The International Seismological Summary for 1926 January, February, March.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present number of the Summary deals with 103 epicentres, 31 of which are new and 72 repetitions from old epicentres. The ratio of new to old is 0·43. The value of this ratio was tabulated for successive years in the Summary for 1922 (p. 162), and may now be reviewed with the later results added.

Year.	New.	Old.	All.	Ratio New/Old.	Ratio to Mean.
1918	158	202	360	0·78	1·20
1919	100	199	299	0·50	0·77
1920	109	186	295	0·59	0·91
1921	104	149	253	0·70	1·08
1922	124	194	318	0·64	0·98
1923	190	301	491	0·63	0·97
1924	120	340	460	0·35	0·54
1925	133	350	483	0·38	0·59
All	1038	1921	2959	0·65	

It will be seen that the ratio new/old has only recently shewn any sensible diminution in value. It was expected that it would decrease steadily from the first, but two causes have probably counteracted this tendency :—

(*a*) With more stations and better observing the accuracy in determination of epicentre has increased, so that a new determination is more readily distinguished from an old one.

(*b*) The same increase in the number of stations has led to the inclusion of small shocks in regions where they might formerly have been missed.

Nevertheless the ratio has now begun to show a sensible decrease, and it will be interesting to see how far the decrease will be maintained or developed.

The table further shows how the total number of epicentres to be dealt with is increasing. The four years 1918-1921 dealt

with 1207 epicentres in all; the years 1922-1925 with 1752, an increase of 45 per cent. Moreover the average number of stations observing each earthquake has also increased; thus, in the first six months of 1920 the total number of stations dealt with in the text (excluding those relegated to the notes for each day) was 2600; four years later (first six months for 1924) it was 4289, an increase of 65 per cent., of which 45 may be assigned as above to the increase in number of shocks, and the remainder to increase in the average number of stations observing it. Such figures have more than a passing interest; they show that the difficulties of drawing inferences from steadily growing material have not yet disappeared with the modern world-organisation in observing.

Since the present number opens a new year (the ninth) of the International Seismological Summary, a few words as to the notation and methods adopted may be repeated here.

The letters P, S, L, and M scarcely need explanation. The tables for P and S are the same (admittedly imperfect) tables throughout. They have been printed in an expanded form and circulated to the observatories. Approximate corrections could have been suggested long ago; and have been deduced from the residuals in a paper (*Revised Seismological Tables, etc.*) circulated to the observatories (Geop. Sup. to Mon. Not. R.A.S. Vol. I, No. 8, p. 425). But there are several points of doubt about them.

(*a*) Some negative correction is undoubtedly required to both P and S in the neighbourhood of $\Delta=35°$; but it is not clear whether this should be a single or a double correction. If a general average is taken, the correction amounts to about −8s. for P and −12s. for S, but it was shown in the paper above referred to that there is a dual maximum in the residuals, possibly indicating a dual phenomenon (like that of S and [S] from $\Delta=70°$ to 120°), one member of which is in closer accord with the existing tables, the other requiring a much larger correction (say −21s. for P and −30s. for S). Reference may be made to a case in the present number, viz., Mar. 19d. 19h., where there is a suggestion of large residuals near $\Delta=31°-38°$.

(*b*) The tables are arranged for an origin close to the earth's surface. Now though it is certain that this assumption is erroneous, it is by no means yet clear how it should be modified. Determinations of focal depth usually arrive at something of the order of 50 km.; but it has been shown in this Summary that a number of foci are much deeper than this (there is an extreme case in the present number noticed below), though the evidence has not yet been accorded general acceptance.

The present tables are good enough to give fair determinations of epicentre ; and while such points as the above are still in doubt it seems undesirable to make a change which may be followed by others. When residuals are all referred to the same tables they are much more readily studied than when they are referred to different systems ; and at present there is still much to be learnt by studying the residuals.

In the columns for P and S are given the observed times diminished by T_0. When these are enclosed in brackets it usually means that a different character was assigned at the observatory (P for S or L for S, etc). But in the columns O—C for the residuals, square brackets appear at large values of Δ. These signify that the observations are compared with the tables for [P] and [S], for waves passing through the earth's liquid core. The formula for [P] is

$$20\text{m. } 17\text{s.} - (180° - \Delta)^2 \times 0{\cdot}0235\text{s.}$$

and has the following values at

$\Delta =$	110°	120°	130°	140°
[P] =	18m. 22s.,	18m. 52s.,	19m. 18s.,	19m. 39s.,

$\Delta =$	150°	160°	170°	180°
[P] =	19m. 56s.,	20m. 8s.,	20m. 15s.,	20m. 17s.

These were adopted empirically in dealing with the observations of 1917. Departures from these values afford essential evidence of the depth of focus of an earthquake, of which sometimes news arrives at the antipodes more than a minute early.

The formula for [S], or Gutenberg's S_cP_cS, was adopted from the observations of 1922 Oct. 11 (q.v.) as

$$S_cP_cS - S = (\Delta - 80°) \times 4{\cdot}6\text{s.}$$

and though admittedly only approximate is good enough for the formation of residuals for further study. Returning to [P] attention may be drawn to the extreme case of deep focus in the present number, on Feb. 9d. 0h. 24m., at 27°·0S. 50°·5W. It will be seen that a depth 0·090 (360 miles or 576 km.) below normal has been assumed to account for—

(*a*) The large negative corrections required to Δ in opposite azimuths. The focus cannot be brought nearer two stations on opposite sides of it by moving it along the earth's surface ; but it can be brought nearer both by taking it vertically downwards. That 0·09 is not excessive is indicated by the fact that the residuals are still all negative, though small, so that we might have adopted even ·095. But there is a natural hesitation in extending this hypothesis so far. Originally the computations

were limited to 0·060; but experience found it necessary to advance to 0·070, and later to 0·080 (1921 Dec. 18d. 15h. and 1922 Sept. 4d. 17h.).

(*b*) The large negative residuals for [P] at antipodal stations. Five of these average [−84s.].

(*c*) A series of large residuals for [S] from $\Delta=94°$ to $\Delta=117°$, Fourteen of these average [−106s.]. Although the effect of depth of focus on [S] is only approximately known, it is shown in the note to this earthquake that it is probably of about this amount for a depth such as 0·090.

The evidence for considerable depths below normal is by this time too massive to be ignored; though it is still possible that some other explanation of the results may be offered. On the other hand independent confirmation of the hypothesis was recently advanced by Mr. Wadati from his Japanese observations, as remarked in this Summary for 1925, p. 2. It was there also remarked that a note on the matter had been sent (1928 May) to Mr. Wadati for publication in the Tokyo *Geophysical Magazine*, wherein his paper appeared; but nothing has yet been heard from him about this.

The evidence for heights *above normal* is not so conclusive; but it is difficult to explain away cases like 1918 Sept. 7, 8, and 12, 1919 May 6 and 29, 1921 Mar. 6, 1922 Feb. 5, 1923 Apr. 23.

It has been suggested that [P] may be not easy to observe, and that the residuals might be explained in this way. Possibly this might explain positive (late) residuals, when the beginning of [P] may not be caught; but it can scarcely explain large negative residuals, and inspection of a series such as that for Mar. 16d. 17h. 37m. in the present number, where 13 observatories assign [P] as [−10s.], with a mean deviation of ±4·5s. (or if we exclude one large residual −8s. ±3·0s.), should give confidence in the substantial accuracy of such observations as well as that of the adopted tables. Or again on Feb. 7d. 7h., where 13 observatories give as [P] residuals +10, +10, +3, +2, +2, +1, +1, +1, 0, −1, −1, −2, −3 seconds. Or again on Mar. 27d. 10h., excluding three large residuals which may involve errors of 1 min., we have 25 residuals of [P] from +36s. to −8s., mean value +12s. with mean deviation ±7·5s. There is very little suggestion of systematic errors comparable with 1 min.

Other notes of interest are made on Mar. 4d. 9h. and Mar. 25d. 19h.; and on Mar. 18d. attention is drawn to two shocks separated by about 4 hours, from two epicentres which seem to be clearly distinct and yet are separated by less than 1°.

The cases of abnormal focal depth in the present number are as follows :—

Date.				Epicentre.		Focal Depth.
	d.	h.	m.	°	°	
Jan.	15	14	52	45·0N.	143·0E.	+0·060
Feb.	1	1	17	10·6N.	65·6W.	+0·025
Feb.	7	2	43	3·0S.	151·5E.	+0·040
Feb.	9	0	24	27·0S.	59·5W.	+0·090
Feb.	15	2	59	11·7N.	89·6W.	+0·015
Mar.	16	17	37	16·0S.	171·0W.	+0·020
Mar.	25	19	8	11·0S.	134·0E.	+0·020

Shock Felt by Steamer.

The shock of Jan. 1d. 21h. 37m. 15s. in 22°·5S. 70°·5W. was felt by the steamer *Essequito*. The following is an extract from the Meteorolog. report (Capt. Duncan, Valparaiso to New York).

Jan. 1, 1926. In Lat. 23°26′S., Long. 70°40½′W. at 4.30 p.m., Chilean Mean Time ; experienced an earthquake shock of 2 sec. duration ; soundings as per chart 385 fathoms.

Solomon Islands.

The shock of Jan. 25d. 0h. 36m. 12s. in 9°·0S. 159°·5E. shook the Solomon Islands by the " worst earthquake for years. The Catholic Church at Visale was destroyed " (Georgetown Seismol. Despatches).

Observers are earnestly requested to send their readings as soon as possible (either in MS. or print) to the University Observatory, Oxford. Belated readings give much more trouble to every one.

H. H. TURNER.

University Observatory, Oxford.
1929, April 9.

1926 JANUARY, FEBRUARY, MARCH.

Jan. 1d. 18h. 4m. 6s. Epicentre 45°·0N. 14°·8E. (as on 1925 Sept. 11d.).

A = +·684, B = +·181, C = +·707 ; D = +·255, E = −·967 ;
G = +·684, H = +·181, K = −·707.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Laibach		1·1	349	i 0 16	− 1	—	—	—	2·7
Zagreb		1·2	45	i 0 32	+14	i 0 54	+21	—	1·0
Venice		1·8	284	i 0 29	+ 1	—	—	—	0·8
Graz		2·2	11	i 0 36	+ 2	—	—	—	1·1
Mostar		2·7	127	1 0	+18	1 2 4	+50	(i 2·1)	2·9
Florence		2·8	244	0 57	+13	2 24	?	—	2·9
Sarajevo		2·8	114	1 5	+21	2 2	−44	(2·0)	2·8
Innsbruck		3·3	313	i 0 51	− 1	(i 1 29)	− 2	i 1·5	1·6
Vienna		3·4	19	e 0 56	+ 3	—	—	i 1·7	1·9
Rocca di Papa	E.	3·6	205	i 1 13	+17	i 2 9	+30	—	3·1
	N.	3·6	205	i 1 11	+15	i 1 49	+10	—	3·1
Budapest		3·9	49	1 11	+10	(e 1 24)	−23	e 1·4	3·5
Belgrade	E.	4·0	91	i 1 19	+17	i 2 33	?L	(i 2·6)	2·9
	N.	4·0	91	e 1 20	+18	i 2 34	?L	(i 2·6)	2·9
Naples		4·1	186	e 3 44	+160	e 4 54	+181	—	—
Pompeii		4·2	182	0 3	−62	1 4	−51	—	1·4
Ravensburg		4·6	310	i 1 13	+ 2	—	—	—	2·5
Zurich		4·9	301	i 1 14	− 2	2 23	+ 9	—	—
Moncalieri		5·0	272	1 31	+14	2 11	− 6	2·7	3·9
Hohenheim		5·3	317	i 1 18	− 4	2 18	− 7	—	2·7
Cheb		5·3	343	i 1 20	− 2	i 2 11	−14	—	2·7
Neuchâtel		5·8	293	1 28	− 2	—	—	—	—
Strasbourg		6·0	309	i 1 27	− 5	e 2 31	−13	e 2·9	3·4
Besançon		6·5	294	i 1 36	− 3	2 43	−14	3·2	—
Lemberg		7·9	49	e 2 54	+54	—	—	e 4·7	5·6
Puy de Dôme		8·4	280	2 9	+ 2	e 4 1	+14	—	4·8
Uccle		9·1	313	e 2 11	− 7	e 3 47	−19	i 4·4	—
Paris		9·2	299	e 2 14	− 5	e 3 56	−12	4·7	4·9
Hamburg		9·2	342	e 2 8	−11	(i 4 4)	− 4	e 4·1	6·2
De Bilt		9·6	322	e 2 36	+12	—	—	4·5	5·2
Athens		9·7	133	e 4 26	+120	5 49	+88	i 6·0	7·0
Barcelona		9·9	253	e 3 6	+37	6 8	+102	e 7·2	—
Konigsberg		10·5	18	—	—	—	—	e 5·6	9·4
Tortosa	N.	11·2	253	2 51	+ 4	4 56	− 3	5·8	—
Algiers		12·1	231	—	—	—	—	e 7·9	10·9
Alicante		13·2	245	3 45	+29	e 6 43	+54	e 8·1	10·2
Stonyhurst		14·3	315	—	—	e 6 38	+23	—	6·9
Bidston		14·4	313	2 41	−51	5 45	−33	6·7	8·1
Toledo		14·8	256	3 53	+17	e 6 52	+25	e 7·6	9·9
Upsala		15·0	6	—	—	e 6 45	+13	e 7·4	9·1
Almeria		15·2	244	3 47	+ 5	e 6 50	+13	8·3	11·6
Edinburgh		15·7	320	—	—	—	—	e 7·9	—
Granada		15·9	247	i 3 59	+ 8	6 54?	+ 1	e 8·6	10·6
Makeyevka		16·2	71	—	—	e 7 14	+14	9·7	9·9
Bergen		16·4	343	—	—	(6 44)	−20	6·7	—
Malaga		16·7	247	e 3 39	−22	e 7 33	+22	8·5	—
Pulkovo		17·4	27	i 3 9	−61	e 6 14	−73	7·9	10·1
Leningrad		17·6	27	e 3 49	−23	e 6 46	−45	7·2	11·2
San Fernando		18·0	249	—	—	6 33	−67	10·9	11·4
Philgorsk		20·1	83	—	—	—	—	e 12·9	—
Bidr		26·0	88	—	—	e 10 26	+ 4	16·2	18·6
Ekaterinburg		30·5	51	e 6 25	− 8	—	—	13·9	19·2
Irkutsk		55·7	48	—	—	e 24 33	?	28·9	32·5
Ottawa		60·1	306	—	—	—	—	e 29·9	—

Additional readings and notes: Zagreb i = +36s., iPR$_1$ = +38s., +42s. and +51s. Venice iPEN = +34s. Graz iP = +37s. Mostar iN = +1m.2s. and +1m.40s., iE = +1m.14s., iSN = +2m.6s. Sarajevo P = +1m.17s. Innsbruck iPNE = +54s. Vienna iPZ = +58s., P = +1m.1s. and +1m.4s., i = +1m.7s., +1m.9s., +1m.16s., MNZ = +1·8m. Budapest i=+1m.15s., iN = +1m.17s., iE = +1m.21s., iN = +1m.22s., i = +1m.28s., MN=+2·9m. Belgrade iPE = +1m.33s., iPN = +1m.38s. Ravensburg e = +1m.25s. Zurich iP = +1m.29s. Moncalieri MN = +3·8m.

Continued on next page.

Hohenheim iP = +1m.36s. Neuchatel P = +1m.47s. Strasbourg ePEN = +1m.29s., P = +1m.47s. Lemberg MN = +5·5m. Puy de Dôme e = +3m.1s. Paris eP = +2m.50s., MN = +6·9m. Hamburg i = +2m.59s., eE = +3m.54s., iN = +4m.19s., MN = +5·6m. De Bilt MN = +5·3m., MZ = +6·0m. Athens iPN = +4m.34s., MN = +6·6m. Alicante MN = +10·7m. Toledo MNW = +9·0m. Upsala MN = +9·4m. Granada i = +4m.33s. and +7m.12s. Makeyevka e = +9m.12s., MN = +13·7m. Pulkovo MZ = +10·0m. Leningrad MN = +11·4m. San Fernando MN = +12·9m. Baku e = +9m.57s. and +13m.47s. Ekaterinburg MN = +16·7m., MZ = +19·3m.

Jan. 1d. 21h. 37m. 15s. Epicentre 22°·5S. 70°·5W.

A = +·308, B = −·871, C = −·383; D = −·943, E = −·334; G = −·128, H = +·361, K = −·924.

Felt by s.s. *Essequito* (Valparaiso to N. York) in Lat. 23°26′S., Long. 70°40½′W (see introduction).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sucre		6·0	55	i 1 39	+ 7	i 2 55	+11	i 3·2	4·2
La Paz		6·4	21	i 1 48	+10	i 3 18	+23	i 3·5	3·6
La Plata		16·6	141	3 46	−14	6 50	−19	8·2	—
Georgetown		61·7	355	e 10 25	+ 2	18 45	+ 1	e 30·4	—
Fordham		63·2	358	—	—	i 18 59	− 4	33·8	38·8
Chicago		66·2	348	e 11 41	+48	i 20 36	+56	e 34·4	40·0
Toronto	N.	66·7	354	i 10 51	− 5	e 19 37	− 9	33·2	40·6
Ottawa		68·1	357	e 11 5	0	i 20 0	− 3	e 31·2	—
San Fernando		84·6	47	—	—	—	—	—	53·8
Victoria	N.	85·2	329	12 56	+ 7	23 11	−10	45·8	50·7
Malaga		85·9	47	12 45	− 8	e 22 53	[− 8]	—	—
Granada		86·7	47	i 12 45	−12	e 23 13	[+ 6]	43·2	46·8
Almeria		87·4	48	13 11	+10	e 23 23	[+12]	—	—
Toledo		87·9	45	12 57	− 7	23 41	−10	e 40·6	48·6
Alicante		89·4	47	13 5	− 7	e 23 30	[+ 6]	—	48·6
Paris		96·4	40	—	—	—	—	e 50·8	52·8
Edinburgh		96·8	32	—	—	—	—	—	51·8
Moncalieri		97·9	45	—	—	—	—	41·1	—
Uccle		98·3	39	—	—	—	—	e 49·8	—
De Bilt		99·3	39	—	—	e 24 45?	[+24]	e 45·8	—
Strasbourg		99·4	41	—	—	—	—	51·8	—
Cheb		102·7	40	—	—	—	—	e 50·8	55·8
Graz		103·7	44	—	—	e 24 58	[+17]	53·8	—
Riverview		111·1	216	—	—	e 29 9	+91	e 33·2	36·0
Pulkovo		114·7	33	—	—	—	—	e 45·8	61·7
Leningrad		114·7	33	—	—	—	—	e 59·4	—
Makeyevka		118·8	46	—	—	e 24 45?	?	—	—
Baku		127·2	55	e 21 9	?PR_1	—	—	57·0	66·4
Ekaterinburg		130·8	33	e 19 22	[+ 2]	—	—	52·8	72·9
Irkutsk		150·0	7	e 19 50	[− 6]	i 23 28	?PR_1	79·8	—

Additional readings: Sucre i = +1m.52s. and +2m.18s.; T_o21h.37m.21s. Chicago i = +21m.48s., SR_1 = +25m.3s., eN = +31m.3s., LN = +35·0m.; T_o = 21h.38m.1s. and 21h.38m.7s. Toronto LE = +33·8m.; T_o = 21h.37m.20s. San Fernando MN = +52·8m. Victoria SE = +23m.1s. = [S]+4s.; T_o = 21h.37m.54s. Granada i = +16m.15s. = PR_1 −26s., PS = +23m.50s. = S +12s. Riverview MN = +39·3m. Baku e = +31m.20s., +36m.6s. and +39m.1s., MN = +69·8m. Ekaterinburg i = +22m.36s, and + 22m.56s., e = +31m.21s., MZ = +73·0m., MN = +73·3m. Irkutsk e = +41m.45s.?

Jan. 1d. Readings also at 0h. (Manila), 1h. (Budapest), 7h. (La Paz), 8h. (Budapest), 10h. (near Amboina (2)), 11h. (Azores and near Amboina (2)), 12h. (Tokyo), 15h. (Budapest and near Amboina (2)), 16h. (Denver and near Amboina (3)), 18h. (Budapest, Granada, Laibach (3), Toledo, and near Sumoto), 19h. (Budapest), 20h. (near Zagreb (2), Laibach (3), and near Tacubaya), 21h. (Batavia and Graz).

Jan. 2d. Readings at 0h. (Baku and near Laibach), 1h. (Zagreb and near Amboina), 2h. (Paris and near Amboina), 3h. (2) and 7h. (near Amboina), 11h. (Batavia), 15h. (Tokyo), 16h. (Irkutsk, near La Paz, and Sucre), 22h. (Baku (2), Ekaterinburg, and Irkutsk).

Jan. 3d. Readings at 1h. (near Lick), 5h. and 6h. (near Athens), 7h. (near Lick), 8h. (near Manila), 10h. (Athens), 12h. (Ekaterinburg and Irkutsk), 13h. (Baku), 16h. (Manila and Ekaterinburg), 18h. (near Lick), 20h. (Mizusawa, 23h. (Irkutsk, Ekaterinburg, and near Manila).

Jan. 4d. 4h. 1m. 36s. Epicentre 48°·0S. 170°·0E. (as on 1925 Dec. 17d.).

$A = -\cdot659$, $B = +\cdot116$, $C = -\cdot743$; $D = +\cdot174$, $E = +\cdot985$; $G = +\cdot732$, $H = -\cdot129$, $K = -\cdot669$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch		4·8	23	0 48	−26	1 12	−59	—	2·4
Riverview		20·0	308	e 4 48	+ 7	e 8 34	+11	e 10·3	11·3
Sydney	E.	20·0	308	—	—	8 36	+13	10·8	12·6
Melbourne		20·9	290	e 4 48	− 4	—	—	—	14·2
Apia		37·4	30	—	—	—	—	e 22·4	24·4
Honolulu	E.	75·0	30	—	—	—	—	e 35·4	—
Chicago	N.	127·0	66	—	—	—	—	e 63·5	—
Toronto	N.	133·1	68	—	—	—	—	e 66·4	—
Ottawa		136·2	68	—	—	—	—	e 65·4	—
Ekaterinburg		138·0	310	—	—	—	—	65·4	—

Riverview gives also PS = +8m.45s. = SR_1 −13s. and +9m.11s. = SR_2 +7s.

Jan. 4d. Readings also at 1h. (near Manila), 3h. (La Paz, Victoria, Chicago. Ottawa, Toronto, near Tacubaya, and Merida), 4h. (Apia), 7h. (Taihoku), 8h. (Chicago, Ottawa, and Toronto), 9h. (Manila (2)), 10h. (Azores), 18h. (Taihoku and near Laibach).

Jan. 5d. 7h. 27m. 40s. Epicentre 14°·0S. 166°·5E. (as on 1923 May 11d.).

$A = -\cdot943$, $B = +\cdot227$, $C = -\cdot242$; $D = +\cdot233$, $E = +\cdot972$; $G = +\cdot235$, $H = -\cdot056$, $K = -\cdot970$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		21·1	92	e 5 6	+12	9 11	+25	10·3	11·6
Riverview		24·2	212	e 5 54	+24	e 10 0	+12	e 11·9	13·6
Sydney	E.	24·2	212	5 20	−10	10 2	+14	13·3	14·3
Wellington		28·2	167	i 7 2	+52	i 13 25	+142	i 16·3	17·8
Christchurch		30·0	171	(e 6 26)	− 2	(e 11 20)	−14	(13·7)	(14·8)
Melbourne		30·5	215	—	—	e 12 32	+49	i 17·8	18·4
Adelaide		32·7	226	e 6 46?	− 8	12 15	− 4	e 15·3	18·0
Perth		49·4	240	9 32	+29	16 20	+ 9	17·6	17·9
Honolulu	E.	49·6	45	—	—	—	—	25·3	—
Manila		53·3	300	e 9 59	+31	—	—	—	—
Batavia		59·0	271	i 10 28	+23	i 18 48	+37	—	—
Lick	E.	84·7	49	—	—	—	—	e 40·2	—
Irkutsk		85·1	327	i 13 0	+11	23 24	+ 4	42·3	46·3
Victoria		87·9	39	23 47	?S	(23 47)	− 4	41·7	49·2
Ekaterinburg		110·3	326	i 19 16	?PR_1	—	—	44·3	69·2
Chicago	E.	111·1	50	—	—	e 53 44?	?	e 56·5?	60·3
	N.	111·1	50	—	—	e 50 20?	?	e 56·9	—
Ann Arbor		114·0	49	—	—	e 26 32	?	e 58·1	—
Toronto	N.	117·0	46	—	—	—	—	79·3	—
Baku		119·2	310	e 20 34	?PR_1	e 33 22	?	64·5	70·1
Ottawa		119·3	44	—	—	e 37 10	?SR_1	e 54·3	—
Ithaca		119·3	48	—	—	—	—	62·3	—
Sucre		119·3	122	—	—	56 42	?	66·6	72·1
Fordham		121·5	50	—	—	—	—	e 61·3	70·1
Kucino		122·7	329	e 22 8	?	e 29 8	− 2	59·2	—
Harvard	E.	123·2	47	—	—	—	—	e 66·5	—
Leningrad		124·1	335	—	—	—	—	64·4	—
Pulkovo		124·2	335	—	—	e 38 5	?SR_1	63·3	82·7
Upsala	N.	128·8	341	—	—	—	—	e 71·3	—
Hamburg		136·3	340	—	—	—	—	e 84·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt	E.	139·1	342	—	—	—	—	e 72·3	81·9
	N.	139·1	342	—	—	—	—	e 74·3	79·4
Bidston		139·7	349	—	—	—	—	—	82·8
Uccle		140·5	342	—	—	—	—	e 73·3	—
Strasbourg		141·2	336	—	—	—	—	80·3	—
Paris		142·8	343	—	—	—	—	e 76·3	—
Granada		155·2	341	—	—	97 20?	?	100·8	107·4
San Fernando	E.	156·6	345	—	—	—	—	—	94·8

Additional readings and notes: Apia $PR_1 = +5m.26s.$ Riverview iPS? = +10m.15s. $=SR_1 - 27s.$, MN = +13·8m. Wellington: If the times are 1 min. too large, S is SR_1. Christchurch: All the readings have been diminished by 5 min. Melbourne e (?PR_1) = +7m.8s. $=PR_1 - 17s.$ Perth $PR_1 =$ +10m.55s. $=PR_1 - 15s.$, S is given as SR_1, with S = +14m.55s.; all readings having been diminished by 10m. Honolulu eN? = +19m.56s. $=SR_1 - 2s.$, eE = +21m.14s. $=SR_2 - 9s.$, LN = +24·3m. Irkutsk ePR_1 = +16m.7s. Victoria MN = +51·2m. Ekaterinburg e = +25m.47s. = [S] +36s., +27m.10s. $=S - 21s.$, and +35m.15s. $=SR_1 + 29s.$, i = +29m.1s., MNZ = +61·2m. Ann Arbor eE = +33m.8s. Baku $PR_3 = +30m.32s.$, MZ = +86·8m., MN = +92·1m. Sucre $PR_1 = +50m.38s.$ Fordham L = +62·6m. Pulkovo MN = +72·4m., MZ = +78·4m. San Fernando MN = +90·3m.

Jan. 5d. 10h. 3m. 14s. Epicentre 11°·0N. 57°·0E.

A = +·535, B = +·823, C = +·191; D = +·839, E = −·545; G = +·104, H = +·160, K = −·982.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		17·2	61	4 3	− 4	7 16	− 6	8·7	13·8
Kodaikanal		20·1	90	—	—	—	—	9·2	12·3
Hyderabad		21·8	70	4 59	− 4	9 5	+ 4	11·1	12·7
Colombo		23·0	98	—	—	9 46?	+21	12·4	13·6
Simla	E.	27·5	40	—	—	e 10 52	+ 2	—	—
Baku		30·0	349	e 6 22	− 6	i 11 23	−11	17·0	19·8
Helwan		30·4	313	e 7 35	+63	12 53	+72	—	18·0
Piatigorsk		35·1	344	e 7 8	− 6	e 12 37	−20	—	22·9
Ekaterinburg		45·9	3	i 8 33	− 6	i 15 12	−15	20·8	30·8
Kucino		47·2	347	—	—	e 17 46	+122	28·7	—
Vienna	Z.	50·6	327	i 9 11	0	—	—	—	—
Batavia		52·5	108	—	—	i 16 56	+ 6	—	—
Innsbruck	N.W.	52·7	323	e 9 40	+16	—	—	—	—
Pulkovo		52·7	345	9 28	+ 4	16 57	+ 5	27·3	35·1
Leningrad		52·8	345	e 9 29	+ 4	e 16 58	+ 4	23·8	—
Strasbourg		55·5	323	—	—	—	—	e 32·8	—
Irkutsk		56·1	33	9 45	− 2	17 34	− 1	28·8	34·4
De Bilt		58·4	326	—	—	—	—	e 28·8	—
Paris		58·7	321	—	—	—	—	e 24·8	—

Additional readings: Simla eN = +10m.40s. $=S - 10s.$ Baku i = +6m.24s. and +7m.48s. $=PR_3 + 18s.$, MN = +19·4m., MZ = +21·5m. Piatigorsk $PR_1 = +8m.26s.$, $SR_2 = +14m.47s.$ Ekaterinburg i = +10m.24s. = $PR_1 - 9s.$, iPS = +18m.46s. $=SR_1 - 2s.$, MN = +28·8m., MZ = +34·2m. Kucino e = +21m.16s. $=SR_3 + 20s.$ Leningrad e = +14m.14s. Irkutsk $PR_3 = +13m.4s.$

Jan. 5d. 23h. 37m. 30s. Epicentre 51°·0N. 6°·0E.

A = +·626, B = +·066, C = +·777; D = +·105, E = −·995; G = +·773, H = +·081, K = −·629.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle		1·1	259	0 17	0	0 37	+ 6	—	—
De Bilt		1·2	336	e 0 30	+12	e 0 47	+14	—	—
Strasbourg		2·7	155	e 0 34	− 8	e 1 16	+ 2	—	—
Paris		3·1	226	e 0 52	+ 3	e 1 35	+ 9	1·7	—
Hohenheim		3·1	138	e 0 57	+ 8	—	—	—	—
Hamburg	Z.	3·5	42	e 0 54	− 1	—	—	—	—
Besançon		3·8	179	—	—	e 1 34	−10	—	—
Zurich		4·0	155	e 0 47	−15	e 1 48	− 2	—	—
Innsbruck		5·1	134	e 2 15	?S	(e 2 15)	− 5	—	—
Puy de Dôme		5·6	201	—	—	—	—	e 3·5	—
Vienna		7·3	109	3 26	?S	(3 26)	+ 8	—	3·8

Strasbourg gives also e = +45s.

Jan. 5d. Readings also at 0h. (Zurich), 4h. (Amboina, Sucre, and Toronto), 5h. (near Tacubaya), 8h. (La Paz and near Athens), 9h. (Ekaterinburg), 13h. (Manila), 15h. (near Toyooka), 20h. (Berkeley).

Jan. 6d. 23h. 45m. 20s. Epicentre 2°·0N. 126°·0E. (as on 1925 Dec. 27d.).

A = −·587, B = +·809, C = +·035; D = +·809, E = +·588; G = −·021, H = +·028, K = −·999.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		6·1	159	i 4 46	+193	5 58	+192	—	—
Manila		13·5	339	e 3 26	+ 6	—	—	4·9	—
Batavia		20·8	247	i 4 57	+ 6	i 8 25	−15	—	—
Hong Kong		23·3	331	5 5	−15	9 20	−11	11·1	13·2
Taihoku	E.	23·4	350	—	—	(8 40?)	−53	8·7	—
Phu-Lien		26·6	316	e 5 45	− 9	e 10 21	−12	14·7	—
Riverview		43·0	150	—	—	e 14 4	−44	e 23·6	25·9
Irkutsk		53·4	344	9 24	− 5	16 59	− 2	28·7	—
Bombay		54·6	292	e 11 46	+129	—	—	—	—
Ekaterinburg		75·1	329	i 11 45	− 5	i 21 18	− 9	33·7	—
Makeyevka		87·2	318	—	—	i 23 29	−14	—	—
Kucino		87·2	326	—	—	24 9	+26	50·6	—
Pulkovo		91·1	330	e 13 21	− 1	i 24 3	−22	45·7	53·0
Leningrad		91·1	330	—	—	e 24 10	−15	47·2	—
De Bilt		106·7	325	—	—	—	—	e 56·7	—
Uccle		107·7	325	—	—	—	—	55·7	—
Paris		109·6	324	—	—	—	—	e 59·7	—
Ottawa		128·8	20	—	—	—	—	e 68·7	—
Sucre		159·7	148	e 20 40	[+32]	—	—	—	—
La Paz		159·9	137	e 20 28	[+20]	—	—	—	—

Additional readings: Riverview MN = +26·0m. Irkutsk PR_s = +13m.0s. Kucino e = +24m.25s. and +25m.26s. Batavia gives epicentre 3°·3N. 127°·4E.; T_s = 23h.45m.4s.

Jan. 6d. Readings also at 1h. (near La Paz and Sucre), 6h., 9h., and 10h. (2) (near Toyooka), 13h. (near Manila), 15h. (Apia), 16h. (Tokyo, near La Paz, and Sucre), 21h. (Barcelona), 22h. (Ann Arbor and Ottawa).

Jan. 7d. 14h. 31m. 6s. Epicentre 34°·0N. 39°·8W.

A = +·637, B = −·531, C = +·559; D = −·640, E = −·768; G = +·430, H = −·358, K = −·829.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Azores		12·0	68	3 36	+37	—	—	—	7·4
Harvard	E.	25·8	298	e 5 12	−34	—	—	e 12·6	—
Rio Tinto		27·0	72	7 54?	+116	—	—	—	28·9
Fordham		27·7	294	—	—	i 10 54	0	13·4	15·0
Toledo		29·0	68	6 17	− 1	8 34	?	e 9·2	13·8
Granada		29·4	73	e 6 54?	+32	—	—	—	14·9
Ottawa		29·6	304	e 6 24	0	e 11 28	+ 1	e 14·2	—
Georgetown	E.	30·2	290	e 6 32	+ 2	(e 11 34)	− 3	e 11·6	—
Almeria		30·4	75	e 6 29	− 3	(e 10 44)	−57	e 10·7	11·6
Alicante		31·8	70	6 24	−21	—	—	—	—
Toronto	E.	31·8	300	—	—	e 10 27	−98	16·0	—
	N.	31·8	300	—	—	e 10 18	−107	15·9	19·2
Bidston		32·3	42	—	—	—	—	—	16·9
Tortosa	N.	32·5	66	—	—	—	—	e 13·9	—
Stonyhurst		32·9	42	—	—	—	—	e 16·9	20·9
Edinburgh		33·3	40	—	—	—	—	—	17·9
Paris		34·5	52	—	—	—	—	15·9	—
Ann Arbor		35·1	298	i 7 12	− 2	i 13 0	+ 3	e 17·8	19·0
Uccle		36·0	50	—	—	—	—	e 16·9	19·4
De Bilt		36·7	48	—	—	e 13 24	+ 4	e 17·9	20·0
Moncalieri		37·7	60	(8 5)	+27	8 5	?P	18·4	—
Strasbourg		37·9	52	—	—	—	—	e 17·9	—
Hamburg		39·9	46	e 7 54	0	—	—	e 18·9	21·9

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	40·3	63	—	—	—	—	16·9	21·9
Cheb	41·0	51	—	—	13 24	−57	e 19·9	21·9
Venice	41·0	59	0 23	?	—	—	—	—
Rocca di Papa	41·5	66	e 8 9	+ 2	e 14 30	+ 2	e 17·7	—
Pompeii	43·0	66	e 7 27	−51	e 14 27	−21	—	—
Upsala	45·0	38	—	—	—	—	—	23·9
Budapest	45·5	55	—	—	—	—	e 20·4	—
Konigsberg	46·1	45	—	—	—	—	e 24·9	26·9
Pulkovo	51·3	39	e 9 37	+22	e 16 48	+13	23·9	30·9
Leningrad	51·3	39	i 9 26	+11	e 16 57	+22	24·9	32·0
Kucino	55·9	42	e 10 12	+27	e 18 0	+27	28·0	30·7
La Paz	57·2	215	i 9 55	+ 2	17 40	− 9	29·0	30·7
Sucre	58·3	210	10 2	+ 1	i 18 8	+ 5	28·1	31·9
Victoria	61·3	313	14 24	?PR_2	19 2	+22	30·9	36·4
Ekaterinburg	67·3	37	i 11 16	+16	20 18	+24	28·9	39·8
Baku	68·6	55	e 11 28	+20	e 20 33	+24	33·5	42·2
Irkutsk	88·2	22	e 13 6	0	e 23 55	+ 1	50·9	—
Bombay	97·0	62	e 13 54?	0	—	—	—	—
Melbourne	174·6	224	—	—	—	—	e 87·9	102·5

Additional readings and notes: Almeria iS = +9m.4s., MN = +16·7m. Toronto eE = +11m.54s. =S −11s. Paris e =13h.58m.58s. De Bilt MNZ = +20·9m. Moncalieri P = −1m.16s., perhaps an earlier shock, see Florence. Florence P = −1m.6s., perhaps an earlier shock, see Moncalieri. Cheb readings have all been diminished by 1h. Rocca di Papa ePE = +9m.56s. =PR_1 +16s. Pulkovo MN = +29·8m. Leningrad MZ = +31·1m. Kucino e = +22m.12s. =SR_1 +16s., MN = +32·9m. Sucre PR_1 = +12m.38s., PR_2 = +13m.48s., PS = +18m.37s., SR_1 = +22m.13s., SR_2 = +24m.10s.; T_0 =14h.31m.5s. Victoria MN = +35·4m. Ekaterinburg P = +10m.2s., MN = +36·6m. Baku MZ = +43·8m., MN = +44·6m.

Jan. 7d. Readings also at 0h. (Tokyo and Mizusawa), 1h. (Manila, near Laibach, and Zagreb), 2h. (near Amboina), 4h. (Zagreb and Laibach), 5h. (near Nagasaki, near Lick, Berkeley, and Santa Clara), 7h. (Melbourne), 8h. (near Tacubaya (2) and near Irkutsk), 9h. (Wellington and Santa Clara), 10h. (Santa Clara), 11h. (Santa Clara and near Amboina), 12h. (Batavia and Manila), 15h. (Venice, near Mizusawa, and near Santa Clara), 16h. (near Santa Clara), 18h. (near Sumoto (2)), 19h. (Riverview and near Amboina), 21h. (near Sumoto, Matuyama, and near Baku), 22h. (near Platigorsk).

Jan. 8d. 9h. 14m. 15s. Epicentre 42°·8N. 12°·3E. (as on 1918 May 13d.).

$A = +·717$, $B = +·156$, $C = +·679$; $D = +·213$, $E = -·977$; $G = +·664$, $H = +·145$, $K = -·734$.

Rocca di Papa gives the epicentre 42°53′N. 11°40′·5E. The above is the nearest previously adopted epicentre.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rocca di Papa	1·1	164	i 0 23	+ 6	0 50	+19	—	2·2
Florence	1·2	322	0 15	− 3	—	—	—	1·1
Naples	2·4	143	(e 0 40)	+ 3	—	—	e 0·7	—
Pompeii	2·6	142	—	—	(1 2)	−10	1·0	—
Venice	2·7	0	e 0 25	−17	—	—	1·7	—
Moncalieri	3·9	306	0 10	−51	1 10	−37	1·9	—
Zagreb	4·0	40	e 1 12	+10	—	—	e 2·1	—
Innsbruck N.W.	4·6	352	i 1 12	+ 1	1 2 8	+ 2	—	—
Zurich Z.	5·2	332	e 1 18	− 2	—	—	—	—

Additional readings: Venice +6m.20s. Zagreb i = +2m.31s. Innsbruck iNE = +1m.55s.

Jan. 8d. 14h. 22m. 18s. Epicentre 23°·0S. 66°·0W. (as on 1925 Dec. 18d.).

A = +·374, B = −·841, C = −·391; D = −·914, E = −·407; G = −·159, H = +·357, K = −·921.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sucre	4·1	10	i 1 12	+ 8	i 1 59	+ 6	2·3	3·5
La Paz	6·8	343	1 42	− 2	2 55	−10	3·5	4·3
La Plata	13·8	151	3 24	+ 1	—	—	7·2	—

Additional readings: Sucre i = +2m.10s.; T_o = 14h.22m.30s. La Paz MN = +4·5m.; T_o = 14h.22m.30s.

Jan. 8d. Readings also 2h. (Apia and near Mizusawa), 12h. (Ekaterinburg, Irkutsk, and near Mizusawa), 13h. (Irkutsk, Bombay, Kucino, Leningrad, Johannesburg, Phu-Lien, Hong Kong, Florence, and near Rocca di Papa). 14h. (Taihoku), 17h. (Rio Tinto), 19h. (near La Paz), 21h. (Bagnères), 23h. (near Toyooka).

Jan. 9d. Readings at 1h. (near Nagasaki), 2h. (La Paz, Sucre, and near Baku and Piatigorsk), 6h. (Taihoku and Sucre), 7h. (La Paz and near Toyooka), 10h. (Irkutsk), 14h. (Azores), 19h. (Irkutsk), 23h. (Naples, Zagreb, near Athens, and near Nagasaki).

Jan. 10d. 9h. 2m. 40s. Epicentre 36°·0N. 142°·0E. (as on 1924 Sept. 14d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	1·9	261	0 23	− 6	—	—	—	—
Mizusawa	3·2	348	0 48	− 2	1 24	− 4	—	—
Nagoya	4·2	260	0 15	−50	(1 15)	−40	1·2	1·6
Osaka	5·5	258	1 28	+ 3	(2 35)	+ 4	2·6	3·4
Kobe	5·8	259	e 1 27	− 3	2 48	+ 9	3·8	4·1
Irkutsk	31·1	313	—	—	—	—	e 15·3	19·2
Pulkovo	69·1	330	—	—	—	—	38·3	—
Baku	69·1	307	—	—	—	—	40·3	43·0

Additional readings: Mizusawa SN = +1m.25s. Irkutsk L = +17·3m. Baku MNZ = +43·9m.

Jan. 10d. Readings also at 4h. (Bagnères), 7h. (near Phu-Lien), 9h. (near Osaka, Nagoya, Tokyo, and Mizusawa, presumably not a repeat from the shock of 10d. 9h. 2m. 40s.), 10h. (Baku), 12h. (near Nagasaki), 23h. (Pompeii).

Jan. 11d. Readings at 2h. (near Amboina), 4h. (Sucre, La Paz, and Tacubaya), 8h. (Manila), 9h. (Amboina), 10h. (La Paz), 15h. (Taihoku), 17h. (Tacubaya and Tokyo), 22h. (Ekaterinburg and Sucre).

Jan. 12d. Readings at 1h. (Granada), 2h. (Amboina (3) and near Sumoto), 5h. (Baku), 8h. (Sucre and La Paz), 10h. (near Taihoku (3)), 11h. (Sucre, La Paz, and Laibach), 12h. (Tokyo, Sucre, and La Paz), 14h. (Puy de Dôme and near Sumoto), 15h. (Sucre and La Paz), 17h. (Granada), 21h. (La Paz, Baku, Ekaterinburg, Irkutsk, Kucino, Tokyo, and Pulkovo), 23h. (near Amboina).

Jan. 13d. 1h. 46m. 44s. Epicentre 38°·0N. 29°·5E. (as on 1923 Sept. 11d.).

A = +·686, B = +·388, C = +·616; D = +·492, E = −·870; G = +·536, H = +·303, K = −·788.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		4·5	271	1 8	− 2	1 59	− 5	2·1	2·6
Belgrade	E.	9·6	318	i 2 37	+13	—	—	—	5·2
Mostar		10·3	304	e 2 21	−13	—	—	—	—
Makeyevka		11·8	29	e 3 3	+ 7	e 5 35	+21	7·3	13·5
Piatigorsk	E.	11·9	55	2 59	+ 1	6 39	?L	(6·6)	9·4
Pompeii		11·9	288	e 6 46	?L	—	—	(e 6·8)	—
Budapest		12·1	324	e 2 46	−14	i 5 50	+29	e 6·8	11·3
Lemberg		12·4	344	e 3 4	− 1	—	—	—	8·7
Zagreb	N.W.	12·7	312	i 3 0	− 9	e 6 0	+23	—	8·0
Rocca di Papa	Z.	13·4	292	e 3 19	+ 1	—	—	e 7·5	—
Laibach		13·7	311	3 23	+ 1	7 3	?	(7·0)	8·4
Graz		13·7	316	2 22	−60	(6 11)	+10	6·2	7·7
Vienna		14·0	322	e 3 19	− 7	i 6 14	+ 6	—	7·3
Venice		14·7	305	—	—	—	—	—	11·3
Florence		14·9	299	3 36	− 2	—	—	(7·3)	9·3
Baku		16·0	75	i 4 10	+18	i 7 19	+24	8·8	10·9
Innsbruck		16·2	311	i 3 52	− 3	—	—	—	—
Cheb		17·1	320	—	—	—	—	e 8·3	9·8
Moncalieri		17·7	300	4 19	+ 6	7 44	+11	10·6	11·8
Zurich		17·9	308	e 4 11	− 5	e 7 27	−11	—	—
Konigsberg		17·9	343	i 4 11	− 5	8 21	?SR_1	e 9·7	10·3
Hohenheim		18·1	313	e 4 6	−12	e 7 31	−11	e 10·3	—
Kucino		18·6	15	4 34	+10	i 7 55	+ 2	8·2	—
Strasbourg		18·9	311	i 4 25	− 3	i 7 53	− 7	10·3	12·3
Hamburg		20·5	326	e 4 42	− 5	i 8 47	− 7	e 11·0	13·3
Algiers		21·0	275	4 45	− 8	8 29	−15	9·6	—
Pulkovo		21·8	1	i 4 57	− 6	8 56	− 5	10·8	12·7
Uccle		21·9	314	e 4 56	− 8	8 47	−16	10·3	12·2
Leningrad		22·0	1	i 5 2	− 3	i 9 0	− 5	9·4	13·7
De Bilt		22·1	318	—	—	e 9 0	− 7	e 10·7	14·4
Paris		22·2	308	e 5 0	− 7	e 9 1	− 8	11·3	12·3
Upsala		23·1	345	e 5 14	− 4	e 9 18	− 9	—	15·6
Oxford		25·5	313	—	—	i 10 1	−12	—	16·9
Bidston		27·1	315	—	—	—	—	2·3?	15·4
Bergen		27·1	334	—	—	12 16?	+93	16·3	—
Ekaterinburg		27·8	37	e 6 12	+ 6	10 46	− 9	15·3	18·9
Edinburgh		28·1	320	—	—	—	—	e 15·3	19·1
Dyce		28·2	323	—	—	11 0	− 3	17·3	19·8
Rio Tinto		28·3	280	19 46	?L	—	—	(19·8)	21·3
Irkutsk		52·2	48	—	—	16 57	+11	35·3	—
Ottawa		73·0	315	—	—	—	—	e 33·3	—
Toronto	N.	76·1	315	—	—	—	—	47·5	—

Additional readings and notes: Athens iPN = +1m.27s., MN = +2·2m. Belgrade iPN = +2m.45s. and +3m.12s., iPE = +2m.59s., iSR_1E = +4m.46s., iSR_1N = +4m.50s., MN = +5·4m. Piatigorsk SN = +6m.29s. Budapest iN = +6m.8s. and +6m.26s., iE = +6m.22s. and +6m.29s., MN = +10·0m. Lemberg MN = +8·9m. Rocca di Papa eN = +7m.4s. Vienna iE = +4m.4s. +4m.26s. and S = +6m.40s.; the S in the text is entered as iE; iN = +4m.16s. and +4m.36s., SR_1? = +7m.8s. Florence L is given as P of another shock. Baku MN = +12·5m., MZ = +12·8m. Innsbruck SR_1NE? = +8m.34s. Konigsberg eN = +4m.16s., iZ = +5m.11s., SR_1 = +9m.13s., MN = +11·3m. Strasbourg ePEN = +4m.36s., MNZ = +12·0m. Pulkovo MN = +14·2m. Leningrad PR_1 = +5m.22s., iSR_1 = +9m.18s., MZ = +14·3m., MN = +14·4m. De Bilt MN = +12·4m., MZ = +14·5m. Ekaterinburg MN = +19·9m. Irkutsk SR_1 = +20m.49s.

Jan. 13d. 8h. 8m. 24s. Epicentre 38°·0N. 29°·5E. (as at 1h.).

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	4·5	271	e 1 13	+ 3	2 4	0	2·2	2·4
Belgrade	9·6	318	i 2 48	+24	—	—	—	5·1
Mostar	10·3	304	3 15	+41	—	—	—	—
Makeyevka	11·8	29	e 3 6	+10	i 5 38	+24	7·6	16·2
Pompeii	11·9	288	e 5 6	?S	(e 5 6)	−11	—	9·6
Piatigorsk	11·9	55	3 14	+16	6 35	?L	(6·6)	9·5
Budapest	12·1	324	—	—	—	—	e 6·1	7·1

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Lemberg	12·4	344	e 2 30	−35	—	—	e 6·8	8·7
Zagreb	12·7	312	e 2 59	−10	e 5 11	−26	i 6·9	—
Rocca di Papa	13·4	292	3 28	+10	—	—	e 7·2	8·6
Laibach	13·7	311	4 51	?S	(4 51)	−70	(7·2)	8·6
Graz	13·7	316	2 42	−40	(6 15)	+14	6·2	7·9
Vienna	14·0	322	3 20	− 6	6 47	+39	—	8·0
Venice	14·7	305	1 36?	?	—	—	—	—
Florence	14·9	299	e 3 6	−32	—	—	—	9·6
Baku	16·0	75	i 4 15	+23	—	—	9·1	10·9
Innsbruck	16·2	311	e 3 58	+ 3	e 7 21	+21	—	—
Cheb	17·1	320	—	—	—	—	e 8·6	10·1
Moncalieri	17·7	300	2 57	−76	6 59	−34	8·9	11·9
Zurich	17·9	308	e 4 36?	+20	e 7 50?	+12	—	—
Konigsberg	17·9	343	i 4 17	+ 1	e 9 5	+87	e 9·6	10·6
Hohenheim	18·1	313	—	—	—	—	e 9·8	—
Kucino	18·6	15	i 5 35	+71	9 5	+72	10·5	—
Strasbourg	18·9	311	i 4 29	+ 1	17 57	− 3	9·6	12·1
Hamburg	20·5	326	e 4 44	− 3	e 8 36	+ 2	e 11·3	13·6
Algiers	21·0	275	4 51	− 2	—	—	—	—
Pulkovo	21·8	1	i 5 2	− 1	19 2	+ 1	10·6	13·7
Uccle	21·9	314	e 5 4	0	—	—	e 10·6	12·3
Leningrad	22·0	1	i 5 5	0	19 4	− 1	10·4	13·7
De Bilt	22·1	318	(e 5 6)	0	e 5 6	?P	e 10·9	14·5
Paris	22·2	308	—	—	—	—	e 11·6	12·6
Upsala	23·1	345	e 5 17	− 1	e 9 19	− 8	—	—
Bidston	27·1	315	—	—	11 41?	+58	13·6	15·4
Bergen	27·1	315	—	—	e 16 6	?	18·6	—
Ekaterinburg	27·8	37	6 15	+ 9	10 53	− 2	14·6	22·4
Edinburgh	28·1	320	—	—	10 36?	−25	—	19·2
Dyce	28·2	323	6 23	+13	10 52	−11	15·1	19·2
Irkutsk	52·2	48	9 32	+11	17 1	+15	31·6	—
Ottawa	73·0	315	—	—	—	—	e 33·6	—

Additional readings and notes: Athens iPN = +1m.22s., MN = +2·2m. Belgrade ePN = +2m.51s., iPN = +2m.59s., iPE = +3m.9s., iSR_1E = +4m.48s., iSR_1N = +4m.51s., MN = +5·5m. Piatigorsk iSR_1 = +6m.59s. Budapest MN = +10·2m. Lemberg MN = +8·6m. Zagreb eP and eS have been increased by 9m. Graz readings have been diminished by 1h. Vienna i = +4m.33s. and +5m.57s., SR_1? = +7m.0s. Baku MN = +12·6m., MZ = +12·7m. Kucino e = +7m.5s. Strasbourg MN = +10·7m. Pulkovo MNZ = +14·3m. Leningrad PR_1 = +5m.26s., MZ = +14·3m. De Bilt MN = +12·5m., MZ = +14·6m. Ekaterinburg MN = +20·0m. Irkutsk PR_2 = +12m.30s., SR_1 = +21m.0s.

Jan. 13d. Readings also 0h. (Naples and near San Juan), 1h. (Riverview and Amboina), 2h. (Riverview), 7h. (Naples), 15h. (Amboina), 16h. (Zagreb, Mostar, and near Sarajevo), 17h. (La Paz, Sucre, and Mostar), 18h. (Mostar (2)), 19h. (Amboina). 20h. (Irkutsk), 23h. (Ekaterinburg).

