The International Seismological Summary for 1925 October, November, December.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

When a mistake has been made it is very difficult to secure correction of it unless attention is called to it particularly. Let me first acknowledge an error to which Dr. S. W. Visser has kindly called attention. The town of Wonosobo was destroyed on 1924 Nov. 12 by a comparatively small earthquake, not on Nov. 24 as stated in this Summary by an oversight. Hence the epicentres of these two earthquakes should be altered. The following comparison between the old and new solutions of Nov. 12 shows the difficulty of selecting an epicentre on scanty information. The erroneous epicentre gives residuals rather better than the corrected.

Nov. 12d. 6h. 24m. 10s. (Wonosobo destroyed).

			5°·0S. 109°·0E.			7°·4S. 110°·0E. (Wonosobo)		
	P.	S.	Δ	P–C.	S–C.	Δ	P–C.	S–C.
	m. s.	m. s.	°	s.	s.	°	s.	s.
Batavia	0 55	1 14	2·4	+18	+ 8	3·3	+ 3	−17
Malabar	0 43	1 15	2·7	+ 1	− 1	2·4	+ 6	+ 9
Manila	e 5 15	—	22·9	+ 1	—	24·6	−19	—

The details for the other earthquake on Nov. 24 have been revised and are given on a sheet at the end of this number of the summary. It is distressing when such mistakes occur, in spite of all care. Dr. Visser refers to the Batavia Bulletin, and to the Vulk. Versch.en Aardb. Oost. Ind. Arch. 1924, Natuurk. Tijdschr. 85, p. 58, 1925. Perhaps those who have received this useful publication for the year 1926 (published in 1928) may like to correct at once the headings of Table III, pp. 82-4, which are credited to 1924, whereas they should be 1926 throughout; and the single heading of Table II (on p. 57) from 1925 to 1926.

Opportunity may be also taken to draw attention to another error. The latitude of the observatory at Travnik has been given and used by us hitherto as 43°13′, as printed in the *Annuaire Seismique de l'Université de Beograd* from 1924 to date, and given us in MS. for the year 1923. Mr. Tillotson, of Leeds University, however, in examining

some records, called attention to the fact that this did not agree with the map, and on inquiry at Beograd, Prof. Mihailovic informs us that the latitude should be 44°13′20″, the figures 43° being due to a printer's error. Hence the position and constants should be revised in our list to

44°13′N. 17°41′E. a=+·683, b=+·218, c=+·697.

A list of the corrections thus rendered necessary in the Summary for 1923 and 1924 is given at the end of this number.

The present number of the Summary deals with 92 epicentres, 29 of which are new and 63 repetitions from old epicentres. In November half the epicentres (13) were new and half old. The following are the cases of abnormal focus :—

Date			Epicentre		Focal Depth (below normal)
		d. h.	°	°	
1925	Oct.	5 4	12·3N.	85·8W.	+0·020
	Oct.	13 17	10·2N.	42·8W.	+0·005
	Oct.	20 9	27·3N.	138·5E.	+0·050
	Dec.	18 18	36·8N.	69·5E.	+0·030

A note is generally appended showing the evidence for deep focus in detail. On Oct. 20 and Dec. 18 the epicentres are repetitions of old epicentres when assumptions of deep focus were also found necessary, but in each case the depth was found not quite so great as on the previous occasion.

Near Earthquakes.

Mr. A. E. Mourant, now Demonstrator in Geology at Leeds University, while still in Oxford made a special study of earthquakes in the Channel Islands, following the lines of Dr. H. Jeffreys, F.R.S. Incidentally he obtained a result of some importance, viz., a very close accordance (within a second or two) between the residuals for 1926 July 20 (Jeffreys) and 1927 Feb. 17 (Mourant). Such figures (which will shortly be published by Mr. Mourant) support the view that shocks may be repeated from an epicentre which is closely the same as a previous one. This supposition has been made constantly in this Summary, but on evidence which was not generally enough to establish identity within very narrow limits.

The Sydney Earthquake.

The shock of Dec. 18d. 10h. is entered chiefly because it caused some excitement in Sydney, though it must otherwise have been of minor importance. Australia is almost wholly free from earthquakes. In the Sydney *Sun* of Dec. 19 Father Pigot of Riverview is reported as saying :

> " It was undoubtedly the biggest earthquake recorded over New South Wales, but it may be 20 or 25 years before we experience one of similar magnitude."

He went on to explain that " The movement was really providential, acting as the opening of a safety valve." The newspaper reporters were industrious in collecting information from various quarters, including the fact that Sir Edgeworth David had missed the experience " by several weeks and many thousands of miles, being on the *Sophocles* somewhere between Cape Town and London, but that Lady David (in Sydney) thought there had been " a sudden gust of wind."

On 1925 Oct. 25 Mr. C. E. Adams had been lecturing about New Zealand earthquakes, recalling specially those of 1848 and 1855. On the former occasion Mr. Justice H. S. Chapman made inquiries among the Maoris and found no traditions of such shocks. " Several of the most intelligent natives I saw never knew anything of the kind before." Nevertheless the shock of October 28, 1848, was severe enough to extract the following apology from a newspaper office :

> " Owing to the confusion into which the types of this office were thrown by the earthquake of last Thursday, together with the subsequent excitement which prevailed, it was found impossible to publish the *Spectator* as usual on Saturday last."

Reports from Steamers, etc.

The *Bull. Volcan.* for 1926 No. 9 and 10 gives the following extract from the Meteorological Log of ss. *Empress of Australia :* Capt. Hailey, Vancouver to Yokohama, Nov. 11, 1925, 12.30 a.m. Lat. 30°38′N., Long. 143°14′E. approx. :

> " Felt two distinct shocks as of volcanic disturbance."

It was reported in Georgetown Seismol. Despatches on Dec. 28 that the small (80 miles square) island of Yap in the Caroline Islands had been swept by a " tidal wave," and not one house left standing. The exact date is not given, but the cable between Guam and Yap was interrupted on Dec. 16.

H. H. TURNER.

University Observatory, Oxford.
1929, Feb. 14.

1925 OCTOBER, NOVEMBER, DECEMBER.

Oct. 1d. Readings at 0h. (Ekaterinburg, Riverview, and Ottawa), 1h. (near Athens), 2h. and 3h. (Ekaterinburg), 6h. (Batavia and Malabar), 8h. (near Manila (2)), 10h. (Manila, Taihoku, Toronto, Ottawa, and Chicago).

Oct. 2d. 4h. 35m. 45s. Epicentre 2°·0N. 126°·0E. (as on 1925 July 4d.).

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. s.	s.	m. s.	s.	m.
Amboina	6·1	159	1 33	0	1 2 45	− 1	—
Manila	13·5	339	e 3 29	+ 9	—	—	i 4·1
Malabar	20·5	243	4 46	− 1	—	—	—
Batavia	20·8	247	4 56	+ 5	8 26	−14	—

Amboina gives also i = +1m.51s.

Oct. 2d. Readings also at 0h. (near Phu-Lien and near Lick), 2h. and 6h. (near Manila), 7h. (Ekaterinburg), 8h. (Tacubaya and near Athens), 10h. (near Amboina), 12h. (near Phu-Lien), 13h. (Florence), 14h. and 15h. (2) (La Paz), 16h. (Apia), 20h. (near Athens).

Oct. 3d. Readings at 1h. (Apia), 3h. (near Manila), 5h. (near Hukuoka), 10h. (Taihoku), 11h. (Batavia and Agana), 15h. (Uccle, Florence, Baku, De Bilt, and near Manila), 16h. (Zante), 21h. (near La Paz), 22h. (Granada), 23h. (Zagreb).

Oct. 4d. 3h. 44m. 45s. Epicentre 10°·0N. 103°·0W. (as on 1919 July 25d.).

A = −·222, B = −·960, C = +·174 ; D = −·974, E = +·225 ;
G = −·039, H = −·169, K = −·985.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tacubaya		10·1	21	2 56	+25	5 43	+71	6·0	6·9
Tucson	E.	23·4	343	e 6 3	+42	10 7	+34	13·0	13·4
Chicago		34·5	21	7 1	− 8	12 48	0	18·4	20·2
Toronto		39·4	28	i 7 25	−25	i 14 7	+10	24·5	—
Victoria	E.	42·0	340	14 42	?S	(14 42)	+ 7	20·6	21·9
Ottawa		42·4	28	e 8 6	− 8	i 14 50	+10	e 21·6	27·9
La Paz		43·5	128	8 13	− 9	14 40	−15	20·2	24·6
Honolulu	N.	53·9	290	—	—	e 25 15?	?	27·0	27·8
Rio Tinto		88·9	51	30 15?	?SR_1	—	—	—	60·2
Granada		91·4	51	—	—	—	—	e 43·4	47·7
De Bilt	E.	93·0	36	—	—	—	—	e 45·2	—
Uccle		93·0	38	—	—	—	—	e 45·2	—
Ekaterinburg		111·8	10	—	—	—	—	51·2	—
Baku		123·7	25	e 50 5	?	—	—	63·0	71·4

Additional readings and notes: Tucson eE = +11m.26s. Chicago PR_1 = +8m.20s., eSR_1E = +14m.45s., SR_1N = +14m.57s., MN = +20·1m. ; T_1=3h.44m.15s. and 3h.44m.28s. Toronto LN = +26·6m. ; P and S are given as iE and iN respectively. Ottawa ePR_1N? = +9m.52s. ; T_1=3h.44m.20s. Honolulu LE = +27·2m. Baku MN = +68·0m.

Oct. 4d. 7h. 28m. 42s. Epicentre 41°·0N. 156°·5E. (as on 1916 Feb. 6d.).

A = −·692, B = +·301, C = +·656 ; D = +·399, E = +·917 ;
G = −·602, H = +·262, K = −·755.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	N.	11·9	268	4 41	?S	(4 41)	−36	(5·8)	—
Zi-ka-wei		29·7	263	i 6 22	− 3	11 11	−18	15·7	17·5
Phu-Lien	N.	46·6	261	—	—	e 19 7	?SR_1	23·3	—
Ekaterinburg		59·5	321	e 10 13	+ 4	—	—	16·8	34·1
Pulkovo		70·0	334	e 0 18	?	—	—	14·3	—
Baku		74·9	311	i 11 49	+ 1	e 21 30	+ 5	37·0	45·4
Toronto	N.	81·5	37	—	—	e 23 18	+37	47·3	—
Ottawa		81·8	34	—	—	e 22 48	+ 4	e 43·3	—
De Bilt	N.	83·7	343	—	—	—	—	e 44·3	49·9
Uccle		85·0	343	—	—	e 22 36	[−20]	e 37·3	—
Rocca di Papa		91·0	334	e 12 55	−26	—	—	—	—
Toledo		97·2	347	—	—	—	—	e 51·8	60·6

Additional readings: Ekaterinburg e = +12m.29s. =PR_1 −22s., MN = +31·4m.
MZ = +37·1m. Baku eSR_2 = +31m.40s. =SR_3 −3s., MN = +45·3m.,
MZ = +45·6m. Ottawa eN? = +31m.18s.? De Bilt eLE = +37·3m.
Rocca di Papa ePN = +13m.5s.

Oct. 4d. Readings also at 1h. (Toronto, Ottawa, and Florence), 2h. (Manila), 8h. (near La Paz), 13h. (Manila), 16h. (Manila, Zi-ka-wei, Rio de Janeiro, Ottawa, Toronto, near Sumoto, and near Wellington), 17h. (Irkutsk, Ekaterinburg, Baku, and De Bilt).

Oct. 5d. 4h. 9m. 2s. Epicentre **12°·3N. 85°·8W.**

A = +·072, B = −·974, C = +·213 ; D = −·997, E = −·073 ;
G = +·016, H = −·212, K = −·977.

A depth of focus 0·020 is assumed.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		•	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Hts.	E.	−0·1	7·0	117	1 30	−15	3 0	− 7	3·0	3·2
	N.	−0·1	7·0	117	1 28	−17	2 52	−15	4·0	4·2
Merida		−0·2	9·4	338	2 8	−11	3 30	−38	3·6	4·8
Oaxaca		−0·3	11·6	296	2 16	−33	—	—	4·2	4·3
Vera Cruz		−0·3	12·1	306	2 30	−26	(5 14)	0	5·2	7·2
Port au Prince		−0·5	14·4	63	i 4 41	+76	9 34	?	14·8	—
Tacubaya		−0·5	14·7	300	3 21	− 8	(5 46)	−27	5·8	6·9
Loyola		−0·7	18·1	348	i 5 18	+68	7 18	− 9	8·5	9·1
Guadalajara		−0·7	19·0	299	4 56	+35	—	—	8·3	8·4
Manzanillo		−0·7	19·1	293	4 30	+ 8	(7 58)	+ 9	8·0	—
St. Louis	E.	−1·2	26·6	352	e 4 39	−63	i 10 0	−11	—	11·9
	N.	−1·2	26·6	352	e 4 40	−62	i 9 58	−13	10·7	—
Cheltenham		−1·3	27·6	15	5 46	− 5	i 10 17	−11	e 15·1	15·6
Georgetown		−1·3	27·7	15	i 5 49	− 3	i 10 19	−11	e 11·3	—
Chicago	E.	−1·4	29·5	357	5 58	−11	i 10 34	−27	13·9	14·3
Ann Arbor		−1·4	30·0	4	i 6 34	+20	i 11 16	+ 6	i 13·8	13·8
Fordham		−1·4	30·4	18	i 6 10	− 8	i 11 2	−15	14·4	18·5
Tucson	E.	−1·4	30·5	315	e 6 22	+ 3	10 53	−26	e 15·8	20·6
Ithaca		−1·4	31·2	14	6 13	−13	11 9	−22	—	—
Toronto	N.	−1·5	31·8	10	i 6 21	−10	i 11 28	−11	14·7	20·5
Denver		−1·5	32·2	333	5 58?	−37	11 28	−18	13·0	13·0
Harvard		−1·5	32·6	20	e 6 32	− 7	i 11 40	−13	16·0	19·5
La Paz		−1·5	33·7	150	i 6 44	− 6	12 1	−10	15·4	18·0
Ottawa		−1·6	34·2	14	i 6 39	−14	i 11 53	−25	i 14·7	21·0
Halifax		−1·6	37·5	26	i 7 14	− 7	i 12 53	−16	e 16·8	—
Berkeley	E.	−1·6	41·4	316	e 7 37	−16	e 13 36	−27	e 17·1	—
Victoria	E.	−2·0	47·7	328	8 30	− 8	15 5	−19	23·3	34·5
La Plata	E.	−2·3	54·1	152	i 9 17	− 2	i 16 41	0	27·6	—
	N.	−2·3	54·1	152	i 9 18	− 1	16 42	+ 1	—	34·2
Rio de Janeiro		−2·3	54·6	131	i 9 21	− 1	16 50	+ 2	e 22·0	30·7

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu	−2·6	69·2	290	e 11 34	+39	i 19 53	+ 8	34·2	39·5
San Fernando	−2·6	74·4	56	i 11 38	+10	i 21 7	+19	33·0	36·0
Eskdalemuir	−2·6	75·6	36	e 11 58?	+22	21 8	+ 6	30·0	—
Edinburgh	−2·6	75·7	36	11 36	− 1	21 8	+ 5	36·0	—
Malaga	−2·6	75·8	55	11 42	+ 5	i 21 14	+10	29·4	—
Bidston	−2·6	75·8	39	12 8	+31	21 36	+32	—	33·5
Toledo	−2·6	75·9	52	e 11 39	+ 1	i 21 14	+ 8	e 35·2	42·6
Stonyhurst	−2·6	76·2	39	i 11 41	+ 1	i 21 13	+ 4	36·0	42·5
Dyce	−2·6	76·2	34	12 15	+35	21 15	+ 6	32·7	34·0
Granada	−2·6	76·4	55	i 11 45	+ 4	i 21 25	+13	32·8	39·4
Oxford	−2·6	77·0	40	i 11 44	− 1	21 19	0	e 37·0	42·0
Alicante	−2·7	78·7	53	e 11 45	−10	21 26	−11	—	21·9
Tortosa E.	−2·7	79·2	50	i 12 5	+ 7	i 21 54	+11	—	—
N.	−2·7	79·2	50	12 4	+ 6	21 52	+ 9	34·7	45·5
Paris	−2·7	79·7	43	e 12 3	+ 2	i 21 51	+ 2	33·0	43·0
Barcelona	−2·7	80·3	50	12 7	+ 2	22 29	+33	37·4	56·7
Uccle	−2·7	80·5	40	12 4	− 2	i 22 1	+ 3	34·0	40·7
De Bilt	−2·7	80·9	39	12 7	− 1	22 5	+ 3	e 38·0	45·2
Algiers	−2·7	81·8	55	12 15	+ 1	22 15	+ 2	35·0	46·0
Besançon	−2·7	82·2	45	i 12 19	+ 3	23 9	+51	37·0	—
Strasbourg	−2·7	83·1	43	i 12 18	− 3	22 28	0	37·0	48·0
Hamburg	−2·7	83·5	37	e 12 21	− 3	e 22 29	− 4	e 47·0	—
Moncalieri	−2·7	83·8	46	i 12 23	− 3	22 28	− 8	—	23·9
Zurich	−2·7	83·9	45	e 12 25	− 1	e 22 25	−12	—	—
Innsbruck N.W.	−2·7	85·8	43	i 12 37	0	i 15 45	? PR_1	—	—
Cheb	−2·7	85·8	40	i 12 34	− 3	i 22 43	−15	—	49·0
Upsala	−2·7	86·0	30	e 15 58?	? PR_1	e 22 52	− 8	e 37·0	—
Florence	−2·7	86·5	47	e 12 28	−13	22 58	− 9	—	26·0
Venice	−2·7	86·8	45	12 48	+ 5	24 18	+69	—	—
Rocca di Papa	−2·8	88·0	49	e 12 43	− 6	i 23 20	− 1	41·9	—
Graz	−2·8	88·5	41	e 12 45	− 7	19 16	? PR_2	43·7	—
Vienna	−2·8	88·8	40	e 12 45	− 8	—	—	—	51·0
Zagreb	−2·8	89·2	43	e 12 53	− 2	e 23 8	[+ 3]	—	—
Naples	−2·8	89·3	49	e 41 18	? L	e 53 18	?	(e 41·3)	—
Pompeii	−2·8	89·6	49	e 14 45	+107	e 22 43	[−25]	—	—
Budapest	−2·8	90·7	41	e 12 58?	− 6	e 17 58?	? PR_1	e 36·0	—
Leningrad	−2·8	91·7	27	i 13 2	− 8	23 49	−13	39·5	52·3
Pulkovo	−2·8	91·8	27	13 3	− 7	23 51	−12	40·5	60·6
Athens	−2·8	97·1	49	e 13 16	−24	i 23 46	[−23]	42·5	—
Ekaterinburg	—	105·5	20	i 18 0	? PR_1	i 24 33	[−17]	40·0	52·7
Pjatigorsk	—	107·0	37	—	—	—	—	22·0	—
Baku	—	113·2	35	e 19 12	? PR_1	i 25 7	[−16]	29·2	58·6
Riverview	—	124·2	237	—	—	—	—	e 58·2	71·3
Zi-ka-wei	—	129·3	330	18 56	[−21]	e 28 36	−80	—	35·8
Simla	—	133·6	20	e 39 22	? SR_1	e 47 52	?	—	—
Hong Kong	—	140·2	330	21 26	?	40 28	? SR_1	—	70·0
Manila	—	142·3	315	e 19 24	[−20]	—	—	—	—
Bombay	—	142·4	34	19 25	[−19]	22 40	? PR_1	—	—
Hyderabad	—	146·4	28	19 31	[−19]	e 33 6	?	68·6	91·5
Kodaikanal	—	152·0	37	38 28	?	—	—	—	—
Malabar	—	165·9	290	e 20 2	[−10]	i 31 18	?	—	—
Batavia	—	166·1	295	19 55	[−17]	—	—	—	—

Additional readings and notes: Balboa Heights readings have been increased by 2min. Merida readings have been increased by 14min. Oaxaca readings have been increased by 4min. Vera Cruz readings have been diminished by 8min. Manzanillo readings have been increased by 4min. St. Louis ePR_1N = +5m.20s., ePR_2 = +5m.27s., e = +6m.12s., i = +10m.6s. Cheltenham iN = +10m.24s., SR_1? = +11m.20s., LN = +13·2m. MN = +16·7m.; T_o = 4h.8m.52s. and 4h.9m.7s.; readings are given for 4d. Georgetown i = +6m.58s., iSN = +10m.23s. Chicago eE = +7m.30s., +8m.1s., and +10m.5s., iSR_1E = +11m.36s., iSR_2E = +12m.1s., iSR_2E = +12m.2ls.; T_o = 4h.8m.57s. and 4h.9m.13s. Ann Arbor eSR_1 = +12m.22s.; T_o = 4h.9m.42s. Fordham iPR_1 = +6m.59s., i = +7m.28s. = PR_2 +12s., SR_1 = +12m.11s.; T_o = 4h.9m.5s. Tucson PR_1E = +6m.51s., eE = +11m.29s., SR_1E = +12m.9s., SR_2E = +13m.1s.; T_o = 4h.8m.55s. and 4h.9m.11s. Toronto PR_1 = +7m.9s., LN = +15·4m.; T_o = 4h.8m.55s. Harvard iP = +6m.34s., PR_1N = +7m.19s., PR_2E = +7m.44s., eN = +8m.10s., eE = +12m.39s., iN = +12m.44s., SR_1N = +13m.40s., SR_1E = +13m.52s., eLN = +15·7m., eN = +17m.16s., MN = +19·6m.; T_o = 4h. 8m. 49s. and 4h. 9m. 5s.; all readings are given for 4d. La Paz PR_2 = 7m.58s., SR_1 = +12m.58s., SR_2 = +15m.58s.; T_o = 4h.9m.4s. Ottawa iPR_2 = +7m.32s. = PR_1 − 20s.; T_o = 4h.9m.5s. Berkeley eZ = +8m.4s.

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Victoria LN = +23·7m., MN = +34·1m. ; T_e = 4h.9m.13s. La Plata N = +11m.34s. = PR_1 +3s., +18m.56s., +20m.9s. = SR_1 −31s., +24m.53s., +30m.24s., LE = +29·6m. Rio de Janeiro eLN = +21·7m., MN = +30·5m. ; T_e = 4h.9m.0s. Honolulu ePN = +12m.40s., iSR_1 = +20m.49s., eE = +21m.34s., eN = +21m.58s. and +28m.0s. San Fernando MN = +34·0m. Eskdalemuir SR_1 = +25m.58s.? Toledo PR_1NE = +14m.36s., PR_1NW = +14m.38s., PR_2NE = +16m.32s., PR_2NW = +16m.34s., SR_1NW = +26m.28s., SR_1NE = +26m.32s., MNW = +43·4m. Stonyhurst PR_1 = +14m.33s. Dyce PR_1 = +15m.28s., i = +17m.55s. and +19m.31s., SR_1 = +27m.30s. Granada i = +14m.18s., PR_1 = +15m.16s., PR_2 = 16m.58s., i = +31m.54s. = SR_1 +34s., MZ = +37·2m. Oxford iPR_1 = +14m.46s. Alicante MN = +22·2m. Paris eP = +12m.33s., PR_1 = +15m.3s., iS = +22m.49s., MN = +34·0m. Barcelona PR_1 = +15m.14s., PS = +22m.51s. Uccle PR_1 = +15m.15s., SR_1 = +28m.20s. De Bilt iZ = +12m.46s., eE = +13m.5s., iPR_1 = +15m.16s., eE = +22m.56s., eSR_1 = +27m.26s., MN = +45·3m. Strasbourg ePEN = +12m.22s. Innsbruck ePNE = +12m.38s. Upsala iN = +24m.0s., iE = +24m.1s. Rocca di Papa iPE = +12m.49s., PR_1E = +13m.27s., PR_1N = +16m.16s. = PR_1 −14s., PR_2E = +16m.20s. = PR_1 −10s., eS = +21m.1s., iS = +24m.24s. Graz PR_1 = +16m.28s., SR_1 = +22m.49s. = [S] −12s. Vienna iPZ = +12m.50s., iZ = +16m.2s. = PR_1 −34s. Zagreb i = +12m.57s., iPR_1 = +16m.38s. Leningrad iPR_1 = +16m.47s., i = +17m.39s. and +23m.18s. = [S] −3s. Pulkovo PR_1 = +16m.46s., i = +23m.18s. = [S] −4s. and +24m.26s., SR_1 = +29m.40s. Athens PR_1 = +17m.28s. Ekaterinburg i = +18m.30s. = PR_1 −19s., +25m.43s., +27m.54s., and +28m.37s., MZ = +64·2m. Baku iP = +19m.26s., MN = +29·9m., MZ = +33·6m. Riverview e = +25m.40s., +27m.10s., +32m.10s., +39m.16s., and +40m.34s., MN = +73·2m. Batavia i = +20m.10s., +21m.13s., and +31m.55s.

Oct. 5d. 4h. 10m. 55s. Epicentre 17°·5N. 83°·0W. (as on 1925 June 14d.).

A = +·116, B = −·947, C = +·301 ; D = −·993, E = −·122 ; G = +·037, H = −·298, K = −·954.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Toronto	N.	26·3	6	i 5 50	− 1	i 10 24	− 4	—
Ottawa		28·5	11	i 6 13	0	i 11 0	− 8	i 14·2
Halifax		31·7	26	i 6 55	+11	e 12 5	+ 2	e 14·5
Granada		71·3	56	i 10 30	−55	i 20 37	− 5	—
De Bilt	Z.	75·2	39	—	—	—	—	i 40·1
Algiers		76·6	55	e 40 5	?L	—	—	(e 40·1)
Innsbruck	N.W.	80·1	43	—	—	—	—	e 40·1

Additional readings : Ottawa iPR_1 = +7m.1s. Granada PS = +22m.5s.

Oct. 5d. 9h. 3m. 12s. Epicentre 29°·0S. 73°·0W. (as on 1923 July 31d.).

A = +·256, B = −·836, C = −·485 ; D = −·956, E = −·292 ; G = −·142, H = +·464, K = −·875.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		13·3	21	3 19	+ 2	5 48	− 3	6·9	9·6
La Plata	E.	14·1	118	3 35	+ 8	6 31	+21	7·4	8·4
	N.	14·1	118	3 37	+10	6 31	+21	7·3	7·9
Rio de Janeiro		27·4	84	e 10 40	?S	(e 10 40)	− 8	e 17·2	—
Granada		92·7	48	—	—	e 45 18	?	47·3	50·0
Baku		132·5	60	—	—	—	—	41·8	—
Ekaterinburg		137·4	36	e 20 22	[+47]	—	—	68·8	—

Additional readings : La Plata E = +3m.58s., N = +7m.8s. Rio de Janeiro S = +14m.48s.

