The International Seismological Summary for 1925 January, February, March.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

There has been a little delay in sending this number of the Summary for Press owing to some doubts whether funds for printing it would be available. The financial situation is certainly matter for anxiety, and a note on the subject is being addressed to the Executive Committee of the Union. It may be that a halt must be called soon until the statutable contributions can again accumulate; at present they have been spent to the limit, and indeed further than that, for the Royal Society has helped with a very welcome subsidy. But by taking some risks it seems just possible to proceed for the present.

The present number deals with 121 epicentres, 28 of which are new and 93 repetitions from old epicentres. It initiates the eighth year of the International Summary.

Cases of abnormal focus are noted on :—

Date.		Epicentre.		Focal Depth (below normal)
	d. h.	°	°	
1925 Jan.	28 18	52·8N.	174·0E.	+·010
Jan.	30 17	52·8N.	174·0E.	+·010
Mar.	1 2	48·2N.	70·8W.	+·010
Mar.	8 11	35·0N.	69·0E.	+·030
Mar.	15 13	10·8S.	119·5E.	+·015
Mar.	15 15	10·8S.	119·5E.	+·015
Mar.	26 10	5·4N.	125·2E.	+·040
Mar.	29 21	7·5N.	79·0W.	+·010

There is a good series of observations of [P] on March 22d. 8h.

There are good series of observations of [S] (or Gutenberg's S_cP_cS) on Jan. 18d.12h., Feb. 2d.13h., Feb. 2d.19h., Feb. 20d.1h.; but [S] is not always observed in preference to S, as will be seen, for instance, on Jan. 28d.4h., Jan. 30d.17h., Feb. 1d.5h. There is, of course, often a doubt whether the observation is of S or [S]. Usually the smaller residual is taken except very close to $\Delta=80°$, where S is preferred in any case.

Independent Confirmation of Deep Foci in Japan.

For the last five or six years cases have been noted of the occurrence of abnormally deep (or shallow) foci of earthquakes, using the method described in the *Geoph. Supp. to the Mon. Not. R. A.S.*, Vol. I, No. 1 (March, 1922): See also *Travaux Scientifiques* (Pub. du Bureau Central Internat.), Fasc. No. 2, p. 36 (1925).

In the *Geophysical Magazine* (published by the Central Meteorological Observatory, Tokyo) for March, 1928, p. 162, K. Wadati has by a totally different method determined the depth of "Shallow and Deep Earthquakes," selecting for special treatment the shock of July 27th, 1926, or using Greenwich Time, that of July 26d.18h.54m.45s. He uses the observations of 58 Japanese stations within 1100 km. of the epicentre, which he puts at 35°·4N. 136°·4E.; and he deduces a depth of 343 km., or ·054 of the earth's radius. It is satisfactory to find that this solution suits the observations of such distant stations as are yet to hand very closely, as will appear in due course when this earthquake is dealt with in the summary. Meanwhile a note has been sent to Professor Wadati for publication in the *Geophysical Magazine*, if he thinks fit. He gives also a list of other "deep earthquakes observed in Japan," to one of which (1924 April 8d. 2h. 30m. 30s.; 32°·0 139°·0E.) has already been assigned a depth of ·050 below normal; and others so far examined accord with the published observations, though they were not sufficient to assign a deep focus independently.

Incidentally it becomes clear that there is a great mass of observational material in Japan which does not yet reach us for inclusion in the Int. Seism. Summary; and it is hoped that we may obtain some better access to it.

Reflected Waves.

Hitherto attention has been concentrated on the phases P and S, with their associates [P] and [S]; cases of PR_1 and SR_1 have been noted in passing, and even PR_2, PR_3, SR_2, SR_3, etc., when

observatories themselves record them. But recently detailed tables have been prepared by Miss Bellamy for the reflected waves, and have been used to examine some past observations. They have also been used to examine those in the present number of the Summary, and in consequence various identifications have been suggested. Often these do not agree with those suggested at the observatory itself: as, for instance, in the notes to **Mar.** 22d. 8h. 41m. 50s. Epicentre 18°·5S. 168°·5E., where we have for La Paz ($\Delta=114°\cdot2$) the notes

$$PR_1=+22m.20s.=PR_2-36s.,\quad PR_2=+24m.25s.=PR_3-29s.$$

Here PR_1 was the identification suggested by La Paz; but on comparing +22m. 20s. with the tables for $\Delta=114°\cdot2$, PR_1 is found to come at +19m. 46s., nearly 3 min. away from the observation; whereas PR_2 is only 36s. away as shown by the added $PR_2-36s.$ The difference 36s. is still large, but derives support from the difference −29s. between the observation +24m. 25s. and PR_3. The tables for PR_1, PR_2, etc., are subject in an accentuated form to the errors of the tables for P and S, including the constant error due to focal depth, which we are not yet in a position to assess. Thus for the present the time for PR_1 at 114°·2 is taken simply as double the time for P at 57°·1; that for PR_3 as treble the time for P at 38°·1; and so on. The discussion of the residuals is in progress and should give an independent check on the errors of the tables deduced directly from the observations of P and S.

In annotating the present number of the Summary in this way the impression was formed that observations of PR_3 are likely to occur when there is no PR_1 or PR_2; but this impression may be erroneous.

Australian Epicentres.

It seems ungracious to say anything which might appear to reflect on the activity of Australian stations, to which we are indebted for much valuable information. But the fact cannot be ignored that we are often left in uncertainty about earthquakes in the neighbourhood of 30°S. 180°W., and should welcome any increase in the number of Australian and New Zealand stations, or any improvement in the instrumental equipment. The weak points in the general survey of the whole earth may be said to be the polar regions and this Australian neighbourhood.

1925 February 1.

There are a number of shocks on Feb. 1, viz. :—

	d.	m.	h.	s.		°	°
Feb.	1	5	23	50	at	43·2N.	147·2E.
	1	15	56	48		15·5N.	56·5E.
	1	17	14	36		43·2N.	147·2E.
	1	18	0	15		1·0S.	126·0E.
	1	19	33	36		39·0N.	73·0E.
	1	21	3	30		41·0N.	127·0W.
	1	21	52	40		50·0N.	6·5W.

There is no ultimate difficulty in separating these shocks, but it will readily be understood that the preliminary work is not light. For the last shock at 1d. 21h. 52m. Oxford appears in an unusual position at the head of the list of observing stations, the epicentre being off Land's End. It was felt in Cornwall (Penzance, Truro, Redruth), and in the Scilly Isles and Channel Islands.

1925 March 1 (Sanguenay River).

Early in March we received Mr. E. A. Hodgson's pamphlet (from Trans. R.S. Canada 3rd Ser., Vol. XXI, Sect. IV, 1927) on "The St. Lawrence Earthquake, February 28, 1925." Those who turn to this date in the present number of the Summary may be puzzled to find no earthquake of any importance. But they will find Mr. Hodgson's important earthquake on March 1d. 2h. 19m. 12s., a date which Mr. Hodgson gives as February 28, 9h. 19m. 20s. p.m., E.S.T. Doubtless this date conveys the time of occurrence most conveniently to those in the vicinity of the shock, but seeing that the paper was addressed to the scientific public would it not have been better to use the scientific notation ? The all-important reform which led to a universal time system was started in Canada (by Mr. Sandford Fleming, who was none too well treated at the outset, especially by the British Association, to which this Summary owes a good deal), and it seems a pity that Canada should be responsible for a retrograde step, which exhibits some of the inconveniences that Sandford Fleming set out to remove. The use of a.m. and p.m. will probably die hard, but it was on 1925·0 that astronomers decided to facilitate their abolition by altering their zero point from noon to midnight. The letters E.S.T. require special knowledge for their interpretation, no help to which is supplied in the paper. And finally the ambiguity about the day, and even the month, is very unfortunate. Most of the inconveniences could have been avoided if the author had given the universal date as an alternative, but

this he has completely failed to do (unless it is hidden in some obscure paragraph). One can scarcely be too emphatic in deprecating any further instances of this method of dating.

This shock shook not only Canadian towns but New York and other towns in the Eastern States. Mr. Hodgson calls attention to previous shocks in this neighbourhood in 1663 Feb. 5; 1732 Sept. 5; 1791 Dec. 6; 1860 Oct. 17; 1870 Oct. 20.

There was a minor repetition in 1925 Mar. 21d. which caused alarm in Quebec.

Reports from Vessels (Unsupported).

The following from the Liverpool Journal of Commerce, 24-3-25 (it will be seen from the observations in the Summary that it is practically impossible to attribute a seismic origin to the disturbance):

Messrs. Frew and Elder's steamer *Bedeburn*, which has arrived at Avonmouth with grain from Philadelphia, encountered some remarkable weather. When two days out she experienced a storm, apparently of seismic or volcanic origin. There was no wind, but the water heaved and boiled in a remarkable manner, and the *Bedeburn* was tossed hither and thither in the turmoil. Her cargo shifted and she had such a heavy list that on March 2 her captain and crew thought she would capsize. By strenuous and prolonged efforts the cargo was, however, trimmed, and eventually the *Bedeburn* was again got on an even keel. Practically the whole of the voyage was particularly stormy, and the steamer was nearly three weeks making the passage. S.S. *Bedeburn* left Philadelphia 27 Feb. 1925.—(Copied from Bull. Volcan. Nos. 9 and 10, 1926, as also the following).

Extract from Met. Log. of S.S. *Maitar*, Capt. Rowe, Panama to Sydney, N.S.W.

Jan. 24d. 1925. Noon, position Lat. 33°53′S., Long. 178°28′W., course and speed 268°, 12 knots, 1.50 p.m. Distinct tremor of ships. Thought to be a small quake or volcanic eruption. (No seismograph record in support).

Recent Nairobi Shock.

On 1928 January 6 a shock near Nairobi gave a special opportunity for the use of the seismographs recently set up at Entebbe by the officers of the Geological Survey of Uganda. Unfortunately it was strong enough to throw the instruments

out of action after the first shock. A letter received from Mr. W. C. Simmons, of the Survey, dated Jan. 8, says that " the effects were strongest north of Nairobi, in the area including Fort Hall, Nyeri, and the Subukia Valley. It was felt also as far east as Mombasa ; and the westerly limit in Uganda, so far as reports received to date go, was near Nubendi." The epicentre was provisionally fixed at 0°·5S. 37°·0E. T_0 = 1928 Jan. 6d. 19h. 31m. 40s. Though slight shocks down the backbone of Africa have been recorded before, nothing so emphatic as this shock has yet been recorded in the Summary.

Other Recent Earthquakes.

On March 9d. 18h. 5m. there was a shock in the Indian Ocean, say 1°·0S. 91°·0E., followed by another on Mar. 13d. 18h. 32m., possibly from the same epicentre ; and these were the forerunners of a series of shocks in various parts of the world on Mar. 16, 22, 26, 27, 29, 31, April 9, 13, 14, 17, 18 (2), 22, 25, 27, 28, 29, May 1 (2), 2 (2), etc. Those which naturally attracted most attention were near Smyrna on Mar. 31 ; at Chirpan in Bulgaria (42°·3N. 25°·4E) on April 14, followed by others (on April 17, 18, 21, and 23), in which the town of Plovdiv suffered severely, the damage being estimated at over four million pounds ; and near Corinth on April 22, also followed by after shocks. Extensive relief works were necessary and forthcoming in these cases.

Epicentres in South East Europe.

The opportunity was taken to review the earthquake history of South-Eastern Europe during the seven years for which the Intern. Seism. Summary has been published (1918-1924), and it appears that there is a line of epicentres running from about

45°N. 10°E. to 38°N. 30°E,

represented therefore roughly by

$$\text{Lat.} = 48°\cdot5 - 0\cdot35 \times \text{longitude},$$

near which the Bulgarian epicentre lies. Chirpan lies 3° N. of this mean line, but there are indications of waviness in the line with maxima (North) near 16°·5E. and 25°·5E. An empirical formula calculated for this line runs as follows :—

long.	lat.	long.	lat.	long.	lat.	long.	lat.
°	°	°	°	°	°	°	°
10·0	46·2	15·0	42·9	20·0	42·0	25·0	41·1
11·0	44·7	16·0	43·8	21·0	40·5	26·0	41·8
12·0	43·2	17·0	44·5	22·0	39·6	27·0	41·7
13·0	42·3	18·0	44·4	23·0	39·5	28·0	40·8
14·0	42·2	19·0	43·5	24·0	40·2	29·0	39·2
						30·0	37·8

It will be seen that Chirpan (25°·4E. 42°·3N.) now lies pretty close to the line, though the trend of it was settled from previous observations. Corinth (22°·9E. 37°·9N.) is also not far from this line.

About 5° south of this wavy line is another running roughly parallel with it, on which at least 36 epicentres lie, according to present observations. But to test this rough assignment thoroughly would require a good deal of time and labour which cannot at present be spared.

The Late Col. Chaves.

The following notes about Colonel Chaves, who founded the Meteorological Service of the Azores in 1901, and continued as Director of that Service until his death on July 23, 1926, are extracted from a notice by Mr. J. Agostinho in Terrestrial Magnetism for Sept.—Dec., 1927, p. 175.

" Colonel Chaves was born in 1857. He was a laureate pupil of the Military Academy in Lisbon. He was the first to show the advantage of a submarine cable between the Azores and Europe for the purpose of making meteorological observations in the Azores useful for weather forecasting in Europe. In 1907 he sent up the first pilot balloons in the Azores.

" He made the first seismological observations in the Azores, setting up a Milne seismograph in S. Miguel more than 20 years ago. He also published a study of submarine eruptions in the neighbourhood of these islands. And he established chronometer stations in the Azores as an important help to navigation."

H. H. TURNER.

University Observatory, Oxford.
1928 June 1.

Belated Readings from Hukuoka.

These will be included in the next number of the Summary.

1925 JANUARY, FEBRUARY, MARCH.

Jan. 1d. Readings at 5h. (Zurich, near Athens, Sumoto, and Merida), 7h. (near Manila), 9h. (near Almeria), 12h. (near Tokyo), 13h. (Malabar and near Batavia), 14h. (near Merida), 15h. (Manila), 16h. (Balboa Heights and La Paz), 19h. (near Tokyo), 21h. (near Algiers).

Jan. 2d. 16h. 40m. 30s. Epicentre 36°·0N. 5°·0W. (as on 1924 Dec. 25d.).

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 20	+ 6	e 0 27	+ 2	—	—
Granada	1·6	43	0 28	+ 4	i 0 30	−15	0·5	0·6
Almeria	2·3	67	0 34	− 2	0 50	−13	1·0	—

No other readings.

Jan. 2d. 23h. 15m. 45s. Epicentre 38°·8N 70°·0E. (as on 1924 Sept. 16d.).

A = +·267, B = +·732, C = +·627; D = +·940, E = −·342:
G = +·214, H = +·589, K = −·779.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	N.	9·7	140	2 51	+25	4 27	+ 6	—	—
Baku		15·5	282	e 3 44	− 2	7 24	+40	8·0	9·5
Ekaterinburg		19·0	344	i 4 35	+ 6	8 9	+ 7	10·2	12·1
Bombay		20·0	172	4 45	+ 4	8 41	+18	11·0	12·7
Calcutta	E.	22·6	131	5 15	+ 3	9 15	− 2	—	—
Hyderabad		22·6	158	e 5 13	+ 1	9 19	+ 2	12·2	14·0
Irkutsk		27·2	49	7 41	+101	12 20	−25	15·2	—
Pulkovo		32·5	323	6 46	− 7	12 8	− 8	15·2	20·8
Upsala		38·6	320	—	—	—	—	e 24·2	—
De Bilt		45·7	310	—	—	—	—	e 27·8	31·0
Nagasaki		48·1	78	13 24	?S	(13 24)	−151	—	—

Additional readings: Simla PE = +4m.3s. Baku e = +4m.15s., MN = +11·8m. Ekaterinburg MZ = +12·3m. Pulkovo MN = +18·0m., MZ = +22·5m.

Jan 2d. Readings also at 5h. (Rocca di Papa), 7h. (near Sumoto), 8h. (near Athens), 9h. (Almeria and near Granada, perhaps from the epicentre of 16h. shock), 13h. (Apia), 18h. (Batavia (2) and Malabar (2)), 19h. (Manila (2)), 20h. (Irkutsk, Ekaterinburg, and near Tokyo).

Jan 3d. 8h. 18m. 42s. Epicentre 44°·7N. 147°·6E. (as on 1924 June 30d.).

A = −·600, B = +·381, C = +·703; D = +·536, E = +·844;
G = −·594, H = +·377, K = −·711.

Uncertain.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		3·9	301	1 19	+18	—	—	2·6	3·2
Mizusawa	E.	7·3	223	1 29	−22	2 12	−66	—	—
	N.	7·3	223	1 30	−21	2 10	−68	—	—
Tokyo		10·8	216	e 2 47	+ 6	e 4 17	−33	—	—
Nagoya		12·5	224	5 21	?S	(5 21)	−11	—	—
Osaka		13·7	227	3 46	+24	—	—	6·3	9·4
Kobe	E.	13·8	228	—	—	—	—	—	10·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei		24·5	246	5 11	−22	9 20	−34	—	15·3
Taihoku		28·8	236	—	—	—	—	e 21·0	—
Hong Kong		35·3	241	12 21	iS	(12 21)	−39	—	21·8
Manila		37·6	226	e 9 18	iPR$_1$	—	—	—	—
Phu-Lien		41·3	248	—	—	—	—	21·3	—
Ekaterinburg		52·4	317	i 9 24	+ 2	16 55	+ 6	24·3	36·0
Hyderabad		63·1	270	—	—	—	—	—	40·7
Pulkovo		63·7	330	—	—	—	—	33·3	42·5
Bombay		66·1	274	13 18?	iPR$_1$	—	—	—	—
Baku		67·5	305	e 11 8	+ 7	e 20 6	+10	37·5	48·7
Upsala	N.	67·7	336	—	—	—	—	e 44·3	46·5
Kodaikanal		68·7	265	45 48	iL	—	—	(45·8)	—
De Bilt		77·9	337	—	—	—	—	e 42·3	44·0
Uccle		79·3	337	—	—	—	—	e 39·3	45·3
Strasbourg		80·4	335	—	—	—	—	53·3	—
Chicago		80·4	38	—	—	—	—	36·8	—
Ottawa	E.	82·1	28	—	—	e 33 22	i	e 42·3	—
Toronto	E.	82·2	31	—	—	—	—	51·7	—
Moncalieri		83·5	333	—	—	—	—	e 43·7	54·0
Rocca di Papa		84·6	327	—	—	—	—	e 49·8	58·5

Additional readings: Osaka MN = +·6·7m. Zi-ka-wei MN = +13·8m. Ekaterinburg SR_1 = +21m.1s., MN = +31·1m., MZ = +35·2m. Pulkovo MZ = +44·8m. Baku MN = +52·7m. Chicago L = +48·6m. Ottawa eE = +38m.18s. Toronto LN = +46·3m.

Jan. 3d. Readings also at 0h. (Nagasaki), 1h. (Nagasaki and Ekaterinburg), 2h. (Nagasaki), 3h. (Kobe), 4h. (Nagasaki (2)), 6h. (Kucino), 7h. (Nagasaki), 12h. (near Tokyo), 13h. (near Tokyo), 16h. (near Manila), 19h. (Baku), 20h. (La Paz (2)), 22h. (La Paz and Irkutsk), 23h. (Apia and Baku).

Jan. 4d. Readings at 7h. (near Athens), 8h. (Manila and near La Paz), 16h. (near Manila), 18h. (Apia), 21h. (near Tokyo).

Jan. 5d. 13h. 45m. 36s. Epicentre 12°·0S. 69°·0W. (as on 1922 Aug. 21d.).

A = +·351, B = −·913, C = −·208; D = −·934, E = −·358; G = −·075, H = +·194, K = −·978.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		4·6	169	i 1 24	+13	i 2 22	+16	2·8	4·4
La Plata	E.	25·0	158	i 5 17	−21	e 9 24	−39	11·1	—
	N.	25·0	158	i 5 22	−16	9 32	−31	11·7	—
Rio de Janeiro		26·9	117	i 5 58	+ 1	(10 39)	0	10·6	—
Tacubaya	N.	43·3	316	7 54	−26	14 55	+ 3	—	—
Georgetown		51·5	352	e 8 58	−19	16 42	+ 4	e 26·1	—
Ann Arbor		56·1	350	10 6	+19	18 12	+37	e 28·7	35·7
Chicago		56·4	345	10 19	+31	18 5	+26	28·1	—
Toronto		56·5	351	e 9 49	0	e 17 39	− 1	28·9	—
Ottawa		57·7	355	i 9 58	+ 1	i 18 0	+ 5	e 28·4	—
Granada		78·5	49	i 12 21	+11	e 22 25	+19	e 44·2	—
Rocca di Papa		91·9	48	e 13 24	− 2	e 24 30	− 4	—	—
Baku		119·6	50	—	—	—	—	e 52·4	—
Ekaterinburg		121·0	30	—	—	—	—	62·4	—
Irkutsk		139·4	7	19 22	[−16]	(40 24)	iSR$_1$	40·4	—
Manila		170·0	286	e 22 24?	?	—	—	—	—

Additional readings: La Plata PR_1E = +5m.39s., PR_1N = +5m.43s., E = +9m.37s. and +10m.14s., N = +9m.39s. and +10m.21s. Tacubaya SE = +15m.3s. Georgetown iPN = +9m.15s. (O−C = 0s.). Ann Arbor readings given for 3d. Toronto iPN = +9m.51s., iSN = +17m.47s., iE = +18m.24s.; T_o = 13h.45m.39s. Granada i = +12m.34s. Irkutsk PR_2 = +22m.31s. (= PR_1?).

Jan. 5d. 21h. 42m. 0s. (I) } Epicentre 24°·0N. 107°·0W. (as on 1922 June 12d.)
21h. 59m. 15s. (II) }

A = −·267, B = −·874, C = +·407 ; D = −·956, E = +·292 ;
G = −·119, H = −·389, K = −·914.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Mazatlan		1·0	146	0 14	− 1	—	—	—	3·2
II		1·0	146	0 15	0	—	—	1·6	3·0
I Tacubaya		8·4	122	—	—	—	—	4·2	7·7
II	E.	8·4	122	1 16	−51	—	—	4·2	7·7
II	N.	8·4	122	1 11	−56	—	—	4·1	8·3
I Tucson	E.	9·0	338	—	—	—	—	e 3·0	3·4
II	E.	9·0	338	—	—	—	—	e 3·0	3·4
I Berkeley		19·0	320	—	—	(e 7 50)	−12	e 11·2	—
II		19·0	320	i 2 51	?	—	—	e 10·9	—
I Chicago		24·0	37	—	—	9 45	+ 1	—	12·5
II		24·0	37	—	—	—	—	—	12·5
I Ann Arbor		26·6	41	—	—	i 13 12	?L	e 15·5	—
II		26·6	41	—	—	i 13 27	?L	15·0	17·2
I Victoria	E.	27·6	336	—	—	—	—	12·8	14·3
I	N.	27·6	336	—	—	—	—	13·0	17·3
II	E.	27·6	336	—	—	—	—	13·2	14·2
I Georgetown	N.	29·4	52	—	—	e 14 0?	?L	e 15·5	—
II		29·4	52	—	—	—	—	e 14·8	—
I Toronto	N.	29·9	42	—	—	e 13 35	?SR_1	15·2	15·6
II	E.	29·9	42	—	—	i 13 13	?SR_1	15·6	—
I Fordham		32·4	50	i 10 52	?	—	—	15·4	17·3
II		32·4	50	—	—	e 12 52	+38	16·7	17·8
I Ottawa		33·1	42	—	—	e 13 23	+57	e 15·0	17·4
II		33·1	42	—	—	—	—	e 16·0	17·0
I Harvard	E.	34·8	49	—	—	—	—	e 20·2	24·0
I	N.	34·8	49	—	—	—	—	e 18·0	19·2
II		34·8	49	—	—	—	—	e 18·1	23·4
I Strasbourg		84·2	37	—	—	—	—	48·0	—
II Ekaterinburg		98·4	6	—	—	—	—	40·8	—
II Irkutsk		99·0	340	—	—	e 43 45	?L	60·8	—
I Baku		112·1	18	—	—	—	—	56·0	—
I Manila		119·3	305	e 17 41	[−70]	e 27 0	−104	—	—

Additional readings and notes: Berkeley II eLE = +7·6m., eLZ = +11·9m., all readings for shock I are given as eL. Ann Arbor readings given for 3d. Toronto II iN = +15m.13s. Ottawa II eLN? = +15·0m. Harvard II M.N. = +20·6m.

Jan 5d. Readings also at 2h. (near Amboina), 4h. (Riverview), 5h. and 7h. (near Amboina), 9h. (La Paz), 11h. (near Almeria and near Amboina), 14h. (near Tokyo), 15h. (Ekaterinburg, Cape Town, near Tokyo, and near Mizusawa and Osaka), 19h. (La Plata and La Paz), 21h. (Apia).

Jan 6d. Readings at 3h. (La Paz and near Sumoto), 6h. (Port au Prince), 9h. (Taihoku), 11h. (Baku), 13h. (Toronto, Ottawa, Chicago, and Irkutsk), 14h. (Azores, Ekaterinburg, Baku, and near Mizusawa and Tokyo), 15h. (Baku), 16h. (Ekaterinburg and near Granada), 21h. and 22h. (Port au Prince), 23h. (near Manila).

Jan 7d. 11h. 6m. 42s. Epicentre 42°·0N. 22°·5E. (as on 1924 May 16d.).

A = +·687, B = +·284, C = +·669 ; D = +·383, E = −·924 :
G = +·618, H = +·256, K = −·743.

Unsatisfactory.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	3·2	333	e 0 44	− 6	i 1 38	+10	—	2·4
Sarajevo	3·5	304	e 0 49	− 6	i 1 45	+ 8	—	2·2
Athens	4·2	165	e 0 58	− 7	e 1 56	+ 1	2·1	2·8
Budapest	6·0	337	e 0 18?	−74	—	—	—	—
Venice	8·1	297	e 0 28?	?	—	—	—	5·5
Strasbourg	12·3	307	4 18?	+75	—	—	—	—
Pulkovo	18·4	13	3 23	−59	e 8 46	+57	—	—
Ekaterinburg	28·4	45	—	—	—	—	13·8	—

Additional readings and notes: Belgrade iP = +51s., epicentre 42°4′N. 22°11′E. near that adopted. Sarajevo iP = +1m.5s. Athens MN = +3·3m. Venice eP = +30s.

Jan. 7d. Readings also at 6h. (near Tokyo (2)), 8h. (near Manila), 10h. (near Riverview), 11h. (near Tokyo), 13h. (Azores, near Fordham, and Harvard), 14h. (Riverview), 16h. (near Tokyo), 17h. (Manila and near Tokyo), 20h. (near Manila).

Jan. 8d. 2h. 44m. 56s. Epicentre 47°·2N. 6°·0E. (Besançon).

A = +·676, B = +·071, C = +·734; D = +·105, E = −·995; G = +·730, H = +·070, K = −·679.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Besançon	0·0	—	i 0 0	0	—	—	—	0·1
Strasbourg	1·8	41	0 28	0	0 55	+ 4	1·1	1·2
Zurich	1·8	85	e 0 18	−10	i 0 42	− 9	—	—
Moncalieri	2·5	152	e 0 45	+ 6	i 1 3	− 6	—	—
Ravensburg	2·5	77	e 0 38	− 1	—	—	1·2	1·2
Hohenheim	2·7	55	e 0 40	− 2	—	—	e 1·3	1·5
Paris	2·8	304	e 0 55	+11	e 1 41	+24	1·9	2·1
Innsbruck	3·7	87	e 0 56	− 2	i 1 38	− 4	—	—
Venice	4·7	110	2 6	?S	(2 6)	− 3	—	3·2
De Bilt	4·9	351	—	—	—	—	e 2·7	—
Cheb	5·1	53	—	—	e 2 14	− 6	i 3·3	3·4
Hamburg	6·8	18	—	—	—	—	e 3·7	—
Vienna	7·1	78	—	—	e 3 6	− 7	i 3·7	4·0
Tortosa	7·5	213	—	—	3 34	+10	(3·9)	4·0

Additional readings: Strasbourg PZ = +29s., i = +33s. Ravensburg iP = +45s. Innsbruck iPNE = +57s., ePNW = +58s. Vienna i = +3m.35s. Tortosa gives L as SE, other readings are given for N.

Jan. 8d. 20h. 52m. 0s. Epicentre 36°·5N. 139°·5E. (as on 1924 Oct. 23d.).

A = −·611, B = +·522, C = +·595.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		0·9	i 0 9	− 5	i 0 18	− 7	—	0·3
Nagoya		2·5	0 44	+ 5	—	—	—	—
Mizusawa	E.	2·9	0 54	+ 9	1 28	+ 8	—	—
	N.	2·9	0 53	+ 8	1 30	+10	—	—
Osaka		3·8	1 7	+ 8	—	—	2·0	2·8
Kobe		4·0	1 1	− 1	1 50	0	2·1	2·2

Additional readings: Tokyo MNZ = +0·5m. Osaka MN = +2·7m. Kobe MN = +2·7m.

Jan. 8d. Readings also at 7h. (near Granada), 8h. (La Paz), 9h. (near Uccle and near Tokyo), 13h. (near Tohoku), 16h. (near Kobe and near Tokyo), 21h. (La Paz), 23h. (Balboa Heights).

Jan. 9d 4h. 35m. 20s. (I), 7h. 1m. 30s. (II), 10h. 16m. 40s. (III), 14h. 25m. 26s. (IV), 15h. 27m. 56s. (V), 16h. 19m. 46s. (VI) } Epicentre 36°·5N. 139°·5E. (as on 8d.).

A = −·611, B = +·522, C = +·595; D = +·649, E = +·760; G = −·452, H = +·386, K = −·804.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Tokyo	0·9	166	i 0 7	− 7	i 0 14	−11	—	0·3
II		0·9	166	i 0 8	− 6	i 0 17	− 8	—	0·3
III		0·9	166	i 0 9	− 5	i 0 17	− 8	—	0·3
IV		0·9	166	i 0 10	− 4	i 0 17	− 8	—	—
I	Nagoya	2·5	238	0 47	+ 8	—	—	—	—
II		2·5	238	0 39	0	—	—	—	—
I	Mizusawa	2·9	26	0 53	+ 8	1 29	+ 9	—	—
II	E.	2·9	26	0 55	+10	1 35	+15	—	—
II	N.	2·9	26	0 54	+ 9	1 32	+12	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Osaka	3·8	242	1 11	+12	—	—	1·9	2·7
II	3·8	242	1 3	+ 4	—	—	2·0	2·7
V	3·8	242	1 7	+ 8	—	—	1·8	2·0
VI	3·8	242	1 7	+ 8	—	—	1·4	1·5
II Kobe	4·0	244	1 0	− 2	1 49	− 1	2·1	2·1
II Sumoto	4·3	242	e 1 4	− 3	(2 4)	+ 6	2·1	—
VI	4·3	242	0 56	−11	—	—	1·1	1·1
V Irkutsk	29·2	314	3 37	−163	7 55	−205	14·1	17·6
V Ekaterinburg	54·3	320	4 53	?	—	—	21·1	30·4
V Bombay	60·4	273	—	—	—	—	34·1	—
V Kucino	66·4	323	—	—	—	—	e 27·0	36·3
V Baku	67·1	304	—	—	e 25 8	?SR_1	33·6	41·6
V Pulkovo	67·6	330	—	—	—	—	27·1	36·0
V De Bilt	82·8	334	—	—	—	—	e 44·1	—
V Algiers	96·3	326	47 35	?L	—	—	(47·6)	—

Additional readings: Osaka I, MN = +2·6m., II, MN = +3·0m. Irkutsk V, MN = +17·2m., doubtful identification. Ekaterinburg V, MNZ = +30·5m.; is L really SR_1? Kucino V, MN = +36·8m. Baku V, MN = +41·2m.

Jan. 9d. 17h. 38m. 15s. Epicentre 41°·0N. 44°·0E.

A = +·543, B = +·524, C = +·656; D = +·695, E = −·719; G = +·472, H = +·456, K = −·755.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	85	i 1 38	+28	i 2 40	+36	3·1	—
Helwan		15·1	227	3 47	+ 7	6 38	+ 4	—	10·7
Kucino		15·3	347	2 27	−76	5 18	−81	5·8	8·2
Athens		15·9	266	e 3 40	−11	6 47	− 6	8·5	11·3
Lemberg		16·4	309	e 4 3	+ 6	e 7 9	+ 5	—	10·8
Budapest		18·9	298	4 13	−15	7 49	−11	e 10·8	24·1
Ekaterinburg		19·1	29	i 4 38	+ 8	i 8 16	+12	9·8	13·9
Pulkovo		20·6	340	i 4 45	− 3	i 8 29	− 7	9·8	13·6
Konigsberg		20·7	320	i 4 45	− 4	i 8 34	− 4	e 10·2	10·8
Vienna		20·8	300	e 4 48	− 3	8 46	+ 6	e 11·8	16·2
Pompeii		22·2	279	e 5 18	+11	e 9 38	+29	—	—
Venice		23·3	291	5 17	− 3	7 10	−141	—	—
Rocca di Papa		23·4	282	e 5 15	− 6	e 9 26	− 7	e 12·6	—
		23·4	282	e 5 23	+ 2	e 9 14	−19	—	17·0
Innsbruck		24·0	296	e 5 23	− 5	e 10 0	+16	e 16·8	—
Florence		24·2	288	5 28	− 2	9 45	− 3	—	13·8
Upsala		24·9	328	e 5 34	− 3	e 9 53	− 8	e 11·8	14·3
Hohenheim		25·6	300	e 5 39?	− 5	i 10 4	−10	e 15·8	—
Hamburg		25·9	311	e 5 47	0	e 10 22	+ 2	e 14·6	18·5
Zurich		25·9	296	e 5 38	− 9	e 10 13	− 7	—	—
Strasbourg		26·5	299	5 50	− 3	e 10 56	+24	14·2	—
Moncalieri		26·6	291	e 6 16	+22	10 32	− 1	13·2	19·4
Besançon		27·7	296	—	—	e 10 31	−23	18·8	—
Simla	E.	28·4	100	11 39	?S	(11 39)	+33	—	25·8
	N.	28·4	100	11 9	?S	(11 9)	+ 3	—	20·8
		28·5	306	—	—	e 10 54	−14	e 13·8	20·2
De Bilt		28·9	303	e 6 9	− 8	10 54	−21	13·8	16·2
Uccle		30·0	298	—	—	e 12 8	+34	15·8	21·8
Paris		30·5	324	—	—	—	—	e 16·8	—
Bergen		31·8	304	—	—	—	—	—	25·8
Kew		32·4	304	—	—	e 11 55	−19	—	26·2
Oxford		32·5	282	—	—	—	—	e 11·8	21·3
Tortosa	N.	33·1	123	6 57	0	13 38	+72	22·0	—
Bombay		33·2	308	—	—	e 11 54	−33	20·3	23·5
Stonyhurst		33·4	315	6 37	+23	12 24	− 6	16·8	19·2
Dyce		33·6	308	11 33	?S	(11 33)	−61	(15·6)	22·6
Bidston		33·8	311	—	—	e 12 9	−29	19·8	—
Eskdalemuir		33·8	311	—	—	e 11 45	−53	—	22·8
Edinburgh		34·0	281	—	—	—	—	e 13·8	—
Alicante									

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almeria	35·8	278	e 8 5	+45	e 16 11	?L	(e 16·2)	—
Toledo	36·1	282	e 7 7	−16	—	—	—	—
Granada	36·7	280	i 7 43	+15	i 13 20	0	e 16·9	17·4
Hyderabad	37·8	119	e 7 31	− 5	13 31	− 4	16·8	23·2
San Fernando	38·9	280	—	—	13 50	− 1	21·8	27·8
Irkutsk	41·6	53	8 4	− 4	14 29	0	21·8	—
Kodaikanal	42·6	129	24 57	?L	—	—	(25·0)	—
Colombo	46·7	129	18 45	?SR_1	—	—	29·8	—
Hong Kong	61·0	86	26 57	?L	—	—	(27·0)	42·2
Taihoku	64·8	78	—	—	—	—	e 38·8	—
Manila	70·8	88	—	—	e 18 45?	−111	e 42·8	—
Cape Town	78·5	201	41 2	?L	—	—	(41·0)	43·2
Victora E.	89·9	352	—	—	—	—	52·2	53·4
N.	89·9	352	—	—	—	—	54·3	56·6

Additional readings: Baku i = +1m.52s. Kucino SN = +5m.22s. Athens PE = +3m.49s., MN = +9·9m.; T_o = 17h.38m.3s. Budapest MN = +14·3m. Ekaterinburg MN = +12·6m., MZ = +15·3m. Pulkovo MN = +12·7m. Vienna iPZ = +4m.52s., PR_1 = +5m.15s., PR_2 = +5m.26s., iE = +7m.34s., iN = +8m.17s., SR_1 = +9m.26s., iE = +11m.19s. Venice iP = +5m.27s., +5m.53s. Rocca di Papa (first set) iP = +5m.31s. Upsala MN = +14·8m. Strasbourg S = +6m.30s. (=PR_1?). De Bilt MN = +17·7m., MZ = +20·8m. Paris MN = +16·8m. Stonyhurst SR_1? = +13m.53s., SR_2? = +14m.26s. Eskdalemuir LN = +15·8m. Dyce +11m.44s. Granada i = +8m.34s. (=PR_1?), +8m.47s. (=PR_2?), +8m.58s. (=PR_3?), +10m.36s., +15m.17s. (=SR_1?), and +15m.49s. (=SR_2?), also another set of readings. Irkutsk PR_1 = +9m.42s., SR_1 = +17m.30s.

Jan. 9d. Readings also at 3h. (near Zurich), 7h. (Sumoto (2) and near Manila), 9h. (Mizusawa, Pulkovo, Baku, De Bilt, Strasbourg, Kucino, Ekaterinburg, and near Manila), 18h. (Toledo), 19h. (Algiers), 20h. (near La Paz).

Jan. 10d. Readings at 9h. (Ekaterinburg), 12h. (near Tokyo and Mizusawa), 13h. (Apia), 15h. (Taihoku), 16h. (Riverview, Perth, and near Apia).

Jan. 11d. Readings at 2h. (Baku), 3h. (Baku and Ekaterinburg), 8h. (near Athens), 9h. (Perth), 10h. (Agana and near Tokyo), 11h. (Perth, Riverview, and near Wellington), 13h. (Apia, Riverview, Wellington, Melbourne, and Taihoku), 14h. (Agana), 15h. (near Amboina), 20h. (Wellington and Riverview), 23h. (near Mizusawa).

Jan. 12d. Readings at 0h. (near Athens), 1h. and 2h. (near Tokyo), 13h. (near Amboina), 17h. (Rocca di Papa), 19h. (near Athens), 22h. (Zi-ka-wei), 23h. (Ekaterinburg).

Jan. 13d. Readings at 0h. (Fordham), 6h. (near Tacubaya), 7h. (Apia), 8h. (near Tokyo), 9h. (Apia and Stonyhurst), 10h. (near Tokyo) 12h. (near Tacubaya and near Sumoto), 16h. (Taihoku, Apia, and Fordham), 17h. (near Sumoto),

Jan. 14d. 10h. 19m. 0s. Epicentre 11°·0S. 167°·0E.

A = −·956, B = +·221, C = −·191; D = +·225, E = +·974; G = +·186, H = −·043, K = −·982.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	13·1	124	i 4 18	+64	i 5 54	+ 8	—	6·8
Apia	20·9	100	e 4 22	−30	—	—	—	5·8
Riverview	27·0	210	—	—	e 11 0	+19	e 17·4	24·2
Wellington	31·1	170	—	—	i 11 58	+ 5	e 14·5	20·7
Honolulu	47·2	47	—	—	—	—	e 19·2	20·6
Perth	51·4	237	—	—	31 52	?L	35·9	—
Manila	52·3	299	—	—	—	—	e 37·0	—
Irkutsk	82·8	327	—	—	e 31 0	?SR$_1$	47·0	—
Victoria	85·2	39	—	—	—	—	40·0	42·6
Ekaterinburg	108·1	326	—	—	33 55	?SR$_1$	53·0	69·6
Chicago	108·8	50	—	—	e 28 7	+50	50·2	—
Toronto	114·6	46	—	—	—	—	55·2	—
Ottawa	116·9	44	—	—	e 30 42	?	e 45·0	—
Kucino	120·4	330	—	—	—	—	72·0	—
San Fernando	153·8	348	—	—	—	—	82·0	89·5

Additional readings and notes: Apia e = +3m.32s., MN = +5·2m., MZ = +7·5m.; all readings are given for 15d. Riverview eS? = +14m.58s., MN = +20·8m., these two stations give their readings of this earthquake as for 15d. Wellington i = +13m.21s. (=SR$_1$?). Honolulu eN = +20m.8s. and +22m.33s., MN = +23·1m. Perth PR$_1$ = +29m.27s. Chicago SR$_1$ = +34m.39s. Ottawa eE? = +36m.48s. (=SR$_1$?), eLN = +51·0m.

Jan. 14d. Readings also at 0h. (La Paz) 1h. (Ekaterinburg), 12h. (near Tacubaya (2) and near Sumoto), 13h. (near Tokyo), 19h. (near Pompeii and Rocca di Papa), 20h. (Mizusawa, Nagoya, and near Tokyo).

Jan. 15d. 2h. 50m. 15s. Epicentre 42°·0N. 22°·5E. (as on Jan. 7d.).

A = +·687, B = +·284, C = +·669.

Doubtful identification.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	3·2	333	e 1 53	+63	i 2 23	+55	—	—
Sarajevo	3·5	304	i 1 8	+13	i 1 25	−12	—	1·5
Mostar	3·6	293	i 0 42	−14	i 1 1	−38	—	1·2
Rocca di Papa	7·3	272	e 2 7	+16	—	—	—	—
Venice	8·1	297	i 2 47	+44	—	—	—	4·4
Innsbruck	9·5	308	i 3 7	+44	—	—	—	—

Additional readings and notes: Belgrade iP = +2m.2s.; all these readings are apparently 1m. in error. Rocca di Papa iN = +2m.29s., iE = +2m.30s.

Jan. 15d. 16h. 50m. 50s. Epicentre 0°·0 135°·0E. (as on 1921 Oct. 10d.).

A = −·707, B = +·707, C = 000; D = +·707, E = +·707; G = 000, H = 000, K = −1·000.

Very uncertain identification. The observations at Bombay, Ekaterinburg, Baku, and La Paz suggest a very deep focus, such as was found suitable for the adjacent epicentre 5°·5S. 130°·0E. on 1921 Mar. 23 and other days. But attempts to find a solution on these lines were not very successful.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	20·1	317	e 4 28	−14	(i 8 32)	+ 7	i 8·5	—
Perth	36·7	209	7 41	+13	13 0	−20	16·4	18·6
Riverview	37·1	159	e 9 58	?	e 11 27	−118	e 13·7	15·8
Sydney	37·1	159	7 34	+ 3	—	—	14·7	15·8
Wellington	54·7	144	13 45	?	17 30	+13	23·5	24·8
Irkutsk	58·3	339	—	—	e 25 10?	?	30·2	—
Bombay	63·8	281	—	—	18 10?	−61	—	—
Ekaterinburg	81·5	328	—	—	e 21 41	−60	36·2	—
Baku	86·3	311	—	—	e 22 42	−51	36·4	47·3
Victoria E.	97·8	41	—	—	—	—	47·2	—
Ottawa	127·1	25	—	—	—	—	e 61·2	—
La Paz	151·8	127	18 2	[−117]	—	—	—	—

Additional readings: Perth PR$_1$ = +9m.43s., PR$_2$ = +10m.45s., SR$_1$ = +14m.21s. Riverview MZ = +17·9m. Wellington eL? = +20·4m. Baku e = +27m.11s., MN = +46·4m.

Jan. 15d. Readings also at 1h. (Apia), 3h. (Mizusawa), 7h. (La Paz), 8h. (Ottawa and near Port au Prince), 9h. (near Florence (2)), 10h. (near Apia), 12h. (near Tokyo), 13h. (Bombay and Hyderabad), 18h. (near Sumoto), 20h. (near Sumoto and Tokyo), 21h. (near Amboina), 22h. (Agana), 23h. (Wellington).

Jan. 16d. Readings at 3h. (Agana, Florence, and near Tacubaya), 6h. (near Tokyo), 9h. (near Granada), 22h. (near Mizusawa).

Jan. 17d. Readings at 2h. (near Tokyo), 6h. (Florence and near Tacubaya), 8h. (near Mizusawa), 9h. (Ekaterinburg), 10h. (Baku and near Tokyo), 12h. and 14h. (Apia), 16h. (near Tokyo), 18h. (near Granada and near Nagasaki), 22h. (Taihoku).

Jan. 18d. 12h. 5m. 52s. Epicentre 48°·8N. 153°·5E.

(as on 1923 Feb. 16d.).

$A = -\cdot589$, $B = +\cdot294$, $C = +\cdot752$; $D = +\cdot446$, $E = +\cdot895$; $G = -\cdot673$, $H = +\cdot336$, $K = -\cdot659$.