Jan. 14d. 8h. 51m. 54s. Epicentre 36°·5N. 133°·0E. (as on 1925 May 27d.).

A = −·548, B = +·588, C = +·595.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe	2·5	136	0 43	+ 4	(1 4)	− 5	1·1	1·1
Osaka	2·7	133	0 43	+ 1	(1 10)	− 4	1·2	2·6
Sumoto	2·7	145	0 38	− 4	(0 56)	−18	0·9	1·0
Matuyama	2·7	184	1 0 31	−11	—	—	—	0·7
Hukuoka N.	3·7	218	1 0	+ 2	(1 36)	− 6	1·6	—
Batavia	49·2	217	—	—	—	—	1 22·7	—

Additional readings: Kobe MN = +1·2m. Osaka MN = +1·9m.

Jan. 14d. Readings also at 4h. (Tokyo), 5h. (near Balboa Heights (2)), 7h. (Batavia and Irkutsk), 14h. (Manila and Ekaterinburg), 20h. (Laibach and near Zagreb), 21h. (Pulkovo and Leningrad), 23h. (Tokyo, near Mizusawa, and near Tacubaya).

Jan. 15d. 14h. 52m. 45s. Epicentre 45°·0N. 143°·0E. (as on 1924 Dec. 27d.).

$A = -\cdot565$, $B = +\cdot426$, $C = +\cdot707$; $D = +\cdot602$, $E = +\cdot799$; $G = -\cdot565$, $H = +\cdot426$, $K = -\cdot707$.

A correction for focal depth 0·060 has been assumed. Evidence for slight deep focus (*i.e.*, 0·010) was found on 1924 Dec. 27d.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		+1·9	1·7	354	0 49	− 7	(1 18)	−21	1·3	1·4
Mizusawa	E.	+0·3	6·0	194	1 37	+ 1	2 48	− 4	—	—
	N.	+0·3	6·0	194	1 38	+ 2	2 50	− 2	—	—
Tokyo		−0·6	9·6	196	2 24	+ 8	(4 7)	+ 4	—	—
Nagoya		−0·8	10·8	207	2 32	+ 2	(4 36)	+ 7	4·6	—
Kobe		−1·0	11·9	213	2 46	+ 3	—	—	—	4·9
Osaka		−1·0	12·0	212	2 42	− 2	(4 56)	+ 2	4·9	5·4
Sumoto		−1·1	12·3	213	e 1 59	−48	—	—	2·5	—
Nagasaki		−1·7	15·9	224	3 29	0	3 35	?P	—	—
Zi-ka-wei		−2·6	21·7	238	4 30	0	8 45	?SR_1	—	—
Irkutsk		−3·2	26·3	300	e 5 19	+ 1	i 9 4	−23	11·2	—
Ekaterinburg		−5·5	50·0	316	i 8 21	− 9	i 14 59	−10	18·2	—
Pulkovo		−6·3	61·8	330	e 9 43	0	17 28	0	24·2	—
Baku		−6·7	67·8	303	—	—	e 18 16	−21	—	—

Additional readings and notes: Tokyo readings are each given as P of a separate shock. Kobe MN = +5·1m., all readings being given for 16d. Zi-ka-wei PR_1 = +5m.27s., SR_1 = +9m.43s. Ekaterinburg i = +9m.30s. and +17m.34s., e = +16m.54s.

Jan. 15d. Readings also at 0h. (Baku, Pulkovo, Leningrad, and near Athens), 1h. (Zagreb and near Amboina), 3h. (Amboina), 4h. (Pulkovo and Leningrad), 5h. (Amboina and Ekaterinburg), 6h. (La Paz, Pulkovo, and Leningrad), 7h. (Amboina), 10h. (La Paz, Sucre, and near Mizusawa), 11h. (Irkutsk and Ekaterinburg), 12h. (Ekaterinburg), 13h. (Tokyo), 14h. (Nagoya and Tokyo), 20h. (Balboa Heights), 22h. (near Nagasaki (2)), 23h. (near Tacubaya).

Jan. 16d. Readings at 0h. (near Sarajevo), 1h. (Apia), 9h. (Manila), 18h. (near Sumoto), 22h. (Tokyo, Zagreb, and near Belgrade).

Jan. 17d. Readings at 0h. (Zurich), 3h. (Amboina (3)), 6h. (La Paz and Sucre), 8h. (near Sumoto), 9h. (Kobe and near Sumoto), 12h. (Toronto and near Sucre (2)), 15h. (Manila), 16h. (Apia, La Paz, Sucre, and Tacubaya), 17h. (La Paz, Sucre, Ottawa, Uccle, De Bilt, Pulkovo, and Kucino), 18h. and 19h. (Florence).

Jan. 18d. 11h. 20m. 30s. Epicentre 43°·0N. 75°·0E.

$A = +\cdot189$, $B = +\cdot706$, $C = +\cdot682$; $D = +\cdot966$, $E = -\cdot259$; $G = +\cdot177$, $H = +\cdot659$, $K = -\cdot731$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	16·5	332	i 4 1	+ 2	e 7 7	0	i 9·0	10·0
Baku	18·9	271	i 4 36	+ 8	e 8 10	+10	11·5	13·2
Irkutsk	21·6	54	e 5 12	+12	9 8	+11	11·5	—
Piatigorsk	23·0	284	i 5 13	− 4	e 9 27	+ 2	13·5	18·9
Bombay	24·2	185	e 5 30?	0	—	—	—	—
Makeyevka	26·1	294	e 5 43	− 6	e 10 29	+ 5	13·5	19·4
Kucino	26·8	312	—	—	e 10 35	− 2	16·3	16·7
Pulkovo	31·7	319	i 6 36	− 8	11 48	−15	16·0	20·2
Leningrad	31·7	319	—	—	e 12 0	− 3	15·5	20·7
Konigsberg	36·6	309	—	—	—	—	i 19·6	—
Upsala	38·0	319	—	—	e 20 13	?L	(e 20·2)	24·5
Budapest	38·8	298	—	—	—	—	e 18·0	—
Hamburg	42·9	309	—	—	e 20 30?	?L	e 24·0	27·5
Bergen	44·1	318	e 9 30?	+63	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg		45·7	301	—	—	—	—	e 25·5	28·5
De Bilt	E.	46·1	307	—	—	—	—	e 24·5	29·9
	N.	46·1	307	—	—	—	—	e 25·5	26·2
Uccle		47·0	306	—	—	—	—	e 25·5	—
Paris		48·8	304	—	—	—	—	e 30·5	31·5
Edinburgh		49·5	314	—	—	—	—	e 30·5	—
Granada		58·2	293	e 7 30?	?	—	—	—	15·8

Additional readings: Ekaterinburg MNZ = +10·1m. Baku MN = +13·0m., MZ = +14·7m. Platigorsk eSE = +9m.59s., MN = +18·8m. Makeyevka MZ = +18·0m. Kucino e = +10m.54s. and +14m.18s., i = +14m.39s. Pulkovo MN = +19·8m. Leningrad MN = +19·8m., MZ = +20·4m. Konigsberg e = +19m.50s., +20m.17s., +21m.4s., and +23m.12s.

Jan. 18d. 16h. 55m. 45s. Epicentre 6°·0N. 125°·0E. (as on 1925 May 14d.).

A = −·571, B = +·815, C = +·104; D = +·819, E = +·574; G = −·060, H = +·085, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		9·5	335	e 2 29	+ 6	—	—	i 5·6	7·1
Hong Kong		19·4	328	4 35	+ 1	(8 7)	− 3	8·1	13·8
Malabar	N.	21·8	233	5 2	− 1	9 8	+ 7	—	—
Batavia		22·0	237	5 1	− 4	1 9 4	− 1	—	—
Phu-Lien		23·2	312	5 15	− 4	e 9 19	−10	13·5	—
Colombo		45·0	274	15 10	?S	(15 10)	− 5	28·2	30·7
Irkutsk		49·5	344	8 58	− 6	16 3	−10	24·2	—
Bombay		52·4	289	—	—	e 16 15?	−34	—	—
Ekaterinburg		71·2	330	i 11 28	+ 4	20 40	0	31·2	40·6
Baku		74·9	311	—	—	e 21 31	+ 6	38·8	45·5
Platigorsk		80·1	315	—	—	—	—	44·2	—
Kucino		83·5	326	—	—	e 22 51	−12	44·6	—
Makeyevka		83·6	319	—	—	—	—	44·2	—
Leningrad		87·2	330	—	—	23 31	−12	47·6	54·7
Pulkovo		87·3	330	e 12 55	− 6	23 29	−15	44·2	54·8
Upsala	E.	93·4	331	—	—	—	—	e 58·2	—
Hamburg		99·5	328	—	—	—	—	e 58·2	—
De Bilt		102·9	327	—	—	—	—	e 54·2	66·2
Strasbourg		102·9	324	—	—	—	—	e 32·2	—
Uccle		103·9	326	—	—	—	—	e 50·2	—
Edinburgh		105·0	333	—	—	—	—	e 60·2	—
Stonyhurst		105·7	331	—	—	—	—	e 60·2	—
Ottawa		125·4	18	—	—	—	—	e 59·8	—

Additional readings: Manila MN = +7·2m. Irkutsk PR_1 = +10m.55s., SR_1 = +19m.39s. Ekaterinburg eSR_1 = +21m.43s. =[S]+23s., MN = +42·6m., MZ = +44·5m. Baku MN = +44·2m., MZ = +56·2m. Leningrad MZ = +50·2m. Pulkovo MN = +49·2m. De Bilt MN = +59·7m.

Jan. 18d. 21h. 7m. 18s. Epicentre 1°·5S. 88°·5E.

A = +·026, B = +·999, C = −·026; D = +1·000, E = −·026; G = −·001, H = −·026, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo		12·0	314	(3 17?)	+18	3 17?	?P	5·2	7·4
Kodaikanal		16·1	317	3 30	−23	(6 54)	− 3	6·9	10·5
Batavia		18·9	105	i 4 26	− 2	i 7 59	− 1	—	—
Malabar		19·9	107	i 4 39	− 1	i 8 15	− 6	11·7	—
Hyderabad		21·4	333	5 5	+ 7	9 4	+11	11·7	17·2
Calcutta	E.	24·0	0	5 31	+ 3	9 59	+15	14·4	17·1
	N.	24·0	0	5 35	+ 7	10 11	+27	14·3	—
Bombay		25·5	324	5 43	0	10 16	+ 3	14·5	15·4
Phu-Lien		28·5	37	6 15	+ 2	i 11 11	+ 3	14·8	17·6
Dehra Dun		33·4	344	8 12	+72	13 32	+62	17·2	26·5
Simla	E.	34·3	342	7 12	+ 5	12 42	− 2	17·9	23·5
	N.	34·3	342	7 18	+11	12 54	+10	18·9	20·6
Hong Kong		34·6	46	7 2	− 8	12 42	− 7	17·4	19·9
Manila		35·9	62	i 7 17	− 4	—	—	i 19·1	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		39·7	93	i 8 30	+38	—	—	16·3	—
Perth		39·9	143	7 46	− 8	13 38	−27	16·2	21·0
Taihoku	E.	41·5	49	8 13	+ 6	14 40	+12	22·4	29·8
	N.	41·5	49	8 13	+ 6	14 44	+16	23·0	26·4
Zi-ka-wei		45·2	40	e 8 32	− 2	15 16	− 2	—	26·1
Hukuoka		52·7	45	e 25 5	?L	—	—	28·5	—
Baku		54·7	325	i 9 44	+ 7	i 17 34	+17	26·6	29·4
Irkutsk		55·4	11	9 46	+ 4	17 38	+12	29·7	33·5
Kobe	N.	56·6	46	—	—	—	—	—	31·0
Osaka		56·9	46	10 7	+16	17 59	+14	28·9	34·7
Adelaide		57·3	132	e 16 16	?	(i 17 40)	−10	e 25·1	45·8
Nagoya		58·2	46	—	—	—	—	e 32·4	—
Piatigorsk	E.	60·9	325	i 10 24	+ 6	i 18 46	+11	29·7	48·0
	N.	60·9	325	e 10 21	+ 3	i 18 48	+13	—	39·7
Ekaterinburg		62·5	344	i 10 36	+ 7	i 19 7	+12	29·7	38·4
Heiwan		62·8	306	10 34	+ 3	23 37	?SR_1	—	37·5
Mizusawa		63·0	44	—	—	—	—	31·0	—
Melbourne		63·1	133	e 9 18	−75	i 18 36	−26	e 32·2	35·0
Makeyevka		66·0	326	i 10 58	+ 7	i 19 51	+14	31·3	42·7
Riverview		66·7	128	e 12 54	+118	e 19 42	− 4	e 28·3	34·1
Sydney	E.	66·7	128	19 23	?S	(19 23)	−23	38·5	40·5
Kucino		70·4	333	11 25	+ 6	20 38	+ 7	36·4	47·7
Athens		71·4	312	11 28	+ 2	e 20 46	+ 3	e 29·7	43·0
Cape Town		72·7	235	—	—	21 2	+ 4	—	50·2
Belgrade	E.	75·7	318	e 11 56	+ 3	e 21 45	+11	e 33·0	39·9
	N.	75·7	318	i 11 57	+ 4	e 21 37	+ 3	44·0	—
Pulkovo		75·9	335	i 12 0	+ 6	i 21 43	+ 7	39·7	51·9
Leningrad		76·1	335	i 11 59	+ 3	i 21 43	+ 5	34·4	51·9
Budapest		77·4	320	12 12	+ 9	21 59	+ 6	31·3	49·6
Konigsberg		78·7	327	i 12 14	+ 3	e 22 13	+ 5	e 38·4	49·7
Zagreb		79·0	318	e 12 15	+ 2	e 22 15	+ 3	38·7	52·7
Vienna		79·3	321	e 12 16	+ 1	22 19	+ 4	—	53·7
Graz		79·6	321	i 12 14	− 3	e 22 15	− 4	33·7	51·4
Rocca di Papa		80·5	314	i 12 22	0	e 22 28	− 1	e 32·6	—
Venice		81·4	317	11 46	−41	—	—	—	—
Upsala		81·8	331	e 12 27	− 2	e 22 50	+ 6	e 37·7	53·6
Florence		81·9	315	12 32	+ 2	22 42?	− 3	34·7	44·7
Cheb		82·3	323	e 12 34	+ 2	e 22 54	+ 5	e 49·7	55·7
Innsbruck	N.W.	82·4	319	e 12 33	+ 1	—	—	—	—
Hohenheim	E.	84·1	320	i 12 44	+ 1	i 23 6	− 3	e 35·7	56·4
Zurich		84·3	318	i 12 42	− 2	e 22 57	[+ 5]	—	—
Hamburg		84·4	325	e 12 43	− 1	i 23 16	+ 4	e 41·7	50·7
Moncalieri		84·6	316	12 47	+ 1	23 16	+ 1	36·0	56·5
Christchurch		84·7	134	—	—	(23 30)	+14	44·6	63·3
Strasbourg		85·0	320	12 45	− 3	23 19	0	e 36·7	56·7
Wellington		86·2	132	—	—	i 23 6	[+ 2]	e 34·7	47·7
De Bilt		87·1	323	12 57	− 3	23 37	− 5	e 35·7	57·8
Algiers		87·2	308	12 56	− 4	23 37	− 6	42·7	50·7
Uccle		87·4	321	e 12 58	− 3	i 23 37	− 8	35·7	60·5
Puy de Dôme		88·0	316	10 42?	?	—	—	—	—
Barcelona		88·2	312	e 13 8	+ 2	e 23 45	− 9	e 29·3	—
Paris		88·5	319	i 13 4	− 4	i 23 49	− 9	46·7	60·7
Tortosa	N.	89·4	311	e 13 5	− 7	i 23 57	−10	e 46·7	54·6
Alicante		90·1	310	e 13 14	− 3	e 24 27	+12	e 43·1	59·5
Almeria		91·6	308	13 16	− 9	i 24 28	− 3	e 46·6	57·8
Dyce		91·6	327	13 27	+ 2	24 22	− 8	45·7	57·2
Stonyhurst		91·8	323	13 18	− 8	24 38	+ 5	50·7	63·0
Edinburgh		92·2	325	i 17 14	?PR_1	i 24 4	[+23]	50·7	59·7
Bidston		92·2	323	24 27	?S	(24 27)	−10	37·7	77·7
Granada		92·6	308	13 10	−20	e 24 10	−31	e 47·2	52·5
Toledo		92·9	310	e 13 21	−11	e 24 29	−15	e 38·5	61·4
Malaga		93·2	308	e 13 5	−28	e 24 7	[+20]	e 32·8	—
San Fernando		94·7	307	13 38	− 4	24 30	−33	38·2	63·7
Rio Tinto		95·0	308	19 42?	?	—	—	—	73·7
Victoria		125·0	25	31 47	?	—	—	53·8	82·2
Ottawa	E.	134·0	345	e 21 59	?PR_1	—	—	63·7	85·2
Toronto		136·5	348	e 22 17	?PR_1	—	—	74·7	88·0
Ithaca		136·9	343	—	—	—	—	81·7	—
Fordham		137·5	340	—	—	i 64 1	?	75·8	82·0
Ann Arbor		138·6	351	e 21 54	?PR_1	—	—	e 78·1	—
Chicago	N.	139·6	355	e 18 34	[−65]	—	—	—	84·3
Sucre		147·1	230	i 19 52	[+ 1]	e 33 16	?	71·7	77·0
La Paz	E.	150·8	231	i 19 58	[+ 1]	33 47	?	73·8	80·4
	N.	150·8	231	i 20 2	[+ 5]	33 53	?	69·8	83·3

For Notes see next page.

NOTES TO JAN. 18d. 21h. 7m. 18s.

Additional readings and notes: Kodaikanal readings have been increased by 6m. Phu-Lien MN = +17·0m. Hong Kong SR_1 = +15m.3s. Perth PR_1 = +9m.7s., PR_1 = +9m.29s., L = +18·4m. Zi-ka-wei MN = +25·9m. Baku i = +9m.55s., MN = +28·6m., MZ = +34·7m. Irkutsk e = +21m.16s. +SR_1 −32s., MNZ = +34·0m. Adelaide eS = +22m.0s. = SR_1 −22s., MN = +26·9m.; true S is given as iPR_2. Piatigorsk iP = +10m.36s., PR_1 = +12m.51s., PR_2E = +14m.32s. SR_1 = +23m.37s., SR_2N = +27m.49s. Ekaterinburg i = +10m.47s., iPR_1 = +12m.59s., iPR_2 = +14m.38s., SR_1 = +23m.11s., SR_2 = +26m.23s., SR_3 = +27m.42s., SR_4 = +28m.35s., MN = +42·2m., MZ = +42·4m. Melbourne i = +18m.6s. Makeyevka PS = +20m.32s., SR_1 = +24m.54s., MZ = +43·1m., MN = +44·1m. Riverview e = +19m.54s. +27m.12s. and +27m.18s. =SR_2 −11s., MN = +32·2n. Sydney S = +27m.48s. =SR_2 +19s. Kucino P = +11m.36s., ePR_1 = +14m.14s., PR_2 = +15m.56s., SR_1 = +25m.12s., SR_2 = +28m.38s., MN = +47·6m. Athens MN = +44·0m. Belgrade iE = +12m.12s., iN = +12m.23s., PR_1E = +13m.17s., PR_2E = +14m.40s. Pulkovo PR_1 = +14m.51s., PR_2 = +16m.52s., SR_1 = +26m.36s., SR_2 = +30m.24s., MN = +50·3m. Leningrad iPR_1 = +14m.56s., iPR_2 = +16m.56s., iSR_2 = +30m.34s., MN = +50·4m. Konigsberg iN = +12m.20s., PPS? = +22m.44s., eSR_1 = +27m.24s., eSR_2 = +29m.42s., $P_4P_4P_4P$ = +32m.0s., e = +36m.30s. and +40m.0s. Zagreb i = +12m.27s. Vienna iPZ = +12m.17s., iZ = +16m.12s. =PR_1 +29s., iN = +16m.43s., PR_2 = +17m.15s., PS = +22m.57s., SR_1 = +27m.37s. Rocca di Papa eP = +12m.24s., iS? = +22m.32s. Upsala PR_1E = +15m.54s., PR_2 = +19m.8s., SR_1 = +28m.14s., SR_2 = +31m.42s., MN = +50·9m. Innsbruck iNW = +12m.51s. Hamburg PR_1 = +16m.19s., PR_2 = +18m.7s., SR_1 = +29m.0s., SR_2 = +33m.14s., SR_3 = +35m.25s., MN = +54·7m. Christchurch SR_1 = +23m.30s.; entered as S above; SR_2 = +28m.54s. =SR_1 −25s. Strasbourg ePEN = +12m.48s., ePR_1 = +16m.16s., MN = +54·7m., MZ = +55·2m. De Bilt PR_1Z = +16m.32s., PR_2Z = +18m.38s., SN = +23m.39s., i = +24m.48s., SR_1E = +29m.42s., MZ = +57·9m., MN = +61·0m. Algiers PR_1 = +16m.26s. Uccle PR_1 = +16m.22s., i = +24m.55s., SR_1 = +29m.47s. Paris MN = +64·7m. Dyce SR_1 = +31m.0s. =SR_1 +10s. Edinburgh i = +25m.48s. and +31m.0s. = SR_1 +2s. Bidston S = +30m.47s. =SR_1 −11s. Granada i = +13m.33s. and +17m.7s. =PR_1 −18s. Toledo SR_1NE = +30m.47s., MNW = +63·0m. San Fernando MN = +61·7m. Victoria MN = +75·0m. Ottawa e = +29m.12s. and +32m.6s., eLN = +39·7m., MN = +83·3m. Toronto eLE = +22m.36s., MN = +83·2m. Ann Arbor eE = +23m.6s. Chicago eN = +22m.42s.? =PR_1 +11s., eSR_1N = +46m.18s. =SR_2 −28s., SR_4N = +49m.48s. Sucre PR_1 = +25m.2s., PR_2 = +25m.58s., SR_1 = +37m.43s., SR_2 = +43m.43s., SR_3 = +48m.49s. =SR_2 +30s. La Paz PR_1 = +24m.53s., SR_1 = +38m.33s., SR_2 = +45m.13s.; T_o = 21h.7m.58s.

Jan 18d. Readings also at 0h. (Rocca di Papa, Florence (2), and Zagreb), 2h. (Florence), 6h. (near La Paz and near Nagasaki), 9h. (Merida), 10h. (Apia, Amboina, and near Malabar), 13h. and 15h. (La Paz), 17h. (Piatigorsk and Tokyo), 18h. (Piatigorsk), 20h. (Bergen), 21h. (near Mizusawa), 23h. (Tokyo).

Jan. 19d. Readings at 0h. (near Tacubaya), 1h. (near Algiers), 6h. (Osaka), 7h. (La Paz and Sucre), 11h. (near Phu-Lien), 12h. (Irkutsk), 15h. (Manila), 18h. (Irkutsk), 21h. (La Paz and Sucre), 22h. (La Paz and Sucre).

Jan. 20d. Readings at 2h. (Baku), 5h. (Baku and Irkutsk), 6h. (Zagreb, Venice, near Athens, and Belgrade), 18h. (La Paz), 20h. (Wellington, Melbourne, Apia, Honolulu, Ekaterinburg, and Toledo), 21h. (Kucino, Toronto, and Ottawa).

Jan. 21d. 21h. 26m. 58s. Epicentre 33·5N. 131°·9E. (as on 1922 Dec. 18d.).

A = −·557, B = +·621, C = +·552.

	Δ°	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Wuwajima	0·6	e 0 1	− 8	—	—	e 0·2	0·2
Matuyama	0·8	i 0 15	+ 3	—	—	—	0·4
Hukuoka	1·2	0 22	+ 4	—	—	0·7	0·7
Nagasaki	1·9	0 31	+ 2	0 55	+ 2	1·2	—
Sumoto	2·6	0 17	−24	0 21	−51	0·9	1·0
Kobe	2·9	0 44	− 1	(1 22)	+ 2	1·4	1·5
Osaka	3·2	0 42	− 8	(1 30)	+ 2	1·5	2·3

Additional readings and notes: Hukuoka readings are given for 22d. Nagasaki P = +42s., S = +1m.5s. Sumoto SR_1 = +33s., SR_2 = +43s.

Jan. 21d. Readings also at 6h. (Tokyo), 18h. (Batavia (2)), 20h. (near Zagreb and Laibach), 22h. (La Paz and near Amboina).

Jan. 22d. Readings at 0h. (Amboina (2) and Irkutsk), 2h. (near Sumoto), 7h. (Malabar, Kobe, and near Sumoto (2)), 9h. (Ekaterinburg), 10h. (La Paz), 13h. (Ekaterinburg), 18h. (Melbourne, Ekaterinburg, and near Tacubaya), 19h. (Sucre, Baku, Bombay, and Ottawa), 20h. (Baku), 21h. (Apia, Melbourne, and Ekaterinburg), 22h. (Bombay and Ottawa), 23h. (San Fernando).

Jan. 23d. 0h. 13m. 0s. Epicentre 34°·0S. 57°·0E. (as on 1925 Oct. 12d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kodaikanal	48·3	26	21 36	?L	—	—	(21·6)	—
Bombay	55·0	19	—	—	e 17 26	+ 5	—	—
Melbourne	68·6	122	—	—	—	—	e 32·2	35·4
Baku	74·7	355	—	—	e 21 33	+11	34·3	—
Granada	90·8	317	—	—	—	—	e 52·0	55·5
Ekaterinburg	90·9	3	e 13 15	− 6	24 10	−13	35·0	—
Kucino	91·2	350	—	—	e 24 15	−11	—	—
San Fernando	91·8	315	—	—	—	—	—	59·5
Rio Tinto	92·9	316	58 0	?L	—	—	(58·0)	62·0
Sucre	103·6	235	—	—	—	—	52·2	56·6
Ottawa	142·5	302	—	—	—	—	e 78·0	—

San Fernando gives also MN = +59·0m.

Jan. 23d. 3h. 11m. 52s. Epicentre 13°·7N. 128°·0E.

A = −·598, B = +·766, C = +·237; D = +·788, E = +·616;
G = −·146, H = +·187, K = −·972.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	6·8	278	i 1 40	− 4	(i 3 4)	− 1	i 3·1	3·2
Hong Kong	15·7	305	3 53	+ 5	7 1	+13	—	—
Batavia	28·9	228	i 5 27	−50	—	—	—	—
Malabar	29·1	225	i 5 33	−46	—	—	—	—
Irkutsk	43·0	340	8 20	+ 2	14 53	+ 5	24·1	—
Bombay	53·0	284	e 9 8	−18	—	—	—	—
Melbourne	54·0	165	—	—	e 19 14	+125	—	28·8
Ekaterinburg	66·2	327	e 10 57	+ 4	i 19 45	+ 5	30·1	—
Baku	72·2	310	i 11 31	0	e 20 51	− 1	37·1	47·0
Kucino	78·8	325	—	—	e 21 59	−11	—	—
Pulkovo	82·0	330	12 30	0	22 46	0	41·1	—
Leningrad	82·0	330	i 12 31	+ 1	e 22 43	− 3	40·6	—
La Paz	164·2	102	20 21	[+10]	—	—	—	—
Sucre	166·2	114	21 23	[+71]	—	—	—	—

Additional readings: Manila MN = +4·4m. Hong Kong SR_1 = +7m.30s.
Irkutsk PR_1 = +10m.11s., SR_1 = +18m.4s. Ekaterinburg iP = +10m.59s.
iPS = +20m.30s., i = +21m.29s.

Jan. 23d. Readings also at 0h. (near Nagasaki), 2h. (Irkutsk), 5h. (Batavia), 6h. (Innsbruck), 15h. (Piatigorsk), 17h. (Irkutsk), 22h. (Amboina and Apia).

Jan. 24d. 1h. 25m. 22s. Epicentre 34°·0S. 57°·0E. (as on Jan. 23d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		68·6	122	—	—	e 19 2	−67	—	35·6
Baku		74·7	355	e 11 55	+ 8	e 21 35	+13	36·6	44·1
Rocca di Papa		85·9	329	i 13 0	+ 7	—	—	—	—
Vienna	Z.	89·8	335	e 13 13	− 2	—	—	—	—
Granada		90·8	317	—	—	—	—	e 51·6	54·8
Ekaterinburg		90·9	3	i 13 18	− 3	24 13	−10	37·6	55·4
San Fernando		91·8	315	—	—	—	—	—	59·1
Irkutsk		95·6	27	—	—	e 24 38?	−34	50·6	—
Pulkovo		96·3	348	—	—	—	—	e 52·6	—
Leningrad		96·5	348	—	—	—	—	e 55·1	—
Sucre		103·6	235	—	—	45 40	?	55·4	57·7

Additional readings : Baku MN = +41·9m., MZ = +48·6m. Vienna iPZ = +13m.21s. San Fernando MN = +60·6m.

Jan. 24d. Readings also 4h. and 13h. (Ekaterinburg), 18h. and 19h. (near Santa Clara), 20h. (near Manila), 23h. (La Paz and Sucre).

Jan. 25d. 0h. 36m. 12s. Epicentre 9°·0S. 159°·5E.

A = −·925, B = +·346, C = −·156 ; D = +·350, E = +·937 ;
G = +·147, H = −·055, K = −·988.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		20·5	118	i 3 3	−104	5 48	?	6·8	—
Riverview		26·0	196	i 5 35	−13	i 10 3	−19	e 11·4	14·4
Sydney	E.	26·0	196	5 18	−30	9 54	−28	11·1	14·8
Apia		28·6	103	6 18	+ 4	10 15	−55	12·8	19·8
Amboina		31·5	278	i 8 36	+113	—	—	—	—
Adelaide		32·2	215	i 6 29	−21	i 11 30	−42	i 13·7	23·6
Wellington		35·0	161	i 7 0	−13	12 48	− 7	i 14·8	19·0
Manila		44·9	303	e 8 31	− 1	—	—	i 21·1	—
Perth		46·4	235	8 38	− 5	15 33	0	22·8	38·8
Nagoya		49·0	336	i 8 53	− 7	i 16 4	− 2	25·9	26·3
Osaka		49·2	334	9 5	+ 4	16 23	+14	22·8	27·6
Sumoto		49·2	334	9 0	− 1	—	—	—	—
Kobe		49·4	334	9 6	+ 3	16 16	+ 5	22·8	27·7
Taihoku	E.	50·2	315	8 59	− 9	16 32	+11	24·1	26·4
	N.	50·2	315	8 59	− 9	16 27	+ 6	25·7	25·9
Toyooka		50·3	334	9 9	0	e 16 32	+ 9	e 26·4	28·4
Nagasaki		50·4	328	9 13	+ 4	16 29	+ 5	24·4	32·2
Hukuoka		50·7	330	9 17	+ 6	16 39	+12	22·7	25·2
Mizusawa		51·0	343	9 20	+ 7	16 26	− 5	23·3	—
Malabar		51·4	270	i 9 16	0	i 16 30	− 6	25·4	—
Honolulu	E.	51·5	54	9 24	+ 7	i 16 49	+11	i 24·4?	26·8
	N.	51·5	54	e 9 30	+13	i 16 49	+11	e 24·1	28·3
Batavia		52·2	270	i 9 18	− 3	16 54	+ 8	23·7	—
Zi-ka-wei		54·2	320	i 9 44	+10	17 23	+12	—	35·1
Hong Kong		54·3	307	9 38	+ 3	(17 23)	+10	17·4	25·0
Ootomari		57·6	347	9 54	− 2	17 14	−40	22·3	31·2
Phu-Lien		59·9	300	i 10 20	+ 9	i 18 33	+11	28·8	30·5
Calcutta	E.	76·4	296	11 57	0	21 49	+ 7	31·6	—
	N.	76·4	296	11 51	− 6	21 46	+ 4	31·8	—
Irkutsk		77·2	330	i 12 6	+ 4	i 22 6	+15	35·8	40·9
Colombo		80·9	278	(12 18)	− 6	12 18	?P	23·3	28·5
Kodaikanal		83·9	282	12 48	+ 7	—	—	24·9	57·1
Hyderabad		84·3	289	12 43	− 1	23 9	− 2	44·7	59·2
Sitka	E.	84·5	30	e 12 53	+ 8	e 23 21	+ 7	e 43·6	48·3
	N.	84·5	30	e 12 49	+ 4	e 23 26	+12	—	38·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley	E.	86·3	50	e 13 0	+ 5	i 23 28	− 5	40·0	42·4
	N.	86·3	50	e 13 6	+11	e 23 30	− 3	37·0	38·0
	Z.	86·3	50	e 13 0	+ 5	e 23 36	+ 3	36·8	42·2
Santa Clara	E.	86·5	50	e 12 44	−12	i 23 37	+ 1	37·9	45·6
Lick	E.	86·8	50	e 12 57	− 1	i 23 35	− 4	i 38·0	—
	N.	86·8	50	e 13 24	+26	i 23 38	− 1	e 38·4	—
	Z.	86·8	50	e 13 2	+ 4	—	—	e 44·1	—
Dehra Dun		87·2	302	12 3	−57	—	—	22·3	22·5
Simla	E.	88·1	303	13 0	− 6	e 23 18	[+ 2]	—	30·7
	N.	88·1	303	e 14 54	?	e 23 42	−11	—	55·3
Victoria	E.	88·4	40	13 13	+ 6	23 36	[+18]	37·2	41·8
	N.	88·4	40	13 11	+ 4	23 36	[+18]	—	42·2
Bombay		89·7	290	13 4	−10	23 42	[+16]	—	—
Spokane		92·0	42	e 13 23	− 4	i 24 29	− 6	e 38·8	43·8
Tucson	E.	94·5	58	—	—	e 27 10	?	—	67·2
Mazatlan		97·2	67	—	—	29 34	?SR_1	36·6	54·1
Denver		100·0	50	—	—	e 29 48?	?	43·8	48·8
Tacubaya		103·6	73	18 45	?PR_1	27 51	+82	47·8	53·6
Baku		110·7	310	i 14 49	−12	i 25 34	[+21]	—	—
St. Louis		111·4	52	e 13 55	−69	—	—	e 49·1	58·8
Kucino		114·8	329	—	—	—	—	39·1	70·2
Piatigorsk		115·1	315	17 59	+158	e 29 35	+84	47·8	63·2
Ann Arbor		115·8	46	e 17 42	+138	i 29 48	+92	i 54·6	76·1
Leningrad		116·6	334	15 17	−10	e 28 4	−19	50·8	66·3
Pulkovo		116·7	334	15 17	−11	28 1	−23	49·8	62·2
Makeyevka		117·4	320	e 15 21	−10	30 12	?	47·8	66·6
Toronto	E.	118·5	44	i 20 28	?PR_1	—	—	i 65·4	73·5
	N.	118·5	44	e 16 23	+47	—	—	e 50·8	65·6
Ottawa		120·4	40	19 7	[+14]	—	—	e 50·8	62·8
Ithaca		120·8	45	e 30 48?	?	—	—	51·8	57·8
Johannesburg		121·2	231	30 48?	?	—	—	57·8	—
Georgetown		121·4	49	e 20 50	?PR_1	—	—	61·8	63·9
Cheltenham	N.	121·6	49	—	—	—	—	e 59·0	70·4
Upsala		121·7	340	i 20 42	?PR_1	—	—	e 52·8	75·2
Balboa Heights		121·7	85	—	—	e 23 48?	?PR_2	—	—
Fordham	E.	123·2	46	—	—	27 53	−80	e 54·0	67·5
	N.	123·2	46	e 17 7	+69	—	—	51·6	73·4
Cape Town		123·4	219	—	—	32 14	?	54·8	65·6
La Plata		123·7	143	20 58	?PR_1	—	—	52·5	—
Konigsberg		123·8	334	e 19 21	[+18]	27 46	−92	e 51·8	64·8
Harvard	E.	124·6	43	—	—	—	—	60·7	68·4
	N.	124·6	43	—	—	—	—	58·8	65·6
Lemberg		125·0	326	e 19 24	[+18]	e 30 54	+88	e 42·5	73·9
Bergen		125·1	345	17 18	+72	e 28 48?	−39	—	—
La Paz	E.	126·4	118	i 19 28	[+19]	32 37	?	60·2	66·2
	N.	126·4	118	i 19 30	[+21]	31 55	?	59·9	63·7
Helwan		127·4	300	e 16 30	+14	i 21 15	?PR_1	—	—
Sucre		127·8	123	i 19 24	[+11]	i 32 50	?	i 61·3	71·8
Port au Prince		129·0	74	e 20 6	[+50]	—	—	63·8	72·8
Budapest		129·0	327	e 19 18	[+ 2]	22 57	?PR_1	e 41·3	69·2
Hamburg		129·1	337	e 19 20	[+ 4]	—	—	e 55·8	74·8
Dyce		129·7	347	—	—	—	—	53·8	72·3
Belgrade	E.	129·7	322	e 19 28	[+11]	28 45	−74	e 41·9	77·9
	N.	129·7	322	e 19 27	[+10]	28 46	−73	e 43·0	76·8
Vienna		130·0	330	e 19 22	[+ 4]	—	—	e 58·8	75·8
Cheb		130·7	333	19 32	[+12]	e 34 29	?	e 56·8	72·8
Athens		130·8	313	i 21 44	?PR_1	—	—	59·8	71·7
Edinburgh		131·1	347	i 22 52	?PR_1	—	—	53·8	58·8
Graz	E.	131·2	329	e 19 31	[+10]	—	—	e 63·8	83·2
	N.	131·2	329	—	—	—	—	e 66·8	83·3
Zagreb		131·7	326	19 28	[+ 6]	—	—	38·8	—
De Bilt		132·1	339	19 29	[+ 6]	—	—	e 59·8	69·7
Laibach		132·4	327	e 19 34	[+10]	e 26 51	?	e 65·1	86·6
Stonyhurst		132·8	345	22 1	?PR_1	—	—	59·8	78·3
Innsbruck	N.W.	133·1	331	e 19 35	[+10]	i 32 26	?	e 60·8	67·2
Hohenheim		133·1	335	19 34	[+ 9]	—	—	e 55·8	78·6
Uccle		133·4	339	19 27	[+ 1]	—	—	e 55·8	66·4
Bidston		133·4	345	22 5	?PR_1	31 48	?	45·9	83·7
Strasbourg		133·9	335	19 33	[+ 5]	—	—	56·8	85·8
Venice		133·9	330	18 48?	[−40]	—	—	—	—
Zurich		134·4	332	i 19 32	[+ 3]	—	—	—	—
Oxford		134·4	343	e 22 9	?PR_1	—	—	e 55·8	79·3
San Juan	E.	134·8	73	e 19 39	[+ 9]	—	—	e 63·8	75·2
	N.	134·8	73	—	—	—	—	e 69·0	78·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Besançon		135·6	335	19 40	[+ 9]	—	—	59·8	—
Florence		135·6	326	19 33	[+ 2]	32 28	?	63·8	74·3
Paris		135·7	339	e 19 40	[+ 9]	e 22 12	?PR_1	59·8	60·8
Naples		135·7	321	e 19 48?	[+17]	e 31 48?	?	63·8	83·8
Rocca di Papa		136·1	323	e 19 37	[+ 5]	e 28 2	?PR_2	e 65·1	83·9
Plymouth		136·4	345	22 1	?PR_1	—	—	—	—
Moncalieri		136·5	331	19 50	[+17]	35 5	?	54·3	85·1
Puy de Dôme		138·0	336	19 43	[+ 7]	i 22 59	?PR_1	58·8	93·8
Bagnères		141·4	336	19 43	[+ 1]	i 22 55	?PR_1	59·8	81·9
Barcelona		141·9	331	e 19 43	[0]	32 53	?	e 62·3	83·3
Tortosa	N.	143·1	333	i 19 49	[+ 4]	e 33 27	?	62·0	92·5
Algiers		145·1	325	i 19 49	[+ 1]	33 17	?	63·8	91·8
Alicante		145·6	332	i 19 54	[+ 5]	—	—	—	—
Toledo	N.E.	145·8	337	19 52	[+ 2]	e 33 33	?	e 59·8	80·2
Almeria		147·6	332	i 19 56	[+ 4]	33 31	?	i 64·6	71·8
Granada		147·9	335	i 19 58	[+ 5]	31 14	?	74·2	95·1
Malaga		148·6	335	19 54	[0]	33 48	?	49·7	95·7
Rio Tinto		148·6	340	18 48?	[−66]	—	—	—	101·8
San Fernando		149·6	337	20 8	[+13]	36 18	?	75·8	96·8

Additional readings and notes: Riverview iP = +6m.6s., PR_1 = +6m.32s., PS = +10m.21s., MN = +13·4m., MZ = +15·6m.; T_o = 0h.36m.11s., origin 9°S. 160°E. Sydney PR_2 = +8m.6s. Apia PR_1 = +6m.29s. and +7m.58s., SR_1 = +11m.44s., MZ = +14·8m.; T_o = 0h.37m.32s. Adelaide MN = +24·1m. Wellington PR_2 = +8m.21s., eS = +12m.14s., iS = +12m.31s.; T_o = 0h.36m.33s. Manila iP = +8m.40s. Perth PR_1 = +10m.40s., SR_1 = +17m.54s. Nagoya MN = +27·0m. Sumoto gives its P followed by an apparent local shock, P = +9m.8s., S = +9m.53s., L = +10·4m., M = +10·6m. Kobe PR_1 = +9m.32s., PR_2 = +10m.45s., MN = +27·8m. Taihoku SR_1E = +20m.1s., SR_1N = +20m.5s. Nagasaki MN = +31·3m. Mizusawa LN = +23·2m. Malabar iE = +17m.6s. Honolulu P_cPE? = +10m.42s., PR_1E = +11m.36s., PR_2E = +12m.30s., PR_2N = +13m.11s., PR_2E = +13m.17s., iS_cSN? = +18m.56s., eSR_1N = +20m.42s., eSR_2N? = +21m.48s., SR_2E = +22m.36s.; T_o = 0h.36m.9s., and 0h.36m.12s. Batavia i = +12m.27s. = PR_2 −3s. Zi-ka-wei MN = +34·9m. Ootomari MN = +29·8m. Irkutsk MN = +39·2m. Sitka eE = +17m.16s., SR_1N = +28m.35s., SR_1E = +28m.42s., eN = +30m.39s., SR_2N = +35m.23s., SR_2E = +35m.25s.; T_o = 0h.36m.27s. and 0h.36m.30s. Berkeley iPSZ = +24m.42s., eN = +36m.27s., iE = +38m.9s. Santa Clara PR_1 = +18m.10s., PSE = +24m.13s., SR_1E? = +27m.41s., SR_2E? = +32m.41s., SR_2E = +34m.6s., and several i readings. Dehra Dun: Assuming readings all too small by 1 minute L and M are probably [S] and S. Spokane eE = +13m.32s., ePR_1E = +17m.27s., ePR_2N = +19m.16s., ePR_2N = +21m.0s., eEN = +23m.47s. = [S] +7s., iPSE = +25m.31s., iPSN = +25m.35s., SR_1EN = +30m.55s., eE = +31m.16s., and +33m.36s., SR_2E = +34m.28s., SR_2N = +34m.29s., SR_2E = +37m.5s., SR_2N = +37m.10s., MN = +44·1m.; all readings are given for 16h. Tucson ePR_1E = +16m.54s., PSE = +22m.51s., eSR_2E = +38m.0s. Denver iPR_2E = +21m.48s.? Baku i = +18m.32s. = [P] +8s., and +19m.10s. = PR_1 −13s. St. Louis ePN = +14m.23s., ePR_2? = +25m.10s., ePSE = +29m.10s., ePSN = +29m.17s., ePPS = +29m.48s., iSR_1N = +34m.39s., SR_2E = +39m.27s. Kucino e = +19m.26s. = PR_1 −24s. and +28m50s. = S +42s., i = +25m.16s. = [S] −12s., +26m.27s. and +35m.24s. = SR_1 −18s., MN = +69·4m. Piatigorsk iPRN = +19m.8s., i = +29m.47s., eN = +31m.3s., SR_1 = +35m.35s. Ann Arbor iSR_1 = +36m.54s., eSR_2 = +41m.54s. Leningrad e = +19m.29s., PR_1 = +20m.6s., PR_2 = +22m.33s., PS = +29m.40s., SR_1 = +36m.25s., SR_2 = +40m.57s., MN = +69·0m., MZ = +73·4m. Pulkovo PR_1 = +19m.27s., MN = +62·8m., MZ = +66·1m. Makeyevka PR_1 = +20m.15s., PR_2 = +24m.43s., PR_2 = +26m.7s., PS = +31m.29s., SR_1 = +35m.45s., MN = +60·5m., MZ = +74·9m. Toronto gives several other i readings. Ottawa PR_1 = +20m.28s., MN = +52·8m., and several i readings; T_o = 0h.36m.21s. Georgetown iE = +23m.45s. = PR_2 −11s., eLN = +53·8m., MN = +77·1m. Cheltenham PSE = +30m.49s., eSR_1N = +41m.24s., eLE = +63·8m. Upsala MN = +74·2m. Fordham eE = +7m.20s., eN = +16m.31s. = P +33s., ePR_1 = +20m.55s., ePR_1E = +23m.43s., ePR_2N = +23m.47s., iPSE = +30m.56s., iPSN = +30m.59s., iPPS = +33m.33s., SR_1E = +38m.38s., SR_2E = +43m.37s.; T_o = 0h.36m.23s. Cape Town SR_1 = +37m.59s. Konigsberg PR_1Z = +20m.58s., PR_1EN = +20m.59s., iZ = +21m.51s., i = +29m.10s. = S −8s., eSR_1? = +37m.27s., SR_2 = +42m.54s., eLN = +56·3m., eLZ = +65·3m., MN = +67·8m., MZ = +73·8m. Harvard ePR_1E = +21m.54s., eSR_1N = +38m.6s.?, eSR_1E = +38m.20s., SR_2E? = +48m.16s., SR_4N? = +50m.22s. Lemberg MN = +73·2m. Bergen e = +31m.48s.? La Paz PR_1 = +22m.40s., PR_2 = +26m.14s., PR_2 = +26m.35s., SR_1N = +38m.40s., SR_2 = +43m.42s., SR_2N = +53m.20s.; T_o = 0h.36m.48s. Sucre PR_1 = +21m.26s., PR_2 = +26m.39s.,

Continued on next page.

$SR_1 = +38m.35s.$, i $= +41m.8s.$, $SR_2 = +47m.8s.$, $SR_3 = +53m.35s.$; $T_0 = 0h.36m.33s.$ Port au Prince iP $= +20m.48s.$ Hamburg iPZ $= +19m.26s.$, MNZ $= +78{\cdot}8m.$, also several other readings. Dyce $PR_1 = +21m.30s. = PR_1 + 2s.$, i $= +22m.5s.$, $+22m.50s.$, and $+30m.36s.$, $PR_2 = +28m.10s. = PR_2 - 41s.$ Belgrade $PR_1 = +21m.40s.$, $iPR_1E = +22m.54s.$, $PR_1N = +24m.46s. = PR_2 - 14s.$, $PR_1E = +26m.58s.$, $PR_2N = +25m.23s.$, $PR_2E = +24m.59s.$ Vienna iPZ $= +19m.27s.$, P $= +21m.42s. = PR_1 + 12s.$, $PR_2 = +28m.31s.$, $S_4P_4SP? = +35m.12s.$, $PR_3 = +36m.57s.$, PPS $= +38m.11s. = SR_1 - 39s.$, MN $= +81{\cdot}8m.$ Cheb i $= +21m.42s. = PR_1 + 8s.$, and $+28m.40s.$ Athens MN $= +72{\cdot}6m.$, also many other e and i readings. Edinburgh i $= +33m.51s.$, $+35m.48s.$, and $+39m.27s. = SR_1 + 24s.$ Graz i $= +21m.47s. = PR_1 + 9s.$, $PR_2 = +22m.53s.$, $PR_3 = +23m.24s.$, $SR_1 = +39m.36s.$, $SR_2 = +45m.0s.$ Zagreb e $= +21m.54s. = PR_1 + 14s.$, and many i readings. De Bilt iZ $= +21m.43s. = PR_1 + 0s.$, MNZ $= +79{\cdot}8m.$ Laibach ePN $= +19m.43s.$, $PR_1N = +22m.52s.$, $PR_1E = +22m.55s.$, eE $= +30m.28s. = S + 12s.$, eLN $= +66{\cdot}8m.$, MN $= +81{\cdot}0m.$ Stonyhurst $PR_1? = +32m.6s.$, $PR_2? = +39m.48s. = SR_1 + 24s.$ Innsbruck iNW $= +22m.57s.$, iNE $= +23m.23s.$, MNE $= +76{\cdot}2m.$ Hohenheim i $= +22m.0s. = PR_1 + 10s.$ and $+23m.0s.$ Uccle i $= +22m.4s. = PR_1 + 12s.$, and $+23m.1s.$, MN $= +79{\cdot}2m.$ Bidston S $= +33m.51s.$ Strasbourg i $= +22m.6s. = PR_1 + 11s.$ and $+23m.6s.$, e $= +22m.19s.$, $iPR_1? = +24m.55s. = PR_2 - 36s.$, MZ $= +83{\cdot}8m.$, MN $= +85{\cdot}6m.$ Zurich iP $= +22m.9s. = PR_1 + 10s.$ Oxford i $= +32m.18s.$ and $+40m.9s. = SR_1 + 25s.$ San Juan eE? $= +21m.56s. = PR_1 - 5s.$, $PR_1E = +22m.51s.$, $ePR_1N = +23m.16s.$, $ePR_1E = +26m.47s.$, iE $= +32m.47s.$, eE $= +35m.24s.$, $SR_1E = +40m.47s.$, eN $= +58m.36s.$; $T_0 = 0h.36m.12s.$ Paris MN $= +70{\cdot}8m.$ Rocca di Papa ePN $= +19m.39s.$, iPE $= +19m.41s.$, iPN $= +19m.43s.$, $PR_1E = +22m.17s.$ Barcelona $PR_1 = +23m.0s.$, MN $= +76{\cdot}2m.$ Algiers MN $= +78{\cdot}8m.$ Toledo iP $= +19m.55s.$, MNW $= +70{\cdot}5m.$, MZ $= +86{\cdot}0m.$ Almeria MN $= +68{\cdot}2m.$ Granada $PR_1 = +23m.56s.$, $PR_2 = +27m.36s.$, and $+33m.54s.$, PPS $= +36m.21s.$, $SR_1 = +42m.3s.$ Malaga iP $= +20m.4s.$, MN $= +96{\cdot}7m.$ San Fernando $SR_1 = +51m.0s.$, MN $= +86{\cdot}3m.$

Jan. 25d. 14h. 39m. 36s. Epicentre 31°·5N. 130°·0E. (as on 1925 Mar. 16d.).

A $= -{\cdot}548$, B $= +{\cdot}653$, C $= +{\cdot}522$; D $= +{\cdot}766$, E $= +{\cdot}643$; G $= -{\cdot}336$, H $= +{\cdot}400$, K $= -{\cdot}853$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	1·3	356	0 26	+ 6	—	—	0·9	1·3
Hukuoka	2·1	10	0 36	+ 3	—	—	1·2	—
Matuyama	3·3	45	i 0 49	− 3	i 1 27	− 4	i 1·6	1·7
Osaka	5·6	53	1 55	+28	—	—	2·7	4·0
Irkutsk	28·0	326	—	—	—	—	18·4	—

Matuyama gives also $iPR_1 = +1m.2s.$, $iPR_2N = +1m.22s.$

Jan. 25d. Readings also at 0h. (near Taihoku, near Sumoto (2), and Kobe), 2h. (Taihoku and Tokyo (2)), 3h. (Sucre), 9h. (Osaka), 11h. (near Sumoto), 13h. (Riverview, Adelaide, Baku, and Irkutsk), 14h. (Kucino and near Nagasaki (3)), 20h. (Pulkovo), 23h. (near Nagasaki).

Jan. 26d. 7h. 4m. 24s. Epicentre 20°·6S. 168°·8E. (as on 1924 Oct. 5d.).