Oct. 5d. 11h. 9m. 25s. Epicentre 43°·7N. 141°·2E.

A = −·563, B = +·453, C = +·691 ; D = +·627, E = +·779 ; G = −·538, H = +·433, K = −·723.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	4·6	181	1 3	− 8	1 47	−19	—	—
Nagoya	9·1	202	2 7	−11	—	—	—	—
Osaka	10·1	208	3 2	+31	—	—	4·8	6·2
Zi-ka-wei	20·0	238	e 4 37	− 4	8 39	+16	—	—
Irkutsk	25·9	302	5 43	− 4	10 15	− 5	13·6	—
Ekaterinburg	50·0	315	i 9 10	+ 3	i 16 24	+ 5	23·6	—
Pulkovo	62·2	328	e 10 29	+ 3	—	—	—	—

Osaka gives also MN = +6·7m.

Oct. 5d. Readings also at 4h. (Granada (2) and near Amboina), 5h. (Lick), 8h. (Cape Town), 10h. (Apia), 15h. (near Zagreb), 16h. (near Manzanillo), 19h. (Cape Town), 20h. (La Paz), 21h. (Ekaterinburg).

Oct. 6d. 4h. 11m. 0s. Epicentre 37°·5N. 23°·0E. (as on 1924 Feb. 16d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		0·7	51	e 1 36	+85	2 17	+117	2·4	2·8
Sarajevo		7·2	333	e 2 18	+29	e 3 36	?L	(i 3·6)	3·8
Pompeii		7·3	299	e 2 22	+31	e 3 47	+29	—	4·3
Belgrade		7·5	347	e 2 2	+ 6	i 3 23	− 1	—	3·9
Naples		7·6	299	e 2 13	+18	e 3 3	−23	—	5·2
Rocca di Papa	E.	9·0	302	e 2 12	− 4	e 3 56	− 7	—	4·6
	N.	9·0	302	e 2 11	− 5	e 4 4	+ 1	—	—
Zagreb		9·8	330	e 2 35	+ 8	e 4 34	+11	—	5·3
Budapest		10·4	346	—	—	—	—	e 5·0	—
Florence		10·9	309	e 5 0	?S	(e 5 0)	+ 8	—	6·5
Graz		11·0	332	e 2 48	+ 4	5 18	+24	6·4	6·7
Venice		11·2	318	5 0	?S	(5 0)	+ 1	—	—
Vienna		11·5	338	e 3 13	+21	—	—	—	7·3
Moncalieri		13·7	308	—	—	e 5 38	−23	(7·2)	—
Zurich		14·5	318	e 3 21	−12	6 0?	−20	—	7·6
Cheb		14·7	332	e 6 8	?S	(e 6 8)	−17	(e 8·4)	9·0
Strasbourg		15·6	320	—	—	e 6 0?	−46	—	9·0
Uccle		18·8	321	—	—	—	—	e 9·6	11·0
De Bilt		19·2	325	—	—	—	—	e 10·0	11·9
Granada		21·1	277	e 4 8	−46	e 7 31	−75	8·4	11·7
Eskdalemuir		25·1	324	e 4 0?	−99	—	—	12·0	—
Edinburgh		25·4	325	—	—	—	—	—	16·0

Additional readings and notes: Athens PE = +1m.41s., MN = +2·6m. Sarajevo P = +3m.4s. Belgrade iPN = +2m.10s., iPEN = +2m.18s., MN = +4·4m. Zagreb e = +3m.58s., SR_2 = +4m.9s. Moncalieri gives S as e and L as S. Cheb gives S as P and L as S. De Bilt MN = +11·6m. Granada i = +4m.47s. Eskdalemuir e? = 4h.8m.30s.

Oct. 6d. 13h. 41m. 0s. Epicentre 75°·0N. 7°·0E.

A = +·257, B = +·032, C = +·966 ; D = +·122, E = −·993 ; G = +·959, H = +·118, K = −·259.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Leningrad	17·2	138	4 1	− 6	—	—	8·5	—
Pulkovo	17·4	138	4 3	− 7	7 24	− 3	8·1	10·0
Kucino	22·5	131	e 5 5	− 6	e 9 17	+ 2	e 12·7	—
De Bilt	22·9	183	—	—	e 9 23	0	e 12·0	—
Ekaterinburg	26·8	102	i 6 4	+ 8	e 10 32	− 5	14·0	—
Baku	39·6	126	—	—	—	—	23·0	—
Irkutsk	41·9	65	e 9 45	?PR_1	e 17 25	?SR_1	24·0	—

No additional readings.

Oct. 6d. Readings also at 0h. (Ekaterinburg), 2h. (La Paz), 4h. (De Bilt and Granada), 6h. (Ekaterinburg), 13h. (Granada and near La Paz), 14h. (La Paz), 17h. (Malabar and Taihoku), 18h. (near Algiers), 23h. (Rocca di Papa).

Oct. 7d. Readings at 1h. (Granada), 2h. (Ekaterinburg), 6h. (Leningrad and Granada), 10h. (near Athens), 19h. (Taihoku), 20h. (near Batavia and Malabar).

Oct. 8d. Readings at 0h. (La Paz), 5h. (near Wellington), 6h. (La Paz), 8h. (Ekaterinburg), 10h. (Florence and near Tacubaya), 11h. (Amboina), 12h. (Bombay), 18h. (near Mizusawa), 20h. (Agana), 22h. (Ekaterinburg).

Oct. 9d. Readings at 0h. (Berkeley), 4h. (De Bilt and Ekaterinburg), 6h. (Amboina), 7h. (Vera Cruz, Puebla, Tacubaya, and Oaxaca), 8h. (Toronto Ottawa, Strasbourg, De Bilt, Uccle, Kucino, Pulkovo, Makeyevka, and Ootomari), 9h. (Granada), 13h. (Toronto and Ottawa), 14h. (Malabar and Taihoku), 17h. (Irkutsk), 18h. (Irkutsk, Ekaterinburg, and near Mizusawa), 23h. (Tacubaya).

Oct. 10d. Readings at 7h. (Apia), 8h. (Baku), 9h. (Ekaterinburg), 10h. (La Paz, La Plata, and near Manila), 18h. (near Ootomari), 19h. (Granada).

Oct. 11d. Readings at 6h. (near Manila), 8h. (near Sumoto), 11h. (Irkutsk), 13h. (Mizusawa and near Harvard), 19h. (near La Paz).

Oct. 12d. 5h. 44m. 30s. Epicentre 34°·0S. 57°·0E.

(as on 1925 July 7d.).

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	4 0	−109	—	—	7·1	14·5
Cape Town	31·7	262	6 53	+ 9	12 3	0	16·8	21·0
Colombo	46·3	32	8 50	+ 8	15 30	− 2	22·9	25·0
Kodaikanal	48·3	26	—	—	(16 36)	+38	16·6	27·1
Batavia	53·7	70	9 30	− 1	16 54	−11	—	—
Malabar	53·7	72	9 30	− 1	16 6	−59	—	—
Bombay	55·0	19	9 43	+ 4	17 26	+ 5	—	17·6
Hyderabad	55·4	25	10 31	+49	18 3	+37	27·5	31·3
Adelaide	65·2	116	10 42	− 4	19 30	+ 3	32·8	37·2
Simla	67·9	19	20 6	?S	(20 6)	+ 5	e 29·7	39·2
Helwan	68·3	337	e 11 16	+10	20 28	+22	—	41·8
Melbourne	68·6	122	e 10 54	−14	i 20 18	+ 9	—	56·0
Phu-Lien	72·3	49	11 30	− 2	i 20 54	0	37·5	40·6
Riverview	74·9	121	e 10 36	−72	e 21 48?	−23	e 46·8	53·0
Manila	77·8	64	e 13 30?	+84	—	—	—	—
Athens	78·3	335	e 12 10	+ 1	22 10	+ 6	38·5	—
Hong Kong	78·3	53	12 10	+ 1	22 5	+ 1	27·0	50·5
Makeyevka	83·8	349	e 12 31	−10	e 22 51	−16	37·8	53·1
Pompeii	84·4	330	e 13 4	+20	—	—	—	—
Naples	84·5	330	e 12 30	−15	—	—	—	—
Rio de Janeiro	85·2	246	e 23 30	?S	(e 23 30)	+ 9	e 36·0	43·0
Wellington E.	85·5	139	i 12 49	− 2	i 23 16	− 9	e 42·6	46·8
N.	85·5	139	i 12 49	− 2	i 23 21	− 4	e 40·9	49·3
Rocca di Papa	85·9	329	12 55	+ 2	e 23 30	+ 1	e 57·0	—
Algiers	86·8	320	12 59	+ 1	e 23 36	− 3	e 45·5	50·0
Budapest	88·2	337	13 1	− 5	23 58	+ 4	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		88·2	330	13 15	+ 9	24 0	+ 6	—	30·0
Venice		89·0	331	13 6	− 4	(23 58?)	− 5	—	—
Zi-ka-wei		89·0	50	12 56	−14	e 23 22	[0]	48·2	51·4
Graz		89·2	335	e 13 6	− 5	e 23 36	[+13]	—	56·3
Vienna		89·8	335	e 13 6	− 9	24 3	− 9	e 52·5	69·5
Almeria		89·8	318	i 13 14	− 1	23 47	[+20]	46·7	51·7
Alicante		89·8	320	—	—	—	—	e 48·8	58·7
Marseilles		90·5	325	—	—	—	—	52·5	—
Barcelona		90·7	324	e 13 22	+ 2	e 24 24	+ 3	e 52·6	56·9
Moncalieri		90·7	328	13 10	−10	24 22	+ 1	e 46·4	69·2
Granada		90·8	317	i 13 18	− 2	i 23 55	[+22]	e 47·0	57·0
Ekaterinburg		90·9	3	i 13 16	− 5	i 23 49	[+16]	37·0	57·0
Malaga		90·9	317	13 12	− 9	23 46	[+13]	33·8	56·1
Innsbruck	N.E.	91·0	331	e 13 21	0	—	—	—	—
Tortosa	E.	91·1	321	13 24	+ 2	23 55	[+20]	—	—
	N.	91·1	321	i 13 25	+ 3	23 56	[+21]	e 41·5	52·9
San Fernando		91·8	315	13 33	+ 7	24 26	− 7	48·0	58·5
Toldeo		92·8	319	13 26	− 5	i 24 45	+ 2	e 43·4	62·0
Cheb		92·8	333	i 24 4	?S	(i 24 4)	[+19]	e 57·5	62·5
Strasbourg		93·5	330	i 13 34	− 1	e 24 51	0	e 31·5	62·5
Paris		95·9	329	e 13 48	0	e 23 41	[−20]	53·5	59·5
Pulkovo		96·3	348	13 45	− 6	24 21	[+17]	47·5	58·6
Hamburg		96·5	335	e 13 45	− 7	e 31 30?	?SR_1	e 58·5	—
Leningrad		96·5	348	i 13 46	− 6	—	—	41·2	58·0
De Bilt		97·3	332	e 13 51	− 5	e 24 27	[+18]	e 49·5	66·2
Upsala		99·3	343	—	—	e 32 30?	?SR_1	e 60·5	—
Oxford		99·7	328	e 13 55	−14	e 24 6	[−16]	—	64·5
Bidston		101·6	329	24 55	?S	(24 55)	[+23]	43·5	71·3
Edinburgh		103·4	330	—	—	e 28 30?	+122	—	—
Dyce		103·9	331	—	—	26 11	−21	62·2	66·6
La Paz		107·4	235	e 18 39	[+26]	28 35	+90	54·7	57·4
Harvard	E.	139·0	298	—	—	—	—	—	75·3
Ottawa	N.	142·5	302	—	—	e 33 42	?	e 69·5	82·5
Toronto	E.	145·1	299	i 19 59	[+11]	—	—	82·8	—
Honolulu	N.	146·7	102	19 55	[+ 4]	—	—	e 70·8	76·5
Chicago		151·2	296	20 7	[+10]	—	—	74·2	89·0
Victoria	N.	165·6	1	20 29	[+17]	25 23	?PR_1	86·6	96·6
Berkeley		176·1	352	e 20 30?	[+13]	—	—	96·5	—

Additional readings and notes: Batavia SN = +17m.2s. Adelaide MN = +37·1m. Simla PN = +20m.12s. = S + 11s., eSN = +24m.36s. Riverview ePR_1? = +14m.41s. = PR_1 − 26s. and +14m.50s. = PR_1 − 17s., MN = +51·8m.; all the readings have been increased by 11 min. Athens PR_1E = +15m.17s. Makeyevka PS = +23m.54s., MN = +50·1m. Rio de Janeiro S = +29m.38s. = SR_1 + 12s. Rocca di Papa PN = +12m.57s., PR_1E = +13m.3s.(?), PR_1N = +13m.7s.(?). Zi-ka-wei iPZ = +13m.7s., PR_1 = +16m.38s. Graz PR_1 = +16m.48s., MN = +66·9m. Vienna iPZ = +13m.11s., PR_1 = +17m.9s. Almeria MN = +48·3m. Alicante MN = +58·3m. Barcelona MN = +57·7m. Moncalieri MN = +69·3m. Granada PR_1 = +16m.48s., PR_2 = +19m.19s., PS = +24m.36s. = S + 14s., i = +25m.59s., MZ = +54·8m. Ekaterinburg e? = +12m.51s., i = +13m.23s., e = +15m.51s., i = +16m.51s., +24m.17s. = S − 6s., +25m.23s. and +29m.52s., MN = +55·5m., MZ = +55·6m. Malaga MN = +56·7m. San Fernando MN = +53·5m. Toledo PR_1NW = +17m.20s., PR_1NE = +17m.26s., MNW = +61·9m. Cheb i = +30m.18s. = SR_1 − 48s. Strasbourg ePEN = +13m.36s. Paris MN = +56·5m. Pulkovo PR_1 = +17m.48s., PS = +25m.8s. = S − 11s., MZ = +58·2m. De Bilt MN = +68·2m. Oxford ePR_1 = +18m.10s. Bidston S = +33m.11s. = SR_1 + 13s., or S = +37m.5s. = SR_1 − 51s. Dyce [S] = +24m.38s. = [S] − 4s. La Paz S = +29m.54s. Toronto LN = +80·9m. Honolulu PR_1N = +23m.0s., PR_2N = +29m.30s., PR_1N = +32m.12s., MN = +76·7m. Chicago PR_1E = +23m.33s., PS = +34m.30s., SR_1E = +42m.36s., SR_1N = +43m.33s., e = +44m.10s., SR_1N = +58m.0s., eN = +66m.6s., LN = +74·5m., MN = +84·3m. Victoria ME = +105·3m. Berkeley e = +104·5m. and +115·5m. readings only being given correct to nearest minute.

Oct. 12d. Readings also at 1h. (Batavia, Malabar, Tortosa, Almeria, and near Barcelona), 4h. (Ekaterinburg), 5h. (Nagasaki, Ottawa, Toronto, and Chicago), 7h. (Kucino, Riverview, Ekaterinburg, and near Kobe), 8h. (near Innsbruck), 9h. (Almeria), 13h. (near Sumoto and near Tacubaya), 16h. (Taihoku), 17h. (Baku and Cape Town), 18h. (near Athens), 19h. (near Manila and near Sumoto), 22h. (Ekaterinburg and Irkutsk).

Oct. 13d. 12h. 10m. 54s. Epicentre 38°·0N. 17°·5E.

A = +·752, B = +·237, C = +·616 ; D = +·301, E = −·954 ; G = +·587, H = +·185, K = −·788.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s	m. s.	s.	m.	m.
Pompeii		3·6	322	e 2 6	+70	—	—	—	—
Naples		3·8	320	e 1 6	+ 7	e 2 1	+17	—	—
Athens		4·9	88	e 1 15	− 1	2 12	− 2	2·4	2·8
Rocca di Papa		5·3	317	1 30	+ 8	(e 2 30)	+ 5	(e 3·1)	—
Sarajevo		5·9	7	e 1 25	− 6	2 12	−29	—	2·6
Belgrade	E.	7·2	17	e 1 24	−25	i 2 17	−58	—	3·0
	N.	7·2	17	e 1 21	−28	i 2 21	−54	—	3·0
Florence		7·4	323	—	—	—	—	—	4·6
Zagreb		7·9	352	e 2 0	0	(e 3 36)	+ 2	(i 4·2)	—
Laibach		8·4	346	e 2 50	+43	3 54	+ 7	—	4·5
Graz		9·2	351	2 12	− 7	3 55	−13	—	5·0
Budapest		9·5	6	3 42	?S	(3 42)	−34	—	—
Moncalieri		10·1	317	—	—	—	—	e 5·6	—
Vienna		10·3	356	—	—	4 58	+21	i 5·2	6·1
Strasbourg		12·7	329	—	—	e 5 6?	−31	—	7·1
Uccle		15·8	328	—	—	—	—	e 8·6	—
De Bilt		16·5	332	—	—	—	—	e 9·1	10·6
Granada		16·7	273	—	—	e 9 6	?L	11·1	13·5
Pulkovo		23·2	16	—	—	—	—	e 10·6	13·2
Ekaterinburg		33·9	42	—	—	—	—	15·6	—

Additional readings and notes: Athens MN = +3·1m. Rocca di Papa gives P as e, S as eP, and L as PR_1. Zagreb ePR_1 = +2m.54s., S is given as PS and L as S. Laibach MN = +5·0m. Moncalieri L = +7·2m. Vienna eZ = +3m.26s., iZ = +3m.37s., iE = +4m.14s., eN = +4m.39s. De Bilt MN = +10·4m.

Oct. 13d. 17h. 40m. 28s. Epicentre **10°·2N. 42°·8W.**

A = +·722, B = −·669, C = +·177 ; D = −·679, E = −·734 ; G = +·130, H = −·120, K = −·984.

A depth of focus 0·005 has been assumed. The European and South American stations are thus brought into accord ; 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.
Port au Prince		−0·3	29·7	290	e 5 42	−40	13 3	+99	19·6	—
Azores		−0·4	31·6	26	4 56	−104	—	—	—	13·5
Rio de Janeiro		−0·4	33·1	181	e 6 55	+ 1	12 6	−13	e 14·0	20·5
Balboa Hts.	E.	−0·4	36·2	272	4 44	−156	6 0	?PR_1	10·8	10·9
	N.	−0·4	36·2	272	4 50	−150	10 34	−153	13·2	10·7
La Paz		−0·4	36·6	225	i 7 26	+ 2	i 13 9	− 4	17·7	21·9
Harvard		−0·4	40·6	327	i 7 52	− 5	i 13 58	−12	19·2	20·5
Fordham		−0·4	41·1	324	i 7 55	− 6	14 7	−10	18·4	19·3
Lisbon		−0·4	41·4	42	7 47	−16	13 47	−34	e 18·6	21·6
Cheltenham		−0·4	41·7	320	i 7 59	− 6	14 15	−10	19·4	19·5
Georgetown	E.	−0·4	41·9	320	i 7 3	−64	i 13 21	−67	e 61·5	19·5
	N.	−0·4	41·9	320	i 7 2	−65	i 13 26	−62	e 61·8	—
San Fernando		−0·4	42·2	46	i 8 0	− 9	i 14 21	−11	19·0	26·5
Rio Tinto		−0·4	42·6	45	15 32?	?S	(15 32?)	+54	—	42·5
Ithaca		−0·4	43·6	325	i 8 16	− 4	14 42	− 9	19·7	—
Malaga		−0·4	43·6	47	i 8 6	−14	i 14 22	−29	20·5	27·7
Saint Anne		−0·4	43·7	333	i 9 40	+80	i 16 2	+70	i 20·4	22·6
Granada		−0·4	44·4	47	i 8 14	−12	i 14 52	−10	20·0	22·5
Ottawa		−0·5	45·1	328	i 8 25	− 5	i 15 2	− 8	i 21·4	22·3
Almeria		−0·5	45·1	48	i 8 19	−11	i 14 58	−12	i 21·6	29·4
Toledo		−0·5	45·4	44	i 8 22	−10	i 14 58	−16	e 20·5	21·3
Toronto	E.	−0·5	46·0	324	i 8 34	− 3	i 15 17	− 4	i 21·9	24·3
Alicante	E.	−0·5	47·1	46	i 8 40	− 4	15 47	+11	22·7	28·1

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.
La Plata	E.	−0·5	47·3	197	i 8 48	+ 2	i 15 41	+ 3	20·6	26·0
	N.	−0·5	47·3	197	i 8 48	+ 2	i 15 42	+ 4	21·2	26·1
Ann Arbor		−0·5	48·0	320	i 9 8	+17	i 16 14	+26	i 23·4	24·3
Loyola		−0·5	48·2	302	e 11 42	+170	18 47	+177	25·5	28·7
Tortosa	E.	−0·5	48·9	45	8 49	− 7	15 42	−17	21·5	24·0
	N.	−0·5	48·9	45	8 47	− 9	15 40	−19	20·8	24·7
Algiers		−0·5	49·1	50	i 8 51	− 7	15 38	−23	22·9	25·7
Bignères		−0·5	49·8	41	e 10 27	+85	e 17 32	+82	23·5	30·3
Barcelona		−0·5	50·3	45	i 9 0	− 6	i 16 10	− 6	e 22·1	26·0
Chicago	E.	−0·5	50·3	316	i 9 11	+ 5	i 16 24	+ 8	23·8	26·5
	N.	−0·5	50·3	316	i 9 11	+ 5	e 16 24	+ 8	24·1	25·7
St. Louis	E.	−0·5	50·9	313	e 9 9	0	i 16 28	+ 4	e 24·0	25·6
	N.	−0·5	50·9	313	e 9 9	0	i 16 26	+ 2	e 24·3	30·3
Le Mans		−0·5	52·2	36	—	—	i 21 2	?	i 28·5	38·5
Marseilles		−0·5	53·2	42	9 32	+ 8	i 17 2	+10	23·5	27·1
Oxford		−0·5	53·5	30	i 9 25	− 1	i 16 52	− 4	22·5	27·0
West Bromwich		−0·5	53·6	30	9 28	+ 1	16 54	− 3	—	—
Ridston		−0·5	53·6	29	9 22	− 5	16 57	0	24·6	26·4
Paris		−0·5	54·0	36	i 9 27	− 3	i 16 55	− 8	24·5	27·5
Grenoble		−0·5	54·2	41	i 9 37	+ 6	i 17 10	+ 5	23·5	29·8
Stonyhurst		−0·5	54·2	29	i 9 28	− 3	i 17 5	0	22·5	30·0
Tsumbaya		−0·6	55·1	286	9 38	+ 2	17 26	+11	25·3	—
Edinburgh		−0·6	55·1	27	9 36	0	17 18	+ 3	25·5	27·0
Besançon		−0·6	55·2	40	9 36	− 1	i 17 20	+ 4	25·5	25·5
Moncalieri		−0·6	55·4	42	i 9 37	− 1	i 17 22	+ 3	24·8	29·0
Uccle		−0·6	56·0	35	i 9 40	− 2	i 17 26	0	22·5	26·4
Dyce		−0·6	56·5	25	9 45	0	17 47	+14	—	24·8
Strasbourg		−0·6	56·9	39	i 9 47	− 1	i 17 39	+ 1	25·5	35·5
Zurich		−0·6	56·9	41	e 9 48	0	i 17 38	0	—	—
De Bilt		−0·6	57·0	34	9 49	+ 1	17 43	+ 4	e 23·5	33·2
Florence		−0·6	57·4	45	9 52	+ 1	17 50	+ 6	—	26·5
Rocca di Papa		−0·6	57·8	48	9 54	+ 1	e 17 46	− 3	e 25·2	32·3
Innsbruck		−0·6	58·6	40	e 9 59	0	e 17 59	0	e 27·5	29·7
Naples		−0·6	58·6	49	i 9 32?	−27	i 17 32?	−27	27·5	41·5
Pompeii		−0·6	58·8	49	i 10 3	+ 3	i 18 22	+21	29·5	42·5
Hamburg		−0·6	60·3	33	i 10 13	+ 3	e 18 5	−14	e 27·7	32·5
Laibach		−0·6	60·3	43	10 12	+ 2	18 33	+14	e 28·6	36·0
Cheb		−0·6	60·3	37	i 10 12	+ 2	i 18 26	+ 7	e 26·0	33·5
Zagreb		−0·6	61·2	44	i 10 19	+ 3	i 18 23	− 8	i 29·7	31·3
Graz		−0·6	61·2	41	i 10 16	0	i 18 27	− 4	28·4	32·4
Bergen		−0·6	61·4	25	10 32?	+14	17 32?	−61	29·5	—
Vienna		−0·6	62·1	40	i 10 23	+ 1	e 18 47	+ 5	e 28·0	31·5
Denver		−0·6	62·2	311	9 32?	−51	18 32?	−11	28·5	29·5
Budapest		−0·6	63·7	42	10 35	+ 2	19 13	+11	e 29·5	37·8
Belgrade		−0·6	64·0	45	e 9 46	−48	e 18 4	−62	e 29·7	42.1
Athens		−0·6	65·4	54	i 10 47	+ 3	i 19 27	+ 4	31·1	35·4
Tucson	E.	−0·6	66·1	301	11 1	+13	19 59	+27	e 34·6	39·5
Upsala		−0·6	66·6	29	i 10 52	+ 1	i 19 40	+ 3	e 27·9	33·0
Lemberg		−0·6	67·4	41	e 10 56	− 1	e 20 50	+62	e 32·0	36·7
Helwan		−0·6	71·2	63	11 27	+ 6	i 20 40	+ 7	—	44·9
Pulkovo		−0·6	72·7	30	i 11 32	+ 1	i 20 58	+ 7	34·0	38·7
Leningrad		−0·6	72·9	30	i 11 34	+ 2	i 20 57	+ 3	i 32·8	38·8
Cape Town		−0·6	72·9	132	11 38	+ 6	21 6	+12	34·0	36·1
Lick	N.	−0·6	75·0	308	e 11 57	+12	e 21 35	+16	e 37·1	—
Berkeley		−0·7	75·5	308	e 11 55	+ 7	i 22 16	[+28]	i 36·2	40·4
Victoria	E.	−0·7	76·1	319	11 55	+ 4	21 40	+10	36·3	42·4
	N.	−0·7	76·1	319	12 8	+17	—	—	34·9	38·3
Kucino		−0·7	76·4	35	i 12 11	+18	i 21 59	+25	31·7	42·6
Makeyevka		−0·7	76·4	43	e 11 39	−14	i 21 21	−13	35·8	47·7
Johannesburg		−0·7	77·8	120	21 26	?S	(21 26)	−24	32·5	34·5
Sitka	E.	−0·7	82·8	327	12 32	+ 1	23 1	+14	e 42·2	48·9
	N.	−0·7	82·8	327	—	—	—	—	40·3	47·5
Baku		−0·7	85·5	50	i 12 46	− 1	—	—	41·5	49·0
Ekaterinburg		−0·7	88·7	32	i 13 3	− 2	i 23 34	−18	34·5	47·6
Honolulu	N.	—	109·1	297	—	—	27 14	− 6	e 45·4	61·0
Simla	E.	—	109·2	50	19 14	? PR_1	e 28 32	+71	e 38·5	67·8
	N.	—	109·2	50	19 26	? PR_1	e 28 38	+77	e 38·4	70·7
Bombay		—	110·2	65	19 12	? PR_1	28 35	+65	45·7	66·6
Dehra Dun		—	110·2	51	20 52	? PR_1	29 17	+107	59·5	66·3
Irkutsk		—	111·4	20	14 44	−20	—	—	44·5	52·2
Hyderabad		—	115·7	65	e 17 50	?	29 11	+55	54·7	66·2
Kodaikanal		—	117·2	74	19 32	? PR_1	—	—	66·1	74·3
Colombo		—	120·4	76	20 32	? PR_1	30 32	?	59·5 ?	72·0