The above is the most suitable of several epicentres in the neighbourhood, used on previous occasions. Others are 48°·3N. 152°·0E., 48°·4N. 150°·4E., and 47°·3N. 151°·5E.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		7·5	257	1 59	+ 5	(3 28)	+ 4	3·5	4·9
Mizusawa	E.	13·1	227	2 59	−15	5 6	−40	—	—
	N.	13·1	227	3 0	−14	5 4	−42	—	—
Tokyo		16·6	223	3 46	−14	e 6 41	−28	e 9·1	9·4
Nagoya		18·3	228	3 59	−22	7 13	−34	9·8	11·8
Osaka		19·4	230	4 31	− 3	(8 6)	− 4	8·1	12·3
Kobe		19·6	231	4 26	−10	8 0	−15	10·9	11·8
Sumoto		20·0	230	5 28	+47	(9 10)	+47	9·2	9·7
Nagasaki		23·9	237	5 11	−16	(9 25)	−17	9·4	9·9
Zi-ka-wei		29·9	246	6 10	−17	11 3	−29	—	—
Irkutsk		30·8	293	i 6 21	−15	11 29	−19	16·1	—
Taihoku	E.	34·4	237	e 6 40	−28	11 50	−56	15·8	19·5
Hong Kong		40·8	242	7 35	−26	(13 39)	−39	13·6	26·6
Sitka		41·6	51	8 12	+ 4	14 20	− 9	19·1	—
Phu-Lien		42·4	250	i 8 28	+14	e 17 41	?SR_1	e 21·6	28·8
Manila		43·4	230	i 7 48	−33	—	—	i 23·8	—
Honolulu	E.	47·1	108	i 8 26	−22	15 41	− 1	21·5	22·5
	N.	47·1	108	i 8 26	−22	i 15 31	−11	21·4	23·6
Victoria	N.	52·1	57	9 13	− 8	16 39	− 6	24·8	25·6
Amboina		56·9	211	9 32	−19	18 44	+59	22·1	—
Calcutta	E.	57·0	268	10 0	+ 8	17 48	+ 2	—	—
	N.	57·0	268	10 29	+37	18 29	+43	—	—
Dehra Dun		58·4	280	9 53	− 8	17 53	−11	30·4	36·1
Simla	E.	58·5	282	10 2	0	17 56	− 9	30·1	34·6
	N.	58·5	282	10 2	0	18 8	+ 3	30·2	38·8
Berkeley		59·0	67	i 10 5	0	i 18 13	+ 2	25·0	27·1
Lick	E.	59·8	67	i 10 10	− 1	i 18 18	− 3	i 25·4	29·1
Pulkovo		62·1	331	10 26	0	18 53	+ 4	29·6	41·3
Kucino		62·5	325	i 10 30	+ 1	—	—	—	—
Upsala		65·7	337	i 10 51	+ 2	i 19 34	+ 1	—	41·2
Hyderabad		67·2	271	10 53	− 6	19 40	−12	35·3	42·1
Bergen		67·8	345	11 25	+22	20 16	+16	31·8	40·1
Batavia		68·3	231	i 11 0	− 6	i 19 52	−14	e 33·3	—
Baku		68·3	308	i 11 8	+ 2	i 20 14	+ 8	34·1	36·1
Malabar		68·9	230	11 6	− 4	i 19 58	−15	i 39·6	—
Konigsberg		69·0	333	11 16	+ 5	20 22	+ 8	e 34·1	42·6
Tucson	E.	69·7	65	11 21	+ 6	20 27	+ 5	33·1	36·1
Bombay		69·8	276	11 10	− 6	20 18	− 6	36·1	46·1
Apia		69·8	143	i 11 22	+ 6	20 11	−13	30·8	34·1
Dyce		72·1	346	11 38	+ 7	20 53	+ 2	37·1	45·1
Lemberg		72·2	328	e 9 8	?	e 20 50	− 2	e 37·7	44·6
Hamburg		73·1	339	i 11 39	+ 2	i 21 7	+ 4	e 34·1	43·1
Kodaikanal		73·1	268	11 20	−17	(20 26)	−37	20·4	53·0
Edinburgh		73·5	347	—	—	i 21 12	+ 4	36·1	49·5
Eskdalemuir		74·0	347	i 11 44	+ 2	i 21 17	+ 3	—	—
Colombo		74·0	263	11 38	− 4	21 38	+24	46·1	48·6
Chicago		74·7	43	11 53	+ 6	—	—	34·6	—
Stonyhurst		75·3	346	e 11 54	+ 3	i 21 53	+24	37·2	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	m.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		75·5	340	11 52	0	21 36	+ 4	e 35·1	44·0
Cheb		75·6	335	i 12 41	+48	i 22 22	+49	e 40·1	48·6
Bidston		75·8	346	12 50	+56	22 56	+81	—	51·9
Budapest		75·9	330	11 53	− 1	21 30	− 6	e 38·1	48·5
Ann Arbor		75·9	40	12 2	+ 8	21 38	+ 2	e 36·9	45·9
St. Louis		76·0	47	e 11 59	+ 4	i 21 39	+ 2	36·1	44·0
Vienna		76·1	332	e 11 54	− 2	21 41	+ 3	e 36·1	49·1
West Bromwich		76·5	345	12 0	+ 2	21 48	+ 5	—	—
Ottawa		76·5	33	e 11 58	0	i 21 38	− 5	e 37·1	47·4
Toronto	E.	76·6	37	i 12 1	+ 2	i 21 42	− 2	i 37·4	50·3
Uccle		76·9	340	i 11 59	− 1	i 21 48	0	36·1	42·6
Oxford		77·2	346	12 1	− 1	i 21 51	0	e 32·8	50·4
Kew		77·2	345	—	—	—	—	—	57·1
Hohenheim		77·7	338	i 12 6	+ 1	i 21 58	+ 1	e 38·1	47·3
Belgrade		77·8	328	e 12 7	+ 1	i 21 58	0	e 28·2	49·2
Strasbourg		78·2	338	i 12 8	0	i 22 2	0	34·1	47·7
Innsbruck		78·4	335	e 12 5	− 4	e 22 4	− 1	e 38·1	52·7
Ravensburg		78·4	336	e 12 9	0	i 22 6	+ 1	e 39·1	47·7
Ithaca	E.	78·7	35	e 12 44	+33	i 22 24	+16	e 37·1	—
	N.	78·7	35	e 12 45	+34	i 22 25	+17	42·1	—
Mazatlan		79·0	67	12 48	+35	22 44	+32	36·7	—
Zurich		79·1	337	e 12 11	− 3	i 22 12	− 1	e 43·1	—
Paris		79·2	342	i 12 10	− 4	i 22 11	− 3	39·1	44·1
Sarajevo		79·3	330	i 12 16	+ 1	e 22 19	+ 4	34·1	—
Venice		79·8	335	i 12 14	− 4	22 8	−13	—	—
Besançon		79·9	339	12 20	+ 2	22 22	0	32·1	44·1
Mostar		79·9	330	i 12 18	0	i 22 22	0	34·2	—
Harvard	E.	80·7	31	e 12 42	+19	22 33	+ 2	42·7	53·5
	N.	80·7	31	e 12 28	+ 5	22 33	+ 2	41·4	59·1
Fordham		81·0	35	i 12 24	− 1	i 22 33	− 2	41·1	54·4
Georgetown	E.	81·5	38	e 12 25	− 3	i 22 35	− 6	e 34·3	54·9
	N.	81·5	38	e 12 27	− 1	i 22 35	− 6	e 36·3	56·5
Moncalieri		81·6	337	i 12 24	− 4	i 22 37	− 5	31·7	50·1
Florence		81·6	332	12 26	− 2	22 37	− 5	44·1	47·1
Cheltenham	E.	81·8	38	e 12 48	+19	22 38	− 6	44·9	50·2
	N.	81·8	38	12 27	− 2	—	—	42·6	56·6
Athens		82·6	322	i 12 29	− 5	i 22 42	−11	e 32·3	45·5
Riverview		82·6	182	i 12 18	−16	i 22 21	[−20]	e 33·9	43·0
Sydney		82·6	182	12 38	+ 4	(22 20)	[−19]	41·1	46·3
Loyola	N.	83·0	52	e 12 35	− 1	i 22 51	− 6	29·1	—
Rocca di Papa	Z.	83·1	331	i 12 32	− 5	e 22 27	[−17]	e 35·0	61·0
Pompeii		83·3	330	i 12 48	+10	i 23 8	+ 8	36·1	49·1
Mobile		83·4	50	e 12 35	− 3	i 22 51	[+ 5]	29·1	—
Adelaide		84·8	192	—	—	i 22 38	[−16]	e 33·7	64·7
Helwan		85·9	345	i 12 49	− 4	23 6	[+ 5]	—	59·4
Tacubaya		86·2	65	12 37	−17	23 8	[+ 5]	40·1	47·3
Barcelona		86·3	340	e 12 52	− 3	23 13	[+ 9]	42·1	48·1
Melbourne		86·9	187	10 32	−146	22 20	−80	44·6	46·3
Tortosa	E.Z.	87·2	341	12 55	− 5	23 16	[+ 6]	—	54·0
	N.	87·2	341	12 58	− 2	23 15	[+ 5]	40·8	53·4
Perth		87·4	211	12 57	− 4	23 7	[− 4]	36·5	—
Toledo		89·1	344	e 12 58	−13	i 23 29	[+ 6]	e 39·5	47·0
Alicante	N.	89·8	341	e 13 7	− 8	i 23 33	[+ 6]	48·2	51·8
Algiers		90·4	337	13 8	−10	i 23 35	[+ 5]	e 44·1	54·1
Lisbon		91·2	347	13 1	−21	23 31	[− 4]	e 38·2	45·2
Granada		91·7	344	i 13 0	−25	i 23 32	[− 6]	i 47·2	50·4
Almeria		91·7	342	e 13 16	− 9	i 23 43	[+ 5]	e 47·8	52·2
Rio Tinto		91·7	346	15 8	?	—	—	—	58·1
Wellington		92·1	165	i 12 59	−29	i 23 54	[+13]	e 42·1	44·6
Malaga		92·3	344	13 15	−14	23 48	[+ 6]	45·1	59·8
San Fernando		92·9	345	13 26	− 6	23 55	[+10]	48·1	60·6
La Paz		133·3	60	(i 19 39)	[+13]	e 28 24	?PR_1	63·1	67·3
Cape Town		143·7	277	19 36	[−10]	—	—	—	84·6
La Plata	E.	153·1	71	—	—	i 30 24	?PR_1	69·7	76·0
	N.	153·1	71	—	—	30 32	?PR_1	69·6	92·4

Additional readings and notes: Osaka MN = +11·4m. Kobe MN = +11·7m. Sumoto S = +6m.49s., MN = +9·4m. Nagasaki MN = +9·5m. Sitka SR_1E = +16m.53s., SR_2N = +17m.51s., LN = +22·2m.; T_e = 12h.6m.19s. Phu-Lien MN = +28·4m. Honolulu iPR_1N = +10m.16s., SR_1N = +18m.58s., eSR_1E = +19m.5s., iSR_2 = +20m.21s., and several other i and e readings. Victoria LE = +25·2m., ME = +26·0m.: T_e = +12h.5m.46s. Amboina readings have been increased by 17m. Berkeley PR_2N = +14m.3s., PR_2E = +14m.4s., PR_2Z = +14m.13s., iSNZ = +18m.15s., PSEN = +18m.39s., PSZ = +18m.42s., Lick iPN = +10m.9s., iPR_1 = +12m.57s., iSE = +18m.23s., iSN = +18m.25s., iPSE = +18m.42s., iPSN = +18m.43s., iSR_2E = +24m.55s., iSR_2N = +25m.11s. Pulkovo SR_1 = +21m.50s., MN = +39·1m., MZ = +42·1m. Kucino PR_2 = +14m.27s.

Continued on next page.

Upsala MN = +41·7m. Hyderabad PR_1 = +13m.39s., SR_1 = +24m.20s. ; T_e =12h.5m.51s. Batavia iN = +12m.1s., i = +39m.59s. Baku i = +11m.57s. and +15m.34s., MZ = +39·9m. Malabar i = +39m.35s. Konigsberg eE = +11m.38s., eP = +11m.57s., PR_1 = +14m.26s., PS = +21m.11s. (=[S]?), SR_1 = +25m.31s., eLN = +31·7m., eLZ = +38·6m., MN = +39·6m., MZ = +41·6m. Apia e = +11m.4s., iP = +17m.1s. Dyce PR = +14m.15s.?, SR_1 = +26m.17s. Lemberg MN = +46·6m. Hamburg PR_1 = +14m.28s., MZ = +46·1m. Colombo gives P as S and S as L. Stonyhurst iPR_1 = +14m.48s., SR_1 = +26m.33s., SR_2 = +30m.8s. De Bilt MN = +43·0m., MZ = +51·6m. Budapest iE = +12m.4s., +17m.51s. (=PR_2), and +22m.34s. (=[S]?), iN = +13m.0s., and +14m.23s., MN = +53·4m. Ann Arbor PR_2 = +17m.8s., SR_1 = +27m.8s., MN = +47·0m. St. Louis ePR_2N = +16m.53s., i = +21m.43s. (=[S]?), PS = +22m.5s., SR_1 = +27m.0s., SR_2 = +30m.13s. Vienna iPZ = +11m.58s., PR_1 = +15m.7s, PS = +22m.16s. (=[S]?), SR_1 = +26m.47s., MNZ = +52·1m., and several i readings. Ottawa MN = +48·1m. ; T_e =12h.6m.8s. Toronto iSN = +21m.39s., LN = +48·7m. ; T_e =12h.6m.10s. Uccle iPR_1 = +14m.59s., iPR_2 = +18m.8s., SR_1 = +27m.8s., MN = +42·9m. Oxford i = +12m.19s. Hohenheim i = +22m.19s. (=[S]?), MN = +50·7m. ; T_e =12h.6m.7s. Belgrade iP = +12m.9s., PR_1 = +12m.19s. (??). Strasbourg P = +12m.10s., PR_1 = +15m.14s., ePR_2 = +17m.28s., ePR_3 = +18m.31s., S = +22m.4s., MN = +48·2m. Ravensburg iP = +12m.12s., MN = +47·9m. Paris MN = +43·1m. Venice iPN = +12m.20s., S = +22m.38s. Harvard PR_2E = +17m.22s., PS = +22m.56s., SR_1 = +27m.50s., SR_2E = +30m.37s., SR_2N = +31m.27s. ; T_e =12h.6m.12s., also several e readings. Fordham SR_1 = +27m.54s Florence P = +12m.28s., S = +22m.43s., L = +28·9m. Cheltenham PR_1N = +15m.43s., PSN = +23m.19s., SR_1E = +28m.23s., SR_2E = +31m.24s., SR_2N = +31m.30s., SR_3N = +33m.24s., SR_3E = +33m.38s. ; T_e =12h.6m.6s. Athens MN = +52·2m. Riverview iPR_1 = +15m.53s., iS = +22m.28s., PS = +22m.49s., MN = +43·3m. ; T_e =12h.5m.53s. Rocca di Papa iPEN = +12m.36s., eSE = +22m.41s. Helwan PR_1 = +16m.29s. Barcelona PS? = +23m.30s.(=S). Melbourne SR_1 = +27m.44s., SR_2 = +34m.14s. Tortosa ZE indicates that those readings are either vertical or east. Perth iS = +23m.21s., +23m.37s., +23m.52s. Toledo PR_1NE = +16m.10s., SR_1NW = +29m.35s., MNW = +52·0m., MZ = +57·4m., also many other PR, SR, and i readings. Alicante LE = +47·2m. Granada iPEN = +13m.9s., MN = +48·0m., MZ = +48·4m., also ten other i readings. Almeria MN = +48·8m. Wellington PR_1 = +16m.58s., PR_2 = +19m.13s., S_cP_cS = +23m.0s. ; T_e =12h.5m.39s. Malaga MNZ = +62·9m. San Fernando MN = +61·6m. La Paz P = +14m.19s., PR_2 = +22m.44s., i = +23m.4s., SR_1 = +36m.39s., SR_2 = +39m.39s., SR_3 = +44m.38s., L = +56·6m., [P] is given as iPR_1. La Plata PR_1E = +23m.31s., PR_1N = +23m.39s., S_cP_cSE = +27m.9s. (=PR_2?), iS_cP_cSN = +27m.37s. (=PR_2)?.

•

Jan. 18d. 13h. 11m. 42s. Epicentre 12°·0N. 91°·0W.

A = −·017, B = −·978, C = +·208 ; D = −1·000, E = +·017 ; G = −·004, H = −·208, K = −·978.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca		7·5	313	2 18	+24	—	—	3·6	3·8
Vera Cruz		8·7	326	4 2	?S	(4 2)	+ 6	5·4	6·5
Merida	z.	9·0	8	2 38	+22	4 2	− 1	4·1	4·9
Tacubaya		10·8	313	2 37	− 4	4 44	− 6	5·0	6·2
La Paz		36·4	141	7 25	0	—	—	22·4	35·0

No additional readings.

Jan. 18d. 20h. 14m. 0s. Epicentre 6°·5S. 126°·0E. (as on 1924 Oct. 31d.).

A = −·584, B = +·804, C = −·113 ; D = +·809, E = +·588 ; G = +·067, H = −·092, K = −·994.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	3·6	37	i 0 42	−14	i 1 18	−21	—	—
Malabar	18·3	267	5 7	+46	9 6	+79	—	—
Batavia	19·0	270	4 39	+10	10 0	?L	(10·0)	—
Manila	21·7	346	i 4 55	− 6	(i 9 0)	+ 1	i 9·0	9·1
Perth	27·2	199	5 23	−37	10 47	+ 2	14·2	18·5
Adelaide	30·8	159	—	—	i 11 42	− 6	16·0?	17·0

Continurd on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	33·3	326	7 0	+ 1	12 0	−29	—	—
Melbourne	35·7	153	—	—	12 54	−12	e 17·8	19·7
Riverview	35·9	143	e 6 40	−41	e 11 34	−95	e 14·2	21·6
Zi-ka-wei	37·9	355	7 20	−17	12 24	−73	—	—
Colombo	47·9	285	10 0?	?PR_1	—	—	21·4	22·0
Hyderabad	52·7	298	1 9 39	+15	17 25	+33	—	—
Bombay	58·2	298	10 0?	0	—	—	—	—
Irkutsk	61·6	346	i 10 22	− 1	i 18 41	− 2	30·0	—
Ekaterinburg	82·4	330	i 12 35	+ 3	22 41	− 9	32·0	—
Baku	83·7	314	e 12 44	+ 4	(i 23 16)	+10	43·5	53·1
De Bilt	113·7	325	—	—	—	—	e 66·0	—
Granada	125·0	311	—	—	—	—	e 72·1	84·8
La Paz	153·1	149	i 20 5	[+ 5]	—	—	—	—

Additional readings and notes: Amboina readings have been increased by 17m. Batavia iP = +4m.41s., i = +5m.41s. Manila MN = +9·9m. Melbourne eS has been increased by 24m. Riverview MZ = +17·2m., MN = +17·8m. Baku iP = +12m.47s., S = +24m.9s., PS = +24m.31s., MN = +52·1m.; the reading entered as S is given as iY.

Jan. 18d. Readings also at 8h. (Taihoku and La Plata), 11h. (Wellington (2)), 12h. (Wellington and near Sumoto), 13h. (Apia and Denver), 14h. (Apia), 15h. (Ekaterinburg), 16h. (Bombay), 18h. (near Lick), 19h. (Wellington (2), near Sumoto, La Paz, and near Mizusawa and Tokyo), 20h. (near Mizusawa and Sumoto), 22h. (near Tacubaya), 23h. (near Tokyo).

Jan. 19d. 9h. 4m. 40s. Epicentre 34°·5N. 25°·0E. (as on 1923 Dec. 31d.).

A = +·747, B = +·348, C = +·566; D = +·423, E = −·906; G = +·513, H = +·239, K = −·824.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Pompeii	10·3	310	e 4 30	?S	(e 4 30)	− 7	—	—
Rocca di Papa	12·1	310	e 3 9	+ 9	—	—	e 7·9	9·4
Moncalieri	16·9	314	e 1 39	?	7 1	−15	10·1	15·1
Zurich	17·8	321	e 4 17	+ 2	7 44	+ 8	—	—
Algiers	17·9	284	e 7 57	?S	(e 7 57)	+19	e 16·3	18·8
Baku	20·6	66	—	—	—	—	9·3	15·9
Uccle	22·1	324	e 5 8	+ 2	e 9 8	+ 1	—	—
Almeria	22·3	284	i 5 7	− 2	9 7	− 4	e 11·9	13·7
De Bilt	22·6	327	5 9	− 3	e 9 33	+16	e 12·3	16·4
Kucino	23·1	19	—	—	—	—	e 13·2	—
Granada	23·2	285	i 5 17	− 2	e 9 24	− 5	—	—
Ekaterinburg	32·8	36	—	—	—	—	41·3	—

Additional readings: Baku MN = +15·4m. De Bilt eSN = +9m.39s.

Jan. 19d. Readings also at 0h. (near La Paz), 2h. (Nagasaki, near Tokyo, and Mizusawa), 5h. and 7h. (2) (Nagasaki), 8h. (La Paz), 10h. (De Bilt, near Granada, and Malaga), 11h. (near Tokyo), 12h. (Tokyo and near Tacubaya), 18h. (Nagasaki, La Paz, and near Manila), 20h. (Apia, Nagasaki, and Moncalieri), 21h. (Apia, near Tokyo, and near Tacubaya), 23h. (near Wellington).

Jan. 20d. Readings at 2h. (near Tokyo), 5h. (Apia), 7h. (Taihoku), 8h. (near Sumoto and Zante), 11h. (near Manila), 12h. (Amboina (2)), 14h. (near La Paz), 16h. (Irkutsk, Kobe, and near Sumoto), 17h. (Irkutsk, Venice, Vienna, and near Zurich), 19h. (Irkutsk, Riverview, and Apia), 20h. (De Bilt, Vienna, Strasbourg, Irkutsk, and near Tokyo), 22h. (Apia).

Jan. 21d. 18h. 11m. 0s. . Epicentre 55°·0S. 24°·0W. (as on 1923 May 1d.).

A = +·524, B = −·233, C = −·819 ; D = −·407, E = −·914 ; G = −·748, H = +·333, K = −·574.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	E.	30·8	297	6 34	− 2	i 11 49	+ 1	i 16·7	—
	N.	30·8	297	6 33	− 3	11 4	− 2	i 16·7	—
Rio de Janeiro		35·1	329	e 6 23	−51	12 38	−19	14·9	17·9
Cape Town		36·1	72	7 26	+ 3	—	—	—	—
La Paz		51·2	302	i 9 11	− 3	i 16 15	−19	23·4	28·4
Perth		86·5	146	—	—	i 22 45	[−20]	—	—
Melbourne		86·7	172	—	—	e 22 48	[−19]	—	45·5
Riverview		91·1	176	—	—	e 23 18	[−17]	e 50·1	52·7
San Fernando		92·7	14	—	—	23 52	[+ 8]	46·0	55·5
Malaga		93·2	16	e 24 34	?S	(e 24 34)	−13	e 41·4	—
Granada		93·8	16	e 13 49	+12	i 23 57	[+ 6]	e 45·8	54·3
Tortosa	N.	98·1	20	—	—	—	—	e 47·0	—
Rocca di Papa		101·6	29	18 19	?PR_1	24 34	[+ 2]	—	—
Florence		103·2	26	(14 0?)	−26	—	—	—	54·0
Uccle		108·4	20	—	—	e 25 0	[− 3]	e 45·0	—
Vienna	Z.	108·7	28	19 10	?PR_1	—	—	—	—
Ottawa		109·5	326	—	—	e 29 0?	+96	e 34·5	—
De Bilt	N.	109·8	20	—	—	e 25 12	[+ 3]	e 51·0	57·9
Baku		114·2	52	e 19 31	?PR_1	29 45	+101	50·0	61·8
Upsala		119·5	23	—	—	—	—	e 59·0	—
Kucino		121·7	36	—	—	—	—	e 58·6	—
Pulkovo		122·6	30	e 20 55	?PR_1	e 25 58	[+ 5]	59·0	—
Ekaterinburg		131·0	46	i 18 19	[−62]	—	—	58·0	—
Manila		131·4	134	e 22 0?	?PR_1	—	—	—	—
Victoria		132·4	299	39 21	?SR_1	—	—	59·8	65·5
Irkutsk		149·9	75	i 20 9	[+13]	—	—	69·0	—

Additional readings: La Plata iSR_1E = +13m.9s., SR_1N = +13m.11s. La Paz PR_1 = +12m.1s., iPS = +16m.52s., SR_1 = +19m.33s. ; T_o = 18h.11m.13s. Riverview MN = +51·3m. Granada iS = +24m.31s., +25m.46s., +28m.41s., and +33m.21s. Rocca di Papa eE = +17m.14s. = [P] −38s. De Bilt eLE = +45·0m., ME = +59·8m. Baku e = +19m.37s., and +19m.49s., iP = +20m.0s., PR_2 = +22m.40s., PR_1N = +25m.40s., PR_1Z = +25m.54s., MN = +57·4m. Ekaterinburg i = +18m.46s. (=[P]?), +20m.45s., +21m.36s., +22m.19s., +25m.21s., and +27m.31s. Irkutsk e = +24m.0s. = PR_1?, +30m.16s. = PR_2?, +34m.10s., +38m.42s., +44m.6s.

Jan. 21d. Readings also at 3h. (near Taihoku), 5h. (near Tacubaya), 13h. (Taihoku), 15h. (Perth), 16h. (Malabar), 17h. (Batavia and Malabar), 18h. (near Taihoku).

Jan. 22d. 10h. 17m. 42s. Epicentre 36°·5N. 140°·5E. (as on 1923 May 26d.).

A = −·620, B = +·511, C = +·595.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	1·1	i 0 13	− 4	i 0 28	− 3	—	0·5
Mizusawa	2·6	0 39	− 2	1 9	− 3	—	—
Nagoya	3·2	0 45	− 5	—	—	1·6	1·9
Osaka	4·5	1 15	+ 5	—	—	2·4	3·5
Kobe	4·7	1 17	+ 4	—	—	2·5	2·5

Additional readings: Osaka MN = +3·1m. Kobe MN = +2·6m.

Jan. 22d. Readings also at 0h. (near Sumoto), 4h. (Amboina), 5h. (near Batavia), 11h. (La Paz), 12h. (near Mizusawa), 16h. (near Sumoto), 19h. (Kodaikanal and Strasbourg), 23h. (Agana).

Jan. 23d. 17h. 1m. 0s. Epicentre 11°·0S. 170°·0W. (as on 1917 May 18d.).

A = −·967, B = −·170, C = −·191 ; D = −·174, E = +·985 ; G = +·188, H = +·033, K = −·982.

Doubtful.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		3·3	212	0 54	+ 2	—	—	1·2	1·5
Wellington		33·1	200	i 10 32	?	i 12 30	+ 4	e 13·3	17·2
Honolulu		34·4	20	e 16 50	?L	—	—	(e 16·8)	—
Riverview		42·1	230	e 9 4	+52	e 15 41	+65	e 19·2	21·8
Victoria	E.	72·3	30	—	—	—	—	39·1	44·1
Irkutsk		96·1	323	e 17 28	?PR_1	24 30	[+27]	—	—
Toronto	E.	98·0	46	—	—	—	—	62·6	—
Ottawa		100·8	45	—	—	—	—	e 52·0	—
Ekaterinburg		120·0	330	e 20 43	?PR_1	—	—	53·0	—
De Bilt		138·7	4	—	—	—	—	e 84·0	—
Uccle		139·9	5	—	—	—	—	89·0	—
Granada		151·1	23	—	—	—	—	79·0	—

Additional readings: Apia MZ = +3·8m. Honolulu eN = +19m.0s. Riverview MN = +21·6m. Victoria LN = +40·6m. Irkutsk e = +26m.56s. Ottawa eLN = +44·5m. Ekaterinburg e = +32m.50s. and +37m.35s.

Jan. 23d. Readings also at 0h. (near Athens), 1h. (Nagasaki), 5h. (near Manila), 7h. (Taihoku), 8h., 11h., and 15h. (La Paz), 17h. and 18h. (near Tacubaya) 23h. (near Batavia and Malabar).

Jan. 24d. 8h. 26m. 45s. Epicentre 36°·5N. 140°·5E. (as on 22d.).

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	1·1	i 0 12	− 5	i 0 18	−13	—	0·4
Mizusawa	2·6	0 49	+ 8	1 29	+17	—	—
Nagoya	3·2	0 27	−23	—	—	—	—
Osaka	4·5	1 9	− 1	—	—	2·2	2·9
Kobe	4·7	e 1 48	+35	(2 10)	+ 1	2·1	3·5

Additional readings: Tokyo MN = +0·5m., MZ = +0·6m. Osaka MN = +2·6m. Kobe MN = +2·4m.

Jan. 24d. Readings also at 0h. (near Manila), 1h. (near Apia, Wellington, and Nagasaki), 7h. (Zi-ka-wei and Ekaterinburg), 8h. (Pulkovo, Baku, Kucino, Uccle, and De Bilt), 10h. (Victoria), 11h. and 12h. (near Tokyo), 15h. (Ekaterinburg and Irkutsk), 16h. (near Tokyo), 19h. (La Paz, Tacubaya, and Vera Cruz), 20h. (Irkutsk and near Mizusawa), 21h. (Irkutsk, De Bilt, and near Mizusawa).

Jan. 25d. 10h. 45m. 48s. Epicentre 36°·0N. 138°·0E. (as on 1923 Sept. 29d.).

A = −·601, B = +·541, C = +·588.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	1·2	−0 11	−29	—	—	—	—
Tokyo	1·5	0 24	+ 1	e 1 0	+18	e 1·6	1·8
Osaka	2·5	0 52	+13	—	—	1·5	2·0
Kobe	2·7	0 45	+ 3	1 21	+ 7	2·0	2·4
Sumoto	3·1	0 43	− 6	(e 1 21)	− 5	1·4	1·4
Ekaterinburg	53·9	—	—	—	—	35·2	—

Additional readings: Osaka MN = +1·8m. Kobe MN = +2·6m. Sumoto S reading is given as P of another shock.

Jan. 25d. Readings also at 0h. (La Paz), 2h. (Taihoku), 7h. (Agana), 8h. (near Amboina (2)), 10h. (Tucson), 11h. (Apia), 16h. (Irkutsk, Ekaterinburg, near Mizusawa, and near Port au Prince), 20h. (Tortosa), 21h. (near Sumoto).

Jan. 26d. 19h. 2m. 6s. Epicentre 8°·7N. 83°·0W.

(as on 1918 April 27d.).

A = +·120, B = −·981, C = +·151 ; D = −·993, E = −·122 ;
G = +·018, H = −·150, K = −·989.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Hts.	E.	3·4	84	0 44	− 9	1 26	− 8	1·7	1·9
	N.	3·4	84	0 44	− 9	1 24	−10	1·8	2·4
	E.	3·4	84	0 38	−15	1 26	− 8	2·0	2·4
Port au Prince		14·3	45	i 3 50	+20	8 48	?	13·9	—
Vera Cruz	E.	16·5	311	5 3	+64	9 7	+120	10·2	13·2
Tacubaya		19·0	306	4 37	+ 8	8 22	+20	9·2	11·0
Loyola	N.	22·3	344	i 5 14	+ 5	i 9 14	+ 3	10·6	—
La Paz		29·1	150	e 6 15	− 4	12 22	+63	17·2	21·6
Cheltenham	E.	30·6	12	—	—	11 36	− 8	15·0	19·0
	N.	30·6	12	—	—	11 20	−24	16·9	19·5
Georgetown	E.	30·7	9	—	—	11 41	− 5	17·0	19·1
	N.	30·7	9	e 6 32	− 3	11 40	− 6	17·7	19·6
Fordham		33·2	13	i 6 52	− 6	i 12 12	−15	16·5	19·5
Chicago		33·3	354	7 12	+13	12 44	+15	18·7	21·7
Ann Arbor		33·6	359	e 7 12	+11	13 12	+38	e 18·0	18·9
Ithaca		34·2	8	e 7 0	− 7	e 12 3	−40	18·9	21·9
Tucson	E.	34·9	316	7 13	+ 1	13 9	+15	18·9	19·5
Toronto	E.	35·1	4	—	—	12 19	−38	15·9	20·1
	N.	35·1	4	i 7 9	− 5	e 12 24	−33	16·5	22·6
Harvard	N.	35·3	15	7 10	− 6	12 40	−20	17·3	23·9
Ottawa		37·3	9	e 7 27	− 5	e 13 22	− 6	e 17·9	22·6
Berkeley	E.	45·8	317	—	—	e 15 16	− 9	—	—
La Plata	E.	49·6	153	9 14	+10	16 26	+12	27·8	28·6
	N.	49·6	153	i 9 3	− 1	16 12	− 2	26·8	32·7
Victoria	E.	52·2	327	9 22	+ 1	17 13	+27	28·0	33·0
Lisbon		72·0	53	—	—	—	—	e 33·7	—
San Fernando		74·3	56	12 4	+20	21 54	[+10]	35·9	50·9
Malaga		75·7	56	12 1	+ 8	21 49	[− 5]	29·9	39·8
Toledo		76·0	51	e 12 1	+ 6	21 49	[− 7]	e 35·8	38·7
Granada		76·3	55	i 11 55	− 2	i 21 32	− 9	e 36·1	38·2
Almeria		77·0	55	e 12 18	+17	e 22 34	[+31]	e 46·0	—
Eskdalemuir		77·1	35	—	—	e 21 54?	+ 4	35·9	—
Edinburgh		77·1	34	—	—	e 14 54	?PR_1	41·9	47·9
Bidston		77·1	37	22 36?	?S	(22 36?)	[+33]	(34·7?)	46·2
Stonyhurst		77·4	37	e 12 40	+37	e 23 2	[+50]	e 36·9	41·2
Oxford		78·1	40	—	—	i 29 44	?SR_1	35·9	48·9
Alicante		78·7	53	e 12 14	+ 3	e 21 18	−50	e 37·7	—
Kew		78·7	39	—	—	—	—	—	50·9
Tortosa		79·5	50	e 12 33	+17	22 27	+ 9	33·4	45·0
Paris		80·5	42	—	—	22 32	+ 3	37·9	41·9
Uccle		81·6	40	—	—	e 22 54	+12	e 37·9	43·9
Algiers		81·7	55	e 12 28	− 1	e 22 0	[+43]	e 37·9	52·4
De Bilt		82·0	38	12 35	+ 5	e 22 54	+ 8	e 37·9	50·6
Besançon		83·0	45	—	—	—	—	e 41·9	—
Strasbourg		84·0	44	e 13 44	+62	e 23 54?	+46	39·9	42·9
Moncalieri		84·4	45	e 11 58	−46	22 22	−50	35·8	—
Hamburg		84·8	37	12 48	+ 1	—	—	e 39·9	—
Upsala	E.	87·8	30	—	—	—	—	e 41·9	50·3
Rocca di Papa		88·5	49	e 13 24	+16	(e 23 54)	− 4	23·9	—
Vienna		89·7	41	13 13	− 1	—	—	e 43·9	46·4
Konigsberg		90·6	35	—	—	—	—	e 43·9	49·9
Apia		90·8	258	—	—	—	—	e 53·9	—
Budapest		91·6	42	e 11 54?	−91	—	—	e 43·9	—
Pulkovo		93·8	28	e 13 31	− 6	e 24 4	[+13]	38·9	49·5
Kucino		99·3	30	—	—	24 31	[+10]	46·6	49·4
Ekaterinburg		108·0	21	19 3	?PR_1	28 29	+79	39·9	60·5
Baku		114·5	37	—	—	e 29 9	+63	54·9	73·0
Irkutsk		118·7	356	20 23	?PR_1	30 16	+96	60·9	74·1
Riverview		124·4	234	—	—	e 54 0	?	e 59·3	65·9
Manila		146·7	316	e 19 16	[−35]	—	—	21·0	—
Hyderabad		148·1	37	—	—	—	—	—	81·8

For Notes see next page.

NOTES TO JAN. 26d. 19h. 2m. 6s.

Additional readings: Georgetown iEN = +7m.59s., eLE? = +14m.0s. Chicago E = +15m.43s. Ann Arbor MN = +22·3m. Ithaca iN = +7m.57s., eE = +15m.54s. Harvard iN = +8m.32s., eN = +13m.1s., LE = +16·3m., ME = +22·1m.; T_e = 19h.2m.20s. Ottawa iPR_2? = +8m.57s., SR_2? = +16m.12s., MN = +23·9m.; T_e = 19h.2m.5s. Berkeley eN = +15m.24s., +15m.36s., and +15m.44s. La Plata PR_1N = +11m.1s. Victoria LN = +26·0m., MN = +37·9m.; T_e = 19h.1m.42s. Toledo MNW = +38·5m. Granada SN = +22m.7s. = [S]?, PS? = +22m.24s. Eskdalemuir eE = +26m.54s.? and +30m.24s. Bidston gives S as P and L as S. Alicante eLN = +39·4m. Bergen (△ = 81°·7) gives simply 19h. De Bilt ePR_1Z = +15m.56s., eSR_1E = +28m.26s., MN = +45·0m., MZ = +45·5m. Pulkovo PR_1 = +17m.18s., SR_1 = +29m.48s., MZ = +52·4m., MN = +59·0m. Kucino e = +32m.40s. = SR_1?. MN = +51·8m. Ekaterinburg MN = +62·9m., MZ = +70·9m. Baku i = +29m.36s., MN = +62·7m. Irkutsk PR_3 = +26m.16s., MZ = +74·3m. Riverview MN = +63·2m.

Jan. 26d. Readings also at 1h. and 2h. (near Sumoto), 4h. (Baku and Ekaterinburg), 5h. (Ekaterinburg, Apia, Melbourne, Adelaide, near Victoria, and Berkeley), 6h. (Ottawa, Toronto, and Chicago), 7h. (near Amboina), 11h. (Balboa Heights), 12h. (Riverview), 13h. (Florence (2) and La Plata), 14h. (Ekaterinburg), 15h. (Perth and near Tacubaya), 16h. (Riverview, Ekaterinburg, and near Granada and Malaga), 17h. (Riverview), 20h. (Balboa Heights).

Jan. 27d. 8h. 17m. 0s. Epicentre 33°·5N. 27°·0E.

A = +·743, B = +·379, C = +·552; D = +·454, E = −·891; G = +·492, H = +·251, K = −·834.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens N.	5·2	331	1 25	+ 5	—	—	i 2·8	3·0
Pompeii	12·3	310	e 1 0	?	—	—	—	—
Rocca di Papa	14·0	311	e 3 29	+ 3	—	—	e 9·1	9·5
Budapest	15·2	339	e 2 0?	?	—	—	—	—
Moncalieri	18·8	314	e 4 6	−21	7 58	0	12·4	15·4
Konigsberg	21·8	350	5 16	+13	9 4	+ 3	e 14·2	16·0
Hamburg	23·4	334	e 5 20?	− 1	—	—	—	16·0
Kucino	23·5	16	9 44	?S	(9 44)	+ 9	16·6	—
Uccle	23·9	323	—	—	e 9 24	−18	e 13·0	—
Almeria	24·2	286	i 5 43	+13	10 12	+24	e 15·2	—
De Bilt	24·4	326	—	—	—	—	e 14·0	16·8
Granada	25·1	287	i 5 23	−16	10 14	+ 9	e 15·0	17·9
Malaga	25·8	286	5 39	− 7	9 59	−19	—	—
Pulkovo	26·5	4	5 50	− 3	10 28	− 4	12·0	18·2
Ekaterinburg	32·7	34	e 8 18	?PR_1	12 24	+ 5	17·0	—

Additional readings: Athens iN = +2m.6s., MN = +3·1m. Rocca di Papa eE = +3m.47s., eN = +4m.47s. Kucino eS = +14m.24s. Granada i = +6m.47s. Pulkovo MZ = +18·1m.

Jan. 27d. Readings also at 2h. (Baku), 3h. (near Kobe and Sumoto), 5h. (near Taihoku), 6h. (Ekaterinburg and near Mizusawa), 8h. (Konigsberg (2)), 9h. (near Tacubaya), 10h. (Apia), 12h. (Irkutsk), 13h. (Phu-Lien), 17h. (near Manila), 20h. (Ekaterinburg and La Paz (2)), 23h. (near Tokyo).

Jan. 28d. 4h. 5m. 25s. Epicentre 43°·2N. 147°·2E.

(as on 1924 Dec. 29d.).

A = −·613, B = +·395, C = +·685 ; D = +·542, E = +·841 ; G = −·575, H = +·371, K = −·729.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 22	+ 9	—	—	3·0	3·2
Mizusawa	E.	6·2	230	1 44	+ 9	2 53	+ 4	—	—
	N.	6·2	230	1 45	+10	2 54	+ 5	—	—
Tokyo		9·5	220	2 30	+ 7	i 4 8	− 8	4·7	8·3
Nagoya		11·3	228	3 12	+23	5 8	+ 6	6·4	10·6
Osaka		12·5	231	3 21	+15	—	—	6·1	8·3
Kobe		12·7	232	3 15	+ 6	5 42	+ 5	7·1	9·2
Sumoto		13·0	230	3 24	+11	4 28	−76	7·1	9·7
Nagasaki		17·2	238	4 9	+ 2	8 3	+41	10·1	13·8
Zi-ka-wei		23·6	248	5 26	+ 2	i 9 38	+ 2	—	15·1
Taihoku	E.	27·8	238	6 20	+14	10 41	−14	14·5	16·5
	N.	27·8	238	—	—	11 3	+ 8	—	18·3
Irkutsk		29·8	303	e 7 27	+61	e 11 29	+ 2	15·6	—
Hong Kong		34·4	242	6 56	−12	12 26	−20	—	20·1
Manila		36·4	226	e 7 20	− 5	—	—	i 15·0	16·4
Phu-Lien	N.	40·5	250	e 7 52	− 7	e 13 56	−18	e 19·6	26·9
Honolulu	E.	50·1	98	—	—	i 16 17	− 3	i 23·3	24·9
	N.	50·1	98	—	—	16 25	+ 5	e 23·1	25·2
Calcutta	E.	52·4	268	9 27	+ 5	17 1	+12	—	—
Ekaterinburg		53·3	318	i 9 26	− 2	16 50	−10	27·6	39·2
Simla		55·5	282	17 35	?S	(17 35)	+ 7	30·0	39·8
Victoria		58·9	51	10 10	+ 6	18 5	− 5	32·8	39·7
Batavia		61·4	228	10 30	+ 9	i 18 46	+ 5	33·5	—
Hyderabad		62·8	270	i 10 35	+ 4	19 2	+ 4	34·4	46·0
Kucino		64·5	324	i 10 42	0	i 19 16	− 3	e 27·6	42·7
Pulkovo		64·8	330	i 10 45	+ 1	19 18	− 5	30·1	41·7
Berkeley		65·5	60	—	—	e 19 25	− 6	—	—
Bombay		66·0	274	10 58	+ 7	19 49	+12	35·1	42·6
Suva		67·7	148	—	—	21 29	+91	e 34·4	40·4
Baku		68·1	306	i 11 13	+ 8	(i 20 16)	+13	(29·2)	—
Kodaikanal		68·3	265	—	—	—	—	43·1	46·6
Apia		68·3	136	—	—	—	—	e 33·3	—
Colombo		68·9	260	11 23	+13	20 35	+22	45·1	50·6
Upsala		69·0	336	e 11 10	− 1	e 20 10	− 4	—	45·7
Bergen		71·8	341	e 9 35?	−113	—	—	24·6	—
Konigsberg		72·0	330	11 34	+ 4	20 53	+ 3	e 33·4	46·6
Lemberg		74·6	326	e 21 5	?S	(e 21 5)	−16	e 34·9	48·1
Dyce		76·4	343	11 56	− 1	21 41	− 1	38·7	56·5
Hamburg		76·5	335	e 11 58	0	i 21 46	+ 3	e 38·6	50·6
Riverview		77·2	177	e 11 57	− 5	e 21 46	− 5	e 32·2	62·2
Sydney		77·2	177	17 47	?PR_1	29 5	?SR_1	40·8	44·6
Edinburgh		77·8	345	12 5	− 1	22 8	+10	39·6	53·8
Eskdalemuir		78·3	345	e 12 6	− 3	22 1	− 3	38·6	—
Budapest		78·5	328	e 12 35?	+25	22 12	+ 6	e 39·6	50·4
Adelaide		78·6	187	—	—	e 19 47	?	36·6	63·6
Cheb		78·8	332	e 13 11	+59	e 23 5	+55	e 45·1	54·6
Vienna		78·9	330	12 11	− 1	i 22 13	+ 2	e 41·1	51·6
De Bilt		79·2	338	12 13	− 1	22 13	− 1	e 36·6	44·0
Stonyhurst		79·5	343	12 22	+ 6	22 19	+ 1	33·6	43·9
Belgrade		80·1	325	e 11 38	−42	e 22 34	+10	e 44·6	49·7
Bidston		80·1	343	12 18	− 2	22 20	− 4	—	54·0
Perth		80·5	207	e 22 25	?S	(e 22 25)	− 4	—	—
Uccle		80·6	338	12 20	− 3	22 28	− 2	37·6	53·4
West Bromwich		80·7	342	12 24?	+ 1	22 27	− 4	—	—
Hohenheim		81·0	335	e 12 19	− 6	e 22 35	0	e 43·6	51·1
Melbourne		81·1	182	—	—	e 22 29	− 7	—	51·8
Oxford		81·2	341	i 12 26	0	i 22 32	− 5	43·2	55·4
Kew		81·2	341	—	—	—	—	—	48·6
Innsbruck		81·5	331	e 12 33	+ 5	e 22 29	−12	e 41·6	—
Strasbourg		81·6	334	12 28	0	i 22 42	0	34·6	50·8
Ravensburg		81·6	333	e 12 22	− 6	e 22 38	− 4	e 44·6	52·9
Chicago		81·8	39	13 29	+60	22 41	− 3	46·3	—
Zurich		82·4	333	e 12 13	−19	i 22 45	− 5	—	—
Venice		82·7	330	e 12 30	− 4	i 22 56	+ 2	—	52·3
Paris		82·9	338	e 12 36	+ 1	i 22 48	− 8	39·6	54·6
Ann Arbor		83·1	35	12 47	+10	23 5	+ 7	e 40·7	56·8
Besançon		83·4	334	e 12 37	− 1	22 54	− 7	39·6	50·6
Ottawa		83·6	28	e 12 35	− 5	e 22 52	−13	e 41·2	54·6
Toronto	E.	83·7	31	12 36	− 4	e 22 54	−12	40·8	53·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		84·2	319	12 57	+14	23 1	− 9	42·1	59·6
Florence		84·6	329	12 45	− 1	22 35	[−18]	29·6	54·1
Moncalieri		84·8	333	12 44	− 3	22 57	[+ 2]	32·6	51·6
Rocca di Papa	E.	85·8	328	e 12 49	− 3	23 23	− 5	e 48·1	—
	N.	85·8	328	e 12 47	− 5	23 13	−15	e 47·1	58·4
Pompeii		85·8	326	e 12 35	−17	e 23 35	+ 7	48·6	56·6
Ithaca	N.	85·8	30	—	—	—	—	47·6	—
Helwan		86·3	309	e 12 50	− 5	23 17	[+12]	—	57·1
Harvard	E.	87·8	27	—	—	e 23 35	−15	44·2	50·1
	N.	87·8	27	—	—	e 23 41	− 9	47·4	56·5
Wellington		88·1	160	e 12 52	−14	i 23 45	− 8	e 40·6	45·8
Georgetown	N.	88·6	33	13 2	− 6	23 34	[+15]	48·6	61·9
Cheltenham	N.	88·9	33	—	—	—	—	e 56·9	62·0
Barcelona		89·7	334	—	—	e 23 49	−22	e 45·5	57·6
Tortosa	E.	90·7	336	—	—	e 23 46	[+14]	—	62·2
	N.	90·7	336	13 8	−12	23 44	[+12]	40·5	59·8
Toledo		93·0	339	e 13 19	−13	e 23 57	[+11]	e 39·8	61·5
Alicante	N.	93·3	336	—	—	—	—	e 51·6	—
Algiers		93·6	331	e 13 24	−12	23 54	[+ 4]	e 41·6	63·6
Almeria		95·2	337	e 13 24	−20	25 10	+ 2	49·1	51·6
Granada		95·3	338	i 13 28	−17	—	—	e 52·5	61·6
Lisbon		95·3	342	—	—	—	—	e 50·8	61·3
Rio Tinto		95·6	340	21 35	?	—	—	—	66·6
Malaga		96·0	337	e 13 24	−25	e 26 31	+75	e 33·6	60·4
San Fernando		96·7	340	—	—	24 17	[+11]	50·6	63·6
La Paz		139·8	60	i 19 56	[+17]	—	—	68·8	87·9
La Plata	E.	158·9	75	24 41	?PR_1	—	—	80·8	82·3
	N.	158·9	75	—	—	—	—	79·7	88·1

Additional readings and notes: Tokyo MN = +8·2m. Osaka MN = +7·4m. Kobe MN = +7·5m. Nagasaki MN = +12·8m. Zi-ka-wei MN = +14·8m., MZ = +16·2m. Hong Kong readings given for 27d. Honolulu eN = +19m.0s., eE = +19m.58s. = SR_1 −10s., iSR_1(?) = +20m.46s., eN = +22m.15s. = PR_2 +5s. Calcutta S = +17m.8s. Ekaterinburg i = +16m.51s., MZ = +41·0m., MN = +63·3m. Simla PN = +17m.47s. Victoria LN = +24·6m.?, MN = +37·2m.; T_e = 4h.5m.44s. Kucino PR_2 = +14m.49s., SR_1 = +23m.41s., iL = +34·7m., MN = +41·4m. Pulkovo PR_2 = +14m.57s., SR_1 = +23m.53s., MN = +43·1m. Berkeley eN = +19m.29s. and +19m.45s., eE = +19m.59s. and +20m.15s. Baku iP = +11m.28s., S = +20m.33s. Apia e = +34m.25s. and +37m.7s. Upsala MN = +47·4m. Konigsberg eN = +11m.36s., SR_1 = +26m.29s., MN = +45·6m. Lemberg MN = +47·6m. Hamburg PR_1 = +15m.13s., SR_2 = +30m.17s., MNZ = +49·6m. Riverview eS = +22m.12s. = [S] +8s., MZ = +41·0m., MN = +71·9m.; T_e = 4h.5m.20s. Sydney—Is there an error of 2 min.? Vienna iZ = +12m.32s., iEN = +22m.30s. = [S] +14s., PS = +22m.53s., iE = +23m.42s., +23m.55s., and +24m.44s. De Bilt PR_1Z = +15m.16s., MN = +58·4m., MZ = +62·0m. Hohenheim iP = +12m.21s., iS = +22m.42s., MN = +52·0m. Oxford PR_1 = +16m.38s. Strasbourg P = +12m.33s., MN = +63·6m. Paris MN = +54·6m. Ann Arbor PR_1 = +16m.23s., SR_1 = +28m.59s. Ottawa e = +15m.43s. = PR_1 −35s. and +28m.35s. = SR_1 −29s., MN = +56·1m.; T_e = 4h.6m.0s. Toronto eE = +35m.38s. = SR_2 +48s., LN = +41·0m., MN = +46·4m.; T_e = 4h.5m.41s. Athens LN = +41·7m., MN = +63·2m. Rocca di Papa ePN = +13m.7s., eL = +36·3m. Harvard eN? = +23m.24s. = [S] +10s., PSN = +24m.17s., eN = +24m.39s., eE = +36m.14s. = SR_2 −2s. Wellington [S] = +23m.11s.; T_e = 4h.5m.27s. Georgetown SE = +22m.44s. = [S] −35s., LE = +57·0m. Barcelona MN = +57·8m. Granada i = +17m.20s. = [P] −8s., +22m.21s. = PR_2 +26s., +26m.16s. = S +67s., +27m.0s., +31m.23s. = SR_1 +16s., and +36m.28s. = SR_2 +15s. Algiers MN = +55·6m. Lisbon readings have been increased by 1 hr. Malaga MN = +58·7m. San Fernando e = +7m.52s. and +12m.46s. La Paz PR_1 = +23m.17s., L = +75·8m. La Plata PR_1E = +24m.41s., iPR_1N = +44m.9s., S_eP_eSE = +33m.52s.