A $= -{\cdot}918$, B $= +{\cdot}182$, C $= -{\cdot}352$; D $= +{\cdot}194$, E $= +{\cdot}981$; G $= +{\cdot}345$, H $= -{\cdot}068$, K $= -{\cdot}936$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	9·4	76	i 0 3	−139	i 2 1	−132	i 2·6	4·8
Apia	19·7	73	4 46	+ 9	8 29	+12	9·9	10·5
Riverview	20·5	226	i 4 49	+ 2	i 8 44	+10	e 9·5	11·8
Sydney E.	20·5	226	4 42	− 5	8 36	+ 2	10·4	11·1
Wellington E.	21·3	168	e 4 47	−10	i 8 31	−19	i 9·6	11·0
N.	21·3	168	e 4 47	−10	i 8 35	−15	—	15·4
Christchurch	23·2	173	5 36?	+17	9 18	−11	10·7	15·4
Adelaide	30·1	235	e 6 34	+ 5	10 40	−56	11·8	20·4

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Perth		48·3	245	(9 11)	+15	(16 13)	+15	(24·6)	(25·8)
Honolulu		53·0	40	—	—	e 17 9	+13	i 27·0	32·5
Batavia		61·6	275	i 10 37	+14	i 19 1	+18	25·9	35·7
Osaka		63·7	331	10 55	+19	—	—	33·0	37·3
Taihoku	E.	64·7	315	—	—	e 20 0	+39	—	—
Hong Kong		68·4	306	11 22	+15	(20 28)	+21	20·5	—
Berkeley	Z.	87·1	48	e 13 0	0	e 23 42	0	e 42·4	—
Lick	E.	87·4	49	—	—	—	—	e 41·6	—
Colombo		91·4	277	23 56	?S	(23 56)	[+20]	58·8	63·6
Victoria		91·7	38	23 54	?S	(23 54)	[+16]	44·9	56·8
Irkutsk		91·8	326	i 13 23	− 3	24 33	0	46·6	—
Kodaikanal		94·8	280	37 54	?SR_3	—	—	51·2	73·3
Hyderabad		96·4	286	13 49	− 2	24 23	[+19]	47·5?	62·0
Simla	N.	101·8	300	—	—	—	—	e 59·4	—
Bombay		102·2	286	e 18 13	?PR_1	24 50	[+15]	33·2	62·9
La Paz		113·0	120	e 20 3	?PR_1	33 13	?SR_1	58·7	72·2
Chicago	E.	113·5	51	—	—	e 52 36?	?	56·2	73·0
	N.	113·5	51	—	—	e 35 30	?SR_1	e 57·6	65·1
Sucre		113·9	124	i 19 48	?PR_1	e 33 36	?SR_1	60·6	72·2
Ann Arbor	E.	116·5	50	—	—	—	—	e 61·9	—
Ekaterinburg		117·0	324	19 17	[+33]	e 28 2	−24	47·6	72·9
Toronto	E.	119·7	50	e 21 16	?PR_1	e 30 8	?	59·2	72·2
Georgetown	E.	121·3	55	—	—	—	—	64·7	73·8
Ithaca		121·7	51	—	—	—	—	67·6	—
Ottawa	E.	122·3	47	21 36?	?PR_1	—	—	e 59·6	70·6
	N.	122·3	47	—	—	—	—	e 51·6	73·6
Fordham		123·8	54	e 45 36?	?	—	—	63·6	71·0
Baku		124·9	307	e 21 10	?PR_1	—	—	59·1	74·9
Kucino		129·5	328	e 22 42	?PR_1	—	—	—	78·6
Piatigorsk		129·6	312	e 21 50	?PR_1	i 22 56	?	—	75·6
Leningrad		131·0	334	—	—	—	—	76·6	82·4
Pulkovo		131·1	334	i 22 54	?PR_1	e 31 52	?	55·6	81·6
Upsala	N.	135·7	340	—	—	—	—	e 78·6	—
Vienna	Z.	144·6	329	i 19 50	[+ 2]	—	—	—	—
Athens		145·2	309	e 19 56	[+ 8]	—	—	—	—
De Bilt		146·1	340	19 55	[+ 5]	—	—	e 74·6	—
Uccle		147·4	341	—	—	—	—	82·6	—
Innsbruck	N.W.	147·6	331	e 20 9	[+17]	—	—	—	—
Strasbourg		148·2	334	19 36?	[−17]	—	—	—	—
Zurich	Z.	148·8	334	e 20 2	[+ 8]	—	—	—	—
Naples		150·4	318	e 19 36	[−20]	—	—	—	—
Rocca di Papa		150·8	322	20 4	[+ 7]	—	—	89·3	94·8
Granada		162·2	340	—	—	—	—	e 51·6	109·6
Rio Tinto		162·4	348	32 36	?PR_2	—	—	—	46·6
San Fernando		163·6	346	—	—	45 48	?	87·1	99·6

Additional readings: Suva MN = +5·9m. Riverview PR_1 = +5m.15s., PS = +8m.59s. = SR_1 − 13s., MZ = +11·2m., MN = +12·1m.; T_0 = 7h.4m.9s.; origin 22°S. 173°E. Adelaide SR_1 = +11m.26s. = SR_1 − 10s., MN = +19·8m. Perth PR_1 = (+11m.1s.) = PR_1 + 2s., S = (+15m.36s.), SR_2 = (+21m.16s.) = SR_2 + 24s.; all readings have been diminished by 2min. Honolulu eSR_3N = 24m.30s., eN = +25m.36s. Berkeley eE = +14m.0s., +41m.54s. and +42m.54s., eNZ = +51m.54s. Colombo S = +46m.46s. Victoria SE = +31m.8s. = SR_1 + 16s., MN = +67·8m. Irkutsk SR_2 = +36m.36s. Simla eE = +61m.36s. Ekaterinburg e = +30m.3s. and +36m.30s. = SR_1 + 20s., MN = +58·0m., MZ = +73·2m. Toronto eN = +37m.28s., MN = +70·3m. Fordham eN = +49m.46s., MN = +70·8m.; all the readings have been increased by 1h. Baku e = +31m.37s. and + 38m.29s., MN = +95·1m. Kucino e = +29m.54s. = S − 5s., and +39m.18s. = SR_1 − 29s. Rocca di Papa PEN = +20m.10s. San Fernando MN = +89·6m.

Jan. 26d. Readings also 0h. (Zurich), 2h. (near Nagasaki), 12h. (near Tacubaya), 13h. (Perth, near Kobe, and Sumoto), 16h. (Sucre), 17h. (La Paz), 18h. (Oxford), 19h. (Rocca di Papa and near Manila).

Jan 27d. Readings at 3h. (Apia and near Sumoto), 8h. (La Paz, Simla, Baku, Ekaterinburg, Vienna, Zurich, San Fernando, and near Nagasaki), 9h. (Ottawa), 15h. (Zagreb), 16h. (Tokyo), 20h. (Manila).

Jan. 28d. Readings at 0h. (Manila and near Nagasaki), 7h. (Tokyo), 9h. (near Wuwajima), 16h. (Taihoku and near Nagasaki), 18h. (Wuwajima), 20h. (near Amboina and near Nagasaki), 22h. (La Paz, Sucre, Ekaterinburg, Toronto, Ottawa, Apia, and near Port au Prince, and Balboa Heights), 23h. (near Nagasaki (2)).

Jan. 29d. 3h. 27m. 48s. Epicentre 20°·6S. 168°·8E. (as on Jan. 26d.).

$A = -\cdot 918$, $B = +\cdot 182$, $C = -\cdot 352$; $D = +\cdot 194$, $E = +\cdot 981$; $G = +\cdot 345$, $H = -\cdot 068$, $K = -\cdot 936$.

		Δ	Az.	P..	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		9·4	76	e 2 27	+ 5	4 27	+14	5·2	7·0
Riverview		20·5	226	e 4 51	+ 4	e 8 39	+ 5	e 9·8	11·5
Sydney	E.	20·5	226	4 42	− 5	8 36	+ 2	10·6	12·2
Wellington		21·3	168	i 4 43	−14	8 14	−36	e 9·7	10·7
Christchurch		23·2	173	—	—	9 12	−17	11·3	14·1
Melbourne		26·8	225	e 6 6	+10	i 11 30	+53	15·4	17·1
Adelaide		30·1	235	e 6 32	+ 3	e 11 50	+14	e 14·5	20·5
Batavia		61·6	275	e 11 28	+65	i 19 4	+21	—	—
Kodaikanal		94·8	280	63 42	?	—	—	—	—
Bombay		102·2	286	e 19 12?	?PR_1	—	—	—	—
Chicago	N.	113·5	51	—	—	—	—	e 63·2	—
Ekaterinburg		117·0	324	—	—	e 28 8	−18	52·2	—
Toronto	E.	119·7	50	—	—	—	—	61·2	68·2
Ottawa	E.	122·3	47	—	—	—	—	e 59·2	—
Leningrad		131·0	334	—	—	—	—	e 138·2	—
Vienna	Z.	144·6	329	i 19 49	[+ 1]	—	—	—	—
De Bilt		146·1	340	e 19 54	[+ 4]	—	—	e 77·2	84·6
Zurich		148·8	334	e 19 56	[+ 2]	—	—	—	—
San Fernando		163·6	346	—	—	—	—	—	108·7

Additional readings and notes: Suva readings have been increased by 4m. Riverview iS = +8m.43s., PS = +8m.49s., MN = +12·1m.; T_0 = 3h.47m.40s. Wellington PR_1 = +4m.56s., PR_2 = +5m.5s., iN = +5m.9s., iE = +5m.12s., SN = +8m.50s. (O−C. = 0s), eLN = +9·6m., MN = +15·2m.; T_0 = 3h.28m.4s. Christchurch PR_2 = +5m.42s. Adelaide P has been diminished by 5m., MN = +18·0m. Ekaterinburg e = +36m.33s. = SR_1 + 23s. Ottawa eLN = +53·2m. San Fernando MN = +101·2m.

Jan. 29d. 5h. 55m. 45s. Epicentre 20°·6S. 168°·8E. (as at 3h.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		9·4	76	2 24	+ 2	4 29	+16	5·4	—
Riverview		20·5	226	e 5 5	+18	e 8 58	+24	e 10·6	18·7
Sydney	E.	20·5	226	4 39	− 8	9 3	+29	11·0	11·6
Wellington	E.	21·3	168	4 48?	− 9	8 37	−13	10·1	12·0
	N.	21·3	168	4 54?	− 3	8 43	− 7	—	16·8
Christchurch		23·2	173	9 33	?S	(9 33)	+ 4	13·4	14·8
Melbourne		26·8	225	—	—	e 10 45	+ 8	14·8	16·2
Adelaide		30·1	235	e 8 45	+136	14 2	+146	16·8	20·6
Ekaterinburg		117·0	324	—	—	—	—	58·8	—
Ottawa	E.	122·3	47	—	—	—	—	e 70·2	—
Vienna	Z.	144·6	329	e 20 6	[+18]	—	—	—	—

Additional readings and notes: Suva readings have been increased by 2m. Riverview MN = +24·5m. Christchurch S = +12m.9s. Adelaide MN = +19·8m. Ottawa eLN = +66·2m.

Jan. 29d. Readings also at 0h. (Bombay and Ekaterinburg), 1h. (near Tacubaya and near Toyooka), 2h. (Mostar and Perth), 5h. (Perth), 6h. (near Nagasaki), 12h. (Merida and Ottawa), 13h. (near Sumoto), 14h. (Ekaterinburg), 18h. (Irkutsk, Ekaterinburg, near Batavia, and Malabar); 21h. (near Tacubaya), 22h. (La Paz).

Jan. 30d. 11h. 53m. 36s. Epicentre 33°·5N. 131°·9E. (as on 1926 Jan. 21d.).

A = −·557, B = +·621, C = +·552.

		△ °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Wuwajima		0·6	i 0 10	+ 1	—	—	i 0·4	0·4
Matuyama		0·8	e 0 11	− 1	—	—	—	0·4
Hukuoka	N.	1·2	0 31	+13	—	—	0·8	0·8
Nagasaki		1·9	0 23	− 6	—	—	0·8	0·8
Sumoto		2·6	0 45	+ 4	(1 15)	+ 3	1·2	1·3
Kobe		2·9	—	—	—	—	—	1·6

Nagasaki gives also P = +36s.

Jan. 30d. Readings also at 1h. (near Athens and near Sumoto), 8h. (Ekaterinburg, Tokyo, and Adelaide), 9h. (Baku and near Kobe and Sumoto), 11h. (near La Paz), 14h. (Leningrad), 15h. (near Nagasaki), 16h. (Irkutsk), 17h. (Rio Tinto, Tokyo, Baku, and Ekaterinburg), 22h. (Apia), 23h. (Ekaterinburg and Tokyo).

Jan. 31d. 10h. 19m. 12s. Epicentre 42°·3N. 17°·8E. (as on 1923 Dec. 19d.).

A = +·704, B = +·226, C = +·673; D = +·306, E = −·952;
G = +·641, H = +·206, K = −·740.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Mostar	1·0	1	i 0 14	− 1	i 0 25	− 3	—	0·5
Sarajevo	1·6	17	i 1 3	+39	1 41	−56	—	1·9
Naples	3·0	241	e 2 18	?	—	—	—	—
Belgrade	3·2	37	e 0 40	−10	i 1 34	+ 6	—	2·2
Rocca di Papa	3·8	264	—	—	—	—	e 2·1	—
Venice	5·0	310	3 48?	?L	—	—	(3·8)	—
Vienna	6·0	351	e 3 46	?L	—	—	(e 3·8)	4·5
Athens	6·3	131	e 1 38	+ 2	e 2 15	−37	2·4	2·7
Innsbruck	6·7	320	—	—	—	—	e 3·6	—

Additional readings: Mostar i = +20s. and +24s. Belgrade iP = +1m.9s., iS$_R$ = +1m.50s. Rocca di Papa ePE = +3m.16s., ePN = +3m.24s., ePZ = +3m.26s. Athens MN = +2·8m.

Jan. 31d. Readings also at 2h. (near Manila), 5h. (Ekaterinburg, Pulkovo, and near Athens), 11h. (Athens and near Manila), 14h. (near Barcelona), 15h. (near Mizusawa), 21h. (near Manila).

Feb. 1d. 1h. 17m. 33s. Epicentre 10°·6N. 65°·6W. (as on 1923 Aug. 8d.).

A = +·406, B = −·895, C = +·184; D = −·911, E = −·413;
G = +·076, H = −·168, K = −·983.

The focal depth +0·025 of 1923 Aug. 8 has been retained. 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.
San Juan	+0·1	7·8	356	2 10	+10	3 57	+23	4·8	—
Port au Prince	−0·3	10·3	322	i 3 7	+37	(5 32)	+63	5·5	5·7
La Paz	−1·5	27·2	185	i 5 55	+10	i 10 25	+ 9	13·6	18·2
Sucre	−1·6	29·2	179	i 6 10	+ 6	i 11 3	+11	14·0	15·3
Georgetown E.	−1·7	30·1	344	—	—	—	—	i 15·1	—
Tacubaya	−1·9	33·5	289	7 4	+21	12 40	+39	—	—
Toronto	−2·0	35·1	344	—	—	(11 27?)	−59	20·6	—
Ann Arbor	−2·0	35·4	337	e 11 33	?S	(e 11 33)	−57	e 15·2	—
Ottawa	−2·0	35·8	350	—	—	i 13 27	+49	e 15·8	—
Chicago	−2·0	36·6	333	e 7 8	− 2	e 12 51	+ 2	e 18·0	21·0
La Plata	−2·5	46·1	171	8 17	− 6	14 45	−11	22·0	—
Uccle	−3·2	69·2	40	i 10 53	+ 2	—	—	—	—
De Bilt	−3·2	69·8	39	10 59	+ 4	—	—	e 30·4	—
Strasbourg Z.	−3·2	71·1	43	i 11 3	0	—	—	—	—
Hamburg Z.	−3·2	73·0	38	i 11 19	+ 3	—	—	—	—
Innsbruck N.W.	−3·2	73·4	44	i 11 20	+ 2	—	—	—	—
Rocca di Papa	−3·2	74·3	50	e 11 24	0	e 21 28	[−16]	e 43·4	44·6
Vienna Z.	−3·3	76·8	42	e 11 37	− 2	—	—	—	—
Pulkovo	−3·4	83·8	30	i 12 20	− 1	22 26	− 2	—	—
Leningrad	−3·4	83·8	30	i 12 20	− 1	e 22 26	− 2	e 37·0	—
Kucino	−3·5	88·8	34	—	—	e 23 1	[−20]	41·6	—
Ekaterinburg	−3·7	99·5	27	e 17 27	?PR$_1$	e 24 0	[−22]	39·0	—

Additional readings and notes: San Juan eE = +2m.32s. and +2m.50s., eN = +3m.22s. and +4m.1s.; T_0 = 1h.17m.36s. La Paz iPR$_1$ = +7m.22s., SR$_1$ = +10m.41s., and +11m.24s., MN = +15·6m.; T_0 = 1h.17m.47s., epicentre 7°·4N. 55°·5W. Sucre PR$_2$ = +7m.4s., SR$_1$ = +12m.8s., SR$_2$ = +12m.29s., i = +13m.27s.; T_0 = 1h.17m.33s. Georgetown iE = +16m.55s., LE = +22·7m. Toronto S was given as LE; the L as LN. Ann Arbor eE = +14m.45s., eLN? = +16·4m. Ottawa iN = +12m.38s., iE = +14m.12s. Chicago e = +13m.40s., eSR$_1$ = +14m.51s., eSR$_2$ = +15m.58s.; T_0 = 1h.17m.15s. and 19s. Innsbruck eNE = +11m.21s. Vienna iPZ = +11m.39s. Leningrad e = +21m.4s. Kucino i = +23m.18s. = S −4s. and +24m.8s. = S +46s., e = +28m.56s. and +32m. 18s.

NOTE ON THIS SOLUTION.

The solution originally adopted for trial was epicentre 10°·0N. 62°·4W., with focal depth ·010. But as the residuals were not satisfactory they were re-examined. Omitting the corrections for focal depth the mean corrections to Δ (δΔ) required were

Azimuth.	No. Obsns.	δΔ
°		°
40	9	−1·6
184	3	−1·3
289	1	−2·8
330	1	−4·1

The consistently negative values of δΔ show that *some* correction for focal depth is required. On solving the appropriate equations for corrections x and y to the latitude and longitude of the epicentre and a focal depth f, the solution obtained was

10°·0N. 64°·4W. focal depth ·022.

This is so nearly similar to the

10°·5N. 65°·6W. focal depth ·025

formerly used on 1923 Aug. 8, when the observations were more numerous, that the old calculations were adopted for use again, in accordance with our general practice.

Feb. 1d. Readings also at 3h. (Irkutsk), 12h. (Irkutsk and near Batavia and Malabar), 23h. (Baku and Ekaterinburg).

Feb. 2d. Readings at 13h. (Tacubaya, Oaxaca, Merida, and Vera Cruz), 14h. (Ekaterinburg, Ottawa, Toronto, and Chicago), 15h. (La Paz and Sucre), 22h. (Taihoku), 23h. (Irkutsk, Ekaterinburg, and Kucino).

Feb. 3d. 11h. 52m. 6s. Epicentre 20°·6S. 168°·8E. (as on 1926 Jan. 29d.).

A=−·918, B=+·182, C=−·352; D=+·194, E=+·981; G=+·345, H=−·068, K=−·936.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		19·7	73	4 44	+ 7	9 6	+49	11·0	20·0
Riverview		20·5	226	e 5 2	+15	i 8 55	+21	e 10·4	16·6
Sydney		20·5	226	4 36	−11	8 48	+14	10·7	11·5
Wellington	E.	21·3	168	i 4 43	−14	i 8 20	−30	10·1	14·0
	N.	21·3	168	i 4 33	−24	i 8 18	−32	i 11·0	13·0
Christchurch		23·2	173	8 24	+185	10 24	+55	11·6	13·9
Melbourne		26·8	225	e 8 12	+136	i 10 30	− 7	e 13·9	15·6
Adelaide		30·1	235	(e 6 39)	+10	e 6 39	?P	e 14·9	20·0
Batavia		61·6	275	i 10 44	+21	i 19 5	+22	—	—
Osaka		63·7	331	10 55	+19	(19 6)	− 3	19·1	20·6
Irkutsk		91·8	326	e 13 21	− 5	23 57	[+18]	44·9	—
La Paz		113·0	120	—	—	—	—	61·0	63·4
Chicago	N.	113·5	51	—	—	—	—	e 63·0	—
Sucre		113·9	124	—	—	—	—	61·9	64·4
Ekaterinburg		117·0	324	e 19 12	?PR_1	28 7	−19	52·9	—
Toronto	E.	119·7	50	—	—	e 64 26	?	67·4	68·7
Ottawa		122·3	47	—	—	—	—	e 60·9	71·9
Baku		124·9	307	e 21 16	?PR_1	—	—	67·9	85·0
Kucino		129·5	328	e 22 50	?PR_1	e 29 53	− 5	e 76·9	—
Leningrad		131·0	334	i 22 52	?PR_1	—	—	e 43·1	—
Pulkovo		131·1	334	e 22 51	?PR_1	—	—	—	—
Vienna		144·6	329	e 19 47	[− 1]	—	—	—	—
De Bilt		146·1	340	e 19 51	[+ 1]	—	—	e 80·9	—
Azores		158·8	33	87 54	?L	—	—	(87·9)	—

Additional readings: Apia L=+11·6m. Riverview PR_1=+5m.55s., PS=+9m.6s., iSR_1=+10m.14s., MN=+12·0m., MZ=+23·5m.; T_9=11h.52m.8s. Wellington PR_1N=+4m.54s., PR_1E=+5m.3s., PR_1N=+5m.6s., T_9N=11h.51m.54s., T_9E=11h.52m.14s. Adelaide eSR_1=+11m.9s.=S−27s. Irkutsk PR_1=+17m.3s., SR_1=+29m.54s. Baku e=+13m.3s., +29m.3s.=S−22s., +32m.28s., +37m.56s.=SR_1+8s., +43m.45s.=SR_2+16s., and +53m.56s., MN=+85·1m. Vienna iP=+19m.51s., iE=+20m.35s.

Feb. 3d. 19h. 30m. 16s. Epicentre 50°·0N. 171°·0E. (as on 1913 April 29d.).

A=−·635, B=+·101, C=+·766; D=+·156, E=+·988; G=−·757, H=+·120, K=−·643.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	40·4	300	e 7 49	− 9	e 14 14	+ 1	20·7	24·9
Ekaterinburg	58·7	324	i 10 2	− 1	18 18	+11	27·7	36·0
Kucino	67·3	334	—	—	—	—	36·3	43·3
Baku	75·9	318	—	—	—	—	37·7	48·9

Additional readings: Irkutsk MN=+24·5m., MZ=+24·8m. Baku MNZ=+49·4m.

Feb. 3d. 21h. 46m. 36s. Epicentre 34°·6N. 140°·7E. (as on 1924 May 11d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	3·2	281	0 48	− 2	—	—	—	—
Osaka	4·3	272	1 7	0	—	—	2·4	2·9
Mimasawa	4·5	358	1 10	0	2 4	0	—	—
Kobe	4·6	272	1 4	− 7	—	—	—	2·2
Sumoto	4·8	268	1 4	−10	—	—	1·2	1·2
Irkutsk	31·3	316	—	—	e 11 24?	−32	—	—

Additional readings: Osaka MN=+3·0m. Kobe MN=+2·4m.

Feb. 3d. Readings also at 1h. (Ekaterinburg), 4h. (Phu-Lien and near Mizusawa), 6h. (La Paz), 7h. (near Malabar), 9h. (Batavia), 11h. (Bombay), 12h. (near Manila), 22h. (La Paz and near Sucre).

Feb. 4d. 6h. 44m. 10s. Epicentre 42·°5N. 139°·2E.

A = −·558, B = +·482, C = +·676 ; D = +·653, E = +·757 ;
G = −·511, H = +·441, K = −·737.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		3·7	156	0 42	−16	1 8	−34	—	—
Ootomari		4·9	30	1 41	−35	(2 2)	−12	2·0	—
Nagoya		7·5	194	2 1	+ 7	(3 21)	− 3	3·4	4·2
Toyooka		7·7	207	1 56	− 1	(3 27)	− 2	3·4	3·5
Osaka		8·4	202	2 9	+ 2	—	—	4·1	4·4
Kobe		8·4	204	2 4	− 3	(3 43)	− 4	3·7	3·8
Sumoto		8·8	204	2 6	− 7	(3 52)	− 6	3·9	4·5
Hukuoka		11·3	220	1 57	−52	3 22	−100	5·0	5·1
Nagasaki		12·3	220	3 8	+ 5	—	—	6·1	6·9
Zi-ka-wei		18·1	237	i 4 20	+ 2	7 45	+ 3	—	—
Taihoku	E.	22·7	225	—	—	—	—	e 10·8	—
Irkutsk		25·3	305	i 5 37	− 4	i 10 5	− 4	13·8	—
Hong Kong		29·0	234	6 0	−18	10 50	−27	—	16·2
Manila		32·0	217	e 10 50?	?	—	—	—	—
Phu-Lien		34·9	241	i 6 55	−17	e 12 22	−32	17·8	—
Ekaterinburg		49·8	315	i 9 2	− 4	i 16 15	− 1	22·8	34·1
Batavia		56·9	220	e 8 40	−71	i 17 22	−23	—	—
Bombay		60·1	270	—	—	e 18 50?	+26	—	—
Kucino		61·5	320	e 15 43	?	—	—	30·4	40·6
Leningrad		62·3	327	i 10 29	+ 2	i 18 54	+ 2	27·8	—
Pulkovo		62·4	327	10 30	+ 2	18 55	+ 2	28·8	35·2
Baku		63·6	302	e 10 36	0	i 19 14	+ 6	31·8	44·0
Makeyevka		66·0	314	—	—	i 19 44	+ 7	—	—
Upsala		67·0	331	—	—	e 19 50	0	35·8	—
Hamburg		74·6	330	e 11 43	− 3	e 21 19	− 2	e 37·8	—
Budapest		75·7	323	e 11 50?	− 3	21 36	+ 2	e 40·8	—
Vienna	z.	76·2	325	e 11 50	− 6	—	—	—	—
Cheb		76·4	328	—	—	—	—	e 35·8	44·8
De Bilt		77·4	332	—	—	e 21 50	− 3	e 37·8	—
Uccle		78·7	333	—	—	—	—	e 38·8	—
Innsbruck		79·0	326	e 12 5	− 8	—	—	—	—
Strasbourg		79·4	330	e 11 50?	−25	—	—	41·8	—
Zurich	z.	80·1	328	i 12 14	− 6	—	—	—	—
Rocca di Papa		83·0	322	—	—	—	—	e 46·1	49·9

Additional readings and notes : Mizusawa SN = +1m.9s. Ootomari readings are given for Feb. 2d. Nagoya S = +2m.33s. Toyooka MN = +3·7m. Osaka MN = +4·7m. Kobe S = +2m.37s., MN = +4·0m. Sumoto S = +2m.53s. Ekaterinburg i = +9m.37s., iPS = +16m.59s., SR_1 = +18m.38s., MN = +28·7m., MZ = +28·9m. Batavia iE = +21m.20s., P and S are given as simply e and i repsectively. Pulkovo SR_1 = +23m.2s., MZ = +40·9m. Baku iP = +10m.38s., MN = +36·3m., MZ = +45·0m. Budapest e = +9m.50s.? Vienna iPZ = +11m.53s.

Feb. 4d. Readings also at 2h. (near Irkutsk), 5h. (Apia), 8h. (Tokyo), 9h. (Simla and Ekaterinburg), 10h. (Baku, Irkutsk, and Kucino), 12h. (Tokyo), 15h. (Zagreb and Belgrade), 19h. (Rocca di Papa).

Feb. 5d. Readings at 0h. (near Manila), 1h. (Irkutsk), 2h. (Irkutsk, De Bilt, Uccle, Baku, Paris, Strasbourg, and near Ootomari), 5h. (Irkutsk), 11h. and 14h. (2) (La Paz), 18h. (Tacubaya).

Feb. 6d. 8h. 49m. 50s. Epicentre 45°·1N. 147°·2E. (as on 1919 July 16d.).

A = −·593, B = +·382, C = +·708; D = +·542, E = +·841;
G = −·595, H = +·384, K = −·706.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari	3·5	298	1 18	+23	—	—	2·5	—
Mizusawa	7·5	219	1 57	+ 3	3 20	− 4	—	—
Irkutsk	28·8	300	e 6 4	−12	e 10 52	−21	16·2	19·3
Ekaterinburg	51·9	316	1 9 14	− 5	e 16 39	− 4	25·2	34·4
Kucino	63·0	323	—	—	e 18 22	−39	33·0	41·3
Leningrad z.	63·0	330	—	—	—	—	—	51·1
Pulkovo	63·2	330	—	—	e 19 35	+32	30·2	42·4
Bombay	65·8	274	—	—	e 20 10?	+35	—	—
Baku	67·0	305	e 10 58	0	e 20 3	+13	36·2	43·8
Upsala	67·3	335	—	—	—	—	e 43·2	—
Makeyevka	68·2	317	—	—	—	—	e 38·2	—
Piatigorsk	68·3	311	—	—	—	—	e 40·2	46·2
Hamburg	74·8	335	—	—	—	—	e 41·2	—
Budapest	76·8	327	—	—	—	—	e 44·2	—
Cheb	77·0	330	—	—	—	—	e 43·2	48·2
De Bilt	77·5	337	—	—	—	—	e 36·2	—
Graz	78·5	328	—	—	—	—	51·2	—
Strasbourg	79·9	334	—	—	—	—	49·2	—
Paris	81·1	337	—	—	—	—	e 49·2	—
Ottawa	81·9	28	—	—	—	—	e 41·7	—
Toronto	82·0	30	—	—	—	—	45·7	—
Rocca di Papa	84·1	328	e 33 44	?	—	—	e 50·4	55·4
San Fernando	95·0	339	—	—	44 40	?L	53·2	65·7

Additional readings and notes: Irkutsk MN = +19·2m. Ekaterinburg MN = +30·2m., MZ = +34·3m. Kucino MN = +41·5m. Pulkovo MN = +41·5m., MZ = +43·0m. Baku iP = +11m.0s., MN = +44·4m., MZ = +44·7m. Graz reading has been increased by 1h. San Fernando MN = +62·2m.

Feb. 6d. Readings also at 2h. (La Paz), 5h. (near Toyooka (2) and near Nagasaki), 7h. (Apia, near Toyooka, near Lick, Berkeley, and Santa Clara), 8h. (Ekaterinburg), 9h. (Baku), 11h. (Ekaterinburg), 14h. (La Paz), 16h. (near Toyooka), 21h. (Sucre).

Feb. 7d. 2h. 43m. 54s. Epicentre 1°·0N. 147°·0E. (as on 1922 Aug. 7d.).

A = −·839, B = +·545, C = +·017; D = +·545, E = +·839;
G = −·015, H = +·010, K = −1·000.

For alternative solution (with focal depth +·040) see below.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	29·1	300	e 6 55	+36	(i 12 15)	+56	i 12·2	—
Riverview	35·0	174	(e 6 50)	−23	i 10 2	−173	e 12·1	16·3
Sydney	35·0	174	9 54	?	12 24	−31	14·9	15·6
Adelaide	36·8	191	e 7 26	− 2	i 11 2	−139	e 12·2	18·8
Hong Kong	38·4	307	9 18	?PR_1	14 25	+41	—	18·4
Melbourne	38·8	183	i 11 24	?	i 14 6	+17	e 16·9	18·6
Malabar	40·2	260	7 57	0	i 14 13	+ 3	—	—
Batavia	40·7	262	8 1	0	i 14 17	0	—	—
Perth	44·2	219	6 56	−91	13 51	−74	21·1	27·2
Honolulu E.	57·3	68	e 14 6	?PR_2	—	—	—	—
Irkutsk	62·4	333	i 10 43	+15	i 19 24	+31	31·1	—
Simla E.	72·3	305	—	—	e 21 18	+24	—	—
Bombay	74·7	290	11 49	+ 2	21 34	+12	e 38·8	—
Ekaterinburg	87·2	328	i 12 52	− 8	i 23 28	−15	37·1	55·4
Victoria E.	89·1	42	—	—	—	—	22·2	28·9
Baku	94·7	313	e 13 29	−13	23 31	[−24]	42·1	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Piatigorsk	99·2	316	e 21 6	?PR$_2$	—	—	—	—
Kucino	99·7	328	—	—	i 23 45	[−38]	—	—
Leningrad	102·1	334	i 18 39	?PR$_1$	e 23 56	[−38]	e 52·1	—
Pulkovo	102·2	334	e 18 35	?PR$_1$	i 23 53	[−42]	e 51·1	—
De Bilt	118·0	335	—	—	—	—	e 60·1	—
Uccle	119·2	334	—	—	—	—	e 59·1	—
Ottawa	120·2	33	—	—	i 26 6	[+20]	e 44·1	—
Rocca di Papa	120·6	320	e 18 22	?PR$_1$	—	—	—	—
La Plata	138·9	147	22 2	?PR$_1$	—	—	—	—
La Paz	142·1	116	18 43	[−60]	30 13	?	41·2	—
Sucre	143·6	121	18 47	[−59]	30 56	?	43·1	—

Additional readings and notes: Riverview MN = +15·2m.; P is given as ePR$_1$? Perth SR$_1$ = +17m.36s. Honolulu iE = +15m.50s. Irkutsk PR$_1$ = +12m.6s. Simla eN = +21m.24s. Ekaterinburg i = +14m.23s. and +16m.50s. = PR$_1$ +4s., iS = +22m.46s. = [S] −24s., i = +24m.57s., e = +30m.11s. = SR$_1$ +19s., MN = +52·1m.; true S is given as another i. Baku i = +26m.24s. Kucino iPS = +24m.39s. = [S] +17s., i = +25m.13s., e = +27m.1s., +29m.43s., and +35m.30s. Leningrad i = +27m.26s. Pulkovo iPS = +24m.50s., i = +27m.26s., e = +37m.27s. Ottawa i = +30m.51s., e = +35m.44s., eE = +38m.6s.?, eLN = +49·1m. Rocca di Papa ePN = +18m.35s., PR$_1$N = +21m.10s., PR$_1$EZ = +21m.14s. La Paz i = +22m.13s. and +23m.54s.

The residuals are far from satisfactory, and moreover the large negative residuals for [P] at La Paz and Sucre suggest an abnormal focal depth. Accordingly the following alternative solution was made, with focal depth +0·040; but it still leaves much to be desired.

ALTERNATIVE SOLUTION.

Feb. 7d. 2h. 43m. 54s. Epicentre 3°·0S. 151°·5E.

$$A = -\cdot878,\ B = +\cdot477,\ C = -\cdot052;\quad D = +\cdot477,\ E = +\cdot879;$$
$$G = +\cdot046,\ H = -\cdot025,\ K = -\cdot999.$$

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.
Riverview		−2·6	30·9	181	(e 6 50)	+39	i 10 2	−62	e 12·1	16·3
Sydney		−2·6	30·9	181	9 54	?	12 24	+80	14·9	15·6
Adelaide		−2·9	34·1	199	e 7 26	?PR$_1$	i 11 2	−52	e 12·2	18·8
Manila		−3·0	35·0	300	e 6 55	+ 8	(i 12 15)	+ 7	i 12·2	—
Melbourne		−3·0	35·3	189	i 11 24	?S	i 14 6	+113	e 16·9	18·6
Malabar		−3·5	43·9	264	7 57	− 1	i 14 13	0	—	—
Perth		−3·6	44·3	225	6 56	−65	13 51	−26	21·1	27·2
Hong Kong		−3·6	44·4	307	9 18	?PR$_1$	14 25	+ 7	—	18·4
Batavia		−3·6	44·6	265	8 1	− 2	i 14 17	− 4	—	—
Honolulu	E.	−4·4	55·0	61	e 14 6	?	—	—	—	—
Irkutsk		−4·8	68·1	330	i 10 43	+ 9	i 19 24	+19	31·1	—
Simla	E.	−5·1	78·3	304	—	—	e 21 18	+14	—	—
Bombay		−5·1	80·3	290	11 49	− 1	21 34	+ 6	e 38·8	—
Victoria	E.	−5·4	89·1	41	—	—	—	—	22·2	28·9
Ekaterinburg		−5·5	92·9	327	i 12 52	− 9	i 23 28	−17	37·1	55·4
Baku		−5·8	100·7	311	e 13 29	−15	23 31	[−26]	42·1	—
Piatigorsk		—	105·2	316	e 21 6	?PR$_2$	—	—	—	—
Kucino		—	105·5	327	—	—	i 23 45	[−65]	—	—
Leningrad		—	107·7	334	i 18 39	?PR$_1$	e 23 56	[−64]	e 52·1	—
Pulkovo		—	107·8	334	e 18 35	?PR$_1$	i 23 53	[−67]	i 51·1	—
Ottawa		—	120·9	37	—	—	i 26 6	?	e 44·1	—
De Bilt		—	123·5	336	—	—	—	—	e 60·1	—
Uccle		—	124·8	336	—	—	—	—	e 59·1	—
Rocca di Papa		—	126·5	323	e 18 22	[−48]	—	—	—	—
La Plata		—	133·1	147	22 2	?PR$_1$	—	—	—	—
La Paz		—	136·3	119	18 43	[−50]	30 13	?	41·2	—
Sucre		—	137·7	123	18 47	[−48]	30 56	?	43·1	—

Feb. 7d. 4h. 37m. 0s. Epicentre 41°·5S. 81°·0W.

A = +·117, B = −·740, C = −·663; D = −·988, E = −·156;
G = −·104, H = +·054, K = −·749.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	19·3	77	4 29	− 4	e 8 6	− 2	9·8	—
Sucre	26·2	36	e 5 50	0	10 25	− 1	14·0	15·8
La Paz	27·4	28	6 11	+ 9	10 37	−11	14·0	17·4
Uccle	118·4	46	—	—	—	—	—	64·0
Baku	143·4	75	—	—	—	—	79·0	—
Ekaterinburg	151·2	45	e 38 38	?	—	—	64·0	—

Ekaterinburg gives also e = +43m.11s. = SR_1 + 6s.

Feb. 7d. 7h. 49m. 22s. Epicentre 18°·0S. 173°·5E. (as on 1925 Dec. 14d.).

A = −·945, B = +·108, C = −·309; D = +·113, E = +·994;
G = +·307, H = −·035, K = −·951.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		4·7	93	e 0 38?	−35	i 2 38?	+29	—	3·5
Wellington	E.	23·0	177	i 5 17	0	i 9 11	−14	—	—
	N.	23·0	177	i 5 18	+ 1	i 9 10	−15	—	—
Riverview		25·5	227	i 5 9	−34	i 9 2	−71	—	13·4
Sydney		25·5	227	4 20	−83	9 8	−65	12·1	13·1
Christchurch		25·6	181	—	—	(9 52)	−22	9·9	12·6
Adelaide		35·3	234	i 7 38	+22	i 11 26	−94	i 12·4	14·4
Honolulu	E.	48·3	39	—	—	e 16 18	+20	—	—
Manila		61·2	299	e 10 2	−18	—	—	10·6	—
Batavia		65·9	273	11 8	+18	—	—	—	—
Hong Kong		70·6	303	11 43	+22	(20 42)	+ 9	20·7	—
Victoria	N.	87·0	37	—	—	(23 55)	+14	23·9	25·2
Irkutsk		92·2	325	e 13 14	−14	e 23 34	[− 7]	42·6	—
La Paz		110·2	118	e 19 52	?PR_1	(28 14)	+44	28·2	29·6
Sucre		111·4	120	19 57	?PR_1	—	—	—	—
Toronto		114·6	49	—	—	e 37 8	?SR_1	53·6	—
Ottawa		117·2	46	—	—	e 31 8	?	e 57·6	—
Ekaterinburg		117·4	325	18 55	[+10]	i 25 33	[− 4]	e 47·6	68·0
Baku		126·9	308	e 21 21	?PR_1	—	—	e 55·6	—
Kucino		129·6	330	—	—	e 37 38?	?	—	—
Leningrad		130·4	336	i 19 20	[+ 1]	e 23 20	?PR_1	56·6	—
Pulkovo		130·6	336	19 21	[+ 1]	i 22 44	?PR_1	58·6	—
Vienna	Z.	144·5	334	i 19 45	[− 2]	—	—	—	—
De Bilt		144·7	348	i 19 50	[+ 2]	—	—	e 75·6	—
Uccle		146·1	349	i 19 53	[+ 3]	—	—	—	—
Innsbruck		147·2	336	e 19 53	[+ 2]	—	—	—	—
Strasbourg		147·3	342	i 19 51	[− 1]	—	—	—	—
Zurich	Z.	148·1	340	e 19 54	[+ 1]	—	—	—	—
Venice		148·4	335	e 19 52?	[− 1]	—	—	—	—
Besançon		149·0	343	20 4	[+10]	—	—	—	—
Florence		150·2	332	19 53	[− 3]	—	—	—	—
Rocca di Papa		151·1	330	e 19 57	[0]	i 24 11	?PR_1	—	—
San Fernando		161·2	359	—	—	—	—	—	99·1

Additional readings: Wellington PR_1E = +5m.30s., PR_1N = +5m.35s., PR_2E = +5m.36s., SR_1E = +9m.33s., SR_1N = +9m.36s., SR_2N = +9m.58s.; T_eE = +7h.49m.42s., T_eN = +7h.49m.46s. Riverview iPR_1 = +5m.58s. and +6m.19s., PS = +9m.12s., MN = +13·3m.; T_e = 7h.49m.31s. Christchurch eS? = +7m.4s. Adelaide MN = +15·3m. Honolulu eN = +17m.38s. Hong Kong S? = +16m.48s. = PR_2 − 2s. Irkutsk e = +13m.48s. and +17m.0s. = PR_1 − 22s. Ottawa e = +36m.38s. = SR_1 + 26s. eLN = +53·6m. Ekaterinburg iP? = +20m.33s. = PR_1 + 27s., i = +21m.6s., e = +26m.34s., and +27m.33s., i = +30m.14s. and +31m.28s., MN = +57·3m. Baku i = +21m.35s. = PR_1 + 26s., e = +33m.10s. Uccle i = +20m.30s. Strasbourg i = +20m.29s. and +20m.51s. Zurich iP = +19m.58s. Rocca di Papa ePE = +20m.1s., iPZ = +20m.3s., iPN = +20m.5s. San Fernando MN = +96·6m.

Feb. 7d. 22h. 41m. 58s. Epicentre 50°·1N. 178°·7E. (as on 1924 Sept. 14d.).

A = −·641, B = +·015, C = +·767; D = +·023, E = +1·000; G = −·767, H = +·017, K = −·641.

Was there a faint shock about a minute earlier, which shows only in the S of Victoria, Irkutsk, Zi-ka-wei, and Leningrad (notes)? See also De Bilt (notes).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu	E.	34·1	139	—	—	—	—	e 14·4	—
Victoria	E.	36·9	70	12 28	?S	(12 28)	−54	16·8	17·2
Irkutsk		44·4	304	e 8 24	− 5	e 13 29	−98	21·0	26·8
Zi-ka-wei		46·0	270	8 40	0	e 14 2	−86	—	28·1
Chicago	E.	61·4	59	—	—	—	—	e 36·0	—
Ekaterinburg		61·5	327	e 10 22	0	e 18 48	+ 6	27·5	38·3
Ann Arbor	N.	62·0	55	—	—	e 19 44	+56	e 23·3	—
Toronto		64·2	52	—	—	—	—	e 30·8	—
Ottawa		64·8	49	—	—	e 19 2?	−21	e 29·3	35·5
Leningrad		67·0	344	e 10 55	− 3	e 18 45	−65	e 31·3	47·4
Pulkovo		67·2	344	e 10 57	− 2	e 19 49	− 3	31·0	44·3
Kucino		69·2	338	—	—	—	—	33·7	41·8
De Bilt		77·6	355	—	—	e 23 2?	+66	e 44·0	—
Uccle		79·0	356	—	—	—	—	e 45·0	—
Baku		79·1	323	e 12 16	+ 2	e 22 19	+ 6	39·5	46·0
Cheb		79·1	350	—	—	—	—	e 40·0	56·0
Strasbourg		81·0	354	—	—	—	—	45·0	—
Bombay		85·3	294	—	—	e 23 21	− 1	—	—
Granada		92·6	2	—	—	—	—	e 48·5	61·5
San Fernando		93·3	4	—	—	—	—	—	62·5

Additional readings and notes: Honolulu eN = +15m.28s. = SR_2 +5s. Victoria PN = +12m.38s., LN = +15·1m. Irkutsk MN = +27·1m. Chicago eN = +27m.38s., eE = +28m.2s., eN = +36m.38s. Ekaterinburg SR_1 = +23m.9s., MN = +38·8m., MZ = +39·1m. Leningrad e = +18m.58s. Pulkovo MZ = +44·2m. Kucino MN = +41·5m. De Bilt eLN = +45·0m. Baku SR_1 = +28m.2s., SR_2 = +33m.12s., MZ = +52·1m., MN = +52·3m. San Fernando MN = +62·0m.

Feb. 7d. Readings also at 3h. (Tokyo), 5h. (Berkeley), 7h. (Rocca di Papa, near Zurich, and near Lick), 8h. (Manila), 9h. (Berkeley), 16h. (near Mostar), 18h. (near Sumoto), 21h. (Honolulu).

Feb. 8d. 15h. 17m. 40s. Epicentre 12°·0N. 89°·0W.

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

See note to shock of Feb. 15d. 2h. 59m. 42s.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca		9·0	305	10 39	?	—	—	12·6	15·1
Merida		9·0	356	3 5	+49	—	—	4·9	6·4
Balboa Hts.	E.	9·8	107	2 49	+22	4 33	+10	5·5	9·8
	N.	9·8	108	2 47	+20	4 35	+12	5·6	6·6
Vera Cruz		9·9	317	3 36	+67	—	—	6·0	9·3
Tacubaya		12·3	308	3 18	+15	(5 50)	+24	5·8	9·0
Manzanillo		16·3	297	—	—	—	—	7·3	21·3
Guadalajara		16·4	304	4 5	+ 8	(7 35)	+31	7·6	11·1
Port au Prince		17·4	65	e 4 24	+14	7 11	−16	10·6	12·6
Loyola	N.	18·0	357	i 4 20	+ 3	i 7 56	+16	i 9·3	15·0
Mazatlan		20·0	306	9 2	?S	(9 2)	+39	12·9	14·5
San Juan	E.	22·9	71	e 5 16	0	e 9 1	−22	e 10·8	16·5
St. Louis	E.	26·6	358	—	—	e 10 27	− 6	i 13·3	14·3
	N.	26·6	358	e 5 42	−12	e 10 21	−12	i 13·3	15·4
Tucson	E.	28·5	319	e 6 7	− 6	e 11 15	+ 7	e 15·0	19·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Cheltenham	E.	28·8	20	e 6 28	+12	e 11 11	− 2	e 16·7	18·3
	N.	28·8	20	e 6 10	− 6	e 11 8	− 5	—	17·5
Georgetown		28·9	19	e 6 4	−13	i 11 12	− 1	e 14·2	18·1
Chicago	E.	29·8	1	e 6 15	−11	—	—	e 14·2	16·4
	N.	29·8	1	e 6 2	−24	i 11 15	−16	e 14·6	17·8
Ann Arbor	E.	30·6	8	e 6 44	+10	i 11 50	+ 6	i 14·8	19·5
	N.	30·6	8	i 6 26	− 8	i 11 32	−12	i 14·6	22·5
Fordham	E.	31·8	22	i 6 38	− 7	i 11 55	−10	15·7	18·9
	N.	31·8	22	i 6 29	−16	—	—	15·0	21·4
Ithaca		32·3	17	6 46	− 5	12 4	− 9	15·1	22·0
Toronto		32·7	13	e 6 35	−19	i 12 5	−14	i 16·0	20·3
Harvard	E.	34·1	25	e 6 5	−15	e 12 15	−27	e 16·2	26·1
	N.	34·1	25	e 7 5	− 1	e 12 23	−19	e 16·7	—
Ottawa		35·2	16	i 7 8	− 7	i 12 49	− 9	i 17·0	21·3
La Paz	E.	35·2	144	7 17	+ 2	i 12 39	−19	17·2	19·6
	N.	35·2	144	—	—	i 13 13	+15	—	18·2
Lick	E.	38·7	318	i 7 41	− 3	i 13 46	− 2	i 18·7	23·9
Santa Clara	E.	38·9	318	e 8 42	+57	e 14 50	+59	19·5	24·7
Sucre		38·9	143	7 37	− 8	13 40	−11	18·9	26·6
Halifax		39·2	29	e 7 50	+ 2	i 13 38	−16	21·3	27·3
Berkeley	E.	39·4	318	e 7 45	− 5	i 13 54	− 3	e 18·9	23·2
	N.	39·4	318	e 7 45	− 5	e 13 45	−12	e 18·9	23·8
	Z.	39·4	318	e 7 45	− 5	e 14 0	+ 3	e 19·4	24·0
Spokane	E.	42·9	332	i 7 49	−28	14 39	− 8	e 20·4	32·8
Victoria		46·2	330	8 43	+ 2	15 32	+ 1	22·6	31·7
La Plata		55·4	149	10 13	+31	17 32	+ 6	27·8	—
Sitka	E.	57·2	333	e 10 17	+24	e 18 8	+19	e 28·4	35·8
	N.	57·2	333	—	—	e 18 11	+22	e 28·0	42·0
Azores		61·7	54	8 56	−87	17 8	−96	28·2	34·4
Honolulu		66·3	289	—	—	i 19 56	+15	e 33·8	—
Lisbon		74·6	53	11 54	+ 8	21 36	+15	—	34·5
Rio Tinto		76·7	54	11 20?	−39	—	—	—	52·3
San Fernando		77·2	55	i 12 18	+16	i 22 2	+11	32·3	46·3
Plymouth		77·5	40	12 10	+ 6	22 20	+25	—	—
Edinburgh		77·8	36	12 20	+14	22 33	+35	36·3	51·7
Bidston		78·0	39	12 55	+48	22 10	+10	33·1	45·3
Stonyhurst		78·3	39	12 10	+ 1	22 15	+11	36·9	38·7
Malaga		78·5	55	e 12 1	− 9	22 13	+ 7	33·1	48·6
Toledo		78·5	51	e 11 55	−15	i 22 11	+ 5	e 34·0	39·0
West Bromwich		78·7	40	12 0	−11	22 20	+12	—	—
Granada		79·1	55	i 12 19	+ 5	23 20	+67	—	39·2
Oxford		79·2	40	12 18	+ 4	22 34	+20	36·8	45·7
Almeria		80·2	55	i 12 30	+10	i 22 29	+ 4	37·5	49·8
Alicante		81·4	52	e 11 59	−28	21 40	−59	33·5	38·0
Bergen		81·8	30	i 13 5	+36	i 23 35	+51	41·3	—
Tortosa	E.	81·9	50	12 34	+ 4	22 58	+13	—	—
	N.	81·9	50	12 32	+ 2	22 48	+ 3	33·5	47·8
Paris		82·0	41	e 12 36	+ 6	e 22 3	−43	34·3	40·3
Uccle		82·8	40	12 32	− 3	i 22 50	− 5	34·3	41·2
Barcelona		82·9	49	e 12 47	+12	e 23 2	+ 6	e 28·7	43·8
De Bilt		83·1	38	12 37	0	22 56	− 2	e 35·3	48·5
Algiers		84·5	54	e 12 56	+11	e 23 7	− 7	36·3	41·3
Besançon		84·6	43	—	—	e 24 9	+54	38·3	41·3
Strasbourg		85·4	42	e 12 49	− 1	i 23 34	+11	38·3	50·3
Hamburg		85·6	36	e 12 48	− 3	i 23 29	+ 3	e 39·8	54·3
Apia		86·0	257	—	—	e 24 20?	+50	39·7	46·3
Zurich		86·2	43	i 13 6	+12	i 23 17	−15	—	—
Moncalieri		86·2	45	12 49	− 5	23 33	+ 1	32·3	54·2
Hohenheim		86·4	40	e 13 5	+10	e 23 33	− 1	e 37·3	47·4
Upsala		87·8	29	e 12 50	−14	i 23 38	−12	e 40·8	44·9
Cheb		88·0	39	i 13 14	+ 9	i 23 38	−14	e 40·3	52·7
Innsbruck		88·1	41	e 12 32	−34	i 23 46	− 7	e 42·3	44·3
Florence		89·0	46	13 20?	+10	23 20?	[− 2]	32·3	45·3
Venice		89·2	43	17 20?	‡PR$_1$	24 50	+45	—	58·0
Rocca di Papa		90·6	47	e 13 56	+37	i 24 59	+39	e 37·7	50·3
Laibach		90·6	42	—	—	—	—	e 43·0	—
Graz		90·8	40	e 13 27	+ 7	e 24 0	−22	42·1	52·4
Konigsberg		91·0	33	e 13 44	+23	24 3	−21	e 30·4	44·3
Vienna		91·0	40	e 13 17	− 4	24 29	+ 5	e 42·3	50·3
Zagreb		91·6	43	e 13 31	+ 6	e 23 49	[+11]	36·9	45·3
Naples	E.	91·9	47	e 14 0	+34	e 22 0	−154	44·3	50·3
Pompeii		92·2	47	e 12 20?	−68	—	—	—	—
Budapest		93·0	40	—	—	(e 24 20?)	−25	e 24·3	52·7
Leningrad		93·4	26	13 21	−13	e 24 6	[+18]	45·3	56·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo		93·5	26	13 21	−14	24 5	[+16]	41·3	50·8
Belgrade		94·8	42	e 13 51	+ 9	i 24 23	[+27]	e 43·4	48·3
Lemberg		95·1	37	e 13 38	− 6	e 23 32	[−26]	e 45·9	56·9
Kucino		99·1	27	13 59	− 7	i 24 36	[+16]	42·6	52·8
Athens		99·8	48	e 13 45	−25	e 24 20	[− 3]	47·4	53·5
Wellington	E.	102·5	230	—	—	i 24 50	[+14]	i 47·8	49·6
	N.	102·5	230	—	—	i 25 9	[+33]	e 49·2	—
Makeyevka		103·8	34	e 14 30	+ 1	i 25 6	[+24]	47·3	57·6
Ekaterinburg		106·7	17	e 12 14	?	i 24 34	[−21]	48·3	56·3
Helwan		108·9	53	e 14 50	− 3	25 35	[+29]	—	64·7
Piatigorsk		109·1	35	—	—	e 25 27	[+21]	—	63·6
Cape Town		111·1	123	19 50	?PR_1	9 10	+92	—	62·8
Irkutsk		114·7	351	e 15 8	−11	e 25 46	[+18]	55·3	66·0
Baku		115·2	33	e 15 21	0	i 25 56	[+26]	50·8	70·9
Kobe		117·3	320	—	—	—	—	—	81·7
Riverview		121·3	237	—	—	e 26 17	[+28]	e 56·0	59·3
Sydney		121·3	237	20 32	?PR_1	26 20	[+31]	62·7	66·7
Melbourne		125·6	231	e 20 44	?PR_1	i 26 38	[+38]	i 38·6	66·6
Zi-ka-wei		127·9	327	e 19 14	[0]	e 33 12	?	62·7	73·1
Adelaide		131·3	233	—	—	62 22	?	e 66·0	80·4
Taihoku	N.	132·5	321	—	—	e 49 17	?SR_3	—	—
Simla	E.	134·9	17	23 14	?PR_1	34 38	?	62·7	73·5
	N.	134·9	17	22 32	?PR_1	34 26	?	63·6	71·6
Hong Kong		138·8	326	19 33	[− 5]	22 35	?PR_1	23·5	91·3
Manila		140·1	310	e 20 11	[+32]	—	—	e 49·3	—
Phu-Lien		143·8	334	e 19 50	[+ 3]	e 29 49	?SR_3	63·3	83·8
Bombay		144·3	30	19 41	[− 6]	33 1	?	69·0	78·0
Calcutta	N.	145·4	3	20 8	[+19]	—	—	—	—
Hyderabad		148·0	23	20 11	[+18]	e 33 44	?	71·1	85·1
Perth		149·7	224	20 20?	[+25]	—	—	—	—
Kodaikanal		154·0	32	24 38	?PR_1	—	—	88·2	104·9
Colombo		158·1	31	20 30	[+24]	35 55	?	105·0	107·2
Batavia		163·3	289	e 23 8	?	—	—	e 83·1	—

Additional readings and notes: Loyola iPR_1N = +4m.40s., iN = +8m.12s. = SR_1+6s. San Juan eE = +7m.4s.; T_0 =15h.18m.8s. and 15h.18m.15s. St. Louis PR_1N = + 6m.24s., PR_2N = +6m.30s., iSN = +10m.53s., iSE = +10m.54s., SR_1N = +11m.42s., SR_1E = +11m.43s. Tucson eSR_2E = +13m.41s.; T_0 =15h.17m.2s. and 15h.17m.18s. Cheltenham eSR_1E = +13m.0s., eSR_1N = +13m.44s.; T_0 =15h.17m.18s. and 15h.17m.34s. Georgetown SR_1E = +13m.0s., MN = +17·5m. Chicago ePR_1N = +6m.55s., e = +7m.38s., eE = +9m.40s. +10m.52s. and +11m.48s., iN = +11m.25s.; T_0 =15h.17m.7s. and 15h.17m.27s. Ann Arbor ePR_1 = +7m.26s., iSR_1 = +13m.14s.; T_0 =15h.18m.0s. Fordham iPR_1N = +7m.35s., iSR_1E = +14m.2s.; T_0 =15h.17m.3s. Toronto eP = +6m.43s., i = +12m.24s., iN = +12m.28s., iE = +12m.32s., MN = +20·8m.; T_0 = 15h.17m.19s. Ottawa iPR_2 = +8m.20s. =PR_1 −4s., iE = +12m.20s., iSR_1N = +14m.30s., iSR_2N = +15m.16s., MN = +22·3m.; T_0 =15h.17m.37s. La Paz PR = +8m.25s. and +8m.57s. =PR_2 +5s., SR_1N = +15m.19s., SR_1E = +16m.21s.; T_0 =15h.17m.27s. Lick iE = +7m.46s. and +9m.27s, =PR_1 +20s., iLN = +18·9m., eLZ = +19·3m., MN = +23·6m., MZ = +26·2m. Santa Clara PR_2E = +10m.36s. Sucre i = +8m.5s., PR = +8m.58s. +9m.14s. and +9m.36s., PS = +14m.10s., SR_1 = +16m.13s. +16m.46s. =SR_2 −24s. and +17m.23s. =SR_3 −3s.; T_0 =15h.17m.39s. Halifax ePR_2 = +9m.13s., iE = +13m.30s., MN = +28·8m.; T_0 = 15h.18m.10s. Berkeley iE = +19m.35s. Spokane PR_1E = +9m.58s., PR_2 = +10m.17s., PR_1N = +10m.42s., iE = +18m.19s. =SR_1 +30s. Victoria MN = +34·5m.; T_0 =15h.17m.47s. Sitka ePR_2E = +13m.45s.; T_0 =15h.18m.5s. and 15h.18m.7s. Honolulu eSR_1N = +24m.20s., eSR_1E = +24m.51s., eSR_2N = +27m.44s., eSR_2E = +29m.25s., eE = +30m.48s., eLN = +33·3m. Edinburgh SR_1 = +27m.21s., SR_2 = +30m.52s. Malaga MN = +42·1m. Toledo iPNE = +12m.15s., PR_1NE = +15m.3s., SR_1NE = +27m.55s., SR_2NE = +31m.35s., MNW = +36·9m. Oxford iPR_1 = +15m.28s., SR_1 = +27m.28s. Granada i = +15m.57s. =PR_1 +15s. Apia MN = +44·3m. Alicante MN = +36·7m. Paris iSE = +23m.37s., SR_1 = +28m.25s., MN = +43·3m. Strasbourg PR_1 = +16m.26s., PR_2 = +18m.29s., SR_1 = +29m.35s., SR_2 = +34m.12s., MZ = +48·8m., MN = +55·3m. Uccle PR_1 = +15m.49s., SR_1 = +28m.13s., SR_2 = +31m.52s. Barcelona MN = +48·9m. De Bilt eSR_1N = +28m.23s., MN = +39·8m., MZ = +49·9m.; T_0 =15h.17m.36s. Algiers MN = +48·3m. Hamburg e = +13m.2s., PR_1 = +16m.17s., SR_1 = +29m.24s., SR_2 = +32m.40s., MNZ = +50·3m. Moncalieri MN = +48·6m. Hohenheim i = +24m.50s., eSR_1 = +29m.25s., MN = +43·6m. Upsala PR_1 = +16m.32s.,

Continued on next page.