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.
Calcutta	E.	—	122·0	54	20 33	?PR_1	30 35	?	—	—
	N.	—	122·0	54	20 32	?PR_1	30 26	?	—	—
Wellington	E.	—	134·6	220	e 22 7	?PR_1	i 40 9	?SR_1	i 69·3	73·0
	N.	—	134·6	220	i 22 16	?PR_1	i 40 14	?SR_1	70·1	80·2
Osaka		—	135·1	2	22 44	?PR_1	—	—	—	—
Zi-ka-wei		—	135·9	19	e 19 30	[− 2]	39 50	?SR_1	74·2	81·3
Phu-Lien		—	136·8	45	i 22 12	?PR_1	e 35 45	?	66·5	69·8
Hong Kong		—	140·4	35	22 34	?PR_1	40 52	?SR_1	—	70·0
Taihoku	E.	—	141·6	24	e 22 35	?PR_1	36 22	?	45·0	69·5
Batavia		—	149·7	85	20 0	[+ 5]	—	—	71·1	75·2
Manila		—	150·5	33	i 20 19	[+22]	—	—	—	—
Malabar		—	150·6	87	20 6	[+ 9]	—	—	—	—
Melbourne		—	151·5	193	—	—	e 29 8	?	—	87·8
Riverview		—	153·1	206	—	—	—	—	60·9	89·7
Sydney		—	153·1	206	14 16	?	—	—	71·2	73·8
Adelaide		—	155·2	183	e 19 32	[−30]	—	—	—	98·4
Amboina		—	169·0	55	i 19 38	[−36]	i 25 50	?PR_1	—	—

Additional readings and notes: Port au Prince iP = +7m.6s. Rio de Janeiro MN = +16·8m.; T_0 = 17h.40m.50s. La Paz PR_1 = +8m.31s., i = +8m.53s. = PR_2 − 6s. and +9m.30s. = PR_3 + 22s., PR_3 = +9m.59s., i = +13m.32s., and +13m.47s., SR_1 = +14m.55s., and +15m.43s. = SR_1 + 19s.; T_0 = 17h.40m.39s. Harvard PR_1 = +9m.26s., SR_1N = +16m.56s., SR_1E = +17m.8s., MN = +20·2m.; T_0 = 17h.40m.27s., and 17h.40m.38s. Fordham i = +8m.19s., PR_1 = +9m.18s., PR_2 = +10m.12s., SR_1 = +16m.51s., SR_2 = +17m.14s.; T_0 = 17h.40m.22s. Cheltenham PR_1 = +9m.25s., eE = +16m.7s. and +18m.44s., MN = +20·0m.; T_0 = 17h.40m.21s. and 17h.40m.31s. Georgetown PR_1 = +8m.32s. San Fernando MN = +21·0m. Ithaca PR_1 = +9m.52s., SR_1 = +17m.32s. Malaga PR_1N = +9m.40s., PR_1E = +10m.2s., PR_2N = +10m.6s., SR_2N = +16m.48s. = SR_1 − 66s., SR_2N = +18m.14s. = SR_2 − 40s., MN = +26·0m. Granada i = +8m.25s., +10m.17s., +11m.31s., +15m.14s., +16m.36s., and +17m.23s., MZ = +23·0m., MN = +23·4m. Ottawa iPR_1 = +10m.8s., iPR_2 = +10m.34s., iSR_1 = +18m.21s., eSR_2 = +19m.30s., MN = +23·7m.; T_0 = 17h.40m.32s. Almeria MZ = +21·7m., MN = +28·8m. Toledo PR_1NW = +9m.13s. = PR_1 − 68s., PR_2NW = +9m.35s. = PR_2 − 81s., PR_1NEZ = +10m.7s. = PR_1 − 14s., PR_2NE = +10m.35s. = PR_2 − 21s., PR_2Z = +10m.38s. = PR_2 − 18s., PR_3Z = +10m.59s. = PR_3 − 11s., PR_3NE = +11m.3s., SR_1NE = +17m.59s., SR_1NW = +18m.5s., SR_2NE,NW = +18m.48s. = SR_2 − 46s., SR_3NW = +19m.42s., SR_3NE = +19m.43s. = SR_3 − 16s., MZ = +22·0m., MNW = +29·6m. Toronto iE = +9m.18s., SR_1E = +18m.34s., iN = +15m.22s., MN = +22·4m.; T_0 = 17h.40m.33s. La Plata PR_1N = +10m.36s., PR_1E = +10m.41s., $iSR_1E?$ = +19m.21s., SR_1N = +19m.22s., and several other readings. Ann Arbor iPR_1 = +10m.56s., eSR_1 = +19m.26s.; T_0 = 17h.41m.0s. Loyola PR_1 = +13m.32s., PR_2 = +14m.47s., PR_3 = +16m.47s., SR_1 = +22m.27s., SR_2 = +24m.17s. Algiers PR_1 = +10m.41s. Bagnères MN = +24·0m. Barcelona PR_1 = +10m.49s., PS = +17m.4s., ? = 17m.10s., SR_1 = +19m.8s., MN = +26·6m. Chicago PR_1 = +11m.3s., ePR_2N = +12m.22s., eN = +15m.32s., iE = +16m.15s., eN = +18m.22s., SR_1 = +19m.44s., SR_2E = +21m.50s.; T_0 = 17h.40m.30s. and 17h.40m.35s. St. Louis iP = +9m.10s. PR_1 = +10m.56s., iPR_2 = +12m.4s., iEN = +16m.35s., SR_1EN = +20m.0s., iN = +22m.17s. = SR_2 + 1s. Oxford PR_2 = +12m.30s. = PR_2 − 8s. Paris ePR_1 = +11m.26s., MN = +25·5m. Grenoble PR_1 = +11m.34s., i = +20m.52s. = SR_1 − 24s., MN = +26·8m. Edinburgh PR_2 = +12m.39s., SR_2 = +23m.0s. Moncalieri MN = +30·3m. Uccle PR_1 = +12m.44s., i = +20m.33s., MN = +34·3m. Dyce PR_1 = +12m.2s. Strasbourg PR_1 = +12m.14s., PR_2 = +12m.58s., PR_3 = +13m.22s., eSR_1 = +21m.28s., SR_2 = +23m.10s., MN = +31·5m., MZ = +33·3m. De Bilt MN = +27·5m. Florence P = +9m.56s. and +9m.59s., SN = +17m.52s. Rocca di Papa P = +9m.56s., iPN = +10m.36s., iPE = +10m.51s., S = +17m.56s., iL = +29·1m. Innsbruck iNE = +10m.38s., eSNW = +18m.2s. Hamburg PS = +18m.32s., SR_1 = +22m.8s., MNZ = +29·5m. Cheb MN = +32·5m. Zagreb i = +10m.32s. and +17m.44s. Graz SR_1 = +21m.56s., MN = +30·8m. Vienna PR_1 = +12m.47s., iS = +18m.52s., PS = +19m.9s., SR_1 = +23m.4s., SR_2 = +25m.39s., also several i readings. Budapest iN = +10m.49s. and +10m.56s. Belgrade PR_1 = +11m.45s., PR_2 = +13m.24s. = PR_1 − 4s., PS = +14m.41s. = PR_1 − 2s. Athens MN = +36·5m. Tucson PR_1E = +13m.18s., PR_2E = +15m.25s.; T_0 = 17h.40m.31s. and 17h.40m.38s. Upsala MN = +31·2m. Lemberg MN = +34·2m. Helwan PR_1 = +14m.4s. Pulkovo PR_1 = +14m.10s., PR_2 = +15m.52s., PR_3 = +16m.42s., PS = +21m.40s. = [S] + 12s., iSR_1 = +25m.32s., SR_2 = +28m.32s., MZ = +41·0m., MN = +41·3m. Leningrad iPR_1 = +14m.13s., iPR_2 = +16m.18s., iPR_3 = +16m.56s., PS = +21m.38s. = S + 9s.,

Continued on next page.

iSR$_1$ = +25m.34s., iSR$_2$ = +28m.43s., MN = +34·2m., MZ = +38·9m. Lick iN = +12m.7s. Berkeley iE = +12m.1s., +17m.40s. = PR$_2$ +0s., +21m.28s., and +22m.20s. = [S] +32s., iLZ = +37·5m., MZ = +39·7m. Kucino iP = +12m.15s., e = +13m.55s., ePR$_1$ = +14m.58s., PR$_2$ = +16m.49s. SR$_1$ = +26m.29s., eSR$_2$ = +30m.38s., MN = +37·8m. Makeyevka SR$_1$ = +27m.6s., SR$_2$ = +30m.11s., MN = +39·5m. Sitka PR$_1$ = +15m.51s., SR$_1$ = +28m.29s., SR$_2$ = +32m.9s., eE = +38m.14s.; T$_0$ = 17h.40m.28s. and 17h.40m.32s. Baku iP = +12m.51s., PS = +24m.10s., MN = +47·2m., MZ = +49·4m. Ekaterinburg iPR$_1$ = +16m.14s., iPR$_2$ = +18m.24s., iPR$_3$ = +19m.40s., i = +22m.39s. Honolulu iPR$_1$ = +19m.15s., PR$_2$N = +22m.23s., PR$_3$N = +23m.56s., S$_0$P$_0$S = +25m.26s. = [S] +20s., eE = +25m.56s., PSN = +28m.20s., iPSE = +28m.32s., PPSN = +29m.20s., eE = +32m.14s., eN = +32m.37s., eSR$_1$N = +34m.14s., eSR$_1$E = +34m.44s., eSR$_2$E? = +37m.44s., ME = +61·5m. Irkutsk PR$_1$ = +19m.16s., PS = +28m.44s., SR$_1$ = +34m.54s., MZ = +63·1m. Colombo L = +66·1m. Wellington iPE = +22m.56s. and +23m.56s., SR$_1$E = +44m.14s.(?), and many i and e readings. Zi-ka-wei PR$_1$ = +22m.17s., PR$_2$ = +26m.15s., PR$_3$ = +29m.5s., PSP? = +30m.44s. = S +5s., SPPS? = +35m.45s., PS = +40m.21s. = SR$_1$ +18s., SR$_2$ = +42m.3s.(?). SR$_3$ = +45m.37s. = SR$_2$ −20s. Phu-Lien PR$_1$E = +26m.45s., MN = +79·5m. Hong Kong ? = +46m.2s., MN = +83·4m. Taihoku PR$_1$E = +29m.24s., SR$_1$E = +41m.17s. Batavia MN = +86·8m. Melbourne i = +38m.44s. and +43m.2s. Riverview ePR$_1$? = +21m.48s., e = +44m.38s., and +49m.38s. = SR$_2$ +4s., MN = +78·9m. Adelaide e = +27m.24s. = PR$_2$ −31s., +36m.12s., and +49m.12s., MN = +87·5m.

NOTE TO OCT. 13d. 17h. The assumption of so small an excess focal depth as 0·005 requires a word of justification. The original assumption for epicentre was 10°·5N. 42°·5W. The residuals on this assumption were collected into three groups according to azimuth as follows :—

Group	Azimuth	Equation		Residuals Normal Focus	Depth 0·005
	°			°	°
(1)	200	−·34x − ·94y	=	−0·8	−0·4
(2)	315	−·71x + ·71y	=	0·0	0·0
(3)	40	+·64x + ·77y	=	−0·2	+0·4

The second equation gives x = y. The other two equations then become

$$-1{\cdot}28x = -0{\cdot}8 \text{ or } -0{\cdot}4$$
$$+1{\cdot}41x = -0{\cdot}2 \text{ or } +0{\cdot}4$$

It is seen that with normal focus they cannot be reconciled; while with focal depth +0·005 they are in good accordance with x = +0°·3 = y. Hence the epicentre was moved to 10°·2N. 42°·8W.

Oct. 13d. **Readings also at 3h. (near Mizusawa), 8h. (near La Paz), 9h. (Florence and near Athens), 16h. (near Sumoto (2)), 18h. (Vienna), 19h. (near Zurich), 22h. (Irkutsk), 23h. (La Paz, Leningrad, Ekaterinburg, Baku, and Pulkovo).**

Oct. 14d. 10h. 23m. 30s. **Epicentre 35°·3N. 130°·8E. (as on 1921 Nov. 16d.).**

A = −·533, B = +·618, C = +·578; D = +·757, E = +·653; G = −·378, H = +·437, K = −·816.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	Z.	8·8	245	e 2 6	− 7	—	—	—	—
Irkutsk		25·3	320	e 6 59	+78	e 11 48	+99	16·5	21·3
Ekaterinburg		50·5	320	i 9 16	+ 6	e 16 36	+11	25·5	31·2
Baku		61·8	303	e 10 17	− 7	e 20 9	+83	38·3	46·0
Honolulu	N.	62·9	84	—	—	—	—	21·5	—
Pulkovo		64·9	327	10 41	− 3	e 19 15	− 9	28·5	34·7
Makeyevka		66·2	315	—	—	e 27 34	?SR$_2$	36·5	38·2
Victoria		73·5	42	14 52	?PR$_1$	18 20	−168	22·7	24·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		80·6	330	—	—	—	—	e 41·5	—
Innsbruck	N.E.	81·2	324	i 11 45	−41	—	—	—	—
Strasbourg		82·1	326	—	—	—	—	36·5	—
Chicago		95·3	29	—	—	(24 33)	−36	e 35·5	—
Ottawa	E.	95·8	19	e 20 4	?PR_2	e 25 28	+14	39·5	—
Granada		96·0	326	12 49	−60	—	—	48·0	51·8
Toronto	N.	96·7	22	—	—	—	—	38·7	—

Additional readings and notes: Irkutsk PR_2 = +8m.12s., MN = +21·4m. Ekaterinburg MN = +32·8m. Baku MN = +46·1m., MZ = +46·2m. Pulkovo MN = +34·5m., MZ = +39·8m. Chicago SE = +19m.42s. (?PR_1), eLN = +37·5m.; true S is given as SR_1E. Ottawa e = +28m.2s.

Oct. 14d. 17h. 5m. 18s. Epicentre 27°·0N. 100°·0E.

A = −·155, B = +·878, C = +·454; D = +·985, E = +·174; G = −·079, H = +·447, K = −·891.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	E.	8·6	134	e 2 16	+ 6	e 4 45	+52	e 5·0	5·2
Hong Kong		13·7	107	7 7	?L	—	—	(7·1)	8·0
Zi-ka-wei		19·2	72	i 4 37	+ 6	i 8 19	+13	—	12·5
Taihoku	E.	19·4	91	—	—	e 9 18	+68	10·5	12·4
Simla		20·4	287	—	—	e 8 36	+ 4	—	—
Hyderabad		22·1	249	5 10	+ 4	9 13	+ 6	—	15·3
Manila		23·1	118	e 5 28	+10	—	—	—	—
Irkutsk		25·5	6	i 5 41	− 2	10 13	0	13·7	—
Ekaterinburg		40·8	327	—	—	14 12	− 6	21·7	23·6
Baku		42·8	302	e 8 19	+ 2	e 14 49	+ 4	23·4	—
Kucino		52·4	321	—	—	—	—	e 28·5	—
Pulkovo		56·8	326	10 1	+10	e 17 58	+14	25·7	36·0
Leningrad		56·8	326	e 10 3	+12	—	—	23·2	—
Konigsberg		62·3	320	e 12 31	+124	—	—	e 28·7	—
De Bilt	N.	71·9	320	—	—	—	—	e 40·7	—

Additional readings: Phu-Lien MN = +5·6m. Simla eN = +8m.54s. = SR_1 −16s. Baku e = +18m.2s. = SR_1 +16s. Kucino e = +24m.37s. Pulkovo MN = +31·6m., MZ = +36·1m.

Oct. 14d. Readings also at 3h. (Nagasaki), 5h. (Bombay and Hukuoka), 8h. (Batavia, La Paz, and Nagasaki), 11h. (Batavia), 13h. (Rio de Janeiro, La Paz and La Plata), 14h. (Toledo, Pulkovo, and Kucino), 15h. (Irkutsk), 17h. (Batavia), 21h. (near Amboina), 22h. (Ottawa and Toronto).

Oct. 15d. 1h. 22m. 18s. Epicentre 15°·0S. 172°·0W. (as on 1925 Sept. 11d.).

A = −·956, B = −·134, C = −·259; D = −·139, E = +·990; G = +·256, H = +·036, K = −·966.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		1·2	11	0 15	− 3	0 34	+ 1	0·7	0·8
Riverview		38·1	233	—	—	—	—	e 15·7	24·3
Honolulu	E.	38·8	21	—	—	—	—	e 16·4	—
Ottawa		105·0	45	e 24 46	?[S]	(e 24 46)	[− 1]	e 47·0	—
Ekaterinburg		122·5	329	e 20 14	?PR_1	(e 25 45)	[− 7]	e 52·7	65·5
Leningrad		132·2	345	i 22 32	?PR_1	—	—	—	—
Pulkovo		132·4	345	i 22 30	?PR_1	—	—	e 60·7	76·0
Baku		135·7	313	e 22 43	?PR_1	—	—	67·7	72·7
De Bilt		142·9	3	—	—	—	—	e 83·7	—
Uccle		144·1	5	—	—	—	—	e 74·7	—
Vienna		146·1	350	19 26	[−24]	—	—	—	87·7
San Fernando	E.	155·1	28	—	—	—	—	—	87·7
Granada		155·6	23	e 24 8	?PR_1	—	—	77·7	85·0

Additional readings and notes: Riverview MN = +20·0m. Ottawa eSE? = +33m.32s. = SR_1 −8s. Ekaterinburg S = +36m.57s. = SR_1 −21s., MN = +66·4m.; S is given as another eP. Pulkovo MZ = +74·2m. Baku e = +39m.42s. = SR_1 −19s., MZ = +75·2m., MN = +77·0m. De Bilt eL = +93·7m.

Oct. 15d. 12h. 36m. 12s. **Epicentre 27°·0N. 100°·0E. (as on Oct. 14d.).**

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		8·6	134	i 2 13	+ 3	e 4 28	+35	4·9	5·2
Hong Kong		13·7	107	3 21	− 1	—	—	—	7·7
Zi-ka-wei		19·2	72	i 4 34	+ 3	i 8 15	+ 9	—	12·4
Taihoku	E.	19·4	91	e 4 39	+ 5	7 39	−31	10·2	12·3
	N.	19·4	91	4 40	+ 6	8 15	+ 5	10·2	11·6
Dehra Dun		19·6	285	4 3	−33	8 3	−12	12·6	12·8
Simla	E.	20·4	287	4 54	+ 8	8 30	− 2	e 11·7	13·6
	N.	20·4	287	—	—	8 36	+ 4	e 11·5	11·8
Hyderabad		22·1	249	i 5 4	− 2	9 8	+ 1	11·7	16·3
Manila		23·1	118	e 5 20	+ 2	—	—	i 13·0	15·8
Irkutsk		25·5	6	i 5 40	− 3	9 9	−64	—	14·6
Bombay		26·2	258	10 26	?S	(10 26)	0	—	16·2
Kodaikanal		27·1	236	11 6	?S	(11 6)	+23	—	—
Colombo		27·8	227	10 48	?S	(10 48)	− 7	19·3	—
Osaka		31·2	67	12 40	?S	(12 40)	+46	17·4	18·0
Batavia		33·8	170	6 54	− 9	—	—	i 18·9	—
Malabar		35·0	169	7 26	+13	—	—	e 19·8	—
Ekaterinburg		40·8	327	e 7 55	− 6	14 3	−15	20·8	24·1
Baku		42·8	302	e 8 20	+ 3	i 14 48	+ 3	22·1	32·5
Makeyevka		51·9	313	i 9 6	−13	e 16 32	−11	24·2	32·8
Kucino		52·4	321	9 26	+ 4	16 50	+ 1	27·8	31·3
Pulkovo		56·8	326	i 9 58	+ 7	i 17 53	+ 9	26·8	36·0
Konigsberg		62·3	320	—	—	—	—	e 31·7	40·8
Upsala	N.	63·2	326	—	—	—	—	e 34·8	—
Budapest		64·6	313	—	—	—	—	e 25·8	—
Vienna	Z.	66·2	315	i 11 3	+10	—	—	—	—
Graz		67·0	314	—	—	—	—	e 35·5	—
Cheb		68·2	318	—	—	—	—	e 28·8	41·8
Hamburg		68·6	320	e 11 20	+12	e 21 21	+72	e 37·8	—
Strasbourg		71·6	316	(e 11 48?)	+21	(21 48?)	[+25]	21·8	—
Dyce		71·6	326	—	—	—	—	—	42·8
De Bilt		71·9	320	—	—	21 3	+14	e 37·8	41·2
Uccle		72·8	319	—	—	e 21 11	+11	e 37·8	—
Moncalieri		72·8	313	e 5 48	?	13 40	?	20·0	—
Paris		74·7	318	—	—	—	—	e 39·8	44·8
Edinburgh		74·8	325	—	—	e 19 18	−126	—	43·8
Stonyhurst		75·4	323	—	—	—	—	e 42·8	—
Oxford		75·7	321	—	—	—	—	e 38·8	46·1
Bidston		75·9	323	22 9	?S	(22 9)	+33	38·3	42·8
Granada		83·9	310	i 12 42	+ 1	e 23 46	+38	e 48·3	55·3
San Fernando		86·1	310	—	—	—	—	48·8	50·8
Victoria	E.	95·2	27	—	—	—	—	49·4	58·7
Ottawa		107·5	357	e 25 13	?S	(25 13)	[+14]	e 48·3	—
Toronto	N.	109·4	0	—	—	e 27 10	−13	41·6	—
Chicago		110·9	6	—	—	—	—	56·8	64·0
Georgetown		114·1	358	e 23 48?	?	—	—	—	—
La Paz		164·8	311	e 20 21	[+ 9]	—	—	—	—

Additional readings and notes: Phu-Lien MN = +5·6m. Zi-ka-wei PR_1 = +5m.37s., PS = +9m.7s. Dehra Dun readings have been increased by 4m. Manila MN = +16·0m. Colombo S = +17m.58s. Osaka MN = +20·7m. Batavia iN = +19m.13s. Ekaterinburg iS = +7m.58s. = P−3s., i = +10m.36s. and +e13m.49s., MZ = +25·8m. Baku PR_1 = +10m.7s. = PR_2 − 22s., iSR_1 = +18m.4s. = SR_2 − 39s., MN = +24·6m. Makeyevka SR_1 = +20m.44s., MN = +33·1m., MZ = +38·1m. Kucino e = +9m.57s., +17m.9s., +17m.49s., +19m.9s., and +23m.31s. Pulkovo SR_1 = +22m.6s., MN = +31·6m., MZ = +35·6m. Hamburg readings are given for 16d. Strasbourg P is given as eS and S as L. De Bilt MN = +41·1m., MZ = +45·5m. Moncalieri readings are given for 16d. Bidston S = +30m.16s. = SR_2 − 11s. Granada PR_1 = +15m.57s. Victoria LN = +52·9m. Ottawa eS? = +34m.12s. = SR_1 + 1s. Toronto eN = +31m.38s. Chicago ePR_1E? = +19m.42s., MN = +67·3m.

Oct. 15d. **Readings also at 1h. (near Apia), 2h. (near Manila), 3h. (Baku), 5h. (near Piatigorsk), 7h. (near Amboina), 9h. (Florence), 10h. (Hukuoka), 12h. (Cape Town), 13h. (Phu-Lien), 14h. (Irkutsk (2), and near Batavia and Malabar), 15h. (Azores), 16h. (Toronto, Ottawa, and near Manila), 17h. (Cape Town and Toronto), 18h. (Ottawa, Toronto, and Ekaterinburg), 23h. (Ottawa, Toronto, and near Nagoya, Osaka, and Sumoto).**

Oct. 16d. Readings at 0h. (Leningrad, Pulkovo, and Ekaterinburg), 1h. (Pulkovo, Ekaterinburg, Riverview, Baku, and Chicago), 2h. (Honolulu, Victoria, Ottawa, Toronto, and Uccle), 3h. (Nagasaki and near Athens), 15h. (Ekaterinburg and Nagasaki), 16h. (Irkutsk), 18h. (Ekaterinburg), 21h. (La Paz, Ekaterinburg, and Zagreb).

Oct. 17d. Readings at 0h. (near Sumoto), 1h. (Baku), 3h. (Ekaterinburg), 8h. (Florence), 9h. (Batavia and Taihoku), 10h. (Florence), 13h. (Toronto and near Port au Prince), 22h. (Manila), 23h. (Lick).

