 | 326 | 5 37 | −18 | (9 45) | −50 | 9·8 | 9·9 |
| II | | 26·7 | 326 | — | — | — | — | — | 10·0 |
| I | Osaka | 34·5 | 9 | 6 54 | −15 | (12 47) | − 1 | 12·8 | 22·9 |
| I | Riverview | 39·7 | 152 | — | — | — | — | e 23·8 | 28·3 |
| I | Melbourne | 40·7 | 162 | (e 7 6) | −55 | e 17 0 | ?$SR_1$ | e 27·3 | 29·2 |
| I | Honolulu E. | 72·5 | 69 | — | — | — | — | 36·2 | 49·0 |
| I | Ekaterinburg | 78·4 | 330 | 12 6 | − 3 | i 21 38 | −27 | 33·2 | — |
| II | | 78·4 | 330 | 12 8 | − 1 | 21 43 | −22 | — | — |
| I | Baku | 82·2 | 311 | e 12 26 | − 5 | 22 25 | −23 | 39·7 | — |
| II | | 82·2 | 311 | e 12 30 | − 1 | 22 27 | −21 | 40·1 | — |
| I | Pulkovo | 94·4 | 330 | e 17 54 | ?$PR_1$ | i 24 26 | −34 | 52·7 | 65·0 |
| I | Leningrad | 94·4 | 330 | — | — | e 17 58 | ?$PR_1$ | 51·2 | — |
| I | De Bilt | 110·1 | 328 | — | — | — | — | e 55·7 | — |
| I | Strasbourg | 110·3 | 323 | — | — | — | — | 63·7 | — |
| I | Uccle | 111·2 | 327 | — | — | — | — | e 55·7 | — |
| I | Moncalieri | 111·8 | 320 | e 14 45 | −21 | 29 20 | +96 | 48·0 | — |
| I | Edinburgh | 112·1 | 333 | — | — | — | — | e 66·7 | — |
| II | Kew | 113·3 | 329 | — | — | — | — | 60·1 | — |
| I | Granada | 123·0 | 314 | e 37 49 | ?$SR_1$ | — | — | 69·2 | 74·2 |
| I | Toronto N. | 128·6 | 26 | — | — | — | — | e 62·2 | — |
| I | Ottawa | 128·8 | 21 | — | — | — | — | e 53·7 | — |

Additional readings: Batavia I iE = +5m.34s., II iZ = +5m.35s. Riverview I MN = +40·8m. Melbourne I e(P) has been increased by 10m. Ekaterinburg I i$PR_1$ = +15m.0s., II e$PR_1$ = +15m.5s. Granada i = +50m.14s.

July 14d. 19h. 30m. 12s. Epicentre 37°·2N. 139°·0E. (as on 1922 May 28d.).

A = −·601, B = +·522, C = +·605.

| | | Δ | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | | ° | m. s. | s. | m. s. | s. | m. | m. |
| Mizusawa | E. | 2·5 | 0 36 | − 3 | 1 8 | − 1 | — | — |
| Nagoya | | 2·7 | 0 49 | + 7 | — | — | 1·4 | 1·4 |
| Osaka | | 3·9 | 0 57 | − 4 | (1 48) | + 1 | 1·8 | 2·5 |

Additional readings: Mizusawa SN = +1m.11s. Osaka MN = +2·8m.

July 14d. 22h. 22m. 20s. Epicentre 66°·0N. 165°·0W.

A = −·393, B = −·105, C = +·914; D = −·259, E = +·966;
G = −·882, H = −·236, K = −·407.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Sitka | | 16·5 | 109 | — | — | 7 15 | + 8 | 7·9 | 11·2 |
| Victoria | N. | 27·8 | 109 | 5 40 | −26 | 10 20 | −35 | 13·8 | 15·0 |
| Spokane | | 30·7 | 103 | — | — | i 16 33 | ?L | i 17·0 | 18·0 |
| Irkutsk | | 44·0 | 299 | e 8 24 | − 2 | 14 54 | − 8 | 24·7 | 26·1 |
| Honolulu | E. | 44·9 | 171 | — | — | e 18 52 | ?$SR_1$ | e 20·5 | 21·3 |
| Tucson | N. | 46·5 | 110 | — | — | — | — | e 23·7 | 24·8 |
| Chicago | E. | 47·6 | 82 | — | — | e 15 50 | + 1 | e 22·9 | 24·7 |
| Ann Arbor | | 48·7 | 78 | e 22 4 | ? | i 24 40 | ?L | e 25·4 | 25·7 |
| Ottawa | | 49·2 | 70 | e 10 46 | ?$PR_1$ | e 19 2 | ?$SR_1$ | e 22·7 | 26·1 |
| Toronto | E. | 49·2 | 75 | — | — | e 19 10 | ?$SR_1$ | i 24·7 | 25·4 |
| St. Louis | N. | 49·2 | 87 | — | — | e 15 54 | −15 | e 25·0 | — |
| Ithaca | | 51·4 | 72 | — | — | — | — | e 25·7 | — |
| Ekaterinburg | | 52·5 | 331 | 9 23 | 0 | i 16 51 | + 1 | 24·7 | 32·2 |
| Harvard | | 53·5 | 68 | — | — | — | — | 24·8 | 28·6 |
| Leningrad | | 53·5 | 351 | e 9 28 | − 2 | e 16 57 | − 6 | 24·3 | 38·5 |
| Pulkovo | | 53·7 | 351 | e 9 27 | − 4 | 17 0 | − 5 | 27·2 | 33·8 |
| Fordham | | 53·7 | 71 | e 16 44 | ?S | (e 16 44) | −21 | 25·5 | 27·7 |
| Upsala | | 54·2 | 358 | — | — | — | — | 35·7 | — |
| Cheltenham | E. | 54·4 | 75 | — | — | — | — | 27·4 | 32·9 |
| Zi-ka-wei | | 55·1 | 271 | — | — | e 18 7 | +45 | — | 34·1 |
| Loyola | N. | 56·8 | 90 | e 23 7 | ? | i 27 49 | ? | e 29·4 | 31·9 |
| Kucino | | 57·0 | 346 | — | — | e 17 48 | + 2 | 26·9 | 30·3 |
| Edinburgh | | 57·4 | 13 | — | — | e 17 40? | −11 | — | — |
| Hamburg | | 60·4 | 4 | — | — | — | — | e 38·7 | — |
| De Bilt | E. | 61·7 | 7 | — | — | 18 42 | − 2 | e 28·7 | 30·6 |
| Kew | | 61·9 | 11 | — | — | e 18 40? | − 7 | 32·7 | — |
| Uccle | | 62·9 | 8 | — | — | e 18 52 | − 8 | e 26·7 | — |
| Strasbourg | | 65·3 | 6 | e 10 40? | − 7 | e 18 40? | −49 | 28·7 | — |
| Hong Kong | | 66·0 | 272 | — | — | — | — | — | 38·7 |
| Moncalieri | | 68·9 | 6 | e 14 50 | +220 | 23 11 | +178 | 39·8 | — |
| Baku | | 70·3 | 333 | e 11 24 | + 5 | e 20 36 | + 6 | 33·7 | 37·4 |
| Rocca di Papa | | 72·2 | 2 | e 1 39 | + 8 | e 20 36 | −16 | — | 22·7 |
| Tortosa | N. | 72·6 | 12 | — | — | — | — | e 39·7 | 46·8 |
| Toledo | | 73·2 | 16 | — | — | — | — | e 38·6 | 44·7 |
| Granada | | 75·8 | 16 | i 11 55 | + 1 | — | — | 39·7 | 43·2 |
| Almeria | | 76·3 | 15 | — | — | — | — | e 40·1 | 59·2 |
| San Fernando | E. | 76·3 | 19 | — | — | — | — | — | 48·2 |
| Apia | | 80·0 | 187 | — | — | — | — | — | 88·1 |
| Hyderabad | | 84·3 | 301 | — | — | — | — | — | 49·0 |

Additional readings: Sitka $PR_1E$ = +4m.43s. Victoria SE = +10m.40s.; $T_g$ = 22h.22m.7s. Spokane eE = +14m.32s., +15m.5s., and +15m.24s. Irkutsk $SR_1$ = +18m.28s., MZ = +28·4m. Honolulu eLN = +21·7m. Chicago eE = +14m.51s. and +17m.2s., $S_eSE$? = +18m.4s. and +18m.25s., $SR_1E$ = +19m.27s. Ann Arbor LN = +25·5m. Ottawa eN = +15m.22s. = S −47s., eE = +15m.44s. = S −25s., MN = +25·9m. St. Louis iN = +16m.13s. and +16m.23s., and several other e readings. Ekaterinburg MN = +39·8m. Leningrad MZ = +33·4m., MN = +33·6m. Pulkovo MZ = +32·4m. Fordham eN = +20m.31s., eE = +20m.37s., eSE = +21m.41s., i = +27m.14s., MN = +31·4m. Zi-ka-wei e = +21m.0s. = $SR_1$ −42s. Kucino MN = +40·2m. De Bilt eLN = +32·7m., MN = +43·1m. Baku MN = +46·4m., MZ = +49·5m. Rocca di Papa ePE = +11m.42s. Toledo MNW = +44·6m. Granada MZ = +44·9m. Almeria MN = +44·0m. San Fernando MN = +45·2m.

July 14d. Readings also at 0h. (Chicago, Ekaterinburg, and Manila), 1h. (Ekaterinburg), 3h. (Tokyo and near Osaka), 5h. (Nagoya), 7h. (Moncalieri and near Hukuoka), 8h. (Strasbourg, Zurich, and near Zagreb), 10h. (Ekaterinburg, Nagoya, and near Mizusawa), 14h. (Taihoku), 19h. (Graz and Ekaterinburg), 20h. (Upsala), 23h. (Hamburg).

July 15d. 18h. 25m. 40s. Epicentre 35°·0N. 89°·0E.

A = +·014, B = +·819, C = +·574; D = +1·000, E = −·017; G = +·010, H = +·574, K = −·819.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Simla | N. | 10·7 | 252 | — | — | — | — | 6·5 | — |
| Hyderabad | | 19·9 | 211 | — | — | — | — | — | 12·6 |
| Irkutsk | | 20·4 | 28 | 4 48 | + 2 | e 8 32 | 0 | 11·3 | — |
| Phu-Lien | | 21·0 | 128 | — | — | — | — | 11·3 | — |
| Bombay | | 21·6 | 226 | — | — | — | — | e 11·3 | — |
| Hong Kong | | 25·4 | 113 | — | — | — | — | — | 15·3 |
| Zi-ka-wei | | 27·3 | 89 | e 10 48 | ?S | (e 10 48) | + 2 | (e 16·1) | 18·3 |
| Ekaterinburg | | 29·0 | 328 | i 6 14 | − 4 | e 11 16 | − 1 | 14·3 | — |
| Baku | | 31·2 | 292 | — | — | e 11 54 | 0 | — | — |
| Kucino | | 40·2 | 318 | — | — | e 17 8 | ?$SR_1$ | 22·2 | — |
| Pulkovo | | 44·8 | 323 | — | — | e 18 31 | ?$SR_1$ | 23·8 | 26·7 |
| Leningrad | | 44·8 | 323 | — | — | — | — | 24·8 | 29·3 |
| Hamburg | | 56·4 | 317 | — | — | — | — | e 30·3 | — |
| Strasbourg | | 59·2 | 311 | — | — | — | — | e 29·3 | — |
| De Bilt | | 59·6 | 315 | — | — | — | — | e 32·3 | 34·8 |
| Uccle | | 60·5 | 314 | — | — | — | — | e 30·3 | — |
| Edinburgh | | 62·8 | 321 | — | — | — | — | 36·3 | — |
| Kew | | 62·9 | 316 | — | — | — | — | e 30·3 | — |
| Granada | | 71·5 | 304 | — | — | — | — | e 39·3 | 49·3 |

Additional readings: Simla eE = +6m.38s. Baku e = +13m.11s. = $SR_1$ −21s. Strasbourg L = +36·3m.

July 15d. 21h. 47m. 10s. Epicentre 23°·0N. 121°·7E. (as on 1921 July 18d.).

A = −·484, B = +·783, C = +·391; D = +·851, E = +·526; G = −·205, H = +·332, K = −·921.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | N. | 1·9 | 359 | e 1 6 | +37 | — | — | 1·6 | 1·7 |
| Hong Kong | | 7·0 | 266 | 1 40 | − 6 | — | — | — | 5·7 |
| Zi-ka-wei | | 8·2 | 358 | e 2 11 | + 7 | 3 52 | +10 | — | 6·2 |
| Manila | | 8·4 | 185 | e 2 2 | − 5 | — | — | i 4·0 | — |
| Irkutsk | | 32·2 | 341 | e 6 37 | −13 | e 10 57 | −74 | 16·8 | 21·2 |
| Ekaterinburg | | 55·2 | 326 | i 9 39 | − 1 | i 17 23 | − 1 | 26·8 | 36·7 |
| Baku | | 61·9 | 308 | e 10 26 | + 2 | e 18 54 | + 7 | 31·8 | 36·2 |
| Kucino | | 67·7 | 324 | — | — | e 20 4 | + 6 | 33·8 | 44·4 |
| Leningrad | | 70·9 | 330 | e 11 30 | + 8 | — | — | 35·8 | — |
| Pulkovo | | 71·0 | 330 | 11 28 | + 5 | 20 39 | + 1 | 34·3 | 45·4 |
| Upsala | | 77·0 | 331 | — | — | — | — | 40·8 | — |
| Vienna | Z. | 82·6 | 320 | i 12 39 | − 5 | — | — | — | — |
| Hamburg | | 83·6 | 326 | — | — | — | — | e 43·8 | 45·8 |
| De Bilt | | 86·8 | 326 | — | — | — | — | e 45·8 | 49·0 |
| Strasbourg | | 87·4 | 321 | e 13 25 | +24 | — | — | 47·8 | 57·4 |
| Florence | | 87·8 | 319 | — | — | — | — | — | 48·8 |
| Uccle | | 88·0 | 325 | — | — | — | — | e 44·8 | 48·8 |
| Edinburgh | | 88·4 | 331 | — | — | — | — | 45·8 | 56·8 |
| Moncalieri | | 88·9 | 320 | (e 13 17) | + 7 | (24 19) | +17 | 43·2 | — |
| Kew | | 89·9 | 328 | — | — | — | — | e 45·8 | — |
| Paris | | 90·1 | 325 | — | — | — | — | e 56·8 | — |
| Spokane | | 91·7 | 35 | — | — | — | — | i 40·1 | — |
| Granada | | 100·8 | 320 | — | — | — | — | e 56·7 | 61·8 |
| San Fernando | | 102·9 | 320 | — | — | — | — | — | 61·8 |
| Ottawa | | 109·8 | 12 | — | — | — | — | e 61·8 | — |

Additional readings: Manila iP = +2m.24s. Irkutsk MZ = +21·1m. Ekaterinburg MN = +30·4m., MZ = +36·6m. Baku MN = +36·3m., MZ = +40·1m. Kucino MN = +36·8m. Pulkovo MN = +39·6m., MZ = +45·3m. De Bilt MN = +49·5m. Moncalieri readings have been diminished by 9 min. Spokane gives 15 readings, beginning with i = +34m.47s. = $SR_2$ −24s., and ending with that given as L. Granada eL = +59·8m.

July 15d. Readings also at 5h. (Tokyo), 7h. (Sucre), 16h. (Tokyo), 20h. (Strasbourg, Kew, near Granada, and Almeria), 22h. (near Berkeley).

July 16d. 2h. 4m. 30s. Epicentre 5°·5S. 147°·0E. (as on 1926 April 8d.).

$A = -\cdot835$, $B = +\cdot542$, $C = -\cdot096$; $D = +\cdot545$, $E = +\cdot839$; $G = +\cdot080$, $H = -\cdot052$, $K = -\cdot995$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | 18·8 | 275 | i 4 17 | −10 | i 7 53 | − 5 | 15·5 | — |
| Riverview | | 28·6 | 173 | e 7 36 | +82 | e 12 48 | +98 | e 13·5 | 16·3 |
| Sydney | | 28·6 | 173 | 7 32 | +78 | 12 42 | +92 | 15·1 | 16·6 |
| Adelaide | | 30·4 | 194 | 6 30? | − 2 | i 11 11 | −30 | 13·8 | 19·6 |
| Melbourne | | 32·3 | 184 | — | — | e 11 42 | −31 | i 17·0 | 20·4 |
| Manila | | 32·7 | 310 | e 7 23 | +29 | (i 13 10) | +51 | i 13·2 | — |
| Taihoku | E. | 39·3 | 323 | — | — | e 13 39 | −17 | — | — |
| Perth | | 39·3 | 225 | 9 24 | +95 | 16 0 | +124 | 21·0 | 25·5 |
| Batavia | | 39·9 | 269 | i 8 34 | +40 | — | — | — | — |
| Apia | | 41·4 | 103 | 8 24 | +18 | — | — | 17·5 | — |
| Osaka | | 41·6 | 347 | 8 9 | + 1 | 14 24 | − 5 | 22·9 | 27·2 |
| Hong Kong | | 42·5 | 313 | 8 10 | − 5 | — | — | — | 22·2 |
| Wellington | | 43·5 | 149 | — | — | i 14 37 | −18 | e 19·5 | — |
| Zi-ka-wei | | 44·1 | 330 | e 8 25 | − 2 | e 18 29 | ?$SR_1$ | 23·0 | 27·4 |
| Christchurch | | 44·2 | 153 | e 15 12 | ?S | (e 15 12) | + 7 | 23·2 | 33·1 |
| Phu-Lien | | 47·6 | 306 | e 8 51 | 0 | i 12 30? | ? | 24·5 | — |
| Honolulu | E. | 60·2 | 61 | — | — | e 18 38 | +12 | 28·2 | 32·7 |
| Irkutsk | | 68·2 | 334 | — | — | 20 16 | +12 | 32·5 | 42·0 |
| Bombay | | 76·9 | 291 | — | — | e 21 52 | + 4 | — | — |
| Ekaterinburg | | 92·6 | 327 | e 13 16 | −14 | i 23 56 | [+12] | 35·5 | 53·6 |
| Berkeley | E. | 93·9 | 51 | — | — | — | — | e 45·0 | — |
| Victoria | E. | 93·9 | 42 | 17 21 | ?$PR_1$ | 24 7 | [+16] | 31·5 | 47·4 |
| Baku | | 99·0 | 311 | — | — | e 24 37 | [+18] | 49·5 | 58·1 |
| Leningrad | | 107·9 | 333 | e 14 20 | −28 | — | — | 42·5 | 68·4 |
| Pulkovo | | 108·0 | 333 | e 14 19 | −29 | — | — | 43·5 | 68·2 |
| Upsala | | 113·3 | 335 | — | — | — | — | e 57·5 | — |
| Cape Town | | 117·5 | 227 | — | — | — | — | — | 64·9 |
| Chicago | E. | 119·6 | 44 | — | — | 25 54 | [+10] | e 53·0 | 63·2 |
| Vienna | | 120·2 | 325 | e 20 31 | ?$PR_1$ | 29 48 | +57 | — | 75·5 |
| Hamburg | | 120·6 | 331 | — | — | — | — | e 60·5 | 69·5 |
| Graz | | 121·3 | 324 | — | — | — | — | e 62·5 | 75·8 |
| Cheb | | 121·5 | 327 | — | — | — | — | e 62·5 | 76·5 |
| Ann Arbor | | 122·1 | 40 | — | — | — | — | e 61·6 | — |
| De Bilt | | 123·8 | 332 | e 21 12 | ?$PR_1$ | — | — | e 58·5 | 76·5 |
| Edinburgh | | 124·3 | 339 | e 33 30 | ? | — | — | 60·5 | 80·5 |
| Toronto | E. | 124·3 | 38 | — | — | — | — | 62·5 | 64·5 |
| Strasbourg | | 124·8 | 327 | e 20 30? | ?$PR_1$ | — | — | 60·5 | 80·5 |
| Uccle | | 125·1 | 331 | — | — | — | — | e 57·5 | 70·5 |
| Zurich | N. | 125·1 | 326 | e 20 56 | ?$PR_1$ | — | — | — | — |
| Florence | | 125·5 | 320 | — | — | — | — | — | 63·5 |
| Rocca di Papa | | 125·6 | 319 | e 10 0 | ? | — | — | 65·6 | 78·6 |
| Stonyhurst | | 125·6 | 337 | — | — | — | — | e 64·5 | — |
| Ottawa | | 125·6 | 35 | e 21 7 | ?$PR_1$ | e 31 14 | ? | e 52·5 | 66·5 |
| Kew | | 126·7 | 335 | e 21 17 | ?$PR_1$ | — | — | 60·5 | 72·9 |
| Oxford | | 126·8 | 335 | — | — | — | — | e 60·5 | 80·5 |
| Moncalieri | | 127·0 | 324 | e 21 24 | ?$PR_1$ | 31 47 | ? | 64·0 | 74·9 |
| Paris | | 127·3 | 331 | e 21 26 | ?$PR_1$ | — | — | 66·5 | 72·5 |
| Tortosa | N. | 133·7 | 325 | — | — | 23 4 | ?$PR_1$ | e 39·5 | 83·1 |
| Toledo | | 136·9 | 327 | — | — | — | — | e 56·4 | 81·4 |
| Almeria | | 138·0 | 324 | — | — | — | — | e 70·1 | 73·0 |
| Granada | | 138·5 | 324 | i 19 42 | [+ 5] | i 23 14 | ?$PR_1$ | e 70·0 | 88·0 |
| Sucre | | 139·8 | 128 | 20 19 | [+40] | — | — | 73·5 | — |
| San Fernando | | 140·5 | 325 | — | — | 41 42 | ?$SR_1$ | — | 92·0 |

Additional readings: Riverview MN = +16·4m., MZ = +18·7m. Melbourne e = +16m.12s. Perth PS = +15m.30s., $SR_1$ = +17m.54s., $SR_2$ = +18m.15s. All readings should apparently be decreased by 1m. Apia L = $SR_1$ +14s. Osaka MN = +23·7m. Honolulu eN = +19m.30s., $SR_1$ = +25m.36s., eLN = +29·0m. Irkutsk MZ = +40·7m. Ekaterinburg ePS = +24m.45s. = S +4s., $eSR_1$ = +29m.7s., $eSR_2$ = +33m.10s., MN = +47·9m., MZ = +57·9m. Victoria L = $SR_1$ +9s. Baku MN = +56·0m., MZ = +70·1m. Leningrad $PR_1$ = +19m.19s., PPS = +28m.34s., MZ = +68·0m., MN = +68·2m. Pulkovo $PR_1$ = +19m.19s., e = +23m.55s. = $PR_2$ +3s., PPS = +28m.37s., $SR_1$ = +34m.30s., MN = +57·5m. Chicago

*Continued on next page.*

$PR_1E = +20m.1s.$, $PR_2E = +23m.42s.$, $S_cP_cP_cSE = +26m.55s.$, $P_cP_cP_cPE = +28m.55s. = S+7s.$, $PSE = +29m.50s.$, $PPSE = +31m.17s.$, $PPPSE = +31m.55s.$, $SR_1E = +36m.36s.$, $SR_2E = +41m.10s.$?, $SR_3 = +44m.45s.$ Hamburg $MZ = +71{\cdot}5m.$, $MN = +73{\cdot}5m.$ De Bilt $eZ = +23m.48s. = PR_1 - 27s.$, $e = +31m.0s.$, $MN = +68{\cdot}1m.$, $MZ = +76{\cdot}9m.$ Toronto $eN = +59m.30s.$ Strasbourg $MN = +72{\cdot}5m.$, $MZ = +74{\cdot}0m.$ Ottawa $MN = +64{\cdot}5m.$ Tortosa $L = SR_1 - 7s.$ Toledo $MNW = +70{\cdot}8m.$ San Fernando $MN = +88{\cdot}0m.$

July 16d. Readings also at 0h. (near Osaka, Kobe, Sumoto, and Toyooka), 4h. (Victoria), 6h. (Apia and Riverview), 7h. (Ottawa and Honolulu), 9h. (near Algiers), 14h. (near Sumoto), 15h. (Baku and near Sucre), 16h. (near Kobe and Sumoto), 17h. (La Plata), 19h. (Tokyo and Rio Tinto), 22h. (Stonyhurst).

July 17d. 19h. 14m. 12s. Epicentre 36°·0N. 84°·5E.

$A = +{\cdot}078$, $B = +{\cdot}805$, $C = +{\cdot}588$; $D = +{\cdot}995$, $E = -{\cdot}096$; $G = +{\cdot}056$, $H = +{\cdot}585$, $K = -{\cdot}809$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Simla | N. | 7·8 | 233 | — | — | — | — | e 4·8 | — |
| Irkutsk | | 21·4 | 35 | 5 1 | + 3 | e 8 53 | 0 | 10·8 | — |
| Ekaterinburg | | 26·2 | 330 | e 5 48 | − 2 | e 10 24 | − 2 | 12·8 | 16·7 |
| Baku | | 27·3 | 290 | — | — | e 11 12 | +26 | e 16·9 | — |
| Kucino | | 36·0 | 318 | — | — | e 15 29 | ?$SR_1$ | 20·1 | — |
| Pulkovo | | 41·7 | 324 | — | — | e 14 30 | − 1 | 21·3 | 26·2 |
| Leningrad | | 41·8 | 324 | — | — | — | — | 23·8 | 28·8 |
| Upsala | N. | 48·1 | 323 | — | — | — | — | e 25·3 | — |
| Hamburg | | 53·0 | 316 | — | — | — | — | e28·6 | — |
| Strasbourg | | 55·7 | 310 | — | — | — | — | e 29·8 | — |
| De Bilt | | 56·2 | 315 | — | — | — | — | e 29·8 | 33·4 |
| Uccle | | 57·1 | 314 | — | — | — | — | e 28·8 | — |
| Besançon | | 57·2 | 308 | — | — | — | — | 50·7 | — |
| Paris | | 58·9 | 311 | — | — | — | — | e 32·8 | 39·8 |
| Edinburgh | | 59·6 | 320 | — | — | — | — | e 33·8 | — |
| Kew | | 59·6 | 314 | — | — | — | — | e 31·8 | — |
| Granada | | 67·8 | 301 | — | — | e 21 48 | +108 | 29·8 | 34·3 |

Additional readings: Simla $eE = +5m.0s.$ Ekaterinburg $MNZ = +17{\cdot}7m.$ Pulkovo $e = +17m.32s. = SR_1 + 10s.$, $MN = +26{\cdot}5m.$, $MZ = +27{\cdot}2m.$ Leningrad $MN = +28{\cdot}6m.$, $MZ = +29{\cdot}9m.$ Hamburg $e = +25m.30s.$

July 17d. Readings also at 2h. (Agana), 6h. (Ekaterinburg), 8h. (Pulkovo, Ekaterinburg, Ottawa, and Taihoku), 9h. (Pulkovo), 11h. (near Athens), 12h. (Pulkovo and near Phu-Lien), 14h. (San Juan), 15h. (Sucre, Honolulu, Toronto, Ottawa, and Ekaterinburg), 16h. (Leningrad, Pulkovo, Baku, De Bilt, and Uccle), 20h. (Baku, Paris, near Uccle, and Strasbourg.)

July 18d. Readings at 3h. (Sucre, La Plata, Apia, Pulkovo, Rocca di Papa, De Bilt, Uccle, Paris, Kew, Edinburgh, and Algiers), 4h. (Baku, Leningrad, and San Fernando), 6h. (Azores and near Tacubaya), 8h. (Ekaterinburg), 9h. (Batavia and near Malabar), 12h. (Toledo), 15h. (Zi-ka-wei and near Sumoto), 16h. (Ekaterinburg, Rocca di Papa, and near Taihoku), 17h. (near Athens), 19h. (De Bilt, Pulkovo, Leningrad, Ekaterinburg, Kucino, Baku, Irkutsk, Ottawa, Chicago, Honolulu, Victoria, Batavia, Manila, Adelaide, Melbourne, and Apia), 20h. (Edinburgh, Toronto, Strasbourg, Zurich, and near Laibach), 21h. (Leningrad).

**July 19d. 4h. 51m. 54s. Epicentre 43°·8N. 11°·2E. (as on 1926 March 28d.).**

A = +·708, B = +·140, C = +·692; D = +·194, E = −·981; G = +·679, H = +·134, K = −·722.

Uncertain.

| | | Δ | Az. | P. | O−C. | S. | O−C. |
|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. |
| Venice | | 1·9 | 26 | 1 25 | +56 | 2 25 | +92 |
| Laibach | | 3·3 | 46 | e 1 5 | +13 | i 1 25 | − 6 |
| Zurich | | 4·0 | 332 | e 1 6 | + 4 | i 1 47 | − 3 |
| Strasbourg | | 5·3 | 334 | — | — | e 2 6? | −19 |
| Vienna | z. | 5·7 | 37 | e 2 6 | +38 | — | — |

No additional readings.

**July 19d. 9h. 55m. 50s. Epicentre 35°·7N. 134°·8E. (as on 1926 July 14d.).**

A = −·572, B = +·576, C = +·584.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Kobe | 1·1 | 163 | 0 21 | + 4 | (0 34) | + 3 | 0·6 | 0·6 |
| Osaka | 1·2 | 154 | 0 19 | + 1 | (0 37) | + 4 | 0·6 | 1·0 |
| Sumoto | 1·4 | 177 | 0 18 | − 3 | (0 29) | −10 | 0·5 | 0·5 |
| Nagoya | 1·8 | 107 | 1 1 | +33 | — | — | 1·4 | 1·6 |

No additional readings.

**July 19d.** Readings also at 3h. (Ekaterinburg), 5h. (Florence), 8h. (Ekaterinburg), 9h. (Malabar), 10h. (near Amboina), 13h. (Tokyo), 16h. (Strasbourg), 19h. (Tokyo), 21h. (Ekaterinburg, Toronto, Ottawa, Irkutsk, and Victoria), 22h. (Victoria and Sucre), 23h. (Irkutsk and Zurich).

**July 20d. 13h. 59m. 26s. Epicentre 36°·1N. 137°·3E. (as on 1926 Mar. 15d.).**

A = −·594, B = +·548, C = +·589; D = +·678, E = +·735; G = −·433, H = +·400, K = −·808.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Nagoya | 1·0 | 196 | 0 21 | + 6 | (0 27) | − 1 | 0·5 | 0·5 |
| Toyooka | 2·1 | 254 | 0 41 | + 8 | (1 9) | +11 | 1·2 | 1·2 |
| Osaka | 2·1 | 218 | 0 32 | − 1 | (0 55) | − 3 | 0·9 | 2·6 |
| Kobe | 2·2 | 231 | 0 38 | + 4 | (0 59) | − 1 | 1·0 | 1·2 |
| Sumoto | 2·6 | 228 | 0 40 | − 1 | 0 53 | −19 | 1·0 | 1·3 |

Additional readings: Toyooka MN = +1·1m. Osaka MN = +2·5m. Kobe MN = +1·0m. Sumoto MN = +1·2m.

**July 20d.** Readings also at 10h. (near Mizusawa), 11h. (Strasbourg and Zurich), 14h. (La Paz, Strasbourg, and Sucre), 17h. (La Paz and Sucre), 18h. (near Taihoku), 22h. and 23h. (Rio Tinto).

**July 21d. 2h. 23m. 0s. Epicentre 14°·5N. 88°·7W. (as on 1926 May 26d.).**

A = +·022, B = −·968, C = +·250; D = −·1·000, E = −·023; G = +·006, H = −·250, K = −·968.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Merida | 6·6 | 352 | 1 49? | + 8 | 3 37? | +37 | 3·8 | 4·8 |
| Tacubaya | 11·2 | 298 | 2 44 | − 3 | 5 6 | + 7 | 5·3 | 5·6 |
| Toronto | 30·2 | 13 | — | — | — | — | 19·0 | — |
| Ottawa | 32·8 | 18 | — | — | e 12 30 | + 9 | e 18·5 | — |
| Uccle | 80·7 | 40 | | | — | — | — | 51·0 |
| De Bilt | 80·9 | 39 | — | — | — | — | e 44·0 | — |

De Bilt gives also eLN = +43·0m.

July 21d. Readings also at 1h. (San Fernando), 2h. (Pulkovo, Leningrad, Baku, Ekaterinburg, Irkutsk, Granada, and Melbourne), 3h. (Toronto, Ottawa, and Victoria), 11h. (near Sumoto), 19h. (Tokyo), 21h. (near Athens), 23h. (near La Paz and Sucre).

July 22d. 22h. 54m. 10s. Epicentre 34°·0S. 57°·0E. (as on 1926 July 8d.).

$A = +\cdot452$, $B = +\cdot695$, $C = -\cdot559$; $D = +\cdot839$, $E = -\cdot545$; $G = -\cdot305$, $H = -\cdot469$, $K = -\cdot829$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Cape Town | | 31·7 | 262 | 15 35 | ?L | — | — | (15·6) | 18·8 |
| Colombo | | 46·3 | 32 | 15 20 | ?S | (15 20) | −12 | 23·1 | 24·8 |
| Kodaikanal | | 48·3 | 26 | 12 56 | ? | — | — | — | — |
| Bombay | | 55·0 | 19 | 17 18 | ?S | (17 18) | − 3 | e 26·5 | — |
| Hyderabad | | 55·4 | 25 | 17 13 | ?S | (17 13) | −13 | 23·7 | 28·2 |
| Simla | | 67·9 | 19 | — | — | — | — | e 31·5 | — |
| Baku | | 74·7 | 355 | e 11 54 | + 7 | i 21 34 | +12 | 36·8 | 41·0 |
| Algiers | | 86·8 | 320 | e 12 22 | −36 | e 23 42 | + 3 | 45·8 | 50·8 |
| La Plata | | 88·0 | 229 | — | — | — | — | 17·0? | — |
| Vienna | Z. | 89·8 | 335 | 13 8 | − 7 | — | — | — | — |
| Almeria | | 89·8 | 318 | 13 16 | + 1 | 22 36 | [−51] | — | 54·0 |
| Moncalieri | | 90·7 | 328 | e 22 29 | ? | 33 22 | ?$SR_1$ | 48·4 | — |
| Granada | | 90·8 | 317 | i 13 16 | − 4 | i 22 49 | [−44] | 40·6 | 53·0 |
| Ekaterinburg | | 90·9 | 3 | e 13 14 | − 7 | i 23 22 | [−11] | 32·8 | 53·8 |
| Tortosa | N. | 91·1 | 321 | e 15 9 | +107 | e 23 54 | [+19] | e 38·8 | 52·6 |
| San Fernando | | 91·8 | 315 | — | — | — | — | 45·8 | 57·8 |
| Toledo | N.W. | 92·8 | 319 | — | — | — | — | e 45·7 | 56·9 |
| Strasbourg | | 93·5 | 330 | e 13 30 | − 5 | — | — | e 29·6 | — |
| Irkutsk | | 95·6 | 27 | e 13 13 | −34 | 24 7 | [+ 7] | 34·8 | — |
| Paris | | 95·9 | 329 | — | — | — | — | e 58·8 | — |
| Pulkovo | | 96·3 | 348 | e 14 44 | +53 | 24 12 | [+ 8] | 46·8 | 57·7 |
| Leningrad | | 96·5 | 348 | — | — | i 24 12 | [+ 7] | 46·8 | 57·5 |
| Hamburg | | 96·5 | 335 | — | — | — | — | e 56·8 | — |
| Uccle | | 96·6 | 330 | — | — | — | — | e 40·8 | — |
| De Bilt | | 97·3 | 332 | — | — | — | — | e 40·8 | 61·2 |
| Kew | | 99·1 | 328 | — | — | — | — | e 36·8 | — |
| Edinburgh | | 103·4 | 330 | — | — | — | — | — | 63·8 |
| Sucre | | 103·6 | 235 | — | — | — | — | 52·7 | 56·8 |
| Ottawa | E. | 142·5 | 302 | — | — | e 23 14 | ?$PR_1$ | e 69·8 | — |
| Toronto | | 145·1 | 299 | — | — | e 45 50 | ?$SR_1$ | 62·8 | 84·1 |
| Chicago | | 151·2 | 296 | — | — | — | — | 86·0 | 89·8 |
| Victoria | E. | 165·6 | 1 | — | — | — | — | 85·4 | 95·6 |

Additional readings: Simla eN = +33m.38s. Baku iP = +11m.57s., MN = +41·6m., MZ = +48·4m. La Plata L = $PR_1$ + 8s. Almeria MN = +55·2m. Moncalieri. Readings diminished by 1h.: if further increased by 1m., then P = [S] − 3s. and S = $SR_2$ − 31s. Granada PS = +23m.34s. Ekaterinburg e = +24m.10s. = S − 13s., and +25m.16s., i = +30m.14s. = $SR_1$ − 27s., MNZ = +54·0m. Tortosa SN = +23m.56s. San Fernando $SR_1$ = +30m.32s. Toledo MNE = +52·0m.; all readings have been diminished by 1h. Pulkovo $PR_1$ = +17m.10s., $PR_2$ = +19m.20s., MN = +56·6m. Leningrad e$PR_1$ = +17m.8s., e = +19m.5s., MN = +57·2m., MZ = +57·8m. De Bilt MN = +66·6m. Edinburgh reading has been increased by 1h. Ottawa eN = +35m.2s., +41m.30s. = $SR_1$ + 8s., and +46m.50s. = $SR_2$ − 34s., eLN = +60·8m. Victoria LN = +81·1m.

July 22d. Readings also at 2h. (La Paz and Sucre), 3h. (Ekaterinburg), 4h. (Pulkovo, Leningrad, and Sucre), 5h. (Sucre and La Paz), 6h. (Nagoya, near Osaka, Kobe, and Sumoto), 7h. (near Sumoto and near Taihoku), 8h. (Irkutsk), 9h. (Strasbourg, Zurich (2), and Ekaterinburg), 17h. (near Mizusawa), 18h. (La Paz), 20h. (near Taihoku).

July 23d. 4h. 32m. 42s. Epicentre 46°·5N. 13°·0E. (as on 1924 Dec. 12d.).

A = +·671, B = +·155, C = +·725 ; D = +·225, E = −·974 ;
G = +·707, H = +·163, K = −·688.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Laibach | | 1·1 | 113 | e 0 6 | −11 | e 0 11 | −20 | i 0·4 | 0·5 |
| Venice | | 1·1 | 204 | i 0 37 | +20 | — | — | — | — |
| Innsbruck | N.W. | 1·4 | 305 | i 0 21 | 0 | i 0 36 | − 3 | — | — |
| Ravensburg | | 2·7 | 299 | — | — | — | — | — | 1·3 |
| Vienna | Z. | 2·9 | 52 | 1 39 | +54 | — | — | (1·6) | — |
| Zurich | | 3·2 | 288 | e 0 48 | − 2 | i 1 29 | + 1 | — | — |
| Hohenheim | | 3·4 | 313 | — | — | — | — | i 1·7 | 1·8 |
| Strasbourg | | 4·1 | 302 | e 1 8 | + 4 | 2 10 | +17 | — | — |

Additional readings: Venice iP = +35s. Hohenheim eE = +4h.31m.10s.
Strasbourg $SR_1$? = +2m.16s.

July 23d. 5h. 16m. 40s. Epicentre 6°·5N. 126°·0E. (as on 1922 June 27d.).

A = −·584, B = +·804, C = +·113 ; D = +·809, E = +·588 ;
G = −·066, H = +·092, K = −·994.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | | 9·5 | 330 | i 2 45 | +22 | — | — | i 6·0 | 7·8 |
| Amboina | | 10·4 | 168 | (2 27) | − 9 | (i 4 25) | −15 | — | — |
| Hong Kong | | 19·5 | 326 | 4 43 | + 8 | (8 28) | +15 | 8·5 | 8·7 |
| Batavia | | 22·9 | 237 | i 5 14 | − 2 | i 9 30 | + 7 | — | — |
| Malabar | | 22·9 | 233 | 5 14 | − 2 | — | — | — | — |
| Phu-Lien | | 23·6 | 309 | i 5 27 | + 3 | e 9 48 | +12 | 12·3 | — |
| Zi-ka-wei | | 25·0 | 351 | i 5 38 | 0 | i 10 7 | + 4 | — | — |
| Osaka | | 29·5 | 16 | 7 14 | +51 | — | — | 14·9 | — |
| Melbourne | | 47·7 | 160 | — | — | — | — | i 18·6 | 19·4 |
| Irkutsk | | 49·1 | 344 | 9 2 | + 1 | 16 2 | − 5 | 26·3 | — |
| Ekaterinburg | | 71·2 | 330 | i 11 32 | + 8 | i 20 46 | + 6 | 25·3 | 43·4 |
| Honolulu | E. | 74·7 | 69 | — | — | 21 26 | + 4 | e 35·0 | 46·4 |
| Baku | | 75·2 | 312 | i 12 1 | +11 | 21 39 | +11 | 38·3 | 42·8 |
| Pulkovo | | 87·2 | 331 | 12 58 | − 2 | i 23 33 | −10 | 42·8 | 52·6 |
| Leningrad | | 87·2 | 331 | i 12 57 | − 3 | i 23 33 | −10 | 38·3 | 53·2 |
| Upsala | | 93·4 | 333 | — | — | — | — | 48·3 | — |
| Victoria | E. | 98·6 | 40 | 24 27 | ?S | (24 27) | [+10] | 46·4 | 47·2 |
| Hamburg | | 99·7 | 327 | — | — | — | — | e 51·3 | — |
| Strasbourg | | 102·4 | 321 | — | — | — | — | e 56·3 | — |
| De Bilt | | 102·9 | 327 | — | — | — | — | e 53·3 | 62·0 |
| Uccle | | 104·0 | 326 | — | — | — | — | e 47·3 | — |
| Edinburgh | | 105·0 | 333 | — | — | — | — | 60·3 | — |
| Kew | | 106·1 | 328 | — | — | — | — | e 57·3 | — |
| Paris | | 106·1 | 324 | — | — | — | — | e 64·3 | — |
| Tortosa | N. | 111·2 | 319 | — | — | — | — | e 52·3 | 61·8 |
| Granada | | 115·9 | 316 | — | — | e 29 20? | +63 | e 63·3 | 79·2 |
| Ottawa | | 124·7 | 18 | — | — | e 26 10 | [+12] | e 52·3 | — |
| Toronto | E. | 124·9 | 20 | — | — | — | — | 63·3 | — |
| La Paz | | 162·9 | 127 | i 20 20 | [+10] | — | — | — | — |

Additional readings and notes: Manila MN = +7·6m. Amboina readings have been increased by 5m. Batavia iP = +5m.17s. Zi-ka-wei $PR_1$ = +6m.4s., $SR_1$ = +10m.26s. Irkutsk $PR_1$ = +10m.59s. Ekaterinburg ePS = +21m.33s. = [S] +13s., MN = +38·8m., MZ = +43·7m. Honolulu PSE = +22m.0s., $SR_1$E = +26m.44s. Baku MN = +42·6m. Pulkovo $PR_1$ = +16m.44s., $S_4P_4S$ = +23m.20s. = [S] +10s., $SR_1$ = +29m.20s., $SR_2$ = +33m.32s., MN = +50·1m., MZ = +53·5m. Leningrad $PR_1$ = +16m.31s., $SR_2$ = +33m.30s. Granada i = +31m.25s. Ottawa e = +37m.50s. = $SR_1$ +5s.

July 23d. Readings also 0h. (near Sumoto), 2h. (Ekaterinburg), 12h. (Ekaterinburg and Leningrad), 16h. (Ekaterinburg), 17h. (Baku).

July 24d. Readings at 6h. (near Mizusawa), 8h. (Pulkovo), 10h. (Toronto, Ottawa, and Merida), 12h. (Baku, Pulkovo, Ekaterinburg, Ottawa, and Toronto), 13h. (San Fernando and Ekaterinburg), 14h. (near Athens), 18h. (near Irkutsk), 19h. (Baku and Ekaterinburg), 20h. (Adelaide), 21h. (Granada, Tokyo, Ottawa, and Toronto).

**July 25d. 4h. 52m. 35s. Epicentre 51°·5S. 144°·5E.**

$A = -\cdot507$, $B = +\cdot361$, $C = -\cdot783$; $D = +\cdot581$, $E = +\cdot814$; $G = +\cdot637$, $H = -\cdot454$, $K = -\cdot623$.

Was there another shock near Piatigorsk which causes confusion ?

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Melbourne | | 13·7 | 2 | i 3 13 | − 9 | i 5 49 | −12 | — | 6·8 |
| Adelaide | | 17·1 | 343 | e 4 10 | + 4 | (e 6 15) | −65 | e 6·2 | 7·5 |
| Sydney | | 18·3 | 18 | 4 25 | + 4 | 7 55 | + 8 | 9·7 | 11·0 |
| Wellington | | 23·0 | 76 | — | — | — | — | e 10·3 | — |
| Perth | | 28·7 | 302 | 6 17 | + 2 | — | — | 12·5 | — |
| Kodaikanal | | 84·4 | 294 | 51 37 | ?S | — | — | (51·6) | — |
| Zi-ka-wei | | 85·2 | 340 | e 12 43 | − 6 | — | — | — | 52·4 |
| Honolulu | N. | 88·4 | 50 | — | — | 23 49 | − 7 | 37·6 | 41·4 |
| Baku | | 123·0 | 295 | — | — | e 30 37 | ? | 54·4 | 69·8 |
| Victoria | E. | 126·9 | 54 | — | — | — | — | 60·4 | 72·2 |
| Ekaterinburg | | 128·2 | 315 | e 21 5 | ?$PR_1$ | — | — | 32·4 | — |
| Piatigorsk | | 129·3 | 293 | e 28 7 | ?S | (e 28 7) | −109 | i 28·4 | — |
| Pulkovo | | 143·6 | 310 | e 19 57 | [+11] | — | — | 67·8 | 76·1 |
| Leningrad | | 143·7 | 310 | e 19 57 | [+11] | — | — | e 70·4 | 115·8 |
| Toronto | N. | 149·8 | 87 | — | — | — | — | 78·9 | — |
| Strasbourg | | 152·5 | 281 | — | — | — | — | e 91·4 | — |
| Almeria | E. | 152·6 | 251 | — | — | — | — | — | 87·6 |
| Ottawa | E. | 152·9 | 87 | — | — | e 35 25? | ? | e 72·4 | — |
| Granada | | 153·4 | 250 | i 20 23 | [+23] | — | — | 72·8 | 82·6 |
| San Fernando | E. | 154·4 | 246 | — | — | — | — | — | 88·9 |
| De Bilt | | 155·2 | 288 | — | — | — | — | e 82·4 | — |
| Toledo | N.E. | 155·4 | 254 | — | — | — | — | e 71·1 | 87·4 |
| Kew | | 158·3 | 284 | — | — | — | — | e 92·4 | — |
| Edinburgh | | 160·6 | 296 | — | — | — | — | e 95·4 | — |

Additional readings and note: Adelaide P has been increased by 5m. Perth $PR_1 = +6$m.54s., PS = +10m.5s., L = +12·2m. Zi-ka-wei readings have been increased by 1h. Honolulu LE = +42·6m., ME = +47·4m. Baku MN = +65·0m., MZ = +68·0m. Ekaterinburg e = +31m.3s. Toronto LE = +88·4m. Ottawa e = +44m.7s., eLN = +64·4m. San Fernando MN = +87·9m.

**July 25d. 17h. 57m. 50s. Epicentre 36°·0N. 120°·5W.**

$A = -\cdot411$, $B = -\cdot697$, $C = +\cdot588$; $D = -\cdot862$, $E = +\cdot508$; $G = -\cdot298$, $H = -\cdot506$, $K = -\cdot809$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Lick | | 1·6 | 326 | i 0 29 | + 5 | i 0 49 | + 4 | — | — |
| Santa Clara | | 1·8 | 321 | 0 30 | + 2 | i 0 45 | − 6 | i 1·1 | 1·4 |
| Berkeley | | 2·4 | 323 | e 0 36 | − 1 | i 1 5 | − 1 | — | 1·4 |
| Spokane | | 11·8 | 10 | 2 23 | −33 | 6 4 | +50 | 6·7 | 7·2 |
| Victoria | | 12·6 | 352 | 5 48 | ?S | (5 48) | +14 | 6·4 | 8·3 |
| Denver | N. | 12·8 | 68 | e 2 25 | −45 | e 3 55 | −104 | i 4·7 | — |
| Chicago | E. | 26·1 | 67 | e 9 10 | ? | 10 22 | − 2 | 14·0 | 16·1 |
| Ann Arbor | | 29·0 | 66 | — | — | — | — | e 15·4 | 18·7 |
| Toronto | | 32·1 | 64 | — | — | e 12 20 | +10 | 18·6 | — |
| Ottawa | | 34·8 | 60 | — | — | e 12 58 | + 6 | e 20·2 | — |
| Honolulu | | 35·8 | 257 | — | — | 13 28 | +21 | 18·9 | 23·4 |
| Fordham | | 36·4 | 69 | e 15 59 | ? | 19 34 | ? | 22·7 | 24·0 |
| Harvard | N. | 38·3 | 65 | — | — | — | — | 17·3 | 20·8 |

Additional readings: Lick i = +41s., iZ = +43s. and +45s. Santa Clara i = +32s. +38s., and +1m.1s. Berkeley e = +43s., iZ = +44s.? +51s., and +58s., iN = +53s., i = +57s., MN = +1·5m., MZ = +1·7m. Spokane eN = +2m.53s., eE = +3m.39s., iE = +6m.14s., PSE? = +6m.28s. Victoria LN = +7·1m. Toronto eN = +15m.47s. Ottawa eE = +11m.34s. and + 16m.34s., eN = +14m.40s., eLN = +18·7m. Honolulu $SR_1N$ = +15m.52s. $=SR_2 - 1$s., LN = +19·2m. Fordham eN = +16m.29s. and +19m.14s., eE = +19m.59s. Harvard eN = +20m.10s., ME = +24·2m.

**July 25d.** Readings also at 1h. (near Berkeley), 3h. (Colombo), 7h. (Christchurch) 8h. (Sydney, Ekaterinburg, Adelaide, and near Malabar), 9h. (Pulkovo), 10h. (Irkutsk and Lick), 11h. (Leningrad, Pulkovo, Ekaterinburg, Hong Kong, and near Manila), 12h. and 18h. (near Lick), 19h. (La Paz), 20h (Apia), 21h. (Kodaikanal and near Malabar), 22h. (Kodaikanal).

**July 26d. 18h. 54m. 45s. Epicentre 36°·0N. 134°·0E. (as on 1922 Feb. 5d.).**

$A = -\cdot562$, $B = +\cdot582$, $C = +\cdot588$; $D = +\cdot719$, $E = +\cdot695$; $G = -\cdot408$, $H = +\cdot423$, $K = -\cdot809$.

A depth of focus 0·050 has been assumed, see note at end. For the residuals in [S] the Δ uncorrected for focal depth has been used at present. Several stations indicate at least one other shock about a minute later.

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Kobe | | +1·5 | 1·6 | 144 | 0 53 | + 4 | (1 26) | 0 | 1·4 | 1·5 |
| Osaka | | +1·4 | 1·8 | 139 | 0 53 | + 3 | (1 30) | + 2 | 1·5 | 2·2 |
| Sumoto | | +1·4 | 1·9 | 157 | 1 1 | + 9 | 1 35 | + 4 | 1·7 | 1·7 |
| Matuyama | | +1·2 | 2·4 | 205 | i 0 47 | − 9 | — | — | e 2·2 | — |
| Nagoya | | +1·1 | 2·5 | 109 | 0 48 | − 8 | (1 26) | −13 | 1·4 | 1·8 |
| Hukuoka | | +0·7 | 3·8 | 231 | 1 26 | +16 | — | — | 2·5 | 2·5 |
| Nagasaki | | +0·4 | 4·7 | 228 | 1 31 | +12 | — | — | 2·8 | 2·8 |
| Mizusawa | | 0·0 | 6·4 | 59 | 1 33 | − 5 | 2 38 | −17 | — | — |
| Zi-ka-wei | | −0·8 | 11·5 | 249 | 2 54 | +14 | 5 17 | +29 | — | — |
| Ootomari | | −1·0 | 12·5 | 29 | 2 51 | − 1 | (4 15) | −52 | 4·2 | 5·1 |
| Hong Kong | | −2·2 | 22·0 | 237 | 5 30 | +51 | — | — | — | — |
| Manila | | −2·6 | 24·4 | 212 | e 5 1 | − 2 | — | — | i 12·2 | — |
| Irkutsk | | −2·8 | 26·5 | 317 | 5 25 | 0 | i 9 42 | + 4 | 11·2 | 14·4 |
| Phu-Lien | | −3·0 | 28·4 | 245 | — | — | — | — | 14·2 | — |
| Batavia | | −4·8 | 49·3 | 219 | i 9 33 | +63 | i 15 2 | − 7 | — | — |
| Ekaterinburg | | −4·9 | 51·8 | 319 | e 8 54 | + 8 | e 15 49 | + 9 | 20·2 | 34·0 |
| Baku | | −5·6 | 63·6 | 304 | e 11 31 | +92 | i 18 30 | +31 | — | — |
| Leningrad | | −5·7 | 65·6 | 328 | e 10 23 | +12 | i 18 46 | +24 | i 25·2 | 43·8 |
| Pulkovo | | −5·7 | 65 7 | 328 | e 11 25 | +73 | i 19 46 | +83 | 26·2 | — |
| Makeyevka | | −5·8 | 67·6 | 314 | e 13 33 | ?$PR_1$ | i 19 8 | +22 | 37·2 | — |
| Upsala | | −5·9 | 70·9 | 332 | — | — | e 19 41 | +16 | — | — |
| Hamburg | Z. | −6·1 | 78·2 | 330 | e 12 59 | +88 | — | — | — | — |
| Vienna | | −6·2 | 79·1 | 324 | e 11 41 | + 6 | 21 18 | +17 | — | — |
| Edinburgh | | −6·2 | 81·2 | 338 | — | — | i 21 33 | + 7 | — | — |
| De Bilt | | −6·3 | 81·3 | 330 | — | — | 21 36 | +10 | e 45·2 | — |
| Hohenheim | E. | −6·3 | 82·1 | 328 | — | — | e 21 41 | + 6 | — | — |
| Uccle | | −6·3 | 82·6 | 330 | e 11 56 | − 1 | 21 44 | + 3 | e 42·2 | — |
| Strasbourg | | −6·3 | 82·9 | 328 | 12 0 | + 1 | i 21 49 | + 5 | 35·2 | 54·8 |
| Venice | | −6·3 | 83·1 | 323 | 15 1 | ?$PR_1$ | 20 50 | −57 | — | — |
| Zurich | | −6·3 | 83·4 | 326 | e 11 51 | −11 | e 21 47 | − 3 | — | — |
| Kew | | −6·3 | 83·8 | 333 | 12 4 | 0 | 21 51 | − 4 | 35·2 | — |
| Paris | | −6·4 | 84·9 | 330 | e 12 7 | − 3 | i 21 58 | − 8 | 49·2 | — |
| Pompeii | | −6·4 | 85·2 | 319 | e 22 36 | ?S | (e 22 36) | +26 | — | — |
| Moncalieri | | −6·4 | 85·6 | 325 | e 12 3 | −11 | i 22 1 | −13 | 34·0 | — |
| Rocca di Papa | | −6·4 | 85·6 | 320 | e 11 26 | −48 | e 21 11 | −63 | — | — |
| Algiers | | −6·6 | 94·1 | 323 | 11 58 | −64 | e 22 48 | −59 | 37·2 | — |
| Ottawa | | −6·6 | 94·3 | 20 | — | — | i 23 30 | [−23] | e 37·2 | — |
| Toronto | N. | −6·6 | 94·8 | 23 | — | — | e 23 15 | [−41] | 37·2 | — |
| Granada | | −6·6 | 96·9 | 328 | e 12 38 | −40 | i 22 53 | [−74] | 49·2 | 58·7 |
| Rio Tinto | | −6·7 | 97·7 | 330 | 110 15 | ? | — | — | — | 137·8 |
| La Paz | | — | 152·3 | 51 | 19 19 | [−40] | — | — | — | — |
| Sucre | | — | 156·0 | 50 | 19 22 | [−41] | — | — | — | — |

**Additional readings:** Toyooka (Δ =0°·8) gives simply eP =18h.54m. Osaka MN = +1·9m. Sumoto MN = +1·8m. Mizusawa SN = +2m.40s. Irkutsk iP = +6m.32s., eS = +8m.34s., MN = +14·7m., MZ = +15·4m. Batavia iZ = +9m.39s. Ekaterinburg iP = +9m.0s., $PR_1$ = +10m.12s., $PR_2$ = +12m.6s., iS = +15m.52s., $SR_1$ = +18m.6s., e = +25m.10s., MN = +30·5m. Leningrad i = +19m.39s., i$SR_1$ = +23m.11s. Vienna iEZ = +13m.4s., iN = +21m.55s. and +22m.15s. Uccle $SR_1$ = +27m.21s. Strasbourg i = +13m.33s., iS = +22m.45s. Rocca di Papa ePE = +12m.22s., ePNZ = +12m.47s. and +13m.47s., iS = +23m.26s. Algiers e = +13m.38s., eS = +22m.48s Ottawa eN = +22m.47s., eE = +23m.23s..

## NOTE TO SHOCK OF JULY 26d., 18h.

Mr. Wadati's $T_e$ was used, but an independent determination of epicentre was made, the evidence for which is given below. Using the adopted origin we have for the stations whose $\Delta$ is less than 10°.

| Station. | Azimuth. | Residual without assuming focal depth. | Residual after assuming focal depth 0·050. |
|---|---|---|---|
| | ° | ° | ° |
| Kobe | 144 | +1·6 | +0·1 |
| Osaka | 139 | +1·5 | +0·1 |
| Sumoto | 157 | +1·8 | +0·4 |
| Matuyama | 205 | +0·6 | −0·6 |
| Nagoya | 109 | +0·6 | −0·5 |
| Hukuoka | 231 | +1·3 | +0·6 |
| Nagasaki | 228 | +1·3 | +0·9 |
| Mizusawa | 59 | −0·4 | −0·4 |

For those further than 10° we can group the stations in Azimuth as follows :—

| No. | Station. | Azimuth | Mean Residual (no focal depth) | Mean Residual (with focal depth) |
|---|---|---|---|---|
| 1 | Ootomari | 29 | −1·0 | 0·0 |
| 4 | China, etc. | 230 | −3·6 | +0·3 |
| 15 | Europe, etc. | 327 | −5·4 | +0·5 |

Any compromise adjustment to suit the majority of these stations without the assumption of deep focus must necessarily involve a large displacement of origin. This would throw out *all* the close stations which fit in very well with the focus assumed. Moreover, [P] at La Paz and Sucre indicate a deep focus clearly.

July 26d. Readings also at 0h. (Manila and Tokyo), 2h. (Makeyevka, Ekaterinburg, Leningrad, Pulkovo, near Manila, and near Toyooka), 4h. (La Paz (2) ), 6h. (Ravensburg, Nagoya, near Osaka, Sumoto, and Kobe), 7h. (Vienna, Hohenheim, Innsbruck, near Strasbourg, and Zurich), 16h. (Taihoku), 17h. (near Sumoto), 18h. (Kucino, Nagoya, Piatigorsk, and near Mizusawa), 20h. (near Taihoku), 21h. (near Tacubaya).

July 27d. 4h. 53m. 15s. Epicentre 52°·0N. 36°·0W. (as on 1925 Aug. 7d.).

A = +·498, B = −·362, C = +·788 ; D = −·588, E = −·809 ;
G = +·638, H = −·463, K = −·616.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Edinburgh | | 19·5 | 65 | — | — | e 7 45? | −28 | — | — |
| Stonyhurst | | 20·1 | 71 | 4 45 | + 3 | 8 28 | + 3 | — | 11·8 |
| Kew | | 21·9 | 77 | 5 4 | 0 | e 9 14 | +11 | 11·8 | — |
| Paris | | 24·5 | 82 | 5 29 | − 4 | e 9 8 | −46 | 13·8 | — |
| Uccle | | 24·9 | 77 | e 5 33 | − 4 | e 9 54 | − 7 | e 12·8 | — |
| De Bilt | | 25·0 | 73 | 5 37 | − 1 | e 9 55 | − 8 | e 12·8 | 15·4 |
| Ottawa | | 26·7 | 272 | — | — | e 10 45 | +10 | e 14·2 | — |
| Granada | | 27·1 | 110 | — | — | — | — | e 12·8 | 14·8 |
| Hamburg | | 27·4 | 68 | e 5 58 | − 4 | — | — | e 16·8 | — |
| Strasbourg | | 27·7 | 79 | e 6 45? | −20 | e 9 45? | −69 | 14·8 | — |
| Toronto | E. | 29·8 | 271 | — | — | — | — | 17·8 | — |
| Rocca di Papa | | 34·1 | 88 | — | — | — | — | — | 4·1 |
| Leningrad | | 36·3 | 51 | — | — | — | — | 15·4 | — |
| Makeyevka | | 45·6 | 64 | — | — | — | — | 21·8 | — |
| Ekaterinburg | | 51·7 | 44 | — | — | — | — | 21·8 | — |

Additional readings: De Bilt MZ = +15·7m. Ottawa eLN = +16·2m.
Strasbourg e = +7m.45s.? Rocca di Papa eP = +4h.51m.9s.

**July 27d. 5h. 47m. 12s. Epicentre 6°·5N. 126°·0E. (as on 1926 July 23d.).**

A = −·584, B = +·804, C = +·113; D = +·809, E = +·588; G = −·066, H = +·092, K = −·994.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. |
| Manila | 9·5 | 330 | e 2 32 | + 9 | — | — | i 4·7 |
| Hong Kong | 19·5 | 326 | 4 22 | −13 | 8 6 | − 7 | — |
| Batavia E. | 22·9 | 237 | i 5 40 | +24 | — | — | — |
| Irkutsk | 49·1 | 344 | 9 7 | + 6 | — | — | 24·8 |
| Ekaterinburg | 71·2 | 330 | — | — | e 20 26 | −14 | 25·8 |
| Baku | 75·2 | 312 | — | — | e 21 13 | −15 | 40·8 |
| Zagreb | 99·0 | 318 | — | — | — | — | 45·8 |
| De Bilt | 102·9 | 327 | — | — | — | — | e 56·8 |
| Uccle | 104·0 | 326 | — | — | — | — | e 53·8 |

Additional readings: Irkutsk e = +10m.58s. =PR$_1$ −9s. Ekaterinburg e = +20m.52s. and +22m.10s.

**July 27d. 7h. 23m. 36s. Epicentre 30°·5N. 80°·5E.**

A = +·142, B = +·850, C = +·508; D = +·986, E = −·165; G = +·084, H = +·501, K = −·862.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Dehra Dun | 2·2 | 265 | 1 24 | +50 | 1 44 | +44 | 1·9 | 2·1 |
| Simla | 2·9 | 282 | 1 30 | +45 | 2 0 | +40 | 2·3 | — |
| Calcutta N. | 10·6 | 137 | 1 40 | −58 | 3 50 | −55 | 4·9 | — |
| Hyderabad | 13·2 | 188 | 5 11 | ?S | (5 11) | −38 | (6·7) | 6·9 |
| Bombay | 13·5 | 213 | 3 13 | − 7 | 5 38 | −18 | 6·9 | 7·4 |
| Kodaikanal | 20·5 | 189 | 6 6 | +79 | — | — | — | — |
| Colombo | 23·6 | 182 | 9 24 | ?S | (9 24) | −12 | (12·8) | 14·8 |
| Phu-Lien | 25·4 | 106 | 5 24? | −18 | — | — | — | — |
| Baku | 26·7 | 300 | e 5 45 | −10 | 10 47 | +12 | e 15·9 | — |
| Irkutsk | 27·9 | 32 | e 6 3 | − 4 | e 11 15 | +18 | 15·4 | — |
| Ekaterinburg | 29·7 | 338 | i 6 29 | + 4 | 11 31 | + 2 | 13·4 | 17·5 |
| Makeyevka | 36·7 | 312 | e 7 28 | 0 | i 13 19 | − 1 | 17·4 | 26·5 |
| Pulkovo | 44·3 | 328 | 8 28 | 0 | 15 8 | + 2 | 18·4 | 29·0 |
| Leningrad | 44·4 | 328 | 8 28 | − 1 | i 15 8 | + 1 | i 18·5 | 28·3 |
| Upsala N. | 50·5 | 325 | — | — | — | — | e 26·4 | — |
| Strasbourg | 56·7 | 312 | — | — | — | — | 27·4 | — |
| De Bilt | 57·7 | 317 | — | — | e 18 15 | +20 | e 33·4 | 38·5 |
| Uccle | 58·4 | 316 | — | — | — | — | e 26·4 | — |
| Paris | 60·0 | 314 | — | — | e 36 6 | ? | 38·1 | 39·4 |
| Kew | 61 1 | 315 | — | — | — | — | e 32·4 | — |
| Edinburgh | 61·7 | 321 | — | — | — | — | e 34·4 | — |
| Granada | 67·8 | 301 | — | — | — | — | 32·4 | 43·1 |
| Ottawa | 101·1 | 345 | — | — | — | — | e 47·7 | — |
| Toronto N. | 103·6 | 347 | — | — | — | — | 62·4 | — |

Additional readings and notes: Hyderabad and Colombo give S as P and L as S. Baku e = +6m.9s. =PR$_1$ −29s. Ekaterinburg SR$_1$ = +12m.17s., MZ = +19·6m. Pulkovo MN = +25·3m., MZ = +27·5m. Leningrad MN = +27·7m., MZ = +29·0m. De Bilt MN = +34·0m.

**July 27d. Readings also at 5h. (near Taihoku (3) ), 9h. (Stonyhurst), 12h. (near Sumoto), 23h. (Tokyo).**

## July 28d. 8h. 52m. 20s. Epicentre 9°·5S. 157°·0E.

(as on 1926 March 27d.).

A = −·908, B = +·385, C = −·165 ; D = +·391, E = +·920 ;
G = +·152, H = −·064, K = −·986.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Riverview | | 24·9 | 191 | i 5 46 | + 9 | e 10 4 | + 3 | e 12·8 | 17·9 |
| Sydney | | 24·9 | 191 | 5 10 | −27 | (10 22) | +21 | 10·4 | 11·0 |
| Amboina | | 29·2 | 280 | — | — | (i 10 52) | −28 | (25·4) | — |
| Melbourne | | 30·3 | 199 | e 6 52 | +21 | i 11 28 | −11 | i 13·7 | 17·3 |
| Adelaide | | 30·5 | 210 | e 6 5 | −28 | i 11 29 | −14 | 16·1 | 27·2 |
| Apia | | 30·8 | 101 | 6 19 | −17 | 11 43 | − 5 | 15·0 | 16·5 |
| Wellington | N. | 35·4 | 157 | e 8 24 | +67 | i 13 15 | +14 | e 17·4 | 23·4 |
| Christchurch | | 36·7 | 161 | 17 34 | ?L | — | — | 19·8 | 22·9 |
| Manila | | 43·1 | 304 | e 8 12 | − 7 | — | — | i 20·7 | — |
| Perth | | 44·2 | 234 | 15 0 | ?S | (15 0) | − 5 | 23·7 | 31·2 |
| Osaka | | 48·7 | 336 | 9 23 | +25 | 16 0 | − 2 | 23·5 | 26·0 |
| Taihoku | E. | 48·9 | 317 | — | — | e 16 8 | + 3 | 23·8 | — |
| Malabar | | 48·9 | 271 | 9 0 | + 1 | i 16 0 | − 5 | — | — |
| Batavia | | 49·7 | 273 | e 9 6 | + 1 | i 16 9 | − 6 | 33·7 | — |
| Hong Kong | | 52·7 | 308 | 9 14 | −10 | 16 45 | − 7 | 26·4 | 28·2 |
| Zi-ka-wei | | 53·1 | 322 | i 9 17 | −10 | 16 40 | −17 | 26·9 | 30·2 |
| Honolulu | E. | 53·8 | 55 | 9 20 | −12 | e 17 58 | +52 | 25·7 | 28·0 |
| | N. | 53·8 | 55 | 9 20 | −12 | e 17 8 | + 2 | 26·4 | 27·3 |
| Phu-Lien | | 58·1 | 300 | e 9 58 | − 2 | e 17 57 | − 3 | 28·7 | — |
| Irkutsk | | 76·4 | 330 | 11 48 | − 9 | i 21 32 | −10 | 36·7 | 43·1 |
| Kodaikanal | | 81·6 | 282 | 22 40 | ?S | (22 40) | − 2 | — | — |
| Hyderabad | | 82·2 | 289 | e 12 28 | − 3 | 22 40 | − 8 | 41·2 | 50·7 |
| Sitka | E. | 86·2 | 30 | — | — | — | — | 43·1 | — |
| Simla | E. | 86·4 | 303 | e 23 16 | ?S | (e 23 16) | −18 | — | — |
| Bombay | | 87·6 | 290 | — | — | e 23 40? | − 8 | — | — |
| Victoria | | 90·4 | 40 | 12 58 | −20 | 23 58 | −20 | 38·0 | 44·8 |
| Spokane | | 94·0 | 42 | — | — | e 26 17 | ? | e 46·3 | 54·8 |
| Tucson | E. | 96·8 | 57 | 14 15 | +22 | 25 16 | − 8 | 44·0 | 48·7 |
| Ekaterinburg | | 101·4 | 326 | e 13 54 | −23 | 24 35 | [+ 4] | 29·7 | 57·1 |
| Baku | | 109·1 | 310 | e 14 26 | −27 | e 25 10 | [+ 4] | e 38·8 | 65·5 |
| Piatigorsk | | 113·7 | 315 | — | — | — | — | — | 68·7 |
| Kucino | | 114·0 | 328 | — | — | e 25 32 | [+ 6] | 59·0 | 71·1 |
| Loyola | | 114·5 | 61 | — | — | — | — | e 53·7 | 62·7 |
| Chicago | E. | 115·2 | 48 | — | — | 25 35 | [+ 5] | 56·5 | 62·7 |
| Leningrad | | 116·0 | 333 | e 19 30 | ?$PR_1$ | e 27 26 | −52 | 55·3 | 71·7 |
| Pulkovo | | 116·1 | 333 | — | — | 25 38 | [+ 5] | 50·7 | 67·4 |
| Makeyevka | | 116·2 | 320 | e 19 51 | ?$PR_1$ | e 25 40 | [+ 7] | 30·7 | 67·2 |
| Ann Arbor | N. | 117·9 | 46 | — | — | — | — | e 59·8 | — |
| Toronto | E. | 120·5 | 44 | e 20 17 | ?$PR_1$ | e 30 9 | +76 | 52·0 | 75·7 |
| Upsala | | 121·3 | 337 | — | — | e 37 40? | ?$SR_1$ | e 61·7 | 80·4 |
| Ottawa | | 122·4 | 40 | e 20 30 | ?$PR_1$ | e 26 2 | [+10] | e 51·7 | — |
| Ithaca | | 122·9 | 44 | — | — | — | — | 59·7 | — |
| Cheltenham | N. | 123·8 | 49 | — | — | — | — | e 70·1 | 75·1 |
| Fordham | | 125·4 | 45 | — | — | — | — | e 54·1 | 65·7 |
| Harvard | N. | 126·7 | 42 | — | — | — | — | e 56·6 | 68·6 |
| Budapest | | 128·1 | 325 | e 21 40? | ?$PR_1$ | — | — | e 65·7 | 83·2 |
| La Paz | | 128·3 | 121 | 19 26 | [+11] | 31 35 | ? | 61·5 | 70·9 |
| Hamburg | | 128·6 | 335 | e 19 22 | [+ 7] | — | — | e 61·7 | 67·7 |
| Sucre | | 129·5 | 124 | e 20 1 | [+44] | 32 1 | ? | 65·7 | — |
| Cheb | | 130·0 | 331 | — | — | e 27 40? | ?$PR_2$ | — | 72·7 |
| Graz | | 130·3 | 327 | e 22 37 | ?$PR_1$ | e 33 13 | ? | 63·7 | 81·2 |
| Zagreb | | 130·8 | 325 | e 22 22 | ?$PR_1$ | — | — | — | — |
| Edinburgh | | 131·1 | 345 | — | — | i 39 10 | ?$SR_1$ | 63·7 | — |
| De Bilt | | 131·6 | 336 | e 19 21 | [− 1] | — | — | e 59·7 | 69·3 |
| Uccle | | 133·0 | 336 | e 19 18 | [− 7] | — | — | e 57·7 | 82·4 |
| Strasbourg | | 133·2 | 331 | e 19 21 | [− 5] | — | — | e 47·7 | 72·8 |
| Bidston | | 133·3 | 343 | 23 40 | ? | — | — | 60·7 | 84·7 |
| Zurich | | 133·7 | 330 | e 20 33 | [+66] | e 22 43 | ?$PR_1$ | — | — |
| Kew | | 134·1 | 340 | e 19 18 | [−10] | — | — | 48·7 | 71·0 |
| Florence | | 134·7 | 324 | e 18 55 | [−34] | 31 40 | ? | 61·7 | 73·4 |
| Rocca di Papa | | 135·1 | 321 | e 17 43 | [−87] | — | — | — | 24·9 |
| Paris | | 135·3 | 336 | e 19 26 | [− 5] | e 36 58 | ? | 67·7 | 84·7 |
| Moncalieri | | 135·8 | 329 | e 19 19 | [−13] | 34 8 | ? | 50·5 | 83·8 |
| Toledo | | 145·3 | 335 | e 19 43 | [− 6] | e 36 34 | ? | e 48·3 | 76·9 |
| Almeria | | 146·9 | 329 | 19 42 | [− 9] | — | — | — | 86·6 |
| Granada | | 147·3 | 330 | i 19 46 | [− 6] | — | — | 72·3 | 100·8 |
| Malaga | | 148·0 | 331 | 19 46 | [− 7] | — | — | — | — |
| San Fernando | | 149·0 | 332 | 19 58 | [+ 4] | 35 21 | ? | 73·7 | 102·7 |

*For Notes see next page.*

NOTES TO JULY 28d. 8h. 52m. 20s.

Additional readings and notes: Riverview PS = +10m.22s. and +10m.40s. = $SR_1$ −21s., MN = +17·0m., MZ = +17·4m.; $T_o$ = 8h.52m.30s. Amboina readings have both been increased by 20m. Melbourne i = 8h.46m.6s.; all readings have been increased by 1h. Adelaide i$SR_1$ = +13m.40s., i$SR_2$ = +14m.57s., MN = +18·9m. Apia S = +12m.51s. = $SR_1$ −32s. Wellington $SR_1N$ = +15m.5s., $SR_2N$ = +15m.37s. Perth S = +20m.10s. = $SR_2$ +28s., L = +25·0m. Honolulu $P_cPE$ = +10m.46s., $PR_1E$? = +11m.52s., $PR_1N$ = +12m.13s., $PR_2E$ = +13m.16s. = $PR_2$ −2s., $PR_2N$ = +13m.22s., $P_cSN$ = +16m.10s., $P_cSE$ = +16m.28s., $SR_1$ = +21m.46s., $SR_2E$? = +22m.52s. Irkutsk MN = +44·1m., MZ = +46·9m. Sitka LN = +38·3m. Simla ePN = +23m.22s. Victoria MN = +64·0m.; $T_o$ = 8h.52m.14s. Spokane MN = +49·7m. Tucson eE = +15m.28s., $PR_1E$? = +17m.23s. and +18m.17s., SPSE = +24m.16s. = [S] +9s., PSE = +26m.30s., $SR_1E$ = +31m.58s., $SR_2E$ = +35m.28s. Ekaterinburg $PR_1$ = +18m.1s., PPS = +27m.6s., MZ = +61·7m. Baku i$PR_1$ = +18m.51s., e = +27m.54s. = S +34s., MZ = +77·1m. Kucino e = +32m.42s., i = +33m.12s., and +36m.18s. = $SR_1$ +36s., e = +45m.12s. = $SR_2$ +40s., MN = +63·8m. Loyola PSE = +28m.5s. = S −1s., PSN = +29m.4s., PPSN = +29m.45s., PPSE = +30m.15s., $SR_1$ = +35m.40s., eLN = +56·2m., MN = +59·6m. Chicago SE = +26m.45s., PSE = +29m.13s., eE = +34m.4s., $SR_1E$ = +36m.4s.?, eE = +39m.40s., $SR_2E$ = +40m.4s., $SR_2E$? = +41m.4s., e$SR_2E$? = +43m.22s., $SR_4E$? = +46m.46s. Leningrad e = +35m.16s. = $SR_1$ −42s., MZ = +72·2m., MN = +72·5m. Pulkovo $PR_1$ = +19m.40s., S = +27m.24s., PS = +29m.10s., $SR_1$ = +35m.34s., MN = +65·1m., MZ = +71·6m. Makeyevka MN = +72·0m. Ottawa e = +27m.40s. and +36m.52s. = $SR_1$ −24s., i = +30m.20s. Fordham e$PR_1$ = +20m.51s., e$PR_2$ = +23m.47s., e$PR_3$ = +26m.12s., ePSN = +30m.47s., ePS = +33m.19s., e$SR_1$ = +37m.50s.; $T_o$ = 8h.52m.17s. Budapest MN = +71·4m. La Paz $PR_1$ = +22m.40s. Hamburg MN = +65·7m., MZ = +79·7m. Zagreb e = +23m.39s. De Bilt eZ = +21m.34s. = $PR_1$ −6s., e = +22m.43s. and +39m.5s. = $SR_1$ −10s., MZ = +77·6m., MN = +78·2m. Uccle MN = +78·5m. Strasbourg MNZ = +78·7m. Moncalieri MN = +83·9m. Toledo MNW = +78·4m. Granada i = +21m.40s., +23m.12s. = $PR_1$ −8s., and +25m.50s. San Fernando MN = +92·2m.

July 28d. Readings also at 1h. (near Athens), 7h. (Hamburg), 12h. (near Batavia), 13h. (Apia and near Mizusawa), 22h. (Irkutsk, near Mizusawa, Osaka, and Nagoya).

July 29d. Readings at 0h. (Irkutsk), 1h. (Pulkovo, Leningrad, Ekaterinburg, and Honolulu), 3h. and 5h. (Ekaterinburg), 7h. (near Sumoto), 12h. (Ekaterinburg. Pulkovo, Irkutsk (2), Strasbourg, and near Hukuoka), 13h. (Granada, Strasbourg, De Bilt, Uccle, Kew, Baku, Makeyevka, Irkutsk, Pulkovo, Leningrad, and near Laibach), 14h. (near Hukuoka and Matuyama), 15h. (Tokyo and Nagoya), 17h. (La Plata), 18h. (Florence), 20h. (Baku), 22h. (near La Paz).

July 30d. 13h. 20m. 5s. Epicentre 49°·2N. 1°·7W.

Given by H. Jeffreys Geophy. Supp. to M.N.R.A.S. I, 484, June 1927.

A = +·653, B = −·019, C = +·757; D = −·030, E = −·1·000; G = +·757, H = −·022, K = −·653.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Plymouth | 2·0 | 306 | 0 34 | + 3 | — | — | — | — |
| Kew | 2·4 | 21 | 0 39 | + 2 | 1 10 | + 4 | — | 1·5 |
| Paris | 2·8 | 98 | e 0 40 | − 4 | 1 14 | − 3 | 1·4 | 1·4 |
| Uccle | 4·2 | 66 | e 0 54 | −11 | 1 46 | − 9 | 2·1 | 2·4 |
| Bidston | 4·3 | 350 | 0 34 | −33 | 1 9 | −49 | — | 2·2 |
| Puy de Dôme | 4·7 | 134 | 1 18 | + 5 | i 2 23 | +14 | (i 2·4) | 2·4 |
| Stonyhurst | 4·7 | 355 | e 1 13 | 0 | i 2 21 | +12 | (i 2·4) | 2·5 |
| De Bilt | 5·2 | 54 | e 1 35 | +15 | — | — | i 2·7 | — |
| Besançon | 5·5 | 108 | e 1 20 | − 5 | — | — | e 2·8 | — |
| Neuchatel | 6·2 | 108 | e 1 50 | +15 | i 3 9 | +20 | (i 3·1) | — |
| Strasbourg | 6·2 | 92 | e 1 23 | −12 | — | — | 3·8 | 3·9 |
| Bagnères | 6·3 | 166 | e 1 27 | − 9 | 2 30 | −22 | — | — |
| Edinburgh | 6·7 | 353 | — | — | — | — | e 3·5 | 3·7 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Hohenheim | | 7·2 | 90 | e 1 23 | −26 | i 3 2 | −13 | i 3·3 | 4·0 |
| Moncalieri | | 7·6 | 120 | e 2 57 | +62 | 3 56 | +30 | (3·9) | — |
| Ravensburg | E. | 7·6 | 96 | e 2 11 | +16 | i 3 49 | +23 | i 4·0 | 4·2 |
| Barcelona | | 8·2 | 159 | e 2 14 | +10 | e 4 1 | +19 | e 4·3 | — |
| Tortosa | E. | 8·5 | 168 | e 1 54 | −15 | 3 24 | −26 | 3·6 | 4·8 |
| | N. | 8·5 | 168 | — | — | 3 26 | −24 | 3·6 | 4·6 |
| Hamburg | | 8·5 | 53 | e 3 6 | +57 | — | — | — | 5·9 |
| Cheb | | 9·2 | 79 | — | — | e 4 2 | − 6 | e 5·5 | 6·0 |
| Toledo | | 9·5 | 190 | — | — | e 4 2 | −14 | e 4·6 | 5·8 |
| Venice | | 10·2 | 107 | 4 25 | ?S | (4 25) | −10 | 5·6 | 5·9 |
| Alicante | | 10·9 | 175 | e 4 17 | ?S | (e 4 17) | −35 | 7·1 | — |
| Graz | | 11·6 | 94 | e 3 32 | +39 | e 5 39 | +30 | 6·2 | 7·0 |
| Vienna | | 11·9 | 88 | e 4 28 | +90 | 5 41 | +24 | e 6·4 | 6·9 |
| Granada | | 12·1 | 187 | i 4 54 | +114 | 5 19 | − 2 | 7·4 | 8·2 |
| Almeria | | 12·3 | 182 | e 4 13 | +70 | i 6 37 | +71 | 7·4 | 7·7 |
| Malaga | | 12·6 | 190 | — | — | — | — | e 6·8 | — |
| Budapest | | 13·9 | 89 | 7 31 | ?L | — | — | (7·5) | — |
| Pulkovo | | 21·0 | 48 | e 4 36 | −17 | e 8 27 | −17 | 9·9 | — |
| Leningrad | | 21·1 | 48 | — | — | (e 8 25) | −21 | e 8·4 | — |
| Ekaterinburg | | 36·9 | 54 | — | — | — | — | e 18·9 | — |

Additional readings and notes: Paris iP = +47s. Uccle iP = +1m.14s. Besançon i = +1m.38s. Strasbourg P? = +2m.4s., $PR_1$ = +2m.11s., PS = +3m.21s., $SR_2$ = +3m.31s., MZ = +4·1m. Bagnères $SR_1$? = +3m.5s., $SR_2$? = +3m.15s. Edinburgh i = +3m.35s. Hohenheim i = +3m.10s., MN = +4·2m. Ravensburg iE = +3m.5s., +3m.9s., +3m.15s., +3m.21s., and +3m.35s. Cheb e = +4m.39s. Toledo MZ = +5·6m., MNW = +5·9m. Alicante S = +6m.54s. Venice S is given as P and L as S. Graz MN = +6·8m. Vienna P = +4m.48s., iZ = +5m.0s., iN = +5m.8s., $iPR_2$ = +5m.36s., iN = +5m.52s., iE = +5m.54s., $PS_2$ = +6m.5s., S = +6m.10s., MZ = +6·7m., MN = +7·8m. Granada i = +6m.0s.; all readings being given for 12h. Almeria MN = +8·2m. Ekaterinburg L = +20·9m.

July 30d. Readings also at 6h. (La Paz, Sucre, Ottawa, Kew, De Bilt, and Uccle), 7h. (Irkutsk, Ekaterinburg, Baku, Pulkovo, and Strasbourg), 11h. (Azores), 12h. (near Batavia and Malabar), 17h. (Tucson), 18h. (Ottawa, Toronto, Victoria, Tacubaya, Vera Cruz, Puebla, Guadalajara, and Oaxaca), 19h. (Tucson, La Paz, Ekaterinburg, and Pulkovo), 20h. (Toronto, Ottawa, Victoria, Tacubaya, Vera Cruz, Puebla, Guadalajara, and Oaxaca), 21h. (Pulkovo, Leningrad, Baku, Makeyevka, Irkutsk, Ekaterinburg, near La Paz, and near Tacubaya).