$SR_2 = +29m.30s.$, $SR_2 = +33m.22s.$, MN = +53·6m. Innsbruck MNW = +43·4m. Konigsberg $ePR_1 = +17m.6s.$, eN = +17m.14s., e = +22m.14s., iEZ = +25m.33s., PS = +25m.43s., $SR_1 = +30m.14s.$, MN = +45·3m. Vienna $S_cP_cS = +24m.0s.$, PS = +25m.38s., $SR_1 = +30m.41s.$, $SR_2 = +34m.38s.$, $PR_2 = +38m.12s.$ Zagreb e = +24m.11s. =S − 20s. Budapest eP = 15h.16m., MN = +51·0m. Leningrad $PR_1 = +17m.7s.$, MZ = +50·7m., MN = +50·8m. Pulkovo $PR_1 = +17m.9s.$, $PR_2 = +19m.15s.$, $PR_3 = +20m.37s.$, $SR_1 = +30m.50s.$, $SR_2 = +34m.38s.$, $SR_3 = +36m.26s.$, MZ = +50·3m., MN = +60·5m. Belgrade $PR_1 = +17m.23s.$ Lemberg MN = +64·3m. Kucino $PR_1 = +18m.1s.$, $ePR_2 = +19m.57s.$, PPS = +26m.55s., $eSR_1 = +32m.2s.$, $eSR_2 = +36m.2s.$, i = +38m.2s. MN = +53·1m. Athens iS = +24m.49s., MN = +52·3m. Wellington $SR_1N = +33m.14s.$, $SR_1E = +33m.26s.$, eN = +42m.20s.? Makeyevka $PR_1 = +18m.38s.$, PS = +27m.46s., MZ = +52·5m., MN = +61·6m. Ekaterinburg gives very many i readings, MN = +54·6m., MZ = +55·1m. Piatigorsk $ePR_1 = +17m.4s.$, $PR_2 = +19m.18s.$ $=PR_1 + 5s.$, PS = +25m.41s., i = +28m.44s., MN = +61·7m. Irkutsk e = +19m.40s. $=PR_1 - 9s.$ and +29m.34s., MZ = +65·9m., MN = +68·1m. Baku eP = +19m.56s. $= PR_1 + 3s.$, iP = +20m.0s., iS = +29m.42s., $SR_1 = +35m.35s.$ Riverview e = +30m.50s. and +30m.57s., $eSR_1 = +37m.20s.$, $eSR_2 = +38m.0s.$, e = +51m.20s. and +51m.50s., MN = +57·8m. Zi-ka-wei $PR_1 = +21m.47s.$, $PR_2 = +23m.5s.$, $PR_3 = +29m.5s.$, $SR_1 = +34m.56s.$, $SR_2 = +38m.35s.$ $= SR_1 + 10s.$, $SR_3 = +43m.23s.$ $=SR_2 - 47s.$ Adelaide $SR_1 = +64m.35s.$, MN = +77·0m. Simla, if the readings are 4min. in excess, identification would be easier; *e.g.*, the suggested P with [P] at 19m.29s. Phu-Lien $ePR_1 = +23m.7s.$, $eSR_1 = +37m.30s.$, MN = +73·7m. Bombay $PR_1 = +23m.36s.$, $SR_1 = +42m.26s.$ Calcutta PE = +20m.22s. Kodaikanal L = +39m.20s. Batavia eL = +43m.8s.

Feb. 8d. 19h. 48m. 32s. Epicentre 37°·5N. 19°·7E. (as on 1925 Nov. 9d.).

A = +·747, B = +·267, C = +·609; D = +·337, E = −·941; G = +·573, H = +·205, K = −·793.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	3·2	81	0 53	+ 3	i 1 33	+ 5	i 1·7	1·9
Rocca di Papa	6·8	311	—	—	—	—	e 4·1	8·1
De Bilt	17·8	329	—	—	—	—	e 13·5	—
Kucino	22·0	28	—	—	—	—	e 11·3	—
Pulkovo	23·3	14	5 13	− 7	9 28	− 3	11·0	13·0
Leningrad	23·5	14	e 5 15	− 8	—	—	14·0	—
Ekaterinburg	33·1	41	6 19	−38	—	—	18·0	—

Additional readings: Athens P = +1m.1s., MN = +1·8m. Rocca di Papa eN = +4m.26s., eL = +6·8m.

Feb. 8d. Readings also at 0h. (Zurich, Mostar, Venice, and Rocca di Papa), 1h. Ekaterinburg), 3h. (Manila and Taihoku), 5h. (Tokyo and Ekaterinburg), 7h. (near Santa Clara and Mazatlan), 12h. (near Nagoya), 16h. (Merida and Dehra Dun), 17h. (Merida, Tacubaya, Tokyo, Santa Clara, Vienna, Zurich, and Innsbruck), 18h. (Merida), 22h. (near Kobe, Sumoto, and near Santa Clara).

Feb. 9d. 0h. 24m. 24s. Epicentre 27°·0S. 59°·5W.

A = +·452, B = −·768, C = −·454; D = −·862, E = −·508; G = −·230, H = +·391, K = −·891.

The exceptionally great depth 0·090 of focus was found necessary for this shock, the differences for Δ being taken by extrapolation from the usual table, which only extends to 0·080. 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.
La Plata		−0·2	8·0	170	1 54	− 4	3 27	− 4	3·6	—
Sucre		−1·0	9·6	326	i 2 15	+ 5	i 3 52	− 1	i 4·1	4·3
La Paz		−2·1	13·2	321	i 2 47	+ 1	i 4 51	− 6	i 5·2	5·3
Tacubaya		−3·9	60·3	316	9 5	−11	16 26	−10	—	—
Cape Town		−0·2	66·0	117	—	—	—	—	—	18·3
Georgetown	N.	−2·3	67·9	346	e 9 2	−61	i 18 17	+11	e 27·1	—
Toronto	N.	−3·6	73·0	346	i 10 28	− 6	i 19 6	0	27·6	—
Chicago	E.	−3·6	73·5	339	—	—	e 18 56	−16	—	—

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.
Ottawa		− 9·6	73·9	349	i 10 39	− 1	i 19 18	+ 1	e 30·6	—
San Fernando		−10·0	80·9	41	—	—	i 20 54	+17	—	33·6
Malaga		−10·2	82·1	42	11 30	+ 1	21 10	+21	—	—
Granada		−10·2	82·9	42	i 11 40	+ 6	i 21 10	+12	—	30·9
Almeria		−10·3	83·4	43	i 11 30	− 7	i 21 2	− 1	—	—
Toledo	N.E.	−10·4	84·5	40	e 11 41	− 2	i 21 11	± 4	—	—
Alicante		−10·4	85·5	42	11 48	− 2	21 16	−11	—	—
Algiers		−10·5	86·8	45	i 11 51	− 6	21 24	−17	e 31·6	35·6
Lick	Z.	−10·5	86·8	316	i 11 34	−23	i 21 25	−16	—	—
Berkeley		−10·6	87·6	316	e 11 36	−25	e 21 2	−47	—	—
Tortosa		−10·6	87·7	41	e 11 56	− 6	i 21 30	−20	35·8	35·8
Barcelona		−10·6	89·0	41	—	—	i 22 10	+ 5	—	—
Paris		−10·9	93·8	36	e 10 47	−108	i 21 59	[−112]	36·6	37·6
Rocca di Papa		−11·0	95·7	46	e 13 10	+24	e 21 54	[−127]	—	30·9
Edinburgh		−11·0	95·7	29	—	—	i 22 11	[−110]	—	—
Uccle		−11·1	96·0	35	e 11 36?	−71	i 22 13	[−109]	—	—
Zurich		−11·1	96·2	40	e 12 34	−15	i 22 14	[−109]	—	—
Naples		−11·1	96·2	47	e 21 28	?	—	—	—	—
Strasbourg		−11·1	96·4	38	e 14 36?	+106	e 23 20	− 2	35·6	—
Pompeii		−11·1	96·4	47	e 21 36?	?	—	—	—	—
De Bilt		−11·1	97·1	35	e 14 56	+123	e 23 23	− 7	—	—
Hohenheim		−11·1	97·4	37	e 21 51	?	—	—	—	—
Venice		−11·1	97·4	42	19 36	?PR_2	24 18	+45	—	—
Zagreb		−11·3	99·5	44	—	—	e 22 32	[−110]	—	—
Cheb		−11·3	99·8	39	i 22 34	?[S]	(i 22 34)	[−109]	e 37·6	39·6
Hamburg		−11·3	100·4	35	—	—	i 22 36	[−110]	—	—
Graz		−11·3	100·8	42	e 22 30	?[S]	(e 22 30)	[−118]	—	38·8
Venice	Z.	−11·3	101·2	41	e 17 19	?PR_1	—	—	—	—
Athens		−11·4	101·3	54	e 12 41	−34	22 38	[−113]	—	—
Upsala		—	107·0	30	—	—	i 24 42	[− 15]	—	—
Pulkovo		—	113·0	33	e 18 43	?PR_1	i 23 21	[−121]	—	—
Leningrad		—	113·0	33	e 17 33	?PR_1	i 23 23	[−119]	31·6	—
Makeyevka		—	114·5	46	—	—	i 23 31	[−117]	42·6	—
Kucino		—	116·1	38	e 19 11	?PR_1	—	—	—	—
Piatigorsk		—	117·1	51	e 19 16	?PR_1	i 23 51	[−105]	—	32·6
Baku		—	121·3	56	e 19 49	?PR_1	—	—	e 49·1	—
Ekaterinburg		—	128·7	37	i 18 2	[−73]	i 27 51	−121	—	—
Bombay		—	135·6	88	e 15 36?	?	—	—	—	—
Kodaikanal		—	136·2	102	e 76 54	?L	—	—	(76·9)	—
Simla	E.	—	142·2	72	—	—	e 27 48	?	—	—
Malabar		—	143·6	157	i 18 19	[−87]	—	—	—	—
Batavia		—	144·3	155	i 18 23	[−84]	—	—	—	—
Irkutsk		—	152·0	21	e 18 39	[−80]	e 41 36?	?SR_1	—	—
Manila		—	167·6	182	e 18 36?	[−98]	—	—	—	—
Hong Kong		—	172·6	127	23 51	?PR_1	30 11	?	—	44·8

Additional readings and notes: Sucre i = +2m.21s.; T_0 = 0h.24m.41s. epicentre 26°·2S. 66°W. La Paz i = +3m.18s. and +3m.23s.; T_0 = 0h.24m.33s., epicentre as for Sucre. Georgetown ePE? = +9m.7s. [O − C = −56s.]. Toronto e = +22m.48s.; T_0 = 0h.24m.15s. Chicago eSN = +19m.2s., ePSE = +19m.28s., ePSN = +19m.31s., eN = +21m.31s., eE = +22m.47s. Ottawa iPR_1N = +13m.36s., eN = +22m.57s., iE = +23m.10s., LN = +41·6m.; T_0 = 0h.24m.24s. San Fernando MN = +32·1m. Granada i = +14m.0s. and +14m.45s., PS = +22m.5s. Toledo iNE = +21m.29s., eNE = +25m.23s. Algiers P = +11m.55s., +14m.7s. Lick iE = +21m.2s. and +21m.17s. Berkeley eN = +21m.18s., iE = +21m.22s. Barcelona e = +21m.36s. Paris i = +22m.49s. Rocca di Papa eE = +14m.52s., and +16m.42s., eN = +17m.8s., iS = +22m.17s. Zurich iPS = +23m.12s. Strasbourg e = +18m.36s.?, i = +22m.20s., e = +25m.36s.?, +27m.26s. and +28m.36s.? De Bilt eZ = +18m.46s., eN = +22m.21s. and +30m.30s. Hohenheim i = +22m.18s. Cheb iS = +26m.43s. Graz eS = +26m.42s. Athens e = +17m.24s. Pulkovo e = +20m.45s., i = +24m.39s., e = +27m.23s. and +31m.27s. Leningrad e = +20m.31s. Makeyevka i = +24m.53s. and +37m.39s., e = +27m.51s. Kucino e = +20m.40s., +23m.35s., +24m.56s., +26m.6s., and +27m.54s., i = +23m.39s. Baku i = +21m.48s. and +35m.58s., e = +28m.31s. Ekaterinburg i = +20m.25s., +22m.33s., +23m.50s., +24m.42s., and +26m.25s., e = +28m.36s., i = +37m.13s., +39m.19s., and +40m.48s. Simla eN = +40m.18s. Irkutsk eP = +12m.31s.

NOTE ON THE DEEP FOCUS ASSUMPTION.

The observations can be collected into the following groups :—

Locality	No. of Stns.	Mean Az.	Mean Corrn. to △. Without deep focus	With deep focus
		°	°	°
S.W. Europe	9	43	−10·3	0·0
La Plata	1	170	− 0·4	−0·2
Calif. and Mexico	3	316	−13·0	−2·5
Bolivia	2	324	− 1·6	0·0
N. America	2	346	− 9·9	−0·3

The La Plata and La Paz observations practically fix the epicentre. If we choose to ignore the La Plata observation we could satisfy most of the others by moving the epicentre some 10° to the north ; but even then we could not explain the large [P] residuals.

As regards the [S] residuals they have been formed with reference to the simple △, uncorrected for deep focus ; for the corrections calculated in the second column can only be doubtfully extended beyond △ =100°, and it is desirable to show [S] on the same plan throughout. It is satisfactory to notice that these residuals accord well with the hypothesis of a deep focus, in conjunction with that of the central core. The [S] wave starts as S, and the effect of the deep focus is to cut off a length of the S path approximately the equivalent of the "correction for focus." The time thus saved at different values of △ is as follows :—

△	Corrn. for focus	Time saved in S	△	Corrn. for focus	Time saved in S
°	°	s.	°	°	s.
70	− 9·5	116	100	−11·3	116
80	−10·0	117	110	−11·4?	96?
90	−10·7	120	120	−11·4?	94?

As far as △ =100° the time saved is about 2 minutes, and remains nearly constant. Beyond this the calculated values become problematical for several reasons ; the values of S are tabulated but seldom observed ; and the equivalence of a correction to △ becomes doubtful. In fact the observations of the present case tell us more than we knew before, viz., that the "time saved" in [S] continues to remain near 2 min. for values of △ up to 117°·1. It seems scarcely possible that the observations at Ekaterinburg and Simla are really of S itself, but they show residuals from S of the same order.

Feb. 9d. Readings also at 0h. (Irkutsk and Sucre), 1h. (near Mizusawa), 6h. (near Sumoto), 8h. (Makeyevka), 9h. (Merida (2), Toronto, Ottawa, Sucre, and Ekaterinburg), 10h. (near Nagasaki and near Toyooka), 11h. (La Paz and near Nagasaki), 13h. (Baku), 14h. (Tokyo, Irkutsk, and near Tacubaya), 15h. (Oaxaca), 17h. (Tokyo (2)), 21h. (Taihoku (2) and Tokyo (2)), 22h. (near Mizusawa).

Feb. 10d. 14h. 48m. 20s. Epicentre 13°·0N. 85°·4W. (as on 1922 Aug. 18d.).

A = +·078, B = −·971, C = +·225 ; D = −·997, E = −·080 ;
G = +·018, H = −·224, K = −·974.

See note at end.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Merida	8·9	336	3 49	?S	(3 49)	−12	4·6	6·4
Tacubaya	14·7	298	3 31	− 4	6 24	− 1	6·8	7·2
Georgetown	26·9	14	—	—	—	—	e 18·9	—
Chicago	28·8	355	—	—	e 11 40?	+27	e 13·9	21·7
Ann Arbor N.	29·3	3	—	—	—	—	e 20·0	—
Ottawa	33·4	13	—	—	e 12 52	+22	e 20·7	—
La Paz	34·1	150	7 26	+20	e 11 59	−43	15·8	18·0
Sucre	37·7	148	7 51	+15	13 22	−12	16·8	21·3
Victoria N.	47·3	326	—	—	—	—	23·7	34·8
San Fernando E.	73·7	56	—	—	—	—	—	56·7
Edinburgh	74·9	37	—	—	—	—	e 50·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Granada		75·7	55	—	—	—	—	46·7	59·7
Tortosa	N.	78·5	51	—	—	—	—	54·2	55·8
Paris		78·9	43	—	—	—	—	e 43·7	—
Uccle		79·8	41	—	—	—	—	e 41·7	—
De Bilt		80·1	40	—	—	—	—	e 44·7	48·6
Algiers		81·0	54	e 50 2	?	52 14	?	53·5	53·7
Strasbourg		82·4	43	—	—	—	—	48·7	—
Cheb		85·0	38	—	—	—	—	e 46·7	59·7
Leningrad		91·0	26	—	—	e 25 9	+45	54·0	—
Pulkovo		91·1	26	—	—	e 29 46	?SR_1	56·7	70·7
Ekaterinburg		104·7	19	e 19 2	?PR_1	—	—	51·7	63·2
Baku		112·5	35	e 42 39	?	—	—	52·2	57·2
Irkutsk		114·2	354	—	—	—	—	e 69·7	—

Additional readings: San Fernando MN = +56·2m. De Bilt MZ = +48·7m. Leningrad e = +29m.42s., Ekaterinburg e = +25m.27s. and +28m.33s., P = +37m.30s., MZ = +71·6m. Baku e = +47m.7s., MN = +55·4m., MZ = +60·3m.

NOTE.—The solution is far from satisfactory, but it is impossible to combine all the evidence on the hypothesis of a single shock. If we may assume an earlier and slighter shock affecting the nearer stations only, the epicentre of 1917 June 27, viz., 8°·8N. 81°·5W., might be better.

Feb. 10d. Readings also at 1h. (Batavia and Malabar), 4h. (Kodaikanal), 9h. (near Taihoku), 10h. (Christchurch, Irkutsk, and Ekaterinburg), 11h. (Ekaterinburg), 12h. (Tokyo and near Tacubaya (2)), 13h. (Alicante and Amboina), 15h. (Cape Town and Johannesburg), 16h. (near Belgrade), 17h. (La Paz, Sucre, near Tacubaya, Oaxaca, Manzanillo, and Guadalajara), 20h. (La Paz).

Feb. 11d. 5h. 5m. 48s. Epicentre 46°·0N. 149°·0E. (as on 1925 Feb. 20d.).

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.
Mizusawa	E.	8·9	223	2 32	+17	4 26	+25	—	—
	N.	8·9	223	2 33	+18	4 27	+26	—	—
Nagasaki		19·8	235	2 20	−139	—	—	3·8	4·1
Irkutsk		29·5	299	i 6 21	− 2	i 11 25	− 1	16·2	—
Manila		39·2	226	e 7 1	−47	—	—	—	—
Ekaterinburg		52·2	316	—	—	i 17 38	+52	30·2	—
Pulkovo		63·1	330	—	—	i 18 59	− 3	—	—
Baku		67·6	306	—	—	e 19 32	−25	—	—

Pulkovo gives also i = +27m.58s. = SR_3 +40s.

Feb. 11d. Readings also at 1h. (Belgrade and near Athens), 6h. and 7h. (Sucre and La Paz), 10h. (near Toyooka), 11h. (Leningrad), 12h. (Athens and near Toyooka), 13h. (Toyooka), 15h. (Athens), 20h. (Irkutsk and Ekaterinburg), 23h. (Baku and Ekaterinburg).

Feb. 12d. 7h. 40m. 12s. Epicentre 17°·6S. 177°·5W. (as on 1924 May 17d.).

A = −·955, B = −·042, C = −·292; D = −·044, E = +·999;
G = +·292, H = +·013, K = −·956.

Doubtful identification.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		6·3	62	1 37	+ 1	—	—	2·4	3·3
Wellington		25·2	194	—	—	—	—	e 12·8	—
Sydney		32·7	232	—	—	—	—	22·5	23·8
Melbourne		38·9	230	—	—	e 14 24	+33	—	23·6
Honolulu		42·8	29	—	—	—	—	e 18·9	21·9
Adelaide		42·9	237	—	—	14 44	− 3	e 21·1	30·3
Perth		61·6	242	—	—	—	—	27·8	—
Victoria	N.	81·2	33	—	—	—	—	36·6	40·5
Irkutsk		96·4	323	e 15 13	+82	e 24 28	[+24]	—	—
Chicago	E.	101·1	50	—	—	—	—	e 45·8	57·8
La Paz		102·7	112	—	—	—	—	50·9	61·5
Toronto	E.	107·3	49	—	—	e 34 23	?SR_3	54·3	—
Ottawa		110·1	46	—	—	e 27 10	−19	e 51·8	—
Ekaterinburg		121·4	327	21 26	?PR_1	e 28 22	−38	49·8	64·8
Kucino		132·9	334	—	—	—	—	e 63·3	—
Baku		133·1	310	e 23 50	?PR_1	—	—	60·8	72·9
De Bilt		144·8	357	—	—	—	—	e 80·8	87·0
San Fernando	E.	159·1	20	—	—	—	—	—	86·8

Additional readings: Honolulu eE? = +18m.16s., eN = +18m.48s.? Adelaide MN = +25·2m. Chicago eN = +51m.48s. Ottawa eS = +34m.48s. = SR_1 +5s., eE = +41m.48s., eLN = +50·3m. Ekaterinburg e = +37m.34s. = SR_1 +30s., and +42m.0s. = SR_2 −41s., MN = +57·7m., MZ = +69·2m. Baku MZ = +75·1m., MN = +81·6m. San Fernando MN = +94·3m.

Feb. 12d. Readings also at 1h. (near Sumoto), 2h. (Ekaterinburg and near Amboina), 3h. (La Paz, Sucre, and near Amboina), 5h. (near Algiers and near Amboina), 6h. (Tokyo and near Amboina), 7h. (near Amboina), 8h. (Apia), 13h. (near Sumoto), 15h. (Manila and Tokyo), 16h. (Ekaterinburg), 17h. (Ekaterinburg, Irkutsk, and near Amboina), 19h. (Batavia), 20h. (Tokyo), 21h. (near Batavia and Malabar, also near Amboina), 22h. (Ekaterinburg), 23h. (Oaxaca, Tacubaya, and near Amboina).

Feb. 13d. 9h. 8m. 20s. Epicentre 23°·5S. 178°·0E. (as on 1923 April 13d.).

A = −·916, B = +·032, C = −·399; D = +·035, E = +·999;
G = +·398, H = −·014, K = −·917.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		13·7	47	e 2 42	−40	4 52	−69	6·0	20·2
Wellington	N.	18·0	188	4 19	+ 2	—	—	e 6·3	10·3
Christchurch		20·5	191	e 6 28	+101	9 20	+46	13·1	15·8
Riverview		25·6	240	e 6 28	+44	e 10 43	+29	e 12·0	16·8
Sydney		25·6	240	5 22	−22	10 16	+ 2	14·2	16·1
Melbourne		31·6	235	e 5 40	−63	—	—	e 18·4	19·8
Adelaide		36·0	243	e 7 5	−17	e 12 49	−21	e 16·0	22·9
Honolulu	E.	50·6	31	—	—	e 14 25	−121	e 23·6	24·8
Perth		54·9	247	—	—	—	—	73·7	—
Manila		67·5	301	e 11 40?	+39	—	—	—	—
Batavia		70·2	271	e 11 28	+10	—	—	—	—
Berkeley		83·1	46	—	—	—	—	e 43·7	—
Lick		83·2	46	—	—	—	—	e 43·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	89·0	35	23 30	?S	(23 30)	[+ 8]	46·0	60·8
Irkutsk		99·1	324	e 13 53	−13	e 24 31	[+11]	57·7	61·4
Colombo		100·2	272	29 10	?	—	—	—	68·7
Kodaikanal		103·7	277	68 58	?L	—	—	(69·0)	—
La Paz		104·0	117	13 5	−85	24 17	[−26]	51·8	54·3
Sucre		105·1	120	—	—	24 3	[−45]	53·1	60·8
Chicago	E.	108·6	52	—	—	e 33 19	?SR_1	e 57·4	69·2
	N.	108·6	52	—	—	e 33 5	?SR_1	e 57·5	62·0
Bombay		110·9	282	e 21 40?	?PR_1	—	—	—	—
Ann Arbor	E.	111·5	51	—	—	—	—	e 60·2	—
Toronto	N.	114·9	50	—	—	—	—	51·8	73·4
Georgetown	E.	115·8	56	—	—	—	—	e 64·8	—
Ithaca		116·7	52	—	—	—	—	70·7	—
Ottawa	N.	117·7	49	—	—	e 25 27	[−12]	e 61·7	—
Fordham		118·5	55	—	—	e 34 22	?	62·8	74·2
Cape Town		119·4	199	13 0	−160	—	—	—	65·7
Ekaterinburg		124·4	324	18 58	[− 6]	—	—	47·7	76·8
Baku		133·6	306	e 19 17	[−10]	e 32 56	?	e 66·7	83·5
Kucino		136·5	330	—	—	e 23 27	?PR_1	—	—
Pulkovo		136·9	337	19 14	[−20]	—	—	75·7	—
Leningrad		137·2	337	i 19 14	[−20]	—	—	75·7	—
Makeyevka		140·0	320	i 19 25	[−14]	—	—	85·7	—
Upsala	N.	141·2	344	—	—	—	—	e 85·7	—
Edinburgh		147·6	1	—	—	—	—	e 89·7	—
Hamburg		148·6	347	—	—	—	—	e 88·7	—
Stonyhurst		149·6	1	—	—	—	—	e 81·3	—
Budapest		150·8	330	—	—	—	—	e 90·7	—
De Bilt		150·9	351	e 19 49	[− 8]	—	—	e 85·7	92·0
Cheb		151·2	341	—	—	—	—	e 94·7	104·7
Vienna	Z.	151·3	334	e 19 51	[− 7]	—	—	—	—
Uccle		152·3	351	e 30 40?	?PR_2	—	—	e 76·7	—
Strasbourg		153·8	345	—	—	—	—	e 94·7	—
Innsbruck		153·9	339	e 20 40?	[+39]	—	—	—	—
Paris		154·4	353	—	—	—	—	e 88·7	109·7
Zurich	N.	154·7	343	e 19 49	[−13]	—	—	—	—
Venice		155·2	335	20 0	[− 2]	—	—	—	—
Florence		157·0	335	e 19 50	[−15]	24 50	?PR_1	—	99·8
Moncalieri		157·1	342	—	—	—	—	e 83·1	—
Rocca di Papa		158·0	330	e 19 41	[−25]	e 28 27	?PR_2	e 92·9	112·0
Toledo	N.E.	163·6	5	—	—	—	—	e 90·3	97·2
Rio Tinto		165·2	14	91 40?	?L	—	—	(91·7)	112·7
San Fernando		166·6	15	—	—	—	—	89·7	108·7

Additional readings: Apia e = +3m.26s. Wellington iN = +5m.41s. Riverview MN = +17·2m. Adelaide MN = +25·6m. Honolulu eSR_1N = +16m.18s. = S − 8s., eSR_1E = +18m.15s. Lick eZ = +45m.46s. Victoria MN = +52·2m. Irkutsk e = +17m.22s. = [P] − 21s. (?PR_1). MZ = +61·6m. Sucre PR_1 = +17m.30s. = [P] − 35s. Chicago ePSE? = +24m.46s. = [S] − 17s., iPPSN = +26m.8s. Toronto ME = +72·9m. Ottawa eE = +27m.42s., eLN = +61·7m. Fordham e = +53m.36s. and +56m.45s. Ekaterinburg i = +21m.11s. = PR_1 + 19s., and +22m.23s., e = +38m.43s., MN = +74·3m., MZ = +76·5m. Baku e = +22m.54s., MN = +93·9m., MZ = +94·8m. Kucino e = +33m.36s., +38m.15s., and +42m.5s. Pulkovo PR_1 = +23m.4s., i = +39m.13s. De Bilt eE = +43m.46s. = SR_1 + 44s., MZ = +93·0m., MN = +103·6m. Uccle e = +43m.40s.? = SR_1 + 23s. Moncalieri eL = +90·0m. Toledo MNW = +104·5m. San Fernando MN = +97·2m.

Feb. 13d. Readings also at 2h. (near Matuyama), 3h. (Kobe and near Sumoto), 5h. (Manila), 6h. (Tokyo), 7h. (Stonyhurst), 8h. (La Paz), 14h. (Tokyo, Nagoya, and near Mizusawa), 17h. (near Manila), 18h. (Puy de Dôme).

Feb. 14d. Readings at 0h. (Irkutsk, Ekaterinburg, Leningrad, and Tokyo), 2h. (Baku, Batavia, Amboina, near Manila, also Puebla, Vera Cruz, Tacubaya, and Oaxaca), 4h. (Tacubaya and Vera Cruz), 7h. (La Paz and Sucre), 18h. (Irkutsk and La Paz), 21h. (Tokyo), 23h. (Rio Tinto).

Feb. 15d. 2h. 59m. 42s. Epicentre **11°·7N. 89°·6W.**

A = +·007, B = −·979, C = +·203; D = −1·000, E = −·007; G = +·001, H = −·203, K = −·979.

A depth of focus 0·015 has been assumed.

		Corr. for Focus	Δ	Az.	P.		O−C.	S.		O−C.	L.	M.
		°	°	°	m.	s.	s.	m.	s.	s.	m.	m.
Oaxaca		−0·2	8·8	308	2	44	+34	4	29	?L	(4·5)	5·8
Merida		−0·2	9·2	0	4	17	?S	(4	17)	+14	6·0	6·9
Balboa Hts.	E.	−0·2	10·2	104	2	38	+ 8	3	22	−67	5·2	6·7
	N.	−0·2	10·2	104	2	38	+ 8	3	26	−63	5·2	7·5
Tacubaya		−0·3	12·0	311	3	8	+13	—		—	6·2	7·1
Guadalajara		−0·4	16·1	306	3	56	+ 8	7	20	+32	—	—
Port au Prince		−0·5	18·0	66	i 4	28	+17	7	55	+26	11·4	12·0
Loyola	N.	−0·5	18·2	359	e 4	1	−12	i 7	28	− 5	i 9·5	23·5
Mazatlan		−0·6	19·7	308	3	42	−48	7	44	−20	9·6	—
San Juan	E.	−0·7	23·6	71	e 5	3	−13	e 9	15	− 8	—	13·1
	N.	−0·7	23·6	71	—		—	e 9	7	−16	e 10·9	16·0
St. Louis	N.	−0·9	26·9	359	i 5	40	− 8	i 10	10	−12	e 12·7	14·4
Tucson	E.	−0·9	28·4	320	e 6	5	+ 2	e 9	23	−87	e 14·2	16·6
Cheltenham	N.	−1·0	29·3	21	e 6	7	− 4	e 10	54	−10	e 18·0	19·4
Georgetown	E.	−1·0	29·4	20	i 6	9	− 3	i 10	59	− 7	e 13·9	19·3
	N.	−1·0	29·4	20	i 6	10	− 2	i 10	59	− 7	e 13·3	19·6
Chicago	N.	−1·0	30·1	3	i 6	7	−12	11	0	−19	e 16·6	18·5
Ann Arbor	E.	−1·0	31·0	8	i 6	18	−10	i 11	0	−34	e 13·6	19·8
	N.	−1·0	31·0	8	—		—	i 11	12	−22	e 14·1	22·9
Denver	E.	−1·0	31·1	339	e 5	48	−41	e 9	48	−108	—	18·3
Fordham		−1·1	32·3	22	i 6	29	−11	i 11	35	−19	15·5	20·4
Ithaca		−1·1	32·8	17	i 6	36	− 8	11	44	−19	e 16·1	—
Toronto		−1·1	33·1	13	e 6	41	− 6	i 11	53	−15	13·7	24·2
Harvard	E.	−1·2	34·6	25	e 6	52	− 8	e 12	8	−22	e 16·6	24·4
	N.	−1·2	34·6	25	e 6	56	− 4	e 12	20	−10	i 16·8	24·6
La Paz		−1·2	35·3	144	i 6	59	− 7	i 12	44	+ 2	16·4	17·8
Ottawa		−1·2	35·7	16	i 7	3	− 6	i 12	33	−15	e 16·6	23·4
Lick		−1·3	38·5	318	i 7	35	+ 3	—		—	e 20·6	—
Sucre		−1·3	39·0	143	i 7	29	− 7	i 13	34	0	18·8	24·6
Berkeley		−1·3	39·2	318	7	40	+ 3	e 13	40	+ 3	e 20·5	24·2
Ste. Anne		−1·3	39·3	21	i 7	34	− 4	i 13	29	− 9	e 19·2	25·5
Halifax		−1·3	39·8	29	e 7	40	− 2	i 13	37	− 8	e 18·3	—
Spokane		−1·4	42·8	332	e 8	24	+18	i 13	18	−69	e 22·8	26·8
Victoria	E.	−1·4	46·2	330	8	31	− 1	15	26	+14	23·8	40·2
La Plata		−1·7	55·4	149	9	34	+ 3	17	16	+11	29·0	—
Sitka	N.	−1·7	57·2	333	—		—	—		—	e 32·2	42·8
Azores		−1·8	62·3	54	22	24	?	—		—	—	31·4
Honolulu	E.	−1·9	65·9	289	e 10	49	+11	e 19	55	+42	e 33·0	—
	N.	−1·9	65·9	289	e 11	6	+28	e 20	22	+69	e 31·7	36·7
San Fernando		−2·1	77·8	55	12	6	+13	21	54	+20	34·3	46·3
Edinburgh		−2·1	78·3	36	—		—	22	18	+39	37·3	48·8
Bidston		−2·1	78·5	39	—		—	21	58?	+16	34·0	50·5
Dyce		−2·1	78·8	34	—		—	22	3	[+ 2]	38·0	50·5
Stonyhurst		−2·1	78·9	39	11	56	− 4	21	38	− 9	37·0	47·6
Toledo		−2·1	79·2	51	i 12	9	+ 7	i 22	3	+13	e 33·2	41·8
Malaga		−2·1	79·2	55	12	6	+ 4	22	6	+16	34·7	48·5
Oxford		−2·1	79·8	40	i 12	14	+ 9	i 22	3	+ 6	37·5	44·3
Granada		−2·1	79·8	55	i 12	17	+12	i 22	20	+23	37·3	44·1
Almeria		−2·1	80·8	55	12	17	+ 6	i 22	15	+ 7	e 37·8	42·7
Alicante		−2·1	82·0	52	12	12	− 6	22	10	−12	33·5	44·7
Bergen		−2·1	82·3	30	e 17	18	+298	i 27	33	+308	—	—
Tortosa	N.	−2·1	82·5	50	12	31	+10	22	37	+ 9	34·1	47·6
Paris		−2·1	82·6	41	i 12	28	+ 6	e 22	35	+ 6	28·3	45·3
Uccle		−2·1	83·4	40	e 12	29	+ 2	i 22	43	+ 5	e 38·3	46·7
Puy de Dôme		−2·1	83·4	45	—		—	22	18?	−20	50·3	—
De Bilt		−2·1	83·6	38	12	33	+ 5	22	45	+ 4	e 37·3	40·1
Barcelona		−2·1	83·6	49	e 12	9	−19	e 22	40	− 1	e 35·4	46·1
Algiers		−2·1	85·1	54	12	36	0	23	2	+ 5	40·3	—
Besançon		−2·1	85·2	43	12	39	+ 2	23	4	+ 6	29·3	—
Apia		−2·1	85·4	257	—		—	—		—	39·3	45·3
Strasbourg		−2·1	86·0	42	12	44	+ 3	i 23	11	+ 3	e 39·3	48·3
Hamburg		−2·1	86·2	38	e 12	51	+ 8	i 23	10	+ 1	e 39·3	40·3
Zurich		−2·1	86·8	43	i 12	49	+ 3	i 23	14	− 2	—	—
Moncalieri		−2·1	86·8	45	i 12	45	− 1	i 23	16	0	e 33·4	57·8

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.
Hohenheim		−2·1	86·9	40	e 12 49	+ 2	e 23 13	− 4	e 39·3	47·3
Upsala		−2·1	88·3	29	e 12 55	+ 1	i 23 20	[+ 3]	e 41·3	53·7
Cheb		−2·1	88·5	39	i 12 59	+ 4	i 23 27	− 7	e 41·3	55·3
Innsbruck	N.E.	−2·1	88·7	41	i 13 17	+20	—	—	—	—
Florence		−2·1	89·5	46	e 13 0	− 1	e 23 28	[+ 3]	35·3	46·3
Venice		−2·1	89·8	43	i 14 13	+70	i 23 38	−11	—	—
Rocca di Papa	E.	−2·1	91·2	47	i 13 13	+ 2	i 23 42	[+ 7]	e 37·1	50·6
	N.	−2·1	91·2	47	i 13 23	+12	i 23 41	[+ 6]	—	—
Graz		−2·1	91·4	40	e 13 9	− 3	e 23 37	[+ 1]	39·3	50·2
Vienna		−2·1	91·6	40	e 13 10	− 3	i 24 10	+ 1	—	51·3
Konigsberg		−2·1	91·6	33	e 13 24	+11	23 58	−11	e 43·5	46·3
Naples		−2·2	92·6	47	e 13 8	−10	e 23 18?	[−26]	50·3	55·3
Pompeii		−2·2	92·8	47	e 13 48	+29	e 24 18	− 2	51·3	—
Budapest		−2·2	93·6	40	13 15	− 8	23 59	[+ 9]	e 35·3	62·7
Leningrad		−2·2	93·6	26	i 13 24	+ 1	24 51	+23	38·3	59·1
Pulkovo		−2·2	94·0	26	i 13 26	0	24 53	+20	41·3	55·6
Kucino		−2·2	99·6	27	e 13 51	− 5	i 24 27	[+ 5]	42·3	53·8
Athens		−2·2	100·4	48	—	—	i 24 30	[+ 4]	44·0	—
Makeyevka		−2·2	104·4	34	—	—	i 25 3	[+18]	49·3	58·8
Ekaterinburg		−2·2	107·2	17	14 26	− 8	i 25 5	[+ 7]	47·3	57·6
Piatigorsk		−2·2	109·6	35	—	—	e 25 22	[+14]	—	68·6
Cape Town		−2·2	111·4	123	—	—	26 58	−23	—	69·6
Irkutsk		−2·2	114·9	351	e 14 25	−45	e 29 28	+96	55·3	66·5
Baku		—	115·8	33	—	—	—	—	51·3	59·1
Agana	N.	—	120·5	294	—	—	—	—	e 82·3	—
Riverview		—	120·7	237	—	—	e 30 44	+109	e 56·0	61·8
Melbourne		—	125·0	231	e 21 0	?PR_1	—	—	—	39·9
Zi-ka-wei		—	127·8	327	19 19	[+ 6]	e 28 34	−72	—	40·1
Simla	N.	—	135·3	17	23 6	?PR_1	e 34 24	?	—	71·0
Hong Kong		—	138·7	326	19 28	[− 9]	23 16	?PR_1	—	—
Manila		—	139·9	310	e 19 42	[+ 3]	—	—	—	—
Phu-Lien		—	143·8	334	—	—	—	—	e 69·6	82·4
Bombay		—	144·8	30	19 31	[−17]	29 47	?PR_3	e 51·0	82·2
Perth		—	149·1	224	19 18?	[−36]	—	—	—	—
Kodaikanal		—	154·5	31	45 6	?SR_1	—	—	98·5	106·9
Colombo		—	158·6	30	31 18	?PR_3	—	—	98·8	109·3
Batavia		—	162·9	287	i 20 22	[+12]	i 39 14	?	—	—

Additional readings: Loyola iPN = +4m.10s., iN = +7m.33s., iE = +7m.44s. San Juan ePR_1N = +5m.27s., ePR_1E = +5m.34s., ePR_2 = +6m.0s., eN = +7m.20s. and +9m.27s., eSR_2E = +10m.17s. St Louis eN = +6m.10s., PR_1N = +6m.22s., SR_1N = +10m.30s., iN = +10m.59s. Cheltenham ePR_1N = +6m.57s., eE = +7m.36s. and +11m.19s., eN = +8m.17s., +11m.39s., and +16m.4s., eLE = +16·3m., ME = +19·6m.; T_0 = 2h.59m.31s. and 2h.59m.48s. Georgetown SR_2E = +12m.39s. Chicago eN = +6m.32s., +7m.10s., and +12m.20s. = SR_1 − 20s., eE = +7m.32s., +12m.36s., and +13m.48s., ME = +19·1m.; T_0 = 2h.59m.23s. and 2h.59m.39s. Ann Arbor ePR_1N = +6m.54s., iSR_1E = +12m.0s.; T_0 = 2h.59m.54s. Denver ePN = +6m.18s., eSN = +12m.18s., LN = +17·3m.; all readings are given only to the nearest half minute. Fordham PR_1N = +7m.11s., SR_1N = +12m.31s., MN = +21·8m.; T_0 = 2h.59m.29s. Toronto MN = +23·3m.; T_0 = 2h.59m.49s. Harvard eE = +7m.40s., ePR_1N = +8m.3s., eN = +10m.2s. and +11m.37s., iSR_1N = +14m.17s.; T_0 = 2h.59m.40s. and 2h.59m.55s. La Paz PR_1 = +7m.58s., iSN = +12m.36s. (O − C = −6s.), PSE = +13m.12s., SR_1N = +13m.15s., SR_1E = +15m.0s.; T_0 = 2h.59m.26s., and 2h.59m.36s.; epicentre 11°·3N. 89°·0W. Ottawa iPR_2 = +8m.10s., iSR_2 = +14m.40s. = SR_1 − 7s., MN = +23·8m.; T_0 = 2h.59m.49s. Lick ePN = +7m.37s., iN = +7m.48s., eZ = +21m.18s., eN = +23m.48s. Sucre i = +8m.3s., PR = +8m.49s., and +9m.7s., i = +9m.42s.?, PR_1 = +9m.55s., PS = +14m.0s., SR_1 = +16m.0s., SR_1 = +16m.34s., SR_2 = +17m.15s., i = +18m.4s.; T_0 = 2h.59m.30s., epicentre 11°·3N. 88°·8W. Berkeley eSEN = +13m.42s., eLN = +21·6m., eLZ = +21·7m. St Anne iPR_2 = +9m.9s., iSR_2 = +16m.15s.; T_0 = 2h.59m.48s. Halifax iPR_2 = +9m.7s. = PR_1 + 3s., eSR_1N = +16m.43s.; T_0 = 2h.59m.51s. Spokane iP = +8m.27s., PR_1N = +10m.9s., PR_1E = +10m.18s., PR_2E? = +10m.30s., PR_2N? = +10m.37s., iEN = +13m.18s., SR_2N = +18m.26s., iN = +18m.37s., SR_2N? = +19m.17s., iN = +19m.39s., iLN = +22·3m. Victoria MN = +32·6m.; T_0 = 2h.59m.31s. Sitka eLE = +32·6m. Honolulu eN = +11m.22s., eSR_1N = +24m.10s., eSR_1E = +24m.42s., eSR_2N = +27m.55s. = SR_2 − 15s., eE = +28m.22s., eSR_2E = +29m.0s.; T_0 = 2h.59m.25s., and 2h.59m.33s. Edinburgh i = +18m.1s. = PR_2 + 3s. Dyce i = +12m.51s., i = +13m.13s., i = +14m.23s., PR_2 = +17m.8s. = PR_2 − 2s., i = +20m.50s., i = +23m.13s., i = +26m.56s., SR_1 = +27m.30..

Continued on next page.

Toledo $PR_1 = +14m.5s.$, $SR_1NW = +27m.41s.$, $SR_2NW = +31m.5s.$, MNW = +37·2m., MZ = +42·6m. Granada i = +15m.17s. = $PR_1 - 12s.$ Almería MN = +43·0m. Alicante MN = +42·6m. Paris iS = +22m.46s., MN = +38·3m. Uccle $PR_1 = +15m.39s.$, $SR_1 = +28m.14s.$ De Bilt $PR_1Z = +15m.47s.$, MN = +45·4m., MZ = +48·4m.; $T_0 = 2h.59m.36s.$, epicentre 11°·2N. 88°·5W. Barcelona PS = +23m.57s. Strasbourg $PR_1 = +16m.21s.$, MN = +55·0m. Hamburg $SR_2 = +32m.58s.$, MN = +54·3m. Hohenheim $eSR_1 = +29m.33s.$ Upsala MN = +51·0m. Graz iS = +23m.40s. Vienna iPZ = +13m.11s., iE = +15m.55s., PR_1? = +17m.12s., $S_cP_cS = +23m.43s.$ = [S]+18s. Konigsberg eN = +16m.22s., $PR_1 = +16m.54s.$, $eE = +17m.30s.$, $S_cP_cS = +23m.48s.$, PS = +25m.6s., $SR_1 = +30m.18s.$, $eE = +32m.30s.$, $SR_2 = +34m.6s.$ Budapest MN = +67·5m. Leningrad $iPR_1 = +17m.14s.$, Y = +23m.57s. = [S]+21s., $SR_1 = +30m.50s.$, MZ = +55·4m. Pulkovo $PR_1 = +17m.13s.$, Y = +23m.57s. = [S]+18s., $SR_1 = +30m.48s.$, MZ = +55·5m., MN = +55·8m. Kucino $ePR_1 = +17m.52s.$, $ePS = +25m.20s.$ = S−10s., PPS = +26m.46s., e = +33m.10s., MN = +52·0m. Makeyevka $ePR_1 = +18m.32s.$ Ekaterinburg i = +18m.9s., +18m.44s., +21m.8s. = $PR_2 - 31s.$, +28m.9s., and +34m.3s., e = +24m.33s., +34m.38s., +38m.39s., and +42m.9s., MN = +54·2m., MZ = +57·7m. Platigorsk $iPR_1 = +19m.7s.$, MN = +63·0m. Irkutsk e = +19m.44s. = $PR_1 + 8s.$, MZ = +66·4m. Baku $iPR_1 = +19m.52s.$, iPS = +29m.43s., $eSR_1 = +36m.52s.$, MN = +66·7m., MZ = +67·9m. Riverview e = +20m.36s. = $PR_1 + 7s.$, MN = +57·7m. Simla eE = +52m.54s., ME = +71·9m. Bombay $PR_1 = +23m.30s.$, $SR_1 = +32m.53s.$

Note to the Shock of 1926 Feb. 15d. 2h. 59m. 42s.