Oct. 18d. 8h. 25m. 48s. Epicentre 4°·8N. 126°·0E. (as on 1924 Sept. 11d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		10·9	334	i 3 12	+29	—	—	i 5·6	5·7
Taihoku	E.	20·6	348	4 52	+ 4	(8 43)	+ 7	8·7	—
Hong Kong		21·0	328	5 2	+ 9	—	—	—	9·4
Malabar		22·0	237	5 7	+ 2	9 6	+ 1	—	—
Batavia		22·1	240	i 5 12	+ 6	i 9 11	+ 4	—	—
Phu-Lien		24·7	312	i 5 40	+ 5	i 10 9	+12	11·9	12·6
Zi-ka-wei		26·7	352	i 5 50	− 5	10 37	+ 2	—	—
Hukuoka		29·1	8	e 10 52	?S	(e 10 52)	−27	—	17·6
Nagoya		32·0	17	e 6 0	−47	—	—	—	—
Mizusawa		36·9	20	7 11	−18	7 19	?	—	—
Adelaide		41·5	166	e 6 22	−105	i 13 17	−71	21·6	28·7
Riverview		44·6	150	e 7 25	−65	e 15 16	+ 6	e 22·6	23·3
Melbourne		46·1	160	e 7 24	−77	i 14 6	−83	—	27·9
Colombo		46·4	274	9 37	+54	(15 37)	+ 4	15·6	16·0
Hyderabad		48·2	290	8 54	− 1	15 57	+ 1	26·3	34·1
Kodaikanal		48·4	280	15 42	?S	(15 42)	−17	—	—
Simla		52·8	307	e 9 36	+11	—	—	—	—
Makeyevka		85·1	319	e 12 28	−21	e 22 37	[−20]	37·6	57·6
Pulkovo		88·7	331	i 13 57	+48	15 23	?	33·2	48·0
Upsala	N.	94·9	331	—	—	—	—	e 51·2	—
Victoria	E.	99·9	40	26 10	?S	(26 10)	+15	—	32·2
Hamburg		101·1	326	e 18 12	?PR_1	e 27 49	+103	e 53·2	—
Innsbruck	N.W.	102·7	321	e 18 24	?PR_1	—	—	—	—
Rocca di Papa		103·8	315	e 18 35	?PR_1	e 26 42	+11	—	—
Florence		104·1	317	11 12?	?	(28 12?)	+98	28·2	37·2
Strasbourg		104·2	322	—	—	—	—	e 36·2	—
De Bilt		104·3	327	—	—	e 28 44	+128	e 50·2	56·5
Uccle		105·4	325	—	—	—	—	—	56·2
Moncalieri		105·9	319	e 18 40	?PR_1	28 54	+123	38·0	—
Paris		107·4	325	—	—	e 30 7	+182	56·2	—
Toledo		116·0	318	e 20 1	?PR_1	e 29 57	+99	e 43·4	68·2
Almeria		116·4	315	e 20 7	?PR_1	e 30 5	+104	—	—
San Fernando		119·2	316	—	—	20 22	?PR_1	—	38·7
Chicago	E.	124·2	30	—	—	e 28 32	−48	e 52·2	72·4
Ottawa	N.	126·2	17	e 17 12?	?	e 31 12?	?	e 38·7	—
Toronto		126·4	21	e 22 50	?PR_1	—	—	79·7	—
La Plata	E.	149·7	174	20 2	[+ 7]	—	—	—	—
La Paz		161·9	131	19 55	[−14]	29 44	?	44·5	—

Additional readings and notes: Batavia iN = +5m.55s. Zi-ka-wei PR_1 = +6m.39s., SR_1 = +11m.28s. Mizusawa PN = +7m.12s. Adelaide PR_1 = +9m.34s., MN = +27·2m. Riverview eS = +14m.20s., MN = +32·0m. Simla eN = +9m.54s. Makeyevka PS = +23m.29s. = S + 8s., MN = +46·4m. Pulkovo e = +13m.54s., PS = +16m.44s. = PR_1 − 13s., MN = +40·4m. Rocca di Papa eP = +18m.38s. = PR_1 + 0s. De Bilt MN = +55·9m. Moncalieri readings have been increased by 10m. Toledo MNW = +68·6m. Chicago ePR_1E? = +20m.42s. = PR_1 − 10s., SR_1E? = +31m.23s.(?), SR_1E? = +37m.30s. = SR_1 − 8s. La Plata P?E = +16m.50s. and +20m.50s., P?N = +19m.40s. = [P] − 15s.

Oct. 18d. Readings also at 8h. (Bombay and near Amboina), 17h. (near Kobe and Sumoto), 21h. (Ekaterinburg).

Oct. 19d. 10h. 43m. 36s. Epicentre 28°·0N. 112°·5W. (as on 1919 Sept. 30d.).

A = −·338, B = −·816, C = +·469; D = −·924, E = +·383; G = −·180, H = −·434, K = −·883.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson	E.	4·5	19	e 1 18	+ 8	i 2 9	+ 5	2·3	3·2
Berkeley		12·9	323	—	—	—	—	e 7·0	—
Tacubaya		14·9	122	3 29	− 9	—	—	6·6	8·5
Chicago		24·5	49	—	—	9 44	−10	e 12·8	13·7
Honolulu	E.	41·7	271	—	—	—	—	e 20·3	25·1

Additional readings: Tucson PE = +1m.22s. and +1m.35s., eE = +1m.48s., iE = +1m.56s. Chicago i = +13m.12s., MN = +15·5m.

Oct. 19d. 10h. 57m. 30s. Epicentre 42°·5N. 85°·5W. (as on 1918 June 17d.).

A = +·058, B = −·735, C = +·676; D = −·997, E = −·078; G = +·053, H = −·674, K = −·737.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s	s.	m.	m.
Ann Arbor		1·3	99	e 0 24	+ 4	e 0 42	+ 6	1·2	1·5
Toronto	N.	4·6	74	i 1 12?	+ 1	i 2 15	+ 9	i 2·6	2·9
St. Louis	N.	5·3	224	e 1 42	+20	e 2 12	−13	e 2·5	3·4
Ithaca		6·6	88	—	—	e 3 1	+ 1	3·3	—
Georgetown		7·3	116	—	—	e 2 30?	−48	5·0	—
Cheltenham	E.	7·5	117	—	—	e 3 2	−22	—	5·2
	N.	7·5	117	—	—	i 3 19	− 5	—	3·5
Ottawa		7·6	64	e 1 55	0	i 3 32	+ 6	i 4·2	4·7
Fordham		8·8	97	e 3 25?	+72	i 3 57	− 1	i 4·2	5·7
Harvard		10·6	86	—	—	—	—	i 5·0	6·1
Halifax		16·0	75	—	—	e 7 42	+47	e 8·5	9·2
Victoria		26·9	296	10 18	?S	(10 18)	−21	12·8	16·0
Edinburgh		52·1	45	—	—	—	—	—	32·5
De Bilt		58·1	46	—	—	—	—	e 27·5	—
Granada		60·6	65	—	—	—	—	e 31·5	33·1
Strasbourg		61·4	49	—	—	—	—	—	35·5
Pulkovo		64·7	30	—	—	—	—	29·5	38·2
Leningrad		64·9	30	—	—	e 20 48	+84	e 26·5	—
Kucino		70·7	30	—	—	—	—	e 31·7	—
Ekaterinburg		76·6	19	e 12 39	+40	—	—	28·5	—
Makeyevka		76·7	35	—	—	—	—	34·5	47·7
Irkutsk		84·9	354	—	—	—	—	e 43·5	—
Baku		87·9	32	—	—	—	—	37·5	—

Additional readings and notes: Toronto ME = +3·0m. St. Louis readings have been increased by 5 min. Georgetown LN = +4·5m. Cheltenham LN? = +2·5m., LE? = +2·6m. Ottawa e = +3m.47s. = SR_1 + 19s. Fordham i = +4m.20s., i = +4m.34s.; T_o = 10h.57m.57s.? Harvard i = +5m.38s., MN = +6·5m. Victoria LN = +13·2m.; all readings have been increased by 15 min. Granada e = +27m.30s.? Irkutsk reading has been increased by 1h.

Oct. 19d. Readings also at 0h. (Lick and Harvard), 7h. (Ekaterinburg, Zurich, and near Athens), 9h. (Baku and La Paz), 10h. (Ekaterinburg and Denver), 11h. (Tucson, Toronto, and Victoria), 12h. (Denver, Ann Arbor, Ithaca, Toronto, Ottawa, Harvard, Fordham, and La Paz), 13h. (Denver), 15h. (Manila), 21h. (La Paz).

Oct. 20d. 9h. 41m. 45s. Epicentre 27°·3N. 138°·5E. (as on 1923 June 29d.).

A = −·666, B = +·589, C = +·459 ; D = +·663, E = +·749 ; G = −·344, H = +·304, K = −·889.

The depth of focus 0·050 used here has been modified from the 0·060 of 1923 June 29d.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto		−0·2	7·7	338	e 2 5	+11	2 58	−26	3·6	3·7
Osaka		−0·2	7·8	342	1 46	− 9	(3 39)	+13	3·7	4·4
Kobe		−0·2	7·9	340	2 7	+10	—	—	3·7	3·7
Nagoya		−0·2	8·0	351	e 1 50	− 8	(3 31)	0	3·5	3·7
Matuyama		−0·3	8·2	325	e 2 17	+17	—	—	—	4·0
Nagasaki		−0·5	9·2	309	2 28	+16	—	—	5·2	5·4
Hukuoka		−0·5	9·4	314	2 36	+21	—	—	4·3	4·5
Mizusawa	N.	−0·9	12·0	10	2 42	− 4	—	—	4·8	—
Zi-ka-wei		−1·3	15·4	289	3 35	+ 8	6 29	+19	—	—
Manila		−2·1	20·7	236	e 6 0	?	—	—	—	—
Irkutsk		−3·6	35·7	324	e 8 15	? ?PR_1	—	—	—	—
Batavia		−4·4	45·4	229	e 8 8	+ 5	—	—	—	—
Ekaterinburg		−5·5	60·9	323	i 9 42	0	i 17 25	− 1	29·2	—
Baku		−5·9	71·8	308	i 10 52	+ 2	i 19 39	+ 3	e 37·2	—
Kucino		−6·0	73·3	325	—	—	19 50	− 4	38·0	—
Pulkovo		−6·0	75·1	330	i 11 6	− 6	i 20 5	−10	40·2	—
Leningrad		−6·0	75·1	330	i 11 5	− 7	20 4	−11	30·2	—
La Paz		—	153·1	72	e 21 14	[+74]	—	—	—	—

Additional readings and notes: Osaka MN = +4·7m. Nagasaki MN = +5·3m. Batavia e = +13m.57s. =S −24s. Hukuoka MN = +4·6m. Ekaterinburg i = +12m.0s. =PR_1 −10s. and +18m.42s. Kucino PS = +20m.22s., e = +22m.47s., SR_2 = +28m.55s. Pulkovo SR_1 = +24m.51s.

Oct. 20d. Readings also at 0h. (Matuyama (2), Kobe, Sumoto, and Osaka), 2h. (near Tacubaya), 3h. (near Baku), 6h. (Nagasaki), 7h. (Florence). 10h. (near Taihoku). 16h. (Manila), 17h. (Irkutsk and Batavia), 22h. (Nagasaki and near Sumoto).

Oct. 21d. 16h. 53m. 20s. Epicentre 39°·0S. 180°·0 (as on 1914 Oct. 28d.).

A = −·777, B = 000, C = −·629 ; D = 000, E = +1·000 : G = +·629, H = 000, K = −·777.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	E.	4·6	238	i 1 16	+ 5	i 2 3	− 3	i 2·2	6·0
	N.	4·6	238	i 1 15	+ 4	i 2 3	− 3	i 2·3	4·3
Riverview		23·7	276	e 2 46	−159	e 7 10	−148	e 8·0	13·0
Sydney		23·7	276	2 22	−183	—	—	10·9	12·5
Melbourne		27·3	261	e 7 28	+87	e 8 40	−126	e 13·0	15·5
Adelaide		33·1	263	e 6 40?	−17	e 12 31	+ 5	e 16·1?	20·3
Agana		61·9	320	—	—	—	—	e 24·8	—
Honolulu	N.	63·8	23	—	—	—	—	(e 26·0)	—
Kobe		84·5	323	—	—	—	—	—	26·4
Victoria	E.	100·8	34	38 7	?SR_2	—	—	42·7	56·4
Colombo		102·2	269	30 0	?	—	—	—	63·7
Kodaikanal		106·1	269	59 22	?L	—	—	(59·4)	—
Irkutsk		112·4	320	e 21 56	?PR_2	—	—	52·7	62·1
Bombay		114·9	274	—	—	—	—	59·7	—
Chicago	N.	116·3	55	25 16	?S	(25 16)	[−17]	47·3	—
Georgetown	E.	122·1	63	i 50 56	?	—	—	e 58·7	—
Toronto		122·5	57	—	—	—	—	59·4	69·5
Ottawa		125·6	56	—	—	e 51 56	?	e 60·2	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	137·3	315	i 19 29	[− 6]	e 34 51	?	57·7	78·8
Baku	142·1	289	—	—	—	—	79·7	—
Kucino	149·9	315	—	—	—	—	e 73·3	—
Pulkovo	151·8	328	16 37	?	—	—	70·7	90·6
De Bilt	166·4	346	—	—	—	—	e 87·7	97·7
Uccle	167·8	347	—	—	—	—	84·7	—
Florence	170·2	305	—	—	—	—	85·7	88·7
San Fernando	174·5	115	—	—	—	—	—	94·2

Additional readings: Riverview MN = +11·2m. Adelaide eSR_1 = +14m.5s., MN = +17·3m. Honolulu (Δ = 63°·8, Az. = 23°) eSR_1E = +23m.0s., eSR_2E = +24m.58s., eSR_3N? = +25m.58s. Irkutsk MZ = +62·0m. Chicago PR_2N = +21m.50s. eSR_1N = +32m.10s. Ottawa eLN = +59·3m. Ekaterinburg i = +19m.51s., MN = +67·9m. De Bilt MN = +92·8m.

Oct. 21d. Readings also at 2h. (Tacubaya (2) and Vera Cruz), 3h. (near Tacubaya), 6h. (Nagasaki and near Tacubaya (2)), 11h. (Ekaterinburg), 12h. (Taihoku), 14h. (La Paz and La Plata), 17h. and 20h. (near Sumoto), 23h. (Ekaterinburg and near Baku).

Oct. 22d. 17h. 1m. 36s. Epicentre 4°·0S. 103°·0E.

(as on 1914 July 14d.).

A = −·224, B = +·972, C = −·070; D = +·974, E = +·225; G = +·016, H = −·068, K = −·998.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		4·4	121	i 1 9	+ 1	i 1 52	− 9	—	—
Malabar		5·6	125	i 1 25	− 2	i 2 20	−14	—	—
Phu-Lien		25·1	8	i 5 40	+ 1	i 10 12	+ 7	12·4	17·1
Amboina		25·2	90	4 30	−70	—	—	—	—
Colombo		25·6	295	(5 34?)	−10	(10 24?)	+10	12·7	17·4
Manila		25·8	43	e 5 47	+ 1	(i 10 20)	+ 2	i 10·3	11·4
Hong Kong		28·5	22	6 11	− 2	11 4	− 4	13·8	19·9
Kodaikanal		29·2	300	6 42	+22	(11 18)	− 2	11·3	20·1
Calcutta	E.	30·2	332	6 25	− 5	11 28	− 9	—	—
	N.	30·2	332	6 24	− 6	11 24	−13	—	—
Perth		30·4	158	6 16	−16	11 24	−17	28·9	74·8
Hyderabad		32·3	313	i 6 37	−14	12 3	−10	16·8	24·1
Taihoku	E.	34·2	30	7 20	+13	(12 35)	− 8	12·6	22·3
	N.	34·2	30	7 21	+14	8 39	?PR_2	—	—
Bombay		37·6	309	7 27	− 8	12 49	−43	e 19·6	27·2
Zi-ka-wei		39·4	25	i 7 47	− 3	i 13 54	− 3	21·4	24·1
Dehra Dun		41·8	327	7 9	−60	13 39	−53	16·9	27·6
Simla	E.	42·9	327	8 18	+ 1	14 48	+ 1	e 21·9	25·1
	N.	42·9	327	8 18	+ 1	14 48	+ 1	e 25·1	28·1
Adelaide		45·2	138	i 8 11	−23	14 31	−47	18·8?	30·4
Hukuoka	E.	45·7	33	—	—	—	—	e 33·9	35·0
Osaka		49·2	36	9 6	+ 5	(16 18)	+ 9	16·3	18·2
Melbourne		51·0	138	e 8 6	−67	—	—	i 26·6	34·7
Riverview		53·7	130	e 9 21	−10	i 16 51	−14	e 25·9	34·0
Sydney		53·7	130	9 0	−31	17 24	+19	33·9	37·2
Irkutsk		56·3	0	i 9 56	+ 8	i 17 45	+ 7	27·4	32·0
Baku		65·4	319	i 10 58	+11	i 19 48	+18	31·9	36·8
Ekaterinburg		69·8	337	i 11 22	+ 6	i 20 33	+ 9	31·4	45·4
Wellington	E.	73·7	133	i 11 50	+10	e 20 38	−32	i 38·0	40·7
	N.	73·7	133	—	—	i 20 51	−19	e 30·6	—
Helwan		76·2	302	11 59	+ 3	21 40	+ 1	—	45·0
Makeyevka		76·7	322	e 11 50	− 9	i 21 27	−18	34·8	56·9
Cape Town		83·2	236	23 4	?S	(23 4)	+ 5	—	43·4
Athens		84·1	310	e 12 39	− 4	22 58	−11	40·4	54·6
Pulkovo		84·9	331	i 12 45	− 2	i 23 37	+19	42·4	56·8
Leningrad		85·0	331	i 12 47	− 1	i 23 41	+22	40·9	56·7
Belgrade		87·6	316	e 12 56	− 7	i 23 24	−24	36·9	—
Konigsberg		88·9	325	i 13 3	− 7	i 24 18	+16	e 52·4	53·4
Vienna		90·7	320	e 13 11	− 9	i 24 10	−11	e 50·4	56·4
Zagreb		90·8	316	e 13 12	− 8	i 23 45	[+12]	51·4	—
Upsala		91·2	330	—	—	24 12	−14	e 46·4	64·4

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Graz		91·2	318	12 49	−33	e 23 37	[+ 2]	—	56·3
Pompeii		91·4	311	e 13 24?	+ 1	e 23 24?	[−12]	—	—
Naples		91·7	311	e 14 24?	+59	e 24 24?	− 8	—	—
Laibach		91·9	317	13 16	−10	23 40	[+ 1]	—	—
Rocca di Papa	E.	92·9	313	e 13 27	− 5	e 23 53	[+ 8]	—	—
	N.	92·9	313	e 12 39	−53	e 24 47	+ 3	—	—
Venice		93·4	316	—	—	26 24?	+95	—	—
Innsbruck	N.E.	94·0	318	e 12 34	−64	e 23 56	[+ 4]	—	—
Florence		94·0	314	e 13 54	+16	23 24	[−28]	40·4	46·4
Hamburg		95·0	324	—	—	e 24 24?	[+27]	e 48·4	59·4
Strasbourg		96·5	320	—	—	—	—	55·4	—
Moncalieri		96·6	315	e 22 27	?	32 21	?SR_1	49·4	62·7
Bergen		97·2	330	—	—	e 44 24?	?L	e 73·4	—
De Bilt		98·0	323	—	—	e 24 26	[+13]	e 43·4	58·8
Uccle		98·6	321	—	—	23 24?	[−53]	e 41·4	59·2
Paris		99·9	319	—	—	—	—	e 55·4	63·4
Honolulu	E.	99·9	69	—	—	—	—	e 51·4	—
Algiers		100·3	308	—	—	e 24 31	[+ 5]	e 33·4	—
Dyce		101·5	328	—	—	25 46	−24	54·2	62·4
Oxford		101·9	322	—	—	—	—	50·4	57·5
Tortosa	N.	102·0	311	—	—	—	—	e 58·4	63·5
Stonyhurst		102·2	324	—	—	—	—	e 58·4	62·9
Edinburgh		102·3	327	—	—	—	—	55·4	65·4
Granada		105·6	308	—	—	—	—	i 47·7	—
San Fernando		107·8	307	—	—	28 8	+60	51·9	71·4
Victoria	E.	120·7	34	25 58	?S	(25 58)	[+10]	62·5	84·7
	N.	120·7	34	26 6	?S	(26 6)	[+18]	63·5	78·0
La Plata	E.	137·1	203	—	—	—	—	—	63·8
Rio de Janeiro		137·4	228	e 22 54	?PR_1	—	—	e 64·2	65·9
Ottawa		138·6	359	e 22 39	?PR_1	e 29 44	?	e 65·4	70·4
Toronto	N.	140·4	3	—	—	(27 47)	?	75·0	—
Chicago	N.	141·1	12	e 23 24?	?PR_1	—	—	70·5	89·7
Ithaca		141·6	359	—	—	—	—	71·4	—
Georgetown	E.	145·1	0	e 19 47	[− 1]	—	—	73·4	—
La Paz		157·7	203	i 20 28	[+22]	34 33	?	74·7	80·7

Additional readings and notes: Phu-Lien MN = +18·6m. Amboina i = +5m.0s., +5m.36s., and +8m.30s. Colombo gives P as S and S as L. Manila iS = +9m.10s., MN = +11·1m. Hyderabad PR_1 = +7m.39s.; T_0 = 17h.1m.18s. Taihoku eE = +5m.19s., SE = +8m.38s. like SN, but it seems probable that LE should be S; microseisms apparently interfered. Adelaide PR_1 = +9m.38s., SR_1 = +17m.10s., SR_2 = +18m.7s.; all these are considerably too early, as are P and S in the text; SR_3 = +18m.24s., MN = +23·7m. Osaka S = +12m.25s., MN = +17·1m. Riverview iS = +16m.55s., PS = +17m.21s., MN = +28·1m. Baku iP = +11m.1s., iPR_2 = +15m.7s., PS = +20m.56s., SR_2 = +27m.31s., MN = +35·0m., MZ = +48·8m. Ekaterinburg iPR_1 = +13m.53s., iPR_2 = +15m.43s. Wellington SR_1N = +25m.26s. Makeyevka PS = +22m.10s. =[S]+9s., SR_1 = +27m.15s., SR_2 = +30m.13s., SR_3 = +32m.1s., MN = +53·8m. Athens PR_1 = +16m.17s., SR_1N = +28m.54s. Pulkovo PR_1 = +16m.7s., i = +23m.11s. =[S]+16s., SR_1 = +29m.18s., MN = +50·9m., MZ = +56·9m. Leningrad iPR_1 = +16m.24s., i = +23m.17s. =[S]+21s., iSR_1 = +28m.55s., MN = +51·0m., MZ = +56·8m. Belgrade iP = +13m.4s., PR_1N = +13m.23s., PR_1E = +13m.36s., eSN = +23m.34s. Konigsberg iZ = +13m.16s., ePR_1 = +17m.8s., S_0P_0S = +23m.27s. =S+6s., eEN = +23m.50s. iE = +24m.23s., S_0S? = +24m.30s., eE = +24m.35s., e = +24m.39s., PS = +25m.18s., PPS = +25m.43s., SR_1E = +30m.58s., e = +31m.28s., and +32m.18s., eSR_2 = +34m.24s., e = +35m.18s., and +36m.48s., eLN = +43·3m., MN = +50·4m.; T_0 = 17h.1m.30s. Vienna iPZ = +13m.13s., iNZ = +13m.46s., iZ = +15m.52s., eEN = +16m.36s., PR_1 = +16m.56s., PS = +24m.59s. =S+38s., iZ = +27m.50s., SR_1? = +29m.42s. Zagreb ePR_1 = +15m.9s. Upsala eE = +23m.42s. =[S]+8s., MN = +56·0m. Innsbruck eSNW = +23m.59s. Hamburg MN = +56·4m. Moncalieri MN = +60·1m. De Bilt eN = +25m.18s. =S−18s., MN = +58·1m. Dyce SR_1? = +32m.59s. San Fernando MN = +62·4m. La Plata PR_1?N = +23m.7s. and +23m.21s., MN = +66·5m. Rio de Janeiro eL = +41·5m. Ottawa i = +40m.48s. =SR_1 +12s. Toronto eN = +40m.47s. =SR_1 −9s.; all other readings are given as LN. Chicago PR_1N = +23m.54s., PR_2N? = +29m.39s., SR_1N = +41m.38s. Georgetown eN = +19m.51s. = [P]+3s. La Paz iPN = +20m.33s.

Oct. 22d. Readings also at 7h. (Manila and Ekaterinburg), 9h. (near Athens), 11h. (Ekaterinburg and near Zurich), 12h. (near Mizusawa), 13h. (Irkutsk, Baku, Ekaterinburg, and near Sumoto), 15h. and 17h. (La Paz), 21h. and 22h. (2) (near Sumoto).

Oct. 23d. 1h. 47m. 27s. Epicentre 9°·0S. 115°·0E.

$A = -\cdot417$, $B = +\cdot895$, $C = -\cdot156$; $D = +\cdot906$, $E = +\cdot423$
$G = +\cdot066$, $H = -\cdot142$, $K = -\cdot988$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		7·5	283	1 55	+ 1	3 17	− 7	—	—
Batavia		8·5	288	2 15	+ 6	3 49	− 1	—	—
Amboina		14·2	69	i 4 3	+34	i 6 51	+38	—	—
Manila		24·3	14	e 5 45	+14	—	—	i 8·9	10·3
Phu-Lien		30·9	345	i 6 36	− 1	i 11 58	+ 8	17·6	26·2
Hong Kong		31·3	359	6 45	+ 4	12 0	+ 4	—	23·0
Adelaide		33·8	144	i 6 33	−30	i 11 45	−53	16·6	18·4
Colombo		38·4	292	—	—	13 58?	+14	24·1	26·0
Melbourne		39·5	143	—	—	i 13 27	−32	i 19·6	21·4
Zi-ka-wei		40·6	9	8 3	+ 3	14 25	+10	—	30·5
Riverview		41·5	134	e 7 47	−20	e 13 56	−32	e 20·4	22·0
Sydney		41·5	134	7 33	−34	14 9	−19	21·4	22·2
Kodaikanal		42·0	296	17 45	?SR_1	—	—	25·0	28·6
Hyderabad		44·7	307	8 30	− 1	15 5	− 6	23·0	30·2
Bombay		50·0	306	9 6	− 1	16 17	− 2	25·2	—
Simla	E.	54·0	320	—	—	e 17 9	0	—	—
Wellington		61·6	133	i 25 43	?SR_1	—	—	34·4	—
Baku		77·5	316	i 12 7	+ 3	i 22 1	+ 6	37·0	49·3
Ekaterinburg		79·3	333	i 12 15	0	i 22 21	+ 6	36·6	49·1
Makeyevka		88·1	319	—	—	—	—	i 53·1	—
Kucino		90·3	327	—	—	23 51	−26	47·8	—
Pulkovo		95·1	330	13 36	− 8	24 12	[+14]	38·6	—
Leningrad		95·2	330	—	—	—	—	49·8	—
Vienna	Z.	102·4	319	e 18 11	?PR_1	—	—	—	—
De Bilt		109·2	323	—	—	—	—	e 62·6	—
Rio de Janeiro		141·6	214	e 23 11	?PR_1	—	—	e 42·2	—
Ottawa	N.	142·4	11	20 9	[+25]	—	—	e 75·0	—
Toronto	N.	143·1	16	i 19 41	[− 4]	—	—	42·6	—
La Paz		154·3	173	20 3	[+ 2]	24 13	?PR_1	28·4	—

Additional readings: Manila iL = +8·5m., MN = +10·2m. Adelaide SR_1 = +13m.20s., SR_2 = +13m.50s., L = +16·6m. MN = +18·6m. Riverview MZ = +18·6m., MN = +22·1m. Simla eN = +17m.15s. Wellington eN = +31m.25s. Baku PS = +22m.43s., MN = +46·3m., MZ = +56·2m. Ekaterinburg e = +22m.0s., MN = +50·2m. Makeyevka L = +73·6m. Pulkovo PR_1 = +17m.38s., e = +21m.28s. = PR_2 −15s.