Jan. 28d. 10h. 58m. 30s. Epicentre 8°·7N. 83°·0W. (as on Jan. 26d.).

A = +·120, B = −·981, C = +·151; D = −·993, E = −·122; G = +·018, H = −·150, K = −·989.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Hts.	E.	3·4	84	1 6	+13	1 50	+16	2·0	2·5
	N.	3·4	84	0 30	−23	1 14	−20	1·5	2·1
	E.	3·4	84	0 14	−39	0 48	−46	1·1	1·7
	N.	3·4	84	0 38	−15	1 22	−12	1·7	1·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		14·3	45	e 3 47	+17	5 50	−25	—	—
Tacubaya		19·0	306	4 36	+ 7	7 39	−23	8·2	—
La Paz		29·1	150	6 21	+ 2	e 11 8	−11	15·0	19·1
Cheltenham	N.	30·6	12	—	—	—	—	e 15·2	19·5
Georgetown	E.	30·7	9	—	—	—	—	e 16·5	17·8
	N.	30·7	9	—	—	—	—	e 17·5	19·5
Chicago		33·3	354	6 25	−34	12 16	−13	18·0	—
Ann Arbor		33·6	359	7 12	+11	i 12 42	+ 8	e 17·5	18·7
Ithaca	N.	34·2	8	—	—	—	—	19·5	—
Toronto	E.	35·1	4	e 8 23	?PR_1	e 12 35	−22	18·2	19·8
	N.	35·1	4	e 6 59	−15	e 12 39	−18	18·9	22·5
Harvard	N.	35·3	15	—	—	—	—	e 19·6	23·6
Ottawa		37·3	9	e 7 20	−12	e 13 11	−17	e 17·7	21·5
Victoria	E.	52·2	327	16 47	?S	(16 47)	+ 1	31·8	37·5
	N.	52·2	327	—	—	—	—	32·8	36·0
Eskdalemuir		77·1	35	—	—	e 21 30?	−20	40·5	—
Edinburgh		77·1	34	—	—	—	—	e 40·5	48·5
Oxford		78·1	40	—	—	—	—	34·6	49·3
Kew		78·7	39	—	—	—	—	—	48·5
Paris		80·5	42	—	—	—	—	e 38·5	42·5
Uccle		81·6	40	—	—	e 22 42	0	e 38·5	—
De Bilt		82·0	38	e 12 30	0	e 22 33	[− 4]	e 38·5	50·4
Strasbourg		84·0	44	—	—	e 22 30?	[−20]	e 39·5	—
Pulkovo		93·8	28	13 29	− 8	23 4	[−47]	40·0	52·0
Zante		93·8	51	9 30	?	—	—	—	—
Kucino		99·3	30	—	—	—	—	e 48·8	—
Ekaterinburg		108·0	21	e 18 57	?PR_1	25 12	[+11]	45·5	69·3
Irkutsk		118·7	356	e 20 14	?PR_1	e 54 30	?L	61·5	—

Additional readings: Chicago E = +15m.33s. Toronto eE = +15m.30s. = SR_2 − 6s.; T_o = 10h.58m.20s. Ottawa iPR_1? = +8m.50s. = PR_1 + 1s., eSN = +13m.17s., MN = +23·5m.; T_o = 10h.58m.27s. Eskdalemuir e = +27m.30s.? = SR_1 − 1s. De Bilt eSR_1 = +28m.24s., MZ = +50·6m. Pulkovo PR_1 = +17m.13s., PS = +24m.0s. = S − 54s., SR_1 = +28m.18s., MZ = +52·1m., MN = +58·1m.

Jan. 28d. 18h. 14m. 40s. Epicentre 52°·8N. 174°·0E.

A = −·601, B = +·063, C = +·797; D = +·105, E = +·995; G = −·792, H = +·083, K = −·605.

For epicentre and depth of focus (+0·010) see shock at 30d. 17h. Should T_o be increased by 30s.?

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	−0·8	38·7	70	—	—	—	—	24·6	25·5
Irkutsk	−0·8	40·7	298	e 7 59	+ 5	13 55	−10	20·3	22·6
Zi-ka-wei	−0·9	43·4	263	e 8 25	+10	—	—	—	22·5
Hong Kong	−1·1	54·3	261	—	—	—	—	—	33·3
Manila	−1·1	56·5	249	e 10 20	+38	—	—	—	—
Ekaterinburg	−1·2	57·6	325	10 44	+56	—	—	27·8	34·3
Chicago	−1·2	62·3	57	—	—	21 54	?	35·9	—
Pulkovo	−1·2	63·7	342	—	—	e 20 55	+120	35·3	41·5
Toronto E.	−1·2	64·8	50	—	—	—	—	38·8	—
Ottawa	−1·2	65·2	47	—	—	e 22 5	?	e 35·3	—
Kucino	−1·2	65·6	336	—	—	—	—	35·2	42·6
Upsala	−1·2	65·8	348	—	—	—	—	e 38·3	—
Apia	−1·2	67·8	166	—	—	—	—	—	76·3
Konigsberg	−1·2	70·1	345	—	—	—	—	e 41·2	46·3
Eskdalemuir	−1·2	71·8	359	—	—	—	—	46·3	—
De Bilt	−1·3	74·7	354	e 13 15	+97	—	—	e 41·3	44·2
Baku	−1·3	75·0	319	—	—	—	—	40·3	47·2
Uccle	−1·3	76·0	355	—	—	—	—	e 42·3	—
Strasbourg	−1·3	78·0	351	—	—	—	—	e 48·3	—
Hyderabad	−1·3	79·5	285	—	—	—	—	—	46·8
Bombay	−1·3	81·5	290	41 20?	?L	—	—	(41·3)	—
Granada	−1·4	90·0	359	e 45 19	?L	e 55 4	?	e 57·6	—
San Fernando N.	−1·4	90 8	0	—	—	—	—	—	60·3

Additional readings: Irkutsk e = +9m.21s. = PR_1 − 10s., +18m.20s. = SR_2 + 3s., MZ = +22·8m., MN = +22·9m. Ekaterinburg MN = +36·6m., MZ = +39·2m. Pulkovo MN = +40·5m., MZ = +41·4m. Toronto LN = +38·0m. Kucino MN = +42·1m. De Bilt MN = +52·7m. Granada i = +49m.59s.

Jan. 28d. 18h. 15m. 6s. Epicentre 39°·0N. 155°·0E.

A = −·704, B = +·328, C = +·629 ; D = +·423, E = +·906 ; G = −·570, H = +·266, K = −·777.

Very rough.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	28·4	264	e 7 59	?	—	—	—	22·1
Irkutsk	37·0	309	e 7 33	+ 3	13 29	+ 5	19·9	22·2
Hong Kong	38·4	258	—	—	—	—	—	32·9
Manila	38·6	240	e 9 54?	?PR_1	—	—	—	—
Victoria	56·9	51	—	—	—	—	24·2	25·1
Ekaterinburg	60·3	322	10 18	+ 4	—	—	27·4	33·9
Apia	61·2	142	—	—	—	—	—	75·9
Hyderabad	68·8	275	—	—	—	—	—	46·4
Kucino	71·2	329	—	—	—	—	34·8	42·2
Pulkovo	71·3	334	—	—	e 20 29	−13	34·9	41·1
Bombay	72·3	280	40 54	?L	—	—	(40·9)	—
Upsala	75·1	340	—	—	—	—	e 37·9	—
Baku	75·3	311	—	—	—	—	39·9	46·8
Konigsberg	78·4	336	—	—	—	—	e 40·8	45·9
Chicago	81·1	43	—	—	21 28	−68	35·5	—
Eskdalemuir	83·8	348	—	—	—	—	45·9	—
Toronto E.	83·8	37	—	—	—	—	38·4	—
Ottawa	84·1	33	—	—	e 21 39	−90	e 34·9	—
De Bilt	85·2	343	e 12 49	0	—	—	40·9	43·8
Uccle	86·5	343	—	—	—	—	e 41·9	—
Strasbourg	87·8	340	—	—	—	—	e 47·9	—
Granada	101·4	344	e 44 53	?L	e 54 38	?	e 57·2	—
San Fernando	102·6	346	—	—	—	—	—	59·9

Additional readings: Irkutsk e = +8m.55s. = PR_1?, +17m.54s., MNZ = +22·4m. Ekaterinburg MN = +36·2m., MZ = +38·8m. Kucino MN = +41·7m. Pulkovo MN = +40·1m., MZ = +41·0m. Toronto LN = +37·5m. De Bilt MN = +52·3m. Granada i = +49m.33s.

Jan. 28d. Readings also at 1h. (Taihoku), 4h. (Tokyo and near Mizusawa (2)), 7h. (Balboa Heights), 8h. (Riverview, Pulkovo, near Oaxaca and Tacubaya), 9h. (near Vera Cruz), 10h. (Irkutsk, Granada, and near Tacubaya), 11h. (near Mizusawa), 13h. (Balboa Heights), 14h. (Ottawa) , 15h. (Irkutsk), 18h. (Balboa Heights), 20h. (Balboa Heights and Irkutsk), 22h. (near Nagasaki), 23h. (Apia).

Jan. 29d. Readings at 0h. (Toronto, Ottawa, and near Victoria), 3h. (Apia), 5h. (Tacubaya), 6h. (Baku), 8h. (Baku, Zi-ka-wei, Nagasaki, Manila, Ekaterinburg, Hong Kong, Hyderabad, Bombay, and La Paz), 13h. (Apia and near Tacubaya, Oaxaca, and Vera Cruz), 14h. (La Paz and near Puebla), 15h. and 16h. (near Belgrade), 17h. (Phu-Lien), 20h. (Taihoku), 23h. (Azores).

Jan. 30d. 17h. 28m. 20s. Epicentre 52°·8N. 174°·0E.

(as on 1925 Jan. 28d.).

A = −·601, B = +·063, C = +·797 ; D = +·105, E = +·995 ;
G = −·792, H = +·083, K = −·605.

A depth of focus 0·010 is assumed.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		−0·4	20·9	266	4 42	− 5	(8 19)	−15	8·3	—
Mizusawa	E.	−0·6	26·3	252	(5 44)	− 1	5 44	? P	—	—
Honolulu		−0·8	38·1	135	—	—	13 36	+ 8	18·3	19·3
Victoria		−0·8	38·7	70	7 38	+ 1	13 40	+ 3	19·7	26·5
Irkutsk		−0·8	40·7	298	7 37	−17	13 39	−26	19·7	21·5
Zi-ka-wei		−0·9	43·4	263	e 9 46	? PR_1	—	—	—	30·7
Berkeley		−0·9	45·5	84	7 55	−35	15 7	− 3	e 23·9	—
Taihoku		−1·0	47·9	259	—	—	—	—	e 19·0	—
Hong Kong		−1·1	54·3	261	—	—	—	—	—	35·2
Manila		−1·1	56·5	249	e 13 40?	? PR_2	—	—	—	—
Ekaterinburg		−1·2	57·6	325	9 48	0	17 44	+ 5	26·7	33·5
Chicago		−1·2	62·3	57	14 40	+260	24 40	+363	30·4	—
Pulkovo		−1·2	63·7	342	10 32	+ 3	e 19 5	+10	30.2	41·0
Ann Arbor		−1·2	63·8	54	15 16	? PR_1	22 34	? SR_1	e 31·2	39·4
Toronto		−1·2	64·8	50	—	—	e 24 1	? SR_1	30·3 ?	40·3
Ottawa	E.	−1·2	65·2	47	e 15 6	? PR_1	e 22 22	? SR_1	e 30·1	35·7
Kucino		−1·2	65·6	336	e 10 46	+ 5	19 27	+ 9	23·8	38·7
Upsala	N.	−1·2	65·8	348	—	—	—	—	e 38·7	42·0
Simla	E.	−1·3	69·5	295	—	—	—	—	35·6	37·9
Fordham		−1·3	69·5	50	27 22	?	—	—	34·3	41·2
Harvard	N.	−1·3	69·5	46	—	—	—	—	37·6	37·9
Georgetown	E.	−1·3	69·6	53	—	—	—	—	36·8	—
Bidston		−1·3	73·7	358	42 40?	? L	48 45	?	(42·7)	—
De Bilt	E.	−1·3	74·7	354	—	—	—	—	e 31·7	51·9
	N.	−1·3	74·7	354	—	—	—	—	e 36·7	38·1
Uccle		−1·3	76·0	355	—	—	e 20 40?	−42	e 31·7	—
Strasbourg		−1·3	78·0	351	—	—	—	40·7	—	
Paris		−1·3	78·1	355	—	—	e 20 40?	−67	—	51·7
Hyderabad		−1·3	79·5	285	e 12 7	− 1	21 57	− 5	40·1	50·8
Moncalieri		−1·3	81·5	351	e 13 56	+96	23 22	+57	39·3	52·6
Bombay		−1·3	81·5	290	12 39	+19	22 24	− 1	41·4	44·9
Florence		−1·3	82·2	348	12 22	− 2	19 55	?	—	45·7
Rocca di Papa		−1·4	84·1	347	e 12 34	0	e 22 54	0	e 49·4	—
Pompeii		−1·4	84·8	345	—	—	e 23 10	+ 9	—	—
Athens		−1·4	85·7	338	—	—	e 22 58	[+ 6]	31·7	—
Kodaikanal		−1·4	85·8	281	—	—	—	—	47·9	53·0
Tortosa	N.	−1·4	86·2	356	—	—	—	—	e 49·7	56·0
Colombo		−1·4	87·0	277	23 16	? S	(23 16)	−10	53·9	58·7
Toledo		−1·4	87·6	359	e 12 48	− 6	e 23 19	−13	e 42·4	57·1
Riverview		−1·4	89·0	198	—	—	e 23 46	− 2	e 30·1	40·5
Sydney		−1·4	89·0	198	—	—	23 40?	− 8	—	—
Rio Tinto		−1·4	89·4	0	17 40	? PR_1	—	—	—	59·7
Granada		−1·4	90·0	359	e 13 1	− 7	—	—	e 47·4	59·4
Malaga		−1·4	90·5	359	e 12 55	−16	e 24 7	+ 3	—	—
San Fernando		−1·4	90·8	0	23 38	? S	(23 38)	[+ 5]	53·2	61·2
Adelaide		−1·4	93·7	208	—	—	—	—	e 46·7	79·7
Melbourne		−1·4	94·1	203	—	—	e 24 22	[+29]	—	54·9
La Paz		—	119·8	80	e 18 56	[+ 4]	i 20 29	? PR_1	71·8	74·2
Rio de Janeiro		—	138·9	58	22 30	? PR_1	—	—	67·7	—

Additional readings and notes: Honolulu eN = +15m.35s. = SR_1? Victoria LN = +18·2m., MN = +28·4m. ; T_e = 17h.28m.21s. Irkutsk PR_2 = +9m.20s., SR_2 = +16m.45s., MN = +21·3m. Berkeley PZ = +8m.1s., SE = +15m.19s., eE = +17m.3s., eLN = +24·2m. ; all readings except L's have been increased by 36m. Ekaterinburg i = +9m.51s., MN = +32·8m., MZ = +35·5m. Pulkovo PR_1 = +13m.29s., SR_1 = +23m.34s., MN = +39·3m., MZ = +42·8m. Toronto LN = +33·8m., LE = +39·8m., MN = +41·9m. Ottawa SR_2? = +27m.10s., MN = +36·2m. Kucino MN = +38·0m. Harvard eN = +33m.55s., eE = +34m.56s., ME = +45·2m. Georgetown LN = +41·2m. Eskdalemuir (Δ = 71°·8) gives simply 18h. De Bilt eSR_1 = +26m.22s., MZ = +50·3m. Rocca di Papa eP = +12m.36s. Adelaide e = +56m.28s. Toledo MNW = +56·8m. Riverview MN = +43·1m. San Fernando SR_1? = +40m.6s. La Paz L and M have been increased by 1h.

Jan. 30d. Readings also at 1h. (near Tokyo), 4h. (Apia), 6h. (Manila), 7h. (Mizusawa (2), near Tokyo, and Balboa Heights), 8h. (Balboa Heights and near Phu-Lien), 13h. (La Paz), 15h. (near Batavia and Malabar), 17h. (near Manila), 20h. (Irkutsk and Ekaterinburg).

Jan. 31d. 7h. 5m. 20s. Epicentre 48°·0N. 21°·0E. (as given by Zurich).

A = +·625, B = +·240, C = +·743 ; D = +·358, E = −·934 ;
G = +·694, H = +·266, K = −·669.

The above position is given by Zurich as a rough epicentre, and has been adopted as no sensible improvement suggests itself.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Budapest		1·4	248	0 22	+ 1	—	—	—	—
Vienna		3·1	276	i 0 41	− 8	1 29	+ 3	—	2·7
Belgrade		3·2	186	0 46	− 4	i 1 52	+24	(i 1·9)	2·6
Sarajevo		4·5	204	e 1 22	+12	i 2 19	+15	(i 2·3)	2·5
Mostar		5·1	206	e 1 20	+ 1	i 2 18	+ 2	—	2·6
Venice		6·4	249	e 1 50	+12	—	—	4·3	4·6
Innsbruck		6·5	267	e 1 28	−11	i 3 17	+20	(i 3·3)	—
Konigsberg		6·8	358	—	—	i 3 4	− 1	i 3·8	4·3
Ravensburg		7·6	273	e 3 1	+66	e 3 40	+14	4·4	—
Zurich		8·4	270	e 1 52	−15	3 40?	− 7	—	—
Rocca di Papa	N.	8·6	226	e 2 23	+13	—	—	i 4·7	—
Pompeii		8·6	215	—	—	e 4 50	?L	(e 4·8)	—
Strasbourg		8·8	278	—	—	—	—	e 4·7	—
Hamburg		8·9	313	—	—	e 3 40?	−21	—	—
Moncalieri		9·6	257	e 2 11	−13	4 7	−11	5·2	—
Besançon		10·2	271	—	—	—	—	e 5·3	—
Paris	E.	12·3	281	—	—	—	—	e 6·5	—
Pulkovo		13·0	22	—	—	6 52	?L	7·4	7·6
Ekaterinburg		25·3	55	—	—	(9 40)	−29	9·7	—

Additional readings and notes: Budapest iN = +23s. and +26s., i = +24s. Vienna P = +53s., iN = +1m.0s., iE = +1m.7s., PR_1 = +1m.16s., PS = +1m.22s., SR_1 = +1m.37s., S = +1m.44s., SR_2 = +1m.49s., MZ = +2·0m., MN = +2·2m. Belgrade iP = +1m.2s.; all readings have been increased by 1m. Venice ePN = +3m.12s. and +3m.22s. Konigsberg iE = +3m.38s. Rocca di Papa eE = +2m.37s., iE = +4m.49s. Paris eN = +7m.3s. Pulkovo MN = +7·4m.

Jan. 31d. 17h. 0m. 30s. Epicentre 42°·5N. 149°·0E. (as on 1915 June 7d.).

A = −·632, B = +·380, C = +·676 ; D = +·515, E = +·857 ;
G = −·579, H = +·348, K = −·737.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		6·1	315	1 33	0	(2 49)	+ 3	2·8	3·7
Mizusawa	N.	6·8	243	1 47	+ 3	2 53	−12	—	—
Osaka		13·1	239	3 38	+24	—	—	—	10·3
Zi-ka-wei		24·6	252	e 5 29	− 5	10 4	+ 9	—	15·7
Taihoku		28·5	241	—	—	—	—	e 15·9	—
Irkutsk		31·2	305	e 6 24	−16	e 11 28	−26	16·5	19·8
Hong Kong		35·3	245	12 45	?S	(12 45)	−15	—	20·5
Phu-Lien		41·5	251	—	—	—	—	23·5	—
Ekaterinburg		54·7	318	i 9 35	− 2	17 15	− 2	28·5	35·0
Kucino		65·9	324	—	—	—	—	33·8	41·7
Pulkovo		66·1	331	e 10 50	− 2	—	—	e 34·5	42·3
Bombay		67·3	275	e 21 30?	?	—	—	—	—
Baku		69·6	307	e 11 17	+ 2	20 26	+ 5	36·0	43·4
De Bilt		80·4	338	—	—	—	—	e 41·5	—
Uccle		81·8	338	—	—	—	—	e 43·5	—
Strasbourg		82·8	335	—	—	—	—	e 45·5	—
Ann Arbor		82·8	36	—	—	—	—	e 44·0	—
Ottawa		83·5	29	—	—	—	—	e 40·5	—
Toronto		83·5	33	—	—	—	—	e 37·2	—
Paris		84·1	339	—	—	—	—	e 45·5	—
Granada		96·5	338	—	—	—	—	e 59·5	62·0
San Fernando		97·8	340	—	—	50 54	?L	(50·9)	65·5

Additional readings: Osaka MN = +9·8m. Irkutsk MN = +18·5m. Ekaterinburg MN = +32·6m., MZ = +35·0m. Kucino MN = +42·6m. Pulkovo MZ = +42·3m., MN = +42·6m. Baku PR_2 = +14m.32s., PS = +21m.20s., MN = +44·5m. Ottawa eLN = +45·5m., eLE = +47·5m.

Jan. 31d. Readings also at 0h. (Ekaterinburg), 5h. (Florence and near Mizusawa), 7h. (La Paz), 9h. (near Kobe and Sumoto), 10h. (near Sumoto, near Taihoku, near Mostar, and Sarajevo, and near Batavia and Malabar), 15h. (Ekaterinburg), 16h. (near Baku), 20h. (Ekaterinburg, Irkutsk, and Mizusawa), 21h. (Baku).

Feb. 1d. 5h. 23m. 50s. Epicentre 43°·2N. 147°·2E.

(As on 1925 Jan. 28d.).

A = −·613, B = +·395, C = +·685 ; D = +·542, E = +·841 ; G = −·575, H = +·371, K = −·729.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 20	+ 7	—	—	2·8	3·2
Mizusawa	E.	6·2	230	1 49	+14	2 50	+ 1	5·4	—
	N.	6·2	230	1 50	+15	2 53	+ 4	5·4	—
Nagoya		11·3	228	4 11	?S	(4 11)	−51	5·9	—
Osaka		12·5	231	3 48	+42	—	—	6·7	9·1
Kobe		12·7	232	3 30	+21	—	—	7·2	10·2
Sumoto		13·0	230	e 3 27	+14	—	—	7·4	10·2
Zi-ka-wei		23·6	248	i 5 25	+ 1	i 9 55	+19	14·8	16·0
Taihoku		27·8	238	—	—	e 11 7	+12	14·8	16·2
Irkutsk		29·8	303	12 10?	?S	(12 10?)	+39	18·2	—
Hong Kong		34·4	242	6 58	−10	12 38	− 8	18·0	20·2
Manila		36·4	226	e 7 25	0	i 14 52	+96	i 23·6	25·8
Phu-Lien		40·5	250	i 7 52	− 7	e 14 4	−10	e 18·8	28·2
Amboina		49·9	207	i 8 58	− 8	16 4	−14	—	—
Honolulu		50·1	98	—	—	16 20	0	23·3	24·2
Ekaterinburg		53·3	318	i 9 29	+ 1	16 52	− 8	25·2	33·7
Simla		55·5	282	17 40	?S	(17 40)	+12	—	36·0
Victoria		58·9	51	18 10	?S	(18 10)	0	28·3	39·7
Batavia		61·4	228	i 10 30	+ 9	—	—	e 30·2	—
Hyderabad		62·8	270	i 10 32	+ 1	19 22	+24	35·1	45·7
Pulkovo		64·8	330	i 10 48	+ 4	19 23	0	31·7	41·7
Berkeley		65·5	60	10 9	−39	19 29	− 2	30·4	—
Bombay		66·0	274	10 57	+ 6	19 46	+ 9	35·0	42·6
Baku		68·1	306	i 11 11	+ 6	i 20 15	+12	—	—
Kodaikanal		68·3	265	25 16	?SR_1	—	—	45·2	51·3
Colombo		68·9	260	11 40	+30	22 10	+117	44·1	46·7
Upsala		69·0	336	e 11 12	+ 1	e 20 12	− 2	e 33·2	45·1
Bergen		71·8	341	—	—	—	—	i 38·2	—
Konigsberg		72·0	330	i 10 34	−56	e 19 52	−58	e 34·2	46·2
Hamburg		76·5	335	i 12 1	+ 3	i 21 46	+ 3	e 37·2	43·4
Riverview		77·2	177	e 11 59	− 3	e 21 53	+ 2	e 33·6	44·4
Sydney		77·2	177	31 40	?	—	—	39·0	45·0
Edinburgh		77·8	345	—	—	—	—	44·2	—
Eskdalemuir		78·3	345	—	—	22 10?	+ 6	40·2	—
Budapest		78·5	328	e 11 10?	−60	22 15	+ 9	e 39·9	50·7
Cheb		78·8	332	e 13 10?	+58	e 23 10	+60	e 48·2	—
Vienna		78·9	330	e 12 14	+ 2	22 29	+18	e 41·7	51·7
De Bilt		79·2	338	12 17	+ 3	22 14	0	e 36·2	43·6
Stonyhurst		79·5	343	—	—	—	—	e 34·2	45·6
Belgrade		80·1	325	e 12 19	− 1	e 22 13	−11	e 45·1	51·6
Bidston		80·1	343	22 23	?S	(22 23)	− 1	44·2	53·8
Perth		80·5	207	—	—	22 10	−19	—	—
Uccle		80·6	338	12 21	− 2	e 22 25	− 5	37·2	44·5
Hohenheim		81·0	335	e 12 13	−12	e 22 25	−10	e 43·2	—
Melbourne		81·1	182	—	—	e 22 34	− 2	—	49·5
Oxford		81·2	341	—	—	i 22 49	+12	—	46·2
Kew		81·2	341	—	—	—	—	—	57·2
Innsbruck		81·5	331	e 12 21	− 7	i 22 39	− 2	e 39·2	—
Ravensburg		81·6	333	e 12 25	− 3	e 22 28	−14	e 45·2	—
Strasbourg		81·6	334	12 32	+ 4	i 22 38	− 4	e 40·2	60·8
Chicago	N.	81·8	39	—	—	22 50	+ 6	e 42·8	57·2
Zurich		82·4	333	e 12 31	− 1	e 22 44	− 6	—	—
Venice		82·7	330	i 13 49	+75	24 28	+94	—	—
Paris		82·9	338	e 12 16	−19	e 22 49	− 7	40·2	43·2
Ann Arbor		83·1	35	13 4	+27	23 22	+24	e 41·2	54·4
Besançon		83·4	334	—	—	22 56	− 5	40·2	53·2
Ottawa		83·6	28	e 12 45	+ 5	e 22 48	[+ 1]	e 38·2	49·2
Toronto	E.	83·7	31	—	—	i 22 50	[+ 2]	40·7	46·2
	N.	83·7	31	—	—	e 22 53	[+ 5]	40·2	57·2
Athens		84·2	319	12 39	− 4	23 1	− 9	e 32·7	50·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		84·6	329	12 10	−36	—	—	—	53·2
Moncalieri		84·8	333	i 12 41	− 6	23 20	+ 3	33·8	51·3
Rocca di Papa		85·8	328	e 12 49	− 3	e 23 14	[+12]	e 38·1	55·3
Pompeii		85·8	326	e 12 55	+ 3	—	—	—	—
Harvard	E.	87·8	27	—	—	—	—	e 47·2	—
Wellington		88·1	160	—	—	i 22 55	[−21]	43·3	62·0
Fordham		88·1	30	—	—	e 24 34	+41	e 43·4	56·7
Georgetown	N.	88·6	33	13 4	− 4	23 48	−11	37·7	—
Barcelona		89·7	334	—	—	e 23 50	−21	e 44·6	58·7
Tortosa	N.	90·7	336	e 13 20	0	e 24 10	−11	41·8	—
Toledo		93·0	339	e 13 21	−11	e 24 30	−15	e 42·2	55·4
Alicante	E.	93·3	336	—	—	—	—	e 46·8	—
Algiers		93·6	331	e 13 26	−10	23 50	[0]	e 41·2	60·2
Almeria		95·2	337	13 48	+ 4	25 7	− 1	48·8	55·8
Granada		95·3	338	13 19	−26	24 14	[+15]	50·6	65·1
Rio Tinto		95·6	340	22 10	?PR_1	—	—	—	60·2
Malaga		96·0	337	e 13 39	−10	24 49	−27	e 37·2	54·0
San Fernando		96·7	340	24 16	?[S]	(24 16)	[+10]	53·2	54·2
La Paz		139·8	60	e 19 42	[+ 3]	e 33 38	?	e 71·1	89·4
Rio de Janeiro		157·9	26	e 20 18	[+12]	—	—	77·3	—
La Plata		158·9	75	—	—	—	—	76·0	78·2

Additional readings and notes: Ootomari MN = +3·0m. Osaka MN = +7·3m. Kobe MZ = +10·0m. Sumoto MN = +10·6m. Zi-ka-wei PR_1E = +5m.40s., SR_1E = +10m.17s., MZ = +15·2m., MN = +17·0m. Manila MN = +24·9m. Phu-Lien MN = +27·0m. Amboina readings have been increased by 6m. Honolulu MN = +25·5m. Ekaterinburg PR_1 = +11m.38s., PR_2 = +12m.35s., i = +14m.51s., and +19m.15s., SR_1 = +21m.3s., MN = +33·3m., MZ = +34·8m. Victoria LN = +24·7m. Pulkovo PR_2 = +15m.5s., SR_1 = +23m.58s., SR_2 = +26m.52s., MZ = +44·3m., MN = +49·3m. Berkeley L?E = +31·5m. and eLZ = +32·9m. Upsala MN = +45·2m. Bergen i = +45m.10s. Konigsberg PS = +20m.11s., SR_1 = +29m.40s., MN = +39·2m. Hamburg MNZ = +49·2m. Riverview PS = +22m.55s., MN = +39·6m.; T_e = 5h.23m.42s. Budapest iE = +22m.31s. and +22m.39s., iN = +22m.35s., MN = +50·4m. Cheb readings have been increased by 1h. Vienna iPZ = +12m.15s., i = +14m.3s., +22m.50s., and +25m.22s. De Bilt MN = +51·4m., MZ = +61·6m. Belgrade PR_1 = +16m.20s. Bidston S = +30m.10s. Innsbruck S is given as iNW and has been increased by 10m. Strasbourg MN = +54·5m. Chicago SR_1N = +28m.10s., eN = +35m.40s. Paris iP = +12m.37s., iS = +23m.8s., MN = +54·2m. Ottawa MN = +59·2m. Toronto eSE = +22m.33s. Athens eLN = +45·2m., MN = +58·4m.; T_e = 5h.24m.4s. Rocca di Papa ePEN = +12m.51s., eSZ = +22m.56s., eSN = +23m.26s., SN = +23m.37s. Georgetown eLE = +38·0m. Barcelona MN = +61·3m. Toledo i = +24m.48s., MNW = +53·5m. Alicante eLN = +47·6m. Malaga MN = +53·7m. San Fernando S = +35m.27s., MN = +69·2m. La Paz i = +19m.58s., PR_1 = +23m.22s., L = +76·1m.; T_e = 5h.23m.49s.

Feb. 1d. 15h. 56m. 48s. Epicentre 15°·5N. 56°·5E.

A = +·532, B = +·804, C = +·267; D = +·834, E = −·552; G = +·147, H = +·223, K = −·964.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay	16·0	75	—	—	7 12?	+17	—	—
Hyderabad	21·1	82	4 55	+ 1	8 54	+ 8	10·1	12·7
Kodaikanal	21·4	101	10 30	?L	—	—	(10·5)	—
Baku	25·6	348	—	—	i 10 26	+12	14·7	17·0
Ekaterinburg	41·5	3	e 8 6	− 1	e 14 20	− 8	19·2	27·1
Kucino	42·7	345	—	—	—	—	e 26·1	—
Irkutsk	52·6	35	—	—	e 14 12?	?	e 28·2	—

Additional readings: Baku ePR = +6m.53s. Ekaterinburg e = +9m.48s. =PR_1 +8s., MZ = +27·4m., Irkutsk L = +16·2m., L = +32·2m.; the above readings are given as e simply.

Feb. 1d. 17h. 14m. 36s. Epicentre 43°·2N. 147°·2E. (as at 5h.).

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 17	+ 4	—	—	—	—
Mizusawa	E.	6·2	230	1 42	+ 7	2 52	+ 3	—	—
Irkutsk		29·8	303	e 6 18	− 8	e 11 28	− 3	16·4	19·5
Ekaterinburg		53·3	318	9 24	− 4	—	—	26·4	34·6
Kucino		64·5	324	—	—	—	—	e 35·2	—
Pulkovo		64·8	330	—	—	—	—	e 35·4	—
Baku		68·1	306	—	—	—	—	38·4	—

Additional readings: Mizusawa SN = +2m.51s. Irkutsk MN = +19·4m. Ekaterinburg e = +21m.12s. = SR_1 +4s., MZ = +34·7m., MN = +34·8m. Kucino eL = +41·0m.

Feb. 1d. 18h. 0m. 15s. Epicentre 1°·0S. 126°·0E.

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

Epicentre deduced from +0°·5 +126°·5, as on 1924 June 1d.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	16·4	342	e 3 45	−12	—	—	i 4·2	—
Batavia	19·8	254	e 4 28	−11	8 29	+10	—	—
Hong Kong	26·0	334	5 23	−25	(9 25)	−47	9·6	—
Perth	32·6	196	—	—	11 54	−24	—	—
Riverview	40·4	147	e 7 55	− 3	e 14 7	− 6	e 23·2	25·0
Bombay	55·8	294	—	—	17 45?	+14	—	—
Irkutsk	56·3	344	e 9 44	− 4	—	—	26·8	—
Ekaterinburg	77·6	329	i 12 2	− 3	e 22 20	+24	30·8	39·5
La Paz	157·6	142	20 9	[+ 3]	—	—	—	—

Additional readings: Batavia iE = +4m.32s. and +17m.34s., MN = +24·5m. Riverview e = +17m.20s.

Feb. 1d. 19h. 33m. 36s. Epicentre 39°·0N. 73°·0E. (as on 1922 Dec. 17d.).

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	8·6	156	3 24	?S	(3 24)	−29	—	—
Baku	17·8	282	4 19	+ 4	7 51	+15	e 11·4	—
Ekaterinburg	19·6	340	1 4 41	+ 5	i 8 25	+10	10·9	12·7
Pulkovo	33·8	322	e 6 48	−15	e 12 8	−30	—	—

Additional readings: Simla PN = +3m.36s. Ekaterinburg i = +8m.32s.

Feb. 1d. 21h. 3m. 30s. Epicentre 41°·0N. 127°·0W. (as on 1919 Jan. 31d.).

A = −·453, B = −·603, C = +·656; D = −·799, E = +·602; G = −·395, H = −·524, K = −·755.

Doubtful solution.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley		4·8	130	—	—	—	—	e 3·2	—
Victoria		7·8	17	1 43	−15	—	—	1·7	4·2
Chicago	E.	29·2	75	—	—	e 11 55	+35	19·1	19·2
Ann Arbor		31·9	75	8 42	+116	14 6	+119	e 19·9	22·7
Toronto		34·7	70	—	—	—	—	i 20·0	22·0
Ottawa		36·9	66	e 7 30	+ 1	e 13 30	+ 8	e 18·9	23·3
Georgetown		37·7	77	e 7 35	− 1	13 51	+17	26·8	—
Fordham		39·5	74	e 22 6	?L	i 23 59	?	24·8	24·9
Harvard		40·9	69	—	—	—	—	e 24·5	25·7

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Eskdalemuir	72·4	30	—	—	—	—	36·5	—
Irkutsk	76·7	331	e 10 30?	−89	—	—	34·5	—
Pulkovo	77·5	11	—	—	—	—	e 34·5	—
De Bilt	78·0	28	—	—	—	—	e 33·5	—
Uccle	78·7	29	—	—	—	—	e 36·5	—
Ekaterinburg	81·9	358	e 12 22	− 8	—	—	32·5	38·0
Kucino	82·4	9	—	—	—	—	e 33·5	—
Granada	86·4	43	—	—	—	—	e 45·5	51·8
Baku	98·6	3	—	—	e 37 0	?SR_2	49·0	—

Additional readings: Berkeley eEN = 21h.0m.11s., eZ = 21h.2m.11s., and several L's. Victoria PE = +31s. Toronto eE = +20m.8s., LE = +21·5m., LN = +21·7m. Ottawa ePR_1?E = +8m.54s.; T_o = 21h.3m.26s. Georgetown LN = +24·0m. Harvard PR_1E = 20h.49m.18s., PSN = 20h.58m.55s., PSE = 20h.59m.2s., SR_2E = +6m.34s., e = +12m.30s., LN = +22·2m., MN = +26·1m. Ekaterinburg MN = +46·0m.

Feb. 1d. 21h. 52m. 40s. Epicentre 50°·0N. 6°·5W.

A = +·639, B = −·073, C = +·766; D = −·113, E = −·994; G = +·761, H = −·087, K = −·643.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oxford	3·7	60	0 55	− 3	1 43	+ 1	—	2·0
West Bromwich	3·8	46	1 30	?S	(1 30)	−14	—	2·3
Bidston	3·9	30	1 41	?S	(1 41)	− 6	(2·2)	—
Stonyhurst	4·6	31	e 1 28	+17	i 2 42	+36	(i 2·7)	—
Eskdalemuir	5·7	19	—	—	—	—	e 3·3	—
Paris	6·0	98	e 1 20	−12	e 2 8	−36	2·4	2·4
Uccle	7·0	79	e 1 48	+ 2	e 3 8	− 2	—	3·3
De Bilt	7·6	69	—	—	e 3 20?	− 6	—	—
Besançon	8·7	104	e 2 46	+34	3 44	−12	—	—
Strasbourg	9·4	93	e 2 22	0	e 4 12	− 1	—	4·4
Zurich	10·3	99	e 1 51	−43	—	—	—	4·6
Hohenheim	10·3	91	—	—	e 4 34	− 3	—	—
Hamburg	10·8	64	—	—	—	—	e 5·3	—
Ravensburg	10·8	96	—	—	e 4 55	+ 5	—	—
Moncalieri	10·8	112	3 51	+70	—	—	—	—
Innsbruck	12·1	96	e 5 30	?S	(e 5 30)	+ 9	—	—
Vienna	15·0	88	—	—	—	—	e 7·2	—
Ottawa	45·2	292	—	—	e 24 22	?L	e 33·6	—
Toronto	48·3	292	—	—	—	—	e 33·1	—
Chicago	54·2	295	—	—	—	—	e 30·2	—
Irkutsk	62·2	40	—	—	e 46 20?	?	—	—

Vienna gives also i = +7m.19s. and +7m.39s.

Feb. 1d. Readings also at 0h. (Irkutsk, Ekaterinburg, and near Mizusawa), 5h. (near Kobe), 6h. (Mizusawa and Pompeii), 9h. (Lick, Mizusawa (3), Ootomari, Ekaterinburg, and Irkutsk), 10h. (Lick, Baku, and Pulkovo), 11h. (Irkutsk and Ekaterinburg), 12h. (Granada, Irkutsk, Ekaterinburg, and Mizusawa), 14h. (Ekaterinburg (2) and near Mostar), 15h. (Mizusawa (2) and Irkutsk), 16h. (Mizusawa and Irkutsk), 17h. (Amboina and Mizusawa), 20h. (Honolulu and near Mizusawa (2)), 21h. (Irkutsk and Ekaterinburg), 22h. (near Victoria).

Feb. 2d. 10h. 53m. 33s. (I)
11h. 18m. 36s. (II) } **Epicentre 43°·2N. 147°·2E. (as on Feb. 1d.).**
11h. 38m. 40s. (III)

A = −·613, B = +·395, C = +·685; D = +·542, E = +·841; G = −·575, H = +·371, K = −·729.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Ootomari	4·7	319	1 19	+ 6	—	—	2·3	—
II		4·7	319	1 14	+ 1	—	—	2·1	—
III		4·7	319	1 22	+ 9	—	—	2·6	3·4
I	Mizusawa E.	6·2	230	1 38	+ 3	2 48	− 1	—	—
I	N.	6·2	230	1 39	+ 4	2 45	− 4	—	—
II	E.	6·2	230	1 38	+ 3	2 46	− 3	—	—
III		6·2	230	1 35	0	2 51	+ 2	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
III	Osaka	12·5	231	4 33	+87	—	—	7·3	8·7
III	Zi-ka-wei	23·6	248	e 5 15	− 9	—	—	—	15·7
III	Taihoku	27·8	238	—	—	—	—	14·3	—
I	Irkutsk	29·8	303	—	—	—	—	18·4	19·5
II		29·8	303	e 6 26	0	e 11 23	− 8	17·4	19·3
III		29·8	303	e 6 41	+15	11 23	− 8	17·3	19·4
III	Hong Kong	34·4	242	12 35	?S	(12 35)	−11	—	20·8
I	Ekaterinburg	53·3	318	9 21	− 7	e 18 59	+119	28·4	32·0
II		53·3	318	9 20	− 8	—	—	26·9	33·0
III		53·3	318	9 24	− 4	—	—	25·3	32·0
III	Kucino	64·5	324	e 15 7	?PR_1	e 19 32	+13	34·6	40·2
II	Pulkovo	64·8	330	10 38	− 6	14 15	?PR_1	15·0	—
III		64·8	330	e 13 6	?	e 19 22	− 1	31·3	41·9
III	Bombay	66·0	274	—	—	19 20?	−17	—	—
II	Baku	68·1	306	e 13 11	?	—	—	18·4	18·9
III		68·1	306	—	—	e 18 10	−113	38·3	44·0
III	Upsala	69·0	336	—	—	—	—	e 41·3	—
III	Hamburg	76·5	335	—	—	—	—	e 41·3	49·3
III	De Bilt	79·2	338	—	—	e 22 20?	+ 6	e 38·3	43·8
II	Uccle	80·6	338	—	—	—	—	e 41·4	—
III		80·6	338	—	—	—	—	e 39·3	—
III	Strasbourg	81·6	334	—	—	—	—	e 54·3	—
III	Paris	82·9	338	—	—	e 32 20	?	e 45·3	53·3
II	Ann Arbor	83·1	35	—	—	(e 23 24)	+26	e 23·4	—
II	Ottawa	83·6	28	—	—	e 24 0	+55	53·4	—
II	Toronto E.	83·7	31	—	—	—	—	51·9	—
III	E.	83·7	31	—	—	—	—	43·6	—
III	Moncalieri	84·8	333	e 29 47	?SR_1	34 12	?	47·1	—
III	Fordham	88·1	30	—	—	—	—	e 47·8	—
II	Georgetown E.	88·6	33	—	—	—	—	e 43·4	—
III	Granada	95·3	338	—	—	e 51 16	?	e 57·2	60·6

Additional readings and notes: Mizusawa II PN = +1m.39s. Osaka III MN = +10·4m. Irkutsk I MNZ = +19·4m., II MZ = +19·4m., III MZ = +19·5m. Ekaterinburg II MZ = +34·6m., III MZ = +34·7m. Kucino eL = 11h.35m.29s., III MN = +41·4m. Pulkovo III e = +21m.25s., MN = +38·0m., MZ = +41·8m. De Bilt III MN = +55·4m.

Feb. 2d. 13h. 29m. 9s. Epicentre 43°·2N. 147°·2E.

(as at 11h.).