Comparing the observations of this shock (with adopted epicentre 12°N. 89°W. of Feb. 8d.) we have the following table for the differences of △ from the tables :—

No. of Stns.	Az.	Equation.			O_1	O_2	C_1	$(O-C)_1$	C_2	$(O-C)_2$
	°				°	°	°	°	°	°
13	15	+·26x	+·97y	=	−1·4	−0·3	−0·6	−0·8	+0·5	−0·8
24	40	+·64x	+·77y	=	−1·0	+1·0	−0·9	−0·1	+0·4	+0·6
2	68	+·93x	+·37y	=	+0·2	+0·8	−1·0	+1·2	+0·7	+0·1
3	145	+·57x	−·82y	=	−1·4	0·0	−0·4	−1·0	+0·1	−0·1
3	330	−·50x	+·87y	=	−1·1	+0·2	+0·4	−1·5	−0·1	+0·3

The △ residuals are in the O_1 O_2 columns, the former being formed on the assumption of normal focal depth and the latter after a correction for focal depth 0·015 has been applied.

The solutions for the two cases are :

(1) x = −1°·1 y = −0°·3
(2) x = +0°·6 y = +0°·3

Putting these values for x and y in the equations we get the C_1, C_2, and then $(O-C)_1$ $(O-C)_2$, columns of differences. Considering the closeness in azimuth of the first two (the main) groups of observing stations, the $(O-C)_2$ differences are very satisfactory. The corresponding determination of epicentre has been adopted, viz., 11°·7N. 89°·6W.

The Shock Feb. 8d. 15h. 17m. 40s., Epicentre 12°·0N. 89°·0W.

It might seem that these elements would apply to this earlier shock, but it is not found to be so, for if we apply the origin and depth of focus found for Feb. 15d. 2h. to the observations of Feb. 8, a good fit is obtained except for the stations in Europe. All these consistently require a correction of mean value +1°·8 to the calculated △, showing that for these stations no correction for focus is required. There is thus an awkward discrepancy between the residuals for stations in Europe and in Eastern America (which are nearly in the same Azimuth), so that the elements of Feb. 15d. offer no improvement over those adopted in the text for February 8d.

Feb. 15d. 14h. 36m. 48s. Epicentre 41°·5N. 20°·0E.

A = +·704, B = +·256, C = +·663; D = +·342, E = −·940;
G = +·623, H = +·227, K = −·749.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mostar		2·4	319	i 0 32	− 5	i 0 52	−14	—	1·1
Sarajevo		2·6	334	i 0 36	− 5	0 56	−16	—	1·0
Belgrade		3·3	6	e 0 55	+ 3	i 1 33	+ 2	—	1·8
Naples		4·4	264	e 1 2	− 6	—	—	—	—
Zagreb		5·2	328	e 1 22	+ 2	i 2 11	−11	—	—
Rocca di Papa	z.	5·5	275	e 1 31	+ 6	e 2 47	+16	—	2·8
Laibach		6·0	321	e 1 45	+13	2 42	− 2	—	2·9
Venice		6·8	308	2 16	+32	—	—	—	4·1
Vienna		7·2	340	e 2 2	+13	i 3 31	+16	—	3·8
Innsbruck	N.W.	8·4	316	e 2 8	+ 1	i 4 6	+19	—	—
Zurich		10·0	310	e 2 26	− 4	e 4 17	−12	—	—
Strasbourg		11·2	314	—	—	—	—	5·2	—

Additional readings and notes: Mostar i = +46s., MN = +0·9m. Belgrade ePE = +1m.3s. Zagreb eP = +1m.29s., P = +1m.33s., i = +2m.21s. and +2m.34s. Laibach MN = +3·2m. Vienna i = +3m.4s. Innsbruck eNE = +3m.58s., iNE = +4m.10s.

Feb. 15d. 23h. 11m. 40s. Epicentre 25°·0N. 123°·0E. (as on 1919 Sept. 29d.).

A = −·494, B = +·760, C = +·423; D = +·839, E = +·545;
G = −·230, H = +·354, K = −·906.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	1·3	274	0 25	+ 5	—	—	0·6	0·7
Zi-ka-wei	6·3	348	e 1 41	+ 5	2 51	− 1	—	4·8
Hong Kong	8·5	252	—	—	3 50	0	—	4·8
Manila	10·6	191	e 2 34	− 4	(4 14)	−31	4·2	—
Phu-Lien	15·7	258	e 3 33	−15	e 6 37	−11	8·3	8·8
Irkutsk	30·7	338	e 6 18	−17	e 11 17	−29	16·3	20·1
Ekaterinburg	54·3	324	i 9 29	− 6	—	—	26·3	35·9
Baku	61·7	305	e 10 21	− 2	e 19 10	+26	32·3	36·2
Kucino	66·9	323	—	—	—	—	35·9	—
Makeyevka	68·5	315	—	—	—	—	41·3	—
Pulkovo	69·9	328	—	—	e 22 49	+144	40·3	44·6
Leningrad	69·9	328	—	—	e 23 15	+170	39·6	44·6
Upsala	75·9	330	—	—	—	—	e 48·3	—
De Bilt	85·8	327	—	—	—	—	e 45·3	56·2
Strasbourg	86·6	324	—	—	—	—	54·3	—
Uccle	87·0	326	—	—	—	—	e 45·3	—

Additional readings and note: Ekaterinburg MN = +30·2m., MZ = +35·1m. Baku MZ = +41·2m., MN = +42·2m. Kucino reading has been increased by 1h. Pulkovo MZ = +44·5m. Leningrad MZ = +44·4m.

Feb. 15d. Readings also at 11h. (La Plata, La Paz, and Sucre), 14h. (Puy de Dôme, Mostar, Sucre, and La Paz), 22h. (Apia).

Feb. 16d. Readings at 6h. (Mizusawa), 7h. (Ottawa), 13h. (Baku), 17h. (near La Paz and Sucre), 18h. (Merida and Tacubaya), 19h. (Toronto, Ottawa, Sucre, La Paz, and Tacubaya), 21h. (near Barcelona), 22h. (Tokyo).

Feb. 17d. Readings at 3h. (Ottawa and Toronto), 8h. (Perth), 10h. (Manila, Ekaterinburg, Ootomari, and near Mizusawa), 19h. (La Paz), 20h. (Matuyama).

Feb. 18d. Readings at 1h. (La Paz), 5h. and 13h. (Ekaterinburg), 14h. (Strasbourg), 17h. (near Athens), 18h. (Uccle, Ekaterinburg, Leningrad, St. Anne, Victoria, Chicago, Tucson, Toronto, Ottawa, Ann Arbor, Fordham, near Santa Clara, and Berkeley), 21h. (Santa Clara), 23h. (La Paz and Sucre).

Feb. 19d. Readings at 1h. (Agana and Tokyo), 16h. (near Sucre, La Paz, and near Batavia), 21h. (Ekaterinburg and Tokyo).

Feb. 20d. 11h. 37m. 15s. Epicentre 74°·0N. 18°·0W.

$A = +\cdot262$, $B = -\cdot085$, $C = +\cdot961$; $D = -\cdot309$, $E = -\cdot951$; $G = +\cdot914$, $H = -\cdot297$, $K = -\cdot276$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Leningrad	22·4	102	5 11	+ 1	e 9 14	+ 1	10·4	—
Pulkovo	22·6	102	i 5 11	− 1	e 9 16	− 1	—	—
Kucino	28·2	99	e 6 13	+ 3	—	—	13·0	—
Ekaterinburg	33·4	77	7 2	+ 2	11 48	−42	13·8	—
Ottawa	38·1	255	—	—	—	—	e 26·8	—
Toronto N.	40·6	257	—	—	—	—	30·3	—

No additional readings.

Feb. 20d. Readings also at 0h. (near Batavia and Malabar), 2h. (Ekaterinburg, Toronto, and Ottawa), 4h. (Graz, Zurich, and near Vienna), 5h. (Rocca di Papa), 8h. (near Port au Prince), 10h. (Ottawa and Toronto), 12h. (Ekaterinburg), 13h. (Ekaterinburg and Wellington), 14h. (Ekaterinburg (2) and Tacubaya), 15h. (La Paz), 16h. (near Mostar), 20h. (Tokyo).

Feb. 21d. Readings at 2h. (Ekaterinburg and Bombay), 4h. (near Mizusawa), 5h. (Manila), 6h. and 8h. (La Paz), 12h. (Tacubaya and near Athens), 15h. (near Nagasaki), 22h. (La Paz and Simla), 23h. (near Athens and Dehra Dun).

Feb. 22d. Readings at 1h. (Tokyo, near Osaka, and near Mizusawa), 4h. (Taihoku), 5h. (near Apia), 6h. (Vienna, Innsbruck, and Honolulu), 7h. (Kucino), 10h. (Tokyo), 11h. (Manila), 12h. (Ekaterinburg), 17h. (Kucino, Irkutsk, Ekaterinburg, and Pulkovo).

Feb. 23d. Readings at 3h. (Mizusawa), 11h. (Tacubaya), 20h. (Mizusawa and near Sumoto (2)), 21h. (Toronto, Ottawa, and Leningrad), 23h. (Mizusawa and Rocca di Papa).

Feb. 24d. Readings at 4h. (Vera Cruz), 9h. (Oaxaca and Tacubaya), 10h. (near Sumoto), 11h. (Kobe and Tacubaya and near Toyooka), 16h. (Nagoya), 22h. (La Paz), 23h. (Taihoku).

Feb. 25d. Readings at 5h. (La Paz), 6h. (Tokyo and near Mizusawa), 8h. (near Sumoto), 15h. (near Sumoto), 17h. (Tokyo and near Mizusawa), 19h. (Merida, Oaxaca, Tacubaya, Ottawa, Toronto, and Agana), 20h. (Ekaterinburg), 22h. (Chicago), 23h. (Ottawa, Toronto, and Tacubaya).

Feb. 26d. 15h. 46m. 20s. (I)
16h. 8m. 10s. (II) } Epicentre 37°·5N. 23°·0E. (as on 1925 Oct. 6d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Athens	0·7	51	i 0 53	+42	—	—	i 1·3	1·9
II		0·7	51	i 0 50	+39	—	—	i 1·2	1·8
I	Mostar	7·0	328	2 8	+22	(3 10)	0	(4·3)	4·5
I	Sarajevo	7·2	333	e 1 56	+ 7	(3 8)	− 7	(4·1)	4·3
II		7·2	333	e 1 54	+ 5	(3 3)	−12	(4·0)	4·4
I	Pompeii	7·3	299	e 2 22	+31	e 4 20	+62	—	6·7
II		7·3	299	e 3 10	?S	(e 3 10)	− 8	(e 4·5)	5·2
I	Belgrade	7·5	347	e 2 2	+ 8	—	—	—	4·8
II		7·5	347	e 1 58	+ 4	—	—	—	4·5
I	Naples	7·6	299	e 1 24	−31	e 3 14	−12	—	5·9
II		7·6	299	e 1 34	−21	e 3 4	−22	—	4·6
I	Rocca di Papa	9·0	302	2 13	− 3	3 58	− 5	—	5·4
II		9·0	302	2 12	− 4	e 3 56	− 7	—	5·0
I	Zagreb	9·8	330	e 2 33	+ 6	i 5 46	+83	(i 5·8)	—
II		9·8	330	e 2 27	0	i 5 31	+68	(i 5·5)	—
I	Budapest	10·4	346	3 27	+51	—	—	6·2	9·2
II		10·4	346	3 1	+25	i 4 26	−14	5·6	11·2
I	Laibach	10·6	326	e 2 35	− 3	i 4 13	−32	4·6	5·4
II		10·6	326	2 28	−10	i 4 18	−27	—	5·4
I	Florence	10·9	309	3 50	+67	6 10	?L	(6·2)	6·7
II		10·9	309	e 4 50	?S	(e 4 50)	− 2	(6·0)	6·8
I	Graz	11·0	332	e 2 37	− 7	e 5 19	+25	5·7	6·6
II		11·0	332	e 2 39	− 5	e 5 34	+40	5·6	7·8
I	Venice	11·2	318	e 2 50	+ 3	5 22	+23	—	10·8
II		11·2	318	3 0	+13	4 36	−23	6·3	10·3
I	Vienna	11·5	338	e 3 7	+15	6 17	+70	i 7·7	8·2
II		11·5	338	e 2 55	+ 3	6 18	+71	—	7·6
II	Lemberg	12·3	3	e 2 8	−55	—	—	e 7·1	7·9
I	Innsbruck	13·0	323	e 3 5?	− 8	e 5 45	+ 1	—	—
II		13·0	323	i 3 6	− 7	i 5 56	+12	—	—
I	Moncalieri	13·7	308	3 34	+12	6 26	+25	7·6	11·0
II		13·7	308	3 53	+31	6 33	+32	7·3	8·6
I	Ravensburg	14·2	321	e 3 40?	+11	5 40?	−33	—	8·4
II		14·2	321	e 2 50?	−39	—	—	—	—
I	Zurich	14·5	318	i 3 39	+ 6	e 5 48	−32	—	—
II		14·5	318	e 3 34	+ 1	e 5 50	−30	—	—
I	Cheb	14·7	332	e 5 39	+124	i 8 7	+162	—	8·6
II		14·7	332	e 5 18	+103	e 8 10	+165	—	8·5
I	Hohenheim	15·0	323	e 3 40?	+ 1	e 6 20	−12	—	—
II		15·0	323	e 2 50?	−49	—	—	—	—
II	Makeyevka	15·2	42	—	—	—	—	1·8	—
I	Strasbourg	15·6	320	e 3 55	+ 8	e 7 3	+17	8·7	9·7
II		15·6	320	e 3 34	−13	e 7 0	+14	8·8	9·8
I	Besançon	15·8	313	—	—	e 6 22	−28	—	—
II		15·8	313	e 3 55	+ 6	e 6 47	− 3	9·8	—
I	Algiers	15·9	273	3 40?	−11	6 40?	−13	—	12·7
II		15·9	273	e 3 38	−13	—	—	—	11·8
I	Piatigorsk	16·5	61	i 4 29	+30	—	—	i 8·2	—
II		16·5	61	i 4 33	+34	—	—	—	—
I	Barcelona	16·5	290	e 0 18	?	—	—	e 11·8	14·9
II		16·5	290	—	—	—	—	e 8·4	12·5
I	Konigsberg	17·4	355	e 3 21	−49	—	—	e 11·2	—
II		17·4	355	e 4 14	+ 4	—	—	e 10·0	11·8
I	Tortosa N.	17·7	286	e 4 12	− 1	7 2	−31	e 10·8	14·0
II	N.	17·7	286	e 4 14	+ 1	7 16	−17	e 9·1	12·9
I	Hamburg	18·5	335	e 4 17	− 6	—	—	e 10·7	12·7
II		18·5	335	4 21	− 2	—	—	e 9·8	10·8
I	Alicante	18·5	280	e 4 54	+31	e 11 10	?	18·0	25·7
I	Paris	18·6	314	e 4 48	+24	e 7 46	− 7	10·7	—
II		18·6	314	e 4 26	+ 2	e 7 42	−11	10·8	13·8
I	Uccle	18·8	321	e 4 29	+ 2	e 7 54	− 4	e 10·2	—
II		18·8	321	4 26	− 1	—	—	10·1	—
I	De Bilt	19·2	325	4 37	+ 6	8 6	0	10·5	12·8
II		19·2	325	4 31	0	8 2	− 4	10·5	12·7
I	Almeria	20·2	277	e 4 38	− 5	e 10 42	?L	(e 10·7)	—
I	Kucino	20·8	24	—	—	—	—	e 9·2	—
II		20·8	24	—	—	—	—	11·4	12·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Toledo		21·2	285	e 4 51	− 4	e 10 49	+121	e 14·0	17·8
II		21·2	285	—	—	e 8 28	−20	—	15·6
I Malaga		21·8	276	4 56	− 7	e 11 40	?L	(e 11·7)	—
II Oxford		22·2	318	—	—	—	—	12·7	13·1
I Upsala	N.	22·6	354	e 5 11	− 1	e 9 16	− 1	—	—
II	N.	22·6	354	e 5 10	− 2	e 9 30	+13	—	—
I Pulkovo		22·7	10	i 5 20	+ 7	e 9 37	+18	14·7	15·4
II		22·7	10	i 5 17	+ 4	9 34	+15	12·8	15·3
I Leningrad		22·9	10	5 22	+ 6	9 36	+13	10·7	—
II		22·9	10	5 20	+ 4	9 36	+13	11·8	16·4
II San Fernando		23·3	276	—	—	—	—	—	15·3
I Stonyhurst		23·9	321	—	—	—	—	e 12·7	—
II		23·9	321	—	—	e 8 50?	−52	—	—
I Ekaterinburg		31·4	40	6 48	+ 6	e 11 54	− 4	13·7	21·4
II		31·4	40	6 44	+ 2	e 11 54	− 4	15·8	19·6
I Irkutsk		56·3	47	—	—	—	—	32·7	—
II		56·3	47	—	—	—	—	31·8	—

Additional readings and notes: Athens I MN = +1·8m., II MN = +2·0m. Pompeii gives S as P and L as S. Mostar I and Sarajevo I and II S is given as P and L as S. Belgrade I iP = +2m.35s., iE = +2m.52s., and +4m.35s., iSR$_1$ = +4m.43s., II ePN = +2m.3s., iN = +2m.10s., iE = +2m.33s., SR$_1$N = +4m.22s., SR$_1$E = +4m.26s., MN = +4·7m. Rocca di Papa I PE = +2m.15s. and +2m.46s., II eSN = +4m.40s., MN = +5·3m. Zagreb I e = +4m.5s. = S −18s., i = +5m.20s., II e = +4m.1s. = S − 22s., i = +5m.36s. Budapest I MN = +9·8m., II iN = +3m.33s., MN = +10·2m. Laibach I i = +3m.1s. and +4m.0s., e = +3m.29s., II e = +2m.49s., i = +3m.13s. Florence II eP = +4m.10s., L is given as S. Venice I ePE = +2m.27s., ePN = +3m.58s., II PN = +5m.21s., S = +7m.10s. Vienna I PR$_1$ = +3m.15s., PR$_2$ = +3m.34s., iN = +4m.40s., iEN = +5m.12s., iENZ = +5m.40s., SR$_1$ = +6m.51s., II PR$_1$ = +3m.34s., iEN = +4m.24s., iZ = +4m.28s., iN = +4m.43s., iNZ = +4m.54s., SR$_1$ = +6m.39s., SR$_2$ = +7m.2s. Lemberg II MN = +7·7m. Innsbruck I iSNW = +5m.48s., II iPNW = +3m.12s., iNE = +4m.23s., iNW = +5m.12s. Cheb I eP = +5m.46s., eS = +8m.16s., II e = +5m.30s., iS = +8m.13s., MN = +8·4m. Piatigorsk i = 15h.42m.9s. Barcelona I MN = +14·0m. Konigsberg I e = +13m.46s L = +19·1m., II e = +10m.21s., +11m.11s., and +11m.20s. Tortosa I PE = +4m.6s., II PE = +4m.11s. Alicante I MN = +27·5m. De Bilt I MN = +11·2m., MZ = +14·3m., II MN = +12·0m., MZ = +13·6m. Kucino I e = +12m.30s. and +18m.52s. Toledo I MNW = +17·6m., II MNW = +14·7m. Pulkovo II MZ = +15·2m. Leningrad II MZ = +15·4m. San Fernando II MN = +14·8m. Ekaterinburg I e = +9m.51s., MN = +19·9m., MZ = +21·5m., II MN = +19·5m., MZ = +21·4m.

Feb. 26d. 21h. 54m. 50s. Epicentre 54°·0N. 161°·0E. (as on 1923 Feb. 3d.).

A = −·556, B = +·191, C = +·809; D = +·326, E = +·946; G = −·765, H = +·263, K = −·588.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		33·2	290	e 6 55	− 3	—	—	15·2	—
Zi-ka-wei		36·2	248	e 7 35	+11	—	—	—	29·8
Victoria	E.	45·4	66	—	—	—	—	22·5	24·0
Ekaterinburg		51·7	318	e 9 18	0	e 16 33	− 7	23·2	32·5
Leningrad		59·4	335	—	—	—	—	e 33·2	—
Pulkovo		59·6	335	—	—	—	—	e 32·2	—
Kucino		60·8	328	—	—	—	—	e 31·0	—
Piatigorsk		68·6	318	—	—	—	—	35·2	—
Ottawa		69·5	40	—	—	e 26 10?	?SR$_1$	33·2	—
Toronto	E.	69·6	42	—	—	24 18	?	36·4	—
De Bilt		72·0	346	—	—	—	—	e 45·2	—
Cheb		72·7	340	—	—	—	—	e 30·2	45·2
Uccle		73·4	347	—	—	—	—	e 40·2	—
Bombay		73·8	281	—	—	—	—	e 39·2	—
Georgetown	E.	74·5	45	—	—	—	—	31·2	—
Strasbourg		75·0	344	—	—	—	—	45·2	—
Moncalieri		78·4	342	e 42 1	?L	44 7	?	47·4	—
San Fernando		88·9	350	—	—	—	—	—	60·7

Additional readings and notes: Irkutsk e = +1m.4s. Ekaterinburg MN = +29·5m., MZ = +36·3m. Ottawa eN = +30m.28s. San Fernando MN = +61·7m.

Feb. 26d. Readings also at 5h. (Simla), 14h. (Tokyo, Sucre, La Paz, and La Plata), 15h. (near Athens), 16h. (near Athens (2) and Rocca di Papa), 18h. (Tokyo), 19h. (La Paz (2)).

Feb. 27d. Readings at 0h. (near Athens), 2h. (near La Paz), 3h. (Irkutsk), 6h. (Ekaterinburg and near Platigorsk), 7h. (Hong Kong), 8h. (Ekaterinburg, Phu-Lien, Zi-ka-wei, Taihoku, Nagoya, and near Batavia and Malabar), 11h. (Tokyo), 15h. (Taihoku), 18h. (Apia), 20h. (Tokyo (2)), 23h. (Tacubaya and near Oaxaca).

Feb. 28d. 22h. 12m. 24s. Epicentre 39°·0N. 7°·5W.

$A = +\cdot770$, $B = -\cdot101$, $C = +\cdot629$; $D = -\cdot131$, $E = -\cdot991$; $G = +\cdot624$, $H = -\cdot082$, $K = -\cdot777$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Lisbon	1·3	258	0 13	− 7	—	—	—	0·5
Toledo	2·8	72	0 42	− 2	1 18	+ 1	i 1·5	1·7
San Fernando	2·8	158	i 0 44	0	1 15	− 2	—	2·6
Malaga	3·3	132	0 53	+ 1	1 27	− 4	1·6	1·7
Granada	3·6	120	i 1 1	+ 5·	1 41	+ 2	1·8	1·9
Almeria	4·6	116	e 1 2	− 9	i 1 56	−10	i 2·1	2·9
Alicante	5·5	95	i 0 57	−28	2 16	−15	2·8	3·1
Tortosa	6·4	71	1 46	+ 8	3 25	+30	3·6	3·9
Barcelona	7·7	68	—	—	e 3 56	+27	e 4·8	—
Zurich	14·3	49	e 5 59	?S	(e 5 59)	−16	—	—
Uccle	14·4	31	—	—	e 6 12	− 6	—	—
Strasbourg	14·5	44	—	—	—	—	e 7·6	—
De Bilt	15·7	30	—	—	—	—	e 8·6	—

Additional readings: Toledo iPNE = +52s. Granada i = +1m.17s. and +1m.24s. Almeria MZ = +2·6m., MN = +2·8m. Alicante MN = +3·0m. Tortosa SN = +3m.26s.

Feb. 28d. Readings also at 1h. (Tokyo), 8h. (near Batavia and Malabar), 13h. (Riverview and Wellington), 19h. (Ottawa, Toronto, Merida, and near Tacubaya).

March 1d. 20h. 1m. 42s. Epicentre 36°·8N. 30°·0E.

$A = +\cdot693$, $B = +\cdot400$, $C = +\cdot599$; $D = +\cdot500$, $E = -\cdot866$; $G = +\cdot519$, $H = +\cdot300$, $K = -\cdot801$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		5·1	285	1 22	+ 3	2 32	+12	i 2·7	3·4
Ksara		5·7	120	1 52	+24	i 3 10	+34	(3·2)	—
Helwan		7·0	171	2 8	+22	3 28	+18	(3·5)	8·9
Belgrade	N.	10·7	321	e 2 49	+ 9	—	—	i 5·8	6·6
Platigorsk		12·3	50	e 3 18	+15	e 5 52	+26	—	9·7
Makeyevka		12·4	25	e 3 48	+43	—	—	—	—
Pompeii		12·7	293	e 3 18?	+ 9	e 5 18?	−19	—	—
Naples		12·9	293	e 2 33	−39	e 6 33	+51	—	8·3
Budapest		13·3	326	3 21	+ 4	—	—	e 8·3	9·6
Lemberg		13·7	344	e 3 24	+ 2	e 7 12	+71	—	9·4
Zagreb		13·8	315	e 3 18?	− 5	—	—	i 8·2	9·0
Rocca di Papa		14·2	296	e 3 36	+ 7	e 8 18	?L	(e 8·3)	9·7
Laibach		14·8	314	3 33	− 3	e 6 0	−20	9·0	9·6
Graz		14·8	318	e 3 36	0	e 6 18	− 9	7·3	9·7
Vienna		15·1	324	3 39	− 1	7 41	+67	—	10·1
Florence		15·8	302	3 48	− 1	6 58	+ 8	—	11·8
Venice		15·8	309	3 18?	−31	7 18?	+28	10·0	10·4
Baku		15·9	71	i 4 13	+22	i 7 21	+28	8·8	12·2
Innsbruck		17·3	313	e 4 12	+ 3	e 8 19	+54	e 10·2	—
Cheb		18·3	322	i 4 25	+ 4	e 7 50	+ 3	e 10·5	12·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Moncalieri		18·6	303	4 24	0	7 53	0	8·4	12·6
Ravensburg		18·6	313	e 4 21	− 3	e 7 58	+ 5	—	11·8
Zurich		19·0	311	i 4 30	+ 1	i 8 0	− 2	—	—
Konigsberg		19·1	343	4 36	+ 6	—	—	—	11·8
Hohenheim		19·2	315	e 4 32	+ 1	e 8 6	0	11·3	12·4
Kucino		19·7	13	4 45	+ 8	8 22	+ 5	10·7	13·2
Strasbourg		20·0	313	i 4 41	0	i 8 23	0	11·3	12·7
Besançon		20·5	308	4 47	0	8 39	+ 5	—	12·3
Algiers		21·5	278	4 56	− 3	8 50	− 5	—	15·3
Hamburg		21·7	327	i 5 0	− 1	e 8 57	− 2	e 12·3	14·3
Barcelona		22·0	291	i 5 3	− 2	e 9 14	+ 9	e 13·6	15·6
Pulkovo		22·9	0	5 14	− 2	9 28	+ 5	12·3	14·4
Uccle		23·0	316	i 5 13	− 4	i 9 23	− 2	11·3	15·0
De Bilt		23·2	319	5 18	− 1	9 28	− 1	11·6	15·4
Tortosa	E.	23·2	289	5 18	− 1	9 36	+ 7	—	—
	N.	23·2	289	5 27	+ 8	9 30	+ 1	11·1	15·9
Leningrad		23·2	0	i 5 18	− 1	i 9 29	0	11·3	14·9
Paris		23·3	310	i 5 15	− 5	i 9 23	− 8	13·3	15·3
Alicante		24·1	283	5 48	+19	10 1	+15	11·9	13·1
Upsala	N.	24·4	345	i 5 32	0	i 9 50	− 2	e 13·3	16·6
Almeria		25·8	280	i 5 46	0	e 10 21	+ 3	e 14·3	21·0
Oxford		26·6	314	i 5 51	− 3	i 10 35	+ 2	—	17·5
Toledo		26·7	287	i 5 51	− 4	i 10 33	− 2	e 12·0	12·6
Granada		26·7	281	i 5 49	− 6	i 10 46	+11	14·8	19·2
Malaga		27·4	280	5 55	− 7	—	—	19·3	—
Stonyhurst		28·1	318	6 2	− 7	i 11 10	+ 9	17·1	18·9
Bidston		28·2	317	5 52	−18	10 35	−28	13·8	23·3
Bergen		28·3	334	—	—	—	—	e 53·8	—
Ekaterinburg		28·5	36	6 9	− 4	i 11 2	− 6	14·3	20·4
San Fernando		28·9	280	—	—	11 13	− 2	17·8	20·3
Edinburgh		29·3	321	—	—	i 11 33	+11	16·8	23·6
Bombay		41·5	104	7 56	−11	17 44	?SR_2	—	—
Irkutsk		52·6	48	9 30	+ 6	17 4	+10	23·3	—
Cape Town		71·6	190	—	—	—	—	—	41·6
Zi-ka-wei		73·0	63	11 44	+ 8	—	—	—	54·2
Ottawa		74·1	316	—	—	e 21 21	+ 6	e 35·3	—
Toronto	N.	77·2	316	—	—	—	—	39·8	48·6
Victoria	E.	91·6	343	—	—	—	—	44·7	58·9

Additional readings and notes: Athens iP = +1m.36s., MN = +3·3m. Belgrade ePE = +2m.52s., SR_1N = +5m.2s., SR_1E = +5m.9s., ME = +6·2m. Piatigorsk iP = +3m.19s. Budapest iN = +3m.25s., +3m.34s., and +4m.35s., iE = +3m.32s., +3m.44s., and +6m.9s., MN = +9·2m. Lemberg MN = +9·5m. Zagreb e = +5m.36s., +6m.36s., i = +7m.54s. Rocca di Papa eS = +8m.45s. Laibach e = +4m.43s., iSR = +8m.0s. and +8m.11s. Graz eP = +3m.38s. Vienna iZ = +3m.49s., PR_1 = +4m.1s., PR_2 = +4m.13s., iE = +4m.49s., and +6m.11s. =S −23s., iN = +5m.13s. and +5m.41s. Baku MN = +11·8m., MZ = +12·6m. Florence P = +4m.8s. = PR_1 + 8s. Moncalieri MN = +12·5m. Ravensburg iP = +4m.24s. Konigsberg ePR,Z = +4m.54s., MN = +12·8m. Hohenheim e = +9m.18s. Kucino MN = +13·0m. Strasbourg iPEN = +4m.42s., iS = +8m.24s., +8m.25s., and +8m.28s., MZ = +12·8m., MN = +13·1m. Hamburg MN = +15·3m. Barcelona MN = +15·0m. Pulkovo MZ = +14·0m., MN = +14·5m. De Bilt MZ = +15·5m. Leningrad iPR_1 = +5m.51s., MZ = +13·6m., MN = +15·8m. Upsala ME = +16·8m.; readings have been increased by 1h. Toledo S = +10m.23s. (O − C = −12s.), MNW = +12·8m. Granada i = +6m.44s. = PR_1 + 9s., +7m.57s., and +11m.51s. = SR_1 + 7s., MZ = +19·3m. Ekaterinburg eS = +10m.57s., MN = +20·8m., MZ = +23·2m. San Fernando MN = +20·8m. Irkutsk SR_1 = +19m.25s., SR_2 = +21m.6s. = SR_1 + 10s.; readings having been increased by 22m. Ottawa eS = +26m.24s. = SR_1 − 25s., e = +29m.44s. = SR_2 − 7s.

March 1d. Readings also at 0h. (near Lick), 1h. (La Paz, Sucre, and near Sumoto), 10h. (Baku), 12h. (Riverview, Wellington, and Apia), 13h. (Irkutsk and Ekaterinburg), 15h. (Taihoku), 18h. (Mizusawa), 22h. (Ekaterinburg).

March 2d. Readings at 2h. (Kobe and near Sumoto), 6h. (near Amboina), 12h. (Tokyo), 16h. (Irkutsk and near Tacubaya).

March 3d. 13h. 16m. 42s. Epicentre 40°·5S. 88°·5W.

A = +·020, B = −·760, C = −·649; D = −1·000, E = −·026;
G = −·017, H = +·649, K = −·760.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	24·8	87	5 33	− 3	9 59	0	12·9	—
Sucre	29·3	50	e 6 17	− 4	11 12	−10	14·5	15·6
La Paz	29·8	42	6 27	+ 1	11 32	+ 1	14·5	16·7

No additional readings.

Mar. 3d. 18h. 6m. 27s. Epicentre 37°·3N. 85°·3E. (as on 1924 July 15d.).

A = +·065, B = +·793, C = +·606; D = +·997, E = −·082;
G = +·050, H = +·604, K = −·795.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	N.	9·1	230	4 33	?L	—	—	(4·6)	—
Irkutsk		20·0	36	4 52	+11	8 39	+16	11·6	—
Bombay		21·4	214	e 8 53	?S	(e 8 53)	0	(11·6)	—
Ekaterinburg		25·5	328	i 5 38	− 5	10 8	− 5	12·6	16·4
Baku		27·6	288	—	—	(11 3)	+11	11·0	—
Pulkovo		41·1	322	i 7 55	− 9	—	—	—	—
La Paz		148·7	305	19 54	[0]	—	—	(73·3)	—

Additional readings and notes: Bombay gives S and L as P and S respectively. Ekaterinburg MN = +18·1m., MZ = +18·2m. La Paz readings are given as separate P's.

Mar. 3d. Readings also at 0h. (La Paz and Sucre), 1h. (Baku), 3h. (near Sumoto), 6h. (near Athens), 9h. (Victoria), 11h. (Baku), 13h. and 17h. (La Paz), 19h. (Adelaide), 20h. (Riverview and Wellington).

March 4d. 9h. 30m. 52s. Epicentre 6°·5N. 128°·0E.

(as on 1925 Mar. 14d.).

A = −·612, B = +·783, C = +·113; D = +·788, E = +·616;
G = −·070, H = +·089, K = −·994.

See note at end.

		Δ	Az.	P.	O−C	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		10·2	179	i 2 14	−19	i 3 50	−45	4·9	—
Manila		10·7	320	e 3 3	+23	—	—	i 6·1	9·3
Taihoku		19·5	342	4 57	+22	—	—	8·8	9·0
Hong Kong		20·7	322	5 1	+12	7 31	−67	9·0	9·0
Malabar		24·6	236	6 26	+52	10 34	+39	i 17·5	—
Batavia		24·7	239	6 16	+41	1 10 32	+35	20·6	—
Phu-Lien		25·2	307	i 5 30	−10	i 9 59	− 8	12·1	13·4
Hukuoka		27·2	4	6 0	0	(9 48)	−57	14·3	—
Sumoto		28·4	12	6 7	− 5	(e 11 1)	− 5	e 11·0	—
Kobe		28·9	12	6 13	− 4	—	—	14·3	15·2
Osaka		29·0	13	6 21	+ 3	11 22	+ 5	14·5	18·4
Nagoya		29·8	15	6 32	+ 6	(11 35)	+ 4	11·6	—
Mizusawa		34·7	17	7 11	0	12 45	− 6	18·6	—
Perth		40·1	196	6 53	−63	13 20	−48	20·7	24·6
Calcutta	E.	41·4	298	8 26	+20	14 40	+13	20·1	—
	N.	41·4	298	8 20	+14	14 11	−16	—	—
Ootomari		42·1	16	8 14	+ 2	14 40	+ 4	18·0	23·3
Adelaide		42·6	167	e 7 34	−41	i 13 47	−56	18·1	29·3
Riverview		45·9	151	e 8 11	−28	e 14 43	−44	e 21·5	27·0
Sydney		45·9	151	7 20	−79	14 44	−43	24·8	26·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		47·0	161	e 8 32	−15	—	—	—	28·3
Colombo		47·8	274	8 53	0	(15 38)	−13	15·6	16·0
Hyderabad		49·6	288	8 58	− 6	16 5	− 9	25·5	34·9
Irkutsk		49·8	341	i 9 6	0	16 19	+ 3	23·1	29·8
Kodaikanal		50·1	279	—	—	(16 8)	−12	16·1	16·7
Simla	E.	53·5	305	e 9 44	+14	e 17 8	+ 5	28·0	30·2
	N.	53·5	305	e 9 56	+26	e 17 20	+17	27·9	—
Bombay		55·0	290	9 47	+ 8	17 23	+ 2	27·9	33·6
Wellington		64·1	142	i 10 45	+ 6	i 18 45	−29	i 23·2	34·8
Ekaterinburg		72·3	329	i 11 37	+ 5	i 21 1	+ 7	32·1	44·1
Honolulu	E.	72·7	70	i 11 40	+ 6	21 9	+11	34·1	38·1
	N.	72·7	70	11 44	+10	21 9	+11	30·9	—
Baku		76·8	310	i 12 4	+ 4	i 21 56	+ 9	38·1	48·5
Piatigorsk		81·9	315	i 12 28	− 2	22 38	− 7	37·1	46·1
Kucino		84·8	326	e 12 32	−15	22 44	[−11]	38·6	53·1
Makeyevka		85·2	319	e 12 54	+ 5	23 50	+29	38·0	59·0
Leningrad		88·2	330	13 5	− 1	24 2	+ 8	40·1	65·2
Pulkovo		88·3	330	13 3	− 4	24 2	+ 7	—	—
Upsala	N.	94·4	332	—	—	—	—	e 50·1	—
Athens		97·1	310	e 13 8?	−47	i 24 7	[− 1]	51·6	—
Budapest		97·7	321	—	—	—	—	e 54·1	—
Vienna	Z.	99·2	322	13 53	−13	—	—	—	—
Graz		100·2	321	e 17 26	[−21]	e 26 40	+42	54·1	62·4
Zagreb		100·3	319	e 18 22	?PR$_1$	e 24 30	[+ 5]	37·1	—
Hamburg		100·8	329	—	—	—	—	e 63·1	—
Cheb		100·9	324	e 42 8?	?	e 52 32	?L	e 60·1	63·1
Innsbruck		102·6	322	e 17 56	[0]	e 24 58	[+22]	—	—
Hohenheim		103·3	325	—	—	—	—	57·1	—
De Bilt	E.	104·0	329	—	—	e 28 8?	+95	e 55·1	65·6
	N.	104·0	329	—	—	—	—	e 50·1	73·2
Rocca di Papa		104·0	317	e 18 38	?PR$_1$	32 15	?SR$_1$	e 58·2	73·9
Florence		104·2	319	e 17 8?	?	—	—	52·1	62·1
Strasbourg		104·3	323	—	—	—	—	e 55·1	—
Uccle		105·1	327	—	—	e 24 8?	[−40]	e 52·1	74·1
Moncalieri		105·9	321	18 45	?PR$_1$	33 56	?SR$_1$	54·8	67·6
Paris		107·1	327	—	—	—	—	e 56·2	75·1
Algiers		112·8	315	—	—	—	—	e 63·1	76·1
Granada		117·2	317	e 19 10	[+26]	e 31 26	?	e 59·1	68·4
Rio Tinto		118·9	320	25 8?	?PR$_2$	—	—	—	40·1
San Fernando		119·4	318	—	—	41 2	?SR$_1$	65·1	74·6
Chicago		121·8	30	—	—	27 32	−91	60·5	63·1
Ann Arbor	E.	123·3	27	—	—	—	—	e 63·6	—
Ottawa		123·9	18	e 21 8	?PR$_1$	—	—	66·1	71·1
Toronto		124·1	21	e 21 8?	?PR$_1$	e 37 18	?SR$_1$	65·9	67·6
Fordham		128·6	20	—	—	—	—	e 65·8	83·6
Georgetown	N.	129·0	23	e 21 26	?PR$_1$	—	—	83·2	—
La Plata		151·1	170	19 57	[0]	—	—	73·5	—
La Paz		161·3	124	e 20 8	[− 1]	34 28	?	77·3	81·1
Sucre		162·0	135	—	—	34 52	?	72·8	89·0

Additional readings and notes: Amboina, iN = +2m.26s., all readings having been increased by 5m. Manila MN = +8·5m. Taihoku LN = +8·7m., MN = +8·9m. Phu-Lien MN = +14·2m. Hukuoka S is given as L. Sumoto S = +8m.29s. Kobe MN = +18·2m. Mizusawa SN = +12m.44s. Perth, PR$_1$ = +9m.13s., SR$_2$ = +17m.48s. Adelaide PR$_1$ = +9m.8s., SR$_1$ = +16m.38s., MN = +15·7m. Riverview iP = +8m.16s., iS = +14m.49s., PS = +15m.4s., SR$_1$ = +18m.14s., MN = +27·4m., MZ = +34·5m.; T$_o$ = 9h.30m.40s. Sydney SR$_1$ = +18m.20s. Melbourne i = +14m.50s., +17m.38s. and +24m.44s. Irkutsk SR$_1$ = +19m.57s., MZ = +34·2m. Bombay SR$_1$ = +22m.6s. Ekaterinburg iPR$_1$ = +14m.30s., iPR$_2$ = +18m.19s., SR$_1$ = +26m.25s., SR$_2$ = +29m.20s., SR$_3$ = +30m.28s., MN = +38·6m., MZ = +55·3m. Honolulu eN = +24m.8s.; T$_o$ = 9h.31m.2s. and 9h.31m.11s. Baku MN = +43·4m., MZ = +51·8m. Piatigorsk PS = +23m.29s. Kucino iPS = +23m.56s., eSR$_1$ = +27m.44s., e = +29m.56s. = SR$_1$ + 36s., MN = +54·2m. Makeyevka PR$_1$ = +16m.36s., e = +23m.14s. Leningrad i = +23m.36s. = [S] + 20s. Pulkovo i = +23m.36s. = [S] + 19s. Upsala eL = +54·1m. Innsbruck iNW = +18m.51s. = PR$_1$ + 21s. Paris L = +73·1m. Budapest e = +60m.8s. Granada e = +20m.20s. = PR$_1$ + 14s. San Fernando PR$_1$ = +30m.26s. Chicago PR$_1$N = +21m.9s., PSN = +26m.0s. = PR$_2$ − 10s. and +30m.18s.?, SR$_1$N = +36m.48s., SR$_2$N = +42m.8s., eN = +54m.17s. Ottawa eN = +26m.25s. = PR$_2$ − 6s., e = +37m.8s. = SR$_1$ − 27s., and +51m.8s., MN = +68·1m. Toronto eN = +30m.23s. Georgetown LE = +82·2m. La Paz iP = +20m.10s., PR$_1$ = +24m.11s., PR$_2$ = +30m.41s., SR$_1$ = +38m.45s. Sucre PR$_1$ = +24m.28s., PR$_2$ = +29m.54s., SR$_1$ = +39m.37s.

NOTE TO MAR. 4d. 9h. 30m. 52s.

The following residuals are nearly all large.

	△	Az.	P.	S.		
	°	°				
Amboina	10·2	179	−19	−45	+21	− 5
Perth	40·1	196	−63	−48	−23	− 8
Adelaide	42·6	167	−41	−56	− 1	−16
Riverview	45·9	151	−28	−38	+12	+ 2
Sydney	45·9	151	−79	−43	−39	− 3
Melbourne	47·0	161	−15	—	+25	—
Wellington	64·1	142	(+ 6)	−29	—	+11
Means			−41	−40		

In view of the great mass of evidence in other azimuths it seems impossible to alter either T_0 or the epicentre. Is it possible that there was a shock 40 sec. before the main shock which reached the Australian stations but not those in other azimuths? See also a similar case on Mar. 25d. The alternative of assuming a deep focus is not available here owing to the antipodal observations.

March 4d. Readings also at 8h. (near Hukuoka), 11h. (Agana), 12h. and 14h. (Mizusawa), 16h. (near Port au Prince and San Juan), 17h. (Tokyo), 19h. (Agana and near Athens), 22h. (Tokyo).

March 5d. 23h. 58m. 50s. Epicentre 34°·0S. 73°·0W. (as on 1922 Aug. 6d.).

A = +·242, B = −·793, C = −·559.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	12·5	98	3 30	+24	5 37	+ 5	6·4	—
Sucre	16·5	27	4 4	+ 5	(7 31)	+24	7·5	8·5
La Paz	18·0	15	4 9	− 8	7 31	− 9	9·1	9·5
Ekaterinburg	141·4	39	—	—	—	—	67·2	—
Manila	156·8	216	e 21 22	[+77]	—	—	—	—

La Paz readings have been diminished by one day.

March 5d. Readings also at 0h. (Florence), 4h. (Agana), 8h. (Irkutsk), 9h. (Baku), 10h. (La Paz), 11h. (Agana), 12h. (Apia), 13h. (Riverview, Sydney, and Wellington), 14h. (Irkutsk), 15h. (Tokyo), 19h. (Rio Tinto).

March 6d. 14h. 59m. 16s. Epicentre 30°·2S. 75°·0E. (as on 1923 March 26d.).

A = +·224, B = +·835, C = −·503; D = +·966, E = −·259;
G = −·130, H = −·486, K = −·864.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	59·4	35	—	—	—	—	—	46·7
Baku	74·3	341	—	—	e 21 18	0	32·2	43·8
Irkutsk	86·2	17	—	—	—	—	50·7	—
Ekaterinburg	87·9	353	i 13 0	− 4	23 55	+ 4	36·7	53·7
Kucino	91·6	340	—	—	—	—	e 50·7	—
Granada	99·7	309	—	—	—	—	e 49·9	57·1
San Fernando	101·1	306	—	—	—	—	—	58·7
Ottawa	152·6	312	—	—	—	—	e 76·7	—

Additional readings: Baku MN = +41·6m., MZ = +48·2m. Irkutsk e = +26m.0s. and +34m.57s. Ekaterinburg MN = +53·8m., MZ = +55·1m. Granada MZ = +55·1m. San Fernando MN = +60·2m.

March 6d. 15h. 40m. 40s. Epicentre 6°·5N. 128°·0E. (as on Mar. 4d.).

$A = -·612$, $B = +·783$, $C = +·113$; $D = +·788$, $E = +·616$; $G = -·070$, $H = +·089$, $K = -·994$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	10·7	320	e 3 0	+20	(i 4 44)	− 4	i 4·7	—
Hong Kong	20·7	322	5 13	+24	8 30	− 8	9·7	—
Batavia	24·7	239	e 5 20	−15	i 9 29	−29	—	—
Ekaterinburg	72·3	329	11 36	+ 4	i 20 44	−10	35·3	38·2
Pulkovo	88·3	330	—	—	e 23 26	[+ 9]	—	—

Batavia readings are given as e and i simply.

March 6d. Readings also at 0h. (near Port au Prince), 3h. (near Amboina and Nagasaki), 10h. (near Sumoto) 11h. (Toronto) 15h. (Florence, Ann Arbor, Ottawa, Tacubaya, and Merida), 18h. (near Batavia and Malabar), 22h. (near Batavia and Malabar).

March 7d. 20h. 33m. 28s. Epicentre 2°·8S. 74°·5W. (as on 1924 March 10d.).

$A = +·267$, $B = -·962$, $C = -·049$; $D = -·964$, $E = -·267$; $G = -·013$, $H = +·047$, $K = -·999$.

See alternative solution at the end.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	15·0	156	e 3 24	−15	i 6 11	−21	6·9	7·8
La Plata	35·6	156	6 48	−30	12 4	−60	16·5	—
Georgetown N.	41·8	357	i 8 9	0	e 15 19	+47	—	—
Ithaca	45·3	358	8 33	− 2	15 26	+ 7	—	—
Toronto	46·6	355	i 8 41	− 3	e 15 32	− 4	24·2	24·8
Ottawa	48·2	359	i 8 56	+ 1	i 16 0	+ 4	e 22·5	—
Victoria E.	66·4	328	19 38	?S	(19 38)	− 4	20·6	20·7
San Fernando	74·4	51	—	—	22 36	+77	—	23·5
Malaga	75·9	51	12 2	+ 8	i 22 52	+76	—	—
Granada	76·6	51	i 12 8	+ 9	e 22 8	+24	30·5	33·5
Toledo	77·0	48	i 12 9	+ 8	i 22 53	+64	e 29·7	—
Almeria	77·5	51	e 12 14	+10	23 2	+67	—	—
Uccle	85·2	39	i 12 49	0	e 24 2	+41	—	—
De Bilt	85·8	38	i 12 54	+ 2	e 24 30	+62	—	—
Moncalieri	86·5	45	—	—	e 23 24	−12	71·8	—
Strasbourg	87·0	42	—	—	24 32?	+51	—	—
Zurich	87·4	43	12 57	− 4	—	—	—	—
Ekaterinburg	115·4	25	—	—	29 54	+101	47·5	—
Irkutsk	130·5	1	i 19 11	[− 9]	—	—	39·5	—
Bombay	144·2	61	e 19 39	[− 8]	—	—	—	—
Zi-ka-wei	147·9	334	79 36	?L	—	—	(79·6)	—

Additional readings: La Paz iP = +3m.30s., i = +3m.38s., +4m.40s., and +5m.20s., iSN = +6m.12s. Georgetown eSE = +15m.25s. Ithaca i = +16m.19s. Toronto eE = +16m.32s., eN = +19m.40s.; T_e = 20h.33m.31s. Ottawa i = +16m.53s., eN = +20m.22s., eSR_1E = +20m.50s.; T_e = 20h.33m.30s. Granada i = +12m.45s., PR_1 = +14m.49s., S = +22m.57s., i = +23m.4s. Moncalieri e = +38m.42s. Irkutsk PR_1 = +21m.36s., PR_2 = +22m.40s., PR_3 = +23m.14s.

ALTERNATIVE SOLUTION.

The above solution is far from satisfactory, especially for the European stations, and the following alternative was computed from them as basis. It suits most stations better than the other, but not Ithaca, Toronto, Ottawa, and Victoria. It seems possible that there were both shocks, the earlier one arriving earlier at most stations; but that at Ithaca, &c., the S of the later one arrived before that of the earlier.

March 7d. 20h. 32m. 30s. Epicentre 9°·5S. 84°·0W.

A = +·103, B = −·981, C = −·165; D = −·995, E = −·105;
G = −·017, H = +·164, K = −·986.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		17·0	116	e 4 22	+17	i 7 9	− 9	7·9	8·8
La Plata		34·8	141	7 46	+35	13 2	+10	17·5	—
Georgetown	N.	48·8	8	i 9 7	+ 8	e 16 17	+13	—	—
Ithaca		52·4	8	9 31	+ 9	16 24	−25	—	—
Toronto		53·6	5	i 9 39	+ 9	e 16 30	−34	25·1	25·8
Ottawa		55·4	8	i 9 54	+12	i 16 58	−28	e 23·5	—
Victoria	E.	67·5	333	20 36	?S	(20 36)	+40	21·5	21·6
San Fernando		86·0	51	—	—	23 34	+ 4	—	24·5
Malaga		87·5	51	13 0	− 2	i 23 50	+ 3	—	—
Granada		88·2	51	i 13 6	0	e 23 6	[−10]	31·5	34·4
Toledo		88·5	49	i 13 7	− 1	i 23 51	− 7	e 30·6	—
Almeria		89·1	52	e 13 12	+ 1	24 0	− 4	—	—
Uccle		96·3	40	i 13 47	− 4	e 25 0	−19	—	—
De Bilt		96·9	39	i 13 52	− 2	e 25 28	+ 3	—	—
Moncalieri		97·9	46	—	—	e 24 22	[+10]	72·8	—
Strasbourg		98·2	43	—	—	25 30?	− 8	—	—
Zurich		98·7	45	13 55	− 9	—	—	—	—
Ekaterinburg		125·3	23	—	—	30 52	+84	48·5	—
Irkutsk		136·7	353	i 20 9	[+36]	—	—	40·5	—
Zi-ka-wei		147·9	316	80 34	?L	—	—	(80·6)	—
Bombay		155·7	65	e 20 37	[+34]	—	—	—	—

Additional readings: La Paz iP = +4m.28s., i = +4m.36s., +5m.38s., and +6m.18s., iSN = +7m.10s. Georgetown eSE = +16m.23s. Ithaca i = +17m.17s. Toronto eE = +17m.30s. = S+26s., eN = +20m.38s. = SR_1 − 36s.; T_0 = 20h.33m.31s. Ottawa i = +17m.51s., eN = +21m.20s., eSR_2E = +21m.48s. = SR_1 +0s.; T_0 = 20h.33m.30s. Granada i = +13m.43s., PR_1 = +15m.47s., i = +24m.2s. = S+8s. Moncalieri e = +39m.40s. = SR_2 +6s. Irkutsk PR_1 = +22m.34s., PR_2 = +23m.38s., PR_3 = +24m.12s.

March 7d. Readings also at 3h. (near Batavia), 4h. (near Malabar), 5h. (Tokyo), 6h. (Mostar), 7h. (Sydney), 8h. and 9h. (2) (near Nagasaki), 10h. (La Paz, Tokyo, and near Mizusawa), 13h. (Ekaterinburg and near Amboina), 15h. (near Tacubaya), 16h. (Irkutsk (2) and Ekaterinburg), 17h. (near Tacubaya), 21h. (near Algiers and near Toyooka).

March 8d. 20h. 21m. 32s. Epicentre 43°·0N. 148°·5E.