Oct. 23d. Readings also at 0h. (Lick, near Taihoku, and near Zi-ka-wei), 1h. (Ekaterinburg), 2h. (near Sumoto), 3h. (Perth and Toronto), 5h. (Apia), 6h. (Ekaterinburg), 7h. (Baku), 11h. (Manila), 22h. (near Granada), 23h. (Nagasaki and near Granada).

Oct. 24d. Readings at 0h. (Cape Town), 5h. (Moncalieri), 13h. (Ekaterinburg), 14h. (Algiers and Ekaterinburg), 15h. (Baku and La Paz), 19h. (near Batavia and Malabar), 21h and 23h. (La Paz).

Oct. 25d. 0h. 21m. 20s. Epicentre 5°·0N. 128°·0E. (as on 1918 June 8d.).

$A = -\cdot613$, $B = +\cdot785$, $C = +\cdot087$; $D = +\cdot788$, $E = +\cdot616$;
$G = -\cdot054$, $H = +\cdot069$, $K = -\cdot996$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		8·7	179	i 1 34	−38	i 2 34	−82	—	—
Manila		11·8	325	e 2 53	− 3	—	—	i 5·6	—
Taihoku		21·0	343	e 5 9	+16	—	—	9·2	10·1
Hong Kong		21·9	324	5 3	− 1	—	—	—	9·4
Malabar		23·7	239	e 5 10	−15	i 9 30	− 8	i 16·1	—
Batavia		23·9	243	4 57	−30	8 54	−48	—	—
Phu-Lien		26·1	309	e 5 37	−12	e 10 12	−12	e 12·2	—
Zi-ka-wei		26·9	347	i 5 56	− 1	? 10 54	+15	—	14·4
Melbourne		45·6	161	e 8 58	+21	—	—	—	26·1
Hyderabad		50·0	289	—	—	—	—	—	16·0
Bombay		55·5	289	17 9	?S	(17 9)	−19	—	—
Honolulu	E	73·4	69	—	—	—	—	—	44·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg		73·5	328	i 11 39	0	i 21 11	+ 3	33·7	44·6
Baku		77·7	311	i 12 2	− 3	i 21 59	+ 2	39·7	50·7
Kucino		85·9	326	e 12 52	− 1	e 23 28	− 1	41·7	—
Makeyevka		86·3	318	e 12 21	−34	e 22 45	−48	37·7	55·3
Leningrad		89·5	330	13 0	−13	e 24 0	− 9	51·7	—
Pulkovo		89·6	330	13 1	−13	23 54	−16	39·7	53·8
De Bilt	N.	105·2	328	—	—	—	—	e 53·7	60·8
Uccle		106·3	326	—	—	—	—	e 55·7	—
Ottawa		125·4	20	—	—	—	—	e 61·7	—
Toronto	E.	125·5	24	—	—	—	—	i 67·0	—
La Paz		160·5	127	20 21	[+12]	—	—	—	—

Additional readings: Amboina iE = +1m.40s. Taihoku iPN = +5m.10s. Batavia i = +9m.44s. Ekaterinburg MN = +43·6m. Baku MN = +49·0m., MZ = +51·1m. Kucino e = +13m.16s. and +24m.34s. Makeyevka MN = +50·1m., MZ = +56·2m. Leningrad i = +16m.41s. = PR$_1$ −21s. Pulkovo PR$_1$ = +16m.41s., e = +23m.28s. = [S] +2s., MNZ = +54·1m. De Bilt eLE = +55·7m. Toronto LN = +68·5m.

Oct. 25d. 4h. 30m. 0s. Epicentre 18°·0S. 73°·0W. (as on 1925 March 16d.).

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

It is not easy to reconcile the observations. La Plata P and Rio P should probably both be PR$_1$; if so, T$_0$ might be increased by 20 sec. and the epicentre moved nearer La Paz.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		4·9	70	i 1 10	− 6	i 1 48	−26	—	—
La Plata	E.	21·6	145	i 5 44	+44	e 9 15	+18	10·8	12·4
	N.	21·6	145	5 44	+44	i 9 11	+14	10·8	16·7
	Z.	21·6	145	e 5 42	+42	e 9 18	+21	11·1	17·6
Rio de Janeiro	E.	28·4	105	—	—	11 38	+32	e 14·8	15·5
	N.	28·4	105	e 7 8	+56	11 4	− 2	e 15·4	18·5
Chicago		61·3	348	—	—	e 28 30	?	30·0	37·5
Toronto	E.	61·9	355	—	—	—	—	28·0	—
Ottawa	N.	63·4	358	—	—	e 20 36	+90	e 25·0	43·0
Victoria	E.	79·7	329	24 17	?S	(24 17)	+117	46·3	50·8
San Fernando	E.	83·2	48	—	—	—	—	—	53·5
De Bilt	E.	97·1	37	—	—	—	—	e 50·0	55·8
Leningrad		112·1	32	—	—	—	—	e 57·5	—
Pulkovo		112·2	32	—	—	e 30 0	?	56·0	60·8
Baku		126·4	53	e 22 12	?PR$_1$	—	—	57·0	67·2
Ekaterinburg		128·2	30	—	—	—	—	93·0	—
Irkutsk		145·6	357	21 7	[+78]	—	—	77·0	93·0
Bombay		147·6	83	—	—	—	—	77·0	—
Colombo		151·3	109	77 50	?L	—	—	(77·8)	90·0
Manila		166·2	281	e 57 0?	?	—	—	—	—

Additional readings: La Paz i = +1m.18s.; T$_0$ = 4h.30m.21s. Chicago MN = +33·9m. Toronto LN = +36·5m. Ottawa eE? = +22m.30s. Victoria LN = +41·6m. San Fernando MN = +50·0m. De Bilt eLN = +53·0m. Pulkovo MZ = +60·7m. Baku e = +32m.20s., +34m.36s., and +40m.43s., MZ = +75·0m.

Oct. 25d. Readings also at 0h. (near Mizusawa), 7h. (near Algiers), 12h., 14h., 15h., 16h., 17h., and 18h. (La Paz), 19h. (La Paz and Nagasaki), 20h. (2) and 21h. (2) (La Paz).

Oct. 26d. Readings at 2h. (La Paz, near Nagoya, Osaka, Kobe, and Sumoto), 5h. (La Paz), 6h. (Batavia), 7h. (Nagasaki), 8h. and 9h. (near La Paz), 12h. (Cape Town), 13h. (Nagasaki), 16h. (La Paz), 17h. (Cape Town), 19h. (near La Paz), 22h. (Nagasaki), 23h. (Manila).

Oct. 27d. Readings at 0h. (La Paz (2)), 1h. (near Tortosa (2)), 2h. and 3h. (near La Paz), 5h. (Agana and Sumoto (2)), 7h. (Phu-Lien), 8h. (La Paz), 9h. (near Athens), 11h. (near Tacubaya), 13h. (Melbourne), 14h. (Nagasaki), 16h. (near Calcutta), 17h. (Baku, Bombay, and Irkutsk).

Oct. 28d. Readings at 2h. and 3h. (Irkutsk), 7h. (La Paz), 8h. (Zurich, Venice, Innsbruck, and Florence), 15h. (Florence), 17h. (near Tacubaya), 22h. (Granada), 23h. (La Paz and near Tacubaya).

Oct. 29d. 19h. 31m. 40s. Epicentre 29°·0N. 104°·0E. (as on 1917 July 30d.).

A = −·212, B = +·849, C = +·485; D = +·970, E = +·242; G = −·117, H = +·470, K = −·895.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	8·5	163	2 20	+11	e 3 52	+ 2	4·3	4·6
Hong Kong	11·3	123	6 40	?L	—	—	(6·7)	7·2
Zi-ka-wei	15·2	77	6 36	?S	(6 36)	− 1	(9·3)	10·7
Irkutsk	23·3	4	5 3	−17	8 40	−51	12·3	—
Bombay	30·1	257	9 47	?S	(9 47)	−109	—	—
Baku	45·2	300	—	—	—	—	e 23·6	—
Kucino	53·1	320	—	—	—	—	e 28·2	—

Additional readings and notes: Phu-Lien MN = +4·9m. Zi-ka-wei gives S as P and L as S. Ekaterinburg (Δ = 41°·1, Az. = 325°) gives L = 19h.31m.

Oct. 29d. Readings also at 1h. (near Batavia and Malabar), 3h. (La Paz), 4h. (Nagasaki), 6h. and 10h. (La Paz), 14h. (Irkutsk).

Oct. 30d. 11h. 2m. 0s. Epicentre 5°·0N. 128°·0E. (as on Oct. 25d.).

A = −·613, B = +·785, C = +·087; D = +·788, E = +·616; G = −·054, H = +·069, K = −·996.

See note at end for alternative solution.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	8·7	179	—	—	i 3 54	− 2	—	—
Manila	11·8	325	—	—	e 5 0?	−14	—	—
Hong Kong	21·9	324	4 59	− 5	8 41	−22	—	15·5
Malabar	23·7	239	5 24	− 1	9 29	− 9	—	—
Batavia	23·9	243	5 10	−17	9 14	−28	—	—
Phu-Lien	26·1	309	e 5 37	−12	e 9 55	−29	13·0	—
Zi-ka-wei	26·9	347	6 5	+ 8	10 58	+19	—	—
Irkutsk	51·2	342	—	—	—	—	29·0	—
Ekaterinburg	73·5	328	11 47	+ 8	21 4	− 4	33·0	—
Baku	77·7	311	e 12 13	+ 8	e 21 53	− 4	39·1	44·5
Kucino	85·9	326	e 14 54	?	—	—	—	—
Leningrad	89·5	330	—	—	—	—	47·0	—
Pulkovo	89·6	330	—	—	—	—	e 47·0	—
Budapest	98·9	320	—	—	—	—	e 43·0	—

Baku gives also MN = +44·9m.

NOTE TO OCT. 30d. 11h. 2m. 0s.

Many of the stations would be better suited by an alteration of T_0 by 22s., and the epicentre by about 3° as follows:—

Oct. 30d. 11h. 2m. 22s. Epicentre 6°·5N. 126°·0E. (as on 1922 June 27d.).

A = −·584, B = +·804, C = +·113.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Manila	9·5	330	—	—	4 38	+22
Amboina	10·4	168	—	—	3 32	−68
Hong Kong	19·5	326	4 37	+ 2	8 19	+ 6
Malabar	22·7	233	5 2	−11	9 7	−12
Batavia	22·9	237	4 48	−28	8 52	−31
Phu-Lien	23·7	309	5 15	−10	9 33	− 5
Zi-ka-wei	25·0	351	5 43	+ 5	10 36	+33
Ekaterinburg	71·3	329	11 25	0	20 42	0
Baku	75·2	310	11 51	+ 1	21 31	+ 3

But unless Amboina is 1 min. in error this solution does not suit the nearer stations so well as the former.

Oct. 30d. 14h. 41m. 48s. Epicentre 8°·0S. 160°·0E. (as on 1920 March 22d.).

A = −·931, B = +·339, C = −·139; D = +·342, E = +·940; G = +·131, H = −·048, K = −·990.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·1	196	i 5 26	−33	i 9 52	−51	e 11·5	12·5
Sydney		27·1	196	5 36	−23	10 24	−19	12·7	14·6
Apia		28·3	104	6 13	+ 2	11 50	+46	13·6	16·4
Amboina		31·9	276	i 8 30	?	—	—	—	—
Melbourne		32·8	202	e 5 24	−91	i 11 0	−81	14·0	16·7
Wellington	E.	35·8	161	6 42	−38	e 11 52	−75	e 14·4	20·6
	N.	35·8	161	i 6 35	−45	e 11 52	−75	e 14·4	19·8
Manila		44·8	300	—	—	—	—	e 18·2	—
Osaka		48·2	333	9 10	+15	18 18	+142	25·4	27·4
Nagasaki		49·8	327	0 22	?	—	—	—	—
Taihoku	E.	49·9	314	—	—	—	—	22·9	—
Hukuoka		50·2	329	—	—	—	—	—	27·1
Honolulu	E.	50·5	54	e 9 18	+ 8	e 16 18	− 7	e 22·7	25·0
Malabar		51·9	268	9 15	− 4	16 35	− 8	—	—
Batavia		52·7	268	e 9 22	− 2	16 54	+ 2	—	—
Zi-ka-wei		53·8	319	i 9 33	+ 1	17 8	+ 2	28·4	34·9
Hong Kong		54·2	306	9 37	+ 3	17 15	+ 4	—	29·7
Phu-Lien		59·8	300	e 10 17	+ 6	e 19 14	+53	31·2	—
Irkutsk		76·6	329	e 11 55	− 4	21 49	+ 5	39·2	47·0
Kodaikanal		84·3	281	63 42	?	—	—	—	—
Hyderabad		84·5	288	12 38	− 7	22 54	−20	42·0	64·6
Victoria	E.	87·3	40	23 29	?S	(23 29)	[+18]	41·0	43·2
Simla	N.	88·0	302	—	—	—	—	e 46·5	—
Bombay		89·9	290	23 31	?S	(23 31)	[+ 4]	—	—
Ekaterinburg		101·7	327	e 14 2	−17	i 24 33	[0]	44·2	58·6
Baku		110·4	310	e 19 28	?PR_1	i 28 59	+87	54·2	68·5
Chicago	E.	111·9	48	—	—	—	—	e 57·2	62·9
	N.	111·9	48	—	—	—	—	e 55·7	63·2
Kucino		114·2	329	—	—	e 26 39	−85	55·3	62·9
Piatigorsk		114·7	315	—	—	—	—	e 63·2	—
Leningrad		115·9	334	e 20 5	?PR_1	—	—	53·2	72·9
Pulkovo		116·1	335	e 20 14	?PR_1	—	—	47·2	72·0
Makeyevka		117·0	320	—	—	—	—	60·2	—
Toronto	N.	117·4	45	—	—	—	—	59·6	64·6
Ottawa	E.	119·3	42	—	—	e 26 12?	[+29]	e 50·7	—
Georgetown	E.	120·4	49	—	—	e 34 12?	?SR_1	—	—
Upsala		120·9	339	—	—	—	—	e 63·2	—
La Paz		126·4	117	19 9	[0]	—	—	70·2	72·6
Budapest		128·4	327	—	—	—	—	e 64·2	—
Vienna		129·4	330	e 19 12	[− 5]	—	—	—	76·2
Graz		130·6	329	—	—	—	—	e 68·8	—
Zagreb		131·1	327	—	—	—	—	e 125·1	—
De Bilt	E.	131·3	340	—	—	e 55 12?	?	e 58·2	63·5
	N.	131·3	340	—	—	—	—	e 60·2	75·4
Uccle		132·6	339	—	—	—	—	e 56·2	75·2
Strasbourg		133·2	335	—	—	—	—	79·2	—
Paris		135·0	339	—	—	e 54 12?	?	73·2	—
Florence		135·0	328	—	—	—	—	68·2	74·2
Rocca di Papa		135·6	324	e 16 0	?	—	—	e 69·0	—
Moncalieri		135·9	332	35 8	?	48 16	?	68·4	—
Rio de Janeiro		141·7	143	—	—	—	—	e 72·8	—
Tortosa	N.	142·4	334	19 38	[− 6]	29 22	?PR_2	—	77·7
Algiers		144·4	327	19 45	[− 2]	22 54	?PR_1	—	—
Granada		147·2	336	—	—	—	—	e 77·2	88·7
San Fernando		148·9	338	19 48	[− 6]	34 5	?	79·2	91·7

Additional readings: Riverview MN = +12·8m., MZ = +14·3m.; T_0 = 14h.41m.26s. Apia P = +6m.17s., +11m.50s (taken as S), +12m.46s. = SR_1 +26s., MN = +16·0m. Wellington PR_1N = +7m.53s., PR_1E = +7m.56s., PR_2N? = +9m.13s.; T_0N = 14h.41m.40s., T_0E = 14h.41m.57s. Osaka MN = +27·2m. Honolulu eE = +13m.18s., eSR_1E = +19m.30s., eSR_2E = +21m.24s., eSR_4N = +21m.39s., eLN = +22·3m., MN = +25·4m.; T_0 = 14h.42m.12s. and +14m.42m.18s. Irkutsk iP = +12m.1s., MZ = +46·4m. Victoria LN = +36·2m. Simla eE = +30m.12s. = SR_1 +8s., Ekaterinburg i = +18m.12s. = PR_1 −12s., and +27m.39s., MN = +54·4m., MZ = +59·9m. Baku MNZ = +61·6m. Chicago PSE = +28m.48s. = S +63s., SR_2 = +40m.12s., eN = +50m.14s., eE = +54m.42s. Kucino e = +27m.15s., +29m.14s., +35m.49s. = SR_1 +15s., and +49m.30s., MN = +62·6m. Leningrad e = +20m.9s. Pulkovo MN = +58·7m., MZ = +71·6m. Ottawa eE? = +36m.48s. = SR_1 +11s., eLN = +48·7m. Vienna PR_1? = +22m.43s. Rocca di Papa ePN = +20m.0s. = [P] +29s., ePE = +22m.0s. = PR_1 −5s. San Fernando MN = +86·2m.

Oct. 30d. Readings also at 0h. (near Athens), 1h. (Nagasaki), 2h. (near Athens), 5h. (Manila), 8h. (La Paz), 11h. (Naples, Pompeii, and Rocca di Papa), 15h. (Berkeley), 15h. (near Batavia and Malabar), 19h. (Irkutsk, Ekaterinburg, and near Batavia and Malabar), 20h. (La Paz and near Algiers).

Oct. 31d. 19h. 30m. 45s. Epicentre 12°·0N. 141°·5E. (as on 1925 July 17d.).

A=-·765, B=+·609, C=+·208; D=+·623, E=+·783; G=−·163, H=+·126, K=−·978.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	20·1	280	—	—	e 8 15?	−10	—	—
Irkutsk	50·1	331	e 9 4	− 4	e 16 8	−12	27·2	—
Ekaterinburg	74·9	326	i 11 51	+ 3	21 33	+ 8	35·2	48·9
Baku	83·5	311	—	—	—	—	e 44·2	55·5
Leningrad	89·8	333	—	—	—	—	55·2	—
Pulkovo	89·9	333	—	—	—	—	e 53·2	—
La Paz	151·0	102	19 57	[0]	—	—	—	—

Additional readings: Ekaterinburg MN=+40·9m., MZ=+49·0m. Baku MN=+56·6m., MZ=+58·0m.

Oct. 31d. Readings also at 2h. (Zagreb), 6h. (Rocca di Papa), 7h. (Agana), 9h. (near Tacubaya), 10h. (Cape Town, Taihoku, and near Tacubaya), 12h. (Agana), 13h. and 15h. (near La Paz), 18h. (Agana), 20h. (Manila), 23h. (Rocca di Papa).

Nov. 1d. Readings at 0h. (Malabar, near Batavia, and near Mizusawa), 1h. (La Paz and La Plata), 5h. (2), 6h., 8h., 9h., and 10h. (2) (Agana), 12h. (Baku and Ekaterinburg), 13h. (near Tucson), 14h. (La Paz), 15h. (Ann Arbor, Chicago, Fordham, Georgetown, Harvard, Ithaca, Ottawa, Toronto, and Victoria), 16h. (Agana and La Paz), 20h. (near Sumoto), 22h. (La Plata).

Nov. 1d. 18h. 44m. 10s. Epicentre 76°·5N. 15°·0E.

A=+·225, B=+·060, C=+·972; D=+·259, E=−·966; G=+·939, H=+·252, K=−·233.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Upsala	16·7	175	—	—	—	—	e 7·8	—
Leningrad	17·4	154	4 10	0	7 26	−1	9·3	10·3
Pulkovo	17·6	154	4 12	0	7 30	− 1	8·8	10·2
Kucino	22·4	145	—	—	e 10 43	+90	12·8	14·7
De Bilt N.	24·7	195	—	—	(e 9 50?)	− 7	e 9·8	13·8
Ekaterinburg	25·4	114	—	—	—	—	10·8	—
Ucclo	26·0	196	—	—	9 50?	−32	—	—
Graz	29·4	179	—	—	(11 50?)	+26	11·8	—
Baku	39·2	136	—	—	—	—	20·8	23·1
Irkutsk	39·6	74	e 7 50?	− 1	18 50?	?	27·8	—

Additional readings: Leningrad MZ=+11·3m. Pulkovo MZ=+10·3m. Baku MN=+25·5m., MZ=+25·6m.

Nov. 2d. Readings also at 4h. (Agana and near Athens (2)), 10h. (Florence), 12h. (Agana and near Athens), 13h. (near Batavia and Malabar), 16h. (Ekaterinburg and near Batavia and Malabar), 17h. (Cape Town and Irkutsk), 18h. (La Paz (2)), 19h. (Leningrad, Pulkovo, Kucino, Baku, De Bilt, and near Athens), 20h. (Agana).

Nov. 3d. Readings at 1h. (Irkutsk, Kucino, Manila, Ekaterinburg, La Paz (2), and Almeria), 2h. (near Granada), 4h. (near Athens), 5h. (Kucino, Pulkovo, Leningrad, Ekaterinburg, Kobe, and near Sumoto), 7h. (near La Paz), 8h. (La Paz and near Sumoto), 11h. (Ekaterinburg and Agana), 17h. (Manila and La Paz), 18h. (near Batavia and Malabar), 22h. (Ekaterinburg and near Mizusawa).

Nov. 4d. Readings at 0h. (La Paz, near Victoria, Lick (2), and Berkeley), 2h. (La Plata and La Paz), 3h. (La Paz, Granada, Ekaterinburg, Irkutsk, and near Tacubaya), 5h. (La Paz), 6h. (near Tacubaya), 21h. (near Nagasaki).

Nov. 5d. Readings at 6h. (near Tacubaya), 8h. (Azores, La Plata, and La Paz), 9h. (Irkutsk and Ekaterinburg), 10h. (La Paz), 11h. (Baku), 12h. (Hong Kong, Irkutsk, and Manila), 18h. (Nagoya and near Mizusawa), 20h. (near Malabar).

Nov. 6d. 13h. 57m. 40s. Epicentre 13°·0S. 74°·5W.

A = +·260, B = −·939, C = −·225; D = −·964, E = −·267; G = −·060, H = +·217, K = −·974.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		7·1	120	—	—	1 3 15	+ 2	3·7	5·2
La Plata	E.	26·5	148	5 47	− 6	10 35	+ 3	14·2	16·0
	N.	26·5	148	5 48	− 5	10 32	0	14·1	16·6
Rio de Janeiro	N.	31·4	114	—	—	11 50	− 8	e 17·7	18·1
Georgetown	E.	52·0	358	—	—	e 16 47	+ 3	34·3	—
Chicago	E.	56·1	349	—	—	17 32	− 3	e 25·7	—
	N.	56·1	349	—	—	17 23	−12	e 27·8	—
Toronto		56·8	355	—	—	e 17 5	−39	17·6	—
Ottawa		58·4	0	—	—	i 17 58	− 6	e 28·3	—
Victoria		75·1	330	11 57	+ 7	21 30	+ 3	39·2	44·1
Honolulu	E.	88·8	292	—	—	—	—	e 41·3	—
De Bilt	E.	94·0	37	—	—	—	—	e 45·2	—
Wellington	E.	96·5	226	—	—	—	—	e 44·4	—
Pulkovo		108·6	31	—	—	e 27 12	− 3	49·3	—
Leningrad		108·6	31	—	—	—	—	e 55·3	—
Baku		124·4	49	e 21 2	?PR_1	e 34 17	?	57·0	67·7
Ekaterinburg		124·5	28	e 21 3	?PR_1	e 28 13	−70	52·8	66·5
Irkutsk		140·7	1	e 19 32	[− 8]	e 22 20	?PR_1	40·3	66·3
Bombay		148 2	75	—	—	—	—	84·3	—
Phu-Lien		172·1	353	—	—	—	—	89·3	—

Additional readings: La Plata E = +8m.28s., +10m.16s., +13m.0s., and +15m.26s., N = +12m.26s., and +14m.46s. Rio de Janeiro eLE = +17·6m. Georgetown eN = +16m.49s. Chicago eN = +19m.12s., eE = +19m.20s., iE = +19m.47s., SR_1E = +21m.41s., SR_1E = +23m.51s. = SR_2+6s. Victoria LN = +38·5m., MN = +40·8m.; T_g = 13h.58m.2s. De Bilt eLN = +40·3m. Baku MZ = +56·7m., MN = +65·0m. Ekaterinburg MN = +66·7m., MZ = +66·9m.

Nov. 6d. 15h. 13m. 35s. Epicentre 38°·0N. 137°·5E. (as on 1925 Aug. 7d.).