A = −·613, B = +·395, C = +·685; D = +·542, E = +·841; G = −·575, H = +·371, K = −·729.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Motomari		4·7	319	1 22	+ 9	—	—	2·8	3·2
Oizusawa	E.	6·2	230	1 39	+ 4	2 46	− 3	5·2	—
	N.	6·2	230	1 38	+ 3	2 45	− 4	—	—
Nagoya		11·3	228	3 17	+28	—	—	6·0	—
Osaka		12·5	231	3 33	+27	—	—	6·5	8·9
Kobe		12·7	232	e 3 8	− 1	—	—	6·3	8·7
Sumoto		13·0	230	—	—	e 6 21	+37	7·5	10·5
Zi-ka-wei		23·6	248	5 20	− 4	9 46	+10	13·9	15·0
Taihoku		27·8	238	—	—	11 4	+ 9	14·4	17·6
Irkutsk		29·8	303	i 6 9	−17	11 14	−17	17·8	18·9
Hong Kong		34·4	242	6 51	−17	12 23	−23	17·5	20·4
Manila		36·4	226	e 7 41	+16	—	—	i 19·2	26·5
Honolulu	E.	50·1	98	—	—	16 11	− 9	23·7	24·8
	N.	50·1	98	—	—	—	—	23·3	25·4
Calcutta	E.	52·4	268	8 52	−30	16 33	−16	—	—
	N.	52·4	268	9 4	−18	16 35	−14	—	—
Ekaterinburg		53·3	318	i 9 22	− 6	16 53	− 7	25·8	33·4
Simla	E.	55·5	282	e 10 3	+20	—	—	—	38·2
	N.	55·5	282	e 9 57	+14	—	—	—	36·6
Victoria		58·9	51	17 58	?S	(17 58)	−12	33·2	38·4
Batavia		61·4	228	—	—	e 17 35	−66	43·1	—
Hyderabad		62·8	270	e 10 30	− 1	19 10	+12	—	46·0
Kucino		64·5	324	10 42	0	19 8	−11	32·1	42·8
Pulkovo		64·8	330	10 43	− 1	19 24	+ 1	29·8	41·7
Bombay		66·0	274	10 53	+ 2	19 53	+16	36·1	42·8

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Baku		68·1	306	—	—	—	—	35·8	39·8
Kodaikanal		68·3	265	21 27	?S	(21 27)	+81	44·4	47·2
Colombo		68·9	260	10 51	−19	21 1	+48	45·3	48·8
Upsala		69·0	336	e 11 3	− 8	e 20 13	− 1	e 32·8	41·3
Konigsberg		72·0	330	—	—	—	—	e 36·8	38·8
Dyce		76·4	343	12 9	+12	21 50	+ 8	44·5	51·0
Hamburg		76·5	335	i 11 55	− 3	e 21 51	+ 8	e 37·8	49·8
Riverview		77·2	177	e 12 13	+11	e 21 43	− 8	e 32·2	45·1
Sydney		77·2	177	21 51	?S	(21 51)	0	41·6	46·0
Edinburgh		77·8	345	i 18 3	?	—	—	43·8	44·8
Eskdalemuir		78·3	345	e 12 21	+12	22 3	− 1	39·8	—
Budapest		78·5	328	—	—	e 21 51?	−15	e 38·8	50·4
Cheb		78·8	332	—	—	—	—	e 43·8	51·8
Vienna		78·9	330	e 12 9	− 3	22 20	+ 9	e 40·4	52·4
De Bilt		79·2	338	12 10	− 4	22 10	− 4	e 35·8	43·7
Stonyhurst		79·5	343	e 12 39	+23	e 22 55	+37	40·8	46·4
Belgrade		80·1	325	e 10 47	−93	e 21 53	−31	e 44·0	51·2
Bidston		80·1	343	11 15	−65	22 14	−10	44·8	53·4
Perth		80·5	207	—	—	22 51	+22	—	—
Uccle		80·6	338	e 12 16	− 7	e 22 18	−12	36·8	44·7
Hohenheim		81·0	335	—	—	—	—	e 43·8	53·1
Melbourne		81·1	182	—	—	(21 27)	−69	21·4	48·4
Oxford		81·2	341	—	—	i 22 32	− 5	42·8	46·4
Innsbruck		81·5	331	e 11 57	−31	—	—	e 42·8	—
Strasbourg		81·6	334	e 12 20	− 8	22 31	[− 3]	33·8	52·5
Ravensburg		81·6	333	—	—	—	—	e 42·8	52·9
Chicago		81·8	39	—	—	—	—	51·8	54·0
Paris		82·9	338	—	—	e 22 57	+ 1	39·8	44·8
Ann Arbor		83·1	35	12 27	−10	22 39	[− 5]	e 35·8	48·2
Besançon		83·4	334	—	—	e 22 48	[+ 2]	40·8	47·8
Ottawa		83·6	28	12 29	−11	e 22 36	[−11]	e 37·8	53·8
Toronto	E.	83·7	31	e 13 23	+43	i 22 41	[− 7]	e 39·7	45·7
	N.	83·7	31	i 13 22	+42	e 22 6	−60	31·1	46·8
Athens		84·2	319	—	—	e 24 9	+59	33·7	—
Florence		84·6	329	12 21	−25	22 51	[− 2]	44·8	52·4
Moncalieri		84·8	333	i 12 38	− 9	23 10	− 7	39·5	55·4
Rocca di Papa		85·8	328	—	—	e 23 31	+ 3	e 45·8	57·0
Helwan		86·3	309	12 49	− 6	23 14	[+ 9]	—	57·0
Harvard	E.	87·8	27	—	—	23 31	[+17]	e 46·4	50·3
	N.	87·8	27	—	—	—	—	46·8	56·8
Fordham		88·1	30	—	—	e 22 11	[−64]	45·8	55·6
Wellington		88·1	160	e 13 11	+ 5	23 19	[+ 3]	e 41·7	51·4
Georgetown	E.	88·6	33	—	—	e 23 38	[+19]	48·6	—
	N.	88·6	33	—	—	e 23 21	[+ 2]	60·8	—
Barcelona		89·7	334	—	—	e 23 50	−21	e 32·9	55·9
Tortosa	N.	90·7	336	—	—	23 51	[+19]	e 41·8	61·0
Toledo		93·0	339	13 1	−31	23 44	[− 2]	e 39·3	61·4
Alicante	E.	93·3	336	—	—	—	—	e 48·6	—
Algiers		93·6	331	—	—	—	—	e 39·8	64·8
Almeria		95·2	337	e 12 59	−45	e 23 18	[−40]	e 49·7	52·3
Granada		95·3	338	i 13 53	+ 8	—	—	e 48·6	53·3
Rio Tinto		95·6	340	25 51?	?S	(25 51)?	+39	—	57·8
Malaga		96·0	337	e 13 1	−48	e 24 17	[+15]	e 40·3	54·4
San Fernando		96·7	340	e 23 52	?S	(e 23 52)	[−14]	52·4	63·4
Cape Town		139·5	265	—	—	—	—	—	86·4
La Paz		139·8	60	e 19 51	[+12]	e 34 29	?	78·2	86·7

Additional readings: Ootomari MN = +3·6m. Osaka MN = +7·4m. Kobe MN = +7·4m., MZ = +9·1m. Sumoto MN = +8·6m. Zi-ka-wei SR_1N = +9m.58s., SR_1E = +10m.6s., MN = +14·1m. Manila MN = +25·3m. Honolulu eE = +17m.21s., SR_1N = +20m.16s., SR_1E = +22m.6s. Ekaterinburg i = +10m.37s., +12m.58s., +19m.9s., +21m.1s., and +21m.27s., MZ = +34·6m. Victoria LN = +34·1m. Kucino PR_1 = +14m.52s., MN = +42·3m. Pulkovo PR_1 = +14m.7s., SR_1 = +23m.57s. SR_2 = +27m.3s., MZ = +41·6m., MN = +43·4m. Upsala MN = +45·4m. Dyce PR_1 = +17m.25s. Riverview MN = +51·2m.; T_e = 13h.29m.41s. Vienna PS = +23m.11s., iE = +26m.59s., MN = +50·4m. De Bilt MN = +51·6m., MZ = +52·1m. Strasbourg MN = +55·2m. Chicago eLE? = +53·2m., eLN? = +55·9m., MN = +56·8m. Paris MN = +53·8m. Ann Arbor PR_1 = +16m.39s. Ottawa MN = +53·4m.; T_e = 13h.29m.28s. Toronto eN = +28m.23s. Harvard eE = +29m.11s., eN = +29m.23s. Fordham e = +33m.51s. Barcelona MN = +51·7m. Toledo MNW = +53·7m. Granada i = +14m.29s., MN = +58·1m., MZ = +64·0m. Alicante eLN = +49·0m. Almeria MN = +60·8m. Malaga MN = +56·8m. San Fernando S = +35m.44s., MN = +65·8m. La Paz eP = +23m.23s., L = +81·7m.

Feb. 2d. 14h. 11m. 50s. (I)
19h. 24m. 50s. (II) } Epicentre 43°·2N. 147°·2E. (as at 13h.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Ootomari		4·7	319	1 14	+ 1	—	—	2·4	3·6
II		4·7	319	1 18	+ 5	—	—	2·7	3·2
I Mizusawa	E.	6·2	230	1 33	− 2	2 44	− 5	—	—
I	N.	6·2	230	1 35	0	2 42	− 7	—	—
II	E.	6·2	230	1 38	+ 3	2 47	− 2	—	—
II Nagoya		11·3	228	2 49	0	—	—	—	—
I Osaka		12·5	231	3 47	+41	—	—	6·7	9·1
II		12·5	231	4 3	+57	—	—	6·9	9·1
I Kobe	E.	12·7	232	—	—	—	—	—	10·3
I Sumoto		13·0	230	e 5 56	?S	(e 5 56)	+12	10·5	—
I Taihoku		27·8	238	—	—	—	—	14·2	—
II		27·8	238	—	—	—	—	12·2	—
II Irkutsk		29·8	303	6 11	−15	11 16	−15	17·2	—
II Hong Kong		34·4	242	12 20	?S	(12 20)	−26	(17·0)	20·7
II Ekaterinburg		53·3	318	i 9 20	− 8	16 49	−11	26·2	—
II Pulkovo		64·8	330	e 10 45	+ 1	e 19 8	−15	—	—
II Baku		68·1	306	e 11 4	− 1	e 20 8	+ 5	—	—
II Hamburg		76·5	335	e 11 53	− 5	—	—	—	—
I Vienna	Z.	78·9	330	e 12 10	− 2	—	—	—	
II	Z.	78·9	330	e 12 5	− 7	—	—	—	—
I De Bilt	E.	79·2	338	—	—	—	—	e 41·2	44·0
II		79·2	338	—	—	—	—	e 39·2	—
I Uccle		80·6	338	—	—	—	—	e 43·2	—
I Oxford		81·2	341	—	—	—	—	43·2	46·2

Additional readings: Ootomari I . MN = +3·5m. Mizusawa II SN = +2m.48s. Osaka I MN = +11·0m., II MN = +10·0m. Kobe I MN = +11·4m. Hong Kong II S is given as P and L as S, also L = +20·0m. Baku II S is given as e, also S = +20m.24s.

Feb. 2d. 18h. 44m. 24s. Epicentre 9°·5N. 60°·0E.

A = +·493, B = +·854, C = +·165 ; D = +·866, E = −·500 ; G = +·083, H = +·143, K = −·986.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		15·6	52	3 22	−25	—	—	—	12·4
Kodaikanal		17·2	86	9 12	?L	—	—	(9·2)	—
Hyderabad		19·6	64	4 40	+ 4	8 18	+ 3	9·5	11·8
Calcutta	N.	30·1	61	10 1	?S	(10 1)	−95	—	—
Baku		32·7	346	e 6 45	− 7	e 12 0	−19	17·6	19·7
Ekaterinburg		47·3	0	i 8 47	− 2	15 47	+ 2	23·6	29·4
Pulkovo		55·0	342	e 9 54	+15	e 17 27	+ 6	—	—
Irkutsk		55·8	31	—	—	—	—	32·6?	—

Additional readings: Baku iS = +12m.24s., SR_2 = +16m.3s. Ekaterinburg i = +10m.43s. = PR_1 − 6s. Irkutsk e = 19h.7m. and 19h.12m.

Feb. 2d. 19h. 46m. 45s. Epicentre **43°·2N. 147°·2E.**
(as at 13h. etc.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 22	+ 9	—	—	2·6	3·3
Mizusawa	E.	6·2	230	1 41	+ 6	2 50	+ 1	5·1	—
Nagoya		11·3	228	3 4	+15	—	—	6·1	11·1
Osaka		12·5	231	3 43	+37	—	—	6·5	8·5
Kobe		12·7	232	3 22	+13	—	—	6·8	8·7
Sumoto		13·0	230	e 3 24	+11	e 5 24	−20	7·0	9·4
Zi-ka-wei		23·6	248	i 4 21	−63	i 8 39	−57	—	15·2
Taihoku		27·8	238	7 5	+59	11 22	+27	14·4	16·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		29·8	303	i 6 16	−10	11 26	− 5	17·2	20·2
Hong Kong		34·4	242	6 55	−13	(12 28)	−18	12·5	22·2
Manila		36·4	226	e 7 20	− 5	—	—	i 18·8	22·9
Phu-Lien		40·5	249	i 7 50	− 9	13 15?	−59	e 20·2	26·9
Sitka	E.	48·6	45	—	—	—	—	e 28·2	30·2
	N.	48·6	45	—	—	—	—	e 30·5	31·3
Honolulu		50·1	98	—	—	i 16 15	− 5	i 23·0	26·2
Calcutta	E.	52·4	268	8 52	−30	16 28	−21	—	—
	N.	52·4	268	8 58	−24	16 38	−11	—	—
Ekaterinburg		53·3	318	9 25	− 3	i 17 40	+40	25·2	32·2
Simla		55·5	282	9 45	+ 2	e 16 57	−31	—	36·4
Victoria	E.	58·9	51	16 14	?	22 6	?	30·2	38·6
	N.	58·9	51	18 14	?S	(18 14)	+ 4	29·1	—
Batavia		61·4	228	i 10 22	+ 1	i 18 42	+ 1	e 30·2	45·2
Hyderabad		62·8	270	10 30	− 1	19 14	+16	34·4	46·0
Pulkovo		64·8	330	i 10 43	− 1	19 21	− 2	29·8	42·0
Berkeley		65·5	60	10 43	− 5	19 25	− 6	35·0	40·5
Bombay		66·0	274	10 54	+ 3	19 50	+13	35·0	44·7
Lick	E.	66·2	60	e 10 56	+ 3	e 19 39	− 1	29·7	33·4
	N.	66·2	60	e 11 14	+21	e 19 36	− 4	28·4	33·6
Baku		68·1	306	i 11 9	+ 4	(20 15)	+12	20·2	—
Kodaikanal		68·3	265	20 9	?S	(20 9)	+ 3	43·8	46·8
Apia		68·3	136	—	—	—	—	—	42·2
Colombo		68·9	260	10 40	−30	20 50	+37	45·2	48·2
Upsala		69·0	336	e 11 11	0	e 20 11	− 3	e 34·2	45·4
Konigsberg		72·0	330	i 11 34	+ 4	i 20 21	−29	35·2	41·2
Lemberg		74·6	326	e 21 9	?S	(e 21 9)	−12	e 32·6	47·8
Dyce		76·4	343	11 59	+ 2	21 41	− 1	43·4	51·5
Hamburg		76·5	335	i 11 58	0	i 21 43	0	e 38·2	49·2
Riverview		77·2	177	e 12 19	+17	e 21 45	− 6	e 33·8	43·9
Sydney		77·2	177	10 9	−113	—	—	39·0	45·2
Edinburgh		77·8	345	—	—	i 20 15	−103	41·2	50·8
Budapest		78·5	328	e 12 15	+ 5	22 12	+ 6	e 38·2	50·8
Adelaide		78·6	187	—	—	e 20 15?	−112	42·2	44·8
Cheb		78·8	332	—	—	e 22 15?	+ 5	e 43·2	50·2
Vienna		78·9	330	e 12 10	− 2	i 22 12	+ 1	e 39·8	45·8
De Bilt		79·2	338	12 12	− 2	22 12	− 2	e 37·2	44·0
Stonyhurst		79·5	343	e 12 19	+ 3	22 26	+ 8	—	45·6
Belgrade		80·1	325	e 12 18	− 2	e 22 32	+ 8	e 44·1	51·8
Bidston		80·1	343	18 50	?PR_2	22 33	+ 9	44·0	53·6
Perth		80·5	207	19 15	?PR_2	—	—	—	—
Uccle		80·6	338	e 12 18	− 5	22 26	− 4	37·2	44·8
Hohenheim		81·0	335	e 12 21	− 4	e 22 28	− 7	e 38·2	43·4
Melbourne		81·1	182	e 10 15	?	i 22 27	− 9	—	47·6
Oxford		81·2	341	—	—	i 22 34	− 3	41·2	46·2
Kew		81·2	341	—	—	—	—	—	50·2
Innsbruck		81·5	331	e 12 25	− 3	e 22 25	−16	e 41·2	52·8
Strasbourg		81·6	334	12 25	− 3	i 22 39	− 3	26·2	46·7
Ravensburg		81·6	333	e 12 22	− 6	e 22 36	− 6	e 43·2	52·9
Chicago		81·8	39	—	—	i 22 45	+ 1	e 39·2	49·6
Zurich		82·4	333	e 12 31	− 1	22 43	− 7	—	—
Venice		82·7	330	13 49	+75	24 57	+123	54·1	—
Paris		82·9	338	i 12 30	− 5	i 22 49	− 7	39·2	45·2
Ann Arbor		83·1	35	12 48	+ 8	i 22 51	− 7	e 39·6	56·6
Besançon		83·4	334	—	—	22 53	− 8	e 41·2	48·2
Ottawa		83·6	28	e 12 26	−14	i 22 48	[+ 1]	e 38·2	56·2
Toronto	E.	83·7	31	e 12 32	− 8	i 22 45	[− 3]	e 39·9	46·6
	N.	83·7	31	e 12 30	−10	e 22 43	[− 5]	44·9	59·1
Athens		84·2	319	e 12 34	− 9	i 22 54	[+ 3]	32·2	50·8
Florence		84·6	329	12 38	− 8	23 5	−10	—	33·2
Moncalieri		84·8	333	i 12 20	−27	i 22 58	[+ 3]	36·4	56·2
Pompeii		85·8	326	e 13 15	+23	e 23 15	[+13]	47·2	60·2
Ithaca		85·8	30	—	—	—	—	46·2	—
Rocca di Papa		85·8	328	12 47	− 5	e 23 7	[+ 5]	e 34·2	58·6
Helwan		86·3	309	i 12 49	− 6	23 17	[+12]	—	56·6
Harvard		87·8	27	—	—	23 33	−17	46·2	50·7
Fordham		88·1	30	i 23 26	?[S]	(i 23 26)	[+11]	46·0	60·8
Wellington		88·1	160	—	—	i 23 15	[− 1]	e 43·8	46·8
Georgetown		88·6	33	e 13 0	− 8	? 23 42	−17	48·6	—
Barcelona		89·7	334	14 23	+69	22 56	[−30]	e 39·2	58·2
Tortosa	E.	90·7	336	—	—	24 9	−12	—	59·3
	N.	90·7	336	e 13 31	+11	24 8	−13	41·3	59·8
Toledo		93·0	339	e 13 20	−12	e 24 25	−20	e 44·0	61·8
Alicante	E.	93·3	336	—	—	—	—	e 35·7	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers	93·6	331	e 13 24	−12	e 24 3	[+13]	52·2	59·8
Almeria	95·2	337	—	—	e 24 38	−30	49·2	51·8
Granada	95·3	338	i 13 15	−30	24 16	[+17]	e 47·8	53·0
Lisbon	95·3	342	—	—	—	—	e 49·7	52·7
Rio Tinto	95·6	340	9 15	?	—	—	—	65·2
Malaga	96·0	337	12 55	−54	24 39	[+37]	45·4	53·3
San Fernando	96·7	340	24 15	?S	(24 15)	[+ 9]	52·8	55·8
Cape Town	139·5	265	22 31	?PR_1	—	—	—	86·7
La Paz	139·8	60	e 19 42	[+ 3]	e 33 49	?	e 73·1	89·6
Rio de Janeiro	157·9	26	e 22 39	?PR_1	—	—	43·9	—

Additional readings and notes: Ootomari MN = +3·4m. Mizusawa SN = +2m.49s. Osaka MN = +7·4m. Kobe MN = +9·4m. Sumoto MN = +10·4m. Zi-ka-wei PR_1E = +4m.37s., SR_1 = +9m.3s., MN = +13·4m. Hong Kong S? = +10m.57s., MN = +21·8m. Phu-Lien MN = +23·0m. Honolulu SR_1E = +20m.13s., SR_1N = +20m.18s., LN = +23·8m., MN = +25·5m. Ekaterinburg i = +11m.19s. = PR_1 − 30s. and +12m.13s. = PR_2 − 30s., MZ = +34·2m. Simla PN = +9m.57s. Hyderabad PR_1 = +12m.57s., SR_1 = +23m.39s.; T_0 = 19h.46m.26s. Pulkovo PR_2 = +15m.27s., MZ = +41·7m., MN = +43·1m. Berkeley PZ = +10m.46s., SE = +19m.49s., and +20m.9s., eN = +33m.45s., and +33m.53s. Baku iS = +16m.22s. = PR_2 + 1s., SR_2 = +17m.46s. Upsala MN = +46·6m. Konigsberg iE = +21m.11s., iN = +21m.38s., MN = +38·2m. Hamburg SR_1 = +27m.15s. Riverview PS = +22m.23s., MN = +43·1m. Budapest iE = +12m.29s., iN = +22m.29s., iE = +22m.36s., MN = +55·6m. Adelaide e = +26m.45s. and +32m.3s., i = +36m.57s. Vienna iPZ = +12m.13s., PS = +23m.12s., iE = +23m.26s., and +26m.11s., SR_1 = +27m.12s., iN = +28m.22s., iE = +29m.40s. and +36m.42s., MNZ = +51·2m. De Bilt MN = +51·5m., MZ = +52·4m. Hohenheim MN = +45·9m. Strasbourg MN = +54·6m. Chicago PR_1E? = +15m.33s., SR_1N = +27m.58s., SR_1E = +28m.10s., eSR_1E = +31m.15s., eSR_1N = +31m.46s., eLN = +43·9m., MN = +48·8m. Paris MN = +54·2m. Ottawa MN = +53·2m.; T_0 = 19h.46m.47s. Toronto iN = +12m.45s., iE = +12m.53s., eN = +39m.45s. Athens MN = +58·4m. Rocca di Papa eS = +23m.7s., eL = +47·4m. Harvard eLN = +49·2m., MN = +59·0m. Fordham eS = +32m.4s. Georgetown LN = +48·9m. Barcelona MN = +51·4m. Toledo MNW = +53·5m. Granada gives very many i readings, also MZ = +55·9m., MN = +58·1m. Alicante eLN = +35·2m. Almeria MN = +54·0m. Malaga MN = +53·7m. San Fernando S = +35m.28s., SR_1 = +41m.25s., MN = +63·8m. La Paz PR_1 = +23m.15s., SR_1 = +41m.9s., SR_2 = +47m.31s., L = +77·1m.; T_0 = 19h.46m.30s.

Feb. 2d. 22h. 12m. 45s. Epicentre 43°·2N. 147°·2E. (as at 19h., etc.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 25	+12	—	—	3·8	4·8
Mizusawa	E.	6·2	230	1 41	+ 6	2 46	− 3	—	—
	N.	6·2	230	1 42	+ 7	2 47	− 2	—	—
Osaka		12·5	231	3 25	+19	—	—	6·4	10·0
Taihoku		27·8	238	—	—	—	—	15·2	—
Irkutsk		29·8	303	6 16	−10	11 24	− 7	16·2	19·6
Hong Kong		34·4	242	12 26	?S	(12 26)	−20	18·8	20·5
Ekaterinburg		53·3	318	i 9 24	− 4	—	—	25·2	34·2
Pulkovo		64·8	330	e 10 51	+ 7	e 19 37	+14	32·2	42·0
Bombay		66·0	274	—	—	—	—	38·2	—
Kodaikanal		68·3	265	19 21	?S	(19 21)	−45	—	—
Upsala		69·0	336	—	—	—	—	e 41·2	—
Hamburg		76·5	335	e 12 15?	+17	—	—	e 41·2	—
Eskdalemuir		78·3	345	—	—	—	—	44·2	—
De Bilt		79·2	338	—	—	—	—	e 39·2	44·0
Uccle		80·6	338	—	—	—	—	e 40·2	—
Oxford		81·2	341	—	—	—	—	—	47·2
Strasbourg		81·6	334	—	—	—	—	45·2	—
Paris		82·9	338	—	—	—	—	e 47·2	50·2
Moncalieri		84·8	333	—	—	—	—	e 39·4	53 8
Toledo		93·0	339	—	—	—	—	e 50·0	—
Granada		95·3	338	i 17 33	?PR_1	i 38 37	?SR_2	e 57·6	65·0
San Fernando	N.	96·7	340	—	—	—	—	—	65·2

Additional readings: Osaka MN = +7·2m. Ekaterinburg MZ = +35·1m. Pulkovo P and S are given as e, also e = +9m.1s., MN = +44·5m. De Bilt MN = +51·7m., MZ = +56·8m. Paris MN = +54·2m. Moncalieri L = +47·2m. Granada i = +54m.28s.

Feb. 2d. Readings also at 6h. (near La Paz), 7h. (Granada), 10h. (Ekaterinburg and Mizusawa), 11h., 12h. (5), and 13h. (near Mizusawa), 14h. (near Mizusawa and Ootomari), 15h. (Mizusawa), 17h. (Irkutsk and near Mizusawa), 19h. (Baku and near Mizusawa (2)), 20h. (near Mizusawa (4)), 21h. (Granada, near Mizusawa, and Ootomari), 22h. (Kodaikanal), 23h. (near Mizusawa).

Feb. 3d. 2h. 27m. 50s. Epicentre 43°·2N. 147°·2E. (as on 2d.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·7	319	1 14	+ 1	—	—	2·3	3·4
Mizusawa		6·2	230	1 39	+ 4	2 48	− 1	—	—
Taihoku		27·8	238	—	—	—	—	13·2	—
Ekaterinburg		53·3	318	i 9 21	− 7	e 16 46	−14	25·2	31·7
Pulkovo		64·8	330	e 12 16	+92	e 20 34	+71	34·2	42·0
Bombay		66·0	274	—	—	—	—	39·2	—
Apia		68·3	136	—	—	—	—	—	90·2
De Bilt	E.	79·2	338	—	—	—	—	e 41·2	—
Uccle		80·6	338	—	—	—	—	e 42·2	—
Strasbourg		81·6	334	—	—	—	—	e 52·2	—
Ottawa		83·6	28	—	—	—	—	e 41·7	—
Moncalieri		84·8	333	—	—	—	—	e 47·4	—
Granada		95·3	338	—	—	—	—	e 53·8	62·3

Additional readings: Ekaterinburg MZ = +34·6m. Pulkovo readings are given as e only, also MZ = +42·3m., MN = +42·7m. Moncalieri L = +50·1m. Granada e = +50m.40s.

Feb. 3d. 18h. 18m. 42s. Epicentre 6°·3N. 123°·2E. (as on 1922 July 13d.).

A = −·544, B = +·832, C = +·110; D = +·837, E = +·548; G = −·060, H = +·092, K = −·994.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·6	346	e 2 18	+ 8	—	—	i 5·3	6·3
Hong Kong	18·4	332	4 23	+ 1	7 46	− 3	8·6	11·3
Phu-Lien	21·6	314	e 4 51	− 9	e 8 45	−12	—	11·3
Zi-ka-wei	25·0	356	e 5 36	− 2	e 10 5	+ 2	—	15·9
Perth	38·9	190	—	—	12 18?	−93	—	—
Colombo	43·0	273	9 43	+85	18 53	?SR_2	26·9	30·3
Hyderabad	45·0	288	e 8 8	−25	14 39	−36	—	—
Kodaikanal	45·5	278	19 30	?L	—	—	(19·5)	—
Riverview	48·1	148	—	—	—	—	e 27·6	33·5
Sydney	48·1	148	15 24	?S	(15 24)	−31	—	—
Irkutsk	48·5	345	8 58	+ 1	15 52	− 8	22·3	—
Bombay	50·1	290	15 59	?S	(15 59)	−21	—	—
Ekaterinburg	69·9	329	11 17	+ 1	20 18	− 7	34·3	42·5
Kucino	82·1	324	e 11 18?	−73	i 16 3	?PR_1	—	—
Pulkovo	86·6	329	i 12 48	− 9	e 23 11	[+ 4]	—	53·1
De Bilt	101·6	325	—	—	—	—	e 55·3	—
Uccle	102·6	325	—	—	—	—	56·3	—
Granada	114·1	315	—	—	—	—	e 68·3	74·1
Ottawa	125·6	15	—	—	e 38 18	?SR_1	e 67·3	—
Toronto . E.	126·0	20	—	—	—	—	69·4	—

Additional readings and notes: Manila MN = +7·2m. Zi-ka-wei readings are given for 19h. Riverview MN = +34·6m. Ekaterinburg readings have been increased by 10m. Kucino readings have been diminished by 1h.

Feb. 3d. Readings also at 1h. (near Mizusawa and Osaka), 4h. (Mizusawa), 5h. (near Sumoto), 6h. (Mizusawa), 8h. (near Taihoku), 12h. and 14h. (Irkutsk), 17h. (Malabar and near Batavia), 22h. (Kobe and Taihoku).

Feb. 4d. 10h. 2m. 32s. Epicentre 7°·0S. 148°·0E. (as on 1921 Jan. 6d.).

A = −·842, B = +·526, C = −·122 ; D = +·530, E = +·848 ; G = +·103, H = −·065, K = −·992.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·0	174	e 6 1	+ 3	e 10 43	+ 2	e 15·1	17·6
Sydney		27·0	174	10 34	?S	(10 34)	− 7	14·3	17·6
Adelaide		29·3	196	e 4 22	?	—	—	e 13·7	20·5
Manila		34·4	309	—	—	e 12 10	−36	—	—
Perth		39·0	226	8 10	+24	13 58	+ 6	17·0	—
Taihoku		41·1	322	—	—	—	—	19·5	—
Wellington		41·8	149	8 58	+49	i 14 10	−22	i 17·6	24·7
Osaka		43·4	345	8 21	0	12 15	?	16·2	18·5
Hong Kong		44·3	312	14 58	?S	(14 58)	− 8	—	—
Mizusawa	E.	46·6	353	(8 36)	− 8	8 36	?P	—	—
Ekaterinburg		94·4	327	—	—	—	—	47·5	—
Victoria	E.	94·4	42	—	—	—	—	43·1	44·9
Kucino		107·0	326	—	—	—	—	e 55·6	—
Chicago	E.	119·9	45	—	—	—	—	e 59·4	62·6
	N.	119·9	45	—	—	—	—	e 59·3	64·2
De Bilt		125·6	331	—	—	—	—	e 66·5	—
Ottawa	E.	126·1	37	—	—	e 32 58	?	e 52·5	—
Strasbourg		126·6	328	—	—	—	—	e 73·5	—
Uccle		126·8	330	—	—	—	—	—	71·5
La Paz		137·2	124	e 19 46	[+12]	—	—	—	—
Toledo		138·7	325	—	—	e 64 5	?	e 68·2	70·5
Granada		140·3	324	i 23 55	?PR_1	36 31	?	64·0	70·5
Malaga		141·1	321	64 9	?	69 15	?L	(69·2)	—
Azores		148·8	350	62 52	?L	—	—	(62·9)	87·5

Additional readings and notes: Riverview eP = +6m.54s., PS = +11m.5s., MN = +19·3m. ; T_o = 10h.2m.29s. Sydney S = +12m.34s. Adelaide e = +13m.40s. Osaka MN = +17·6m. Ottawa eN = +37m.58s. = SR_1 −5s. Malaga readings are given as for a shock 30° distant.

Feb. 4d. Readings also at 0h. (Toronto and Ottawa), 5h. (Azores), 17h. (near Irkutsk), 23h. (Kobe and near Sumoto).

Feb. 5d. Readings at 5h. (near Zurich), 6h. (near Mizusawa), 7h. (Apia and near Algiers), 11h. (near Taihoku), 12h. (near La Paz), 14h. (Apia), 18h. and 19h. (near Mizusawa), 21h. (La Paz), 22h. (Batavia).

Feb. 6d. 17h. 11m. 12s. Epicentre 35°·0N. 142°·0E. (as on 1922 July 2d.).

A = −·646, B = +·504, C = +·574 ; D = +·616, E = +·788 ; G = −·452, H = +·353, K = −·819.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	4·2	351	1 1	− 4	1 49	− 6	—	—
	N.	4·2	351	1 2	− 3	1 51	− 4	—	—
Nagoya		4·2	274	1 6	+ 1	—	—	2·6	2·8
Osaka		5·4	268	1 33	+10	—	—	2·9	3·6
Kobe		5·7	268	1 24	− 4	2 29	+ 3	2·8	4·3
Sumoto		5·9	265	e 1 51	+20	2 30	−11	3·0	3·6
Ootomari		11·7	3	4 16	?S	(4 16)	−56	5·7	—
Zi-ka-wei		17·7	264	7 24	?S	(7 24)	− 9	(9·0)	11·2
Hong Kong		27·4	250	13 12	?L	—	—	(13·2)	—
Irkutsk		31·8	315	6 36	− 9	11 26	−39	15·8	19·7
Ekaterinburg		56·8	320	—	—	—	—	24·3	36·9
De Bilt		85·2	335	—	—	—	—	e 49·8	—
Uccle		86·4	336	—	—	—	—	—	51·8
Moncalieri		90·0	330	—	—	—	—	e 49·0	—
Ottawa		92·7	26	—	—	e 22 48?	?	e 48·8	—
Toronto	E.	92·8	29	—	—	—	—	52·4	—
Granada		101·1	334	—	—	i 43 8	?	e 60·3	63·5
San Fernando	N.	102·6	335	—	—	—	—	—	66·3
La Paz		147·3	63	19 54	[+ 2]	—	—	—	—

Additional readings: Osaka MN = +3·2m. Kobe MN = +3·0m., MZ = +3·3m. Sumoto MN = +3·3m. Ekaterinburg MN = +36·4m., MZ = +37·5m. Ottawa eN = +36m.12s., eE = +37m.3s. If the time is about 1 min. wrong the observations would suit [S], SR_2, and SR_4. Toronto LN = +61·0m.

Feb. 6d. Readings also at 1h. (Port au Prince), 10h. (Apia), 13h. (Apia, Innsbruck, Fordham, and near Rocca di Papa), 15h. (Apia), 18h. (near Kobe and Sumoto), 20h. (near Tacubaya), 21h. (Apia), 22h. (near Tacubaya), 23h. (Apia).

Feb. 7d. 8h. 53m. 0s. Epicentre 37°·2N. 3°·6W. (as on 1924 Nov. 28d.).

A = +·795, B = −·050, C = +·605.

Doubtful.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Granada	0·0	i 0 1	+ 1	i 0 11	+11	i 0·2	0·3
Malaga	0·8	0 0	−12	(0 15)	− 7	0·2	—
Almeria	1·2	e 0 5	−13	e 0 16	−17	—	—

Feb. 7d. 12h. 14m. 56s. Epicentre 36°·5N. 19°·7E. (as on 1920 Nov. 28d.).

A = +·757, B = +·271, C = +·595 ; D = +·337, E = −·942 ;
G = +·560, H = +·200, K = −·804.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	3·5	66	0 46	− 9	e 1 36	− 1	1·7	2·2
Pompeii	5·9	318	e 0 59	−32	e 2 34	− 7	—	5·1
Mostar	7·0	349	e 1 47	+ 1	—	—	—	4·4
Sarajevo	7·4	353	e 1 49	− 3	i 3 1	−20	—	3·9
Rocca di Papa	7·5	317	e 1 59	+ 5	e 3 32	+ 8	—	5·1
Belgrade N.	8·3	4	e 1 55	−11	—	—	—	5·0
Florence	9·7	321	2 16	−10	—	—	—	5·1
Venice	10·5	330	4 32	?S	(4 32)	−11	—	7·0
Budapest	11·0	358	e 3 34	+50	—	—	—	—
Vienna	12·0	349	e 3 0	+ 1	i 5 14	− 5	—	8·6
Moncalieri	12·4	317	—	—	2 6	?	6·4	11·5
Innsbruck	12·4	333	e 3 11	+ 6	—	—	—	—
Algiers	13·3	276	3 23	+ 6	e 6 3	+12	—	14·1
Ravensburg	13·5	330	e 3 34	+14	e 6 4	+ 8	—	—
Zurich	13·6	326	e 3 26	+ 5	6 4?	+ 6	—	—
Strasbourg	14·9	328	3 33	− 5	e 6 34	+ 4	—	—
Paris	17·6	320	—	—	—	—	e 10·1	12·1
Uccle	18·0	327	e 4 16	− 1	e 7 33	− 7	e 9·7	—
Konigsberg	18·3	2	4 11	−10	e 7 32	−15	e 9·7	10·7
Hamburg	18·4	342	e 4 22	0	—	—	e 10·1	11·1
Granada	18·6	279	i 4 16	− 8	—	—	i 8·6	—
De Bilt	18·7	331	—	—	7 54	− 1	10·1	10·8
Toledo	18·9	288	e 4 30	+ 2	i 8 4	+ 4	e 9·6	13·0
Malaga	19·3	278	4 18	−15	8 18	+10	e 12·8	—
Kucino	22·9	27	5 0	−16	9 0	−23	e 12·9	14·1
Upsala	23·4	357	e 5 5	−16	e 9 9	−24	—	15·7
Baku	23·9	71	—	—	e 9 12	−30	15·7	16·7
Pulkovo	24·2	13	i 5 14	−16	9 21	−27	10·4	15·6
Eskdalemuir	24·4	328	—	—	i 9 42	−10	—	—
Ekaterinburg	33·9	40	6 37	−27	11 53	−46	19·1	21·1
Irkutsk	58·9	45	e 10 3	− 1	—	—	34·1	37·8
Ottawa	68·3	311	—	—	—	—	e 41·1	—
Toronto E.	71·4	311	—	—	—	—	42·1	—

Additional readings and notes: Athens iP = +58s., MN = +1·8m. Mostar iSR_1 = +3m.42s. Sarajevo eP = +2m.16s. Rocca di Papa eP = +2m.8s., iN = +4m.23s., iE = +4m.38s. Belgrade iP = +2m.5s., i = +2m.45s., +2m.58s., +3m.23s., +4m.19s., SR_1 = +4m.40s., ME = +5·3m. Florence P = +2m.24s. Vienna iZ = +3m.39s., iS = +6m.35s., SR_1 = +6m.54s. : true S is given as iE. Moncalieri e = 12h.11m.15s. Konigsberg iZ = +8m.25s., eLN = +11·9m., MZ = +12·4m., MN = +12·5m. Granada i = +4m.28s., +4m.59s., +6m.10s., and +15m.9s. De Bilt MN = +13·0m. Malaga readings are given as for 14h. Kucino readings have been increased by 12m. Pulkovo MN = +15·6m., MZ = +15·7m. Ekaterinburg MN = +19·8m. Irkutsk MZ = +37·5m., MN = +37·6m. Toronto LN = +42·7m.

Feb. 7d. 17h. 23m. 50s. Epicentre 48°·0N. 105°·0E.

A = −·173, B = +·646, C = +·743 ; D = +·966, E = +·259 ;
G = −·192, H = +·718, K = −·669.

Very rough.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		4·3	355	e 1 8	+ 1	1 58	0	2·3	—
Phu-Lien		27·2	177	9 10?	?	(10 40)	− 5	10·7	—
Ekaterinburg		27·9	305	—	—	—	—	13·2	16·1
Hyderabad		37·4	225	17 2	?L	—	—	(17·0)	—
Bombay		39·0	232	—	—	—	—	18·2	—
Baku		39·4	279	—	—	—	—	e 21·0	—
Pulkovo		43·0	315	—	—	—	—	e 23·2	25·0
De Bilt		59·0	315	—	—	—	—	e 33·2	34·4
Uccle		60·1	315	—	—	—	—	34·2	—
Ottawa	N.	86·6	0	—	—	—	—	e 47·8	—

Additional readings : Ekaterinburg MZ = +18·3m. Ottawa eN = +53m.52s. and +83m.40s., eE = +58m.22s.

Feb. 7d. 18h. 9m. 50s. Epicentre 5°·4N. 125°·2E. (as on 1923 Aug. 31d.).

A = −·574, B = +·813, C = +·094 ; D = +·817, E = +·576 ;
G = −·054, H = +·077, K = −·996.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	9·5	162	i 13 4	?	—	—	—	—
Manila	10·1	336	e 2 44	+13	(4 39)	+ 7	4·6	—
Hong Kong	20·0	329	4 40	− 1	8 21	− 2	11·9	13·5
Batavia	21·7	238	i 5 6	+ 5	—	—	—	—
Phu-Lien	23·7	312	5 52	+27	(9 40)	+ 2	9·7	18·0
Perth	38·4	192	12 0	?	—	—	—	—
Irkutsk	50·0	344	e 9 10?	+ 3	—	—	—	—
Apia	65·4	108	—	—	—	—	—	32·2
Ekaterinburg	71·8	329	e 12 35	+67	i 20 26	−22	33·2	44·4
Pulkovo	87·8	330	e 13 9	+ 5	e 23 1	[−13]	43·2	49·5
Ottawa	125·8	18	—	—	—	—	e 56·2	—
La Paz	162·8	131	20 10	[0]	—	—	—	—

Additional readings : Amboina i = +15m.4s. Hong Kong MN = +13·0m. Phu-Lien eL = +16·7m., MN = +17·0m. Ekaterinburg MN = +39·2m., MZ = +43·5m. Pulkovo MZ = +51·5m.

Feb. 7d. 18h. 18m. 0s. Epicentre 25°·0N. 121°·5E. (as on 1923 July 2d.).

A = −·472, B = +·773, C = +·423 ; D = +·853, E = +·522 ;
G = −·221, H = +·360, K = −·906.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		0·1	22	0 30	+28	—	—	0·7	0·9
Zi-ka-wei		6·2	359	1 43	+ 8	3 8	+19	—	5·0
Manila		10·4	183	e 3 7	+31	—	—	i 6·0	—
Osaka		15·5	48	5 7	+81	—	—	8·9	9·9
Irkutsk		30·2	340	6 38	+ 8	11 34	− 3	15·0	—
Simla	N.	39·2	290	—	—	—	—	e 21·8	—
Hyderabad		40·6	270	e 7 12	−48	14 17	+ 2	—	28·6
Colombo		43·6	254	7 40	−43	—	—	—	32·0
Kodaikanal		44·2	260	26 36	?L	—	—	(26·6)	—
Bombay		45·2	273	8 30	− 4	15 0	−18	22·8	27·2
Ekaterinburg		53·4	324	i 9 37	+ 8	i 17 16	+15	—	—
Baku		60·5	305	e 13 11	+175	e 22 12	+222	32·0	40·5
Kucino		65·9	322	—	—	—	—	e 34·2	—
Upsala	N.	75·1	330	—	—	—	—	e 41·0	—
De Bilt		85·0	327	—	—	—	—	e 47·0	48·7
Strasbourg		85·6	323	—	—	—	—	e 48·0	—
Uccle		86·1	326	—	—	—	—	e 45·0	—
Florence		86·1	319	12 0?	−54	—	—	—	—
Eskdalemuir		86·8	333	—	—	—	—	46·0	—
Granada		99·1	319	—	—	e 35 15	?	e 57·5	67·8
Ottawa		107·9	13	—	—	—	—	57·5	—
Toronto		108·7	15	—	—	—	—	60·4	—
La Paz		167·7	49	20 49	[+35]	—	—	—	—

Additional readings : Baku MN = +35·9m. De Bilt MN = +48·2m. Ottawa LN = +71·5m. Toronto LN = +63·5m.

Feb. 7d. 20h. 24m. 48s. Epicentre 1°·0S. 117°·0E.

$A = -·454$, $B = +·891$, $C = -·017$; $D = +·891$, $E = +·454$; $G = +·008$, $H = -·016$, $K = -1·000$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	11·4	243	—	—	—	—	i 7·1	—
Amboina	11·5	104	i 2 18	−34	i 3 6	?	—	—
Manila	16·1	14	e 6 55	?S	(e 6 55)	− 2	7·5	—
Perth	31·0	181	6 27	−11	—	—	—	—
Riverview	45·8	140	—	—	e 15 26	[+ 1]	e 19·2	23·4
Irkutsk	54·3	351	—	—	e 17 10	− 3	e 19·8	—
Apia	71·6	105	—	—	e 55 5	?	57·4	58·7
Ekaterinburg	73·2	332	i 11 40	+ 3	21 7	+ 3	30·2	—

Additional readings: Riverview eS = +15m.0s. MN = +25·9m.

Feb. 7d. Readings also at 0h. (Fordham), 5h. (near Athens), 8h. (near Tacubaya), 11h. (La Paz), 12h. (Mizusawa), 18h. (Taihoku (5)), 19h. (La Paz, Malaga, and Taihoku), 20h. (La Paz and Taihoku (2)), 21h. (Riverview), 22h. (Apia and Ekaterinburg).

Feb. 8d. Readings at 1h. (Perth and Riverview), 2h. (Ekaterinburg), 5h. (Ekaterinburg, Manila, and near Sumoto), 9h. (near Mizusawa), 10h. (Irkutsk and Ekaterinburg), 11h. (Taihoku), 12h. (near Athens), 14h. (Fordham and Taihoku), 15h. (2) and 20h. (near Taihoku).

Feb. 9d. 5h. 53m. 30s. Epicentre 16°·0N. 90°·0W. (as on 1920 Oct. 8d.).

$A = ·000$, $B = -·961$, $C = +·276$; $D = -1·000$, $E = ·000$; $G = ·000$, $H = -·276$, $K = -·961$.

Doubtful identification. The residuals suggest an origin rather further north.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Merida	4·9	4	1 26	+10	—	—	2·7	2·9
Oaxaca	6·6	280	1 24	−17	(2 19)	−41	2·3	2·5
Vera Cruz	6·6	299	—	—	(2 54)	− 6	2·9	4·8
Tacubaya E.	9·4	292	2 20	− 2	4 0	−13	4·0	4·7
N.	9·4	292	2 18	− 4	3 58	−15	3·9	4·7
Port au Prince	17·1	79	e 4 39	+33	—	—	—	—
Georgetown	25·5	24	e 6 30?	+47	—	—	e 12·8	—
Toronto N.	29·0	16	—	—	e 12 20?	+63	19·1	—
Ottawa	31·7	20	e 7 30?	+46	e 12 6	+ 3	e 14·5	—
La Paz	39·0	145	8 12	+26	—	—	—	—

Additional readings and notes: Merida readings have been increased by 4m., Oaxaca by 8m. Toronto eE = +12m.30s.? Ottawa LN = +20·5m.

Feb. 9d. 14h. 9m. 48s. Epicentre 22°·0S. 170°·0E.

(as on 1922 May 12d.).

The epicentre 22°·5S. 170°·5E. was independently computed before the use of that adopted on 1922 May 12 was noticed, and it suits the Wellington observations better, giving $\Delta = 19°{\cdot}1$ with residuals -1 and -2. But there are advantages in retaining the old epicentre for comparison.