July 31d. 11h. 27m. 24s. Epicentre 9°·5S. 157°·0E. (as on July 28d.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Riverview | | 24·9 | 191 | e 6 42 | +65 | — | — | e 13·8 | 15·9 |
| Sydney | | 24·9 | 191 | 5 42 | + 5 | — | — | 14·4 | 15·9 |
| Melbourne | | 30·3 | 191 | — | — | e 11 30 | − 9 | — | 15·7 |
| Adelaide | | 30·5 | 210 | — | — | — | — | e 16·4? | 20·1 |
| Wellington | | 35·4 | 157 | e 6 21 | −56 | — | — | — | — |
| Tokyo | | 48·0 | 342 | — | — | — | — | 30·3 | — |
| Victoria | E. | 90·4 | 40 | 24 36 | ?S | (24 36) | +18 | 43·4 | 48·4 |
| | N. | 90·4 | 40 | 24 26 | ?S | (24 26) | + 8 | 47·3 | — |
| Ekaterinburg | | 101·4 | 326 | e 19 26 | ?$PR_1$ | (24 36?) | [+ 5] | 24·6 | — |
| Baku | | 109·1 | 310 | — | — | — | — | 73·6 | — |
| Chicago | E. | 115·2 | 48 | — | — | — | — | e 56·8 | — |
| Leningrad | | 116·0 | 333 | 19 42 | ?$PR_1$ | — | — | e 44·1 | — |
| Pulkovo | | 116·1 | 333 | 19 41 | ?$PR_1$ | — | — | — | 85·7 |
| Toronto | | 120·5 | 44 | — | — | e 51 51 | ? | 63·6 | — |
| Ottawa | E. | 122·4 | 40 | — | — | e 25 36? | [−16] | e 59·6 | — |
| De Bilt | | 131·6 | 336 | e 20 12 | [+50] | — | — | e 83·6 | — |
| Kew | | 134·1 | 340 | — | — | — | — | e 88·6 | — |
| Paris | | 135·3 | 336 | — | — | — | — | e 89·6 | — |
| Granada | | 147·3 | 330 | — | — | — | — | e 94·6 | 102·0 |
| San Fernando | | 149·0 | 332 | — | — | 71 42 | ?L | (71·7) | 95·6 |

Additional readings: Riverview MN = +15·1m. Ekaterinburg e = +22m.53s. = $PR_2$ +8s. Ottawa eN = +28m.12s., LN = +66·6m. San Fernando MN = +106·1m.

**July 31d. 18h. 9m. 40s. Epicentre 36°·5N. 36°·0W.**

$A = +·650$, $B = -·472$, $C = +·595$; $D = -·588$, $E = -·809$; $G = +·481$, $H = -·350$, $K = -·804$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Lisbon | | 21·3 | 76 | e 5 5 | + 8 | 9 5 | +15 | — | — |
| Rio Tinto | | 23·3 | 78 | 7 20? | +120 | — | — | — | 19·3 |
| San Fernando | | 23·8 | 81 | 5 34 | + 8 | 9 58 | +18 | 11·8 | 12·8 |
| Toledo | | 25·2 | 72 | e 5 37 | − 3 | e 9 13 | −54 | e 10·3 | 12·3 |
| Malaga | | 25·2 | 80 | e 5 49 | + 9 | 10 43 | +36 | e 13·4 | — |
| Granada | | 25·8 | 79 | i 5 51 | + 5 | e 9 12 | −66 | 10·4 | 14·7 |
| Almeria | | 26·8 | 79 | 5 36 | −20 | 9 31 | −66 | e 11·0 | 15·8 |
| Alicante | | 28·0 | 75 | e 5 43 | −25 | e 9 24 | −95 | 10·5 | 12·2 |
| Bidston | | 28·4 | 43 | 6 20 | + 8 | 10 47 | −19 | 12·8 | 15·6 |
| Tortosa | E. | 28·6 | 70 | e 6 20 | + 6 | — | — | — | — |
| Stonyhurst | | 28·9 | 42 | e 6 45 | +28 | i 11 20 | + 5 | — | — |
| Kew | | 29·3 | 48 | e 6 26 | + 5 | e 11 26 | + 4 | 13·3 | 15·1 |
| Edinburgh | | 29·4 | 38 | 7 20? | +58 | i 11 29 | + 5 | 13·3 | 17·1 |
| Fordham | N. | 29·6 | 290 | e 4 47 | −97 | e 11 20 | − 7 | — | 13·7 |
| Barcelona | | 29·8 | 69 | e 6 33 | + 7 | e 11 20 | −11 | e 14·3 | 16·0 |
| Paris | | 30·5 | 53 | e 6 33 | 0 | e 11 35 | − 8 | 14·3 | 15·3 |
| Dyce | | 30·5 | 36 | — | — | — | — | — | 14·8 |
| Ottawa | | 31·0 | 300 | e 6 38 | 0 | (e 11 44) | − 7 | 15·3 | — |
| Algiers | | 31·1 | 78 | e 6 58 | +19 | e 11 34 | −19 | e 13·7 | 17·0 |
| Uccle | | 32·0 | 50 | e 6 48 | + 1 | e 12 4 | − 4 | e 14·3 | 15·8 |
| De Bilt | | 32·7 | 49 | e 6 57 | + 3 | 12 17 | − 2 | e 14·3 | 18·6 |
| Toronto | N. | 33·6 | 298 | — | — | e 12 30 | − 4 | 15·4 | — |
| Moncalieri | | 33·7 | 62 | e 6 35 | −27 | 12 30 | − 6 | 15·8 | 20·0 |
| Strasbourg | | 33·8 | 56 | e 7 0 | − 3 | i 12 33 | − 5 | 15·8 | 20·1 |
| Zurich | | 34·3 | 59 | e 6 59 | − 8 | e 12 43 | − 1 | — | — |
| Hohenheim | | 34·8 | 54 | e 7 8 | − 3 | e 12 46 | − 6 | e 16·4 | 19·9 |
| Hamburg | | 35·8 | 47 | e 7 21 | + 1 | — | — | e 17·7 | 21·7 |
| Florence | | 36·3 | 65 | e 8 30 | +66 | e 13 10 | − 4 | — | 22·8 |
| Ann Arbor | N. | 36·8 | 296 | — | — | — | — | e 18·1 | — |
| Cheb | | 37·0 | 52 | — | — | e 13 25 | + 1 | — | 21·6 |
| Rocca di Papa | | 37·6 | 67 | e 7 24 | −11 | e 13 33 | + 1 | e 21·0 | 23·5 |
| Graz | | 39·0 | 57 | — | — | — | — | e 18·3 | 21·6 |
| Zagreb | | 39·5 | 60 | e 7 49 | − 2 | — | — | — | — |
| Upsala | | 41·0 | 39 | — | — | e 17 20? | ?$SR_1$ | e 18·3 | 23·8 |
| Budapest | | 41·4 | 56 | — | — | — | — | e 22·8 | 25·1 |
| Pulkovo | | 47·4 | 40 | e 8 57 | + 7 | 15 59 | +13 | 21·8 | 25·8 |
| Leningrad | | 47·4 | 40 | 8 56 | + 6 | — | — | 19·3 | 29·0 |
| Makeyevka | | 53·8 | 53 | e 7 21 | −131 | e 21 14 | +248 | 28·3 | 35·3 |
| Tucson | E. | 60·3 | 290 | — | — | — | — | e 27·3 | — |
| La Paz | | 61·1 | 218 | 10 26 | + 6 | — | — | 27·3 | 32·2 |
| Victoria | | 62·0 | 312 | 19 13 | ?S | (19 13) | +25 | 30·4 | 33·0 |
| Ekaterinburg | | 63·4 | 39 | e 10 47 | +13 | e 19 34 | +28 | 22·3 | 34·6 |
| Baku | | 64·6 | 57 | e 10 59 | +17 | 19 45 | +25 | 33·3 | 38·0 |
| Irkutsk | | 84·7 | 24 | e 10 20? | −146 | — | — | 49·3 | — |

Additional readings: Toledo iP = +5m.40s., MNW = +12·5m. Granada i = +6m.19s. = $PR_1$ −5s., and +7m.11s. Almeria MN = +13·8m. Alicante MN = +12·0m. Kew MN = +14·2m. Fordham eN = +9m.14s.; all readings are given simply as eN. Paris eP = +7m.29s. = $PR_1$ +4s., MN = +14·3m. Uccle $PR_1$ = +7m.47s. De Bilt MN = +16·4m., MZ = +18·9m. Strasbourg e$PR_1$ = +8m.13s. e$PR_2$ = +8m.32s., $SR_2$ = +15m.7s., MN = +19·9m. Hamburg eN = +15m.45s. = $PR_2$ −8s., MN = +19·3m., MZ = +19·9m. Florence eP = +8m.50s. Ann Arbor eN = +15m.14s. and +15m.50s., eN = +15m.14s. = $SR_1$ −24s., and +15m.50s. = $SR_2$ −26s. Rocca di Papa ePE = +7m.34s., $PR_1$ = +7m.59s., eS? = +13m.22s. Pulkovo i$SR_1$ = +19m.44s., MZ = +29·0m. Leningrad MN = +25·8m.; is L = $SR_1$ +14s. ? Makeyevka MN = +30·7m. Ekaterinburg MN = +34·9m., MZ = +37·3m. Baku MZ = +45·4m.

July 31d. Readings also at 0h. (Irkutsk), 1h. (Ekaterinburg, Makeyevka, Pulkovo, Leningrad, and Granada), 3h. (near Irkutsk), 5h. (Ekaterinburg and Pulkovo), 6h. (Granada), 9h. (near Mizusawa), 14h. (Tokyo), 17h. (Vienna), 18h. (Kucino and near Algiers), 20h. (Uccle), 21h. (near Tacubaya), 23h. (Granada).

Aug. 1d. Readings at 0h. (Strasbourg and near Zurich), 2h. (near Almeria and Granada), 5h. (Granada, near Tacubaya, near Victoria, and Spokane), 6h. (Toronto, Ottawa, Ithaca, Fordham, and Baku), 10h. (near Athens), 11h. (Azores and Athens), 14h. (Riverview), 15h. (Tokyo and near Batavia), 20h. (Tokyo (2) ).

## Aug. 2d. 5h. 1m. 21s. Epicentre 13°·5N. 125°·0E.

(as on 1917 Feb. 25d.).

A = −·558, B = +·797, C = +·233 ; D = +·819, E = +·574 ;
G = −·134, H = +·191, K = −·972.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | | 4·1 | 285 | i 1 1 | − 3 | (i 1 54) | + 1 | i 1·9 | — |
| Taihoku | | 12·0 | 344 | i 2 59 | 0 | 5 10 | − 9 | 7·5 | 8·6 |
| Hong Kong | | 13·6 | 312 | 3 14 | − 7 | (5 27?) | −31 | 5·4? | 7·6 |
| Amboina | | 17·4 | 169 | i 4 10 | 0 | 15 47 | ? | 17·5 | — |
| Zi-ka-wei | | 18·0 | 350 | i 4 20 | + 3 | i 7 39 | − 1 | 11·1 | 12·0 |
| Phu-Lien | | 19·0 | 295 | e 4 24 | − 5 | i 7 51 | −11 | 9·2 | 12·4 |
| Nagasaki | | 19·8 | 12 | 4 46 | + 7 | (8 25) | + 6 | 8·4 | 8·6 |
| Hukuoka | | 20·7 | 13 | 5 0 | +11 | (8 45) | + 7 | 8·8 | 9·4 |
| Sumoto | | 22·7 | 22 | 5 16 | + 3 | (9 31) | +12 | 9·5 | 10·5 |
| Kobe | | 23·1 | 22 | 5 25 | + 7 | (9 37) | +10 | 9·6 | 10·2 |
| Osaka | | 23·2 | 22 | 4 47 | −32 | (9 37) | + 8 | 9·6 | 10·2 |
| Nagoya | | 24·2 | 24 | 5 37 | + 7 | (9 58) | +10 | 10·0 | — |
| Batavia | | 26·7 | 224 | i 5 45 | −10 | i 10 30 | − 5 | — | — |
| Malabar | | 27·0 | 221 | i 6 1 | + 3 | — | — | 14·6 | — |
| Mizusawa | E. | 29·2 | 26 | 6 16 | − 4 | 12 26 | +66 | 18·4 | — |
| | N. | 29·2 | 26 | 6 17 | − 3 | 12 28 | +68 | 18·4 | — |
| Calcutta | E. | 35·9 | 290 | 7 59 | +38 | 13 15 | + 6 | 19·2 | — |
| | N. | 35·9 | 290 | 7 33 | +12 | 13 25 | +16 | 19·0 | — |
| Ootomari | | 36·4 | 22 | e 7 23 | − 2 | — | — | 14·8 | — |
| Irkutsk | | 42·2 | 343 | i 8 2 | −10 | 14 24 | −14 | 21·6 | 26·7 |
| Hyderabad | | 44·9 | 283 | e 8 21 | −11 | 14 57 | −17 | 23·0 | 28·4 |
| Colombo | | 45·0 | 266 | 8 9 | −24 | 14 59 | −16 | 26·6 | 35·6 |
| Kodaikanal | | 46·6 | 271 | 15 39 | ?S | (15 39) | + 3 | 27·4 | 35·6 |
| Simla | E. | 47·2 | 302 | e 8 27 | −21 | 15 27 | −17 | — | 30·6 |
| | N. | 47·2 | 302 | e 8 57 | + 9 | 15 33 | −11 | 25·2 | 25·6 |
| Adelaide | | 50·1 | 167 | 8 19? | −49 | i 16 15 | − 5 | 25·8 | 34·2 |
| Bombay | | 50·3 | 284 | 10 28 | +79 | 16 10 | −13 | 21·8 | 34·5 |
| Riverview | | 53·5 | 154 | e 9 36 | + 6 | e 16 52 | −11 | e 24·5 | 28·2 |
| Sydney | | 53·5 | 154 | 8 21 | −69 | 17 9 | + 6 | 27·0 | 28·4 |
| Melbourne | | 54·6 | 161 | e 6 15 | −202 | i 17 15 | − 1 | — | 31·9 |
| Ekaterinburg | | 64·8 | 328 | i 10 48 | + 4 | i 19 25 | + 2 | 21·6 | 36·6 |
| Baku | | 70·1 | 310 | i 11 22 | + 4 | i 20 36 | + 9 | 34·6 | 39·3 |
| Wellington | | 71·5 | 143 | — | — | e 20 32 | −12 | e 28·6 | — |
| Honolulu | E. | 73·2 | 72 | 11 48 | +11 | e 21 15 | +11 | e 33·9 | 40·0 |
| | N. | 73·2 | 72 | e 11 54 | +17 | e 21 39 | +35 | e 35 3 | 39·9 |
| Piatigorsk | | 74·9 | 314 | 11 23 | −25 | 20 50 | −35 | — | 37·6 |
| Makeyevka | | 78·0 | 318 | e 12 8 | + 1 | 21 42 | −18 | 34·6 | 46·3 |
| Pulkovo | | 80·7 | 329 | i 12 22 | − 1 | i 22 26 | − 5 | 38·6 | 48·5 |
| Leningrad | | 80·7 | 329 | 12 23 | 0 | i 22 29 | − 2 | 38·0 | 48·4 |
| Helwan | | 86·4 | 300 | e 12 51 | − 4 | 23 18 | [+13] | — | 58·5 |
| Lemberg | | 86·6 | 320 | e 12 3 | −54 | e 23 15 | [+ 9] | e 49·2 | 58·4 |
| Upsala | | 86·8 | 332 | e 12 52 | − 6 | e 23 16 | [+ 8] | e 43·6 | 52·2 |
| Athens | | 90·4 | 310 | 13 26 | + 8 | 23 36 | [+ 6] | 35·2 | 66·5 |
| Budapest | | 90·6 | 320 | e 13 9 | −10 | e 24 9 | −11 | — | 55·8 |
| Vienna | | 91·9 | 322 | e 13 22 | − 4 | 24 17 | −17 | — | 53·6 |
| Bergen | | 92·0 | 335 | — | — | — | — | e 48·6 | — |
| Graz | | 92·9 | 321 | e 14 8 | +36 | e 24 41 | − 3 | 50·4 | 59·9 |
| Zagreb | | 93·1 | 319 | e 13 26 | − 7 | e 23 57 | [+10] | e 51·4 | 56·8 |
| Hamburg | | 93·2 | 327 | e 16 39? | ?$PR_1$ | e 23 59 | [+12] | e 47·6 | 55·6 |
| Victoria | E. | 93·6 | 39 | 13 35 | − 1 | 24 7 | [+17] | 41·1 | 55·4 |
| Venice | | 95·6 | 320 | e 17 50 | ?$PR_1$ | 19 21 | ? | — | — |
| Hohenheim | E. | 95·9 | 324 | e 13 55 | + 7 | e 24 12 | [+10] | e 31·9 | 58·2 |
| Pompeii | | 96·0 | 315 | e 17 4 | ?$PR_1$ | e 24 14 | [+12] | — | — |
| De Bilt | | 96·5 | 328 | e 13 58 | + 6 | e 24 15 | [+10] | e 46·6 | 60·1 |
| Strasbourg | | 96·9 | 324 | e 13 40 | −14 | e 24 14 | [+ 7] | 39·6 | 58·1 |
| Rocca di Papa | | 96·9 | 316 | e 14 52 | +58 | e 24 39 | [+32] | e 55·6 | 64·6 |
| Zurich | | 97·0 | 322 | e 14 17 | +23 | e 24 9 | [+ 1] | — | — |
| Florence | | 97·0 | 318 | e 17 9 | ?$PR_1$ | 25 11 | −15 | 48·6 | 54·0 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Dyce | | 97·0 | 336 | — | — | e 25 16 | −10 | 48·2 | 52·8 |
| Uccle | | 97·6 | 327 | — | — | e 24 23 | [+12] | e 46·6 | 53·8 |
| Edinburgh | | 98·3 | 333 | — | — | e 24 39? | [+24] | 47·6 | 57·2 |
| Besançon | | 98·6 | 324 | — | — | — | — | 52·6 | 58·6 |
| Moncalieri | | 98·6 | 320 | 14 11 | + 8 | 24 9 | [− 8] | 48·2 | 59·5 |
| Stonyhurst | | 99·2 | 331 | e 13 59 | − 7 | 24 29 | [+ 9] | — | — |
| Paris | | 99·7 | 326 | e 14 14 | + 5 | e 24 34 | [+11] | 50·6 | 57·6 |
| Kew | | 99·7 | 330 | e 14 0 | − 9 | e 24 30 | [+ 7] | 47·6 | 59·7 |
| Bidston | | 99·8 | 331 | 18 12 | ?$PR_1$ | 31 25 | ? | 47·1 | 57·2 |
| Barcelona | | 104·0 | 320 | e 18 32 | ?$PR_1$ | e 29 58 | ? | e 47·5 | 61·2 |
| Tortosa | E. | 105·3 | 320 | e 18 16 | ?$PR_1$ | 24 56 | [+ 7] | e 40·6 | 65·5 |
| Algiers | | 105·8 | 316 | e 13 56 | −42 | 24 56 | [+ 5] | 44·6 | 64·6 |
| Alicante | | 107·4 | 320 | e 19 7 | ?$PR_1$ | e 29 43 | +158 | 55·2 | 65·7 |
| Toledo | | 108·7 | 332 | e 18 56 | ?$PR_1$ | e 29 22 | +126 | e 42·6 | 69·2 |
| Almeria | | 109·4 | 320 | 19 8 | ?$PR_1$ | e 29 23 | +120 | — | 62·8 |
| Tucson | E. | 109·7 | 49 | — | — | e 26 59 | −26 | 55·7 | 60·7 |
| Granada | | 110·0 | 320 | i 19 12 | ?$PR_1$ | 29 18 | +110 | e 55·2 | 69·0 |
| Malaga | | 110·8 | 320 | e 18 45 | [+21] | e 29 31 | +116 | e 36·6 | 42·9 |
| Cape Town | | 111·0 | 238 | — | — | — | — | — | 64·6 |
| San Fernando | | 112·1 | 320 | 19 17 | ?$PR_1$ | 31 59 | ? | 58·6 | 64·6 |
| Lisbon | | 112·5 | 322 | — | — | i 23 31 | ? | — | 62·5 |
| Chicago | | 117·1 | 27 | — | — | 25 51 | [+15] | e 58·0 | 62·8 |
| Ottawa | | 118·2 | 15 | e 20 12 | ?$PR_1$ | e 30 12 | ? | e 46·6 | 66·3 |
| Ann Arbor | | 118·3 | 13 | — | — | — | — | e 55·8 | — |
| Toronto | N. | 118·7 | 20 | 20 17 | ?$PR_1$ | e 30 13 | ? | 45·6 | 73·6 |
| Ithaca | | 120·7 | 18 | — | — | — | — | 57·6 | — |
| Harvard | E. | 122·2 | 15 | — | — | — | — | e 49·8 | — |
| Fordham | | 122·9 | 17 | e 20 33 | ?$PR_1$ | e 30 31 | ? | 45·4 | 68·2 |
| La Plata | | 158·4 | 173 | — | — | — | — | 70·2 | — |
| La Paz | | 166·9 | 105 | 20 27 | [+14] | e 33 9 | ?$PR_2$ | 80·6 | 110·0 |
| Sucre | | 168·7 | 121 | 20 50 | [+36] | 34 59 | ? | 78·6 | 92·4 |

Additional readings: Taihoku LN = +7·6m., MN = +8·0m. Zi-ka-wei $SR_1E$ = +7m.49s., MN = +12·2m. Phu-Lien MN = +9·4m. Nagasaki MN = +12·4m. Hukuoka MN = +9·1m. Sumoto MZ = +10·7m. Osaka MN = +11·5m. Batavia N = +6m.44s. = $PR_1$ +9s. Irkutsk $SR_2$ = +17m.54s. = $SR_1$ +22s., MZ = +26·9m. Adelaide $PR_1$ = +10m.39s., i$SR_1$? = +19m.59s., MN = +33·6m. Riverview eS = +17m.7s. = S +4s., MN = +33·2m. Bombay: Is L = $SR_2$? Ekaterinburg i$PR_2$ = +15m.0s., MZ = +38·6m. Baku $SR_1$ = +25m.45s., i$SR_2$ = +30m.57s. = $SR_2$ +59s., MN = +37·3m., MZ = +44·8m. Wellington: Is L = $SR_2$? Honolulu $P_cPE$ = +12m.12s., $P_cPN$ = +12m.16s., e$PR_1E$ = +15m.3s., e$PR_1N$ = +16m.0s. = $PR_2$ −35s., e$PR_2N$ = +16m.51s., e$PR_2E$? = +17m.9s. = $PR_2$ −15s., PSE = +21m.59s., e$SR_1E$ = +25m.39s., e$SR_1N$ = +26m.49s., $SR_1E$? = +26m.57s. and +29m.57s. = $SR_2$ +21s., $SR_2N$ = +31m.15s. = $SR_2$ +7s. Platigorsk $PR_1$ = +15m.8s., $SR_1$ = +25m.58s., $SR_2$ = +30m.6s. Makeyevka PS = +22m.29s., $SR_1$ = +27m.19s., i = +30m.39s. = $SR_2$ −27s., MN = +46·6m., MZ = +52·0m. Pulkovo $PR_1$ = +15m.43s., $PR_2$ = +18m.48s., $SR_2$ = +31m.51s., $SR_2$ = +34m.9s., MN = +45·8m., MZ = +48·4m. Leningrad $PR_1$ = +15m.41s., $PR_2$ = +17m.59s. $PR_2$ = +18m.49s., $SR_2$ = +31m.9s., i$SR_2$ = +34m.21s., MN = +45·9m., MZ = +51·7m. Upsala MN = +49·3m. Athens MN = +57·7m.; is L = $SR_2$? Budapest MN = +53·4m. Vienna $PR_1$ = +17m.5s., iN = +28m.35s. Graz MN = +52·6m. Zagreb e$PR_1$ = +17m.22s., e = +25m.47s., eL = +53·2m. Hamburg eE = +28m.3s. Hohenheim eE = +20m.59s. = $PR_1$ +39s.; is L = $SR_1$? De Bilt MN = +56·4m., MZ = +58·8m.; epicentre 14°·8N. 125°·4E. Strasbourg PS = +25m.12s. = S −13s., MN = +52·3m., MZ = +58·6m.; is L = $SR_2$? Rocca di Papa eP = +17m.46s. = $PR_1$ −7s. and +17m.48s. = $PR_1$ −5s., $PR_1$ = +21m.21s. = $PR_2$ −40s., eSN = +24m.47s. Zurich e = +17m.37s. = $PR_1$ −17s. Dyce e = +24m.19s. (O−C. = [+11]). Uccle e$PR_1$ = +17m.56s., MN = +54·0m. Moncalieri MN = +59·8m. Paris MN = +52·6m. Barcelona MN = +61·4m. Toledo MNW = +64·4m. Almeria MN = +68·8m. Tucson e$PR_1E$ = +18m.59s., e$PR_1N$ = +19m.14s., SN = +27m.4s., PSE? = +28m.39s., PPSE = +30m.37s., $SR_1E$ = +34m.42s. Granada i = +21m.39s. and +22m.50s. = $PR_2$ +27s., PS = +30m.35s. Malaga readings have been increased by 1h. San Fernando MN = +66·6m. Chicago PSE = +29m.57s., $SR_1E$ = +36m.15s., $SR_2E$ = +40m.57s., $SR_1E$ = +43m.51s. Ottawa i = +36m.37s. = $SR_1$ +13s., MN = +72·4m. Toronto eE = +26m.9s. Harvard e$SR_1E$ = +36m.33s. Fordham e$PR_1N$ = +25m.36s. = [S] −17s., e$PR_2N$ = +26m.53s., e$SR_1N$ = +35m.38s., eE = +37m.30s. = $SR_1$ +7s., $SR_2N$ = +40m.45s., MN = +72·8m. La Paz SE = +34m.4s. Sucre $PR_1$ = +25m.42s., $PR_2$ = +29m.9s.?, $SR_2$ = +51m.20s. = $SR_2$ −90s.

**Aug. 2d. 12h. 41m. 0s. Epicentre 13°·5N. 125°·0E. (as at 5h.).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | | 4·1 | 285 | e 1 1 | − 3 | (i 1 53) | 0 | 1·9 | — |
| Taihoku | N. | 12·0 | 344 | e 3 3 | + 4 | 5 25 | + 6 | 7·6 | — |
| Hong Kong | | 13·6 | 312 | 3 15 | − 6 | — | — | — | 10·7 |
| Zi-ka-wei | | 18·0 | 350 | i 4 19 | + 2 | i 7 51 | +11 | — | 20·6 |
| Phu-Lien | | 19·0 | 295 | e 4 25 | − 4 | e 7 52 | −10 | 9·2 | — |
| Sumoto | | 22·7 | 22 | 9 35 | ?S | (9 35) | +16 | 14·3 | — |
| Osaka | | 23·2 | 22 | 5 31 | +12 | (9 49) | +20 | 9·8 | 11·7 |
| Batavia | | 26·7 | 224 | 5 54 | − 1 | i 11 38 | +63 | — | — |
| Irkutsk | | 42·2 | 343 | 8 2 | −10 | e 14 32 | − 6 | 22·0 | — |
| Adelaide | | 50·1 | 167 | — | — | — | — | e 36·6 | 57·2 |
| Riverview | | 53·5 | 154 | — | — | e 13 18 | ?$PR_2$ | e 23·0 | 28·1 |
| Sydney | | 53·5 | 154 | 16 54 | ?S | (16 54) | − 9 | 23·4 | 24·7 |
| Melbourne | | 54·6 | 161 | — | — | i 17 0 | −16 | i 21·3 | 31·7 |
| Ekaterinburg | | 64·8 | 328 | e 10 49 | + 5 | 19 27 | + 4 | 22·0 | 36·4 |
| Apia | | 68·3 | 111 | — | — | — | — | e 36·0 | — |
| Baku | | 70·1 | 310 | 11 22 | + 4 | 20 39 | +12 | 34·5 | 43·8 |
| Wellington | | 71·5 | 143 | — | — | e 16 5 | ?$PR_2$ | e 35·2 | 38·2 |
| Kucino | | 77·2 | 324 | — | — | 21 49 | − 2 | 40·5 | 42·5 |
| Makeyevka | | 78·0 | 318 | e 12 7 | 0 | e 21 58 | − 2 | 36·0 | 46·3 |
| Pulkovo | | 80·7 | 329 | 12 24 | + 1 | 22 25 | − 6 | 39·5 | 51·0 |
| Leningrad | | 80·7 | 329 | i 12 26 | + 3 | 22 28 | − 3 | 43·5 | 51·2 |
| Upsala | | 86·8 | 332 | — | — | e 23 26 | −13 | e 47·0 | — |
| Hamburg | | 93·2 | 327 | — | — | e 32 0? | ? | e 49·0 | 56·0 |
| Victoria | E. | 93·6 | 39 | 17 25 | ?$PR_1$ | — | — | — | — |
| De Bilt | | 96·5 | 328 | — | — | — | — | e 49·0 | 58·9 |
| Strasbourg | | 96·9 | 324 | — | — | — | — | 45·0 | 58·0 |
| Uccle | | 97·6 | 327 | — | — | e 27 0? | ? | e 51·0 | 54·0 |
| Edinburgh | | 98·3 | 333 | — | — | — | — | 50·0 | — |
| Moncalieri | | 98·6 | 320 | e 26 15 | ? | 41 37 | ? | 53·2 | — |
| Paris | | 99·7 | 326 | — | — | — | — | e 54·0 | 63·0 |
| Kew | | 99·7 | 330 | — | — | — | — | e 44·0 | — |
| Granada | | 110·0 | 320 | e 19 23 | ?$PR_1$ | i 29 15 | +107 | e 57·7 | 65·0 |
| San Fernando | | 112·1 | 320 | — | — | — | — | — | 64·0 |
| Ottawa | | 118·2 | 15 | — | — | e 30 12 | ? | e 52·5 | — |
| Toronto | | 118·7 | 20 | — | — | — | — | e 56·0 | — |
| Fordham | | 122·9 | 17 | — | — | — | — | e 62·8 | — |

Additional readings: Osaka MN = +12·2m. Adelaide L = +46·5?m. Riverview e = +20m.12s., MN = +32·5m. Are the readings 3 minutes too large? Then +10m.18s. =P +48s., +17m.12s. =S +9s., and L may be $SR_1$. Ekaterinburg MZ = +38·4m. Baku MN = +39·3m. Wellington $SR_1$ = +22m.25s. Kucino e$SR_2$ = +30m.35s. Makeyevka e = +28m.43s., $SR_2$ = +31m.31s., MN = +46·6m. Pulkovo $SR_2$ = +34m.6s., MN = +45·8m., MZ = +51·0m. Leningrad MZ = +51·4m., MN = +51·8m. Hamburg MN = +54·0m. De Bilt MN = +56·2m., MZ = +58·8m. San Fernando MN = +65·0m.

**Aug. 2d.** Readings also at 0h. (near Nagasaki), 1h. (near Zagreb), 2h. (Ekaterinburg, Baku, and near La Paz), 6h. (Manila (2) ), 7h. (Hong Kong, De Bilt, and near Manila), 8h. (Hong Kong, De Bilt, Uccle, Taihoku, and Pulkovo), 10h. (Tokyo), 12h. (Dyce), 13h. (Riverview), 14h. (Paris and Manila), 16h. and 17h. (Manila), 18h. (Pulkovo, Baku, Ekaterinburg, Leningrad, Irkutsk, and near Mizusawa), 19h. (Irkutsk), 20h. (Sucre), 21h. (Manila).

**Aug. 3d. 3h. 16m. 12s. Epicentre 22°·5S. 173°·5W. (as on 1921 Jan. 9d.).**

A = −·918, B = −·104, C = −·383; D = −·113, E = +·994; G = +·381, H = +·043, K = −·924.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Apia | 8·9 | 11 | 2 35 | +20 | 4 41 | +40 | 5·4 | 6·5 |
| Wellington | 21·2 | 205 | — | — | (e 8 48?) | 0 | e 8·8 | 13·6 |
| Riverview | 33·0 | 242 | e 7 16 | +20 | — | — | e 14·4 | 19·2 |
| Sydney | 33·0 | 242 | 11 54 | ?S | (11 54) | −30 | 16·5 | 18·0 |
| Melbourne | 38·6 | 237 | i 7 30 | −13 | — | — | i 19·3 | 23·8 |
| Adelaide | 43·4 | 242 | — | — | 15 6? | +12 | 17·3? | 22·9 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Honolulu | E. | 46·4 | 20 | — | — | e 15 30 | − 3 | 21·2 | 22·7 |
| | N. | 46·4 | 20 | — | — | e 15 18 | −15 | 21·3 | 25·1 |
| Manila | | 74·1 | 294 | e 11 16 | −27 | — | — | — | — |
| Hong Kong | | 83·4 | 298 | 22 40 | ?S | (22 40) | −21 | — | — |
| Victoria | | 83·9 | 31 | 22 58 | ?S | (22 58) | −10 | 45·6 | 54·2 |
| La Paz | | 97·2 | 111 | — | — | — | — | 55·6? | — |
| Chicago | | 101·9 | 49 | — | — | — | — | — | 53·0 |
| Irkutsk | | 103·1 | 322 | e 16 48? | ? | e 24 31 | [− 7] | — | — |
| Toronto | | 108·1 | 49 | — | — | e 28 33 | +82 | 56·8 | — |
| Ottawa | | 111·1 | 48 | — | — | e 26 23 | [+69] | e 54·2 | — |
| Fordham | | 111·6 | 53 | — | — | e 27 4 | −38 | i 54·5 | 57·9 |
| Ekaterinburg | | 128·0 | 326 | e 19 1 | [−13] | e 20 45 | ?$PR_1$ | 21·8 | — |
| Leningrad | | 139·0 | 342 | 19 9 | [−29] | e 22 58 | ?$PR_1$ | — | — |
| Pulkovo | | 139·2 | 342 | e 19 11 | [−27] | e 22 15 | ?$PR_1$ | — | — |
| Baku | | 139·4 | 307 | e 22 12 | ?$PR_1$ | — | — | — | — |
| Makeyevka | | 144·2 | 323 | e 19 26 | [−21] | — | — | — | — |
| Hamburg | | 149·1 | 356 | e 19 48 | [− 6] | — | — | — | — |
| Kew | Z. | 150·6 | 9 | e 19 42 | [−15] | — | — | — | — |
| Uccle | | 151·7 | 3 | e 19 42 | [−16] | — | — | — | — |
| Vienna | Z. | 153·1 | 345 | e 19 44 | [−16] | — | — | — | — |
| Paris | | 153·5 | 6 | e 19 47 | [−13] | — | — | — | — |
| Strasbourg | Z. | 153·9 | 358 | e 19 48 | [−13] | — | — | — | — |
| Algiers | | 155·4 | 7 | e 20 4 | [+ 2] | e 29 26 | ? | — | — |
| Zagreb | | 155·5 | 344 | e 20 3 | [+ 1] | — | — | — | — |
| Rocca di Papa | | 160·1 | 347 | e 20 27 | [+19] | — | — | — | — |
| Granada | | 163·0 | 29 | e 19 58 | [−12] | — | — | — | — |

Additional readings: Wellington MN = +11·6m. Riverview MN = +17·9m. Is L = $SR_1$? Honolulu $PR_1N$ = +10m.15s., $PR_1E$ = +10m.18s., $S_6SN$? = +17m.48s., $SR_1$ = +19m.18s., $SR_3E$ = +20m.10s. Victoria PN = +23m.8s. La Paz: the L is given as S of the following shock. Toronto eN = +53m.33s. Ottawa eN = +27m.11s. =S −27s., eE = +28m.56s. Fordham eN = +28m.26s. and many other values. Ekaterinburg: Is L = $PR_1$? Leningrad e = +22m.10s. = $PR_1$ −18s. Strasbourg ePEN = +20m.3s. =[P]+3s. Rocca di Papa ePN = +20m.31s. and +24m.21s. = $PR_1$ −18s. Granada iP = +20m.13s., i = +22m.25s., and +24m.45s. = $PR_1$ −11s., e = +30m.1s. and +31m.51s. = $PR_3$ −13s.

## Aug. 3d. 3h. 41m. 30s. Epicentre 22°·0N. 121°·0E.

(as on 1917 Jan. 6d.).

A = −·478, B = +·795, C = +·375; D = +·857, E = +·515; G = −·193, H = +·321, K = −·927.

Epicentre deduced by comparison with 22°N. 123°·5E. of June 25d. and 23°N. 121°·7E. of July 15d.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | | 3·1 | 9 | 2 5 | +76 | (2 51) | +85 | 2·8 | 4·2 |
| Hong Kong | | 6·3 | 275 | (1 47) | +11 | — | — | 3·2 | 5·7 |
| Manila | | 7·4 | 180 | e 1 45 | − 7 | 1 3 30 | + 9 | 1 3·9 | — |
| Zi-ka-wei | | 9·2 | 6 | 2 20 | + 1 | e 4 21 | +13 | — | 7·1 |
| Nagasaki | | 13·3 | 34 | 3 13 | − 4 | — | — | 7·0 | 9·7 |
| Phu-Lien | | 13·5 | 267 | e 3 26 | + 6 | 6 30 | +34 | 7·5 | 11·1 |
| Hukuoka | N. | 14·2 | 34 | 3 28 | − 1 | — | — | 8·1 | 9·8 |
| Sumoto | | 17·3 | 42 | 4 4 | − 5 | (7 32) | + 7 | 7·5 | 15·3 |
| Osaka | | 17·9 | 42 | 4 12 | − 4 | (8 2) | +24 | 8·0 | 13·2 |
| Nagoya | | 19·2 | 43 | e 4 24 | − 7 | — | — | — | — |
| Mizusawa | | 24·2 | 41 | 5 20 | −10 | 9 30 | −18 | 13·7 | — |
| Amboina | | 26·6 | 164 | 5 41 | −13 | 1 10 37 | + 4 | — | — |
| Calcutta | E. | 30·2 | 277 | 6 37 | + 7 | 13 47 | +130 | 20·1 | — |
| | N. | 30·2 | 277 | 6 22 | − 8 | 13 38 | +121 | 20·4 | — |
| Ootomari | | 30·3 | 30 | 6 22 | − 9 | (11 2) | −37 | 11·0 | — |
| Batavia | | 31·5 | 208 | 6 13 | −30 | — | — | 16·5 | — |
| Malabar | | 32·1 | 207 | 6 31 | −17 | — | — | — | — |
| Irkutsk | | 32·9 | 341 | e 6 43 | −13 | 12 8 | −14 | 17·5 | 21·6 |
| Simla | E. | 40·0 | 295 | e 7 42 | −13 | 14 0 | − 7 | 23·1 | 25·6 |
| | N. | 40·0 | 295 | e 8 18 | +23 | 14 6 | − 1 | 22·6 | 23·3 |
| Hyderabad | | 40·2 | 274 | 7 52 | − 5 | 14 28 | +18 | 22·1 | 26·8 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Colombo | | 42·5 | 258 | 8 30 | +15 | 15 40 | +58 | 26·8 | 28·8 |
| Kodaikanal | | 43·3 | 264 | 10 54 | ?PR$_3$ | — | — | 21·0 | — |
| Bombay | | 45·1 | 275 | e 9 37 | +63 | 15 12 | − 4 | e 19·7 | 31·8 |
| Ekaterinburg | | 55·6 | 325 | 9 50 | + 7 | i 17 38 | + 9 | 19·5 | 36·6 |
| Baku | | 61·9 | 307 | i 10 34 | +10 | 19 8 | +21 | 31·5 | 42·8 |
| Riverview | | 62·8 | 152 | — | — | — | — | e 30·0 | 35·9 |
| Piatigorsk | | 66·4 | 310 | i 10 42 | −12 | 19 32 | −10 | — | 40·5 |
| Makeyevka | | 69·3 | 316 | 11 17 | + 4 | i 20 28 | +10 | 32·5 | 46·3 |
| Pulkovo | | 71·4 | 329 | i 11 31 | + 5 | i 20 53 | +10 | 36·8 | 46·4 |
| Leningrad | | 71·5 | 329 | i 11 32 | + 5 | i 20 54 | +10 | 35·0 | 47·2 |
| Honolulu | E. | 74·2 | 73 | 11 55 | +12 | 21 28 | +12 | 35·3 | 42·0 |
| | N. | 74·2 | 73 | — | — | 21 30 | +14 | 36·0 | — |
| Upsala | | 77·6 | 330 | e 12 2 | − 3 | e 21 58 | + 2 | e 38·5 | 43·1 |
| Budapest | | 81·6 | 319 | 12 28 | 0 | 22 53 | +11 | e 43·5 | 55·8 |
| Athens | | 82·2 | 309 | e 12 32 | + 1 | 22 42 | − 6 | e 33·2 | 50·3 |
| Bergen | | 82·7 | 334 | — | — | — | — | e 38·5 | — |
| Vienna | | 82·9 | 320 | e 12 34 | − 1 | 23 6 | +10 | e 41·5 | 45·5 |
| Graz | | 84·0 | 320 | e 12 51 | + 9 | e 23 6 | − 2 | 41·5 | 58·6 |
| Hamburg | | 84·1 | 327 | e 12 40 | − 3 | e 23 7 | − 2 | e 41·5 | 46·5 |
| Zagreb | | 84·2 | 318 | e 12 43 | 0 | e 23 8 | − 2 | — | 47·8 |
| Venice | | 86·6 | 319 | e 13 7 | +10 | 23 14 | −23 | — | — |
| Hohenheim | E. | 86·9 | 323 | e 12 36 | −22 | e 23 44 | + 4 | e 44·8 | 52·3 |
| De Bilt | | 87·3 | 326 | e 13 6 | + 5 | e 23 29 | −15 | e 40·5 | 49·4 |
| Pompeii | | 87·4 | 313 | e 13 4 | + 3 | e 23 34 | −11 | — | — |
| Dyce | | 87·7 | 333 | e 13 4 | + 1 | e 23 39 | −10 | 40·3 | 50·8 |
| Zurich | | 87·7 | 321 | e 12 54 | − 9 | i 23 30 | −19 | — | — |
| Strasbourg | | 87·8 | 323 | e 12 58 | − 6 | 23 48 | − 2 | 38·5 | 58·8 |
| Florence | | 88·1 | 317 | 13 0 | − 6 | 23 50 | − 3 | 42·5 | 51·0 |
| Rocca di Papa | | 88·2 | 315 | e 13 2 | − 4 | e 22 55 | −59 | e 50·2 | 58·0 |
| Uccle | | 88·4 | 325 | e 13 4 | − 3 | e 23 36 | −20 | e 40·5 | 49·1 |
| Edinburgh | | 89·0 | 331 | e 14 30? | +80 | i 24 6 | + 3 | 42·5 | 51·7 |
| Besançon | | 89·6 | 322 | — | — | — | — | 48·5 | — |
| Moncalieri | | 89·7 | 320 | e 12 57 | −17 | 23 53 | −18 | 45·3 | 52·9 |
| Stonyhurst | | 90·0 | 330 | e 13 48 | +32 | 24 10 | − 4 | — | 51·8 |
| Kew | | 90·4 | 329 | e 13 11 | − 7 | e 23 49 | −29 | 40·5 | 51·1 |
| Bidston | | 90·5 | 330 | e 13 40 | +21 | e 23 19 | [−12] | 38·4 | 54·2 |
| Paris | | 90·6 | 325 | e 13 21 | + 2 | e 23 50 | [+18] | 46·5 | 48·5 |
| Barcelona | | 95·0 | 319 | e 17 43 | ?PR$_1$ | e 24 10 | [+13] | e 48·9 | 53·8 |
| Tortosa | E. | 96·3 | 320 | e 15 5 | +74 | 24 17 | [+13] | e 49·5 | 61·3 |
| Algiers | | 97·0 | 315 | e 13 54 | 0 | 24 20 | [+12] | e 42·5 | 54·5 |
| Alicante | | 98·5 | 318 | — | — | — | — | e 53·9 | 62·0 |
| Toledo | | 99·7 | 320 | e 17 37 | ?PR$_1$ | — | — | — | 59·1 |
| Granada | | 101·1 | 319 | 18 14 | ?PR$_1$ | i 27 12 | +66 | 37·5 | 51·0 |
| Rio Tinto | | 102·6 | 320 | 22 30? | ?PR$_2$ | — | — | — | 66·5 |
| San Fernando | | 103·2 | 320 | — | — | 25 4 | [+25] | 53·5 | 65·5 |
| Chicago | | 110·9 | 22 | — | — | e 29 30? | +114 | e 52·7 | 62·8 |
| Ottawa | | 110·9 | 11 | — | — | e 32 0 | ? | e 50·5 | — |
| Toronto | N. | 111·7 | 16 | — | — | — | — | 63·1 | 66·9 |
| Ann Arbor | | 111·7 | 19 | — | — | e 28 42 | +59 | e 61·4 | — |
| Harvard | | 114·6 | 10 | — | — | — | — | 51·9 | 70·0 |
| Fordham | | 115·6 | 12 | — | — | e 36 26 | ?SR$_1$ | — | 74·8 |
| La Plata | | 167·1 | 184 | — | — | — | — | 60·3 | — |
| La Paz | | 169·8 | 59 | 20 25 | [+10] | 30 20 | ? | 102·5 | 107·1 |
| Sucre | | 173·4 | 64 | 20 32 | [+16] | e 32 41 | ? | 103·0 | 110·7 |

Additional readings: Taihoku MN = +3·4m. Hong Kong P is given as SR$_1$ for the previous shock. Zi-ka-wei MN = +8·0m. Phu-Lien MN = +11·8m. Osaka MN = +14·4m. Amboina i = +6m.6s. = PR$_1$ −28s. Batavia iP = +6m.28s. Irkutsk MZ = +21·8m. Ekaterinburg MZ = +34·4m. Baku i = +10m.41s., MN = +35·1m., MZ = +44·4m. Riverview MN = +37·8m. Piatigorsk PS = +20m.5s. Makeyevka PS = +21m.8s. = [S] +1s., SR$_1$ = +25m.52s., SR$_2$ = +28m.50s., SR$_3$ = +30m.0s., MN = +41·4m., MZ = +43·2m. Pulkovo PR$_1$ = +16m.8s., PR$_2$ = +17m.23s., PS = +21m.40s. = [S] +18s., SR$_1$ = +25m.54s., SR$_2$ = +29m.12s., SR$_3$ = +30m.54s., MN = +40·0m., MZ = +47·2m. Leningrad PR$_2$ = +15m.52s., PS = +21m.42s. = [S] +22s., SR$_2$ = +29m.12s., MN = +40·3m., MZ = +47·2m. Honolulu SR$_1$E = +26m.30s., eSR$_1$E = +26m.41s., SR$_2$N = +30m.30s., SR$_2$E = +32m.48s., SR$_4$N = +33m.0s. Upsala eLN = +35·5m. Budapest MN = +59·2m. Athens eLN = +33·8m., MN = +52·2m. Vienna MZ = +56·5m. Graz MN = +48·8m. Hamburg MZ = +53·5m. Zagreb ePR$_1$ = +16m.9s. Hohenheim eE = +34m.50s. De Bilt MN = +49·6m. Strasbourg ePR$_1$ = +16m.36s., ePS = +24m.46s., MN = +50·2m., MZ = +59·0m. Rocca di Papa ePZ = +13m.8s., ePE = +13m.11s., ePN = +13m.16s., eSE = +22m.38s. Uccle ePR$_1$ = +16m.36s. eSR$_1$ = +29m.45s. Moncalieri L = +35·1m. = SR$_4$ +30s., MN = +53·2m.

*Continued on next page.*

Kew $PR_1 = +16$m.50s. Paris $PR_1 = +17$m.0s. Algiers $PR_1 = +17$m.45s. Alicante MN = +70·5m. Granada i = +28m.47s., MZ = +68·6m. San Fernando MN = +68·5m. Chicago eE = +33m.52s. Ann Arbor eE = +31m.30s., eN = +39m.24s. Harvard $SR_1N = +34$m.36s. and +36m.54s. Fordham ME = +39·4m. La Paz gives L and M as for a separate shock for which P = +62m.5s. But does S belong to the previous shock (3h.16m.12s.) as there indicated? Sucre $PR_1E = +15$m.20s. eP = +62m.13s. Does S here also belong to previous shock? (See La Paz).

Aug. 3d. 9h. 26m. 8s. Epicentre 35°·5N. 140°·0E. (as on 1926 April 18d.).

A = −·624, B = +·523, C = +·581; D = +·643, E = +·766; G = −·445, H = +·373, K = −·814.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Tokyo | | 0·3 | 312 | 0 16 | +11 | — | — | — | — |
| Nagoya | | 2·5 | 262 | 0 43 | + 4 | — | — | 1·3 | 1·8 |
| Mizusawa | | 3·7 | 14 | 1 3 | + 5 | 1 46 | + 4 | — | — |
| Osaka | | 3·8 | 259 | 1 0 | + 1 | — | — | 2·0 | 2·7 |
| Kobe | | 4·1 | 266 | 1 5 | + 1 | (2 2) | + 9 | 2·0 | 2·2 |
| Toyooka | | 4·2 | 273 | e 1 39 | +34 | — | — | e 2·5 | 2·7 |
| Sumoto | | 4·4 | 256 | 1 7 | − 1 | — | — | 2·2 | 2·3 |
| Matuyama | | 6·2 | 256 | e 1 51 | +16 | — | — | e 3·5 | 3·6 |
| Hukuoka | | 8·1 | 259 | 2 6 | + 3 | — | — | 4·1 | 4·4 |
| Nagasaki | | 8·9 | 255 | 2 10 | − 5 | 4 10 | + 9 | 4·6 | 5·0 |
| Zi-ka-wei | | 16·1 | 260 | i 3 47 | − 6 | 6 54 | − 3 | — | — |
| Taihoku | E. | 19·0 | 242 | e 5 27 | +58 | — | — | — | — |
| Agana | E. | 22·4 | 168 | — | — | — | — | e 22·6 | — |
| Irkutsk | | 30·3 | 315 | e 6 10 | −21 | e 10 59 | −40 | 18·9 | — |
| Ekaterinburg | | 55·4 | 320 | i 9 37 | − 5 | i 17 15 | −11 | 18·9 | 24·4 |
| Kucino | | 67·4 | 324 | e 10 57 | − 3 | 20 17 | +22 | 35·5 | 41·6 |
| Baku | | 68·0 | 305 | e 11 1 | − 3 | e 19 49 | −13 | 33·9 | 43·2 |
| Leningrad | | 68·6 | 330 | i 11 4 | − 4 | i 20 4 | − 5 | 31·4 | 45·8 |
| Pulkovo | | 68·7 | 330 | i 11 5 | − 4 | i 20 3 | − 7 | 33·4 | 43·9 |
| Makeyevka | | 71·5 | 318 | e 11 20 | − 7 | e 20 34 | −10 | 33·9 | — |
| Vienna | Z. | 82·4 | 326 | e 12 23 | − 9 | — | — | — | — |
| De Bilt | | 84·0 | 334 | 12 32 | −10 | 22 50 | −18 | e 43·9 | — |
| Zagreb | | 84·3 | 324 | e 12 33 | −11 | e 22 34 | −37 | — | — |
| Uccle | | 85·3 | 334 | — | — | e 22 57 | −25 | e 41·9 | — |
| Strasbourg | | 85·8 | 330 | e 12 37 | −15 | e 23 0 | −28 | e 33·9 | — |
| Venice | | 86·2 | 326 | e 7 58 | ? | 16 55? | ? | — | — |
| Zurich | E. | 86·4 | 330 | e 13 0 | + 5 | — | — | — | — |
| Moncalieri | | 88·7 | 329 | e 12 31 | −38 | 23 15 | [− 5] | 34·6 | — |
| Rocca di Papa | | 89·0 | 324 | e 13 11 | + 1 | e 23 19 | [− 3] | e 41·0 | — |
| Algiers | | 97·4 | 326 | e 13 7 | −49 | e 23 40 | [−30] | — | — |
| Almeria | N. | 99·6 | 331 | — | — | — | — | — | 65·9 |
| Granada | | 99·9 | 332 | e 14 36 | +26 | e 26 13 | +18 | e 52·9 | 64·4 |
| La Paz | | 148·5 | 60 | 19 55 | [+ 1] | — | — | — | — |

Additional readings: Nagoya MN = +2·0m. Mizusawa SN = +1m.47s. Osaka MN = +2·4m. Sumoto MZ = +2·5m. Zi-ka-wei $PR_1 = +4$m.6s. Irkutsk e = +14m.11s. Ekaterinburg MN = +30·9m., MZ = +35·9m. Baku MZ = +43·1m. Leningrad MN = +46·2m. Pulkovo PS = +20m.33s., MZ = +46·0m. Vienna $PR_1 = +15$m.35s. De Bilt $ePR_1Z = +15$m.46s. Zagreb e = +15m.45s. Rocca di Papa e = +9m.56s. eE = +12m.56s., eN = +12m.57s., $ePR_1N = +16$m.19s. Algiers $PR_1 = +17$m.34s. Granada i = +17m.49s. and +19m.55s.

## Aug. 3d. 10h. 31m. 54s. Epicentre 2°·0S. 127°·3E.

(given by De Bilt).

A = −·606, B = +·795, C = −·035; D = +·795, E = +·606; G = +·021, H = −·028, K = −·999.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | 1·9 | 153 | i 1 22 | +53 | — | — | — | — |
| Manila | 17·8 | 339 | i 4 23 | + 8 | i 7 59 | +23 | i 10 0 | 10·2 |
| Malabar | 20·3 | 254 | i 4 41 | − 4 | i 8 17 | −12 | — | — |
| Batavia | 20·8 | 258 | i 4 42 | − 9 | i 8 30 | −10 | — | — |
| Hong Kong | 27·5 | 333 | 5 56 | − 7 | (10 36) | −14 | 10·6 | 12·8 |
| Taihoku | E. 27·6 | 348 | 7 13 | +69 | (11 31) | +39 | 11·5 | — |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Phu-Lien | 30·5 | 319 | e 6 19 | −14 | e 11 21 | −22 | 17·1 | — |
| Perth | 31·8 | 200 | 6 26 | −19 | 12 6 | + 1 | 18·0 | 18·9 |
| Zi-ka-wei | 33·7 | 353 | i 6 54 | − 8 | 12 11 | −25 | — | — |
| Adelaide | 34·6 | 165 | e 6 34 | −36 | i 12 37 | −12 | 16·8 | 20·9 |
| Sumoto | 37·1 | 10 | 7 36 | + 5 | 13 19 | − 6 | 19·5 | — |
| Osaka | 37·5 | 10 | 7 35 | + 1 | 13 3 | −28 | 21·2 | 26·2 |
| Nagoya | 38·3 | 13 | e 7 42 | + 2 | — | — | — | — |
| Riverview | 38·9 | 149 | e 7 35 | −10 | e 13 18 | −33 | e 18·7 | 22·6 |
| Sydney | 38·9 | 149 | 6 18 | −87 | 16 36 | ?$SR_4$ | 21·3 | 23·1 |
| Melbourne | 39·3 | 159 | e 7 42 | − 7 | i 13 54 | − 2 | i 19·0 | 22·2 |
| Mizusawa | 43·0 | 17 | 8 14 | − 4 | 14 50 | + 2 | 21·4 | — |
| Calcutta E. | 45·2 | 308 | 7 19 | −75 | 15 8 | −10 | — | — |
| N. | 45·2 | 308 | 7 44 | −50 | 15 14 | − 4 | — | — |
| Colombo | 48·2 | 282 | 8 56 | − 1 | 15 56 | 0 | 18·9 | 28·4 |
| Kodaikanal | 51·1 | 286 | (9 6) | − 8 | — | — | (22·8) | (35·0) |
| Hyderabad | 51·9 | 295 | 9 13 | − 6 | 16 33 | −10 | 26·1 | 30·2 |
| Bombay | 57·5 | 295 | 10 5 | + 9 | 17 40 | −13 | e 27·8 | — |
| Irkutsk | 57·7 | 345 | 10 3 | + 6 | 18 3 | + 8 | 29·1 | 39·1 |
| Christchurch | 57·8 | 144 | e 10 12 | +14 | 18 42 | +46 | 31·7 | 37·7 |
| Wellington | 58·0 | 140 | e 10 2 | + 3 | 18 2 | + 3 | e 24·1 | 36·9 |
| Simla E. | 58·0 | 310 | e 9 30 | −29 | 18 0 | + 1 | 30·7 | 31·9 |
| N. | 58·0 | 310 | e 10 6 | + 7 | 18 0 | + 1 | 32·7 | 34·9 |
| Honolulu | 76·5 | 69 | 12 14 | +16 | i 22 7 | +24 | 36·1 | 44·2 |
| Ekaterinburg | 79·2 | 330 | i 12 18 | + 4 | i 22 11 | − 3 | 24·1 | 50·1 |
| Baku | 81·8 | 312 | i 12 31 | + 2 | i 22 45 | + 1 | 39·6 | 45·8 |
| Piatigorsk | 87·2 | 315 | 12 31 | −29 | 22 55 | [−15] | — | 47·1 |
| Makeyevka | 91·1 | 320 | e 13 13 | − 9 | 24 35 | +10 | 43·1 | 55·6 |
| Kucino | 91·4 | 326 | e 13 32 | + 9 | 23 51 | [+15] | 37·5 | — |
| Leningrad | 95·2 | 330 | e 13 38 | − 6 | i 24 12 | [+14] | 44·1 | 66·9 |
| Pulkovo | 95·3 | 330 | e 13 34 | −11 | 24 13 | [+14] | 45·7 | 61·4 |
| Upsala E. | 101·5 | 331 | e 18 15 | ?$PR_1$ | e 24 40 | [+ 8] | e 52·1 | 62·6 |
| Athens E. | 101·9 | 310 | e 14 33 | +13 | i 24 43 | [+ 9] | 36·1 | 60·1 |
| Budapest | 103·7 | 320 | 19 39 | ?$PR_1$ | 25 0 | [+19] | e 52·1 | — |
| Victoria E. | 104·2 | 40 | 18 51 | ?$PR_1$ | 25 2 | [+18] | 39·3 | 50·7 |
| Vienna | 105·3 | 321 | e 18 49 | ?$PR_1$ | 24 58 | [+ 9] | e 52·1 | 65·1 |
| Graz | 106·2 | 320 | e 17 14 | ? | e 27 6 | +12 | 53·1 | 59·0 |
| Zagreb | 106·2 | 316 | e 18 6? | [− 3] | 25 6? | [+13] | — | — |
| Hamburg | 107·5 | 326 | e 19 7 | ?$PR_1$ | i 25 13 | [+14] | e 52·1 | 57·1 |
| Venice | 108·7 | 317 | e 19 9 | ?$PR_1$ | 20 46 | ? | — | — |
| Rocca di Papa | 109·5 | 313 | e 18 33 | [+12] | e 28 47 | ? | e 54·1 | 59·3 |
| Hohenheim E. | 109·6 | 321 | e 19 22 | ?$PR_1$ | e 30 46 | ? | e 47·1 | — |
| Florence | 109·9 | 314 | 19 6 | ?$PR_1$ | 28 36 | +69 | 53·1 | 64·1 |
| Zurich N. | 110·5 | 320 | e 18 53 | [+29] | — | — | — | — |
| Strasbourg | 110·6 | 321 | e 15 6? | + 6 | e 27 43 | +10 | 48·1 | 59·6 |
| De Bilt | 110·8 | 325 | 14 57 | − 4 | e 25 27 | [+14] | e 50·1 | 59·0 |
| Uccle | 111·8 | 325 | e 19 32 | ?$PR_1$ | e 27 54 | +10 | e 49·1 | 58·4 |
| Dyce | 111·9 | 333 | — | — | — | — | 52·3 | 58·1 |
| Edinburgh | 113·1 | 331 | e 19 51 | ?$PR_1$ | i 25 46 | [+24] | 54·1 | 59·1 |
| Paris | 113·7 | 323 | e 19 46 | ?$PR_1$ | e 28 11 | +11 | 46·1 | 65·1 |
| Stonyhurst | 113·9 | 330 | e 19 46 | ?$PR_1$ | — | — | 58·1 | 62·1 |
| Kew | 114·0 | 328 | e 19 50 | ?$PR_1$ | — | — | 46·1 | — |
| Bidston | 114·5 | 330 | 19 46 | ?$PR_1$ | 30 53? | ? | 36·2 | 61·9 |
| Algiers | 118·1 | 310 | e 20 18 | ?$PR_1$ | 33 22 | ? | e 59·1 | 75·1 |
| Tortosa E. | 118·4 | 316 | 20 13 | ?$PR_1$ | — | — | e 58·1 | 82·8 |
| Toledo | 121·9 | 316 | e 20 29 | ?$PR_1$ | — | — | — | 61·4 |
| Granada | 122·9 | 313 | i 20 51 | ?$PR_1$ | e 31 6 | ? | 63·6 | 65·3 |
| Rio Tinto | 124·7 | 315 | 20 6? | ?$PR_1$ | — | — | — | 30·1 |
| San Fernando | 125·0 | 313 | — | — | — | — | — | 87·6 |
| Chicago E. | 129·4 | 34 | — | — | — | — | e 58·4 | 72·9 |
| Ann Arbor | 131·1 | 30 | i 23 0 | ?$PR_1$ | — | — | e 64·0 | — |
| Ottawa | 132·1 | 20 | e 21 56 | ?$PR_1$ | — | — | e 58·1 | 68·1 |
| Toronto N. | 132·1 | 25 | i 23 6 | ?$PR_1$ | — | — | 65·1 | 72·1 |
| Fordham | 136·7 | 24 | e 19 4 | [−29] | — | — | e 70·7 | 73·5 |
| La Plata | 142·8 | 172 | 19 55? | [+10] | — | — | — | — |
| Sucre | 155·6 | 150 | e 20 20 | [+17] | e 34 28 | ? | 77·9 | 94·3 |
| La Paz | 156·0 | 141 | 20 16 | [+13] | 34 25 | ? | 80·1 | — |

Additional readings and notes: Manila PSN = +6m.34s., PSE = +6m.40s., $SR_1N$ = +8m.23s., $SR_1E$ = +8m.28s., MN = +10·4m. Malabar and Batavia readings are all given for 11h. Perth $PR_1$ = +7m.15s., $PR_2$ = +7m.31s., $PR_3$ = +7m.46s., PS = +11m.28s., $SR_1$ = +15m.10s. Adelaide $PR_1$ = +7m.52s., i$SR_4$? = +16m.6s. Riverview e$PR_1$ = +9m.5s. and +9m.24s., $P_1S$ = +13m.55s. and +16m.41s. = $SR_1$ +18s., MN = +22·7m., MZ = +26·4m.; $T_e$ = 10h.32m.3s. Sydney $PR_2$ = +9m.0s. = $PR_1$ −9s.

*Continued on next page.*

$SR_1 = +16m.36s.$ Melbourne $i = +17m.24s. = SR_2 + 6s.$ Kodaikanal readings have been increased by 11m. Wellington $i = +14m.22s. = PR_2 + 10s.$, $MN = +33 \cdot 3m.$; is $L = SR_2$? Honolulu $P = +12m.32s.$, $PR_1E = +15m.10s.$, $PR_1N = +16m.43s.$, $PR_2N = +17m.6s.$, $PR_2N = +17m.22s.$, $PSE = +22m.25s.$, $S_0SPE$? $= +23m.0s.$, $iS_0SPN = +23m.15s.$, $PPSE = +23m.23s.$, $eSR_1N = +27m.16s.$, $SR_1E = +27m.36s.$, $eSR_2N = +31m.16s.$, $SR_2 = +32m.42s.$, $LN = +34 \cdot 6m.$ Ekaterinburg $MN = +41 \cdot 0m.$, $MZ = +57 \cdot 2m.$ Baku $i = +12m.42s.$, $MN = +43 \cdot 2m.$, $MZ = +54 \cdot 4m.$ Piatigorsk $iPS = +23m.42s. = S - 1s.$ Makeyevka $PR_1 = +16m.59s.$, $S_4P_4S = +23m.45s. = [S] + 11s.$, $PS = +25m.20s.$, $SR_2 = +37m.30s. = SR_2 + 8s.$, $MN = +50 \cdot 8m.$, $MZ = +58 \cdot 6m.$ Kucino $ePR_1 = +16m.54s.$, $PR_2 = +20m.12s.$, $S_4P_4P_4S = +24m.11s.$, $S = +24m.36s.$, $ePS = +25m.33s.$, $SR_2 = +30m.19s.$ Leningrad $iPR_1 = +17m.32s.$, $eS = +24m.54s.$, $MZ = +64 \cdot 1m.$, $MN = +67 \cdot 2m.$ Pulkovo $PR_1 = +17m.28s.$, $PPS = +26m.22s.$, $SR_1 = +31m.24s.$, $MN = +49 \cdot 6m.$, $MZ = +69 \cdot 9m.$ Upsala $eLN = +50 \cdot 1m.$, $MN = +66 \cdot 7m.$ Athens $eN = +25m.4s.$ Victoria $LN = +43 \cdot 7m.$, $MN = +53 \cdot 1m.$; is $L = SR_2$? Vienna $SR_1 = +27m.37s.$ Zagreb $ePR_1 = +19m.0s.$ Hamburg $MZ = +65 \cdot 1m.$ Rocca di Papa $ePN = +19m.0s.$, $ePE = +19m.2s.$, $eP = +19m.26s.$ ($PR_1$ is at $+19m.15s.$). Hohenheim $ePR_2E = +25m.18s. = [S] + 10s.$, $eE = +28m.50s.$ and $+31m.30s.$ Strasbourg $ePR_1 = +19m.23s.$, $ePR_2 = +25m.44s. = [S] + 32s.$, $ePS = +29m.33s.$, $MZ = +72 \cdot 4m.$ De Bilt $ePR_1 = +19m.25s.$, $MN = +59 \cdot 2m.$, $MZ = +74 \cdot 1m.$; $T_0 = 10h.31m.41s.$; epicentre $2° \cdot 0S.\ 127° \cdot 3E.$, as adopted. Uccle $e = +25m.31s. = [S] + 14s. = S_cP_cS + 14s.$, $e = +35m.12s. = SR_1 + 6s.$, and $+39m.12s.$ Dyce $PR_1 = +19m.30s.$ Stonyhurst $iPR_2$? $= +27m.36s. = S - 25s.$ Granada $i = +23m.46s. = PR_2 - 22s.$, $+24m.25s.$ and $+27m.44s.$, $P = +32m.39s.$, which with L and M above furnish the phase for a second shock. Ann Arbor $eN = +25m.36s. = PR_2 + 24s.$ and $+33m.0s.$ Ottawa $i = +22m.59s.$, $eN = +31m.36s.$, $eE$? $= +35m.9s.$, $e = +40m.36s. = SR_1 + 81s.$, $eLN = +61 \cdot 1m.$, $MN = +72 \cdot 1m.$ Toronto $eE = +40m.6s. = SR_1 + 51s.$ Fordham $eN = +22m.7s. = PR_1 - 6s.$ and $+24m.57s.$, $iN = +23m.7s.$ and $+26m.10s. = PR_2 + 19s.$, $SR_1N = +41m.14s.$, $SR_2 = +45m.27s.$, $e = +66m.12s.$, $MN = +74 \cdot 4m.$ Sucre $iP = +20m.29s.$, $PR_1 = +23m.53s.$, $SR_2 = +50m.59s. = SR_2 + 52s.$

Aug. 3d. 19h. 41m. 12s. Epicentre 1°·0N. 97°·5E.

$A = -\cdot 131$, $B = +\cdot 991$, $C = +\cdot 017$; $D = +\cdot 991$, $E = +\cdot 131$; $G = -\cdot 002$, $H = +\cdot 017$, $K = -\cdot 1 \cdot 000$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Batavia | | 11·7 | 128 | e 3 2 | + 7 | — | — | i 6·2 | — |
| Colombo | | 18·6 | 289 | 4 48 | +24 | 8 38 | +45 | 10·8 | 12·8 |
| Phu-Lien | | 21·7 | 23 | e 5 2 | + 1 | e 9 20 | +21 | 12·8 | — |
| Kodaikanal | | 22·0 | 296 | 5 48 | +43 | — | — | 11·7 | 17·0 |
| Hyderabad | | 25·0 | 312 | 5 40 | + 2 | 10 10 | + 7 | 13·4 | 17·2 |
| Hong Kong | | 26·8 | 36 | 5 53 | − 3 | (10 38) | + 1 | 10·6 | 19·3 |
| Manila | | 26·9 | 58 | 5 48? | − 9 | — | — | — | — |
| Bombay | | 30·2 | 308 | e 9 27 | +177 | 13 31 | +114 | e 16·5 | — |
| Taihoku | E. | 33·4 | 43 | — | — | e 11 48? | −42 | 17·8 | — |
| Simla | E. | 35·8 | 330 | — | — | — | — | e 17·3 | — |
| Zi-ka-wei | | 37·7 | 35 | i 7 23 | −13 | e 16 21 | +167 | 22·8 | 25·6 |
| Irkutsk | | 51·6 | 6 | e 9 16 | − 1 | 16 40 | + 1 | 27·8 | 34·3 |
| Adelaide | | 52·6 | 138 | — | — | — | — | e 31·2 | 33·8 |
| Melbourne | | 58·4 | 138 | — | — | e 17 54 | −10 | — | 35·3 |
| Baku | | 58·4 | 320 | e 10 9 | + 8 | — | — | e 30·8 | 43·3 |
| Ekaterinburg | | 63·1 | 339 | i 10 44 | +11 | i 19 29 | +27 | — | 39·7 |
| Makeyevka | | 69·4 | 323 | e 11 18 | + 5 | 20 21 | + 2 | 32·8 | 50·7 |
| Kucino | | 72·6 | 329 | 11 38 | + 4 | 20 59 | + 2 | 37·8 | 49·3 |
| Pulkovo | | 77·9 | 332 | i 12 6 | 0 | i 21 57 | − 2 | 37·8 | 58·6 |
| Leningrad | | 78·0 | 332 | i 12 8 | + 1 | 21 58 | − 2 | 42·3 | 55·4 |
| Vienna | | 83·4 | 320 | i 12 36 | − 2 | 22 58 | − 3 | — | — |
| Upsala | E. | 84·1 | 330 | — | — | e 23 2 | − 7 | — | — |
| Rocca di Papa | | 85·5 | 313 | e 12 48 | − 3 | e 22 19 | −66 | — | — |
| Florence | | 86·6 | 314 | e 19 48 | ? | — | — | — | 41·8 |
| Hamburg | | 87·8 | 325 | e 13 1 | − 3 | e 23 42 | − 8 | 52·8 | — |
| Zurich | | 88·6 | 318 | e 13 1 | − 7 | e 23 19 | [ 0] | — | — |
| Strasbourg | | 89·1 | 320 | e 13 5 | − 6 | e 23 46 | −18 | 36·8 | — |
| De Bilt | | 90·7 | 322 | 13 14 | − 6 | e 24 8 | −13 | e 49·8 | 61·8 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Uccle | | 91·3 | 321 | — | — | e 24 12 | −15 | e 44·8 | — |
| Paris | | 92·6 | 320 | — | — | — | — | e 53·8 | — |
| Algiers | | 93·0 | 309 | — | — | 24 26 | −19 | — | 59·8 |
| Kew | | 94·1 | 322 | — | — | (e 23 48?) | [− 4] | e 23·8 | — |
| Edinburgh | | 95·2 | 327 | — | — | — | — | e 48·8 | — |
| Granada | | 98·3 | 309 | i 12 15 | −107 | e 21 53 | −226 | e 43·8 | 58·8 |
| San Fernando | E. | 100·4 | 309 | — | — | — | — | — | 73·3 |
| Victoria | E. | 119·3 | 30 | — | — | — | — | 72·4 | — |
| Ottawa | | 133·3 | 352 | e 22 54 | ?$PR_1$ | e 39 48? | ?$SR_1$ | e 54·8 | — |
| Toronto | N. | 135·3 | 357 | — | — | — | — | e 81·2 | — |

Additional readings and notes: Simla eN = +20m.12s.: another shock? Baku e = +13m.53s. = $PR_2$ +9s., MN = +36·7m., MZ = +41·7m. Ekaterinburg e = +12m.59s. = $PR_1$ −27s. and +14m.33s. = $PR_2$ −7s., MN = +38·3m., MZ = +42·4m. Makeyevka $PR_2$ = +16m.15s., MN = +48·6m. Kucino e$PR_1$ = +14m.26s., e$PR_2$ = +16m.8s., e = +21m.13s. = [S] −18s., MN = +39·8m. Pulkovo MN = +49·0m. Leningrad MN = +56·9m., MZ = +57·1m. De Bilt eE = +23m.55s. = [S] +23s., MZ = +64·8m. San Fernando MN = +64·3m.

Aug. 3d. Readings also at 4h. (Taihoku (2) ), 6h. (La Paz and Sucre), 7h. (2) and 8h. (2) (Venice), 12h. (Leningrad and near Tacubaya), 13h. and 16h. (Zi-ka-wei), 22h. (Kodaikanal).

Aug. 4d. Readings at 4h. (Dyce), 10h. (Ekaterinburg), 11h. (Pulkovo), 12h. (Hohenheim), 13h. (Tokyo and Ekaterinburg), 14h. (Azores and Zi-ka-wei), 17h. (Tokyo and Paris), 19h. (Irkutsk, Ekaterinburg, and near Zi-ka-wei), 20h. (Pulkovo, Leningrad (2), and De Bilt), 21h. (Zi-ka-wei), 23h. (near La Paz and Sucre).

Aug. 5d.
2h. 47m. 45s. (I)
4h. 22m. 40s. (II)
4h. 55m. 55s. (III)
5h. 49m. 35s. (IV)
6h. 7m. 36s. (V)
} Epicentre 25°·0N. 119°·5E. (as on 1920 Dec. 6d. 1h.).

A = −·446, B = +·789, C = +·423; D = +·870, E = +·492; G = −·208, H = +·368, K = −·906.

A long series of repetitions, apparently *not* from the epicentre 24°·0N. 124°·0E. on Aug. 6d. 15h. From the general character of the records De Bilt suggests that the epicentre is closely the same for all, but there seem to be at least three epicentres involved, viz., 25°·0N. 119°·5E., 24°·0N. 124°·0E., and 25°·8N. 128°·0E. For the minor shocks it is difficult to be certain of the proper epicentre.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I Zi-ka-wei | 6·4 | 15 | e 1 40 | + 2 | 2 51 | − 4 | — | — |
| II | 6·4 | 15 | e 1 44 | + 6 | 2 50 | − 5 | — | — |
| III | 6·4 | 15 | e 1 44 | + 6 | 2 51 | − 4 | — | — |
| IV | 6·4 | 15 | e 1 39 | + 1 | — | — | — | 6·1 |
| V | 6·4 | 15 | e 1 40 | + 2 | 2 42 | −13 | — | 4·4 |
| I Irkutsk | 29·5 | 341 | — | — | — | — | e 18·2 | — |
| II | 29·5 | 341 | — | — | — | — | e 18·3 | — |
| IV | 29·5 | 341 | — | — | e 11 25? | − 1 | 15·4 | — |
| V | 29·5 | 341 | — | — | — | — | 17·4 | — |
| V Ekaterinburg | 52·4 | 324 | e 9 46 | +24 | — | — | — | 34·6 |
| V Pulkovo | 68·2 | 327 | — | — | e 24 18 | ?$SR_1$ | — | 44·5 |
| IV Leningrad | 68·2 | 327 | — | — | — | — | e 40·4 | — |
| V De Bilt | 84·1 | 326 | — | — | — | — | e 54·4 | — |

Aug. 5d. 7h. 35m. 35s. (VI)
8h. 53m. 5s. (VII)
10h. 14m. 25s. (VIII)
10h. 27m. 0s. (IX)
12h. 3m. 0s. (X)
} Epicentre 25°·0N. 119°·5E., as above.

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| VII | Taihoku | N. | 1·9 | 89 | — | — | — | — | e 2·2 | — |
| VIII | | N. | 1·9 | 89 | — | — | — | — | e 2·0 | — |
| IX | | N. | 1·9 | 89 | e −1 0 | ? | — | — | — | — |
| X | | N. | 1·9 | 89 | — | — | — | — | e 1·2 | — |
| VI | Zi-ka-wei | | 6·4 | 15 | e 1 52 | +14 | e 2 50 | − 5 | — | 4·5 |
| VII | | | 6·4 | 15 | e 1 41 | + 3 | 3 2 | + 7 | — | — |
| VIII | | | 6·4 | 15 | 1 35 | − 3 | 2 52 | − 3 | — | — |
| IX | | | 6·4 | 15 | e 1 53 | +15 | 2 50 | − 5 | — | — |
| X | | | 6·4 | 15 | e 1 58 | +20 | 2 48 | − 7 | — | — |
| VI | Irkutsk | | 29·5 | 341 | — | — | — | — | e 16·4 | — |
| VIII | | | 29·5 | 341 | e 5 35? | −48 | — | — | 19·6 | — |
| X | | | 29·5 | 341 | e 6 0? | −23 | — | — | 20·0 | — |
| VII | Ekaterinburg | | 52·4 | 324 | e 9 15 | − 7 | — | — | — | 34·7 |
| VIII | | | 52·4 | 324 | e 9 24 | + 2 | — | — | — | 30·9 |
| X | | | 52·4 | 324 | e 9 21 | − 1 | — | — | — | 34·8 |
| VI | Pulkovo | | 68·2 | 327 | — | — | — | — | — | e 26·9 |
| VII | | | 68·2 | 327 | — | — | — | — | e 41·9 | — |
| VIII | | | 68·2 | 327 | — | — | — | — | e 32·3 | 44·8 |
| X | | | 68·2 | 327 | — | — | — | — | 39·3 | 44·8 |
| VII | Leningrad | | 68·2 | 327 | — | — | — | — | e 37·9 | — |
| VIII | | | 68·2 | 327 | — | — | — | — | e 42·6 | — |
| VIII | De Bilt | | 84·1 | 326 | — | — | — | — | e 48·6 | — |
| X | Strasbourg | | 84·6 | 322 | — | — | — | — | e 47·0 | — |
| X | Uccle | | 85·2 | 324 | — | — | — | — | e 48·0 | — |
| X | Kew | | 87·1 | 327 | — | — | — | — | e 55·0 | — |
| X | Granada | | 98·0 | 318 | — | — | — | — | e 58·0 | 62·5 |

Aug. 5d. 12h. 46m. 36s. (XI)
13h. 14m. 50s. (XII)
14h. 53m. 20s. (XIII)
15h. 32m. 24s. (XIV)
16h. 41m. 10s. (XV)
} Epicentre 25°·0N. 119°·5E. (as above).

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XI | Taihoku | N. | 1·9 | 89 | — | — | — | — | e 2·4 | — |
| XV | | N. | 1·9 | 89 | — | — | — | — | e 1·1 | — |
| XI | Zi-ka-wei | | 6·4 | 15 | e 1 34 | − 4 | e 2 54 | − 1 | — | — |
| XII | | | 6·4 | 15 | e 1 22 | −16 | e 3 17 | +22 | — | — |
| XIII | | | 6·4 | 15 | e 1 37 | − 1 | — | — | — | — |
| XIV | | | 6·4 | 15 | e 1 39 | + 1 | 3 5 | +10 | — | — |
| XV | | | 6·4 | 15 | e 1 40 | + 2 | 2 53 | − 2 | — | 4·5 |
| XV | Phu-Lien | | 12·6 | 253 | — | — | — | — | — | 9·8 |
| XI | Irkutsk | | 29·5 | 341 | — | — | — | — | e 17·4 | — |
| XIII | | | 29·5 | 341 | — | — | — | — | e 16·4 | — |
| XI | Ekaterinburg | | 52·4 | 324 | e 9 24 | + 2 | — | — | — | 34·8 |
| XIV | | | 52·4 | 324 | 9 25 | + 3 | 19 15 | +146 | — | 34·9 |
| XV | | | 52·4 | 324 | 9 17 | − 5 | — | — | — | 34·8 |
| XI | Pulkovo | | 68·2 | 327 | — | — | — | — | e 41·4 | — |
| XII | | | 68·2 | 327 | — | — | — | — | e 38·6 | — |
| XIII | | | 68·2 | 327 | — | — | — | — | e 43·7 | — |
| XIV | | | 68·2 | 327 | — | — | — | — | e 43·6 | — |
| XV | | | 68·2 | 327 | — | — | e 14 8 | ?$PR_4$ | 38·8 | 44·6 |
| XI | Leningrad | | 68·2 | 327 | — | — | — | — | e 38·9 | — |
| XIV | | | 68·2 | 327 | — | — | — | — | e 48·1 | — |
| XV | | | 68·2 | 327 | — | — | — | — | 38·5 | — |
| XV | Hamburg | | 80·8 | 325 | — | — | — | — | e 45·8 | — |
| XIV | De Bilt | | 84·1 | 326 | — | — | — | — | e 55·6 | — |
| XV | | | 84·1 | 326 | — | — | — | — | e 46·8 | — |
| XIV | Strasbourg | | 84·6 | 322 | — | — | — | — | e 57·6 | — |
| XV | | | 84·6 | 322 | — | — | — | — | e 43·8 | — |
| XV | Uccle | | 85·2 | 324 | — | — | — | — | e 38·8 | — |
| XV | Kew | | 87·1 | 327 | — | — | — | — | e 52·8 | — |
| XV | Paris | | 87·3 | 324 | — | — | — | — | e 50·8 | — |
| XV | Granada | | 98·0 | 318 | — | — | — | — | e 64·3 | 66·9 |

Aug. 5d. 18h. 40m. 18s. (XVI)
20h. 40m. 0s. (XVII)
22h. 45m. 20s. (XVIII)
23h. 31m. 50s. (XIX)
23h. 52m. 30s. (XX)
} Epicentre 25°·0N. 119°·5E. (as above).

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XVII | Taihoku | N. | 1·9 | 89 | — | — | — | — | e 1·6 | — |
| XVIII | | N. | 1·9 | 89 | — | — | — | — | e 1·0 | — |
| XIX | | N. | 1·9 | 89 | — | — | — | — | e 1·3 | — |
| XX | | N. | 1·9 | 89 | — | — | — | — | e 2·2 | — |
| XVI | Zi-ka-wei | | 6·4 | 15 | e 1 42 | + 4 | 2 52 | − 3 | — | — |
| XVII | | | 6·4 | 15 | e 1 14 | −24 | e 2 22 | −33 | — | — |
| XVIII | | | 6·4 | 15 | e 1 35 | − 3 | — | — | — | — |
| XIX | | | 6·4 | 15 | e 0 30 | −68 | — | — | — | — |
| XX | | | 6·4 | 15 | e 1 28 | −10 | — | — | — | 3·8 |
| XX | Manila | | 10·5 | 172 | e 1 30? | −67 | — | — | — | — |
| XIX | Phu-Lien | | 12·6 | 253 | — | — | — | — | — | 10·2 |
| XVI | Irkutsk | | 29·5 | 341 | e 8 42? | +139 | — | — | 14·7 | — |
| XVIII | | | 29·5 | 341 | — | — | e 11 40? | +14 | 18·7 | — |
| XIX | | | 29·5 | 341 | e 6 16 | − 7 | e 11 42 | +16 | 19·2 | — |
| XX | | | 29·5 | 341 | e 6 42 | +19 | — | — | 18·5 | — |
| XVII | Ekaterinburg | | 52·4 | 324 | e 9 43 | +21 | — | — | — | 35·3 |
| XVIII | | | 52·4 | 324 | e 9 13 | − 9 | — | — | — | 34·8 |
| XIX | | | 52·4 | 324 | 9 34 | +12 | — | — | e 30·7 | 31·5 |
| XIX | Baku | | 59·0 | 304 | — | — | — | — | e 35·7 | — |
| XX | | | 59·0 | 304 | — | — | — | — | e 39·9 | — |
| XX | Makeyevka | | 66·2 | 314 | e 13 39 | ?$PR_1$ | — | — | 41·5 | 48·1 |
| XVI | Pulkovo | | 68·2 | 327 | — | — | — | — | e 44·3 | — |
| XVII | | | 68·2 | 327 | e 11 30 | +25 | — | — | — | 45·1 |
| XVIII | | | 68·2 | 327 | — | — | — | — | e 42·7 | — |
| XIX | | | 68·2 | 327 | — | — | — | — | e 34·7 | 41·2 |
| XX | | | 68·2 | 327 | — | — | — | — | — | 45·3 |
| XVI | Leningrad | | 68·2 | 327 | — | — | — | — | 44·2 | — |
| XVII | | | 68·2 | 327 | (e 11 30) | +25 | — | — | e 11·5 | — |
| XVIII | | | 68·2 | 327 | — | — | — | — | e 42·0 | — |
| XX | | | 68·2 | 327 | — | — | — | — | 38·5 | 45·5 |
| XIX | Hamburg | | 80·8 | 325 | — | — | — | — | e 45·2 | — |
| XX | | | 80·8 | 325 | — | — | — | — | e 45·5 | — |
| XVII | De Bilt | | 84·1 | 326 | — | — | — | — | e 48·0 | — |
| XVIII | | | 84·1 | 326 | — | — | — | — | e 48·7 | — |
| XIX | | | 84·1 | 326 | — | — | — | — | e 47·2 | 55·5 |
| XX | | | 84·1 | 326 | — | — | — | — | e 47·5 | 55·9 |
| XIX | Strasbourg | | 84·6 | 322 | — | — | — | — | 47·2 | — |
| XIX | Uccle | | 85·2 | 324 | — | — | — | — | e 47·2 | — |
| XIX | Kew | | 87·1 | 327 | — | — | — | — | e 54·2 | — |
| XX | Paris | | 87·3 | 324 | — | — | — | — | e 35·5 | 57·5 |
| XIX | Granada | | 98·0 | 318 | — | — | — | — | e 49·2 | 62·7 |
| XX | | | 98·0 | 318 | — | — | — | — | e 59·5 | 63·2 |

Aug. 5d. Readings also at 3h. (Irkutsk), 5h. (near Osaka), 6h. (Irkutsk), 10h. (Taihoku), 11h. (Pulkovo, Irkutsk, Leningrad, and Osaka), 14h. (Azores), 16h. (Irkutsk), 17h. (Ekaterinburg, Irkutsk, and near Athens), 18h. (Leningrad, Pulkovo, and Zagreb), 20h. and 22h. (Irkutsk), 23h. (near Osaka (2) ).

Aug. 6d. 3h. 6m. 10s. (XXI)
3h. 55m. 10s. (XXII)
4h. 32m. 50s. (XXIII)
5h. 26m. 24s. (XXIV)
} Epicentre 25°·0N. 119°·5E. (as on Aug. 5d.).