A = −·581, B = +·532, C = +·616; D = +·676, E = +·737; G = −·454, H = +·416, K = −·788.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		2·9	189	0 31	−14	(1 4)	−16	1·1	2·2
Mizusawa	E.	3·0	68	0 36	−11	1 53	+30	—	—
	N.	3·0	68	0 35	−12	1 55	+32	—	—
Osaka		3·7	206	0 58	0	—	—	1·8	3·0
Kobe		3·9	210	e 1 2	+ 1	1 47	0	2·4	3·8
Sumoto		4·3	210	1 15	+ 8	2 20	+22	3·3	—
Irkutsk		27·1	313	e 6 27	+28	10 25	−18	16·4	19·2
Ekaterinburg		52·1	318	i 9 17	− 4	—	—	25·4	36·1
Kucino		64·2	323	—	—	—	—	e 35·4	—
Pulkovo		65·5	330	—	—	—	—	e 37·9	—
De Bilt		80·8	333	—	—	—	—	e 49·4	—
Ottawa		91·4	23	—	—	—	—	e 58·4	—
Toronto	E.	91·8	26	—	—	—	—	66·6	—

Additional readings: Nagoya MN = +2·1m. Osaka MN = +3·3m. Irkutsk MZ = +19·3m.; should P be PR_1, due at 6m.41s.? Ekaterinburg MN = +34·7m., MZ = +35·6m. Kucino eL = +42·4m.

Nov. 6d. 19h. 20m. 45s. Epicentre 26°·5N. 81°·5E.

A=+·132, B=+·885, C=+·446; D=+·989, E=−·148;
G=+·066, H=+·441, K=−·895.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	N.	6·0	322	3 21	?L	—	—	(3·4)	—
Calcutta	E.	7·3	121	3 49	?L	4 34	?	(3·8)	—
	N.	7·3	121	4 6	?L	4 56	?	(4·1)	—
Hyderabad		9·5	198	5 26	?L	6 59	?	(5·4)	8·0
Bombay		11·0	228	6 7	?L	7 39	?	8·2	9·0
Irkutsk		30·9	28	e 6 35	− 2	e 11 47	− 3	16·2	—
Ekaterinburg		33·8	340	e 7 8	+ 5	e 12 39	+ 1	17·2	18·4
Kucino		42·8	325	—	—	—	—	e 23·6	—
Pulkovo		48·1	330	—	—	—	—	e 23·2	26·8
Leningrad		48·2	330	e 10 31	?PR_1	—	—	—	—
De Bilt	E.	61·5	317	—	—	—	—	e 39·2	—

Additional readings: Simla PE=+3m.51s. Ekaterinburg MZ=+20·7m.
De Bilt eLN=+35·2m.

Nov. 6d. Readings also at 3h. (Batavia and Malabar), 4h. (Irkutsk), 5h. (La Paz), 15h. (near Irkutsk), 16h. (Irkutsk, Ekaterinburg, Mizusawa, and near Talhoku), 17h. (near Manila).

Nov. 7d. Readings at 3h. (near Laibach), 4h. (Rocca di Papa), 6h. (La Paz and near Baku), 10h. (Baku), 14h. (near Granada), 16h. (Amboina), 19h. (near Dehra Dun), 22h. (near Nagasaki).

Nov. 8d. Readings at 0h. (Ekaterinburg and near Zurich), 5h. (La Paz and Malabar), 14h. and 21h. (Irkutsk), 22h. (Cape Town), 23h. (near Batavia and Malabar).

Nov. 9d. 0h. 11m. 25s. Epicentre 37°·5N. 19°·7E. (as on 1925 May 20d.).

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	e 0 58	+ 8	e 1 42	+14	1 1·8	2·1
Makeyevka	17·0	45	e 4 0	− 5	—	—	11·2	—
Kucino	22·0	28	—	—	e 9 9	+ 4	14·5	—
Pulkovo	23·3	14	e 5 20	0	e 9 40	+ 9	13·1	—
Baku	23·6	73	e 5 23	− 1	—	—	e 16·2	16·8
Irkutsk	58·2	46	—	—	—	—	36·6	—

Athens gives also iP=+1m.5s., MN=+2·0m.

Nov. 9d. Readings also at 0h. (near La Paz), 1h. (near Nagasaki), 2h., 3h., and 7h. (Baku), 8h. (Ekaterinburg), 9h. (near Nagasaki), 10h. (Riverview and Ekaterinburg), 11h. (Baku, Ottawa, and Toronto), 13h. (Ottawa), 19h. (Sitka and near Victoria), 20h. (Ottawa, Toronto, Ithaca, Georgetown, Ann Arbor, Harvard, Fordham, Chicago, De Bilt, Leningrad, Irkutsk, Pulkovo, Baku, and Ekaterinburg), 21h. (near Athens), 22h. (Adelaide, Riverview, Manila, Ekaterinburg, La Paz (2), Irkutsk (2)), 23h. (Ottawa, Leningrad, Pulkovo, and Ekaterinburg).

Nov. 10d. 13h. 50m. 27s. Epicentre **1°·0S. 130°·5E.**

A = −·649, B = +·760, C = −·017; D = +·760, E = +·649;
G = +·011, H = −·013, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		3·5	220	i 3 21	+146	3 57	+140	—	—
Manila		18·2	329	i 4 19	0	—	—	—	—
Malabar		23·7	254	5 19	− 6	9 35	− 3	14·6	—
Batavia		24·2	257	i 5 24	− 6	9 51	+ 3	18·5	—
Hokoto		26·7	337	e 5 44	−11	—	—	—	—
Taihoku	E.	27·4	342	e 6 3	+ 1	9 3	−105	11·2	18·2
	N.	27·4	342	6 3	+ 1	9 7	−101	11·1	16·1
Hong Kong		28·2	327	5 59	−11	(11 3)	0	11·0	—
Phu-Lien		31·9	313	6 33	−13	i 12 5	− 2	15·6	16·5
Zi-ka-wei		33·3	347	e 6 42	−17	13 39	+70	—	37·8
Nagasaki		33·7	359	6 55	− 7	12 42	+ 6	16·9	23·2
Hukuoka		34·6	0	6 47	−23	12 6	−43	14·2	19·5
Adelaide		34·8	170	e 6 53?	−18	12 17	−35	i 17·2	32·1
Matuyama		34·9	3	e 13 0	?S	(13 0)	+ 6	—	18·7
Sumoto		35·5	7	6 55	−23	10 9	?	14·2	17·2
Osaka		35·9	7	7 26	+ 5	13 28	+19	17·7	19·0
Kobe		35·9	6	8 46	?PR_2	12 49	−20	15·6	17·6
Nagoya		36·6	9	7 29	+ 2	13 10	− 8	16·1	16·7
Riverview		38·1	152	e 7 35	− 4	i 13 21	−18	e 18·0	28·3
Sydney		38·2	152	7 33	− 7	12 39	−62	21·4	32·0
Melbourne		39·1	163	e 7 51	+ 4	i 13 15	−38	19·2	23·8
Mizusawa	E.	41·2	13	8 3	− 2	13 58	−26	19·9	—
	N.	41·2	13	8 2	− 3	13 53	−31	19·8	—
Calcutta	E.	47·3	304	8 43	− 6	15 39	− 6	21·8	26·6
	N.	47·3	304	8 52	+ 3	15 40	− 5	20·9	—
Ootomari		48·8	11	9 13	+14	16 17	+13	20·4	25·0
Suva		50·0	115	7 48	−79	i 14 58	−81	22·1	24·9
Kodaikanal		54·0	284	10 9	+36	—	—	19·4	37·8
Hyderabad		54·4	293	9 32	− 3	17 23	+ 9	—	29·4
Wellington	E.	56·7	141	9 55	+ 5	17 43	+ 1	24·3	38·7
	N.	56·7	141	9 55	+ 5	i 17 37	− 5	i 24·4	36·8
Irkutsk		57·6	342	i 9 55	− 1	17 56	+ 2	—	—
Apia		58·5	105	10 17	+15	18 25	+20	27·8	35·6
Dehra Dun		58·8	308	10 48	+44	17 18	−51	19·0	36·7
Simla	E.	59·8	309	10 21	+10	18 21	0	e 31·6?	37·0
	N.	59·8	309	10 27	+16	18 27	+ 6	e 33·0?	38·4
Bombay		59·9	293	10 14	+ 3	17 37	−45	28·1	32·4
Honolulu	E.	73·1	68	12 6	+29	21 33	[− 2]	e 30·6	41·4
	N.	73·1	68	—	—	21 32	[− 3]	e 33·4	40·8
Ekaterinburg		79·9	329	i 12 18	0	i 22 17	− 5	30·6	51·8
Baku		83·5	312	i 12 39	0	—	—	—	—
Piatigorsk		88·8	315	e 13 4	− 5	23 34	[+13]	38·6	—
Kucino		92·2	326	e 13 21	− 7	i 24 21	−16	e 41·8	61·5
Makeyevka		92·4	319	e 13 6	−23	23 45	[+ 3]	46·8	63·1
Sitka	E.	93·1	33	—	—	23 56	[+ 9]	43·1	46·6
Pulkovo		96·0	330	13 37	−12	24 48	−28	45·6	65·5
Leningrad		96·0	330	13 30	−19	24 49	−27	43·4	65·4
Helwan		98·5	300	e 13 43	−20	e 17 51	?PR_1	—	69·5
Johannesburg		100·8	242	—	—	26 33?	+30	—	—
Lemberg		101·3	321	e 17 51	?PR_1	e 25 15	−53	57·4	64·4
Victoria	E.	101·4	40	24 43	?[S]	(24 43)	[+12]	45·5	50·8
	N.	101·4	40	24 44	?[S]	(24 44)	[+13]	42·3	50·8
Upsala		102·1	333	e 18 15	?PR_1	—	—	e 43·6	72·6
Konigsberg		102·2	327	e 14 9	−12	25 25	−52	e 42·0	50·6
Athens		103·7	310	e 17 11	?	—	—	44·6	64·9
Berkeley	E.	104·1	50	—	—	e 34 16	?SR_1	e 48·9	64·2
Lick	E.	104·7	50	e 24 52	?[S]	e 28 10	+91	e 47·9	70·7
Belgrade		104·8	317	e 18 41	?PR_1	e 31 36	?	e 44·7	57·3
Budapest		105·0	320	e 17 33?	[−32]	e 26 3	−39	e 47·6	69·7
Vienna		106·6	321	e 18 16	?PR_1	—	—	e 48·6	74·0
Bergen		107·4	335	—	—	34 33?	?SR_1	49·6	—
Graz		107·5	320	e 18 39	?PR_1	28 32	+86	e 49·6	72·6
Zagreb		107·6	317	e 19 26	?PR_1	—	—	e 50·6	72·6
Cape Town		107·6	234	18 50	[+36]	25 10	[+11]	—	58·0
Hamburg		108·4	327	e 19 4	?PR_1	—	—	e 49·6	71·6
Cheb		108·4	323	e 19 13	?PR_1	i 29 26	+132	e 56·6	72·6
Innsbruck		110·0	320	e 17 51	[−31]	—	—	e 51·6	77·2
Pompeii		110·0	313	e 21 3	?	e 29 56	+148	79·6	90·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Venice	110·1	319	19 33?	?PR$_1$	—	—	—	—
Strasbourg	110·8	323	e 14 54	− 7	e 28 8	+33	58·6	64·6
Rocca di Papa	111·1	314	e 18 1	[−24]	e 27 31	− 7	e 56·4	84·8
Florence	111·4	316	e 18 3	[−23]	28 33	+52	49·6	60·6
De Bilt	111·7	327	e 14 39	−27	e 25 9	[− 8]	e 47·6	63·2
Zurich	111·8	320	e 20 31	?PR$_1$	28 33?	+49	—	—
Dyce	112·4	334	—	—	26 23	[+65]	48·6	77·6
Uccle	112·7	326	—	—	—	—	47·6	63·8
Moncalieri	113·3	319	15 11	− 2	29 3	+67	47·5	76·6
Besançon	113·4	321	e 19 27	?PR$_1$	e 29 35	+98	53·6	60·6
Edinburgh	113·7	333	e 19 41	?PR$_1$	e 29 40	+100	46·6	72·2
Tucson E.	114·5	53	—	—	—	—	53·8?	55·4
Stonyhurst	114·5	331	e 14 43	−35	26 51	−75	57·3	62·6
Grenoble	114·5	320	18 33?	[− 3]	—	—	58·6	—
Paris	114·7	325	e 19 26	?PR$_1$	e 31 7	?	51·6	77·6
Oxford	115·2	330	i 21 18	?	—	—	49·8	67·4
Marseilles	115·5	319	20 33?	?PR$_1$	e 30 33?	?	56·6	63·6
Puy de Dôme	115·9	321	e 19 33?	?PR$_1$	e 31 23	?	59·6	81·8
Denver	116·5	44	34 33?	?	45 33?	?SR$_3$	56·6	60·6
Barcelona	118·5	317	e 20 16	?PR$_1$	—	—	e 53·2	64·3
Bagnères	118·9	320	—	—	31 33?	?	59·6	—
Tortosa E.	119·8	317	20 20	?PR$_1$	—	—	—	88·5
N.	119·8	317	e 20 17	?PR$_1$	31 54	?	53·8	81·6
Algiers	119·8	312	e 15 20	−21	e 27 44	−64	55·6	79·6
Mazatlan	120·6	62	—	—	—	—	58·6	63·6
Alicante	121·7	315	e 20 43	?PR$_1$	e 34 1	?	44·8	74·6
Toledo	123·3	319	e 20 46	?PR$_1$	34 6	?	e 56·1	81·7
Almeria	123·7	314	20 49	?PR$_1$	i 31 24	?	—	73·4
Granada	124·4	315	16 42	+39	27 14	?PR$_3$	e 70·0	86·0
Malaga	125·2	315	e 20 37	?PR$_1$	e 34 25	?	e 43·3	78·5
Rio Tinto	126·2	317	21 33	?PR$_1$	—	—	—	33·6
SanFernando	126·6	315	20 11	?PR$_1$	34 8	?	67·6	76·6
Chicago N.	126·8	35	—	—	e 28 33?	−66	63·2	66·6
St. Louis	127·1	40	—	—	—	—	e 54·6	75·7
Lisbon	127·2	320	e 22 33?	?PR$_1$	—	—	—	67·6
Tacubaya	128·0	66	—	—	—	—	53·8	62·9
Ann Arbor	128·6	31	e 23 21	?PR$_1$	e 34 39	?	55·6	81·0
Toronto E.	129·7	28	e 22 44	?PR$_1$	i 34 45	?	56·8	75·6
Ottawa	129·9	23	e 22 11	?PR$_1$	e 33 33	?	e 53·9	66·6
Loyola	131·8	49	—	—	—	—	—	91·6
Ithaca	132·0	27	—	—	—	—	68·6	75·3
Harvard E.	134·3	21	—	—	—	—	e 64·3	75·6
N.	134·3	21	—	—	e 40 15	?SR$_1$	1 64·8	77·0
Fordham	134·4	27	22 25	?PR$_1$	34 25	?	58·6	74·4
Georgetown E.	134·5	30	e 22 49	?PR$_1$	33 18	?	e 55·2	74·7
N.	134·5	30	e 22 42	?PR$_1$	33 18	?	60·4	74·5
Cheltenham N.	134·7	30	—	—	—	—	60·2	74·6
La Plata	143·3	168	e 19 51	[+ 5]	—	—	70·2	81·2
La Paz	154·6	134	19 57	[− 5]	34 33	?	73·6	78·0
Rio de Janeiro	155·4	194	e 20 5	[+ 3]	—	—	e 70·7	98·0

Additional readings and notes: Batavia eE = +5m.18s. Taihoku PE = +6m.28s., PN = +6m.30s., SN = +8m.36s., SE = +8m.37s. Hong Kong S = +9m.37s. Phu-Lien MN = +15·4m. Nagasaki PR$_1$ = +8m.16s., MN = +26·0m. Hukuoka MN = +21·8m. Adelaide e = +8m.58s. and +10m.18s., SR$_1$ = +13m.58s.?, eL = +14·9m. Matuyama MN = +23·0m. Sumoto SR$_1$ = +12m.40s., MN = +25·2m. Osaka MN = +17·7m. Kobe MN = +20·0m. Nagoya MN = +20·5m. Riverview iP = +7m.39s., PR$_1$ = +8m.59s., PS = +13m.43s. and +17m.39s., MZ = +26·2m., MN = +26·4m. Sydney SR$_3$ = +16m.9s. = SR$_1$ + 1s. Melbourne i = +14m.57s. and +16m.51s. = SR$_1$ + 31s. Suva SR$_1$N = +17m.58s., SR$_2$N = +19m.33s. Should the readings be all increased by nearly 2min.? Apia SR$_1$ = +22m.23s., SR$_2$ = +26m.20s.; T$_e$ = 13h.50m.40s. Wellington PR$_1$E = +12m.15s., PR$_1$N = +12m.19s., PR$_2$E = +13m.17s., PR$_2$N = +13m.33s., iE = +14m.26s., iN = +15m.27s., SR$_1$E = +21m.59s., SR$_1$N = +22m.4s.; T$_e$E = 13h.50m.37s., T$_e$N = 13h.50m.44s. Honolulu P$_e$PE? = +13m.15s., PR$_1$N = +15m.9s., PR$_2$E = +16m.25s., S$_e$SN? = +22m.53s., SR$_1$E? = +25m.33s., SR$_1$N? = +25m.39s. and +27m.15s.; also several e's. Ekaterinburg MN = +43·6m., MZ = +59·7m. Kucino PR$_1$ = +16m.50s., PR$_2$ = 19m.21s., ePR$_2$ = +21m.50s., eS$_e$P$_e$S = +23m.16s., eS$_e$P$_e$PS = +24m.8s., ePS = +25m.10s. Makeyevka PR$_1$ = 16m.53s., PR$_2$ = +19m.6s., PR$_3$ = +19m.58s. = PR$_2$ + 10s., Y = +22m.28s., PS = +24m.40s. = S + 1s., MN = +54·4m., MZ = +71·8m. Sitka e = +22m.36s., PSN = +25m.12s.

Continued on next page.

$SR_1E = ? + 28m.51s.$, $SR_1N = +29m.7s.$, $SR_2E? = +34m.2s.$, $SR_2E? = +36m.8s.$, MN = +51·7m., also several e's. Pulkovo $PR_1 = +17m.35s.$, e = +24m.35s., $SR_1 = +30m.45s.$, MN = +51·9m., MZ = +60·5m. Leningrad $iPR_1 = +17m.36s.$, PS = +25m.50s., $SR_1 = +31m.14s.$, $SR_2 = +35m.46s.$, $SR_3 = +38m.47s.$, MN = +58·0m., MZ = +71·5m. Victoria SN = +31m.31s. SE = +31m.36s. Upsala MN = +61·4m. Konigsberg $eS_cP_cS? = +24m.31s.$ =[S] −3s., and +24m.33s. =[S] −1s., $eS_cP_cP_cS = +25m.3s.$, S? = +25m.29s., PS = +26m.33s. =S +16s., ePS = +27m.37s., $SR_1 = +33m.13s.$ and +33m.33s., MN = +54·6m., MZ = +61·6m.; $T_o = 13h.51m.10s.$: also several e readings. Athens iE = +25m.1s., iN = +25m.52s., eN = +28m.29s. and +33m.5s. $=SR_1 - 19s.$, LN = +49·0m., MN = +61·2m. Berkeley eN = +43m.48s. Belgrade $PR_1 = +20m.41s.$, $PR_2 = +26m.8s.$, L = +51·0m. Budapest MN = +57·7m. Vienna iPZ = +18m.36s., P = +22m.4s. = $PR_2 + 10s.$, $PR_1 = +22m.57s.$, $PR_2 = +25m.36s.$, $S_4P_cS? = +28m.51s.$, PS = +32m.0s., $S_4P_cSP? = +33m.34s.$, $SR_1? = +37m.49s.$, MN = +57·6m., MZ = +79·6m.; also several i readings. Bergen $ePR_1 = +24m.45s.$ =[S] −13s. Graz eLN = +57·6m., MN = +73·6m. Zagreb i = +20m.59s., e = +24m.12s. $=PR_2 + 27s.$, +25m.30s. =[S] +31s., +34m.14s. $=SR_1 + 4s.$, and +57m.30s. Hamburg eEZ = +23m.35s. $=PR_2 - 21s.$, eE = +34m.39s. = $SR_1 + 17s.$, and +45m.51s., L = +55·6m., MN = +61·2m., MZ = +74·6m. Cheb i = +28m.22s. Strasbourg $ePR_1 = +19m.24s.$, e = +19m.33s.?, MN = +63·2m., MZ = +70·2m. De Bilt eZ = +18m.44s. =[P] +17s., iZ = +19m.37s. $=PR_1 + 7s.$, eN = +30m.43s., MN = +75·7m. Dyce $PR_1 = +19m.43s.$, S = +27m.3s. Uccle $ePR_1 = +19m.3s.$ Moncalleri MN = +80·4m. Tucson PSE = +29m.38s., $SR_1E = +36m.11s.$, $SR_2E = +44m.25s.$ $=SR_2 - 17s.$, eE = +51m.22s. Stonyhurst $PR_1? = +20m.33s.$ Paris MN = +82·6m. Puy de Dôme MN = +83·5m. Denver LN = 57·6m. Algiers e? = +20m.23s. $=PR_1 + 1s.$, MN = +85·6m. Alicante MN = +70·2m. Toledo eLNW = +54·9m., MNW = +59·8m. Almeria MN = +74·5m. Granada e = +14m.58s., $PR_1 = +19m.59s.$, $PR_2 = +22m.43s.$, $SR_1 = 30m.14s.$, $SR_2? = +36m.21s.$; if we assume a correction of 1min. to all the readings, then e = P −5s., PR_1 and PR_2 are nearly correct, and $SR_2 = SR_1 - 21s.$; other readings, however, not easily identified. Malaga MN = +78·2m. San Fernando MN = +82·6m. Chicago $PR_1E = +21m.15s.$, $PR_2E = +23m.50s.$, $PR_3E = +26m.18s.$, iSE? = 28m.3s., PS?E = +31m.9s.? and +32m.56s., $SR_1 = +37m.44s.$, and several e readings. St. Louis $eSR_1N = +38m.33s.?$, eLN = +53·6m., MN = +64·6m. Ann Arbor $PR_1 = +27m.21s.$ $=PR_2 + 5s.$, $PR_2 = +29m.51s.$, $SR_1 = +41m.9s.$, $SR_2 = +45m.39s.$ Toronto MN = +73·5m. Ottawa $PR_1 = +26m.16s.$, $PR_2 = +28m.30s.$, $SR_1 = +39m.45s.$, $SR_2 = +44m.11s.$, MN = +71·0m. Harvard $SR_1N = +40m.39s.$, $SR_2N = +45m.27s.$, $SR_2E? = +51m.27s.$, $SR_3N? = +52m.5s.$ Fordham $PR_2 = +29m.40s.$, $S_cP_cS = +32m.26s.$, $S_cP_cP_cS = +34m.5s.$, PS = +35m.35s., $SR_1 = +40m.43s.$, $SR_2 = +43m.57s.$ Georgetown $PR_1N = +23m.7s.$; readings are given for 14d. Cheltenham eLE = +29m.9s., eE = +64m.24s., MN = +74·8m. La Plata PN = +28m.51s. and +30m.5s., iN = +33m.20s. and +39m.31s., $SR_1E? = +41m.52s.$, and +46m.31s., LN = +72·8m., MN = +81·6m. La Paz iP = +20m.24s., $PR_1 = +24m.57s.$, and +27m.22s. $=PR_2 - 29s.$, PS = +35m.9s., $SR_1 = +42m.59s.$, +44m.59s., and +49m.47s. $=SR_2 - 7s.$, L = +67·2m.; $T_o = 13h.50m.50s.$ Rio de Janeiro LN = +43·7m.

Nov. 10d. Readings also at 3h. (Adelaide, Riverview, and Irkursk), 4h. (Athens), 5h. (Chicago, Irkutsk (2), Riverview, and Apia), 6h. (Baku, De Bilt, Uccle, and Ottawa), 8h. (Baku, Balboa Heights, and near Tacubaya), 10h. (Balboa Heights and Manila), 13h. (La Paz), 14h. (La Paz, near Tacubaya, and near Nagoya and Mizusawa), 16h. (Batavia), 23h. (Ootomari).

Nov. 11d. Readings at 0h. (near Oaxaca), 3h. (Manila), 5h. (near Taihoku), 6h. (Ekaterinburg), 7h. (near Manila), 12h. (Nagoya), 16h. (Lick and near Mizusawa), 17h. (La Paz), 23h. (Ekaterinburg and near Mizusawa).

Nov. 12d. Readings at 3h. (near Nagasaki (2)), 12h. (near Mizusawa, 13h (near Sumoto), 17h. (Tortosa), 20h. (near Tacubaya).

Nov. 13d. 12h. 14m. 40s. Epicentre **13°·0N. 124°·7E.**

A = −·555, B = +·801, C = +·225; D = +·822, E = +·569 ; G = −·128, H = +·185, K = −·974.