A = −·624, B = +·382, C = +·682; D = +·522, E = +·853;
G = −·582, H = +·356, K = −·731.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		5·5	313	1 32	+ 7	—	—	3·0	4·2
Mizusawa		6·8	303	1 48	+ 4	2 55	−10	—	—
Tokyo		10·0	225	3 48	+78	—	—	—	—
Nagoya		11·9	233	e 3 32	+34	—	—	5·9	—
Osaka		13·1	235	3 17	+ 3	(5 43)	− 3	5·7	8·0
Kobe		13·3	236	e 3 13	− 4	—	—	—	9·9
Hukuoka		17·0	242	4 5	0	7 19	+ 1	9·1	—
Nagasaki		17·9	241	4 9	− 7	—	—	10·3	—
Zi-ka-wei		24·5	250	i 5 21	−12	i 9 51	− 3	15·3	21·6
Taihoku	E.	28·5	240	—	—	(11 25)	+17	11·4	—
Irkutsk		30·7	304	i 6 19	−16	11 18	−28	16·5	20·6
Hong-Kong		35·1	245	6 58	−16	12 28	−29	16·5	21·1
Manila		36·9	229	e 7 14	−15	—	—	9·7	—
Phu-Lien		41·3	251	e 7 48	−17	e 14 3	−22	21·5	—
Honolulu	E.	49·1	99	—	—	—	—	22·4	25·4
Ekaterinburg		54·2	318	e 9 30	− 4	i 17 9	− 2	25·0	35·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	E.	56·5	284	—	—	—	—	e 30·5	—
Victoria		58·3	51	—	—	—	—	23·7	34·7
Batavia		62·0	230	i 10 25	0	—	—	—	—
Kucino		65·3	325	10 50	+ 3	i 19 31	+ 2	34·9	43·3
Leningrad		65·4	330	e 10 50	+ 3	i 19 35	+ 5	31·5	41·9
Pulkovo		65·5	330	e 10 50	+ 2	19 34	+ 3	33·5	42·2
Bombay		66·9	275	10 59	+ 2	—	—	—	—
Baku		69·0	307	11 14	+ 3	i 20 22	+ 8	34·0	39·3
Piatigorsk		69·1	313	11 27	+15	20 35	+20	—	47·7
Kodaikanal		69·2	266	18 28	?	—	—	—	—
Upsala		69·6	336	e 11 16	+ 1	e 20 16	− 5	—	45·3
Makeyevka		70·4	319	e 11 23	+ 4	i 20 38	+ 7	36·4	—
Konigsberg	N.	72·6	331	—	—	—	—	e 48·3	—
Hamburg		77·2	336	e 12 2	0	—	—	e 40·5	45·5
Budapest		79·2	328	12 18	+ 4	—	—	—	51·5
Cheb		79·4	333	—	—	e 33 28?	?SR_2	e 43·5	49·5
Vienna	Z.	79·5	330	12 13	− 3	—	—	—	—
De Bilt		79·8	338	12 19	+ 1	e 22 17	− 4	e 39·5	52·3
Stonyhurst		80·0	344	—	—	—	—	e 51·5	58·0
Uccle		81·2	338	e 12 24	− 2	—	—	39·5	—
Chicago	N.	81·4	39	—	—	—	—	—	47·5
Innsbruck	N.W.	82·1	332	i 12 32	+ 1	—	—	—	—
Strasbourg		82·2	335	e 12 26	− 5	—	—	35·5	—
Ann Arbor		82·6	36	—	—	—	—	e 53·8	—
Zurich	Z.	83·0	334	i 12 31	− 5	—	—	—	—
Ottawa		83·3	29	—	—	e 22 28?	[−17]	e 37·5	—
Toronto	E.	83·3	32	—	—	—	—	50·9	—
Paris		83·5	339	i 12 36	− 3	—	—	52·5	—
Florence		85·2	330	e 12 43	− 6	—	—	—	—
Moncalieri		85·4	334	—	—	e 23 10	−13	49·5	—
Puy de Dôme		86·2	337	e 11 28?	−86	—	—	—	—
Rocca di Papa		86·4	329	e 12 37	−18	e 23 15	[+10]	e 51·4	55·3
Tortosa	N.	91·4	337	—	—	—	—	e 50·5	60·3
Toledo	N.E.	93·5	340	—	—	—	—	e 45·8	61·5
Alicante		94·0	337	—	—	—	—	48·2	—
Granada		95·9	339	e 12 11	−97	—	—	48·5	62·5
San Fernando		97·1	340	—	—	—	—	58·5	67·0
La Paz		139·1	61	19 45	[+ 7]	—	—	80·6	—
Sucre		142·8	60	e 19 54	[+ 9]	—	—	80·8	94·1

Additional readings and notes: Mizusawa PN = +1m.49s. Osaka MN = +10·2m. Kobe MN = +8·6m. Zi-ka-wei readings have all been increased by 1h. Honolulu e = +20m.28s., LN = +22·2m., MN = +24·4m. Ekaterinburg i = +9m.33s., e = +17m.2s., eSR_1 = +21m.9s., MN = +33·6m., MZ = +35·8m. Simla eN = +32m.46s. Kucino iP = +10m.54s., i = +13m.33s. = PR_1 −15s., MZ = +44·9m. Leningrad iP = +10m.54s., i = +13m.33s. = Pulkovo iP = +10m.54s., SR_1 = +23m.52s., MN = +46·1m. Baku MZ = +40·6m., MN = +46·0m. Piatigorsk PR_1 = +15m.18s. = PR_1 +59s., MN = +47·9m. Makeyevka ePS = +21m.23s. = [S] +9s. Hamburg MNZ = +50·5m. Budapest iN = +12m.28s.? iE = +23m.22s., and +23m.39s. De Bilt MN = +52·8m. Innsbruck iPNE = +12m.33s. Strasbourg eP = +12m.28s. Ottawa e = +32m.28s.? = SR_2 −16s.; Toronto LN = +33·3m. Moncalieri S? = +33m.35s. = SR_2 +13s.; true S is given simply as e. Rocca di Papa iPE = +12m.55s. Toledo MNW = +56·5m. San Fernando MN = +65·5m.

Mar. 8d. Readings also at 1h. (Tokyo), 3h. (Ekaterinburg and Piatigorsk), 5h. (La Paz), 7h. (Sucre), 9h. (Port au Prince), 17h. (Adelaide, Sydney, and Irkutsk), 18h. (Ekaterinburg, Tokyo, Kucino, and near Athens), 19h. (Almeria), 20h. (Georgetown and near Mizusawa), 21h. (near Sumoto), 22h. (Taihoku).

Mar. 9d. Readings at 3h. (near Manila), 9h. (Zi-ka-wei, Irkutsk, Ekaterinburg, Bombay, near Hong Kong, and near Phu-Lien), 12h. (Ekaterinburg and Irkutsk).

Mar. 10d. 15h. 4m. 50s. Epicentre 66°·5N. 130°·0W.

$A = -\cdot256$, $B = -\cdot305$, $C = +\cdot917$; $D = -\cdot766$, $E = +\cdot643$; $G = -\cdot589$, $H = -\cdot703$, $K = -\cdot399$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		9·8	197	—	—	e 4 27	+ 4	4·9	6·2
Victoria	E.	18·5	166	7 46	?S	(7 46)	− 5	9·2	9·8
Spokane	N.	20·0	155	e 4 36	− 5	i 8 14	− 9	i 10·3	11·7
Denver		30·3	140	—	—	—	—	15·2	—
Chicago	N.	33·8	116	—	—	—	—	e 18·2	22·4
Ann Arbor		34·8	111	—	—	—	—	i 18·9	21·9
Ottawa		35·3	100	—	—	—	—	i 19·2	22·0
Toronto		35·3	105	—	—	—	—	i 19·2	—
St. Louis		35·7	122	—	—	—	—	e 18·6	—
Ithaca		37·5	103	—	—	—	—	i 20·4	—
Harvard		39·6	98	—	—	—	—	21·6	24·4
Fordham		39·8	102	i 21 29	?L	—	—	(i 21·5)	24·6
Georgetown		40·3	106	—	—	—	—	e 21·7	—
Irkutsk		54·3	323	—	—	e 19 46	+153	32·2	—
San Fernando	E.	68·5	46	—	—	—	—	—	43·2
Baku		73·1	0	—	—	—	—	e 37·2	—

Additional readings: Sitka eE = +4m.30s., eN = +4m.34s., LN = +5·0m. Victoria MN = +10·9m. Spokane iN = +4m.46s., PR_1N = +4m.51s.; PR_2N = +5m.8s., SR_1N = +8m.57s., SR_2N = +9m.5s., ME = +11·6m. Ann Arbor iN = +18m.58s., iE = +19m.4s. Ottawa i = +19m.20s., +19m.40s., and +20m.44s., eL? = +21·5m. St. Louis SR_1N? = +15m.42s. $=SR_2-9$s. Ithaca i = +24m.22s. Georgetown iE = +29m.20s. Fordham iPN = +21m.50s., i = +22m.4s.

Mar. 10d. Readings also at 4h. (Ekaterinburg), 5h. (Manila), 11h. (Ekaterinburg), 14h. (Manila (3)), 15h. (Toronto), 18h. (Tokyo and near Balboa Heights), 20h. (La Paz (2)), 22h. (Baku, Florence, and near Lick).

Mar. 11d. 10h. 41m. 54s. Epicentre 10°·0S. 74°·0W.

$A = +\cdot271$, $B = -\cdot947$, $C = -\cdot174$; $D = -\cdot961$, $E = -\cdot276$; $G = -\cdot048$, $H = +\cdot167$; $K = -\cdot985$.

		Δ	Az.	P	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		8·6	139	i 2 15	+ 5	3 48	− 5	4·1	5·3
Sucre		12·4	138	i 3 4	− 1	i 5 15	−14	i 7·1	7·9
Balboa Heights	N.	19·8	344	4 38	− 1	—	—	—	—
Georgetown		49·0	357	—	—	16 49	+43	—	—
Chicago	N.	53·3	348	e 9 25	− 3	17 16	+16	17·5	27·6
Toronto	N.	53·9	355	i 9 26	− 6	17 29	+21	29·1	—
Ottawa		55·4	359	i 9 39	− 3	e 17 29	+ 3	e 26·1	—
Victoria	E.	72·8	329	20 50	?S	(20 50)	−10	36·6	37·0
San Fernando	N.	78·7	49	—	—	—	—	—	22·6
Granada		80·9	50	e 12 32	+ 8	—	—	38·1	—
Uccle		90·6	39	—	—	—	—	31·1	—
Kucino		110·5	34	—	—	—	—	e 48·1	—
Baku		122·1	48	—	—	—	—	35·1	—
Zi-ka-wei		154·4	328	e 19 44	[−17]	24 14	?PR_1	—	—

Additional readings: Balboa Heights E = +4m.46s.; T_e = 10h.41m.30s. and 10h. 41m. 33s. Chicago iN = +17m.43s., eSR_1N = +22m.6s., eN = +25m.48s. Toronto ME = +27·7m.; T_e = 10h.41m.49s. Ottawa iN = +13m.51s. $=PR_2+15$s., and +18m.0s., iE = +18m.17s.; T_e = 10h.41m.48s. Victoria MN = +36·4m.

Mar. 11d. Readings also at 0h. (La Plata), 4h. (Zi-ka-wei, Adelaide, Perth, and Sucre), 8h. (La Paz), 10h. (Manila), 14h. (Irkutsk), 16h. (La Paz, La Plata, and Sucre), 18h. (Tokyo), 19h. (near Tacubaya), 21h. (Rio Tinto and Tacubaya), 22h. (Manila).

Mar. 12d. Readings at 1h. (Sucre), 2h. (Ekaterinburg, Kodaikanal, and Sucre), 3h. and 5h. (Tokyo), 12h. (near Amboina), 20h. (Adelaide, Riverview, Batavia, and Irkutsk), 21h. (Baku and Perth), 22h. (Baku).

Mar. 13d. 19h. 36m. 0s. Epicentre 22°·5N. 126°·0E. (inferred by comparison with 22°·0N. 125°·5E. of 1922 Aug. 20d.).

$A = -\cdot543$, $B = +\cdot747$, $C = +\cdot383$; $D = +\cdot809$, $E = +\cdot588$; $G = -\cdot225$, $H = +\cdot310$, $K = -\cdot924$.

		Δ	Az.	P	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		4·8	303	1 16	+ 2	—	—	1·7	2·0
Manila		9·3	212	e 2 14	− 6	—	—	—	—
Zi-ka-wei		9·6	336	2 11	−13	3 57	−21	—	5·9
Hong Kong		10·9	272	2 45	+ 2	—	—	—	6·2
Phu-Lien		18·1	268	e 4 21	+ 3	e 7 40	− 2	10·0	—
Irkutsk		34·1	336	e 8 5	+59	—	—	19·0	—
Bombay		49·6	277	—	—	e 16 0?	−14	—	—
Ekaterinburg		57·9	325	—	—	—	—	23·5	36·0
Baku		65·4	306	—	—	—	—	36·5	39·9
Kucino		70·5	324	—	—	—	—	e 38·0	—
Leningrad		73·4	329	—	—	—	—	e 37·5	47·5
De Bilt	E.	89·4	328	—	—	—	—	e 49·0	—
Uccle		90·6	328	—	—	—	—	e 48·0	—
San Fernando	E.	105·8	322	—	—	—	—	—	62·5

Additional readings: Ekaterinburg MN = +31·7m. Baku MN = +40·1m. De Bilt eLN = +48·0m. San Fernando MN = +69·5m.

Mar. 13d. Readings also at 3h. (Tokyo), 6h. (Baku), 10h. (near Phu-Lien), 12h. (near Piatigorsk).

Mar. 14d. 8h. 52m. 10s. Epicentre 38°·0N 128°·0E. (as on 1922 July 14d.).

$A = -\cdot485$, $B = +\cdot621$, $C = +\cdot616$; $D = +\cdot788$, $E = +\cdot616$; $G = -\cdot379$, $H = +\cdot485$, $K = -\cdot788$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	4·9	156	e 1 6	−10	e 2 47	+33	e 2·9	3·2
Nagasaki	5·5	163	1 19	− 6	2 7	−24	2·5	3·0
Osaka	6·9	117	3 4	?S	(3 4)	− 3	5·1	5·4
Zi-ka-wei	8·7	220	e 2 16	+ 4	3 59	+ 3	—	6·7
Taihoku	14·1	205	e 1 55	−92	—	—	—	—
Hong Kong	19·7	221	—	—	—	—	—	11·3
Irkutsk	21·8	318	—	—	—	—	14·8	—
Manila	24·2	197	e 5 24	− 6	—	—	—	—
Baku	58·5	300	—	—	—	—	32·8	—
Kucino	59·5	320	—	—	—	—	35·5	—
Leningrad	61·3	326	—	—	—	—	e 41·3	—
Pulkovo	61·4	326	—	—	—	—	e 42·8	—
Uccle	78·4	327	—	—	—	—	—	48·8
Granada	92·6	323	—	—	—	—	37·8	—

Additional readings and notes: Hukuoka L has been diminished by 1m. Nagasaki P = +1m.45s., S = +2m.15s. Osaka MN = +6·2m.

Mar. 14d. Readings also at 2h. (Tokyo), 3h. (Sucre and near Mizusawa), 11h. (Agana and Manila), 13h. (Laibach), 14h. (near Port au Prince), 22h. (near Athens), 23h. (near Granada).

Mar. 15d. 1h. 30m. 30s. Epicentre 34°·0S. 57°·0E. (as on 1926 Jan. 24d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Johannesburg		26·1	280	—	—	9 30?	−54	—	—
Cape Town		31·7	262	—	—	—	—	—	20·9
Colombo		46·3	32	15 30	?S	(15 30)	− 2	22·7	24·2
Kodaikanal		48·3	26	16 30	?S	(16 30)	+32	—	—
Simla		67·9	19	e 12 24	+81	—	—	e 30·6?	34·1
Baku		74·7	355	i 11 52	+ 5	21 30	+ 8	37·5	43·9
Riverview		74·9	121	—	—	—	—	36·0	39·1
Sydney		74·9	121	—	—	29 48	?SR_2	37·3	39·5
Hong Kong		78·3	53	—	—	—	—	—	45·5
Makeyevka		83·8	349	i 12 38	− 3	i 15 53	?PR_1	48·6	—
Wellington	E.	85·5	139	—	—	—	—	e 42·5	46·5
Rocca di Papa		85·9	329	i 12 53	0	e 23 28	− 1	e 47·9	55·7
Algiers		86·8	320	12 58	0	23 45	+ 6	—	52·0
Zagreb		88·0	334	e 13 10	+ 5	—	—	—	—
La Plata		88·0	229	—	—	—	—	41·9	—
Venice		89·0	331	14 30?	+80	19 30?	−273	—	—
Vienna	Z.	89·8	335	13 9	− 6	—	—	—	—
Almeria		89·8	318	13 7	− 8	e 23 7	[−20]	—	—
Moncalieri		90·7	328	e 13 16	− 4	24 18	− 3	51·7	—
Granada		90·8	317	13 28	+ 8	23 47	[+14]	e 46·0	52·7
Malaga		90·9	317	13 13	− 8	23 21	[−12]	—	—
Innsbruck		91·0	331	e 13 9	−12	—	—	—	—
Tortosa	N.	91·1	321	—	—	—	—	e 46·5	52·9
Kucino		91·2	350	—	—	e 24 15	−11	41·5	—
San Fernando		91·8	315	—	—	25 38	+65	46·5	59·0
Zurich	Z.	92·2	330	i 13 22	− 6	—	—	—	—
Toledo		92·8	319	e 12 54	−37	e 23 14	[−31]	e 39·9	58·6
Strasbourg		93·5	330	12 30?	−65	—	—	—	—
Irkutsk		95·6	27	—	—	—	—	43·5	52·0
Pulkovo		96·3	348	—	—	—	—	e 49·5	57·9
Leningrad		96·5	348	—	—	—	—	e 48·5	57·7
Uccle		96·6	330	—	—	—	—	e 49·5	—
De Bilt		97·3	332	—	—	—	—	e 54·5	—
Sucre		103·6	235	18 52	?PR_1	—	—	52·0	56·8
La Paz		107·4	235	e 19 17	?PR_1	30 35	?	53·0	60·9
Ottawa	E.	142·5	302	—	—	—	—	e 76·5	—
Toronto	E.	145·1	299	—	—	—	—	77·8	—
Chicago	N.	151·2	296	—	—	—	—	—	84·9
Victoria	E.	165·6	1	—	—	—	—	90·3	105·1

Additional readings: Simla MN = +34·8m. Baku MN = +42·2m., MZ = +48·6m. Riverview MN = +39·4m.; all readings are given for 16d. Wellington eLN = +40·5m. Rocca di Papa iPEN = +12m.55s. Granada PS = +24m.37s. =S +15s. Kucino e = +23m.17s. =[S] −18s. San Fernando MN = +62·5m. Zurich reading has been diminished by 1h. Toledo MNW = +61·7m. Irkutsk MZ = +52·1m. Sucre PR_2 = +28m.30s. La Paz MN = +58·4m. Ottawa eLN = +74·5m. Toronto LN = +83·0m.

Mar. 15d. 7h. 59m. 36s. Epicentre 36°·1N. 137°·3E. (as on 1925 May 18d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	1·0	196	0 14	− 1	(0 21)	− 7	0·4	0·5
Osaka	2·1	218	0 39	− 6	(0 56)	− 2	0·9	1·2
Kobe	2·2	231	0 36	− 2	—	—	1·2	1·2
Sumoto	2·6	228	e 0 45	+ 4	(1 5)	− 7	1·1	1·4
Matuyama	4·4	240	e 1 11	+ 3	e 1 58	− 3	e 2·4	—

Additional readings: Osaka MN = +1·3m. Matuyama ePR = +1m.33s.

March 15d. Readings also at 0h. (Batavia, Malabar, and near Athens (2)), 3h. (Zurich, Strasbourg, Zagreb, De Bilt, Moncalieri, Rocca di Papa, and near Athens), 4h. (near Tacubaya), 7h. (La Paz), 8h. (near Athens), 9h. (Merida), 12h. (Athens), 19h. (Kobe and near Nagoya), 21h. (near Athens).

March 16d. 17h. 37m. 25s. Epicentre 16°·0S. 171°·0W. (as 1925 April 5d.).

$A = -\cdot949$, $B = -\cdot150$, $C = -\cdot276$; $D = -\cdot156$, $E = +\cdot988$; $G = +\cdot272$, $H = +\cdot043$, $K = -\cdot961$.

A depth of focus 0·020 has been assumed.

		Corr. for Focus	Δ	Az.	P.		O−C.	S.		O−C.	L.	M.
		°	°	°	m.	s.	s.	m.	s.	s.	m.	m.
Apia		+0·3	2·3	340	i 0	40	− 1	—		—	—	1·0
Wellington		−1·3	28·1	203	—		—	e 10	27	−10	—	—
Riverview		−1·7	38·3	235	e 7	39	+12	e 13	1	−17	e 15·7	21·0
Sydney		−1·7	38·3	235	—		—	13	5	−13	19·1	21·4
Honolulu	N.	−1·7	39·5	19	e 7	36	0	13	35	0	18·3	19·3
Manila		−2·6	73·6	291	e 11	35?	+12	—		—	—	—
Victoria		−2·6	77·1	30	21	53	?S	(21	53)	+33	36·2?	37·4
Zi-ka-wei		−2·7	80·1	307	12	6	+ 3	22	48	+55	—	—
Batavia		−2·7	80·7	266	i 12	13	+ 6	i 22	8	+ 8	—	—
La Paz		−2·9	97·3	109	—		—	25	55	+55	47·4	49·2
La Plata	N.	−2·9	98·7	130	—		—	—		—	56·6	—
Irkutsk		−2·9	99·5	321	e 13	40	−12	e 24	9	[−13]	42·6	52·0
Toronto		−2·9	102·1	48	—		—	—		—	e 51·3	—
Ottawa		−2·9	105·0	46	—		—	e 28	1	+105	54·6	—
Ekaterinburg		—	123·9	330	20	39	? PR_1	—		—	51·1	68·1
Leningrad		—	133·4	345	22	45	? PR_1	—		—	61·6	73·7
Pulkovo		—	133·6	345	22	45	? PR_1	e 31	47	?	64·6	75·1
Kucino		—	134·5	337	22	49	? PR_1	—		—	62·7	74·3
Upsala		—	135·7	354	—		—	—		—	e 75·6	—
Baku		—	137·1	313	e 19	25	[− 9]	—		—	58·6	74·1
Konigsberg		—	140·2	350	—		—	—		—	e 77·6	—
Hamburg		—	142·4	0	—		—	—		—	e 76·6	—
De Bilt		—	143·8	4	e 19	35	[−12]	—		—	e 77·6	79·2
Uccle		—	145·0	5	19	38	[−10]	—		—	e 69·6	—
Vienna	Z.	—	147·2	351	19	42	[− 9]	—		—	—	—
Strasbourg		—	147·4	2	e 19	40	[−12]	—		—	84·6	—
Budapest		—	147·5	347	e 19	35?	[−17]	—		—	—	—
Innsbruck	N.W.	—	148·7	357	i 19	49	[− 5]	—		—	—	—
Zurich	Z.	—	148·7	1	e 19	47	[− 7]	—		—	—	—
Zagreb		—	149·7	350	e 19	52	[− 3]	—		—	—	—
Puy de Dôme		—	149·8	9	e 19	53	[− 3]	—		—	—	—
Florence		—	152·2	356	19	51	[− 8]	—		—	—	—
Rocca di Papa		—	154·1	353	e 19	31	[−30]	—		—	—	—
Tortosa		—	154·1	15	e 19	53	[− 8]	—		—	75·6	85·0
San Fernando	E.	—	155·5	30	—		—	—		—	—	118·1
Granada		—	156·1	25	—		—	—		—	69·6	83·4

Additional readings: Riverview MN = +18·3m. Honolulu PR_1N = +8m.53s., eN = +12m.41s., SR_1N = +16m.23s. = SR_2 −19s., iLE = +16·8m., ME = +17·1m.; T_o = 17h.37m.15s. and 17h.37m.28s. Batavia i = +23m.8s. La Paz MN = +51·9m., all readings having been diminished by 1h. Irkutsk ePR_1 = +16m.35s.?, MN = +51·8m., MZ = +52·1m. Ottawa e = +33m.39s. = SR_1 +35s., eN = +44m.12s., eLN = +46·6m. Ekaterinburg e = +30m.29s., +32m.39s., and +37m.27s. = SR_1 −8s., i = +37m.33s., MN = +65·5m. Leningrad MNZ = +73·2m. Pulkovo MZ = +70·8m., MN = +73·0m. Kucino e = +44m.17s., MN = +73·7m. Baku e = +22m.59s. = PR_1 +43s., +34m.17s., and +40m.17s. = SR_1 +0s., MZ = +75·9m., MN = +86·8m. De Bilt eN = +69m.35s.? Strasbourg i = +19m.45s., ePN = +19m.47s., ePE = +19m.51s., i = +20m.6s. Innsbruck ePNE = +19m.50s. Zagreb i = +20m.7s. Rocca di Papa ePN = +19m.42s. Tortosa ePN = +20m.7s. San Fernando MN = +96·1m.

March 16d. Readings also at 0h. (Amboina), 1h. (Ekaterinburg and near Athens), 2h. (near Nagasaki), 3h. (Kucino, Ekaterinburg, San Fernando, Zagreb, and near Rocca di Papa and near Athens (2)), 9h. (near Strasbourg and Zurich), 13h. (Adelaide), 14h. (Leningrad and Ekaterinburg), 15h. (Pulkovo), 16h. (Ekaterinburg), 17h. (Sucre), 20h. (Ottawa and Merida), 21h. (Ekaterinburg and Toronto).

March 17d. 4h. 36m. 40s. Epicentre 30°·0N. 129°·0E.

A = −·545, B = +·673, C = +·500; D = +·777, E = +·629;
G = −·315, H = +·389, K = −·866.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		2·8	15	0 14	−30	1 16	− 1	1·7	2·2
Hukuoka		3·8	18	0 49	−10	—	—	3·0	3·4
Sumoto		6·5	48	1 58	+19	2 43	−14	4·5	—
Kobe		7·0	46	1 34	−12	—	—	e 4·7	7·0
Osaka		7·2	48	2 30	+41	—	—	4·5	5·4
Taihoku	E.	8·3	235	e 3 29	?S	(e 3 29)	−16	—	—
Hong Kong		15·3	243	6 30	?S	(6 30)	− 9	—	9·8
Manila		17·1	207	e 4 11	+ 5	—	—	—	—
Phu-Lien		22·2	251	—	—	e 9 12	+ 3	13·3	15·8
Irkutsk		28·7	328	e 6 15	0	e 11 9	− 3	15·3	19·4
Simla	E.	45·0	285	—	—	—	—	26·8	—
Bombay		51·8	273	—	—	—	—	e 26·3	—
Ekaterinburg		53·6	320	—	—	—	—	24·8	30·8
Baku		63·4	303	e 10 20	−14	e 19 15	+ 9	33·3	40·6
Kucino		66·2	321	—	—	—	—	34·7	37·6
Leningrad		68·5	328	—	—	—	—	e 34·8	45·7
Pulkovo		68·6	328	—	—	—	—	e 35·3	46·2
Upsala		74·1	330	—	—	—	—	e 43·3	—
Konigsberg		75·4	325	—	—	—	—	e 41·3	—
Hamburg		81·2	329	—	—	—	—	e 46·3	—
Cheb		82·3	324	—	—	—	—	e 44·3	51·3
De Bilt	E.	84·4	329	—	—	—	—	e 47·3	55·9
	N.	84·4	329	—	—	—	—	e 46·3	49·6
Uccle		85·6	329	—	—	—	—	e 46·3	—
Strasbourg		85·6	325	—	—	—	—	e 47·3	—
Florence		86·8	320	—	—	—	—	45·3	46·3
Tortosa	N.	95·1	324	—	—	—	—	e 50·3	—
Granada		99·5	323	—	—	e 44 20?	?L	e 52·5	56·2
Ottawa		101·3	16	—	—	—	—	e 60·3	—
San Fernando	E.	101·4	325	—	—	—	—	—	59·3
Toronto	N.	101·9	20	—	—	—	—	e 60·5	—

Additional readings and notes: Nagasaki P = +33s., S = +1m.27s., all readings having been diminished by 5m. Hukuoka MN = +4·8m. Sumoto SR_1 = +3m.29s. Osaka MN = +9·0m. Irkutsk readings have been diminished by 30m. Simla MN = +25·9m. Ekaterinburg MZ = +37·5m. Baku MZ = +40·3m., MN = +43·1m. Leningrad MN = +40·0m., MZ = +45·8m. Pulkovo MN = +40·2m., MZ = +45·0m. Strasbourg eL = +53·3m. San Fernando MN = +57·8m. Toronto reading has been increased by 1h.

March 17d. 11h. 53m. 30s. Epicentre **13°·0N. 83°·0W.**
(as on 1919 Oct. 28d.).

A = +·119, B = −·967, C = +·225; D = −·993, E = −·122;
G = +·027, H = −·223, K = −·974.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	E.	5·3	139	1 10	−12	1 58	−27	2·1	4·4
	N.	5·3	139	1 5	−17	1 57	−28	2·0	3·1
Merida		10·2	323	3 32	+59	—	—	5·6	5·7
Port au Prince		11·7	60	e 2 52	− 3	5 16	+ 4	6·6	7·3
Oaxaca		13·9	289	3 46	+21	6 51	+45	7·4	8·2
Vera Cruz		14·1	298	3 32	+ 5	6 32	+22	7·4	9·6
Tacubaya		16·8	294	4 2	0	7 3	−10	7·5	10·2
San Juan		17·1	70	e 4 7	+ 1	e 7 9	−11	9·3	12·5
Loyola	E.	18·2	340	e 4 43	+24	8 10	+26	9·1	19·0
	N.	18·2	340	e 4 32	+13	8 15	+31	9·1	11·1
Guadalajara		21·1	294	5 27	+33	9 42	+56	10·9	12·5
Mazatlan		24·5	298	4 52	−41	9 30	−24	12·0	—
Cheltenham	E.	26·3	11	5 58	+ 7	e 10 27	− 1	13·5	16·2
	N.	26·3	11	5 54	+ 3	e 10 27	− 1	13·6	15·8

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Georgetown	E.	26·4	10	e 5 52	0	i 10 33	+ 3	e 12·0	15·8
	N.	26·4	10	e 5 53	+ 1	i 10 33	+ 3	e 11·8	18·4
St. Louis	N.	26·4	347	e 5 43	− 9	i 10 34	+ 4	e 14·7	16·0
Fordham		29·0	14	e 6 19	+ 1	11 12	− 5	13·4	19·1
Chicago	N.	29·1	353	6 22	+ 3	11 11	− 8	15·9	16·6
Ann Arbor		29·3	359	e 6 6	−15	i 11 6	−16	e 14·1	14·7
Ithaca		29·9	10	6 25	− 2	11 24	− 8	14·9	17·9
Toronto	E.	30·8	5	—	—	i 11 37	−11	13·6	17·8
	N.	30·8	5	e 6 29	− 7	i 11 29	−19	13·6	18·9
Harvard		31·1	17	—	—	11 36	−17	14·9	21·6
Tucson	E.	32·0	311	e 6 46	− 1	12 8	0	18·7	20·8
La Paz	E.	33·0	153	i 6 41	−15	11 47	−37	15·1	18·9
	N.	33·0	153	i 6 43	−13	11 41	−43	15·1	21·7
Ottawa		33·0	9	i 6 51	− 5	i 12 10	−14	e 16·6	19·2
Denver	N.	33·0	329	8 0	+64	13 0	+36	20·5	—
Halifax		35·7	23	i 8 18	+59	e 13 10	+ 4	e 16·4	23·0
Ste. Anne		36·0	15	e 7 21	− 1	i 13 0	−10	e 17·0	21·8
Sucre		36·5	151	(7 10)	−16	i 12 48	−29	17·4	20·2
Santa Clara	E.	42·4	312	e 8 18	+ 4	e 14 21	−19	e 16·4	30·1
Berkeley	E.	42·9	312	e 10 5	+108	14 37	−10	e 22·2	26·0
	N.	42·9	312	e 10 5	+108	14 39	− 8	e 22·4	26·4
Victoria	E.	48·6	325	8 50	− 8	16 0	− 1	23·5	33·5
	N.	48·6	325	8 50	− 8	16 3	+ 2	23·5	33·8
La Plata		53·5	155	9 27	− 3	16 32	−31	26·1	—
Sitka	E.	59·2	330	—	—	—	—	29·4	40·5
	N.	59·2	330	—	—	—	—	29·6	37·5
Rio Tinto		71·4	54	23 30?	?	—	—	—	59·5
Honolulu	E.	71·6	288	—	—	e 21 30	+45	33·3	38·8
	N.	71·6	288	—	—	e 21 48	+63	30·7	—
San Fernando		71·8	55	11 38	+10	i 21 6	+18	30·0	33·5
Malaga		73·1	54	11 32	− 5	21 18	+15	27·1	32·5
Toledo		73·3	51	e 11 38	0	e 21 16	+10	e 30·8	33·6
Bidston		73·6	39	11 55?	+15	21 17	+ 8	30·9	48·7
Edinburgh		73·6	35	—	—	i 21 24	+15	35·5	47·4
Granada		73·8	54	i 11 45	+ 4	i 21 25	+13	31·9	36·5
Stonyhurst		74·0	37	e 11 46	+ 4	i 21 24	+10	36·5	44·0
West Bromwich		74·3	39	—	—	20 50	−28	—	46·5
Oxford		74·7	39	—	—	i 21 27	+ 5	35·8	39·1
Almeria		74·8	54	i 11 52	+ 4	i 21 24	0	33·4	35·9
Alicante		76·1	52	11 42	−14	21 33	− 5	e 34·0	35·8
Tortosa	E.	76·7	50	12 4	+ 5	21 52	+ 7	—	—
	N.	76·7	50	12 3	+ 4	21 58	+13	32·9	40·6
Paris		77·3	42	e 12 3	0	e 21 54	+ 2	30·5	43·5
Barcelona		77·8	50	—	—	e 21 51	− 7	e 33·5	47·5
Bergen		77·9	30	i 12 0	− 6	e 22 30?	+31	e 34·5	—
Puy de Dôme		78·0	45	e 12 12	+ 5	e 22 8	+ 8	37·5	—
Uccle		78·3	41	e 12 8	− 1	i 22 11	+ 7	32·5	42·6
De Bilt		78·6	39	12 14	+ 3	22 18	+11	e 37·5	42·4
Algiers		79·2	53	12 12	− 2	22 8	− 6	33·5	36·5
Besançon		79·8	43	e 12 21	+ 3	22 33	+12	27·5	—
Strasbourg		80·8	42	e 12 19	− 5	i 22 43	+10	36·5	44·5
Hamburg		81·3	37	e 12 29	+ 2	e 22 38	0	e 38·5	49·5
Moncalieri		81·4	46	12 26	− 1	22 36	− 3	31·4	47·2
Zurich	Z.	81·6	44	e 12 22	− 6	—	—	—	—
Hohenheim		81·7	40	e 12 30	+ 1	e 22 40	− 3	36·5	47·5
Innsbruck		83·4	42	e 12 38	0	e 22 54	− 7	—	—
Cheb		83·5	40	e 12 55	+16	e 22 51	−12	e 39·5	49·0
Upsala	E.	84·0	29	e 12 42	0	e 23 14	+ 6	39·5	52·6
Florence		84·0	47	12 30	−12	23 10	+ 2	36·5	43·5
Rocca di Papa		85·6	48	i 12 50	− 1	e 23 23	− 3	e 36·3	40·9
Graz		86·2	41	e 12 49	− 5	e 23 22	−10	39·5	46·3
Vienna		86·4	40	e 12 47	− 8	23 25	− 9	e 39·5	51·5
Zagreb		86·8	43	e 12 58	0	e 23 38	− 1	e 45·5	—
Konigsberg		87·0	34	e 13 30	+31	23 51	+10	e 48·5	49·5
Pompeii		87·1	49	e 13 30?	+30	—	—	—	—
Budapest		88·4	40	—	—	e 23 0	[−18]	52·4	57·6
Leningrad		89·8	27	e 13 8	− 7	24 15	+ 3	43·0	52·4
Pulkovo		89·9	27	13 10	− 5	24 16	+ 3	42·5	52·7
Apia		91·9	258	e 19 50	?PR_2	—	—	46·5	49·5
Athens		94·7	49	e 13 18	−24	24 1	[+ 6]	40·6	—
Kucino		95·4	29	—	—	e 25 18	+ 8	46·6	49·6
Makeyevka		99·7	35	—	—	e 24 49	[+26]	48·5	60·8
Ekaterinburg		104·0	20	e 18 35	?PR_1	—	—	48·5	57·1
Piatigorsk		104·8	37	—	—	—	—	—	43·5

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Capetown		106·6	122	—	—	25 16	[+21]	—	57·5
Wellington		107·7	230	—	—	28 17	+70	50·4	56·1
Baku		111·0	37	e 19 24	?PR_1	e 28 59	+82	50·5	78·6
Irkutsk		114·4	355	e 48 16	?L	—	—	76·5	91·8
Riverview		126·8	238	—	—	e 38 12	?SR_1	e 61·3	73·8
Zi-ka-wei		130·0	331	e 21 14	?PR_1	38 13	?SR_1	68·4	82·3
Simla	E.	131·9	23	e 44 48	?SR_2	—	—	68·4	71·8
Adelaide		136·6	232	—	—	e 66 10	?L	75·4	85·9
Taihoku	E.	137·6	329	—	—	—	—	e 64·4	—
Bombay		140·2	37	e 19 30	[− 9]	—	—	—	—
Hong Kong		140·9	334	—	—	—	—	—	91·2
Manila		143·6	320	e 20 4	[+18]	—	—	49·5	—
Hyderabad		144·5	31	20 2	[+14]	—	—	66·0	85·0
Phu-Lien		144·9	245	—	—	—	—	—	79·7
Kodaikanal		149·7	41	51 54	?	—	—	(80·6)	99·6
Colombo		153·8	41	32 50	?	—	—	102·0	104·4
Batavia		168·2	304	—	—	e 31 1	?	e 86·6	—

Additional readings and notes: Port au Prince MNW = +6·7m. San Juan iPN = +4m.14s., ePE = +4m.15s., iSN = +7m.35s. = SR_1 − 8s., eSE = +7m.39s. = SR_1 − 4s. Loyola PR_1N = +4m.53s., PR_2N = +5m.0s., PR_3N = +5m.5s., iN = +5m.35s., iEN = +6m.1s., and +8m.22s. = SR_1 +10s., SR_1N = +8m.58s. Cheltenham PR_1N = +6m.40s., PR_1E = +6m.46s., eN = +9m.36s., iS = +10m.51s., SR_1E = +11m.50s., SR_1N = +12m.7s.; T_e = 11h.53m.27s. and 11h.53m.41s. Georgetown PR_1N = +6m.31s., PR_2N = +6m.42s. St. Louis iPN = +5m.52s., eSE = +10m.36s., ME = +16·1m. Fordham P_cP = +9m.48s., SR_1 = +12m.42s.; T_e = 10h.53m.41s. Chicago PR_1N = +7m.0s., eN = +8m.35s., +12m.56s. = SR_1 +14s., +14m.11s., iN = +11m.21s. and +12m.37s. = SR_1 − 5s.; T_e = 11h.53m.32s. and 11h.53m.48s. Ann Arbor SR_1 = +12m.30s., LN = +14·2m., MN = +19·3m.; T_e = 11h.53m.12s. Ithaca i = +13m.27s. = SR_2 +3s. Harvard PR_1E = +7m.32s., PR_1N = +7m.37s., SR_1E = +13m.42s., SR_1N = +13m.58s., MN = +20·5m., and several other e readings. Tucson PR_1 = +7m.48s., eSR_1 = +13m.29s., and several eE readings; T_e = 11h.53m.14s. and 11h.53m.29s. La Paz iPSN = +12m.2s.; T_e = 11h.53m.44s. Ottawa e? = +6m.23s., iPR_2N = +7m.50s. = PR_1 +0s., iSR_1 = +13m.37s., iSR_2E = +14m.3s. = SR_2 − 11s., MN = +19·4m.; T_e = 11h.53m.38s. Ste. Anne iPR_2 = +8m.30s. = PR_1 − 4s., eSR_1 = +14m.43s.; T_e = 11h.53m.44s. Sucre iPR_1 = +7m.10s. = P − 16s., PR_1 = +8m.12s., i = +9m.50s. and +13m.54s., SR_1 = +14m.48s., SR_2 = +16m.9s.; T_e = 11h.53m.35s. Santa Clara eE = +9m.2s. and +9m.35s. = SR_1 − 15s. Honolulu eN = +23m.6s., eE = +24m.0s. Toledo iPNW = +11m.44s., iS = +21m.24s. = [S] − 12s. Oxford SR_1 = +26m.31s. Almeria MN = +34·4m. Alicante MN = +35·6m. Tortosa PZ = +11m.57s. (O − C. = − 2s.). Paris MN = +35·5m. Barcelona MN = +37·1m. Bergen readings have all been diminished by 5m. Uccle MN = +36·6m. De Bilt eLN = +34·5m., MN = +37·3m., MZ = +48·9m. Strasbourg eP +12m.21s. and +12m.40s., PS = +23m.32s., SR_1 = +28m.22s., SR_2 = +31m.59s., MN = +37·5m. Hamburg iSE = +22m.50s., iSN = +22m.51s., SR_2 = +31m.36s., MN = +45·5m., MZ = +46·5m. Moncalieri MN = +39·0m. Innsbruck iNW = +13m.57s. Upsala MN = +42·8m. Rocca di Papa ePE = +12m.54s., S = +23m.31s. Graz SR_2 = +29m.20s. Vienna iPZ = +12m.55s., PR_1 = +16m.17s., PPS = +24m.46s., iE = +25m.5s., SR_1 = +29m.24s., SR_2 = +33m.22s. Konigsberg PR_1 = +17m.36s., PPS = +26m.36s., e = +28m.30s., SR_2 = +37m.30s. Leningrad e = +23m.45s. = [S] +18s. Pulkovo i = +23m.45s. = [S] +18s., PS = +25m.9s., SR_2 = +34m.54s., MN = +47·4m., MZ = +52·8m. Apia e = +7m.33s. Kucino e = +27m.17s., and +29m.36s., MN = +50·4m. Makeyevka ePR_1 = +18m.24s., e = +27m.10s., and +30m.2s., MZ = +59·9m. Ekaterinburg i = +18m.36s., +25m.3s. = [S] +20s., +33m.37s. = SR_1 +9s., and +40m.40s., e = +27m.48s. and +37m.45s., MN = +58·1m., MZ = +68·2m. Baku MN = +74·6m., MZ = +80·8m. Irkutsk PS = +59m.23s., MN = +92·9m., MZ = +96·7m. Riverview MN = +104·4m. Zi-ka-wei PR_1 = +22m.44s., PR_2 = +24m.52s.; all readings have been increased by 1h. Simla ePN = +41m.0s., MN = +84·1m. Adelaide SR_1 = +69m.57s. Phu-Lien MN = +89·4m. Kodaikanal L = +92·9m.

March 17d. Readings also at 5h. (Baku, Ekaterinburg and near La Paz), 6h. (Irkutsk and near Sumoto), 7h. (Merida and near Taihoku), 8h. (Irkutsk), 15h. (Santa Clara), 16h. (Santa Clara (2), Toledo, near Granada, and Almeria), 17h. (Agana), 18h. (Santa Clara), 19h. (Rio Tinto and Tacubaya), 21h. and 22h. (Santa Clara), 23h. (Mostar and Sarajevo).

Mar. 18d. 6h. 31m. 45s. Epicentre 35°·0N. 69°·0E. (as on 1925 Mar. 8d. and see 1926 Mar. 22d.).

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla		7·9	117	2 21	+21	e 3 9	−25	—	—
Baku		16·0	296	i 3 45	− 7	e 6 57	+ 2	c 13·8	—
Bombay		16·5	167	e 6 15	?S	(e 6 15)	−52	—	—
Hyderabad		19·5	152	e 6 22	+107	8 22	+ 9	9·4	11·6
Calcutta	N.	21·0	122	6 56	+123	—	—	—	—
Ekaterinburg		22·5	348	e 4 59	−12	e 9 44	+29	11·8	14·0
Kucino		29·7	324	—	—	—	—	e 17·2	—
Irkutsk		30·4	42	e 7 1	+29	—	—	16·2	—

Additional readings: Calcutta PE = +7m.0s. Ekaterinburg MNZ = +16·0m.; S is given as e simply.

March 18d. 14h. 6m. 0s. Epicentre 35°·0N. 29°·5E.

A = +·713, B = +·403, C = +·574; D = +·492, E = −·870; G = +·499, H = +·282, K = −·819.

The observations of S can be divided into two sets separated by about 25sec. There may have been 2 shocks.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan		5·4	163	i 1 47	+24	—	—	—	9·0
Athens		5·5	304	i 1 27	+ 2	2 26	− 5	2·6	3·3
Belgrade		12·0	327	e 2 57	− 2	—	—	—	7·0
Mostar		12·2	316	i 3 6	+ 4	i 6 16	+52	(i 6·3)	—
Sarajevo		12·3	319	e 3 2	− 1	6 15	+49	(6·2)	7·8
Pompeii		13·1	300	e 4 0?	+46	e 8 22	?L	(8·4)	11·2
Naples		13·3	300	e 3 28	+11	e 4 28	−83	6·4	10·4
Pjatigorsk		13·8	45	3 30	+ 7	5 58	− 5	—	9·7
Makeyevka		14·5	23	i 3 21	−12	i 6 2	−18	6·5	11·3
Rocca di Papa		14·7	302	e 3 34	− 1	i 6 34	+ 9	i 9·0	9·2
Budapest		14·7	331	3 30	− 5	6 21	− 4	—	11·2
Zagreb		14·8	321	e 3 32	− 4	e 6 7	−20	—	8·1
Lemberg		15·3	347	e 3 36	− 7	e 6 36	− 3	e 8·5	10·5
Laibach		15·8	319	e 3 47	− 2	—	—	—	7·9
Graz		16·0	323	i 3 48	− 4	i 6 57	+ 2	7·4	10·4
Vienna		16·4	328	e 3 53	− 4	7 16	+12	—	11·3
Florence		16·5	308	i 4 7	+ 8	7 12	+ 5	9·0	10·0
Venice	E.	16·6	314	3 24	−36	5 3	−126	—	—
	N.	16·6	314	3 16	−44	5 6	−123	—	12·8
Baku		17·0	65	i 4 7	+ 2	i 7 18	0	—	—
Innsbruck	N.E.	18·2	318	i 4 20	+ 1	e 7 42	− 2	—	8·2
	N.W.	18·2	318	i 4 19	0	i 7 52	+ 8	—	12·4
Moncalieri		19·3	308	4 41	+ 8	8 24	+16	10·0	15·0
Cheb		19·5	326	i 4 33	− 2	i 8 34	+21	—	12·3
Ravensburg		19·5	317	e 4 36	+ 1	i 8 30	+17	e 11·0	—
Zurich		19·9	315	i 4 35	− 5	e 8 12	− 9	—	—
Hohenheim		20·3	319	e 4 42	− 3	i 8 [illegible]	+10	e 11·0	13·2
Marseilles		20·4	301	4 35	−11	8 27	− 5	—	10·0
Konigsberg	E.	20·8	345	e 4 53	+ 2	i 9 6	+26	e 10·1	13·1
	N.	20·8	345	e 4 52	+ 1	i 8 47	+ 7	e 11·1	14·1
	Z.	20·8	345	e 4 52	+ 1	i 9 12	+32	i 11·5	13·0
Strasbourg		21·0	317	e 4 46	− 7	i 8 52	+ 8	10·0	14·0
Besançon		21·3	312	4 59	+ 2	8 57	+ 7	12·0	13·0
Algiers		21·4	283	5 0	+ 2	9 13	+20	10·7	24·5
Kucino		21·5	13	4 50	− 9	8 32	−23	9·9	15·2
Barcelona		22·3	295	i 5 13	+ 4	i 9 21	+10	e 10·1	14·6
Puy de Dôme		22·8	307	e 5 4	−11	i 9 24	+ 3	13·0	15·7
Hamburg		23·1	330	e 5 9	− 9	i 9 18	− 9	—	—
Tortosa	E.	23·4	293	5 17	− 4	9 59	+26	11·6	14·0?
	N.	23·4	293	e 5 20	− 1	9 57	+24	11·5	16·8
Uccle		24·0	319	e 5 18	−10	i 9 39	− 5	12·0	16·0
Paris		24·1	313	e 5 21	− 8	e 9 49	+ 3	12·0	14·0
Alicante		24·2	287	i 5 50	+20	i 10 14	+26	—	17·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		24·3	322	5 32	+ 1	9 48	− 2	12·0	16·4
Pulkovo		24·7	1	5 21	−14	9 42	−15	11·2	19·4
Leningrad		25·0	1	i 5 24	−14	i 9 46	−17	14·0	19·1
Almeria		25·7	283	5 36	− 9	i 10 17	+ 1	14·4	15·1
Upsala		26·0	346	e 5 35	−13	i 10 1	−21	e 12·0	15·0
Granada		26·7	284	i 5 54	− 1	10 42	+ 7	16·3	21·6
Toledo		26·9	290	e 5 47	−10	i 10 33	− 6	—	16·8
Kew		26·9	317	6 2	+ 5	10 36	− 3	—	—
Malaga		27·4	284	5 54	− 8	i 11 8	+20	15·3	24·7
Oxford		27·6	317	i 6 3	− 1	i 11 7	+15	16·5	18·3
West Bromwich		28·3	318	6 12	+ 1	10 46	−18	—	—
San Fernando		28·8	283	6 27	+11	i 11 27	+14	16·5	21·0
Rio Tinto		29·0	286	10 0?	?	—	—	—	26·0
Stonyhurst		29·2	320	6 17	− 3	11 25	+ 5	15·0	17·2
Bergen		29·8	336	i 6 0	−26	i 11 5	−26	i 16·6	—
Ekaterinburg		30·3	34	i 6 18	−13	i 11 13	−26	—	—
Edinburgh		30·5	324	6 32	− 1	11 47	+ 4	—	18·9
Lisbon		30·9	289	6 38	+ 1	11 44	− 6	15·1	19·5
Simla	E.	39·8	82	7 54	+ 1	13 48	−15	24·7	27·3
	N.	39·8	82	8 6	+13	14 0	− 3	24·0	27·5
Dehra Dun		40·7	83	14 10	?S	(14 10)	− 7	27·1	27·7
Bombay		41·5	101	7 56	−11	14 18	−10	21·3	32·1
Azores		43·9	290	12 12	?	—	—	—	27·9
Hyderabad		46·8	99	8 44	− 2	15 29	− 9	22·7	32·6
Kodaikanal		50·1	108	16 6	?S	(16 6)	−14	29·1	39·8
Calcutta	N.	52·3	87	9 15	− 7	16 34	−14	—	—
Colombo		54·0	110	9 50	+17	17 25	+16	33·4	36·5
Irkutsk		54·2	47	i 9 32	− 2	16 55	−16	26·0	33·6
Johannesburg		61·2	182	10 48	+28	19 18	+40	35·0	40·0
Phu-Lien		68·0	80	e 11 11	+ 7	i 20 5	+ 3	34·0	43·0
Halifax		68·2	310	i 11 23	+18	i 20 15	+11	e 35·0	39·0
Cape Town		69·7	190	11 51	+36	20 58	+36	37·7	44·4
Ste. Anne		70·7	315	e 11 47	+26	i 20 43	+ 9	e 34·0	38·0
Hong Kong		73·0	75	12 5	+29	21 7	+ 5	36·0	—
Harvard		74·0	311	i 11 59	+17	21 29	+15	36·6	41·0
Ottawa		75·1	316	i 12 5	+15	i 21 41	+14	e 34·8	41·4
Fordham		76·5	311	e 12 0	+ 2	i 21 58	+15	36·6	42·3
Ithaca		77·3	314	12 15	+12	e 21 46	− 6	35·0	47·7
Taihoku	E.	77·5	68	e 8 50	?	—	—	18·5	38·1
Toronto		78·2	316	i 12 20	+12	i 22 14	+12	36·8	48·5
Ootomari		78·7	40	12 15	+ 4	(22 10)	+ 2	22·2	46·4
Hukuoka		79·1	56	—	—	—	—	28·5	—
Georgetown	E.	79·2	311	i 12 33	+19	e 22 32	+18	e 37·4	46·7
	N.	79·2	311	e 12 34	+20	i 22 33	+19	39·5	—
Ann Arbor		81·5	317	i 12 30	+ 2	i 22 42	+ 1	e 39·7	47·7
Kobe		81·7	53	—	—	—	—	—	56·0
Osaka		81·9	53	12 55	+25	22 54	+ 9	35·0	56·1
Manila		82·9	77	i 13 0	+25	—	—	38·5	—
Batavia		83·3	103	i 12 42	+ 4	i 23 4	+ 4	38·7	54·7
Chicago	N.	84·0	318	—	—	e 33 6	?SR$_3$	e 37·2	48·7
Malabar		84·6	103	12 50	+ 4	i 23 13	− 2	—	—
St. Louis	N.	87·6	317	e 13 10	+ 7	i 23 34	−14	e 41·0	50·8
Spokane	N.	92·1	339	e 33 35	+ 7	i 24 30	− 6	47·5	58·2
Victoria		93·2	342	13 38	+ 5	24 9	[+22]	41·5	53·3
Loyola		93·7	310	—	—	—	—	e 44·0	—
Berkeley		102·5	338	e 18 19	?PR$_1$	—	—	e 49·2	—
Sucre		104·5	257	e 15 0	+28	i 27 12	+34	50·4	60·9
Perth		105·0	119	37 0?	?	—	—	—	—
La Paz		105·5	261	i 15 2	+25	27 22	+35	50·0	57·8
La Plata		107·3	239	19 14	?PR$_1$	—	—	48·8	—
Honolulu	N.	123·2	7	19 0	[− 1]	—	—	e 61·7	72·0
Adelaide		123·3	110	—	—	i 41 14	?	e 49·2	88·2
Riverview		132·6	103	e 15 20	?	—	—	e 57·1	77·0
Sydney		132·6	103	—	—	67 30	?L	76·2	81·2
Apia		151·4	48	20 5	[+ 7]	e 27 56	?PR$_2$	—	115·0
Wellington		152·2	114	i 20 28	[+29]	e 43 28	?SR$_1$	76·6	81·7

Additional readings: Athens P = +1m.41s., MN = +3·0m. Belgrade iPN = +3m.2s., iPE = +3m.3s., iN = +3m.13s., +4m.32s., and +4m.43s., iE = +3m.15s. and +4m.30s., iEN = +4m.46s., SR$_1$N = +5m.59s., SR$_1$E = +6m.1s. Mostar iP = +3m.22s. and many other i readings. Sarajevo P = +3m.14s. Piatigorsk i = +3m.41s. and +4m.50s., iS = +6m.3s., MN = +10·4m. Makeyevka MN = +8·2m., MZ = +11·2m. Rocca di Papa P = +3m.40s. Budapest MN = +10·2m. Vienna iP = +3m.55s., PR$_1$ = +4m.9s., PR$_2$Z = +4m.16s., MN = +9·9m., and many other i readings.