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XXI | Taihoku | N. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| XXII | | N. | 1·9 | 89 | — | — | — | — | e 1·8 | — |
| XXIV | | N. | 1·9 | 89 | e 1 22 | +53 | — | — | — | — |
| XXI | Zi-ka-wei | | 6·4 | 15 | e 1 48 | +10 | 2 45 | −10 | — | 4·5 |
| XXII | | | 6·4 | 15 | e 1 37 | −1 | 2 44 | −11 | — | 4·3 |
| XXIII | | | 6·4 | 15 | e 2 42 | +64 | 3 17 | +22 | — | — |
| XXIV | | | 6·4 | 15 | 1 48 | +10 | 2 33 | −22 | — | — |
| XXIII | Manila | | 10·5 | 172 | — | — | — | — | e 5·2 | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XXIII | Nagasaki | 11·9 | 47 | e 2 14 | −44 | — | — | 4·3 | 5·3 |
| XXIV | | 11·9 | 47 | e 5 12 | ?S | (e 5 12) | − 5 | 7·4 | 8·4 |
| XXI | Phu-Lien | 12·6 | 253 | — | — | — | — | 10·2 | — |
| XXIII | | 12·6 | 253 | — | — | — | — | i 11·1 | — |
| XXIV | | 12·6 | 253 | — | — | — | — | 11·6 | — |
| XXIII | Hukuoka | 12·8 | 46 | 2 6 | −64 | 3 49 | −110 | 5·3 | — |
| XXI | Osaka | 16·8 | 51 | 4 47 | +45 | (6 57) | −16 | 6·9 | — |
| XXIII | | 16·8 | 51 | 5 37 | +95 | — | — | — | 8·6 |
| XXIV | | 16·8 | 51 | 4 3 | + 1 | (6 17) | −56 | 6·3 | 8·5 |
| XXI | Irkutsk | 29·5 | 341 | — | — | e 11 8 | −18 | e 16·3 | — |
| XXII | | 29·5 | 341 | — | — | — | — | e 16·8 | — |
| XXIII | | 29·5 | 341 | e 6 22 | − 1 | e 11 26 | 0 | 19·2 | — |
| XXI | Ekaterinburg | 52·4 | 324 | e 9 14 | − 8 | — | — | — | 34·8 |
| XXII | | 52·4 | 324 | e 6 52 | −150 | e 17 23 | +35 | — | 34·6 |
| XXIII | Makeyevka | 66·2 | 314 | — | — | e 37 19 | ?L | 43·2 | 47·6 |
| XXI | Pulkovo | 68·2 | 327 | — | — | — | — | e 42·3 | 44·7 |
| XXII | | 68·2 | 327 | — | — | — | — | e 43·3 | — |
| XXIII | | 68·2 | 327 | — | — | e 21 21 | +77 | 37·7 | 45·1 |
| XXI | Leningrad | 68·2 | 327 | — | — | — | — | e 41·8 | 44·6 |
| XXII | | 68·2 | 327 | — | — | — | — | 43·8 | — |
| XXIII | | 68·2 | 327 | — | — | — | — | 39·2 | 45·1 |
| XXIII | Upsala N. | 74·3 | 329 | — | — | — | — | e 42·2 | — |
| XXIII | Hamburg | 80·8 | 325 | — | — | — | — | e 45·2 | 54·2 |
| XXI | De Bilt | 84·1 | 326 | — | — | — | — | e 46·8 | — |
| XXII | | 84·1 | 326 | — | — | — | — | e 46·8 | — |
| XXIII | | 84·1 | 326 | — | — | — | — | e 47·2 | 55·8 |
| XXIII | Dyce | 84·4 | 332 | — | — | — | — | e 47·8 | — |
| XXI | Strasbourg | 84·6 | 322 | — | — | — | — | 43·8 | — |
| XXIII | | 84·6 | 322 | — | — | — | — | 47·2 | 56·2 |
| XXIII | Florence | 85·0 | 317 | 49 40 | ?L | — | — | (49·7) | 50·2 |
| XXI | Uccle | 85·2 | 324 | — | — | — | — | e 47·8 | — |
| XXII | | 85·2 | 324 | — | — | — | — | e 47·2 | — |
| XXIII | | 85·7 | 332 | — | — | — | — | 50·2 | — |
| XXIII | Edinburgh | 85·7 | 332 | — | — | — | — | 48·5 | — |
| XXIII | Moncalieri | 86·5 | 319 | — | — | e 33 35 | ?$SR_2$ | e 50·2 | 58·5 |
| XXIII | Stonyhurst | 86·7 | 330 | — | — | — | — | e 50·6 | 53·1 |
| XXIV | | 86·7 | 330 | — | — | — | — | e 54·8 | — |
| XXI | Kew | 87·1 | 327 | — | — | — | — | e 39·2 | — |
| XXIII | | 87·1 | 327 | — | — | — | — | e 47·2 | 58·2 |
| XXIII | Paris | 87·3 | 324 | — | — | — | — | e 49·2 | 57·7 |
| XXIII | Oxford | 87·8 | 328 | — | — | — | — | 49·2 | 52·3 |
| XXIII | Tortosa N. | 93·1 | 320 | — | — | — | — | e 54·2 | 59·2 |
| XXIII | Granada | 98·0 | 318 | — | — | — | — | | |

Aug. 6d. 5h. 23m. 48s. Epicentre 85°·0N. 85°·0E.

A = +·008, B = +·087, C = +·996; D = +·996, E = −·087;
G = +·087, H = +·992, K = −·087.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Leningrad | 27·4 | 242 | i 6 4 | + 2 | i 10 58 | +10 | 13·2 | 23·0 |
| Pulkovo | 27·6 | 242 | i 6 6 | + 2 | i 10 59 | + 7 | 13·7 | 21·6 |
| Upsala | 28·6 | 256 | e 6 10 | − 4 | e 11 4 | − 6 | e 14·2 | 22·5 |
| Ekaterinburg | 28·7 | 208 | i 6 16 | + 1 | i 11 14 | + 2 | 13·2 | 19·3 |
| Dyce | 32·8 | 275 | i 6 46 | − 9 | 12 12 | − 9 | e 16·0 | — |
| Irkutsk | 33·0 | 158 | e 6 56 | 0 | e 12 21 | − 3 | 17·2 | 29·4 |
| Edinburgh | 34·2 | 275 | — | — | i 12 36 | − 7 | — | — |
| Hamburg | 35·4 | 262 | e 7 14 | − 3 | e 12 42 | −19 | — | 21·2 |
| Stonyhurst | 36·2 | 274 | — | — | e 12 59 | −14 | — | — |
| De Bilt | 37·3 | 266 | i 7 30 | − 2 | 13 22 | − 6 | e 16·2 | — |
| Kew | 38·4 | 273 | 7 36 | − 5 | — | — | 18·2 | — |
| Uccle | 38·6 | 267 | e 7 39 | − 4 | e 13 38 | − 8 | e 18·2 | 22·0 |
| Makeyevka | 38·7 | 231 | 7 42 | − 2 | 13 44 | − 4 | 20·2 | 25·3 |
| Vienna | 40·1 | 254 | e 7 53 | − 3 | 14 3 | − 5 | i 19·7 | 22·7 |
| Hohenheim | 40·2 | 261 | e 7 56 | − 1 | e 13 48 | −22 | e 19·5 | — |
| Strasbourg | 40·6 | 263 | 7 54 | − 6 | e 14 10 | − 5 | 16·2 | 34·1 |
| Budapest | 40·7 | 251 | 8 9 | + 8 | — | — | e 25·2 | 29·5 |
| Paris | 40·8 | 268 | i 7 59 | − 2 | e 17 21 | ?$SR_1$ | 25·2 | 34·2 |
| Graz | 41·3 | 255 | i 8 28 | +23 | (14 36) | +11 | 27·2 | — |
| Zurich | 41·7 | 262 | i 8 6 | − 3 | — | — | — | — |
| Piatigorsk | 42·3 | 225 | e 7 43 | −30 | i 14 13 | −26 | — | 23·2 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Zagreb | | 42·6 | 254 | e 8 12? | − 3 | — | — | — | 30·4 |
| Venice | | 43·2 | 258 | 8 20 | 0 | 10 9 | ?PR$_1$ | — | — |
| Moncalieri | | 44·1 | 262 | e 7 43 | −44 | 14 59 | − 4 | 22·9 | — |
| Florence | | 45·0 | 258 | 8 32 | − 1 | 15 12 | − 3 | 24·2 | 34·7 |
| Victoria | | 46·1 | 26 | 8 30 | −11 | 15 20 | − 9 | 24·8 | 29·8 |
| Rocca di Papa | | 46·9 | 257 | e 8 49 | + 3 | e 15 35 | − 5 | 34·4 | 34·8 |
| Naples | | 47·6 | 255 | e 6 55 | −116 | — | — | — | — |
| Pompeii | | 47·7 | 255 | e 9 1 | + 9 | e 15 51 | + 1 | — | — |
| Tortosa | E. | 48·9 | 269 | e 9 7 | + 8 | 16 12 | + 7 | — | — |
| | N. | 48·9 | 269 | 9 3 | + 4 | 16 18 | +13 | e 24·2 | 38·7 |
| Ottawa | | 49·4 | 342 | — | — | i 16 10 | − 1 | e 23·2 | — |
| Athens | | 49·8 | 245 | — | — | e 16 24 | + 8 | 24·7 | 27·2 |
| Toledo | | 50·2 | 273 | 9 10 | + 2 | — | — | — | 16·6 |
| Toronto | E. | 51·2 | 345 | — | — | e 16 34 | 0 | 23·2 | — |
| Ann Arbor | N. | 52·6 | 349 | — | — | — | — | e 30·1 | — |
| Algiers | | 52·7 | 266 | e 8 22 | −62 | 17 6 | +14 | — | — |
| Granada | | 52·8 | 272 | i 8 32 | −53 | 15 40 | −74 | e 25·2 | 42·2 |
| Almeria | | 52·0 | 273 | e 8 28 | −58 | e 15 2 | −114 | e 24·9 | 26·1 |
| Chicago | | 53·2 | 353 | — | — | 16 52 | − 7 | 26·6? | 28·2 |
| San Fernando | | 53·8 | 275 | e 5 22 | ? | — | — | — | 43·2 |
| Simla | E. | 53·9 | 188 | — | — | — | — | e 24·8 | — |
| Tucson | N. | 62·5 | 15 | e 10 27 | − 2 | e 18 50 | − 5 | 23·4 | — |
| Phu-Lien | | 64·6 | 158 | 14 12? | ?PR$_1$ | — | — | — | — |
| Hyderabad | | 67·6 | 187 | — | — | — | — | — | 40·0 |

Additional readings: Leningrad MN = +16·1m., MZ = +20·8m. Pulkovo $SR_3$ = +13m.0s., MN = +20·8m., MZ = +21·0m. Upsala MN = +21·3m. Ekaterinburg MNZ = +19·6m. Irkutsk MZ = +24·1m., MN = +30·4m. De Bilt eLN = +18·2m. Makeyevka P = +9m.16s. =$PR_1$ +8s., $PR_1$ = +9m.59s. =$PR_3$ +15s., S = +15m.24s. =$SR_1$ −56s. MN = +29·0m., MZ = +33·2m. Vienna $SR_1$? = +16m.39s., iN = +21m.48s. Hohenheim eE = +1m.48s. and +11m.28s. Graz S is given as $PR_1$, with S = +17m.28s. =$SR_1$ +14s. Piatigorsk i = +9m.20s. =$PR_1$ −29s. Victoria LN = +26·9m., MN = +29·5m.; $T_0$ =5h.23m.41s. Rocca di Papa eZ = +8m.37s., eE = +8m.45s., eS = +15m.43s. Athens MN = +32·2m. Toledo eNW = +12m.50s. =$PR_3$ +24s., and +14m.16s. Granada i = +14m.18s., eS = +15m.9s. S is given as PS. Chicago $PR_1$N = +11m.52s., $PR_2$N = +12m.29s., SE = +16m.54s., $eS_cSN$ = +19m.35s., $SR_1$N = +20m.33s., $SR_1$E = +20m.42s., $SR_2$E = +22m.2s. and 22m.30s., $SR_2$N = +23m.0s. =$SR_3$ −24s., MN = +32·4m. San Fernando MN = +104·7m. Simla eN = +32m.0s. Tucson eE = +18m.57s. and +20m.57s.

Aug. 6d. 6h. 0m. 40s. (I) } Epicentre 25°·8N. 128°·0E. (as on 1925 Nov. 28d.).
7h. 1m. 48s. (II) }

A = −·554, B = +·709, C = +·435; D = +·788, E = +·616;
G = −·268, H = +·343, K = −·900.

Possibly the European observations are those of a separate shock; but see also Aug. 9d. 14h.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I Taihoku | N. | 5·9 | 263 | — | — | — | — | e 1·4 | — |
| II | N. | 5·9 | 263 | — | — | — | — | e 1·5 | — |
| I Nagasaki | | 7·1 | 13 | 2 13 | +25 | — | — | 4·5 | 5·5 |
| II | | 7·1 | 13 | e 2 4 | +16 | — | — | 4·3 | 5·3 |
| I Zi-ka-wei | | 8·0 | 315 | i 1 51 | −10 | i 3 25 | −12 | — | — |
| II | | 8·0 | 315 | e 2 17 | +16 | 3 42 | + 5 | — | — |
| I Hukuoka | | 8·0 | 15 | 2 12 | +11 | — | — | 5·5 | 5·7 |
| II | | 8·0 | 15 | 2 19 | +18 | — | — | 5·5 | — |
| I Osaka | | 11·0 | 34 | 3 1 | +17 | — | — | 6·9 | 9·0 |
| II | | 11·0 | 34 | 1 43 | −61 | — | — | 5·9 | 8·8 |
| I Manila | | 13·0 | 212 | e 3 36 | +23 | — | — | 9·3 | — |
| II | | 13·0 | 212 | e 4 12 | +59 | — | — | 10·0 | — |
| I Hong Kong | | 13·1 | 257 | — | — | — | — | — | 10·3 |
| II | | 13·1 | 257 | 3 4 | −10 | — | — | 7·0 | 10·4 |
| I Phu-Lien | | 20·3 | 260 | i 4 42 | − 3 | e 8 25 | − 4 | 11·3 | — |
| II | | 20·3 | 260 | — | — | — | — | e 9·3 | — |
| I Irkutsk | | 31·9 | 332 | e 6 32 | −14 | e 11 55 | −12 | 17·3 | 20·5 |
| II | | 31·9 | 332 | 6 26 | −20 | e 11 32 | −35 | 16·2 | 20·7 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Simla | 44·6 | 289 | — | — | — | — | e 23·4 | — |
| II | | 44·6 | 289 | — | — | — | — | e 23·3 | — |
| I | Ekaterinburg | 56·3 | 324 | — | — | — | — | e 23·6 | 40·7 |
| II | | 56·3 | 324 | e 9 39 | − 9 | — | — | — | — |
| I | Piatigorsk | 68·9 | 310 | — | — | — | — | 38·3 | — |
| II | Kucino | 69·0 | 324 | — | — | — | — | 31·8 | 42·9 |
| I | Makeyevka | 71·0 | 316 | — | — | e 25 46 | ?$SR_1$ | — | 47·9 |
| II | | 71·0 | 316 | — | — | e 20 36 | − 2 | 40·2 | 47·5 |
| I | Leningrad | 71·5 | 329 | — | — | e 23 8 | ? | 27·9 | 46·2 |
| II | | 71·5 | 329 | — | — | — | — | 34·7 | 46·0 |
| I | Pulkovo | 71·6 | 329 | e 17 20 | ?$PR_2$ | e 23 8 | ? | 34·3 | 45·0 |
| II | | 71·6 | 329 | — | — | — | — | e 35·7 | 45·1 |
| I | Upsala | 77·4 | 331 | — | — | — | — | e 41·3 | 49·9 |
| II | | 77·4 | 331 | — | — | — | — | e 42·2 | 49·8 |
| I | Budapest | 82·9 | 320 | — | — | — | — | e 42·8 | — |
| I | Vienna | 84·0 | 322 | e 24 56 | ? | — | — | e 43·3 | 53·3 |
| I | Hamburg | 84·1 | 328 | — | — | — | — | e 46·9 | 54·3 |
| II | | 84·1 | 328 | — | — | — | — | e 44·2 | 52·2 |
| I | Graz | 85·1 | 321 | — | — | — | — | — | 53·0 |
| I | Zagreb | 85·6 | 320 | — | — | e 25 14 | ? | e 46·3 | — |
| I | De Bilt | 87·5 | 328 | — | — | — | — | e 47·3 | 55·9 |
| II | | 87·5 | 328 | — | — | — | — | e 47·2 | 55·8 |
| I | Hohenheim | 87·6 | 325 | — | — | — | — | e 46·9 | 56·7 |
| II | | 87·6 | 325 | — | — | — | — | e 48·5 | 56·6 |
| I | Venice | 87·9 | 320 | — | — | e 28 20? | ?$SR_1$ | — | — |
| I | Edinburgh | 88·4 | 335 | — | — | — | — | 46·3 | 57·3 |
| II | | 88·4 | 335 | — | — | e 29 42 | ?$SR_1$ | 47·2 | 59·2 |
| I | Strasbourg | 88·5 | 325 | e 13 5 | − 3 | e 25 0 | +62 | 46·3 | 56·2 |
| II | | 88·5 | 325 | — | — | — | — | 43·2 | 55·9 |
| I | Florence | 89·5 | 319 | e 3 50 | ? | e 12 20 | ?P | 43·3 | 54·3 |
| II | | 89·5 | 319 | — | — | — | — | 33·2 | 46·2 |
| I | Stonyhurst | 89·6 | 333 | — | — | — | — | e 50·3 | 58·8 |
| II | | 89·6 | 333 | — | — | — | — | e 50·2 | 58·7 |
| I | Rocca di Papa | 89·8 | 318 | e 25 51 | ? | e 34 26 | ?$SR_1$ | e 46·7 | 56·8 |
| II | | 89·8 | 318 | — | — | — | — | e 53·2 | 56·7 |
| I | Kew | 90·4 | 331 | e 12 12 | −66 | — | — | 54·3 | — |
| II | | 90·4 | 331 | — | — | — | — | e 43·2 | — |
| I | Oxford | 90·6 | 331 | — | — | — | — | e 47·3 | 54·3 |
| II | | 90·6 | 331 | — | — | — | — | e 47·2 | 52·2 |
| I | Moncalieri | 90·8 | 323 | e 12 50 | −30 | 20 37 | ?$PR_2$ | 46·0 | — |
| II | | 90·8 | 323 | — | — | — | — | 44·7 | — |
| I | Paris | 90·9 | 328 | e 25 2 | ?S | (e 25 2) | +39 | 49·3 | 58·3 |
| II | | 90·9 | 328 | — | — | — | — | e 50·2 | 58·2 |
| I | Bagnères | 96·0 | 325 | e 12 11 | −98 | — | — | — | — |
| I | Tortosa N. | 97·5 | 324 | — | — | — | — | e 47·3 | 52·0 |
| II | N. | 97·5 | 324 | — | — | — | — | e 48·2 | 54·1 |
| I | Almeria | 101·9 | 323 | 1 8 49 | ? | — | — | — | 64·1 |
| I | Granada | 102·4 | 324 | 1 13 16 | −66 | 1 26 47 | +28 | e 52·7 | 64·1 |
| II | | 102·4 | 324 | — | — | — | — | e 52·2 | 63·0 |

Notes: The residuals for Nagasaki are frequently about −60s., see 6d. 11h. and 6d. 14h. Florence: Should P and S be increased by 10m. ?

1926 Aug. 6d. 8h. 53m. 55s. Epicentre 25°·0N. 119°·5E. (XXV: as at 5h.).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 1·9 | 89 | — | — | — | — | e 2·1 | — |
| Hong Kong | 5·5 | 242 | — | — | — | — | — | 12·6 |
| Zi-ka-wei | 6·4 | 15 | e 1 12 | −26 | e 2 22 | −33 | — | — |
| Manila | 10·5 | 172 | — | — | — | — | e 7·4 | — |
| Osaka | 16·8 | 51 | 3 31 | −31 | — | — | — | 11·0 |
| Irkutsk | 29·5 | 341 | e 6 33 | +10 | e 11 34 | + 8 | 18·1 | — |
| Ekaterinburg | 52·4 | 324 | e 9 51 | +29 | — | — | — | 35·3 |
| Kucino | 64·9 | 322 | — | — | — | — | e 27·7 | 43·1 |
| Pulkovo | 68·2 | 327 | — | — | — | — | e 38·1 | 47·1 |
| Leningrad | 68·2 | 327 | — | — | — | — | e 43·6 | 47·4 |
| Hamburg | 80·8 | 325 | — | — | — | — | e 46·1 | — |
| Strasbourg | 84·6 | 322 | — | — | — | — | 47·1 | — |
| Edinburgh | 85·7 | 332 | — | — | — | — | e 50·1 | — |
| Kew | 87·1 | 327 | — | — | — | — | e 50·1 | — |
| Paris | 87·3 | 324 | — | — | — | — | e 57·1 | 60·1 |
| Granada | 98·0 | 318 | — | — | — | — | 49·1 | 62·5 |

Aug. 6d. 9h. 48m. 20s. Epicentre 25°·0N. 119°·5E. (XXVI as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 1·9 | 89 | — | — | e 1 6 | +13 | — | — |
| Hong Kong | 5·5 | 242 | — | — | — | — | — | 11·2 |
| Ekaterinburg | 52·4 | 324 | e 9 23 | + 1 | — | — | — | 35·0 |
| Kucino | 64·9 | 322 | — | — | — | — | e 34·7 | — |
| Pulkovo | 68·2 | 327 | — | — | — | — | 42·7 | 44·9 |
| Leningrad | 68·2 | 327 | — | — | — | — | 44·2 | — |
| Kew | 87·1 | 327 | — | — | — | — | e 55·7 | — |
| Paris | 87·3 | 324 | — | — | — | — | e 56·7 | 57·7 |

Aug. 6d. 10h. 22m. 32s. Epicentre 25°·0N. 119°·5E. (XXVII as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Zi-ka-wei | 6·4 | 15 | 1 44 | + 6 | 2 49 | − 6 | — | — |
| Pulkovo | 68·2 | 327 | — | — | — | — | 43·0 | — |
| Leningrad | 68·2 | 327 | — | — | — | — | e 64·0 | — |
| De Bilt | 84·1 | 326 | — | — | — | — | e 47·5 | — |
| Kew | 87·1 | 327 | — | — | — | — | e 55·5 | — |
| Paris | 87·3 | 324 | — | — | — | — | e 56·5 | — |
| Granada | 98·0 | 318 | — | — | — | — | 59·5 | 64·7 |

Aug. 6d. 11h. 0m. 36s. Epicentre 25°·0N. 119°·5E. (XXVIII as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 1·9 | 89 | — | — | — | — | e 1·3 | — |
| Hong Kong | 5·5 | 242 | — | — | — | — | — | 10·4 |
| Zi-ka-wei | 6·4 | 15 | e 1 38 | 0 | 2 54 | − 1 | — | 4·2 |
| Nagasaki | 11·9 | 47 | 2 48 | −10 | — | — | — | 5·4 |
| Irkutsk | 29·5 | 341 | e 6 14 | − 9 | — | — | e 16·6 | — |
| Ekaterinburg | 52·4 | 324 | e 9 32 | +10 | — | — | — | 35·0 |
| Pulkovo | 68·2 | 327 | — | — | e 26 46 | ? | 40·9 | 45·1 |
| Leningrad | 68·2 | 327 | — | — | — | — | 43·6 | 46·4 |
| De Bilt | 84·1 | 326 | — | — | — | — | 37·4 | — |
| Kew | 87·1 | 327 | — | — | — | — | e 56·4 | — |
| Paris | 87·3 | 324 | — | — | — | — | e 57·4 | — |

Aug. 6d. 11h. 30m. 20s. Epicentre 25°·0N. 119°·5E. (XXIX as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 1·9 | 89 | — | — | e 0 49 | − 4 | — | — |
| Zi-ka-wei | 6·4 | 15 | e 1 45 | + 7 | — | — | — | — |
| Nagasaki | 11·9 | 47 | e 1 59 | −59 | (3 33) | −104 | 3·6 | 4·6 |
| Phu-Lien | 12·6 | 253 | — | — | — | — | — | 10·7 |
| Osaka | 16·8 | 51 | 6 49 | ?S | (6 49) | −24 | — | — |
| Irkutsk | 29·5 | 341 | e 5 59 | −24 | — | — | e 18·7 | — |
| Ekaterinburg | 52·4 | 324 | e 9 20 | − 2 | — | — | — | 34·7 |
| Kucino | 64·9 | 322 | — | — | — | — | e 40·6 | 48·3 |
| Pulkovo | 68·2 | 327 | — | — | — | — | e 30·5 | 44·7 |
| Leningrad | 68·2 | 327 | — | — | — | — | e 43·7 | 46·2 |
| De Bilt | 84·1 | 326 | — | — | — | — | e 47·7 | — |
| Kew | 87·1 | 327 | — | — | — | — | e 53·0 | — |
| Paris | 87·3 | 324 | — | — | — | — | e 53·1 | — |

Aug. 6d. 12h. 5m. 40s. Epicentre 25°·0N. 119°·5E. (XXX as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 1·9 | 89 | — | — | — | — | e 2·3 | — |
| Hong Kong | 5·5 | 242 | — | — | — | — | — | 11·5 |
| Zi-ka-wei | 6·4 | 15 | e 1 51 | +13 | 2 45 | −10 | — | 6·2 |
| Nagasaki | 11·9 | 47 | 2 48 | −10 | — | — | 5·4 | 6·4 |
| Hukuoka | 12·8 | 46 | 3 9 | − 1 | — | — | 6·5 | — |
| Osaka | 16·8 | 51 | 1 59 | −123 | — | — | 4·5 | 9·3 |

**Aug. 6d. 12h. 6m. 46s. Epicentre 25°·0N. 119°·5E. (xxxi as above).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | | 10·5 | 172 | e 4 56 | ?S | (e 4 56) | +13 | 10·5 | — |
| Phu-Lien | | 12·6 | 253 | — | — | — | — | — | 10·2 |
| Irkutsk | | 29·5 | 341 | e 6 21 | − 2 | e 11 28 | + 2 | 17·2 | 21·6 |
| Ekaterinburg | | 52·4 | 324 | e 9 35 | +13 | — | — | — | 35·1 |
| Piatigorsk | | 63·5 | 310 | — | — | — | — | 39·2 | — |
| Kucino | | 64·9 | 322 | — | — | e 26 38 | ?$SR_3$ | 35·3 | 40·5 |
| Pulkovo | | 68·2 | 327 | — | — | 23 44 | +220 | 36·7 | 45·0 |
| Leningrad | | 68·2 | 327 | — | — | — | — | 37·7 | 45·0 |
| Upsala | E. | 74·3 | 329 | — | — | — | — | e 43·2 | 49·7 |
| Budapest | | 78·4 | 317 | — | — | — | — | e 48·2 | — |
| Vienna | | 79·7 | 320 | — | — | — | — | 40·2 | — |
| Graz | | 80·7 | 319 | — | — | — | — | e 43·2 | — |
| Hamburg | | 80·8 | 325 | — | — | — | — | e 43·2 | 53·2 |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 47·2 | 55·7 |
| Strasbourg | | 84·6 | 322 | — | — | — | — | 43·2 | 56·0 |
| Zurich | | 84·7 | 320 | — | — | — | — | e 47·5 | — |
| Florence | N. | 85·0 | 317 | e 20 14 | ?$PR_3$ | e 32 44 | ?$SR_3$ | 43·2 | 49·2 |
| Edinburgh | | 85·7 | 332 | — | — | — | — | 47·3 | 59·3 |
| Moncalieri | | 86·5 | 319 | e 15 46 | ? | 30 37 | ? | e 48·2 | 58·7 |
| Stonyhurst | | 86·7 | 330 | — | — | — | — | e 44·2 | 52·7 |
| Kew | | 87·1 | 327 | — | — | — | — | e 46·2 | — |
| Paris | | 87·3 | 324 | — | — | — | — | 50·2 | 57·2 |
| Tortosa | N. | 93·1 | 320 | — | — | — | — | e 51·2 | 63·6 |
| Granada | | 98·0 | 318 | — | — | — | — | 53·8 | 63·3 |
| San Fernando | | 100·0 | 318 | — | — | 29 14 | ? | 56·2 | 67·2 |

**Aug. 6d. 13h. 17m. 48s. Epicentre 26°·0N. 96°·0E. (as on 1924 Aug. 1d.).**

$A = -·094$, $B = +·894$, $C = +·438$; $D = +·995$, $E = +·105$;
$G = -·046$, $H = +·436$, $K = -·899$.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Irkutsk | 27·0 | 11 | e 5 48 | −10 | — | — | 18·2 | — |
| Ekaterinburg | 39·8 | 330 | e 8 26 | +33 | — | — | — | 32·9 |
| Kucino | 50·9 | 321 | — | — | — | — | 22·1 | 28·8 |
| Pulkovo | 55·6 | 327 | — | — | e 17 34 | + 5 | 33·7 | 37·1 |
| Leningrad | 55·7 | 327 | — | — | — | — | 34·4 | 38·6 |
| Rocca di Papa | 68·3 | 307 | e 30 58 | ?L | — | — | (e 31·0) | 31·1 |
| Zurich | 69·5 | 314 | e 11 11 | − 3 | e 20 35 | +15 | — | — |
| Strasbourg | 69·8 | 316 | e 11 23 | + 7 | e 20 40 | +16 | — | — |
| De Bilt | 70·3 | 320 | — | — | e 20 8 | −22 | e 40·2 | — |

Additional readings: Irkutsk e = +13m.12s.? Ekaterinburg MN = +32·3m., MZ = +34·4m. Kucino MN = +23·6m. Is L = $SR_3$? Pulkovo MN = +38·4m., MZ = +38·6m. Rocca di Papa eN = +30m.37s. = $SR_3$ +79s., eE = +30m.51s. = $SR_3$ +93s., MN = +31·4m.

**Aug. 6d. 13h. 31m. 0s. Epicentre 25°·0N. 119°·5E. (xxxii as at 12h.).**

| | Δ | Az. | P. | O−C. | S. | O−C. |
|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. |
| Zi-ka-wei | 6·4 | 15 | e 1 42 | +4 | 2 50 | −5 |

Aug. 6d. 13h. 48m. 24s. (XXXIII)
14h. 4m. 0s. (XXXIV)
14h. 30m. 0s. (XXXV)
} Epicentre 25°·0N. 119°·5E. (as above).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XXXIII Taihoku N. | 1·9 | 89 | — | — | — | — | 2·1 | — |
| XXXIV N. | 1·9 | 89 | — | — | — | — | — | — |
| XXXIII Hong Kong | 5·5 | 242 | — | — | — | — | — | 11·6 |
| XXXIII Zi-ka-wei | 6·4 | 15 | e 1 43 | + 5 | 2 34 | −21 | — | 4·7 |
| XXXIV | 6·4 | 15 | e 1 45 | + 7 | 3 4 | + 9 | — | — |
| XXXV | 6·4 | 15 | e 1 44 | + 6 | 2 42 | −13 | — | — |
| XXXIV Nagasaki | 11·9 | 47 | e 4 17 | ?S | (e 4 17) | −60 | 6·6 | 7·6 |
| XXXIII Phu-Lien | 12·6 | 253 | — | — | — | — | — | 11·6 |
| XXXIV | 12·6 | 253 | — | — | — | — | — | 10·0 |
| XXXIII Osaka | 16·8 | 51 | 3 52 | −10 | — | — | — | — |
| XXXIV | 16·8 | 51 | 3 50 | −12 | — | — | — | 8·3 |
| XXXIV Irkutsk | 29·5 | 341 | — | — | — | — | 17·0 | — |
| XXXIII Ekaterinburg | 52·4 | 324 | e 10 22 | +60 | — | — | e 24·6 | 50·4 |
| XXXIII Pulkovo | 68·2 | 327 | — | — | — | — | e 44·1 | 45·8 |
| XXXIV | 68·2 | 327 | — | — | — | — | e 41·0 | 44·8 |
| XXXIII Leningrad | 68·2 | 327 | — | — | — | — | e 44·2 | 45·9 |
| XXXV | 68·2 | 327 | — | — | — | — | 44·5 | — |
| XXXIV Hamburg | 80·8 | 325 | — | — | — | — | e 42·0 | — |
| XXXIII De Bilt | 84·1 | 326 | — | — | — | — | e 48·6 | 56·5 |
| XXXIV | 84·1 | 326 | — | — | — | — | e 47·0 | 55·4 |
| XXXV | 84·1 | 326 | — | — | — | — | e 48·0 | — |
| XXXIII Strasbourg | 84·6 | 322 | — | — | — | — | 51·6 | — |
| XXXIV Edinburgh | 85·7 | 332 | — | — | — | — | 49·0 | — |
| XXXIV Kew | 87·1 | 327 | — | — | — | — | e 39·0 | — |
| XXXIV Paris | 87·3 | 324 | — | — | — | — | e 51·0 | 57·0 |
| XXXV Victoria E. | 87·7 | 36 | — | — | — | — | 54·3 | — |
| XXXIV Granada | 98·0 | 318 | — | — | — | — | — | 62·6 |

## Aug. 6d. 15h. 52m. 12s. Epicentre 24°·0N. 124°·0E.

(as on 1921 Dec. 1d.).

A = −·511, B = +·757, C = +·407; D = +·829, E = +·559;
G = −·228, H = +·337, K = −·914.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku N. | 2·5 | 294 | 0 48 | + 9 | (1 24) | +15 | 1·4 | 2·0 |
| Zi-ka-wei | 7·5 | 343 | 1 57 | + 3 | 4 13 | +49 | (4·2) | 6·4 |
| Hong Kong | 9·2 | 262 | 2 28 | + 9 | — | — | — | 7·8 |
| Manila | 9·8 | 197 | e 2 37 | +10 | i 6 31 | +128 | i 8·3 | 19·4 |
| Nagasaki | 10·1 | 29 | 2 19 | −12 | — | — | 5·6 | 7·8 |
| Hukuoka | 11·1 | 29 | 2 28 | −18 | 4 35 | −22 | 7·0 | 7·7 |
| Osaka | 14·6 | 40 | 3 39 | + 5 | — | — | — | 10·2 |
| Phu-Lien | 16·4 | 262 | e 3 59 | + 2 | i 7 23 | +19 | 9·1 | — |
| Irkutsk | 32·0 | 337 | e 6 20 | −27 | e 12 3 | − 5 | 17·8 | 21·0 |
| Batavia | 34·6 | 211 | i 6 59 | −11 | i 12 31 | −18 | — | — |
| Simla N. | 41·8 | 292 | — | — | — | — | e 22·2 | — |
| Hyderabad | 42·9 | 273 | e 7 14 | −63 | 14 33 | −14 | 24·5 | 60·8 |
| Bombay | 47·6 | 276 | e 15 36 | ?S | (e 15 36) | −13 | 27·5 | — |
| Ekaterinburg | 55·6 | 324 | i 10 33 | +50 | e 16 56 | −33 | 22·8 | 31·1 |
| Piatigorsk | 67·3 | 310 | — | — | — | — | 32·8 | — |
| Makeyevka | 69·8 | 315 | 11 8 | − 8 | 20 16 | − 8 | 32·8 | 45·6 |
| Honolulu N. | 71·1 | 74 | — | — | — | — | e 32·8 | 46·8 |
| Pulkovo | 71·2 | 326 | i 11 17 | − 7 | 20 33 | − 7 | 40·0 | 47·5 |
| Leningrad | 71·2 | 326 | 11 16 | − 8 | — | — | 38·2 | 47·3 |
| Upsala | 77·2 | 330 | — | — | e 22 18 | +27 | e 40·8 | 48·9 |
| Budapest | 81·9 | 320 | — | — | — | — | e 42·3 | 58·0 |
| Vienna | 83·2 | 321 | 12 24 | −13 | e 22 34 | −25 | — | 54·8 |
| Hamburg | 83·9 | 327 | e 12 29 | −12 | — | — | e 42·8 | 46·8 |
| Graz | 84·2 | 320 | e 2 34 | ? | — | — | 43·8 | 53·8 |
| Zagreb | 84·5 | 319 | e 12 31 | −14 | 22 48? | [− 5] | e 46·4 | 54·8 |
| Victoria | 85·9 | 39 | 13 36 | +43 | 23 5 | [+ 4] | 39·6 | 55·0 |
| Hohenheim E. | 87·0 | 325 | — | — | — | — | e 47·9 | 57·7 |
| De Bilt | 87·2 | 327 | i 12 44 | −16 | e 23 12 | [+ 2] | e 43·8 | 49·3 |
| Strasbourg | 87·9 | 325 | 12 45 | −19 | e 22 48? | [−26] | 37·8 | 56·3 |
| Zurich | 88·0 | 322 | e 12 49 | −16 | e 23 21 | [+ 6] | — | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Uccle | | 88·3 | 327 | e 12 54 | −13 | e 23 17 | [ 0] | e 42·8 | 49·4 |
| Edinburgh | | 88·4 | 333 | — | — | e 23 48? | − 8 | 45·8 | 59·8 |
| Florence | | 88·5 | 318 | e 0 48 | ? | 23 28 | [+10] | 43·8 | 50·8 |
| Rocca di Papa | | 88·6 | 316 | e 13 15 | + 7 | e 23 38 | −21 | e 45·1 | 64·2 |
| Moncalieri | | 89·9 | 321 | 12 59 | −16 | 23 25 | [− 2] | 42·0 | 59·4 |
| Kew | | 90·1 | 329 | 12 59 | −18 | e 22 48? | [−41] | 34·8 | 53·5 |
| Oxford | | 90·4 | 330 | — | — | — | — | e 48·3 | 52·3 |
| Paris | | 90·5 | 326 | e 13 1 | −18 | e 23 32 | [+ 1] | 48·8 | 57·8 |
| Tortosa | N. | 96·6 | 321 | — | — | — | — | e 48·8 | 63·6 |
| Toledo | | 99·9 | 323 | e 11 56 | −134 | — | — | — | 56·9 |
| Almeria | | 100·9 | 320 | 13 25 | −50 | e 25 4 | −60 | — | 61·2 |
| Granada | | 101·4 | 320 | e 13 29 | −48 | e 25 15 | −54 | 52·8 | 68·8 |
| Malaga | | 102·2 | 320 | — | — | — | — | e 55·8 | — |
| Rio Tinto | | 102·8 | 323 | 56 48? | ?L | — | — | (56·8) | 75·8 |
| San Fernando | | 103·4 | 321 | — | — | — | — | e 56·8 | 59·8 |
| Ottawa | | 108·2 | 14 | — | — | — | — | — | — |
| Toronto | N. | 109·0 | 19 | — | — | — | — | 58·0 | — |
| La Paz | | 166·4 | 60 | 20 9 | [− 3] | — | — | — | — |

Additional readings: Taihoku ME = +2·6m. Manila PS = +4m.56s., $SR_1$ = +7m.20s., MN = +19·5m. Nagasaki MN = +7·1m. Osaka MN = +10·9m. Irkutsk $PR_1$ = +7m.32s., MN = +20·7m., MZ = +20·8m. Simla eE = +23m.6s. Ekaterinburg $PR_1$ = +12m.53s., i = +21m.39s. = $SR_1$ −11s., MN = +31·2m., MZ = +35·4m. Makeyevka $SR_2$ = +28m.43s., MN = +44·0m., MZ = +49·7m. Pulkovo $PR_2$ = +15m.42s., PS = +21m.10s. =[S]+0s., MN = +42·7m., MZ = +45·3m. Leningrad MN = +45·2m., MZ = +47·4m. Upsala MN = +43·1m. Budapest eL = +48·8m., MN = +50·4m. Hamburg MN = +46·8m. Victoria LN = +38·9m. De Bilt e$PR_1$Z = +16m.12s., MZ = +56·6m. Strasbourg MNZ = +60·3m. Rocca di Papa e = +11m.8s. Kew MN = +57·4m. Paris MN = +50·8m. Tortosa ME = +65·4m. Almeria MN = +48·9m. Granada e = +23m.36s. =[S]−55s. San Fernando MN = +72·3m. Ottawa eE = +30m.24s.

Aug. 6d. 16h. 42m. 20s. Epicentre 30°·1N. 131°·6E. (as on 1926 June 5d.).

A = −·574, B = +·647, C = +·502; D = +·748, E = +·664; G = −·333, H = +·375, K = −·865.

The shock at 6d. 7h. 1m. 54s. would fit this epicentre for several stations, viz., Zi-ka-wei, Manila, Osaka, Irkutsk, and Ekaterinburg, though not Taihoku, Hong Kong, Nagasaki, and Hukuoka. Neither epicentre fits these last 4 stations, except on the hypothesis of several errors of whole minutes.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Nagasaki | | 3·0 | 332 | 0 49 | + 2 | — | — | 4·3 | 5·5 |
| Osaka | | 5·6 | 34 | 0 31 | −56 | — | — | — | 8·8 |
| Zi-ka-wei | | 8·8 | 278 | e 2 10 | − 3 | e 3 47 | −11 | — | — |
| Taihoku | N. | 10·3 | 243 | (2 32) | − 2 | — | — | — | — |
| Hong Kong | | 17·4 | 248 | — | — | — | — | — | 10·5 |
| Phu-Lien | | 24·3 | 253 | — | — | — | — | 7·7 | — |
| Irkutsk | | 29·8 | 325 | e 6 35 | + 9 | — | — | 17·7 | — |
| Hamburg | | 82·3 | 330 | — | — | — | — | 44·7 | 52·7 |
| De Bilt | | 85·4 | 330 | — | — | — | — | e 47·7 | 55·8 |
| Paris | | 89·0 | 329 | — | — | — | — | e 48·7 | — |
| Ottawa | N. | 100·5 | 19 | — | — | — | — | e 76·7 | — |
| Granada | | 100·7 | 325 | — | — | — | — | 60·7 | 62·6 |

Additional readings: Osaka MN = +9·6m. De Bilt MN = +56·0m.

Aug. 6d. 19h. 51m. 0s. Epicentre 25°·0N. 119°·5E. (XXXVI as above).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. |
| Taihoku | N. | 1·9 | 89 | 0 27 | − 2 | — | — | — |
| Z-ka-wei | | 6·4 | 15 | e 1 49 | +11 | 2 42 | −13 | — |
| Irkutsk | | 29·5 | 341 | e 6 21 | − 2 | — | — | — |
| Kucino | | 64·9 | 322 | — | — | — | — | e 42·0 |
| Pulkovo | | 68·2 | 327 | — | — | — | — | e 44·4 |
| Leningrad | | 68·2 | 327 | — | — | — | — | e 44·3 |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 53·0 |

Aug. 6d. 20h. 36m. 30s. (I) 22h. 45m. 46s. (II) } Epicentre 35°·0N. 78°·0E. (as on 1914 Oct. 9d.).

A = +·170, B = +·801, C = +·574; D = +·978, E = −·208; G = +·119, H = +·561, K = −·819.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Simla | 4·0 | 190 | e 1 36 | +34 | — | — | e 2·3 | 3·1 |
| II | | 4·0 | 190 | 1 20 | +18 | 2 20 | +30 | 2·9 | 3·2 |
| I | Bombay | 16·9 | 197 | — | — | — | — | e 7·5 | — |
| II | | 16·9 | 197 | 4 11 | + 7 | 6 41 | −35 | 8·7 | 10·9 |
| I | Hyderabad | 17·6 | 178 | 7 36 | ?S | (7 36) | + 5 | 10·2 | 10·3 |
| II | | 17·6 | 178 | 4 36 | +24 | 7 23 | − 8 | 8·8 | 10·0 |
| I | Ekaterinburg | 24·8 | 337 | 5 31 | − 5 | e 9 52 | − 7 | 10·5 | 13·7 |
| II | | 24·8 | 337 | i 5 30 | − 6 | i 9 49 | −10 | 10·2 | 14·6 |
| I | Irkutsk | 25·4 | 39 | e 5 29 | −13 | e 9 56 | −15 | 13·5 | — |
| II | | 25·4 | 39 | e 5 28 | −14 | i 10 0 | −11 | 13·2 | 16·2 |
| I | Piatigorsk | 28·2 | 299 | — | — | — | — | e 23·5 | — |
| II | | 28·2 | 299 | e 5 31 | −39 | e 10 29 | −34 | — | 18·2 |
| II | Colombo | 28·2 | 176 | 10 44 | ?S | (10 44) | −19 | 15·1 | 16·3 |
| II | Phu-Lien | 28·8 | 112 | — | — | 9 14? | −119 | — | — |
| I | Makeyevka | 32·2 | 307 | — | — | e 11 54 | −17 | 19·5 | 24·0 |
| II | | 32·2 | 307 | 6 44 | − 6 | 11 56 | −15 | 14·2 | 24·1 |
| II | Hong Kong | 33·9 | 102 | — | — | — | — | — | 20·1 |
| I | Kucino | 34·2 | 320 | — | — | — | — | 17·9 | 22·0 |
| II | | 34·2 | 320 | — | — | — | — | 15·2 | 23·0 |
| II | Zi-ka-wei | 36·2 | 84 | e 5 44 | −100 | 7 6 | ?P | — | — |
| II | Taihoku N. | 38·7 | 91 | e 6 52 | −52 | — | — | — | — |
| I | Pulkovo | 39·3 | 324 | 7 39 | −10 | 13 38 | −18 | 20·2 | 22·7 |
| II | | 39·3 | 324 | e 7 40 | − 9 | i 13 43 | −13 | 20·4 | 25·0 |
| I | Leningrad | 39·4 | 324 | — | — | e 13 40 | −17 | 20·0 | 25·6 |
| II | | 39·4 | 324 | i 7 42 | − 8 | i 13 42 | −15 | 19·1 | 25·3 |
| II | Lemberg | 41·5 | 308 | e 7 26 | −41 | — | — | — | 25·9 |
| II | Athens | 43·1 | 290 | e 8 8 | −11 | 14 47 | − 2 | 21·3 | 32·6 |
| II | Manila | 43·6 | 107 | e 8 14? | − 9 | — | — | — | — |
| II | Budapest | 44·9 | 306 | 10 25 | ?$PR_1$ | 18 53 | ?$SR_1$ | — | 31·7 |
| I | Upsala | 45·6 | 322 | — | — | — | — | e 23·5 | — |
| II | | 45·6 | 322 | 8 29 | − 8 | e 15 12 | −10 | e 25·7 | 28·7 |
| II | Osaka | 46·4 | 73 | 10 40 | ?$PR_1$ | — | — | — | — |
| II | Vienna | 46·6 | 308 | e 8 44 | 0 | 15 36 | 0 | e 27·4 | 31·2 |
| II | Zagreb | 47·2 | 301 | e 8 48 | 0 | e 15 43 | − 1 | e 19·4 | 30·5 |
| II | Graz | 47·3 | 306 | e 8 50 | + 1 | e 19 26 | ?$SR_1$ | 27·2 | 32·5 |
| II | Naples | 49·5 | 296 | 14 58 | ?S | (14 58) | −75 | 32·2 | — |
| II | Venice | 49·8 | 303 | e 9 11 | + 5 | (e 16 15) | − 1 | — | — |
| I | Hamburg | 49·9 | 314 | — | — | — | — | e 20·5 | 29·5 |
| II | | 49·9 | 314 | e 9 9 | + 3 | e 16 15 | − 3 | e 24·8 | 29·2 |
| II | Rocca di Papa | 50·4 | 299 | e 9 54 | +45 | i 16 28 | + 4 | e 30·0 | 38·4 |
| II | Florence | 50·9 | 300 | e 9 24 | +12 | 16 44 | +14 | — | 30·7 |
| II | Hohenheim E. | 51·2 | 309 | e 9 20 | + 6 | (e 16 36) | + 2 | e 30·2 | 54·8 |
| II | Bergen | 51·7 | 323 | — | — | — | — | e 34·2 | — |
| II | Zurich | 51·9 | 305 | e 9 33 | +14 | e 16 46 | + 3 | — | — |
| I | Strasbourg | 52·2 | 308 | — | — | — | — | 23·5 | — |
| II | | 52·2 | 308 | 9 25 | + 4 | 16 48 | + 2 | e 26·2 | 44·0 |
| I | De Bilt | 53·1 | 312 | — | — | — | — | e 27·5 | 34·3 |
| II | | 53·1 | 312 | 9 32 | + 5 | 17 4 | + 7 | e 26·2 | 35·3 |
| II | Moncalieri | 53·1 | 304 | e 9 35 | + 8 | 16 55 | − 2 | 27·6 | 35·9 |
| II | Besançon | 53·6 | 307 | — | — | — | — | e 29·2 | — |
| II | Uccle | 53·8 | 311 | e 9 37 | + 5 | e 17 12 | + 6 | e 26·2 | 29·2 |
| I | Paris | 55·5 | 309 | — | — | — | — | e 23·5 | — |
| II | [redacted] | 55·5 | 309 | e 9 49 | + 6 | e 17 36 | + 8 | 29·2 | 38·2 |
| I | Kew | 56·4 | 313 | — | — | — | — | e 23·5 | — |
| II | | 56·4 | 313 | 9 55 | + 7 | e 17 47 | + 8 | e 27·2 | 38·2 |
| II | Edinburgh | 56·9 | 319 | — | — | i 17 50 | + 5 | e 31·2 | 39·0 |
| II | Oxford | 57·0 | 313 | — | — | i 17 54 | + 8 | 29·6 | 37·8 |
| II | Stonyhurst | 57·0 | 316 | e 9 57 | + 5 | 17 55 | + 9 | — | 36·6 |
| II | Barcelona | 58·0 | 301 | — | — | e 18 34 | +35 | e 33·3 | 35·6 |
| II | Algiers | 59·1 | 295 | e 10 6 | 0 | e 18 21 | + 9 | 29·2 | — |
| I | Tortosa N. | 59·4 | 300 | — | — | — | — | e 33·5 | 38·2 |
| II | E. | 59·4 | 300 | 10 17 | + 9 | 18 26 | +10 | — | 40·2 |
| II | N. | 59·4 | 300 | e 10 14 | + 6 | 18 28 | +12 | 29·5 | 38·2 |
| II | Toledo | 63·0 | 300 | e 10 37 | + 5 | 19 12 | +11 | e 28·2 | 42·4 |
| II | Almeria | 63·0 | 299 | 10 35 | + 3 | 19 15 | +14 | — | 40·4 |
| I | Granada | 63·8 | 299 | — | — | e 29 23 | ? | 38·5 | 40·1 |
| II | | 63·8 | 299 | i 10 45 | + 8 | i 19 20 | + 9 | 33·7 | 42·4 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| II Malaga | | 64·6 | 299 | 10 49 | + 7 | 19 33 | +13 | e 26·4 | — |
| II San Fernando | | 66·0 | 299 | — | — | 19 50 | +13 | 37·2 | 45·2 |
| II Lisbon | | 67·0 | 301 | — | — | — | — | e 37·7 | 40·6 |
| II Victoria | | 94·4 | 14 | 24 6 | ?S | (24 6) | [+12] | 49·2 | 60·2 |
| II Ottawa | | 96·1 | 341 | — | — | i 24 12 | [+ 9] | e 42·7 | 57·2 |
| II Toronto | N. | 98·6 | 344 | — | — | e 24 29 | [+12] | 43·5 | 62·5 |
| II Sucre | | 143·8 | 284 | e 19 21 | [−26] | — | — | 74·2 | 83·9 |
| II La Paz | | 144·6 | 293 | 20 2 | [+14] | — | — | — | — |

Additional readings: Simla II PN = +1m.32s. Ekaterinburg I MZ = +15·6m., II e = +9m.57s., MN = +15·2m., MZ = +16·0m. Irkutsk II iP = +5m.34s. = P − 8s. Piatigorsk II iP = +6m.9s. = P − 1s. Hyderabad I S = +9m.36s. Makeyevka I e = +17m.7s., MN = +23·0m., MZ = +25·4m., II $SR_1$ = +13m.32s., MN = +20·5m. Kucino II readings have been increased by 1h. Pulkovo I $SR_1$ = +16m.24s., MN = +22·9m., MZ = +25·3m., II iP = +7m.43s., $PR_1$ = +9m.14s., $iSR_1$ = +16m.26s., MN = +22·9m., MZ = +25·3m.; epicentre 35°·54′N. 77°·58′E. Leningrad I e = +16m.26s. = $SR_1$ − 8s., MN = +25·7m., II $iPR_1$ = +9m.16s., $iSR_1$ = +16m.15s., $iSR_3$ = +16m.52s. = $SR_2$ − 29s., MN = +22·9m. Lemberg II MN = +24·5m. Athens II MN = +30·6m. Budapest II MN = +29·2m. Upsala II $ePR_1E$ = +10m.20s., $ePR_2E$ = +20m.50s. = $SR_3$ + 34s., eLN = +23·2m., MN = +26·4m. Vienna II iN = +15m.58s., $SR_3$ = +19m.58s. Zagreb II $ePR_1$ = +10m.39s., eLN = +42·2m.; is L = $SR_1$? Hamburg II $eSR_1$ = +20m.14s., MZ = +33·2m.; is L = $SR_1$? Hohenheim II eSE = +20m.38s. = $SR_1$ + 10s., eN = +29m.20s.; true S is given as $ePR_2E$. Strasbourg II $SR_1$ = +20m.59s., MZ = +48·2m.; are the L's = $SR_3$? De Bilt I MN = +29·8m., MZ = +34·5m., II MN = +29·8m., MZ = +35·5m. Uccle II $eSR_1$ = +20m.46s. Paris II MN = +30·2m.; is L = $SR_2$? Kew II MN = +34·0m.; is L = $SR_2$? Oxford II i = +22m.34s. = $SR_1$ + 18s. Barcelona II MN = +39·7m. Toledo II MNW = +42·2m. San Fernando MN = +43·7m. Ottawa eN = +31m.50s. = $SR_1$ + 1s. and +38m.14s. = $SR_3$ − 44s., eLN = +46·2m.

Aug. 6d. 20h. 44m. 20s. (XXXVII)
21h. 24m. 54s. (XXXVIII)
22h. 7m. 3s. (XXXIX)
} Epicentre 25°·0N. 119°·5E., (as at 19h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XXXVIII Taihoku | N. | 1·9 | 89 | — | — | — | — | e 4·7 | — |
| XXXVII Zi-ka-wei | | 6·4 | 15 | e 1 42 | + 4 | 2 50 | − 5 | — | — |
| XXXVIII | | 6·4 | 15 | e 2 3 | +25 | 2 43 | −12 | — | — |
| XXXIX | | 6·4 | 15 | e 1 37 | − 1 | — | — | — | 3·8 |
| XXXVIII Phu-Lien | | 12·6 | 253 | — | — | — | — | — | 11·1 |
| XXXVIII Osaka | | 16·8 | 51 | 6 19 | ?S | (6 19) | −54 | — | 9·8 |
| XXXVII Tokyo | | 20·6 | 54 | 2 55 | −113 | — | — | — | — |
| XXXVIII Irkutsk | | 29·5 | 341 | e 7 29 | +66 | — | — | 18·1 | — |
| XXXVIII Ekaterinburg | | 52·4 | 324 | e 10 44 | +82 | — | — | — | 34·0 |
| XXXVIII Makeyevka | | 66·2 | 314 | — | — | — | — | 41·1 | — |
| XXXVIII Pulkovo | | 68·2 | 327 | — | — | — | — | 38·3 | 46·0 |
| XXXIX | | 68·2 | 327 | — | — | — | — | 38·5 | — |
| XXXVIII Leningrad | | 68·2 | 327 | — | — | — | — | 39·6 | 46·9 |
| XXXIX | | 68·2 | 327 | — | — | — | — | 43·5 | — |
| XXXVIII De Bilt | | 84·1 | 326 | — | — | — | — | e 48·1 | 56·8 |
| XXXVIII Kew | | 87·1 | 327 | — | — | — | — | e 51·1 | — |
| XXXVIII Granada | | 98·0 | 318 | — | — | — | — | 61·1 | 63·9 |
| XXXVIII Rio Tinto | | 99·3 | 320 | 43 6 | ?L | — | — | (43·1) | 65·1 |

August 6d. Readings also at 2h. (Irkutsk, Pulkovo, and Leningrad), 3h. (Irkutsk), 4h. (Tokyo and Leningrad), 5h. (Almeria), 6h. (Tokyo), 7h. (Tokyo and Simla), 9h. (Nagasaki and Tokyo), 11h. (near Matuyama and Sumoto), 17h. (Tokyo, Tucson, Toronto, and near Lick and Berkeley), 18h. (near Calcutta), 21h. (near Mostar), 23h. (Granada).

Aug. 7d. 0h. 11m. 33s. Epicentre 42°·5S. 25°·0E.

A = +·668, B = +·312, C = −·676 ; D = +·423, E = −·906 ;
G = −·612, H = −·286, K = −·737.

Doubtful. The observations of Sucre, La Paz, and Algiers would be suited by the epicentre 51°·0S. 3°·0E., as on 1920 Sept. 4d., with $T_0$ increased by 3min. But this would not suit other readings.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Sucre | | 77·5 | 256 | — | — | 21 57 | + 2 | 28·8 | 31·8 |
| La Paz | | 81·0 | 256 | 13 42 | +77 | — | — | — | — |
| Algiers | | 81·8 | 344 | — | — | e 19 42 | ? | e 28·8 | 30·4 |
| Almeria | | 83·2 | 339 | e 12 37 | 0 | 23 2 | + 3 | 38·8 | 43·4 |
| Malaga | | 83·4 | 338 | e 12 52 | +14 | — | — | — | — |
| Granada | | 83·8 | 338 | i 12 34 | − 7 | i 22 51 | [+ 2] | 29·4 | 32·3 |
| Tortosa | | 86·3 | 342 | e 13 4 | + 9 | e 23 1 | [− 3] | e 32·4 | 34·4 |
| Toledo | | 86·5 | 339 | e 12 57 | + 1 | e 23 37 | + 1 | — | — |
| Florence | | 87·2 | 351 | — | — | e 22 27 | −76 | — | 33·4 |
| Zagreb | | 88·7 | 355 | e 14 5 | +56 | — | — | — | — |
| Zurich | N. | 91·0 | 350 | e 14 9 | +48 | — | — | — | — |
| Strasbourg | | 92·3 | 350 | e 14 16 | +47 | — | — | — | — |
| Paris | | 93·4 | 346 | e 14 10 | +36 | — | — | 31·4 | 35·4 |
| De Bilt | | 96·1 | 349 | e 14 36 | +46 | (e 28 27?) | ? | e 28·4 | — |
| Kew | | 96·6 | 345 | e 13 27? | −25 | — | — | 31·4 | — |
| Oxford | | 97·1 | 345 | — | — | — | — | — | 55·2 |
| Pulkovo | | 102·4 | 4 | e 16 3 | +101 | — | — | 44·0 | 51·4 |
| Leningrad | | 102·6 | 4 | e 16 1 | +98 | — | — | e 35·8 | 54·2 |

Additional readings: Almeria MN = +47·8m. Leningrad MZ = +56·5m.
Tortosa and De Bilt: Is L the S of the following shock ?

Aug. 7d. 0h. 19m. 24s. (XL)
1h. 13m. 24s. (XLI)
5h. 55m. 30s. (XLII)
} Epicentre 25°·0N. 119°·5E. (as on 6d. 22h.).

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XLI | Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| XLII | | E. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| XL | Zi-ka-wei | | 6·4 | 15 | e 1 43 | + 5 | 2 46 | − 9 | — | — |
| XLI | | | 6·4 | 15 | e 1 49 | +11 | 2 48 | − 7 | — | — |
| XLII | | | 6·4 | 15 | e 1 50 | +12 | 2 46 | − 9 | — | — |
| XL | Manila | | 10·5 | 172 | — | — | — | — | e 7·6 | — |
| XL | Osaka | | 16·8 | 51 | 7 59 | ?S | (7 59) | +46 | — | — |
| XLI | | | 16·8 | 51 | 5 21 | +79 | — | — | 7·9 | 14·5 |
| XLII | | | 16·8 | 51 | 2 10 | −112 | — | — | — | — |
| XL | Agana | N. | 26·4 | 111 | e 2 36 | −196 | — | — | — | — |
| XL | Ekaterinburg | | 52·4 | 324 | e 9 17 | − 5 | — | — | — | 37·9 |
| XLI | Pulkovo | | 68·2 | 327 | e 17 53 | ? | — | — | 42·6 | 54·8 |
| XLII | | | 68·2 | 327 | e 11 27 | +22 | (19 30) | −34 | 19·5 | — |
| XLII | Leningrad | | 68·2 | 327 | — | — | — | — | 44·0 | 45·7 |
| XL | De Bilt | | 84·1 | 326 | — | — | — | — | e 47·6 | 58·5 |
| XLI | | | 84·1 | 326 | — | — | — | — | e 47·6 | 55·4 |
| XLII | | | 84·1 | 326 | — | — | — | — | e 47·5 | 55·2 |
| XL | Paris | | 87·3 | 324 | — | — | 23 36 | [+26] | e 57·6 | — |
| XLI | | | 87·3 | 324 | — | — | — | — | e 56·6 | — |
| XL | Granada | | 98·0 | 318 | — | — | — | — | 57·6 | 66·1 |

**Aug. 7d. 2h. 9m. 15s. Epicentre 25°·8N. 128°·0E. (as on Aug. 6d.).**

A = −·554, B = +·709, C = +·435; D = +·788, E = +·616; G = −·268, H = +·343, K = −·900.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 5·9 | 263 | — | — | — | — | e 1·4 | — |
| Nagasaki | | 7·1 | 13 | 2 1 | +13 | (3 52) | +39 | 3·9 | 5·5 |
| Hukuoka | | 8·0 | 15 | 2 45? | +44 | — | — | — | — |
| Zi-ka-wei | | 8·0 | 315 | 1 50 | −11 | 3 10 | −27 | — | 5·1 |
| Osaka | | 11·0 | 34 | 2 56 | +12 | (5 36) | +42 | 5·6 | 12·7 |
| Manila | | 13·0 | 212 | e 2 45? | −28 | — | — | — | — |
| Hong Kong | | 13·1 | 257 | 3 5 | − 9 | — | — | — | 12·2 |
| Agana | | 20·0 | 125 | — | — | e 9 45 | +82 | — | — |
| Ekaterinburg | | 56·3 | 324 | i 9 46 | − 2 | 17 26 | −12 | 18·8 | 35·4 |
| Piatigorsk | | 68·9 | 310 | — | — | — | — | 41·8 | — |
| Makeyevka | | 71·0 | 316 | e 11 27 | + 4 | e 20 31 | − 7 | 36·8 | 48·0 |
| Leningrad | | 71·5 | 329 | e 11 29 | + 2 | — | — | 33·8 | 46·2 |
| Pulkovo | | 71·6 | 329 | 11 33 | + 6 | e 20 49 | + 4 | 36·2 | 46·1 |
| Upsala | N. | 77·4 | 331 | — | — | — | — | e 41·8 | 49·2 |
| Vienna | | 84·0 | 322 | e 12 36 | − 6 | — | — | e 42·8 | 52·8 |
| Hamburg | | 84·1 | 328 | — | — | — | — | e 43·8 | 53·8 |
| Graz | | 85·1 | 321 | — | — | — | — | 44·8 | — |
| Zagreb | | 85·6 | 320 | — | — | — | — | e 44·8 | 52·5 |
| De Bilt | | 87·5 | 328 | 13 0 | − 2 | — | — | e 45·8 | 56·1 |
| Edinburgh | | 88·4 | 335 | — | — | — | — | e 44·8 | — |
| Strasbourg | | 88·5 | 325 | — | — | — | — | 45·8 | 56·2 |
| Uccle | | 88·7 | 328 | — | — | — | — | e 42·8 | — |
| Zurich | N. | 88·8 | 324 | e 13 32 | +23 | — | — | — | — |
| Florence | | 89·5 | 319 | — | — | — | — | e 34·8 | 45·8 |
| Stonyhurst | | 89·6 | 333 | — | — | — | — | e 50·8 | 58·8 |
| Rocca di Papa | | 89·8 | 318 | — | — | — | — | e 48·8 | 56·8 |
| Kew | | 90·4 | 331 | — | — | — | — | e 45·8 | 58·8 |
| Moncalieri | | 90·8 | 323 | e 12 36 | −44 | 40 33 | ? | 48·6 | 57·8 |
| Paris | | 90·9 | 328 | — | — | — | — | e 47·8 | — |
| Tortosa | N. | 97·5 | 324 | — | — | — | — | e 45·8 | 64·4 |
| Almeria | | 101·9 | 323 | — | — | — | — | — | 66·9 |
| Granada | | 102·4 | 324 | — | — | — | — | 51·8 | 63·0 |
| San Fernando | | 104·4 | 325 | — | — | — | — | 56·2 | 67·2 |
| Ottawa | | 105·6 | 17 | — | — | — | — | e 46·8 | — |
| Toronto | | 106·2 | 20 | — | — | — | — | 55·8 | — |
| La Paz | | 162·3 | 62 | e 20 13 | [+ 4] | — | — | — | — |

**Aug. 7d. 6h. 14m. 36s. Epicentre 34°·6N. 140°·7E. (as on 1926 Feb. 3d.).**

A = −·637, B = +·521, C = +·568; D = +·633, E = +·774; G = −·439, H = +·360, K = −·823.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Tokyo | | 1·3 | 324 | 0 32 | +12 | — | — | — | — |
| Nagoya | | 3·2 | 281 | 0 52 | + 2 | — | — | 1·5 | 1·8 |
| Osaka | | 4·3 | 272 | 1 16 | + 9 | — | — | 2·4 | 4·2 |
| Mizusawa | | 4·5 | 358 | 1 12 | + 2 | 2 6 | + 2 | — | — |
| Kobe | | 4·6 | 272 | 1 19 | + 8 | — | — | 2·3 | 2·5 |
| Sumoto | | 4·8 | 268 | 1 24 | +10 | — | — | 2·4 | 3·3 |
| Hukuoka | N. | 8·6 | 266 | 2 18 | + 8 | (4 2) | + 9 | 4·0 | 4·8 |
| Nagasaki | | 9·2 | 263 | e 2 14 | − 5 | (4 5) | − 3 | 4·1 | — |
| Manila | | 26·8 | 227 | e 5 24? | −32 | — | — | — | — |
| Ekaterinburg | | 56·4 | 320 | e 9 47 | − 1 | e 17 26 | −13 | 18·4 | 36·4 |
| Kucino | | 68·5 | 325 | — | — | e 20 8 | 0 | 36·2 | 44·4 |
| Leningrad | | 69·6 | 331 | 11 14 | − 1 | e 20 21 | 0 | 38·1 | 40·8 |
| Pulkovo | | 69·8 | 331 | 11 17 | + 1 | — | — | — | 43·0 |
| Makeyevka | | 72·5 | 318 | — | — | e 20 50 | − 6 | 40·4 | 48·8 |
| De Bilt | | 85·0 | 335 | e 12 57 | + 9 | e 23 4 | −15 | e 44·4 | 52·5 |
| Zagreb | | 85·4 | 326 | e 12 46 | − 4 | e 22 18 | [−41] | e 49·4 | — |
| Uccle | | 86·3 | 334 | — | — | e 23 6 | [+ 2] | e 44·4 | — |
| Strasbourg | | 86·9 | 331 | e 12 54 | − 4 | e 23 24? | [+16] | 30·4 | — |
| Kew | | 87·4 | 339 | e 13 9 | + 8 | — | — | 35·4 | — |
| Florence | | 89·1 | 326 | e 5 24? | ? | — | — | — | 48·4 |
| Rocca di Papa | | 90·0 | 325 | e 11 57 | −79 | — | — | e 57·5 | — |
| Granada | | 100·9 | 334 | — | — | — | — | e 42·4 | 60·8 |
| San Fernando | | 102·5 | 335 | — | — | — | — | — | 64·4 |

*For Notes see next page.*

NOTES TO AUG. 7d. 6h. 14m. 36s.

Additional readings: Osaka MN = +3·6m. Kobe MN = +2·8m. Sumoto MZ = +2·4m., MN = +4·2m. Ekaterinburg MN = +32·8m., MZ = +36·4m. Kucino e = +22m.38s., MN = +42·7m. Leningrad MZ = +44·6m. Pulkovo MN = +44·5m. Makeyevka MN = +46·7m. Zagreb e = +16m.23s. = $PR_1$ − 9s., and +55m.24s. Strasbourg: Is L = $SR_1$? San Fernando MN = +68·9m.

**1926 Aug. 7d. 9h. 8m. 0s. Epicentre 25°·0N. 119°·5E. (XLIII as above).**

| | | Δ | Az. | P. | O − C. | L. | M. |
|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. | m. |
| Taihoku | E. | 1·9 | 89 | — | — | e 1·2 | — |
| Osaka | | 16·8 | 51 | 4 7 | + 5 | 7·2 | — |
| Ekaterinburg | | 52·4 | 324 | e 9 23 | + 1 | — | 34·9 |
| Leningrad | | 68·2 | 327 | — | — | 39·5 | 45·7 |
| Athens | | 79·2 | 307 | — | — | e 36·0 | 36·7 |
| De Bilt | | 84·1 | 326 | — | — | e 48·0 | 55·4 |
| Strasbourg | | 84·6 | 322 | — | — | e 42·0 | — |
| Florence | | 85·0 | 317 | — | — | e 32·0 | 45·0 |
| Rocca di Papa | | 85·1 | 314 | 29 43 | ?$SR_1$ | e 36·8 | — |
| Kew | | 87·1 | 327 | — | — | e 54·0 | — |
| Paris | | 87·3 | 324 | — | — | e 57·0 | — |
| Granada | | 98·0 | 318 | — | — | 51·0 | 61·0 |

Notes:—Osaka L = S + 1s. Rocca di Papa L = $SR_1$?

**Aug. 7d. 9h. 36m. 40s. Epicentre 25°·8N. 128°·0E. (as at 2h.).**

A = −·554, B = +·709, C· = +435; D = +·788, E = +·616; G = −·268, H = +·343, K = −·900.

| | | Δ | Az. | P. | O − C. | S. | O − C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 5·9 | 263 | — | — | — | — | e 1·4 | — |
| Zi-ka-wei | | 8·0 | 315 | e 1 57 | − 4 | — | — | — | — |
| Osaka | | 11·0 | 34 | 3 3 | +19 | (5 34) | +40 | 5·6 | 14·8 |
| Manila | | 13·0 | 212 | e 3 20? | + 7 | — | — | — | — |
| Tokyo | | 14·3 | 42 | 2 45 | −45 | — | — | — | — |
| Phu-Lien | | 20·3 | 260 | — | — | — | — | 10·3 | — |
| Ekaterinburg | | 56·3 | 324 | e 9 48 | 0 | e 17 29 | − 9 | — | 35·3 |
| Kucino | | 69·0 | 324 | — | — | — | — | 35·0 | 42·8 |
| Makeyevka | | 71·0 | 316 | e 12 2 | +39 | e 20 20 | −18 | 39·3 | 46·5 |
| Pulkovo | | 71·6 | 329 | 9 45 | −102 | — | — | 37·8 | 45·1 |
| Hamburg | | 84·1 | 328 | — | — | — | — | e 43·3 | 54·3 |
| De Bilt | | 87·5 | 328 | — | — | — | — | e 48·3 | 55·9 |
| Edinburgh | | 88·4 | 335 | — | — | — | — | e 50·3 | — |
| Strasbourg | | 88·5 | 325 | — | — | — | — | — | 56·3 |
| Uccle | | 88·7 | 328 | — | — | — | — | — | 48·3 |
| Rocca di Papa | | 89·8 | 318 | — | — | — | — | 46·6 | 49·5 |
| Paris | | 90·9 | 328 | — | — | — | — | — | 57·3 |
| Tortosa | | 97·5 | 324 | — | — | — | — | e 50·3 | 57·0 |
| Granada | | 102·4 | 324 | — | — | — | — | 55·3 | 62·3 |
| San Fernando | | 104·4 | 325 | — | — | — | — | — | 66·8 |

**Aug. 7d. 11h. 3m. 40s. Epicentre 24°·0N. 124°·0E. (as on 6d. 15h.).**

| | | Δ | Az. | P. | O − C. | L. | M. |
|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. | m. |
| Taihoku | E. | 2·5 | 294 | — | — | e 2·1 | — |
| Osaka | | 14·6 | 40 | 3 32 | − 2 | — | — |
| Irkutsk | | 32·0 | 337 | e 6 40 | − 7 | 15·3 | — |
| Ekaterinburg | | 55·6 | 324 | 9 55 | +12 | — | 35·4 |
| Pulkovo | | 71·2 | 326 | e 12 3 | +39 | 38·3 | 45·2 |
| Leningrad | | 71·2 | 326 | — | — | 40·3 | 46·4 |
| De Bilt | | 87·2 | 327 | — | — | e 47·3 | — |
| Strasbourg | | 87·9 | 325 | — | — | e 47·3 | — |
| Uccle | | 88·3 | 327 | — | — | e 46·3 | — |
| Kew | | 90·1 | 329 | — | — | e 53·3 | — |
| Paris | | 90·5 | 326 | — | — | e 54·3 | — |
| Granada | | 101·4 | 320 | — | — | e 57·3 | — |

Aug. 7d. 11h. 32m. 42s. (XLIV)
12h. 34m. 20s. (XLV)
17h. 5m. 36s. (XLVI)
23h. 37m. 4s. (XLVII)

Epicentre 25°·0N. 119°·5E. (as at 7h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XLIV Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| XLV | E. | 1·9 | 89 | — | — | — | — | e 1·3 | — |
| XLVI | E. | 1·9 | 89 | — | — | — | — | − e 0·2 | — |
| XLVII | E. | 1·9 | 89 | — | — | — | — | e 1·2 | — |
| XLIV Zi-ka-wei | | 6·4 | 15 | e 2 4 | +26 | 3 1 | + 6 | — | 4·8 |
| XLVI | | 6·4 | 15 | − e 0 10 | ? | 0 52 | ? | — | — |
| XLVII | | 6·4 | 15 | e 1 49 | +11 | 2 52 | − 3 | — | — |
| XLIV Manila | | 10·5 | 172 | e 2 18? | −19 | — | — | — | — |
| XLVII | | 10·5 | 172 | e 2 56? | +19 | — | — | — | — |
| XLIV Phu-Lien | | 12·6 | 253 | — | — | — | — | 11·3 | — |
| XLVII | | 12·6 | 253 | — | — | — | — | 9·9 | — |
| XLIV Osaka | | 16·8 | 51 | 3 7 | −55 | (5 44) | −89 | 5·7 | 17·3 |
| XLV | | 16·8 | 51 | 3 5 | −57 | — | — | — | — |
| XLVI | | 16·8 | 51 | 3 52 | −10 | — | — | — | — |
| XLVII | | 16·8 | 51 | 1 33 | ? | — | — | — | 8·2 |
| XLIV Irkutsk | | 29·5 | 341 | e 6 18 | − 5 | e 11 22 | − 4 | 19·3 | — |
| XLV | | 29·5 | 341 | e 6 11 | −12 | e 14 26 | +180 | 17·7 | — |
| XLVI | | 29·5 | 341 | e 6 1 | −22 | e 11 27 | + 1 | 17·4 | — |
| XLVII | | 29·5 | 341 | e 6 3 | −20 | — | — | — | — |
| XLIV Ekaterinburg | | 52·4 | 324 | e 9 36 | +14 | e 16 56 | + 7 | 19·3 | 42·5 |
| XLV | | 52·4 | 324 | e 9 24 | + 2 | — | — | e 27·7 | 34·9 |
| XLVI | | 52·4 | 324 | e 9 38 | +16 | e 16 45 | − 4 | 22·4 | 35·0 |
| XLVII | | 52·4 | 324 | e 9 20 | − 2 | e 16 55 | + 6 | — | 34·8 |
| XLVI Makeyevka | | 66·2 | 314 | — | — | — | — | 42·4 | — |
| XLVII | | 66·2 | 314 | — | — | — | — | 39·9 | 46·3 |
| XLIV Pulkovo | | 68·2 | 327 | — | — | — | — | 34·3 | 53·4 |
| XLV | | 68·2 | 327 | — | — | — | — | e 38·3 | 44·8 |
| XLVI | | 68·2 | 327 | — | — | e 20 56 | +52 | 37·4 | 44·9 |
| XLVII | | 68·2 | 327 | — | — | e 28 16 | ?$SR_2$ | e 38·4 | 44·7 |
| XLIV Leningrad | | 68·2 | 327 | — | — | — | — | e 40·3 | 46·0 |
| XLV | | 68·2 | 327 | — | — | — | — | 40·7 | 45·7 |
| XLVI | | 68·2 | 327 | — | — | — | — | e 35·2 | 44·9 |
| XLVII | | 68·2 | 327 | — | — | — | — | e 32·9 | 45·7 |
| XLIV Hamburg | | 80·8 | 325 | — | — | — | — | e 45·3 | — |
| XLVII | | 80·8 | 325 | — | — | — | — | e 44·9 | — |
| XLIV De Bilt | | 84·1 | 326 | — | — | — | — | e 47·3 | 56·8 |
| XLV | | 84·1 | 326 | — | — | — | — | e 47·7 | — |
| XLVI | | 84·1 | 326 | — | — | — | — | e 47·4 | 56·8 |
| XLVII | | 84·1 | 326 | — | — | — | — | e 46·9 | 55·4 |
| XLV Strasbourg | | 84·6 | 322 | — | — | — | — | e 47·7 | — |
| XLVI | | 84·6 | 322 | — | — | — | — | e 47·4 | — |
| XLVII | | 84·6 | 322 | — | — | — | — | e 45·9 | — |
| XLVI Rocca di Papa | | 85·1 | 314 | — | — | — | — | 60·5 | 60·7 |
| XLV Uccle | | 85·2 | 324 | — | — | — | — | e 47·7 | — |
| XLVI | | 85·2 | 324 | — | — | — | — | e 47·4 | — |
| XLVII | | 85·2 | 324 | — | — | — | — | e 46·9 | — |
| XLIV Edinburgh | | 85·7 | 332 | — | — | — | — | e 56·3 | — |
| XLV Kew | | 87·1 | 327 | — | — | — | — | e 55·7 | — |
| XLVI | | 87·1 | 327 | — | — | — | — | e 54·4 | — |
| XLVII | | 87·1 | 327 | — | — | — | — | e 52·9 | — |
| XLV Paris | | 87·3 | 324 | — | — | — | — | e 56·7 | — |
| XLVII | | 87·3 | 324 | — | — | — | — | e 55·9 | — |
| XLVI Granada | | 98·0 | 318 | — | — | — | — | 57·4 | 63·3 |
| XLVII | | 98·0 | 318 | — | — | — | — | 54·9 | 62·5 |
| XLIV San Fernando | | 100·0 | 318 | — | — | — | — | — | 67·8 |
| XLVII | | 100·0 | 318 | — | — | — | — | — | 66·4 |

**Aug. 7d. 15h. 16m. 33s. Epicentre 24°·0N. 124°·0E. (as on Aug. 7d. 11h.).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 2·5 | 294 | — | — | — | — | e 1·4 | — |
| Zi-ka-wei | | 7·5 | 343 | 1 54 | 0 | 3 25 | + 1 | — | — |
| Osaka | | 14·6 | 40 | 5 18 | ?S | (5 18) | −64 | — | — |
| Irkutsk | | 32·0 | 337 | e 6 27? | −20 | — | — | 17·4 | — |
| Ekaterinburg | | 55·6 | 324 | 9 53 | +10 | 17 32 | + 3 | — | 35·4 |
| Makeyevka | | 69·8 | 315 | — | — | — | — | e 40·2 | — |
| Pulkovo | | 71·2 | 326 | — | — | e 27 39 | ? | 37·0 | 45·2 |
| Leningrad | | 71·2 | 326 | — | — | — | — | e 31·8 | 46·3 |
| De Bilt | | 87·2 | 327 | — | — | — | — | e 46·4 | 56·0 |
| Strasbourg | | 87·9 | 325 | — | — | — | — | e 47·4 | — |
| Uccle | | 88·3 | 327 | — | — | — | — | e 45·4 | — |
| Kew | | 90·1 | 329 | — | — | — | — | e 53·4 | — |
| Paris | | 90·5 | 326 | — | — | — | — | e 31·4 | — |
| Granada | | 101·4 | 320 | — | — | — | — | e 55·4 | 62·4 |

**Aug. 7d.** Readings also at 0h. (Agana), 1h. (Tokyo), 2h. (La Paz and Tokyo), 3h. (La Paz (2) ), 5h. (Agana, Osaka, Pulkovo, Leningrad, Ekaterinburg, and De Bilt), 6h. (Tokyo (2) and Leningrad), 7h. (Taihoku), 8h. (Ekaterinburg), 10h. (Tokyo and Irkutsk), 12h. (De Bilt, near Oaxaca, and Tacubaya), 13h. (Pulkovo, Leningrad, Ekaterinburg, Irkutsk, Tokyo, Osaka, and near Athens), 14h. (Sucre, La Paz, De Bilt, Tokyo, and Matuyama), 16h. (Venice), 18h. (Irkutsk), 19h. (Pulkovo (2) ), 21h. (Tokyo), 22h. (Pulkovo, Leningrad, Ekaterinburg, and Irkutsk).

**Aug. 8d.**
1h. 24m. 48s. (XLVIII)
4h. 11m. 0s. (XLIX)
6h. 49m. 0s. (L)
8h. 20m. 42s. (LI)
11h. 39m. 42s. (LII)
14h. 57m. 24s. (LIII)
16h. 47m. 6s. (LIV)
20h. 41m. 9s. (LV)
} **Epicentre 25°·0N. 119°·5E. (as on 7d. 23h.**

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| XLVIII | Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·5 | — |
| XLIX | | E. | 1·9 | 89 | — | — | — | — | e 1·8 | — |
| L | | E. | 1·9 | 89 | — | — | — | — | e 1·6 | — |
| LI | | E. | 1·9 | 89 | — | — | — | — | e 2·6 | — |
| LII | | E. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| LIII | | E. | 1·9 | 89 | — | — | — | — | e 1·3 | — |
| LIV | | E. | 1·9 | 89 | 0 31 | + 2 | — | — | — | — |
| LV | | E. | 1·9 | 89 | — | — | — | — | e 1·6 | — |
| XLIX | Zi-ka-wei | | 6·4 | 15 | e 1 53 | +15 | e 2 52 | − 3 | — | 4·5 |
| L | | | 6·4 | 15 | e 1 52 | +14 | 2 55 | 0 | — | 4·3 |
| LI | | | 6·4 | 15 | e 1 46 | + 8 | 2 48 | − 7 | — | — |
| LII | | | 6·4 | 15 | e 1 58 | +20 | 2 53 | − 2 | — | — |
| LIII | | | 6·4 | 15 | e 1 48 | +10 | 2 54 | − 1 | — | — |
| LIV | | | 6·4 | 15 | 0 34 | −64 | 1 47 | −67 | — | 3·2 |
| XLVIII | Osaka | | 16·8 | 51 | 3 39 | −23 | — | — | — | 15·5 |
| XLIX | | | 16·8 | 51 | 3 54 | − 8 | — | — | — | — |
| L | | | 16·8 | 51 | 3 15 | −47 | — | — | — | — |
| LII | | | 16·8 | 51 | 1 3 | ? | — | — | — | — |
| LII | Irkutsk | | 29·5 | 341 | e 6 5 | −18 | e 11 3 | −23 | 17·3 | — |
| LIII | | | 29·5 | 341 | — | — | — | — | e 15·6 | — |
| LIV | | | 29·5 | 341 | — | — | — | — | e 14·9 | — |
| LV | | | 29·5 | 341 | — | — | — | — | e 12·8 | — |
| XLVIII | Ekaterinburg | | 52·4 | 324 | e 9 38 | +16 | — | — | — | 27·8 |
| L | | | 52·4 | 324 | e 9 18 | − 4 | — | — | — | 34·9 |
| LI | | | 52·4 | 324 | 7 32 | −110 | — | — | — | 35·8 |
| LII | | | 52·4 | 324 | e 9 22 | 0 | — | — | — | 34·8 |
| LIII | | | 52·4 | 324 | e 9 16 | − 6 | — | — | — | 35·8 |
| LIV | | | 52·4 | 324 | e 9 32 | +10 | — | — | — | 34·7 |
| LV | | | 52·4 | 324 | 9 21 | − 1 | — | — | — | 34·9 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | $M_S$ |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | $m_S$ |
| XLVIII | Makeyevka | 66·2 | 314 | — | — | — | — | 39·2 | 46·6 |
| XLVIII | Pulkovo | 68·2 | 327 | — | — | e 23 47 | ?$SR_1$ | 37·2 | 44·9 |
| XLIX | | 68·2 | 327 | — | — | — | — | e 39·0 | — |
| L | | 68·2 | 327 | — | — | — | — | e 37·0 | 44·6 |
| LI | | 68·2 | 327 | — | — | — | — | e 44·3 | — |
| LII | | 68·2 | 327 | — | — | — | — | e 39·3 | 44·3 |
| LIII | | 68·2 | 327 | — | — | — | — | 42·6 | — |
| LIV | | 68·2 | 327 | — | — | — | — | e 41·9 | — |
| LV | | 68·2 | 327 | — | — | — | — | e 40·8 | 45·5 |
| L | Leningrad | 68·2 | 327 | — | — | — | — | 40·3 | 45·8 |
| LV | | 68·2 | 327 | — | — | — | — | e 41·4 | 45·8 |
| XLVIII | De Bilt | 84·1 | 326 | — | — | — | — | e 48·2 | 55·7 |
| XLIX | | 84·1 | 326 | — | — | — | — | e 49·0 | — |
| L | | 84·1 | 326 | — | — | — | — | e 48·0 | 55·4 |
| LI | | 84·1 | 326 | — | — | — | — | e 49·3 | — |
| LII | | 84·1 | 326 | — | — | — | — | e 48·3 | — |
| LIII | | 84·1 | 326 | — | — | — | — | e 49·6 | — |
| LIV | | 84·1 | 326 | — | — | — | — | e 46·9 | — |
| LV | | 84·1 | 326 | — | — | — | — | e 47·8 | — |
| XLVIII | Strasbourg | 84·6 | 322 | — | — | — | — | e 48·2 | — |
| L | | 84·6 | 322 | — | — | — | — | e 48·0 | — |
| XLVIII | Uccle | 85·2 | 324 | — | — | — | — | 48·2 | — |
| L | | 85·2 | 324 | — | — | — | — | 48·0 | — |
| LII | | 85·2 | 324 | — | — | — | — | e 36·3 | — |
| LIII | | 85·2 | 324 | — | — | — | — | 49·6 | — |
| LV | | 85·2 | 324 | — | — | — | — | 47·8 | — |
| XLVIII | Kew | 87·1 | 327 | — | — | — | — | e 52·2 | — |
| L | | 87·1 | 327 | — | — | — | — | e 54·0 | — |
| LII | | 87·1 | 327 | — | — | — | — | e 45·3 | — |
| XLVIII | Paris | 87·3 | 324 | — | — | — | — | e 57·2 | — |
| L | | 87·3 | 324 | — | — | — | — | e 57·0 | — |
| LII | | 87·3 | 324 | — | — | — | — | e 48·3 | — |
| L | Granada | 98·0 | 318 | — | — | — | — | 61·0 | 70·0 |
| LI | | 98·0 | 318 | — | — | — | — | e 75·3 | — |
| LII | | 98·0 | 318 | — | — | — | — | 49·3 | 56·3 |
| LV | | 98·0 | 318 | — | — | — | — | e 77·8 | — |

Note.—Many of the L's seem to fit $SR_3$.