Phu-Lien, Batavia, Malabar, and Calcutta indicate a T_0 about 20 sec. earlier than that adopted. See note to Nov. 14d. (8h. 10h. 14h.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		4·0	294	i 1 21	+19	—	—	i 2·3	—
Taihoku	E.	12·4	346	3 28	+23	5 46	+17	7·4	—
	N.	12·4	346	3 26	+21	6 9	+40	7·2	—
Hong Kong		13·7	314	3 24	+ 2	5 57	− 5	6·4	9·1
Amboina		17·0	168	(i 4 8)	+ 3	(i 7 8)	−10	i 6·8	—
Zi-ka-wei		18·4	351	i 4 27	+ 5	i 7 50	+ 1	14·2	14·8
Phu-Lien		19·0	297	i 4 35	+ 6	8 32	+30	10·3	11·4
Nagasaki		20·3	13	4 52	+ 7	8 39	+10	10·9	14·7
Hukuoka		21·2	13	5 5	+10	8 53	+ 5	12·0	12·6
Sumoto		23·2	22	5 25	+ 6	(9 30)	+ 1	9·5	9·6
Kobe		23·6	22	5 16	− 8	(9 41)	+ 5	9·7	11·7
Osaka		23·8	22	5 24	− 2	(9 34)	− 6	9·6	12·5
Batavia		26·2	224	i 5 43	− 7	10 31	+ 5	16·1	17·1
Malabar		26·4	221	5 45	− 7	10 31	+ 1	15·3	—
Mizusawa	E.	29·9	26	6 17	−10	10 27	−65	14·6	—
	N.	29·9	26	6 18	− 9	10 26	−66	14·6	—
Calcutta	E.	35·8	290	7 12	− 8	13 8	+ 1	19·8	21·1
	N.	35·8	290	7 21	+ 1	13 37	+30	—	19·5
Ootomari		36·9	21	7 30	+ 1	13 29	+ 7	20·1	21·6
Irkutsk		42·6	344	e 8 3	−12	14 29	−14	20·3	22·4
Colombo		44·6	268	8 25	− 5	15 0	−10	27·3	30·2
Perth		45·7	190	i 8 28	−10	15 2	−22	21·3	27·2
Kodaikanal		46·3	274	8 38	− 4	—	—	21·9	32·0
Dehra Dun		46·3	300	8 35	− 7	15 5	−27	18·8	19·8
Simla	E.	47·2	302	8 44	− 4	15 50	+ 6	e 23·3	30·3
	N.	47·2	302	8 56	+ 8	15 56	+12	—	21·6
Adelaide		49·7	166	i 8 55	−10	15 55	−20	21·4	32·3
Bombay		50·1	285	9 8	0	16 20?	0	26·3	34·3
Riverview		53·2	152	i 9 24	− 3	i 16 44	−15	e 25·7	29·0
Sydney		53·2	152	9 20	− 7	16 50	− 9	27·4	29·0
Melbourne		54·2	161	i 10 8	+34	i 17 44	+33	—	33·1
Ekaterinburg		65·1	328	i 10 50	+ 4	i 19 35	+ 9	28·3	43·3
Apia		68·4	110	11 15	+ 8	20 11	+ 4	31·8	33·8
Wellington	E.	71·3	143	i 11 21	− 4	e 20 14	−28	i 34·9	39·1
	N.	71·3	143	i 11 21	− 4	i 20 31	−11	i 34·8	42·3
Honolulu	E.	73·6	71	e 11 53	+13	i 21 15	+ 6	i 33·7	48·8
	N.	73·6	71	11 43	+ 3	i 21 15	+ 6	e 33·4	42·3
Platigorsk		75·0	314	i 11 46	− 3	i 21 24	− 2	—	49·8
Kucino		77·5	325	i 12 6	+ 2	i 22 6	+11	37·6	51·1
Makeyevka		78·2	317	i 11 55	−13	—	—	—	—
Pulkovo		81·0	330	i 12 22	− 3	22 32	− 3	38·3	52·7
Leningrad		81·0	330	i 12 22	− 3	i 22 34	− 1	36·8	49·4
Sitka	E.	84·4	32	e 12 45	+ 1	i 23 8	− 4	39·8	42·8
	N.	84·4	32	—	—	e 23 11	− 1	e 43·5	47·4
Helwan		86·4	300	i 12 52	− 3	22 50	−44	—	61·1
Lemberg		86·8	320	e 12 44	−14	e 23 20	−19	e 50·4	58·4
Upsala	E.	87·1	331	e 12 59	− 1	i 23 31	−11	—	57·4
	N.	87·1	331	—	—	i 23 32	−10	e 40·0	52·1
Konigsberg		87·3	326	i 13 3	+ 2	23 44	0	—	—
Athens		90·4	310	13 6	−12	i 23 33	[+ 3]	e 41·0	59·8
Belgrade		90·7	317	i 13 21	+ 1	22 44	[−48]	e 40·2	68·1
Budapest		90·7	320	e 14 20?	+60	e 23 20?	[−12]	e 36·3	60·1
Vienna		92·1	322	e 13 14	−14	i 23 49	[+ 8]	e 44·3	50·3
Bergen		92·3	335	13 20?	− 9	i 24 20?	−18	45·3	57·3
Graz		93·1	320	e 13 29	− 4	e 23 53	[+ 6]	e 45·1	57·1
Zagreb		93·2	319	12 29	−64	i 22 56	[−51]	41·3	53·3
Hamburg		93·5	327	i 13 25	−10	e 23 54	[+ 5]	e 43·3	60·3
Cheb		93·7	325	i 13 29	− 7	i 24 5	[+15]	e 50·3	59·3
Laibach		94·1	320	12 42	−57	24 2	[+10]	e 32·4	86·0
Victoria	E.	94·2	59	13 46	+ 7	24 1	[+ 8]	46·6	52·8
	N.	94·2	59	13 34	− 5	24 2	[+ 9]	39·8	62·1
Innsbruk		95·5	322	e 13 36	−10	i 24 5	[+ 5]	e 44·3	65·0
Venice		95·8	320	e 13 20?	−28	25 5	− 9	—	—
Pompeii		96·2	315	e 14 50	+60	e 25 0	−18	61·3	78·3
Naples		96·4	315	e 13 48	− 3	e 23 50	[−14]	53·3	59·3

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		96·8	327	13 41	−12	e 26 17	+53	e 45·3	63·3
Rocca di Papa		97·0	316	e 13 41	−13	e 24 14	[+ 6]	48·6	68·2
Strasbourg		97·1	325	13 42	−13	e 25 44	+17	50·3	61·3
Florence		97·1	319	e 13 50	− 5	25 10	−17	43·3	50·3
Zurich		97·2	321	e 13 42	−13	e 24 16	[+ 7]	—	—
Dyce		97·3	335	17 44	?PR_1	24 22	[+12]	30·0	52·0
Uccle		97·8	327	13 46	−13	24 22	[+10]	45·3	56·4
Edinburgh		98·6	333	e 13 50	−13	i 25 32	−10	44·3	66·2
Moncalieri		98·8	321	13 54	−10	24 15	[− 3]	39·4	64·9
Besançon		98·8	323	18 20?	?PR_1	24 28	[+10]	—	55·3
Berkeley	E.	99·3	47	—	—	i 31 35	?SR_1	45·4	50·1
	N.	99·3	47	—	—	i 31 17	?SR_1	46·4	—
Stonyhurst		99·5	331	e 14 33	+25	25 59	+ 8	47·8	56·8
Paris		99·9	326	e 13 55	−15	i 24 31	[+ 7]	48·3	58·3
Lick	E.	100·0	47	—	—	i 24 31	[+ 7]	i 45·6	48·4
Grenoble		100·0	322	e 14 9	− 2	e 25 26	−30	46·3	64·2
West Bromwich		100·1	330	11 8	−183	—	—	—	—
Bidston		100·1	331	14 0	−11	24 40	[+15]	62·0	67·8
Oxford		100·2	330	13 20?	−52	—	—	—	65·3
Marseilles		101·1	321	e 14 20?	+ 4	e 24 48	[+18]	45·3	55·0
Puy de Dôme		101·2	324	e 18 22	?PR_1	e 28 8	+121	49·3	66·0
Johannesburg		101·6	245	24 32	?S	(24 32)	[0]	—	58·3
Barcelona		104·1	320	18 27	[+26]	27 46	+72	46·4	67·9
Tortosa	N.	105·5	320	e 18 29	[+22]	28 0	+73	44·5	68·4
Algiers		105·9	316	e 13 49	−50	24 58	[+ 6]	45·3	80·3
Alicante		107·6	319	18 50	?PR_1	i 29 15	+129	41·8	63·7
Toledo	Z.	108·9	321	19 9	?PR_1	29 47	+149	e 46·2	72·9
Almeria		109·6	319	e 18 38	?PR_1	i 28 44	+80	49·7	65·0
Denver	N.	109·9	39	36 20?	?	46 20?	?	58·3	—
Tucson	E.	110·2	47	—	—	—	—	51·1	58·8
Granada	Z.	110·2	319	—	—	—	—	51·7	70·8
Cape Town		110·6	237	19 46	?PR.	28 56	+83	—	69·5
Malaga		111·0	319	e 18 44	[+19]	e 28 46	+69	e 39·9	67·2
Rio Tinto		111·8	321	19 20?	?PR_1	—	—	—	79·3
San Fernando		112·3	320	e 18 40	[+11]	i 29 24	+96	37·3	67·3
Lisbon		112·7	321	e 19 19	?PR_1	—	—	e 46·3	58·3
Chicago	E.	117·6	27	—	—	—	—	i 53·6	62·8
Ottawa		118·7	14	e 20 5	?PR_1	i 30 0	+80	e 46·3	70·3
Ann Arbor		118·8	23	e 19 26	[+37]	e 30 8	+88	e 49·1	77·8
St. Louis	N.	118·9	30	18 20	[−30]	—	—	e 49·3	67·3
Toronto	N.	119·5	20	e 20 15	?PR_1	e 30 7	+81	42·3	81·2
Ithaca		121·2	16	e 20 43	?PR_1	30 22	+84	e 47·3	—
Harvard	E.	122·7	12	—	—	28 26	−44	62·2	78·8
	N.	122·7	12	—	—	—	—	e 64·0	86·3
Fordham		123·5	15	20 20	?PR_1	—	—	59·6	73·2
Georgetown		124·2	20	20 20?	?PR_1	31 11	+111	69·8	79·8
Cheltenham	N.	124·4	20	—	—	—	—	e 57·8	75·6
Loyola		125·5	37	—	—	—	—	—	65·3
Tacubaya		126·0	53	—	—	—	—	38·4	65·3
Vera Cruz		128·5	51	—	—	—	—	59·7	69·6
La Plata	E.	158·0	174	20 16	[+10]	i 35 19	?	68·8	89·6
	N.	158·0	174	20 18	[+12]	i 31 2	?PR_3	78·5	88·5
	Z.	158·0	174	i 20 14	[+ 8]	—	—	86·8	89·9
Rio de Janeiro		164·8	228	i 20 20	[+ 8]	31 58	?PR_3	e 54·2	105·5
La Paz		167·1	107	20 20	[+ 7]	34 43	?	75·3	84·0

Additional readings: Amboina The readings have been diminished by 2m. Zi-ka-wei PR_1 = +4m.48s., PS = +8m.16s. = SR_1, MN = +15·2m. Hukuoka MN = +12·4m. Sumoto P = +5m.43s., S = +6m.42s., and +7m.58s., MN = +10·4m. Kobe MN = +11·4m. Osaka MN = +11·1m. Batavia iE = +13m.26s., iN = +13m.51s. Malabar i = +10m.59s. and +11m.58s. = SR_2 +4s. If Mizusawa readings can be increased by 1 min. P would be PR_1 and S correct. Ootomari MN = +22·5m. Irkutsk iP = +8m.7s., SR_2 = +17m.37s. = SR_1 −3s., MN = +25·1m., MZ = +32·0m. Adelaide PR_1 = +11m.0s., SR_1 = +19m.18s., MN = +30·2m. Riverview i = +9m.33s. and +9m.39s., iS = +16m.53s., PS = +17m.24s., SR_1 = +20m.39s. SR_2 = +21m.20s., MZ = +30·8m., MN = +35·4m.; T_g = 12h.14m.47s. Sydney SR_1 = +22m.50s. = SR_2 +8s. SR_2 = +25m.20s. Melbourne readings are given as i simply. Ekaterinburg iP = +10m.53s., iPR_1 = +13m.21s., iPR_2 = +14m.59s., MZ = +43·1m., MN = +142·3m. Apia SR_1 = +24m.40s., SR_2 = +28m.7s., LN = +32·3m.; T_g = 12h.15m.0s. Wellington PR_2N = +15m.51s., PR_2E = +15m.52s., SR_1N = +24m.51s., SR_1E = +25m.19s., SR_2N = +28m.19s., SR_2E = +28m.44s., SR_2E = +30m.20s., SR_2N = +30m.26s.; T_gN = 12h.14m.43s., T_gE = 12h.15m.12s.

Continued on next page.

Honolulu $PR_1N = +14m.23s.$, $PR_2N = +16m.38s.$, $ePR_2E = +17m.42s.$, $SR_1E? = +25m.0s.$, $SR_1N? = +25m.14s.$, $SR_2E = +29m.32s.?$, $iSR_2N = +31m.9s.$, $SR_2E = +31m.20s.$; $T_0 = 12h.14m.49s.$ and 12h.14m.59s. Platigorsk $iP = +11m.48s.$, $MN = +50 \cdot 8m.$ Kucino $e = +14m.21s.$, $+15m.5s. = PR_1 - 23s.$, $+16m.50s. = PR_2 - 28s.$, and $+18m.18s. = PR_3 + 3s.$, $MN = +55 \cdot 3m.$ Pulkovo $MN = +46 \cdot 8m.$, $MZ = +49 \cdot 4m.$ Leningrad $PR_1 = +15m.35s.$, $PR_2 = +18m.15s.$, $PS = +23m.13s.$, $SR_2 = +32m.25s.$, $MN = +46 \cdot 8m.$, $MZ = +52 \cdot 9m.$ Sitka $PR_1E = +16m.26s.$, $PR_2N = +20m.2s.$, $eSR_1E = +28m.18s.$, $eSR_1N = +28m.57s.$, $eSR_2E? = +33m.59s.$, $SR_2N? = +35m.32s.$; $T_0 = 12h.15m.0s.$ and 12h.15m.5s. Lemberg $MN = +57 \cdot 7m.$ Konigsberg $P? = +13m.9s.$, $iE = +13m.22s.$, $eE = +15m.54s.$, $PR_2 = +18m.25s.$, $ScP_0SN = +23m.32s.$, $ScP_0SE = +23m.34s.$, $SN = +23m.42s.$, $ScP_0P_0S? = +23m.53s.$, $PS = +24m.46s.$, $PPS = +25m.14s.$, $e? = +25m.38s.$, $SR_2 = +32m.56s.$, $e = +34m.32s.$, $eN = +36m.44s.$; $T_0 = 12h.15m.0s.$ Athens $PR_1 = +16m.42s.$, $PR_2 = +18m.49s.$, $eSR_1 = +30m.4s.$, $eSR_2 = +34m.25s.$, $MN = +53 \cdot 0m.$ Belgrade $eP = +12m.27s.$, $PR = +15m.10s.$, and $+18m.8s.$, $SR_1 = +27m.11s.$, $L = +46 \cdot 9m.$ Budapest $MN = +51 \cdot 6m.$ Vienna $iP = +13m.20s.$, $P = +16m.56s.$, $PR_1 = +17m.52s.$ $PR_2 = +21m.0s. = PR_2 - 9s.$, $S_0P_0SP = +28m.22s.$, $SR_2 = +33m.40s.$, $MNZ = +59 \cdot 3m.$ Graz $PR_1 = +17m.9s.$, $PR_2 = +19m.4s.$, $SR_1 = +29m.6s.$, $SR_2 = +34m.34s.$ Zagreb $iPR_2 = +16m.13s.$, $iPS = +23m.36s. = [S] - 11s.$ Hamburg $iPR_1 = +17m.15s.$, $i = +24m.39s. = S - 12s.$, $eLZ = +38 \cdot 8m.$, $MNZ = +59 \cdot 3m.$ Innsbruck $eSNW = +24m.23s.$, $MNW = +55 \cdot 9m.$ Pompeii: If the readings can be diminished by 1 min. then P is correct and $S = [S] - 3s.$ De Bilt $PR_1 = +17m.40s.$, $MN = +63 \cdot 5m.$ Rocca di Papa $eP = +17m.41s.$ $iS = +24m.20s.$ Strasbourg $P = +13m.45s.$, $iPR_1 = +17m.43s.$, $PR_2 = +19m.59s.$, $PR_3 = +21m.33s.$, $MZ = +61 \cdot 8m.$, $MN = +77 \cdot 3m.$ Dyce $i = +20m.22s. = PR_2 - 15s.$, and $i = 21m.34s. = PR_3 - 31s.$ Uccle $iPR_1 = +17m.49s.$ Edinburgh $i = +26m.50s.$ Moncalieri $MN = +65 \cdot 1m.$ Berkeley $eN = +23m.35s.$, $ePR_1 = +24m.27s. = [S] + 7s.$, $iPR_2E = +26m.47s.$ Stonyhurst $iPR_1 = +18m.38s.$ Paris $PR_1 = +18m.3s.$, $MN = +48 \cdot 3m.$ Lick $iE = +27m.58s.$, $+30m.49s.$, and $+31m.40s.$ Grenoble $e = +18m.44s. = PR_1 + 30s.$ Puy de Dôme $MN = +70 \cdot 2m.$ Barcelona $MN = +65 \cdot 8m.$ Tortosa $ePE = +18m.41s. = PR_1 - 8s.$ Algiers $PR_1? = +18m.47s.$ Alicante $MN = +76 \cdot 5m.$ Toledo $iZ = +19m.11s. = PR_1 \pm 0s.$ Almeria $MN = +66 \cdot 2m.$ Denver $LE = +55 \cdot 3m.$ Tucson $ePR_1E? = +19m.41s.$, $ePSE = +28m.43s.$, $SR_1E = +35m.13s.$, $eSR_2E? = +42m.34s.$ Granada $PR_1 = +16m.42s.$, $LE = +50 \cdot 5m.$, $ME = +70 \cdot 4m.$ Malaga $MN = +63 \cdot 3m.$ Chicago $PR_1E = +20m.17s.$, $PSE = +30m.0s.$, $iPPS = +31m.7s.$, $SR_1E = +35m.22s.$, $SR_2E = +40m.42s.$, $SR_3E = +45m.8s.$, $MN = +69 \cdot 2m.$ Ottawa $i = +23m.4s. = PR_2 - 29s.$, $e = +27m.12s.$, $eSR_1? = +35m.40s.$, $iE = +36m.36s. = SR_1 + 5s.$, $eN = +37m.20s.$ Ann Arbor $eSR_1 = +36m.20s.$, $eSR_2 = +40m.26s.$ St. Louis $PSN = +30m.5s.$, $eSR_1N = +36m.40s.$, $SR_2N = +41m.31s.$, $ME = +64 \cdot 2m.$ Toronto $iE = +36m.37s. = SR_1 + 7s.$, $ME = +80 \cdot 2m.$ Ithaca $e = +27m.20s.$ and $+37m\ 2s. = SR_1 \pm 0s.$ Harvard $PR_1N = +20m.45s.$, $PSE = +30m.32s.$, $PSN = +30m.36s.$, $SR_1N = +37m.11s.$, $SR_1E = +37m.26s.$, $SR_2N = +41m.57s.$, $SR_2E = +45m.16s.$ Fordham $P = +23m.54s. = PR_2 - 20s.$, $ScP_0S = +30m.40s.$, $ScP_0P_0S = +32m.7s.$, $PPS = +38m.12s. = SR_1 + 42s.$, $SR_1 = +41m.52s.$, $SR_2 = +44m.50s.$ Georgetown $LN = +74 \cdot 8m.$ Cheltenham $eSR_1N = +37m.26s.$, $eSR_1E = +37m.49s.$, $eE = +40m.55s.$, $eN = +47m.13s. = SR_2 - 19s.$, $ME = +79 \cdot 3m.$ La Plata $ScP_0SE = +27m.24s. = PR_2 - 49s.$, $PPS?N = +38m.27s.$, $SR_1E = +43m.43s.$, $SR_1?N = +44m.44s.$ Rio de Janeiro $PR_1 = +24m.58s.$, $SN? = +31m.43s. = PR_2 - 37s.$, $MN = +97 \cdot 8m.$ La Paz $iP = +20m.24s.$, $PR = +25m.23s. = PR_1 + 4s.$, and $+29m.44s. = PR_2 + 32s.$, $SR = +41m.45s.$, $+46m.56s. = SR_1 + 48s.$, and $+52m.38s. = SR_2 + 8s.$

Nov. 13d. The following are the times of P for the above shock (13°·0N. 124°·7E.) and its associated after-shocks, recorded at Manila.

h.	m.	s.	h.	m.	s.	h.	m.	s.
12	16	1	13	38	27	16	40	27
	40	54		50	7		59	34
	43	14	14	2	8	18	42	29
	45	42	15	24	59	22	47	1
	59	0		52	46	23	31	31
13	26	51	16	8	16			

Nov. 13d. Readings also at 0h. (near Batavia and Malabar), 1h. (near La Paz), 9h. (Irkutsk, Edinburgh, and near Athens), 10h. (Ekaterinburg), 11h. (Baku), 12h. (Osaka), 14h. (Batavia and La Paz), 15h. (Baku), 16h. (Uccle), 21h. (La Paz).

Nov. 14d. 8h. 10m. 48s. (I)
10h. 3m. 28s. (II)
14h. 37m. 3s. (III) } **Epicentre 13°·0N. 124°·7E. (as on Nov. 13d.).**

For all three shocks the stations within 45° of the epicentre indicate a T_0 about 20 sec. earlier than that adopted ; see shock of Nov. 13d. 12h.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Manila	4·0	294	i 1 12	+10	—	—	i 2·4	3·5
II		4·0	294	i 1 16	+14	—	—	i 2·4	—
III		4·0	294	i 1 12	+10	—	—	i 2·4	2·9
I	Taihoku E.	12·4	346	e 3 15	+10	(5 47)	+18	5·8	7·7
I	N.	12·4	346	i 3 17	+12	—	—	7·2	8·7
II	E.	12·4	346	e 3 20	+15	(5 36)	+ 7	5·6	7·2
II	N.	12·4	346	i 3 7	+ 2	—	—	6·6	7·4
III	E.	12·4	346	e 3 8	+ 3	(5 25)	− 4	5·4	7·5
III	N.	12·4	346	i 3 2	− 3	—	—	6·7	8·6
I	Hong Kong	13·7	314	3 30	+ 8	6 40	+39	7·7	9·5
II		13·7	314	3 24	+ 2	6 32	+31	7·5	10·2
III		13·7	314	3 17	− 5	6 27	+26	7·4	10·3
I	Zi-ka-wei	18·4	351	i 4 27	+ 5	8 5	+16	—	12·7
II		18·4	351	i 4 24	+ 2	i 8 0	+11	—	12·6
III		18·4	351	i 4 22	0	7 57	+ 8	—	11·6
I	Phu-Lien	19·0	297	e 4 32	+ 3	i 8 23	+21	9·5	12·5
II		19·0	297	4 32	+ 3	i 8 22	+20	9·5	14·4
III		19·0	297	e 4 35	+ 6	e 8 26	+24	9·5	12·1
I	Hukuoka E.	21·2	13	e 2 26	−149	(e 8 50)	+ 2	e 8·8	—
II		21·2	13	e 4 55	0	(e 8 50)	+ 2	e 8·8	—
III	E.	21·2	13	e 1 6	?	(e 8 35)	−13	e 8·6	—
I	Osaka	23·8	22	6 5	+39	(9 50)	+10	9·8	10·9
II		23·8	22	5 54	+28	(9 57)	+17	10·0	11·7
III		23·8	22	5 53	+27	—	—	10·2	17·0
I	Batavia	26·2	224	6 3	+13	—	—	—	—
II		26·2	224	5 41	− 9	—	—	—	—
III		26·2	224	5 26	−24	i 10 7	−19	—	—
II	Malabar	26·4	221	e 5 35	−17	—	—	—	—
I	Irkutsk	42·6	344	8 5	−10	14 29	−14	22·2	—
II		42·6	344	8 3	−12	i 14 27	−16	21·5	—
III		42·6	344	8 0	−15	14 24	−19	22·0	—
II	Colombo	44·6	268	8 32	+ 2	—	—	—	31·7
III		44·6	268	8 27	− 3	—	—	—	31·2
I	Hyderabad	44·8	283	8 21	−11	15 7	− 5	24·3	31·2
II		44·8	283	8 22	−10	15 2	−10	23·6	32·3
III		44·8	283	e 8 19	−13	15 5	− 7	—	32·4
I	Kodaikanal	46·3	274	29 24	?L	—	—	(29·4)	—
II		46·3	274	17 38	?S	(17 38)	+126	29·8	34·4
III		46·3	274	—	—	—	—	29·2	33·4
I	Simla	47·2	302	e 8 48	0	e 15 54	+10	—	—
II	N.	47·2	302	—	—	e 15 44	0	—	—
III	E.	47·2	302	—	—	e 15 51	+ 7	—	—
I	Bombay	50·1	285	9 10	+ 2	16 21	+ 1	—	—
II		50·1	285	9 8	0	16 22	+ 2	—	—
III		50·1	285	9 6	− 2	16 17	− 3	—	—
I	Riverview	53·2	152	—	—	(e 16 42)	−17	e 29·3	30·2
II		53·2	152	e 9 13	−14	e 16 38	−21	e 24·1	36·9
III		53·2	152	—	—	e 16 21	−38	—	28·5
II	Ekaterinburg	65·1	328	i 10 51	+ 5	i 19 36	+10	31·5	38·7
III		65·1	328	i 10 50	+ 4	i 19 31	+ 5	28·0	38·7
I	Baku	70·2	310	e 11 36	+18	i 20 43	+15	36·4	48·4
II		70·2	310	i 11 23	+ 5	i 20 42	+14	35·7	40·4
III		70·2	310	i 11 19	+ 1	e 20 44	+16	35·6	40·1
II	Piatigorsk	75·0	314	—	—	—	—	40·5	—
III		75·0	314	—	—	—	—	41·0	—
I	Kucino	77·5	325	—	—	—	—	e 43·5	—
II		77·5	325	e 12 2	− 2	e 21 55	0	42·5	46·6
III		77·5	325	—	—	22 0	+ 5	43·0	—
I	Makeyevka	78·2	318	—	—	—	—	e 43·4	—
II		78·2	318	—	—	e 21 51	−11	46·2	51·7
III		78·2	318	—	—	—	—	46·0	—
I	Pulkovo	81·0	330	—	—	22 31	− 4	40·2	53·1
II		81·0	330	12 21	− 4	22 36	+ 1	38·5	53·2
III		81·0	330	e 12 22	− 3	22 29	− 6	38·0	52·9
II	Leningrad	81·0	330	—	—	i 22 29	− 6	39·5	51·8
III		81·0	330	—	—	—	—	e 44·0	52·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Upsala N.	87·1	331	—	—	—	—	e 51·2	—
II	N.	87·1	331	—	—	e 23 31	−11	e 48·5	51·5
III	N.	87·1	331	—	—	—	—	e 49·0	—
I	Hamburg	93·5	327	—	—	—	—	e 53·2	—
II		93·5	327	—	—	—	—	e 52·5	59·5
III		93·5	327	—	—	—	—	e 54·0	—
II	Cheb	93·7	325	—	—	e 22 32?	−141	—	59·5
III		93·7	325	—	—	—	—	e 43·0	57·0
I	De Bilt	96·8	327	—	—	—	—	e 51·2	63·7
II		96·8	327	—	—	—	—	e 48·5	62·7
III		96·8	327	—	—	e 24 9	[+ 2]	e 49·0	62·6
I	Rocca di Papa	97·0	316	—	—	—	—	e 57·3	69·4
II		97·0	316	—	—	—	—	e 57·8	67·8
I	Strasbourg	97·1	325	—	—	—	—	58·2	—
II		97·1	325	e 17 32?	?PR_1	—	—	e 54·5	—
III		97·1	325	—	—	—	—	53·0	—
II	Dyce	97·3	335	—	—	—	—	—	59·1
III		97·3	335	—	—	—	—	—	59·1
I	Uccle	97·8	327	—	—	e 37 12	?SR_3	e 53·2	—
II		97·8	327	—	—	e 24 14	[+ 2]	e 49·5	55·5
III		97·8	327	—	—	e 24 15	[+ 3]	e 51·0	—
III	Edinburgh	98·6	333	—	—	—	—	e 62·0	—
II	Paris	99·9	326	—	—	—	—	e 59·5	63·5
II	Bidston	100·1	331	—	—	—	—	e 47·5	59·0
III		100·1	331	—	—	—	—	e 46·8	58·6
II	Oxford	100·2	330	—	—	—	—	53·5	66·9
II	Toledo N.E.	108·9	321	—	—	—	—	e 61·1	67·1
II	N.W.	108·9	321	—	—	—	—	e 61·8	65·0
I	San Fernando	112·3	320	—	—	—	—	—	68·2
II		112·3	320	—	—	—	—	—	66·5
III		112·3	320	—	—	—	—	—	68·4
I	Ottawa	118·7	14	—	—	—	—	e 54·2	—
II		118·7	14	—	—	e 30 2	?	e 52·5	—
III		118·7	14	—	—	—	—	e 52·0	—
I	Toronto N.	119·5	20	—	—	—	—	e 61·2	—
II	N.	119·5	20	—	—	—	—	53·5	—

Additional readings: Manila III MN = +2·8m. Zi-ka-wei I PR_1 = +5m.0s. Phu-Lien II MN = +12·4m., III MN = +12·9m. Osaka I MN = +14·8m., II MN = +10·7m., III MN = +10·7m. Batavia I iE = +9m.4s., II iE = +8m.5s., and +11m.19s. = SR_1 −13s., III i = +10m.7s. Irkutsk I SR_3 = +17m.59s. = SR_1 +19s., II SR_3 = +17m.51s., III SR_3 = +18m.8s. Simla III eN = +15m.57s. Riverview I gives S as PR_1 and eS? = +20m.18s., MN = +33·7m., II MN = +34·2m., III MN = +27·3m. Ekaterinburg II i = +20m.43s. and +26m.48s. = SR_3 −9s., MN = +37·4m., MZ = +42·7m., III i = +11m.44s., MN = +37·7m., MZ = +39·6m.; is L perhaps SR_3? Baku I MN = +40·6m., MZ = +41·0m., II MN = +40·3m., MZ = +41·2m., III MN = +40·3m., MZ = +41·2m. Kucino I L = +46·2m. Pulkovo I MN = +46·9m., MZ = +53·2m., II MN = +46·7m., III MN = +46·7m., MZ = +53·2m. Leningrad II MN = +47·8m., III MN = +47·8m. De Bilt I MN = +61·2m., II MN = +62·0m., III MN = +62·1m. San Fernando I MN = +75·2m., III MN = +73·0m.