Continued on next page.

Laibach ePN = +3m.50s., iP = +3m.56s., and +3m.58s., iSR_1E = +6m.20s., iSR_1N = +6m.29s., and several other i readings. Innsbruck PR_1 = +4m.28s. Moncalieri MN = +12·0m. Ravensburg iP = +4m.48s. Zurich PR_1 = +4m.48s., SR_1 = +8m.44s. Hohenheim iP = +4m.52s., iSR_1 = +9m.18s., MN = +16·0m. Konigsberg iPZ = +4m.59s., iPN = +5m.7s., iE = +5m.12s., iZ = +6m.6s., and +10m.30s., eN = +7m.6s., SR_1? = +9m.33s. Strasbourg iP = +4m.49s., eP = +4m.53s. and +4m.55s., iPR_1 = +5m.0s., PR_2 = +5m.25s. and +5m.30s., SR_1 = +9m.30s., MN = +12·5m., epicentre 36°·0N, 29°·0E. Algiers iP = +5m.13s. Kucino P = +5m.12s. = PR_1 PR_1 − 9s., MN = +14·8m. Barcelona MN = +15·0m. Puy de Dôme i = +5m.18s. Hamburg iPZ = +5m.22s., iSZ = +9m.29s. Uccle iP = +5m.32s., MN = +14·7m. Paris MN = +13·0m. Alicante MN = +15·4m. De Bilt MN = +15·0m. Pulkovo MZ = +20·2m., MN = +21·1m. Leningrad i = +9m.52s., MZ = +15·8m., MN = +16·0m. Almeria iP = +5m.49s., MN = +16·9m. Upsala iP = +5m.50s., MN = +17·1m. Toledo iPZ = +6m.3s., PR_1 = +6m.25s., PR_1NE = +7m.23s., SR_1 = +11m.45s., MNW = +19·6m. San Fernando MN = +20·0m. Bergen iP = +3m.50s. Ekaterinburg i = +6m.30s. Dehra Dun S = +21m.0s. Bombay PR_1 = +9m.56s., SR_1 = +17m.24s. Phu-Lien MN = +45·5m. Halifax eSR_2N = +28m.0s.? ; T_0 = 14h.6m.31s. Harvard iPS = +21m.45s., SR_1E = +26m.48s., MN = +41·7m. and several e readings ; T_0 = 14h.6m.28s. and 14h.6m.36s. Ottawa iSR_1E = +27m.12s., MN = +42·5m. ; T_0 = 14h.6m.27s. Fordham e = +13m.0s., PR_1 = +15m.10s., PS = +22m.45s. = [S] +46s., MN = +42·0m. ; T_0 = 14h.6m.7s. Toronto iSN = +22m.16s., SR_1E = +28m.8s., MN = +45·6m ; T_0 = 14h.6m.24s. Ootomari S = +18m.35s. = PR_2 +8s. Chicago eN = +35m.30s. = SR_2 +34s. Ann Arbor ePR_2 = +18m.6s., eSR_1 = +28m.36s., iSR_2 = +32m.18s., eLN = +39·9m., MN = +47·4m. Spokane eSR_1N = +30m.48s. Victoria MN = +58·4m. ; T_0 = 14h.7m.5s. Berkeley eE = +18m.29s. = PR_1 +0s., eLN = +54·0m. and several other e readings. Sucre i = +18m.35s., PR_1 = +19m.12s., PR_2 = +20m.54s., PS = +28m.30s., SR_1 = +33m.34s., SR_2 = +35m.42s. ; T_0 = 14h.6m.47s. La Paz PR_1 = +19m.18s., PR_2 = +25m.21s. = [S] +31s., SR_1 = +34m.25s., SR_2 = +41m.50s., LN = +52·0m., MN = +65·8m. ; T_0 = 14h.6m.49s. Honolulu ePR_1N = +20m.30s., SPSN = +26m.12s. = PR_2 − 12s., ePSN = +31m.38s.?, SR_1N = +37m.42s., eLE = +66·5m., ME = +67·5m. Adelaide MN = +67·6m. Riverview MN = +61·3m., MZ = +78·4m. Wellington iPE = +21m.54s. and +22m.23s., PR_1N = +30m.43s., PR_1E = +30m.46s., SR_1N = +54m.38s., SR_2N = +63m.20s., eLN = +66·4m., MN = +102·3m.

March 18d. 17h. 52m. 44s. Epicentre 35°·5N. 29°·0E. (as on 1925 April 15d.).

A = +·712, B = +·395, C = +·581 ; D = +·485, E = −·875 ;
G = +·508, H = +·282, K = −·814.

The evidence is emphatically in favour of a sensible difference between this epicentre and that of 14h. It may be that the difference (of some 0°·5) is due to a deeper focus for this shock, but in the absence of observations at distant stations it has been ascribed to displacement along the earth's surface.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	4·9	302	1 25	+ 9	2 24	+10	e 2·6	4·4
Helwan	5·9	160	1 46	+15	2 49	+ 8	—	—
Belgrade	11·4	328	2 52	+ 2	e 6 10	?L	(e 6·2)	7·0
Pompeii	12·5	299	e 4 16?	+70	—	—	—	—
Naples	12·8	299	e 3 51	+41	—	—	—	—
Piatigorsk	13·7	48	e 3 1	−21	i 5 44	−17	—	8·3
Budapest	14·1	332	e 3 16?	−11	—	—	—	8·4
Zagreb	14·2	320	e 3 42	+13	—	—	—	—
Rocca di Papa z.	14·2	301	e 3 34	+ 5	e 7 44	+91	(e 7·7)	—
Makeyevka	14·2	25	3 18	−11	5 36	−37	6·6	8·9
Lemberg	14·8	347	e 3 28	− 8	—	—	—	8·9
Graz	15·3	323	e 3 43	0	e 6 36	− 3	7·2	10·5
Vienna	15·8	328	e 3 46	− 3	6 45	− 5	i 8·6	11·1
Florence E.	15·9	307	e 3 56	+ 5	—	—	—	11·9
z.	15·9	307	4 6	+15	8 16	?L	(8·3)	11·8
Venice	16·0	313	e 3 47	− 5	—	—	—	—
Baku	17·1	67	e 4 4	− 2	i 7 14	− 6	9·3	11·5
Innsbruck	17·6	318	e 4 10	− 2	—	—	—	—
Moncalieri	18·7	307	e 4 36	+11	8 11	+16	12·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ravensburg		18·9	316	e 4 46	+18	e 9 2	?L	(e 9·0)	—
Cheb		18·9	326	e 4 28	0	e 8 0	0	—	12·3
Zurich		19·3	314	e 4 31	− 2	e 8 7	− 1	—	—
Hohenheim		19·6	319	e 4 34	− 2	e 8 18	+ 3	11·3	—
Konigsberg	N.	20·2	346	i 4 50	+ 7	i 8 27	0	—	—
Strasbourg		20·4	316	4 43	− 3	i 8 31	− 1	11·3	11·8
Besançon		20·8	312	5 0	+ 9	e 8 59	+19	—	—
Algiers		20·9	281	e 4 54	+ 2	8 47	+ 5	e 10·9	—
Kucino		21·1	14	e 4 44	−10	8 27	−19	11·5	—
Hamburg		22·5	330	e 5 0	−11	i 9 3	−12	—	12·3
Tortosa	F.	22·9	292	e 5 8	− 8	—	—	—	—
Uccle		23·4	319	e 5 13	− 8	9 22	−11	—	—
Paris		23·5	313	e 5 17	− 6	e 9 26	− 9	—	—
De Bilt		23·7	322	5 32	+ 7	9 50	+12	e 13·3	15·9
Pulkovo		24·3	2	i 5 17	−14	9 29	−21	11·6	15·6
Leningrad		24·5	2	i 5 19	−14	e 9 29	−25	11·6	15·6
Upsala		25·4	347	e 5 31	−11	e 9 56	−15	—	15·4
Granada		26·2	284	6 24	+34	—	—	17·3	—
Stonyhurst		28·5	320	—	—	—	—	e 17·8	19·3
Edinburgh		29·9	322	—	—	—	—	e 18·3	—
Ekaterinburg		30·1	35	e 6 18	−11	e 11 18	−18	16·3	19·1
Irkutsk		54·1	47	e 9 22	−12	e 17 21	+11	31·3	—

Additional readings: Athens iP = +1m.34s., MN = +3·2m. Belgrade iPN = +3m.6s., eSN = +6m.13s., iE = +6m.29s. Piatigorsk iP = +3m.16s., iS = +6m.0s. Budapest MN = +11·1m. Rocca di Papa iPEN = +3m.36s. Makeyevka MZ = +16·9m. Vienna iPZ = +3m.53s., PR_1 = +4m.1s., iN = +4m.26s., iE = +5m.31s., and +5m.51s., iZ = +5m.59s., SR_1? = +6m.57s. Baku MZ = +12·2m., MN = +12·9m. Innsbruck iNW = +4m.22s., iNE = +4m.28s. Hohenheim e = +4m.49s. Konigsberg iSE = +8m.23s., iEN = +8m.47s., iE = +11m.22s. Strasbourg eP = +4m.44s., iPR_1 = +4m.57s., S = +8m.32s. Kucino e = +8m.39s. and +9m.12s. = PR_1 −16s. Hamburg MN = +15·3m. Tortosa ePN = +5m.16s. De Bilt MN = +15·3m. Upsala MN = +16·6m.

March 18d. Readings also at 9h. (Irkutsk and Ekaterinburg), 10h. (Phu-Lien, Batavia, Baku, Ekaterinburg, and Irkutsk), 11h. and 12h. (Zi-ka-wei), 13h. (Wellington and near Batavia), 14h. (Riverview), 15h. (Granada), 16h. (Ekaterinburg, Taihoku, and Uccle), 17h. (Tortosa, Pulkovo, and Upsala), 21h. (near Harvard and near Wellington), 22h. (Athens), 23h. (Strasbourg, Zurich, and near Athens).

March 19d. 0h. 28m. 24s. Epicentre 35°·5N. 29°·0E. (as on Mar. 18d.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		4·9	302	1 23	+ 7	2 22	+ 8	2·5	3·7
Helwan		5·9	160	1 43	+12	2 46	+ 5	—	—
Belgrade		11·4	328	e 2 45	− 5	e 6 2	?L	(e 6·0)	—
Naples		12·8	299	e 5 51	?S	(e 5 51)	+12	—	—
Piatigorsk		13·7	48	e 3 6	−16	e 5 38	−23	—	9·6
Budapest		14·1	332	e 3 36?	+ 9	—	—	—	—
Makeyevka		14·2	25	e 3 13	−16	e 6 34	+21	8·6	12·1
Zagreb		14·2	320	e 3 38	+ 9	—	—	—	—
Rocca di Papa		14·2	301	e 3 27	− 2	6 38	+25	—	7·4
Graz		15·3	323	e 3 38	− 5	e 6 27	−12	—	9·5
Vienna		15·8	328	3 42	− 7	6 22	−28	i 8·4	9·7
Florence	Z.	15·9	307	3 36?	−15	8 36?	?L	(8·6)	10·6
Venice		16·0	313	4 36?	+44	—	—	—	11·6
Baku		17·1	67	e 4 0	− 6	7 6	−14	9·4	11·4
Innsbruck		17·6	318	e 4 13	+ 1	—	—	—	—
Moncalieri		18·7	307	e 4 15	−10	7 59	+ 4	11·8	—
Cheb		18·9	326	—	—	e 7 36?	−24	—	11·6
Zurich		19·3	314	i 4 27	− 6	e 8 6	− 2	—	—
Hohenheim		19·6	319	e 4 36	0	e 8 9	− 6	—	—
Strasbourg		20·4	316	e 4 38	− 8	8 39	+ 7	10·6	11·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Besançon		20·8	312	5 5	+14	e 8 57	+17	13·6	—
Algiers		20·9	281	e 4 47	− 5	8 37	− 5	e 10·3	—
Kucino		21·1	14	e 4 44	−10	e 8 26	−20	12·1	—
Hamburg		22·5	330	e 4 59	−12	e 9 0	−15	—	10·8
Tortosa	N.	22·9	292	e 5 1	−15	—	—	—	—
Uccle		23·4	319	e 5 11	−10	9 23	−10	—	—
Paris		23·5	313	e 5 26	+ 3	—	—	13·3	—
De Bilt		23·7	322	5 30	+ 5	—	—	e 12·6	13·8
Pulkovo		24·3	2	5 16	−15	8 53	−57	10·1	—
Upsala		25·4	347	e 5 25	−17	e 9 51	−20	—	—
Granada		26·2	284	—	—	e 9 36?	−50	—	18·8
Edinburgh		29·9	322	—	—	—	—	e 14·6	—
Ekaterinburg		30·1	35	i 6 21	− 8	e 10 56	−40	15·6	20·9
Irkutsk		54·1	47	e 9 32	− 2	16 50	−20	28·6	—

Additional readings: Athens iP = +1m.30s., MN = +3·2m. Belgrade eSN = +6m.7s. and several i and e readings. Piatigorsk iP = +3m.16s., iS = +5m.58s. Makeyevka MZ = +9·0m. Rocca di Papa ePZ = +3m.29s., ePN = +3m.38s., eS = +7m.3s. Vienna PR_1 = +4m.0s., iN = +5m.15s., iE = +8m.17s. Florence LE = +9·6m., ME = +11·6m. Baku MN = +10·6m., MZ = +11·9m. Strasbourg SN = +8m.36s. Hamburg MN = +10·4m. Ekaterinburg S is given as e simply.

March 19d. 3h. 41m. 33s. Epicentre 43°·4N. 17°·8E. (see 1926 Mar. 24d. 16h.).

A = +·692, B = +·222, C = +·687; D = +·306, E = −·952; G = +·654, H = +·210, K = −·727.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mostar	0·1	166	i 0 3	+ 1	i 0 9	+ 6	—	0·2
Sarajevo	0·7	44	e 0 6	− 5	0 21	+ 1	—	0·4
Zagreb	2·7	332	e 0 42	0	e 1 13	− 1	—	—
Rocca di Papa	4·1	249	e 2 1	?S	(e 2 1)	+ 8	e 7·5	9·6
Zurich	7·6	305	e 2 29	+34	—	—	—	—

Rocca di Papa gives also ePE = +2m.25s.

March 19d. 12h. 0m. 30s. Epicentre 22°·5N. 126°·0E. (as on March 13d.).

A = −·543, B = +·747, C = +·383; D = +·809, E = +·588; G = −·225, H = +·310, K = −·924.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	4·8	303	0 56	−18	(1 48)	−23	1·8	2·0
Manila	9·3	212	e 2 24	+ 4	—	—	—	—
Zi-ka-wei	9·6	336	e 4 15	?S	(e 4 15)	− 3	—	—
Hong Kong	10·9	272	2 40?	− 3	—	—	—	4·9
Irkutsk	34·1	336	—	—	e 13 30?	+48	17·5	—
Ekaterinburg	57·9	325	—	—	—	—	28·0	35·6
Baku	65·4	306	—	—	—	—	37·5	—
Pulkovo	73·5	329	—	—	—	—	e 36·8	—

Additional readings: Ekaterinburg MN = +31·0m. Pulkovo L = +44·5m.

Mar. 19d. 19h. 3m. 24s. Epicentre 3°·5S. 129°·0E. (as on 1920 June 9d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	19·8	336	i 4 47	+ 8	(i 8 20)	+ 1	i 8·3	8·8
Malabar	21·6	259	5 3	+ 3	i 9 10	+13	i 16·6	—
Batavia	22·2	262	i 5 18	+11	—	—	—	—
Hong Kong	29·6	331	6 16	− 8	—	—	—	14·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Perth		31·0	201	5 36	−62	(11 31)	−20	19·6	21·8
Phu-Lien		32·7	319	i 6 44	−10	e 12 5	−14	15·6	—
Adelaide		32·7	165	6 16	−38	i 11 34	−45	14·0	19·0
Zi-ka-wei		35·4	350	i 7 8	− 9	e 12 57	− 4	—	—
Riverview		36·7	148	e 7 5	−23	e 12 36	−44	e 15·8	20·7
Sydney		36·7	148	10 12	?	—	—	18·9	20·8
Melbourne		37·3	159	—	—	i 12 54	−34	i 19·8	21·5
Osaka		38·7	10	7 47	+ 3	(13 1)	−47	13·0	15·8
Mizusawa	E.	43·8	14	(8 23)	− 1	8 23	?P	—	—
Colombo		50·2	281	16 36	?S	(16 36)	+15	31·6?	34·6
Kodaikanal		53·1	285	32 42	?L	—	—	(32·7)	—
Wellington		55·8	140	—	—	—	—	e 31·6	36·3
Irkutsk		59·6	342	i 10 10	+ 1	18 21	+ 3	28·6	—
Bombay		59·6	294	e 10 11	+ 2	18 18	0	—	—
Simla	E.	60·2	310	—	—	e 18 18	− 8	—	—
Ekaterinburg		81·3	329	i 12 26	− 1	22 37	− 1	34·6	48·3
Baku		84·0	311	i 12 40	− 2	i 23 11	+ 3	42·6	—
Piatigorsk		89·5	315	13 5	− 8	e 24 6	− 3	—	—
Makeyevka		93·3	319	—	—	e 24 0	[+12]	39·6	—
Kucino		93·5	325	—	—	e 24 58	+ 7	56·7	—
Pulkovo		97·4	330	—	—	e 25 18	−12	47·6	68·1
Victoria	E.	104·3	40	—	—	—	—	51·6	52·9
De Bilt		112·9	325	e 19 39	?PR_1	—	—	e 58·6	—
Uccle		113·9	324	—	—	—	—	e 59·6	—
Granada		125·1	312	—	—	—	—	64·6	—
San Fernando	N.	127·3	312	—	—	—	—	—	95·6
Toronto	N.	132·7	27	—	—	—	—	e 69·0	—
Ottawa		132·9	21	—	—	—	—	e 63·6	—
Sucre		153·5	149	e 17 51	?	—	—	34·5	—
La Paz		153·8	140	e 20 0	[− 1]	—	—	—	—

Additional readings and notes: Manila MN = +9·4m. Perth PS = +11m.31s. (entered as S), SR_1 = +15m.41s., SR_2 = +16m.21s.; all readings being given for 18h. Adelaide MN = +20·0m. Osaka MN = +16·3m. Riverview MZ = +22·7m., MN = +22·8m.; readings being given for 18d. Simla eN = +18m.24s. Ekaterinburg PR_1 = +15m.37s. Piatigorsk e = +16m.42s. = PR_1 − 20s. Makeyevka ePR_1 = +17m.16s. Kucino e = +25m.30s. and +26m.36s. Pulkovo ePR_1 = +17m.25s., MN = +61·8m., MZ = +67·3m. De Bilt eLN = +55·6m.

Mar. 19d. 20h. 32m. 33s. Epicentre 42°·0N. 139°·5E.

A = −·565, B = +·483, C = +·669; D = +·649, E = +·760; G = −·509, H = +·435, K = −·743.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	3·1	157	0 52	+ 3	1 21	− 5	—	—
Ootomari	5·3	24	1 32	+10	(2 34)	+ 9	2·6	—
Osaka	7·9	205	2 10	+10	—	—	4·1	5·0
Kobe	8·1	206	(2 46)	+43	—	—	2·8	2·8
Irkutsk	25·7	306	i 5 44	− 1	i 10 14	− 2	13·4	—
Ekaterinburg	50·3	316	—	—	i 16 24	+ 1	23·4	33·4
Kucino	62·0	321	—	—	e 19 53	+65	e 23·9	—
Pulkovo	62·9	328	—	—	i 19 2	+ 2	28·0	—
Baku	64·1	302	—	—	—	—	31·4	—
De Bilt	77·9	333	—	—	—	—	e 40·4	—

Additional readings and notes: Osaka MN = +5·5m. Irkutsk readings have been increased by 1h. Ekaterinburg e = +3m.20s. and +11m.10s. = PR_1 − 9s., MN = +28·5m.

Mar. 19d. Readings also at 0h. (near Mostar), 11h. (Cape Town and near La Paz), 13h. (Tokyo), 14h. (near Nagasaki), 15h. (Tokyo, Ekaterinburg, Baku, and Irkutsk), 20h. (Manila, Hohenheim, Ravensburg, near Strasbourg and Zurich), 22h. (Baku and near Athens), 23h. (Ekaterinburg.

Mar. 20d. 7h. 17m. 50s. Epicentre 7°·0S. 155°·0E. (as on 1918 July 21d.).

A = −·900, B = +·420, C = −·122; D = +·423, E = +·906; G = +·111, H = −·052, K = −·993.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·1	187	—	—	e 10 58	+15	e 14·7	16·8
Sydney		27·1	187	—	—	10 22	−21	14·2	15·3
Adelaide		31·8	206	—	—	9 33	−152	12·8?	15·5
Melbourne		32·1	195	—	—	e 12 4	− 6	—	21·1
Irkutsk		73·3	330	e 11 37	− 1	21 3	− 3	39·2	—
Victoria	E.	89·8	41	—	—	—	—	43·2	45·3
Ekaterinburg		98·2	326	e 17 0	?PR_1	e 26 47	+69	44·2	60·5
Baku		106·0	310	—	—	—	—	e 53·2	—
Pulkovo		113·0	333	—	—	—	—	58·7	—
Chicago		114·9	47	—	—	—	—	60·4	75·1
Toronto	E.	120·1	43	—	—	—	—	e 63·0	—
Ottawa		121·9	40	—	—	—	—	e 59·6	—
La Paz		131·3	119	23 7	?PR_1	—	—	—	—

Additional readings: Riverview MN = +16·5m. Adelaide MN = +19·9m.
Ekaterinburg MZ = +60·4m.

Mar. 20d. Readings also at 0h. (Athens), 1h. (La Paz (2), Sucre, Wellington, Melbourne, Adelaide, and Riverview), 2h. (Apia and Ekaterinburg), 6h. (near Taihoku), 8h. (near Taihoku and near Malabar), 9h. (Honolulu, Ekaterinburg, Ottawa, and Chicago), 11h. (Tokyo and near Mizusawa), 15h. (near Mostar), 17h. (Honolulu and Mizusawa), 20h. (Sydney, Ekaterinburg and Irkutsk), 21h. (Baku, Pulkovo, and near Sumoto).

Mar. 21d. 12h. 5m. 48s. Epicentre 34°·0S. 57°·0E. (as on 1926 March 15d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Johannesburg		26·1	280	—	—	10 12?	−12	—	14·7
Cape Town		31·7	262	11 57	?S	(11 57)	− 6	—	20·8
Colombo		46·3	32	15 32	?S	(15 32)	0	—	25·2
Perth		48·8	105	—	—	—	—	—	22·1
Batavia		53·7	70	i 9 33	+ 2	i 17 5	0	—	—
Bombay		55·0	19	9 39	0	17 17	− 4	—	—
Hyderabad		55·4	25	10 28	+46	18 12	+46	26·8	29·1
Adelaide		65·2	116	—	—	e 26 49	?SR_1	36·7	41·2
Simla	E.	67·9	19	e 20 6	?S	(e 20 6)	+ 5	—	—
Phu-Lien		72·3	49	e 11 32	0	e 20 55	+ 1	39·2	—
Baku		74·7	355	i 11 55	+ 8	i 21 36	+14	34·2	49·7
Riverview		74·9	121	—	—	—	—	e 39·0	41·4
Sydney		74·9	121	21 54	?[S]	(21 54)	[+ 6]	37·4	39·6
Manila		77·8	64	e 12 12	+ 6	(21 56)	− 2	21·9	—
Hong Kong		78·3	53	14 57?	?PR_1	21 58	− 6	—	—
Makeyevka		83·8	349	12 42	+ 1	23 6	− 1	38·2	43·1
Pompeii		84·4	330	24 12?	?	e 34 12?	?	—	—
Wellington	E.	85·5	139	—	—	—	—	e 42·2	47·2
	N.	85·5	139	—	—	—	—	e 43·2	44·2
Rocca di Papa		85·9	329	i 12 56	+ 3	e 23 23	− 6	e 59·4	—
Algiers		86·8	320	—	—	e 23 33	− 6	e 49·0	57·2
Zagreb		88·0	334	e 13 8	+ 3	e 22 37	[−38]	—	—
Florence		88·2	330	—	—	—	—	—	52·2
Budapest		88·2	337	13 6	0	—	—	—	—
Venice		89·0	331	13 12?	+ 2	—	—	—	—
Vienna		89·8	335	e 13 12	− 3	24 8	− 4	—	—
Alicante		89·8	320	e 46 24	?L	—	—	(e 46·4)	—
Moncalieri		90·7	328	e 13 33	+13	24 8	−13	40·0	—
Granada		90·8	317	i 13 24	+ 4	23 27	[− 6]	46·9	55·4

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	90·9	3	i 13 14	− 7	i 23 47	[+14]	36·2	56·9
Malaga	90·9	317	—	—	—	—	e 49·2	—
Innsbruck N.W.	91·0	331	e 13 18	− 3	—	—	—	—
Tortosa N.	91·1	321	—	—	23 54	[+19]	e 47·2	52·9
Kucino	91·2	350	e 13 20	− 2	i 24 16	−10	40·9	—
San Fernando	91·8	315	—	—	—	—	48·2	58·7
Zurich Z.	92·2	330	i 13 25	− 3	—	—	—	—
Toledo	92·8	319	—	—	—	—	46·4	54·3
Cheb	92·8	333	—	—	e 25 12?	+29	e 56·2	64·2
Strasbourg	93·5	330	e 13 31	− 4	e 24 42	− 9	—	—
Irkutsk	95·6	27	13 34	−13	e 24 6	[+ 6]	42·2	—
Pulkovo	96·3	348	13 46	− 5	e 24 18	[+14]	47·2	58·5
Leningrad	96·5	348	e 13 45	− 7	e 24 19	[+14]	e 43·2	58·0
Hamburg	96·5	335	—	—	—	—	e 58·2	—
De Bilt	97·3	332	—	—	e 24 30	[+21]	e 55·2	—
Stonyhurst	101·7	329	e 11 12?	?	e 24 42	[+ 9]	e 49·2	—
Edinburgh	103·4	330	—	—	—	—	e 58·2	—
Sucre	103·6	235	28 5	?S	(28 5)	+96	56·1	57·1
La Paz	107·4	235	28 31	?S	(28 31)	+86	57·3	60·7
Ottawa	142·5	302	—	—	—	—	e 71·2	—
Toronto	145·1	299	—	—	—	—	e 75·2	—

Additional readings: Adelaide ePR$_1$ = +21m.32s. Simla ePN = +20m.12s. Baku MN = +36·8m., MZ = +48·5m. Riverview MN = +40·8m. Makeyevka PS = +24m.7s., MN = +50·7m. Rocca di Papa eP = +12m.58s., iPN = +13m.7s. Budapest iE = +13m.8s., i = +13m.24s. Granada i = +14m.55s. +16m.10s. and +17m.9s. =[P]−1s. Ekaterinburg i = +16m.51s. =[P]−19s., iS = +24m.13s., i = +25m.25s., e = +29m.40s. and +33m.57s., MN = +49·5m., MZ = +55·5m. Innsbruck iNW = +13m.25s. Kucino ePR$_1$ = +16m.56s., e = +23m.47s. =[S]+12s., SR$_1$ = +30m.12s. San Fernando MN = +53·2m. Toledo MNW = +54·7m. Irkutsk PR$_1$ = +16m.56s., i = +26m.10s., SR$_1$ = +30m.13s., SR$_2$ = +34m.14s. Pulkovo ePS = +25m.2s. =S−17s., MN = +62·0m.

Mar. 21d. 14h. 19m. 6s. Epicentre 61°·0S. 25°·0W.

A = +·439, B = −·205, C = −·875; D = −·423, E = −·906; G = −·793, H = +·370, K = −·485.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	33·5	307	6 50	−11	12 9	−23	15·9	—
Cape Town	38·8	65	7 24	−20	13 24	−25	16·2	18·2
Johannesburg	49·7	70	—	—	15 54?	−21	21·9	23·2
Sucre	50·6	309	i 9 6	− 5	i 16 20	− 6	24·8	28·2
La Paz E.	54·1	307	i 9 36	+ 2	i 17 17	+ 7	26·8	28·7
N.	54·1	307	—	—	i 17 15	+ 5	—	32·3
Wellington E.	76·4	195	12 33	+36	i 21 48	+ 6	i 32·6	46·6
N.	76·4	195	12 38	+41	i 21 51	+ 9	33·0	42·8
Dakar	76·6	8	e 12 5	+ 6	—	—	—	—
Melbourne	80·9	173	—	—	i 22 24	−10	i 41·3	42·7
Perth	81·8	147	12 54	+25	23 44	+60	39·4	45·3
Adelaide	83·1	167	e 15 30?	?PR$_1$	i 22 54	− 4	31·8	50·6
Riverview	85·1	178	e 12 57	+ 8	e 23 17	− 3	e 41·8	47·2
Sydney	85·1	178	15 36	?	23 12	− 8	34·7	36·1
San Fernando	98·6	15	13 4	−59	24 19	[+ 2]	40·9	54·4
Malaga	99·2	17	e 13 41	−25	26 47	+59	38·9	55·5
Granada	99·8	17	i 17 11	?PR$_1$	25 44	−10	48·6	53·4
Rio Tinto	99·9	15	28 54?	?	—	—	—	60·9
Algiers	100·4	24	—	—	31 56	?SR$_1$	e 42·9	56·9
Almeria	100·4	19	i 17 27	?PR$_1$	26 26	+26	39·8	46·5
Alicante	101·4	20	e 14 20	+ 3	e 27 2	+53	39·2	55·8
Helwan	101·7	48	e 16 29	?	25 56	−16	—	52·5
Toledo	102·3	16	—	—	e 25 53	−25	e 41·2	42·9
Batavia	103·1	130	i 18 24	?PR$_1$	i 25 46	−39	48·8	—
Colombo	103·2	100	18 24	?PR$_1$	33 14	?SR$_1$	67·9	72·3
Tortosa N.	104·0	20	e 18 12	?PR$_1$	24 42	[− 1]	44·2	57·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s	m.	m.
Barcelona		104·9	22	—	—	e 25 49	−52	—	58·6
Bagnères		106·1	20	—	—	28 54?	+121	48·9	—
Pompeii		106·8	31	e 20 54?	?PR$_2$	—	—	—	—
Naples		106·8	31	e 24 54	?[S]	(e 24 54)	[− 2]	54·9	—
Rocca di Papa		107·2	30	e 18 44	?PR$_1$	e 28 56	+113	e 50·9	64·2
	Z.	107·2	30	e 17 56	[−16]	e 27 56	+53	e 55·9	—
Athens		107·5	38	e 21 57	?PR$_2$	e 33 46	?SR$_1$	e 55·5	67·4
Georgetown	E.	108·5	320	—	—	—	—	57·9	—
Florence	E.	108·9	29	e 18 24	[+ 6]	28 24	+66	31·2	47·4
Moncalieri		109·3	25	19 19	?PR$_1$	33 36	?SR$_1$	45·4	65·1
Fordham		109·4	323	e 25 4	? [S]	(25 4)	[− 4]	—	55·2
Harvard	E.	110·0	325	—	—	—	—	e 44·7	60·9
Bombay		110·2	86	e 19 6	?PR$_1$	25 18	[+ 7]	e 34·5	46·6
Venice		110·7	28	18 54?	?PR$_1$	—	—	—	—
Besançon		111·1	22	—	—	—	—	—	58·9
Zurich		111·7	24	e 18 54	?PR$_1$	e 28 1	+18	—	—
Hyderabad		111·7	90	20 24	?PR$_1$	29 54	+131	46·8	66·8
Zagreb		111·9	30	e 19 18	?PR$_1$	e 29 48	+123	e 57·9	—
Ithaca		111·9	322	e 25 1	? [S]	(e 25 1)	[−17]	e 53·9	61·4
Paris		112·1	19	e 21 24	—	e 28 58	+71	41·9	58·9
Ravensburg		112·4	25	e 19 24	?PR$_1$	e 28 54?	+65	e 52·9	61·4
Strasbourg		112·7	23	e 19 20	?PR$_1$	e 28 59	+67	46·9	64·6
Hohenheim		113·2	24	e 19 34	?PR$_1$	e 34 54?	?	50·9	62·9
Toronto		113·6	320	e 19 28	?PR$_1$	i 25 46	[+22]	49·4	60·2
Ann Arbor		113·6	317	e 16 42	?	—	—	e 49·3	61·0
Ottawa		114·0	325	i 25 42	? [S]	(i 25 42)	[+16]	e 49·9	62·6
Vienna		114·2	29	19 32	?PR$_1$	26 52	[+85]	e 58·9	64·4
Budapest		114·2	31	15 45	+28	e 19 24	?PR$_1$	—	67·5
Uccle		114·3	20	—	—	29 10	+66	47·9	52·3
Oxford		114·3	15	i 23 46	?PR$_2$	—	—	45·8	62·7
Ste. Anne		114·3	330	i 25 43	? [S]	(i 25 43)	[+16]	e 52·6	60·9
Chicago	E.	114·6	314	—	—	27 39	−28	e 53·3	61·5
	N.	114·6	314	e 18 33	[− 3]	27 2	−65	e 53·5	58·9
Cheb		115·1	26	e 19 35	?PR$_1$	e 29 25	+74	—	66·9
De Bilt		115·6	21	e 19 41	?PR$_1$	e 29 33	+78	e 48·9	63·4
Bidston		115·8	14	25 36?	? [S]	(25 36)?	[+ 5]	—	67·7
Stonyhurst		116·3	14	e 19 12	?PR$_1$	—	—	46·9	—
Hamburg		117·9	23	e 19 54?	?PR$_1$	e 29 54	+81	e 48·9	66·9
Baku		118·1	56	i 20 6	?PR$_1$	29 54	+79	50·9	—
Edinburgh		118·2	13	—	—	e 26 54?	−102	—	65·6
Pistigorsk		118·6	50	i 18 49	[0]	i 27 5	−94	—	76·1
Makeyevka		120·2	43	20 13	?PR$_1$	33 12	?	62·9	73·6
Konigsberg		121·3	29	—	—	e 26 5	?PR$_2$	e 62·1	74·9
Simla	N.	122·7	84	—	—	e 26 12	?PR$_2$	—	—
Bergen		123·6	16	e 19 54?	?PR$_1$	e 36 54?	?SR$_1$	e 61·9	—
Upsala		125·2	25	—	—	e 30 54	?	e 53·9	69·8
Kucino		126·8	39	e 21 4	?PR$_1$	—	—	56·3	75·0
Manila		127·5	136	e 20 39	?PR$_1$	—	—	—	—
Phu-Lien		127·7	118	e 13 17	−180	—	—	58·9	—
Pulkovo		128·1	32	e 19 3	[−11]	—	—	53·9	74·5
Leningrad		128·3	32	e 19 20	[+ 5]	e 31 6	?	53·1	80·6
Honolulu	N.	128·8	240	—	—	—	—	e 60·2	74·4
Hong Kong		132·2	125	22 54	?PR$_1$	—	—	—	—
Victoria	E.	134·5	294	23 31	?PR$_1$	—	—	59·8	60·4
Ekaterinburg		135·4	50	i 19 24	[− 7]	—	—	57·9	65·1
Taihoku	N.	137·4	132	e 38 50	?	—	—	—	—
Irkutsk		151·6	85	e 19 49	[− 9]	—	—	56·2	—

Additional readings: Sucre i = +9m.14s., iPR$_1$ = +11m.19s., PR$_2$ = +12m.15s., PS = +16m.37s., SR$_1$ = +20m.1s., SR$_2$ = +22m.13s., i = +23m.43s.; T$_e$ = 14h.19m.5s. La Paz PR$_1$N = +12m.0s. PR$_1$E = +12m.1s., PR$_2$E = +13m.15s., PR$_2$N = +13m.17s.; T$_e$ = 14h.19m.5s. Wellington SR$_1$E = +26m.41s., SR$_1$N = +27m.3s., SR$_2$E = +31m.3s. Melbourne iS = +27m.42s. = SR$_1$ − 45s., i = +33m.24s. = SR$_2$ − 26s., true S is given as i. Perth SR$_1$ = +28m.14s. Adelaide PR$_2$ = +19m.28s. = PR$_2$ + 6s., SR$_1$ = +27m.40s., MN = +46·6m. Riverview PS = +23m.36s., eSR$_1$ = +28m.42s. and +29m.11s. = SR$_1$ − 13s., e = +34m.48s., +35m.23s. = SR$_2$ + 7s. and +35m.30s., MNZ = +49·8m. Sydney SR$_2$ = +28m.54s. = SR$_1$ − 31s. San Fernando MN = +55·4m. Granada i = +17m.44s. = [P] + 0s. and +27m.17s. Algiers eN = +21m.15s. = PR$_1$ + 13s., eE = +25m.56s. = S − 4s. Alicante MN = +55·1m. Toledo MNW = +57·3m. Tortosa LE = +43·3m., ME = +56·8m. Barcelona MN = +56·8m. Moncalieri MN = +58·9m. Fordham PR$_1$ = +28m.27s., S = +34m.36s. = SR$_1$ + 2s.

Continued on next page.

Harvard SPSE = +25m.23s. =[S]+13s., PSE = +28m.24s., SR_1E = +34m.43s. Bombay SR_1 = +28m.43s. Zagreb e = +35m.54s.? Ithaca i = +25m.35s., eS = +25m.18s. =[S]+0s. Paris MN = +60·9m. Strasbourg MZ = +62·9m. Toronto MN = +63·7m. Ann Arbor eN = +18m.24s. =[P]−9s., and +25m.42s. =[S]+18s., eE = +19m.36s. = PR_1 −6s., and +29m.24s., MN = +59·7m. Ottawa iPR_1? = +29m.14s., iPR_2? = +31m.2s., iS? = +36m.0s., MN = +62·9m. Vienna S_4P_4P? = +23m.15s. =PR_3+19s., eN = +29m.9s., PPS? = +35m.47s. =SR_1+13s. Budapest MN = +65·8m. Uccle SR_1 = +35m.24s., SR_2 = +39m.36s., MN = +66·3m. Ste. Anne iPR_1 = +29m.11s., eS = +36m.3s. =SR_1+27s. Chicago PR_1N = +19m.42s., SPS = +25m.54s. = [S]+27s., PSN = +29m.21s., ePSE=+29m.30s., iPSE=+29m.52s., PPSN=+30m.42s., eN = +32m.54s., SR_1E = +35m.48s., SR_1N = +36m.0s., iE = +38m.42s., SR_2N = +40m.30s., SR_2E = +40m.32s., SR_3E = +43m.48s. De Bilt eSR_1 = +35m.42s., eSR_2 = +40m.1s., MN = +61·6m., MZ = +68·5m. Bidston S = +36m.4s. =SR_1+8s. Hamburg eSR_2 = +36m.29s. =SR_1+8s. Piatigorsk i = +29m.57s. Makeyevka PR_2 = +28m.43s. =S −7s., PR_3 = +30m.29s., e = +32m.19s., PS = +35m.1s., MN = +85·6m., MZ = +90·0m. Konigsberg e = +48m.6s., eLN = +60·6m., eLZ = +66·9m., MZ = +67·9m., MN = +68·9m. Simla eE = +27m.54s. Bergen readings have all been diminished by 1h. Upsala MN = +71·6m. Kucino e = +23m.44s., +28m.4s., +31m.14s., and +38m.48s. =SR_1+36s., MN = +71·4m. Pulkovo e = +22m.25s., +28m.3s., and +32m.16s., i = +38m.46s. =SR_1 +19s., MN = +75·6m. Leningrad PR_1 = +22m.28s., MN = +73·1m., MZ = +74·8m. Honolulu SR_1N = +39m.30s., SR_2N = +44m.24s. Victoria MN = +68·9m. Ekaterinburg i = +22m.0s. =PR_1 −4s., +22m.52s., PR_2 =29m.28s., PS = +34m.8s., and +35m.27s., iSR_1 = +39m.47s., SR_2 = +44m.45s., SR_3 = +48m.10s., MZ = +55·7m., MN = +68·4m.

March 21d. 19h. 14m. 12s. Epicentre 61°·0S. 25°·0W. (as at 14h.).

Very doubtful identification.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	33·5	307	6 58	− 3	(12 36)	+ 4	12·6	—
Sucre	50·6	309	i 9 17	+ 6	i 16 19	− 7	22·1	—
La Paz	54·1	307	i 9 36	+ 2	i 16 45	−25	24·3	27·5
Baku	118·1	56	—	—	(e 29 48?)	+73	e 29·8	—
Ekaterinburg	135·4	50	—	—	e 29 11	?	63·3	—
Irkutsk	151·6	85	e 20 25	[+ 2]	—	—	—	—

Additional readings: La Plata S = +10m.48s. La Paz gives also i = +17m.38s.; T_0 =19h.14m.48s.

March 21d. 22h. 4m. 12s. Epicentre 35°·5N. 29°·0E. (as on March 19d.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		4·9	302	e 1 40	+24	2 39	+25	2·8	3·6
Belgrade		11·4	328	e 5 36	?L	—	—	e 5·6	—
Piatigorsk		13·7	48	3 27	+ 5	—	—	—	10·8
Budapest		14·1	332	—	—	e 6 48	+38	—	—
Rocca di Papa	N.	14·2	301	e 3 38	+ 9	e 6 46	+33	—	—
Zagreb		14·2	320	—	—	e 6 48?	+35	e 7·8	—
Makeyevka		14·2	25	—	—	e 5 52	−21	11·3	—
Lemberg		14·8	347	—	—	e 6 24	− 3	—	8·6
Vienna		15·8	328	e 3 47	− 2	8 7	?L	(8·1)	—
Florence	Z.	15·9	307	e 4 18?	+27	e 8 48?	?	(e 8·8)	11·8
Baku		17·1	67	e 4 20	+14	8 11	+51	10·6	11·9
Moncalieri		18·7	307	4 41	+16	8 13	+18	11·2	—
Cheb		18·9	326	—	—	e 8 36	+36	—	13·3
Zurich		19·3	314	e 4 34	+ 1	e 12 5	?L	(e 12·1)	—
Hohenheim		19·6	319	—	—	—	—	e 12·8	—
Konigsberg		20·2	346	—	—	—	—	11·8	—
Strasbourg		20·4	316	4 55	+ 9	e 8 36	+ 4	e 13·0	—
Kucino		21·1	14	e 4 58	+ 4	e 8 29	−17	e 13·1	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hamburg		22·5	330	—	—	—	—	e 11·8	—
Uccle		23·4	319	—	—	—	—	e 11·8	—
De Bilt		23·7	322	—	—	e 9 39	+ 1	12·8	15·5
Pulkovo		24·3	2	5 25	− 6	9 38	−12	10·8	14·8
Leningrad		24·5	2	5 27	− 6	e 9 40	−14	12·0	14·7
Upsala	E.	25·4	347	—	—	—	—	e 12·8	—
Granada		26·2	284	i 1 31	?	10 59	+33	—	19·2
Edinburgh		29·9	322	—	—	—	—	e 18·8	—
Ekaterinburg		30·1	35	—	—	e 11 15	−21	15·8	20·4
Irkutsk		54·1	47	—	—	—	—	e 21·2	—

Additional readings: Athens MN = +3·3m. Belgrade ePE? = +5m.41s., iE = +5m.56s., iN = +6m.6s., iSE = +7m.28s. Rocca di Papa ePZ = +3m.56s. Vienna SR_1? = +8m.37s. Baku MN = +12·1m., MZ = +12·2m. Konigsberg LN = +10·8m. Pulkovo MNZ = +14·5m. Leningrad MZ = +14·6m.

March 21d. Readings also at 0h. (Riverview and Ekaterinburg), 8h. (Pulkovo and Taihoku), 9h. (La Plata, Sucre, La Paz, and Ekaterinburg (2)), 14h. (Granada, Ottawa, and La Paz), 15h. (Granada), 16h. (Georgetown and Florence), 17h. (near Kobe and Toyooka), 18h. (Tokyo), 23h. (Piatigorsk and Vienna).

March 22d. 16h. 24m. 0s. Epicentre 35°·0N. 69°·0E. (as on 1926 March 18d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	E.	7·9	117	2 0	0	3 18	−16	—	—
	N.	7·9	117	2 6	+ 6	3 30	− 4	—	—
Baku		16·0	296	e 4 2	+10	1 7 12	+17	—	—
Bombay		16·5	167	3 55	− 4	—	—	—	—
Hyderabad		19·5	152	4 2	−33	7 32	−41	9·5	10·5
Calcutta	E.	21·0	122	4 37	−16	8 20	−24	—	—
	N.	21·0	122	4 33	−20	8 22	−22	—	—
Piatigorsk		21·8	302	5 5	+ 2	9 4	+ 3	12·0	16·0
Ekaterinburg		22·5	348	i 5 9	− 2	9 8	− 7	11·0	12·8
Makeyevka		26·4	309	5 47	− 5	i 10 55	+25	15·0	19·5
Kucino		29·7	324	6 15	−10	11 48	+19	14·7	—
Irkutsk		30·4	42	e 6 15	−17	11 2	−39	15·0	—
Pulkovo		35·2	326	i 7 2	−13	12 42	−16	16·5	22·7
Leningrad		35·3	326	i 7 4	−12	12 41	−19	16·2	19·7
Konigsberg		38·6	316	i 7 37	− 6	e 14 0	+14	e 16·9	17·0
Budapest		38·8	307	i 7 35	− 9	—	—	—	—
Vienna		40·6	309	i 7 50	−10	—	—	—	10·5
Upsala		41·2	324	e 7 50	−15	—	—	—	—
Venice		43·5	303	e 8 5	−17	12 24	−151	—	—
Zi-ka-wei		43·6	80	e 8 28	+ 5	e 14 25	−31	—	—
Rocca di Papa		43·9	296	e 8 17	− 8	i 10 36	?PR_2	—	—
Florence	Z.	44·5	300	8 30	0	—	—	—	25·0
Hamburg		44·6	314	e 8 17	−13	—	—	i 22·3	28·3
Zurich	Z.	45·9	304	i 8 33	− 6	—	—	—	—
Strasbourg		46·3	307	e 8 36	− 6	—	—	—	—
Moncalieri		46·8	302	e 8 39	− 7	—	—	20·5	—
Bergen		47·3	324	e 26 45	?L	—	—	(e 26·8)	—
De Bilt		47·6	312	i 8 46	− 5	—	—	e 27·0	—
Edinburgh		52·1	317	—	—	—	—	e 21·0	—
Tortosa	E.	53·0	299	e 9 28	+ 2	—	—	—	—
Granada		57·2	295	—	—	—	—	33·0	—
La Paz		137·6	284	19 40	[+ 5]	—	—	—	—

Additional readings: Baku i = +4m.34s. Piatigorsk i = +5m.36s. = PR_1 +10s. Ekaterinburg i = +5m.40s. = PR_1 +4s. Makeyevka i = +6m.17s. = PR_1 −15s., SR = +12m.14s. = SR_2 +14s. Kucino P = +6m.45s., PR_1 = +7m.22s., PS = +12m.11s. Pulkovo i = +7m.32s. and +14m.2s., MN = +20·8m. Leningrad i = +7m.32s., PR_1 = +8m.19s., MNZ = +19·3m. Konigsberg iPZ = +7m.35s., SR_1E = +16m.20s. Upsala iE = +9m.34s. = PR_1 −2s., and +10m.3s. = PR_2 −4s. Rocca di Papa eSZ = +10m.28s. Hamburg iPZ = +8m.23s., i = +19m.45s. = SR_1 +18s., MN = +27·3m. Strasbourg e = +9m.0s. Bergen i = +34m.10s. De Bilt eZ = +9m.17s.

March 22d. 18h. 29m. 0s. Epicentre 7°·0S. 150°·0E. (as on 1925 Aug. 14d.).

A = −·860, B = +·496, C = −·122; D = +·500, E = +·866;
G = +·106, H = −·061, K = −·992.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		26·8	178	e 6 3	+ 7	i 10 54	+17	e 13·3	16·0
Sydney		26·8	178	5 48	− 8	10 18	−19	16·0	17·3
Adelaide		29·9	199	6 36	+ 9	i 11 48	+16	i 14·2	22·3
Melbourne		31·1	186	e 6 6	−33	i 11 48	− 5	18·5	20·4
Manila		36·0	309	i 7 25	+ 3	—	—	15·8	18·0
Apia		38·1	102	e 10 34	?	—	—	19·7	24·8
Perth		40·4	227	5 30?	−148	14 0	−13	25·4	28·4
Wellington	N.	40·8	150	e 9 38	?PR$_1$	i 13 59	−19	17·6	24·3
Taihoku	N.	42·4	320	e 8 26	+12	—	—	—	—
Batavia		42·9	270	8 28	+11	15 17	+30	25·2	—
Hong Kong		45·8	311	8 34	− 5	—	—	—	24·5
Zi-ka-wei		47·0	326	i 8 40	− 7	15 52	+11	—	28·7
Phu-Lien		50·9	304	i 9 19	+ 7	e 17 8	+38	26·3	—
Honolulu	E.	58·3	60	—	—	e 25 0	?SR$_2$	e 27·6	34·0
	N.	58·3	60	—	—	e 24 30	?SR$_2$	e 25·6	—
Irkutsk		70·9	333	i 11 23	+ 1	e 20 37	0	35·0	—
Hyderabad		74·8	290	11 45	− 3	—	—	—	41·3
Bombay		80·3	291	12 28	+ 7	22 28	+ 1	—	—
Berkeley		92·5	51	—	—	—	—	e 40·9	—
Lick	E.	93·0	52	—	—	—	—	e 42·7	46·7
Victoria	E.	94·0	41	—	—	—	—	43·4	47·3
Ekaterinburg		95·5	326	13 33	−13	24 19	[+19]	41·5	56·2
Baku		102·2	310	e 14 9	−12	e 24 54	[+19]	48·0	58·7
Piatigorsk		107·0	315	e 15 1	+17	e 25 25	[+28]	61·0	—
Kucino		108·1	326	—	—	28 19	+68	53·1	63·3
Makeyevka		109·8	320	—	—	28 41	+75	56·0	66·4
Leningrad		110·6	332	e 19 9	?PR$_1$	e 28 22	+49	56·0	77·2
Pulkovo		110·7	332	e 14 39	−22	28 22	+48	54·0	66·0
Upsala	N.	116·2	335	—	—	—	—	e 60·0	71·0
Konigsberg		117·6	330	—	—	e 41 0?	?SR$_2$	e 66·0	—
Chicago		118·5	45	—	—	e 50 0?	?	55·5	73·0
Loyola		119·2	59	—	—	—	—	e 66·0	—
Budapest		122·0	323	e 4 0?	?	—	—	e 36·0	—
Vienna	Z.	123·2	325	e 19 5	[+ 4]	—	—	—	—
Hamburg		123·3	332	—	—	—	—	e 62·0	—
Toronto	E.	123·5	40	—	—	—	—	60·7	71·0
Ottawa		124·9	37	—	—	e 29 24	− 1	62·0	—
Ithaca		125·9	40	—	—	—	—	e 63·0	—
De Bilt	E.	126·5	333	—	—	—	—	e 61·0	71·4
	N.	126·5	333	—	—	—	—	e 59·0	76·9
	Z.	126·5	333	e 21 9	?PR$_1$	—	—	—	76·7
Edinburgh		126·7	340	—	—	—	—	e 67·0	81·0
Georgetown	E.	127·0	44	—	—	—	—	69·2	—
Strasbourg		127·7	328	e 19 14	[+ 1]	—	—	63·0	—
Uccle		127·8	333	—	—	—	—	e 61·0	—
Stonyhurst		128·2	338	—	—	—	—	e 68·0	—
Fordham		128·4	41	—	—	e 56 26	?	61·5	68·4
Florence	E.	128·5	321	21 30	?PR$_1$	31 50	?	71·0	80·5
	N.	128·5	321	22 0	?PR$_1$	32 0	?	71·0	77·0
Rocca di Papa	Z.	128·7	320	19 17	[+ 2]	—	—	—	—
Oxford		129·4	337	—	—	—	—	—	74·0
Harvard		129·4	39	—	—	—	—	66·8	71·0
Moncalieri		129·9	326	e 22 36	?PR$_1$	34 35	?	51·6	—
Paris		130·0	332	—	—	—	—	e 66·0	78·0
La Plata		130·5	149	22 57?	?PR$_1$	—	—	72·0	—
La Paz		135·5	123	19 34	[+ 3]	—	—	70·0	71·5
Tortosa	N.	136·6	330	—	—	—	—	e 66·0	82·5
Sucre		136·6	126	e 19 39	[+ 6]	i 23 5	?PR$_1$	51·0	96·5
Algiers		137·7	319	e 19 29	[− 6]	—	—	—	—
Alicante		138·9	324	—	—	—	—	e 74·3	89·6
Toledo		139·7	329	—	—	—	—	e 71·2	88·8
Granada		141·5	325	19 34	[− 8]	i 22 49	?PR$_1$	71·6	88·2
Rio Tinto		142·7	329	88 0	?L	—	—	(88·0)	97·0
San Fernando		143·4	327	19 36	[−10]	—	—	—	95·5

Additional readings: Riverview iS = +11m.22s. = SR$_1$ − 24s., MN = +16·8m., MZ = +17·0m. Adelaide MN = +19·0m. Melbourne i = +16m.6s. Zi-ka-wei eP? = +12m.18s., S = +19m.17s. = SR$_2$ − 7s. Irkutsk PR$_2$ = +15m.41s., PR$_3$ = +17m.8s., e = +25m.15s. = SR$_1$ − 49s., SR$_3$ = +29m.9s.