$A = -{\cdot}913$, $B = +{\cdot}161$, $C = -{\cdot}375$; $D = +{\cdot}174$, $E = +{\cdot}985$; $G = +{\cdot}369$, $H = -{\cdot}065$, $K = -{\cdot}927$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		8·8	66	i 1 32	−41	2 52	−66	3·2	4·7
Apia		19·2	68	4 28	− 3	(e 7 52)	−14	e 7·9	12·2
Wellington		19·7	169	i 4 29	− 8	i 8 2	−15	i 9·8	11·8
Riverview		20·4	230	i 4 46	0	e 8 30	− 2	e 10·1	16·3
Sydney		20·4	230	4 42	− 4	8 36	+ 4	11·2	12·0
Melbourne		26·7	228	—	—	11 24	+49	—	22·2
Adelaide		30·3	238	—	—	i 11 30	− 9	17·6	19·4
Perth		48·8	245	e 9 18	+19	i 16 2	− 2	22·4	27·7
Honolulu	E.	53·5	38	9 32	+ 2	i 16 54	− 9	i 25·0	28·8
	N.	53·5	38	—	—	17 12	+ 9	—	27·9
Manila		60·4	303	e 10 22	+ 7	(i 18 26)	− 2	i 18·4	—
Batavia		62·8	274	e 10 16	−15	i 19 10	+12	28·3	35·8
Osaka		65·5	329	10 34	−14	—	—	—	25·2
Taihoku		66·5	313	19 55	?S	(19 55)	+11	—	—
Hong Kong		70·2	307	11 22	+ 4	21 34	[+21]	—	—
Zi-ka-wei		70·7	319	11 26	+ 5	21 25	[+ 9]	34·8	41·2
Berkeley	E.	87·3	46	—	—	—	—	e 40·7	43·1
Lick	E.	87·5	47	—	—	—	—	e 40·6	47·6
Sitka	N.	91·3	27	—	—	e 42 57	?L	56·9	—
Victoria	E.	92·1	38	23 56	?[S]	(23 56)	[+15]	42·7	51·8
Colombo		92·8	276	12 47	−44	—	—	47·8	53·2
Tucson	E.	93·0	55	—	—	—	—	e 52·2	58·6
Irkutsk		93·6	326	e 19 12?	?PR_2	e 24 5	[+15]	—	—
Kodaikanal		96·2	279	34 42	?	—	—	55·4	56·4
Hyderabad		97·8	285	13 51	− 8	24 25	[+13]	—	—
Bombay		103·4	284	e 18 32	?PR_1	24 59	[+19]	33·2	33·4
La Paz		111·3	119	e 18 2	[−23]	31 32	?	55·4	63·7
Chicago	E.	113·5	51	—	—	—	—	57·1	58·9
Ann Arbor		116·4	51	—	—	e 24 18	?	e 48·0?	62·2
Ekaterinburg		118·8	324	i 20 15	?PR_1	28 12	−28	39·2	78·4
Toronto	E.	119·7	50	e 20 22	?PR_1	30 2	+75	e 44·2	—
Georgetown	E.	121·1	56	—	—	—	—	60·3	65·5
Cheltenham	E.	121·2	56	—	—	—	—	59·3	68·8
Ithaca		121·7	51	—	—	—	—	62·2	—
Ottawa		122·3	49	e 20 35	?PR_1	e 30 12	+66	—	67·2
Harvard		125·7	52	—	—	—	—	i 65·0	67·7
Baku		126·6	305	e 21 17	?PR_1	—	—	60·2	91·3
Kucino		131·3	326	i 21 45	?PR_1	e 30 25	+16	61·5	78·9
Pulkovo		132·9	334	e 22 53	?PR_1	—	—	—	—
Upsala		137·5	340	19 4	[−31]	—	—	e 71·2	79·6
Konigsberg		140·0	333	—	—	—	—	e 74·2	76·2
Hamburg		145·0	340	e 19 46	[− 2]	—	—	80·2	87·2
Budapest		145·5	325	e 19 42	[− 7]	—	—	e 78·7	—
Vienna	Z.	146·4	329	e 19 49	[− 1]	—	—	e 79·2	92·2
Athens	E.	147·0	307	19 52	[+ 1]	—	—	50·2	—
Stonyhurst		147·6	350	—	—	—	—	e 82·2	—
De Bilt		147·7	343	i 19 56	[+ 4]	e 48 12	?SR_2	e 75·2	84·8
Uccle		149·1	343	e 19 55	[+ 1]	—	—	74·2	82·2
Oxford		149·5	349	—	—	—	—	84·2	—
Kew		149·6	350	—	—	—	—	—	101·2
Strasbourg		149·9	333	i 20 3	[+ 7]	—	—	77·2	—
Paris		151·5	343	—	—	—	—	81·2	91·2
Florence		152·0	326	19 27	[−32]	—	—	65·2	80·2
Rocca di Papa		152·6	321	20 2	[+ 2]	—	—	e 72·9	94·4
Moncalieri		152·8	332	19 54	[− 6]	36 43	?	56·8	97·0
Tortosa	N.	159·3	337	—	—	—	—	e 82·2	100·0
Algiers		161·4	326	e 20 17	[+ 8]	e 31 17	?PR_2	—	97·2
Toledo		161·5	346	20 9	[0]	35 6	?	—	94·4
Alicante		161·8	335	—	—	—	—	e 34·2	—
Lisbon		163·3	358	—	—	—	—	e 82·4	91·4
Almeria		163·7	338	20 26	[+15]	—	—	—	—
Granada		163·9	341	e 20 6	[− 5]	—	—	72·8	95·7
Rio Tinto		164·0	350	73 12	?L	—	—	(73·2)	107·2
Malaga		164·5	343	20 6	[− 5]	e 35 21	?	e 63·2	89·2
San Fernando		165·2	348	21 22	[+70]	35 42	?	85·7	95·7

For Notes see next page.

NOTES TO FEB. 9d. 14h. 9m. 48s.

Additional readings: Apia S = +6m.37s. Wellington iSR$_1$ = +8m.27s. Riverview iP = +5m.2s. and +5m.46s., PS = +8m.42s. and +9m.0s., MN = +11·9m., MZ = +16·4m.; T$_0$ = 14h.9m.52s. Melbourne PR$_2$? = +6m.24s., SR$_2$ = +16m.42s. Perth PR$_1$ = +11m.24s., PR$_2$ = +12m.2s., SR$_1$ = +18m.50s., SR$_2$ = +20m.5s., L = +22·5m. Honolulu e = +13m.34s., eN = +14m.50s., eE = +20m.21s., eN = +20m.37s., SR$_2$N = +22m.37s., SR$_2$E = +22m.42s.; T$_0$ = 14h.10m.5s. Batavia iE = +14m.35s. = PR$_2$ − 2s. Osaka MN = +38·3m. Zi-ka-wei PR$_1$ = +5m.58s., PR$_2$ = +17m.37s., SR$_1$ = +27m.0s., SR$_2$ = +30m.58s. Berkeley LEN = +41·2m., MN = +43·6m. Lick eLZ = +41·4m., eLN = +41·5m. Victoria SE = +31m.5s. = SR$_1$ + 8s., LN = +42·6m., MN = +62·0m. La Paz P = +19m.32s. = PR$_1$ + 5s., PR$_1$ = +27m.7s. = S − 33s., L = +58·8m. Chicago iPSE? = +30m.40s., eN = 46m.12s., eE = +51m.12s., LN = +55·4m., MN = +59·5m. Ann Arbor S? = +30m.12s., SR$_1$? = +36m.12s. Ekaterinburg e = +26m.35s., MN = +70·6m., MZ = +78·1m. Toronto eP = +20m.47s. = PR$_1$ + 25s. Cheltenham PSN = +32m.19s., PSE = +32m.54s., SR$_2$E = +44m.26s., eN = +49m.7s., eE = +54m.59s. Harvard eLN = +65·2m., MN = +76·2m. Baku e = +33m.48s., +38m.39s. = SR$_1$ + 28s., and +43m.10s. = SR$_2$ − 45s. Kucino MN = +77·2m. Konigsberg MZ = +78·2m. Hamburg MZ = +82·2m. Vienna iPZ = +19m.53s. Athens eE = +31m.29s. and +38m.57s. De Bilt MNZ = +81½2m. Paris e = +75m.12s., MN = +84·2m. Rocca di Papa iP = +20m.11s., eLN = +90·4m. Toledo MNW = +94·0m. Granada iP = +20m.21s., i = +33m.2s. and +33m.31s. San Fernando PR$_1$ = +25m.12s., MN = +96·7m.

Feb. 9d. Readings also at 0h. (Taihoku), 3h. (Ekaterinburg, near Mizusawa, and near Sumoto), 5h. (near Athens), 12h. (Apia and near Sumoto (2)), 15h. (Taihoku and Riverview), 19h. (Taihoku).

Feb. 10d. 3h. 22m. 20s. Epicentre 16°·0N. 90°·0W. (as on 9d.).

		Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Merida	Z.	4·9	4	1 25	+ 9	—	—	2·1	2·2
Oaxaca		6·6	280	1 25	−16	2 57	− 3	3·0	3·3
Vera Cruz		6·6	299	1 0	−41	—	—	1·7	2·3
Puebla		8·4	292	3 10	+63	(3 52)	+ 5	3·9	4·3
Tacubaya		9·4	292	1 56	−26	—	—	2·9	3·1
Mazatlan		17·0	298	—	—	—	—	7·9	8·1
Tucson		24·9	314	—	—	—	—	10·8	11·2
Chicago	N.	25·8	4	10 40	?S	(10 40)	+22	16·3	—
Ann Arbor	N.	26·8	10	—	—	e 10 34	− 3	18·2	22·2
Toronto		29·0	16	—	—	11 15	− 2	22·9	—
Ottawa		31·7	20	—	—	e 12 10	+ 7	e 18·4	—
La Paz		39·0	145	7 48	+ 2	—	—	—	—
Victoria	E.	42·3	330	—	—	—	—	21·8	26·1
Ekaterinburg		103·2	16	—	—	—	—	68·2	—

Additional readings and notes: Merida readings have been increased by 4m., Tacubaya by 1m. Chicago PE? = +11m.11s. = SR$_1$ − 13s. Toronto eE = +12m.32s. Ottawa eLN = +22·7m.

Feb. 10d. 8h. 16m. 54s. (I)
10h. 38m. 18s. (II)
12h. 14m. 45s. (III)
21h. 43m. 40s. (IV)
} Epicentre 22°·0S. 170°·0E. (as on Feb. 9d.).

(An independent computation gave for the epicentre 21°·0S. 171°·5E., which suits Riverview better, but there are advantages in retaining an old epicentre).

		Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Suva	8·8	66	2 18	+ 5	—	—	4·5	5·6
II		8·8	66	1 42	−31	—	—	3·8	5·0
III		8·8	66	e 1 57	−16	—	—	4·1	5·3
IV		8·8	66	i 2 8	− 5	—	—	i 3·5	5·3
I	Wellington	19·7	169	4 49	+12	i 8 31	+14	e 10·6	12·4
II		19·7	169	4 31	− 6	i 8 5	−12	e 10·2	12·1
III		19·7	169	i 4 37	0	i 8 24	+ 7	10·4	—
IV		19·7	169	i 4 22	−15	i 8 7	−10	10·3	13·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Riverview	20·4	230	e 4 48	+ 2	e 8 59	+27	e 10·4	14·7
II		20·4	230	e 4 46	0	e 8 46	+14	e 10·1	12·1
III		20·4	230	e 4 47	+ 1	e 8 45	+13	e 10·1	12·2
IV		20·4	230	e 4 47	+ 1	e 8 42	+10	e 10·6	13·8
I	Sydney	20·4	230	4 30	−16	—	—	11·1	12·1
II		20·4	230	4 42	− 4	—	—	10·8	12·0
III		20·4	230	4 57	+11	8 51	+19	11·1	12·3
IV		20·4	230	7 50	?S	(7 50)	−42	—	11·3
I	Melbourne	26·7	228	—	—	—	—	—	16·1
II		26·7	228	—	—	(10 12)	−23	10·2	15·4
III		26·7	228	—	—	(10 9)	−26	10·2	15·7
I	Perth	48·8	245	—	—	—	—	24·1	—
II		48·8	245	—	—	—	—	22·9	—
III		48·8	245	—	—	16 15	+11	—	—
IV		48·8	245	—	—	—	—	18·3	—
I	La Paz	111·3	119	42 34	?	—	—	—	—
I	Chicago E.	113·5	51	—	—	—	—	e 66·1	—
II	E.	113·5	51	—	—	—	—	e 67·7	—
III	E.	113·5	51	—	—	—	—	e 68·1	—
I	Ann Arbor	116·4	51	—	—	—	—	e 62·5	—
III		116·4	51	—	—	—	—	e 63·0	—
I	Ekaterinburg	118·8	324	—	—	—	—	63·1	—
II		118·8	324	—	—	—	—	62·7	—
III		118·8	324	—	—	—	—	61·3	—
II	Toronto E.	119·7	50	—	—	—	—	67·7	—
III	E.	119·7	50	—	—	—	—	66·1	—
IV	E.	119·7	50	—	—	—	—	64·6	—
I	Ottawa	122·3	49	—	—	—	—	e 61·4	—
II		122·3	49	—	—	—	—	e 67·7	—
III		122·3	49	—	—	—	—	e 61·3	—
IV		122·3	49	—	—	—	—	e 64·0	—

Additional readings and notes: Suva IV i = 21h.41m.0s., also P has been increased by 10m. Wellington III SR_1 = +8m.48s., SR_2 = +8m.57s., IV PR_1 = +4m.40s. Riverview I PS = +9m.13s., MN = +11·4m., T_e = 8h.16m.24s.; II MN = +12·2m., T_e = 10h.38m.0s.; III PR_1 = +5m.17s., PS = +9m.0s., MN = +11·7m., T_e = 12h.14m.16s.; IV MN = +12·1m., T_e = 21h.43m.30s. Ann Arbor I LN = +66·7m., III LN = +68·5m.; true L is given as e in both shocks. Toronto IV LN = +74·6m.

Feb. 10d. Readings also at 2h. (near Oaxaca (2)), 4h. (Mizusawa), 8h. (La Plata), 9h. (near Lick and Berkeley), 10h. (Suva, Wellington, and near Victoria), 11h. (near Granada and Malaga), 12h. (Wellington and near Athens), 15h. (La Paz), 20h. (Suva), 21h. (near Taihoku).

Feb. 11d. Readings also at 0h. (near Amboina), 6h. (La Paz), 8h. (La Paz and La Plata), 9h. (Azores), 11h. (near La Paz), 12h. and 15h. (near Taihoku), 21h. (Baku), 23h. (Taihoku).

Feb. 12d. 6h. 27m. 30s. Epicentre 40°·0N. 42°·0E. (as on 1924 Sept. 27d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	6·0	85	i 1 36	+ 4	i 2 51	+ 7	3·6	—
Ekaterinburg	20·7	30	i 4 32	−17	7 59	−39	10·5	—
Pulkovo	21·1	344	4 54	0	e 8 51	+ 5	10·8	12·9

Baku gives also i = +1m.43s. and +2m.30s., iS = +3m.7s.

Feb. 12d. Readings also at 2h. (Apia, Colombo, and near Taihoku), 3h. (Toronto, Ottawa, Ekaterinburg, and near Port au Prince), 7h. (Apia, Manila, and near Athens), 9h. (near Athens), 10h. (Toronto), 12h. (Florence), 21h. and 23h. (Apia).

Feb. 13d. 7h. 12m. 52s. Epicentre 35·°5N. 143°·5E. (as on 1923 May 31d.).

$A = -·654$, $B = +·484$, $C = +·581$.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	4·1	1 1	− 3	1 48	− 5	—	—
	N.	4·1	1 0	− 4	1 44	− 9	—	—
Nagoya		5·3	0 58	−24	—	—	—	—
Osaka		6·6	1 43	+ 2	(2 30)	−30	2·5	2·9
Kobe		6·8	—	—	—	—	—	2·4

No additional readings.

Feb. 13d. 13h. 32m. 35s. Epicentre 11°·5N. 128°·5E.

$A = -·610$, $B = +·767$, $C = +·199$; $D = +·783$, $E = +·623$; $G = -·124$, $H = +·156$, $K = -·980$.

Epicentre deduced from 11°N. 127°E. of 1924 May 16d.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·0	294	e 1 59	− 2	(i 3 30)	− 7	i 3·5	5·2
Hong Kong	17·5	310	7 35	?S	(7 35)	+ 6	—	—
Irkutsk	45·2	339	e 8 34	0	e 15 18	0	25·4	—
Colombo	48·2	270	14 50	?S	(14 50)	−66	21·9	25·6
Pulkovo	84·2	330	—	—	—	—	50·4	58·2

Additional readings: Manila MN = +4·4m. Pulkovo MZ = +58·3m., MN = +59·0m.

Feb. 13d. 13h. 49m. 15s. Epicentre 29°·2S. 177°·0W. (as on 1921 May 14d.).

$A = -·872$, $B = -·046$, $C = -·488$; $D = -·052$, $E = +·999$; $G = +·487$, $H = +·026$, $K = -·873$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington		13·8	206	3 47	+24	i 6 8	+ 5	6·8	12·8
Apia		16·1	18	3 51	− 2	6 26	−31	7·4	9·6
Riverview		27·5	251	e 6 4	+ 1	e 10 49	− 1	e 12·8	14·8
Sydney		27·5	251	6 3	0	11 3	+13	14·2	16·0
Melbourne		32·7	244	e 6 9	−45	—	—	16·0	18·4
Adelaide		37·8	249	e 7 21	−15	e 13 51	+16	e 20·8	23·8
Perth		57·0	249	16 10	?S	(16 10)	−96	31·6	—
Manila		74·2	297	e 11 20	−23	—	—	12·6	—
Batavia		74·9	271	i 11 56	+ 8	—	—	39·2	—
Osaka		78·1	322	12 1	− 7	—	—	16·5	22·6
Hong Kong		83·9	299	23 3	?S	(23 3)	− 5	—	—
Victoria		91·3	32	23 44	?[S]	23 44	[+ 8]	41·3	44·8
La Plata		93·9	133	—	—	24 8	[+19]	44·2	—
La Paz		97·6	114	—	—	i 24 30	[+19]	44·8	46·4
Colombo		104·7	270	—	—	—	—	65·2	68·9
Irkutsk		106·3	321	e 18 54	?PR_1	e 27 58	+63	46·8	61·4
Chicago	E.	108·5	51	e 44 45	?	e 52 27	?L	60·0	—
	N.	108·5	51	—	—	e 55 37	?L	58·6	60·3
Kodaikanal		108·5	272	57 9	?L	—	—	64·8	68·4
Hyderabad		110·8	278	e 16 40	+99	29 10	+95	—	59·0
Ann Arbor		111·4	52	e 21 15	?PR_1	e 29 27	+106	42·2	—
Rio de Janeiro		111·5	134	e 18 0	?	29 0	+78	48·9	—
Toronto	E.	114·8	52	—	—	e 29 23	+75	55·8	59·9
	N.	114·8	52	e 20 53	?PR_1	i 27 37	−31	55·6	—
Bombay		116·3	278	e 21 28	?PR_1	25 51	[+18]	29·8	68·0
Simla		117·1	292	—	—	—	—	e 68·6	—
Ottawa	E.	117·8	51	e 20 45	?PR_1	i 30 0	+88	57·8	—
Ekaterinburg		131·6	322	i 19 21	[− 1]	i 22 45	?PR_1	58·2	72·0
Baku		140·4	299	19 46	[+ 6]	30 21	?	70·8	83·5
Kucino		143·7	326	22 49	?PR_1	e 33 5	?	69·6	76·8
Pulkovo		144·3	337	19 40	[− 7]	e 23 0	?PR_1	62·8	85·7
Upsala		147·8	347	—	—	—	—	e 73·8	—
Konigsberg		151·4	339	—	—	—	—	e 80·8	82·8
Edinburgh		152·9	8	—	—	—	—	82·8	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Eskdalemuir	153·5	8	—	—	—	—	76·8	—
Hamburg	155·1	350	—	—	—	—	e 76·8	—
Stonyhurst	155·1	8	—	—	—	—	e 81·8	—
Bidston	155·4	9	—	—	—	—	—	86·4
De Bilt	157·1	357	i 20 8	[+ 3]	—	—	e 76·8	89·6
Oxford	157·2	7	—	—	—	—	78·2	89·0
Kew	157·6	6	—	—	—	—	—	96·8
Vienna	158·3	335	e 20 8	[+ 2]	—	—	e 79·8	—
Uccle	158·4	358	—	—	—	—	e 74·8	—
Strasbourg	160·3	351	e 20 11	[+ 3]	—	—	e 77·8	—
Paris	160·4	1	e 20 10	[+ 2]	—	—	84·8	87·8
Rocca di Papa	165·2	331	e 20 2	[−10]	e 28 33	?PR_2	e 87·6	—
Toledo	167·9	27	—	—	—	—	e 83·1	94·3
Tortosa N.	168·1	11	—	—	—	—	e 84·8	106·2
San Fernando	169·4	44	25 50	?PR_1	46 15	?SR_1	88·8	90·8
Granada	170·3	33	e 21 33	[+78]	—	—	e 82·2	87·6

Additional readings: Riverview ePR_1 = +7m.0s. and +7m.15s., MZ = +14·5m., MN = +15·2m. Melbourne ? = +8m.33s., +14m.21s., and +15m.57s. Adelaide ePR_1 = +9m.27s., eSR_1 = +16m.45s., SR_2 = +18m.33s. Perth S = +24m.58s., SR_1 = +28m.34s. Osaka MN = +22·8m Victoria LN = +42·1m. Colombo P = 13h.47m.25s. Irkutsk MN = +60·9m. Chicago readings (except L) are given as e simply. Ann Arbor iE = +33m.3s. Ottawa eE = +25m.49s. = [S] +11s. and +27m.0s., eN = +28m.0s. Ekaterinburg MZ = +71·9m., MN = +74·1m. Baku PR_1 = +23m.19s., SR_1 = +36m.11s., SR_2 = +40m.7s., SR_3 = +43m.17s., L = +52·2m., MN = +80·0m. Kucino eL = +47·0m., MN = +75·3m. Pulkovo MN = +79·2m., MZ = +84·8m. De Bilt iPR_1Z = +24m.11s., MNZ = +85·7m. Vienna iZ = +20m.41s. Strasbourg ePR_1? = +24m.29s. Paris e = +24m.31s. and +30m.32s., MN = +90·8m. Rocca di Papa e = +24m.20s. Toledo MNW = +94·4m. San Fernando PR_1 = +32m.40s. = PR_2?, MN = +101·8m.

Feb. 13d. Readings also at 0h. (Apia), 4h (2) and 5h. (La Paz), 9h. (Toronto and near Tacubaya), 10h. (Ottawa), 11h. (Irkutsk), 12h. (near Sumoto), 14h. (Irkutsk), 18h. (near Mizusawa).

Feb. 14d. 0h. 42m. 18s. Epicentre 37°·0N. 138°·5E. (as on 1924 Oct. 2d.).

A = −·599, B = +·529, C = +·602.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	2·2	214	1 33	− 1	—	—	—	—
Mizusawa E.	2·9	44	0 44	− 1	1 17	− 3	—	—
Osaka	3·5	227	0 44	−11	—	—	1·8	2·5
Kobe	3·6	230	1 9	+13	—	—	2·0	2·0

Additional readings: Mizusawa PN = +43s. Osaka MN = +2·1m.

Feb. 14d. Readings also at 2h. (Paris), 3h. (near Athens), 9h. (Mizusawa), 19h. (La Paz).

Feb. 15d. 7h. 48m. 0s. Epicentre 34°·5N. 138°·0E. (as on 1924 Dec. 21d.).

A = −·613, B = +·551, C = +·566.

The epicentre is probably nearer the stations, and may be the same as that of Feb. 14d. 0h., viz., 34°·5N. 135°·0E., but the observations compare well with those of 1924 Dec. 21d.).

	Δ	P.	O−C.	L.	M.
	°	m. s.	s.	m.	m.
Nagoya	1·2	0 32	+14	—	—
Osaka	2·2	0 32	− 2	0·7	1·1
Kobe	2·4	0 34	− 3	0·7	0·7
Sumoto	2·6	0 40	− 1	0·9	0·9

Osaka gives MN = +1·0m.

Feb. 15d. Readings also at 5h. (Ekaterinburg (2)), 10h. (Taihoku), 11h. (Irkutsk, Ekaterinburg, and near Mizusawa), 12h. (Baku), 17h. (La Paz).

Feb. 16d. 17h. 39m. 8s. Epicentre 58°·0S. 7°·0W.

A = +·526, B = −·065, C = −·848; D = −·122, E = −·993; G = −·842, H = +·103, K = −·530.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Cape Town		29·5	46	11 27	?S	(11 27)	+ 1	—	13·4
Johannesburg		40·3	53	—	—	—	—	16·9	—
La Plata	E.	40·6	282	i 7 56	− 4	13 59	−16	22·8	25·0
	N.	40·6	282	7 55	− 5	14 3	−12	—	—
Rio de Janeiro		43·6	309	i 8 15	− 8	14 44	−12	19·9	22·0
La Paz		60·9	285	i 10 28	+10	i 18 57	+22	28·8	34·6
Perth		78·2	134	—	—	18 7	?PR_3	36·9	—
Wellington		80·7	182	—	—	22 32	+ 1	e 37·2	—
Melbourne		81·6	159	—	—	23 4	+22	33·4	44·6
Adelaide		82·7	152	—	—	i 22 46	− 8	e 38·7 ?	47·1
Riverview		86·4	163	e 13 57	+62	e 23 31	− 3	e 35·3	46·3
Sydney		86·4	163	23 22	?S	(23 22)	−12	35·7	37·1
Helwan		93·5	34	e 14 52	+77	25 0	+ 9	—	48·6
Colombo		94·2	84	23 52?	?[S]	(23 52?)	[0]	53·0	55·7
San Fernando		94·4	0	13 0	−40	24 57	− 3	41·4	52·9
Malaga		94·8	3	e 12 49	−53	e 25 1	− 3	e 43·6	50·9
Algiers		95·2	9	—	—	e 25 5	− 3	e 41·9	44·9
Granada		95·2	3	e 16 36	?	—	—	e 42·1	52·2
Kodaikanal		95·8	80	44 40	?L	—	—	(44·7)	—
Alicante		96·5	5	—	—	—	—	e 39·6	—
Lisbon		96·8	359	—	—	—	—	e 40·8	—
Toledo		97·9	2	—	—	e 25 24	−11	42·2	45·4
Tortosa	N.	99·0	5	—	—	27 17	+91	e 43·9	56·4
Bombay		100·8	70	e 25 6	?S	(e 25 6)	−57	43·2	—
Rocca di Papa		101·1	14	—	—	—	—	46·4	—
Hyderabad		102·4	77	17 59	?PR_1	24 49	[+13]	—	45·2
Florence		102·9	13	—	—	—	—	42·9	55·9
Moncalieri		103·7	10	e 19 18	?PR_1	30 11	?	43·1	—
Paris		107·1	5	15 52?	?	—	—	e 43·9	47·9
Strasbourg		107·2	9	—	—	—	—	e 30·9	—
Uccle		109·2	6	—	—	e 28 28	+67	e 45·9	49·9
Baku		109·2	42	e 19 15	?PR_1	28 42	+81	49·4	57·1
Kew		109·6	4	—	—	—	—	—	53·9
Oxford		110·1	3	—	—	—	—	44·3	52·0
De Bilt		110·6	7	—	—	e 27 11	−22	e 44·9	48·9
Bidston		111·5	3	29 12?	?S	(29 12?)	+90	48·9	65·9
Stonyhurst		111·9	3	e 9 41	?	—	—	e 45·9	—
Hamburg		112·4	10	—	—	e 33 52?	?	47·9	—
Georgetown	E.	113·1	306	—	—	e 29 6	+71	58·3	—
Fordham		113·4	311	—	—	—	—	e 30·0	35·6
Eskdalemuir		113·4	2	—	—	e 28 52	+55	—	—
Harvard		113·6	312	—	—	e 35 25	?SR_1	53·3	58·2
Edinburgh		113·9	2	e 39 52	?	—	—	46·9	49·9
Ottawa		117·9	311	e 20 11	?PR_1	i 29 52	+79	e 44·9	56·9
Toronto	E.	118·0	308	e 20 12	?PR_1	e 29 46	+72	56·0	60·4
	N.	118·0	308	i 20 11	?PR_1	e 29 48	+74	40·9	60·1
Ann Arbor		118·7	304	e 24 28	?	e 30 52	?	65·4	—
Upsala		119·4	13	—	—	—	—	e 51·9	—
Chicago	N.	120·0	300	20 29	?PR_1	29 56	+67	40·9	71·2
Pulkovo		121·4	20	e 20 36	?PR_1	—	—	50·4	69·2
Manila		122·0	116	—	—	e 29 28	+24	(e 50·4)	—
Hong Kong		125·2	102	—	—	—	—	—	68·9
Ekaterinburg		126·9	38	19 14	[+ 3]	31 30	?	51·9	63·5
Honolulu	E.	137·8	220	—	—	—	—	64·2	—
Irkutsk		142·1	67	e 19 43	[0]	e 41 25	?SR_1	56·9	—
Victoria	N.	142·2	283	32 54	?	41 16	?SR_1	61·3	79·7

Additional readings: La Plata PR_1N = +9m.29s., PR_1E = +9m.32s., SR_1 = +16m.33s.; T_e = +17h.39m.18s. Rio de Janeiro MN = +21·9m. La Paz i = +10m.48s., PR_1 = +12m.56s., PS = +19m.22s., SR_1 = +23m.5s., SR_2 = +25m.0s.; T_e = 17h.39m.15s. Perth L? = +37·9m. Adelaide eSR_1 = +28m.28s., e = +31m.4s., i = +35m.22s. Riverview e = +39m.7s., MNZ = +49·5m. Sydney S = +29m.22s. San Fernando MN = +45·9m. Granada i = +17m.30s. = PR_1 − 12s. and +28m.16s. Alicante eLN = +42·6m. Toledo MNW = +45·8m. Bombay S = +32m.52s.

Continued on next page.

$=SR_1+4s.$ Paris MN = +49·9m. Baku $SR_1 = +34m.40s.$, MN = +54·0m. De Bilt eN = +28m.53s. and +35m.14s., eE = +34m.47s., MZ = +61·7m., MN = +61·9m. Georgetown eN = +29m.12s., LN = +58·1m. Harvard MN = +56·5m. Ottawa e = +36m.33s. $=SR_1+12s.$, +40m.52s. $=SR_2-56s.$, MN = +57·4m. Toronto iN = +36m.15s. $=SR_1-7s.$ Chicago eN = +27m.1s. and +36m.31s. Pulkovo e = +24m.26s. and +35m.28s., MZ = +64·9m , MN = +65·4m. Ekaterinburg PS = +33m.1s., MN = +60·7m., MZ = +78·4m. Victoria LE = +62·0m., ME = +76·4m.

Feb. 16d. Readings also at 0h. (Baku), 19h. (Uccle, Pulkovo, La Paz, and near Tacubaya), 20h. (Strasbourg, La Paz, and near Batavia and Malabar), 21h. (near La Paz).

Feb. 17d. 14h. 13m. 18s. Epicentre 51°·7S. 173°·8E. (as on 1920 May 9d.).

A = −·616, B = +·067, C = −·785 ; D = +·108, E = +·994 ;
G = +·780, H = −·085, K = −·620.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	10·4	4	—	—	—	—	e 3·8	17·2
Riverview	24·2	309	e 5 29	− 1	e 9 46	− 2	e 10·8	13·4
Sydney	24·2	309	6 24	+54	—	—	15·5	16·7
Perth	46·0	272	—	—	15 42	+14	—	—
Baku	140·5	276	—	—	—	—	65·7	—
Ekaterinburg	142·2	305	—	—	—	—	58·7	—
Pulkovo	158·3	306	e 19 28	[−38]	—	—	—	—

Riverview gives also MN = +14·0m. ; $T_o = 14h.13m.21s.$

Feb. 17d. Readings also at 6h. (Granada, Algiers, De Bilt, Tortosa, Baku, and Ekaterinburg), 8h. (near Sumoto), 11h. (La Paz), 16h. (La Paz and near Algiers), 17h. (near Algiers), 20h. (near Zurich), 22h. and 23h. (3) (near Taihoku).

Feb. 18d. 11h. 31m. 18s. Epicentre 9°·0N. 141°·0E. (as on 1919 March 30d.).

A = −·768, B = +·622, C = +·156 ; D = +·629, E = +·777 ;
G = −·121, H = +·098, K = −·988.

It is impossible to reconcile the observations at Irkutsk and Ekaterinburg. This solution accepts the latter as correct and refers to an old epicentre. But if we may presume an error of 4 min. in the Ekaterinburg S we may bring Irkutsk into line as below, though Baku is then out.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	52·6	333	e 10 8	+44	e 14 38	−133	19·7	23·0
Ekaterinburg	77·3	328	12 2	− 1	e 21 52	0	29·7	38·8
Baku	85·1	311	—	—	e 23 22	+ 2	40·2	47·2
Kucino	89·8	327	—	—	—	—	e 38·9	—
Pulkovo	92·4	332	e 13 9	−20	—	—	37·7	47·2
De Bilt	108·2	333	—	—	—	—	e 52·7	—
Innsbruck	108·2	327	15 54	+65	—	—	—	—
Strasbourg	109·4	330	—	—	—	—	51·7	—

Additional readings and notes: Irkutsk MN = +22·8m., MZ = +22·9m., P and S are given as e s simply. Pulkovo MN = +41·0m., MZ = +45·7m., P is given as e simply. Ekaterinburg i = +13m.15s., e = +23m.38s., MN = +34·2m., MZ = +38·0m. Baku S is given as e simply, also e = +31m.13s. MN = +47·7m.

Feb. 18d. 11h. 35m. 50s. Epicentre 69°·0N. 145°·0E.

A = −·294, B = +·206, C = +·934 ; D = +·574, E = +·819 ;
G = −·765, H = +·536, K = −·358.

(Alternative solution. See note to previous solution).

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	25·2	249	e 5 36	− 4	e 10 6	− 1	15·2	18·5
Ekaterinburg	36·8	294	7 30	+ 2	e 17 20	+239	25·2	34·2
Pulkovo	43·1	318	e 8 37	+18	—	—	33·2	42·7
Kucino	44·6	311	—	—	—	—	e 34·4	—
Baku	54·6	291	—	—	e 18 50	+94	35·7	42·7
De Bilt	55·4	330	—	—	—	—	e 48·2	—
Strasbourg	58·3	328	—	—	—	—	47·2	—
Innsbruck	58·8	325	e 10 22	+18	—	—	—	—

Additional readings and notes: Irkutsk MN = +18·2m., MZ = +18·4m., P and S are given simply as e. Ekaterinburg i = +8m.43s., e = +19m.6s., MN = +29·7m., MZ = +33·5m. Pulkovo MN = +36·5m., MZ = +41·2m., P is given as e simply. Baku e = +26m.41s., MN = +43·2m., S is given as e simply.

Feb. 18d. Readings also at 0h. (Taihoku), 3h. (La Paz), 5h. (Hyderabad and Ekaterinburg), 8h. (near Mizusawa), 12h. (Mizusawa and Ekaterinburg), 13h. (Ekaterinburg), 18h. (Irkutsk and Ekaterinburg), 19h. (Rocca di Papa, Granada, Kucino, Baku, and Pulkovo), 22h. (near Sumoto).

Feb. 19d. Readings at 1h. (Ekaterinburg), 5h. (Granada), 9h. (near Athens), 11h. (La Plata and La Paz), 15h. (Wellington, Riverview, Ekaterinburg, Nagoya, and near Mizusawa), 16h. (Granada), 23h. (near Mizusawa).

Feb. 20d. 1h. 2m. 20s. Epicentre **46°·0N. 149°·0E.**

(as on 1923 Aug. 22d.).

A = −·596, B = +·358, C = +·719 ; D = +·515, E = +·857 ;
G = −·617, H = +·370, K = −·695.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		4·4	281	1 32	+24	—	—	2·7	—
Mizusawa	E.	8·9	223	2 15	0	3 52	− 9	—	—
	N.	8·9	223	2 17	+ 2	3 51	−10	—	—
Nagoya		14·1	224	3 23	− 4	(6 17)	+ 7	6·3	9·6
Osaka		15·3	227	3 44	+ 1	(6 50)	+11	6·8	10·0
Kobe		15·4	228	2 46	−58	5 52	−49	7·0	9·2
Zi-ka-wei		25·9	245	e 5 37	−10	e 10 8	−12	—	—
Irkutsk		29·5	299	e 6 22	− 1	11 24	− 2	15·7	—
Taihoku	E.	30·3	235	—	—	—	—	16·7	18·9
Hong Kong		36·8	240	7 11	−17	(12 37)	−44	12·6	23·5
Manila		39·2	226	e 7 33	−15	—	—	i 15·2	16·3
Phu-Lien	N.	42·7	247	i 8 2	−14	i 14 28	−16	e 22·9	27·8
Honolulu		49·3	102	—	—	15 48	−22	22·1	23·0
Ekaterinburg		52·2	316	i 9 20	− 1	i 16 45	− 1	23·7	30·9
Amboina		53·0	207	i 9 4	−22	i 16 28	−28	22·2	—
Calcutta	E.	53·8	267	9 32	0	17 8	+ 2	—	—
Victoria		56·2	53	9 40	− 7	17 28	− 8	24·5	27·4
Simla	E.	56·2	280	9 52	+ 5	17 34	− 2	29·5	36·3
	N.	56·2	280	9 10	−37	17 46	+10	e 30·2	39·2
Kucino		63·1	324	10 35	+ 2	19 13	+11	31·2	40·1
Pulkovo		63·1	330	10 36	+ 3	19 5	+ 3	31·7	42·2
Hyderabad		64·1	270	i 10 40	+ 1	19 15	+ 1	33·1	41·3
Batavia		64·2	228	i 10 42	+ 3	i 19 13	− 2	e 33·7	—
Upsala	N.	67·0	336	e 10 59	+ 1	e 19 47	− 3	e 31·7	44·0
Bombay		67·0	275	e 11 24	+26	17 58	−112	—	39·9
Baku		67·6	306	i 11 9	+ 7	i 20 9	+12	31·2	38·2
Piatigorsk		68·7	312	11 12	+ 3	20 23	+13	32·7	45·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kodaikanal		69·9	266	20 28	?S	(20 28)	+ 3	40·6	51·2
Konigsberg		70·2	331	i 11 25	+ 7	20 38	+10	e 34·2	38·7
Colombo		70·6	261	—	—	21 40	+67	44·3	47·3
Lemberg		73·0	325	e 11 34	− 2	e 21 4	+ 2	e 39·8	47·2
Dyce		74·1	344	—	—	21 6	− 9	38·2	—
Hamburg		74·5	337	i 11 45	− 1	e 21 21	+ 1	e 35·7	45·7
Edinburgh		75·5	345	—	—	e 21 55	+23	33·7	50·8
Eskdalemuir		76·0	345	11 55	0	21 41	+ 4	35·7	47·7
Budapest		76·8	328	11 54	− 6	21 54	+ 7	e 37·7	49·6
De Bilt		77·2	335	12 3	+ 1	21 52	+ 1	e 34·7	40·4
Vienna		77·2	330	e 12 2	0	21 59	+ 8	e 39·7	48·7
Stonyhurst		77·3	344	e 12 1	− 2	22 17	+25	39·2	—
Bidston		77·8	344	12 10	+ 4	21 0	−58	39·5	51·5
Uccle		78·5	335	12 8	− 2	22 5	− 1	35·7	49·8
Belgrade		78·5	325	e 12 15	+ 5	e 22 9	+ 3	e 41·4	48·2
Chicago	E.	78·8	40	—	—	i 21 59	−11	36·5	43·6
Oxford		79·0	342	i 11 37	−36	e 22 14	+ 2	33·7	50·1
Kew		79·0	342	—	—	—	—	50·7	55·7
Hohenheim		79·1	335	e 12 12	− 2	e 22 13	0	e 38·7	49·7
Innsbruck		79·6	332	e 12 20	+ 3	—	—	e 40·7	—
Strasbourg		79·7	336	i 12 15	− 2	22 19	− 1	32·7	46·0
Riverview		79·8	178	e 12 39	+21	e 22 12	− 9	e 31·9	34·4
Sydney		79·8	178	—	—	29 10	?SR$_1$	41·0	43·9
Ravensburg		79·8	333	e 12 18	0	e 22 20	− 1	e 39·7	48·3
Ann Arbor		80·0	37	e 12 16	− 3	i 22 10	−13	e 38·3	—
Zurich		80·5	333	e 12 22	0	e 22 34	+ 5	e 40·7	—
Ottawa		80·5	29	e 12 12	−10	i 22 14	−15	e 36·7	—
Toronto		80·6	33	12 17	− 6	22 17	−13	36·6	39·9
Paris		80·8	335	i 12 23	− 1	e 22 30	− 3	28·7	49·7
Venice		80·9	331	i 12 26	+ 2	i 23 8	+34	42·2	—
Besançon		81·4	335	e 12 28	+ 1	e 22 39	0	33·7	46·7
Adelaide		81·5	189	e 12 10?	−18	i 22 16	−25	e 35·9	50·2
Florence		82·8	330	12 30	− 5	22 40	−15	29·2	29·4
Moncalieri		82·9	333	i 12 38	+ 3	22 54	− 2	34·6	51·7
Perth		83·5	208	15 40	?PR$_1$	—	—	—	—
Melbourne		83·9	183	e 8 46	?	(i 21 58)	−70	i 22·0	53·4
Rocca di Papa		84·1	327	i 12 42	− 1	e 23 1	− 8	e 43·4	55·1
Pompeii		84·2	326	e 12 40	− 3	e 22 50	[− 1]	49·7	—
Harvard	E.	84·8	29	—	—	22 58	[+ 3]	e 39·0	49·7
	N.	84·8	29	—	—	22 52	[− 3]	52·2	55·9
Fordham		85·1	30	—	—	—	—	43·6	57·1
Georgetown	E.	85·6	34	e 12 48	− 3	i 23 10	[+10]	56·7	—
	N.	85·6	34	e 12 48	− 3	i 22 57	[− 3]	56·6	—
Helwan		85·6	310	12 48	− 3	23 7	[+ 7]	—	56·7
Barcelona		87·7	336	e 12 44	−19	23 44	− 5	41·2	59·8
Tortosa	N.	88·8	336	e 13 5	− 4	23 30	[+ 9]	e 38·7	53·7
Wellington		90·2	161	—	—	i 23 40	[+11]	43·5	48·2
Toledo		90·8	339	e 13 6	−14	23 41	[+ 8]	e 34·1	59·1
Alicante	N.	91·4	337	23 36	?[S]	(23 36)	[0]	e 44·3	—
Algiers		91·8	332	e 13 17	− 9	i 23 59	[+20]	e 38·7	58·2
Almeria		93·3	338	12 54	−40	23 25	[−23]	47·8	52·4
Lisbon		93·3	343	—	—	—	—	e 47·5	56·5
Granada		93·3	338	i 13 13	−21	24 4	[+16]	e 32·5	57·1
Rio Tinto		93·4	341	27 40	?	—	—	—	62·7
Malaga		93·9	339	e 13 0	−37	24 0	[+ 9]	38·3	59·2
San Fernando		94·6	340	13 17	−24	24 35	−27	—	57·7
La Paz		137·3	53	19 38	[+ 3]	e 33 3	?	55·6	76·2
Cape Town		140·9	270	—	—	—	—	—	80·2
Rio de Janeiro		154·9	27	e 19 55	[− 7]	—	—	e 54·4	—

Additional readings: Osaka MN = +6·8m. Kobe MN = +9·9m. Hong Kong MN = +21·4m. Manila MN = +16·4m. Honolulu eE = +18m.35s., SR$_1$N = +19m.45s., SR$_1$E = +20m.2s., MN = +22·8m. Ekaterinburg i = +10m.31s., +12m.24s., and +21m.7s., PR$_1$ = +11m.24s., PR$_2$ = +12m.48s., MZ = +33·9m. Amboina eLN = +27·0m. Kucino iPR$_1$ = +14m.51s., iSR$_1$ = +23m.53s., MN = +41·0m. Pulkovo PR$_1$ = +14m.45s., PS = +20m.16s., SR$_1$ = +23m.58s., SR$_2$ = +26m.16s., MN = +36·0m., MZ = +40·8m. Upsala SR$_1$N = +24m.30s., SR$_2$E = +27m.34s., ME = +41·2m. Baku PR$_1$ = +14m.17s., SR$_2$ = +28m.5s., SR$_3$ = +29m.10s. Piatigorsk PR$_2$ = +15m.37s., PS = +21m.9s. Konigsberg iN = +21m.23s. = [S] +10s., PS = +21m.38s., eSR$_1$ = +26m.4s., MN = +37·7m. Lemberg MN = +47·1m. Dyce SR$_1$ = +27m.4s. Hamburg eSE = +21m.37s. = [S] −8s., SR$_2$ = +30m.16s. Eskdalemuir PR$_1$ = 14m.55s., PR$_2$ = +16m.40s., SR$_1$ = +27m.10s. Budapest MN = +48·1m.

Continued on next page.

De Bilt $PR_1Z = +15m.21s.$, $eSR_1 = +27m.22s.$, $eSR_2 = +31m.16s.$, $MN = +47 \cdot 3m.$, $MZ = +48 \cdot 6m.$ Vienna $iPZ = +12m.5s.$, $i = +13m.3s.$, $iE = +14m.4s.$, $PR_1 = +15m.36s.$, $iZ = +16m.21s.$, $PS = +22m.52s.$ Stonyhurst eP? = +11m.36s. Innsbruck $iPNW = +12m.21s.$ Bidston $S = +17m.43s. = PR_2 + 21s.$ Uccle $SR_1 = +28m.4s.$, $MN = +47 \cdot 3m.$ Chicago $PR_1N = +15m.2s.$, $PR_1E = +15m.7s.$, $iPSN = +22m.20s.$, PSE? = +22m.24s., $SR_1 = +28m.8s.$, $eSR_2N = +30m.48s.$, $eSR_2E = +31m.6s.$, $LN = +37 \cdot 2m.$, $MN = +38 \cdot 6m.$ Oxford—the seismogram was re-examined and the only time at which the character of the trace definitely changes is that given for P. Small microseisms are in evidence and may explain this movement, in which case the P phase was not recorded. Innsbruck $iPNW = +12m.21s.$ Strasbourg $ePR_1 = +15m.43s.$, $MN = +46 \cdot 5m.$ Riverview $eS = +22m.1s.$ and $+22m.33s.$, $e = +27m.6s.$ and $+27m.43s. = SR_1 - 27s.$, $MN = +39 \cdot 5m.$ Sydney gives many other L readings. Ravensburg $MN = +50 \cdot 7m.$ Ann Arbor $PR_1 = +15m.22s.$, $SR_1 = +27m.52s.$, $SR_2 = +31m.28s.$, $LN = +49 \cdot 0m.$ Ottawa $SR_1 = +27m.52s.$, $eE = +33m.40s. = SR_2 - 2s.$; $T_o = 1h.2m.28s.$ Toronto $iSR_1N = +28m.5s.$, $eE = +33m.45s.$, $MN = +47 \cdot 1m.$; $T_o = 1h.2m.36s.$ Paris $MN = +48 \cdot 7m.$ Adelaide $ePR_1 = +14m.40s.$ Florence $P = +12m.38s.$ Moncalieri $MN = +53 \cdot 7m.$ Rocca di Papa $eE = +12m.4s.$, $iPZ = +12m.39s.$, $iPEN = +12m.44s.$ Barcelona $PR_1 = +16m.32s.$, ? = +23m.25s. = [S] +12s., $MN = +53 \cdot 0m.$ Tortosa $LE = +37 \cdot 3m.$, $ME = +56 \cdot 4m.$ Wellington [S] = +23m.15s., $SR_1 = +29m.20s.$ Toledo $PR_1 = +16m.50s.$, $PR_2NE = +18m.54s.$, $i = +24m.6s. = [S] + 33s.$, $MNW = +55 \cdot 9m.$ Almeria $MN = +52 \cdot 9m.$ Granada $i = +17m.1s. = PR_1 - 28s.$, $i = +20m.45s.$, and $+26m.2s.$ Malaga $MN = +55 \cdot 1m.$ San Fernando $MN = +64 \cdot 2m.$ La Paz $SR_1 = +40m.13s.$; $T_o = 1h.2m.47s.$ Rio de Janeiro readings have been increased by 1h.

Feb. 20d. Readings also at 0h. (Sumoto), 3h. (Uccle), 4h. (Ekaterinburg), 7h (Rio de Janeiro), 8h. (La Paz, Uccle, Vienna, Baku, Ottawa, Toronto, Chicago, and Bombay), 9h. (Ekaterinburg), 16h. (Manila (2)), 17h. (Riverview and Ekaterinburg), 20h. (La Paz), 23h. (Nagoya).