Aug. 8d. Readings also at 1h. (Zi-ka-wei), 7h. (near Misusawa), 8h. (Taihoku and La Paz), 9h. (Uccle, De Bilt, and Ekaterinburg), 10h. (Taihoku), 11h. (De Bilt, Fordham, and Victoria), 12h. (Ottawa, Toronto, Chicago, and De Bilt), 13h. (Taihoku), 18h. (Tokyo and near Manila), 19h. (Tokyo (6) ), 22h. (near Tacubaya).

Aug. 9d. 1h. 0m. 36s. Epicentre 39°·0S. 74°·5W. (as on 1920 Dec. 10d.)

A = +·208, B = −·749, C = −·629; D = −·964, E = −·267; G = −·168, H = +·606, K = −·777.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Santiago | 6·3 | 31 | 1 48 | +12 | — | — | — | — |
| La Plata | 13·8 | 78 | 3 16 | − 7 | 5 47 | −16 | 6·9 | — |
| Sucre | 21·5 | 24 | 4 51 | − 8 | 8 36 | −19 | 10·8 | 13·0 |
| La Paz | 23·2 | 16 | 5 21 | + 2 | e 9 35 | + 6 | 13·4 | 15·8 |
| Granada | 100·2 | 50 | — | — | — | — | 55·3 | 61·6 |
| Uccle | 113·2 | 41 | — | — | — | — | e 60·4 | — |
| De Bilt | 114·2 | 41 | — | — | — | — | e 60·4 | — |

No additional readings.

## Aug. 9d. 3h. 39m. 22s. Epicentre 52°·0N. 176°·0W.

A = −·614, B = −·043, C = +·788; D = −·070, E = +·998; G = −·786, H = −·055, K = −·616.

The large negative residuals near Δ = 35°·0 are noteworthy in connection with other similar evidence. But it is to be remarked that Honolulu and Tucson suggest two shocks with an interval of a few seconds only.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Sitka | E. | 23·7 | 62 | i 5 21 | − 4 | e 9 33 | − 5 | 10·3 | 16·5 |
| | N. | 23·7 | 62 | — | — | i 9 38 | 0 | 10·4 | 17·0 |
| Ootomari | | 27·0 | 275 | 5 53 | − 5 | (10 38) | − 3 | 10·6 | — |
| Victoria | | 33·2 | 76 | 6 39 | −19 | 11 54 | −33 | 15·6 | 18·2 |
| Honolulu | E. | 33·7 | 150 | 6 38 | −24 | e 11 56 | −40 | 15·4 | 18·3 |
| | N. | 33·7 | 150 | 6 38 | −24 | i 12 0 | −36 | 15·1 | 22·2 |
| Spokane | | 37·0 | 75 | e 6 54 | −36 | e 12 33 | −51 | 15·3 | — |
| Osaka | | 38·4 | 265 | 7 37 | − 4 | — | — | 10·3 | 17·0 |
| Berkeley | N. | 39·5 | 90 | e 7 23 | −28 | — | — | e 18·2 | — |
| Lick | N. | 40·3 | 90 | e 7 42 | −15 | e 13 50 | −21 | e 21·8 | 23·9 |
| Irkutsk | | 46·3 | 306 | 8 35 | − 7 | 14 55 | −37 | 19·6 | 27·7 |
| Zi-ka-wei | | 49·4 | 273 | i 8 57 | − 6 | 16 15 | + 4 | 25·0 | 31·5 |
| Tucson | E. | 50·2 | 88 | 9 12 | + 4 | e 16 20 | − 1 | 23·9 | 30·3 |
| | N. | 50·2 | 88 | 9 12 | + 4 | 16 21 | 0 | e 22·4 | 27·4 |
| Taihoku | E. | 53·7 | 268 | e 11 8 | ?$PR_1$ | — | — | — | — |
| Chicago | E. | 57·4 | 64 | 10 0 | + 5 | 17 38 | −13 | 23·1 | 36·1 |
| | N. | 57·4 | 64 | 10 0 | + 5 | 17 38 | −13 | 27·4 | 30·3 |
| St. Louis | | 57·8 | 68 | e 10 3 | + 5 | i 17 58 | + 2 | — | — |
| Ann Arbor | | 59·4 | 60 | i 9 50 | −18 | e 18 50 | +34 | e 32·0 | 34·6 |
| Hong Kong | | 60·3 | 271 | 10 18 | + 4 | (18 38) | +11 | 18·6 | — |
| Toronto | | 60·5 | 57 | e 10 13 | − 3 | e 18 23 | − 7 | 28·6 | 36·6 |
| Ottawa | | 61·1 | 53 | e 10 15 | − 5 | e 18 24 | −13 | e 27·6 | 38·6 |
| Ekaterinburg | | 61·7 | 330 | i 10 27 | + 4 | i 18 55 | +11 | — | 41·3 |
| Manila | | 62·1 | 260 | e 10 33 | + 7 | — | — | — | — |
| Ithaca | | 62·8 | 56 | e 10 29 | − 2 | 19 2 | + 4 | 31·6 | — |
| Fordham | | 65·3 | 56 | 10 48 | + 1 | i 19 34 | + 5 | 31·6 | 42·6 |
| Harvard | | 65·5 | 53 | 10 38 | −10 | 19 32 | + 1 | e 29·5 | 31·3 |
| Apia | | 66·0 | 176 | e 10 38? | −13 | e 18 38? | −59 | 30·6 | 34·6 |
| Leningrad | | 66·0 | 348 | i 10 54 | + 3 | i 19 46 | + 9 | 28·6 | 46·1 |
| Pulkovo | | 66·2 | 348 | 10 56 | + 3 | 19 52 | +12 | 30·6 | 44·6 |
| Upsala | N. | 67·6 | 354 | e 11 1 | − 1 | e 19 59 | + 2 | e 34·6 | 39·7 |
| Dyce | | 70·7 | 5 | 11 18 | − 3 | 20 31 | − 3 | 31·9 | 39·9 |
| Edinburgh | | 71·9 | 5 | e 12 8 | +39 | i 21 56 | +67 | — | 53·6 |
| Stonyhurst | | 74·0 | 5 | e 11 53 | +11 | 21 20 | + 6 | — | 42·3 |
| Hamburg | | 74·3 | 357 | e 11 49 | + 5 | e 21 56 | [+12] | e 30·6 | 50·6 |
| Bidston | | 74·4 | 5 | 11 47 | + 2 | 21 23 | + 4 | 34·9 | 50·6 |
| Simla | N. | 75·3 | 304 | e 21 32 | ?S | (e 21 32) | + 3 | — | 46·6 |
| Makeyevka | | 75·8 | 339 | 11 57 | + 3 | 21 43 | + 8 | 35·6 | 46·9 |
| De Bilt | | 75·9 | 359 | 11 54 | 0 | e 21 38 | + 2 | e 36·6 | 56·2 |
| Oxford | | 76·0 | 5 | — | — | i 21 45 | + 8 | e 41·6 | 55·6 |
| Kew | | 76·5 | 4 | 11 54 | − 4 | 21 43 | 0 | 34·6 | 52·7 |
| Uccle | | 77·2 | 0 | e 12 1 | − 1 | e 21 55 | + 4 | e 36·6 | 51·0 |
| Piatigorsk | | 78·2 | 333 | — | — | e 21 8 | −54 | — | 45·6 |
| Paris | | 79·2 | 1 | i 12 16 | + 2 | e 22 17 | + 3 | 31·6 | 54·6 |
| Vienna | | 79·2 | 353 | e 12 14 | 0 | e 23 5 | +51 | e 41·6 | 53·6 |
| Strasbourg | | 79·4 | 358 | 12 16 | + 1 | e 22 24 | + 8 | 39·6 | 43·6 |
| Budapest | | 79·7 | 350 | 12 34 | +17 | e 22 38? | +18 | e 40·6 | 49·6 |
| Graz | | 80·4 | 353 | e 12 39 | +18 | e 23 45 | +77 | 31·6 | 49·6 |
| Zurich | | 80·6 | 357 | e 12 19 | − 4 | e 22 23 | − 7 | — | — |
| Besançon | | 80·8 | 359 | — | — | — | — | 50·6 | — |
| Zagreb | | 81·6 | 353 | — | — | e 23 52 | +70 | e 41·6 | 58·6 |
| Venice | | 82·3 | 355 | 12 26 | − 6 | — | — | — | — |
| Moncalieri | | 83·0 | 358 | e 12 26 | −10 | 22 51 | − 6 | 38·6 | 50·2 |
| Florence | | 84·0 | 355 | 12 33 | − 9 | 21 28 | −100 | 37·6 | 55·1 |
| Hyderabad | | 85·5 | 293 | — | — | — | — | — | 52·4 |
| Rocca di Papa | | 86·0 | 354 | e 12 47 | − 6 | e 23 8 | [+ 5] | e 52·3 | — |
| Batavia | | 87·1 | 259 | e 12 13 | −47 | — | — | — | — |
| Tortosa | E. | 87·1 | 4 | — | — | 23 35 | − 7 | e 40·6 | 60·9 |
| | N. | 87·1 | 4 | e 12 55 | − 5 | 23 31 | −11 | e 38·6 | 60·7 |
| Bombay | | 87·4 | 300 | e 21 27 | ? | — | — | — | — |
| Toledo | | 87·9 | 7 | e 12 58 | − 6 | e 23 24 | [+10] | e 38·0 | 50·7 |
| Athens | E. | 88·5 | 346 | — | — | e 23 28 | [+10] | e 49·5 | 55·6 |
| Granada | | 90·6 | 7 | i 13 10 | − 9 | i 24 9 | −11 | 42·0 | 65·7 |
| Almeria | | 90·9 | 6 | e 13 13 | − 8 | e 23 47 | [+14] | e 39·9 | 54·4 |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malaga | 91·0 | 7 | 13 5 | −16 | e 23 31 | [− 3] | — | — |
| Algiers | 91·2 | 0 | e 13 8 | −14 | 22 44 | [−51] | — | — |
| San Fernando | 91·2 | 9 | — | — | 23 44 | [+ 9] | — | — |
| Wellington | 93·6 | 187 | — | — | i 23 44 | [− 6] | e 42·6 | — |
| Melbourne | 96·0 | 210 | — | — | e 24 38 | [+36] | — | 51·3 |
| La Paz | 113·9 | 89 | e 19 39 | ?$PR_1$ | — | — | 57·6 | 76·1 |
| Sucre | 117·6 | 86 | e 20 3 | ?$PR_1$ | 32 35 | ? | 58·6 | 77·4 |

Additional readings: Honolulu $P_cPN$ = +8m.58s., $P_cPE$ = +9m.14s., PSN = +12m.9s. =S −27s., iPSE = +12m.14s. =S −22s., $P_cSE$ = +13m.3s. $iSR_1E$ = +13m.59s., $SR_1N$ = +14m.0s., $eSR_2N$ = +14m.26s., $eSR_2E$ = +14m.31s.; $T_o$ =3h.38m.59s. and 3h.39m.13s. Spokane ePE = +6m.59s., iE = +7m.6s., +7m.14s., and +7m.17s., $PR_1E$ = +7m.49s., $PR_2E$ = +8m.15s., $PR_3E$ = +8m.29s., eSN = +12m.36s., iS = +12m.42s. and +12m.48s. Osaka MN = +16·6m. Berkeley eE = +7m.46s. and +16m.32s. =$SR_1$ −4s. Lick eN = +16m.8s. =$SR_1$ −44s. Irkutsk $PR_2$ = +10m.35s. =$PR_1$ −2s., MN = +26·9m., MZ = +28·5m. Zi-ka-wei $PR_1$ = +11m.3s. Tucson $PR_1E$ = +11m.14s., $eSR_1E$ = +19m.45s., $SR_1N$? = +20m.23s., $SR_2N$ = +21m.36s.; $T_o$ =3h.39m.30s. and 3h.39m.34s. Chicago $P_cPE$ = +11m.18s., $PR_1E$ = +12m.24s., $PR_2E$ = +12m.50s., $S_cS$ = +19m.40s., $SR_1N$ = +21m.38s. St. Louis iE = +18m.5s.; $T_o$ =3h.39m.33s. Ann Arbor ePS = +19m.50s., LN = +33·3m.; $T_o$ =3h.38m.12s. Toronto iSE = +18m.30s. and +18m.47s., MN = +37·9m.; $T_o$ =3h.39m.27s. Ottawa $eSR_1$ = +23m.1s., MN = +37·1m.; $T_o$ =3h.39m.30s. Ekaterinburg $PR_3$ = +14m.23s. =$PR_2$ +0s. Fordham $PR_2$ = +14m.54s., $PR_3$ = +15m.25s., $SR_1$ = +23m.45s., $SR_2$ = +26m.53s.; $T_o$ =3h.39m.30s. Harvard $eP_cPE$? = +11m.11s., $SR_1E$ = +24m.22s., $SR_2E$ = +27m.20s. Leningrad $iPR_2$ = +15m.31s., MN = +41·5m., MZ = +41·6m. Pulkovo $PR_1$ = +13m.58s., $PR_2$ = +15m.12s., $PR_3$ = +16m.23s., $SR_1$ = +24m.50s., $SR_2$ = +27m.56s., MZ = +41·9m. Upsala ME = +46·1m. Edinburgh readings are given for 8d. Hamburg eLN = +26·6m. Simla eE = +21m.56s., ME = +45·1m. Makeyevka PS = +22m.25s., $SR_1$ = +27m.26s., $SR_2$ = +30m.43s., MN = +46·6m. MZ = +48·0m. De Bilt $eSR_1N$ = +27m.2s., $eSR_2N$ = +31m.5s., MN = +52·8m., MZ = +52·9m. Uccle $SR_1$ = +27m.4s., MN = +54·0m. Strasbourg PS = +22m.53s., $eSR_1$ = +28m.8s. Budapest MN = +56·2m. Graz MN = +42·7m. Zagreb e = +23m.15s., eL = +44·1m. Rocca di Papa i = +24m.41s. Athens eE = +23m.45s., eLE = +37·6m., MN = +60·6m. Almeria MN = +55·0m. San Fernando MN = +66·1m. Sucre $PR_2$ = +27m.1s.; if all the readings are decreased by 4min. we should have eP = +16m.3s. = P +31s., $PR_2$ = +23m.1s. =$PR_2$ −23s., S = +28m.35s. =S +4s.

Aug. 9d. 14h. 2m. 20s. Epicentre 24°·0N. 124°·0E. (as on Aug. 7d.).

A = −·511, B = +·757, C = +·407; D = +·829, E = +·559; G = −·228, H = +·337, K = −·914.

The European observations are puzzling and suggest another shock; but no satisfactory hypothesis has been evolved. See also Aug. 6d. 6h.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m |
| Taihoku | E. | 2·5 | 294 | 2 38 | ?L | — | — | (2·6) | — |
| Zi-ka-wei | | 7·5 | 343 | 2 36 | +42 | e 4 22 | +58 | — | — |
| Hong Kong | | 9·2 | 262 | 4 0 | ?S | (4 0) | − 8 | 7·2 | 16·2 |
| Manila | | 9·8 | 197 | e 5 13 | ?L | — | — | (e 5·2) | — |
| Nagasaki | | 10·1 | 29 | 2 56 | +25 | — | — | 5·5 | 5·7 |
| Hukuoka | | 11·1 | 29 | 2 56 | +10 | 4 27 | −30 | 5·8 | 6·3 |
| Sumoto | | 14·0 | 40 | e 3 29 | + 3 | (6 20) | +12 | 6·3 | 16·0 |
| Kobe | | 14·4 | 40 | e 5 40 | ?S | (e 5 40) | −38 | e 14·9 | 16·5 |
| Osaka | | 14·6 | 40 | 3 24 | −10 | — | — | — | 16·2 |
| Nagoya | | 15·8 | 42 | 3 53 | + 4 | — | — | — | — |
| Phu-Lien | | 16·4 | 262 | — | — | — | — | 11·7 | 21·0 |
| Ootomari | | 27·2 | 29 | e 19 23 | ?L | — | — | (e 19·4) | — |
| Irkutsk | | 32·0 | 337 | e 7 18 | +31 | e 13 12 | +64 | 18·7 | 31·7 |
| Simla | N. | 41·8 | 292 | — | — | — | — | e 21·0 | — |
| Hyderabad | | 42·9 | 273 | — | — | — | — | — | 37·2 |
| Kodaikanal | | 46·4 | 260 | 28 4 | ?L | — | — | (28·1) | — |
| Bombay | | 47·6 | 276 | — | — | — | — | e 28·7 | — |
| Ekaterinburg | | 55·6 | 324 | — | — | e 17 23 | − 6 | 29·7 | 42·8 |
| Perth | | 56·5 | 190 | 3 20 | ? | 8 0 | ? | 11·7 | 12·5 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Piatigorsk | | 67·3 | 310 | — | — | — | — | 41·7 | — |
| Makeyevka | | 69·8 | 315 | — | — | e 21 26 | +62 | 39·7 | 57·0 |
| Pulkovo | | 71·2 | 326 | e 12 25 | +61 | e 19 20 | −80 | 38·7 | 52·8 |
| Leningrad | | 71·2 | 326 | e 12 22 | +58 | e 19 13 | −87 | 39·7 | 53·8 |
| Upsala | | 77·2 | 330 | — | — | — | — | e 41·7 | 57·2 |
| Budapest | | 81·9 | 320 | e 30 40 | ? | — | — | e 48·7 | 57·8 |
| Vienna | | 83·2 | 321 | e 20 40? | ? | e 30 40? | ? | — | 49·7 |
| Hamburg | | 83·9 | 327 | e 21 40? | ? | e 32 40? | ?$SR_2$ | e 46·7 | 57·7 |
| Graz | | 84·2 | 320 | e 14 42 | +119 | — | — | 45·7 | 60·3 |
| Zagreb | | 84·5 | 319 | e 31 14 | ? | — | — | e 41·5 | — |
| Dyce | | 87·1 | 335 | — | — | — | — | 25·0 | 57·0 |
| De Bilt | | 87·2 | 327 | e 20 40? | ?$PR_3$ | — | — | e 47·7 | 57·1 |
| Strasbourg | | 87·9 | 325 | e 20 40? | ?$PR_3$ | — | — | 37·7 | 58·6 |
| Zurich | | 88·0 | 322 | e 20 7 | ?$PR_3$ | — | — | — | — |
| Uccle | | 88·3 | 327 | — | — | e 23 40? | −15 | e 41·7 | 57·6 |
| Edinburgh | | 88·4 | 333 | e 32 40? | ?$SR_1$ | — | — | 47·7 | 57·2 |
| Florence | | 88·5 | 318 | — | — | e 22 40 | [−38] | — | 47·7 |
| Rocca di Papa | | 88·6 | 316 | e 2 55 | ? | — | — | e 56·9 | 64·4 |
| Stonyhurst | | 89·5 | 332 | e 13 40? | +27 | — | — | e 48·7 | 58·7 |
| Moncalieri | | 89·9 | 321 | 24 23 | ?S | (24 23) | +10 | 46·1 | 65·2 |
| Kew | | 90·1 | 329 | — | — | e 23 40? | [+11] | 47·7 | 58·7 |
| Bidston | | 90·1 | 332 | 24 40? | ?S | (24 40?) | +25 | 44·7 | 66·9 |
| Paris | | 90·5 | 326 | — | — | e 27 40? | ? | 51·7 | 64·7 |
| Tortosa | N. | 96·6 | 321 | — | — | — | — | e 49·7 | 63·7 |
| Algiers | | 97·6 | 317 | — | — | — | — | — | 61·7 |
| Toledo | | 99·9 | 323 | — | — | — | — | e 52·5 | 65·8 |
| Granada | | 101·4 | 320 | — | — | e 25 9 | −60 | 53·7 | 65·6 |
| San Fernando | | 103·4 | 321 | — | — | — | — | 61·7 | 75·2 |
| Chicago | | 108·0 | 25 | — | — | — | — | e 56·4 | 78·7 |
| Ottawa | | 108·2 | 14 | — | — | e 36 40? | ?$SR_4$ | e 48·7 | — |
| Toronto | E. | 109·0 | 19 | — | — | — | — | 55·9 | — |

Additional readings: Hong Kong S = +6m.30s. Manila L = +11·7m. Nagasaki MN = +7·0m. Sumoto MN = +13·8m. Kobe MN = +16·2m. Osaka MN = +16·9m. Phu-Lien MN = +20·6m. Irkutsk MZ = +28·1m., MN = +29·9m. Simla eE = +25m.46s. Ekaterinburg e = +22m.9s. and +25m.49s., i = +29m.29s., MN = +40·5m., MZ = +42·9m. Makeyevka e = +16m.45s. and +19m.14s., i = +24m.7s. and +28m.12s., MN = +53·8m. Pulkovo e = +28m.20s. and +35m.42s., MN = +49·6m., MZ = +52·8m. Leningrad e = +28m.19s., MN = +49·6m., MZ = +54·0m. Upsala MN = +51·4m. Budapest e = +40m.40s.?, MN = +57·2m. Hamburg MN = +54·7m., MZ = +60·7m. Zagreb e = +36m.4s., +50m.3s. and +55m.10s. De Bilt e = +24m.10s. =S+27s., +41m.22s., MN = +57·8m., MZ = +63·9m. Strasbourg MN = +59·7m., MZ = +62·6m. Moncalieri S? = +34m.19s. =$SR_2$−21s. Kew MN = +58·1m. Paris MN = +58·7m. San Fernando MN = +75·7m. Chicago eLN = +60·1m.

Aug. 9d. 15h. 55m. 6s. (LVI)
16h. 50m. 12s. (LVII)
17h. 34m. 0s. (LVIII)
} Epicentre 25°·0N. 119°·5E. (as on 8d. 20h.).

| | | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| LVI | Taihoku | E. | 1·9 | 89 | 1 16 | ?L | — | — | (1·3) | — |
| LVII | | E. | 1·9 | 89 | 0 43 | +14 | — | — | — | — |
| LVIII | | E. | 1·9 | 89 | — | — | — | — | e 1·2 | — |
| LVI | Zi-ka-wei | | 6·4 | 15 | e 1 54 | +16 | 3 29 | +34 | — | — |
| LVII | | | 6·4 | 15 | e 1 28 | −10 | 3 5 | +10 | — | 8·2 |
| LVIII | | | 6·4 | 15 | e 1 44 | + 6 | e 2 29 | −26 | — | — |
| LVI | Manila | | 10·5 | 172 | — | — | — | — | e 6·3 | — |
| LVII | | | 10·5 | 172 | e 4 48? | ?S | (e 4 48?) | + 5 | — | — |
| LVI | Phu-Lien | | 12·6 | 253 | — | — | — | — | 9·9 | — |
| LVI | Osaka | | 16·8 | 51 | 5 5 | +63 | (7 53) | +40 | 7·9 | — |
| LVII | | | 16·8 | 51 | 5 41 | +99 | — | — | 8·1 | — |
| LVI | Irkutsk | | 29·5 | 341 | e 6 15 | − 8 | e 11 25 | − 1 | 17·9 | 21·0 |
| LVII | | | 29·5 | 341 | — | — | — | — | 17·8 | 20·5 |
| LVIII | | | 29·5 | 341 | — | — | — | — | 15·0 | — |
| LVI | Ekaterinburg | | 52·4 | 324 | 9 33 | +11 | — | — | — | 34·8 |
| LVIII | | | 52·4 | 324 | e 8 54 | −28 | — | — | — | 34·5 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| LVI | Makeyevka | 66·2 | 314 | — | — | — | — | e 38·2 | 58·4 |
| LVII | | 66·2 | 314 | — | — | — | — | e 38·1 | 46·2 |
| LVI | Pulkovo | 68·2 | 327 | — | — | — | — | e 35·9 | 41·6 |
| LVII | | 68·2 | 327 | — | — | — | — | e 35·8 | 40·9 |
| LVIII | | 68·2 | 327 | — | — | — | — | e 43·0 | — |
| LVI | Leningrad | 68·2 | 327 | — | — | — | — | 37·1 | 47·6 |
| LVII | | 68·2 | 327 | — | — | — | — | e 38·0 | 44·9 |
| LVIII | | 68·2 | 327 | — | — | — | — | e 41·8 | — |
| LVI | De Bilt | 84·1 | 326 | — | — | — | — | e 46·9 | 56·1 |
| LVII | | 84·1 | 326 | — | — | — | — | e 46·8 | 55·6 |
| LVIII | | 84·1 | 326 | — | — | — | — | e 52·0 | — |
| LVI | Strasbourg | 84·6 | 322 | — | — | — | — | e 47·9 | — |
| LVII | | 84·6 | 322 | — | — | — | — | e 47·8 | — |
| LVIII | | 84·6 | 322 | — | — | — | — | — | 53·0 |
| LVI | Florence | 85·0 | 317 | — | — | — | — | — | 41·4 |
| LVI | Rocca di Papa | 85·1 | 314 | — | — | — | — | e 63·9 | 64·2 |
| LVI | Uccle | 85·2 | 324 | — | — | — | — | e 47·9 | — |
| LVII | | 85·2 | 324 | — | — | — | — | e 45·8 | — |
| LVIII | | 85·2 | 324 | — | — | — | — | — | 52·0 |
| LVI | Stonyhurst | 86·7 | 330 | — | — | — | — | e 56·9 | — |
| LVI | Kew | 87·1 | 327 | — | — | — | — | e 53·9 | — |
| LVII | | 87·1 | 327 | — | — | — | — | e 50·8 | — |
| LVI | Paris | 87·3 | 324 | — | — | — | — | e 55·9 | — |
| LVII | Oxford | 87·4 | 328 | — | — | — | — | e 59·8 | 71·8 |
| LVI | Granada | 98·0 | 318 | — | — | — | — | 55·9 | 62·9 |
| LVII | | 98·0 | 318 | — | — | — | — | 57·8 | 64·8 |

Aug. 9d. 21h. 40m. 12s. Epicentre 28°·5S. 71°·5W. (as on 1924 Dec. 18d.).

A = +·279, B = −·833, C = −·477 ; D = −·948, E = −·317 ;
G = −·151, H = +·453, K = −·879.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Sucro | | 11·1 | 32 | 2 59 | +13 | i 4 57 | 0 | 5·8 | 5·9 |
| La Paz | | 12·4 | 15 | 3 1 | − 4 | 5 20 | − 9 | 5·9 | 7·2 |
| La Plata | | 13·2 | 122 | i 3 6 | −10 | 5 28 | −21 | 6·3 | — |
| Ottawa | | 74·0 | 359 | — | — | — | — | e 41·8 | — |
| San Fernando | | 89·3 | 48 | — | — | — | — | — | 49·3 |
| Granada | | 91·4 | 49 | — | — | i 29 57 | ?$SR_4$ | 42·5 | — |
| Tortosa | N. | 96·1 | 47 | — | — | — | — | e 36·8 | 48·0 |
| Algiers | | 96·5 | 51 | — | — | — | — | 46·8 | 52·8 |
| Kew | | 101·4 | 38 | — | — | e 40 30 | ?$SR_1$ | 45·8 | — |
| Paris | | 101·5 | 41 | — | — | — | — | e 40·3 | — |
| Stonyhurst | | 101·6 | 36 | — | — | — | — | e 46·8 | 50·3 |
| Edinburgh | | 102·3 | 33 | — | — | — | — | e 46·8 | — |
| Moncalieri | | 102·8 | 46 | — | — | e 35 54 | ?$SR_1$ | 49·1 | — |
| Dyce | | 103·5 | 31 | — | — | — | — | e 41·3 | 49·2 |
| Uccle | | 103·6 | 39 | — | — | — | — | e 46·8 | — |
| Strasbourg | | 104·4 | 43 | — | — | e 40 48? | ?$SR_3$ | 49·8 | — |
| Rocca di Papa | | 104·5 | 51 | e 30 2 | ? | i 40 10 | ? | e 51·5 | 56·0 |
| Florence | | 104·5 | 49 | — | — | e 36 58 | ? | — | 50·8 |
| De Bilt | | 104·6 | 38 | — | — | e 40 58 | ?$SR_3$ | e 47·8 | 55·4 |
| Pulkovo | | 120·2 | 36 | e 36 11 | ?$SR_1$ | 44 8 | ? | 53·8 | 66·9 |
| Leningrad | | 120·2 | 36 | — | — | — | — | e 52·3 | 72·6 |
| Makeyevka | | 123·4 | 49 | — | — | e 43 56 | ?$SR_2$ | 60·8 | 68·7 |
| Irkutsk | | 156·0 | 6 | — | — | — | — | 83·8 | — |

Additional readings : San Fernando MN = +47·8m. Granada i = +31m.51s. e = +39m.22s. Moncalieri S? = +41m.35s. = $SR_3$ +31s. Uccle e = +40m.34s.

Aug. 9d. Readings also at 1h. (Nagasaki and Tokyo), 3h. (Nagasaki), 4h. (Nagoya, Osaka, Kobe, Sumoto, and near Lick), 5h. (Granada), 6h. (Ekaterinburg and Nagasaki), 7h. (Nagasaki), 8h. (Nagasaki and near Toyooka), 12h. (Ekaterinburg, Irkutsk, and Nagasaki), 13h. (Ekaterinburg, Athens, Azores, Irkutsk, and Tacubaya), 14h. (Ekaterinburg, Nagasaki, Hukuoka and near Taihoku), 16h. (Nagasaki, Rio Tinto, and Taihoku), 17h. (Nagasaki), 18h. (Manila, Taihoku, and Irkutsk), 19h. (Irkutsk and Piatigorsk), 21h. (Sydney), 22h. (La Paz and Sucre).

**Aug. 10d. 0h. 25m. 0s. Epicentre 24°·0N. 124°·0E. (as on Aug. 9d. 14h.).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 2·5 | 294 | — | — | — | — | e 1·9 | — |
| Zi-ka-wei | | 7·5 | 343 | 1 53 | − 1 | 3 22 | − 2 | — | 5·0 |
| Manila | | 9·8 | 197 | e 4 37 | ?S | (e 4 37) | +14 | 10·2 | — |
| Hukuoka | | 11·1 | 29 | 2 8 | −38 | — | — | 5·6 | — |
| Osaka | | 14·6 | 40 | 2 12 | −82 | — | — | — | 9·0 |
| Irkutsk | | 32·0 | 337 | 6 28 | −19 | e 11 40 | −28 | 16·0 | 20·5 |
| Ekaterinburg | | 55·6 | 324 | e 9 46 | + 3 | e 17 31 | + 2 | — | 35·1 |
| Makeyevka | | 69·8 | 315 | — | — | e 20 21 | − 3 | 35·0 | 47·4 |
| Pulkovo | | 71·2 | 326 | e 11 31 | + 7 | e 20 34 | − 6 | 34·0 | 46·2 |
| Leningrad | | 71·2 | 326 | e 11 30 | + 6 | — | — | e 28·5 | 45·2 |
| Lemberg | | 77·9 | 319 | e 45 54 | ?L | — | — | (e 45·9) | 47·0 |
| Vienna | | 83·2 | 321 | e 46 46 | ?L | — | — | (e 46·8) | 50·5 |
| Hamburg | | 83·9 | 327 | — | — | — | — | e 45·0 | 54·0 |
| Zagreb | | 84·5 | 319 | — | — | — | — | e 48·1 | — |
| De Bilt | | 87·2 | 327 | — | — | — | — | e 48·0 | 55·9 |
| Strasbourg | | 87·9 | 325 | — | — | — | — | e 46·0 | — |
| Zurich | N. | 88·0 | 322 | — | — | — | — | e 50·3 | — |
| Uccle | | 88·3 | 327 | — | — | — | — | e 46·0 | — |
| Edinburgh | | 88·4 | 333 | — | — | — | — | e 53·0 | — |
| Florence | | 88·5 | 318 | — | — | — | — | e 46·0 | 51·0 |
| Rocca di Papa | | 88·6 | 316 | — | — | — | — | e 48·7 | — |
| Stonyhurst | | 89·5 | 332 | — | — | — | — | e 52·0 | 59·0 |
| Moncalieri | | 89·9 | 321 | — | — | — | — | 49·7 | — |
| Kew | | 90·1 | 329 | — | — | — | — | e 47·0 | — |
| Oxford | | 90·4 | 330 | — | — | — | — | e 62·0 | — |
| Paris | | 90·5 | 326 | — | — | — | — | e 51·0 | — |
| Tortosa | N. | 96·6 | 321 | — | — | — | — | e 50·0 | 68·6 |
| Granada | | 101·4 | 320 | — | — | — | — | 50·0 | 62·6 |
| San Fernando | | 103·4 | 321 | — | — | — | — | — | 67·5 |
| Ottawa | | 108·2 | 14 | — | — | — | — | e 57·0 | — |

**Aug. 10d. 13h. 41m. 28s. Epicentre 25°·0N. 119°·5E. (LIX as on 9d. 17h.).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 1·9 | 89 | — | — | — | — | e 2·0 | — |
| Hong Kong | | 5·5 | 242 | — | — | — | — | — | 10·0 |
| Zi-ka-wei | | 6·4 | 15 | e 1 35 | − 3 | 3 5 | +10 | — | 4·9 |
| Manila | | 10·5 | 172 | — | — | e 4 9 | −34 | — | — |
| Osaka | | 16·8 | 51 | 1 25 | ? | — | — | — | 11·7 |
| Irkutsk | | 29·5 | 341 | e 6 10 | −13 | e 11 27 | + 1 | — | — |
| Ekaterinburg | | 52·4 | 324 | — | — | — | — | e 39·5 | 60·3 |
| Makeyevka | | 66·2 | 314 | — | — | e 20 13 | +33 | 37·5 | 47·5 |
| Pulkovo | | 68·2 | 327 | — | — | e 28 47 | ?$SR_3$ | 36·5 | 44·9 |
| Leningrad | | 68·2 | 327 | — | — | — | — | 33·7 | 44·9 |
| Upsala | | 74·3 | 329 | — | — | — | — | e 42·5 | — |
| Hamburg | | 80·8 | 325 | — | — | — | — | e 45·5 | 53·5 |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 46·5 | 55·7 |
| Strasbourg | | 84·6 | 322 | — | — | — | — | e 46·5 | — |
| Uccle | | 85·2 | 324 | — | — | — | — | e 45·5 | — |
| Edinburgh | | 85·7 | 332 | — | — | — | — | e 49·5 | — |
| Florence | | 85·0 | 317 | — | — | (29 30) | ?$SR_1$ | 29·5 | 43·5 |
| Kew | | 87·1 | 327 | — | — | — | — | e 48·5 | — |
| Paris | | 87·3 | 324 | — | — | — | — | e 50·5 | 57·5 |
| Granada | | 98·0 | 318 | — | — | — | — | e 52·5 | 61·5 |
| San Fernando | | 100·0 | 318 | — | — | — | — | — | 67·0 |

**Aug. 10d. 17h. 34m. 48s. Epicentre 25°·0N. 119°·5E. (LX as above).**

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·4 | — |
| Hong Kong | | 5·5 | 242 | — | — | — | — | — | 11·2 |
| Zi-ka-wei | | 6·4 | 15 | e 1 34 | − 4 | 3 8 | +13 | — | — |
| Osaka | | 16·8 | 51 | 4 11 | + 9 | — | — | — | 13·4 |
| Irkutsk | | 29·5 | 341 | e 6 18 | − 5 | e 11 25 | − 1 | 17·2 | — |
| Ekaterinburg | | 52·4 | 324 | e 9 34 | +12 | — | — | — | 35·0 |
| Kucino | | 64·9 | 322 | — | — | — | — | 36·0 | — |
| Makeyevka | | 66·2 | 314 | — | — | e 24 34 | ?$SR_1$ | 43·2 | — |
| Pulkovo | | 68·2 | 327 | — | — | — | — | e 36·2 | — |
| Leningrad | | 68·2 | 327 | — | — | — | — | 39·4 | 45·8 |
| Hamburg | | 80·8 | 325 | — | — | — | — | e 52·2 | — |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 48·2 | — |
| Strasbourg | | 84·6 | 322 | — | — | — | — | e 50·2 | — |
| Uccle | | 85·2 | 324 | — | — | — | — | e 48·2 | — |
| Kew | | 87·1 | 327 | — | — | — | — | e 55·2 | — |
| Paris | | 87·3 | 324 | — | — | — | — | e 56·2 | — |
| Granada | | 98·0 | 318 | — | — | — | — | e 56·2 | 62·2 |
| San Fernando | | 100·0 | 318 | — | — | — | — | — | 65·7 |

**Aug. 10d. 21h. 16m. 20s. Epicentre 28°·0S. 163°·5W. (as on 1925 Aug. 1d.).**

A = −·846, B = −·251, C = −·469; D = −·284, E = +·959; G = +·450, H = +·133, K = −·883.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Apia | | 16·1 | 330 | e 4 40? | +47 | — | — | — | 7·7 |
| Wellington | | 22·2 | 227 | — | — | — | — | (e 17·8) | — |
| Riverview | | 39·0 | 250 | e 7 49 | + 3 | — | — | e 14·6 | 17·4 |
| Adelaide | | 49·2 | 246 | e 6 58 | −123 | e 14 8? | −121 | 20·4 | 26·4 |
| Honolulu | E. | 49·6 | 7 | — | — | e 15 58 | −16 | e 23·1 | 33·3 |
| | N. | 49·6 | 7 | — | — | e 15 46 | −28 | e 23·8 | 32·7 |
| Tucson | E. | 78·3 | 43 | — | — | e 22 10 | + 6 | e 41·9 | 45·3 |
| Chicago | E. | 98·7 | 46 | — | — | — | — | 53·7 | 57·5 |
| Toronto | E. | 105·0 | 47 | — | — | — | — | 59·4 | — |
| Ottawa | | 108·0 | 47 | (e 21 40?) | ?$PR_2$ | — | — | 61·7 | — |
| Irkutsk | | 113·1 | 319 | e 15 54 | +42 | e 27 33 | −22 | 36·7 | — |
| Ekaterinburg | | 137·7 | 325 | — | — | e 28 25 | ?$PR_1$ | 43·7 | — |
| Leningrad | | 146·7 | 347 | — | — | — | — | 65·9 | — |
| Pulkovo | | 146·9 | 347 | e 19 39 | [−12] | — | — | 71·7 | 84·6 |
| Kucino | | 148·3 | 337 | e 22 38 | ?$PR_1$ | — | — | — | — |
| Edinburgh | | 148·8 | 23 | e 49 40 | ?$SR_2$ | — | — | e 88·7 | — |
| Kew | | 153·4 | 24 | e 19 40? | [−20] | — | — | 84·7 | — |
| Makeyevka | | 153·9 | 326 | e 19 44 | [−17] | — | — | 47·7 | 89·5 |
| De Bilt | | 154·4 | 16 | e 20 3 | [+ 2] | — | — | e 83·7 | 94·3 |
| Uccle | | 155·4 | 19 | e 23 40? | ?$PR_1$ | — | — | e 40·7 | 92·7 |
| Paris | | 156·5 | 24 | e 17 40? | ? | — | — | 83·7 | — |
| Strasbourg | | 158·4 | 16 | e 23 40? | ?$PR_1$ | — | — | e 79·7 | — |
| San Fernando | | 159·1 | 60 | 25 22 | ?$PR_1$ | 36 10 | ? | — | 91·7 |
| Granada | | 160·8 | 57 | — | — | — | — | 81·7 | 86·7 |
| Tortosa | N. | 161·7 | 42 | (e 20 40?) | [+31] | — | — | e 84·7 | 95·3 |
| Florence | | 163·7 | 14 | — | — | — | — | e 79·7 | 90·7 |

Additional readings and notes: Wellington eL = +19·7m.; all readings are given for 20h. Riverview MN = +17·9m. Adelaide MN = +23·2m. Honolulu eN = +18m.46s. Tucson eLN = +42·7m. Irkutsk e = +24m.52s. = $PR_4$ +9s. Ekaterinburg e = +31m.17s. = S +27s.? Pulkovo e = +22m.33s. and +23m.16s. = $PR_1$ −1s.. MN = +84·2m. Makeyevka MN = +33·6m. San Fernando MN = +93·2m. Tortosa eSN is given as L for earlier shock.

**Aug. 10d. 23h. 51m. 40s. Epicentre 25°·0N. 119°·5E. (LXI as at 17h.).**

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Zi-ka-wei | 6·4 | 15 | e 1 41 | + 3 | 2 52 | − 3 | — | — |
| Irkutsk | 29·5 | 341 | — | — | e 11 37 | +11 | e 16·7 | — |
| Ekaterinburg | 52·4 | 324 | e 9 11 | −11 | — | — | — | 34·4 |
| Leningrad | 68·2 | 327 | — | — | — | — | e 43·3 | — |
| De Bilt | 84·1 | 326 | — | — | — | — | e 55·3 | — |

Aug. 10d. Readings also at 1h. (near Makeyevka), 4h. (Oxford), 6h. (Manzanillo), 7h. (La Paz and Sucre), 8h. (Irkutsk, Pulkovo, and Leningrad), 9h. (Manila), 14h. (Hukuoka), 17h. (La Paz), 18h. (La Paz and near Athens), 21h. (Granada), 23h. (Irkutsk and Pulkovo).

Aug. 11d. 5h. 47m. 30s. Epicentre 29°·5N. 101°·0E.

A = −·166, B = +·854, C = +·492; D = +·982, E = +·191; G = −·094, H = +·483, K = −·870.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Phu-Lien | | 10·1 | 148 | e 2 43 | +12 | e 5 39 | +67 | 5·9 | — |
| Hong Kong | | 13·8 | 118 | 6 20 | ?S | (6 20) | +17 | 7·5 | 7·8 |
| Zi-ka-wei | | 17·7 | 80 | e 7 28 | ?S | (e 7 28) | − 5 | (e 9·0) | — |
| Taihoku | E. | 18·8 | 99 | — | — | — | — | e 9·2 | — |
| Simla | N. | 20·6 | 281 | e 8 54 | ?S | (e 8 54) | +18 | — | — |
| Irkutsk | | 22·9 | 5 | e 5 10 | − 6 | 1 9 18 | − 5 | 12·5 | 12·9 |
| Manila | | 23·7 | 125 | e 5 14 | −11 | — | — | — | — |
| Bombay | | 27·7 | 254 | e 11 46 | ?S | (e 11 46) | +52 | 15·4 | 16·6 |
| Osaka | | 29·5 | 71 | 12 6 | ?S | (12 6) | +40 | 17·3 | 19·0 |
| Ekaterinburg | | 39·2 | 326 | e 7 38 | −10 | e 13 50 | − 4 | — | 22·0 |
| Makeyevka | | 50·9 | 311 | — | — | e 16 14 | −16 | 27·5 | 35·0 |
| Pulkovo | | 55·2 | 325 | 9 45 | + 5 | 17 30 | + 6 | 27·5 | 31·6 |
| Leningrad | | 55·2 | 325 | — | — | — | — | 30·0 | 33·4 |
| Hamburg | | 67·2 | 320 | — | — | — | — | e 30·5 | — |
| Rocca di Papa | | 69·7 | 307 | — | — | — | — | e 38·9 | 41·4 |
| Florence | | 69·9 | 320 | e 14 0 | ?$PR_1$ | (28 30) | ?$SR_2$ | 28·5 | 39·5 |
| Strasbourg | | 70·4 | 316 | — | — | — | — | 32·5 | — |
| De Bilt | | 70·5 | 320 | — | — | — | — | e 35·5 | 44·6 |
| Uccle | | 71·4 | 319 | — | — | — | — | e 65·5 | 69·5 |
| Edinburgh | | 73·1 | 325 | — | — | — | — | e 40·5 | — |
| Paris | | 73·4 | 318 | — | — | — | — | e 39·5 | — |
| Kew | | 73·8 | 321 | — | — | — | — | e 37·5 | — |
| Granada | | 82·9 | 310 | — | — | — | — | 36·5 | 42·1 |
| San Fernando | E. | 85·1 | 310 | — | — | — | — | — | 51·0 |

Additional readings: Hong Kong S = +7m.20s. Zi-ka-wei L recorded as eS. Irkutsk iP = +5m.14s., MNZ = +13·7m. Bombay S = +14m.11s. Osaka MN = +19·2m. Ekaterinburg $PR_1$ = +9m.12s., MN = +22·3m., MZ = +23·8m. Makeyevka MN = +33·0m. Pulkovo $SR_1$ = +21m.48s., $SR_2$ = +24m.18s. = $SR_2$ +6s. De Bilt MN = +39·3m. San Fernando MN = +52·0m.

Aug. 11d. 12h. 36m. 40s. Epicentre 25°·0N. 119°·5E. (LXII as on 10d. 23h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·3 | — |
| Zi-ka-wei | | 6·4 | 15 | e 1 42 | + 4 | 2 50 | − 5 | — | — |
| Irkutsk | | 29·5 | 341 | e 3 32 | −171 | — | — | e 14·6 | — |
| Ekaterinburg | | 52·4 | 324 | e 8 48 | −34 | — | — | — | 34·7 |
| Pulkovo | | 68·2 | 327 | — | — | — | — | 41·3 | 44·6 |
| Leningrad | | 68·2 | 327 | — | — | — | — | 39·8 | 44·9 |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 54·3 | — |

Aug. 11d. Readings also at 4h. (near Sumoto), 6h. (Matuyama), 7h. (La Paz), 11h. (Irkutsk), 16h. (Tokyo and Cape Town), 17h. (Cape Town), 19h. (Agana), 22h. (Cape Town), 23h. (Sucre, near La Paz, and near Tacubaya).

**Aug. 12d. 22h. 17m. 48s. Epicentre 22°·5S. 66°·0W.**

A = +·376, B = −·844, C = −·383; D = −·914, E = −·407; G = −·156, H = +·350, K = −·924.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| La Paz | | 6·4 | 341 | 1 38 | 0 | i 2 53 | − 2 | i 3·1 | 3·2 |
| Santiago | | 11·7 | 200 | 2 55 | 0 | — | — | — | — |
| La Plata | | 14·2 | 152 | i 3 40 | +11 | 6 48 | +35 | 8·3 | — |
| Tacubaya | | 53·0 | 320 | 8 34 | −52 | 16 11 | −45 | — | — |
| Toronto | N. | 67·3 | 350 | — | — | e 20 17 | +23 | 33·2 | — |
| Ottawa | | 68·5 | 354 | e 10 50 | −18 | i 19 50 | −18 | e 31·2 | — |
| San Fernando | | 81·6 | 45 | — | — | i 22 57 | +15 | — | 39·2 |
| Malaga | | 82·9 | 46 | 12 44 | + 9 | 23 8 | +12 | — | — |
| Granada | | 83·7 | 46 | 12 38 | − 2 | 22 59 | − 7 | 42·7 | 46·4 |
| Almeria | | 84·2 | 46 | 12 47 | + 3 | i 23 21 | +10 | — | 53·2 |
| Toledo | | 85·0 | 43 | e 12 41 | − 7 | 23 5 | −14 | e 38·4 | — |
| Algiers | | 88·0 | 49 | e 13 0 | − 5 | 23 50 | − 2 | — | — |
| Tortosa | N. | 88·4 | 44 | — | — | 23 26 | [+ 8] | e 34·2 | 41·1 |
| Oxford | | 93·2 | 34 | — | — | — | — | — | 50·7 |
| Kew | | 93·6 | 34 | e 13 33 | − 3 | e 23 48 | [− 2] | 37·2 | — |
| Paris | | 93·7 | 39 | i 13 35 | − 1 | — | — | — | — |
| Edinburgh | | 94·6 | 30 | — | — | i 23 54 | [− 1] | 50·2 | — |
| Uccle | | 95·7 | 38 | e 13 42 | − 5 | e 23 55 | [− 6] | e 42·2 | — |
| Strasbourg | | 96·6 | 40 | e 13 49 | − 3 | (31 12) | ?$SR_1$ | 31·2 | — |
| De Bilt | | 96·8 | 37 | e 13 50 | − 3 | e 24 8 | [+ 1] | e 41·2 | — |
| Honolulu | E. | 99·8 | 290 | e 17 19 | ?$PR_1$ | e 26 2 | + 7 | 44·3 | — |
| Hamburg | | 100·1 | 35 | e 17 54 | ?$PR_1$ | e 24 26 | [+ 2] | e 47·2 | — |
| Zagreb | | 100·6 | 44 | e 13 12? | −61 | e 24 30 | [+ 3] | — | — |
| Vienna | E. | 101·8 | 41 | e 18 12? | ?$PR_1$ | — | — | — | — |
| Pulkovo | | 112·4 | 31 | — | — | — | — | 55·2 | 61·6 |
| Leningrad | | 112·4 | 31 | e 16 38 | ? | e 18 56 | ?[P] | 57·0 | 61·6 |
| Makeyevka | | 115·7 | 45 | e 20 9 | ?$PR_1$ | e 25 29 | [− 2] | 49·2 | 68·9 |
| Ekaterinburg | | 128·5 | 33 | e 19 1 | [−14] | — | — | 33·2 | 70·3 |
| Irkutsk | | 149·3 | 10 | e 19 36 | [−19] | (e 23 12?) | ?$PR_1$ | e 23·2 | — |

Additional readings and notes: La Paz iPN = +1m.40s., i = +1m.53s., +2m.20s., and +2m.30s.; $T_s$ = 22h.17m.50s. Toronto iE = +20m.57s. Granada i = +12m.48s. and +13m.37s. Almeria MN = +49·1m. Tortosa SE = +23m.56s. (O−C = 0s.). De Bilt e$PR_1$Z = +17m.50s. San Fernando MN = +24·2m. Zagreb e = +18m.12s. ? = $PR_1$ − 6s. Pulkovo e$PR_1$ = +19m.28s., PS = +29m.4s., $SR_1$ = +35m.0s., MZ = +62·3m., MN = +70·2m. Leningrad e = +28m.48s., MZ = +61·7m. Makeyevka e = +29m.39s. Ekaterinburg e = +21m.27s. = $PR_1$ + 8s., +28m.7s., and +31m.25s., i = +22m.20s. and +22m.49s., MN = +70·9m., MZ = +71·1m.

**Aug. 12d.** Readings also at 2h. and 3h. (near Manzanillo), 4h. (Zurich and Cape Town (3)), 5h. (Cape Town and Irkutsk), 6h. (Makeyevka and Irkutsk), 8h. (Tokyo and near Sumoto), 9h. (Sucre, near La Paz, Tokyo, and near Mizusawa), 10h. (Simla, Irkutsk, and near Algiers), 11h. (Nagoya, near Kobe, Sumoto, and near Batavia), 12h. (Ottawa and Victoria), 16h. (Edinburgh, Kew, and Granada), 17h. (De Bilt, Paris, Strasbourg, Budapest (5), and San Fernando), 18h. (Zagreb), 20h. (near Laibach).

**Aug. 13d.** Readings at 0h. (Cape Town), 3h. (Pulkovo and Leningrad), 4h. (Tokyo and near Nagoya), 5h. (Sucre and near La Paz), 6h. (Pulkovo, Leningrad, Ekaterinburg, and Makeyevka), 16h. (Tokyo).

**Aug. 14d. 1h. 26m. 18s. Epicentre 25°·0N. 119°·5E. (LXIII as on 11d. 12h.).**

**The Ekaterinburg observations suggest an epicentre 3° further W.**

| | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. |
| Zi-ka-wei | 6·4 | 15 | e 1 36 | − 2 | 2 55 | 0 | — |
| Irkutsk | 29·5 | 341 | — | — | — | — | e 14·7 |
| Ekaterinburg | 52·4 | 324 | 9 6 | −16 | e 16 18 | −31 | e 26·6 |
| Pulkovo | 68·2 | 327 | — | — | — | — | e 42·7 |
| Leningrad | 68·2 | 327 | — | — | — | — | 42·1 |
| De Bilt | 84·1 | 326 | — | — | — | — | e 48·7 |
| Uccle | 85·2 | 324 | — | — | — | — | e 48·7 |

**Aug. 14d. 8h. 36m. 10s. Epicentre 41°·0S. 92°·0W. (as on 1924 July 17d.).**

A = −·026, B = −·754, C = −·656; D = −·999, E = +·035; G = +·023, H = +·656, K = −·755.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| La Plata | 27·4 | 88 | i 6 0 | − 2 | 10 21 | −27 | 13·1 | — |
| La Paz | 32·0 | 47 | i 6 50 | + 3 | 11 52 | −16 | 14·0 | 18·1 |
| Ottawa | 87·6 | 11 | — | — | e 23 50? | + 2 | 48·8 | — |
| San Fernando | 110·2 | 59 | — | — | — | — | — | 66·8 |
| Granada | 112·3 | 60 | e 15 17 | + 9 | e 29 20 | +92 | 52·8 | 61·8 |
| Paris | 122·2 | 50 | — | — | — | — | e 63·8 | — |
| Edinburgh | 122·3 | 42 | — | — | — | — | e 68·8 | — |
| Kew | 123·2 | 46 | — | — | — | — | e 61·8 | — |
| Uccle | 124·1 | 49 | — | — | — | — | — | 66·8 |
| De Bilt | 125·1 | 48 | — | — | — | — | e 63·8 | — |
| Strasbourg | 125·2 | 52 | — | — | — | — | e 65·8 | — |
| Pulkovo | 140·3 | 41 | e 20 4 | [+24] | — | — | 63·8 | 81·3 |
| Leningrad | 140·3 | 41 | e 19 18 | [−22] | — | — | 33·8 | — |
| Makeyevka | 144·3 | 61 | e 23 51 | ?$PR_1$ | — | — | 46·8 | 82·6 |
| Ekaterinburg | 156·3 | 39 | 20 34 | [+30] | — | — | 60·8 | 88·2 |

Additional readings: La Paz MN = +18·6m.; $T_g$ =8h.37m.0s. Ottawa eN = +30m.8s. =$SR_1$ +10s. San Fernando MN = +65·3m. Granada i = +19m.52s. =$PR_1$ +18s. Makeyevka MN = +87·6m. Ekaterinburg e = +20m.56s., +23m.56s. =$PR_1$ −20s., and +60m.12s., MN = +88·0m., MZ = +88·4m.

**Aug. 14d.** Readings at 0h. (Tacubaya), 2h. (Ekaterinburg, Pulkovo, Sydney, and Adelaide), 3h. (De Bilt, Uccle, Pulkovo, Leningrad, Irkutsk, and near Athens), 4h. (Pulkovo, Ekaterinburg, Irkutsk, and Zi-ka-wei), 5h. (De Bilt, Uccle, Granada, Leningrad, Ekaterinburg, Makeyevka, and Apia), 6h. (Ottawa and Granada), 8h. (Ekaterinburg), 16h. (near Tacubaya), 19h. (near Sumoto (2)), 21h. (Apia, La Paz, Riverview, Adelaide, and Ekaterinburg), 22h. (Pulkovo, Leningrad, Irkutsk, Ekaterinburg, Granada, La Paz, and Ottawa), 23h. (Leningrad, De Bilt, San Fernando, and near Laibach and Zagreb).

**Aug. 15d. 2h. 27m. 24s. Epicentre 58°·5S. 153°·0E. (as on 1923 Nov. 26d.).**

A = −·466, B = +·237, C = −·853; D = +·454, E = +·891; G = +·760, H = −·387, K = −·522.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Christchurch | 19·2 | 48 | 4 6 | −25 | 7 54 | −12 | 9·3 | 10·7 |
| Melbourne | 21·4 | 342 | e 6 42 | +104 | — | — | — | 11·0 |
| Wellington E. | 22·0 | 48 | i 5 1 | − 4 | i 8 57 | − 8 | 11·6 | 13·3 |
| N. | 22·0 | 48 | i 5 1 | − 4 | i 9 1 | − 4 | e 10·3 | 13·1 |
| Riverview | 24·7 | 356 | e 6 48 | +73 | e 10 30 | +33 | e 11·5 | 11·9 |
| Sydney | 24·7 | 356 | — | — | 10 18 | +21 | 11·4 | 11·8 |
| Adelaide | 25·4 | 332 | e 4 36? | −66 | e 9 2 | −69 | e 11·1? | 15·4 |
| Honolulu E. | 89·4 | 44 | — | — | — | — | e 43·6 | — |
| Victoria E. | 126·8 | 56 | — | — | — | — | 58·7 | 66·0 |
| Baku | 130·0 | 284 | — | — | e 24 58 | ?$PR_2$ | 62·6 | 72·8 |
| Ekaterinburg | 136·5 | 307 | e 19 34 | [+ 1] | — | — | 40·6 | 76·6 |
| Makeyevka | 141·4 | 284 | — | — | e 36 36? | ? | 76·6 | 116·7 |
| Toronto | 145·0 | 89 | — | — | — | — | e 72·5 | — |
| Ottawa | 148·1 | 90 | e 25 36? | ? | — | — | e 69·6 | — |
| Rocca di Papa | 150·2 | 253 | — | — | — | — | e 89·7 | 90·1 |
| Pulkovo | 151·5 | 298 | 20 10 | [+12] | — | — | 80·6 | 97·9 |
| Leningrad | 151·6 | 298 | e 20 10 | [+12] | — | — | 71·6 | 86·8 |
| Granada | 153·8 | 226 | i 20 38 | [+37] | — | — | 77·6 | 84·6 |
| San Fernando | 154·1 | 221 | — | — | — | — | 80·6 | 94·1 |
| Moncalieri | 155·0 | 252 | — | — | — | — | e 64·7 | — |
| Tortosa N. | 155·2 | 236 | — | — | — | — | e 83·6 | — |
| Strasbourg | 157·5 | 259 | — | — | — | — | 96·1 | — |
| Paris | 160·2 | 254 | e 20 42 | [+34] | — | — | e 88·6 | — |
| Uccle | 160·5 | 260 | — | — | — | — | e 80·6 | — |
| De Bilt | 160·8 | 264 | 20 22 | [+13] | — | — | e 82·6 | — |
| Kew | 163·3 | 257 | — | — | — | — | e 89·6 | — |
| Oxford | 164·0 | 256 | — | — | — | — | — | 105·6 |

*For Notes see next page.*

NOTES TO AUG. 15d. 2h. 27m. 24s.

Additional readings and notes: Christchurch readings are given as at 1h. Wellington $SR_1E = +9m.41s.$, $SR_1N = +9m.44s.$ Riverview eS = +10m.45s., MN = +11·7m. Baku MN = +72·1m. Ekaterinburg e = +22m.34s. $=PR_1 +22s.$, and +26m.5s. $=PR_2 +14s.$, eL = +27·6m., e = +38m.29s., MN = +77·4m., MZ = +78·2m. Makeyevka MN = +118·8m. Ottawa eN? = +30m.6s. $=PR_2 +5s.$ San Fernando MN = +91·6m. De Bilt $ePR_1Z = +25m.8s.$

Aug. 15d. 3h. 58m. 22s. Epicentre 52°·2N. 2°·7W. (given by H. Jeffreys, Geoph. Supp. to Mon. Not. R.A.S. I. 489, June 1927).

A = +·612, B = −·029, C = +·790; D = −·047, E = −·999; G = +·789, H = −·037, K = −·613.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Oxford | 1·0 | 116 | i 0 16 | + 1 | — | — | 0·6 | — |
| Bidston | 1·2 | 350 | 0 32 | +14 | — | — | — | 0·6 |
| Kew | 1·7 | 117 | 0 25 | − 1 | 0 47 | − 1 | — | 0·9 |
| Stonyhurst | 1·7 | 5 | e 0 24 | − 2 | i 0 43 | − 5 | — | 0·8 |
| Plymouth | 2·0 | 206 | (0 23) | − 8 | — | — | — | — |
| Edinburgh | 3·7 | 356 | e 1 50 | +52 | — | — | i 2·1 | — |
| Uccle | 4·6 | 105 | e 1 7 | − 4 | — | — | — | — |
| De Bilt | 4·8 | 88 | — | — | e 2 2 | − 9 | e 2·5 | — |
| Paris | 4·8 | 133 | e 1 24 | +10 | e 2 36 | +25 | (2·6) | 2·6 |
| Besançon | 7·5 | 128 | — | — | e 3 7 | −17 | — | 3·8 |
| Strasbourg | 7·6 | 114 | e 1 54 | − 1 | — | — | — | — |
| Hamburg | 7·8 | 75 | — | — | e 3 8? | −23 | — | — |
| Zurich | 8·7 | 119 | e 1 59 | −13 | e 3 26 | −30 | e 4·4 | — |
| Vienna z. | 12·8 | 100 | — | — | — | — | e 6·6 | — |

Additional readings: Plymouth reading has been increased by 1m. Uccle e = +1m.22s. and +2m.21s. De Bilt e = +2m.25s. Strasbourg $SR_1$ = +4m.11s., $SR_2$ = +4m.20s. Vienna iE = +6m.48s.

Aug. 15d. 6h. 31m. 36s. Epicentre 4°·8N. 126°·0E. (as on 1925 Oct. 18d.).

A = −·586, B = +·806, C = +·084; D = +·809, E = +·588; G = −·049, H = +·068, K = −·997.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | 8·8 | 166 | i 5 20 | +187 | i 6 55 | +177 | — | — |
| Manila | 10·9 | 334 | e 2 24? | −19 | — | — | — | — |
| Hong Kong | 21·0 | 328 | — | — | — | — | — | 12·4 |
| Malabar | 22·0 | 237 | i 5 4 | − 1 | — | — | — | — |
| Batavia | 22·1 | 240 | i 5 7 | + 1 | i 9 8 | + 1 | — | — |
| Baku | 76·3 | 311 | e 13 59 | +122 | e 23 30 | +109 | 39·4 | — |
| Makeyevka | 85·1 | 319 | — | — | e 23 8 | −12 | 67·4 | — |
| Pulkovo | 88·7 | 331 | — | — | e 23 39 | −21 | 49·4 | 57·6 |
| Leningrad | 88·7 | 331 | e 12 56 | −13 | — | — | 45·4 | 57·7 |
| De Bilt | 104·3 | 327 | — | — | — | — | e 50·4 | — |
| Uccle | 105·4 | 325 | — | — | (38 24) | ?$SR_2$ | e 38·4 | — |
| Kew | 107·6 | 330 | — | — | — | — | e 61·4 | — |
| Granada | 117·1 | 316 | — | — | — | — | 78·4 | 81·4 |
| San Fernando | 119·2 | 316 | — | — | — | — | — | 79·9 |
| Ottawa | 126·2 | 17 | — | — | e 28 24 | −70 | 68·4 | — |

Additional readings: Pulkovo MN = +50·4m., MZ = +58·2m. Leningrad MN = +50·3m. De Bilt eL = +54·4m. San Fernando MN = +80·4m. Ottawa eE = +38m.18s. $=SR_1 +14s.$

**Aug. 15d. 9h. 53m. 45s. Epicentre 14°·0N. 109°·0E. (as on 1924 Dec. 26d.).**

A = −·316, B = +·917, C = +·242; D = +·946, E = +·326; G = −·079, H = +·229, K = −·970.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Hong Kong | 9·6 | 30 | — | — | — | — | — | 12·2 |
| Manila | 11·6 | 86 | — | — | e 5 15? | + 6 | — | — |
| Taihoku E. | 16·1 | 45 | — | — | e 6 15? | −42 | — | — |
| Zi-ka-wei | 20·6 | 32 | e 4 50 | + 2 | — | — | — | — |
| Irkutsk | 38·4 | 355 | e 7 40 | − 1 | — | — | 20·2 | 21·5 |
| Baku | 57·6 | 310 | — | — | — | — | 36·2 | — |
| Makeyevka | 67·0 | 319 | — | — | — | — | e 37·2 | 50·6 |
| Kucino | 67·8 | 325 | — | — | — | — | 37·4 | 44·7 |
| Pulkovo | 72·3 | 329 | 12 36 | +64 | — | — | 35·2 | 46·8 |
| Leningrad | 72·3 | 329 | — | — | — | — | 37·2 | 51·0 |
| Vienna | 81·3 | 320 | 13 48 | +81 | — | — | e 53·2 | — |
| Hamburg | 84·0 | 325 | — | — | — | — | e 46·2 | — |
| Strasbourg | 86·8 | 320 | — | — | — | — | 48·2 | — |
| De Bilt | 87·2 | 323 | — | — | — | — | e 47·2 | — |
| Uccle | 88·1 | 323 | — | — | — | — | e 47·2 | — |
| Paris | 89·9 | 321 | — | — | — | — | e 57·2 | — |
| Kew | 90·6 | 325 | — | — | — | — | e 53·2 | — |
| Granada | 98·7 | 314 | — | — | — | — | 56·2 | 60·2 |
| San Fernando | 100·9 | 314 | — | — | — | — | — | 71·2 |
| Ottawa | 120·5 | 2 | — | — | — | — | e 61·2 | — |

Additional readings: Makeyevka L = +42·2m., MN = +44·5m. Leningrad MZ = +50·8m. San Fernando MN = +68·2m.

**Aug. 15d. 14h. 17m. 52s. Epicentre 36°·0N. 5°·0W. (as on 1925 Jan. 2d.).**

A = +·806, B = −·071, C = +·588.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malaga | 0·9 | 32 | 0 16 | + 2 | 0 26 | + 1 | — | — |
| Granada | 1·6 | 43 | i 0 27 | + 3 | 0 39 | − 6 | 0·7 | 1·0 |
| Almeria | 2·3 | 67 | i 0 42 | + 6 | i 1 8 | + 5 | i 1·3 | 1·8 |
| Toledo | 3·9 | 11 | e 1 1 | 0 | 1 36 | −11 | i 1·8 | 2·1 |

Additional readings: Granada i = +0m.29s., MN = +0·8m. Almeria MNZ = +1·4m. Toledo S = +1m.31s.

**Aug. 15d.** Readings also at 2h. (near La Paz and near Sucre), 4h. (Ann Arbor), 9h. (Tokyo and near Nagasaki), 10h. (near Oaxaca), 11h. (Irkutsk), 12h. (La Paz and Ekaterinburg), 13h. (De Bilt and Irkutsk), 18h. (Ekaterinburg), 19h. (De Bilt), 20h., 21h., and 22h. (Moncalieri), 23h. (Amboina).

**Aug. 16d. 2h. 35m. 24s. Epicentre 5°·5S. 147°·0E. (as on 1926 July 16d.).**

A = −·835, B = +·542, C = −·096; D = +·545, E = +·839; G = +·080, H = −·052, K = −·995.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Riverview | 28·6 | 173 | e 6 29 | +15 | e 11 43 | +33 | e 14·2 | 15·9 |
| Sydney | 28·6 | 173 | 10 42 | ?S | (10 42) | −28 | 15·3 | 15·8 |
| Adelaide | 30·4 | 194 | e 10 58 | ?S | (e 10 58) | −43 | 14·9 | 18·4 |
| Melbourne | 32·2 | 184 | e 8 48 | +117 | — | — | — | 18·5 |
| Manila | 32·7 | 310 | — | — | e 12 36? | +17 | — | — |
| Honolulu | 60·2 | 61 | — | — | e 18 9 | −17 | e 25·6 | 32·0 |
| Ekaterinburg | 92·6 | 327 | e 16 51 | ?$PR_1$ | (23 36) | [− 8] | 23·6 | 51·8 |
| Makeyevka | 106·7 | 320 | — | — | — | — | 56·6 | 71·3 |
| Leningrad | 107·9 | 333 | e 18 44 | ?$PR_1$ | — | — | 56·6 | 66·4 |
| Pulkovo | 108·0 | 333 | e 18 38 | ?$PR_1$ | e 28 4 | +54 | 55·6 | 69·9 |
| De Bilt | 123·8 | 332 | — | — | — | — | e 57·6 | — |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Edinburgh | 124·3 | 339 | — | — | — | — | — | 82·6 |
| Strasbourg | 124·8 | 327 | — | — | — | — | e 68·6 | — |
| Uccle | 125·1 | 331 | — | — | — | — | e 58·6 | — |
| Ottawa | 125·6 | 35 | — | — | e 29 12 | −18 | e 51·6 | — |
| Kew | 126·7 | 335 | — | — | — | — | e 72·6 | — |
| Paris | 127·3 | 331 | — | — | — | — | e 76·6 | — |
| Granada | 138·5 | 324 | — | — | — | — | e 68·6 | 71·1 |
| La Paz | 138·9 | 122 | 19 28 | [−10] | — | — | — | — |
| Sucre | 139·8 | 128 | 19 23 | [−17] | — | — | — | — |
| San Fernando N. | 140·5 | 325 | — | — | — | — | — | 82·6 |

Additional readings and note: Riverview MN = +18·6m. Adelaide S = +14m.2s. Honolulu MN = +27·2m. Ekaterinburg MN = +48·9m., MZ = +54·4m. Leningrad MN = +68·8m., MZ = +70·1m. Pulkovo MZ = +70·1m. Ottawa e = +36m.54s. La Paz and Sucre readings have been diminished by 9m.

Aug. 16d. 10h. 57m. 55s. Epicentre 36°·0N. 5°·0W. (as on 15d. 14h.).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malaga | 0·9 | 32 | 0 21 | + 7 | — | — | — | 0·5 |
| Granada | 1·6 | 43 | 0 22 | − 2 | 0 28 | −17 | 0·5 | 0·6 |
| Almeria | 2·3 | 67 | 0 43 | + 7 | i 1 2 | − 1 | i 1·1 | 1·2 |

Granada gives also i = +0m.24s., MN = +0·7m.

Aug. 16d. Readings also at 1h. (Moncalieri), 4h. (Ekaterinburg), 5h. (Tokyo), 7h. (near Laibach), 9h. (Tucson, Tacubaya, Puebla, Oaxaca, and Vera Cruz), 10h. (Irkutsk and Ekaterinburg), 12h. (Taihoku, Irkutsk, Ekaterinburg, Pulkovo, and Zi-ka-wei), 13h. (Uccle, De Bilt, Kew, Strasbourg, Granada, and Algiers), 18h. (Tokyo), 19h. (La Paz and La Plata), 20h. (Tokyo and Irkutsk), 21h. (Manila).

Aug. 17d. 1h. 42m. 45s. Epicentre 38°·5N. 15°·0E.

A = +·756, B = +·203, C = +·623; D = +·259, E = −·966; G = +·601, H = +·161, K = −·783.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Pompeii | 2·3 | 350 | e 0 42 | + 6 | e 1 57 | +54 | — | — |
| Naples | 2·4 | 346 | 0 42 | + 5 | 1 15 | + 9 | — | — |
| Rocca di Papa | 3·7 | 332 | e 0 56 | − 2 | 1 44 | + 2 | — | 2·2 |
| Florence | 6·0 | 333 | 1 45 | +13 | 3 55 | +71 | — | — |
| Athens | 6·9 | 91 | 1 49 | + 4 | e 3 1 | − 6 | 4·7 | 8·2 |
| Venice | 7·2 | 345 | e 2 52 | +63 | e 4 7 | +52 | (e 4·1) | 9·6 |
| Zagreb | 7·3 | 5 | e 1 54 | + 3 | e 4 3 | +45 | — | 5·4 |
| Belgrade | 7·5 | 31 | e 2 6 | +12 | i 4 48 | +84 | e 7·8 | — |
| Moncalieri | 8·5 | 322 | 2 9 | 0 | 3 45 | − 5 | 4·6 | 5·5 |
| Graz | 8·6 | 2 | e 2 2 | − 8 | e 4 39 | +46 | 5·0 | 5·1 |
| Budapest | 9·4 | 17 | e 3 15? | +53 | 4 15? | + 2 | — | — |
| Algiers | 9·6 | 264 | 2 59 | +35 | — | — | e 5·5 | 9·2 |
| Vienna | 9·8 | 5 | e 2 33 | + 6 | i 4 22 | − 1 | — | 7·2 |
| Zurich | 10·0 | 335 | e 2 20 | −10 | — | — | 15·9 | — |
| Ravensburg E. | 10·1 | 339 | e 2 47 | +16 | (e 4 1) | −31 | e 5·0 | 6·8 |
| Barcelona | 10·3 | 291 | — | — | (e 4 28) | − 9 | e 4·5 | 8·2 |
| Hohenheim E. | 11·0 | 340 | — | — | — | — | e 5·6 | 6·7 |
| Strasbourg | 11·3 | 335 | e 2 41 | − 8 | — | — | e 6·2 | 9·6 |
| Tortosa N. | 11·4 | 287 | — | — | (4 47) | −17 | 4·8 | 9·9 |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Cheb | 11·7 | 352 | — | — | e 5 15? | + 3 | — | 7·2 |
| Paris | 13·7 | 323 | e 3 18 | − 4 | e 6 19 | +18 | 7·8 | 8·2 |
| Almeria | 13·8 | 269 | e 3 19 | − 4 | e 6 8 | + 5 | e 7·3 | 10·4 |
| Uccle | 14·4 | 332 | e 3 25 | − 7 | — | — | e 6·2 | 8·7 |
| Granada | 14·7 | 271 | 3 28 | − 7 | 6 24 | − 1 | 7·2 | 9·4 |
| Toledo | 14·8 | 282 | e 3 39 | + 3 | e 6 37 | +10 | e 7·3 | 10·9 |
| De Bilt | 15·2 | 336 | 3 42 | 0 | 6 45 | + 8 | 7·6 | 10·6 |
| Hamburg | 15·5 | 349 | e 3 41 | − 5 | — | — | e 8·8 | 9·2 |
| Malaga | 15·5 | 270 | e 2 42 | −64 | e 5 36 | −68 | — | — |
| Kew | 16·8 | 325 | e 3 58 | − 4 | e 7 8 | − 5 | 7·2 | — |
| San Fernando | 16·9 | 270 | — | — | e 7 15 | − 1 | 10·2 | 11·2 |
| Rio Tinto | 17·0 | 274 | 8 15? | ?L | — | — | (8·2) | 18·2 |
| Oxford | 17·5 | 325 | 4 9 | − 2 | 7 17 | −12 | 10·2 | 11·8 |
| Makeyevka | 19·2 | 53 | 4 32 | + 1 | 8 3 | − 3 | 10·2 | 19·5 |
| Bidston | 19·4 | 326 | 4 19 | −15 | 7 37 | −33 | 9·8 | 12·2 |
| Stonyhurst | 19·4 | 328 | 4 34 | 0 | 8 12 | + 2 | — | 11·6 |
| Edinburgh | 21·2 | 331 | — | — | — | — | i 9·8 | — |
| Upsala | 21·4 | 4 | — | — | e 8 46 | − 7 | — | 15·1 |
| Piatigorsk | 21·7 | 66 | e 4 15? | −46 | — | — | — | — |
| Bergen | 22·7 | 348 | e 7 15? | ? | — | — | — | — |
| Pulkovo | 23·3 | 20 | i 5 9 | −11 | i 9 18 | −13 | 10·6 | 12·8 |
| Leningrad | 23·5 | 20 | e 5 9 | −14 | i 9 17 | −18 | 11·2 | 13·9 |
| Baku | 26·8 | 75 | e 5 48 | − 8 | e 11 4 | +27 | e 15·2 | — |
| Ekaterinburg | 34·9 | 43 | e 6 55 | −17 | e 12 3 | −51 | 15·2 | 19·4 |
| Irkutsk | 60·1 | 45 | — | — | — | — | e 32·2 | — |
| Ottawa | 64·2 | 309 | — | — | — | — | e 35·2 | — |
| Toronto E. | 67·3 | 309 | — | — | — | — | 42·1 | — |

Additional readings and notes: Rocca di Papa eE = +33s., ePE = +57s., ePN = +59s., iS = +1m.47s. Athens LN = +4·5m., MN = +5·2m. Zagreb P = 1h.44m., e = +3m.11s. Belgrade i = +4m.26s., $iSR_1$ = +4m.51s. Graz MN = +6·3m. Vienna MN = +7·8m. Ravensburg e = +51s., S is given as eL and L as e. Barcelona MN = +6·7m. Hohenheim eN = +6m.27s., MN = +9·5m. Strasbourg MN = +8·6m., MZ = +9·5m. Almeria i = +3m.45s., MN = +11·4m. Uccle MN = +9·3m. Granada i = +4m.3s., +4m.9s., and +5m.13s., L = +8·2m. Toledo MNW = +11·2m. Makeyevka MN = +11·5m., MZ = +12·6m. Upsala MN = +14·4m. Bergen reading has been diminished by 1h. Pulkovo MZ = +14·8m. Is L = $SR_1$ ? Ekaterinburg MZ = +22·2m. Is L = $SR_1$ ?

Aug. 17d. Readings also at 11h. (Almeria, Malaga, and near Granada), 13h. (Azores and Tokyo).

Aug. 18d. 15h. 54m. 40s. Epicentre 36°·0N. 5°·0W. (as on 16d. 10h.).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malaga | 0·9 | 32 | 0 10 | − 4 | (0 17) | − 8 | 0·3 | 0·4 |
| San Fernando | 1·0 | 296 | i 0 33 | +18 | 0 54 | +26 | — | — |
| Granada | 1·6 | 43 | i 0 23 | − 1 | 0 36 | − 9 | 0·6 | 0·8 |
| Almeria | 2·3 | 67 | i 0 45 | + 9 | i 1 13 | +10 | i 1·3 | 1·3 |
| Toledo | 3·9 | 11 | e 0 49 | −12 | i 1 32 | −15 | i 1·6 | 2·0 |
| Alicante | 4·3 | 56 | 1 24 | +17 | (1 32) | −26 | 1·5 | 1·7 |
| Tortosa N. | 6·5 | 40 | 1 29 | −10 | (2 45) | −12 | 2·8 | 4·0 |
| De Bilt E. | 17·6 | 21 | — | — | — | — | e 9·3 | — |

Additional readings: Granada i = +25s., +28s., and +31s. Almeria MNZ = +1·4m. Toledo P = +58s., i = +1m.0s., iS = +1m.22s. De Bilt eLN = +11·3m.

**Aug. 18d. 17h. 4m. 52s. Epicentre 38°·0N. 20°·5E. (as on 1923 April 3d.).**

$A = +\cdot738$, $B = +\cdot276$, $C = +\cdot616$; $D = +\cdot350$, $E = -\cdot937$; $G = +\cdot577$, $H = +\cdot216$, $K = -\cdot788$.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | | 2·6 | 91 | i 0 51 | +10 | e 1 25 | +13 | 1·5 | 1·9 |
| Naples | | 5·6 | 303 | 1 30 | + 3 | 2 8 | −26 | — | — |
| Mostar | | 5·7 | 341 | 1 32 | + 4 | — | — | — | — |
| Sarajevo | | 6·0 | 346 | e 1 36 | + 4 | 3 39 | +55 | — | 3·9 |
| Belgrade | | 6·8 | 0 | i 1 40 | − 4 | — | — | — | 4·7 |
| Rocca di Papa | | 7·0 | 305 | 1 50 | + 4 | e 3 12 | + 2 | e 4·2 | 5·3 |
| Zagreb | | 8·5 | 338 | e 2 19 | +10 | i 5 1 | +71 | — | — |
| Florence | | 9·0 | 313 | e 2 8 | − 8 | 5 38 | +95 | (5·6) | — |
| Laibach | | 9·2 | 333 | e 2 14 | − 5 | i 4 7 | − 1 | — | — |
| Budapest | | 9·5 | 355 | 2 31 | + 8 | 3 38 | −38 | 5·3 | 9·7 |
| Venice | | 9·6 | 323 | 2 29 | + 5 | i 3 58 | −20 | — | 6·1 |
| Graz | | 9·8 | 340 | e 2 26 | − 1 | i 6 3 | +100 | 6·8 | 7·1 |
| Vienna | | 10·6 | 345 | e 2 28 | −10 | 5 36 | ?L | (5·6) | 7·6 |
| Innsbruck | N.E. | 11·4 | 327 | e 3 6 | +16 | e 4 49 | −15 | — | — |
| Moncalieri | | 11·8 | 310 | 3 5 | + 9 | 5 31 | +17 | 6·7 | 10·5 |
| Lemberg | | 12·1 | 11 | e 2 44 | −16 | — | — | — | 7·3 |
| Ravensburg | E. | 12·6 | 324 | e 3 20 | +13 | e 7 28 | ?L | e 8·8 | 9·6 |
| | N. | 12·6 | 324 | e 3 24 | +17 | e 7 26 | ?L | — | — |
| Zurich | | 12·8 | 321 | 3 14 | + 4 | e 5 23 | −16 | — | — |
| Cheb | | 13·4 | 337 | — | — | e 5 22 | −31 | — | 8·1 |
| Hohenheim | | 13·5 | 327 | i 3 43 | +23 | e 7 54 | +118 | e 9·1 | 11·6 |
| Algiers | | 13·9 | 271 | i 3 27 | + 2 | 6 21 | +15 | — | 13·1 |
| Strasbourg | | 14·0 | 323 | e 3 29 | + 3 | e 6 17 | + 9 | 8·6 | 9·0 |
| Besançon | | 14·0 | 316 | e 3 25 | − 1 | i 5 56 | −12 | 10·1 | — |
| Tortosa | E. | 15·7 | 287 | e 3 48 | 0 | e 6 40 | − 8 | — | — |
| | N. | 15·7 | 287 | e 3 53 | + 5 | 6 45 | − 3 | 7·1 | 13·0 |
| Makeyevka | | 16·2 | 46 | 3 51 | − 4 | 7 6 | + 6 | 8·1 | 10·9 |
| Paris | | 16·9 | 316 | e 4 7 | + 3 | i 7 24 | + 8 | 10·1 | 10·1 |
| Hamburg | | 17·2 | 339 | e 4 4 | − 3 | e 7 8 | −14 | e 9·0 | 12·1 |
| Uccle | | 17·2 | 323 | e 4 10 | + 3 | e 7 24 | + 2 | e 9·1 | — |
| De Bilt | | 17·7 | 328 | 4 16 | + 3 | 7 35 | + 2 | 10·1 | 12·3 |
| Piatigorsk | | 18·0 | 63 | i 3 59 | −18 | — | — | — | — |
| Almeria | | 18·1 | 274 | i 4 26 | + 8 | e 8 4 | +22 | e 9·5 | 11·2 |
| Granada | | 19·1 | 275 | i 4 33 | + 3 | e 8 18 | +14 | 11·1 | 11·8 |
| Toledo | | 19·1 | 283 | e 4 30 | 0 | i 8 5 | + 1 | e 8·9 | 15·9 |
| Malaga | | 19·8 | 274 | 4 40 | + 1 | 8 20 | + 1 | 13·0 | — |
| Kew | | 19·8 | 319 | e 4 42 | + 3 | e 8 22 | + 3 | 11·1 | 12·7 |
| Oxford | | 20·5 | 319 | — | — | i 8 32 | − 2 | — | — |
| Kucino | | 21·2 | 28 | 5 50 | +55 | 9 53 | +65 | 12·3 | 14·0 |
| San Fernando | | 21·3 | 274 | 5 21 | +24 | 8 55 | + 5 | 12·1 | 16·1 |
| Upsala | | 21·9 | 356 | e 4 56 | − 8 | e 8 48 | −15 | — | 14·9 |
| Stonyhurst | | 22·3 | 323 | e 6 32 | +83 | 13 8 | ?L | (13·1) | — |
| Pulkovo | | 22·6 | 13 | i 5 3 | − 9 | i 9 2 | −15 | 12·1 | 14·0 |
| Leningrad | | 22·8 | 13 | i 5 3 | −12 | i 9 4 | −17 | 10·5 | 14·0 |
| Baku | | 22·8 | 75 | e 5 3 | −12 | 9 19 | − 2 | 13·1 | 17·0 |
| Edinburgh | | 23·8 | 326 | — | — | — | — | e 30·1 | — |
| Bergen | | 24·4 | 342 | — | — | — | — | e 15·1 | — |
| Ekaterinburg | | 32·3 | 41 | e 6 34 | −17 | 11 43 | −30 | 12·1 | 20·4 |
| Irkutsk | | 57·4 | 46 | e 9 52 | − 3 | e 13 26 | ?$PR_2$ | e 35·1 | — |

**Additional readings:** Athens ePN = +55s. Sarajevo iP = +2m.41s. Belgrade iP = +2m.11s. and +2m.15s., $iSR_1N$ = +3m.49s., $iSR_1E$ = +3m.52s. Rocca di Papa i = +2m.1s., eS = +4m.31s. Zagreb e = +2m.31s., +2m. 44s., +3m.23s., and +3m.52s., i = +4m.14s. and +4m.51s. Laibach iPN = +2m.31s., e = +3m.15s. and +3m.18s., i = +3m.30s. and +4m.7s., iSR = +5m.10s. and +5m.25s. Budapest MN = +8·9m. Venice PE = +3m.8s., iS = +4m.12s. Vienna iNZ = +4m.15s., $SR_1$? = +6m.15s. Moncalieri MN = +8·8m. Lemberg MN = +7·1m. Ravensburg $ePR_1$ = +3m.58s. Hohenheim $iPR_1$ = +4m.21s., MN = +9·3m. Strasbourg $iSR_2$ = +8m.14s., MN = +9·7m., MZ = +10·6m. Makeyevka MNZ = +10·6m. De Bilt MN = +11·9m., MZ = +12·8m. Almeria MN = +11·9m. Granada i = +4m.55s. Toledo MNW = +14·4m. Kucino e = +9m.40s. San Fernando MN = +14·6m. Pulkovo MZ = +14·6m. Leningrad i = +9m.11s., MN = +14·1m., MZ = +15·1m. Baku iP = +5m.8s., MNZ = +16·0m. Ekaterinburg MN = +20·0m.