Continued on next page.

Berkeley eE = +42m.50s., eZ = +43m.53s. Ekaterinburg PR_1 = +17m.26s., i = +26m.14s., e = +31m.19s. = SR_1 − 22s., and +35m.28s., MN = +47·6m., MZ = +56·3m. Baku ePR_1 = +18m.35s., MN = +61·2m. Piatigorsk e = +18m.35s. = PR_1 − 25s. Kucino PR_1 = +18m.57s., e = +25m.25s. = [S] +24s., and +34m.22s. = SR_1 +3s. Makeyevka ePR_1 = +19m.15s., e = +31m.57s., MZ = +78·6m., MN = +84·4m. Leningrad MN = +67·6m., MZ = +69·4m. Pulkovo PR_1 = +19m.8s., e = +25m.14s. = [S] +2s., and +35m.6s. = SR_1 +15s., MN = +59·4m., MZ = +65·3m. Upsala ME = +72·5m. Chicago LN = +59·8m., MN = +65·6m. Toronto MN = +62·6m. Ottawa e = +37m.0s.? = SR_1 − 48s. Rocca di Papa ePN = +18m.49s. Harvard eN? = +65m.27s., MN = +72·5m. La Paz PR_1? = +23m.6s., MN = +74·4m. Algiers PR_1? = +23m.2s. Alicante MN = +89·2m. Toledo MNW = +89·8m. Granada MN = +88·9m. San Fernando MN = +99·5m.

March 22d. Readings also at 0h. (Ekaterinburg and near Mizusawa), 6h. (Tokyo), 9h. (Mizusawa and near Nagasaki), 16h. (near Nagasaki, La Plata, near La Paz, and Sucre), 20h. (Tokyo), 22h. (La Paz and Sucre).

March 23d. 1h. 58m. 35s. Epicentre 35°·5N. 29°·0E. (as on March 21d.).

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	4·9	302	1 28	+12	2 27	+13	2·6	3·4
Helwan	5·9	160	i 1 47	+16	2 55	+14	—	—
Belgrade	11·4	328	e 2 49	− 1	—	—	—	6·5
Pompeii	12·5	299	e 6 25?	?L	e 9 25?	?	(e 6·4)	—
Naples	12·8	299	e 5 47	?S	(e 5 47)	+ 8	—	—
Piatigorsk	13·7	48	i 3 25	+ 3	i 6 3	+ 2	—	10·4
Budapest E.	14·1	332	i 3 23	− 4	—	—	—	—
Rocca di Papa	14·2	301	i 3 43	+14	e 6 1	−12	—	10·0
Makeyevka	14·2	25	e 3 19	−10	e 6 37	+24	7·4	13·7
Vienna	15·8	328	i 3 46	− 3	—	—	—	7·2
Florence	15·9	307	3 55	+ 4	7 5	+12	9·1	10·1
Venice	16·0	313	—	—	6 58	+ 3	—	—
Baku	17·1	67	e 4 2	− 4	e 7 17	− 3	9·4	11·6
Innsbruck	17·6	318	e 4 24	+12	—	—	—	—
Moncalieri	18·7	307	4 33	+ 8	8 6	+11	11·3	—
Zurich	19·3	314	e 4 30	− 3	e 8 3	− 5	—	—
Strasbourg	20·4	316	e 4 37	− 9	e 8 58	+26	12·4	—
Kucino	21·1	14	4 45	− 9	8 33	−13	11·0	—
Hamburg Z.	22·5	330	e 5 2	− 9	—	—	—	—
Uccle	23·4	319	e 5 25	+ 4	e 9 25	− 8	e 12·0	—
De Bilt	23·7	322	—	—	e 9 55	+17	e 12·4	—
Pulkovo	24·3	2	i 5 18	−13	9 35	−15	10·9	—
Leningrad	24·5	2	5 19	−14	e 9 34	−20	11·6	—
Upsala	25·4	347	e 5 51	+ 9	—	—	—	—
Edinburgh	29·9	322	—	—	—	—	13·4	—
Ekaterinburg	30·1	35	6 11	−18	e 10 59	−37	13·9	18·2

Additional readings: Athens MN = +3·1m. Belgrade SR_1 = +6m.11s., MN = +6·2m. Piatigorsk eP = +2m.35s. = P − 47s. Budapest iN = +3m.24s. Rocca di Papa eZ = +2m.15s., iPN = +3m.56s., eS = +6m.3s. Florence MZ = +9·4m. Baku e = +4m.13s., MN = +10·6m. Innsbruck iNW = +4m.28s. Strasbourg e = +4m.42s.

March 23d. Readings also at 0h. (La Paz), 1h. (La Paz and Sucre), 7h. (Taihoku (2)), 9h. (Merida and Tacubaya), 10h. (Ekaterinburg (2), La Plata and La Paz), 11h. (Sucre, Nagoya, Tokyo, Irkutsk (2), Strasbourg, San Fernando, De Bilt, Granada, Pulkovo, near Mizusawa, and near Zurich), 16h. (Sucre (2) and La Paz (2)), 17h. (La Paz, near Kobe, and Sumoto), 21h. (Ekaterinburg and Irkutsk).

Mar. 24d. 5h. 41m. 6s. Epicentre 19°·0N. 70°·0W. (as on 1924 Sept. 17d.).

A = +·323, B = −·889, C = +·326; D = −·940, E = −·342; G = +·111, H = −·306, K = −·946.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		2·1	260	i 0 56	+23	—	—	1·4	1·9
San Juan		3·8	98	e 1 3	+ 4	1 38	− 6	i 2·0	3·5
Harvard		23·4	358	5 14	− 7	9 23	−10	e 10·1	—
Toronto	N.	25·9	344	i 5 54	+ 7	e 9 45	−35	10·9	—
Ann Arbor	N.	26·0	336	e 5 42	− 6	e 10 6	−16	e 12·2	—
Ottawa		26·8	351	i 6 6	+10	i 10 11	−26	e 12·4	—
Chicago	E.	27·2	330	e 8 41	?	11 17	+32	15·3	17·8
La Paz		35·6	177	7 18	0	i 13 6	+ 2	20·3	21·5
Sucre		38·3	173	7 39	− 1	—	—	—	—

Additional readings: San Juan eN = +1m.18s., S = +1m.26s., iN = +1m.50s. Ann Arbor eE = +5m.54s. and +9m.54s.; T_o = 5h.41m.18s. Ottawa eSR_1E? = +11m.4s.; T_o = 5h.42m.5s. Chicago eE = +10m.30s. = S − 15s. La Paz iSN = +12m.28s.

Mar. 24d. 7h. 4m. 30s. Epicentre 35°·5N. 29°·0E. (as on March 23d.).

		Δ	Az.	P	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		4·9	302	1 19	+ 3	i 2 14	0	i 2·4	3·6
Belgrade	E.	11·4	328	e 3 42	+52	e 5 33	+29	6·4	6·4
	N.	11·4	328	e 3 59	+69	e 6 19	+75	6·5	6·5
Pompeii		12·5	299	e 4 30?	+84	e 8 30?	?L	(e 8·5)	—
Naples		12·8	299	e 3 32	+22	e 5 52	+13	—	9·2
Piatigorsk		13·7	48	e 3 25	+ 3	i 6 3	+ 2	—	8·5
Budapest		14·1	332	3 22	− 5	7 22	+72	i 8·3	11·5
Rocca di Papa		14·2	301	e 3 19	−10	e 6 6	− 7	e 9·4	—
Makeyevka		14·2	25	—	—	e 5 22	−51	9·5	—
Zagreb		14·2	320	—	—	0 42?	?	—	1·2
Graz		15·3	323	e 3 42	− 1	e 6 57	+18	7·5	10·0
Vienna		15·8	328	e 3 46	− 3	i 6 15	−35	—	10·3
Florence	E.	15·9	307	3 40	−11	6 50	− 3	—	9·5
Venice		16·0	313	—	—	—	—	9·8	—
Innsbruck		17·6	318	e 4 16	+ 4	—	—	—	—
Moncalieri		18·7	307	4 39	+14	7 46	− 9	10·2	13·2
Ravensburg		18·9	316	e 4 30?	+ 2	e 7 55	− 5	e 10·0	—
Zurich		19·3	314	e 4 24	− 9	e 7 55	−13	—	—
Hohenheim		19·6	319	e 4 30?	− 6	—	—	—	—
Strasbourg		20·4	316	e 4 37	− 9	8 30	− 2	10·5	13·8
Besançon		20·8	312	e 4 55	+ 4	8 52	+12	13·5	—
Algiers		20·9	281	e 4 46	− 6	8 38	− 4	—	—
Kucino		21·1	14	—	—	e 8 27	−19	—	—
Hamburg	Z.	22·5	330	e 5 0	−11	—	—	—	—
Uccle		23·4	319	e 5 17	− 4	9 19	−14	11·5	—
Paris		23·5	313	e 5 33	+10	e 9 35	0	13·5	13·5
De Bilt		23·7	322	—	—	9 34	− 4	e 12·5	15·8
Pulkovo		24·3	2	5 16	−15	9 31	−19	11·5	14·5
Leningrad		24·5	2	5 16	−17	e 9 33	−21	11·5	—
Upsala		25·4	347	—	—	—	—	e 13·5	—
Granada		26·2	284	i 5 28	−22	e 8 37	?	14·4	16·6
San Fernando		28·4	282	—	—	—	—	—	20·5
Edinburgh		29·9	322	—	—	e 11 30?	− 2	—	20·5
Ekaterinburg		30·1	35	6 43	+14	—	—	13·5	20·2
Irkutsk		54·1	47	—	—	e 16 54	−16	27·5	—
Ottawa		74·5	315	—	—	—	—	e 34·5	—
Toronto		77·6	315	—	—	—	—	34·0	—
Chicago	E.	83·4	318	—	—	e 23 15	+14	48·4	—

Additional readings: Athens MN = +2·9m. Budapest iN = +8m.54s., MN = +11·2m. Rocca di Papa ePE = +3m.33s., PR_1Z = +6m.52s. = SR_1 +26s. Florence eP = +3m.50s., S = +6m.45s. Moncalieri MN = +13·3m. Strasbourg eP = +4m.40s., MN = +12·2m. Algiers readings are given for 23d. Paris iP = +5m.37s. De Bilt eLN = +11·5m., MZ = +15·7m. Pulkovo MZ = +15·3m., MN = +18·3m. Ekaterinburg e = +9m.57s., +10m.40s., and +10m.57s., MN = +18·2m.

Mar. 24d. 10h. 54m. 42s. Epicentre 14°·0N. 89°·0W. (as on 1924 May 1d.).

A = +·017, B = −·970, C = +·242; D = −1·000, E = −·017; G = +·004, H = −·242, K = −·970.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Merida		7·0	356	3 59	?L	—	—	5·4	6·3
Oaxaca		8·1	294	1 35	−28	—	—	2·7	3·1
Vera Cruz		8·6	308	1 40	−30	—	—	3·0	4·3
Puebla		10·2	301	—	—	—	—	6·3	7·2
Tacubaya		11·2	300	2 32	−17	(4 20)	−39	4·3	4·8
Chicago	E.	27·8	2	—	—	11 7	+12	13·6	16·7
Ann Arbor		28·7	8	—	—	—	—	e 16·2	—
Toronto	N.	30·8	14	e 6 37	+ 1	e 11 39	− 9	18·5	21·7
Ottawa		33·3	18	9 18?	?	e 12 21	− 8	e 17·3	22·3
La Paz		36·8	145	e 7 32	+ 4	13 26	+ 5	18·8	—
Sucre		40·5	144	e 8 4	+ 5	—	—	20·7	23·8
Victoria	E.	44·5	329	—	—	—	—	26·4	29·6

Additional readings: Chicago SE = +11m.35s., SR_1E = +12m.38s. Toronto ME = +18·9m. Ottawa MN = +19·8m. Victoria LN = +25·4m.

Mar. 24d. 11h. 7m. 8s. Epicentre 50°·0N. 97°·0E.

A = −·078, B = +·638, C = +·766; D = +·993, E = +·122; G = −·093, H = +·760, K = −·643.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		5·1	61	i 1 15	− 4	i 2 13	− 7	—	—
Ekaterinburg		22·4	302	5 14	+ 4	i 9 19	+ 6	10·9	14·7
Simla		24·0	226	—	—	e 10 28	?SR_1	—	—
Phu-Lien		30·2	162	e 15 34	?L	e 16 56	?	e 17·6	—
Hong Kong		30·8	148	14 3	?SR_2	—	—	17·7	18·1
Kucino		35·0	303	e 12 5	?	e 12 37	−18	18·4	19·7
Platigorsk		36·4	281	—	—	—	—	e 43·3	52·9
Bombay		36·6	221	e 4 52?	?	—	—	—	—
Makeyevka		37·7	290	—	—	e 16 21	?SR_2	22·9	—
Pulkovo		37·8	311	7 30	− 6	e 13 26	− 9	18·4	25·4
Leningrad		37·8	311	e 7 32	− 4	—	—	18·4	24·4
Manila		40·4	143	—	—	—	—	e 19·9	26·4
Upsala	N.	43·8	315	—	—	—	—	e 23·9	—
Budapest	E.	49·0	299	—	—	—	—	e 22·9	—
Hamburg		50·5	310	—	—	—	—	e 26·9	32·4
Graz		51·2	300	—	—	—	—	—	28·5
De Bilt		53·7	310	—	—	e 16 34	−31	e 27·9	32·0
Strasbourg		54·6	305	e 10 52?	+75	—	—	27·9	—
Uccle		54·9	310	—	—	—	—	e 29·9	—
Edinburgh		55·2	317	—	—	—	—	e 27·9	—
Rocca di Papa		56·1	296	e 9 25	−22	e 17 25	−10	e 31·0	34·1
Moncalieri		56·8	303	—	—	—	—	31·6	—
Oxford		57·0	314	—	—	—	—	—	37·8
Paris		57·1	309	—	—	—	—	e 32·5	—
Granada		68·1	303	—	—	e 25 34	?SR_1	e 30·4	31·6
San Fernando	E.	70·3	304	—	—	—	—	—	41·9
Toronto	N.	86·3	357	—	—	—	—	46·1	95·4

Additional readings and notes: Irkutsk iP = +1m.24s. Ekaterinburg MN = +13·3m., MZ = +13·8m. Platigorsk i = +44m.26s. Makeyevka i = +20m.56s. Pulkovo MZ = +24·8m. Leningrad MZ = +26·1m. Upsala eE = +24m.52s.? Budapest eN = +23m.52s.? De Bilt MN = +31·8m., MZ = +35·5m. Rocca di Papa eE = +9m.55s., eN = +10m.1s. Moncalieri e = +27m.42s. San Fernando MN = +36·9m.

Mar. 24d. 16h. 37m. 48s. Epicentre 43°·4N. 17°·8E.
(as on Mar. 19d. and given by Belgrade).

A = +·692, B = +·222, C = +·687 ; D = +·306, E = −·952 ;
G = +·654, H = +·210, K = −·727.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mostar		0·1	166	−0 24	−26	−0 12	−15	—	−0·1
Sarajevo		0·7	44	e 0 6	− 5	0 21	+ 1	—	0·4
Belgrade	E.	2·4	53	e 0 35	− 2	i 1 16	+10	—	1·4
	N.	2·4	53	e 0 41	+ 4	i 1 19	+13	—	1·3
Zagreb		2·7	332	e 0 47	+ 5	e 1 20	+ 6	—	—
Laibach		3·5	320	0 58	+ 3	1 41	+ 4	—	2·2
Pompeii		3·6	224	e 2 12?	+76	e 2 42?	+63	—	—
Naples		3·7	228	e 1 24	+26	e 2 2	+20	—	—
Rocca di Papa		4·1	249	1 15	+11	2 18	+25	—	2·4
Budapest		4·2	12	i 1 15	+10	i 1 57	+ 2	—	—
Venice		4·4	300	1 52	?S	(1 52)	− 9	3·3	—
Vienna	Z.	5·0	349	e 1 15	− 2	—	—	i 2·7	3·0
Innsbruck	N.W.	5·9	313	e 1 30	− 1	i 3 11	?L	(i 3·2)	—
Ravensburg		7·2	311	—	—	e 2 57	−18	—	—
Zurich		7·6	305	e 2 57	?S	(e 2 57)	−29	(e 3·9)	—
Hohenheim		8·0	315	e 3 42	?S	(e 3 42)	+ 5	—	—
Strasbourg		8·7	310	e 3 22	?S	e 5 10	?L	(e 5·2)	—
Besançon		9·1	299	—	—	e 4 42	− 4	—	—
De Bilt		12·1	320	—	—	—	—	e 7·0	—

Additional readings : Belgrade iN = +45s., iE = +46s. ; epicentre as adopted. Rocca di Papa iSE = +2m.25s. Laibach e = +1m.31s. Venice S = +2m.40s. Innsbruck eNE = +2m.59s. Strasbourg PR_2 = +4m.38s.

Mar. 24d. Readings also at 5h. (La Paz and Sucre), 6h. (Irkutsk and Port au Prince), 7h. (near Zagreb), 11h. (near Tacubaya, near Osaka, and Ootomari), 12h. (Ottawa, Merida, and near Tacubaya), 13h. (near Irkutsk, near Mizusawa, and near Tacubaya), 16h. (Toronto, Ottawa, near Mostar (2), and near Tacubaya), 17h. (Tokyo), 19h. (Irkutsk, Hong Kong, Ekaterinburg, and near Sumoto), 20h. (Chicago and Sucre).

March 25d. 13h. 18m. 48s. Epicentre 43°·5N. 143°·0E.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		3·2	357	0 51	+ 1	—	—	1·8	—
Mizusawa		4·6	198	1 8	− 3	1 59	− 7	—	—
Nagoya		9·5	211	e 0 31	−112	2 37	−99	3·2	3·4
Osaka		10·6	216	3 6	+28	—	—	5·3	6·0
Zi-ka-wei		21·0	241	e 4 57	+ 4	e 8 40	− 4	—	14·7
Taihoku	E.	25·4	230	—	—	—	—	11·2	—
Irkutsk		27·0	302	e 6 10	+12	i 10 38	− 3	13·2	—
Hong Kong		31·8	238	11 47	?S	(11 47)	−18	—	18·7
Manila		34·5	220	e 7 3	− 6	(12 55)	+ 7	12·9	—
Ekaterinburg		51·0	316	i 9 14	+ 1	i 16 36	+ 5	26·2	32·3
Leningrad		62·9	329	i 10 32	+ 1	e 19 5	+ 5	32·2	41·3
Pulkovo		63·0	329	10 33	+ 1	19 6	+ 5	31·2	41·4
Baku		65·4	304	e 10 52	+ 5	e 19 42	+12	33·7	—
Makeyevka		67·3	316	e 11 4	+ 4	20 2	+ 8	32·2	51·6
Upsala		67·4	334	e 10 59	− 1	e 19 56	+ 1	—	—
Hamburg		75·0	334	e 11 47	− 2	e 21 58	[+11]	e 39·2	—
Vienna	Z.	77·0	327	i 11 59	− 2	—	—	—	—
De Bilt		77·7	335	12 2	− 3	21 57	0	e 39·2	—
Uccle		79·1	335	e 12 12	− 2	e 22 10	− 3	38·2	—
Innsbruck		79·7	329	e 12 12	− 5	—	—	—	—
Strasbourg		79·9	331	12 12?	− 6	—	—	41·2	—
Paris		81·4	335	—	—	—	—	e 41·2	54·2
Rocca di Papa		83·8	325	e 12 33	− 8	e 22 53	−14	e 45·6	52·2
Granada		93·8	335	—	—	—	—	e 51·2	59·5
San Fernando	E.	95·3	337	—	—	—	—	—	57·7

Additional readings and notes : Mizusawa PN = +1m.9s. Osaka MN = +7·4m. Ekaterinburg e = +18m.59s., MZ = +34·6m. Leningrad i = +10m.47s. Pulkovo MN = +41·6m. Makeyevka PS = +21m.0s., MZ = +44·5m. San Fernando MN = +64·2m.

March 25d. 19h. 8m. 50s. Epicentre 8°·0S. 135°·0E. (as on 1917 Jan. 11d.).

$A = -\cdot700$, $B = +\cdot700$, $C = -\cdot139$; $D = +\cdot707$, $E = +\cdot707$; $G = +\cdot098$, $H = -\cdot098$, $K = -\cdot990$.

See note at end.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Adelaide		27·1	174	—	—	i 7 49	−174	9·5	19·7
Riverview		30·2	153	e 4 12	−138	(e 10 28)	−69	e 10·5	15·6
Sydney		30·2	153	(6 28)	− 2	6 28	?P	15·5	16·6
Melbourne		31·2	164	—	—	e 10 28	−86	18·3	19·5
Taihoku	E.	35·5	339	—	—	—	—	14·2	—
Hong Kong		36·5	326	—	—	—	—	—	24·2
Zi-ka-wei		41·3	343	8 17	+12	e 14 10	−15	—	26·0
Honolulu	E.	71·9	64	—	—	—	—	e 34·2	—
Ekaterinburg		88·3	328	13 6	− 1	23 55	0	42·2	50·2
Kucino		100·5	325	—	—	—	—	62·8	—
Makeyevka		100·6	318	—	—	—	—	58·2	—
Victoria	E.	103·7	41	—	—	—	—	44·3	53·3
Pulkovo		104·3	330	e 14 10	−21	—	—	59·2	69·0
Leningrad		104·3	330	—	—	—	—	e 64·2	—
De Bilt	E.	120·0	327	—	—	—	—	e 64·2	—
Strasbourg		120·1	322	—	—	—	—	39·2	—
Uccle		121·0	326	—	—	—	—	e 63·2	—
Paris		123·0	325	—	—	—	—	e 76·2	79·2
Ann Arbor	E.	131·7	37	—	—	e 45 34	?SR_2	e 61·4	—
Granada		132·5	314	—	—	—	—	e 40·2	80·4
Toronto	N.	133·4	33	—	—	—	—	58·2	—
Ottawa		134·2	29	—	—	e 38 28	?SR_1	66·2	—
San Fernando		134·7	315	—	—	—	—	96·7	—

Additional readings: Riverview MN = +16·4m. Honolulu eN = +26m.10s. ? = SR_1 − 9s. Ekaterinburg eSR_3 = +30m.55s. = SR_1 +47s. Pulkovo MN = +67·0m., MZ = +67·5m. De Bilt eLN = +59·2m. Ottawa eLN = +52·2m.

NOTE ON MAR. 25d. 19h. 8m. 50s.

The above solution is far from satisfactory, but it will be seen that the observations are not consistent, so that it is difficult to suggest an improvement. The Australian observations all demand an epicentre nearer to Australia, *i.e.*, further south, though they differ among themselves as to the amount. This would make the epicentre further from Ekaterinburg, and so far throws doubt on those observations. We may remark

(a) That S for Ekaterinburg cannot be [S], since the interval [S] − P is close to 10m.13s. for a wide range of Δ (88° to 97° at least).

(b) Nor can it be PS, since PS − P is near 14m.

(c) Nor can P be PR_1 with S = PS, since PS − PR_1 = 10m.

Briefly, if we accept the Ekaterinburg observations we can only reconcile them with the Australian by moving the epicentre further south and assuming a deep focus, say as follows:—

ALTERNATIVE SOLUTION.

Mar. 25d. 19h. 8m. 50s. Epicentre 11°·0S. 134°·0E. (as on 1923 May 26d. 8h.).

A focal depth +·020 below normal is assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	°	m. s.	s.	m. s.	s.
Adelaide	−1·1	24·3	171	—	—	i 7 49	−100
Riverview	−1·3	27·7	148	e 4 12	−100	(e 10 27)	− 3
Sydney	−1·3	27·7	148	(6 28)	+36	6 28	?PR_1
Melbourne	−1·3	28·5	162	—	—	e 10 28	−17
Zi-ka-wei	−1·8	43·9	347	8 17	+ 5	e 14 10	−26
Ekaterinburg	−2·8	90·3	329	13 6	+ 4	23 55	+ 8

But on March 4d. 9h. 30m. there is another case where the Australian residuals are all large negatives and where it is difficult to assume a deep focus because of [P] observations at La Plata and La Paz.

March 25d. Readings also at 0h. (Sucre), 2h. (Tokyo), 3h. (Ekaterinburg and Baku), 10h. (Belgrade), 11h. (Florence and Strasbourg), 14h. (near Florence), 15h. (La Paz), 17h. (Ekaterinburg (2), Strasbourg, Sucre, La Paz, and Taihoku), 18h. (Perth, La Paz, Tokyo, De Bilt, Leningrad, Pulkovo, and Ottawa), 19h. (Uccle), 21h. (Tacubaya).

March 26d. Readings at 0h. (Ekaterinburg), 1h. (near Sumoto), 3h. (Tokyo), 4h. (Irkutsk, near Batavia, and Malabar), 6h. (Tacubaya, near Lick, and Berkeley), 9h. (Manila), 10h. (Ekaterinburg), 11h. (Baku, Piatigorsk, and Tokyo), 12h. (Irkutsk and Ekaterinburg), 14h. (near La Paz, Sucre, and Irkutsk), 17h. (Taihoku and Tacubaya), 21h. (Innsbruck).

March 27d. 6h. 23m. 18s. Epicentre 0°·3N. 80°·4W.

$A = +\cdot167$, $B = -\cdot986$, $C = +\cdot005$; $D = -\cdot986$, $E = -\cdot167$; $G = +\cdot001$, $H = -\cdot005$, $K = -1\cdot000$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	E.	20·7	145	i 4 55	+ 6	8 42	+ 4	11·2	14·9
	N.	20·7	145	i 4 47	− 2	8 34	− 4	—	14·4
Sucre		24·4	143	i 5 32	0	i 9 54	+ 2	13·2	17·4
La Plata		41·0	151	—	—	—	—	24·7	—
Chicago	E.	42·0	353	—	—	14 35	0	e 22·4	25·4
Toronto	N.	43·4	1	—	—	—	—	24·7	—
Ottawa		45·3	6	—	—	e 15 18	− 1	e 22·7	—
Victoria	E.	60·7	329	—	—	—	—	36·8	38·1
De Bilt		87·1	38	—	—	—	—	e 47·7	—
Ekaterinburg		114·9	22	—	—	—	—	35·7	—

Additional readings: Sucre i = +5m.42s.; T_0 = 6h.23m.20s. Chicago SR_1E = +18m.0s. = SR_2 − 24s. Ottawa e = +18m.24s. = SR_1 − 12s.

March 27d. 10h. 48m. 22s. Epicentre **9°·5S. 157°·0E.**

(as on 1924 July 8d.).

$A = -\cdot908$, $B = +\cdot385$, $C = -\cdot165$; $D = +\cdot391$, $E = +\cdot920$; $G = +\cdot152$, $H = -\cdot064$, $K = -\cdot986$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		22·4	115	i 3 28	−102	i 7 50	−83	10·3?	—
Riverview		24·9	191	i 5 39	+ 2	i 10 3	+ 2	e 11·4	14·5
Sydney		24·9	191	5 32	− 5	10 8	+ 7	12·6	13·6
Amboina		29·2	280	i 5 30	−50	—	—	15·1	—
Melbourne		30·3	199	i 7 2	?PR_1	11 38	− 1	14·7	15·9
Adelaide		30·5	210	i 6 24	− 9	i 11 10	−33	i 13·0	18·8
Apia		30·8	101	6 42	+ 6	11 57	+ 9	15·3	16·6
Wellington	E.	35·4	157	i 8 33	?PR_1	12 58	− 3	i 15·3	15·6
	N.	35·4	157	i 8 38	?PR_1	12 58	− 3	i 15·4	19·9
Manila		43·1	304	i 8 15	− 4	i 14 13	−36	i 18·4	19·3
Perth		44·2	234	8 38	+11	15 13	+ 8	22·0	39·6
Nagoya		48·5	338	e 8 26	−31	—	—	—	—
Sumoto		48·6	335	e 12 45	?	15 55	− 6	21·0	—
Osaka		48·7	336	9 5	+ 7	16 1	− 1	20·1	21·0
Kobe		48·8	336	8 55	− 4	15 53	−11	20·5	21·2
Malabar		48·9	271	i 8 59	0	i 16 2	− 3	22·9	—
Taihoku		48·9	317	9 8	+ 9	15 59	− 6	19·6	20·7
Batavia		49·7	273	i 9 6	+ 1	i 16 12	− 3	21·9	—
Hukuoka		49·9	331	8 57	− 9	16 18	0	21·0	23·4
Mizusawa		50·8	345	8 20	−52	16 29	0	24·5	—
Hong Kong		52·7	308	9 25	+ 1	(16 55)	+ 3	16·9	17·3

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		53·1	322	i 9 23	− 4	15 10	−107	—	28·4
Honolulu	E.	53·8	55	e 9 43	+11	e 17 18	+12	e 23·6	28·3
	N.	53·8	55	e 10 2	+30	e 17 22	+16	23·6	25·7
Ootomari		57·6	349	9 43	−13	17 49	− 5	24·2	27·7
Phu-Lien		58·1	300	i 10 7	+ 7	i 18 10	+10	26·6	30·0
Calcutta		74·4	297	11 49	+ 4	21 25	+ 6	31·8	—
Irkutsk		76·4	330	12 3	+ 6	21 47	+ 5	32·6	37·5
Colombo		78·6	278	12 13	+ 2	22 13	+ 6	51·2	56·1
Kodaikanal		81·6	282	18 32	?PR_1	—	—	50·8	57·5
Hyderabad		82·2	289	12 33	+ 2	22 47	− 1	43·9	54·6
Sitka		86·2	30	—	—	23 38	+ 6	38·2	44·4
Simla	E.	86·4	303	e 13 14	+19	23 26	− 8	—	45·2
	N.	86·4	303	e 14 26	+91	23 32	− 2	e 35·9	51·5
Bombay		87·6	290	e 13 7	+ 4	23 29	−19	42·1	73·4
Berkeley		88·6	50	e 13 17	+ 9	e 23 42	−17	—	—
Victoria	E.	90·4	40	13 31	+13	23 55	−23	38·1	48·7
	N.	90·4	40	13 31	+13	24 23	+ 5	—	46·8
Spokane		94·0	42	—	—	e 24 38	−18	43·6	48·7
Tucson	E.	96·8	57	—	—	25 6	−18	e 44·0	47·6
Ekaterinburg		101·4	326	i 14 7	−10	i 25 44	−25	38·6	57·0
Denver	E.	102·2	50	—	—	—	—	57·6	—
Baku		109·1	310	e 15 18	+25	i 26 56	−24	—	58·7
Piatigorsk		113·7	315	e 19 31	?PR_1	i 29 21	+81	—	71·6
St. Louis	N.	113·7	51	—	—	e 38 15	?	e 49·0	56·6
Kucino		114·0	328	19 48	?PR_1	e 30 46	?	49·4	54·2
Leningrad		116·0	333	e 15 14	−11	—	—	44·6	73·8
Pulkovo		116·1	333	15 13	−12	27 50	−29	43·6	60·3
Makeyevka		116·2	320	—	—	26 54	−86	47·6	71·7
Ann Arbor	N.	117·9	46	e 22 8	?	e 30 2	+89	e 36·4	37·5
Johannesburg		118·9	232	—	—	—	—	48·6	—
Toronto	E.	120·5	44	20 33	?PR_1	27 38	−75	36·7	—
Upsala		121·3	337	e 20 26	?PR_1	—	—	51·6	64·0
Cape Town		121·4	220	30 38	?	37 30	?SR_1	—	65·6
Ottawa		122·4	40	i 20 46	?PR_1	e 27 58	−69	e 37·4	—
Ithaca		122·9	44	e 32 13	?	—	—	e 54·6	—
Konigsberg	N.	123·2	332	—	—	i 37 32	?SR_1	—	59·6
Georgetown		123·6	49	—	—	—	—	62·6	—
La Plata		124·7	145	21 26?	?PR_1	32 44	?	53·1	—
Ste. Anne		124·8	37	e 21 9	?PR_1	e 28 14	−71	e 36·2	—
Bergen		124·9	344	e 18 58	[− 8]	20 38?	?PR_1	e 41·6	—
Fordham		125·4	45	20 36	?PR_1	28 10	−79	52·9	78·2
Harvard	E.	126·7	42	—	—	e 29 44	+ 6	58·6	68·6
Budapest		128·1	325	20 52	?PR_1	—	—	e 38·6	67·1
La Paz		128·3	121	e 19 45	[+30]	e 31 47	?	i 60·9	68·0
Hamburg		128·6	335	e 19 19	[+ 4]	—	—	e 52·6	64·6
Vienna		129·1	329	e 19 25	[+ 9]	—	—	e 53·6	64·6
Athens		129·4	312	20 4	?	32 56	?	57·6	70·6
Sucre		129·5	124	e 20 3	[+46]	32 11	?	62·1	71·8
Cheb		130·0	331	e 21 45	?PR_1	—	—	e 49·6	55·6
Graz		130·3	327	e 22 33	?	31 29	?	53·6	64·8
Zagreb		130·8	325	e 19 36	[+16]	e 22 58	?	e 63·6	—
Edinburgh		131·1	345	e 21 50	?PR_1	i 39 23	?SR_1	52·6	63·1
De Bilt		131·6	336	19 35	[+13]	—	—	e 58·6	61·7
Hohenheim		132·4	332	e 18 38?	[−46]	—	—	e 57·6	67·3
Stonyhurst		132·7	343	—	—	—	—	56·6	65·6
Ravensburg		132·9	331	—	—	—	—	e 61·6	—
Venice		133·0	328	20 12	[+47]	24 16	?	—	—
Uccle		133·0	336	e 19 33	[+ 8]	—	—	57·6	61·6
Strasbourg		133·2	331	e 19 35	[+ 9]	—	—	59·6	68·8
Bidston		133·3	343	(19 38)	[+12]	19 38	?[P]	53·3	78·1
Zurich	Z.	133·7	330	e 19 41	[+14]	—	—	—	—
Oxford		134·2	341	22 47	?	—	—	54·9	69·0
Pompeii		134·5	320	e 21 38?	?PR_1	e 34 38?	?	61·6	79·6
Naples	E.	134·6	320	e 22 27	?PR_1	e 32 57	?	51·6	66·6
Florence	N.	134·7	324	19 38	[+ 9]	e 29 13	?	59·6	69·6
	Z.	134·7	324	i 19 30	[+ 1]	—	—	77·6	—
Besançon		135·0	332	e 23 14	?	e 40 13	?SR_1	66·6	—
Rocca di Papa		135·1	321	e 19 41	[+11]	e 29 41	?	e 60·5	67·6
Paris		135·3	336	e 19 43	[+12]	e 29 6	?	69·6	—
Moncalieri		135·8	329	20 6	[+34]	32 39	?	55·5	87·1
Bagnères		140·8	334	e 19 38?	[− 3]	e 23 12	?PR_1	62·6	—
Barcelona		141·1	330	e 23 12	?PR_1	—	—	e 58·8	71·7
Tortosa	N.	142·4	330	e 20 20	[+36]	35 11	?	e 57·6	72·0
Algiers		143·9	322	e 19 44	[− 3]	32 37	?	58·6	124·6

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Alicante	144·8	330	e 20 8	[+20]	e 33 1	?	47·3	66·6
Toledo	145·3	335	e 19 54	[+ 5]	e 41 39	?SR_1	e 63·6	74·9
Granada	147·3	330	i 20 1	[+ 9]	—	—	66·6	87·6
Malaga	148·0	331	20 8	[+15]	e 33 10	?	e 47·6	81·9
Rio Tinto	148·1	336	28 38?	?	—	—	—	135·6
Lisbon	148·3	338	20 16	[+23]	—	—	e 61·3	—
San Fernando	149·0	332	i 20 7	[+13]	—	—	71·6	79·1

Additional readings: Riverview PS = +10m.27s. = SR_1 −34s., MZ = +13·2m., MN = +14·8m.; T_o = 10h.49m.28s., epicentre 9°·5S. 152°·5E. Sydney readings are given for 12h. Adelaide iPR_2 = +7m.13s. = PR_1 −12s., MN = +18·1m. Apia SR_2? = +13m.45s.; T_o = 10h.48m.31s. Wellington iN = +9m.34s., iE = +10m.17s., iSE = +12m.34s., iSN = +12m.36s.; the S's entered are given as S max. Manila MN = +19·5m. Perth SR_1? = +17m.38s. Sumoto SR_1 = +17m.58s. Osaka MN = +21·1m. Kobe MN = +27·7m. Malabar i = +10m.16s. Taihoku SN = +16m.5s. Batavia iE = +15m.17s. Mizusawa PN = +8m.36s. Honolulu iP_gPE = +11m.0s., PR_1E = +12m.14s., PR_1N = +12m.33s., PR_2N = +13m.14s. = PR_2 −2s., eE = +14m.48s. eN = +15m.20s., iSE = +17m.24s., iSN = +17m.28s., eE = +18m.26s., and +19m.20s., eN = +18m.32s., eS_gSN = +19m.56s., SR_1N = +21m.32s., SR_2N = +23m.26s. = SR_2 +2s. Phu-Lien MN = +30·2m. Irkutsk SR_1 = +26m.15s., SR_2 = +29m.55s. Sitka PSE = +24m.26s., SR_1E = +29m.33s., eN = +31m.44s., LN = +35·7m., MN = +44·5m. Berkeley ePE = +13m.19s., and many other e readings. Spokane PS? = +26m.6s., eN = +34m.38s., +39m.19s., and +43m.38s. Tucson PSE = +26m.40s. SR_1E = +31m.38s., eE = +33m.55s. Makeyevka ePR_1 = +19m.4s. = [P] +23s., e = +20m.4s. = PR_1 +4s., and five other values: PS = +27m.52s., MN = +55·4m., MZ = +69·9m. Ekaterinburg PR_1 = +18m.12s., e = +30m.7s., +35m.56s., and +38m.6s., SR_2 = +32m.50s. = SR_1 −4s., MN = +46·1m., MZ = +58·4m. Denver SR_1E = +52m.38s.? Baku i = +19m.16s.(?PR_1), MN = +59·3m., MZ = +59·4m. Piatigorsk i = +19m.43s. = PR_1 +1s. St. Louis ePR_2N = +22m.55s., ePR_2N = +24m.51s., ePPSN = +30m 54s., ME = +59·6m. Kucino P_gP = +20m.43s., PR_2 = +25m.44s. = [S] +18s., e = +27m.25s., eS_gP_gS = +29m.27s., i = +35m.40s. = SR_1 +8s., and +46m.38s., e = +38m.21s., MN = +52·3m. Leningrad PR_1 = +19m.8s. = [P] +27s., i = +19m.55s. = PR_1 −3s., MN = +58·9m., MZ = +69·1m. Pulkovo PR_1 = +19m.9s. = [P] +28s., i = +19m.56s. = PR_1 −3s., e = +27m.29s., i = +36m.6s. = SR_1 +7s., MN = +56·1m., MZ = +69·1m. Toronto PN = +20m.38s. = PR_1 +11s., eE = +26m.6s. = PR_2 +9s. Upsala i = +37m.13s. = SR_1 +10s., MN = +63·1m. Konigsberg iE = +42m.2s., iN = +47m.8s. = SR_2 −4s., ME = +64·6m. Fordham SR_1 = +38m.16s., SR_2 = +42m.54s. Harvard PR_1E = +21m.29s., ePR_2E = +25m.4s., eN = +29m.59s., PPSE = +32m.45s., PPSN = +32m.54s., eSR_1N = +38m.26s., SR_1E = +38m.38s., SR_2N = +42m.47s., SR_2E = +43m.45s., SR_2N = +46m.29s., SR_2E = +46m.31s., LN = +59·9m., MN = +69·0m., and several other e's. Budapest iE = +24m.38s. = PR_2 −10s., and +26m.13s., MN = +64·1m. La Paz PR_2 = +28m.38s., SR_1 = +39m.2s., and +39m.29s., SR_2 = +43m.47s., iLN = +61·1m., MN = +64·3m. Hamburg iE = +22m.49s., i = +38m.44s. = SR_1 +10s. Vienna P = +23m.6s., PR_1 = +24m.8s., PR_2 = +26m.23s., PPS = +34m.14s., SR_1 = +39m.8s., MZ = +76·6m., and several e and i readings. Athens MN = +97·1m. Sucre iP = +20m.51s., PR_1 = +22m.55s., i = +24m.47s. = PR_2 −12s., PR_2 = +28m.21s., SR_1 = +39m.15s., SR_2 = +41m.49s. De Bilt e = +21m.52s. = PR_1 +12s., and +39m.18s. = SR_1 +8s., MN = +66·2m. Hohenheim e = +23m.8s. and +39m.43s. Uccle i = +23m.4s., e = +39m.33s. = SR_1 +5s., MN = +66·9m. Strasbourg e = +22m.3s. = PR_1 +13s., +22m.26s., +23m.6s., +23m.20s., and +29m.48s. = S −34s., MN = +67·8m., MZ = +75·6m. Bidston P = +27m.43s. = PR_2 −14s., S = +39m.53s., perhaps a subsequent shock for which L and M are as entered in the table. Rocca di Papa ePZ = +20m.0s., PR_1E = +22m.35s. Moncalieri MN = +78·1m. Barcelona MN = +72·2m. Algiers PR_1 = +24m.0s., MN = +83·6m. Alicante MN = +74·2m. Toledo iP = +19m.59s., iS = +42m.12s. = SR_2 +17s., MNW = +76·3m. Granada i = +22m.55s., +24m.16s., +26m.20s. = PR_2 −42s., +29m.27s. = PR_2 −26s., and +32m.18s. San Fernando SR_1 = +43m.8s., MN = +92·6m.

March 27d. Readings also at 4h. (La Paz), 11h. (Ste. Anne, Ottawa, Toronto, and Ann Arbor), 13h. (Kodaikanal), 14h. (Tokyo), 16h. (near Mostar), 20h. (Sucre).

March 28d. 17h. 49m. 50s. Epicentre 43°·8N. 11°·2E. (as on 1925 March 15d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0·0	—	0 0	0	—	—	—	0·2
Venice	1·9	26	e 0 26	− 3	—	—	1·2	—
Rocca di Papa	2·3	152	i 0 12	−24	1 12	+ 9	—	—
Moncalieri	2·8	295	—	—	—	—	e 1·5	—
Innsbruck	3·5	2	e 1 1	+ 6	—	—	—	—
Naples	3·7	141	e 1 10	+12	—	—	—	—
Pompeii	3·9	142	e 5 10?	?	—	—	—	—
Zurich	4·0	332	e 0 52	−10	e 2 9	?L	(e 2·2)	—
Strasbourg	5·3	334	e 1 27	+ 5	e 2 20	− 5	—	—
Vienna z.	5·7	37	e 2 36	?S	(e 2 36)	0	—	—
Uccle	8·4	329	—	—	—	—	e 4·8	—
De Bilt	9·2	336	—	—	e 4 52	+44	e 5·9	—
Hamburg	9·8	356	—	—	—	—	e 6·2	—

Additional readings: Venice ePN = +55s. Rocca di Papa $PR_1 = +42$s.

March 28d. Readings also at 0h. (Ekaterinburg), 5h. (near Port au Prince and near Sumoto), 7h. and 9h. (Sucre), 12h. (Ekaterinburg and Florence), 13h. (Tokyo), 15h. (near Sumoto), 18h. (Florence), 19h. (Budapest), 20h. (La Paz), 21h. (Baku, Ekaterinburg, Budapest, Strasbourg, De Bilt, Uccle, and near Athens), 22h. (near Port au Prince).

March 29d. 15h. 52m. 55s. Epicentre 20°·0N. 101°·5E. (as on 1925 Dec. 23d.).

$A = -·187$, $B = +·921$, $C = +·342$; $D = +·980$, $E = +·199$; $G = -·068$, $H = +·335$, $K = -·940$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	4·8	82	i 1 19	+ 5	1 2 31	+20	e 2·8	3·2
Hong Kong	12·1	77	5 42	?S	(5 42)	+21	6·6	6·8
Taihoku N.	19·2	71	6 44	?	6 50	?	7·1	7·4
Manila	19·4	103	e 5 5?	+31	—	—	—	—
Zi-ka-wei	21·1	54	—	—	—	—	e 10·7	—
Batavia	26·7	168	—	—	—	—	i 16·4	—
Bombay	27·0	273	10 48	?S	(10 48)	+ 7	—	—
Irkutsk	32·4	3	—	—	e 11 50	−24	17·1	—
Ekaterinburg	47·5	332	e 8 45	− 6	e 15 39	− 9	23·1	26·4
Baku	48·2	309	—	—	—	—	e 27·1	—
De Bilt N.	78·1	323	—	—	—	—	e 42·1	44·2

Additional readings: Phu-Lien MN = +2·8m. Bombay S = +16m.19s. Ekaterinburg $eSR_1 = +19$m.16s. De Bilt eLE = +43·1m.

March 29d. Readings also at 0h. (Ekaterinburg), 1h. (Tokyo), 7h. (Irkutsk), 8h. (La Paz and Tacubaya), 11h. (Batavia and near Mizusawa), 12h. (Ekaterinburg), 18h. (near Sumoto), 20h. (Manila (2)), 21h. (near Kobe), 22h. (Ekaterinburg and La Paz), 23h. (Ekaterinburg and Kucino).

March 30d. Readings at 2h. (Florence), 4h. (La Paz), 5h. (Ekaterinburg and Manila), 7h. (near Sumoto), 9h. (Ekaterinburg), 10h. (Toronto), 11h. (Puebla, Oaxaca, Tacubaya, Vera Cruz, near Batavia, and Malabar), 12h. (near Mizusawa), 16h. (Alicante), 18h. (near Christchurch), 23h. (near Batavia).

March 31d. 15h. 6m. 45s. Epicentre 35°·5N. 29°·0E. (as on March 24d.).

A = +·712, B = +·395, C = +·581; D = +·485, E = −·875;
G = +·508, H = +·282, K = −·814.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	N.	4·9	302	1 42	+26	2 41	+27	2·8	3·1
Piatigorsk		13·7	48	—	—	i 6 6	+ 5	—	—
Budapest		14·1	332	—	—	—	—	e 7·2	—
Florence		15·9	307	3 55	+ 4	—	—	—	4·5
Baku		17·1	67	4 6	0	7 15	− 5	10·2	11·5
Innsbruck		17·6	318	e 4 23	+11	—	—	—	—
Moncalieri		18·7	307	e 4 25	0	8 57	+62	12·8	—
Zurich	Z.	19·3	314	i 4 31	− 2	—	—	—	—
Strasbourg		20·4	316	e 4 46	0	e 8 55	+23	—	—
Kucino		21·1	14	—	—	e 8 30	−16	11·8	—
Uccle		23·4	319	—	—	—	—	12·2	—
De Bilt		23·7	322	e 5 11	−14	e 9 51	+13	e 13·0	—
Pulkovo		24·3	2	5 16	−15	9 44	− 6	12·0	15·3
Leningrad		24·5	2	5 12	−21	—	—	14·6	—
Ekaterinburg		30·1	35	e 6 42	+13	e 10 52	−44	14·2	—
Irkutsk		54·1	47	—	—	e 16 52	−17	29·2	—
Ottawa	N.	74·5	315	—	—	e 19 29	−111	30·2	—
Victoria	E.	92·6	342	—	—	—	—	45·4	49·4

Additional readings: Athens ME = +3·5m. Baku MZ = +12·2m., MN = +13·0m. Strasbourg e = +7m.15s.? Pulkovo MZ = +15·4m.

March 31d. Readings also at 9h. (Irkutsk and near Sumoto), 10h. (Ekaterinburg and Baku), 11h. (Granada, San Fernando, and near Taihoku), 15h. (Baku, Merida, Tacubaya, and near Algiers), 16h. (La Plata and Ekaterinburg), 17h. (Irkutsk).

TABLE.

Degrees.	P sec.	S sec.	S − P sec.	Degrees.	P sec.	S sec.	S − P sec.	Degrees.	P sec.	S sec.	S − P sec.
1	15	28	13	51	553	991	438	101	855	1565	710
2	31	55	24	52	560	1004	444	102	860	1575	715
3	47	83	36	53	566	1016	450	103	865	1584	719
4	62	110	48	54	573	1029	456	104	870	1593	723
5	77	137	60	55	579	1041	462	105	874	1602	728
6	92	164	72	56	586	1054	468	106	879	1612	733
7	106	190	84	57	592	1066	474	107	884	1621	737
8	121	217	96	58	599	1079	480	108	888	1630	742
9	136	243	107	59	605	1091	486	109	893	1639	746
10	150	269	119	60	612	1103	491	110	897	1648	751
11	164	294	130	61	619	1116	497	111	902	1657	755
12	179	319	140	62	625	1128	503	112	907	1666	759
13	193	344	151	63	632	1141	509	113	911	1674	763
14	206	368	162	64	638	1153	515	114	916	1682	766
15	219	392	173	65	645	1165	520	115	920	1690	770
16	232	415	183	66	651	1177	526	116	925	1698	773
17	245	438	193	67	658	1190	532	117	929	1706	777
18	257	460	203	68	664	1202	538	118	934	1714	780
19	269	482	213	69	671	1214	543	119	938	1722	784
20	281	503	222	70	677	1226	549	120	942	1729	787
21	293	524	231	71	683	1238	555	121	947	1737	790
22	305	545	240	72	690	1250	560	122	952	1744	792
23	317	565	248	73	696	1262	566	123	957	1752	795
24	328	584	256	74	702	1274	572	124	961	1759	798
25	338	603	265	75	709	1286	577	125	966	1766	800
26	348	622	274	76	715	1297	582	126	970	1773	803
27	358	641	283	77	721	1309	588	127	974	1780	806
28	368	659	291	78	727	1320	593	128	978	1787	809
29	378	677	299	79	733	1332	599	129	983	1794	811
30	388	694	306	80	739	1343	604	130	988	1801	813
31	398	711	313	81	745	1355	610	131	992	1807	815
32	407	728	321	82	750	1366	616	132	996	1814	818
33	416	744	328	83	756	1377	621	133	1001	1821	820
34	425	760	335	84	762	1388	626	134	1005	1827	822
35	433	775	342	85	768	1399	631	135	1009	1833	824
36	442	790	348	86	773	1410	637	136	1014	1840	826
37	450	804	354	87	779	1421	642	137	1018	1846	828
38	458	818	360	88	785	1432	647	138	1023	1852	829
39	466	832	366	89	790	1443	653	139	1027	1858	831
40	475	847	372	90	796	1454	658	140	1031	1864	833
41	483	861	378	91	801	1464	663	141	1035	1869	834
42	491	875	384	92	807	1475	668	142	1039	1875	836
43	498	888	390	93	812	1485	673	143	1043	1881	838
44	506	902	396	94	818	1496	678	144	1047	1886	839
45	513	915	402	95	823	1506	683	145	1051	1892	841
46	520	928	408	96	829	1516	687	146	1055	1897	842
47	527	941	414	97	834	1526	692	147	1059	1902	843
48	534	954	420	98	840	1536	696	148	1063	1907	844
49	540	966	426	99	845	1546	701	149	1067	1912	845
50	547	979	432	100	851	1556	705	150	1071	1917	846

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