Feb. 21d. 18h. 55m. 40s. Epicentre 22°·0S. 170°·0E. (as on Feb. 10d.).

$A = -\cdot913$, $B = +\cdot161$, $C = -\cdot375$; $D = +\cdot174$, $E = +\cdot985$; $G = +\cdot369$, $H = -\cdot065$, $K = -\cdot927$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	8·8	66	2 38	+25	—	—	4·7	6·5
Apia	19·2	68	—	—	e 7 20?	−46	—	13·3
Wellington	19·7	169	i 4 22	−15	i 8 0	−17	10·0	12·0
Riverview	20·4	230	e 4 49	+ 3	e 8 36	+ 4	e 9·8	12·7
Sydney	20·4	230	2 26	?	8 44	+12	11·3	12·5
Melbourne	26·7	228	—	—	e 10 38	+ ·3	—	15·6
Adelaide	30·3	238	e 9 8	?	e 12 32	+53	—	19·5
Agana	43·3	321	—	—	e 16 35	+103	—	—
Perth	48·8	245	i (9) 2	+ 4	(15) 53	−11	(22·0)	—
Honolulu	53·5	38	—	—	—	—	26·3	—
Manila	60·4	303	e 11 20?	+65	—	—	—	—
Victoria E.	92·1	38	—	—	—	—	43·3	47·3
Irkutsk	93·6	326	e 23 59	?[S]	(e 23 59)	[+ 9]	46·3	—
Ekaterinburg	118·8	324	—	—	e 25 55	[+13]	49·3	—
Toronto E.	119·7	50	—	—	e 55 58	?	63·0	—
Ottawa	122·3	49	—	—	e 30 56	?	e 63·3	—
Baku	126·6	305	—	—	—	—	49·3	—

Additional readings and notes: Riverview $eS = +8m.59s.$, $MN = +12 \cdot 4m.$, $MZ = +19 \cdot 9m.$; $T_o = 19h.55m.42s.$ Perth $PE = +(7)m.38s.$, $PR_1 = +(11)m.51s.$, $SR_1 = +(18)m.42s.$, $SR_2 = +(19)m.10s.$; all the readings have been diminished by 7 min. Victoria $MN = +47 \cdot 5m.$ Irkutsk $S = +31m.23s. = SR_1 + 7s.$ Toronto $eN = +51m.35s.$, $LN = +66 \cdot 8m.$ Ottawa $eN = +53m.20s.$

Feb. 21d. Readings also at 2h. (near Taihoku (2)), 6h. (near La Paz), 8h. (Granada), 9h. (Manila), 11h. (Nagoya), 18h. (Manila).

Feb. 22d. Readings at 0h. (La Paz), 1h. (Baku), 5h. (Baku, Perth, and Bombay), 15h. (Manila), 16h. (near Taihoku), 17h. (Ekaterinburg), 18h. (Apia and Riverview), 19h. (Rocca di Papa (2), Irkutsk, Strasbourg, Zurich, and near Besançon, not being a repetition of shock of Jan. 8d.), 20h. (2) and 21h. (Rocca di Papa).

Feb. 23d. 23h. 53m. 36s. Epicentre 60°·0N. 146°·0W.

A = −·415, B = −·280, C = +·866 ; D = −·559, E = +·829 ;
G = −·718, H = −·484, K = −·500.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		6·3	115	1 51	+15	e 2 24	−28	i 3·8	4·7
Victoria		17·5	122	4 26	+15	—	—	8·0	10·5
Saskatoon		23·5	92	5 28	+ 5	9 41	+ 6	e 11·8	14·1
Berkeley		26·8	135	6 1	+ 5	10 49	+12	14·0	17·0
Lick		27·5	135	i 6 5	+ 2	i 11 2	+12	—	15·1
Denver		32·5	111	6 24	−29	—	—	18·9	18·9
Tucson	E.	36·1	127	7 25	+ 2	13 17	+ 6	20·0	21·2
Honolulu		39·6	199	i 7 47	− 4	14 11	+11	18·4	23·5
Chicago		39·8	92	7 48	− 5	e 13 57	− 6	18·9	22·4
St. Louis		40·5	97	i 7 55	− 4	i 14 8	− 6	e 20·4	22·4
Ann Arbor		41·0	88	7 57	− 6	14 12	− 9	19·8	22·3
Toronto	E.	42·1	83	e 8 5	− 7	i 14 32	− 4	19·8	26·1
	N.	42·1	83	i 8 9	− 3	i 14 33	− 3	20·6	26·2
Ootomari		42·2	285	7 58	−14	(14 4)	−34	14·1	21·5
Ottawa		42·6	78	i 8 10	− 5	i 14 36	− 7	e 19·8	23·2
Ithaca		44·4	82	e 8 14	−15	14 54	−13	20·0	23·9
Mazatlan	E.	45·9	127	10 44	+125	17 36	+129	24·4	—
Georgetown	E.	46·8	85	i 8 44	− 2	i 15 38	0	e 21·8	25·4
	N.	46·8	85	i 8 44	− 2	i 15 40	+ 2	—	25·6
Fordham		46·9	82	8 43	− 3	i 15 38	− 2	23·8	28·8
Cheltenham	E.	47·1	85	8 47	− 1	i 15 42	0	23·4	25·9
	N.	47·1	85	8 52	+ 4	15 46	+ 4	21·9	25·7
Harvard		47·1	78	8 46	− 2	15 40	− 2	23·6	28·3
Loyola		47·5	105	8 44	− 7	15 32	−16	21·9	35·4
Mobile		47·8	101	e 9 9	+16	i 16 6	+15	25·2	27·4
Mizusawa	E.	48·6	279	(9 3)	+ 5	9 3	?P	—	—
Halifax		49·0	70	9 1	+ 1	16 3	− 3	e 23·4	—
Tacubaya		52·4	120	9 28	+ 6	17 6	+17	30·0	34·3
Irkutsk		54·4	316	—	—	e 16 50	−24	25·4	—
Osaka		54·9	280	10 24	+46	(17 16)	− 4	17·3	37·1
Upsala		59·5	10	i 10 8	− 1	i 18 9	− 8	e 25·4	43·9
Pulkovo		60·2	3	i 10 10	− 3	i 18 18	− 8	27·4	35·5
Edinburgh		60·4	25	—	—	—	—	—	38·4
Ekaterinburg		61·3	345	10 17	− 4	18 31	− 9	27·4	38·0
Stonyhurst		62·5	25	11 2	+33	20 6	+71	32·9	—
Bidston		62·8	25	18 40?	?S	(18 40?)	−18	29·6	30·4
West Bromwich		63·8	25	10 52	+15	i 19 13	+ 2	—	—
Kucino		64·2	358	i 10 41	+ 2	i 19 10	− 5	29·4	46·4
Konigsberg		64·6	9	10 44	+ 2	19 19	− 1	27·4	35·4
Zi-ka-wei		64·6	290	e 10 40	− 2	19 13	− 7	41·8	—
Hamburg		64·8	16	i 10 45	+ 1	i 19 24	+ 1	e 33·4	37·4
Kew		65·2	24	—	—	—	—	—	41·4
De Bilt		65·5	20	i 10 52	+ 4	19 35	+ 4	e 31·4	42·6
Uccle		66·6	21	10 56	+ 1	i 19 46	+ 1	32·4	41·6
Paris		68·2	23	e 11 12	+ 7	—	—	34·4	43·4
Strasbourg		69·4	19	i 11 13	0	e 20 23	+ 4	41·4	—
Hohenheim		69·4	19	e 11 12	− 1	e 20 20	+ 1	e 36·4	46·0
Taihoku		69·6	285	—	—	—	—	e 34·4	—
Ravensburg		70·4	17	e 11 13	− 6	i 20 33	+ 2	e 36·4	46·2
Besançon		70·4	20	11 30	+11	—	—	—	—
Zurich		70·7	19	i 11 26	+ 5	e 20 35?	+ 1	—	—
Vienna		70·8	13	e 11 20	− 2	20 36	0	e 36·4	50·4
Innsbruck		71·2	16	i 11 26	+ 2	e 20 36	− 4	e 36·4	—
Budapest		71·9	10	e 11 24?	− 5	i 20 48	− 1	e 35·4	—
Moncalieri		72·9	20	12 24	+49	i 21 32	[− 1]	36·0	44·7
Venice		73·0	17	i 11 47	+11	20 57	− 5	—	—
Belgrade		74·6	10	e 11 50	+ 4	e 21 18	− 3	e 39·7	43·8
Florence		74·6	17	11 46	0	21 14	− 7	—	39·4
Lisbon		75·1	34	—	—	—	—	e 39·0	—
Barcelona		75·2	25	—.	—	21 30	+ 2	e 41·6	—
Toledo		75·4	30	11 49	− 2	i 21 29	− 1	e 34·9	45·3
Hong Kong		75·5	290	11 46	− 6	21 17	−15	—	49·4
Tortosa	N.	75·6	27	11 52	− 1	e 21 34	+ 1	e 34·4	46·2
Piatigorsk		75·7	354	e 12 2	+ 9	i 21 37	+ 3	34·4	45·4
Apia		76·6	207	e 12 24?	+25	e 23 24?	+100	e 36·4	—
Rio Tinto		76·7	32	17 24?	?PR_g	—	—	—	71·4
Rocca di Papa		76·8	16	i 11 58	− 2	e 21 41	− 6	e 41·7	53·8
Alicante		77·6	28	i 12 13	+ 8	—	—	e 39·5	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Granada		78·0	30	i 12 7	0	e 22 11	+11	e 39·5	47·6
Pompeii		78·0	15	e 12 4	− 3	e 21 34	−26	54·4	—
San Fernando		78·1	32	12 7	− 1	22 1	0	—	49·9
Malaga		78·3	30	i 12 4	− 5	i 22 0	− 4	37·8	46·3
Baku	E.	78·8	349	i 12 9	− 3	i 22 0	−10	35·7	42·0
	N.	78·8	349	i 12 9	− 3	i 22 4	− 6	—	53·8
Manila		78·9	280	i 12 24	+12	—	—	i 43·1	—
Almeria		79·6	29	i 12 7	−10	22 3	−16	42·0	46·3
Algiers		80·0	25	i 12 17	− 2	22 16	− 7	39·7	49·4
Phu-Lien		80·4	296	e 12 13	− 8	i 22 14	−14	e 27·4	52·4
Athens		81·8	8	12 24	− 5	e 22 29	−15	41·4	—
Simla	E.	82·2	325	22 30	?S	(22 30)	−18	35·7	45·3
	N.	82·2	325	22 36	?S	(22 36)	−12	44·2	51·8
Calcutta	E.	86·4	313	12 33	−22	22 50	[−15]	—	—
	N.	86·4	313	12 45	−10	22 59	[− 6]	—	—
Helwan		90·2	3	e 13 19	+ 2	23 54	−21	—	58·0
Hyderabad		94·6	320	10 58	?	—	—	—	55·5
Bombay		95·0	325	13 27	−16	23 52	[− 5]	45·1	59·6
La Paz		98·3	110	14 45	+43	27 30	+111	55·2	60·0
Kodaikanal		101·7	317	32 48	?SR_1	—	—	55·0	64·8
Batavia		103·9	282	i 17 44	?PR_1	—	—	61·4	—
Colombo		104·0	313	24 49	?S	(24 49)	[+ 6]	(55·4)	77·4
Wellington		106·3	210	—	—	24 49	[− 4]	e 50·1	57·1
Riverview		107·0	230	e 13 54	−50	e 25 3	[+ 6]	e 50·6	57·9
Sydney		107·0	230	e 12 36	?	—	—	e 57·7	59·1
Melbourne		112·9	233	—	—	i 36 24	?SR_1	55·1	63·7
Adelaide		113·1	240	e 19 24	?PR_1	e 28 6	+11	e 57·4?	75·4?
Rio de Janeiro		116·0	91	e 19 54	?PR_1	—	—	57·4	67·5
La Plata	E.	118·8	110	—	—	—	—	58·9	63·6
Cape Town		152·0	28	—	—	—	—	—	84·9

Additional readings and notes: Sitka e?E = +2m.24s., iN = +3m.43s., iE = +4m.1s., eLN = +3·9m., MN = +6·3m.; T_o = 23h.53m.30s. Victoria MN = +14·2m.; T_o = 23h.53m.34s. Berkeley PZ = +6m.3s. and +6m.6s., PR_1 = +6m.49s., PR_2E = +7m.1s., PR_2N = +7m.5s., SZ = +10m.52s., iE = +12m.3s., SR_1E = +12m.23s., SR_2E = +12m.57s. Lick iPN = +6m.10s., iN = +6m.17s., iEZ = +6m.21s., iSE = +11m.4s., eSZ = +11m.9s., iE = +12m.14s., iN = +12m.39s. Tucson SR_1E = +15m.53s.; T_o = 23h.53m.37s. Chicago i = +8m.0s., PR_1E? = +9m.8s., e = +13m.26s. and +14m.44s., iSN = +13m.53s., iSR_1N = +16m.4s., iSR_2N = +17m.8s.; T_o = 23h.53m.43s. Honolulu ePR_1E = +9m.22s., ePR_1N = +9m.44s., eE = +11m.37s., eN = +12m.44s., SR_1E = +16m.47s., MN = +22·8m.; T_o = 23h.53m.18s. St Louis e = +8m.55s., ePR_1 = +9m.38s., iPR_1 = +10m.13s. iSE = +14m.9s., PS = +14m.18s., iEN = +15m.37s., iSR_1 = +16m.58s., iSR_2 = +17m.41s., eSR_2 = +18m.29s., MN = +23·5m. Ann Arbor PR_2 = +9m.42s. Toronto iPE = +8m.8s., iSR_1E = +17m.24s., iSR_1N = +17m.25s.; T_oE = 23h.53m.32s.; T_oN = 23h.53m.39s. Ottawa ePR_2 = +10m.6s., SR_1E = +17m.24s., iSR_2E = +18m.6s.; T_o = 23h.53m.38s. = Ithaca PR_1 = +10m.2s. Fordham PR_1 = +10m.46s., SR_1 = +19m.25s. Cheltenham eE = +11m.47s., SR_1 = +18m.36s., SR_2E = +19m.30s.; T_o = 23h.53m.39s. Harvard PR_1 = +10m.56s., SR_1 = +18m.50s., iE = +24m.34s., LN = +22·5m.; T_o = 23h.53m.40s. Loyola MN = +32·4m. Mobile LN = +24·8m. Mizusawa SN = +9m.4s. Halifax SR_1 = +19m.0s.; T_o = 23h.53m.46s. Irkutsk e = +20m.42s. Osaka MN = +32·6m. Upsala PR_1N = +12m.30s., eLN = +27·4m., MN = +33·9m. Pulkovo PR_2 = +13m.55s., SR_1 = +22m.48s., MZ = +33·9m., MN = +34·2m. Ekaterinburg i = +10m.19s. and +17m.27s., and S = +18m.14s., MNZ = +37·9m. Bidston S = +22m.49s. Kucino PR_1 = +13m.10s., PR_2 = +14m.40s., i = +20m.39s. and +21m.47s., iSR_1 = +23m.11s., MN = +37·9m. Konigsberg P = +13m.14s. = PR_1 − 28s., SN = +19m.16s., PS = +19m.34s., SR_1 = +23m.28s., eLZ = +30·4m., MN = +33·4m., MZ = +34·4m. De Bilt MN = +33·8m., MZ = +40·6m. Uccle MN = +37·0m. Paris e = +15m.40s. (?PR_1), MN = +38·4m. Hohenheim iP = +11m.27s., i = +11m.37s. Ravensburg iP = +11m.25s. Vienna iPZ = +11m.23s., PR_1 = +14m.28s., PR_2 = +15m.38s., S = +19m.59s., PS used as S in text, SR_1 = +24m.53s., SR_2 = +26m.51s. Budapest iN = +20m.51s. Moncalieri MN = +46·6m. Florence S = +21m.34s. Lisbon reading has been increased by 1h. Toledo MNW = +45·0m., also several (i) readings. Rocca di Papa iPN = +12m.1s., L = +50·4m. Piatigorsk iP = +12m.4s., PR_1 = +15m.5s. Apia e = +26m.24s. Alicante eLN = +40·0m. San Fernando MN = +46·4m. Baku SR_1 = +27m.14s., SR_2 = +31m.3s., SR_3 = +33m.0s., MZ = +56·9m. Malaga MN = +44·3m. Simla SE = +28m.0s. = SR_2 − 44s., SN = +32m.48s. = SR_1 + 24s. Colombo S is given as P and L as S, also L = +75·4m. Wellington i = +36m.11s. Riverview eS = +25m.26s., PS = +26m.28s., eSR_1 = +32m.4s. and +32m.12s., MN = +56·8m. La Plata PR_1 = +20m.28s., SR_1N = +34m.16s., LN = +62·1m.

Feb. 23d. Readings also at 0h. and 1h. (near Amboina), 6h. (Apia), 18h. (near Tacubaya), 21h. (Uccle, De Bilt, and near Zurich), 23h. (Mizusawa).

Feb. 24d. Readings also at 0h. (Vienna and Innsbruck), 2h. (Apia and near Taihoku), 3h. (Apia), 4h. (Tortosa), 7h. (Innsbruck), 11h. and 14h. (Taihoku), 17h. (Nagoya and near Mizusawa), 18h. (near Sumoto), 20h. (Ekaterinburg and near Tacubaya), 22h. (Ekaterinburg (2)), 23h. (Hyderabad and near Athens (2)).

Feb. 25d. 22h. 0m. 40s. Epicentre 3°·5S. 146°·5E. (as on 1924 May 27d.).

$A = -\cdot832$, $B = +\cdot551$, $C = -\cdot061$; $D = +\cdot552$, $E = +\cdot834$; $G = +\cdot050$, $H = -\cdot034$, $K = -\cdot998$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		18·2	269	i 4 14	− 5	i 7 26	−18	—	—
Riverview		30·6	172	e 7 23	+49	e 11 50	+ 6	e 13·1	20·9
Manila		31·2	308	7 31	+51	—	—	—	—
Adelaide		32·3	191	—	—	e 12 8	− 5	16·9	18·8
Melbourne		34·3	181	—	—	i 11 8	−96	—	20·5
Batavia		39·6	265	—	—	—	—	e 15·9	—
Perth		40·4	221	e 6 35	−83	13 29	−44	21·3	—
Hong Kong		40·8	311	7 40	−21	13 37	−41	17·0	—
Mizusawa	E.	42·9	355	(9 10)	+53	9 10	?P	—	—
Irkutsk		66·2	334	10 47	− 6	19 33	− 7	33·3	—
Bombay		75·7	290	—	—	21 20?	−14	—	—
Ekaterinburg		90·6	326	13 19	0	23 17	[−15]	31·3	41·0
Baku		97·3	311	e 17 24	?PR_1	—	—	51·3	—
Kucino		103·2	326	—	—	e 33 38	?SR_1	—	—
De Bilt		121·8	332	—	—	—	—	e 60·3	—
Toronto	E.	123·0	38	—	—	e 30 50	?	61·3	—
Ottawa		124·2	34	—	—	e 30 50	?	e 59·3	—
San Fernando		138·6	325	—	—	—	—	78·8	80·8
La Paz		140·4	124	20 0	[+20]	—	—	—	—

Additional readings and notes: Riverview MZ = +20·3m., MN = +21·4m.; readings given for 21h. Melbourne readings are given for 26d. Perth PR_1 = +8m.5s., PR_2 = +9m.5s. Irkutsk SR_1 = +24m.15s., SR_2 = +27m.45s.; readings given for 21h. Ekaterinburg MN = +47·4m.; all readings given for 24d. Baku e = +32m.6s. = SR_1 − 3s. Toronto eE = +32m.5s., LN = +59·7m. Ottawa e = +38m.35s.

Feb. 25d. Readings also at 11h. (Irkutsk), 19h. (Irkutsk, Ottawa, and Georgetown), 23h. (Baku, Irkutsk, and near Manila).

Feb. 26d. Readings at 2h. (Adelaide), 7h. (Amboina), 14h. (Fordham and near Tacubaya), 17h. (near Sumoto), 22h. and 23h. (Amboina).

Feb. 27d. Readings at 0h. (Manila), 1h. (Apia), 5h. (Zurich and near Vienna), 11h. (Hyderabad), 12h. (Riverview), 15h. (La Paz).

Feb. 28d. Readings at 1h. (2) and 2h. (Apia), 3h. (Baku), 7h. (La Plata and La Paz), 10h. (near Taihoku and near Tacubaya), 11h. (Taihoku), 18h. (La Paz), 21h. (La Paz and Baku).

Mar. 1d. 2h. 19m. 12s. Epicentre 48°·2N. 70°·8W.

A = +·219, B = −·629, C = +·745 ; D = −·944, E = −·329 ; G = +·245, H = −·704, K = −·667.

A depth of focus +0·010 has been adopted. Felt in Canada and the Eastern States. See note at end.

		Corr. for Focus	Δ	Az.	P.		O−C.	S.		O−C.	L.	M.
		°	°	°	m.	s.	s.	m.	s.	s.	m.	m.
Ottawa		0·0	4·4	233	i 1	14	+ 6	i 2	7	+ 6	i 2·3	2·6
Harvard		0·0	5·8	183	i 1	23	− 7	(i 2	47)	+ 8	i 2·8	—
Halifax		0·0	6·1	122	i 1	36	+ 3	i 2	41	− 5	2·8	4·8
Ithaca		0·0	7·0	217	1	35	−11	(2	50)	−20	2·8	3·8
Toronto		−0·1	7·5	236	i 1	55	+ 3	i 3	18	− 3	i 3·6	—
Fordham	N.	−0·1	7·6	198	i 1	50	− 4	e 3	8	−16	3·3	4·1
Georgetown		−0·1	10·3	209	e 2	34	+ 1	i 4	26	− 9	—	5·5
Cheltenham		−0·1	10·5	207	2	37	+ 1	4	30	−10	i 5·3	5·6
Ann Arbor		−0·1	10·8	242	2	54	+14	4	57	+ 9	5·3	6·1
Chicago	N.	−0·2	13·5	248	i 3	19	+ 2	i 5	48	− 3	i 6·8	8·8
St. Louis		−0·3	17·0	243	i 4	6	+ 5	7	7	− 4	7·3	9·1
Mobile		−0·4	22·0	224	e 5	10	+10	i 9	8	+11	9·9	11·7
Saskatoon		−0·4	22·4	293	i 5	19	+14	i 9	33	+28	i 12·3	14·0
Loyola	E.	−0·5	23·5	226	6	48	+91	10	48	+83	12·5	13·8
	N.	−0·5	23·5	226	6	18	+61	10	35	+70	12·1	11·8
	Z.	−0·5	23·5	226	6	18	+61	10	33	+68	12·0	19·8
Denver		−0·5	25·8	264	5	48?	+ 7	8	58	−71	12·3	14·8
Tucson	E.	−0·8	33·9	257	—		—	e 11	24	−62	i 17·6	21·1
Victoria		−0·8	34·2	290	6	56	− 4	12	36	+ 6	17·6	19·0
Vera Cruz	E.	−0·8	35·5	224	6	20	−51	11	42	−69	14·3	—
Tacubaya	E.	−0·8	36·8	228	7	20	− 2	13	5	− 5	16·6	22·0
	N.	−0·8	36·8	228	7	16	− 6	13	1	− 9	19·8	—
Mazatlan	E.	−0·8	37·7	239	9	32	+123	15	16	+114	20·6	21·3
Berkeley		−0·8	38·3	273	e 7	35	+ 1	13	31	0	—	21·4
	Z.	−0·8	38·3	273	7	30	− 4	13	36	+ 5	19·3	—
Sitka	E.	−0·8	38·6	307	—		—	e 16	35	?	e 20·2	21·2
	N.	−0·8	38·6	307	—		—	—		—	e 19·2	21·3
Edinburgh		−0·8	40·6	54	7	46	− 7	13	54	− 9	18·8	23·8
Eskdalemuir		−0·8	40·7	54	7	43	−11	13	38	−27	18·3	23·8
Bidston		−0·8	41·5	57	7	51	−10	13	59	−18	17·3	20·0
Stonyhurst		−0·8	41·7	57	i 7	54	− 8	14	14	− 6	20·9	24·6
West Bromwich		−0·8	42·4	58	7	51	−17	14	34	+ 5	—	—
Bergen		−0·9	43·4	44	e 7	48?	−27	—		—	—	—
Kew		−0·9	43·8	58	—		—	—		—	—	25·8
De Bilt		−0·9	46·5	55	i 8	34	− 3	15	15	− 7	20·8	27·0
Paris		−0·9	46·6	60	i 8	34	− 4	i 15	23	− 1	18·8	27·8
Uccle		−0·9	46·7	58	8	34	− 5	15	20	− 5	20·3	28·6
Rio Tinto		−0·9	46·7	79	11	48?	?PR$_8$	—		—	—	32·8
Toledo		−0·9	47·2	75	8	35	− 7	i 15	21	−11	e 20·2	22·4
San Fernando		−1·0	47·7	80	8	13	−32	15	32	− 5	18·8	27·8
Hamburg		−1·0	48·4	51	e 8	50	0	e 15	45	− 1	e 23·8	29·9
Malaga		−1·0	48·7	79	8	47	− 5	i 15	51	+ 1	19·0	29·8
Granada		−1·0	49·0	78	i 8	54	0	16	0	+ 6	i 23·5	28·5
Upsala		−1·0	49·2	40	8	53	− 2	16	0	+ 4	21·8	28·3
Besançon		−1·0	49·4	60	i 8	54	− 2	16	0	+ 1	22·8	29·8
Tortosa		−1·0	49·5	70	i 8	57	0	16	2	+ 2	22·3	25·6
Strasbourg		−1·0	49·7	59	i 8	59	+ 1	16	8	+ 6	22·8	28·8
Almeria		−1·0	49·9	76	i 8	55	− 4	16	2	− 3	23·7	25·4
Barcelona		−1·0	50·2	68	e 8	44	−17	16	7	− 2	27·4	30·2
Alicante		−1·0	50·3	74	i 8	56	− 6	16	16	+ 6	22·6	—
Hohenheim		−1·0	50·5	59	e 9	1	− 3	16	15	+ 2	23·8	24·8
Zurich		−1·0	50·8	60	i 9	6	0	i 16	23	+ 7	e 20·3	—
Ravensburg		−1·0	51·1	58	e 9	7?	− 1	e 16	16	− 4	e 21·8	29·3
Moncalieri		−1·0	51·6	63	9	45	+34	i 16	50	+24	25·0	33·6
Innsbruck		−1·1	52·5	58	e 9	15	− 1	—		—	e 23·8	—
Konigsberg		−1·1	53·1	46	9	27	+ 7	e 16	54	+ 9	e 25·6	30·8
Algiers		−1·1	53·5	73	9	20	− 2	16	51	+ 2	23·8	25·8
Venice		−1·1	54·0	60	e 9	30	+ 5	16	48	− 7	27·8	—
Florence		−1·1	54·4	62	9	30	+ 2	17	18	+18	—	33·8
Pulkovo		−1·1	54·6	37	i 9	36	+ 6	i 17	18	+15	27·8	32·7
Vienna		−1·1	54·7	54	9	33	+ 3	17	12	+ 8	e 26·8	34·3
Zagreb		−1·1	55·9	58	e 9	48	+10	e 17	34	+15	e 29·0	32·7
Rocca di Papa		−1·1	56·4	62	9	46	+ 5	17	27	+ 2	e 25·4	35·3
Budapest		−1·1	56·6	53	e 9	48?	+ 5	e 17	48?	−20	e 26·8	35·4

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.
Belgrade		−1·2	59·0	55	e 11 3	+65	e 20 59	+183	e 29·8	37·1
Kucino		−1·2	60·3	38	i 11 13	+67	i 19 30	+78	28·2	41·9
La Paz		−1·2	64·7	177	i 10 37	+ 2	i 19 6	− 1	34·4	36·5
Ekaterinburg		−1·2	67·4	26	i 11 6	+13	i 20 6	+26	27·8	39·2
Piatigorsk		−1·3	71·0	44	i 11 34	+19	i 20 54	+32	—	44·3
Honolulu	E.	−1·3	72·4	281	—	—	e 21 48	[+29]	e 38·1	42·8
Rio de Janeiro		−1·3	75·3	154	i 11 44	+ 2	i 21 18	+ 4	37·3	44·3
Helwan		−1·3	75·5	61	i 11 50	+ 7	i 21 31	+15	—	44·7
Baku		−1·3	77·1	42	i 11 59	+ 5	i 21 59	[+ 4]	—	42·6
La Plata	E.	−1·4	83·8	170	12 37	+ 5	22 47	− 3	37·8	—
	N.	−1·4	83·8	170	i 12 40	+ 8	22 49	− 1	38·8	51·2
Simla		−1·4	95·7	27	—	—	—	—	e 56·8	—
Zi-ka-wei		−1·4	99·9	350	e 17 57	? PR_1	—	—	—	61·1
Bombay		−1·5	105·5	35	17 36	? PR_1	28 2	+89	e 50·8	—
Taihoku	E.	−1·5	106·0	349	—	—	—	—	e 53·8	—
Hyderabad		−1·5	108·8	30	18 53	? PR_1	28 33	+89	—	—
Hong Kong		−1·5	109·3	355	28 38	? S	(28 38)	+90	—	62·5
Kodaikanal		—	115·1	36	70 54	?	—	—	—	—
Manila		—	116·4	348	e 19 48	? PR_1	—	—	—	73·8
Colombo		—	119·2	35	30 18?	?	—	—	(49·3?)	81·8
Wellington		—	134·4	254	i 22 53	? PR_1	e 35 40	?	73·8	—
Riverview		—	145·8	277	i 19 46	[− 4]	—	—	e 80·1	82·6
Sydney		—	145·8	277	35 54	?	—	—	77·3	81·5
Adelaide		—	154·6	291	—	—	—·	—	e 74·8	94·3
Perth		—	162·9	341	19 48?	[−22]	—	—	—	—

Additional readings: Ithaca MN = +4·1m. Toronto iE = +3m.22s., iN = +3m.33s.; T_o = 2h.19m.25s. Georgetown MN = +5·7m. Cheltenham eN? = +2m.31s., eE = +3m.0s., eN = +4m.6s., MN = +6·2m.; T_o = 2h.19m.31s. Chicago iS = +5m.30s.; T_o = 2h.19m.27s. St. Louis i = +4m.24s., +4m.38s., +6m.13s., +6m.56s., +8m.7s., +10m.4s., and +10m.59s. Mobile MN = +11·8m.; T_o = 2h.19m.25s. Tucson e = +14m.51s. Victoria MN = +18·8m.; T_o = 2h.19m.0s. Denver MN = +14·0m. Berkeley PZ = +7m.31s., PR_1? = +8m.11s., i? = +12m.19s., SR_1?E = +16m.25s. and +16m.35s., LZ = +19·4m. Edinburgh SR_1 = +17m.0s. Eskdalemuir PR_1E = +9m.18s., iE = +16m 38s. = SR_1 − 22s., iN = +17m.12s. = SR_1 +12s., MN = +19·8m. Stonyhurst PS? = +7m.59s., PR_1 = +9m.34s., PR_2 = +10m.5s., PR_3 = +10m.22s., SR_1 = +17m.20s. De Bilt eSR_1 = +18m.59s., MN = +22·8m. Paris MN = +20·8m. Uccle SR_1 = +18m.58s., MN = +22·5m. Toledo MZ = +20·8m., MNW = +25·0m. San Fernando MN = +23·3m. Hamburg PR_1 = +10m.48s., SR_1 = +19m.54s. Malaga MN = +28·4m. Granada i = +9m.4s., +11m.23s., +15m.21s., +16m.8s., +19m.2s., and +19m.59s., MN = +26·0m. Upsala PR_1 = +10m.47s., SR_1 = +19m.43s., MN = +27·3m. Strasbourg ePR_1 = +10m.58s., iSR_1 = +20m.6s., SR_2 = +21m.24s., SR_3 = +21m.52s., MN = +28·4m. Almeria MN = +24·5m. Alicante ePE = +9m.1s., eSN = +16m.48s.? Hohenheim PR_1 = +11m.0s., PR_2 = +11m.45s., PS = +16m.34s. Ravensburg L = +23·8m. Königsberg PEZ = +10m.29s., PR_1Z = +12m.4s., PR_2Z = +12m.52s., e = +13m.22s., SEN = +18m.2s., SR_1E = +19m.36s., SR_2 = +23m.12s. Florence S = +17m.48s. Pulkovo PR_1 = +12m.55s. = PR_2 − 2s., SR_1 = +21m.12s., MN = +32·3m. Vienna iE = +15m.49s., PS = +17m.29s., SR_1 = +21m.21s., SR_2 = +23m.14s. Zagreb e = +9m.52s., PR_1 = +12m.16s., SR_1 = +22m.1s., SR_2 = +23m.51s., e = +24m.43s. = SR_3 +13s. Rocca di Papa ePEN = +9m.48s., eSZ = +17m.39s., L = +34·8m. Kucino PR_1 = +13m.32s., i = +16m.2s. and +23m.29s. = SR_1 +16s., MN = +37·4m. La Paz PR_1 = +12m.57s., PR_2 = +14m.32s., SR_1 = +20m.26s., SR_2 = +22m.26s., SR_3 = +26m.31s.; T_o = 2h.19m.17s. Ekaterinburg iPR_2 = +15m.16s., MN = +44·8m., MZ = +45·1m. Piatigorsk PR_2 = +16m.6s. Honolulu eE = +33m.23s. and +42m.33s. Baku SR_1 = 27m.56s., SR_2 = +31m.9s., SR_3 = +33m.17s., i = +35m.54s., MZ = +48·9m., MN = +49·0m. Simla eN = +52m.0s. Hong Kong ? = +29m.46s. Riverview ePR_1 = +23m.4s., MN = +89·4m. Adelaide gives several other e's, also eL = +91·2m. The epicentre lies in the mouth of the Saguenay river. The shock was felt in New York; the Woolworth building and other skyscrapers swayed. In Syracuse (N.Y.) "the shock set off the city's fire gong; the audience fled from the theatre." "Quebec was rocked five times by shocks distinct and severe." A Toronto paper gives the distance to the "epic centre" (*sic*!) as 540 km. or 335 miles. "The quake was felt very generally all over Ottawa. No damage was reported."

Mar. 1d. 3h. 57m. 0s. Epicentre 46°·7N. 145°·8E. (as on 1921 Oct. 12d.).

A = −·567, B = +·386, C = +·728 ; D = +·562, E = +·827 ;
G = −·602, H = +·409, K = −·686.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		2·1	270	−0 26	−59	—	—	—	—
Mizusawa	E.	8·3	206	2 15	+ 9	3 36	− 9	—	—
Ekaterinburg		50·1	315	—	—	—	—	28·0	31·5
Kucino		61·1	322	—	—	—	—	e 34·0	41·7
Baku		65·3	303	e 10 41	− 6	—	—	35·5	44·0
Upsala	N.	65·4	335	—	—	—	—	e 40·0	—
Budapest		75·0	326	e 10 0	−109	—	—	—	—
Vienna	Z.	75·3	329	e 11 58	+ 7	—	—	—	—
De Bilt		75·6	336	—	—	—	—	e 44·0	—
Uccle		77·0	337	—	—	—	—	e 43·0	—
Ottawa		81·0	29	—	—	—	—	i 33·7	—
Toronto		81·2	31	—	—	—	—	i 35·2	—

Additional readings: Mizusawa SN = +3m.40s. Ekaterinburg e = +10m.20s. (?PR_1), MZ = +33·7m. Kucino MN = +41·4m. Baku MNZ = +44·4m., P is given as e simply.

Mar. 1d. 12h. 25m. 26s. Epicentre 22°·0N. 120°·5E. (as on 1924 Jan. 15d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hokoto		1·7	330	0 28	+ 2	(i 0 51)	+ 3	i 0·8	0·9
Taihoku	N.	3·2	18	0 50	0	(1 17)	−11	1·3	1·7
Hong Kong		5·9	274	1 44	+13	—	—	—	4·6
Manila		7·4	176	i 2 19	+27	—	—	—	—
Zi-ka-wei		9·2	5	2 10	− 9	e 4 13	+ 5	—	—
Osaka		18·2	43	3 39	−40	—	—	—	13·0
Irkutsk		32·7	342	—	—	11 40	−39	14·6	—
Simla	N.	39·6	293	—	—	—	—	e 21·1	—
Colombo		42·0	256	14 34	?S	(14 34)	− 1	27·6	29·9
Kodaikanal		42·9	262	30 28	?	—	—	—	—
Bombay		44·6	274	—	—	14 34?	−36	—	—
Ekaterinburg		55·4	325	i 9 39	− 3	17 21	− 5	26·6	35·3
Baku		61·5	307	10 28	+ 6	19 3	+21	31·1	40·1
Kucino		67·9	323	—	—	e 19 37	−24	34·9	41·4
Pulkovo		71·2	329	i 11 25	+ 1	20 34	− 6	36·1	43·9
Upsala		77·3	330	—	—	—	—	e 41·6	48·6
Hohenheim		86·6	322	—	—	—	—	49·6	56·6
De Bilt		87·0	326	e 12 47	−12	e 23 42	+ 1	e 45·6	55·6
Strasbourg		87·6	322	—	—	—	—	47·6	56·6
Uccle		88·2	325	—	—	—	—	e 43·6	48·6
Edinburgh		88·8	331	—	—	—	—	45·6	57·2
Eskdalemuir		89·1	331	—	—	—	—	44·6	57·6
Moncalieri		89·3	319	—	—	—	—	e 45·5	—
Stonyhurst		89·7	330	—	—	e 19 47	?PR_2	e 45·8	54·2
Kew		90·2	327	—	—	—	—	—	54·6
Paris		90·3	324	—	—	—	—	e 47·6	57·6
Bidston		90·3	330	43 26	?L	48 12	?	50·4	58·8
Granada		100·8	318	—	—	—	—	i 58·9	67·8
Ottawa	E.	111·0	12	—	—	—	—	e 56·1	—
Toronto	N.	111·8	15	—	—	—	—	57·1	—

Additional readings and notes: Osaka MN = +14·7m. Irkutsk eP = 12h.14m.3s. Kodaikanal reading has been diminished by 1h. Ekaterinburg MN = +31·5m., MZ = +35·2m. Baku MZ = +41·9m., MN = +43·3m. Kucino e = +27m.22s. =SR_2 −31s., MN = +40·4m. Pulkovo SR_2 = +28m.40s., SR_3 = +31m.4s., MN = +44·8m. Upsala MN = 48·1m. De Bilt MN = +48·7m. Moncalieri eL = +52·2m. Granada i = +61m.32s. and +62m.37s.

Mar. 1d. Readings also at 6h. (Mizusawa, Ottawa, and Toronto), 7h. (Ottawa, Toronto, and Ithaca), 10h. (near Tacubaya), 11h. (near Rocca di Papa), 18h. (San Fernando), 19h. (Rio Tinto).

Mar. 2d. Readings at 4h. (Taihoku), 9h. (near Mizusawa and near Apia), 19h. (La Paz), 20h. (Fordham), 22h. (Apia).

Mar. 3d. 0h. 38m. 36s. Epicentre 41°·0N. 13°·5E. (as on 1920 April 5d.).

A = +·734, B = +·176, C = +·656.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Rocca di Papa		1·0	i 0 40	+25	1 1	+33	—	—
Florence		3·2	0 45	− 5	—	—	—	1·4
Zagreb		5·2	e 1 18	− 2	i 2 9	−13	e 2·8	—
Vienna	Z.	7·5	—	—	e 3 8	−16	—	—

Zagreb gives also e = +1m.25s., PR_1 = +1m.59s., SR_1 = +2m.13s., S = +2m.22s.

Mar. 3d. Readings also at 2h. (Victoria and Chicago), 3h. (Ottawa and Toronto), 5h. (Baku), 11h. (Victoria), 12h. (Zante), 17h. (Manila), 19h. (Nagasaki).

Mar. 4d. Readings at 0h. (Taihoku), 2h. (Baku), 5h. (Nagoya), 15h. (La Paz), 16h. (near Sumoto), 20h. (Rio de Janeiro, La Plata, and near La Paz), 21h. (De Bilt, Ekaterinburg, and Irkutsk).

Mar. 5d. Readings at 1h. (Toronto, Ottawa, Chicago, and Ekaterinburg), 7h. (near Sumoto and near Taihoku), 9h. (near Kobe), 10h. (near Nagoya and Osaka, also near Tacubaya).

Mar. 6d. Readings at 2h. (Batavia), 9h. (near Granada), 12h. (Apia, Batavia, and near Manila), 13h. (Nagoya), 14h. (Bidston).

Mar. 7d. 18h. 14m. 8s. Epicentre 55°·0S. 5°·0W.

A = +·571, B = −·050, C = −·819; D = −·087, E = −·996;
G = −·816, H = +·071, K = −·574.

To suit the Cape Town observation assumed to be S the epicentre 52°·0S. 3°·5W. was at first adopted, but this threw other stations out.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Cape Town		26·7	47	9 46	!8	(9 46)	−49	(12·6)	13·3
La Plata	E.	41·2	275	i 8 1	− 4	14 8	−16	18·8	22·2
	N.	41·2	275	7 59	− 6	14 7	−17	19·1	22·4
Rio de Janeiro	E.	42·8	301	e 8 7	−10	i 14 37	− 8	18·6	21·4
	N.	42·8	301	e 8 22	+ 5	e 14 37	− 8	18·1	21·1
La Paz		61·3	282	i 10 23	+ 2	i 18 43	+ 3	29·9	34·6
Perth		79·4	133	—	—	20 52!	−84	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		83·6	156	—	—	—	—	—	45·9
Riverview		88·8	160	e 23 27	?[S]	(e 23 27)	[+ 6]	e 44·4	46·2
Helwan		90·4	31	24 42	?S	(24 42)	+24	—	48·6
Algiers		92·1	7	e 15 28	+120	e 24 58	+22	e 43·9	56·4
Granada		92·2	1	i 13 36	− 8	24 54	+17	e 40·6	49·3
Toledo		94·8	1	—	—	—	—	e 40·4	65·1
Bombay		98·7	69	—	—	25 52?	+ 9	—	—
Hyderabad		100·6	75	—	—	—	—	—	45·5
Strasbourg		104·1	9	—	—	—	—	53·9	—
Uccle		106·1	6	—	—	—	—	e 45·9	—
Baku		106·2	40	—	—	e 28 35	?	49·4	64·0
De Bilt		107·5	6	—	—	e 34 52?	?SR_1	e 45·9	58·6
Georgetown		112·2	306	e 22 52	?PR_2	—	—	—	—
Kucino		116·2	25	—	—	e 36 5	?SR_1	61·2	69·5
Ottawa		116·8	311	e 20 8	?PR_1	e 29 37	+73	56·9	—
Toronto	N.	117·0	307	—	—	(36 14)	?SR_1	59·6	—
Ann Arbor		117·9	304	e 20 40	?PR_1	e 27 40	−53	57·9	—
Pulkovo		118·2	18	—	—	e 30 40	?	60·9	—
Chicago	N.	119·4	330	—	—	e 31 31	?	69·7	71·9
Ekaterinburg		123·8	36	19 9	[+ 6]	e 32 54	?	52·9	76·2
Irkutsk		139·8	63	e 23 4	?PR_1	—	—	64·9	—
Victoria	E.	142·8	285	—	—	—	—	72·0	76·4
	N.	142·8	285	—	—	—	—	72·7	79·4

Additional readings and notes: Cape Town gives S as P and L as S. La Plata PR_1N? = +9m.32s., PR_1E? = +9m.34s.; T_o = 18h.14m.14s. La Paz i = +10m.30s., PR = +12m.49s. and +14m.25s., PS = +19m.15s., SR = +23m.26s. and +25m.18s. Riverview e = +35m.40s., MNZ = +49·6m. Granada i = +15m.59s., +18m.59s., +26m.15s., and +27m.20s. Toledo MNW = +64·9m., all readings having been increased by 1h. Baku MN = +54·0m. Ottawa e = +25m.44s. = [S] + 9s., eL = +47·9m. Toronto readings all given as L, LE = +56·5m. Chicago eN = +34m.42s. and +59m.42s.

Mar. 7d. Readings also at 2h. (Ottawa and Toronto), 3h. (Ottawa, Toronto, and La Paz), 9h. (Nagasaki (2)), 12h. (Alicante), 15h. (Nagasaki), 20h. (Bombay).

Mar. 8d. 0h. 51m. 40s. Epicentre 26°·5S. 179°·0W. (as on 1924 April 28d.).

A = −·895, B = −·016, C = −·446; D = −·017, E = +1·000; G = +·446, H = +·008, K = −·895.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington		15·7	197	3 46	− 2	6 50	+ 2	9·7	12·6
Riverview		26·8	247	e 10 37	?S	(e 10 37)	0	e 16·2	20·6
Adelaide		37·2	247	—	—	—	—	e 19·3	25·0
Agana		53·3	314	—	—	—	—	i 36·3	—
Victoria	E.	89·9	33	—	—	—	—	46·5	47·8
La Paz		100·3	114	6 49	?	—	—	—	—
Bombay		114·1	279	—	—	—	—	56·3	—
Toronto	N.	114·6	50	—	—	—	—	e 53·0	—
Ottawa		117·5	49	—	—	—	—	e 56·3	—
Ekaterinburg		128·4	322	e 16 12	− 8	—	—	69·3	—
Baku		137·5	301	—	—	—	—	68·3	—
Pulkovo		141·1	335	—	—	—	—	e 90·3	—
Granada		168·6	19	—	—	e 73 40	?	e 86·8	90·7

Additional readings: Wellington PR_1 = +3m.59s.; T_o = 0h.51m.33s. Riverview MN = +19·2m. Adelaide eS = +21m.8s., L = +22·6m. Victoria LN = +47·4m. Toronto LN = +63·7m.

Mar. 8d. 11h. 27m. 42s. Epicentre 35°·0N. 69°·0E. (as on 1921 May. 20d.).

A = +·294, B = +·765, C = +·574 ; D = +·934, E = −·358 ; G = +·205, H = +·536, K = −·819.

The focal depth 0·030 of 1921 May 20d. is retained.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Simla		−0·2	7·9	117	1 54	− 3	(3 18)	−11	3·3	—
Baku		−0·9	16·0	296	i 3 59	+19	i 7 8	+34	7·3	7·4
Bombay		−0·9	16·5	167	4 18?	+31	—	—	—	—
Hyderabad		−1·2	19·5	152	4 29	+ 8	8 15	+28	—	10·8
Calcutta	E.	−1·3	21·0	122	4 24	−13	(8 5)	−12	8·1	—
	N.	−1·3	21·0	122	4 31	− 6	(8 12)	− 5	8·2	—
Piatigorsk		−1·3	21·8	302	i 4 56	+ 9	—	—	15·3	—
Ekaterinburg		−1·4	22·5	348	i 4 45	− 9	i 8 30	−16	—	—
Kucino		−2·0	29·7	324	i 5 58	− 7	—	—	—	—
Irkutsk		−2·0	30·4	42	i 6 29	+17	(11 36)	+30	11·6	—
Pulkovo		−2·3	35·2	326	i 6 44	−14	e 11 59	−23	13·3	—
Konigsberg		−2·4	38·6	316	7 55	+31	16 24	? L	(16·4)	—
Vienna		−2·5	40·6	309	7 39	0	16 37	+178	e 20·2	—
Zagreb		−2·6	41·0	300	7 18?	−23	—	—	—	—
Rocca di Papa		−2·7	43·9	296	i 7 54	−11	—	—	—	—
Innsbruck		−2·8	44·0	305	e 8 51	+46	—	—	—	—
Florence		−2·8	44·5	300	7 48	−21	—	—	—	—
Zurich		−2·9	45·9	304	8 35	+17	—	—	—	—
Alicante	N.	−3·4	54·4	295	e 26 55	? L	—	—	(e 26·9)	—

Additional readings: Simla SE = +2m.30s., SN = +2m.42s. Baku MN = +7·8m. Piatigorsk i = +5m.59s. Ekaterinburg i = +5m.19s., +5m.46s., and +8m.32s., iPS = +8m.38s. Kucino e = +6m.35s. and +8m.33s., i = +7m.17s., +12m.5s., +12m.38s., and +17m.43s. Irkutsk e = +7m.18s. Konigsberg eP = +8m.54s., i = +9m.58s., SR_1 = +20m.18s. Vienna iZ = +8m.43s., PR_1 = +10m.20s., PR_2 = +11m.43s., i = +12m.25s., SR_1 = +17m.20s.