Aug. 18d. 23h. 58m. 48s. Epicentre 24°·5N. 94°·5E.

A = −·071, B = +·907, C = +·415 ; D = +·997, E = +·078 ; G = −·033, H = +·413, K = −·910.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Calcutta | E. | 5·9 | 252 | 1 42 | +11 | 2 40 | − 1 | — | — |
| | N. | 5·9 | 252 | 1 47 | +16 | 2 33 | − 8 | — | — |
| Phu-Lien | | 11·8 | 106 | i 2 54 | − 2 | 5 12 | − 2 | 6·2 | — |
| Hyderabad | | 16·5 | 248 | 3 47 | −12 | 7 3 | − 4 | 8·8 | 12·6 |
| Bombay | | 20·8 | 259 | e 5 0 | + 9 | 8 33 | − 7 | 10·4 | 11·9 |
| Irkutsk | | 28·7 | 13 | 6 1 | −14 | — | — | — | — |
| Baku | | 40·3 | 306 | e 7 59 | + 2 | e 13 51 | −20 | — | — |
| Ekaterinburg | | 40·4 | 332 | e 7 43 | −14 | 13 45 | −28 | 16·2 | 23·3 |
| Makeyevka | | 49·8 | 315 | 9 14 | + 8 | 16 1 | −15 | 25·2 | 64·2 |
| Kucino | | 51·3 | 324 | e 10 23 | +68 | e 17 40 | +65 | 32·5 | 33·9 |
| Pulkovo | | 56·0 | 328 | 9 41 | − 5 | 17 18 | −16 | 26·2 | 36·4 |
| De Bilt | | 70·5 | 319 | — | — | — | — | e 39·2 | — |

Additional readings: Baku e = +9m.42s. Ekaterinburg i = +14m.16s., MZ = +26·4m. ; is L = $SR_1$ ? Makeyevka $PR_1$ = +11m.11s., e = +18m.11s. Kucino e$PR_1$ = +12m.22s., $SR_1$ = +21m.49s. Pulkovo $SR_1$ = +22m.12s., MN = +34·3m.

Aug. 18d. Readings also at 0h. (near Nagasaki), 1h. (Baku), 2h. (La Paz), 3h. (Sucre and near La Paz), 8h. and 9h. (near Reykjavik), 12h. (Simla), 14h. (Vienna, Hamburg, Upsala, near Pulkovo, and Leningrad), 16h. (Stonyhurst, Cape Town, Almeria, Granada, and near Malaga), 17h. (Tokyo (2) ), 19h. (St. Louis), 20h. (Ekaterinburg), 22h. (Irkutsk, Zi-ka-wei and near Malaga).

Aug. 19d. 13h. 51m. 25s. Epicentre 7°·0S. 145°·0E. (as on 1926 June 19d.).

A = −·813, B = +·569, C = −·122 ; D = +·574, E = +·819 ; G = +·100, H = −·070, K = −·993.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | 17·1 | 280 | i 4 39 | +33 | — | — | i 8·3 | — |
| Riverview | | 27·4 | 169 | — | — | e 8 5 | −163 | e 14·8 | 20·8 |
| Sydney | | 27·4 | 169 | (6 11) | + 9 | (11 5) | +17 | (14·5) | (15·0) |
| Adelaide | | 28·5 | 191 | e 6 30? | +17 | e 12 1 | +53 | 17·3 | 19·1 |
| Melbourne | | 30·7 | 180 | — | — | e 11 47 | + 1 | — | 22·1 |
| Manila | | 32·2 | 312 | e 6 35? | −15 | — | — | 16·2 | — |
| Honolulu | E. | 62·6 | 62 | 10 25 | − 4 | 18 35 | −21 | 31·2 | 41·1 |
| Irkutsk | | 68·7 | 335 | — | — | — | — | 50·6 | — |
| Bombay | | 75·6 | 291 | e 21 46 | ?S | (e 21 46) | +13 | — | — |
| Ekaterinburg | | 92·8 | 327 | e 12 54 | −37 | e 23 48 | [+ 3] | 24·6 | 53·0 |
| Victoria | E. | 96·4 | 42 | 15 56 | +125 | 25 35 | +15 | 43·4 | 54·1 |
| Baku | | 98·4 | 311 | e 17 49 | [+ 9] | e 26 34 | +54 | 48·6 | 54·6 |
| Kucino | | 105·4 | 325 | e 25 2 | ?[S] | e 27 37 | +51 | 51·2 | 58·4 |
| Makeyevka | | 106·5 | 318 | — | — | e 25 7 | [+13] | 42·6 | 65·1 |
| Pulkovo | | 108·3 | 331 | e 18 50 | ?$PR_1$ | 28 7 | +54 | 48·6 | 63·9 |
| Leningrad | | 108·3 | 331 | e 18 55 | ?$PR_1$ | e 28 9 | +56 | 46·8 | 63·9 |
| Upsala | E. | 114·1 | 334 | — | — | — | — | e 58·6 | — |
| Cape Town | | 114·9 | 229 | — | — | — | — | — | 66·6 |
| Hamburg | | 121·0 | 331 | — | — | — | — | e 57·6 | — |
| Cheb | | 121·7 | 325 | — | — | — | — | e 58·6 | 74·6 |
| Chicago | | 122·1 | 44 | — | — | — | — | 61·8 | 71·8 |
| De Bilt | E. | 124·2 | 331 | — | — | — | — | e 56·6 | 74·7 |
| | N. | 124·2 | 331 | — | — | — | — | e 59·6 | 74·9 |
| Strasbourg | | 125·0 | 327 | — | — | — | — | e 61·6 | — |
| Uccle | | 125·4 | 331 | — | — | — | — | e 59·6 | — |
| Kew | | 127·1 | 332 | — | — | — | — | e 62·6 | — |
| Oxford | | 127·4 | 334 | — | — | — | — | — | 77·1 |
| Paris | | 127·6 | 330 | — | — | — | — | e 62·6 | 74·6 |
| Ottawa | | 128·0 | 36 | — | — | e 28 5 | −102 | 60·6 | — |
| Tortosa | N. | 133·7 | 322 | — | — | — | — | e 69·6 | 86·0 |
| Granada | | 138·5 | 321 | — | — | — | — | 71·6 | 76·1 |
| San Fernando | | 140·6 | 322 | — | — | 43 11 | ? | 74·1 | 84·1 |

*For Notes see next page.*

NOTES TO AUG. 19d. 13h. 51m. 25s.

Additional readings: Riverview MZ = +21·9m., MN = +24·8m. Sydney: The readings have all been diminished by 3min. Adelaide $PR_1$ = +8m.15s., $SR_1$ = +15m.23s. Honolulu eE = +23m.47s. = $SR_1$ − 5s., $SR_1E$ = +24m.53s. LN = +28·4m., MN = +36·1m.; $T_e$ = 13h.51m.42s. and 13h.51m.43s. Ekaterinburg e = +17m.0s. = $PR_1$ − 26s., MN = +45·5m., MZ = +53·1m.; is L = S? Baku MN = +55·7m. Kucino e = +38m.17s. = $SR_1$ − 35s. Makeyevka e = + 26m.12s. and +27m.45s., MN = +62·1m., MZ = +62·8m. Pulkovo $PR_1$ = +21m.58s. = $PR_2$ − 12s., e = +25m.7s. = [S] + 5s., MN = +63·6m., MZ = +64·0m. Leningrad i = +28m.20s., MZ = +63·8m., MN = +64·1m. Chicago $SR_1N$ = +36m.35s., MN = +64·7m. Ottawa e = +37m.47s. (= $SR_1$ − 39s.) and +42m.35s., eL = +55·0m. San Fernando MN = +86·6m.

Aug. 19d. Readings also at 0h. (Sucre), 2h. (Agana), 3h. (Sucre and Nagasaki), 4h. (Athens), 16h. (Manila), 17h. (Algiers (2) and near Athens), 21h. (Zurich), 22h. (Ekaterinburg), 23h. (Pulkovo, Leningrad, and Tokyo).

Aug. 20d. 3h. 9m. 6s. Epicentre 24°·0N. 124°·0E. (as on Aug. 10d. 0h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 2·5 | 294 | — | — | e 1 18 | + 9 | 2·3 | — |
| Zi-ka-wei | | 7·5 | 343 | 1 55 | + 1 | i 3 24 | 0 | — | 11·2 |
| Manila | | 9·8 | 197 | — | — | — | — | e 8·9 | — |
| Hukuoka | | 11·1 | 29 | e 1 53 | −53 | (5 7) | +10 | 5·1 | — |
| Osaka | | 14·6 | 40 | 4 19 | +45 | — | — | — | 14·2 |
| Irkutsk | | 32·0 | 337 | e 6 10 | −37 | — | — | 19·9 | — |
| Ekaterinburg | | 55·6 | 324 | e 9 24 | −19 | — | — | — | 31·0 |
| Baku | | 63·0 | 307 | — | — | (20 54?) | +113 | 20·9 | — |
| Makeyevka | | 69·8 | 315 | — | — | — | — | e 40·9 | — |
| Pulkovo | | 71·2 | 326 | — | — | e 25 32 | ?$PR_1$ | 36·9 | 45·9 |
| Leningrad | | 71·2 | 326 | — | — | — | — | 34·4 | 46·2 |
| De Bilt | | 87·2 | 327 | — | — | — | — | e 47·9 | 55·6 |
| Strasbourg | | 87·9 | 325 | — | — | — | — | e 52·9 | — |
| Uccle | | 88·3 | 327 | — | — | — | — | e 47·9 | — |
| Kew | | 90·1 | 329 | — | — | — | — | e 54·9 | — |

Aug. 20d. 5h. 49m. 50s. Epicentre 25°·0N. 119°·5E. (LXIV as on Aug. 14d. 1h.)

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 1·9 | 89 | — | — | — | — | e 1·8 | — |
| Zi-ka-wei | | 6·4 | 15 | e 1 37 | − 1 | e 2 55 | 0 | — | — |
| Irkutsk | | 29·5 | 341 | — | — | — | — | e 14·2 | — |
| Ekaterinburg | Z. | 52·4 | 324 | — | — | — | — | — | 34·6 |
| Pulkovo | | 68·2 | 327 | — | — | e 30 48 | ? | 38·2 | — |
| Leningrad | | 68·2 | 327 | — | — | — | — | e 43·2 | — |
| De Bilt | | 84·1 | 326 | — | — | — | — | e 48·2 | — |
| Strasbourg | | 84·6 | 322 | — | — | — | — | e 54·2 | — |

Aug. 20d. Readings also at 1h. (near Mostar), 3h. (near Sucre), 7h. (Sucre and near La Paz), 12h. (near Mizusawa), 13h. (La Paz), 16h. (Apia), 19h. (near Nagasaki), 20h. (near La Paz, La Plata, and Sucre).

Aug. 21d. Readings at 1h. and 2h. (near Sumoto), 4h. (Tokyo, Wellington, Pulkovo, Leningrad, Makeyevka, Ekaterinburg, Irkutsk, De Bilt, Rocca di Papa, near Moncalieri, and near Tacubaya), 6h. (Tokyo), 7h. (Ekaterinburg), 8h. (Irkutsk, Baku, and near Mizusawa), 12h. (Baku), 13h. (La Paz and Sucre), 15h. (Ekaterinburg and Ottawa), 16h. (Ann Arbor and Azores), 19h. (Chicago, Ottawa, Honolulu, Wellington, Riverview, Granada, and Irkutsk), 20h. (Baku, Pulkovo, Kew, De Bilt, and San Fernando), 21h. (Sucre), 23h. (Agana and Sucre).

**Aug. 22d.** Readings at 1h. and 2h. (near Nagasaki), 8h. (Zi-ka-wei, Manila, and near Taihoku), 9h. (Irkutsk, Baku, Pulkovo, Makeyevka, Edinburgh, Strasbourg, De Bilt, Uccle, and Granada), 13h. (Sucre), 16h. (near Manila).

**Aug. 23d. 4h. 23m. 54s.** Epicentre 40°·0N. 14°·0E. (as on 1920 July 11d.).

$A = +\cdot743$, $B = +\cdot185$, $C = +\cdot643$; $D = +\cdot242$, $E = -\cdot970$; $G = +\cdot624$, $H = +\cdot155$, $K = -\cdot766$.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Naples | 0·9 | 14 | e 0 16 | + 2 | e 0 25 | 0 | — | — |
| Rocca di Papa | 2·0 | 331 | i 0 36 | + 5 | 1 5 | +10 | 1·2 | — |
| Zagreb | 6·0 | 13 | e 2 13 | +41 | e 2 39 | − 5 | e 3·4 | — |
| Zurich | 8·3 | 334 | e 3 21 | +75 | — | — | e 4·8 | — |
| Strasbourg | 9·6 | 334 | — | — | — | — | 6·1 | — |
| Uccle | 12·7 | 331 | — | — | — | — | 7·1 | — |
| Granada | 14·0 | 264 | — | — | e 6 6? | − 2 | — | 10·6 |

Additional readings: Rocca di Papa iP = +43s., E = +1m.14s., N = +1m.16s. Zagreb e = +2m.25s.; all readings have been increased by 1h.

**Aug. 23d.** Readings also at 4h. (Sucre), 5h. (near Tacubaya), 10h. (near Amboina), 13h. (near Athens), 15h. (Ottawa, Makeyevka, Baku, Ekaterinburg, and Irkutsk), 16h. (Rocca di Papa and near Amboina), 17h. (Pulkovo and near Athens), 18h. (near Athens (2) ), 20h. (Ekaterinburg), 21h. (Irkutsk, Baku, and near Athens), 22h. (near Athens).

**Aug. 24d. 6h. 41m. 50s.** Epicentre 38°·5N. 30°·5W. (as on 1926 July 13d.).

$A = +\cdot674$, $B = -\cdot397$, $C = +\cdot623$; $D = -\cdot508$, $E = -\cdot862$; $G = +\cdot536$, $H = -\cdot316$, $K = -\cdot783$.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| San Fernando E. | 19·3 | 88 | — | — | — | — | — | 12·2 |
| Toledo | 20·5 | 78 | e 4 44 | − 3 | e 8 8 | −26 | e 8·7 | 10·5 |
| Malaga | 20·6 | 87 | 4 51 | + 3 | e 9 15 | ?$SR_1$ | e 12·4 | — |
| Granada | 21·2 | 85 | i 4 57 | + 2 | 8 51 | + 3 | 10·0 | 11·5 |
| Almeria | 22·2 | 85 | e 4 47 | −20 | e 8 30 | −39 | — | 11·4 |
| Kew | 24·7 | 48 | — | — | — | — | e 12·2 | — |
| Barcelona | 25·0 | 73 | e 5 50 | +12 | — | — | e 28·8 | 33·8 |
| Paris | 25·8 | 55 | — | — | — | — | e 11·2 | — |
| Uccle | 27·3 | 52 | — | — | — | — | e 12·2 | — |
| De Bilt | 28·1 | 49 | — | — | — | — | e 13·2 | — |
| Strasbourg | 29·1 | 57 | — | — | — | — | e 13·2 | — |
| Ottawa | 33·9 | 297 | — | — | e 12 27 | −12 | e 16·7 | — |
| Pulkovo | 43·1 | 40 | — | — | — | — | e 23·2 | — |
| Ekaterinburg | 59·2 | 40 | e 10 10 | + 4 | — | — | 17·2 | — |
| Baku | 59·8 | 60 | — | — | — | — | e 30·2 | — |

Additional readings: San Fernando MN = +11·2m. Toledo MNW = +10·8m. Almeria MN = +12·3m. Barcelona MN = +36·3m. Paris eL at +11·2m. probably = $SR_1$ −12s.

**Aug. 24d.** Readings also at 1h. (near Nagasaki), 2h. (near Manila), 3h. (Nagasaki (2), Ekaterinburg, and Irkutsk), 4h. (2), 5h., 6h., and 7h. (Nagasaki), 11h. (Baku), 15h. (Mizusawa), 16h. (Cape Town), 18h. (La Paz, La Plata, and near Sucre), 20h. (near La Paz, La Plata, and Sucre), 22h. (Victoria, Ottawa, Toronto, near La Paz, and Sucre).

## Aug. 25d. 5h. 44m. 32s. Epicentre 23°·8S. 172°·5E.

(as on 1920 June 12d.).

A = −·907, B = +·119, C = −·404; D = +·130, E = +·992; G = +·400, H = −·053, K = −·915.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Suva | | 7·9 | 45 | (i 1 40) | −20 | (i 3 10) | −24 | — | — |
| Wellington | E. | 17·6 | 174 | i 4 24 | +12 | i 7 54 | +23 | i 9·7 | 10·0 |
| | N. | 17·6 | 174 | e 4 24 | +12 | i 7 54 | +23 | i 9·6 | 10·6 |
| Apia | | 17·9 | 59 | 4 22 | + 6 | (7 35) | − 3 | 7·6 | 9·0 |
| Christchurch | | 19·7 | 180 | 5 4 | +27 | — | — | 9·0 | 11·9 |
| Riverview | | 21·2 | 237 | e 4 57 | + 2 | i 9 0 | +12 | e 10·5 | 11·8 |
| Sydney | | 21·2 | 237 | 4 58 | + 3 | 8 58 | +10 | 11·2 | 12·7 |
| Melbourne | | 27·3 | 233 | i 5 52 | − 9 | i 10 46 | 0 | 14·9 | 16·5 |
| Adelaide | | 31·4 | 241 | e 6 33 | − 9 | i 11 38 | −20 | i 13·8 | 19·8 |
| Amboina | | 47·2 | 289 | i 9 59 | +71 | i 19 16 | ?$SR_1$ | 37·3 | — |
| Honolulu | E. | 53·5 | 35 | 9 28 | − 2 | i 16 50 | −13 | i 22·3 | 27·8 |
| | N. | 53·5 | 35 | 9 28 | − 2 | i 16 51 | −12 | 25·1 | 27·3 |
| Manila | | 63·4 | 302 | e 11 35 | +61 | (19 48) | +42 | 19·8 | — |
| Malabar | | 64·2 | 274 | i 10 46 | + 7 | i 19 21 | + 6 | 33·0 | 36·4 |
| Batavia | | 65·3 | 274 | i 10 50 | + 3 | i 19 30 | + 1 | 30·0 | 43·8 |
| Osaka | | 68·3 | 328 | 10 59 | − 7 | 20 0 | − 6 | 32·5 | 39·4 |
| Mizusawa | | 69·4 | 335 | 20 10 | ?S | (20 10) | − 9 | 35·0 | — |
| Taihoku | E. | 69·5 | 312 | e 16 40 | ?$PR_2$ | — | — | — | 36·0 |
| Hong Kong | | 73·1 | 305 | 11 35 | − 2 | (21 0) | − 3 | 21·0 | 21·8 |
| Zi-ka-wei | | 73·6 | 317 | e 11 32 | − 8 | 20 58 | −11 | — | — |
| Phu-Lien | | 78·1 | 300 | e 12 6 | − 2 | e 21 52 | − 9 | 39·5 | — |
| Berkeley | E. | 86·8 | 46 | e 12 58 | 0 | e 23 10 | −29 | e 36·7 | 39·7 |
| | N. | 86·8 | 46 | e 13 6 | + 8 | e 23 14 | −25 | e 36·7 | 40·2 |
| Lick | | 87·0 | 46 | e 12 48 | −11 | e 22 52 | [−17] | e 36·9 | 40·3 |
| Sitka | E. | 91·9 | 25 | — | — | — | — | e 48·5 | — |
| Tucson | E. | 92·1 | 55 | 13 25 | − 3 | i 23 47 | [+ 6] | 41·6 | 44·3 |
| | N. | 92·1 | 55 | 13 25 | − 3 | 23 39 | [− 2] | e 41·4 | 60·7 |
| Victoria | E. | 92·2 | 36 | 13 26 | − 2 | 23 41 | [ 0] | 42·3 | 51·3 |
| | N. | 92·2 | 36 | 13 26 | − 2 | — | — | 42·0 | 49·5 |
| Spokane | | 95·0 | 39 | e 12 45 | −58 | e 24 28 | −38 | 44·5 | 50·5 |
| Colombo | | 95·2 | 275 | 13 28 | −16 | 24 28 | −40 | 58·0 | 59·5 |
| Irkutsk | | 96·4 | 325 | 13 40 | −11 | 24 6 | [+ 2] | 45·5 | 56·8 |
| Kodaikanal | | 98·7 | 277 | 24 4 | ?[S] | (24 4) | [−13] | 58·2 | 62·1 |
| Hyderabad | | 100·5 | 284 | 14 8 | − 5 | 24 36 | [+10] | 49·0 | 65·1 |
| La Plata | | 104·3 | 140 | 18 46? | ?$PR_1$ | — | — | 49·5 | — |
| Bombay | | 106·0 | 284 | 18 42 | ?$PR_1$ | 28 12 | +80 | 46·6 | 68·5 |
| Simla | E. | 106·3 | 298 | — | — | e 24 46 | [− 7] | — | 68·1 |
| La Paz | | 108·4 | 118 | 18 41 | ?$PR_1$ | i 28 44 | +90 | 51·8 | 58·1 |
| Sucre | | 109·2 | 122 | 18 44 | ?$PR_1$ | i 28 53 | +92 | 41·9 | 68·1 |
| St. Louis | | 110·0 | 55 | — | — | — | — | e 58·4 | — |
| Chicago | | 112·7 | 51 | 19 38 | ?$PR_1$ | 26 21 | −91 | 54·6 | 60·7 |
| Ann Arbor | E. | 115·7 | 51 | e 19 58 | ?$PR_1$ | — | — | e 54·9 | 59·3 |
| | N. | 115·7 | 51 | e 22 4 | ? | — | — | e 52·4 | 62·9 |
| Cape Town | | 117·2 | 203 | — | — | — | — | — | 68·0 |
| Toronto | E. | 119·0 | 50 | e 20 50 | ?$PR_1$ | e 25 43 | [ 0] | 56·8 | 64·2 |
| | N. | 119·0 | 50 | — | — | e 28 11 | −31 | 52·8 | 65·8 |
| Cheltenham | E. | 120·2 | 57 | — | — | — | — | e 60·9 | 63·0 |
| Ithaca | | 120·9 | 53 | — | — | e 30 26 | ? | 55·5 | — |
| Ekaterinburg | | 121·7 | 323 | e 13 23 | −148 | — | — | — | 69·0 |
| Ottawa | E. | 121·7 | 49 | e 20 28 | ?$PR_1$ | — | — | e 56·5 | 65·0 |
| Fordham | | 122·8 | 55 | e 25 38 | ?[S] | i 36 48 | ?$SR_1$ | e 50·5 | 62·6 |
| Harvard | E. | 124·9 | 53 | — | — | 25 58 | [ 0] | 52·6 | 67·0 |
| | N. | 124·9 | 53 | — | — | — | — | 52·7 | 70·9 |
| Baku | | 129·6 | 304 | e 19 8 | [− 9] | — | — | — | — |
| Piatigorsk | | 134·3 | 310 | e 19 36 | [+ 7] | i 22 57 | ?$PR_1$ | — | 71·5 |
| Leningrad | | 135·4 | 334 | i 18 5 | [−86] | — | — | 52·5 | 74·9 |
| Pulkovo | | 135·5 | 334 | — | — | i 32 20 | ? | 63·5 | 80·2 |
| Makeyevka | | 136·8 | 316 | e 19 36 | [+ 2] | e 23 6 | ?$PR_1$ | — | 83·2 |
| Upsala | | 139·9 | 340 | — | — | e 22 54 | ?$PR_1$ | e 60·5 | 78·3 |
| Hamburg | | 147·5 | 341 | i 19 48 | [− 4] | — | — | e 70·5 | 79·5 |
| Edinburgh | | 147·8 | 356 | — | — | — | — | i 80·2 | — |
| Budapest | | 148·3 | 324 | 20 0 | [+ 7] | — | — | e 69·5 | 86·4 |
| Vienna | | 149·2 | 328 | e 19 49 | [− 5] | — | — | e 67·5 | 87·5 |
| Cheb | | 149·5 | 335 | e 18 53 | [−62] | e 30 10 | ?$SR_1$ | e 65·5 | 83·0 |
| Stonyhurst | | 149·7 | 354 | e 24 38 | ?$PR_1$ | — | — | 75·5 | 86·1 |
| Athens | | 149·9 | 306 | — | — | e 42 58 | ?$SR_1$ | e 76·5 | 113·8 |
| De Bilt | | 150·1 | 344 | e 19 57 | [+ 1] | e 42 50 | ?$SR_1$ | e 63·5 | 85·0 |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Bidston | 150·2 | 355 | 30 28 | ?$PR_3$ | — | — | 68·9 | 88·3 |
| Graz | 150·4 | 327 | e 20 3 | [+ 7] | e 36 48 | ? | 65·5 | 69·7 |
| Zagreb | 151·0 | 325 | e 20 8 | [+11] | — | — | — | — |
| Uccle | 151·5 | 344 | e 19 50 | [− 8] | e 30 23 | ?$PR_3$ | 63·5 | 95·1 |
| Oxford | 151·7 | 352 | — | — | — | — | 83·5 | 119·5 |
| Kew | 151·8 | 352 | e 20 28? | [+29] | — | — | 63·5 | 78·6 |
| Hohenheim E. | 151·8 | 336 | — | — | — | — | e 68·6 | 84·7 |
| Innsbruck | 152·1 | 332 | e 20 1 | [+ 2] | — | — | e 52·5 | 88·0 |
| Ravensburg E. | 152·4 | 335 | — | — | — | — | 65·5 | — |
| Strasbourg | 152·5 | 338 | i 19 55 | [− 4] | — | — | 60·5 | 93·0 |
| Venice | 153·1 | 328 | e 20 50 | [+50] | — | — | — | — |
| Zurich | 153·2 | 336 | i 20 24 | [+24] | — | — | — | — |
| Paris | 153·8 | 345 | e 21 6 | [+65] | — | — | 45·5 | 75·5 |
| Besançon | 154·3 | 339 | — | — | — | — | e 85·5 | — |
| Naples | 155·1 | 318 | e 23 11 | ?$PR_1$ | e 32 13 | ? | 78·5 | 99·5 |
| Rocca di Papa | 155·5 | 322 | e 20 6 | [+ 3] | e 31 6 | ?$PR_3$ | e 72·1 | 84·1 |
| Moncalieri | 155·5 | 334 | 19 42 | [−21] | 33 48 | ? | 69·8 | 118·7 |
| Tortosa | 161·7 | 340 | — | — | 32 25 | ? | 51·6 | 106·8 |
| Toledo | 163·7 | 351 | e 21 9 | [+58] | i 31 31 | ?$PR_3$ | e 46·6 | 93·8 |
| Algiers | 164·2 | 328 | 20 18 | [+ 7] | 34 18 | ? | e 79·5 | 85·5 |
| Alicante E. | 164·3 | 339 | — | — | — | — | — | 98·0 |
| Lisbon | 165·1 | 5 | i 18 1 | [−131) | — | — | e 79·0 | 85·0 |
| Almeria | 166·1 | 343 | e 20 19 | [+ 7] | 31 45 | ? | 53·6 | 94·4 |
| Rio Tinto | 166·1 | 357 | 25 28? | ?$PR_1$ | — | — | — | 54·5 |
| Granada | 166·2 | 347 | i 20 17 | [+ 5] | i 25 7 | ?$PR_1$ | 80·4 | 95·2 |
| Malaga | 166·8 | 349 | e 20 25 | [+12] | 31 53 | ?$PR_3$ | e 42·0 | 94·6 |
| San Fernando | 167·4 | 356 | 20 22 | [+ 9] | i 31 44 | ?$PR_3$ | 39·5 | 109·0 |

Additional readings and notes: Suva readings have been increased by 3m. Wellington iPE = +4m.28s.; $T_o$ =5h.44m.31s.; epicentre 22°·0S. 172°·0E. Apia S = +6m.52s. Riverview iP = +5m.3s. and +5m.7s., $PR_1$ = +5m.32s., iS = +9m.22s., MN = +11·6m., MZ = +12·4m.; $T_o$ =5h.44m.14s. Melbourne i$PR_1$? = +5m.52s., used as P. Adelaide i$PR_1$ = +7m.24s., i$PR_3$ = +7m.38s., MN = +15·2m. Honolulu iE = +9m.47s., i$P_cPE$ = +10m.45s., $PR_1E$ = +11m.46s., e$PR_1N$ = +11m.58s., $SR_1N$ = +21m.4s., $SR_3N$ = +22m.10s.; $T_o$ =5h.44m.42s. and 5h.44m.48s. But is the recorded L really $SR_3$? Batavia i = +20m.29s., MN = +35·8m. Osaka MN = +37·8m. Lick iPE = +12m.50s., iEN = +13m.4s., iN = +16m.18s. = $PR_1$ −26s., eN = +18m.29s. =$PR_2$ −25s., and +23m.34s. =S −7s. Sitka eN = +42m.28s., eLN = +50·5m. Tucson $PR_1E$ = +17m.1s., eSN = +24m.18s., iSE = +24m.22s. (O − C = −18s. and −14s. respectively), PSE +25m.34s.?, $SR_1N$ = +30m.16s., $SR_1E$ = +30m.46s., $SR_2E$ = +37m.48s.; $T_o$ =5h.44m.56s. Spokane eE = +25m.53s. =S +47s., MN = +56·1m. Irkutsk PS = +24m.47s. =S −33s. Simla eN = +29m.4s. La Paz i = +19m.37s. =$PR_1$ +29s., $PR_3$ = +25m.32s. =[S] +30s., iSE = +28m.46s., $SR_1N$ = +34m.24s., MN = +70·5m. Sucre i = +19m.20s. =$PR_1$ +6s., iS = +29m.55s. =S +154s., $SR_1$ = +36m.5s. =$SR_1$ +93s., $SR_2$ = +41m.5s. = $SR_3$ +77s., $SR_3$ = +45m.35s. =$SR_3$ +151s. St. Louis eE = +62m.47s., eN = +64m.28s. Chicago $PR_1E$ = +20m.3s., SPSE = +25m.10s. =[S] −10s., PSE = +29m.5s., PPSE = +30m.15s., $P_cP_cP_cPE$? = +31m.16s., e$SR_1E$ = +34m.16s., e$SR_2E$ = +38m.52s., $SR_2E$ = +41m.52s., $SR_4E$? = +43m.40s. Ann Arbor eN = +27m.46s., eE = +29m.52s., and +35m.52s. =$SR_1$ −2s. Toronto eE = +27m.6s. and +29m.58s., eN = +28m.11s. =S +19s., iN = +36m.34s. =$SR_1$ +0s., MN = +65·7m. Ekaterinburg e = +14m.54s., +18m.52s. =[P] −5s., and +20m.18s. =$PR_1$ −18s., MZ = +68·6m., MN = +91·3m. Ottawa eE = +25m.53s. =$PR_2$ −16s., iE = +27m.28s., eN = +28m.28s. =S −34s., eLN = +51·0m., MN = +66·5m. Fordham e = +27m.8s. and +29m.53s. =S +43s., i = +28m.6s., i$SR_1$ = +39m.43s., e$SR_2$ = +42m.48s., $SR_2$ = +45m.13s. Harvard $S_cP_cP_cSE$ = +27m.53s., SPPE = +32m.22s., $SR_1E$? = +36m.28s., $SR_1N$ = +37m.45s., $SR_2E$ = +42m.42s., $SR_3E$ = +46m.38s. Baku i = +21m.12s. =$PR_1$ −16s., +22m.23s., +33m.10s., and +38m.45s. =$SR_1$ −1s. Piatigorsk i = +22m.57s. Leningrad e = +5m.55s., i = +26m.48s. Pulkovo i = +34m.6s., e = +39m.4s. = $SR_1$ −54s., and +41m.40s., MN = +74·7m., MZ = +74·9m. Makeyevka MZ = +74·3m., MN = +85·2m. Upsala e = +34m.51s., MN = +80·1m. Hamburg eN = +24m.41s., eEN = +47m.28s.? eL = +64·5m. Vienna iPZ = +19m.53s. De Bilt MN = +87·2m., MZ = +88·5m. Graz e = +40m.41s., MN = +81·7m. Uccle e = +23m.41s. =$PR_1$ −6s., MN = +79·6m. Strasbourg MZ = +85·5m. Paris MN = +82·5m. Rocca di Papa ePE = +20m.30s., i = +20m.36s., and +20m.38s., and +24m.6s. = $PR_1$ −4s., eSN = +33m.30s. Moncalieri MN = +118·3m. Tortosa: Is L =$SR_3$? Toledo eNW = +24m.45s. =$PR_1$ −14s., MNW = +95·4m.; Is S =$PR_3$ −38s. and L =$SR_1$ +67s.? Almeria MN = +93·9m. San Fernando MN = +103·5m.

General Note : Three stations have readings just about a minute later than $PR_1$. Thus Platigorsk has +i22m.57s. $=PR_1+59$s., Makeyevka has +e23m.6s. $=PR_1+52$s., Stonyhurst has +e24m.38s. $=PR_1+62$s.

Aug. 25d. 7h. 42m. 36s. Epicentre 23°·8S. 172°·5E. (as at 5h.).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Wellington | E. | 17·6 | 174 | i 4 20 | + 8 | i 7 54 | +23 | i 9·6 | — |
| | N. | 17·6 | 174 | i 4 19 | + 7 | i 7 55 | +24 | 9·3 | 10·6 |
| Apia | | 17·9 | 59 | 4 34 | +18 | (8 14) | +36 | 8·2 | — |
| Christchurch | | 19·7 | 180 | — | — | — | — | (9·0) | 12·1 |
| Sydney | | 21·2 | 237 | 4 48 | − 7 | 8 54 | + 6 | 10·9 | 12·5 |
| Riverview | | 21·2 | 237 | e 4 58 | + 3 | e 8 58 | +10 | e 10·3 | 11·4 |
| Melbourne | | 27·3 | 233 | — | — | i 10 48 | + 2 | 14·7 | 16·4 |
| Adelaide | | 31·4 | 241 | 6 39 | − 3 | i 11 34 | −24 | 13·5 | 19·5 |
| Honolulu | E. | 53·5 | 35 | — | — | e 16 38 | −25 | 26·7 | 35·4 |
| | N. | 53·5 | 35 | — | — | i 16 50 | −13 | 30·4 | 42·9 |
| Batavia | | 65·3 | 274 | e 10 42 | − 5 | i 19 23 | − 6 | 33·4 | — |
| Taihoku | E. | 69·5 | 312 | — | — | — | — | e 32·4 | — |
| Hamburg | | 147·5 | 341 | i 19 47 | [− 5] | — | — | 79·4 | — |
| Budapest | | 148·3 | 324 | — | — | — | — | e 78·4 | 86·5 |
| De Bilt | | 150·1 | 344 | — | — | — | — | e 72·4 | 84·4 |
| Zagreb | | 151·0 | 325 | — | — | — | — | e 82·8 | — |
| Tortosa | N. | 161·7 | 340 | — | — | — | — | e 81·4 | 110·3 |
| Toledo | N.W. | 163·7 | 351 | — | — | — | — | e 72·4 | 95·2 |
| Granada | | 166·2 | 347 | i 25 5 | ?$PR_1$ | — | — | 80·4 | 102·3 |
| San Fernando | E. | 167·4 | 356 | — | — | — | — | — | 108·4 |

Additional readings and notes : Christchurch gives L as S; $R_2$? Riverview eP = +5m.17s., eS = +9m.12s., MZ = +11·7m., MN = +16·5m. Adelaide $PR_2$ = +7m.39s., $SR_1$ = +12m.57s., MN = +18·1m. Honolulu eN = +18m.34s. and +20m.42s. $=SR_1-30$s. Batavia LN = +35·4m. Budapest eLN = +76·4m. De Bilt MZ = +88·0m., MN = +88·1m. Toledo MNE = +96·1m. San Fernando MN = +107·4m.

Aug. 25d. Readings also at 2h. (Cheb), 10h. (Irkutsk), 11h. (near Amboina), 13h. (near Algiers), 14h. (Riverview and Sucre), 15h. (Amboina, Granada, and San Fernando), 19h. (Adelaide, Melbourne, and Riverview), 20h. (Ottawa, Toronto, Granada, San Fernando, De Bilt, Uccle, Sucre, and near Apia), 22h. (Taihoku).

Aug. 26d. 6h. 41m. 30s. Epicentre 21°·5S. 169°·0E. (as on 1923 Feb. 1d.).

A = −·913, B = +·178, C = −·367 ; D = +·191, E = +·982 ; G = +·360, H = −·070, K = −·930.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Suva | | 9·5 | 71 | (e 2 30) | + 7 | (4 42) | +26 | (5·3) | (7·5) |
| Riverview | | 20·0 | 228 | e 4 42 | + 1 | e 8 41 | +18 | e 9·5 | 13·8 |
| Sydney | | 20·0 | 228 | (5 12) | +31 | (9 12) | +49 | 9·2 | 9·7 |
| Wellington | | 20·4 | 168 | i 4 51 | + 5 | i 8 36 | + 4 | — | — |
| Christchurch | | 22·2 | 173 | — | — | (9 6) | − 3 | 9·5 | 10·2 |
| Melbourne | | 26·3 | 227 | — | — | e 10 12 | −16 | i 15·2 | 17·5 |
| Adelaide | | 29·8 | 237 | — | — | 11 5 | −26 | 16·2 | 20·8 |
| Honolulu | E. | 53·7 | 39 | — | — | 17 4 | − 1 | 24·7 | 30·0 |
| | N. | 53·7 | 39 | — | — | 17 0 | − 5 | 24·6 | 32·5 |
| Manila | | 59·4 | 305 | e 10 30? | +22 | — | — | — | — |
| Batavia | | 61·5 | 275 | e 10 19 | − 3 | i 18 39 | − 3 | — | — |
| Zi-ka-wei | | 69·7 | 320 | e 11 28 | +13 | 20 6 | −16 | — | — |
| Victoria | | 92·3 | 38 | 23 53 | ?S | (23 53) | [+11] | 42·5 | 52·8 |
| Irkutsk | | 92·7 | 326 | 13 24 | − 7 | 23 33 | [−11] | 42·5 | — |
| Chicago | | 113·9 | 52 | — | — | 26 8 | −113 | e 48·3 | 53·4 |
| Ekaterinburg | | 117·8 | 324 | e 19 23 | ?$PR_1$ | e 28 21 | −11 | — | 66·6 |
| Toronto | E. | 120·1 | 50 | — | — | e 48 30? | ? | 60·5 | — |
| Ottawa | E. | 122·7 | 49 | e 20 18 | ?$PR_1$ | e 26 24 | [+30] | 61·5 | — |
| Baku | | 125·6 | 305 | e 21 6 | ?$PR_1$ | e 31 24 | ? | — | — |
| Pulkovo | | 132·0 | 333 | i 22 57 | ?$PR_1$ | — | — | e 58·5 | 72·7 |
| Makeyevka | | 132·9 | 317 | e 22 33 | ?$PR_1$ | — | — | 72·5 | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Vienna | Z. | 145·4 | 328 | e 19 30 | [−19] | — | — | — | — |
| De Bilt | | 147·0 | 341 | i 19 39 | [−12] | — | — | e 69·5 | 81·6 |
| Uccle | | 148·3 | 341 | e 19 42 | [−11] | e 41 54 | ?$SR_1$ | e 67·5 | — |
| Kew | | 148·9 | 348 | e 19 40 | [−14] | — | — | e 71·5 | — |
| Strasbourg | | 149·1 | 336 | 19 41 | [−13] | — | — | e 70·5 | — |
| Venice | | 149·4 | 328 | 19 30? | [−25] | — | — | — | — |
| Zurich | | 149·7 | 333 | e 19 16 | [−39] | — | — | — | — |
| Paris | | 150·6 | 342 | — | — | — | — | e 74·5 | — |
| Rocca di Papa | | 151·6 | 321 | 19 46 | [−12] | — | — | e 88·6 | — |
| Moncalieri | | 151·9 | 331 | e 19 47 | [−12] | (23 41) | ?$PR_1$ | 23·7 | — |
| Granada | | 163·1 | 339 | 24 51 | ?$PR_1$ | — | — | 83·9 | 86·8 |
| San Fernando | E. | 164·5 | 346 | — | — | — | — | — | 112·5 |

Additional readings and notes: Suva i = +2m.54s., all readings having been increased by 4m. Riverview iS = +8m.45s. and +9m.21s. = $SR_1$ +23s., MN = +11·4m. Sydney gives P as S and S as L, also P = 6h.40m.24s. Wellington $PR_1$ = +5m.3s., $PR_2$ = +5m.9s. Christchurch $SR_1$ = +5m.54s.; S has been increased by 7m. Adelaide $SR_2$ = +15m.3s., MN = +18·1m. Honolulu eE = +16m.0s. and +16m.30s. and +18m.12s., $S_0SE$ = +19m.41s., $SR_1E$ = +21m.24s., $SR_2E$ = +22m.48s., $SR_2N$ = +23m.24s. Batavia i = +19m.19s. Irkutsk PS = +24m.4s. = S − 38s. Chicago $PR_1E$ = +19m.47s., SE? = +26m.50s., PSE = +28m.48s., $SR_1N$ = +34m.48s., e$SR_1E$ = +35m.30s., e$SR_2N$ = +38m.42s. Ekaterinburg e = +4m.23s. +25m.25s. = S − 13s., +25m.36s., and +27m.37s., MZ = +66·5m. Ottawa eN = +28m.6s., e = +36m.42s. = $SR_1$ − 39s., eE = +45m.30s., LN = +69·5m. Makeyevka e = +33m.30s.? and +39m.30s.? = $SR_1$ +4s. De Bilt iZ = +20m.1s. Strasbourg ePEN = +19m.52s., eS = +20m.40s., $SR_2$ = +21m.4s. Zurich i = +18m.24s. Rocca di Papa ePN = +19m.47s., ePE = +19m.54s. San Fernando MN = +107·5m.

Aug. 26d. 10h. 29m. 42s. Epicentre 39°·0N. 73°·0E. (as on 1925 Feb. 1d.).

A = +·227, B = +·743, C = +·629; D = +·956, E = −·292; G = +·184, H = +·602, K = −·777.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Simla | N. | 8·6 | 156 | e 5 36 | ?L | — | — | (e 5·6) | — |
| Baku | | 17·8 | 282 | e 4 32 | +17 | e 8 0 | +24 | 10·3 | — |
| Ekaterinburg | | 19·6 | 340 | e 4 34 | − 2 | e 8 15 | 0 | e 9·1 | 10·4 |
| Bombay | | 20·1 | 181 | — | — | — | — | e 9·3 | — |
| Piatigorsk | | 22·8 | 292 | e 6 18? | +63 | — | — | — | — |
| Irkutsk | | 25·3 | 48 | 5 36 | − 5 | e 10 0 | − 9 | 12·9 | 13·1 |
| Makeyevka | | 26·7 | 301 | — | — | e 10 35 | 0 | 16·3 | 20·2 |
| Pulkovo | | 33·8 | 322 | — | — | e 13 5 | +27 | 17·3 | 17·6 |
| Leningrad | | 33·9 | 322 | e 8 5 | +61 | (13 42) | +63 | 13·7 | 21·6 |
| Strasbourg | | 46·6 | 305 | — | — | — | — | e 25·3 | — |
| De Bilt | E. | 47·4 | 310 | — | — | — | — | e 21·3 | — |
| Kew | | 50·8 | 311 | — | — | — | — | 30·3 | — |

Additional readings: Ekaterinburg $SR_1$ = +8m.54s., MN = +10·1m., MZ = +10·2m. Makeyevka e = +13m.10s. De Bilt eLN = +25·3m.

Aug. 26d. Readings also at 0h. (Granada), 2h. (near Wellington), 4h. (Irkutsk, Ekaterinburg, and Taihoku), 5h. (Hohenheim), 12h. (near Nagasaki), 15h. (near Sumoto), 18h. (Apia), 19h. (Tokyo (2)), 23h. (De Bilt, Uccle, Granada and Tortosa).

Aug. 27d. Readings at 2h. (Kobe, near Sumoto, and Toyooka), 8h. (San Fernando), 15h. (Makeyevka, Pulkovo, Leningrad, Ekaterinburg, and Sucre), 17h. (Taihoku), 18h. (Sucre), 19h. (Honolulu).

Aug. 28d. Readings at 0h. (Ekaterinburg), 3h. (Tokyo), 5h. (Rio Tinto), 10h. (Tokyo), 12h. (near Manila), 13h. (Sucre), 14h. (near Athens), 15h. (Ekaterinburg), 16h. (Sucre and near La Paz), 19h. (Ekaterinburg and Granada), 20h. (Taihoku).

**Aug. 29d. 7h. 40m. 36s.** Epicentre 46°·0N. 89°·0E. (as on 1923 Oct. 28d.).

A = +·012, B = +·695, C = +·719; D = +·1000, E = −·017; G = +·013, H = +·718, K = −·695.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Ekaterinburg | 20·5 | 312 | i 4 50 | + 3 | 8 38 | + 4 | 9·1 | 14·0 |
| Baku | 28·8 | 273 | — | — | — | — | e 13·2 | — |
| Bombay | 30·2 | 211 | — | — | — | — | e 15·4 | — |
| Makeyevka | 34·2 | 291 | — | — | — | — | 20·4 | 26·7 |
| Pulkovo | 36·6 | 314 | i 7 16 | −11 | 13 1 | −17 | 20·4 | 26·8 |
| Leningrad | 36·6 | 314 | 7 17 | −10 | 13 2 | −16 | 21·1 | 26·5 |
| Hamburg | 48·9 | 310 | — | — | — | — | e 21·4 | — |
| De Bilt | 52·2 | 310 | — | — | — | — | e 26·4 | 33·7 |
| Strasbourg | 52·5 | 305 | — | — | — | — | e 27·4 | — |
| Uccle | 53·3 | 309 | — | — | — | — | 28·4 | — |
| Kew | 55·4 | 311 | — | — | — | — | e 29·4 | — |
| Granada | 65·8 | 299 | — | — | — | — | e 34·4 | 39·4 |

Additional readings: Ekaterinburg MN = +12·6m., MZ = +12·8m. Baku e = +14m.5s. and +15m.27s., i = +19m.37s. Makeyevka e = +15m.3s. = $SR_2$ − 9s. and +17m.25s., MZ = +23·8m. Pulkovo $SR_1$ = +15m.32s., MN = +24·7m., MZ = +26·6m. Strasbourg L = +32·4m. Kew L = +35·4m.

Aug. 29d. Readings also at 1h. (near Oaxaca), 2h. (Ekaterinburg), 4h. (near Nagasaki), 8h. (Ekaterinburg), 11h. (Bombay), 15h. (La Paz and La Plata), 16h. (Toledo and Sucre), 17h. (Puebla, Tacubaya, Vera Cruz, Merida, and Oaxaca), 19h. (Ekaterinburg), 20h. (Simla and Ekaterinburg), 21h. (Sucre).

**Aug. 30d. 11h. 38m. 0s.** Epicentre **37°·5N. 23°·0E.**

(as on 1926 Feb. 26d.).

A = +·730, B = +·310, C = +·609; D = +·391, E = −·921; G = +·560, H = +·238, K = −·793.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | | 0·7 | 51 | i 0 30 | +19 | — | — | i 0·7 | — |
| Mostar | N. | 7·0 | 328 | 2 0 | +14 | — | — | — | — |
| Sarajevo | | 7·2 | 333 | i 2 1 | +12 | i 4 12 | +57 | (i 4·2) | 4·6 |
| Belgrade | N. | 7·5 | 347 | i 2 5 | +11 | — | — | — | — |
| Naples | | 7·6 | 299 | 2 16 | +21 | 3 8 | −18 | — | 6·0 |
| Sebenico | | 8·2 | 322 | i 2 1 | − 3 | i 3 49 | + 7 | i 5·8 | — |
| Rocca di Papa | | 9·0 | 302 | i 2 20 | + 4 | i 4 5 | + 2 | i 6·1 | 6·4 |
| Zagreb | | 9·8 | 330 | e 2 34 | + 7 | i 4 34 | +11 | i 4·8 | 6·3 |
| Helwan | | 10·3 | 135 | i 2 22 | −12 | i 4 0 | −37 | — | 4·2 |
| Budapest | | 10·4 | 346 | 2 46 | +10 | — | — | e 5·0 | 10·4 |
| Laibach | | 10·6 | 326 | i 2 42 | + 4 | i 4 7 | −38 | — | 7·4 |
| Florence | | 10·9 | 309 | i 2 48 | + 5 | 5 18 | +26 | — | 9·8 |
| Graz | | 11·0 | 332 | i 2 50 | + 6 | i 4 55 | + 1 | 5·0 | 7·8 |
| Vienna | | 11·5 | 338 | e 2 57 | + 5 | 5 30 | +23 | i 6·7 | 8·3 |
| Lemberg | E. | 12·3 | 3 | e 3 18 | +15 | e 5 36 | +10 | — | 7·0 |
| | N. | 12·3 | 3 | e 3 12 | + 9 | e 6 0 | +34 | — | 8·8 |
| Innsbruck | | 13·0 | 323 | i 3 15 | + 2 | i 5 41 | − 3 | e 7·0 | 7·3 |
| Moncalieri | | 13·7 | 308 | 3 24 | + 2 | 6 20 | +19 | — | 12·5 |
| Ravensburg | | 14·2 | 321 | (3 38) | + 9 | (6 26) | +13 | (i 9·0) | (9·5) |
| Zurich | | 14·5 | 318 | i 3 36 | + 3 | i 6 28 | + 8 | — | — |
| Marseilles | | 14·6 | 299 | i 4 42 | +68 | 7 46 | ?L | 10·0 | — |
| Cheb | | 14·7 | 332 | i 3 38 | + 3 | i 6 30 | + 5 | i 7·0 | 8·5 |
| Hohenheim | | 15·0 | 323 | (i 3 42) | + 3 | (i 6 32) | 0 | (i 9·1) | (11·1) |
| Neuchatel | | 15·1 | 314 | i 3 45 | + 5 | i 6 46 | +12 | — | — |
| Makeyevka | | 15·2 | 42 | i 3 46 | + 4 | i 6 41 | + 4 | 8·0 | 11·7 |
| Strasbourg | | 15·6 | 320 | i 3 46 | − 1 | 6 53 | + 7 | e 9·0 | 10·5 |
| Besançon | | 15·8 | 313 | i 3 53 | + 4 | 6 50 | 0 | — | — |
| Algiers | | 15·9 | 273 | i 3 49 | − 2 | 6 46 | − 7 | — | 7·0 |
| Platigorsk | | 16·5 | 61 | i 4 14 | +15 | i 7 28 | +21 | — | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Barcelona | | 16·5 | 290 | i 3 59 | 0 | i 7 11 | + 4 | e 8·4 | 11·2 |
| Tortosa | N. | 17·7 | 286 | i 4 14 | + 1 | i 7 28 | − 5 | 9·0 | 12·8 |
| Bagnères | | 18·1 | 295 | i 4 19 | + 1 | 7 44 | + 2 | 9·0 | — |
| Hamburg | | 18·5 | 335 | i 4 26 | + 3 | i 7 50 | − 1 | e 9·4 | 14·7 |
| Alicante | | 18·5 | 280 | i 4 18 | − 5 | i 7 45 | − 6 | 9·1 | 12·2 |
| Paris | | 18·6 | 314 | i 4 27 | + 3 | i 7 54 | + 1 | 10·0 | 12·0 |
| Uccle | | 18·8 | 321 | i 4 29 | + 2 | i 8 2 | + 4 | 10·0 | 11·9 |
| De Bilt | | 19·2 | 325 | 4 34 | + 3 | 8 13 | + 7 | 10·0 | — |
| Almeria | | 20·2 | 277 | i 4 45 | + 2 | i 8 35 | + 8 | 10·3 | 10·7 |
| Baku | | 21·0 | 74 | i 4 50 | − 3 | — | — | i 9·9 | — |
| Granada | | 21·1 | 277 | i 4 47 | − 7 | 8 43 | − 3 | — | 11·0 |
| Toledo | | 21·2 | 285 | i 4 50 | − 5 | i 8 42 | − 6 | e 9·6 | 14·6 |
| Kew | | 21·5 | 318 | i 4 59 | 0 | 8 57 | + 2 | 10·0 | 14·7 |
| Malaga | | 21·8 | 276 | i 4 55 | − 8 | 8 50 | −11 | 12·6 | — |
| Oxford | | 22·2 | 318 | i 4 55 | −12 | i 8 58 | −11 | — | — |
| Pulkovo | | 22·7 | 10 | i 5 11 | − 2 | i 9 11 | − 8 | 11·5 | 13·4 |
| Leningrad | | 22·9 | 10 | i 5 12 | − 4 | i 9 13 | −10 | 10·5 | 12·0 |
| West Bromwich | | 23·0 | 319 | i 5 12 | − 5 | e 8 3 | −82 | — | — |
| San Fernando | | 23·3 | 276 | i 5 14 | − 6 | i 9 20 | −11 | — | — |
| Rio Tinto | | 23·4 | 280 | 5 0? | −21 | — | — | — | 12·0 |
| Stonyhurst | | 23·9 | 321 | i 5 18 | − 9 | i 9 30 | −12 | 13·0 | 15·3 |
| Bidston | | 24·0 | 320 | 5 22 | − 6 | (9 43) | − 1 | 9·7 | 9·8 |
| Lisbon | | 25·2 | 283 | i 5 26 | −14 | 9 44 | −23 | 11·6 | 15·9 |
| Edinburgh | | 25·4 | 325 | 5 37 | − 5 | 10 1 | −10 | 13·0 | — |
| Dyce | | 25·7 | 328 | i 5 36 | − 9 | 9 21 | −55 | — | 11·2 |
| Ekaterinburg | | 31·4 | 40 | i 6 28 | 14 | i 11 31 | −27 | — | 19·2 |
| Azores | | 38·1 | 286 | 7 36 | − 3 | — | — | — | — |
| Simla | | 44·6 | 83 | 8 6 | −24 | 14 30 | −40 | — | — |
| Bombay | | 47·1 | 100 | 8 33 | −15 | 15 18 | −24 | e 18·8 | 19·4 |
| Hyderabad | | 52·3 | 98 | 9 13 | − 9 | 16 29 | −19 | 26·9 | 34·5 |
| Kodaikanal | | 55·8 | 105 | 17 12 | ?S | (17 12) | −19 | 29·9 | 35·5 |
| Irkutsk | | 56·3 | 47 | i 9 46 | − 2 | i 17 35 | − 3 | 29·0 | 36·6 |
| Calcutta | E. | 57·4 | 85 | 11 5 | +70 | 18 39 | +48 | — | — |
| | N. | 57·4 | 85 | 10 41 | +46 | 18 5 | +14 | — | — |
| Colombo | | 59·7 | 107 | 10 10 | 0 | 18 20 | + 1 | — | 38·8 |
| Halifax | | 62·6 | 308 | e 10 31 | + 2 | e 18 52 | − 4 | — | — |
| Johannesburg | | 63·9 | 176 | — | — | — | — | 38·0 | — |
| Harvard | | 68·4 | 310 | i 11 29 | +22 | i 20 11 | + 4 | 28·1 | 30·6 |
| Ottawa | | 69·6 | 314 | e 11 17 | + 2 | e 20 11 | −10 | e 32·0 | 37·0 |
| Fordham | N. | 70·9 | 309 | — | — | i 20 48 | +11 | 34·0 | 43·6 |
| Cape Town | | 71·6 | 184 | 21 0 | ?S | (21 0) | +15 | — | 38·7 |
| Ithaca | | 71·7 | 311 | e 11 24 | − 4 | i 20 48 | + 2 | 33·0 | — |
| Toronto | E. | 72·7 | 314 | 11 33 | − 1 | i 20 58 | 0 | 38·1 | — |
| | N. | 72·7 | 314 | e 11 52 | +18 | i 20 59 | + 1 | 35·6 | — |
| Ann Arbor | | 76·0 | 315 | e 12 12 | +17 | i 21 36 | − 1 | e 36·4 | — |
| Zi-ka-wei | | 77·5 | 60 | i 11 58 | − 6 | — | — | — | — |
| Hong Kong | | 77·5 | 72 | 12 0 | − 4 | — | — | — | — |
| Chicago | E. | 78·6 | 316 | i 12 8 | − 3 | i 22 1 | − 6 | e 34·7 | 42·2 |
| Taihoku | N. | 81·3 | 66 | e 12 28 | + 1 | — | — | — | — |
| Osaka | | 84·4 | 50 | 12 50 | + 6 | (24 1) | +49 | 24·0 | 25·8 |
| Mizusawa | | 84·6 | 44 | (12 45) | − 1 | 12 45 | ?P | — | — |
| Nagoya | | 85·0 | 49 | 12 35 | −13 | — | — | — | — |
| Manila | | 87·3 | 74 | i 12 50 | −11 | — | — | 37·6 | — |
| Batavia | | 88·9 | 100 | i 12 54 | −16 | i 23 8 | [−13] | — | — |
| Victoria | E. | 89·0 | 338 | 13 2 | − 8 | 23 25 | [+ 3] | 42·2 | 53·3 |
| Malabar | | 90·2 | 100 | i 13 4 | −13 | i 23 48 | −28 | — | — |
| Tucson | N. | 98·0 | 324 | 13 46 | −14 | 25 16 | −20 | — | 56·5 |
| Lick | N. | 98·3 | 332 | e 18 18 | ?$PR_1$ | e 24 16 | [+ 1] | — | — |
| Sucre | | 100·1 | 256 | e 13 58 | −13 | i 24 10 | [−14] | 49·0 | 58·6 |
| La Paz | | 100·9 | 260 | 13 39 | −36 | i 24 25 | [− 3] | 49·8 | 61·3 |
| Honolulu | | 121·1 | 1 | — | — | 27 30 | −88 | 53·2 | 65·5 |
| Riverview | | 138·2 | 101 | — | — | — | — | e 68·5 | 84·4 |

Additional readings and notes: Sarajevo iP = +3m.27s. Belgrade iPN = +2m.8s., iP = +2m.14s., and +2m.15s., $iSR_1E$ = +4m.9s., $iSR_1N$ = +4m.15s., and many i readings. Sebenico i = +3m.54s., +4m.55s., +5m.10s., $iSR_1$ = +5m.25s. Zagreb i = +2m.37s., +3m.1s., +3m.46s., +4m.22s., +4m.51s., and +5m.15s., $iPR_1$ = +3m.23s., $iPR_2$ = +4m.3s., $iSR_2$ = +4m.37s., MNW = +7·8m. Budapest MN = +9·4m. Laibach $iSR_1$ = +5m.16s. and +5m.40s. Graz MN = +6·8m. Vienna iPZ = +2m.58s., i = +3m.16s., iEZ = +3m.27s., and +3m.53s., iN = +4m.46s., $SR_1$ = +5m.44s., MN = +9·1m. Innsbruck ePNE = +3m.16s., MNW = +9·4m. Moncalieri readings are given for 27d. Ravensburg iS = +8m.28s.; true S is given as $iP_4P$; all readings have been increased by 5m.

*Continued on next page.*

Zurich iZ = +3m.38s. Cheb MN = +9·9m. Hohenheim $iPR_2$ = +4m.48s., iS? = +8m.14s.; true S is given as $iP_4P$; all readings have been increased by 5m. Neuchatel readings have been increased by 1h. Makeyevka MZ = +9·1m., MN = +9·8m. Tortosa iPE = +4m.11s., SN = +7m.37s. Bagnères S? = +7m.51s. Hamburg eLN = +9·3m., MZ = +10·2m., MN = +13 2m. Alicante $PR_1$ = +4m.31s., $PR_2$ = +4m.39s., $PR_3$ = +4m.47s., MN = +13·8m., MZ = +18·7m. Almeria MN = +11·8m. Baku i = +11m.8s. Toledo $PR_1Z$ = +5m.9s., $PR_2$ = +5m.21s., $PR_3$ = +5m.33s., $SR_1NW$ = +9m.17s., MZ = +10·4m., MNW = +16·6m. Kew MN = +13·2m. Oxford $PR_1$ = +5m.50s. Pulkovo MN = +15·2m., MZ = +15·8m. Leningrad i = +8m.17s., MN = +15·7m., MZ = +17·0m. Bidston S = +7m.47s.? Ekaterinburg $PR_1$ = +7m.18s., MN = +13·0m., MZ = +20·9m. Irkutsk $PR_1$ = +12m.15s., $PR_2$ = +13m.11s., MZ = +36·4m. Halifax eP = +10m.50s.; $T_0$ = 11h.38m.12s. Harvard iPSN = +20m.36s., iPSE = +20m.46s., SPPE = +21m.4s., $S_0SN$ = +21m.36s., $SR_1N$ = +24m.41s. Ottawa iP = +11m.39s., iS = +20m.26s.; $T_0$ = 11h.38m.23s. Fordham PSN = +21m.20s., $SR_1N$ = +25m.5s., $SR_2N$ = +28m.50s., iN = +29m.5s., $SR_3N$ = +30m.5s.; $T_0$ = 11h.37m.7s. Toronto iPE = +11m.54s., iSE = +21m.35s. = [S] +3s., iSN = +21m.33s. = [S] +1s.; $T_0N$ = 11h.38m.5s.; $T_0E$ = 11h.38m.6s. Ann Arbor $ePR_1$ = +15m.18s., $eSR_1$ = +26m.48s., $eSR_2$ = +30m.18s., eLN = +36·5m.; $T_0$ = 11h.38m.42s. Chicago iPE = +12m.29s., $PR_1E$ = +14m.55s., $PR_2E$ = +17m.36s., iPSE = +22m.34s., $eSR_1E$ = +27m.5s., $SR_2E$ = +30m.42s., $SR_3E$ = +33m.0s. Osaka MN = +25·4m. Batavia iN = +13m.28s., i = +23m.30s. and +24m.19s. = S +17s. Victoria MN = +50·5m.; $T_0$ = 11h.38m.37s. Tucson $PR_2N$ = +17m.49s. Lick eE = +18m.42s.?, +23m.48s.?, and +25m.30s.? Sucre $PR_1$ = +18m.13s., iS = +24m.40s.; $T_0$ = 11h.38m.22s. and 11h.38m.48s. La Paz $PR_1$ = +17m.55s., i = +25m.1s., $SR_1$ = +29m.5s., $SR_2$ = +32m.10s. = $SR_1$ − 29s.; $T_0$ = 11h.38m.35s. Honolulu PSN = +30m.15s., $SR_1E$ = +37m.6s., eLN = +62·0m., and several e readings. Riverview ePR? = +22m.14s.

Aug. 30d. Readings also at 2h. and 7h. (2) (near Tacubaya), 10h. (near Sumoto), 12h. (Granada, Rocca di Papa (2), and Zurich (2) ), 14h. (Granada and Uccle).

Aug. 31d. 10h. 40m. 0s. Epicentre 38°·5N. 28°·6W. (given by the Azores).

A = +·687, B = −·375, C = +·623; D = −·479, E = −·878; G = +·547, H = −·298, K = −·783.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Azores | | 2·4 | 108 | 2 0 | ? | — | — | — | 3·4 |
| Lisbon | | 15·2 | 83 | i 3 47 | + 5 | 6 35 | − 2 | — | 8·6 |
| Rio Tinto | | 17·3 | 86 | 8 0? | ?L | — | — | (8·0) | 11·0 |
| San Fernando | | 17·9 | 90 | e 4 34 | +18 | i 7 44 | + 6 | — | 10·0 |
| Toledo | | 19·0 | 78 | e 4 27 | − 2 | i 8 15 | +13 | e 8·8 | 10·0 |
| Malaga | | 19·2 | 88 | 4 36 | + 5 | 8 18 | +12 | 9·9 | — |
| Granada | | 19·8 | 86 | i 4 42 | + 3 | 8 28 | + 9 | i 9·7 | 12·8 |
| Almeria | | 20·8 | 86 | e 5 1 | +10 | 8 54 | +14 | 10·6 | 12·3 |
| Plymouth | | 21·0 | 48 | 5 36 | ?$PR_1$ | 9 38 | ?$SR_1$ | — | — |
| Alicante | | 21·9 | 82 | 5 10 | + 6 | 9 4 | + 1 | 10·5 | 11·2 |
| Tortosa | E. | 22·5 | 75 | 5 10 | − 1 | 9 27 | +12 | — | 14·4 |
| | N. | 22·5 | 75 | 5 14 | + 3 | 9 18 | + 3 | 10·6 | 12·2 |
| Bidston | | 23·0 | 41 | 6 10 | ?$PR_1$ | 9 7 | −18 | 11·1 | 12·5 |
| Oxford | | 23·2 | 46 | 5 40 | ?$PR_1$ | 10 0 | +31 | 12·2 | 12·9 |
| Stonyhurst | | 23·5 | 41 | 5 48 | ?$PR_1$ | i 9 56 | +21 | — | 13·3 |
| Kew | | 23·6 | 48 | i 5 20 | − 4 | e 9 47 | +11 | 11·0 | 12·3 |
| Barcelona | | 23·6 | 73 | 5 27 | + 3 | 9 52 | +16 | e 11·8 | 13·6 |
| Edinburgh | | 24·2 | 36 | e 8 0? | ? | i 10 3 | +15 | i 12·5 | 14·5 |
| Paris | | 24·6 | 55 | e 5 32 | − 2 | e 9 50 | − 5 | 13·0 | 14·0 |
| Algiers | | 25·1 | 84 | e 5 36 | − 3 | e 9 5 | −60 | 10·6 | 13·0 |
| Dyce | | 25·5 | 34 | 5 35 | − 8 | 10 15 | + 3 | — | 13·6 |
| Uccle | | 26·2 | 51 | e 5 43 | − 7 | e 10 24 | − 2 | e 12·4 | 14·4 |
| Besançon | | 26·6 | 60 | e 5 50 | − 4 | e 10 33 | 0 | 15·0 | — |
| De Bilt | | 27·0 | 49 | 5 55 | − 3 | 10 35 | − 6 | 12·8 | 16·0 |
| Moncalieri | | 27·6 | 65 | e 6 1 | − 3 | 10 59 | + 7 | 15·1 | 19·6 |
| Strasbourg | | 27·9 | 57 | e 6 2 | − 5 | e 10 49 | − 8 | 13·0 | 20·4 |
| Zurich | | 28·3 | 60 | e 6 4 | − 7 | e 10 58 | − 6 | — | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Hohenheim | | 28·9 | 57 | e 5 0 | −77 | e 10 30 | −45 | e 14·4 | 17·0 |
| Ravensburg | E. | 29·1 | 59 | e 7 36 | +77 | e 12 40 | +81 | — | 18·8 |
| Hamburg | | 30·2 | 47 | e 6 46 | +16 | e 11 12 | −25 | e 15·6 | 18·7 |
| Innsbruck | | 30·2 | 60 | e 5 48 | −42 | — | — | e 16·0 | 18·2 |
| Florence | | 30·2 | 70 | e 6 50 | +20 | — | — | 15·0 | 17·0 |
| Cheb | | 31·1 | 55 | — | — | e 11 0? | −53 | — | 18·5 |
| Rocca di Papa | | 31·5 | 71 | e 6 32 | −11 | — | — | e 16·3 | 19·1 |
| Graz | | 33·0 | 60 | e 6 39 | −17 | e 12 31 | + 7 | 16·0 | 19·0 |
| Zagreb | | 33·4 | 64 | e 6 50 | −10 | — | — | 15·0 | 20·0 |
| Vienna | N. | 33·6 | 57 | — | — | e 12 22 | −12 | i 18·0 | 20·7 |
| Ottawa | | 35·2 | 299 | e 7 7 | − 8 | e 12 46 | −12 | e 17·5 | 21·0 |
| Budapest | | 35·4 | 60 | — | — | e 12 0? | −61 | — | 21·2 |
| Upsala | | 35·9 | 38 | — | — | — | — | e 15·0 | 21·6 |
| Toronto | E. | 38·0 | 296 | e 8 58 | ?$PR_1$ | e 13 28 | −10 | 19·0 | — |
| Ann Arbor | E. | 41·4 | 294 | — | — | e 14 24 | − 3 | e 23·8 | 24·1 |
| Leningrad | | 42·1 | 40 | 8 3 | − 9 | 14 29 | − 7 | 21·0 | 25·9 |
| Pulkovo | | 42·2 | 40 | 8 3 | − 9 | 14 30 | − 8 | 21·0 | 26·5 |
| Chicago | | 44·3 | 295 | — | — | e 14 54 | −12 | 21·3 | 26·5 |
| Makeyevka | | 47·9 | 56 | e 10 40 | ?$PR_1$ | e 15 53 | 0 | 24·0 | 27·7 |
| Ekaterinburg | | 58·2 | 41 | e 10 8 | + 8 | 18 14 | +13 | 19·0 | 35·2 |
| Baku | | 58·6 | 61 | — | — | — | — | e 34·0 | — |
| Victoria | E. | 65·0 | 315 | — | — | — | — | 36·1 | 38·9 |
| Irkutsk | | 80·4 | 28 | — | — | — | — | 41·0 | — |

Additional readings: San Fernando MN = +16·0m. Toledo MNW = +10·1m. Granada i = +5m.35s., MZ = +11 5m. Almeria MN = +10·8m. Bidston P = +3m.22s., L = +11·7m. Kew MN = +12·7m. Barcelona MN = +13·4m. Paris MN = +16·0m. Algiers: L gives a better S. Uccle MN = +14·2m. De Bilt MN = +16·5m. Strasbourg eP = +6m.3s., eS = +10m.56s., MZ = +16·8m., MN = +17·7m. Hamburg eSE = +11m.27s., MZ = +18·8m., MN = +19·2m. Rocca di Papa e = +6m.21s., PN = +6m.49s., L = +16·5m. Budapest MN = +21·0m. Upsala MN = +23·3m. Leningrad e = +9m.23s. = $PR_1$ −24s., MZ = +25·1m. MN = +26·9m. Pulkovo $PR_1$ = +9m.50s., $SR_1$ = +16m.42s., $SR_2$ = +17m.54s., MZ = +26·4m., MN = +26·9m. Chicago eE = +18m.12s. = $SR_1$ −4s. Makeyevka MZ = +32·2m. Ekaterinburg $PR_2$ = +13m.40s., MN = +33·3m., MZ = +35·4m. Baku e = 10h.40m.0s. and 10h.48m.32s.

Aug. 31d. Readings also at 0h. (Apia), 3h. (Merida, Oaxaca, Tacubaya, and Makeyevka), 6h. (Taihoku), 12h. and 13h. (near Nagasaki), 14h. (Adelaide, Riverview, and near Nagasaki), 15h. (Baku, Ekaterinburg, and Makeyevka), 17h. (Taihoku, Manila, La Plata, La Paz (2), and Sucre), 22h. (Ekaterinburg).

Sept. 1d. 12h. 10m. 42s. Epicentre 59°·5S. 151°·5E. (as on 1925 Aug. 14d.).

A = −·446, B = +·242, C = −·862; D = +·477, E = +·879; G = +·757, H = −·411, K = −·508.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Christchurch | | 20·3 | 51 | (3 42) | −63 | 3 42 | ?P | 11·1 | 13·4 |
| Melbourne | | 22·1 | 346 | e 7 12 | +126 | — | — | — | 25·1 |
| Wellington | | 23·2 | 49 | e 6 18? | +59 | — | — | — | 18·7 |
| Riverview | | 25·7 | 359 | e 5 42 | − 3 | 10 24 | + 8 | e 12·0 | 16·5 |
| Sydney | | 25·7 | 359 | 5 54 | + 9 | 10 18 | + 2 | 13·9 | 15·6 |
| Adelaide | | 26·0 | 335 | i 10 0 | ?S | (i 10 0) | −22 | 19·5 | 23·8 |
| Apia | | 53·1 | 46 | e 7 18? | −129 | — | — | — | — |
| Honolulu | E. | 90·8 | 45 | — | — | e 23 6 | [−27] | 25·1 | — |
| Sucre | | 95·8 | 143 | e 17 48 | ?$PR_1$ | — | — | 50·3 | 55·0 |
| Irkutsk | | 119·8 | 327 | — | — | — | — | 58·3 | — |
| Baku | | 129·5 | 284 | — | — | — | — | e 77·8 | — |
| Ekaterinburg | | 136·5 | 307 | e 22 37 | ?$PR_1$ | e 41 45 | ?$SR_1$ | 43·3 | 77·1 |
| Toronto | E. | 145·7 | 93 | — | — | — | — | 59·7 | 64·3 |
| Ottawa | | 148·8 | 94 | — | — | e 53 31 | ?$SR_2$ | e 61·3 | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Granada | | 152·5 | 227 | — | — | — | — | e 84·3 | 91·8 |
| San Fernando | | 152·8 | 222 | — | — | — | — | — | 101·3 |
| Tortosa | N. | 154·0 | 237 | — | — | — | — | e 86·3 | — |
| Strasbourg | | 156·5 | 259 | — | — | — | — | 89·3 | — |
| Paris | | 159·2 | 253 | — | — | — | — | e 89·3 | — |
| Uccle | | 159·6 | 259 | — | — | — | — | e 84·3 | — |
| De Bilt | | 160·0 | 263 | — | — | — | — | e 81·3 | — |
| Kew | | 162·4 | 255 | — | — | — | — | e 79·3 | — |

Additional readings: Riverview MN = +15·5m. Adelaide eS = +15m.58s., MN = +24·0m. Honolulu eLN = +27·3m. Ekaterinburg MZ = +75·6m., MN = +79·2m. San Fernando MN = +104·8m. De Bilt eL = +90·3m.

Sept. 1d. Readings also at 0h. (Ekaterinburg and Tashkent), 2h. (near Nagasaki), 3h. (near Toyooka), 4h. and 5h. (Tashkent), 6h. (Baku), 7h. (near Zurich), 8h. (San Fernando, Sucre, and La Paz), 9h. (Tokyo). 15h. (Manila), 16h. (Sucre and La Plata), 18h. (Granada), 19h. (De Bilt, Uccle, Tashkent, Baku, Ekaterinburg, and San Fernando), 21h. (Sucre), 22h. (Baku), 23h. (near Amboina).

## Sept. 2d. 1h. 21m. 40s. Epicentre 34°·0S. 57°·0E.

(as on 1926 July 22d.).