Mar. 8d. Readings also at 5h. (Pompeii and near Rocca di Papa), 7h. (La Paz), 11h. (Irkutsk, Apia, Alicante, and near Almeria), 14h. (Nagasaki and Irkutsk), 15h. (Granada, Pompeii, Rocca di Papa, near Taihoku, and near Sumoto), 18h. (Nagasaki), 23h. (near Kobe and Nagoya).

Mar. 9d. 19h. 48m. 54s. Epicentre 41°·0N. 131°·0E. (as on 1923 July 26d.).

A = −·495, B = +·570, C = +·656 ; D = +·755, E = +·656 ; G = −·430, H = +·495, K = −·755.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe		7·1	150	0 48	−60	—	—	—	—
Osaka		7·2	149	2 49	+60	—	—	3·5	4·1
Nagoya		7·4	139	2 6	+14	—	—	—	—
Mizusawa	E.	8·0	100	2 3	+ 2	3 29	− 8	—	—
Irkutsk		21·3	311	e 6 6?	+69	—	—	—	—

Additional readings: Osaka MN = +3·8m. Mizusawa SN = +3m.36s.

Mar. 9d. Readings also at 3h. (Ekaterinburg and Baku), 4h. (Bombay), 5h. (Apia), 9h. (2) and 11h. (Nagasaki), 12h. (Ekaterinburg), 13h. (Taihoku (2)), 17h. (Nagasaki), 18h. (De Bilt, Toronto, and Ottawa), 19h. (La Paz (2), Ann Arbor, and Ekaterinburg), 20h. (La Paz and La Plata), 22h. (Ekaterinburg), 23h. (Vienna, Apia, Ekaterinburg, Ottawa, and Toronto).

Mar. 10d. Readings at 1h. (Nagoya, Osaka, and near Mizusawa), 2h. (La Paz), 7h. (Mizusawa and near Tacubaya), 11h. (Apia), 15h. (Nagasaki).

Mar. 11d. Readings at 2h. (Taihoku and La Paz), 4h. (near Nagasaki), 5h. (Ekaterinburg), 9h. and 14h. (Manila), 16h. and 17h. (La Paz), 19h. (near Tacubaya), 21h. (La Paz), 22h. (Manila), 23h. (Kucino).

Mar. 12d. 1h. 22m. 0s. Epicentre 40°·0N. 42°·0E. (as on 1925 Feb. 12d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Piatigorsk	4·1	11	i 1 26	+22	—	—	i 2·4	2·7
Baku	6·0	85	e 1 48	+16	i 3 46	+62	5·0	6·0
Athens	14·4	268	6 22	?S	(6 22)	+ 4	e 8·4	10·0
Vienna z.	20·0	303	e 4 38	− 3	—	—	—	—
Ekaterinburg	20·7	30	4 48	− 1	8 38	0	12·0	16·0
Rocca di Papa	22·2	284	i 5 1	− 6	—	—	—	—
Strasbourg	25·8	301	—	—	10 0?	−18	—	—
De Bilt	27·9	308	—	—	e 11 0?	+ 3	e 17·0	—

Additional readings: Piatigorsk i = +1m.29s., +1m.42s., and +1m.55s. Baku i = +2m.0s. Athens S = +7m.58s., MN = +9·1m. Vienna iZ = +5m.6s. Ekaterinburg MN = +13·4m., MZ = +16·1m. Rocca di Papa iPN = +5m.7s., PR_1 = +5m.18s.

Mar. 12d. 11h. 20m. 12s. Epicentre 39°·0N. 55°·0E.

A = +·446, B = +·637, C = +·629 ; D = +·819, E = −·574 ;
G = +·361, H = +·516, K = −·777.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	4·2	292	e 1 23	+18	2 33	+38	2·6	2·7
Piatigorsk	10·2	303	i 4 25	?S	(i 4 25)	−10	—	—
Ekaterinburg	18·2	10	4 24	+ 5	7 29	−15	8·8	—
Kucino	20·3	332	—	—	e 8 26	− 3	i 9·0	13·2
Pulkovo	26·0	331	5 48	0	10 16	− 6	11·8	—
Irkutsk	36·1	52	—	—	—	—	e 17·6	—

Additional readings: Baku iZ = +1m.53s., MN = +2·8m., MZ = +2·9m. Piatigorsk i = +4m.44s., +6m.0s., and +8m.59s. Kucino iP = +8m.29s. (?iS). Irkutsk e = +19m.41s., L = +22·2m.

Mar. 12d. Readings also at 0h. (De Bilt, Ekaterinburg, Kucino, Baku, and Bombay), 1h. (Baku and Piatigorsk), 4h. (Ekaterinburg), 5h. (Baku and near Batavia), 7h. (near Taihoku), 8h. (Ekaterinburg and Baku), 10h. (Taihoku), 15h. (near Amboina), 22h. (Ekaterinburg, Kucino, Baku, Pulkovo, and La Paz).

Mar. 13d. Readings at 0h. (near Tacubaya), 1h. (Perth), 3h. (Amboina, La Plata, and near La Paz), 4h. (Rio de Janeiro and Ekaterinburg), 7h. and 9h. (near Athens), 10h. (La Paz), 22h. (Apia).

Mar. 14d. 2h. 13m. 30s. Epicentre 55°·0S. 24°·0W. (as on 1925 Jan. 21d.).

A = +·524, B = −·233, C = −·819 ; D = −·407, E = −·914 ;
G = −·748, H = +·333, K = −·574.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rio de Janeiro	35·1	329	i 12 45	?S	(i 12 45)	−12	15·0	18·0
La Paz	51·2	302	i 9 19	+ 5	i 16. 32	− 2	26·5	40·6
San Fernando	92·7	14	—	—	—	—	47·0	47·5
Strasbourg	106·9	22	—	—	—	—	61·5	—
Uccle	108·4	20	—	—	—	—	—	57·5
Bombay	109·3	84	—	—	—	—	55·5	—
Toronto N.	109·3	321	—	—	—	—	30·2	—
Ottawa E.	109·5	326	—	—	—	—	55·5	—
De Bilt	109·8	20	—	—	—	—	e 56·5	60·4
Baku	114·2	52	—	—	—	—	62·0	67·2
Kucino	121·7	36	—	—	—	—	e 60·5	—
Ekaterinburg	131·0	46	i 19 36	[+15]	i 23 0	?PR_1	67·5	77·2

Additional readings: La Paz i = +9m.26s., PR_1 = +13m.10s. ; T_o = 2h.13m.41s. Ottawa eLN = +29·5m. De Bilt MN = +62·3m.

Mar. 14d. 14h. 36m. 48s. Epicentre 6°·5N. 128°·0E. (as on 1924 July 26d.).

$A = -\cdot612$, $B = +\cdot783$, $C = +\cdot113$; $D = +\cdot788$, $E = +\cdot616$; $G = -\cdot070$, $H = +\cdot089$, $K = -\cdot994$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Manila	10·7	320	e 2 57	+17	(5 2)	+14	i 5·0
Irkutsk	49·8	341	9 2	− 4	16 15	− 1	26·2
Ekaterinburg	72·3	329	i 11 34	+ 2	e 20 56	+ 2	29·2
Baku	76·8	310	—	—	—	—	e 23·2?
Kucino	84·8	326	—	—	—	—	e 44·2

Irkutsk gives also: $PR_1 = +11$m.0s., $SR_1 = +19$m.10s., $SR_2 = +20$m.17s.

Mar. 14d. Readings also at 9h. (La Paz), 10h. (Toronto, Ottawa, and Agana), 11h. (Florence), 17h. (Fordham), 18h. (Ekaterinburg, La Paz, and near Manila), 19h. (near Taihoku).

Mar. 15d. 13h. 46m. 44s. Epicentre 10°·8S. 119°·5E. (See 15h.).

A depth of focus 0·015, found for the following shock, has been adopted here also.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	−0·2	11·2	51	—	—	i 4 4	−50	—	—
Malabar	−0·3	12·3	286	e 3 0	+ 1	i 5 5	−14	—	—
Batavia	−0·3	13·3	289	i 3 13	0	i 5 57	+13	e 10·3	—
Manila	−0·8	25·4	3	e 5 20	−14	—	—	—	—
Adelaide	−1·0	29·8	147	—	—	e 13 40	+147	e 18·6	20·6
Melbourne	−1·2	35·4	145	—	—	—	—	e 17·7	23·3
Riverview	−1·2	37·0	134	e 6 52	−28	—	—	e 22·3	24·4
Sydney	−1·2	37·0	134	10 16	?	—	—	22·7	24·6
Bombay	−1·7	54·8	303	—	—	15 16?	−101	—	—
Irkutsk	−1·9	64·4	350	10 27	− 2	18 53	− 2	32·3	—
Ekaterinburg	−2·1	83·0	332	i 12 19	− 5	e 22 33	− 1	32·3	52·5
Kucino	−2·2	94·2	326	—	—	—	—	e 46·3	—
Pulkovo	−2·2	98·9	330	—	—	—	—	e 53·3	62·9
De Bilt	—	113·4	322	—	—	—	—	e 65·3	—

Additional readings: Riverview MN = +24·1m. Ekaterinburg PR_1 = +15m.29s., MZ = +52·7m.

Mar. 15d. 15h. 41m. 30s. Epicentre 10°·8S. 119°·5E. (as at 13h.).

$A = -\cdot484$, $B = +\cdot855$, $C = -\cdot187$; $D = +\cdot870$, $E = +\cdot492$; $G = +\cdot092$, $H = -\cdot163$, $K = -\cdot982$.

A depth of focus 0·015 has been assumed. See note at the end.

	Corr. for Focus	Δ	Az.	P.	O—C.	S.	O—C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	−0·2	11·2	51	i 3 24	+40	—	—	5·9	—
Malabar	−0·3	12·3	286	2 56	− 3	4 57	−22	—	—
Batavia	−0·3	13·3	289	i 3 5	− 8	i 5 30	−14	—	—
Perth	−0·6	21·4	188	i 4 44	− 7	8 8	−32	14·8	—
Manila	−0·8	25·4	3	e 5 27	− 7	(i 10 0)	+ 5	i 10·0	—
Adelaide	−1·0	29·8	147	—	—	i 11 12	− 1	e 16·6	23·3
Hong Kong	−1·1	33·5	351	6 47	− 5	—	—	—	27·5
Phu-Lien	−1·2	34·0	338	—	—	—	—	18·5	—
Melbourne	−1·2	35·4	145	—	—	e 11 48	−55	—	23·3
Riverview	−1·2	37·0	134	e 13 7	?S	(e 13 7)	0	e 20·6	23·2
Sydney	−1·2	37·0	134	13 12	?S	(13 12)	+ 5	22·6	24·2
Colombo	−1·4	43·3	290	14 30	?S	(14 30)	− 4	29·5	35·8
Kodaikanal	−1·4	46·9	293	29 0	?L	—	—	(29·0)	—
Hyderabad	−1·5	49·4	305	14 32	?S	(14 32)	−81	—	—
Bombay	−1·7	54·8	303	e 17 3	?S	(e 17 3)	+ 6	—	—
Irkutsk	−1·9	64·4	350	i 19 31	+ 2	18 58	+ 3	32·5	—

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.
Baku		−2·1	82·0	314	12 23	+ 5	22 30	+ 8	38·5	45·1
Ekaterinburg		−2·1	83·0	332	e 12 22	− 2	22 31	− 3	31·5	49·7
Pulkovo		−2·2	98·9	330	13 36	− 17	24 12	[− 6]	41·5	59·6
Strasbourg		—	112·4	318	—	—	—	—	68·5	—
De Bilt	E.	—	113·4	322	—	—	e 29 18	?	e 61·5	68·9
	N.	—	113·4	322	—	—	—	—	e 59·5	63·6
Edinburgh		—	116·9	327	—	—	—	—	e 72·5	—
Eskdalemuir		—	117·1	327	—	—	e 29 30	−63	55·5	—
Stonyhurst		—	117·2	324	—	—	—	—	e 58·5	75·5
Granada		—	122·7	306	—	—	—	—	e 67·3	75·7
Ottawa	E.	—	143·0	16	—	—	—	—	e 75·5	—
La Paz		—	151·7	165	20 24	[+26]	—	—	81·5	91·2

Additional readings: Adelaide $SR_1 = +13m.30s.$ Riverview $eSR_1 = +19m.26s.$, $MN = +22·1m.$ Baku $MZ = +54·4m.$ Ekaterinburg $i = +12m.25s.$, $iPR_1 = +15m.34s.$, $MZ = +52·6m.$ De Bilt $MZ = +72·5m.$ Pulkovo $MZ = +59·3m.$

NOTE TO MAR. 15d. 15h.

Taking as an approximate epicentre 10°·5S. 119°·5E., and arranging the residuals for the different stations in groups of azimuths, we obtain the following table of residuals to which the correction for focus 0·015 has been applied beforehand.

No. of stations represented	Az.	Equation	Residual	New Residual
	°		°	°
2	140	$+1·28x - 1·53y$	$= -0·5$	$+0·0$
1	190	$-0·17x - 1·00y$	$= -0·4$	$-0·1$
5	300	$-4·33x + 2·50y$	$= +1·0$	$+0·2$
2	350	$-0·34x + 2·00y$	$= +0·2$	$-0·4$

Taking the solution $x = 0°·0$ $y = +0°·3$, we obtain the new residuals in the last column. Hence the epicentre 10°·8S. 119°·5E. as adopted.

Mar. 15d. 17h. 14m. 54s. Epicentre 43°·8N. 11°·2E. (Florence, as on 1924 June 12d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		0·0	—	0 4	+ 4	—	—	—	0·5
Venice		1·9	26	0 31	+ 2	—	—	—	1·3
Rocca di Papa		2·3	152	e 1 0	?S	(e 1 0)	− 3	(i 1·5)	—
Moncalieri		2·8	295	e 0 41	− 3	—	—	—	—
Innsbruck		3·5	2	e 0 43	−12	i 1 15	−22	—	—
Zurich		4·0	332	e 0 42	−20	i 1 25	−25	—	—
Zagreb		4·0	58	e 0 52	−10	i 1 46	− 4	i 2·7	—
Besançon		5·0	316	e 1 39	+22	—	—	—	—
Strasbourg		5·3	334	e 1 25	+ 3	e 2 27	+ 2	e 2·8	3·1
Vienna		5·7	37	e 1 57	+29	—	—	i 3·0	—
Toronto	N.	61·8	307	—	—	—	—	21·4	—

Additional readings: Florence $P = +6s.$ Venice $eP = +44s.$ Rocca di Papa gives S as P and L as S. Zagreb $P = +1m.10s.$, $iS = +2m.8s.$ Strasbourg $e = +1m.51s.$

Mar. 15d. Readings also at 0h. (Fordham), 2h. (Ekaterinburg), 5h. (near Mostar), 6h. (Toronto, Ottawa, Chicago, and near Nagasaki), 7h. (Riverview, La Paz, Vienna, Venice, near Pompeii, and Rocca di Papa), 8h. (near Zagreb), 12h. (Zagreb, Pompeii, near Rocca di Papa, and near Irkutsk), 13h. (Venice), 14h. (Pompeii and near Rocca di Papa), 15h. (Algiers and Stonyhurst), 17h. (Zagreb, Ann Arbor, Agana, Pompeii, and near Rocca di Papa), 18h. (Ekaterinburg), 23h. (Pulkovo, Baku, Ekaterinburg, Hong Kong, Hyderabad, Bombay, Phu-Lien, and Manila).

Mar. 16d. 4h. 28m. 36s. Epicentre 31°·5N. 130°·0E. (as on 1923 July 13d.).

A = −·548, B = +·653, C = +·522 ; D = +·766, E = +·643 ;
G = −·336, H = +·400, K = −·853.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	1·3	356	0 16	− 4	(0 35)	− 1	0·6	—
Sumoto	5·0	54	1 10	− 7	2 1	−16	3·5	—
Kobe	5·3	52	1 14	− 8	2 10	−15	3·5	3·5
Osaka	5·6	53	1 23	− 4	(2 20)	−14	2·3	3·5
Nagoya	6·8	56	2 49	?S	(2 49)	−16	—	3·0
Ekaterinburg	53·0	321	e 9 40	+14	e 17 26	+30	27·4	—

Additional readings: Sumoto PR_1 = +1m.39s., SR_1 = +2m.36s. Kobe MN = +4·0m.

Mar. 16d. 8h. 52m. 54s. Epicentre 31°·5N. 141°·5E. (as on 1922 June 29d.).

A = −·667, B = +·531, C = +·522 ; D = +·623, E = +·783 ;
G = −·409, H = +·325, K = −·853.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	5·3	315	1 16	− 6	—	—	1·9	2·1
Osaka	6·0	304	1 34	+ 2	2 14	+30	2·2	3·5
Kobe	6·2	303	1 34	− 1	2 40	− 9	3·9	4·0
Mizusawa E.	7·7	358	2 6	+ 9	3 27	− 2	—	—
Ekaterinburg	59·2	321	10 55	+49	e 16 51	−82	e 26·6	—
Toronto N.	96·1	29	—	—	—	—	e 47·4	—

Additional readings: Osaka MN = +3·0m. Toronto iN = +95m.16s.

Mar. 16d. 10h. 8m. 55s. Epicentre 18°·0S. 73°·0W. (as on 1922 Sept. 19d.).

A = +·278, B = −·910, C = −·309 ; D = −·956, E = −·292 ;
G = −·090, H = +·296, K = −·951.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	4·9	70	1 29	+13	2 19	+ 5	2·3	2·5
La Plata E.	21·6	145	5 1	+ 1	8 53	− 4	11·0	13·1
N.	21·6	145	4 59	− 1	8 51	− 6	11·0	13·1
Rio de Janeiro	28·4	105	—	—	10 50	−16	15·6	16·6
Ottawa	63·4	358	—	—	e 19 29	+23	e 29·1	—
Ekaterinburg	128·2	30	e 21 56	?PR_1	—	—	68·1	—

In Bull. Volcan., Nos. 9 and 10 (1926), p. 226, a letter from the Director of the De Bilt observatory, dated Sept. 1, 1925, to the Director of the Naples Volcan. Observatory contains the following sentences :—

Une observation d'un tremblement de mer, mentionné dans un journal de bord du bateau hollandais " Bennekom."

Ce tremblement de mer fut observé le 16 mars, 1925, à 10h.7m. a.m. (M.T.G.) lieu d'observation environ 10°30′ Sud 70°30′ Ouest.

Le vaisseau tressaillait comme un bateau vide dont la machine est mise en arrière a toute vitesse.

Mar. 16d. 14h. 42m. 6s. Epicentre 25°·0N. 100°·5E.

A = −·165, B = +·891, C = +·423 ; D = +·983, E = +·182 ;
G = −·077, H = +·416, K = −·906.

(Note the large negative residuals, especially in S, near △ = 30°. Batavia does not record S at all, either here or at 23h.).

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		7·0	126	i 1 57	+11	e 3 39	+29	e 3·9	—
Calcutta	E.	11·4	260	2 58	+ 8	5 48	+44	7·5	8·1
	N.	11·4	260	3 0	+10	5 51	+47	7·6	—
Hong Kong		12·8	98	3 11	+ 1	6 3	+24	6·7	8·1
Hokoto		17·4	91	i 4 29	+19	i 7 49	+22	i 9·6	11·7
Taihoku	E.	19·1	85	4 38	+ 8	8 18	+14	10·7	12·7
Zi-ka-wei		19·4	67	4 32	− 2	8 11	+ 1	—	11·8
Tsingtau	E.	20·3	52	e 6 16	+91	10 10	+101	—	—
	N.	20·3	52	e 6 15	+90	10 3	+94	—	10·5
Dehra Dun		20·5	290	4 44	− 3	9 14	+40	11·7	13·2
Simla	E.	21·4	292	5 0	+ 2	8 48	− 5	11·7	13·1
	N.	21·4	292	5 0	+ 2	9 0	+ 7	12·0	—
Manila		21·9	115	e 5 10	+ 6	—	—	i 10·2	15·5
Hyderabad		21·9	254	i 4 54	−10	9 2	− 1	10·3	13·5
Bombay		26·3	260	5 42	− 9	10 35	+ 7	14·2	—
Kodaikanal		26·4	240	5 48	− 4	10 30	0	—	41·2
Nagasaki		26·7	66	5 53	− 2	10 55	+20	14·6	17·0
Colombo		26·8	231	5 54	− 2	(10 44?)	+ 7	10·7	12·4
Irkutsk		27·4	5	i 5 48	−14	i 10 27	−21	14·9	—
Sumoto		31·2	65	e 14 49	?L	—	—	e 15·6	22·2
Kobe		31·4	64	e 12 25	?S	(e 12 25)	+27	17·5	20·3
Osaka		31·6	65	6 46	+ 3	11 16	−45	15·2	18·1
Batavia		31·8	170	6 40	− 5	—	—	i 14·7	20·2
Malabar		33·0	169	6 49	− 7	—	—	—	—
Mizusawa	E.	36·8	59	7 15	−13	12 59	−22	17·3	—
	N.	36·8	59	7 17	−11	12 56	−25	17·3	—
Ootomari		39·8	46	7 46	− 7	13 46	−17	19·3	22·6
Ekaterinburg		42·7	330	i 8 4	−12	i 14 24	−20	20·9	25·1
Baku		44·6	305	—	—	i 15 1	− 9	20·2	—
Piatigorsk		49·8	309	i 9 11	+ 5	e 16 14	− 2	—	30·7
Kucino		54·2	323	12 34	+180	20 3	+172	27·6	35·2
Pulkovo		58·7	327	i 10 1	− 2	18 4	− 3	28·9	34·3
Perth		58·8	166	12 54?	?PR$_1$	—	—	—	—
Helwan		60·7	290	10 16	− 1	18 38	+ 6	—	42·7
Konigsberg		64·1	322	10 48	+ 9	19 54	+40	e 32·4	34·4
Upsala		65·0	328	e 10 45	0	e 19 24	− 1	e 31·9	40·9
Belgrade		65·9	312	e 12 36	+106	e 20 56	+80	e 36·6	41·9
Budapest		66·2	316	e 10 54?	+ 1	19 48	+ 8	34·5	40·0
Vienna		67·8	317	e 10 59	− 4	i 20 5	+ 5	i 35·0	38·9
Zagreb		68·7	314	e 11 12	+ 3	e 20 10	0	e 36·8	40·0
Adelaide		70·0	148	—	—	e 20 42	+16	e 38·9	52·6
Hamburg		70·4	322	e 11 30	+11	e 21 54?	[+40]	e 35·9	41·9
Bergen		70·9	330	13 54?	?PR$_1$	21 10	[+ 8]	28·9	37·9
Pompeii		71·1	309	e 11 54	+30	e 20 54	+15	—	—
Venice		71·2	314	e 11 32	+ 8	—	—	—	—
Innsbruck		71·3	316	e 11 33	+ 8	e 20 33	− 9	e 36·9	—
Rocca di Papa		72·1	310	e 11 40	+ 9	e 20 47	− 4	e 35·3	45·4
Hohenheim		72·2	319	e 9 54?	−97	e 20 54	+ 2	e 34·9	40·5
Ravensburg		72·3	319	e 11 54?	+22?	e 21 28	[− 1]	e 36·9	40·6
Florence		72·4	311	11 24	− 8	20 54	− 1	33·9	39·9
Zurich		73·1	315	e 11 39	+ 2	e 20 54?	− 9	—	—
Strasbourg		73·3	318	e 11 18	−20	e 21 3	− 3	e 33·9	41·1
De Bilt		73·6	320	11 43	+ 3	21 11	+ 2	e 34·9	45·3
Uccle		74·5	320	e 11 48	+ 2	21 20	0	34·9	40·2
Moncalieri		74·5	314	e 11 54	+ 8	21 22	+ 2	30·8	46·5
Besançon		74·8	316	e 11 46	− 2	—	—	e 32·9	40·9
Melbourne		75·4	146	—	—	e 21 36	+ 6	—	51·8
Dyce		75·6	327	—	—	21 30	− 3	37·7	41·2
Riverview		76·0	140	—	—	e 21 48	+11	e 37·3	52·4
Sydney		76·0	140	26 24	?	—	—	40·1	40·9
Paris		76·4	319	12 3	+ 6	e 21 42	0	37·9	46·9
Edinburgh		76·7	326	—	—	e 22 24	+39	38·9	42·9
Eskdalemuir		76·9	326	e 12 2	+ 2	21 24	−24	—	—
Kew		77·0	322	—	—	—	—	—	46·9
Stonyhurst		77·2	323	e 11 57	− 5	e 21 51	0	37·7	42·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oxford		77·5	322	12 5	+ 1	21 57	+ 2	37·1	41·8
West Bromwich		77·5	322	—	—	21 50	− 5	—	—
Bidston		77·7	323	22 1	?S	(22 1)	+ 4	36·8	43·9
Barcelona		79·5	312	—	—	e 22 15	− 3	e 37·0	44·9
Algiers		80·8	308	—	—	—	—	e 46·9	54·9
Tortosa	N.	80·9	312	e 12 25	+ 1	e 22 36	+ 2	e 38·9	45·8
Alicante	E.	82·7	310	e 11 21	−73	22 33	−21	40·4	—
	N.	82·7	310	e 11 31	−63	22 51	− 3	45·4	—
Toledo		84·5	313	e 12 41	− 4	e 23 3	−11	e 37·7	46·4
Almeria		84·7	310	e 12 49	+ 3	e 23 21	+ 5	39·3	40·6
Granada		85·4	310	i 12 46	− 4	23 20	− 3	35·0	52·5
Sitka	E.	85·5	27	—	—	—	—	e 45·6	51·9
Malaga		86·2	310	12 43	−11	23 1	[− 3]	34·9	51·6
San Fernando		87·6	310	—	—	23 39	− 9	44·9	53·4
Lisbon		88·4	314	—	—	—	—	e 43·7	—
Honolulu	E.	90·8	66	—	—	—	—	e 43·1	46·6
Victoria	E.	96·8	28	24 27	?[S]	(24 27)	[+20]	41·0	53·7
Cape Town		97·6	236	26 34	?S	(26 34)	+62	—	60·6
Ottawa		109·5	356	e 19 9	?PR_1	e 25 14	[+ 6]	48·9	67·9
Toronto		111·3	0	—	—	—	—	48·6	65·3
Harvard		112·2	353	e 22 20	?PR_2	—	—	55·1	64·4
Ithaca		112·5	357	—	—	—	—	52·9	—
Ann Arbor		112·6	3	e 19 12	?PR_1	25 36	[+16]	60·7	64·7
Chicago		112·8	6	—	—	25 1	[−20]	e 51·9	65·7
Fordham		113·9	355	—	—	—	—	59·0	62·4
Georgetown	E.	116·0	358	—	—	—	—	e 61·3	68·2
Loyola		124·1	11	—	—	—	—	67·9	—
Rio de Janeiro		146·8	265	—	—	—	—	e 60·4	—
La Paz		166·4	307	21 46	[+94]	e 35 44	?	80·9	91·3

Additional readings: Hong Kong MN = +7·2m. Zi-ka-wei iPZ = +4m.36s., MN = +11·5m. Dehra Dun readings have been increased by 3m. Manila MN = +13·3m. Colombo other L = +17·2?m. and M = +18·5m. Sumoto MN = +21·0m. Kobe MN = +18·7m. Osaka MN = +19·6m. Malabar i = +8m.7s. and +8m.17s. Ekaterinburg PR_1 = +9m.47s., i = +14m.10s., iSR_1 = +17m.28s., MZ = +27·2m. Baku iSR = +18m.18s. =SR_1 −4s. Piatigorsk iPR_1 = +11m.9s., SR_1 = +20m.1s., MN = +29·1m. Kucino SR_1 = +23m.51s. =SR_2 +3s., MN = +32·8m. Pulkovo SR_1 = +23m.36s., MZ = +35·3m. Konigsberg PS = +20m.30s., SR_1 = +25m.6s., i = +25m.59s., SR_2? = +28m.5s., eLN = +31·4m. Upsala MN = +36·7m. Belgrade PR_1 = +13m.32s., SR_1 = +26m.26s. Vienna i = +13m.6s., +13m.46s., PR_1 = +14m.8s., PS? = +21m.0s., SR_2 = +27m.51s. Zagreb e = +12m.2s., +13m.51s., +26m.15s., +29m.38s., and +32m.18s. Adelaide e = +24m.54s. and +31m.54s., eL = +44·8m. Hamburg eLZ = +40·5m. Venice ePN = +11m.46s. Rocca di Papa ePE = +12m.42s., ePN = +12m.49s., L = +40·3m. Florence P = +11m.34s. Strasbourg eSR_1 = +25m.52s., eSR_2 = +29m.24s., MN = +40·2m. De Bilt eSR_1 = +25m.46s., eSR_2 = +29m.4s., MN = +40·1m. Uccle SR_1 = +26m.9s., SR_2 = +29m.34s., MN = +42·4m. Moncalieri MN = +40·4m. Riverview MN = +50·5m. Paris e = +30m.17s., MN = +39·9m. Bidston S = +31m.9s. =SR_2 +9s. Toledo i = +23m.12s. Almeria MN = +47·5m. Granada i = +12m.51s., +16m.6s. =PR_1 −26s., +17m.5s., and +24m.46s. Sitka eSR_2 = +33m.12s., eLN = +41·9m., MN = +45·8m. Malaga MN = +48·6m. San Fernando MN = +50·9m. Honolulu ePSE = +25m.27s., eSR_2N = +33m.49s., eE = +37m.42s. =SR_2 +26s., eLN = +40·6m. Victoria MN = +56·9m. Ottawa eSR_1N? = +28m.39s., MN = +66·9m. Toronto LN = +62·5m., MN = +70·0m. Harvard LN = +62·2m., MN = +66·9m. Chicago SR_1E = +32m.57s., eSR_1N = +33m.14s., eN = +47m.36s., eE = +48m.24s., MN = +66·9m. La Paz P = +22m.13s., SR_1 = +45m.14s., L = +46·9m.(?SR_1).

Mar. 16d. 23h. 19m. 24s. Epicentre 27°·0S. 176°·0W. (as on 1924 Nov. 13d.).

A = −·886, B = −·062, C = −·454 ; D = −·070, E = +·998 ;
G = +·453, H = +·032, K = −·891.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	13·7	18	3 36	+14	—	—	—	9·6
Wellington	16·2	206	e 4 7	+12	(e 7 21)	+21	e 7·4	—
Riverview	29·0	248	e 6 12	− 6	e 11 18	+ 1	—	17·2
Amboina	58·1	283	—	—	—	—	i 31·9	—
Perth	58·6	248	—	—	16 36?	−90	—	—
Batavia	75·7	272	e 11 42	−11	i 21 46	+12	—	—
Colombo	105·7	270	24 56	?S	(24 56)	[+ 6]	(41·9)	49·7
Hyderabad	111·3	278	e 18 36	?PR$_1$	24 38	[−37]	36·7	45·2
Toronto	112·8	51	—	—	e 26 47	−65	42·8	—
Ottawa	115·8	50	e 27 2	?S	(e 27 2)	−74	e 44·1	—
Bombay	116·8	278	22 34	?PR$_1$	30 0	?	—	—
Ekaterinburg	130·4	323	19 27	[+ 8]	25 47	?PR$_2$	—	—
Baku	140·1	301	i 22 34	?PR$_1$	e 34 52	?	55·1	65·0
Kucino	142·3	329	—	—	e 30 48	?	—	—
Pulkovo	142·6	339	e 22 37	?PR$_1$	—	—	—	—
De Bilt	154·9	358	e 20 36	[+34]	—	—	—	—
Toledo	165·5	26	e 20 37	[+25]	e 31 3	?	e 47·4	86·1
Granada	168·0	31	e 19 54	[−20]	—	—	e 76·4	80·6

Additional readings and notes: Riverview eP = +7m.16s., MN = +16·3m. Toronto eE = +28m.39s., eSN = +34m.44s. Ottawa eSN? = +34m.48s. Ekaterinburg e = +20m.51s., eSR$_1$ = +27m.38s. = PR$_2$ +6s. Baku SR$_2$ = +45m.54s., SR$_3$ = +49m.32s., MN = +57·4m., MZ = +61·3m. Toledo MNW = +79·7m. Granada i = +24m.46s., +25m.26s. = PR$_1$ +2s., +29m.47s. = PR$_2$ +28s., and +34m.56s.

Mar. 16d. 23h. 50m. 26s. Epicentre 25°·0N. 100°·5E. (as at 14h.).

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta E.	11·4	260	2 59	+ 9	5 11	+ 7	—	—
Hong Kong	12·8	98	6 3	?S	(6 3)	+24	7·0	8·1
Taihoku	19·1	85	—	—	e 8 20	+16	11·4	—
Zi-ka-wei	19·4	67	4 29	− 5	8 10	0	—	11·5
Simla	21·4	292	8 52	?S	(8 52)	− 1	—	—
Manila	21·9	115	e 5 34	+30	—	—	12·8	—
Bombay	26·3	260	—	—	(9 58)	−30	10·0	17·0
Kodaikanal	26·4	240	9 46	?S	(9 46)	−44	—	—
Batavia	31·8	170	e 6 40	− 5	—	—	—	—
Ekaterinburg	42·7	330	i 8 0	−16	i 14 24	−20	19·1	25·4
Kucino	54·2	323	—	—	—	—	29·8	32·6
Pulkovo	58·7	327	e 10 0	− 3	e 18 4	− 3	—	34·1
Upsala	65·0	328	—	—	—	—	e 34·6	—
De Bilt	73·6	320	e 11 35	− 5	—	—	e 36·6	47·2
Uccle	74·5	320	—	—	—	—	e 36·6	42·4
Edinburgh	76·7	326	11 34?	−25	—	—	—	—
Stonyhurst	77·2	323	e 11 25	−37	e 20 19	−92	e 37·7	43·2
Oxford	77·5	322	i 11 45	−19	—	—	e 39·6	49·8
Bidston	77·7	323	22 1	?S	(22 1)	+ 4	39·6	43·6
San Fernando E.	87·6	310	—	—	—	—	—	52·6
Chicago	112·8	6	—	—	—	—	e 63·6	—

Additional readings and notes: Hong Kong, ? = +7m.14s., MN = +7·3m. Ekaterinburg MZ = +27·4m. Pulkovo MZ = +36·7m. Upsala eN = +29m.34s. De Bilt MN = +40·2m., MZ = +47·0m. Bidston S = +31m.6s. = SR$_2$ +6s. San Fernando MN = +51·6m.

Mar. 16d. Readings also at 0h. (De Bilt, Strasbourg, and Eskdalemuir), 3h. (La Paz and Agana), 5h. (La Paz), 7h. (Adelaide), 8h. (Batavia and near Amboina), 11h. (Irkutsk), 13h. (Nagoya), 14h. (Irkutsk, Ekaterinburg, Amboina, and near Manila), 17h. (near Amboina), 19h. (Moncalieri).

Mar. 17d. 15h. 32m. 0s. Epicentre 39°·0N. 24°·8E.

A = +·705, B = +·326, C = +·629 ; D = +·419, E = −·908 ;
G = +·571, H = +·264, K = −·777.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	1·4	220	0 24	+ 3	—	—	0·7	0·8
Belgrade	6·6	333	e 2 26	+45	e 4 16	?L	(e 4·3)	4·4
Zagreb	9·4	319	e 2 17	− 5	i 4 7	− 6	—	7·6
Budapest N.	9·4	336	—	—	—	—	e 5·5	—
Rocca di Papa	9·6	291	—	—	e 5 30	+72	e 6·8	7·6
Vienna	11·1	330	e 2 46	0	—	—	e 6·9	8·8
Florence	11·2	300	4 0	?	—	—	—	—
Innsbruck	12·8	315	e 3 6	− 4	—	—	—	—
Moncalieri	14·0	301	—	—	e 6 46	+38	9·6	—
Strasbourg	15·6	314	e 3 51	+ 4	—	—	e 8·0	—
Besançon	15·9	307	e 3 50	− 1	—	—	—	—
Uccle	18·6	316	e 4 24	0	—	—	e 11·0	—
Paris	18·7	309	e 4 23	− 2	—	—	7·0	11·0
De Bilt	18·9	320	—	—	—	—	e 10·0	12·0
Baku	19·3	78	e 4 28	− 5	e 7 44	−24	9·5	11·6
Pulkovo	21·0	8	4 37	−16	8 48	+ 4	12·0	13·9
Upsala	21·3	350	—	—	—	—	e 12·4	14·4
Granada	22·3	274	—	—	—	—	e 12·6	15·2
Edinburgh	25·0	322	—	—	—	—	e 15·0	—
Ekaterinburg	29·4	41	e 5 52	−30	e 10 57	−27	14·0	—
Irkutsk	54·2	48	—	—	—	—	31·0	—

Additional readings: Belgrade MN = +4·6m. Budapest eE = +6m.30s. Strasbourg e = +4m.0s. De Bilt MN = +11·9m. Baku MN = +12·6m., MZ = +14·1m., P and S are given as e simply. Granada eL = +14·6m.

Mar. 17d. Readings also at 1h. (Wellington and Riverview), 3h. (Granada), 4h. (Ekaterinburg), 6h. (Fordham), 8h. (Nagasaki), 11h. (near Port au Prince), 12h. (near Nagoya), 14h. (Kucino and Ottawa), 15h. (Toronto and near Rocca di Papa), 16h. (Ottawa), 17h. (Toronto), 21h. (Nagasaki, Baku, Batavia, Malabar, and Ekaterinburg), 23h. (Taihoku).

Mar. 18d. 14h. 2m. 6s. Epicentre 0°·5S. 152°·0E. (as on 1921 Oct. 20d.).

A = −·883, B = +·470, C = −·009 ; D = +·470, E = +·883 ;
G = +·008, H = −·004, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	24·0	262	(6 42)	+74	—	—	6·7	—
Riverview	33·3	181	e 7 5	+ 6	e 11 1	−88	e 13·1	18·2
Sydney	33·3	181	10 30	?	12 54	+25	14·9	16·4
Manila	34·1	298	e 7 3	− 3	(12 30)	−12	12·5	—
Melbourne	37·9	190	—	—	e 11 54	?	i 20·2	19·4
Hong Kong	43·3	307	—	—	—	—	—	23·9
Batavia E.	45·4	262	i 8 31	− 5	—	—	—	—
Perth	46·4	225	e 10 57	+134	i 17 37	+124	23·4	—
Honolulu N.	53·4	61	—	—	e 23 24	?SR_2	26·6	29·5
Irkutsk	66·1	330	11 6	+14	20 9	+31	31·9	—
Bombay	79·9	290	22 16	?S	(22 16)	− 6	—	—
Victoria	86·9	42	23 49	?S	(23 49)	+ 9	42·1	49·6
Ekaterinburg	91·1	327	e 13 23	+ 1	e 24 23	− 2	37·9	47·1
Baku	99·4	311	—	—	e 27 24	+94	46·4	53·9
Kucino	103·7	328	—	—	—	—	47·4	53·6
Pulkovo	105·8	334	—	—	—	—	54·9	—
Ann Arbor	115·0	41	—	—	e 36 18	?SR_1	54·0	66·9
Toronto N.	117·3	38	—	—	e 36 54	?SR_1	39·6	—
Ottawa	118·6	37	—	—	e 36 9	?SR_1	e 53·9	—
De Bilt	121·4	337	—	—	—	—	e 56·9	65·2
Uccle	122·8	336	—	—	—	—	e 56·9	—
Strasbourg	122·9	333	—	—	—	—	61·9	—
La Paz	136·9	116	e 20 9 [+35]		—	—	—	—

Additional readings: Amboina i = 14h.0m.6s. and 14h.4m.6s. Riverview MN = +18·1m. Perth PS = +19m.49s. Honolulu eN = +24m.39s., LE = +25·9m., ME = +31·1m. Victoria LN = +38·3m. Ottawa eN = +37m.14s. De Bilt MN = +65·3m.

Mar. 18d. Readings also at 0h. (Apia), 1h. (near Sumoto), 3h. (Ekaterinburg), 6h. (Apia), 13h. (Ann Arbor and Ottawa), 15h. (La Paz), 18h. (Irkutsk and near Phu-Lien), 20h. (La Paz and Balboa Heights), 21h. (near Tacubaya).

Mar. 19d, 15h. 37m. 55s. Epicentre 4°·8N. 96°·8E. (as on 1917 Nov. 4d.).

$A = -\cdot118$, $B = +\cdot989$, $C = +\cdot084$; $D = +\cdot993$, $E = +\cdot118$; $G = -\cdot010$, $H = +\cdot083$, $K = -\cdot996$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	14·9	138	e 4 6	+28	—	—	—	—
Colombo	17·0	278	7 5	?S	(7 5)	−13	9·4	11·4
Phu-Lien	18·6	30	e 4 42	+18	e 8 50	+57	12·1	—
Kodaikanal	19·9	287	10 35	?L	—	—	(10·6)	—
Hyderabad	22·0	306	5 1	− 4	9 4	− 1	—	—
Hong Kong	24·3	42	5 33	+ 2	10 23	+33	15·0	17·1
Manila	25·7	66	e 6 20	+35	—	—	e 12·1	—
Bombay	27·3	303	5 54	− 7	10 31	−15	13·8	—
Irkutsk	47·5	6	i 8 52	+ 1	i 15 55	+ 7	25·1	—
Baku	55·0	317	—	—	e 17 24	+ 3	26·1	34·7
Ekaterinburg	59·3	339	i 10 16	+ 9	i 18 24	+ 9	27·1	40·4
Kucino	68·9	330	e 19 14	?S	(e 19 14)	−59	34·1	37·3
Vienna	80·0	320	i 12 20	+ 1	i 22 22	− 1	—	—
De Bilt	87·2	322	12 57	− 3	23 36	− 7	e 50·1	61·5
Uccle	87·8	321	—	—	e 23 34	−16	e 43·1	—
Granada	95·4	308	i 36 53	?	e 46 34	?	e 55·5	59·3
Ottawa	129·4	352	—	—	—	—	e 73·1	—
Toronto N.	131·7	356	—	—	—	—	72·7	—
Ann Arbor	132·9	0	—	—	—	—	e 77·2	—
Chicago N.	133·3	4	—	—	—	—	e 86·1	—
Georgetown E.	135·9	353	—	—	—	—	e 71·5	—
La Paz	161·2	231	e 20 3	[− 6]	—	—	—	—

Additional readings: Irkutsk $PR_1 = +10$m.49s., $SR_1 = +18$m.41s. Baku e = +22m.12s. $= SR_1 + 32$s., MN = +30·4m. Ekaterinburg i = +12m.34s. $= PR_1 + 15$s. De Bilt $ePR_1Z = +16$m.25s., MN = +53·2m., MZ = +58·7m. Ann Arbor L is given as e simply, also L = +93·7m.

Mar. 19d. Readings also at 1h. (Merida, Tacubaya, Oaxaca, and Vera Cruz), 8h. (near Kobe and Sumoto), 9h. (near Tacubaya), 13h. (near Belgrade), 16h. (Manila), 17h. (Manila, Fordham, near Osaka, Nagoya, Kobe, and Sumoto), 20h. (Kingston), 21h. (Manila and near Amboina), 22h. (Granada).

Mar. 20d. 5h. 42m. 48s. Epicentre 5°·0S. 109°·0E. (as on 1924 Nov. 12d.).

$A = -\cdot324$, $B = +\cdot942$, $C = -\cdot087$; $D = +\cdot946$, $E = +\cdot326$; $G = +\cdot028$, $H = -\cdot082$, $K = -\cdot996$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	2·4	241	i 0 36	− 1	i 1 8	+ 2	—	—
Malabar	2·7	212	i 0 42	0	i 1 14	0	—	—
Manila	22·9	31	—	—	—	—	e 11·2	—
Phu-Lien	25·9	355	—	—	—	—	15·2	—
Perth	27·7	167	4 12	−113	—	—	—	—
Hong Kong	27·8	10	—	—	—	—	—	19·2
Kodaikanal	34·9	295	22 12	?L	—	—	(22·2)	—
Bombay	42·9	307	8 12?	− 5	—	—	—	—
Riverview	48·6	134	e 21 6	?SR_2	—	—	e 28·7	—
De Bilt	102·4	322	—	—	—	—	e 59·2	—
Uccle	103·1	321	—	—	—	—	e 63·2	—

Batavia gives also i = +45s.

Mar. 20d. 12h. 19m. 30s. Epicentre 31°·0N. 133°·0E.

$A = -·585$, $B = +·627$, $C = +·515$; $D = +·731$, $E = +·682$; $G = -·351$, $H = +·377$, $K = -·857$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka		4·2	29	5 5	+240	—	—	7·0	7·9
Zi-ka-wei		9·9	274	e 2 47	+18	e 5 31	+65	—	—
Taihoku		11·7	242	e 2 58	+ 3	—	—	—	—
Manila		19·8	217	e 4 30	− 9	—	—	10·0	—
Irkutsk		29·8	324	e 6 30?	+ 4	e 11 30	− 1	16·5	17·1
Hyderabad		51·1	270	e 28 30?	?L	—	—	(e 28·5?)	—
Ekaterinburg		55·1	321	10 34	+54	—	—	25·5	38·1
Bombay		55·2	273	—	—	17 30?	+ 6	—	—
Baku		65·7	305	—	—	—	—	40·5	45·1
Kucino		67·5	322	—	—	—	—	37·4	45·2
Pulkovo		69·5	330	—	—	—	—	e 45·0	48·8
Upsala		71·6	333	—	—	—	—	e 50·5	—
Vienna	Z.	82·6	324	e 13 27	+53	—	—	—	—
De Bilt		85·3	331	—	—	e 24 21	+59	e 47·5	58·6
Edinburgh		85·5	338	—	—	—	—	—	60·5
Eskdalemuir		85·9	338	—	—	—	—	46·5	—
Uccle		86·5	331	—	—	—	—	e 47·5	58·5
Strasbourg		86·7	327	—	—	—	—	48·5	57·5
Bidston		87·4	336	55 39	?	—	—	—	61·3
Oxford		88·1	335	—	—	—	—	51·5	61·3
Paris		88·8	330	—	—	—	—	e 52·5	59·5
Rocca di Papa		89·0	320	—	—	—	—	e 50·1	59·1
Moncalieri		89·2	325	—	—	—	—	e 55·8	—
Toledo		98·7	329	—	—	—	—	e 54·5	65·9
Ottawa		99·2	20	—	—	—	—	e 58·5	—
Ann Arbor		99·3	27	—	—	—	—	e 50·4	—
Toronto		99·7	24	—	—	—	—	58·7	—
Granada		100·7	326	—	—	—	—	e 58·7	68·9

Additional readings and notes: Osaka MN = +8·6m. Zi-ka-wei readings are all given for 13h. Irkutsk MZ = +22·2m. Ekaterinburg e = +10m.52s., MN = +33·6m. De Bilt MN = +56·5m., MZ = +58·7m. Paris L = +55·5m. Moncalieri L = +58·5m. Toledo MNW = +68·3m. Toronto eLN = +59·7m. Granada L = +60·6m.

Mar. 20d. Readings also at 3h. (Agana), 7h. (near Batavia and near Malabar), 9h. (La Paz and Melbourne), 11h. (near Batavia and Malabar), 14h. (Nagasaki and near Batavia and Malabar), 15h. (Ekaterinburg), 16h. (Irkutsk and near Wellington).

Mar. 21d. 15h. 20m. 40s. Epicentre 48°·2N. 70°·8W. (as on 1925 Mar. 1d.).

$A = +·219$, $B = -·629$, $C = +·745$; $D = -·944$, $E = -·329$; $G = +·245$, $H = -·704$, $K = -·667$.

The focal depth +0·010 adopted for March 1 has been retained.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Ottawa		−0·0	4·4	233	i 1 24	+16	—	—	—	1·5
Harvard	E.	−0·0	5·8	183	e 1 21	− 9	—	—	1·8	2·0
	N.	−0·0	5·8	183	e 1 52	+22	—	—	2·2	2·3
Ithaca		−0·0	7·0	217	e 1 55	+ 9	—	—	2·5	—
Toronto		−0·1	7·5	236	2 5	+13	i 3 4	−17	i 3·5	3·6
Georgetown	E.	−0·1	10·3	209	i 4 26	?S	(i 4 26)	− 9	—	—
Ann Arbor		−0·1	10·8	242	—	—	(e 4 44)	− 4	e 4·7	—
Chicago		−0·2	13·5	248	—	—	—	—	i 6·3	—
Victoria		−0·3	34·2	290	—	—	—	—	17·3	20·1

Georgetown gives also ePN = +4m.20s. and eSE? = +7m.46s.

Mar. 21d. 16h. 15m. 20s. Epicentre 34°·0N. 21°·0E. (as on 1924 Aug. 8d.).

A = +·774, B = +·297, C = +·559 ; D = +·358, E = −·934 ;
G = +·522, H = +·200, K = −·829.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		4·5	29	i 1 14	+ 4	e 2 15	+11	e 2·4	3·7
Vienna	Z.	14·7	347	e 3 15	−20	—	—	—	—
Moncalieri		15·0	321	e 3 33	− 6	8 57	?L	13·2	—
Innsbruck		15·1	334	e 3 16	−24	—	—	—	—
Strasbourg		17·6	330	e 4 4	− 8	e 8 10	+39	12·7	—
Granada		20·2	286	i 4 22	−21	i 8 40	+13	e 14·3	16·2
Uccle		20·7	329	6 40?	+111	—	—	—	—
De Bilt		21·4	333	i 4 55	− 3	e 8 42	−11	—	—
Baku		23·8	66	e 4 11	−75	e 8 9	−91	—	—
Pulkovo		26·5	11	e 5 29	−24	—	—	e 15·3	—

No additional readings.

Mar. 21d. 16h. 24m. 30s. Epicentre 7°·0S. 148°·0E. (as on 1925 Feb. 4d.).

A = −·842, B = +·526, C = −·122 ; D = +·530, E = +·848 ;
G = +·103, H = −·065, K = −·992.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	27·0	174	e 5 48	−10	e 10 24	−17	e 13·4	16·1
Melbourne	30·9	185	—	—	e 12 6	+16	—	17·3
Perth	39·0	226	—	—	—	—	19·5	—
Ekaterinburg	94·4	327	—	—	—	—	57·5	—
Bergen	119·7	340	—	—	—	—	e 51·5	—
Granada	140·3	324	—	—	—	—	84·5	97·6

Riverview gives also MN = +17·2m.

Mar. 21d. Readings also at 1h. (near Mizusawa), 7h. (Florence), 8h. (Florence and Manila), 9h. (Toronto, Ottawa, and near Irkutsk), 10h. (Florence (3)), 11h. (Zi-ka-wei, Victoria, Ottawa, Toronto, near Oaxaca, Puebla, Vera Cruz, Merida, and Tacubaya), 12h. (La Plata and near Lick), 14h. (Zi-ka-wei), 15h. (Irkutsk), 16h. (Apia), 21h. (Perth and Riverview), 22h. (Ekaterinburg), 23h. (Belgrade).

Mar. 22d. 8h. 41m. 50s. Epicentre **18°·5S. 168°·5E.**
(as on 1924 July 20d.).

A = −·929, B = +·189, C = −·317 ; D = +·199, E = +·980 ;
G = +·311, H = −·063, K = −·948.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		9·4	89	i 1 58	−24	3 22	−51	i 4·5	9·2
Apia		19·5	79	e 4 33	− 2	7 42	−31	9·2	10·2
Riverview		21·8	222	i 4 56	− 7	i 8 58	− 3	e 10·0	12·9
Sydney		21·8	222	4 13	−50	8 58	− 3	11·1	13·2
Wellington		23·4	168	i 5 14	− 7	i 9 38	+ 5	i 12·0	13·8
Melbourne		28·2	221	6 4	− 6	11 10	+ 7	15·0	16·2
Adelaide		31·2	233	i 6 22	−18	12 28	+34	e 17·5	23·7
Amboina		42·1	285	i 8 10	− 2	i 14 16	−20	—	—
Perth		49·0	243	i 9 1	+ 1	15 50	−16	24·7	—
Honolulu	E.	51·6	42	9 14	− 3	i 17 1	+22	i 23·5	25·4
	N.	51·6	42	9 11	− 6	16 49	+10	e 23·4	25·3

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		57·3	303	e 9 58	+ 4	i 17 48	− 2	i 27·6	33·1
Malabar		60·2	274	i 10 18	+ 5	i 18 31	+ 5	24·0	—
Batavia		61·2	274	i 10 25	+ 5	i 18 34	− 4	22·6	35·3
Nagoya		61·4	332	10 51	+30	—	—	—	—
Osaka		61·7	330	10 22	− 1	18 43	− 1	25·6	36·2
Kobe		61·9	330	—	—	—	—	—	36·6
Mizusawa		63·0	339	10 33	+ 1	18 56	− 5	26·4	—
Taihoku	E.	63·1	314	10 27	− 6	(19 0)	− 2	19·0	27·0
Nagasaki		63·2	325	e 10 18	−15	—	—	—	—
Hong Kong		67·0	307	10 57	− 1	(19 57)	+ 7	20·0	24·3
Zi-ka-wei		67·1	320	10 57	− 2	e 17 16	−95	—	38·1
Ootomari		69·1	343	11 23	+11	20 22	+ 7	31·9	35·7
Berkeley	E.	85·9	48	e 13 3	+10	e 22 53	[− 8]	e 39·2	47·9
	N. or Z.	85·9	48	i 12 48	− 5	e 22 47	[−14]	e 39·2	46·2
Lick	E.	86·2	49	12 48	− 6	(e 23 23)	− 9	e 38·9	42·1
	N.	86·2	49	12 50	− 4	(e 23 30)	− 2	e 39·2	41·9
Sitka	E.	88·8	28	—	—	(24 35)	+34	39·8	38·2
	N.	88·8	28	—	—	(25 7)	+66	e 36·0	48·2
Victoria	E.	90·2	37	13 1	−16	24 41	+25	41·6	53·1
	N.	90·2	37	—	—	23 56	[+27]	36·9	37·8
Tucson	E.	92·2	56	—	—	—	—	47·1	59·2
Kodaikanal		94·2	280	23 58	?S	(23 58)	[+ 5]	67·5	78·7
Hyderabad		95·5	286	13 32	−14	23 59	[− 0]	—	31·0
Tacubaya	E.	98·1	75	—	—	32 12	?SR$_1$	—	—
Simla	N.	100·5	300	24 22	?[S]	(24 22)	[− 4]	—	71·0
Bombay		101·0	286	18 18	?PR$_1$	24 32	[+ 3]	32·9	66·5
Loyola	N.	108·7	64	29 10	?S	(29 10)	+114	60·2	66·2
La Plata		110·8	140	—	—	—	—	45·6	53·1
Ann Arbor		111·6	51	e 20 22	?PR$_1$	i 29 22	+100	e 42·7	58·0
Chicago	E.	112·4	51	14 58	−11	—	—	55·0	68·7
La Paz		114·2	120	e 18 54	[+20]	i 29 38	+94	48·2	54·3
Ekaterinburg		115·1	325	i 14 57	−24	27 31	−40	45·2	67·1
Toronto		118·5	49	e 18 25	[−23]	i 30 6	?	44·2	61·4
Georgetown	E.	120·3	55	e 20 10	?PR$_1$	—	—	37·8	74·8
Cape Town		120·3	209	20 40	?PR$_1$	—	—	—	74·7
Cheltenham	E.	120·4	56	—	—	(e 29 46)	+54	61·8	68·8
Ithaca		120·6	50	—	—	e 30 58	+124	62·2	—
Ottawa		121·0	47	e 20 26	?PR$_1$	e 30 6	+69	e 44·2	65·7
Fordham		122·7	53	e 20 43	?PR$_1$	e 32 1	?	51·6	64·0
Baku		123·5	307	i 20 45	?PR$_1$	i 32 42	?	—	—
Harvard	E.	124·6	50	e 20 40	?PR$_1$	—	—	58·1	63·7
	N.	124·6	50	—	—	—	—	61·2	73·2
Kucino		127·5	328	—	—	i 27 10?	−154	32·2	69·2
Piatigorsk		128·0	312	—	—	e 21 17	?PR$_1$	—	72·4
Rio de Janeiro	E.	128·4	141	e 21 14	?PR$_1$	—	—	e 39·2	69·7
	N.	128·4	141	e 21 17	?PR$_1$	—	—	e 38·7	65·7
Pulkovo		129·1	335	e 17 3	+39	e 29 38	−17	59·2	78·6
Upsala	E.	133·7	341	e 21 48	?PR$_1$	—	—	e 59·2	77·6
	N.	133·7	341	—	—	—	—	e 57·2	73·9
Konigsberg		136·3	334	22 10	?PR$_1$	—	—	e 52·7	62·7
Bergen		136·4	349	21 10	?PR$_1$	—	—	—	—
Helwan		139·6	294	e 19 26	[−13]	22 32	?PR$_1$	—	95·8
Dyce		140·6	352	19 31	[− 9]	—	—	—	78·1
Hamburg		141·2	340	e 19 31	[−10]	—	—	e 63·2	76·2
Budapest		141·8	326	19 39	[− 4]	—	—	56·6	81·2
Edinburgh		142·1	353	e 19 40	[− 3]	—	—	59·2	83·7
Vienna		142·6	330	e 19 34	[−10]	—	—	i 58·2	82·2
Belgrade		142·6	322	e 17 39	[−125]	e 33 15	?	e 65·0	81·5
Johannesburg		142·8	221	—	—	—	—	62·2	70·2
Athens		143·7	310	19 32	[−14]	—	—	42·2	—
Stonyhurst		143·9	350	e 19 32	[−15]	—	—	65·4	—
De Bilt		144·0	341	19 37	[−10]	—	—	e 73·2	77·4
Zagreb		144·5	326	e 19 31	[−16]	e 32 38	?	e 60·5	81·7
Bidston		144·5	350	19 39	[− 8]	33 10	?	48·2	84·9
Oxford		144·8	351	i 19 44	[− 4]	i 42 10	?SR$_1$	—	—
Uccle		145·3	341	19 39	[−10]	—	—	59·2	70·4
Innsbruck		145·7	334	e 19 46	[− 3]	—	—	e 70·2	—
Kew		145·9	349	—	—	—	—	—	121·2
Ravensburg		146·0	337	i 19 45	[− 5]	e 33 43?	?	e 63·2	—
Strasbourg		146·1	337	i 19 49	[− 1]	e 33 40	?	64·2	76·7
Venice		146·6	330	i 20 4	[+13]	—	—	—	—
Zurich		146·8	334	e 19 47	[− 4]	—	—	—	—
Paris		147·6	344	i 19 44	[− 8]	—	—	70·2	86·2
Besançon		147·9	339	19 51	[− 2]	—	—	—	74·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		148·3	327	19 50	[− 3]	32 10	?	—	80·2
Pompeii		148·5	320	e 19 40	[−13]	—	—	—	88·2
Rocca di Papa		148·9	322	19 43	[−11]	—	—	e 56·8	86·7
Moncalieri		149·0	333	i 19 55	[+ 1]	33 10	?	52·1	110·9
Barcelona		154·3	336	e 20 3	[+ 2]	—	—	e 74·8	98·0
Tortosa	N.	155·4	338	e 19 10	[−52]	e 33 10	?	63·2	109·0
Algiers		157·7	328	20 14	[+ 8]	e 33 14	?	e 63·2	107·2
Toledo		157·7	345	e 20 2	[− 4]	34 37	?	71·8	91·2
Alicante	E.	158·0	336	e 20 4	[− 2]	39 10	?	e 82·7	—
	N.	158·0	336	e 20 5	[− 1]	38 40	?	e 84·7	—
Lisbon		159·7	355	e 20 41	[+33]	—	—	e 43·7	—
Almeria		159·9	338	20 9	[+ 1]	—	—	—	87·8
Granada		160·1	341	e 19 34	[−34]	—	—	e 73·2	80·8
Rio Tinto		160·3	348	26 10	?	—	—	—	110·2
Malaga		160·7	343	20 5	[− 4]	38 8	?	69·8	105·1
San Fernando		161·5	347	20 12	[+ 3]	—	—	82·7	109·7
Accra		163·0	222	63 10	?L	—	—	(63·2)	82·2

Additional readings and notes: Suva readings have all been increased by 2m. Apia P = +4m.42s. and +5m.59s., S = +7m.50s. and +8m.30s. Riverview iP = +5m.14s., iS = +9m.17s., MZ = +11·1m., MN = +13·4m.; T_e = 8h.41m.37s. Adelaide e = +5m.58s., all readings having been increased by 6m. Perth PR_1 = +10m.46s., ? = +16m.17s., and +16m.43s., SR_1 = +37m.28s. Honolulu eN = +10m.30s. and +19m.10s., eE = +16m.23s., iSR_1 = +21m.26s.; T_e = 8h.41m.28s. Manila MN = +30·6m. Osaka MN = +26·9m. Kobe MN = +36·7m. Berkeley PSZ = +23m.28s., PSN = +23m.30s., PSE = +23m.32s. (all these three are really S, due at 23m.29s.), SR_2N = +32m.12s. Lick ePSE = +23m.23s., ePSN = +23m.30s., used as S above,e E = +33m.50s. = SR_2 + 13s., eN = +36m.4s. = SR_2 + 20s. Sitka S is given as PS. Tucson e = +29m.1s., SR_1E = +30m.50s., SR_2E = +35m.58s. Tacubaya SN = +32m.17s. = SR_1 + 4s. Simla ePE = +24m.34s., ME = +88·5?m. Loyola SN? = +41m.10s. All readings having been increased by 1h. La Plata PR_1N = +19m.23s., SR_1N = +35m.41s. Ann Arbor PR_2 = +24m.58s., = PR_3 + 28s., MN = +63·0m. Chicago PR_1E = +19m.38s., SPSE = +25m.30s. = [S] + 12s., PSE = +29m.8s., iE = +30m.31s. and +31m.20s., eE = +35m.13s., iSR_1E = +35m.53s., eSR_2N? = +37m.32s., eSR_2E? = +39m.0s., eSR_2?E = +42m.7s., eE = +46m.10s.; T_e = 8h.41m.26s. La Paz PR_1 = +22m.20s. = PR_2 − 36s., PR_3 = +24m.25s. = PR_3 − 29s., PS = +30m.40s., SR_1 = +35m.50s., SR_2 = +39m.50s. Ekaterinburg PR_1 = +18m.43s. = [P] + 5s., i = +19m.37s. = PR_1 − 15s., i = +25m.49s. = [S] + 20s., and i = +35m.41s. = SR_1 − 6s., iPS = +29m.23s., MN = +57·2m., MZ = +64·2m. Toronto eP = +19m.25s.?, iE = +36m.10s. = SR_1 − 18s., MN = +53·2m. Cheltenham ePSE = +29m.46s., SR_1E = +37m.41s., eN = +47m.10s., LN = +64·2m., MN = +71·1m. Ithaca e = +38m.16s. and +46m.10s. = SR_3 − 16s. Ottawa PR_2E = +25m.55s. = PR_2 − 7s., iE = +37m.50s., LN = +50·2m., MN = +62·2m. Fordham readings have been increased by 1h. Baku iPR_2 = +27m.6s., iPR_3 = +28m.44s., i = +30m.15s. Harvard PSN = +31m.24s., PSE = +32m.30s., SR_1E = +38m.36s., SR_1N = +38m.48s., eE = +45m.7s., eN = +45m.25s. Kucino MN = +73·1m. Piatigorsk iS = +22m.34s., i = +28m.11s., and +31m.0s., MN = +63·4m. Pulkovo [iP] = +19m.15s. PR_1 = +21m.20s., i = +22m.36s., MN = +75·2m., MZ = +75·5m. Konigsberg PR_1 = +23m.0s., PR_2 = +25m.32s., $ScPcPcS$ = +30m.1s., PS = +34m.20s., e = +38m.48s., +42m.25s., +50m.22s., and +50m.52s., SR_1 = +40m.10s., SR_2 = +45m.10s., eLN = +55·7m., MN = +78·7m. Dyce PR_2 = +22m.29s. Hamburg eLZ = +72·2m., MZ = +97·2m. Edinburgh i = +28m.24s. and +41m.16s. = SR_1 − 1s. Vienna iPZ = +19m.40s., P = +22m.49s. = PR_1 − 1s., PR_1 = +24m.55s., PS = +29m.56s., and +35m.33s., PR_2 = +39m.3s., SR_1 = +41m.31s. Belgrade PR_1 = +29m.19s. = PR_2 + 5s., SR_1 = +49m.8s., and +58m.35s. Stonyhurst PS = +34m.21s. De Bilt iPR_1Z = +22m.55s., e = +41m.46s. = SR_1 − 6s., MN = +79·7m., MZ = +81·8m. Zagreb i = +19m.46s. and +20m.22s., PR_1 = +24m.18s., e = +24m.41s., PR_2 = +27m.29s., PR_3 = +29m.29s., SR_1 = +40m.36s., SR_2? = +45m.26s., SR_3 = +49m.19s. Uccle PR_1 = +23m.3s. Ravensburg eL = +76·2m. and +133·2m. Strasbourg eSR_1? = +42m.10s. MN = +77·2m. Venice PR = +20m.52s., +20m.56s., and +21m.22s. Paris PR_1? = +23m.15s., MN = +79·2m. Rocca di Papa P = +19m.55s., iPE = +19m.58s., iP = +20m.0s. Moncalieri MN = +94·5m. Tortosa PE = +20m.13s. Algiers e = +31m.22s. = PR_2 + 1s. Toledo i = +20m.42s., PR_1 = +24m.20s., i = +28m.40s. = PR_2 + 28s., i = +31m.56s. = PR_3 + 35s., SR_1 = +39m.7s., i = +52m.26s., MNW = +86·1m., MZ = +93·1m. Alicante iPZ = +20m.10s.? Almeria MN = +84·6m. Granada iP = +19m.46s., i = +20m.44s., and +24m.37s. = PR_1 − 2s. Malaga MN = +98·4m. San Fernando SR_1 = +45m.10s.; MN = +102·2m. Accra readings have been increased by 1h.

Mar. 22d. 14h. 5m. 24s. Epicentre 1°·0S. 140°·0E.

$A = -\cdot766$, $B = +\cdot643$, $C = -\cdot017$; $D = +\cdot643$, $E = +\cdot766$; $G = +\cdot013$, $H = -\cdot011$, $K = -1\cdot000$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	12·1	257	i 2 54	− 6	—	—	7·4	—
Manila	24·4	310	e 5 30	− 2	(i 10 8)	+16	i 10·1	—
Adelaide	34·0	181	—	—	e 11 24	−76	e 17·1	20·0
Hong Kong	34·3	315	—	—	—	—	—	21·6
Riverview	34·5	165	—	—	e 13 6	+18	e 18·4	23·8
Sydney	34·5	165	5 54	−75	—	—	18·4	21·2
Zi-ka-wei	36·7	334	7 22	− 6	e 16 12	?L	(e 16·2)	20·5
Melbourne	37·1	174	—	—	e 13 18	− 7	19·9	23·6
Perth	38·4	215	e 7 44	+ 3	14 55	+ 71	19·7	23·8
Irkutsk	61·1	336	10 29	+ 9	18 57	+20	30·6	35·8
Ekaterinburg	85·0	328	12 49	+ 1	23 10	− 9	38·6	52·5
Baku	90·7	311	—	—	e 24 11	−10	49·1	54·5
Victoria E.	95·1	41	—	—	—	—	45·4	48·4
Pulkovo	100·6	331	e 18 12	?PR_1	e 27 18	+77	—	60·1
De Bilt	116·5	330	e 20 30	?PR_1	e 30 0	+98	e 60·6	74·6
Strasbourg	117·2	326	—	—	—	—	61·6	73·6
Edinburgh	117·6	336	—	—	—	—	e 64·6	—
Uccle	117·7	330	—	—	—	—	e 58·6	—
Bidston	119·3	335	—	—	—	—	—	73·0
Oxford	119·7	333	—	—	—	—	61·8	74·2
Paris	119·8	329	—	—	—	—	e 67·6	71·6
Ann Arbor	123·1	37	—	—	—	—	e 57·6	—
Toronto	124·8	33	—	—	—	—	57·2	—
Ottawa	125·6	30	—	—	—	—	e 54·6	—
Georgetown	129·2	37	—	—	e 61 36?	—	67·3	—
Granada	130·7	321	—	—	—	—	e 73·2	82·9
Rio Tinto	132·1	323	86 36	?L	—	—	(86·6)	94·6
San Fernando	132·7	322	—	—	74 51	?L	(74·8)	86·6
La Paz	147·2	123	e 19 57	[+ 6]	—	—	—	—

Additional readings: Adelaide $SR_1 = +14$m.36s. Riverview eS? = +15m.54s., $eSR_1? = +17$m.22s., MN = +19·9m. Sydney readings are given for 23d. Perth ? = +15m.24s. and +15m.35s., $SR_1 = +17$m.18s. = $SR_2 + 6$s. Irkutsk $PR_2 = +11$m.46s., MN = +36·6m. Ekaterinburg $PR_1 = +16$m.10s., i = +23m.39s. Baku MN = +55·3m. Pulkovo MN = +57·9m., MZ = +60·6m. De Bilt MN = +67·9m., MZ = +70·1m. Toronto eN = +60m.51s., LN = +67·2m. San Fernando MN = +84·6m.

Mar. 22d. Readings also at 2h. and 6h. (near Mizusawa), 9h. (Wellington, Batavia, La Paz, Riverview, Manila, Innsbruck, Uccle, Rocca di Papa, and Vienna), 10h. (La Paz), 11h. (Vera Cruz, Merida, Tacubaya, and Irkutsk), 12h. (Ottawa, Toronto, Ann Arbor, Edinburgh, Tucson, Strasbourg, and Georgetown), 16h. (Pulkovo and Irkutsk), 20h. (Rio Tinto), 22h. (Ekaterinburg).

Mar. 23d. Readings at 2h. (Rio Tinto and near Sumoto), 11h. (Ottawa), 12h. (Toronto), 14h. (Ottawa and Sydney), 21h. (near Sumoto), 22h. (Baku).

Mar. 24d. 12h. 55m. 0s. Epicentre 24°·0N. 107°·0W. (as on 1925 Jan. 5d.).

$A = -\cdot267$, $B = -\cdot874$, $C = +\cdot407$; $D = -\cdot956$, $E = +\cdot292$; $G = -\cdot119$, $H = -\cdot389$, $K = -\cdot914$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mazatlan	1·0	146	0 17	+ 2	—	—	0·9	1·0
Tacubaya	8·4	122	1 56	−11	3 55	+ 8	4·0	4·9
Chicago E.	24·0	37	—	—	e 9 50	+ 6	—	—
Ann Arbor	26·6	41	(e 8 30)	?	(10 24)	− 9	e 8·5	11·8
Georgetown	29·4	52	—	—	e 12 39	+75	(e 17·5)	—
Toronto	29·9	42	6 20	− 7	12 57	+85	15·3	—
Ottawa	33·1	42	—	—	—	—	e 14·3	—

Additional readings and notes: Ann Arbor gives its readings as L's, also MN = +12·1m. Georgetown gives S as e and L as eS.

Mar. 24d. Readings also at 0h. (Mazatlan), 5h. (Ekaterinburg and Baku), 6h. (near Manila), 10h. (Cheb), 19h. (near Batavia (2) and Malabar (2)), 20h. (Kucino, Irkutsk, and Ekaterinburg), 21h. (Nagasaki).

Mar. 25d. 12h. 3m. 0s. Epicentre 6°·0S. 160°·0E. (as on 1924 April 6d.).

$A = -\cdot935$, $B = +\cdot340$, $C = -\cdot105$; $D = +\cdot342$, $E = +\cdot940$; $G = +\cdot098$, $H = -\cdot036$, $K = -\cdot995$.

Uncertain identification. Should T_0 be increased by 30 sec. ?

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	29·0	195	6 19	+ 1	11 18	+ 1	e 13·3	17·4
Sydney	29·0	195	7 42	+84	11 42	+25	14·0	15·5
Melbourne	34·6	201	—	—	e 12 48	− 1	—	20·0
Adelaide	35·0	211	—	—	e 14 18	?	e 17·0	20·8
Manila	43·9	299	e 7 0?	−85	—	—	—	—
Perth	48·6	231	—	—	15 19	−42	24·3	—
Irkutsk	75·0	328	12 25	+36	21 49	+23	36·0	—
Ekaterinburg	100·2	326	e 14 33	+21	e 25 17	[+52]	40·0	49·7

Additional readings : Riverview MN = +16·9m. Ekaterinburg e = +18m.31s. = PR_1 +15s., and +25m.57s. = S −1s.

Mar. 25d. Readings also at 5h. (Batavia and near Malabar), 6h. (Ekaterinburg and Manila), 11h. (Ekaterinburg, Irkutsk, and Pulkovo), 19h. (near Tacubaya), 23h. (Ekaterinburg).

Mar. 26d. 10h. 25m. 12s. Epicentre 5°·4N. 125°·2E. (as on 1925 Feb. 7d.).

$A = -\cdot574$, $B = +\cdot813$, $C = +\cdot094$; $D = +\cdot817$, $E = +\cdot576$; $G = -\cdot054$, $H = +\cdot077$, $K = -\cdot996$.

A depth of focus 0·040 is assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	−0·5	9·5	162	i 2 22	+ 6	i 3 48	−15	—	—
Manila	−0·5	10·1	336	e 2 33	+ 9	—	—	i 5·3	6·4
Batavia	−1·7	21·7	238	i 4 41	0	8 34	+11	—	—
Malabar	−1·7	21·7	235	i 4 42	+ 1	i 9 30	+67	—	—
Phu-Lien	−2·0	23·7	312	e 5 6	+ 5	e 10 23	+84	12·8	—
Zi-ka-wei	−2·2	26·0	353	5 21	− 5	9 48	+ 8	—	—
Osaka	−2·6	30·8	17	7 29	+79	—	—	13·4	15·4
Perth	−3·7	38·4	192	6 48?	−23	—	—	—	—
Riverview	−3·7	46·3	150	—	—	e 14 36	− 7	—	18·2
Sydney	−3·7	46·3	150	9 48	? PR_1	14 36	− 7	18·3	18·8
Melbourne	−3·7	46·9	159	—	--	i 15 0	+ 9	—	—
Irkutsk	−4·0	50·0	344	—	—	—	—	e 24·8	—
Ekaterinburg	−4·9	71·8	329	i 11 9	+12	i 20 11	+22	29·8	38·3
Baku	−5·0	75·4	311	e 11 35	+16	20 58	+27	39·3	43·4
Kucino	−5·3	84·0	325	—	—	e 22 18	+10	35·2	—
Pulkovo	−5·4	87·8	330	e 12 32	0	i 22 52	+ 2	36·8	57·5
Dę Bilt	−5·7	103·4	327	—	—	—	--	e 52·8	--
Ottawa	—	125·8	18	—	—	e 25 48	[−13]	e 34·8	—
Toronto N.	—	126·2	22	—	—	—	—	80·8	—
La Paz	—	162·8	131	i 20 48	[+38]	—	—	—	—

Additional readings : Manila MN = +6·6m. Taihoku (Δ = 19°·9 − 1°·6, Az. = 350°) gives e = 10h.23m.8s. Malabar i = +5m.22s. Zi-ka-wei PR_1 = +6m.10s., SR_1 = +10m.13s. Osaka MN = +16·2m. Riverview e? = +11m.6s., MN = +18·4m. Ekaterinburg e = +14m.34s. = PR_1? Baku PS = +22m.5s., SR_1 = +27m.16s., SR_2 = +31m.48s., MN = +44·6m. Kucino e = +29m.21s. Pulkovo e = +13m.27s., +16m.49s. = PR_1 +39s., and +24m.8s., MN = +48·5m., MZ = +61·2m. Ottawa eLN = +31·8m.

Mar. 26d. Readings also at 0h. (La Paz), 2h. (Sydney), 5h. (Malaga), 6h. (Adelaide and Sydney), 8h. (Bombay and Riverview), 9h. (Ekaterinburg and Pulkovo), 11h. (La Paz and near Mizusawa), 13h. (Baku), 16h. (La Paz), 18h. (Irkutsk), 20h. (Sydney).

Mar. 27d. 4h. 16m. 48s. Epicentre 39°·8N. 130°·3E.

A = −·497, B = +·586, C = +·640 ; D = +·763, E = +·647 ;
G = −·414, H = +·488, K = −·768.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe		6·4	141	1 32	− 6	(2 48)	− 7	2·8	2·9
Osaka		6·5	140	1 34	− 5	(2 47)	−10	2·8	2·9
Nagoya		7·0	129	2 41	+55	—	—	3·4	4·7
Nagasaki		7·1	183	1 49	+ 1	—	—	3·5	—
Mizusawa	E.	8·4	91	2 12	+ 5	3 57	+10	—	—
	N.	8·4	91	2 13	+ 6	3 58	+11	—	—
Zi-ka-wei		11·2	223	i 3 3	+16	e 6 35	?L	(e 6·6)	—
Taihoku		16·5	209	e 2 58	−61	—	—	—	—
Manila		26·5	201	e 4 19	−94	—	—	—	—
Batavia		50·8	212	7 20	−112	i 14 0	−159	—	—
Baku		59·2	299	—	—	i 19 3	+50	—	—
Kucino		59·3	319	—	—	i 19 3	+48	36·8	45·0
Pulkovo		61·0	326	e 10 40	+21	19 26	+50	38·2	—
La Paz		151·7	40	20 57	[+59]	—	—	—	—

Additional readings and notes: Osaka MN = +3·6m. Zi-ka-wei readings are given for 3h. Kucino iPS = +19m.47s., e = +22m.5s., MN = +43·1m. Pulkovo PS = +19m.57s.

Mar. 27d. Readings also at 0h. (Riverview), 5h. (Tacubaya, Merida, Vera Cruz, La Paz, Ottawa, Ann Arbor, Chicago, Toronto, and Victoria), 6h. (Fordham), 8h. (Taihoku), 9h. (Bombay), 10h., 12h., and 15h. (Amboina), 19h. (Manila), 21h. (Oaxaca, Merida, Tacubaya, Toronto, and Ottawa), 22h. (Taihoku, Baku, and Athens), 23h. (San Fernando).

Mar. 28d. Readings at 0h. (Ottawa), 1h. and 2h. (Nagasaki), 11h. (Nagasaki, near Mostar, near Oaxaca, and Tacubaya), 12h. (Toronto and Ottawa), 16h. and 17h. (La Paz), 19h. (Irkutsk and near Piatigorsk).

Mar. 29d. 21h. 12m. 27s. Epicentre **7°·5N. 79°·0W.**

(as on 1924 July 20d.).

A = +·189, B = −·973, C = +·130 ; D = −·982, E = −·191 ;
G = +·025, H = −·128, K = −·991.

A depth of focus 0·010 below normal has been adopted : see note at end.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Hts.	E.	+0·3	1·6	346	0 39	+10	1 3	+10	1·2	1·8
	N.	+0·3	1·6	346	0 35	+ 6	0 59	+ 6	1·8	—
Port au Prince		−0·2	12·8	30	3 0	− 7	(i 5 14)	−20	—	—
Merida		−0·2	17·4	324	—	—	—	—	1·8	1·9
Vera Cruz	E.	−0·4	20·4	307	5 47	+66	9 7	+44	9·7	15·1
Tacubaya	N.	−0·5	22·9	303	5 14	+ 4	8 20	−53	8·9	9·8
Loyola	N.	−0·5	24·8	337	5 33	+ 2	9 55	+ 5	11·9	—
	E.	−0·5	24·8	337	5 35	+ 4	9 55	+ 5	12·1	—
La Paz		−0·5	26·3	156	i 5 47	+ 1	i 10 16	− 2	12·6	18·5
Cheltenham	E.	−0·7	31·3	3	—	—	11 14	−30	16·2	18·1
	N.	−0·7	31·3	3	6 22	−12	11 26	−18	18·8	19·2
Georgetown		−0·7	31·5	3	6 27	− 9	11 30	−18	e 13·6	18·6
Fordham		−0·8	33·9	5	i 6 40	−17	i 12 9	−17	16·5	23·3
Ithaca		−0·8	35·0	3	i 6 58	− 9	12 25	−18	17·6	—
Ann Arbor	N.	−0·8	35·1	354	i 6 57	−10	i 12 39	− 5	17·6	22·4
Chicago	E.	−0·8	35·1	350	6 51	−16	12 20	−24	i 15·1	19·6
Harvard		−0·8	35·6	11	7 0	−11	12 27	−25	17·9	24·7
Toronto		−0·8	38·1	0	i 7 7	− 9	i 12 41	−19	i 17·7	20·1
Ottawa		−0·8	38·0	4	7 22	−10	i 13 8	−19	e 17·6	21·6
Tucson		−0·8	38·6	316	e 7 33	− 3	13 42	+ 7	19·0	25·2
Río de Janeiro		−0·9	46·4	133	8 33	− 4	15 3	−18	18·7	28·4
La Plata	E.	−0·9	46·8	156	8 41	+ 2	15 20	+ 1	24·0	26·1
	N.	−0·9	46·8	156	i 8 35	− 4	15 21	− 6	—	32·9

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.
Lick	E.	−1·0	48·8	316	e 9	1	+ 8	i 16	8	+17	e 20·1	30·5
Berkeley		−1·0	49·5	316	9	5	+ 8	16	17	+17	—	30·0
Victoria		−1·1	55·3	326	9	43	+ 9	17	31	+20	31·0	39·6
Sitka	E.	−1·2	65·9	330	—		—	—		—	e 36·3	54·0
Lisbon		−1·3	69·6	52	11	20	+14	21	14	+68	e 28·8	—
Rio Tinto		−1·3	71·5	53	26	33	?SR_1	—		—	—	62·6
San Fernando		−1·3	71·7	54	11	23	+ 4	21	16	[+ 2]	32·0	39·6
Malaga		−1·3	73·1	54	i 11	30	+ 2	20	56	+ 8	27·5	38·7
Toledo		−1·3	73·7	50	11	33?	+ 1	20	56	+ 1	e 31·2	35·2
Granada		−1·3	73·8	53	i 11	26	− 7	21	24	[− 6]	34·1	41·5
Almeria		−1·3	74·9	53	i 11	43	+ 3	21	15	+ 6	e 34·0	42·9
Bidston		−1·3	75·6	37	11	56	+12	26	27	?SR_1	—	41·6
Eskdalemuir		−1·3	75·7	35	11	49	+ 4	21	21	+ 2	35·6	40·6
Edinburgh		−1·3	75·9	34	e 11	53	+ 7	i 21	21	0	37·6	41·2
Alicante	E.	−1·3	76·3	51	i 10	57	+ 8	20	23	− 3	39·4	—
Honolulu	E.	−1·3	77·0	290	—		—	22	10	[+16]	37·6	40·6
Kew		−1·3	77·1	39	—		—	—		—	—	48·6
Tortosa		−1·3	77·2	49	i 11	57	+ 3	21	35	− 1	34·6	41·6
Barcelona		−1·3	78·4	49	e 12	3	+ 1	e 21	52	+ 2	e 40·3	—
Paris		−1·3	78·8	42	e 11	58	− 6	i 22	3	+ 8	33·6	41·6
Algiers		−1·3	79·2	54	12	4	− 2	e 21	57	− 2	e 38·6	46·6
Uccle		−1·3	80·0	39	12	8	− 3	22	7	− 1	e 37·6	41·6
De Bilt		−1·3	80·5	38	i 12	15	+ 1	22	16	+ 2	37·6	42·6
Bergen		−1·3	80·8	30	e 17	33?	?PR_1	—		—	—	—
Besançon		−1·3	81·1	44	12	17	− 1	—		—	—	44·6
Strasbourg		−1·3	82·2	41	i 12	23	− 1	e 22	33	− 1	e 35·6	—
Moncalieri		−1·3	82·4	45	i 12	29	+ 3	i 22	41	+ 5	42·6	—
Hamburg		−1·4	82·8	37	i 12	29	+ 2	—		—	e 39·6	43·6
Zurich		−1·4	82·9	44	12	24	− 4	e 22	36	− 5	—	—
Innsbruck		−1·4	84·8	43	i 12	38	0	—		—	—	—
Florence		−1·4	85·0	46	i 12	38	− 2	23	3	− 2	—	44·6
Venice		−1·4	85·6	45	i 12	52	+ 9	23	14	+ 4	—	—
Rocca di Papa		−1·4	86·3	48	e 12	45	− 2	e 23	18	0	e 45·6	—
Upsala		−1·4	86·8	29	—		—	e 23	9	−14	e 43·6	47·1
Pompeii		−1·4	87·7	49	e 13	3	+ 8	—		—	—	—
Zagreb		−1·4	87·8	44	e 12	53	− 2	23	45	+11	47·1	—
Vienna		−1·4	88·0	42	e 12	52	− 5	—		—	—	48·6
Konigsberg		−1·4	89·3	35	—		—	23	40	−11	e 46·0	50·0
Budapest		−1·4	89·9	42	—		—	—		—	e 51·6	—
Pulkovo		−1·4	93·0	28	i 13	17	− 8	23	49	[+ 3]	42·6	49·5
Kucino		−1·5	98·3	30	—		—	23	14	[−61]	41·6	52·7
Cape Town		—	100·4	123	27	5	?S	(27	5)	+65	—	57·0
Ekaterinburg		—	107·8	22	i 14	26	−21	i 25	4	−124	41·6	59·9
Baku		—	113·0	39	e 19	30	?PR_1	—		—	48·6	64·8
Irkutsk		—	120·1	358	i 20	20	?PR_1	29	54	+64	53·6	61·2
Sydney		—	126·9	233	—		—	—		—	64·3	67·6
Melbourne		—	130·1	226	—		—	—		—	e 55·6	68·6
Simla		—	135·1	29	—		—	—		—	e 74·4	—
Adelaide		—	135·9	226	—		—	—		—	e 68·4	76·6
Zi-ka-wei		—	136·7	333	i 19	30	[− 3]	36	11	?SR_1	—	80·7
Bombay		—	141·7	45	19	33?	[− 9]	—		—	—	—
Hyderabad		—	146·6	40	19	46	[− 5]	—		—	—	—
Hong Kong		—	147·5	337	19	53	[+ 1]	—		—	—	—
Manila		—	150·3	318	e 20	9	[+13]	—		—	—	—
Kodaikanal		—	150·6	53	97	33	?L	—		—	(97·6)	—
Colombo		—	154·5	56	—		—	—		—	94·6	101·5
Batavia		—	174·1	282	e 21	22	[+66]	—		—	—	—

Additional readings and notes: Port au Prince iP = +5m.5s. La Paz i = +6m.12s.; T_o = 21h.12m.32s. Cheltenham PR_1N = +6m.58s., eE = +8m.38s., eN = +9m.25s., SR_1N = +13m.0s.; T_o = 21h.12m.41s. Ann Arbor iPR_2 = +8m.33s., eSR_1 = +14m.33s., LE = +21·8m., ME = +20·0m. Chicago PR_1E = +8m.4s., PR_1E? = +9m.10s., iE = +12m.28s., and +13m.16s., SR_1E? = +14m.6s., SR_1E? = +14m.37s., eE = +17m.52s.; T_o = 21h.12m.23s. Harvard PR_1N = +8m.8s., SR_1E = +14m.30s., SR_2N = +14m.55s., eN = +16m.55s., MN = +23·9m.; T_o = 21h.12m.36s. Toronto iPR_1N = +8m.18s., iE = +15m.18s. = SR_1 +14s.; T_o = 21h.12m.34s. Tucson PR_1E = +8m.54s., PR_2E = +9m.23s., SR_1E = +16m.39s.; T_o = 21h.12m.14s. Ottawa iPR_2N = +8m.41s., eSR_1?E = +15m.11s., iSR_2E = +15m.35s., MN = +26·6m.; T_o = 21h.12m.32s. Lick iPR_2E = +12m.0s., iE = +15m.59s. Berkeley PZ = +9m.9s., PR_2Z = +9m.19s., +11m.25s., and +11m.28s. Rio de Janeiro LN = +18·8m., MN = +27·8m. Victoria LN = +31·4m.; T_o = 21h.12m.36s. Sitka eLN = +37·1m., MN = +42·8m. San Fernando MN = +40·6m. Toledo i = +11m.34s., +11m.41s., and +21m.11s. Granada iP = +11m.28s. Bidston P = +12m.11s.

Continued on next page.

Alicante PN = +10m.59s., LN = +38·9m. Tortosa SE = +21m.41s. Barcelona ? = +19m.51s. Paris iP = +12m.5s. De Bilt MN = +44·1m. Innsbruck iNW = +15m.48s. = PR_1 −30s. Venice iP = +12m.52s., S = +22m.33s.? = [S] −18s. Rocca di Papa iP = +12m.47s., eSE = +22m.36s. = [S] −19s. Vienna iPZ = +12m.55s., eE = +26m.2s. and +32m.59s. Zagreb i = +13m.29s., PR_1 = +16m.15s. Konigsberg iPR_1Z = +16m.1s., PS = +23m.58s., SR_2 = 31m.57s. Pulkovo PR_1 = +16m.53s., SR_1 = +30m.33s., MZ = +51·8m., MN = +55·2m. Kucino e = +32m.55s. and +34m.15s., MN = +53·6m. Ekaterinburg i = +18m.49s. = PR_1?, MZ = +59·6m. Baku e = +29m.26s., +30m.8s., and +33m.12s. Irkutsk PR_1 = +22m.48s., SR_4 = +35m.48s. Zi-ka-wei PR_1 = +22m.13s. Simla eN = +72m.33s.

NOTE TO 1925 MAR. 29d. 21h. 12m. 27s.

This case has been discussed with some care. In the first instance the epicentre 8°·0N. 81°·5W. was adopted as on 1913 Oct. 23d., with a focal depth 0·020 below normal. But this made the residuals for the N. American stations near azimuth 320° strongly positive. The material is ample and the following five groups show the situation :—

No. Stns.	Az.	Correction to △ With deep focus	Correction to △ Without	Sin Az.	Cos Az.	O − C.
	°	°	°			°
7	8	−0·2	−1·6	+·14x	+·99y	−1·0
3	36	+0·1	−1·8	+·59x	+·81y	+0·6
6	54	−0·1	−2·5	+·81x	+·59y	+0·7
3	146	+0·2	−2·9	+·56x	−·83y	−0·7
5	323	+3·6	+1·8	−·60x	+·80y	−0·6

The third column shows the mean corrections to △ for the groups when a focal depth 0·020 below normal is assumed, and it is seen that four of the groups are well satisfied, but the fifth is quite discordant. The residuals in the fourth column make no assumption of deep focus, and if we equate them to x Sin Az. + y Cos Az. we find x = −4°·0 y = 0°·0 approximately, which on substitution give the residuals O − C. These are by no means small, but were accepted for making a second step, which was to move the epicentre to 8°·0N. 77°·5W. We now get four good groups as follows :—

No. Stns.	Az.	Correction to △ With ·010 depth	Correction to △ Without	Sin Az.	Cos Az.	O − C Without ·010 depth	O − C With ·010
	°	°	°			°	°
6	6	−0·6	−1·4	+·10x	+·99y	−0·9	−0·2
10	45	+1·5	+0·2	+·71x	+·71y	+1·0	+1·0
3	146	−0·1	−0·9	+·56x	−·83y	−0·8	−0·1
6	320	−0·1	−0·7	−·64x	+·77x	−1·5	−0·1

The residuals in the fourth column, with no assumption of deep focus, were first treated, and the solution obtained was x = −0°·7 y = −0°·4, but the seventh column shows that the result is quite unsatisfactory. Scrutiny of the individual results for different values of △ showed that a focal depth of 0·010 would undoubtedly suit the observations, giving the results in the eighth column. But the second strong group of 10 stations is still sensibly in error, for which no reason could be suggested. There is, however, a good reason already known why the first group should be in error, for the stations are nearly all near △ = 35° where the adopted tables are sensibly in error (see below), though it is not yet quite clear by how much, as there is a curious double maximum in the tabulated residuals. Let us then omit this group and solve from the other three. We then get

$$x = +1°·2 \qquad y = +0°·9,$$

which makes the first group −1°·6 in error. This brings the epicentre to 7°·1N. 78°·7W., close to an epicentre which has already appeared many times, viz., 7°·5N. 79°·0W. This has accordingly been adopted as above. The errors of the tables near △ = 35° are now clearly shown, and they have not entered into the determination of epicentre, they seem to reach a (negative) maximum of about 10 sec. in P and 20 sec. in S near △ = 35°. These values fall between the two maxima estimated on p. 444 of Geop. Sup. to M.N.R.A.S. (Dec. 1926).

Mar. 29d. Readings also at 1h. (Perth), 2h. and 6h. (near Lick), 7h. (Algiers), 10h. (near Athens), 18h. (near Lick), 21h. (Granada), 23h. (Balboa Heights).

Mar. 30d. Readings at 0h. (Balboa Heights), 3h. (Ekaterinburg), 17h. (Apia), 19h. (near Tacubaya).

Mar. 31d. 1h. 6m. 24s. Epicentre 35°·5N. 141°·0E. (as on 1924 Oct. 5d.).

$$A = -\cdot633,\ B = +\cdot512,\ C = +\cdot581.$$

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		3·4	265	1 39	?S	(1 39)	+ 5	2·2	—
Mizusawa	E.	3·6	1	0 57	+ 1	1 34	− 5	—	—
Osaka		4·6	261	1 15	+ 4	—	—	2·3	2·8
Kobe		4·9	262	1 15	− 1	2 18	+ 4	3·6	3·7

Mizusawa gives also PN = +59s.

Mar. 31d. Readings also at 0h. (Baku, Ekaterinburg, and Nagasaki), 4h. (La Paz), 6h. (near Algiers), 14h. (Apia), 22h. (near Manila).

I.W. County Press.—1134-6-28.