A = +·452, B = +·695, C = −·559; D = +·839, E = −·545; G = −·305, H = −·469, K = −·829.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Johannesburg | | 26·1 | 280 | 6 20? | ?$PR_1$ | 10 32 | + 8 | 13·3 | — |
| Cape Town | | 31·7 | 262 | 6 55 | +11 | 11 57 | − 6 | 15·7 | 20·8 |
| Colombo | | 46·3 | 32 | 8 20? | −22 | 15 20 | −12 | 22·2 | 24·8 |
| Kodaikanal | | 48·3 | 26 | 8 50 | − 6 | (16 2) | + 4 | 16·0 | 25·7 |
| Perth | | 48·8 | 105 | 8 50 | − 9 | 15 50 | −14 | — | — |
| Batavia | | 53·7 | 70 | i 9 27 | − 4 | i 17 2 | − 3 | 25·3 | — |
| Malabar | | 53·7 | 72 | i 10 26 | +55 | — | — | 24·8 | — |
| Bombay | | 55·0 | 19 | 9 41 | + 2 | 17 24 | + 3 | 25·0 | 29·2 |
| Calcutta | E. | 63·9 | 33 | 11 12 | +35 | 19 34 | +22 | 30·3 | 34·2 |
| | N. | 63·9 | 33 | 10 48 | +11 | 19 17 | + 5 | 30·0 | 33·8 |
| Adelaide | | 65·2 | 116 | 10 46 | 0 | i 19 26 | − 1 | 30·2 | 41·0 |
| Dehra Dun | | 67·3 | 20 | 13 25 | +145 | 22 55 | +181 | 33·4 | 36·5 |
| Simla | E. | 67·9 | 19 | 11 8 | + 5 | 19 50 | −11 | 32·3 | 34·3 |
| | N. | 67·9 | 19 | 11 14 | +11 | 19 56 | − 5 | 33·4 | 35·1 |
| Helwan | | 68·3 | 337 | i 11 13 | + 7 | 20 20 | +14 | — | 37·1 |
| Phu-Lien | | 72·3 | 49 | i 11 32 | 0 | i 20 52 | − 2 | 34·3 | 40·8 |
| Baku | | 74·7 | 355 | i 11 51 | + 4 | i 21 37 | +15 | 37·3 | 48·6 |
| Riverview | | 74·9 | 121 | i 11 52 | + 4 | i 21 25 | 0 | e 35·6 | 37·6 |
| Sydney | | 74·9 | 121 | 11 38 | −10 | 21 32 | + 7 | 37·1 | 39·5 |
| Tashkent | | 76·1 | 10 | i 11 56 | 0 | i 21 41 | + 3 | 36·3 | 43·4 |
| Manila | | 77·8 | 64 | i 12 8 | + 2 | e 20 44 | −74 | 32·3 | 39·4 |
| Hong Kong | | 78·3 | 53 | 12 3 | − 6 | (21 53) | −11 | 21·9 | — |
| Piatigorsk | | 79·0 | 351 | i 12 36 | +23 | 22 33 | +21 | — | 41·3 |
| Christchurch | | 82·8 | 139 | 13 2 | +27 | 23 20 | +25 | 41·4 | 69·0 |
| Makeyevka | | 83·8 | 349 | i 12 40 | − 1 | i 23 7 | 0 | 38·3 | 45·6 |
| Pompeii | | 84·4 | 330 | e 12 49 | + 5 | e 22 9 | −63 | 52·3 | 56·3 |
| Naples | | 84·5 | 330 | e 12 20 | −25 | e 22 30 | −44 | 49·3 | 57·3 |
| Taihoku | | 85·1 | 55 | 12 41 | − 8 | (23 0) | −20 | 23·0 | — |
| Belgrade | | 85·5 | 336 | e 12 49 | − 2 | e 23 25 | 0 | e 45·5 | 57·5 |
| Wellington | E. | 85·5 | 139 | i 12 50 | − 1 | i 23 10 | −15 | 43·2 | 46·5 |
| | N. | 85·5 | 139 | i 12 51 | 0 | i 23 13 | −12 | 40·5 | 43·7 |
| Rocca di Papa | | 85·9 | 329 | i 12 52 | − 1 | e 23 16 | −13 | e 44·6 | 64·7 |
| Algiers | | 86·8 | 320 | 13 0 | + 2 | 23 28 | −11 | e 38·3 | 54·3 |
| La Plata | | 88·0 | 229 | i 13 9 | + 4 | 23 35 | −17 | 41·3 | — |
| Zagreb | | 88·0 | 334 | e 13 4 | − 1 | e 23 44 | − 8 | e 36·6 | — |
| Budapest | | 88·2 | 337 | 13 8 | + 2 | 23 42 | −12 | e 33·3 | 51·4 |
| Florence | | 88·2 | 330 | i 13 0 | − 6 | 25 5 | +71 | 42·3 | 60·8 |
| Lemberg | | 88·7 | 340 | e 12 38 | −31 | e 18 44 | ?$PR_2$ | e 46·9 | 55·9 |
| Zi-ka-wei | | 89·0 | 50 | i 13 4 | − 6 | 23 32 | {+10] | 38·0 | 50·9 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Graz | | 89·2 | 335 | i 13 8 | − 3 | 24 5 | 0 | 40·3 | 56·4 |
| Vienna | | 89·8 | 335 | e 13 9 | − 6 | 23 55 | −17 | e 39·3 | 54·3 |
| Alicante | | 89·8 | 320 | i 13 13 | − 2 | e 24 15 | + 3 | 47·1 | 54·7 |
| Almeria | | 89·8 | 318 | i 13 26 | +11 | i 24 22 | +10 | 44·5 | 55·3 |
| Marseilles | | 90·5 | 325 | e 14 32 | +73 | e 25 20? | +61 | 40·3 | — |
| Moncalieri | | 90·7 | 328 | 13 51 | +31 | 24 46 | +25 | 38·3 | 73·4 |
| Barcelona | | 90·7 | 324 | 13 17 | − 3 | e 23 47 | [+15] | e 37·4 | 58·1 |
| Granada | | 90·8 | 317 | i 13 17 | − 3 | i 24 29 | + 7 | 40·1 | 55·6 |
| Ekaterinburg | | 90·9 | 3 | i 13 12 | − 9 | i 24 20 | − 3 | 26·3 | 48·8 |
| Malaga | | 90·9 | 317 | e 13 15 | − 6 | 24 17 | − 6 | 34·2 | 55·4 |
| Innsbruck | | 91·0 | 331 | e 13 19 | − 2 | e 24 8 | −16 | e 37·3 | — |
| Tortosa | | 91·1 | 321 | i 13 20 | − 2 | 23 53 | [+18] | 36·4 | 52·5 |
| San Fernando | | 91·8 | 315 | 13 20 | − 6 | 24 22 | −11 | 44·3 | 58·3 |
| Zurich | | 92·2 | 330 | i 13 21 | − 7 | i 23 55 | [+14] | — | — |
| Ravensburg | | 92·2 | 331 | i 13 24 | − 4 | e 24 0 | −37 | e 34·5 | 52·0 |
| Bagnères | | 92·8 | 324 | e 20 20? | ?$PR_2$ | — | — | 44·3 | — |
| Cheb | | 92·8 | 333 | e 13 26 | − 5 | e 24 2 | [+17] | e 49·3 | 63·3 |
| Toledo | | 92·8 | 319 | 13 26 | − 5 | i 24 38 | − 5 | e 42·7 | 54·2 |
| Rio Tinto | | 92·9 | 316 | — | — | — | — | — | 30·3 |
| Hohenheim | | 93·0 | 331 | e 13 26 | − 6 | i 24 36 | − 9 | e 28·6 | 59·9 |
| Besançon | | 93·2 | 329 | e 13 30 | − 3 | e 24 16 | −31 | — | 58·3 |
| Strasbourg | | 93·5 | 330 | i 13 26 | − 9 | i 24 45 | − 6 | 42·3 | 62·6 |
| Lisbon | | 95·1 | 315 | i 11 56 | −108 | — | — | — | 61·9 |
| Irkutsk | | 95·6 | 27 | i 13 33 | −14 | 24 16 | [+16] | — | 62·4 |
| Paris | | 95·9 | 329 | i 13 41 | − 7 | e 24 18 | [+16] | 41·3 | 53·3 |
| Pulkovo | | 96·3 | 348 | i 13 40 | −11 | 25 4 | −15 | 45·3 | 55·0 |
| Leningrad | | 96·5 | 348 | i 13 40 | −12 | 25 5 | −16 | 43·8 | 57·0 |
| Hamburg | | 96·5 | 335 | 13 42 | −10 | e 24 20 | [+15] | e 41·3 | 59·3 |
| Uccle | | 96·6 | 330 | e 13 42 | −10 | 24 30 | [+24] | e 41·3 | 53·8 |
| De Bilt | | 97·3 | 332 | 13 45 | −11 | e 24 27 | [+18] | e 41·3 | 54·6 |
| Kew | | 99·1 | 328 | e 13 53 | −13 | i 24 41 | [+21] | 42·3 | 61·4 |
| Upsala | | 99·3 | 343 | — | — | e 24 37 | [+16] | e 45·3 | 67·0 |
| Oxford | | 99·7 | 328 | 13 56 | −13 | i 24 40 | [+17] | 42·3 | 64·3 |
| Bidston | | 101·6 | 329 | 18 20 | ?$PR_1$ | — | — | 37·7 | 64·3 |
| Stonyhurst | | 101·7 | 329 | e 14 7 | −12 | 24 17 | [−16] | 52·3 | 66·8 |
| Edinburgh | | 103·4 | 330 | i 18 33 | ?$PR_1$ | i 24 56 | [+16] | 43·3 | 72·4 |
| Sucre | | 103·6 | 235 | e 14 22 | − 6 | i 24 58 | [+17] | 44·5 | 56·8 |
| Azores | | 104·9 | 305 | 54 20? | ?L | 58 38 | ? | 61·3 | 63·2 |
| La Paz | | 107·4 | 235 | e 14 26 | −20 | 25 20 | [+21] | 46·2 | 61·1 |
| Apia | | 113·4 | 128 | e 36 20? | ? | — | — | 53·3 | 59·3 |
| Harvard | N. | 139·0 | 298 | — | — | 26 56 | ?$PR_2$ | 59·2 | 80·8 |
| Fordham | | 140·9 | 294 | 19 27 | [−14] | (23 17) | ?$PR_1$ | 59·1 | 81·5 |
| Ottawa | | 142·5 | 302 | 19 40 | [− 4] | — | — | e 61·3 | 79·1 |
| Cheltenham | E. | 142·9 | 291 | — | — | — | — | e 68·3 | 71·3 |
| Ithaca | | 143·0 | 298 | e 19 31 | [−14] | e 22 58 | ?$PR_1$ | e 66·3 | — |
| Toronto | | 145·1 | 299 | i 19 50 | [+ 2] | — | — | 60·3 | 84·4 |
| Honolulu | E. | 146·7 | 102 | i 19 51 | [ 0] | 30 22 | ?$PR_2$ | 72·4 | 77·8 |
| | N. | 146·7 | 102 | e 19 52 | [+ 1] | — | — | 60·8 | 77·5 |
| Ann Arbor | E. | 148·3 | 296 | i 19 50 | [− 3] | e 34 2 | ? | e 74·5 | 86·2 |
| | N. | 148·3 | 296 | e 19 50 | [− 3] | e 33 26 | ? | e 63·5 | 84·8 |
| Chicago | E. | 151·2 | 296 | i 19 53 | [− 4] | 30 38? | ?$PR_2$ | i 78·6 | 88·7 |
| | N. | 151·2 | 296 | — | — | 27 56? | ?$PR_2$ | e 77·5 | 94·9 |
| Loyola | | 151·9 | 271 | — | — | — | — | 79·7 | — |
| St. Louis | | 153·3 | 289 | e 20 25 | [+25] | e 30 10 | ?$PR_2$ | 76·3 | 91·3 |
| Sitka | N. | 155·4 | 16 | — | — | — | — | e 103·1 | 109·4 |
| Victoria | E. | 165·6 | 1 | 20 16 | [+ 4] | 36 4 | ? | 69·3 | 103·0 |
| | N. | 165·6 | 1 | 20 16 | [+ 4] | 36 16 | ? | — | 96·5 |
| Spokane | | 165·7 | 345 | e 21 58 | ? | — | — | 90·3 | 98·3 |
| Tucson | E. | 169·7 | 264 | 20 22 | [+ 7] | 24 20 | ?$PR_1$ | 88·0 | 100·3 |
| | N. | 169·7 | 264 | 20 22 | [+ 7] | 24 38 | ?$PR_1$ | — | 101·3 |
| Berkeley | | 176·1 | 352 | e 20 30 | [+13] | e 32 49 | ? | 89·3 | 97·9 |
| Lick | | 176·4 | 342 | e 20 24 | [+ 7] | — | — | — | — |

Additional readings and notes: Johannesburg readings are given for 1d. Perth gives other readings +7m.5s., +9m.53s., and +11m.44s. =$PR_2$−3s. Bombay $SR_1$ = +21m.1s. Adelaide P = +11m.32s., 1S = +20m.25s., 1$SR_2$ = +26m.53s., MN = +34·7m. Riverview MN = +40·5m., MZ = +41·0m.; $T_g$ =1h.22m.6s. Sydney $SR_2$ = +29m.38s. Tashkent e = +14m.32s., e$SR_1$ = +26m.43s., e$SR_2$ = +30m.20s.?, e$SR_3$ = +32m.29s., MZ = +44·4m., MN = +48·0m. Manila $SR_1$ = +25m.20s., $SR_2$ = +27m.8s. =$SR_1$−34s., MN = +38·2m. Hong Kong S = +17m.52s.? =$PR_2$+25s. Piatigorsk

*Continued on next page.*

$PR_1$ = +15m.39s., $PR_2$ = +18m.37s. = $PR_3$ +5s., PS = +23m.23s., $SR_1$ = +27m.57s. Christchurch $SR_1$ = +28m.44s. Makeyevka $PR_1$ = +16m.18s., $PR_2$ = +18m.24s., $PR_3$ = +19m.12s., PS = +24m.2s., $SR_1$ = +29m.4s., $SR_2$ = +32m.10s., $SR_3$ = +35m.6s., MNZ = +49·5m. Taihoku LE = +23·1m. Belgrade iP = +12m.55s., i = +13m.15s., PR = +14m.12s., +14m.40s., +15m.37s., +16m.47s. = $PR_1$ +14s., and +18m.22s. = $PR_3$ −17s., eSN = +23m.28s. Wellington $PR_1$E = +16m.8s. Rocca di Papa eSN = +23m.19s., eSE = +23m.29s. Algiers MN = +50·3m. Zagreb i = +13m.15s., e = +16m.40s. = $PR_1$ −12s. Budapest MN = +47·2m. Graz $PR_1$ = +16m.49s., $PR_2$ = +18m.48s., $SR_1$ = +30m.16s., MN = +60·1m. Vienna iP = +13m.11s., $PR_1$? = +16m.6s., $PR_2$ = +19m.24s., PS = +25m.6s., PPS = +25m.26s. Alicante MN = +56·8m. Almeria $PR_1$ = +16m.56s. Barcelona $PR_1$ = +16m.53s., PS? = +24m.21s. = S −0s., MN = +58·0m. Granada $PR_1$ = +16m.57s., $PR_2$ = +20m.24s. = $PR_3$ −28s., PS = +26m.9s., $SR_1$ = +31m.17s. Ekaterinburg $PR_1$ = +16m.59s., i = +22m.48s., and +24m.8s., MN = +50·7m., MZ = +53·6m. ; is PS recorded as L ? Malaga P = +13m.19s. Tortosa MN = +52·1m. San Fernando i$SR_1$ = +30m.36s., MN = +53·3m. Ravensburg eE = +12m.22s. Toledo MNW = +53·5m. Rio Tinto P = 1h.17m. Hohenheim eE = +16m.38s., eN = +24m.0s. = [S] +14s., iLN = +29·7m., MN = +62·7m. Strasbourg P = +13m.27s. and +13m.29s. iZ = +17m.6s. = $PR_1$ −25s., and +21m.6s. = $PR_3$ −17s., iN = +25m.55s. = PS +6s., MN = +61·4m., MZ = +62·2m. Irkutsk e$PR_1$ = +17m.1s., PPS = +26m.12s., MZ = +58·5m., MN = +65·2m. Paris $PR_1$ = +17m.37s., iS = +25m.3s., MN = +48·3m. Pulkovo $PR_1$ = +17m.23s., $PR_2$ = +19m.38s., $S_4P_4S$ = +24m.28s. = [S] −24s., PS = +26m.20s. = PS −3s., $SR_1$ = +31m.2s., $SR_2$ = +35m.14s., MZ = +62·5m. Leningrad $PR_1$ = +16m.49s., $PR_2$ = +19m.45s., $S_4P_4S$ = +24m.26s. = [S] +1s., iPS = +26m.27s. = PS +2s., MN = +56·6m., MZ = +57·9m. Hamburg i$PR_1$ = +17m.42s., eLZ = +45·3m. Uccle e$PR_1$ = +17m.32s., MN = +56·9m. De Bilt $PR_1$ = +17m.47s., MZ = +63·1m., MN = +68·1m. Kew $PR_1$ = +17m.52s., MN = +63·2m. Upsala MN = +60·5m. Oxford $PR_1$ = +18m.20s., i = +32m.44s. = $SR_1$ +10s., MN = +69·0m. Edinburgh i = +27m.49s. = PS +7s. ; all readings being given for 1d. Sucre $PR_1$ = +18m.43s., i = +27m.52s.? = PS +7s., $SR_1$ = +30m.32s., $SR_2$ = +33m.32s. = $SR_1$ +10s., $SR_3$ = +37m.2s. La Paz $PR_2$ = +20m.37s., $SR_1$ = +31m.56s., $SR_2$ = +36m.43s., MN = +57·8m. Harvard $PR_1$N = +22m.32s. e$PR_1$E = +22m.37s., $PR_2$N = +25m.8s., $S_6P_6P_6SN$ = +28m.50s. = $PR_3$ +6s., PSE = +32m.44s., PPSN = +34m.36s. and +35m.14s., PPSE = +34m.48s., $SR_1$E = +40m.59s., $SR_1$N = +41m.0s., $SR_2$N = +49m.26s., ME = +75·8m. Fordham iPE = +22m.52s. = $PR_1$ +13s., $PR_1$E = +23m.20s., $SR_1$ = +41m.20s., $SR_2$N = +46m.20s. Ottawa $PR_1$E? = +22m.56s., PPSE? = +35m.50s., $SR_1$? = +41m.35s., $SR_2$E? = +46m.53s., MN = +82·3m. ; $T_0$ = 1h.21m.30s. Ithaca e = +41m.45s. = $SR_1$ +17s. Toronto iN = +19m.53s., iE = +20m.5s. and +23m.10s. = $PR_1$ +3s., eE = +23m.34s. = $PR_1$ +27s. and +42m.41s. = $SR_1$ −12s., MN = +81·2m. Honolulu eE = +19m.30s., iPN? = +20m.42s., iPE? = +20m.50s., i$PR_1$E = +23m.11s., e$PR_2$N? = +23m.32s., $PR_3$N = +26m.20s. = $PR_2$ −37s., $PR_4$N = +28m.56s., $PR_4$E? = +31m.50s. = S +10s., $PS_6P_6SE$ = +33m.40s., $PS_6P_6SN$ = +33m.52s., PSN = +35m.23s., PPSE = +36m.50s., $SR_1$N = +42m.8s.?, e$SR_1$E = +48m.0s., $SR_2$E = +52m.32s., $SR_4$E? = +53m.50s., $SR_4$N = +56m.20s. Ann Arbor iE = +23m.26s. = $PR_1$ +0s., iN = +42m.44s. = $SR_1$ +13s. Chicago ePE = +20m.9s., ePN = +20m.14s., $PR_1$E = +23m.30s., $PR_1$N = +23m.31s., $PR_2$N = +27m.5s., $PR_3$ = +29m.20s., $S_6P_6P_6SE$ = +30m.38s.?, $PR_4$N = +32m.0s., $PS_6P_6SE$ = +34m.9s., PSE = +35m.47s., PPSE = +36m.50s., $SR_1$N = +43m.14s., $SR_1$E = +43m.40s., $SR_2$N = +48m.53s., $SR_2$E = +49m.23s., e$SR_2$E = +52m.44s., $SR_4$N? = +55m.50s. St. Louis eN? = +24m.20s. = $PR_1$ +22s., eE = +32m.7s. Sitka ME = +110·5m. Spokane e = +22m.18s., eN = +22m.52s., e = +26m.36s. and +27m.56s. Tucson $PR_1$E = +25m.27s., $PR_1$N = +25m.43s., $PR_1$E = +26m.54s., $S_6P_6SE$? = +28m.5s., $PR_2$E? = +29m.16s. and +30m.10s., $S_6P_6P_6SE$ = +31m.46s., $PR_2$E = +32m.17s., $PR_2$N = +32m.20s.?, $S_6PP_6SE$ = +32m.50s., $PR_4$E = +35m.30s., $PS_6P_6SN$ = +36m.25s., e$SR_1$E? = +45m.38s., e$SR_1$N = +46m.8s., e$SR_1$E = +46m.38s., $SR_1$E = +49m.2s., $SR_1$N = +49m.20s., $SR_2$N = +53m.20s., $SR_2$E = +53m.42s., $SR_2$E = +57m.2s., $SR_3$N = +57m.14s., $SR_3$E = +57m.50s. and +61m.20s. Berkeley e$PR_2$N = +25m.55s. = $PR_1$ −15s., e$PR_2$Z = +25m.56s. = $PR_1$ −14s., e$PR_2$E = +25m.58s., MN = +99·6m. Lick i = +25m.58s. = $PR_1$ −14s., e = +47m.45s. = $SR_2$ −3s., and several other e and i readings.

Sept. 2d. Readings also at 2h. (Mizusawa), 3h. (Hamburg), 4h. (Melbourne), 6h. (La Paz), 7h. (La Paz, La Plata, and Sucre), 13h. (near Nagasaki (2) ), 18h. (Irkutsk, Tashkent, Makeyevka, Ekaterinburg, Pulkovo, De Bilt, and Honolulu), 19h. (Baku, Leningrad, Kew, Paris, Uccle, Strasbourg, Granada, San Fernando, Chicago, Ottawa, and Toronto), 23h. (Irkutsk, Ekaterinburg, Pulkovo, and Tashkent).

**Sept. 3d. 21h. 59m. 50s. Epicentre 41°·5N. 26°·5E.**

A = +·670, B = +·334, C = +·663; D = +·446, E = −·895; G = +·593, H = +·296, K = −·749.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | 4·2 | 211 | 1 33 | +28 | 2 10 | +15 | 2·2 | 2·5 |
| Belgrade | 5·5 | 309 | e 1 22 | − 3 | e 2 29 | − 2 | — | 2·7 |
| Budapest | 8·0 | 321 | e 2 10? | + 9 | — | — | 4·2 | — |
| Lemberg | 8·5 | 349 | e 3 4 | +55 | — | — | — | 6·5 |
| Zagreb | 8·7 | 303 | e 2 33 | +21 | e 5 6 | + 70 | (e 5·1) | — |
| Pompeii | 9·0 | 269 | e 4 10 | ?S | (e 4 10) | + 7 | (e 6·2) | — |
| Graz | 9·6 | 309 | e 2 23 | − 1 | e 4 15 | − 3 | 4·5 | 5·4 |
| Vienna | 9·8 | 317 | 2 34 | + 7 | 5 0 | +37 | (5·0) | 6·1 |
| Rocca di Papa | 10·3 | 276 | 3 44 | +70 | e 4 31 | − 6 | — | 6·4 |
| Makeyevka | 10·4 | 47 | e 4 39 | ?S | (e 4 39) | − 1 | 7·2 | 9·1 |
| Florence | 11·4 | 287 | e 4 50 | ?S | (e 4 50) | −14 | (6·2) | 7·4 |
| Innsbruck N.E. | 12·2 | 303 | — | — | — | — | e 6·2 | — |
| Cheb | 13·0 | 316 | e 6 10 | ?L | — | — | (e 6·2) | 7·2 |
| Zurich | 14·0 | 301 | e 3 21 | − 5 | — | — | e 7·0 | — |
| Moncalieri | 14·1 | 291 | e 3 55 | +28 | 6 48 | +38 | 8·4 | 9·8 |
| Hohenheim | 14·1 | 307 | — | — | e 6 42 | +32 | 7·6 | — |
| Strasbourg | 15·0 | 305 | e 3 40 | + 1 | e 6 34 | + 2 | 7·2 | — |
| Besançon | 15·7 | 298 | — | — | — | — | 9·4 | — |
| Kucino | 16·1 | 24 | — | — | — | — | e 7·9 | — |
| Hamburg | 16·3 | 327 | e 2 10? | ? | — | — | e 8·2 | — |
| Uccle | 17·8 | 309 | e 3 58 | −17 | e 7 40 | + 4 | e 8·7 | 9·9 |
| De Bilt | 17·9 | 314 | e 4 13 | − 3 | e 7 34 | − 4 | e 8·6 | 10·1 |
| Paris | 18·3 | 302 | e 4 21 | 0 | e 7 36 | −11 | 9·7 | 10·2 |
| Pulkovo | 18·4 | 6 | 4 25 | + 3 | 7 44 | − 5 | 9·9 | 11·1 |
| Leningrad | 18·6 | 6 | 4 26 | + 2 | e 7 45 | − 8 | 8·8 | 12·6 |
| Algiers | 18·7 | 263 | e 3 28 | −57 | — | — | e 12·2 | — |
| Tortosa | 19·5 | 277 | 4 31 | − 4 | — | — | e 10·2 | 14·2 |
| Kew | 20·8 | 308 | e 4 46 | − 5 | e 8 29 | −11 | 9·2 | 13·2 |
| Oxford | 21·5 | 308 | — | — | — | — | 10·5 | 13·1 |
| Almeria | 22·7 | 268 | e 5 7 | − 6 | — | — | — | 10·2 |
| Granada | 23·6 | 269 | i 5 18 | − 6 | i 9 24 | −12 | 12·6 | 16·0 |
| Edinburgh | 24·0 | 317 | — | — | e 9 30 | −14 | — | 16·2 |
| Ekaterinburg | 26·6 | 43 | e 6 2 | + 8 | e 10 42 | + 9 | 11·2 | 18·2 |
| Tashkent | 31·8 | 76 | — | — | e 11 40 | −25 | e 20·2 | 22·8 |
| Irkutsk | 51·6 | 50 | — | — | — | — | e 23·2 | — |

Additional readings: Belgrade eP = +1m.38s., iS = +2m.36s. Lemberg MN = +6·3m. Pompeii gives S as P and L as S. Zagreb ePR$_1$ = +3m.46s. and +4m.10s.? Vienna iN = +3m.52s., iE = +4m.0s. Rocca di Papa ePN = +4m.3s., eSZ = +4m.43s., eSE = +4m.48s. Makeyevka iP = +6m.7s., eS = +6m.29s., MZ = +9·2m. Kucino L = +8·6m. De Bilt MZ = +11·6m. Pulkovo MNZ = +12·1m. Leningrad MNZ = +12·2m. Kew MN = +11·4m. Almeria i = +5m.34s. Ekaterinburg e = +8m.52s., MN = +15·0m., MZ = +17·2m. Tashkent MN = +22·5m., MZ = +25·6m.

**Sept. 3d. Readings also at 2h. (Nagasaki (2) ), 3h. (Tashkent and near Irkutsk), 6h. (Tashkent, Irkutsk (2), Pulkovo, Leningrad, and Ekaterinburg), 7h. (Hohenheim, Tashkent, Ekaterinburg, and Manila), 8h. (Sucre), 11h. (Nagasaki), 12h. (Taihoku and Tashkent), 13h. (Nagasaki and Tokyo), 14h. (Nagasaki), 17h. (Tokyo), 18h. (Tashkent, Ekaterinburg, Granada, De Bilt, and Uccle), 20h. (Baku), 21h. (Ekaterinburg and Tashkent), 23h. (Hong Kong, Ekaterinburg, Tashkent, Irkutsk, and near Phu-Lien).**

Sept. 4d. 12h. 54m. 24s. Epicentre 22°·0S. 172°·0E. (as on 1925 April 1d.).

A = −·918, B = +·129, C = −·375; D = +·139, E = +·990; G = +·371, H = −·052, K = −·927.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Wellington | | 19·4 | 174 | 4 35 | + 1 | i 8 10 | 0 | — | — |
| Riverview | | 21·8 | 233 | 4 36? | −27 | e 8 54 | − 7 | e 9·2 | 10·8 |
| Adelaide | | 31·9 | 238 | 9 52? | +186 | 13 16 | +69 | 14·2 | 21·1? |
| Ekaterinburg | | 119·9 | 323 | e 18 53 | [+ 1] | — | — | 23·6 | — |
| Hamburg | Z. | 145·6 | 341 | i 19 40 | [− 9] | — | — | — | — |
| Vienna | Z. | 147·4 | 330 | e 19 42 | [−10] | — | — | — | — |
| De Bilt | Z. | 148·3 | 345 | e 19 49 | [− 4] | e 23 19 | ?$PR_1$ | — | — |
| Innsbruck | N.W. | 150·3 | 333 | e 19 54 | [− 2] | — | — | — | — |
| Strasbourg | | 150·7 | 339 | e 19 36? | [−21] | — | — | — | — |
| Zurich | N. | 151·4 | 336 | i 19 56 | [− 2] | — | — | — | — |
| Granada | | 164·4 | 347 | i 24 42 | ?$PR_1$ | — | — | — | — |

Additional readings: Riverview eS = +8m.42s. Adelaide MN = +14·9m.
Ekaterinburg e = +20m.7s. = $PR_1$ −16s. Vienna iPZ = +19m.45s.

**Sept. 4d. 15h. 36m. 58s.** Epicentre **43°·5N. 143°·0E.**
(as on 1926 March 25d.).

A = −·579, B = +·437, C = +·688; D = +·602, E = +·799; G = −·550, H = +·414, K = −·725.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Ootomari | | 3·2 | 357 | 1 5 | +15 | — | — | 2·4 | 3·1 |
| Mizusawa | E. | 4·6 | 198 | 1 4 | − 7 | 1 46 | −20 | — | — |
| | N. | 4·6 | 198 | 1 5 | − 6 | 1 47 | −19 | — | — |
| Nagoya | | 9·5 | 211 | 2 25 | + 2 | (4 19) | + 3 | 4·3 | 4·7 |
| Osaka | | 10·6 | 216 | 2 32 | − 6 | (4 47) | + 2 | 4·8 | 6·6 |
| Kobe | | 10·7 | 217 | 2 32 | − 8 | (4 33) | −15 | 4·6 | 6·6 |
| Sumoto | | 11·1 | 217 | 2 36 | −10 | (4 56) | − 1 | 4·9 | 5·5 |
| Hukuoka | | 13·9 | 229 | 3 16 | − 9 | (6 40) | +34 | 6·7 | 9·7 |
| Nagasaki | | 14·9 | 228 | 3 31 | − 7 | 6 28 | − 2 | 7·2 | 10·2 |
| Zi-ka-wei | | 21·0 | 241 | i 4 44 | − 9 | 8 34 | −10 | — | 14·9 |
| Taihoku | E. | 25·4 | 230 | 5 27 | −15 | 9 54 | −17 | 14·3 | 18·0 |
| Irkutsk | | 27·0 | 302 | i 5 56 | − 2 | i 10 36 | − 5 | 14·0 | 17·7 |
| Hong Kong | | 31·8 | 238 | 6 32 | −13 | 11 37 | −28 | 16·9 | 20·0 |
| Manila | | 34·5 | 220 | 6 43 | −26 | — | — | 10·0 | 11·0 |
| Phu-Lien | | 37·8 | 244 | i 7 20 | −16 | e 13 6 | −29 | 18·5 | — |
| Amboina | | 49·0 | 201 | i 6 48 | −132 | — | — | — | — |
| Calcutta | E. | 49·3 | 266 | 9 3 | + 1 | 16 3 | − 7 | — | — |
| | N. | 49·3 | 266 | 9 11 | + 9 | 16 5 | − 5 | — | — |
| Ekaterinburg | | 51·0 | 316 | i 9 14 | + 1 | i 16 35 | + 4 | 21·0 | 33·1 |
| Simla | E. | 52·4 | 281 | — | — | e 16 20 | −29 | — | — |
| Tashkent | | 52·6 | 296 | e 10 24 | +60 | i 17 47 | +56 | e 23·0 | 31·9 |
| Honolulu | | 53·2 | 95 | — | — | e 16 42 | −17 | 21·9 | — |
| Batavia | | 59·4 | 225 | i 10 1 | − 7 | i 18 4 | −12 | — | — |
| Hyderabad | | 59·7 | 269 | e 10 28 | +18 | 18 16 | − 3 | 33·7 | 42·2 |
| Victoria | E. | 61·1 | 50 | 10 17 | − 3 | 20 0 | +83 | 29·4 | 29·4 |
| | N. | 61·1 | 50 | 10 17 | − 3 | 20 37 | +120 | — | 36·7 |
| Bombay | | 62·8 | 273 | 10 44 | +13 | 19 0 | + 2 | e 32·7 | — |
| Leningrad | | 62·9 | 329 | i 10 37 | + 6 | i 19 8 | + 8 | 28·7 | 40·9 |
| Pulkovo | | 63·0 | 329 | i 10 37 | + 5 | i 19 8 | + 7 | 32·3 | 40·8 |
| Spokane | | 64·7 | 49 | i 9 3 | −100 | — | — | — | — |
| Baku | | 65·4 | 304 | i 10 53 | + 6 | i 19 49 | +19 | 34·0 | 43·2 |
| Colombo | | 65·9 | 259 | 12 2? | +72 | — | — | 46·2 | — |
| Piatigorsk | | 67·1 | 311 | e 11 37 | +38 | 20 30 | +39 | — | 36·0 |
| Makeyevka | | 67·3 | 316 | i 11 5 | + 5 | 20 2 | + 8 | 30·0 | 31·7 |
| Upsala | | 67·4 | 334 | i 11 2 | + 2 | i 19 59 | + 4 | e 33·0 | 43·4 |
| Bergen | | 70·5 | 340 | i 11 35 | +15 | 20 42 | +10 | e 43·0 | — |
| Lemberg | | 72·5 | 324 | e 21 2 | ?S | (e 21 2) | + 6 | e 46·3 | 49·1 |
| Hamburg | | 75·0 | 334 | i 11 51 | + 2 | i 21 27 | + 1 | e 39·0 | 47·0 |
| Dyce | | 75·1 | 343 | i 11 50 | 0 | i 21 27 | 0 | 37·6 | 43·2 |
| Budapest | | 76·5 | 326 | 12 6 | + 8 | 21 54 | +11 | e 35·0 | 52·3 |
| Edinburgh | | 76·6 | 342 | — | — | i 21 50 | + 6 | 42·0 | 52·0 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Vienna | | 77·0 | 327 | i 12 3 | + 2 | i 21 55 | + 6 | e 34·0 | 49·0 |
| Cheb | | 77·0 | 330 | e 12 3 | + 2 | e 21 50 | + 1 | e 39·0 | 50·0 |
| De Bilt | | 77·7 | 335 | 12 5 | 0 | 22 0 | + 3 | e 37·0 | 41·9 |
| Riverview | | 77·7 | 175 | e 12 17 | +12 | e 22 2 | + 5 | e 36·9 | 37·8 |
| Stonyhurst | | 78·2 | 340 | 12 11 | + 3 | i 22 6 | + 4 | — | 53·0 |
| Graz | | 78·3 | 328 | e 12 9 | 0 | e 22 5 | + 1 | 36·0 | 49·8 |
| Adelaide | | 78·5 | 185 | — | — | e 20 17 | ? | e 34·6 | 39·2 |
| Tucson | E. | 78·7 | 57 | 12 3 | − 8 | 21 55 | −13 | 37·1 | 46·7 |
| Bidston | | 78·8 | 340 | 12 11 | − 1 | 22 24 | +14 | 38·2 | 48·3 |
| Uccle | | 79·1 | 335 | i 12 13 | − 1 | i 22 12 | − 1 | e 38·0 | 52·5 |
| Zagreb | | 79·1 | 325 | 12 23 | + 9 | i 22 15 | + 2 | e 44·8 | — |
| Hohenheim | E. | 79·2 | 332 | i 12 14 | 0 | e 22 14 | 0 | e 43·0 | 54·4 |
| | N. | 79·2 | 332 | i 12 14 | 0 | e 22 12 | − 2 | e 43·1 | 48·4 |
| Innsbruck | | 79·7 | 329 | i 12 19 | + 2 | e 22 2 | −18 | e 44·0 | 52·0 |
| Strasbourg | | 79·9 | 331 | i 12 17 | − 1 | i 22 20 | − 2 | 39·0 | 49·7 |
| Ravensburg | | 79·9 | 331 | e 12 14 | − 4 | i 22 26 | + 4 | e 42·3 | 46·4 |
| Kew | | 79·9 | 340 | e 12 16 | − 2 | i 22 20 | − 2 | 38·0 | 52·8 |
| Oxford | | 79·9 | 340 | 12 16 | − 2 | i 22 16 | − 6 | 42·2 | 46·1 |
| Zurich | | 80·7 | 331 | i 12 21 | − 2 | i 22 29 | − 2 | i 26·4 | — |
| Melbourne | | 81·3 | 180 | — | — | — | — | e 31·0 | 39·0 |
| Paris | | 81·4 | 335 | i 12 26 | − 1 | i 22 39 | 0 | 41·0 | 53·0 |
| Besançon | | 81·7 | 333 | — | — | 22 41 | − 2 | 43·0 | — |
| Florence | | 82·7 | 326 | i 12 30 | − 4 | 23 2 | + 8 | 41·0 | 53·5 |
| Moncalieri | | 83·0 | 331 | i 12 26 | −10 | 22 42 | −15 | 40·0 | 51·6 |
| Chicago | E. | 83·4 | 36 | — | — | i 22 44 | −17 | i 35·1 | 48·9 |
| | N. | 83·4 | 36 | e 12 29 | − 9 | i 22 47 | −14 | e 40·7 | 48·9 |
| Rocca di Papa | | 83·8 | 325 | i 12 36 | − 5 | 22 52 | −15 | e 47·2 | 50·9 |
| Pompeii | | 83·8 | 324 | e 13 2? | +21 | e 23 2? | − 5 | 48·0 | — |
| Naples | | 83·8 | 324 | e 12 12 | −29 | e 22 12 | −55 | 47·0 | — |
| Ann Arbor | | 84·6 | 33 | e 12 26 | −20 | i 22 44 | −31 | e 40·3 | — |
| Ottawa | | 84·7 | 26 | e 12 39 | − 7 | i 22 54 | [ 0] | e 38·0 | — |
| Toronto | E. | 85·0 | 30 | — | — | 22 57 | [+ 1] | 38·3 | 49·6 |
| | N. | 85·0 | 30 | e 12 34 | −14 | e 22 54 | [− 2] | 39·0 | 49·8 |
| Ithaca | | 87·1 | 29 | — | — | i 23 8 | [− 2] | 45·0 | — |
| Barcelona | | 88·0 | 332 | e 13 11 | + 6 | e 23 16 | [+ 1] | e 37·6 | 51·4 |
| Harvard | E. | 88·8 | 25 | — | — | 23 26 | [+ 5] | 43·5 | 49·8 |
| | N. | 88·8 | 25 | — | — | i 23 26 | [+ 5] | 44·1 | 51·9 |
| Tortosa | E. | 89·2 | 334 | 13 7 | − 4 | 23 30 | [+ 7] | — | — |
| | N. | 89·2 | 334 | 13 2 | − 9 | 23 27 | [+ 4] | 39·4 | 52·6 |
| Wellington | | 89·5 | 158 | — | — | 23 2 | [−23] | e 43·0 | — |
| Toledo | | 90·8 | 336 | i 13 13 | − 7 | i 23 43 | [+10] | e 39·7 | 58·7 |
| Alicante | | 91·7 | 335 | 13 9 | −16 | 23 35 | [− 3] | 40·2 | 58·4 |
| Algiers | | 91·8 | 330 | e 13 14 | −12 | e 23 44 | [+ 5] | — | 53·9 |
| Almeria | | 93·7 | 335 | e 13 13 | −23 | i 23 46 | [− 4] | e 40·3 | 52·3 |
| Granada | | 93·8 | 335 | i 13 25 | −12 | i 24 35 | −19 | 45·8 | 51·2 |
| Rio Tinto | | 94·2 | 338 | 24 2? | ?S | (24 2?) | [+ 9] | — | 58·0 |
| Malaga | | 94·5 | 336 | e 13 24 | −17 | 23 57 | [+ 3] | — | — |
| San Fernando | | 95·3 | 337 | — | — | i 24 2 | [+ 3] | 49·0 | 62·0 |
| La Paz | | 142·3 | 55 | e 19 35 | [− 9] | — | — | 79·9 | 89·2 |
| Sucre | | 146·0 | 53 | i 19 42 | [− 8] | e 33 44 | ? | 70·8 | 83·1 |

Additional readings: Ootomari MN = +2·7m. Nagoya MN = +6·5m. Osaka MN = +5·8m. Kobe S = +3m.27s., MN = +5·8m. Sumoto S = +3m.47s., MZ = +5·0m., MN = +5·2m. Zi-ka-wei $SR_1E$ = +8m.50s. Taihoku SN = +9m.57s. Irkutsk MN = +15·2m. Manila MN = +11·1m. Ekaterinburg $SR_1$ = +10m.45s., MN = +30·5m., MZ = +33·2m. Simla eN = +16m.32s. Tashkent $ePR_1$ = +12m.2s., $ePR_2$ = +13m.26s., i = +20m.5s., MZ = +30·6m., MN = +34·4m. Honolulu $S_6SE$ = +19m.38s. Batavia PZ = +10m.7s. Leningrad $PR_2$ = +15m.12s. = $PR_2$ −2s., PS = +20m.2s., $SR_1$ = +23m.50s., $SR_2$ = +26m.56s., MN = +40·3m. Pulkovo $PR_1$ = +13m.11s., $PR_2$ = +14m.37s., $SR_1$ = +24m.8s., $SR_2$ = +26m.38s., MZ = +41·9m., MN = +44·1m. Spokane iE = +9m.18s. i = +9m.20s., +9m.31s., +9m.36s., and +9m.46s., eN = +17m.18s., iN = +17m.36s., and +18m.10s. Makeyevka $PR_1$ = +13m.49s., PS = +20m.53s., $SR_1$ = +24m.33s., MN = +43·6m., MZ = +43·8m. Upsala eLN = +35·0m., MN = +43·2m. Lemberg eS = +32m.50s. Hamburg iSN = +21m.30s., eZ = +38m.2s.?, MNZ = +46·0m. Dyce $PR_1$ = +14m.40s. Vienna PS = +22m.56s., $SR_2$ = +31m.40s. De Bilt $PR_1Z$ = +15m.5s., MN = +43·0m., MZ = +50·4m. Riverview e = +16m.8s., MN = +39·7m. Adelaide MN = +40·0m. Tucson eE = +22m.15s. and +22m.50s. = PS +1s.; $T_0$ = 15h.37m.7s. and 15h.37m.15s.

*Continued on next page.*

Uccle ePR$_1$ = +15m.17s., MN = +50·8m. Zagreb e = +22m.26s., +32m.13s., and +42m.14s. Hohenheim iPR$_1$N = +15m.34s., eS$_4$P$_4$SE = +22m.23s., iS$_4$P$_4$SN = +22m.26s. Strasbourg iS = +22m.23s., MN = +53·6m., MZ = +53·7m. Ravensburg iE = +22m.36s. Kew MN = +47·8m. Oxford PR$_1$ = +15m.28s. Chicago P$_6$PN = +12m.52s., PR$_1$N = +15m.44s., iPR$_1$E = +15m.47s., S$_6$SE = +23m.22s., PSN = +23m.38s., PPSE = +24m.20s., P$_6$S$_6$S$_6$PE = +27m.38s., SR$_1$N = +28m.2s., SR$_1$E = +28m.44s., SR$_2$E = +31m.56s., SR$_3$E? = +33m.44s. Ann Arbor ePR$_1$ = +15m.44s., iSR$_1$ = +28m.44s. ; T$_0$ =15h.37m.0s. Ottawa ePR$_1$N = +16m.10s., eLN = +40·0m. ; T$_0$ =15h.37m.20s. Toronto PR$_1$N = +16m.17s., iSN = +23m.0s. ; T$_0$ =15h.37m.3s. Ithaca e = +22m.20s. Harvard PR$_1$N = +16m.46s., S$_6$SN = +23m.49s., PSE = +24m.26s., SR$_2$N = +32m.42s., SR$_3$N = +35m.24s. Toledo i = +24m.15s. =S +10s., MNW = +51·6m. Almeria PR$_1$ = +16m.54s., MN = +53·6m. Granada i = +13m.46s., PR$_1$ = +17m.18s., PR$_2$ = +19m.39s., PS = +26m.9s., SR$_1$ = +30m.9s., SR$_2$ = +34m.16s. San Fernando MN = +63·0m. La Paz PR$_1$ = +23m.45s., PR$_2$ = +29m.33s. =PR$_3$ +22s. Sucre PR$_1$ = +23m.4s., SR$_2$ = +42m.4s. =SR$_1$ +0s., SR$_3$ = +46m.46s.

Sept. 4d. Readings also at 2h. (Ekaterinburg, Irkutsk, and Tashkent), 5h. (Ekaterinburg and Tashkent), 7h. (Ekaterinburg), 8h. (Athens (2) ), 9h. (Nagasaki and Athens (2) ), 10h. (Athens (3) ), 12h. and 13h. (Nagasaki), 14h. (Toyooka), 15h. (Batavia and near Mizusawa), 19h. (near Athens), 21h. (near Mostar), 22h. (Manila and Ekaterinburg), 23h. (Ekaterinburg and Tashkent).

Sept. 5d. Readings at 1h. (Ekaterinburg and Hamburg), 2h. (Irkutsk and Tashkent), 3h. (near Rocca di Papa), 4h. (Irkutsk, Taihoku, Zi-ka-wei, and near Mostar), 5h. (De Bilt, Uccle, Tashkent, Pulkovo, and Leningrad), 6h. (Tashkent, Granada, and near Sumoto (2) ), 7h. (near Sumoto), 8h. (near Tacubaya and near Toyooka), 9h. (Chicago, La Paz, Sucre, and near Mostar), 12h. (near Tacubaya), 17h. (Cape Town), 23h. (Florence, Rocca di Papa, and Zagreb).

Sept. 6d. 0h. 16m. 22s. Epicentre 35°·0S. 75°·0W. (as on 1924 Sept. 19d.).

A = +·212, B = −·791, C = −·574 ; D = −·966, E = −·259 ; G = −·148, H = +·554, K = −·819.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Santiago | | 3·9 | 68 | 1 5 | + 4 | — | — | — | — |
| La Plata | | 14·0 | 94 | 3 28 | + 2 | 6 11 | + 3 | 6·9 | — |
| Sucre | | 18·2 | 31 | e 4 12 | − 7 | i 7 26 | −18 | i 8·9 | 9·9 |
| La Paz | | 19·5 | 20 | 4 38 | + 3 | i 8 14 | + 1 | 9·8 | 11·4 |
| Cape Town | | 73·8 | 120 | — | — | — | — | — | 42·6 |
| Chicago | | 77·7 | 351 | — | — | 21 58 | + 1 | 32·5 | 48·7 |
| Ann Arbor | N. | 77·8 | 355 | — | — | — | — | e 41·2 | — |
| Toronto | | 78·8 | 357 | e 12 38 | +26 | — | — | 43·5 | — |
| Ottawa | | 80·4 | 0 | e 12 14 | − 7 | e 22 32 | + 4 | e 33·6 | — |
| Victoria | | 93·9 | 330 | 24 23 | ?S | (24 23) | −32 | — | 52·6 |
| San Fernando | | 95·9 | 49 | — | — | 24 15 | [+13] | — | 55·6 |
| Honolulu | E. | 96·7 | 292 | — | — | — | — | e 47·2 | — |
| Granada | | 98·0 | 50 | e 12 44 | −76 | i 24 3 | [−10] | — | 56·2 |
| Melbourne | | 98·3 | 211 | — | — | — | — | — | 55·5 |
| Riverview | | 98·7 | 218 | — | — | e 46 38? | ?L | e 51·1 | 60·7 |
| Toledo | N.W. | 99·4 | 48 | — | — | — | — | e 44·1 | 65·2 |
| Algiers | | 102·0 | 54 | — | — | — | — | e 51·6 | 57·6 |
| Tortosa | N. | 102·7 | 49 | (e 23 36) | ?PR$_2$ | — | — | e 23·6 | 57·2 |
| Adelaide | | 103·3 | 208 | — | — | — | — | e 50·8 | 62·1 |
| Oxford | | 108·0 | 40 | — | — | — | — | 52·6 | 60·3 |
| Kew | | 108·3 | 40 | — | — | e 41 38? | ? | 55·6 | 60·6 |
| Paris | | 108·4 | 44 | — | — | — | — | e 57·6 | 61·6 |
| Stonyhurst | | 108·6 | 39 | — | — | — | — | e 51·6 | 62·1 |
| Moncalleri | | 109·4 | 50 | — | — | e 27 3 | −20 | 55·5 | 69·5 |
| Edinburgh | | 109·4 | 35 | — | — | — | — | 58·6 | — |
| Uccle | | 110·5 | 42 | — | — | e 21 19 | ?PR$_2$ | e 49·6 | 62·6 |
| Dyce | | 110·6 | 32 | — | — | e 25 32 | [+20] | 50·0 | 75·7 |
| Rocca di Papa | | 111·0 | 52 | — | — | e 31 9 | ? | e 59·7 | 64·8 |
| Florence | | 111·0 | 51 | e 19 43 | ?PR$_1$ | — | — | — | 63·6 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Strasbourg | | 111·2 | 44 | — | — | e 38 38 | ? | 57·6 | — |
| De Bilt | | 111·5 | 41 | — | — | e 25 44 | [+28] | e 51·6 | 62·2 |
| Ravensburg | E. | 111·9 | 45 | — | — | — | — | e 60·1 | 65·3 |
| Hohenheim | | 112·2 | 43 | — | — | — | — | e 60·4 | 70·1 |
| Cheb | | 114·6 | 44 | — | — | e 29 38? | +91 | — | 65·6 |
| Zagreb | | 114·9 | 50 | — | — | — | — | e 64·6 | — |
| Graz | | 115·2 | 48 | e 22 2 | ?$PR_2$ | — | — | e 61·6 | 66·6 |
| Athens | | 116·7 | 60 | — | — | — | — | e 64·1 | 68·6 |
| Budapest | | 117·5 | 48 | — | — | — | — | e 65·1 | — |
| Upsala | | 121·0 | 35 | — | — | — | — | 68·6 | — |
| Pulkovo | | 127·2 | 37 | — | — | — | — | 65·6 | 74·7 |
| Leningrad | | 127·2 | 37 | — | — | — | — | 64·3 | 74·2 |
| Makeyevka | | 129·8 | 51 | e 22 38? | ?$PR_1$ | (31 36) | +96 | 31·6 | 76·1 |
| Baku | | 136·8 | 65 | e 22 8 | ?$PR_1$ | (e 34 26) | ? | 78·6 | 99·5 |
| Colombo | | 143·6 | 133 | 29 38? | ?$PR_2$ | — | — | 84·6 | 87·6 |
| Kodaikanal | | 144·7 | 126 | 68 32 | ?L | — | — | (68·5) | — |
| Bombay | | 147·3 | 110 | e 42 38? | ?$SR_1$ | — | — | — | — |
| Tashkent | | 151·4 | 67 | i 24 22 | ?$PR_1$ | i 40 48 | ? | e 79·6 | 95·0 |
| Irkutsk | | 162·7 | 2 | e 20 37 | [+27] | — | — | e 76·1 | — |

Additional readings: La Paz LN = +9·7m., MN = +11·0m.; $T_g$ = 0h.16m.30s. Chicago eN = +25m.14s., $SR_2E$? = +30m.44s., MN = +49·8m. San Fernando MN = +55·1m. Granada e = +18m.2s. = $PR_1$ +2s., i = +19m.53s. and +26m.26s. Riverview MN = +61·7m. Toledo MNE = +57·0m. Adelaide eL = +54·0m., MN = +59·0m. Uccle MN = +64·6m. De Bilt MZ = +65·0m., MN = +65·1m.; epicentre 35°S. 74°W. Leningrad MZ = +74·3m., MN = +78·5m. Makeyevka MZ = +80·2m. Tashkent i = +24m.44s., MN = +96·5m., MZ = +97·5m.

Sept. 6d. 0h. 49m. 42s.
0h. 58m. 40s.
1h. 51m. 40s.
} Epicentre 35°·0S. 75°·0W. (as at 0h.).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I Santiago | 3·9 | 68 | 1 0 | − 1 | — | — | — | — |
| II | 3·9 | 68 | (0 53) | − 8 | — | — | — | — |
| III | 3·9 | 68 | 0 56 | − 5 | — | — | — | — |
| I La Plata | 14·0 | 94 | 3 22 | − 4 | 6 10 | + 2 | 7·1 | — |
| II | 14·0 | 94 | 3 21 | − 5 | 6 2 | − 6 | 7·0 | — |
| III | 14·0 | 94 | 3 15 | −11 | 6 0 | − 8 | 7·1 | — |
| I Sucre | 18·2 | 31 | i 4 10 | − 9 | i 7 23 | −21 | 9·1 | 10·8 |
| II | 18·2 | 31 | i 4 16 | − 3 | i 6 21 | −83 | 9·0 | 11·6 |
| III | 18·2 | 31 | 4 25 | + 6 | 7 30 | −14 | 9·3 | 11·7 |
| I La Paz | 19·5 | 20 | 4 34 | − 1 | 8 15 | + 2 | 10·0 | 11·9 |
| II | 19·5 | 20 | 4 36 | + 1 | — | — | 9·7 | 12·6 |
| III | 19·5 | 20 | e 4 45 | +10 | i 8 26 | +13 | 9·8 | 12·3 |

Santiago gives P for II as L to shock I. La Paz I MN = +11·1m., II MN = +10·9m., III MN = +11·2m.

Sept. 6d. 8h. 7m. 15s. Epicentre 20°·5S. 178°·5W. (as on 1924 Jan. 16d.).

A = −·936, B = −·025, C = −·350; D = −·026, E = +1·000.
G = +·350, H = +·009, K = −·937.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Apia | | 9·2 | 45 | 4 4 | ?S | (4 4) | − 4 | 4·8 | 5·8 |
| Wellington | | 21·6 | 194 | — | — | 8 34 | −23 | e 10·2 | 16·6 |
| Christchurch | | 24·2 | 196 | — | — | 9 51 | + 3 | 12·6 | 17·4 |
| Riverview | | 29·9 | 235 | e 6 33 | + 6 | e 11 45 | +13 | e 14·2 | 18·2 |
| Sydney | | 29·9 | 235 | (7 45) | ?$PR_1$ | (11 45) | +13 | 13·6 | 14·8 |
| Adelaide | | 40·3 | 239 | — | — | e 18 5 | +234 | e 20·8 | 27·8? |
| Honolulu | | 46·3 | 26 | — | — | 19 5 | ?$SR_1$ | e 33·2 | — |
| Victoria | E. | 84·6 | 32 | 23 18 | ?S | (23 18) | + 3 | 44·2 | 51·2 |
| Irkutsk | | 98·6 | 325 | — | — | e 24 49 | [+32] | 56·8 | — |
| Toronto | | 110·4 | 49 | — | — | e 26 15 | −77 | 56·8 | — |
| Ottawa | | 113·2 | 47 | — | — | e 27 22 | −34 | e 57·8 | — |
| Tashkent | | 119·8 | 307 | (i 18 47) | [− 4] | (28 47) | − 1 | (56·8) | (75·0) |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Ekaterinburg | 128·8 | 325 | e 21 49 | ?$PR_1$ | — | — | 62·8 | 75·0 |
| Baku | 134·5 | 308 | e 21 45? | ?$PR_1$ | — | — | 82·8 | — |
| Kucino | 135·5 | 331 | — | — | — | — | 81·2 | — |
| Pulkovo | 135·7 | 339 | — | — | — | — | e 72·8 | — |
| De Bilt | 148·0 | 354 | — | — | — | — | e 87·8 | — |
| Kew | 149·0 | 2 | — | — | — | — | e 92·8 | — |
| Strasbourg | 151·5 | 351 | — | — | — | — | e 92·8 | — |
| Paris | 151·7 | 359 | — | — | — | — | e 88·8 | — |
| Florence | 155·3 | 343 | 19 45? | [−17] | 84 45 | ?L | (84·8) | 92·8 |
| Granada | 162·7 | 14 | i 21 2 | [+52] | i 24 55 | ?$PR_1$ | 83·8 | 91·0 |
| San Fernando N. | 162·7 | 21 | — | — | — | — | — | 88·8 |

Additional readings and notes: Apia readings are given as for 7h. Riverview e = +7m.45s. =$PR_1$ +28s., MN = +17·9m. Sydney. The readings have been decreased by 4min. Adelaide MN = +24·3m. Irkutsk e = +27m.18s. Tashkent i = +24m.9s. =$PR_2$ +27s., +38m.27s., and +47m.48s., e = +35m.45s., MN = +70·3m., MZ = +70·5m.; the readings have all been decreased by 6min. Ekaterinburg e = +61m.20s., MZ = +75·8m., MN = +76·0m. Florence e = +78m.45s.

Sept. 6d. 15h. 9m. 40s. Epicentre 14°·0S. 166°·5E. (as on 1926 Jan. 5d.).

A = −·943, B = +·227, C = −·242; D = +·233, E = +·972; G = +·235, H = −·056, K = −·970.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Apia | 21·1 | 92 | e 4 20? | −34 | — | — | — | — |
| Riverview | 24·2 | 212 | e 3 28 | −122 | e 10 8 | +20 | e 11·8 | 13·0 |
| Sydney | 24·2 | 212 | 4 50 | −40 | 8 50 | −58 | 12·9 | 15·1 |
| Wellington | 28·2 | 167 | 6 30 | +20 | 10 5 | −58 | 11·8 | 13·5 |
| Melbourne | 30·5 | 215 | i 7 38 | +65 | e 11 50 | + 7 | e 14·4 | 17·3 |
| Adelaide | 32·7 | 226 | e 6 59 | + 5 | 12 22 | + 3 | 14·8 | 21·2 |
| Honolulu N. | 49·6 | 45 | — | — | 15 20 | −54 | 19·3 | 19·6 |
| Taihoku E. | 58·6 | 313 | — | — | — | — | 29·3 | — |
| Batavia | 59·0 | 271 | (e 9 56) | − 9 | (i 17 39) | −31 | — | — |
| Irkutsk | 85·1 | 327 | e 12 41 | − 8 | e 23 23 | + 3 | 43·3 | — |
| Victoria E. | 87·9 | 39 | 23 36 | ?S | (23 36) | −15 | 40·3 | 52·6 |
| Bombay | 97·8 | 287 | — | — | — | — | e 58·3 | — |
| Tashkent | 104·5 | 310 | i 18 41 | ?$PR_1$ | e 24 20? | [−25] | e 50·3 | 61·4 |
| Ekaterinburg | 110·3 | 326 | e 19 3 | ?$PR_1$ | e 28 51 | ?PS | 36·3 | 62·7 |
| Chicago E. | 111·1 | 50 | — | — | — | — | — | 51·5 |
| Toronto | 117·0 | 46 | — | — | — | — | 67·7 | — |
| Baku | 119·2 | 310 | e 21 38 | ?$PR_1$ | e 37 56 | ?$SR_1$ | e 61·8 | — |
| Ottawa N. | 119·3 | 44 | — | — | e 27 44 | −60 | e 48·3 | — |
| Fordham | 121·5 | 50 | — | — | — | — | e 65·5 | — |
| Kucino | 122·7 | 329 | — | — | — | — | e 39·3 | — |
| Leningrad | 124·1 | 335 | — | — | i 41 16 | ? | 58·8 | 75·8 |
| Pulkovo | 124·2 | 335 | e 33 25 | ? | e 42 20 | ?$SR_2$ | 58·3 | 66·8 |
| Makeyevka | 125·7 | 320 | e 32 58 | ? | e 38 27 | ?$SR_1$ | 60·3 | 69·0 |
| Budapest | 137·0 | 328 | — | — | — | — | e 78·3 | — |
| De Bilt | 139·1 | 342 | — | — | — | — | e 69·3 | 75·8 |
| Uccle | 140·5 | 342 | — | — | — | — | e 66·3 | — |
| Kew | 141·1 | 347 | — | — | — | — | e 73·3 | — |
| Strasbourg | 141·2 | 336 | e 21 20? | ?$PR_1$ | — | — | 60·3 | — |
| Paris | 142·8 | 343 | — | — | — | — | e 77·3 | — |
| Florence | 143·5 | 326 | e 19 35 | [−11] | — | — | 62·3 | 84·3 |
| Toledo N.E. | 152·8 | 344 | — | — | — | — | e 75·8 | 88·7 |
| Granada | 155·2 | 341 | i 20 19 | [+17] | — | — | 76·3 | 81·0 |
| San Fernando | 156·6 | 345 | — | — | — | — | 83·3 | 93·8 |

Additional readings and notes: Apia reading is given for 14h. Riverview PS = +10m.19s. =$SR_1$ −23s., MN = +14·6m. Wellington MN = +15·2m. Melbourne e = 15h.7m.42s. Adelaide MN = +22·4m. Honolulu LE = +19·2m., ME = +19·8m. Batavia; the readings have been increased by 8min. Tashkent e = +34m.50s., +35m.20s., and +45m.20s., MN = +61·9m., MZ = +62·1m. Ekaterinburg e = +34m.50s. =$SR_1$ +4s., MN = +59·1m., MZ = +62·4m. Chicago e$SR_1$E = +34m.8s. Ottawa eN? = +35m.32s. Fordham eE = +53m.33s. and +55m.28s., eN = +57m.20s. and +61m.25s. Leningrad MZ = +76·0m. Pulkovo MZ = +66·5m. Makeyevka MN = +70·8m., MZ = +76·5m. De Bilt MN = +73·4m., MZ = +78·6m. Toledo MNW = +92·1m. Granada i = +24m.24s. = $PR_1$ +14s., and +25m.40s. San Fernando MN = +97·3m.

Sept. 6d. Readings also at 2h. (near Athens), 4h. (near La Paz), 11h. (Apia), 12h. (Matuyama), 13h. (Baku, Ekaterinburg, and near Tashkent), 15h. (Matuyama), 21h. (La Paz, La Plata, and Sucre), 22h. (Ekaterinburg and La Plata), 23h. (Zurich).

## Sept. 7d. 12h. 22m. 58s. Epicentre 5°·5S. 145°·0E.

A = −·815, B = +·571, C = −·096; D = +·574, E = +·819; G = +·078, H = −·055, K = −·995.

A depth of focus 0·020 has been assumed. See note at end.

| | | Corr. for Focus | Δ | Az. | P. m. | P. s. | O−C. s. | S. m. | S. s. | O−C. s. | L. m. | M. m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | | | | | | | | |
| Amboina | | −0·6 | 16·8 | 275 | i 4 | 8 | +13 | i 7 | 20 | +20 | — | — |
| Riverview | | −1·3 | 28·9 | 169 | e 6 | 2 | − 2 | i 10 | 48 | − 4 | e 14·1 | 17·0 |
| Sydney | | −1·3 | 28·9 | 169 | 6 | 26 | +22 | 10 | 50 | − 2 | 15·5 | 18·9 |
| Adelaide | | −1·4 | 30·0 | 190 | i 6 | 12 | − 2 | i 11 | 7 | − 3 | i 13·5 | 20·7 |
| Manila | | −1·4 | 31·2 | 312 | e 6 | 27 | + 1 | i 13 | 2 | ?$SR_1$ | i 20·0 | 25·5 |
| Melbourne | | −1·5 | 32·3 | 181 | e 3 | 44 | −172 | e 12 | 32 | +44 | i 17·4 | 20·6 |
| Malabar | | −1·6 | 37·2 | 268 | i 7 | 24 | + 6 | i 13 | 8 | + 4 | — | — |
| Batavia | E. | −1·7 | 37·9 | 270 | i 7 | 21 | − 3 | | — | — | 18·0 | — |
| Perth | | −1·7 | 37·9 | 224 | 7 | 26 | + 2 | 13 | 12 | − 1 | 17·3 | 20·9 |
| Taihoku | | −1·7 | 38·1 | 326 | 7 | 31 | + 6 | 13 | 18 | + 2 | 16·8 | 17·1 |
| Nagasaki | | −1·7 | 40·9 | 342 | 7 | 49 | + 1 | (14 | 24) | +30 | 14·4 | 17·8 |
| Hong Kong | | −1·7 | 41·0 | 316 | 7 | 50 | + 1 | 13 | 58 | + 2 | 17·6 | — |
| Sumoto | | −1·7 | 41·0 | 350 | 7 | 42 | − 7 | (13 | 51) | − 5 | 13·8 | 14·4 |
| Osaka | | −1·7 | 41·2 | 350 | 7 | 54 | + 3 | 13 | 58 | − 1 | 19·8 | 20·4 |
| Kobe | | −1·7 | 41·2 | 350 | 7 | 45 | − 6 | (13 | 55) | − 4 | 13·9 | 14·0 |
| Nagoya | | −1·7 | 41·4 | 352 | 7 | 53 | + 1 | — | | — | — | — |
| Hukuoka | N. | −1·7 | 41·4 | 345 | 7 | 46 | − 6 | (13 | 15) | −47 | 13·2 | — |
| Toyooka | | −1·8 | 42·2 | 350 | 7 | 53 | − 5 | (e 14 | 5) | − 8 | e 14·1 | — |
| Zi-ka-wei | | −1·8 | 43·1 | 332 | i 8 | 2 | − 3 | i 17 | 51 | — ?$SR_1$ | 23·6 | 25·8 |
| Wellington | | −1·9 | 44·6 | 148 | i 8 | 11 | − 5 | i 14 | 39 | − 5 | 18·3 | 35·9 |
| Mizusawa | | −1·9 | 44·8 | 357 | 8 | 15 | − 2 | 14 | 54 | — + 7 | 19·7 | — |
| Christchurch | | −1·9 | 45·1 | 152 | (10 | 56) | ?$PR_2$ | (15 | 2) | — +11 | 15·0 | 34·2 |
| Phu-Lien | | −1·9 | 45·9 | 307 | i 8 | 29 | + 3 | e 15 | 8 | + 6 | 22·5 | — |
| Ootomari | | −2·2 | 52·2 | 358 | 9 | 9 | + 2 | (16 | 27) | + 8 | 16·4 | — |
| Honolulu | E. | −2·4 | 61·9 | 62 | i 10 | 20 | +11 | i 18 | 42 | +25 | i 25·5 | 29·5 |
| | N. | −2·4 | 61·9 | 62 | e 10 | 25 | +16 | i 19 | 1 | +44 | i 25·5 | 26·1 |
| Calcutta | E. | −2·4 | 62·0 | 300 | 10 | 44 | +35 | 19 | 0 | +42 | — | — |
| | N. | −2·4 | 62·0 | 300 | 10 | 40 | +31 | 18 | 58 | +40 | — | — |
| Irkutsk | | −2·5 | 67·3 | 335 | i 10 | 57 | +13 | 19 | 51 | +28 | 36·0 | — |
| Kodaikanal | | −2·6 | 69·1 | 283 | 11 | 50 | +55 | (20 | 2) | +18 | 20·0 | 26·0 |
| Hyderabad | | −2·6 | 69·6 | 292 | 11 | 12 | +14 | 20 | 18 | +28 | 35·9 | 44·4 |
| Simla | E. | −2·6 | 74·2 | 307 | e 11 | 20 | − 7 | e 20 | 56 | +11 | — | 42·7 |
| | N. | −2·6 | 74·2 | 307 | e 11 | 44 | +17 | e 21 | 8 | +23 | — | — |
| Bombay | | −2·6 | 75·0 | 292 | 11 | 49 | +17 | 21 | 19 | +24 | 39·5 | 41·9 |
| Ekaterinburg | | −2·8 | 91·5 | 328 | i 13 | 9 | 0 | i 24 | 4 | + 4 | — | 50·7 |
| Victoria | E. | −2·8 | 95·2 | 42 | 13 | 18 | −11 | 24 | 8 | [+10] | 43·1 | 51·9 |
| | N. | −2·8 | 95·2 | 42 | 13 | 18 | −11 | 24 | 33 | − 6 | 39·8 | 40·3 |
| Berkeley | E. | −2·8 | 95·5 | 53 | e 13 | 26 | − 5 | e 26 | 26 | +104 | e 44·6 | — |
| Lick | | −2·8 | 96·0 | 53 | e 13 | 28 | − 5 | e 26 | 2? | +75 | e 43·9 | — |
| Baku | | −2·8 | 97·4 | 311 | i 17 | 41 | ?$PR_1$ | i 26 | 49 | +107 | 49·0 | 53·2 |
| Piatigorsk | | −2·9 | 102·4 | 315 | e 14 | 26 | +18 | i 18 | 56 | ?$PR_1$ | — | — |
| Kucino | | −2·9 | 104·1 | 327 | — | | — | e 28 | 20 | +133 | e 53·4 | 64·3 |
| Tucson | E. | −2·9 | 104·9 | 57 | 14 | 17 | − 3 | e 25 | 52 | −23 | 43·9 | — |
| Makeyevka | | −2·9 | 105·4 | 320 | e 14 | 14 | − 9 | 26 | 36 | +16 | 51·0 | 67·6 |
| Pulkovo | | −2·9 | 107·0 | 333 | 14 | 20 | −10 | 25 | 21 | [+24] | 47·0 | 58·8 |
| Leningrad | | −2·9 | 107·0 | 333 | 14 | 20 | −10 | | — | — | 43·0 | 61·0 |
| Upsala | | — | 112·7 | 335 | — | | — | e 29 | 24 | +92 | e 52·0 | 63·4 |
| Cape Town | | — | 116·0 | 228 | 25 | 42 | ?L | (25 | 42) | [+10] | — | 62·0 |
| Budapest | | — | 117·7 | 322 | e 18 | 2? | [−44] | | — | — | e 59·0 | — |
| Athens | | — | 118·1 | 310 | e 20 | 1 | ?$PR_1$ | 29 | 52 | +77 | e 46·1 | 65·5 |
| Vienna | Z. | — | 119·0 | 324 | e 18 | 46 | [− 4] | i 20 | 18 | ?$PR_1$ | — | — |
| Hamburg | | — | 119·7 | 331 | e 19 | 2? | [+11] | e 20 | 18 | ?$PR_1$ | e 58·0 | 62·0 |
| Graz | | — | 120·1 | 323 | e 19 | 39 | [+47] | e 28 | 49 | − 1 | 53·0 | 62·7 |
| Zagreb | | — | 120·4 | 321 | 19 | 2? | [+ 9] | e 28 | 49 | − 3 | e 42·0 | — |
| Cheb | | — | 120·4 | 327 | e 20 | 18 | ?$PR_1$ | e 30 | 12 | +80 | — | 72·0 |
| Chicago | E. | — | 121·0 | 43 | — | | — | 27 | 30 | −87 | 50·0 | 57·1 |
| Dyce | | — | 122·2 | 340 | e 20 | 30 | ?$PR_1$ | e 30 | 29 | +83 | 58·0 | 72·3 |

*Continued on next page.*

| | | Corr. for Focus | Δ | Az. | P. | | O−C. | S. | | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ° | ° | m. | s. | s. | m. | s. | s. | m. | m. |
| Innsbruck | | — | 122·4 | 325 | e 19 | 38 | [+39] | e 28 | 58 | − 9 | e 60·0 | 75·0 |
| Hohenheim | E. | — | 122·8 | 327 | e 17 | 38 | [−82] | e 30 | 38 | ? | e 59·4 | 69·4 |
| | N. | — | 122·8 | 327 | e 21 | 22 | ? $PR_1$ | e 36 | 44 | ? $SR_1$ | e 64·3 | 67·6 |
| Venice | | — | 122·8 | 323 | e 18 | 44 | [−16] | — | | — | — | — |
| Loyola | N. | — | 122·8 | 57 | e 18 | 57 | [− 3] | e 33 | 22 | ? | e 49·0 | 71·4 |
| De Bilt | | — | 122·9 | 331 | e 18 | 59 | [− 2] | i 20 | 42 | ? $PR_1$ | e 55·0 | 60·9 |
| Ann Arbor | | — | 123·4 | 40 | i 20 | 32 | ? $PR_1$ | i 32 | 8 | ? | 54·5 | — |
| Pompeii | | — | 123·5 | 317 | e 19 | 49 | [+47] | e 30 | 47 | ? | — | — |
| Edinburgh | | — | 123·6 | 338 | e 21 | 2? | ? $PR_1$ | — | | — | 56·0 | 69·0 |
| Naples | | — | 123·7 | 317 | e 20 | 2? | ? $PR_1$ | e 30 | 2? | ? | — | — |
| Strasbourg | | — | 123·8 | 327 | e 19 | 1 | [− 2] | i 20 | 45 | ? $PR_1$ | 58·0 | 76·4 |
| Zurich | | — | 124·0 | 325 | e 19 | 1 | [− 2] | — | | — | — | — |
| Uccle | | — | 124·1 | 331 | 20 | 50 | ? $PR_1$ | e 30 | 27 | ? | e 54·0 | 61·4 |
| Rocca di Papa | | — | 124·3 | 319 | 19 | 2 | [− 2] | e 32 | 12 | ? | e 64·6 | 74·0 |
| Florence | | — | 124·3 | 320 | 19 | 12 | [+ 8] | 32 | 32 | ? | 61·0 | 78·5 |
| Stonyhurst | | — | 124·9 | 336 | 20 | 42 | ? $PR_1$ | — | | — | 60·0 | 65·5 |
| Bidston | | — | 125·5 | 336 | 20 | 56 | ? $PR_1$ | — | | — | 52·5 | 65·3 |
| Toronto | N. | — | 125·5 | 38 | i 20 | 46 | ? $PR_1$ | — | | — | 59·1 | 64·0 |
| Kew | | — | 125·8 | 335 | e 19 | 3 | [− 5] | i 20 | 59 | ? $PR_1$ | 57·0 | 69·0 |
| Moncalieri | | — | 125·8 | 323 | e 18 | 55 | [−13] | 32 | 4 | ? | 48·6 | — |
| Oxford | | — | 126·0 | 335 | e 21 | 0 | ? $PR_1$ | — | | — | 60·0 | 76·0 |
| Besançon | | — | 126·1 | 327 | — | | — | — | | — | 65·0 | — |
| Paris | | — | 126·3 | 330 | e 22 | 6 | ? | i 24 | 2 | ? $PR_2$ | 65·0 | 76·0 |
| Ottawa | N. | — | 126·7 | 34 | i 20 | 59 | ? $PR_1$ | 31 | 6 | ? | e 60·0 | 65·0 |
| Ithaca | | — | 127·9 | 38 | i 21 | 5 | ? $PR_1$ | e 37 | 55 | ? $SR_1$ | 61·0 | — |
| Fordham | | — | 130·5 | 39 | i 21 | 22 | ? $PR_1$ | 31 | 2 | ? | 58·3 | 65·4 |
| Barcelona | | — | 131·2 | 322 | e 21 | 12 | ? $PR_1$ | — | | — | e 43·8 | 48·7 |
| Tortosa | N. | — | 132·5 | 323 | e 19 | 55 | [+31] | 32 | 14 | ? | e 57·0 | 71·7 |
| Algiers | | — | 133·2 | 318 | e 19 | 19 | [− 7] | i 22 | 47 | ? $PR_1$ | e 48·0 | 80·0 |
| La Plata | | — | 134·2 | 151 | i 19 | 23 | [− 5] | — | | — | 63·6 | — |
| Alicante | | — | 134·7 | 321 | 19 | 7 | [−22] | — | | — | — | — |
| Toledo | | — | 135·8 | 325 | e 19 | 47 | [+15] | e 31 | 53 | ? | e 47·5 | 74·6 |
| Almeria | | — | 136·7 | 321 | e 19 | 18 | [−15] | e 30 | 37 | ? | e 51·8 | 76·2 |
| Granada | | — | 137·3 | 323 | i 19 | 13 | [−22] | — | | — | 70·0 | 85·2 |
| Malaga | | — | 138·1 | 323 | 20 | 16 | [+40] | 30 | 44 | ? | — | — |
| Rio Tinto | | — | 138·7 | 325 | 22 | 2? | ? $PR_1$ | — | | — | — | 43·0 |
| San Fernando | | — | 139·4 | 323 | 19 | 24 | [−14] | 36 | 2 | ? | 69·0 | 75·0 |
| La Paz | | — | 140·5 | 124 | i 19 | 56 | [+16] | 33 | 21 | ? | 77·9 | 100·4 |
| Sucre | | — | 141·4 | 130 | 19 | 32 | [−10] | 33 | 12 | ? | 77·3 | 89·3 |

Additional readings and notes: Riverview eP = +7m.13s., iS = +11m.42s. = $SR_1$ −24s., and +13m.17s., MN = +18·8m., MZ = +19·6m.; $T_g$ = 12h.22m.46s. Sydney $SR_2$ = +13m.32s. Adelaide $iPR_1$ = +7m.2s., $iSR_1$ = +12m.28s. Manila $PR_2$ = +8m.40s., PS = +12m.22s., $SR_1$ = +16m.17s., $SR_2$ = +17m.47s. Melbourne i = +15m.44s. Batavia PZ = +7m.28s. Perth $PR_1$ = +9m.9s. = $PR_2$ +1s.; all readings are given for 8h. Taihoku SN = +13m.19s. Nagasaki S = +9m.56s. = $PR_1$ +44s. Sumoto S = +10m.32s. = $PR_2$ +42s. Osaka MN = +21·0m. Toyooka $ePR_1$ = +8m.47s., eS = +10m.36s. = $PR_2$ +39s. Zi-ka-wei $PR_1$ = +8m.36s., $PR_2$ = +10m.55s., $PR_3$ = +12m.54s., $SR_1$ = +19m.22s., PS = +20m.46s. Wellington $PR_1$ = +9m.18s., $SR_1$ = +17m.27s., MN = +26·0m. Christchurch gives $PR_2$ as S? Ootomari S = +11m.52s. = $PR_2$ −10s. Honolulu, $P_gPN$ = +10m.42s., $ePR_1E$ = +13m.2s., $P_gS$ = +14m.30s. = $PR_2$ +0s., $eS_gSE$? = +20m.32s., $S_gSN$? = +20m.54s., $eSR_1N$ = +22m.32s., $SR_1E$ = +23m.2s., $SR_2E$ = +24m.2s.: $T_g$ = 12h.22m.37s. and 12h.22m.42s. Honolulu, Calcutta, and other stations may have recorded PS as S. The question is complicated by the allowance for focal depth. Irkutsk $SR_1$ = +24m.29s., $SR_2$ = +28m.1s. = $SR_3$ +1s. Ekaterinburg $PR_1$ = +16m.34s., i = +23m.36s. = [S] +17s., e = +25m.2s. = PS +21s., MN = +47·8m., MZ = +57·1m. Berkeley eE = +6m.26s., +17m.14s. = $PR_1$ −11s., and +32m.8s. Lick eN = +13m.32s., eSE = +17m.16s. = $PR_1$ −12s., eSNZ = +17m.19s. = $PR_1$ −9s. Baku MN = +57·6m., MZ = +65·4m. Kucino e = +28m.51s., +35m.14s., +37m.42s. = $SR_3$ −8s., and +43m.14s., i = +36m.18s., MN = +65·0m. Tucson $PR_1E$ = +18m.34s., eE = +19m.48s., and +26m.35s., PSE = +28m.2s., PPSE = +28m.44s., $eSR_1E$ = +33m.8s.: $T_g$ = 12h.23m.26s. and 12h.23m.33s. Makeyevka $PR_1$ = +18m.34s., PS = +28m.6s., $SR_1$ = +33m.36s., MN = +63·2m. Pulkovo $PR_1$ = +18m.31s., $PR_2$ = +21m.32s., iPS = +27m.59s., iPPS = +28m.35s., $SR_1$ = +33m.44s., $SR_2$ = +38m.38s., $SR_3$ = +41m.50s., MN = +57·5m., MZ = +63·4m. Leningrad $PR_1$ = +18m.46s., $PR_2$ = +21m.36s., PS = +28m.8s., iPPS = +28m.35s., $SR_1$ = +33m.52s., MN = +60·9m., MZ = +79·4m. Upsala MN = +62·6m. Hamburg MNZ = +70·0m. Zagreb e = +20m.54s. = $PR_1$ +28s., and

*Continued on next page.*

+36m.2s.? $=SR_1-44$s. Chicago $iPR_1E=+20$m.14s., $SPSE=$ +26m.16s. =[S]+28s., $PSE=+30$m.2s., $PPSE=+31$m.35s., $eSR_1E=$ +36m.32s., $eSR_2E=+41$m.2s. Hohenheim $eE=+20$m.38s. $=PR_1-4$s. De Bilt $MN=+67\cdot0$m., $MZ=+71\cdot9$m. Ann Arbor $ePR_2=+27$m.14s., $eSR_2$? $=+43$m.8s., $eLN=+54\cdot2$m. Strasbourg $e=+23$m.19s., +23m.22s., and +36m.2s.?, $MN=+59\cdot3$m., $MZ=+76\cdot3$m. Uccle $e=+37$m.50s. $=SR_1+13$s., $MN=+72\cdot2$m. Rocca di Papa $e=+16$m.46s. and +16m.53s. Toronto $eE=+26$m.19s. =[S]+19s., +30m.30s., and +38m.2s. $=SR_1+7$s., $eN=+30$m.46s., and +38m.12s. Kew $MN=$ +70·4m. Moncalieri $i=+21$m.10s. $=PR_1+8$s. Ottawa $PR_1=$ 26m.38s. $=PR_2-17$s., $PPSN=+38$m.24s., $SR_2N$? $=+49$m.32s., $ME=$ +115·0m. Fordham $PR_1E=+24$m.7s., $PR_2N=+27$m.12s., $SR_1N=$ +34m.57s., $SR_2=+38$m.47s., $LN=+59\cdot0$m., $MN=+65\cdot0$m. Toledo $PR_1=+22$m.53s., $MNW=+72\cdot1$m. Almeria $PR_1=+22$m.20s., $PR_2=$ +25m.26s., $MN=+71\cdot3$m. Granada $i=+19$m.24s. and +22m.16s. $=$ $PR_1-1$s., $PR_1=+23$m.4s., $PR_2=+25$m.48s., $SR_1=+37$m.25s. San Fernando $PR_1=+22$m.44s., $MN=+80\cdot0$m. La Paz $iPR_1=+23$m.22s., $iPR_2=+26$m.34s. Sucre $i=+19$m.50s., $PR_1=+23$m.8s., $PR_2=$ +27m.32s., $SR_1=+37$m.30s., $SR_2=+41$m.42s. $=SR_1+34$s.

NOTE ON THE DEEP FOCUS ASSUMPTION.

Rearranging the satisfactory observations in Azimuth we get the following corrections to △ : $\delta\triangle_1$ without any correction for deep focus, $\delta\triangle_2$ with the correction adopted.

| Az. | $\delta\triangle_1$ | Corr. | $\delta\triangle_2$ | Az. | $\delta\triangle_1$ | Corr. | $\delta\triangle_2$ |
|---|---|---|---|---|---|---|---|
| ° | ° | ° | ° | ° | ° | ° | ° |
| 62 | 0·0 | −2·4 | +2·4 | 313 | −3·6 | −2·7 | −0·9 |
| 148 | −2·5 | −1·9 | −0·6 | 316 | −1·6 | −1·7 | +0·1 |
| 169 | −1·5 | −1·3 | −0·2 | 326 | −1·3 | −1·7 | +0·4 |
| 190 | −0·5 | −1·4 | +0·9 | 328 | −2·5 | −2·8 | +0·3 |
| 224 | −1·6 | −1·7 | +0·1 | 332 | −2·2 | −1·8 | −0·4 |
| 268 | −1·1 | −1·6 | +0·5 | 335 | −0·4 | −2·5 | +2·1 |
| 270 | −2·0 | −1·7 | −0·3 | 342 | −1·6 | −1·7 | +0·1 |
| 275 | +0·4 | −0·6 | +1·0 | 345 | −2·4 | −1·7 | −0·7 |
| 292 | −0·3 | −2·6 | +2·3 | 350 | −2·3 | −1·7 | −0·6 |
| 300 | +1·6 | −2·4 | +4·0 | 350 | −2·4 | −1·8 | −0·6 |
| 306 | −4·3 | −2·6 | −1·7 | 350 | −1·5 | −1·7 | +0·2 |
| 307 | −1·5 | −1·9 | +0·4 | 352 | −1·6 | −1·7 | +0·1 |
| 307 | −2·0 | −2·6 | +0·6 | 357 | −1·8 | −1·9 | +0·1 |
| 312 | −1·3 | −1·4 | +0·1 | 358 | −1·9 | −2·2 | +0·3 |

The residuals $\delta\triangle_2$ suggest a slight change of (say) 0°·7 to the South. Perhaps 6°·0S. 145°·0E. would have been a better position for the epicentre.

Sept. 7d. Readings also at 0h. (Dehra Dun), 3h. and 4h. (Nagasaki), 9h. (Nagasaki and near Sumoto), 12h. (Strasbourg and Zurich), 13h. (Nagoya, Tokyo, Sucre, and Zagreb), 14h. (Tashkent and near Toyooka (2) ), 15h. (Manila), 19h. (Sucre, Ottawa, Ekaterinburg, and Tashkent), 20h. (Granada and Riverview), 23h. (La Paz and near Sucre).

Sept. 8d. 15h. 49m. 30s. Epicentre 23°·0N. 95°·0E. (as on 1924 Sept. 2d.).

$A=-\cdot080$, $B=+\cdot917$, $C=+\cdot391$; $D=+\cdot996$, $E=+\cdot087$; $G=-\cdot034$, $H=+\cdot389$, $K=-\cdot921$.

Rough. Some of the observations would be better suited by the epicentre 30°·0N. 99°·0E. of 1923 Oct. 20, with an increase of 72 sec. in $T_0$. But this would not suit Phu-Lien or Manila.

| | △ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Phu-Lien | 11·0 | 99 | e 3 3 | +19 | e 4 35 | −19 | 4·8 | — |
| Hong Kong | 17·7 | 88 | — | — | — | — | — | 8·3 |
| Bombay | 21·1 | 263 | 10 13 | ?L | — | — | (10·2) | 15·8 |
| Taihoku E. | 24·3 | 80 | — | — | e 10 0 | +10 | — | — |
| Zi-ka-wei | 24·8 | 65 | — | — | e 9 20 | −39 | — | — |
| Manila | 25·9 | 104 | — | — | e 9 55 | −25 | — | — |
| Tashkent | 28·2 | 316 | e 3 53 | ? | e 11 30 | +27 | e 17·5 | 21·9 |
| Irkutsk | 30·2 | 11 | e 7 43 | +73 | e 11 20 | −17 | 16·5 | — |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Baku | 41·6 | 306 | — | — | e 15 13 | +44 | 27·5 | — |
| Ekaterinburg | 42·0 | 332 | e 8 4 | − 7 | e 14 58 | +23 | 18·5 | 29·0 |
| Makeyevka | 51·2 | 316 | — | — | — | — | e 31·5 | — |
| Pulkovo | 57·6 | 327 | — | — | — | — | e 31·2 | — |
| Leningrad | 57·7 | 327 | — | — | — | — | 30·5 | — |
| De Bilt | 71·9 | 320 | — | — | — | — | e 41·5 | — |
| Uccle | 72·7 | 319 | — | — | — | — | — | 41·5 |
| Kew | 75·3 | 321 | — | — | — | — | 42·5 | — |
| Granada | 82·7 | 308 | — | — | — | — | e 10·5 | 13·2 |

Additional readings: Tashkent MNZ = +19·8m. Baku e = +18m.29s. = $SR_1$ +14s. Ekaterinburg e = +18m.0s., MN = +26·3m., MZ = +28 0m. Makeyevka L = +36·5m.

Sept. 8d. Readings also at 0h., 2h., 3h. (3), 4h., 6h., and 7h. (near Nagasaki), 9h. (Ekaterinburg, Manila, Tashkent, Zi-ka-wei, and near Amboina), 10h. (Tucson, Tacubaya, and Vera Cruz), 11h. (Oaxaca), 13h. (Ekaterinburg, Hong Kong, Manila, Zi-ka-wei, Phu-Lien, and near Taihoku), 14h. (Pulkovo, De Bilt, and Uccle), 16h. (Ekaterinburg), 17h. (near Amboina), 18h. (Tokyo and near Manila), 19h. (Leningrad).

Sept. 9d. 1h. 33m. 5s. Epicentre 28°·0N. 127°·0E. (as on 1924 May 23d.).

A = −·531, B = +·705, C = +·470; D = +·799, E = +·602; G = −·283, H = +·375, K = −·883.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | N. | 5·7 | 240 | 1 30 | + 2 | (2 30) | − 6 | 2·5 | 2·6 |
| Zi-ka-wei | | 5·8 | 305 | e 2 1 | +31 | — | — | — | — |
| Hong Kong | | 12·9 | 247 | — | — | — | — | — | 11·2 |
| Manila | | 14·6 | 204 | e 4 11 | +37 | — | — | 10·6 | — |
| Phu-Lien | | 19·9 | 253 | — | — | — | — | 9·9 | — |
| Irkutsk | | 29·5 | 331 | e 6 22 | − 1 | — | — | — | — |
| Tashkent | | 48·4 | 302 | e 8 56 | 0 | e 16 46 | +47 | e 23·7 | 32·3 |
| Ekaterinburg | | 54·0 | 323 | 1 9 39 | + 6 | e 17 21 | +12 | 22·9 | 35·3 |
| Baku | | 63·0 | 304 | — | — | — | — | e 36·7 | — |
| Makeyevka | | 68·9 | 315 | — | — | — | — | e 35·9 | 47·4 |
| Pulkovo | | 69·3 | 329 | — | — | — | — | e 36·9 | 45·0 |
| De Bilt | | 85·2 | 328 | — | — | — | — | e 46·9 | 55·8 |
| Edinburgh | | 86·0 | 335 | — | — | — | — | — | 58·9 |
| Strasbourg | | 86·2 | 325 | — | — | — | — | e 46·9 | — |
| Uccle | | 86·4 | 328 | — | — | — | — | e 45·9 | — |
| Kew | | 88·0 | 330 | — | — | — | — | e 47·9 | — |
| Moncalieri | | 88·4 | 322 | — | — | — | — | e 43·1 | — |
| Paris | | 88·6 | 327 | — | — | — | — | e 59·9 | — |
| Granada | | 100·0 | 323 | — | — | — | — | e 58·1 | 62·4 |
| San Fernando | E. | 102·0 | 324 | — | — | — | — | — | 66·9 |

Additional readings: Tashkent P = +5m.59s., e = +6m.16s., the P and S entered are given as simply e. Ekaterinburg e = +21m.15s. = $SR_1$ −9s., MN = +31·3m., MZ = +36·2m. Makeyevka L = +41·9m., MN = +49·3m. Pulkovo MZ = +45·1m., MN = +46·0m. De Bilt MN = +56·0m. Strasbourg e = +53m.55s., L = +55·9m. Granada L = +60·6m. San Fernando MN = +67·4m.

Sept. 9d. 3h. 51m. 12s. Epicentre 45°·6N. 10°·2E. (as on 1918 July 19d.).

A = +·689, B = +·124, C = +·715.

| | Δ | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|
| | ° | m. s. | s. | m. s. | s. | m. |
| Chur | 1·3 | e 0 20 | 0 | 0 37 | +1 | — |
| Zurich | 2·1 | i 0 34 | +1 | i 1 0 | +2 | — |
| Strasbourg | 3·4 | — | — | e 1 33 | −1 | e 1·8 |

Chur gives epicentre 45°55′N. 10°5′E.; the above is the nearest previously adopted origin.

Sept. 9d. 6h. 51m. 40s. Epicentre 35°·0S. 75°·0W. (as on Sept. 6d.).

A = +·212, B = −·791, C = −·574 ; D = −·966, E = −·259 ;
G = −·148, H = +·554, K = −·819.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| La Plata | 14·0 | 94 | 3 30 | + 4 | 6 9 | + 1 | 7·2 | — |
| Sucre | 18·2 | 31 | 4 6 | −13 | e 7 18 | −26 | 9·2 | 10·4 |
| La Paz | 19·5 | 20 | 4 34 | − 1 | e 8 23 | +10 | 10·3 | 12·8 |
| Ekaterinburg | 143·2 | 40 | e 53 33 | ?$SR_3$ | — | — | e 70·3 | — |
| Tashkent | 151·4 | 67 | — | — | e 56 20? | ?$SR_3$ | e 71·3 | 80·7 |

Additional readings: Sucre i = +4m.26s. ; $T_o$ = 6h.51m.42s. Ekaterinburg e = +56m.0s. and +64m.48s.

Sept. 9d. 17h. 31m. 46s. (I)
17h. 33m. 27s. (II)
17h. 38m. 10s. (III)
} Epicentre 42°·0S. 130°·0E. (see Sept. 19d. 20h.).

A = −·478, B = +·569, C = −·669 ; D = +·766, E = +·643 ;
G = +·430, H = −·513, K = −·743.

The observations make it clear that there was a series of shocks near the position given ; but neither on this occasion nor on Sept. 19d. 20h. (which was discussed together with it) do they allow a very precise determination of position. The residuals for P in round brackets refer to $PR_1$.

| | | Δ | Az. | P. | O−C. | L. |
|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. |
| III | Riverview | 18·5 | 72 | i 4 14 | − 9 | e 6·9 |
| I | Irkutsk | 96·9 | 345 | 16 53 | (−60) | — |
| III | | 96·9 | 345 | 17 7 | (−46) | — |
| I | Tashkent | 99·7 | 318 | i 19 42 | (+90) | — |
| II | | 99·7 | 318 | i 19 32 | (+80) | — |
| I | Baku | 109·6 | 307 | 19 12 | (− 4) | — |
| II | | 109·6 | 307 | 20 5 | (+49) | — |
| III | | 109·6 | 307 | 18 58 | (−18) | — |
| I | Ekaterinburg | 114·6 | 325 | 18 51 | [+15] | 31·2 |
| II | | 114·6 | 325 | 18 54 | [+18] | — |
| III | | 114·6 | 325 | 18 50 | [+14] | — |
| I | Vienna z. | 134·2 | 301 | 19 29 | [+ 1] | — |
| I | Rocca di Papa | 134·4 | 291 | e 19 50 | [+21] | — |
| II | | 134·4 | 291 | 18 43 | [−46] | — |
| I | Strasbourg | 139·8 | 300 | 19 14 | [−25] | — |
| I | De Bilt z. | 142·1 | 305 | i 19 41 | [− 2] | — |
| II | z. | 142·1 | 305 | e 19 49 | [+ 6] | — |
| I | Uccle | 142·4 | 302 | e 19 37 | [− 7] | — |
| II | Alicante | 142·6 | 280 | 19 33 | [−11] | — |
| I | Kew z. | 145·4 | 303 | e 19 41 | [− 8] | — |

Additional readings and notes: Irkutsk e = 17h.59m. Tashkent also e = 17h.52m.27s., i = 17h.52m.50s., 17h.54m.4s., e = 17h.55m.16s., 17h.56m.34s., 17h.57m.8s., 17h.59m.14s. Baku e = 18h.8m.13s. Ekaterinburg e = 18h.1m.57s., L may be [S] for No. III (tabular 18h. 3·6m.). Granada (Δ = 144°·4) records i = 17h.55m.19s., i = 17h.56m.26s., M = 18h.0m.50s.

Sept. 9d. 18h. 30m. 20s. Epicentre 58°·5S. 153°·0E. (as on 1926 Aug. 15d.).

A = −·466, B = +·237, C = −·853; D = +·454, E = +·891; G = +·760, H = −·387, K = −·522.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Christchurch | | 19·2 | 48 | — | — | — | — | 7·5 | 10·5 |
| Melbourne | | 21·4 | 342 | e 6 4 | +66 | e 9 4 | +11 | — | 11·7 |
| Wellington | | 22·0 | 48 | 4 57 | − 8 | 8 47 | −18 | 10·8 | 13·9 |
| Riverview | | 24·7 | 356 | e 5 9 | −26 | e 9 36 | −21 | e 10·4 | 12·9 |
| Sydney | | 24·7 | 356 | — | — | 9 40 | −17 | 10·5 | 11·0 |
| Adelaide | | 25·4 | 332 | 5 54? | +12 | i 10 35 | +24 | 12·4 | 14·0 |
| Sucre | | 96·3 | 142 | (16 59) | ?$PR_1$ | (23 59) | [− 5] | 29·5 | — |
| Bombay | | 101·0 | 288 | — | — | — | — | e 46·7 | — |
| Irkutsk | | 117·6 | 328 | e 18 40? | [− 6] | — | — | e 54·7 | — |
| Tashkent | | 121·3 | 298 | e 21 15 | ?$PR_1$ | — | — | e 52·1 | 64·1 |
| Loyola | N. | 129·0 | 93 | — | — | — | — | e 61·7 | — |
| Baku | | 130·0 | 284 | e 21 26 | ?$PR_1$ | e 39 48 | ?$SR_1$ | 59·7 | — |
| Ekaterinburg | | 136·5 | 307 | e 19 8 | [−25] | — | — | 33·7 | — |
| Toronto | | 145·0 | 89 | — | — | — | — | 62·9 | — |
| Ottawa | N. | 148·1 | 90 | — | — | — | — | e 68·7 | — |
| Granada | | 153·8 | 226 | i 19 53 | [− 8] | — | — | e 78·7 | 84·4 |
| San Fernando | | 154·1 | 221 | — | — | — | — | — | 87·7 |
| Tortosa | N. | 155·2 | 236 | — | — | — | — | e 79·7 | 89·1 |
| Strasbourg | | 157·5 | 259 | — | — | — | — | 91·7 | — |
| Paris | | 160·2 | 254 | — | — | — | — | e 89·7 | — |
| Uccle | | 160·5 | 260 | — | — | — | — | e 77·7 | — |
| De Bilt | | 160·8 | 264 | e 19 48 | [−21] | e 35 40? | ? | e 75·7 | — |
| Kew | | 163·3 | 257 | — | — | — | — | e 83·7 | — |
| Edinburgh | | 166·9 | 269 | — | — | — | — | 95·7 | — |

Additional readings and notes: Melbourne readings are given simply as e. Riverview MN = +11·7m. Adelaide MN = +14·4m. Sucre i = +30m.49s. = $SR_1$ − 62s.; the readings have been increased by 7min. Tashkent i = +21m.50s., e = +34m.54s. and +38m.24s., MZ = +62·5m. Ekaterinburg e = +20m.6s., +22m.57s. = $PR_1$ +46s., and +31m.29s. = S − 15s. San Fernando MN = +87·2m.

Sept. 9d. Readings also at 1h. (Leningrad, near Nagoya, and Toyooka), 3h. (near Kobe), 4h. (Dyce, Tashkent, and Venice), 6h. (Ekaterinburg), 7h. (Tashkent), 11h. (Baku, Irkutsk, Bombay, Phu-Lien, Hong Kong, and Ekaterinburg), 14h. (Tashkent), 16h. (Innsbruck), 23h. (Moncalieri and Tacubaya).

Sept. 10d. 8h. 26m. 38s. Epicentre 44°·0S. 80°·5W.

A = +·119, B = −·709, C = −·695; D = −·986, E = −·165; G = −·115, H = +·685, K = −·719.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| La Plata | | 19·6 | 70 | 4 40 | + 4 | 8 9 | − 6 | 10·5 | — |
| Sucre | | 28·1 | 32 | 6 8 | − 1 | e 10 51 | −10 | 13·9 | 16·7 |
| La Paz | | 29·4 | 25 | 6 23 | + 1 | e 11 36 | +12 | 14·7 | 20·0 |
| Toronto | E. | 87·6 | 2 | — | — | — | — | 37·4 | — |
| Ottawa | N. | 89·5 | 4 | — | — | e 23 37 | [+12] | e 39·4 | — |
| Paris | | 117·7 | 47 | — | — | — | — | e 63·4 | — |
| Kew | | 117·9 | 43 | — | — | — | — | e 59·4 | — |
| Uccle | | 119·9 | 46 | — | — | — | — | e 53·4 | — |
| Strasbourg | | 120·4 | 50 | — | — | — | — | e 63·4 | — |
| De Bilt | | 121·0 | 45 | — | — | — | — | e 53·4 | 66·0 |
| Baku | | 143·6 | 78 | e 20 30 | [+44] | — | — | e 82·4 | — |
| Ekaterinburg | | 152·6 | 48 | e 20 1 | [+ 1] | — | — | 43·4 | — |
| Tashkent | | 157·7 | 87 | e 21 14 | [+ 8] | — | — | e 68·4 | 88·0 |

Additional readings: Sucre i = +6m.15s.; $T_o$ = 8h.26m.48s. Ottawa eN = +30m.57s. = $SR_1$ + 34s. Ekaterinburg e = +24m.32s. = $PR_1$ + 38s., +31m.28s., and +40m.46s. Tashkent e = +22m.42s., +27m.38s., +30m.6s., +32m.40s., +36m.28s., +54m.28s., and +64m.22s., MN = +88·5m., MZ = +88·7m.

## Sept. 10d. 10h. 34m. 21s. Epicentre 9°·0S. 111°·0E.

(as on 1918 Sept. 4d. and near 9°·S. 111°·2E., the position given by Batavia).

$A = -\cdot354$, $B = +\cdot922$, $C = -\cdot156$; $D = +\cdot934$, $E = +\cdot358$; $G = +\cdot056$, $H = -\cdot146$, $K = -\cdot988$.

**A Focal depth of +·013 below normal has been used.**

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | | +0·1 | 3·8 | 298 | i 1 1 | 0 | — | — | — | — |
| Batavia | | 0·0 | 5·0 | 304 | i 1 17 | 0 | i 2 34 | +17 | — | — |
| Amboina | | −0·5 | 17·9 | 74 | i 3 23 | −47 | — | — | i 9·1 | — |
| Perth | | −0·6 | 23·4 | 169 | 5 9 | − 6 | 9 19 | − 2 | — | 14·8 |
| Manila | | −0·8 | 25·6 | 23 | i 5 39 | + 3 | i 10 39 | +40 | i 13·3 | 20·3 |
| Phu-Lien | | −0·9 | 30·1 | 351 | e 6 14 | − 6 | 11 11 | − 9 | 13·7 | 21·7 |
| Hong Kong | | −0·9 | 31·5 | 6 | 6 25 | − 9 | 11 29 | −15 | 15·5 | 22·7 |
| Colombo | | −1·0 | 34·9 | 296 | 7 9 | + 5 | 12 39 | 0 | 20·9 | 23·1 |
| Taihoku | | −1·0 | 35·5 | 16 | 7 6 | − 3 | 12 43 | − 5 | 15·3 | 21·0 |
| Adelaide | | −1·0 | 36·2 | 140 | i 7 2? | −13 | i 12 29 | −29 | 15·1 | 21·1 |
| Kodaikanal | | −1·0 | 38·4 | 299 | 7 9 | −24 | (13 3) | −25 | 13·1 | 21·9 |
| Calcutta | E. | −1·1 | 38·5 | 325 | 7 31 | − 2 | 13 22 | − 8 | 19·8 | — |
| | N. | −1·1 | 38·5 | 325 | 7 33 | 0 | 13 51 | +21 | 20·6 | 30·3 |
| Zi-ka-wei | | −1·1 | 41·4 | 14 | i 7 49 | − 8 | i 14 2 | − 9 | — | 31·0 |
| Hyderabad | | −1·1 | 41·6 | 310 | 7 49 | −10 | 14 2 | −12 | 21·0 | 27·5 |
| Melbourne | | −1·1 | 42·0 | 139 | i 7 9 | −53 | i 15 9 | +49 | — | 26·0 |
| Sydney | | −1·2 | 44·4 | 130 | 8 15 | − 5 | 14 51 | 0 | 23·9 | 24·9 |
| Riverview | | −1·2 | 44·4 | 130 | e 8 13 | − 7 | e 14 51 | 0 | e 21·9 | 27·7 |
| Hukuoka | N. | −1·2 | 46·4 | 22 | 8 29 | − 5 | e 15 14 | − 4 | e 19·3 | — |
| Bombay | | −1·2 | 46·8 | 308 | 8 33 | − 4 | 15 13 | − 9 | 23·9 | 26·2 |
| Sumoto | | −1·3 | 48·9 | 27 | 8 51 | 0 | (15 46) | − 3 | 15·8 | 16·6 |
| Kobe | | −1·3 | 49·3 | 26 | 8 52 | − 2 | (15 52) | − 2 | 15·9 | 16·3 |
| Osaka | | −1·3 | 49·4 | 27 | 9 5 | +10 | 16 7 | +12 | 24·4 | 28·6 |
| Toyooka | | −1·3 | 49·9 | 26 | 8 54 | − 4 | (15 12) | −49 | 15·2 | 23·5 |
| Nagoya | | −1·3 | 50·5 | 27 | e 8 54 | − 7 | — | — | — | — |
| Dehra Dun | | −1·3 | 50·5 | 323 | 5 54 | −187 | 13 9 | −180 | 20·7 | 26·3 |
| Simla | E. | −1·3 | 51·6 | 323 | 8 57 | −12 | 16 9 | −14 | 27·5 | 30·3 |
| | N. | −1·3 | 51·6 | 323 | 9 3 | − 6 | 16 15 | − 8 | 28·7 | 30·3 |
| Mizusawa | | −1·4 | 55·6 | 29 | 9 38 | + 4 | 17 17 | + 6 | 23·8 | — |
| Irkutsk | | −1·5 | 61·5 | 356 | 10 18 | + 6 | 18 42 | +19 | 32·7 | — |
| Ootomari | | −1·5 | 62·4 | 24 | 10 24 | + 6 | 18 45 | +10 | 23·7 | 37·1 |
| Tashkent | | −1·6 | 63·2 | 326 | i 11 26 | +63 | i 17 29 | −74 | — | 43·7 |
| Christchurch | | −1·6 | 63·4 | 135 | — | — | 19 39 | +53 | 33·1 | 53·1 |
| Wellington | E. | −1·6 | 64·5 | 132 | e 10 38 | + 7 | i 19 21 | +21 | 30·3 | 36·9 |
| | N. | −1·6 | 64·5 | 132 | — | — | i 19 19 | +19 | 30·0 | 34·7 |
| Baku | | −1·7 | 74·8 | 317 | i 11 41 | + 4 | i 21 20 | +17 | — | 47·2 |
| Apia | | −1·7 | 75·6 | 101 | (12 7) | +26 | (17 38) | ?$PR_3$ | 40·7 | — |
| Ekaterinburg | | −1·7 | 77·6 | 335 | i 11 58 | + 4 | i 21 51 | +15 | 23·7 | 49·4 |
| Piatigorsk | | −1·7 | 80·9 | 318 | e 13 14 | +60 | 23 22 | +68 | — | 37·7 |
| Makeyevka | | −1·8 | 85·6 | 320 | 12 37 | − 4 | 23 4 | − 3 | 38·7 | 59·5 |
| Helwan | | −1·8 | 85·7 | 301 | i 12 42 | + 1 | i 23 9 | + 1 | — | 50·2 |
| Cape Town | | −1·8 | 87·1 | 236 | 12 51 | + 1 | 23 21 | − 1 | — | 44·3 |
| Pulkovo | | −1·8 | 93·1 | 330 | e 13 11 | −13 | 24 33 | + 6 | 40·7 | 57·1 |
| Leningrad | | −1·8 | 93·2 | 330 | 13 12 | −11 | i 24 33 | + 5 | 43·7 | 57·0 |
| Athens | | −1·8 | 93·3 | 308 | e 13 9 | −15 | 24 13 | −16 | e 44·7 | 58·1 |
| Honolulu | E. | −1·8 | 94·2 | 69 | 13 27 | − 2 | i 24 19 | −20 | e 39·9 | 47·1 |
| | N. | −1·8 | 94·2 | 69 | e 13 57 | +26 | i 24 37 | − 2 | 40·1 | 65·5 |
| Lemberg | E. | −1·8 | 94·9 | 320 | e 13 27 | − 6 | e 30 3 | ?$SR_1$ | 55·7 | 62·1 |
| | N. | −1·8 | 94·9 | 320 | e 12 57 | −36 | e 29 57 | ?$SR_1$ | — | 61·5 |
| Belgrade | E. | −1·8 | 96·7 | 315 | e 24 16 | ?[S] | (e 24 16) | [+10] | e 55·6 | 63·8 |
| | N. | −1·8 | 96·7 | 315 | e 23 52 | ?[S] | (e 23 52) | [−14] | e 56·0 | 63·7 |
| Budapest | | −1·9 | 97·9 | 317 | 14 9 | +20 | 24 23 | [+11] | e 30·7 | 62·2 |
| Upsala | | −1·9 | 99·4 | 330 | e 13 53 | − 4 | i 25 27 | − 4 | e 48·7 | 58·9 |
| Vienna | | −1·9 | 99·8 | 319 | e 14 2 | + 3 | 24 20 | [− 3] | e 46·7 | 63·7 |
| Zagreb | | −1·9 | 99·9 | 315 | e 13 49 | −11 | e 24 28 | [+ 4] | 34·7 | 69·4 |
| Graz | | −1·9 | 100·3 | 317 | i 14 9 | + 7 | 25 44 | + 4 | 45·7 | 66·9 |
| Pompeii | | −1·9 | 100·7 | 311 | e 14 32 | +28 | e 23 52 | [−35] | 55·7 | — |
| Rocca di Papa | | −2·0 | 102·2 | 311 | e 13 56 | −16 | 24 38 | [+ 4] | e 45·7 | 91·1 |
| Cheb | | −2·0 | 102·4 | 320 | e 14 36 | +23 | e 24 41 | [+ 6] | e 48·7 | 63·7 |
| Venice | | −2·0 | 102·5 | 315 | 10 39? | ? | — | — | — | — |
| Innsbruck | | −2·0 | 103·1 | 317 | e 24 33 | ?S | (e 24 33) | [− 5] | e 54·7 | 63·7 |
| Florence | | −2·0 | 103·2 | 313 | 14 4 | −12 | 17 39 | ?$PR_1$ | 51·7 | 65·7 |

*Continued on next page.*

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Hamburg | | −2·0 | 103·7 | 324 | e 17 11 | ?$PR_1$ | i 24 47 | [+ 6] | e 52·7 | 68·9 |
| Ravensburg | | −2·0 | 104·3 | 318 | e 17 17 | ?$PR_1$ | e 28 31 | ?PS | e 39·8 | 73·4 |
| Chur | | −2·0 | 104·4 | 317 | e 14 5 | −17 | i 24 42 | [− 3] | — | — |
| Hohenheim | | −2·0 | 104·5 | 319 | e 16 59 | +156 | e 28 57 | +157 | e 38·6 | 64·4 |
| Zurich | | −2·0 | 105·0 | 316 | e 14 18 | − 7 | 24 48 | [+ 1] | — | — |
| Strasbourg | | −2·1 | 105·5 | 319 | 14 18 | − 9 | 26 27 | − 1 | 52·7 | 71·2 |
| Bergen | | −2·1 | 105·5 | 330 | — | — | — | — | e 45·7 | — |
| Moncalieri | | −2·1 | 105·7 | 315 | 14 9 | −19 | 27 29 | +60 | 48·6 | 83·5 |
| Besançon | | −2·1 | 106·7 | 317 | e 17 45 | [−18] | — | — | 53·7 | — |
| De Bilt | | −2·1 | 106·8 | 322 | 14 22 | −11 | e 25 3 | [+ 7] | e 50·7 | 69·5 |
| Uccle | | −2·1 | 107·5 | 321 | e 14 45 | + 9 | i 25 4 | [+ 5] | e 48·7 | 61·1 |
| Paris | | −2·1 | 108·9 | 319 | e 18 15 | [+ 4] | e 25 11 | + 6 | 58·7 | 67·7 |
| Algiers | | −2·1 | 109·7 | 306 | e 18 23 | [+ 9] | i 27 3 | − 3 | e 53·7 | 65·7 |
| Dyce | | −2·1 | 109·9 | 328 | — | — | — | — | 53·7 | 72·1 |
| Barcelona | | — | 110·0 | 310 | e 17 41 | [−41] | — | — | e 54·9 | 70·3 |
| Kew | | — | 110·2 | 321 | e 14 36 | −22 | e 24 50 | ?$PR_2$ | 48·7 | 60·9 |
| Oxford | | — | 110·7 | 321 | 19 2 | $PR_1$ | — | — | 48·7 | 82·9 |
| Edinburgh | | — | 110·8 | 327 | e 15 3 | + 2 | i 28 43 | +68 | 53·7 | 74·7 |
| Stonyhurst | | — | 111·0 | 323 | e 19 14 | $PR_1$ | 28 29 | +52 | 55·7 | 61·0 |
| Tortosa | | — | 111·3 | 310 | e 15 28 | +24 | 26 41 | −59 | e 49·7 | 75·2 |
| Bidston | | — | 111·4 | 323 | e 19 24 | $PR_1$ | e 27 7 | −34 | 44·8 | 65·1 |
| Alicante | | — | 112·4 | 308 | e 19 43 | $PR_1$ | i 27 23 | −26 | 39·4 | 69·0 |
| Plymouth | | — | 112·8 | 321 | 29 24 | ?S | (29 24) | +92 | — | — |
| Almeria | | — | 114·0 | 307 | e 14 36 | −40 | 27 58 | − 4 | e 60·0 | 63·5 |
| Toledo | | — | 114·9 | 310 | e 18 31 | [− 7] | e 27 46 | −23 | e 45·9 | 71·9 |
| Granada | | — | 115·0 | 306 | e 15 17 | − 3 | — | — | 57·7 | 76·7 |
| Malaga | | — | 115·7 | 306 | e 18 47 | [+ 7] | 29 37 | +81 | 37·3 | 75·1 |
| San Fernando | | — | 117·1 | 306 | e 18 10 | [−34] | 28 9 | −18 | — | — |
| Rio Tinto | | — | 117·3 | 307 | 17 39? | [−66] | — | — | — | 36·7 |
| Lisbon | | — | 119·0 | 309 | — | — | — | — | e 105·7? | — |
| Victoria | E. | — | 119·9 | 38 | 20 7 | $PR_1$ | — | — | 56·1 | 57·3 |
| | N. | — | 119·9 | 38 | 20 17 | $PR_1$ | — | — | 51·5 | 83·9 |
| Spokane | | — | 123·8 | 37 | e 14 6 | ? | — | — | 61·7 | 72·7 |
| Berkeley | E. | — | 124·3 | 50 | — | — | e 26 27 | [+30] | e 55·5 | — |
| Azores | | — | 131·6 | 313 | 87 51 | ?L | — | — | (87·9) | 96·9 |
| La Plata | | — | 134·9 | 192 | 19 26 | [− 4] | — | — | 61·7 | — |
| Tucson | E. | — | 134·9 | 51 | i 19 22 | [− 8] | — | — | — | 86·1 |
| | N. | — | 134·9 | 51 | i 19 25 | [− 5] | 26 15 | ?$PR_2$ | 58·7 | 84·3 |
| Ottawa | | — | 143·1 | 6 | i 19 33 | [−12] | e 29 37 | ?$PR_2$ | e 67·7 | 87·7 |
| Chicago | | — | 143·3 | 23 | i 19 31 | [−13] | i 30 59 | ? | e 61·5 | 66·9 |
| Toronto | N. | — | 144·2 | 11 | i 19 31 | [−16] | e 29 36 | ?$PR_2$ | 71·7 | 84·7 |
| Ann Arbor | | — | 144·3 | 17 | i 19 39 | [− 8] | e 29 45 | ?$PR_2$ | e 51·3 | 76·0 |
| St. Louis | N. | — | 144·8 | 29 | e 19 36 | [−12] | e 30 5 | $PR_2$ | 50·4 | 84·7 |
| Ithaca | | — | 145·9 | 9 | i 19 42 | [− 8] | e 29 57 | $PR_2$ | 74·6 | — |
| Harvard | E. | — | 146·6 | 2 | e 19 45 | [− 6] | — | — | 62·9 | 81·9 |
| Fordham | | — | 147·8 | 6 | i 19 57 | [+ 4] | 30 37 | ?$PR_2$ | e 52·9 | 71·1 |
| Loyola | N. | — | 151·2 | 40 | e 19 27 | [−30] | e 30 54 | $PR_2$ | e 66·0 | 103·5 |
| Sucre | | — | 151·8 | 187 | — | — | 34 26 | ? | 69·7 | 91·7 |
| La Paz | | — | 154·5 | 182 | i 20 0 | [− 2] | e 33 56 | ? | 73·5 | 78·5 |
| San Juan | E. | — | 170·2 | 344 | — | — | — | — | 94·3 | — |

Additional readings and notes: In the [S] observations no allowance has been made for the deep focus at present. Malabar i = +1m.6s. Batavia iP = +1m.19s. Amboina L = +14·7m. Manila PS = +9m.7s., $SR_1$ = +11m.49s., MN = +21·5m. Phu-Lien MN = +18·1m. Hong Kong ? = +7m.57s. Taihoku PE = +8m.46s., SN = +12m.33s., MN = +25·3m. Zi-ka-wei $PR_1$ = +8m.11s., MNZ = +30·5m. Melbourne e = +11m.27s. Sydney $SR_2$ = +18m.45s. Riverview PS = +15m.1s., e$SR_1$ = +18m.17s. and +18m.52s. = $SR_2$ − 2s., MN = +25·0m., MZ = +32·9m. Sumoto S = +12m.21s. Dehra Dun readings have all been increased by 1h. Mizusawa PN = +9m.40s. Tashkent iP = +11m.28s. and +11m.33s. Christchurch readings have all been increased by 1h. Wellington $PR_1$E = +13m.56s., $SR_1$E = +23m.43s., $SR_2$N = +26m.31s., $SR_2$E = +27m.18s. = $SR_2$ +4s. Baku i = +11m.43s. and +13m.37s. Apia $PR_1$ = +13m.4s., L = +22·1m., also +26m.17s. = $SR_1$ − 29s. and +28m.49s.; the readings have all been decreased by 1min. Ekaterinburg iP = +12m.21s., $PR_1$ = +15m.1s., iS = +22m.50s., MN = +47·9m., MZ = +48·5m. Piatigorsk iP = +13m.19s., i = +23m.32s. Makeyevka $PR_1$ = +16m.18s., PS = +23m.56s., $SR_1$ = +29m.5s., MN = +54·2m., MZ = +59·7m. Pulkovo iP = +13m.16s., $PR_1$ = +17m.0s., i = +17m.21s., $S_4P_4S$ = +23m.48s., $SR_1$ = +30m.57s., MN = +51·9m., MZ = +57·2m.

*Continued on next page.*

Leningrad iP = +13m.16s., $PR_1$ = +17m.17s., $PR_2$ = +18m.51s., $S_4P_4S$ = +23m.52s., iPS = +26m.23s., $SR_1$ = +31m.51s., MN = +56·3m., MZ = +60·7m. Athens $ePR_1$ = +16m.59s., $ePR_2$ = +19m.56s., $eSR_1$ = +30m.15s., eLN = +49·3m., MN = +62·5m. Honolulu $ePR_1N$ = +17m.9s., $ePR_1E$ = +17m.15s., $ePR_2E$ = +21m.21s., $PR_2N$ = +21m.33s., ePSE? = +26m.27s., PSN = +26m.39s., $SR_1N$? = +30m.9s., $SR_1E$? = +30m.15s. and +32m.39s., $eSR_2E$ = +35m.39s. ; $T_o$ =10h.34m.31s. and 10h.34m.35s. Belgrade eSN = +36m.42s., eSE = +37m.12s. Budapest MN = +65·4m. Upsala iE = +24m.22s. =[S] −12s., MN = +54·6m. Vienna $PR_1$ = +17m.2s., $PR_2$ = +19m.17s., $S_6P_6S$? = +24m.28s., PS = +25m.23s., PPS = +25m.42s., $SR_1$ = +30m.16s., $SR_2$ = +34m.24s., MN = +61·7m. Zagreb e = +14m.4s., +18m.9s., and +24m.19s., $ePR_1$ = +17m.32s. : all readings have been diminished by 1h. Graz $PR_1$ = +17m.54s., $SR_1$ = +32m.28s. Rocca di Papa ePZ = +13m.59s., ePE = +14m.2s., $PR_1Z$ = +16m.29s. Hamburg eN = +34m.39s., eE = +42m.15s., MZ = +65·9m., MN = +67·1m. Ravensburg eE = +13m.49s. and = +18m.23s., $ePR_2E$ = +24m.47s. Hohenheim $ePR_2$ = +24m.45s., eLN = +37·5m., MN = +57·8m. Strasbourg $PR_1$ = +18m.51s. and +18m.55s., PS = +27m.7s., MZ = +73·1m., MN = +73·3m. De Bilt eZ = +17m.44s., eLN = +47·7m., MN = +57·1m., MZ = +69·7m. Uccle $ePR_1$ = +18m.33s. Barcelona i = +19m.26s., MN = +72·3m. Kew $PR_1$ = +18m.59s., MN = +57·7m. Oxford $PR_1$ = +27m.19s. Tortosa eN = +17m.39s., MN = +68·8m. Alicante MN = +66·9m. Almeria $PR_1$ = +19m.47s., $SR_1$ = +31m.19s., MN = +64·7m. Toledo iNE = +19m.42s. Granada i = +17m.1s., iP = +19m.1s., $PR_1$ = +19m.43s., $PR_2$ = +22m.37s., $PR_3$ = +24m.37s., PS = +29m.19s., PPS = +30m.24s., $SR_1$ = +35m.31s. Malaga P = +19m.41s., MN = +75·6m. Spokane i = +14m.31s., eN = +19m.6s. and +38m.1s. Berkeley eE = +37m.45s. Tucson $PR_1N$ = +21m.51s., $PR_1E$ = +21m.54s., $P_6P_6SE$ = +22m.51s., $PR_2E$ = +25m.9s., $iPR_2N$ = +25m.16s., $PR_3N$ = +27m.51s., $PR_4E$ = +28m.57s., SPE = +32m.3s., $eSR_1E$ = +39m.33s., $SR_1N$ = +40m.15s., $SR_2E$ = +47m.41s., $SR_3N$? = +48m.39s. Ottawa iN = +19m.54s., $PR_1$ = +22m.45s., $eSR_1N$? = +41m.6s., $eSR_2N$ = +46m.54s. ; $T_o$ =10h.34m.11s. Chicago $iPR_1E$ = +23m.2s., $PR_2E$ = +25m.40s., ePSE? = +32m.33s., iPSE? = +33m.36s., iPPSE = +35m.11s., $SR_1E$? = +41m.21s. and +42m.9s., $iSR_2E$? = +45m.34s., $SR_2E$? = +45m.51s., $SR_3E$ = +51m.3s., $SR_4E$? = +53m.51s. Toronto PE = +19m.33s., $PR_1N$ = +23m.6s., ME = +84·0m. Ann Arbor $iPR_1$ = +23m.21s., $ePR_2$ = +26m.15s., ePS = +32m.3s., $iSR_2$ = +42m.3s., LN = +52·3m., MN = +97·0m. St. Louis eE = +19m.45s., eN = +31m.34s., +35m.36s., and +40m.58s. Ithaca e = +22m.59s., +32m.49s., and +41m.11s. Harvard iPE = +20m.1s., $PR_1E$ = +23m.25s., $PS_6P_6SE$ = +32m.59s., PSE = +33m.57s., PPSE = +35m.27s., $PR_1E$ = +40m.47s. and +42m.18s., $SR_2E$? = +49m.21s. Fordham $PR_1$ = +23m.39s., PS = +30m.51s., $SR_2N$ = +35m.22s., $SR_3$ = +37m.40s. Loyola iPE = +19m.39s. Sucre $SR_1$ = +43m.14s. La Paz i = +21m.25s., and +31m.0s., $PR_1$ = +23m.39s., $PR_2$ = +26m.45s., $PR_3$ = +29m.40s., $SR_1$ = +39m.20s., $SR_2$ = +42m.40s. ; $T_o$ =10h.34m.38s. San Juan $PR_1N$ = +25m.13s., $PR_1$ = +25m.39s., eE = +26m.22s., eN = +35m.9s. and +38m.44s., LN = +95·0m.

**Sept. 10d. 19h. 52m. 2s. Epicentre 9°·0S. 111°·0E.**

(As at 10h., but focal depth assumed 0·030 instead of 0·013. The evidence is slight, but the stations being all approximately in the same azimuth it is difficult to reconcile the values of △ (without this assumption).

| | Corr. for Focus | △ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | +0·2 | 3·8 | 298 | 0 57 | − 5 | — | — | — | — |
| Batavia | 0·0 | 5·0 | 304 | 1 16 | − 1 | i 2 39 | +22 | — | — |
| Tashkent | −3·7 | 63·2 | 326 | — | — | e 21 18 | +181 | e 35·0 | 44·6 |
| Ekaterinburg | −4·0 | 77·6 | 335 | e 11 38 | − 2 | e 21 13 | + 4 | 22·0 | — |
| Pulkovo | −4·2 | 93·1 | 330 | — | — | e 24 17 | +15 | e 53·0 | — |

Tashkent gives also e = +19m.55s., +20m.4s., +22m.46s. = $SR_1$ −14s., and +30m.58s., MZ = +39·7m.

Sept. 10d. Readings also at 3h. (Moncalieri, near Mostar, and Rocca di Papa, near Toyooka), 4h. (Bagnères and near Matuyama), 5h. (Ekaterinburg and near Mizusawa), 10h. (Rocca di Papa, Amboina, Tacubaya, and Florence), 11h. (near Toyooka), 12h. (Sucre and Malabar (2) ), 13h. (Sucre, Tacubaya, Batavia (2), and Malabar), 14h. (Taihoku), 15h. (Malabar (2) and Batavia), 16h. (Tashkent, Batavia, and Malabar), 17h. (Batavia and Malabar), 19h. (Batavia (2) and Malabar (3) ), 20h. (Matuyama), 22h. (Tokyo), 23h. (near La Paz).

Sept. 11d. 12h. 27m.32s. Epicentre 9°·0S. 111°·0E.

Focal depth 0·013 (as on Sept. 10d. 10h.).

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Malabar | | +0·1 | 3·8 | 298 | i 1 5 | + 4 | 1 50 | + 3 | — | — |
| Batavia | | 0·0 | 5·0 | 304 | i 1 19 | + 2 | i 2 13 | − 4 | i 3·4 | — |
| Amboina | | −0·5 | 17·9 | 74 | 3 22 | −48 | i 6 59 | −28 | 14·8 | — |
| Manila | | −0·8 | 25·6 | 23 | e 5 40 | + 4 | (10 21) | +22 | 10·3 | — |
| Phu-Lien | | −0·9 | 30·1 | 351 | e 5 25 | −55 | — | — | — | 18·5 |
| Hong Kong | | −0·9 | 31·5 | 6 | 6 38? | + 4 | — | — | — | 28·5 |
| Colombo | | −1·0 | 34·9 | 296 | 12 28 | ?S | (12 28) | −11 | — | 33·8 |
| Adelaide | | −1·0 | 36·2 | 140 | e 6 53 | −22 | 12 40 | −18 | 16·6 | 21·8 |
| Kodaikanal | | −1·0 | 38·4 | 299 | 13 10 | ?S | (13 10) | −20 | — | — |
| Hyderabad | | −1·1 | 41·6 | 310 | 7 45 | −14 | 13 55 | −19 | — | 27·2 |
| Melbourne | | −1·1 | 42·0 | 139 | i 8 16 | +14 | i 13 52 | −28 | — | 26·6 |
| Riverview | | −1·2 | 44·4 | 130 | — | — | e 12 40? | −131 | e 22·4 | 28·1 |
| Bombay | | −1·2 | 46·8 | 308 | 8 27 | −10 | 15 12 | −10 | e 23·9 | 31·6 |
| Simla | E. | −1·3 | 51·6 | 323 | — | — | — | — | e 26·5 | — |
| Irkutsk | | −1·5 | 61·5 | 356 | e 10 15 | + 3 | e 18 38 | +15 | 34·5 | 38·4 |
| Baku | | −1·7 | 74·8 | 317 | i 11 39 | + 2 | i 21 15 | +12 | 35·5 | 43·3 |
| Ekaterinburg | | −1·7 | 77·6 | 335 | i 11 56 | + 2 | i 21 43 | + 7 | 33·5 | 43·5 |
| Makeyevka | | −1·8 | 85·6 | 320 | e 12 38 | − 3 | 23 8 | + 1 | 40·5 | 59·8 |
| Pulkovo | | −1·8 | 93·1 | 330 | 13 17 | − 6 | 24 23 | − 4 | 47·5 | 58·1 |
| Leningrad | | −1·8 | 93·2 | 330 | i 13 15 | − 8 | — | — | 50·4 | 59·7 |
| Vienna | Z. | −1·9 | 99·8 | 319 | e 17 54 | $PR_1$ | — | — | — | — |
| Hamburg | | −2·0 | 103·7 | 324 | — | — | — | — | e 61·5 | — |
| Strasbourg | | −2·1 | 105·5 | 319 | e 18 28 | $PR_1$ | — | — | 59·5 | — |
| Moncalieri | | −2·1 | 105·7 | 315 | e 21 42 | $PR_2$ | — | — | 58·4 | — |
| De Bilt | | −2·1 | 106·8 | 322 | — | — | e 25 4 | [+ 8] | e 51·5 | 71.5 |
| Paris | | −2·1 | 108·9 | 319 | e 19 13 | $PR_1$ | — | — | 57·5 | — |
| Dyce | | −2·1 | 109·9 | 328 | — | — | e 27 5 | − 3 | 59·8 | 70·5 |
| Kew | | — | 110·2 | 321 | — | — | e 28 28 | +58 | 62·5 | — |
| Oxford | | — | 110·7 | 321 | — | — | — | — | — | 76·5 |
| Edinburgh | | — | 110·8 | 327 | — | — | — | — | e 68·5 | — |
| Granada | | — | 115·0 | 306 | i 19 50 | $PR_1$ | — | — | 57·7 | 63·5 |
| San Fernando | E. | — | 117·1 | 308 | — | — | — | — | — | 85·5 |
| Ottawa | | — | 143·1 | 6 | — | — | e 27 4 | $PR_2$ | e 74·9 | — |
| Sucre | | — | 151·8 | 187 | i 19 58 | [ 0] | — | — | 80·8 | 92·8 |
| La Paz | | — | 154·5 | 182 | 20 0 | [− 1] | — | — | 82·5 | — |

Additional readings and notes: Riverview $eSR_1(?) = +17m.16s.$, MN = +25·7m. Melbourne i = +3m.10s., P and S are given as i simply. Simla eN = +25m.22s. Irkutsk MZ = +42·1m. Baku MN = +51·1m., MZ = +54·9m. Ekaterinburg $PR_1 = +14m.51s.$, $PR_2 = +17m.12s.$, $PR_3 = +18m.54s.$, $SR_1 = +26m.50s.$, $SR_2 = +31m.6s.$, $SR_3 = +31m.36s.$, MN = +43·7m., MZ = +49·4m. Makeyevka PS = +24m.7s., MN = +55·6m. Pulkovo $PR_1 = +17m.0s.$, $S_4P_4S = +23m.50s.$ =[S]+3s. MN = +57·4m., MZ = +58·3m. Leningrad $PR_1 = +16m.59s.$, MZ = +62·8m. Dyce e = +36m.28s. San Fernando MN = +80·0m. Ottawa eE = +31m.58s., eN = +44m.10s. Sucre i = +20m.13s. and +21m.4s. La Paz i = +20m.17s. and +20m.53s.

Sept. 11d. 17h. 2m. 30s. Epicentre 20°·8N. 106°·6E. (Phu-Lien).

A = −·267, B = +·896, C = +·355.

(The epicentre is clearly near Phu-Lien, but as there is scarcely sufficient evidence to show in which direction the displacement should be, Phu-Lien itself has been adopted for reference).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Phu-Lien | 0·0 | — | — | — | e 0 5 | + 5 | 0·3 | — |
| Irkutsk | 31·5 | 358 | e 6 57 | +14 | e 11 59 | − 1 | — | — |
| Bombay | 31·7 | 275 | e 9 30? | ? | — | — | — | — |
| Tashkent | 37·5 | 315 | (e 7 36) | + 2 | — | — | e 7·6 | 19·1 |
| Ekaterinburg | 49·2 | 330 | i 4 2 | −299 | e 13 53 | −136 | 16·5 | — |
| Baku | 51·7 | 309 | — | — | — | — | 23·5 | — |
| De Bilt | 80·5 | 323 | — | — | — | — | e 37·5 | — |

Sept. 11d. Readings also at 1h. (Tashkent, Malabar, and near Batavia), 3h. (Tokyo), 6h. (Malabar (2) and Batavia (2) ), 7h. (Tashkent), 10h. (Batavia and near Malabar), 11h. (Apia), 12h. (Tashkent and Malabar), 13h. (near Batavia (2) and Malabar (2) ), 14h. (near Batavia and Malabar), 15h. (Tashkent, Irkutsk, Baku, Adelaide, and Tacubaya), 22h. (Sucre, Tashkent, and Ekaterinburg), 23h. (Batavia, Malabar, Granada, Baku, Moncalieri, and Sucre.)

**Sept. 12d. 15h. 43m. 36s.** Epicentre **22°·0N. 120°·5E.**
(as on 1925 April 16d.).

A = −·471, B = +·799, C = +·375 ; D = +·862, E = +·508 ;
G = −·190, H = +·323, K = −·927.

(Was there a second shock about a minute later, shown by Zi-ka-wei and by the S of several stations, Calcutta, Vienna, Graz, Zagreb, Pompeii, etc. ?).

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Taihoku | E. | 3·2 | 18 | 0 48 | − 2 | (1 28) | 0 | 1·5 | 1·8 |
| Hong Kong | | 5·9 | 274 | 1 49 | +18 | — | — | 3·4 | 4·4 |
| Manila | | 7·4 | 176 | e 2 23 | +31 | i 4 59 | +98 | i 5·8 | 8·5 |
| Zi-ka-wei | | 9·2 | 5 | e 3 39 | +80 | 5 34 | +86 | — | 6·1 |
| Phu-Lien | | 13·0 | 267 | e 3 33 | +20 | i 7 5 | +81 | 8·4 | 9·6 |
| Nagasaki | | 13·5 | 36 | e 2 45 | −35 | — | — | 7·0 | 10·1 |
| Hukuoka | N. | 14·5 | 35 | 3 34 | + 1 | — | — | e 8·6 | — |
| Sumoto | | 17·6 | 43 | e 4 20 | + 8 | e 7 19 | −12 | e 11·0 | 13·3 |
| Kobe | | 18·0 | 42 | — | — | — | — | — | 14·5 |
| Osaka | | 18·2 | 43 | 4 29 | +10 | (7 57) | +13 | 8·0 | 13·8 |
| Nagoya | | 19·5 | 44 | 4 23 | −12 | (7 55) | −18 | 7·9 | 8·0 |
| Mizusawa | | 24·5 | 41 | 5 17 | −16 | 9 26 | −28 | 13·4 | — |
| Calcutta | E. | 29·8 | 277 | 6 35 | + 9 | 12 34 | +63 | 20·8 | — |
| | N. | 29·8 | 277 | 6 37 | +11 | 12 20 | +49 | — | — |
| Batavia | | 31·2 | 209 | 5 38 | −62 | — | — | — | — |
| Irkutsk | | 32·7 | 342 | i 6 36 | −18 | e 12 15 | − 4 | 17·4 | 19·3 |
| Dehra Dun | | 38·8 | 294 | (7 54) | +10 | (13 39) | −10 | 18·2 | 18·9 |
| Simla | E. | 39·6 | 293 | 7 30 | −21 | 13 36 | −24 | — | 25·8 |
| | N. | 39·6 | 293 | 7 48 | − 3 | 13 48 | −12 | — | 22·8 |
| Hyderabad | | 39·8 | 273 | 7 50 | − 3 | 13 48 | −15 | 19·3 | 26·5 |
| Colombo | | 42·0 | 256 | — | — | — | — | 27·9 | 30·5 |
| Kodaikanal | | 42·9 | 262 | 14 0 | ?S | (14 0) | −47 | 29·6 | 30·6 |
| Bombay | | 44·6 | 274 | 8 32 | + 2 | 15 7 | − 3 | 23·1 | 29·0 |
| Tashkent | | 46·9 | 310 | i 8 43 | − 3 | i 15 42 | + 2 | e 24·4 | 35·6 |
| Ekaterinburg | | 55·4 | 325 | i 9 42 | 0 | i 17 27 | + 1 | 22·4 | 35·6 |
| Baku | | 61·5 | 307 | — | — | — | — | 29·4 | 37·2 |
| Riverview | | 63·0 | 151 | — | — | e 18 54 | − 7 | e 32·7 | 36·9 |
| Makeyevka | | 69·0 | 317 | e 11 14 | + 3 | e 20 26 | +12 | 33·4 | 47·9 |
| Pulkovo | | 71·2 | 329 | i 11 28 | + 4 | 20 43 | + 3 | 36·4 | 47·1 |
| Leningrad | | 71·2 | 329 | i 11 26 | + 2 | 20 40 | 0 | 35·3 | 45·0 |
| Honolulu | | 74·6 | 73 | e 11 48 | + 2 | 21 18 | − 3 | 38·4 | 43·1 |
| Upsala | | 77·3 | 330 | — | — | e 21 54 | + 2 | e 37·4 | 42·6 |
| Budapest | | 81·3 | 318 | 12 41 | +14 | — | — | e 44·4 | 50·6 |
| Athens | | 81·8 | 310 | e 12 20 | − 9 | 23 3 | +19 | 32·2 | 61·2 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Bergen | | 82·5 | 335 | — | — | — | — | e 36·4 | — |
| Vienna | | 82·6 | 320 | e 12 33 | − 1 | 23 52 | +59 | e 42·4 | 54·4 |
| Graz | | 83·6 | 320 | e 12 37 | − 3 | e 24 16 | +71 | 45·4 | 49·8 |
| Hamburg | | 83·8 | 326 | e 12 38 | − 3 | e 23 40 | +33 | e 44·4 | 45·4 |
| Zagreb | | 83·9 | 318 | e 12 41 | 0 | e 24 6 | +58 | e 45·4 | — |
| Cheb | | 84·1 | 322 | e 12 44 | + 1 | e 23 19 | +10 | e 43·4 | 65·4 |
| Innsbruck | N.E. | 86·1 | 320 | — | — | — | — | e 44·4 | — |
| Venice | | 86·4 | 319 | 14 24? | +89 | — | — | — | — |
| Hohenheim | | 86·6 | 322 | — | — | — | — | e 46·1 | 57·0 |
| Ravensburg | E. | 86·8 | 322 | — | — | — | — | e 46·9 | 49·8 |
| De Bilt | | 87·0 | 326 | i 12 54 | − 5 | — | — | e 40·4 | 48·8 |
| Pompeii | | 87·1 | 314 | e 13 2 | + 2 | e 24 44 | +62 | — | — |
| Dyce | | 87·5 | 334 | i 13 2 | 0 | — | — | 40·9 | 49·6 |
| Strasbourg | | 87·6 | 322 | 13 0 | − 3 | e 23 50 | + 2 | 42·4 | 52·4 |
| Zurich | | 87·7 | 320 | e 13 17 | +14 | e 23 50 | + 1 | — | — |
| Florence | | 87·8 | 317 | e 23 24? | ?S | (e 23 24) | [+10] | 48·4 | 49·7 |
| Rocca di Papa | | 87·9 | 315 | 12 59 | − 5 | e 23 0 | [−14] | e 45·9 | 59·4 |
| Uccle | | 88·2 | 325 | — | — | e 23 24 | [+ 8] | e 41·4 | 49·0 |
| Besançon | | 89·3 | 321 | — | — | — | — | 47·4 | — |
| Moncalieri | | 89·3 | 319 | e 12 42 | −30 | 23 20 | [− 4] | 45·5 | 54·0 |
| Victoria | | 89·5 | 36 | 13 2 | −11 | 23 42 | −27 | 47·4 | 53·5 |
| Stonyhurst | | 89·7 | 330 | — | — | — | — | 45·4 | 51·4 |
| Paris | | 90·3 | 324 | — | — | — | — | e 46·4 | 49·4 |
| Bidston | | 90·3 | 330 | — | — | 24 41 | +24 | 40·2 | 59·1 |
| Oxford | | 90·5 | 329 | — | — | — | — | e 41·4 | 49·9 |
| Barcelona | | 94·7 | 319 | — | — | e 26 26 | +83 | e 47·4 | 54·1 |
| Tortosa | N. | 96·0 | 320 | e 21 24? | ?$PR_3$ | — | — | e 43·4 | 61·2 |
| Algiers | | 96·7 | 315 | e 13 27 | −26 | e 24 30 | −53 | 48·4 | — |
| Alicante | | 98·2 | 318 | — | — | — | — | e 54·5 | 66·4 |
| Toledo | | 99·4 | 320 | — | — | — | — | e 49·9 | 58·6 |
| Granada | | 100·8 | 318 | e 13 41 | −33 | — | — | e 53·6 | 68·0 |
| Malaga | | 101·6 | 318 | e 17 8 | [−44] | 27 20 | ?PS | — | 62·1 |
| Rio Tinto | | 102·3 | 320 | 48 24? | ?L | — | — | (48·4) | 66·4 |
| San Fernando | | 102·9 | 319 | — | — | 25 0 | [+22] | 55·9 | 59·4 |
| Lisbon | | 103·2 | 321 | — | — | — | — | e 54·9 | — |
| Tucson | | 106·8 | 45 | (20 38) | ?$PR_1$ | — | — | — | — |
| Ottawa | | 111·0 | 12 | — | — | e 24 24 | [−50] | e 55·4 | — |
| Toronto | N. | 111·8 | 15 | i 19 17 | ?$PR_1$ | — | — | 71·8 | 75·6 |
| La Paz | | 170·1 | 58 | i 20 29 | [+14] | (30 38) | ?$PR_2$ | — | — |
| Sucre | | 173·8 | 62 | i 20 25 | [+ 9] | e 34 35 | ?$PR_2$ | 81·8 | 95·8 |

Additional readings and notes: Manila $PR_2 = +2m.44s.$, $MN = +8·4m.$ Zi-ka-wei readings are all given for 14h. Are they in error also by about 80 sec. ? Phu-Lien $MN = +10·4m.$ Sumoto $MN = +12·4m.$ Kobe $MN = +14·0m.$ Osaka $MN = +15·0m.$ Mizusawa $PN = +5m.19s.$ Irkutsk $MN = +20·7m.$, $MZ = +22·8m.$; epicentre 22°·6N. 127°·8E. Dehra Dun P and S have been increased by 6m. Tashkent $i = +9m.6s.$, $+9m.20s.$, and $+11m.27s. = PR_2 + 5s.$, $e = +10m.45s. = PR_1 + 1s.$, $iSR_2 = +18m.40s.$, $MN = +25·5m.$, $MZ = +33·3m.$; epicentre 21°·2N. 120°·8E. Ekaterinburg $PR_1 = +11m.48s.$, $PR_2 = +12m.52s.$, $SR_1 = +21m.55s.$, $MN = +31·4m.$; epicentre 25°13′N. 125°29′E. Riverview $MN = +36·7m.$ Makeyevka $eSR_2 = +28m.46s.$, $MN = +40·5m.$, $MZ = +44·3m.$ Pulkovo $PR_1 = +14m.50s.$, $SR_1 = +26m.0s.$, $SR_2 = +29m.6s.$, $MN = +39·6m.$ Leningrad $i = +13m.24s.$, $PR_2 = +16m.2s.$, $SR_2 = +28m.58s.$, $SR_3 = +30m.58s.$, $MN = +39·8m.$, $MZ = +45·2m.$ Honolulu $PE = +11m.52s.$ Budapest $MN = +52·7m.$ Zagreb readings are given for 14h. De Bilt $PR_1Z = +16m.16s.$, $MZ = +57·4m.$ Dyce $i = +12m.43s.$ and $+13m.16s.$, $PR_1 = +16m.24s.$ Strasbourg $P = +13m.1s.$, $MN = +55·6m.$, $MZ = +57·4m.$ Rocca di Papa $eLE = +48·4m.$ Oxford $MN = +58·9m.$ Alicante $MN = +70·5m.$ Toledo $MNW = +56·7m.$ Granada $i = +14m.16s. = P + 2s.$, and $+18m.13s. = PR_1 − 5s.$, $PS = +28m.17s.$ San Fernando $MN = +62·4m.$ Tucson reading is given as $PR_1$. La Paz readings are given as separate P's. Sucre $i = +25m.43s. = PR_1 − 13s.$, $PR_2 = +29m.42s.$, $PR_3 = +32m.37s.$, $SR_1 = +40m.16s.$, $SR_2 = +39m.46s.$

Sept. 12d. Readings also at 5h. (Tashkent), 6h. (Ekaterinburg, Manila, La Paz, and Sucre), 7h. (Tashkent (2)), 10h. (Nagasaki, Batavia, and near Malabar), 13h. (Adelaide, Irkutsk, Tashkent, Ekaterinburg, Sucre, near Batavia and Malabar), 14h. (Tashkent), 16h. (Taihoku (5)), 17h. (Sucre), 18h. (Taihoku), 19h. (Irkutsk and Taihoku((2)), 20h. (Matuyama, near La Paz, and Sucre), 21h. (Tashkent, Ekaterinburg, near Batavia, and Malabar), 22h. (Taihoku and La Plata), 23h. (Taihoku, Tashkent, and La Plata).

Sept. 13d. Readings at 0h. (Irkutsk, Baku, Ekaterinburg, Makeyevka, Kucino, De Bilt, and Granada), 1h. (Tashkent), 4h. (near Taihoku), 6h. (Tashkent), 7h. (La Paz and Sucre), 8h. (Taihoku and Ekaterinburg), 11h. (Tashkent), 12h. (Ekaterinburg), 14h. (Tashkent), 16h. (Baku and Tucson (2) ), 18h. (Tashkent, Ekaterinburg, La Paz, near Batavia, and Malabar), 19h. (Sucre), 20h. (near Zurich), 22h. (Tokyo).

Sept. 14d. Readings at 0h. (near Toyooka), 1h. (Moncalieri and Tashkent), 2h. (Ekaterinburg), 6h. (Ekaterinburg, Vera Cruz., Puebla, and Tacubaya), 7h. (Ottawa, Victoria, and Tucson), 9h. (Tacubaya), 12h. (Tashkent), 13h. (near Mostar), 17h. (Ekaterinburg), 20h. (Sucre), 23h. (near Batavia and Malabar).

Sept. 15d. 11h. 29m. 35s. (I) } Epicentre 3°·0S. 143°·5E. (as on 1925 May 1d.).
11h. 55m. 0s. (II) }

A = −·803, B = +·594, C = −·052; D = +·595, E = +·804;
G = +·042, H = −·031, K = −·999.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Manila | 28·4 | 309 | e 7 7 | ?$PR_1$ | (11 25) | +19 | 11·4 | — |
| II | | 28·4 | 309 | e 6 19 | + 7 | (11 28) | +22 | 11·5 | — |
| I | Riverview | 31·7 | 168 | e 7 37 | ?$PR_1$ | e 12 37 | +34 | e 16·7 | 19·9 |
| II | | 31·7 | 168 | — | — | — | — | e 16·8 | 19·9 |
| II | Sydney | 31·7 | 168 | — | — | 14 12 | ?$SR_3$ | 19·3 | 20·2 |
| I | Adelaide | 32·3 | 188 | — | — | e 12 2 | −11 | 18·7 | 19·2 |
| II | | 32·3 | 188 | — | — | i 12 2 | −11 | i 17·6 | 21·4 |
| I | Melbourne | 34·8 | 178 | — | — | e 12 13 | −39 | i 20·1 | 22·4 |
| II | | 34·8 | 178 | — | — | — | — | i 20·8 | 23·4 |
| II | Taihoku E. | 35·2 | 324 | — | — | e 12 35 | −23 | 22·1 | — |
| I | Batavia | 36·7 | 264 | e 6 55 | −33 | — | — | — | — |
| II | | 36·7 | 264 | e 7 30 | + 2 | — | — | — | — |
| I | Hong Kong | 38·2 | 314 | 8 48 | ?$PR_1$ | 13 10 | −31 | 16·4 | — |
| II | | 38·2 | 314 | — | — | 13 10 | −31 | 16·0 | — |
| II | Osaka | 38·4 | 350 | 7 2 | −39 | — | — | 18·5 | 21·3 |
| I | Perth | 38·9 | 219 | 13 55 | ?S | (13 55) | + 4 | (20·1) | 26·4 |
| II | | 38·9 | 219 | — | — | — | — | 20·9 | — |
| II | Honolulu E. | 62·2 | 64 | 10 55 | +29 | — | — | 30·4 | — |
| I | Irkutsk | 64·4 | 335 | e 10 39 | − 2 | e 19 9 | − 9 | e 31·4 | — |
| II | | 64·4 | 335 | 10 50 | + 9 | e 19 14 | − 4 | 32·0 | — |
| I | Bombay | 72·8 | 291 | — | — | e 19 25? | ? | — | — |
| I | Tashkent | 80·3 | 313 | i 12 30 | + 9 | 22 17 | −10 | e 39·4 | 44·8 |
| II | | 80·3 | 313 | i 13 17 | +56 | i 22 21 | − 6 | e 38·0 | 45·0 |
| I | Ekaterinburg | 88·6 | 328 | e 13 10 | + 2 | 23 44 | −15 | 38·4 | — |
| II | | 88·6 | 328 | i 13 7 | − 1 | i 23 46 | −13 | 42·0 | 49·9 |
| I | Victoria E. | 94·4 | 42 | — | — | — | — | 43·9 | 45·7 |
| II | E. | 94·4 | 42 | — | — | — | — | 54·4 | 55·8 |
| I | Baku | 94·7 | 311 | e 22 47 | ? | e 30 54 | ?$SR_1$ | e 47·6 | — |
| II | | 94·7 | 311 | e 18 15 | ?$PR_1$ | e 26 1 | PS | 47·0 | — |
| I | Kucino | 101·2 | 327 | — | — | e 26 55 | ?PS | 50·1 | 59·2 |
| I | Makeyevka | 102·5 | 320 | — | — | — | — | e 59·4 | — |
| II | | 102·5 | 320 | e 19 0? | ?$PR_1$ | e 25 0? | [+24] | — | 61·3 |
| I | Leningrad | 104·0 | 331 | — | — | e 44 11 | ? | 53·3 | 62·9 |
| II | | 104·0 | 331 | — | — | — | — | 50·9 | 62·8 |
| I | Pulkovo | 104·1 | 331 | — | — | e 29 9 | +155 | 55·4 | 62·8 |
| II | | 104·1 | 331 | — | — | — | — | 52·0 | 62·2 |
| II | Upsala | 109·8 | 335 | — | — | — | — | e 40·0 | — |
| II | Budapest N. | 114·8 | 322 | — | — | — | — | e 67·5 | — |
| II | Hamburg | 116·7 | 331 | — | — | — | — | e 59·0 | 69·0 |
| II | Cheb | 117·5 | 327 | — | — | — | — | e 63·0 | 68·0 |
| I | De Bilt | 120·0 | 332 | — | — | — | — | e 63·4 | — |
| II | | 120·0 | 332 | — | — | — | — | e 60·0 | 76·6 |
| II | Chicago E. | 120·1 | 42 | — | — | — | — | e 64·2 | 66·3 |
| II | Edinburgh | 120·7 | 339 | — | — | — | — | e 49·0 | — |
| II | Strasbourg | 120·8 | 330 | e 19 0? | [+ 6] | — | — | 67·0 | — |
| I | Uccle | 121·2 | 331 | — | — | — | — | e 60·4 | — |
| I | Moncalieri | 122·9 | 324 | — | — | e 30 55 | ? | 57·6 | — |
| I | Kew | 122·9 | 334 | — | — | e 46 25? | ?$SR_1$ | 70·4 | — |
| I | Oxford | 123·1 | 336 | — | — | — | — | e 65·4 | — |
| II | | 123·1 | 336 | — | — | — | — | — | 72·5 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| II Paris | | 123·4 | 330 | e 20 43 | ?$PR_1$ | — | — | 46·0 | 73·0 |
| I Toronto | E. | 124·4 | 37 | — | — | — | — | 56·4 | 92·4 |
| I Ottawa | | 125·5 | 33 | — | — | e 41 25 | ? | e 56·4 | — |
| II | E. | 125·5 | 33 | — | — | — | — | 60·0 | — |
| II Tortosa | N. | 129·6 | 324 | — | — | — | — | e 70·0 | 83·1 |
| II Algiers | | 130·4 | 318 | — | — | — | — | 95·0 | — |
| II Toledo | | 132·8 | 326 | — | — | — | — | e 59·5 | 77·3 |
| II Granada | | 134·4 | 323 | e 19 32 | [+ 3] | — | — | 52·7 | 56·7 |
| II San Fernando | E. | 136·4 | 324 | — | — | — | — | — | 90·5 |
| I La Paz | | 143·1 | 123 | i 20 4 | [+19] | — | — | — | — |
| II | | 143·1 | 123 | i 20 3 | [+18] | — | — | 79·0 | — |
| I Sucre | | 144·2 | 128 | 19 57 | [+10] | — | — | — | — |
| II | | 144·2 | 128 | i 20 4 | [+17] | — | — | 79·3 | 96·3 |

Additional readings and notes: Riverview I MN = +20·8m., II MN = +46·8m., MZ = +47·5m. Adelaide I $SR_1$ = +15m.42s., MN = +21·4m., II i$SR_3$ = +15m.50s., MN = +21·1m. Batavia II i = +8m.44s. = $PR_1$ +1s. Hong Kong I and II readings are given for 10h. Osaka II MN = +20·2m. Perth I P = +18m.15s., S = +20m.45s.; true S is given as P and L as S. It seems possible there were other shocks; see Tashkent. Honolulu II eN = +10m.0s. = P −26s., and +17m.18s. Tashkent I e = +16m.1s. = $PR_1$ +8s., +27m.31s. = $SR_1$ −47s., and +29m.18s., II MN = +48·7m. Ekaterinburg MN = +51·2m., MZ = +52·8m. Victoria II LN = +49·4m. Kucino I e = +32m.29s. = $SR_1$ −23s. Makeyevka II MN = +59·2m. Leningrad I MN = +62·2m., MZ = +65·7m., II MZ = +62·6m., MN = +63·3m. Pulkovo I e = +44m.8s., MZ = +61·8m., II MZ = +62·3m. Budapest II eE = +68m.0s. De Bilt II MN = +65·1m., MZ = +68·2m. Ottawa II LN = +58·0m. Granada II i = +23m.7s., +26m.6s. = $PR_3$ +32s. and +26m.30s. San Fernando II MN = +87·5m. La Paz I i = +20m.14s. and +20m.42s., II i = +20m.18s. and +20m.46s. Sucre I i = +20m.7s. and +20m.16s., II i = +20m.23s. and +20m.42s.

Sept. 15d. Readings also at 0h. (Ekaterinburg), 1h. (near Malabar), 2h. (Perth), 7h. (Tokyo), 9h. (near Sumoto and Hukuoka), 13h. (near Laibach and near Tacubaya), 14h. (La Paz and Sucre), 16h. (Ekaterinburg and Tashkent), 17h. (Port au Prince), 18h. (Tucson), 19h. (near La Paz and Sucre), 20h. (Ekaterinburg and Granada), 22h. (Moncalieri and Sucre).

## Sept. 16d. 17h. 59m. 12s. Epicentre 10°·7S. 159°·7E.

A = −·922, B = +·341, C = −·186; D = +·347, E = +·938; G = +·174, H = −·064, K = −·983.

A depth of focus 0·020 has been assumed (see the note at the end). The long series of observations of [P] is noteworthy. The additional readings for Sucre and for a number of European stations (*e.g.*, Hamburg, Belgrade, Vienna, Athens, Zagreb, and Granada) agree in suggesting that other shocks followed, 2m.26s., 3m.32s., and 9m.26s., after that tabulated, though the first of these may be $PR_1$ in some cases.

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Riverview | | −1·1 | 24·4 | 197 | i 5 27 | + 7 | 10 2 | +31 | e 12·8 | 14·5 |
| Sydney | | −1·1 | 24·4 | 197 | 5 24 | + 4 | 9 48 | +17 | 11·6 | 12·9 |
| Melbourne | | −1·4 | 30·2 | 205 | e 7 6 | +50 | e 12 24 | +71 | i 15·3 | 18·0 |
| Adelaide | | −1·4 | 30·9 | 217 | i 6 23 | 0 | i 11 12 | −14 | i 13·1 | 20·1 |
| Amboina | | −1·5 | 32·0 | 282 | i 5 55 | −38 | i 10 44 | −59 | 15·9 | — |
| Wellington | E. | −1·5 | 33·4 | 160 | i 6 45 | − 1 | i 12 10 | + 3 | i 14·9 | 22·3 |
| | N. | −1·5 | 33·4 | 160 | i 6 46 | 0 | i 12 10 | + 3 | i 14·8 | 22·0 |
| Christchurch | | −1·6 | 34·7 | 164 | 8 36 | ?$PR_3$ | 12 6 | −20 | 15·3 | 22·5 |
| Manila | | −1·9 | 46·0 | 305 | i 8 17 | −10 | i 15 30 | +27 | i 23·8 | 25·9 |
| Nagoya | | −2·1 | 50·7 | 337 | e 8 49 | − 9 | 15 54 | − 7 | 22·4 | 26·6 |
| Sumoto | | −2·1 | 50·8 | 334 | 8 48 | −12 | 14 45 | −77 | 21·6 | 27·0 |
| Osaka | | −2·1 | 50·9 | 335 | 8 57 | − 2 | 15 56 | − 8 | 21·8 | 27·5 |
| Kobe | | −2·1 | 51·0 | 335 | 9 0 | + 1 | e 16 2 | − 3 | 21·5 | 26·6 |
| Malabar | | −2·2 | 51·6 | 271 | 9 14 | +11 | i 16 25 | +14 | e 23·8 | — |
| Taihoku | N. | −2·2 | 51·6 | 316 | 8 59 | − 4 | (16 10) | − 1 | 16·2 | — |

*Continued on next page.*

| | | Corr. for Focus | Δ | Az. | P. m. | P. s. | O−C. s. | S. m. | S. s. | O−C. s. | L. m. | M. m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | | | | | | | | |
| Toyooka | | −2·2 | 51·9 | 335 | 9 | 4 | − 1 | 16 | 10 | − 5 | 21·8 | 27·5 |
| Nagasaki | | −2·2 | 52·0 | 329 | 8 | 58 | − 8 | 16 | 13 | = 3 | 19·9 | 28·1 |
| Batavia | | −2·2 | 52·4 | 273 | e 9 | 14 | + 6 | 16 | 29 | + 8 | 32·5 | — |
| Honolulu | E. | −2·2 | 52·4 | 52 | i 9 | 7 | − 1 | 16 | 36 | +15 | e 21·5 | 25·3 |
| | N. | −2·2 | 52·4 | 52 | i 9 | 7 | − 1 | 16 | 31 | +10 | i 21·5 | 24·8 |
| Mizusawa | | −2·2 | 52·8 | 343 | 9 | 7 | − 4 | 16 | 29 | + 3 | 23·8 | — |
| Hong Kong | | −2·3 | 55·5 | 309 | 9 | 25 | − 2 | 17 | 8 | + 9 | 24·8 | 28·9 |
| Zi-ka-wei | | −2·3 | 55·7 | 321 | i 9 | 21 | − 1 | i 17 | 7 | + 6 | — | 29·6 |
| Ootomari | | −2·4 | 59·4 | 348 | 9 | 53 | + 1 | (17 | 50) | + 4 | 17·8 | 28·7 |
| Phu-Lien | | −2·4 | 61·0 | 302 | i 10 | 9 | + 6 | 18 | 11 | + 5 | 28·8 | — |
| Calcutta | E. | −2·6 | 77·4 | 297 | 13 | 17 | +89 | 21 | 47 | +23 | — | — |
| | N. | −2·6 | 77·4 | 297 | 13 | 34 | +106 | 21 | 53 | +29 | — | — |
| Irkutsk | | −2·7 | 78·8 | 330 | 11 | 57 | + 1 | i 21 | 47 | + 9 | 35·8 | — |
| Kodaikanal | | −2·7 | 84·4 | 282 | 12 | 24 | − 5 | (22 | 36) | − 7 | 22·6 | 52·5 |
| Hyderabad | | −2·7 | 85·1 | 289 | 12 | 38 | + 6 | 22 | 50 | 0 | 40·1 | 52·6 |
| Sitka | E. | −2·7 | 86·0 | 30 | — | | — | e 23 | 0 | 0 | e 37·7 | 38·0 |
| | N. | −2·7 | 86·0 | 30 | — | | — | e 23 | 0 | 0 | e 35·2 | 41·2 |
| Berkeley | E. | −2·7 | 87·3 | 50 | i 12 | 45 | − 1 | e 23 | 10 | − 5 | e 37·4 | 42·5 |
| | N. | −2·7 | 87·3 | 50 | i 12 | 45 | − 1 | e 23 | 16 | + 1 | e 37·1 | 43·3 |
| Lick | | −2·8 | 87·7 | 50 | 12 | 47 | 0 | 23 | 26 | + 8 | e 37·5 | 43·5 |
| Dehra Dun | | −2·8 | 88·3 | 303 | (13 | 18) | +27 | (20 | 18) | ?$PR_2$ | (23·0) | (25·2) |
| Simla | E. | −2·8 | 89·3 | 303 | e 12 | 36 | −20 | 22 | 54 | [−30] | — | 50·1 |
| | N. | −2·8 | 89·3 | 303 | e 12 | 42 | −14 | 23 | 6 | −30 | e 38·2 | 49·8 |
| Victoria | | −2·8 | 89·6 | 40 | 12 | 45 | −13 | 24 | 5 | +26 | 39·6 | 51·3 |
| Bombay | | −2·8 | 90·6 | 289 | 13 | 5 | + 1 | 23 | 27 | −23 | 44·3 | 45·2 |
| Spokane | E. | −2·8 | 93·1 | 43 | i 13 | 0 | −18 | — | | — | 42·2 | 51·8 |
| | N. | −2·8 | 93·1 | 43 | i 13 | 3 | −15 | e 23 | 37 | [− 9] | — | 51·8 |
| Tucson | E. | −2·8 | 95·2 | 58 | i 13 | 22 | − 7 | i 24 | 53 | +14 | 38·9 | 45·8 |
| | N. | −2·8 | 95·2 | 58 | 13 | 22 | − 7 | e 24 | 53 | +19 | 38·8 | 53·2 |
| Tashkent | | −2·9 | 97·3 | 311 | i 13 | 27 | −13 | i 24 | 3 | [− 6] | 49·8 | 57·8 |
| Denver | E. | — | 100·9 | 51 | e 13 | 10 | −65 | 25 | 4 | −60 | 40·3 | 55·9 |
| Tacubaya | | — | 103·9 | 73 | 13 | 49 | −41 | 25 | 28 | −64 | 51·9 | — |
| Ekaterinburg | | — | 103·9 | 327 | i 13 | 57 | −33 | i 25 | 37 | −55 | 42·8 | 60·0 |
| Baku | | — | 111·9 | 310 | e 14 | 37 | −30 | — | | — | — | — |
| Loyola | E. | — | 112·7 | 61 | e 20 | 57 | ?$PR_1$ | — | | — | e 47·2 | 57·0 |
| St. Louis | E. | — | 113·2 | 52 | e 18 | 7 | [−25] | — | | — | — | 54·8 |
| | N. | — | 113·2 | 52 | e 18 | 8 | [−24] | — | | — | 47·8 | 50·2 |
| Chicago | | — | 114·0 | 48 | 14 | 48 | −28 | 27 | 20 | −42 | e 48·4 | 63·8 |
| Kucino | | — | 116·4 | 328 | — | | — | e 26 | 48 | −93 | 45·9 | 60·9 |
| Piatigorsk | | — | 116·5 | 314 | — | | — | 30 | 13 | +111 | — | 60·8 |
| Ann Arbor | | — | 116·8 | 47 | e 19 | 36 | ?$PR_1$ | i 29 | 24 | +60 | e 45·2 | 62·6 |
| Leningrad | | — | 118·2 | 334 | e 15 | 1 | −34 | 25 | 57 | [+17] | 49·0 | 57·7 |
| Pulkovo | | — | 118·3 | 334 | e 14 | 59 | −36 | 25 | 53 | [+13] | 46·8 | 57·5 |
| Makeyevka | | — | 118·9 | 320 | e 18 | 41 | [− 9] | e 25 | 41 | [− 1] | 56·8 | 67·2 |
| Toronto | E. | — | 119·6 | 45 | 19 | 18 | [+27] | e 25 | 48 | [+ 4] | 50·8 | 66·5 |
| Ottawa | | — | 121·6 | 41 | i 18 | 53 | [− 4] | 25 | 55 | [+ 5] | e 51·8 | 66·8 |
| Ithaca | | — | 121·9 | 46 | — | | — | e 29 | 14 | +11 | 54·8 | — |
| La Plata | | — | 122·1 | 142 | i 20 | 33 | ?$PR_1$ | 32 | 4 | ? | 51·8 | — |
| Cape Town | | — | 122·1 | 218 | 20 | 57 | ?$PR_1$ | 37 | 48 | ?$SR_1$ | — | 72·3 |
| Cheltenham | E. | — | 122·5 | 50 | — | | — | — | | — | e 62·1 | 65·8 |
| Upsala | | — | 123·4 | 339 | — | | — | e 25 | 48 | [− 7] | e 54·8 | 63·0 |
| Fordham | | — | 124·3 | 47 | e 19 | 8 | [+ 4] | i 26 | 36 | [+39] | 37·2 | 64·7 |
| La Paz | | — | 125·4 | 119 | 19 | 1 | [− 6] | i 31 | 49 | ? | 58·8 | 68·9 |
| Harvard | E. | — | 125·7 | 44 | — | | — | — | | — | e 62·9 | 78·8 |
| Lemberg | | — | 126·5 | 325 | e 17 | 18 | [−112] | e 30 | 54 | ? | e 62·8 | 66·3 |
| Sucre | | — | 126·6 | 124 | i 19 | 8 | [− 2] | i 32 | 46 | ? | 62·5 | 81·2 |
| Bergen | | — | 126·8 | 345 | 20 | 48? | ?$PR_1$ | — | | — | 60·8 | — |
| Budapest | | — | 130·6 | 325 | 19 | 16 | [− 4] | 21 | 32 | ?$PR_1$ | e 42·8 | 68·5 |
| Hamburg | | — | 130·8 | 337 | i 19 | 10 | [−10] | — | | — | e 51·8 | 66·8 |
| Belgrade | E. | — | 131·2 | 321 | e 19 | 9 | [−12] | e 31 | 47 | ? | e 63·4 | — |
| | N. | — | 131·2 | 321 | e 19 | 6 | [−15] | e 31 | 57 | ? | e 64·7 | 71·0 |
| Dyce | | — | 131·4 | 347 | i 21 | 14 | ?$PR_1$ | — | | — | 53·8 | 71·1 |
| Vienna | | — | 131·6 | 330 | i 19 | 10 | [−12] | 29 | 16 | ? | e 53·8 | 83·8 |
| Athens | | — | 132·1 | 312 | e 19 | 10 | [−13] | — | | — | 62·8 | 71·6 |
| Cheb | | — | 132·3 | 331 | 19 | 15 | [− 9] | e 29 | 11 | ? | e 41·8 | 66·8 |
| Graz | | — | 132·7 | 328 | i 19 | 24 | [ 0] | i 31 | 34 | ? | 45·8 | 69·3 |
| Edinburgh | | — | 132·9 | 346 | i 22 | 39 | ?$PR_1$ | i 39 | 11 | ?$SR_1$ | 53·8 | 98·8 |
| Zagreb | | — | 133·3 | 326 | e 19 | 16 | [−10] | e 31 | 59 | ? | e 55·8 | 69·9 |
| De Bilt | | — | 133·8 | 338 | 19 | 15 | [−12] | — | | — | e 57·8 | 62·1 |
| Laibach | N. | — | 133·9 | 326 | e 19 | 14 | [−14] | — | | — | e 66·4 | — |
| Stonyhurst | | — | 134·5 | 344 | e 21 | 24 | ?$PR_1$ | 33 | 42 | ? | 54·8 | 66·8 |
| Innsbruck | | — | 134·7 | 330 | i 19 | 17 | [−12] | i 21 | 59 | ?$PR_1$ | e 55·8 | 73·8 |
| Hohenheim | | — | 134·7 | 334 | e 18 | 28 | [−61] | e 32 | 48 | ? | e 53·6 | 64·8 |

*Continued on next page.*

| | | Corr. for Focus | Δ | Az. | P. m. | P. s. | O−C. s. | S. m. | S. s. | O−C. s. | L. m. | M. m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | | | | | | | | |
| Bidston | | — | 135·1 | 344 | 21 | 38 | ?$PR_1$ | — | | — | 54·1 | 67·6 |
| Uccle | | — | 135·1 | 338 | i 19 | 17 | [−13] | — | | — | e 57·8 | 63·0 |
| Ravensburg | | — | 135·2 | 333 | i 19 | 20 | [−10] | e 31 | 54 | ? | e 53·3 | 67·5 |
| Strasbourg | | — | 135·5 | 334 | i 19 | 17 | [−14] | — | | — | 60·8 | 69·3 |
| Venice | | — | 135·5 | 327 | 19 | 24 | [− 7] | 24 | 33 | ?$PR_1$ | — | — |
| Zurich | | — | 136·0 | 330 | i 19 | 18 | [−14] | — | | — | — | — |
| Chur | | — | 136·0 | 330 | i 19 | 20 | [−12] | — | | — | — | — |
| Kew | | — | 136·1 | 343 | i 19 | 42 | [+10] | — | | — | 52·8 | 67·2 |
| Oxford | | — | 136·1 | 343 | 19 | 1 | [−31] | — | | — | 56·3 | 67·8 |
| Pompeii | | — | 137·1 | 320 | e 19 | 18 | [−16] | e 32 | 18 | ? | 65·8 | 73·8 |
| Florence | | — | 137·1 | 324 | e 19 | 18 | [−16] | 33 | 48 | ? | 57·8 | 72·8 |
| Naples | | — | 137·2 | 320 | e 19 | 38 | [+ 4] | e 30 | 48 | ? | 65·8 | 85·8 |
| Besançon | | — | 137·3 | 333 | e 16 | 19 | [−16] | i 22 | 58 | ?$PR_1$ | 64·8 | — |
| Paris | | — | 137·4 | 338 | i 19 | 22 | [−13] | e 22 | 53 | ?$PR_1$ | 58·8 | 63·8 |
| Rocca di Papa | | — | 137·6 | 322 | e 19 | 17 | [−18] | — | | — | 69·8 | 74·8 |
| Moncalieri | | — | 138·1 | 330 | 19 | 26 | [−10] | 34 | 4 | ? | 55·3 | 79.6 |
| Bagnères | | — | 143·0 | 334 | 19 | 31 | [−14] | e 22 | 48? | ?$PR_1$ | 62·8 | — |
| Barcelona | | — | 143·6 | 331 | 19 | 31 | [−15] | 29 | 25 | ? | 50·5 | 66·4 |
| Tortosa | N. | — | 144·7 | 333 | i 19 | 31 | [−17] | 33 | 20 | ? | e 54·8 | 79·2 |
| Algiers | | — | 146·5 | 325 | i 19 | 38 | [−13] | 30 | 58 | ? | e 60·8 | 73·8 |
| Alicante | | — | 147·2 | 331 | i 19 | 32 | [−19] | 31 | 58 | ? | e 63·1 | 129·4 |
| Toledo | | — | 147·5 | 336 | e 19 | 38 | [−14] | 35 | 36 | ? | e 55·8 | 76·4 |
| Almeria | | — | 149·2 | 331 | i 19 | 46 | [− 8] | e 34 | 45 | ? | 52·9 | 98·7 |
| Granada | | — | 149·6 | 333 | i 19 | 44 | [−11] | — | | — | 51·1 | 88·8 |
| Malaga | | — | 150·3 | 334 | 19 | 38 | [−18] | e 29 | 48 | ?$PR_2$ | 39·2 | 78·0 |
| Rio Tinto | | — | 150·3 | 338 | 24 | 48? | ·? | — | | — | — | 55·8 |
| Lisbon | | — | 150·3 | 342 | 19 | 52 | [− 4] | — | | — | 52·5 | 78·5 |
| San Fernando | | — | 151·3 | 336 | i 19 | 46 | [−12] | 31 | 30 | ? | 72·8 | 100·8 |
| Azores | | — | 152·6 | 9 | 86 | 0 | ? | 93 | 6 | ? | — | 100·2 |

Additional readings and notes: Riverview P = +5m.43s., $PR_1$ = +6m.14s. and +7m.47s., PS = +10m.10s., MZ = +13·7m., MN = +14·8m.; $T_0$ = 17h.58m.38s. Adelaide MN = +18·1m. Amboina i = +6m.47s. Wellington $PR_2N$ = +7m.52s., $PR_2E$ = +8m.0s. Manila $PR_1$ = +10m.33s., PS = +14m.48s., $SR_1$ = +20m.8s. Nagoya MN = +26·7m. Sumoto MZ = +27·3m. Osaka MN = +26·8m. Kobe MN = +27·4m. Taihoku LE = +16m.26s. =S +15s. Toyooka MN = +27·8m. Batavia i = +9m.18s. Honolulu eE = +9m.18s., $P_cPE$ = +9m.39s., $ePR_1N$ = +11m.4s., $ePR_1E$ = +11m.18s., $ePR_2N$ = +12m.0s., $ePR_2E$ = +12m.18s., $PR_2N$ = +12m.57s., $ePR_2E$ = +13m.0s., $P_cSE$ = +14m.48s., PS = +16m.48s., $S_cSE$ = +19m.6s., $SR_1E$ = +20m.42s., $SR_2N$ = +22m.36s. Hong Kong $PR_1$ = +11m.52s., $SR_1$ = +20m.57s. Ootomari S = +13m.21s. =$PR_2$ −6s., MN = +28·9m. Berkeley $eSR_1N$ = +29m.34s., $eSR_1E$ = +29m.49s., and several i and e readings. Lick $ePR_1E$? = +16m.17s., MN = +43·8m. Dehra Dun: The readings have been increased by 6 min. Perhaps L = S −25s. Victoria LN = +36·9m., MN = +40·2m.; $T_0$ = 17h.58m.32s. Spokane e = +15m.42s., PSN = +24m.30s. Tucson $PR_1E$ = +17m.13s., $iPR_2E$ = +21m.10s., $PR_2N$ = +21m.18s., $S_cP_cSE$ = +23m.59s. =[S] +1s., $eS_cP_cSN$ = +24m.6s. =[S] +8s., $S_cP_cP_cSN$ = +24m.28s., $S_cP_cP_cSE$ = +24m.31s., ePSN = +25m.48s. =PS +12s., PSE = +26m.3s., PPSE = +26m.25s., $SR_1N$ = +30m.0s., $SR_1E$? = +31m.0s., $SR_1E$ = +31m.36s.; $T_0$ = 17h.58m.50s. and 17h.58m.54s. Tashkent iP = +13m.35s., iS = +18m.12s. =$PR_1$ +36s. and +24m.43s., MZ = +56·9m., MN = +59·8m. Denver PE = +13m.22s., $PR_1E$ = +17m.20s., $PR_2E$? = +19m.28s., $PR_2E$? = +21m.10s., $S_cP_cS$ = +24m.4s., PSE = +26m.13s., PPS = +27m.4s. Ekaterinburg iP = +10m.23s., $iPR_2$ = +18m.11s. =$PR_1$ −28s., $ePR_2$ = +21m.44s., iPS = +27m.19s., $iSR_2$ = +32m.9s., and +36m.18s., MN = +52·1m., MZ = +60·4m. Baku $iPR_1$ = +19m.5s., iPS = +28m.23s. St. Louis $PR_1E$ = +19m.22s., $PR_2N$ = +22m.2s., $PR_2E$ = +25m.7s. =[S] −15s., $PR_2N$ = +25m.15s. = [S] −7s., PSEN = +28m.44s. Chicago $iPR_1E$ = +19m.27s., $ePR_1N$ = +19m.30s., $PR_1E$ = +22m.33s., $PR_2N$ = +24m.36s., $S_cP_cSE$ = +25m.33s. = [S] +7s., iPSE = +28m.58s., PSN = +29m.13s., ePPSE = +30m.0s., PPSN = +30m.10s., $SR_1E$ = +35m.48s., $eSR_1N$ = +36m.36s., $SR_2E$ = +38m.54s., $SR_2N$ = +39m.3s., $SR_2E$ = +42m.58s., MN = +53·2m. Kucino $PR_1$ = +19m.42s., $PR_1$ = +22m.12s., PS = +29m.36s., $SR_1$ = +35m.42s., MN = +60·0m. Piatigorsk $ePR_1$ = +20m.13s. Ann Arbor ePS = +30m.12s., $eSR_2$ = +38m.12s., eLN = +50·4m., MN = +54·4m. Leningrad P = +18m.46s. =[P] −1s., $PR_1$ = +19m.42s., $PR_2$ = +22m.22s., PS = +29m.36s., $SR_1$ = +35m.40s., MN = +65·1m., MZ = +67·6m. Pulkovo P = +18m.44s. =[P] −4s., $ePR_1$ = +19m.36s., $PR_2$ = +22m.28s., e = +26m.52s., PS = +29m.36s., $SR_1$ = +35m.42s., $SR_2$ = +40m.54s., MN = +58·0m., MZ = +67·6m. Makeyevka e = +20m.1s. =$PR_1$ −16s. and +20m.8s. =$PR_1$ −9s. MN = +65·0m., MZ = +67·9m. Toronto PE = +17m.52s., $PR_1E$ = +20m.6s., eE = +27m.7s., LN = +55·6m., MN = +68·7m. Ottawa

*Continued on next page.*

$PR_1$? = +20m.16s., PS? = +30m.11s., $SR_1$? = +36m.52s.; $T_0$ = 17h.59m.2s. Cheltenham eLN = +55·6m. Upsala MN = +71·6m. Fordham i = +29m.41s. and +32m.9s., e = +30m.19s.; $T_0$ = 17h.59m.8s. La Paz iPN = +19m.10s., $PR_1$ = +22m.11s., $PR_2$ = +26m.6s. =[S] +6s., $PR_3$ = +31m.6s., i = +33m.10s., $SR_1$ = +38m.8s., $SR_2$ = +41m.46s. Harvard $SR_1N$ = +38m.48s., $SR_2N$ = +43m.48s., $SR_3N$ = +47m.54s., LN = +63·1m., MN = +69·0m. Sucre i = +21m.8s. = $PR_1$ +0s., $PR_1$ = +22m.42s., $PR_2$ = +28m.23s., PS = +33m.35s., $SR_1$ = +38m.47s., $SR_2$ = +42m.20s., $SR_3$ = +46m.11s. Hamburg iZ = +21m.26s., iEN = +22m.37s., eN = +28m.48s., iE = +38m.46s. = $SR_1$ −14s., eL = +57·8m., MN = +67·8m., MZ = +78·6m. Belgrade $PR_1$ = +22m.35s. and +23m.10s., $PR_1N$ = +28m.25s. Dyce i = +22m.36s., e = +32m.9s., +33m.10s., and +38m.54s. = $SR_1$ −12s. Vienna i = +21m.33s. and +28m.23s., iPN = +22m.38s., iE = +30m.31s. and +38m.21s., iN = +31m.16s. and +34m.50s., $S_cP_cSP$ = +34m.31s., $PR_2$ = +39m.29s. = $SR_1$ −19s., $SR_2$ = +47m.13s. Athens $iPR_1$ = +21m.36s., iE = +22m.33s., iN = +22m.36s., eE = +43m.58s., LN = +55·3m., MN = +72·5m. Graz $iPR_1$ = +23m.25s. and $iPR_2$ = +24m.29s. Zagreb iNE = +19m.26s., e = +21m.25s., iNW = +21m.49s., $iPR_1$ = +22m.43s., $iPR_1E$ = +26m.1s., e = +29m.36s. and +51m.8s. De Bilt i = +21m.46s., e = +39m.19s. = $SR_1$ −19s., MN = +76·8m., MZ = +88·0m. Laibach ePE = +19m.17s., $PR_1$ = +22m.40s. and several readings later than eL. Hohenheim $ePR_1E$ = +22m.44s., $ePR_1N$ = +22m.48s., $ePR_2E$ = +25m.54s., eE = +26m.34s., ePPS? = +34m.54s. Bidston +25m.38s. = $PR_2$ −2s., +33m.33s. and +39m.58s. = $SR_1$ +5s. Uccle i = +21m.55s. and +22m.48s., e = +38m.48s. Ravensburg $iPR_1E$ = +24m.32s., $eS_4P_4SE$ = +30m.0s., $eS_4P_4P_4SE$ = +31m.34s., ePSE = +34m.8s., eE = +36m.56s., $eSR_1E$ = +40m.50s. Strasbourg i = +22m.58s., e = +35m.10s. MN = +70·5m., MZ = +84·6m. Zurich iP = +22m.0s. = $PR_1$ −8s. Kew e = +22m.20s. = $PR_1$ +11s., MN = +67·5m. Oxford $PR_1$ = +22m.7s., MN = +76·2m. Florence ePN = +19m.28s., S = +22m.3s., = $PR_1$ −13s., iN = +40m.18s. = $SR_1$ +1s. Rocca di Papa iPE = +19m.26s., iPN = +19m.29s., E = +22m.59s. = $PR_1$ +40s., N = +23m.3s. Barcelona MN = +76·5m. Alicante MN = +80·8m. Toledo iPZ = +19m.41s., iPEN = +19m.50s., S = +42m.8s. = $SR_1$ −14s., MNW = +80·8m. Almeria $PR_1$ = +22m.39s., $PR_2$ = +26m.53s., $SR_1$ = +38m.53s., $SR_2$ = +42m.58s. = $SR_1$ +16s., MN = +98·1m. Granada $PR_1$ = +22m.44s., $PR_2$ = +25m.41s., $PR_3$ = +28m.51s., PS = +33m.41s., PPS = +35m.25s., $SR_1$ = +41m.29s., $SR_2$ = +46m.41s. Rio Tinto readings have been increased by 1h. San Fernando MN = +94·3m.

Note to shock of Sept. 16d. 17h. 59m. 12s.

The following table gives the residuals for △ for the principal stations, when the observed distances of this shock are compared with those calculated for the epicentre 10°·7S. 158°·5E. of 1924 May 8d. :—

| No. of station. | Az. | Equation. | $O_1$ | $O_2$ | $C_2$ | $O_2-C_2$ |
|---|---|---|---|---|---|---|
| | ° | | ° | ° | ° | ° |
| 4 | 40 | +·64x+·77y | −3·4 | −0·7 | −0·8 | +0·1 |
| 1 | 160 | +·34x−·94y | −1·8 | −0·3 | −0·4 | +0·1 |
| 2 | 205 | −·42x−·91y | −0·6 | +0·5 | +0·5 | 0·0 |
| 4 | 278 | −·99x+·03y | −0·7 | +1·7 | +1·2 | +0·5 |
| 3 | 308 | −·79x+·62y | −1·2 | +1·0 | +1·0 | 0·0 |
| 9 | 335 | −·42x+·91y | −2·1 | +0·3 | +0·5 | −0·2 |

The Column $O_1$ gives these residuals uncorrected for abnormal focal depth, and $O_2$ gives the same after a correction for focal depth 0·020 *below* normal has been applied. Solving the equations with $O_2$ we obtain x = −1°·2 y = 0°·0, giving $C_2$ and then $O_2-C_2$

The new origin is therefore 10°·7S. 159°·7E., and it seems probable that the Epicentre on 1924 May 8d. should be corrected to agree with this much more complete solution.

Sept. 16d. Readings also at 1h. (Nagasaki), 3h. (Taihoku), 5h. (Manila), 6h. (Ekaterinburg, Tashkent, and near Athens), 7h. (Tashkent), 8h. (Ekaterinburg), 10h. (near Nagasaki), 13h. (Moncalieri), 14h. (near Nagasaki), 16h. (Batavia), 17h. (Tokyo), 18h. (Batavia, Malabar, Tashkent, and Taihoku), 19h. (Taihoku and La Plata), 20h. (Tokyo, Nagoya, and near Mizusawa), 21h. (La Paz), 22h. (Nagasaki and Sucre (2)), 23h. (Spokane (2)).

**Sept. 17d. 1h. 45m. 50s. (I)**
**2h. 54m. 0s. (II)**
**5h. 41m. 50s. (III)**
} **Epicentre 10°·7S. 159°·7E. (as on Sept. 16d.).**

**A = −·922, B = +·341, C = −·186 ; D = +·347, E = +·938 ;**
**G = +·174, H = −·064, K = −·983.**

**The depth of focus +0·020 is retained.**

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I | Riverview | −1·0 | 24·4 | 197 | e 4 49 | −32 | e 9 46 | +13 | e 13·0 | 16·7 |
| II | | −1·0 | 24·4 | 197 | e 5 29 | + 8 | e 9 43 | +10 | e 13·0 | 16·6 |
| III | | −1·0 | 24·4 | 197 | — | — | e 9 34 | + 1 | e 12·6 | 14·5 |
| I | Melbourne | −1·4 | 30·2 | 205 | e 8 34? | ? | — | — | — | 17·2 |
| III | | −1·4 | 30·2 | 205 | — | — | — | — | e 18·9 | 30·4 |
| I | Adelaide | −1·4 | 30·9 | 217 | e 6 10? | −13 | 11 21 | − 5 | 14·2 | 17·8 |
| II | | −1·4 | 30·9 | 217 | 5 10 | −73 | 11 20 | − 6 | 15·2 | 18·5 |
| III | | −1·4 | 30·9 | 217 | — | — | — | — | 15·7 | 18·2 |
| I | Wellington | −1·5 | 33·4 | 160 | — | — | — | — | 18·2 | — |
| II | | −1·5 | 33·4 | 160 | — | — | — | — | 18·0 | — |
| I | Christchurch | −1·6 | 34·7 | 164 | 14 52 | ? $SR_3$ | — | — | 18·9 | 20·9 |
| II | | −1·6 | 34·7 | 164 | 14 54 | ? $SR_3$ | 17 6 | ? L | 19·2 | 20·5 |
| I | Manila | −1·9 | 46·0 | 305 | e 6 10? | −137 | — | — | — | — |
| II | | −1·9 | 46·0 | 305 | e 8 0? | −27 | — | — | — | — |
| I | Honolulu E. | −2·2 | 52·4 | 52 | e 9 16 | + 8 | e 16 22 | + 1 | 21·6 | 26·2 |
| II | E. | −2·2 | 52·4 | 52 | 8 35 | −33 | e 16 30 | + 9 | 21·8 | 25·0 |
| II | N. | −2·2 | 52·4 | 52 | — | — | e 16 27 | + 6 | e 21·7 | 28·0 |
| III | | −2·2 | 52·4 | 52 | — | — | — | — | 23·8 | — |
| I | Irkutsk | −2·7 | 78·8 | 330 | 11 54 | − 2 | 21 46 | + 8 | e 39·2 | — |
| II | | −2·7 | 78·8 | 330 | e 11 54 | − 2 | 21 42 | + 4 | e 37·0 | — |
| II | Hyderabad | −2·7 | 85·1 | 289 | 22 48 | ? S | (22 48) | − 2 | — | — |
| I | Victoria E. | −2·8 | 89·6 | 40 | 23 22 | ? S | (23 22) | [− 4] | 41·6 | 48·6 |
| II | | −2·8 | 89·6 | 40 | — | — | 23 17 | [− 9] | 40·3 | 48·6 |
| III | | −2·8 | 89·6 | 40 | — | — | — | — | 43·4 | 48·8 |
| I | Bombay | −2·8 | 90·6 | 289 | — | — | e 23 10? | [−22] | — | — |
| I | Tashkent | −2·9 | 97·3 | 311 | e 13 25 | −15 | 24 4 | [− 5] | e 48·2 | 56·6 |
| II | | −2·9 | 97·3 | 311 | i 13 25 | − 15 | 24 0 | [− 9] | e 48·0 | 56·8 |
| III | | −2·9 | 97·3 | 311 | i 13 23 | −17 | 23 55 | [−14] | 52·2 | 77·2 |
| I | Ekaterinburg | — | 103·9 | 327 | e 18 4 | $PR_1$ | 24 33 | [− 9] | 48·2 | 61·0 |
| II | | — | 103·9 | 327 | — | — | — | — | 48·5 | 60·0 |
| III | | — | 103·9 | 327 | e 20 14 | ? | — | — | 33·7 | — |
| I | Baku | — | 111·9 | 310 | e 19 39 | ? $PR_1$ | e 29 5 | +80 | 57·2 | — |
| III | | — | 111·9 | 310 | — | — | — | — | e 57·2 | — |
| I | Chicago | — | 114·0 | 48 | — | — | — | — | — | 71·7 |
| II | | — | 114·0 | 48 | — | — | — | — | — | 71·5 |
| I | Leningrad | — | 118·2 | 334 | — | — | — | — | 57·9 | 73·2 |
| II | | — | 118·2 | 334 | — | — | — | — | 55·5 | 70·8 |
| I | Pulkovo | — | 118·3 | 334 | — | — | e 25 34 | [− 6] | 55·2 | 70·8 |
| II | | — | 118·3 | 334 | — | — | — | — | 53·0 | 70·7 |
| I | Makeyevka | — | 118·9 | 320 | — | — | e 33 10 | ? | 58·2 | 65·0 |
| II | E. | — | 118·9 | 320 | — | — | — | — | — | 68·0 |
| II | Toronto E. | — | 119·6 | 45 | — | — | — | — | 59·4 | 66·0 |
| I | Ottawa | — | 121·6 | 41 | — | — | e 24 28 | ? $PR_2$ | e 58·2 | — |
| II | | — | 121·6 | 41 | — | — | — | — | 66·0 | — |
| I | Cheb | — | 132·3 | 331 | — | — | — | — | e 63·2 | 73·2 |
| II | | — | 132·3 | 331 | — | — | — | — | e 64·0 | 73·0 |
| I | De Bilt | — | 133·8 | 338 | — | — | — | — | e 61·2 | — |
| II | | — | 133·8 | 338 | — | — | — | — | e 61·0 | — |
| I | Uccle | — | 135·1 | 338 | — | — | — | — | e 60·2 | — |
| II | | — | 135·1 | 338 | — | — | — | — | e 56·0 | — |
| I | Kew | — | 136·1 | 343 | — | — | — | — | 74·2 | — |
| I | Moncalieri | — | 138·1 | 330 | — | — | — | — | 73·4 | — |
| II | | — | 138·1 | 330 | — | — | — | — | 77·5 | — |
| I | Granada | — | 149·6 | 333 | e 20 57 | [+62] | — | — | 74·6 | 83·4 |
| II | | — | 149·6 | 333 | — | — | — | — | 73·0 | 110·0 |
| II | San Fernando E. | — | 151·3 | 336 | — | — | — | — | — | 106·0 |

**Additional readings: Riverview I MN = +15·4m., II eS = +10m.7s., MN = +14·4m., III MN = +14·3m. Adelaide I e = +12m.58s. = $SR_1$ +6s. MN = +19·1m., II MN = +20·4m. Tashkent I e = +10m.16s., +15m.15s. +16m.5s., and +17m.16s. = $PR_1$ −20s., MN = +54·0m., MZ = +56·7m., II**

*Continued on next page.*

e = +17m.24s. = $PR_1$ −12s., MN = +51·0m., III e = +29m.40s., MZ = +61·2m. Ekaterinburg I MN = +58·0m. Pulkovo I e = +35m.44s. = $SR_1$ −41s., MN = +67·6m., MZ = +70·9m., II MN = +65·4m., MZ = 70·6m. Makeyevka II MN = +62·8m. Ottawa I eE = +30m.22s. and +37m.34s. = $SR_1$ +28s. Granada I i = +24m.3s. = $PR_1$ −33s. and +24m.49s. = $PR_1$ +13s. San Fernando II MN = +108·0m.

Sept. 17d. 13h. 18m. 20s. Epicentre 41°·7N. 8°·5E. (as on 1924 Jan. 24d.).

A = +·738, B = +·110, C = +·665; D = +·148, E = −·989·
G = +·658, H = +·098, K = −·747.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Rocca di Papa | E. | 3·1 | 87 | 1 46 | +57 | 2 44 | +78 | — | 5 5 |
| | N. | 3·1 | 87 | 1 51 | +62 | 2 37 | +71 | — | — |
| Moncalieri | | 3·3 | 352 | e 0 56 | + 4 | — | — | — | — |
| Pompeii | | 4·6 | 99 | e 1 8 | − 3 | — | — | — | — |
| Venice | | 4·7 | 35 | 5 38 | ? | — | — | — | — |
| Zagreb | | 6·8 | 49 | — | — | e 3 13 | + 8 | — | — |
| Uccle | | 9·6 | 344 | — | — | — | — | — | 8·8 |
| De Bilt | | 10·6 | 349 | — | — | — | — | e 10·7 | — |
| Baku | | 31·0 | 78 | — | — | e 12 10 | +19 | — | — |

Additional readings and notes: Rocca di Papa eE = +3m.14s. +4m.4s., e = +3m.44s., i = +5m.18s. Moncalieri gives an earlier reading at e = 13h.13m.0s.

Sept. 17d. 23h. 14m. 36s. Epicentre 49°·0N. 124°·0W. (as on 1921 June 25d.).

A = −·367, B = −·544, C = +·755; D = −·829, E = +·559;
G = −·422, H = −·626, K = −·656.

Uncertain. Some of the stations suggest a $T_0$ earlier by 2 min.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Victoria | E. | 0·8 | 141 | — | — | — | — | 1·6 | 4·3 |
| | N. | 0·8 | 141 | — | — | — | — | 1·5 | 6·3 |
| Spokane | | 4·6 | 105 | i 0 24 | −47 | e 2 24 | +18 | 4·4 | — |
| Sitka | | 10·5 | 324 | — | — | e 6 24 | +101 | 8·5 | 9·5 |
| Berkeley | | 11·2 | 173 | e 3 24? | +37 | e 4 30 | −29 | i 6·2 | — |
| Lick | N. | 12·1 | 171 | 2 36? | −24 | e 4 52 | −29 | e 6·0 | — |
| Tucson | E. | 19·4 | 145 | 4 35 | + 1 | e 8 16 | + 6 | e 9·3 | 12·7 |
| | N. | 19·4 | 145 | 4 35 | + 1 | 8 11 | + 1 | e 9·8 | 12·4 |
| Chicago | E. | 26·3 | 92 | — | — | 11 16 | +48 | 15·2 | 20·7 |
| Ann Arbor | | 28·6 | 88 | — | — | — | — | e 15·6 | 20·2 |
| Toronto | E. | 30·8 | 82 | — | — | e 12 41 | +53 | 19·6 | 21·8 |
| Ottawa | | 32·5 | 78 | e 6 28 | −25 | i 13 12 | +56 | e 19·8 | 23·1 |
| Ithaca | | 33·2 | 82 | — | — | — | — | 20·4 | — |
| Ste. Anne | | 35·2 | 73 | e 7 4 | −11 | i 13 59 | +61 | e 21·4 | 27·4 |
| Fordham | | 35·7 | 86 | e 9 7 | ?$PR_1$ | e 13 52 | +46 | e 17·6 | 23·5 |
| Harvard | N. | 36·8 | 80 | — | — | — | — | e 22·1 | 24·6 |
| Honolulu | E. | 38·6 | 236 | — | — | (13 47) | + 1 | 13·8 | — |
| Dyce | | 63·0 | 30 | — | — | — | — | 28·4 | 41·9 |
| Edinburgh | | 64·1 | 33 | — | — | — | — | e 27·4 | — |
| Oxford | | 68·1 | 35 | — | — | — | — | 39·4 | 43·9 |
| Kew | | 68·7 | 35 | — | — | — | — | e 39·4 | — |
| Pulkovo | | 69·3 | 13 | — | — | e 21 20 | [+13] | 40·4 | 46·6 |
| De Bilt | | 70·1 | 29 | — | — | e 21 36 | [+24] | e 32·4 | 46·1 |
| Uccle | | 70·9 | 31 | — | — | — | — | e 32·4 | — |
| Paris | | 71·9 | 34 | — | — | — | — | e 45·4 | — |
| Strasbourg | | 74·0 | 30 | — | — | — | — | 45·4 | — |
| Ekaterinburg | | 74·1 | 358 | (10 3) | −100 | (20 3) | −72 | 28·9 | — |
| Cheb | | 74·1 | 26 | e 11 41 | − 2 | — | — | e 32·4 | 51·4 |
| Kucino | | 74·2 | 10 | — | — | e 21 30 | +14 | 33·3 | — |
| Moncalieri | | 77·0 | 32 | e 6 42 | ? | — | — | 34·9 | — |
| Tortosa | N. | 77·8 | 40 | — | — | — | — | e 46·4 | — |
| San Fernando | E. | 78·4 | 47 | — | — | — | — | — | 49·4 |
| Granada | | 79·0 | 45 | e 11 56 | −17 | i 22 31 | +19 | e 40·6 | 50·2 |
| Makeyevka | | 81·8 | 12 | — | — | e 23 24? | +40 | 35·4 | 48·6 |
| Tashkent | | 89·0 | 350 | e 17 17 | ?$PR_1$ | — | — | e 47·3 | 52·2 |
| Baku | | 90·5 | 5 | — | — | e 25 58 | +99 | 43·4 | 57·9 |

*For Notes see next page.*

NOTES TO SEPT. 17d. 23h. 14m. 36s.

Additional readings and notes: Spokane i = +1m.24s.; all readings given only to nearest minute. Sitka eSN = +6m.28s., eE = +8m.6s. Berkeley and Lick give many other readings all of which are given only as e or as i. Tucson $PR_1N$ = +5m.0s.; $T_s$ = 23h.14m.37s. and 23h.14m.42s. Chicago SN = +11m.18s. = $SR_1$ −17s., $SR_1E$ = +13m.24s., MN = +17·4m. Ann Arbor eN = +16m.12s., MN = +20·5m. Toronto $PR_1E$ = +8m.18s. Ottawa $PR_1E$ = +8m.4s., $PR_2E$ = +8m.32s., $SR_2E$ = +17m.24s., MN = +23·4m. Honolulu eE = +12m.2s. and +16m.0s. = $SR_1$ −16s. Pulkovo e = +31m.19s., MZ = +46·0m. Kucino e = +27m.36s. De Bilt MN = +45·6m., MZ = +46·7m. Ekaterinburg readings have been increased by 10m. San Fernando MN = +48·4m. Makeyevka e = +29m.24s.?, MN = +52·7m. Tashkent e = +18m.30s. = $PR_2$ −44s., +21m.1s. = $PR_3$ +29s., +24m.30s. = S +27s., +24m.59s. = PS +4s., +25m.54s., +30m.49s. = $SR_1$ +31s., +34m.30s. = $SR_2$ +5s., +38m.47s. and +45m.30s., i = +38m.20s., MZ = +55·6m. Baku e = +39m.10s., MN = +53·4m., MZ = +65·6m.

Sept. 17d. Readings also at 0h. (Ekaterinburg, Tashkent, Spokane (2)), 1h. (Spokane), 3h. (Granada), 4h. (Tacubaya), 6h. (near Irkutsk), 8h. (Melbourne, Taihoku, and Tashkent), 10h. (Tacubaya and Vera Cruz), 11h. (Graz, Zagreb, and Tashkent), 12h. (Agana), 13h. (Athens, Batavia, and Malabar), 16h. (Taihoku), 17h. (Tashkent), 18h. (near Athens), 20h. (Sucre), 23h. (Irkutsk, Ottawa, and Victoria).

Sept. 18d. Readings at 0h. (Victoria (2), Toronto, Ottawa (2), Toledo, and near Athens). 1h. (Victoria, Ottawa, Toronto, Chicago, Tashkent, and Ekaterinburg), 2h. (Victoria, Ottawa, De Bilt, Uccle, Granada, and Rio Tinto), 3h. (Taihoku, La Paz, and Sucre), 4h. (Tortosa), 9h. (Ekaterinburg), 10h. (Venice, Zagreb, and near Athens), 16h. (Baku and Batavia), 20h. (Tashkent), 22h. (Taihoku), 23h. (Leningrad and Zi-ka-wei).

## **Sept. 19d. 1h. 3m. 42s.** Epicentre **35°·5N. 22°·0E.**

A = +·755, B = +·305, C = +·581; D = +·375, E = −·927; G = +·538, H = +·218, K = −·814.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | | 2·8 | 29 | i 0 55 | +11 | — | — | i 1·4 | 1·9 |
| Pompeii | | 7·9 | 314 | e 1 42 | −18 | e 3 43 | + 9 | — | 7·3 |
| Naples | | 8·1 | 313 | e 2 8 | + 5 | e 4 48 | ?L | (e 4·8) | 8·3 |
| Mostar | | 8·4 | 339 | 2 12 | + 5 | i 3 42 | − 5 | (4·3) | — |
| Belgrade | | 9·4 | 353 | e 2 20 | − 2 | i 4 38 | +25 | — | 5·7 |
| Sebenico | | 9·4 | 332 | e 2 20 | − 2 | — | — | 5·9 | — |
| Rocca di Papa | E. | 9·6 | 314 | i 2 30 | + 6 | i 4 56 | +38 | i 6·2 | 9·1 |
| | N. | 9·6 | 314 | e 2 28 | + 4 | i 5 4 | +46 | — | — |
| Helwan | | 9·7 | 123 | 2 36 | +10 | 4 25 | + 4 | — | 11·0 |
| Florence | N. | 11·7 | 318 | 2 48 | − 7 | 5 48 | ?L | (5·8) | 7·8 |
| Laibach | | 12·0 | 334 | e 2 54 | − 5 | e 5 33 | +14 | i 6·0 | — |
| Budapest | | 12·2 | 351 | 3 5 | + 3 | e 5 18? | − 6 | e 6·3 | 7·9 |
| Venice | | 12·3 | 326 | 3 18 | +15 | 5 16 | −10 | — | 7·2 |
| Graz | | 12·5 | 339 | e 3 1 | − 5 | e 5 46 | +14 | 6·2 | 7·4 |
| Vienna | | 13·5 | 344 | e 3 16 | − 4 | 7 6 | +70 | i 7·7 | 9·1 |
| Innsbruck | N.E. | 14·2 | 330 | e 3 54 | +25 | i 5 55 | −18 | e 8·9 | 12·1 |
| Lemberg | | 14·4 | 5 | e 3 36 | + 4 | e 6 36 | +18 | — | 10·5 |
| Moncalieri | | 14·4 | 315 | 3 27 | − 5 | 6 28 | +10 | 8·3 | 14·1 |
| Chur | | 14·7 | 324 | i 3 40 | + 5 | 6 5 | −20 | — | — |
| Algiers | | 15·3 | 281 | 3 53 | +10 | e 6 48 | + 9 | 13·0 | 21·3 |
| Ravensburg | E. | 15·4 | 327 | e 3 44 | 0 | e 6 46 | + 5 | e 9·1 | 9·5 |
| Zurich | | 15·5 | 324 | e 3 46 | 0 | e 6 33 | −11 | — | — |
| Hohenheim | N. | 16·2 | 329 | e 3 58 | + 3 | e 7 6 | + 6 | e 9·2 | 9·8 |
| Cheb | | 16·2 | 337 | e 3 56 | + 1 | i 7 0 | 0 | e 9·2 | 9·5 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Barcelona | | 16·6 | 297 | i 4 2 | + 2 | e 7 38 | +29 | 9·9 | 14·6 |
| Besançon | | 16·7 | 319 | e 4 11 | +10 | — | — | 9·3 | 11·3 |
| Strasbourg | | 16·8 | 326 | 4 6 | + 4 | i 7 27 | +14 | — | 10·4 |
| Makeyevka | | 17·2 | 38 | i 4 9 | + 2 | i 7 23 | + 1 | 9·3 | 11·2 |
| Tortosa | N. | 17·6 | 294 | 4 18 | + 6 | e 7 36 | + 5 | e 10·3 | 16·2 |
| Alicante | | 18·2 | 286 | 5 22 | +63 | 8 46 | +62 | 13·4 | 18·0 |
| Piatigorsk | | 18·2 | 56 | e 6 5 | +106 | — | — | i 9·5 | 12·3 |
| Paris | | 19·5 | 319 | i 4 39 | + 4 | i 8 16 | + 3 | 11·3 | 13·3 |
| Almeria | | 19·6 | 281 | 4 30 | − 6 | 8 21 | + 6 | 10·1 | 12·2 |
| Uccle | | 19·9 | 326 | i 4 41 | + 1 | i 8 17 | − 4 | e 10·3 | 11·8 |
| Hamburg | | 19·9 | 339 | e 4 41 | + 1 | e 7 54 | −27 | 11·3 | 16·2 |
| De Bilt | | 20·5 | 329 | 4 49 | + 2 | 8 31 | − 3 | e 10·3 | 12·1 |
| Granada | | 20·6 | 282 | i 4 56 | + 8 | i 8 56 | +20 | 11·1 | 15·9 |
| Toledo | | 21·0 | 290 | 4 58 | + 5 | i 8 47 | + 3 | e 10·6 | 16·2 |
| Malaga | | 21·3 | 281 | e 4 57 | 0 | e 8 51 | + 1 | e 12·8 | — |
| Baku | | 22·4 | 69 | i 5 12 | + 2 | i 9 24 | +11 | 12·3 | 15·2 |
| Kew | | 22·5 | 322 | e 5 7 | − 4 | i 9 8 | − 7 | 11·3 | 13·4 |
| San Fernando | | 22·8 | 281 | 5 15 | 0 | 9 20 | − 1 | 15·8 | 17·8 |
| Rio Tinto | | 23·0 | 284 | 5 18? | + 1 | — | — | — | 22·3 |
| Oxford | | 23·2 | 322 | i 5 18 | − 1 | i 9 20 | − 9 | 12·8 | 13·9 |
| West Bromwich | | 24·0 | 323 | 5 25 | − 3 | 9 36 | − 8 | — | — |
| Upsala | E. | 24·5 | 355 | 5 29 | − 4 | 9 42 | −12 | e 12·3 | 15·9 |
| Pulkovo | | 24·8 | 10 | e 5 29 | − 7 | i 9 44 | −15 | 11·3 | 13·9 |
| Stonyhurst | | 25·0 | 325 | 5 36 | − 2 | i 9 58 | − 5 | 14·3 | 16·3 |
| Bidston | | 25·1 | 323 | 5 28 | −11 | 9 52 | −13 | 12·8 | 14·6 |
| Leningrad | | 25·1 | 10 | e 5 30 | − 9 | i 9 46 | −19 | 11·2 | 11·6 |
| Dyce | | 27·1 | 331 | 5 52 | − 7 | 10 27 | −16 | — | 16·8 |
| Bergen | | 27·1 | 342 | e 5 48 | −11 | — | — | 16·3 | — |
| Tashkent | | 37·0 | 67 | 7 24 | − 6 | i 13 8 | −16 | e 19·7 | 25·4 |
| Simla | N. | 45·7 | 80 | — | — | e 15 6 | −18 | — | — |
| Bombay | | 47·6 | 97 | e 9 18? | +27 | — | — | — | — |
| Hyderabad | | 52·9 | 96 | 8 53 | −32 | 16 58 | + 3 | — | — |
| Cape Town | | 69·5 | 184 | — | — | — | — | — | 38·8 |
| Ottawa | | 70·4 | 314 | — | — | — | — | e 34·3 | — |
| Victoria | | 90·6 | 339 | 24 10 | ?S | (24 10) | −10 | 46·0 | 51·8 |
| Sucre | | 98·7 | 253 | — | — | — | — | 50·3 | 60·0 |
| La Paz | | 99·6 | 259 | — | — | — | — | 56·3 | 61·9 |

Additional readings: Athens MN = +2·2m. Mostar P = +2m.57s., S = 4m.19s. = L perhaps. Belgrade ePN = +2m.21s., i = +3m.21s. and +4m.38s., iEN = +3m.57s., $iSR_1E$ = +5m.19s., $iSR_1N$ = +5m.20s., MN = +6·0m.; epicentre 36°·5N. 21°·0E. Sebenico $PR_1$ = +4m.7s. = S − 6s., $iSR_1$ = +4m.33s. Laibach e = +3m.4s. = $PR_1$ + 0s., +3m.10s., +3m.51s., and +4m.2s., $PR_1E$ = +4m.55s., $PR_1N$ = +4m.56s. Budapest MN = +11·0m. Venice ePN = +3m.28s., ePE = +3m.49s., S = +5m.0s. Vienna iZ = +4m.29s., +4m.51s., and +6m.27s. = $SR_1$ + 20s., iEN = +5m.36s. Ravensburg $ePR_1E$ = +5m.11s., eS = +8m.36s.; true S is given as eE. Hohenheim eSN? = +8m.16s.; true S is given as eN. Barcelona MN = +15·2m. Strasbourg e = +7m.6s. and +7m.12s., i = +7m.42s. = $SR_1$ + 8s., MN = +10·3m., MZ = +12·8m. Makeyevka $PR_1$ = +4m.27s., $SR_1$ = +8m.5s., MZ = +12·1m., MN = +13·7m.; epicentre 35° 49′N. 21° 47′E. Tortosa ME = +17·9m. Alicante MN = +17·8m. Piatigorsk: If we decrease the readings by 2min. L would suit S. Uccle i = +8m.26s. Hamburg +8m.30s., +8m.36s., and +8m.42s., eEN = +10m.42s., MN = +14·4m., MZ = +15·7m. De Bilt eSNZ = +8m.37s., MZ = +13·4m. Granada i = +5m.15s. = $PR_1$ + 7s., +6m.37s., +7m.46s., +8m.47s., +9m.29s. = $SR_1$ + 5s., and +10m.6s., MN = +18·5m. Baku MN = +14·2m., MZ = +16·7m. San Fernando MN = +16·3m. Pulkovo iP = +5m.31s., $PR_1$ = +6m.6s., $SR_1$ = +10m.18s., $SR_2$ = +10m.48s. = $SR_1$ − 10s., MN = +16·0m., MZ = +17·5m.; epicentre 37° 12′N. 20° 45′E. Leningrad iP = +5m.33s., $iPR_1$ = +6m.19s., $iSR_2$ = +10m.50s., MZ = +12·4m., MN = +41·4m.; epicentre 36° 10′N. 22° 7′E. Tashkent e = +8m.47s. = $PR_1$ + 1s., +8m.58s. = $PR_2$ − 13s., +10m.9s., +15m.37s. = $SR_1$ − 5s., +15m.50s., +16m.23s. = $SR_2$ + 2s., and +18m.58s., MN = +22·6m., MZ = +26·2m.; epicentre 38°·1N. 22°·7E. Simla eE = +18m.48s. = $SR_1$ + 4s. Ottawa eN? = +28m.18s.? = $SR_2$ − 25s., eE = +31m.18s.? Victoria LN = +47·3m.

Sept. 19d. 14h. 37m. 48s. Epicentre 35°·5N. 22°·0E. (as at 1h.).

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Athens | 2·8 | 29 | 1 7 | +23 | — | — | i 1·6 | 1·8 |
| Pompeii | 7·9 | 314 | e 3 36 | ?S | (e 3 36) | + 2 | — | — |
| Naples | 8·1 | 313 | e 3 42 | ?S | (e 3 42) | + 2 | — | — |
| Rocca di Papa | 9·6 | 314 | e 2 20 | − 4 | — | — | — | 6·5 |
| Zagreb | 11·3 | 338 | 4 35 | ?S | (4 35) | −27 | (e 6·1) | — |
| Budapest | 12·2 | 351 | — | — | — | — | e 6·2 | — |
| Venice | 12·3 | 326 | 5 54 | ?S | (5 54) | +28 | — | — |
| Moncalieri | 14·4 | 315 | — | — | — | — | 8·8 | — |
| Strasbourg | 16·8 | 326 | — | — | — | — | 9·2 | — |
| Uccle | 19·9 | 326 | — | — | — | — | e 11·0 | — |
| De Bilt | 20·5 | 329 | e 4 49 | + 2 | e 8 23 | −11 | e 11·2 | — |
| Baku | 22·4 | 69 | — | — | — | — | e 12·2 | — |
| Pulkovo | 24·8 | 10 | i 5 36 | 0 | — | — | 12·2 | 16·1 |
| Leningrad | 25·1 | 10 | — | — | — | — | e 14·2 | — |
| Tashkent | 37·0 | 67 | — | — | — | — | e 22·2 | — |

Additional readings: Rocca di Papa ePN = +2m.35s., $PR_1N$ = +3m.29s., $PR_1E$ = +3m.40s., $PR_2N$ = +6m.24s., $PR_2E$ = +6m.44s. Zagreb e = +4m.47s. and +5m.52s., i = +7m.2s.; S is given as P and L as S. Venice reading is given for 13h. Moncalieri e = 14h.30m.32s.

Sept. 19d. 20h. 7m. 0s. (I) } Epicentre 42°·0S. 130°·0E. (as on Sept. 9d.).
20h. 8m. 20s. (II) }

A = −·478, B = +·569, C = −·669; D = +·766, E = +·643;
G = +·430, H = −·513, K = −·743.

To the difficulties already noticed on Sept. 9 is here added that of separating out the local shock in Europe which follows at 20h. 22m. The residuals in round brackets refer to $PR_1$ or $SR_1$.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I Riverview | 18·5 | 72 | — | — | e 7 54 | + 3 | — | 13·3 |
| II | 18·5 | 72 | — | — | e 7 58 | + 7 | — | 12·9 |
| I Irkutsk | 96·9 | 345 | e 13 41 | −13 | e 17 53 | $PR_1$ | — | — |
| I Tashkent | 99·7 | 318 | i 21 50 | (+217) | e 34 54 | (+140) | — | — |
| II | 99·7 | 318 | e 21 56 | (+223) | e 34 50 | (+136) | — | — |
| I Baku | 109·6 | 307 | — | — | e 34 10 | (−28) | 63·5 | — |
| I Makeyevka | 121·0 | 309 | i 19 27 | [+32] | — | — | — | — |
| I Pulkovo | 129·9 | 320 | i 19 16 | [− 2] | — | — | — | — |
| I Leningrad | 130·0 | 320 | e 19 18 | [ 0] | — | — | — | — |
| I Zagreb | 133·7 | 298 | e 19 54 | [+28] | — | — | — | — |
| I Vienna z. | 134·2 | 301 | e 19 41 | [+13] | — | — | — | — |
| I Rocca di Papa | 134·4 | 291 | e 19 54 | [+25] | — | — | — | — |
| I Venice | 136·0 | 296 | 19 41 | [+ 9] | — | — | — | — |
| I Innsbruck N.W. | 137·2 | 299 | i 19 54 | [+20] | — | — | — | — |
| I Zurich z. | 138·1 | 297 | i 19 47 | [+11] | — | — | — | — |
| I Chur | 138·3 | 297 | i 19 50 | [+14] | — | — | — | — |
| I Moncalieri | 138·9 | 293 | e 19 40 | [+ 3] | — | — | 29·9 | — |
| I Hamburg | 139·4 | 307 | i 19 37 | [− 1] | — | — | — | — |
| I Strasbourg | 139·8 | 300 | i 19 56 | [+18] | — | — | — | — |
| I De Bilt z. | 142·1 | 305 | i 19 41 | [− 2] | — | — | — | — |
| II z. | 142·1 | 305 | i 19 38 | [− 5] | — | — | — | — |
| I Uccle | 142·4 | 302 | 19 43 | [ 0] | — | — | — | — |
| I Paris | 143·3 | 299 | i 19 46 | [+ 1] | — | — | — | — |
| II | 143·3 | 299 | i 19 46 | [+ 1] | — | — | — | — |
| I Granada | 144·4 | 275 | 19 39 | [− 8] | — | — | — | — |
| II | 144·4 | 275 | 19 24 | [−23] | — | — | — | — |
| I Kew | 145·4 | 303 | 19 44 | [− 4] | — | — | — | — |

Additional readings and notes: Riverview I S given as e simply followed by a reading at +8m.14s. = $SR_1$ −4s., II S given as e(S?) Irkutsk I i = +29m.47s. Tashkent residuals are those for $PR_1$ and $SR_1$ Baku I e = +39m.35s. = $SR_2$ −17s.; S residual is that of $SR_1$. Makeyevka, Pulkovo, and Leningrad observations may belong to the European shock. Zagreb e = +20m.1s., +20m.10s., +20m.20s.; all the readings have been diminished by 1h. Vienna iPZ = +19m.49s. Rocca di Papa ePEN = +19m.56s. Strasbourg i = +20m.0s., e = +20m.5s., +20m.13s. Uccle i = +19m.47s.

For the European shock there are several alternatives, all of which involve difficulties in respect of one or more observatories.

FIRST ALTERNATIVE.

Sept. 19d. 20h. 22m. 0s. Epicentre 72°·0N. 2°·8W. (as on 1919 Sept. 12d.)

A = +·309, B = −·015, C = +·951; D = −·049, E = −·999.
G = +·950, H = −·046, K = −·309.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m |
| Leningrad | 17·6 | 118 | e 4 18 | + 6 | e 7 49 | +18 | e 12·2 |
| Pulkovo | 17·8 | 118 | i 4 16 | + 1 | i 7 50 | +14 | 9·5 |
| Makeyevka | 30·3 | 120 | i 4 27 | −124 | e 8 5 | −214 | 11·0 |
| Baku | 40·7 | 111 | e 6 53 | −68 | — | — | — |
| Tashkent | 45·7 | 91 | e 8 16 | −22 | e 15 28 | + 4 | — |
| Irkutsk | 45·9 | 56 | — | — | i 14 47 | −40 | — |

Here Makeyevka is quite anomalous; both P and S suggest that Δ should be about 19° instead of 30°. But it is difficult to see how this adjustment of the epicentre can be made without entirely upsetting at least one other station.

SECOND ALTERNATIVE.

Sept. 19d. 20h. 22m. 10s. Epicentre 47°·0N. 10°·0E. (as on 1924 Nov. 7d.).

A = +·672, B = +·118, C = +·731; D = +·174, E = −·985;
G = +·720, H = +·127, K = −·682.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. |
| Pulkovo | 17·5 | 36 | i 4 6 | − 5 | i 7 40 | +11 | 9·3 |
| Leningrad | 17·6 | 36 | e 4 8 | − 4 | e 7 38 | + 8 | e 12·0 |
| Makeyevka | 18·9 | 75 | i 4 17 | −11 | e 7 55 | − 5 | 10·8 |
| Baku | 29·3 | 90 | e 6 43 | +22 | — | — | — |
| Tashkent | 41·9 | 75 | e 8 6 | − 4 | e 15 18 | +44 | — |
| Irkutsk | 56·9 | 47 | — | — | i 14 37 | −188 | — |

If we could assume Irkutsk 3min. in error this solution would satisfy the requirements of these particular observations; but this position of the epicentre is close to Chur, Zurich, and Innsbruck, and near many other European stations which fail to record anything at the times near 20h. 23m., which would suit them. There is, of course, a neighbourhood to the east of Pulkovo and Makeyevka which preserves the near equality of Δ suggested by these observations, viz., 59°·0N. 65°·0E., not far from Ekaterinburg. It is particularly unfortunate that the Ekaterinburg seismographs were out of action from Sept. 18-22; observations there would probably have settled the matter. No previous epicentre near this position has been recorded. If we may adopt it for trial, we have :—

THIRD ALTERNATIVE.

Sept. 19d. 20h. 22m. 10s. Epicentre 59°·0N. 65°·0E.

A = +·218, B = +·467, C +·857; D = +·906, E = −·423;
G = +·362, H = +·777, K = −·515.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. |
|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. |
| Pulkovo | 17·5 | 288 | i 4 6 | − 5 | i 7 40 | +11 | 9·3 |
| Leningrad | 17·5 | 288 | e 4 8 | − 3 | e 7 39 | +10 | e 12·0 |
| Tashkent | 17·9 | 169 | — | — | e 8 6 | +28 | e 15·3 |
| Makeyevka | 19·2 | 247 | i 4 17 | −14 | e 7 55 | −11 | 10·8 |
| Baku | 20·9 | 214 | — | — | e 6 43 | −119 | — |
| Irkutsk | 22·8 | 90 | — | — | i 14 37 | +316 | — |

Three observatories (counting Pulkovo and Leningrad as one) are in fair accord if we regard the Tashkent 8m.6s. as S rather than P. It also seems probable that the Baku times are about 2min. too small, as this suits the antipodal shock also. But that Irkutsk times should be 5min. too large is not supported by the antipodal shock observations; nor can either of them be transferred to this shock.

Sept. 19d. Readings also at 0h. (Zi-ka-wei and Taihoku), 3h. (Tashkent and near Athens (2) ), 4h. (near Athens (2) ), 5h. (Nagasaki), 6h. (Venice and near Athens (2) ), 8h. (near Athens), 9h. (Tashkent), 13h. (Sucre, La Paz, and near Nagasaki), 14h. (near Athens), 15h. (Sucre), 19h. (Budapest), 20h. (Mostar), 21h. (Amboina), 22h. (Sucre and Tacubaya).

Sept. 20d. Readings at 12h. (Nagasaki), 13h. (Nagasaki, Rocca di Papa, and Loyola), 17h. and 18h. (near Athens).

Sept. 21d. 5h. 34m. 6s. Epicentre 34°·0S. 57°·0E. (as on Sept. 2d.).

A = +·452, B = +·695, C = −·559; D = +·839, E = −·545: G = −·305, H = −·469, K = −·829.

| | | Δ | Az. | P. | O−C | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Hyderabad | | 55·4 | 25 | — | — | — | — | — | 30·4 |
| Baku | | 74·7 | 355 | e 11 50 | + 3 | e 21 30 | + 8 | 35·9 | — |
| Tashkent | | 76·1 | 10 | e 12 14 | +18 | 21 32 | − 6 | 35·7 | 39·5 |
| Rocca di Papa | | 85·9 | 329 | e 12 49 | − 4 | — | — | e 25·0 | 26·1 |
| Granada | | 90·8 | 317 | — | — | — | — | e 46·6 | 55·5 |
| San Fernando | E. | 91·8 | 315 | — | — | — | — | — | 58·9 |
| Ottawa | | 142·5 | 302 | — | — | — | — | e 76·9 | — |

Additional readings: Tashkent e = +12m.22s. and +32m.6s. = $SR_1$ −4s., MN = +44·8m. Rocca di Papa eZ = +13m.29s. and +18m.59s. = $PR_2$ +16s. Granada L = +51·2m. San Fernando MN = +57·4m.

Sept. 21d. Readings also at 1h. (Tashkent), 2h. (Tacubaya), 5h (Rocca di Papa) 6h. (Tokyo), 8h. (near Toyooka), 9h. (Tokyo), 10h. (near Zurich), 15h. (Tokyo and near Athens), 19h. (La Paz and Sucre), 22h. (Granada, Ottawa, and Merida).

Sept. 22d. 21h. 9m. 45s. Epicentre 49°·0N. 124°·0W. (as on Sept. 17d.).

A = −·367, B = −·544, C = +·755; D = −·829, E = +·559; G = −·422, H = −·626, K = −·656.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Victoria | | 0·8 | 141 | 0 38 | +26 | — | — | 1·9 | 2·4 |
| Spokane | | 4·6 | 105 | i 1 3 | − 8 | i 2 2 | − 4 | 3·6 | — |
| Sitka | | 10·5 | 324 | (2 38) | + 1 | — | — | (9·2) | (8·6) |
| Tucson | E. | 19·4 | 145 | i 4 41 | + 7 | — | — | 13·8 | — |
| | N. | 19·4 | 145 | e 5 1 | +27 | — | — | e 13·2 | — |
| Chicago | E. | 26·3 | 92 | — | — | — | — | 15·4 | 18·6 |
| Ann Arbor | N. | 28·6 | 88 | — | — | e 11 33 | +23 | e 13·4 | 17·2 |
| Toronto | N. | 30·8 | 82 | — | — | — | — | 16·5 | 19·6 |
| Ottawa | | 32·5 | 78 | — | — | e 12 15 | − 1 | e 17·2 | 19·2 |
| Ithaca | | 33·2 | 82 | — | — | — | — | e 18·8 | — |
| Fordham | | 35·7 | 86 | e 17 18 | ?L | — | — | (e 17·3) | — |
| Honolulu | E. | 38·6 | 236 | — | — | — | — | e 16·4 | 17·6 |
| Dyce | | 63·0 | 30 | — | — | — | — | 32·2 | 39·2 |
| Edinburgh | | 64·1 | 33 | — | — | — | — | e 35·2 | — |
| Upsala | | 66·8 | 20 | — | — | — | — | 38·2 | — |
| Oxford | | 68·1 | 35 | — | — | — | — | 37·0 | 39·0 |
| Kew | | 68·7 | 35 | — | — | — | — | e 32·2 | — |
| Leningrad | | 69·0 | 13 | — | — | — | — | 33·6 | 41·0 |
| Pulkovo | | 69·3 | 13 | — | — | e 19 42 | −36 | 34·2 | 40·0 |
| De Bilt | | 70·1 | 29 | — | — | e 20 9 | −18 | e 33·2 | 39·2 |
| Hamburg | | 70·4 | 27 | — | — | — | — | e 37·2 | — |
| Irkutsk | | 70·8 | 331 | — | — | e 16 15? | ?$PR_2$ | 37·2 | — |
| Uccle | | 70·9 | 31 | — | — | — | — | e 33·2 | 44·2 |
| Paris | | 71·9 | 34 | — | — | — | — | e 39·2 | 43·2 |
| Strasbourg | | 74·0 | 30 | — | — | — | — | e 40·2 | — |

*Continued on next page.*

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Kucino | 74·2 | 10 | — | — | e 20 39 | −37 | 37·8 | 46·1 |
| Moncalieri | 77·0 | 32 | — | — | — | — | 44·7 | — |
| Tortosa N. | 77·8 | 40 | — | — | — | — | e 43·2 | 50·9 |
| San Fernando E. | 78·4 | 47 | — | — | — | — | — | 45·2 |
| Granada | 79·0 | 45 | — | — | e 23 31 | ?PS | 39·2 | 45·4 |
| Makeyevka | 81·8 | 12 | — | — | — | — | e 41·2 | 59·0 |
| Tashkent | 89·0 | 350 | — | — | e 26 45 | ? | e 43·2 | 52·8 |
| Baku | 90·5 | 5 | e 15 55 | +156 | e 24 33 | +14 | 45·2 | 57·1 |

Additional readings: Victoria PE = +42s. (O−C = +30s.). Spokane iN = +3m.4s. and +4m.18s. Sitka eE = (+3m.51s.); all readings have been increased by 6m. Tucson eE = +5m.47s., eN = +6m.25s. and +7m.30s. Ann Arbor eN = +8m.51s., eE = +13m.15s. and +13m.45s., LE = +17·0m., ME = +17·4m. Ottawa eLN = +16·2m. Fordham gives several eE and iE readings. Honolulu iLN = +14·8m. Leningrad MZ = +41·6m. Pulkovo MN = +41·0m., MZ = +41·1m. De Bilt MN = +37·8m., MZ = +43·7m. Kucino e = +25m.23s. and +28m.53s. San Fernando MN = +43·8m. Makeyevka MZ = +49·0m., MN = +49·2m. Tashkent MN = +62·0m. Baku P and S are given as e's simply.

Sept. 22d. Readings also at 0h. (near Malabar), 1h. (Baku and Tashkent), 8h. (Agana), 13h. (Ann Arbor), 15h. (near Tacybaya), 17h. (Baku and Tashkent), 18h. (La Plata), 21h. (Tokyo), 22h. (Victoria).

Sept. 23d. 15h. 11m. 6s. Epicentre 45°·0N. 29°·0W.

A = +·618, B = −·343, C = +·707; D = −·485, E = −·875;
G = +·618, H = −·343, K = −·707.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Lisbon | 16·1 | 106 | e 6 22 | ?S | (e 6 22) | −35 | — | — |
| Bidston | 18·8 | 54 | 4 31 | + 4 | 8 2 | + 4 | 9·1 | 10·8 |
| Toledo | 19·1 | 97 | e 4 30 | 0 | e 8 38 | +34 | e 9·7 | — |
| San Fernando | 19·2 | 108 | (4 34) | + 3 | 4 34 | ?P | 8·9 | 11·9 |
| Edinburgh | 19·6 | 47 | i 4 42 | + 6 | i 8 19 | + 4 | — | 10·7 |
| Kew | 20·0 | 61 | e 4 43 | + 2 | e 8 30 | + 7 | 10·9 | — |
| Malaga | 20·3 | 105 | e 5 0 | +15 | e 8 30 | + 1 | — | — |
| Granada | 20·6 | 104 | i 4 50 | + 2 | 8 46 | +10 | i 9·8 | 12·9 |
| Dyce | 20·6 | 44 | e 4 54 | + 6 | e 8 42 | + 6 | — | — |
| Almeria | 21·6 | 103 | 4 51 | − 9 | e 8 28 | −29 | e 9·8 | 11·8 |
| Paris | 21·7 | 69 | e 5 2 | + 1 | e 9 3 | + 4 | 10·9 | 11·9 |
| Tortosa E. | 21·9 | 90 | 5 1 | − 3 | 8 55 | − 8 | e 10·9 | — |
| N. | 21·9 | 90 | 5 3 | − 1 | 8 36 | −27 | 10·6 | 11·9 |
| Barcelona | 22·8 | 88 | e 4 55 | −20 | — | — | e 11·4 | 14·7 |
| Uccle | 22·9 | 63 | e 5 13 | − 3 | 9 23 | 0 | e 10·9 | 13·1 |
| De Bilt | 23·4 | 60 | 5 22 | + 1 | 9 34 | + 1 | 11·6 | 13·7 |
| Strasbourg | 25·2 | 69 | e 5 35 | − 5 | — | — | 12·9 | — |
| Algiers | 25·4 | 98 | e 5 34 | − 8 | — | — | e 12·9 | — |
| Moncalieri | 25·8 | 77 | 5 38 | − 8 | 9 35 | −43 | 13·6 | — |
| Hamburg | 26·5 | 57 | — | — | e 9 54? | −38 | — | 14·9 |
| Cheb | 28·1 | 65 | — | — | e 8 54? | −127 | — | 17·9 |
| Ottawa | 32·4 | 290 | — | — | e 12 18 | + 4 | e 16·9 | — |
| Budapest E. | 32·8 | 69 | — | — | — | — | e 16·4 | — |
| Leningrad | 37·5 | 45 | — | — | — | — | e 18·1 | 23·5 |
| Pulkovo | 37·6 | 45 | e 7 19 | −16 | 13 14 | −18 | 19·6 | 23·4 |
| Chicago | 41·8 | 289 | — | — | — | — | 23·7 | 24·8 |
| Makeyevka | 44·8 | 61 | — | — | e 15 3 | − 9 | 23·9 | 26·8 |
| Ekaterinburg | 53·6 | 44 | e 9 39 | + 9 | 17 13 | + 9 | 25·9 | — |
| Baku | 55·8 | 65 | — | — | — | — | 30·9 | — |
| Tashkent | 67·0 | 55 | (11 6) | + 8 | (e 19 54) | + 4 | (e 31·9) | (42·7) |

Additional readings and notes: San Fernando MN = +10·9m. Granada MZ = +10·9m. De Bilt MNZ = +13·8m. Strasbourg eP = +5m.38s. Budapest eN = +17m.24s. Pulkovo MN = +25·6m. Makeyevka e = +18m.46s. = $SR_1$ +20s., MN = +26·3m. Tashkent e = (+14m.54s.) = $PR_1$ +52s. and +27m.36s. = $SR_2$ +1s., MZ = +37·8m., MN = +43·2m.; S is given as e simply and all readings have been diminished by 1h.

Sept. 23d. 18h. 31m. 48s. Epicentre 2°·8N. 96°·0E.

A = −·104, B = +·993, C = +·049; D = +·995, E = +·105; G = −·005, H = +·049, K = −·999.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Colombo | | 16·6 | 285 | 7 42 | ?S | (7 42) | +33 | 9·7 | 11·2 |
| Kodaikanal | | 19·8 | 293 | 5 6 | +27 | — | — | 12·2 | 13·5 |
| Phu-Lien | | 20·7 | 29 | e 4 53 | + 4 | — | — | 13·2 | — |
| Hyderabad | | 22·6 | 312 | 5 13 | + 1 | 9 25 | + 8 | 13·0 | 19·0 |
| Manila | | 27·3 | 63 | e 6 8 | + 7 | — | — | e 17·0 | 18·1 |
| Bombay | | 27·8 | 307 | 10 49 | ?S | (10 49) | − 6 | — | 15·7 |
| Taihoku | E. | 33·2 | 45 | — | — | — | — | 19·2 | — |
| Tashkent | | 45·3 | 332 | i 9 29 | +54 | i 16 5 | +46 | e 24·2 | 26·5 |
| Irkutsk | | 49·9 | 7 | 10 2 | +56 | 17 14 | +56 | e 27·2 | — |
| Baku | | 56·2 | 320 | — | — | e 17 37 | + 1 | 27·2 | 32·4 |
| Ekaterinburg | | 60·9 | 340 | i 10 22 | + 4 | i 18 36 | + 1 | 28·2 | 35·2 |
| Makeyevka | | 67·0 | 324 | — | — | e 19 53 | + 3 | 35·2 | 39·9 |
| Kucino | | 70·2 | 330 | e 11 16 | − 2 | e 20 20 | − 8 | 34·2 | 45·3 |
| Pulkovo | | 75·5 | 333 | 11 54 | + 2 | 21 32 | 0 | 40·2 | 49·5 |
| Leningrad | | 75·6 | 333 | — | — | — | — | 44·2 | — |
| Cape Town | | 81·2 | 236 | — | — | — | — | — | 45·7 |
| Rocca di Papa | | 83·1 | 312 | e 12 58 | +21 | (e 22 42) | −16 | e 22·7 | — |
| De Bilt | | 88·3 | 323 | — | — | e 23 48 | − 7 | e 45·2 | — |
| Uccle | | 88·8 | 321 | — | — | e 23 49 | −12 | e 43·2 | — |
| Paris | | 90·7 | 320 | — | — | — | — | e 55·2 | — |
| Kew | | 91·6 | 323 | — | — | — | — | e 50·2 | — |
| Granada | | 95·9 | 309 | — | — | — | — | 53·0 | 56·2 |
| San Fernando | E. | 97·8 | 309 | — | — | — | — | — | 65·7 |
| Ottawa | E. | 131·3 | 352 | — | — | — | — | e 65·2 | — |
| Toronto | N. | 133·4 | 355 | — | — | — | — | 81·2 | — |

Additional readings and notes: Colombo S = +8m.37s. Tashkent i = +9m.54s. = $PR_1$ − 29s., +16m.21s., and +19m.36s. = $SR_3$ − 6s., e = +11m.6s. = $PR_2$ + 6s., and +22m.48s., MN = +32·2m., MZ = +42·3m. Baku MN = +35·6m., MZ = +40·1m. Ekaterinburg MN = +35·0m., MZ = +41·1m. Makeyevka e = +28m.1s. = $SR_2$ + 26s., MN = +46·0m. Kucino MN = +38·8m. Pulkovo $SR_2$ = +30m.12s., MZ = +49·2m., MN = +53·8m. Rocca di Papa ePE = +11m.28s., ePN = +14m.4s. = P + 87s., e = +19m.50s. = $PR_2$ + 28s. De Bilt eLN = +49·2m. San Fernando MN = +61·2m. Ottawa LN = +74·8m.

Sept. 23d. Readings also at 0h. (near Malabar), 7h. (near Manila), 11h. (Rocca di Papa), 12h. (near Athens), 13h. (Tokyo), 14h. (Ekaterinburg, Tokyo, and Sucre), 15h. (Agana and Tokyo), 16h. (Guadalajara, Tacubaya, Manzanillo, Graz, De Bilt, Uccle, Budapest, Zagreb, near Athens, and near Mizusawa), 20h. (Zi-ka-wei), 23h. (Baku, Ekaterinburg, Tashkent, Pulkovo, and Granada).

Sept. 24d. 21h. 4m. 20s. Epicentre 53°·0N. 135°·5E.

A = −·429, B = +·422, C = +·799; D = +·701, E = +·713; G = −·570, H = +·560, K = −·602.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Irkutsk | 18·8 | 280 | e 4 14 | −13 | — | — | — | — |
| Ekaterinburg | 41·0 | 306 | i 8 8 | + 5 | 14 29 | + 8 | e 21·1 | — |
| Tashkent | 44·8 | 283 | i 8 38 | + 6 | — | — | e 26·0 | 31·1 |
| Leningrad | 52·2 | 322 | e 9 18 | − 3 | — | — | — | — |
| Pulkovo | 52·4 | 322 | 9 20 | − 2 | 16 44 | − 5 | — | — |

Additional readings: Ekaterinburg e = +17m.45s. = $SR_2$ − 15s. Tashkent e = +8m.54s. and +21m.40s., i = +18m.24s. = $SR_1$ − 2s.

Sept. 24d. Readings also at 0h. (Rocca di Papa, Moncalieri, Leningrad, San Fernando, and near Sumoto), 1h. (Ekaterinburg and Tashkent), 2h. (Tashkent), 3h. (Tashkent, Pulkovo, Leningrad, Ekaterinburg, and Granada), 4h. (near Sumoto), 5h. (Sucre, La Paz, and Taihoku), 12h. (Tokyo and Ekaterinburg), 13h. (Baku), 15h. (Baku and Tashkent), 17h. (Taihoku), 19h. (Sucre, La Paz, and near Toyooka), 20h. (Baku and near Athens), 22h. (Ekaterinburg, Taihoku, and Tashkent), 23h. (Irkutsk).

Sept. 25d. Readings at 0h. (near Irkutsk), 1h. (near Sumoto), 3h. (near Manila), 9h. (Pulkovo, Makeyevka, Venice, Zagreb, near Naples, Pompeii, and Rocca di Papa), 14h. (Ekaterinburg), 17h. (Manila and Toledo), 19h. (Baku), 21h. (near Batavia and Malabar), 23h. (Granada).

Sept. 26d. 1h. 0m. 21s. Epicentre 30°·5N. 138°·5E. (as on 1925 May 15d.).

A = −·645, B = +·571, C = +·508; D = +·663, E = +·749;
G = −·380, H = +·336, K = −·862.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Sumoto | 4·8 | 323 | 1 28 | +14 | (2 21) | +10 | 2·4 | 2·4 |
| Nagoya | 4·8 | 345 | (1 18) | + 4 | (2 4) | − 7 | (2·1) | (2·7) |
| Osaka | 4·9 | 330 | 1 15 | − 1 | (2 0) | −14 | 2·0 | 4·4 |
| Kobe | 5·0 | 328 | 1 24 | + 7 | (2 20) | + 3 | 2·3 | 3·4 |
| Tashkent | 55·6 | 302 | i 9 43 | 0 | e 17 31 | + 2 | e 27·6 | 33·6 |
| Ekaterinburg | 58·4 | 321 | 9 53 | − 8 | 17 51 | −13 | 31·6 | — |
| Baku | 69·8 | 306 | — | — | — | — | e 45·8 | — |
| Florence | 91·4 | 324 | — | — | — | — | e 31·6 | 42·6 |

Additional readings: Sumoto S = +2m.3s. Nagoya MN = (+2·4m.). All the readings have been diminished by 5m. Osaka MN = +4·2m. Kobe P = +1m.38s., MN = +2·8m. Tashkent e = +11m.27s., i = +15m.35s. Baku e = +46m.7s.

Sept. 26d. Readings also at 0h. (Granada), 1h. (Ekaterinburg), 2h. (Ekaterinburg and Tashkent), 9h. (Tashkent), 12h. (Tashkent and near Sumoto), 17h. (Tashkent), 18h. (Batavia).

Sept. 27d. 6h. 43m. 15s. Epicentre 43°·0N. 49°·0E.

A = +·480, B = +·522, C = +·682; D = +·755, E = −·656;
G = +·447, H = +·515, K = −·731.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Baku | 2·7 | 166 | i 0 7 | −35 | i 0 26 | −48 | — | 0·9 |
| Kucino | 14·6 | 335 | — | — | i 6 21 | − 1 | — | — |
| Tashkent | 15·0 | 90 | (i 3 47) | + 8 | (6 45) | +13 | (e 8·2) | (10·3) |
| Ekaterinburg | 15·7 | 24 | 3 38 | −10 | 6 34 | −14 | 6·8 | 8·8 |
| Leningrad | 20·5 | 333 | e 4 49 | + 2 | — | — | — | — |

Tashkent e = (+4m.45s.) and (+7m.45s.), MZ = (+13·3m); all readings having been increased by 4m.

Sept. 27d. Readings also at 1h. (Sucre, Makeyevka, Ekaterinburg, Tashkent, Pulkovo, Baku, and Bombay), 2h. (Baku, Tashkent, Leningrad, Granada, Toronto, and Ottawa), 3h. (Ekaterinburg, Tashkent, and near Tacubaya), 4h. (Tacubaya), 5h. (Sucre and La Paz), 7h. (Manila), 9h. (Tashkent and Tacubaya), 13h. (near La Paz and Sucre), 15h. (La Plata and Sucre), 16h. (Ekaterinburg and Graz), 17h. (Graz), 18h. (Tashkent), 21h. (La Paz) 22h. (Ekaterinburg. Tokyo, and Sucre).

Sept. 28d. 15h. 41m. 50s. Epicentre 48°·0N. 15°·8E.

A = +·644, B = +·182, C = +·743; D = +·272, E = −·962;
G = +·715, H = +·202, K = −·669.

Modified from 47°·5N. 15°·8E. of 1926 July 6d. The observations of Pulkovo, Leningrad, Ekaterinburg, and, perhaps, Paris suggest a second shock about 2·5 minutes later from some such epicentre as 50°N. 20°E. But the accordance is not good.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Vienna | | 0·5 | 57 | 0 6 | − 2 | i 0 15 | + 1 | — | 0·4 |
| Graz | | 0·9 | 194 | i0 6 | − 8 | — | — | — | 0·3 |
| Laibach | | 2·1 | 204 | i 0 29 | − 4 | i 0 54 | − 4 | — | 1·1 |
| Zagreb | | 2·2 | 177 | e 0 30 | − 4 | i 1 3 | + 3 | — | — |
| Budapest | | 2·3 | 103 | 0 34 | − 2 | — | — | e 1·2 | 1·3 |
| Innsbruck | N.W. | 3·0 | 256 | i 0 52 | + 5 | i 1 33 | +10 | — | — |
| Cheb | | 3·0 | 313 | e 1 3 | +16 | i 1 40 | +17 | — | 1·8 |
| Venice | | 3·5 | 224 | 1 17 | +22 | i 1 59 | +22 | 3·0 | — |
| Ravensburg | | 4·1 | 270 | e 0 57 | − 7 | i 1 44 | − 9 | i 2·1 | 2·4 |
| Hohenheim | | 4·4 | 282 | e 1 5 | − 3 | e 1 52 | − 9 | i 2·0 | 2·5 |
| Belgrade | | 4·5 | 133 | e 1 29 | +19 | i 2 27 | +23 | — | 2·6 |
| Zurich | N. | 4·9 | 265 | e 1 10 | − 6 | i 2 4 | −10 | — | — |
| Florence | E. | 5·2 | 219 | e 1 40 | +20 | — | — | — | 2·4 |
| Strasbourg | | 5·4 | 279 | 1 37 | +14 | 2 47 | +19 | — | — |
| Lemberg | | 5·7 | 68 | e 1 46 | +18 | — | — | — | 4·6 |
| Moncalieri | | 6·3 | 244 | e 1 35 | − 1 | — | — | 3·2 | — |
| Rocca di Papa | | 6·6 | 200 | e 1 44 | + 3 | — | — | — | 3·7 |
| Besançon | | 6·6 | 267 | e 2 8 | +27 | — | — | — | 3·7 |
| Hamburg | | 6·6 | 329 | — | — | — | — | e 3·6 | 5·8 |
| Pompeii | | 7·3 | 187 | e 3 10 | ?S | (e 3 10) | − 8 | — | — |
| De Bilt | | 7·9 | 305 | — | — | — | — | e 4·4 | — |
| Uccle | | 7·9 | 295 | e 3 6 | ?S | (3 6) | −28 | (4·2) | — |
| Paris | | 8·8 | 282 | 3 17 | +64 | e 4 48 | +50 | 5·4 | — |
| Kew | | 10·9 | 294 | — | — | e 4 10? | −42 | — | — |
| Pulkovo | | 14·5 | 30 | e 5 46 | +133 | 7 42 | +82 | 8·7 | — |
| Leningrad | | 14·6 | 30 | — | — | e 7 42 | +80 | 8·8 | — |
| Makeyevka | | 14·8 | 81 | — | — | — | — | i 8·0 | — |
| Kucino | | 15·6 | 52 | — | — | — | — | e 8·3 | — |
| Ekaterinburg | | 28·2 | 55 | — | — | e 11 42 | +39 | e 14·9 | — |

Additional readings and notes: Zagreb eP = +33s., iPR$_1$ = +34s. +36s., and +51s. Budapest MN = +1·6m. Venice PE = +1m.57s. Belgrade ePE = +1m.33s. and +1m.48s., S = +2m.31s. Zurich readings are given as for 14h. Strasbourg eP = +1m.46s. and +1m.49s. Rocca di Papa eN = +2m.27s., iE = +3m.16s. and +3m.36s., iN = +3m.22s. Hamburg MZ = +6·1m., MN = +6·3m. Paris e = +4m.8s.

Sept. 28d. 15h. 55m. 2s. Epicentre 9°·0S. 121°·0E. (as on 1924 April 4d.).

A = −·509, B = +·847, C = −·156; D = +·857, E = +·515;
G = +·081, H = −·134, K = −·988.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | 8·9 | 54 | 2 14 | − 1 | i 4 50 | +49 | (i 4·8) | — |
| Batavia | E. | 14·3 | 280 | i 3 40 | +10 | — | — | — | — |
| Manila | | 23·6 | 0 | e 5 34 | +10 | (i 9 40) | + 4 | i 9·7 | — |
| Adelaide | | 30·6 | 150 | (6 33) | − 1 | (i 11 38) | − 6 | (13·6) | (16·0) |
| Phu-Lien | | 33·0 | 335 | — | — | — | — | 19·0 | — |
| Melbourne | | 36·0 | 147 | — | — | e 12 22 | −48 | — | 23·5 |
| Sydney | | 37·2 | 138 | 11 28 | ?S | (11 28) | −119 | 23·0 | 27·8 |
| Riverview | | 37·2 | 138 | — | — | 13 28 | + 1 | e 20·8 | 24·6 |
| Bombay | | 55·1 | 301 | 17 22 | ?S | (17 22) | 0 | — | 34·6 |
| Irkutsk | | 62·9 | 349 | e 10 58? | +27 | e 18 56 | − 4 | e 39·0 | — |
| Tashkent | | 69·1 | 321 | i 11 12 | 0 | — | — | e 37·0 | 49·7 |
| Baku | | 81·8 | 313 | e 12 29 | 0 | e 22 30 | −14 | 42·0 | 55·2 |
| Ekaterinburg | | 82·1 | 332 | e 12 28 | − 3 | 22 38 | − 9 | 35·0 | 54·8 |
| Makeyevka | | 92·0 | 318 | — | — | i 23 54 | [+14] | 50·0 | 64·2 |
| Kucino | | 93·5 | 325 | — | — | e 24 24 | −27 | 43·9 | 57·2 |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Pulkovo | | 98·1 | 330 | (e 14 16) | +15 | (e 25 16) | −21 | (47·0) | (58·5) |
| Leningrad | | 98·1 | 330 | — | — | — | — | e 57·5 | — |
| De Bilt | E. | 112·8 | 322 | — | — | — | — | e 58·0 | — |
| Uccle | | 113·6 | 320 | — | — | — | — | e 55·0 | — |
| Granada | | 122·8 | 309 | — | — | — | — | 74·6 | 76·4 |
| Ottawa | | 140·8 | 17 | — | — | — | — | e 63·0 | — |
| Toronto | | 141·0 | 23 | — | — | — | — | 63·0 | — |
| Sucre | | 151·3 | 167 | i 20 4 | [+ 6] | — | — | — | — |

Additional readings and notes: Batavia gives $T_0$ =15h.55m.0s.; epicentre 9°·0S. 121°·5E. Adelaide MN = +15·6m.; all readings have been diminished by 5m. Riverview e(S?) = +18m.40s., MN = +23·6m. Tashkent e = +13m.52s. = $PR_1$ −27s., +18m.6s., +22m.8s., +23m.8s., +28m.29s. = $SR_2$ +12s., +30m.58s., +32m.40s., and +35m.58s., i = +25m.10s. = $SR_1$ −27s., MN = +45·6m. Baku MN = +52·2m., MZ = +56·4m. Ekaterinburg MN = +51·4m., MZ = +54·6m. Makeyevka MN = +60·8m. Kucino MN = +46·9m. Pulkovo. The readings have been diminished by 7min. De Bilt eLN = +56·0m.

Sept. 28d. 21h. 30m. 52s. Epicentre 46°·5N. 13°·0E. (as on 1926 July 23d.).

A = +·671, B = +·155, C = +·725; D = +·225, E = −·974; G = +·707, H = +·163, K = −·688.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Laibach | | 1·1 | 113 | i 0 18 | + 1 | i 0 33 | + 2 | — | — |
| Venice | | 1·1 | 204 | 0 29 | +12 | — | — | 2·1 | — |
| Innsbruck | N.E. | 1·4 | 305 | e 0 20 | − 1 | i 0 35 | − 4 | — | — |
| Graz | | 1·8 | 71 | 0 30 | + 2 | — | — | — | 0·9 |
| Ravensburg | E. | 2·7 | 299 | i 0 43 | + 1 | i 1 10 | − 4 | i 1·3 | 1·3 |
| Vienna | Z. | 2·9 | 52 | e 1 21 | +36 | (e 1 21) | + 1 | — | — |
| Zurich | N. | 3·2 | 288 | e 0 46 | − 4 | i 1 36 | + 8 | — | — |
| Strasbourg | | 4·1 | 302 | e 1 24 | +20 | (1 53) | 0 | 1·9 | — |

No additional readings.

Sept 28d. Readings also at 1h. (Irkutsk), 2h. (Zagreb), 3h. (Ekaterinburg), 5h. (Tashkent and near Tacubaya), 8h. (San Fernando), 15h. (near Toyooka), 16h. (Toronto), 17h. (Vienna, Tucson, Berkeley, and Lick), 18h. (Ottawa, Toronto, and near Sumoto), 19h. (Cape Town and Matuyama).

Sept. 29d. 3h. 52m. 20s. Epicentre 20°·0N. 94°·0W. (as on 1922 April 3d.).

A = −·066, B = −·937, C = +·342.

| | Δ | Az. | P. | O−C. | L. | M. |
|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. | m. |
| Merida | 4·2 | 79 | 0 57 | − 8 | 2·2? | 2·3 |
| Tacubaya | 5·0 | 262 | 1 25 | + 8 | 2·3 | 2·9 |

Sept. 29d. 3h. 58m. 55s. Epicentre 1°·0N. 143°·5E. (as on 1923 April 30d.)

A = −·804, B = +·595, C = +·017; D = +·595, E = +·804; G = −·014, H = +·011, K = −·1·000.

| | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|
| | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | 26·1 | 303 | e 4 5? | −104 | — | — | — | — |
| Sydney | 35·6 | 169 | — | — | 13 17 | +13 | 17·4 | 18·2 |
| Riverview | 35·6 | 169 | — | — | e 13 59 | +55 | 18·7 | 19·8 |
| Adelaide | 36·2 | 187 | — | — | 13 12 | − 1 | 16·7 | 19·0 |
| Melbourne | 38·9 | 178 | — | — | — | — | i 21·4 | — |
| Irkutsk | 60·8 | 334 | e 10 21 | + 3 | e 18 53 | ?PS | e 34·1 | — |

*Continued on next page.*

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Tashkent | | 77·6 | 312 | 11 52 | −13 | 21 38 | −18 | e 38·1 | 45·0 |
| Ekaterinburg | | 85·2 | 327 | e 12 49 | 0 | e 23 3 | −18 | 36·1 | — |
| Victoria | E. | 91·4 | 42 | — | — | — | — | 45·4 | 53·4 |
| Baku | | 92·1 | 310 | — | — | — | — | e 47·1 | — |
| Makeyevka | | 99·5 | 319 | — | — | — | — | e 56·1 | 64·3 |
| Leningrad | | 100·5 | 332 | — | — | — | — | 53·4 | 63·3 |
| Pulkovo | | 100·6 | 332 | e 18 11 | ?$PR_1$ | — | — | 51·1 | 62·9 |
| Uccle | | 117·7 | 331 | — | — | — | — | e 58·1 | — |
| Toronto | | 121·2 | 35 | — | — | — | — | 63·1 | — |
| Ottawa | | 122·1 | 31 | — | — | — | — | e 62·1 | — |
| La Paz | | 145·2 | 118 | 19 49 | [+ 1] | — | — | | — |

Additional readings: Riverview e(S?) = +16m.17s. =$SR_2$−31s. and +17m.43s. MN = +20·3m.; are the readings all 1min. too large? Adelaide MN = +19·8m. Melbourne e =3h.57m.12s. Tashkent i = +11m.54s., MN = +42·4m., MZ = +45·1m. Makeyevka L = +61·1m. Pulkovo MN = +62·1m., MZ = +63·2m. La Paz i = +20m.20s. and +20m.38s.

Sept. 29d. 5h. 16m. 30s. (I) } Epicentre 9°·0N. 155°·0E. (as on 1925 May 16d.).
5h. 43m. 30s. (II) }

A = −·895, B = +·417, C = +·156; D = +·423, E = +·906;
G = −·142, H = +·066, K = −·988.

Very rough indeed, and not very satisfactory since the New Zealand readings are quite discordant, though they may be due to an earlier shock recorded also at Riverview.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| I Riverview | | 43·0 | 185 | e 7 54? | −24 | (e 15 31) | +42 | e 15·5 | 22·5 |
| I Sydney | | 43·0 | 185 | — | — | 15 18 | +30 | 20·8 | 22·5 |
| I Adelaide | | 46·6 | 200 | — | — | — | — | 26·0 | 30·9 |
| II Honolulu | N. | 46·7 | 70 | — | — | — | — | e 24·2 | — |
| I Wellington | | 53·5 | 164 | — | — | (e 14 15) | −168 | e 14·3 | 16·6 |
| I Christchurch | | 54·9 | 167 | — | — | (15 0) | −140 | 15·0 | 18·5 |
| I Irkutsk | | 59·6 | 328 | — | — | — | — | e 36·5 | — |
| II | | 59·6 | 328 | — | — | — | — | 35·5 | — |
| II Tashkent | | 80·9 | 312 | — | — | — | — | — | 48·3 |
| I Ekaterinburg | | 84·9 | 329 | — | — | e 24 34 | +76 | 45·5 | — |
| II | | 84·9 | 329 | — | — | — | — | 63·0 | — |
| II Baku | | 95·5 | 314 | — | — | — | — | e 48·5 | — |
| II Leningrad | | 98·5 | 336 | — | — | — | — | e 52·0 | — |
| II Pulkovo | | 98·6 | 336 | — | — | — | — | e 52·5 | 62·2 |
| I Makeyevka | | 100·6 | 325 | — | — | 1 25 4 | [+37] | 31·5 | — |
| I Chicago | E. | 103·6 | 44 | — | — | — | — | e 58·5 | — |
| II | E. | 103·6 | 44 | — | — | — | — | e 43·8 | — |
| I Toronto | | 108·0 | 39 | — | — | e 34 30 | $SR_1$ | 38·7 | — |
| II | | 108·0 | 39 | — | | — | — | 38·5 | — |
| I Ottawa | | 109·2 | 36 | — | — | e 34 30 | $SR_1$ | e 41·5 | — |
| II | | 109·2 | 36 | — | — | — | — | 39·5 | — |
| II De Bilt | E. | 113·7 | 340 | — | — | — | — | e 69·5 | — |
| II Uccle | | 115·1 | 340 | — | — | — | — | e 66·5 | — |

Additional readings and notes: Riverview gives an earlier reading e? = 5h.8m.42s., also MN = +21·8m.; all readings are queried except M. Adelaide MN = +29·4m. Christchurch also gives an earlier reading PR? = 5h.5m.0s.; if there was an earlier shock, it would explain the early readings at Wellington and Riverview. Ekaterinburg I $e_2$ = +27m.54s. Ottawa I eLN = +38·5m., II LN = +47·5m.

Sept. 29d. 12h. 20m. 16s. Epicentre 3°·0N. 122°·0E. (as on 1922 Aug. 30d.).

$A = -\cdot529$, $B = +\cdot847$, $C = +\cdot052$; $D = +\cdot848$, $E = +\cdot530$
$G = -\cdot028$, $H = +\cdot044$, $K = -\cdot999$.

Focal depth 0·040 has been adopted; the greater depth 0·080 of Sept. 30d. is excessive for the present shock.

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Manila | | −0·6 | 11·7 | 355 | e 2 39 | − 7 | — | — | 6·6 | — |
| Batavia | B. | −1·3 | 17·7 | 239 | i 4 8 | +11 | — | — | — | — |
| Hong Kong | | −1·7 | 20·8 | 339 | — | — | — | — | — | 8·5 |
| Phu-Lien | | −1·9 | 23·3 | 321 | 5 44? | +46 | — | — | — | — |
| Irkutsk | | −4·1 | 51·3 | 346 | e 8 34 | −14 | e 19 45 | ?$SR_1$ | 31·7 | — |
| Tashkent | | −4·6 | 60·7 | 317 | i 9 57 | +10 | e 16 17 | −78 | e 31·7 | 40·9 |
| Ekaterinburg | | −4·9 | 72·2 | 330 | i 11 2 | + 2 | e 20 1 | + 7 | 31·7 | — |
| Baku | | −5·0 | 74·5 | 311 | e 11 23 | + 9 | e 21 14 | [+ 6] | 39·7 | — |
| Kucino | | −5·3 | 84·2 | 326 | — | — | — | — | e 42·3 | — |

Tashkent gives also i = +10m.4s., e = +10m.47s., +11m.14s., +18m.51s. = PS +49s., +23m. 32s. = $SR_2$ −13s., and +26m.20s.

Sept. 29d. Readings also at 1h. (Vienna), 7h. (San Fernando), 12h. (Manila), 13h. (Granada and near La Paz), 17h. (near Almeria, Granada, and Malaga), 18h. (Uccle, near Almeria, Granada (2), and Malaga), 19h. (near Granada), 23h. (near Sumoto).

Sept. 30d. 4h. 16m. 30s. Epicentre 21°·5N. 40°·5W. (as on 1925 Aug. 11d.).

$A = +\cdot707$, $B = -\cdot604$, $C = +\cdot367$; $D = -\cdot649$, $E = -\cdot760$;
$G = +\cdot259$, $H = -\cdot238$, $K = -\cdot930$.

If the Spanish observations are correct, the epicentre should be moved further from Spain, and $T_0$ must be increased. These alterations suggest a deep focus. On 1922 Sept. 22d. the epicentre 25°·2N. 46°·6W. was used, with focal depth 0·045, but a much larger focal depth would be required in the present instance.

| | | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| San Fernando | E. | 33·3 | 55 | — | — | — | — | — | 21·5 |
| Granada | | 35·5 | 55 | e 8 56 | ?$PR_2$ | (e 13 36) | +33 | 18·4 | 22·9 |
| Almeria | | 36·3 | 56 | i 9 23 | ?$PR_2$ | — | — | — | 20·9 |
| Ottawa | | 37·3 | 320 | e 7 54 | +22 | — | — | e 14·5 | — |
| Toronto | E. | 39·0 | 315 | — | — | e 15 46 | ?$SR_1$ | 17·2 | — |
| Kew | | 43·1 | 36 | — | — | — | — | e 21·5 | — |
| Edinburgh | | 44·0 | 30 | — | — | — | — | e 21·5 | — |
| Uccle | | 45·5 | 39 | — | — | e 15 30 | + 9 | e 20·5 | — |
| De Bilt | | 46·4 | 38 | — | — | — | — | e 22·5 | 25·1 |
| La Paz | | 46·7 | 220 | i 8 48 | + 3 | 15 36 | − 1 | 23·4 | 26·9 |
| Sucre | | 47·2 | 216 | 9 26 | +38 | e 15 32 | −12 | 23·5 | 27·6 |
| Florence | Z. | 48·0 | 52 | — | — | — | — | e 23·5 | 25·5 |
| Hamburg | | 49·7 | 38 | — | — | — | — | e 25·5 | — |
| Cheb | | 50·0 | 42 | — | — | i 16 51 | +32 | e 25·5 | 28·5 |
| Pulkovo | | 61·9 | 33 | — | — | — | — | e 25·5 | — |
| Leningrad | | 61·9 | 33 | — | — | — | — | 29·0 | — |
| Makeyevka | | 66·7 | 46 | — | — | — | — | e 17·5 | — |
| Victoria | E. | 69·4 | 315 | — | — | — | — | 33·2 | 38·4 |
| Baku | | 76·6 | 52 | — | — | — | — | e 43·5 | — |
| Ekaterinburg | | 77·9 | 33 | 12 22 | +16 | — | — | 38·5 | 43·5 |
| Tashkent | | 89·7 | 47 | (e 13 32) | +18 | (e 23 30) | [+ 4] | (e 39·5) | (51·5) |
| Irkutsk | | 100·0 | 22 | i 19 23 | ?$PR_1$ | — | — | e 45·5 | — |

Additional readings and notes: San Fernando MN = +19·5m. Granada S has been diminished by 6m.; as printed it followed L. Almeria MN = +19·6m. Ottawa e = +13m.18s. = S −10s. De Bilt MN = +23·9m., MZ = +25·1m. Ekaterinburg MN = +43·3m., MZ = +45·0m. Tashkent e = (+15m.30s.?), (+21m.29s.), and (+22m.57s.), MN = (+52·2m.), MZ = (+52·5m.); all readings have been increased by 5m.

**Sept. 30d. 5h. 17m. 35s. Epicentre 3°·0N. 122°·0E. (as on Sept. 29d. 12h.).**

$A = -\cdot529$, $B = +\cdot847$, $C = +\cdot052$; $D = +\cdot848$, $E = +\cdot530$; $G = -\cdot028$, $H = +\cdot044$, $K = -\cdot999$.

A depth of focus 0·080 has been assumed, see note at end. The 0·040 used on Sept. 29 is not enough.

| | | Corr. for Focus | Δ | Az. | P. | O−C. | S. | O−C. | L. | M. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ° | ° | ° | m. s. | s. | m. s. | s. | m. | m. |
| Amboina | | −0·5 | 9·1 | 137 | i 2 9 | − 1 | i 3 50 | − 3 | — | — |
| Manila | | −1·2 | 11·7 | 355 | — | — | i 4 45 | + 2 | — | — |
| Batavia | | −2·7 | 17·7 | 239 | i 3 57 | +18 | i 6 55 | +23 | — | — |
| | E. | −2·7 | 17·7 | 239 | 3 51 | +12 | 6 54 | +22 | — | — |
| Hong Kong | | −3·3 | 20·8 | 339 | — | — | — | — | — | 11.4 |
| Irkutsk | | −7·3 | 51·3 | 346 | 8 22 | − 4 | i 14 58 | − 6 | 24·4 | — |
| Tashkent | | −7·9 | 60·7 | 317 | (i 9 29) | + 4 | (16 59) | + 5 | (e 31·5) | (39·1) |
| Ekaterinburg | | −8·6 | 72·2 | 330 | 10 38 | + 2 | i 19 9 | + 1 | 26·4 | — |
| Baku | | −8·8 | 74·5 | 311 | (i 10 56) | + 7 | e 20 45 | +72 | — | — |
| Pulkovo | | −9·6 | 88·2 | 330 | i 12 1 | −10 | i 21 48 | −19 | 51·4 | — |
| Leningrad | | −9·6 | 88·3 | 330 | i 12 0 | −11 | i 21 50 | −18 | 51·1 | — |
| Ottawa | | — | 128·9 | 16 | e 37 5 | ? | — | — | — | — |
| Toronto | | — | 129·3 | 20 | e 36 55 | ? | — | — | — | — |
| Sucre | | — | 162·5 | 157 | 19 20 | [−50] | — | — | — | — |
| La Paz | | — | 163·2 | 144 | 18 51 | [−79] | i 29 50 | ? | — | — |

Additional readings: Irkutsk e = +17m.7s. Tashkent e = +11m.25s. = $PR_1$ −19s., +12m.29s. = $PR_2$ −7s., +20m.25s., and +24m.25s., i = +19m.20s., MZ = +36·3m., MN = +39·2m.; all readings have been increased by 5m. Ekaterinburg i = +10m.39s., $iPR_1$ = +13m.32s., PS = +19m.44s., i = +22m.47s. Baku iP has been increased by 10m. Pulkovo i = +25m.42s. Sucre i = +21m.47s.

NOTE TO SHOCK 1926 SEPT. 30d. 5h. 17m. 35s.

Collecting the residuals for the observed distances of stations under 90° from the epicentre we have the following table:—

| No. of Stations. | Azimuth ° | Station. | Equation | $O_1$ ° | $O_2$ ° |
|---|---|---|---|---|---|
| 1 | 5 | Manila | $+\cdot09x + 1\cdot00y$ | −0·7 | +0·5 |
| 1 | 137 | Amboina | $+\cdot68x - \cdot73y$ | −0·6 | −0·1 |
| 1 | 239 | Batavia | $-\cdot86x - \cdot52y$ | −1·7 | +0·9 |
| 2 | 314 | Asia | $-\cdot72x + \cdot69y$ | −7·6 | +0·7 |
| 4 | 334 | Russia | $-\cdot44x + \cdot90y$ | −8·8 | −1·0 |

The figures in column $O_1$ are the residuals themselves, those in $O_2$ have been corrected for focal depth 0·080. There is evidently no solution to the equations with $O_1$, but solving them with $O_2$ we get $x = -0°\cdot1$ $y = -0°\cdot2$, showing that the origin 3°·0N. 122°·0E. is substantially correct if we allow the exceptional depth of focus.

Sept. 30d. Readings also at 1h. (near Spokane), 2h. (Taihoku), 5h. (La Paz and Sucre), 8h. (near Toyooka), 9h. (Vienna and Graz), 10h. (near Sarajevo), 12h. (near Reykjavik), 13h. (Ekaterinburg and Tashkent), 14h. (near Mizusawa), 15h. (Granada), 16h. (Irkutsk, Hong Kong, Taihoku, Ekaterinburg, and Tashkent), 17h. and 18h. (Nagasaki), 20h. (Manila), 22h. (Taihoku and near Tashkent), 23h. (Manila and near Mostar).

*I.W. County Press.—1824-10-29.*