Nov. 14d. 22h. 35m. 30s. Epicentre 39°·0N. 27°·5W.

A = +·689, B = −·359, C = +·629; D = −·462, E = −·887; G = +·558, H = −·291, K = −·777.

The origin was deduced from preliminary calculation with 39°·5N. 27°·0W. of 1919 Aug. 13d.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Azores	1·9	132	0 30	+ 1	—	—	—	1·6
San Fernando	17·0	92	3 59	− 6	7 30	+12	—	9·5
Toledo N.E.	18·1	80	e 4 10	− 8	i 7 4	−38	e 7·8	9·3
Malaga	18·3	90	4 19	− 2	7 51	+ 4	e 9·3	—
Granada	18·9	88	i 4 31	+ 3	8 34	+34	—	10·9
Almeria	19·9	88	e 4 43	+ 3	i 8 23	+ 2	e 10·4	16·0
Tortosa	21·5	76	5 2	+ 3	9 9	+14	10·1	11·2
Bidston	22·0	41	6 30?	+85	9 2	− 3	10·3	12·9
Oxford	22·3	46	i 5 15	+ 6	i 9 14	+ 3	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Edinburgh	23·4	36	—	—	1 8 42	−51	—	—
Uccle	25·2	52	e 5 37	− 3	e 10 9	+ 2	12·0	13·5
De Bilt	26·0	49	—	—	10 24	+ 2	e 12·5	14·1
Moncalieri	26·6	65	e 5 24	−30	10 34	+ 1	14·7	—
Strasbourg	26·9	58	e 5 30?	−27	—	—	16·5	—
Hamburg	29·3	48	—	—	—	—	e 14·5	—
Rocca di Papa	30·5	72	—	—	—	—	—	17·6
Ottawa	35·8	297	—	—	1 13 6	− 1	e 17·5	—
Toronto	38·6	295	—	—	—	—	26·7	—
Pulkovo	41·2	40	e 9 52	?PR_1	e 14 14	−10	—	23·1
Leningrad	41·2	40	(e 7 30?)	−35	—	—	e 7·5	23·6
Kucino	45·4	46	—	—	e 15 18	− 2	24·0	—
Ekaterinburg	57·3	41	10 3	+ 9	17 58	+ 8	26·0	34·0
Baku	57·6	62	—	—	e 18 4	+10	e 35·6	—
Irkutsk	79·6	28	—	—	—	—	45·5	—

Additional readings: San Fernando MN = +14·5m. Toledo SNE = +7m.6s., eLNW = +7·9m., MNW = +9·1m. Granada MZ = +12·1m. De Bilt eE = +11m.4s. = SR_1 −24s., MN = +13·8m. Pulkovo readings are given as e simply. Ekaterinburg MN = +32·0m. Baku e = +31m.42s.; all readings are given as e simply.

Nov. 14d. Continuation of list of times for P at Manila for repetitions of the shock of 13d. (Epicentre 13°·0N. 124°·7E.).

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	14	24	7	44	13	15	34	25
1	7	41	8	12	0		51	9
	23	47		57	57	16	39	56
3	1	31	10	4	44	19	1	13
	54	4		39	37	20	18	9
5	47	8	14	38	15			

Nov. 14d. Readings also at 0h. (Marseilles), 1h. (Ekaterinburg and near La Paz), 3h., 4h., 5h., and 8h. (La Paz), 9h. (Ekaterinburg), 10h. (La Paz (2)), 11h. (Apia), 13h. (near Harvard), 16h. and 18h. (near Athens).

Nov. 15d. Continuation of list of times for P at Manila for repetitions of the shock of 13d. (13°·0N. 124°·7E.).

h.	m.	s.	h.	m.	s.
6	28	0	14	2	55
	33	55		37	0
	51	30	15	39	13
8	4	12			

Nov. 15d. Readings also at 11h. (Leningrad), 18h. (Ekaterinburg), 19h. (Batavia (2), near Vera Cruz, Oaxaca, and Tacubaya), 21h. (Batavia, near Vera Cruz, Oaxaca, and Tacubaya), 22h. (Apia), 23h. (Adelaide, Riverview, Perth, and Wellington).

Nov. 16d. 11h. 54m. 44s. Epicentre **19°·8N. 107°·0W.**

A = −·275, B = −·900, C = +·339; D = −·956, E = +·292; G = −·099, H = −·324, K = −·941.

There are some indications of a focal depth rather less than usual (say ·010 *above* normal), but scarcely sufficient to warrant a solution on these lines.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo		2·6	106	3 47	+186	—	—	4·2	4·4
Mazatlan		3·4	9	4 13	+200	—	—	4·8	6·7
Guadalajara		3·4	75	2 45	+112	—	—	3·5	3·7
Tacubaya		7·3	92	2 4	+13	—	—	3·8	4·4
Oaxaca		10·1	104	2 4	−27	4 12	−20	4·6	6·5
Vera Cruz		10·2	92	4 0	?S	(4 0)	−35	6·0	6·9
Tucson	E.	12·9	345	e 3 39	+27	e 5 36	− 6	6·3	7·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Merida		16·3	83	0 34	−202	—	—	3·6	6·8
Loyola		18·5	53	4 37	+14	(8 7)	+16	20·1	22·1
Denver		20·0	4	5 16?	+35	9 16?	+53	12·3	13·3
Lick	E.	21·7	327	i 5 19	+18	i 9 53	+54	i 12·1	—
	N.	21·7	327	e 5 23	+22	i 9 46	+47	i 11·3	14·4
Berkeley	E.	22·4	327	e 5 27	+17	i 10 4	+51	—	13·0
	N.	22·4	327	i 5 26	+16	i 9 59	+46	i 11·8	15·2
St. Louis		23·8	34	i 5 42	+16	e 10 5	+25	e 12·2	13·8
Ann Arbor		29·9	36	i 6 46	+19	i 11 52	+20	e 14·7	19·9
Victoria		31·5	340	6 46	+ 3	12 10	+10	16·2	19·5
Georgetown		32·1	47	i 6 45	− 3	i 12 7	− 3	i 17·4	18·9
Cheltenham	E.	32·1	47	—	—	—	—	16·2	21·7
Saskatoon		32·2	3	e 7 22	+32	i 12 50	+39	e 17·3	21·3
Port au Prince		32·7	86	e 7 27	+33	12 15	− 4	15·6	—
Toronto	N.	33·1	38	i 7 2	+ 5	i 12 28	+ 2	15·0	19·4
Ithaca		34·2	42	e 7 12	+ 5	e 12 39	− 4	16·8	21·4
Fordham		35·2	46	6 42	−33	12 53	− 5	16·9	20·7
Ottawa		36·3	39	i 7 27	+ 3	i 13 16	+ 2	18·5	22·5
Harvard		37·7	45	7 39	+ 3	13 37	+ 3	18·1	25·4
Sitka		42·7	339	8 24	+ 8	e 14 59	+15	e 21·4	29·2
Halifax		43·6	45	e 8 16	− 7	14 52	− 4	e 20·3	24·9
Honolulu	E.	47·6	281	i 8 56	+ 5	i 16 8	+19	i 24·6	25·0
	N.	47·6	281	e 9 9	+18	e 16 4	+15	24·3	25·0
La Paz		52·7	131	i 9 23	− 1	i 17 51	+59	27·1	29·3
La Plata	E.	71·8	140	i 11 32	+ 4	20 48	0	36·2	36·7
	N.	71·8	140	i 11 31	+ 3	i 20 48	0	32·0	37·3
	Z.	71·8	140	i 11 31	+ 3	—	—	36·0	38·0
Apia		72·1	249	—	—	e 26 47	?SR_1	33·6	41·6
Rio de Janeiro	E.	75·5	122	i 11 54	+ 2	21 31	− 1	e 36·9	43·1
	N.	75·5	122	i 11 54	+ 2	21 34	+ 2	e 37·0	44·3
Edinburgh		81·1	35	i 12 50	+24	i 23 0	+24	39·3	51·7
Dyce		81·1	32	12 14	−12	22 56	+20	35·8	47·7
Bidston		82·1	37	12 48	+17	23 11	+24	35·4	49·0
Stonyhurst		82·3	37	i 13 13	+41	i 23 36	+47	42·3	47·3
West Bromwich		83·1	38	12 48	+11	23 16	+18	—	—
Bergen		83·2	27	12 39	+ 2	22 59	0	e 36·3	—
Oxford		83·3	38	12 30	−11	23 30	+23	e 35·9	50·1
Rio Tinto		85·8	51	24 16?	?S	(24 16?)	+48	—	50·3
San Fernando		86·6	52	12 51	− 6	i 23 50	+13	36·8	53·3
Toledo		86·9	49	e 12 49	− 9	e 23 24	−16	—	26·4
De Bilt		87·2	35	13 6	+ 6	23 56	+13	e 38·3	49·5
Paris		87·3	39	e 13 4	+ 3	i 23 58	+14	46·3	51·3
Uccle		87·4	37	13 6	+ 5	i 23 56	+11	36·3	44·1
Malaga		87·8	51	13 18	+14	23 54	+ 4	34·9	56·2
Granada		88·2	51	i 13 12	+ 6	i 24 26	+32	43·8	54·7
Upsala		88·6	25	e 13 15	+ 7	e 23 41	−18	e 40·3	54·1
Hamburg		88·9	31	e 13 14	+ 4	e 23 23	[+ 2]	e 39·3	54·3
Puy de Dôme		89·0	40	—	—	e 27 16?	?SR_1	45·3	54·2
Almeria		89·2	50	e 13 6	− 5	24 4	− 1	47·7	52·9
Tortosa	N.	89·6	46	e 13 5	− 9	24 20	+10	37·3	54·1
Besançon		90·1	39	—	—	—	—	e 46·3	51·3
Strasbourg		90·4	38	13 19	+ 1	e 25 25	+67	42·3	49·9
Barcelona		90·4	45	—	—	e 24 26	+ 8	e 39·5	53·1
Zurich		91·4	39	e 13 26	+ 3	—	—	e 35·3	—
Alicante		91·8	48	e 13 22	− 4	e 23 56	[+17]	41·8	63·4
Cheb		92·1	33	e 17 15	?PR_1	e 24 5	−31	e 32·3	52·3
Moncalieri		92·2	40	e 13 47	+19	24 8	−29	40·6	56·9
Pulkovo		93·0	20	13 34	+ 2	24 10	−35	38·3	45·8
Konigsberg		93·0	27	e 13 40	+ 8	e 23 59	[+13]	e 40·3	—
Innsbruck		93·1	36	i 13 33	0	e 23 10	[−37]	e 40·3	45·1
Algiers		93·2	48	e 12 31	−62	24 9	[+22]	46·3	56·3
Wellington	E.	94·5	228	—	—	i 24 49	−12	e 38·3	48·6
	N.	94·5	228	e 14 52	+71	i 24 54	− 7	e 37·8	39·6
Florence		95·0	40	5 28	?	21 16	?PR_2	39·3	45·3
Vienna		95·2	34	i 13 41	− 3	23 34	[−24]	e 46·3	57·3
Graz		95·5	35	e 13 45	− 1	e 24 23	[+23]	e 44·0	57·4
Zagreb		96·6	36	e 14 49	+57	i 25 28	+ 6	34·3	—
Rocca di Papa		97·0	41	e 13 34	−20	24 34	[+26]	e 51·1	59·9
Budapest		97·2	33	e 14 16?	+21	—	—	e 44·3	—
Naples		98·5	41	e 17 16	?PR_1	e 24 16	[0]	61·3	—
Kucino		98·7	20	—	—	24 41	[+24]	46·0	59·0
Pompeii		98·7	41	e 14 59	+55	e 22 1	?PR_2	—	57·3
Belgrade		99·6	35	e 11 23	−166	e 22 40	−192	e 49·9	57·6
Ekaterinburg		102·6	7	i 14 19	− 4	—	—	49·3	61·2

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		102·9	341	14 18	− 7	25 1	[+23]	51·3	—
Makeyevka		105·2	24	e 18 45	?PR_1	i 25 1	[+13]	32·8	62·9
Athens		106·0	39	e 15 22	+43	e 28 13	+81	45·3	53·9
Piatigorsk		110·5	23	e 19 21	?PR_1	e 28 51	+78	—	50·3
Zi-ka-wei		111·0	317	—	—	e 29 0	+83	70·8	75·1
Taihoku	E.	114·9	311	—	—	—	—	47·3	—
Melbourne		116·0	236	—	—	i 29 10	+52	—	61·7
Baku		116·1	20	—	—	—	—	59·0	71·5
Adelaide		120·8	240	—	—	—	—	e 42·8	69·4
Manila		121·6	303	—	—	e 30 16?	?	—	61·3
Hong Kong		121·7	314	20 46	?PR_1	—	—	—	—
Phu-Lien		127·8	319	e 21 21	?PR_1	—	—	54·3	—
Simla	N.	128·9	357	e 22 58	?PR_1	e 34 58	?	e 56·7	76·1
Cape Town		129·9	119	21 31	?PR_1	—	—	—	68·3
Bombay		141·3	0	19 40	[− 2]	—	—	—	89·9
Hyderabad		142·3	353	e 19 47	[+ 3]	—	—	60·6	86·5
Malabar		144·2	286	19 51	[+ 4]	—	—	—	—
Batavia		144·4	288	1 19 53	[+ 6]	—	—	94·3	—
Kodaikanal		149·6	353	86 34	?L	—	—	(86·6)	—
Colombo		152·5	345	39 41	?	53 51?	?	94·4	100·0

Additional readings and notes: Vera Cruz S = +5m.56s. Tucson iPE = +3m.46s., eE = +4m.7s., and +4m.32s., iE = +6m.44s.; T_0 = 11h.55m.8s. Loyola S = +12m.37s., true S is given as PR_1. Denver MN = +14·3m. Lick iN = +5m.31s. = PR_1 + 7s., iE = +5m.42s., eE = +9m.30s. = SR_1 − 12s., iE = +10m.32s. Berkeley ePZ = +5m.25s., iPZ = +5m.28s., iE = +10m.34s., iSR_1N = +11m.26s. St. Louis iPR_3 = +6m.16s., iPR_2 = +6m.25s., iPR_3 = +6m.35s., iN = +6m.52s., eN = +8m.12s., iSN = +10m.10s., iN = +10m.20s., SR_1 = +11m.14s., SR_2N = +11m.29s., SR_3 = +11m.39s. Victoria PN = +6m.47s., MN = +20·2m.; T_0 = 11h.54m.42s. Georgetown ePN = +6m.50s., PR_2E = +8m.3s., MN = +18·8m. Cheltenham eN = +14m.50s. = SR_2 + 26s., LN = +16·1m., MN = +18·3m. Saskatoon ePR_2N = +18m.43s.; T_0 = 11h.55m.12s. Toronto eSN = +12m.18s., ME = +21·7m.; T_0 = 11h.55m.7s. Ithaca i = +8m.25s. = PR_1 + 13s., SR_1 = +14m.59s. Ottawa iPR_2 = +8m.46s., iSR_1N = +15m.16s., iSR_2 = +15m.48s., iLN = +17·8m., MN = +21·3m.; T_0 = 11h.54m.50s. Harvard PR_1E = +9m.8s., PR_1N = +9m.16s., eN = +14m.28s. and +17m.48s., SR_1N = +15m.58s., LN = +18·3m., MN = +22·5m.; T_0 = 12h.54m.39s. and 12h.54m.50s. Sitka SR_1E = +18m.34s., SR_1N = +18m.39s., eLN = +20·9m., MN = +29·1m.; T_0 = 11h.54m.41s. and 11h.54m.49s. Halifax iPR_1E = +10m.16s., eSR_1 = +18m.16s.; T_0 = 11h.54m.40s. Honolulu PR_1 = +10m.47s., iPSE = +16m.36s., iSR_2? = +20m.45s.; T_0 = 11h.54m.32s. and 11h.54m.37s. La Paz PR_1 = +11m.34s. and +12m.22s., = PR_2 − 13s., PS = +18m.28s., SR = +21m.14s. and +24m.34s.; T_0 = 11h.53m.40s. Apia LN = +32·2m., MN = +39·0m. Rio de Janeiro PR_1E = +14m.46s., SR_1E = +26m.31s., SR_2E = +29m.46s., SR_2N = +30m.1s.; T_0 = 11h.55m.0s. Bidston P = +13m.31s. San Fernando MN = +52·3m. De Bilt eSR_1 = +29m.48s., eSR_2 = +33m.30s., MN = +43·6m., MZ = +49·3m. Uccle e = +22m.51s. = [S] − 20s., iSR_1 = +29m.52s., iSR_2 = +33m.33s. Granada PR_1 = +17m.12s., PR_2 = +19m.52s., PS = +25m.43s., SR_1 = +30m.50s., SR_2 = +34m.31s., MZ = +54·9m. Upsala MN = +52·2m. Hamburg ePR_1 = +16m.47s., L = +43·3m. Almeria MN = +55·4m. Tortosa ME = +53·0m. Strasbourg ePEN = +13m.25s., MZ = +53·9m. Alicante MN = +62·1m. Moncalieri MN = +57·2m. Pulkovo PR_1 = +17m.18s., i = +26m.7s., SR_1 = +31m.4s., SR_2 = +34m.52s., MZ = +56·3m. Konigsberg ePR_1 = +17m.17s., eLN = +40·7m., also several eE and eN readings. Innsbruck MNW = +52·1m. Algiers PR_1 = +17m.8s. Vienna PR_1 = +16m.54s., PS = +24m.25s. = [S] + 27s., SR_2? = +31m.44s. Graz MN = +55·8m. Zagreb e = +18m.15s. Rocca di Papa iPZ = +13m.54s., ePR_1Z = +17m.5s., iPR_1Z = +17m.52s., ePR_1N = +17m.55s., ePR_1E = +18m.1s., L = +54·4m. Kucino PR_1 = +18m.7s., i = +27m.13s., and +32m.39s. = SR_2 + 18s., MN = +59·6m. Ekaterinburg i = +18m.36s. = PR_1 + 6s., +26m.11s. = S − 9s., +27m.46s., +33m.22s. = SR_1 + 12s., and +37m.14s. = SR_2 − 55s., e = +24m.53s. = [S] + 17s., MN = +62·5m., MZ = +65·0m. Irkutsk PR_1 = +18m.36s., e = +27m.57s. Makeyevka i = +26m.26s. = S − 18s., SR_1 = +27m.45s., SR_2 = +28m.35s., MN = +63·9m. Athens MN = +60·8m. Zi-ka-wei eS = +36m.56s. Baku PR_1 = +20m.2s., e = +33m.6s. Simla eSE = +39m.22s. = SR_1 + 45s., ME = +71·8m. Batavia iN = +21m.15s. and +24m.28s.

Nov. 16d. Continuation of list of times for P at Manila for repetitions of the shock of 13d. (13°·0N. 124°·7E.).

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	10	29	5	46	25	12	15	2
4	37	56	8	19	6	19	9	36

Nov. 16d. Readings also at 0h. (Manila, Irkutsk, and Ekaterinburg), 7h. (Apia and Balboa Heights), 9h. (Batavia (4) and Malabar), 10h. (Batavia (3)), 15h. (Cape Town), 17h. (Ottawa, Cape Town, and Tacubaya), 18h. (Batavia and Ekaterinburg), 19h. (Balboa Heights).

Nov. 17d. 0h. 17m. 45s. Epicentre 10°·0S. 79°·0W.

$A = +\cdot188$, $B = -\cdot967$, $C = -\cdot174$; $D = -\cdot982$, $E = -\cdot191$; $G = -\cdot033$, $H = +\cdot170$, $K = -\cdot985$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		12·4	123	i 3 18	+13	i 5 53	+24	6·8	10·4
La Plata	E.	31·5	146	i 6 32	−11	e 11 24	−36	15·8	21·9
	N.	31·5	146	6 33	−10	11 26	−34	15·1	22·7
Tacubaya		35·5	325	7 2	−16	—	—	18·2	20·2
Rio de Janeiro	E.	36·6	116	i 7 23	− 4	13 11	− 7	e 19·5	20·9
	N.	36·6	116	? 7 19	− 8	13 11	− 7	e 19·5	24·2
Georgetown	N.	49·0	1	i 8 56	− 4	e 16 39	+33	39·2	—
Tucson	E.	52·1	325	—	—	—	—	e 25·2	32·4
Chicago	E.	52·4	351	—	—	i 16 40	− 9	26·2	30·8
Ann Arbor		52·5	356	—	—	i 16 45	− 5	e 25·2	—
Ithaca		52·5	2	—	—	i 16 56	+ 6	e 27·2	—
Harvard	E.	52·9	7	—	—	e 17 3	+ 8	27·6	—
	N.	52·9	7	e 9 34	+ 9	e 17 4	+ 9	e 26·4	37·6
Toronto	E.	53·7	359	e 8 34	−57	e 17 2	− 3	24·2	31·2
Ottawa		55·5	2	i 9 43	0	i 17 26	− 2	e 27·4	30·2
Victoria		70·3	330	11 19	0	20 34	+ 4	37·4	45·6
San Fernando		82·5	50	e 12 34	+ 1	i 23 1	+ 9	34·8	56·2
Honolulu	N.	83·6	293	—	—	—	—	39·6	44·2
Malaga		83·9	50	12 44	+ 3	23 16	+ 8	—	—
Granada		84·7	50	i 13 1	+15	i 23 26	+10	e 43·8	52·2
Toledo		85·2	47	e 12 35	−14	i 22 36	[−21]	e 38·5	48·3
Almeria		85·5	50	e 12 58	+ 7	23 33	+ 8	—	—
Tortosa	N.	88·8	47	—	—	—	—	e 36·2	52·5
Algiers		89·8	51	—	—	—	—	50·2	65·2
Oxford		90·5	37	—	—	e 23 43	[+12]	43·5	51·8
Edinburgh		90·5	33	—	—	i 24 21	+ 2	48·2	51·8
Cape Town		90·5	125	—	—	—	—	—	56·2
Stonyhurst		93·1	36	—	—	e 24 15?	−31	48·2	—
Uccle		93·6	39	—	—	24 7	[+17]	39·2	—
De Bilt	E.	94·3	38	—	—	—	—	e 45·2	50·6
	N.	94·3	38	—	—	—	—	e 40·2	46·8
Moncalieri		94·9	45	i 26 25	?S	35 15	?	49·3	60·8
Strasbourg		95·3	41	—	—	—	—	51·2	—
Hamburg		97·4	37	—	—	—	—	e 42·2	—
Rocca di Papa		97·9	49	—	—	e 25 9	−26	e 67·4	71·6
Cheb		98·5	40	e 24 40	?S	(e 24 40)	[+24]	e 46·2	59·2
Graz		100·4	43	e 14 15	+ 2	e 24 15?	[−11]	e 47·2	—
Konigsberg		103·7	36	—	—	—	—	e 47·2	—
Leningrad		108·2	30	e 19 7	?PR_1	—	—	53·2	74·5
Pulkovo		108·3	30	e 14 41	− 9	e 25 15	[+12]	53·2	70·5
Kucino		113·2	33	e 19 49	?PR_1	e 29 20	+84	54·0	59·8
Makeyevka		115·3	40	—	—	e 29 29	+77	67·0	—
Ekaterinburg		123·8	25	e 21 9	?PR_1	e 30 56	+98	49·2	73·4
Baku		125·7	46	e 21 3	?PR_1	e 34 15	?	72·2	74·6
Irkutsk		137·6	358	—	—	—	—	62·2	—
Bombay		151·4	69	19 15?	[−43]	—	—	—	—
Zi-ka-wei		151·6	321	e 19 52	[− 6]	e 36 13	?	—	76·6
Kodaikanal		156·8	87	96 3	?L	—	—	(96·0)	—
Hyderabad		156·9	69	e 20 42	[+37]	—	—	—	89·8
Colombo		158·8	97	—	—	86 35	?	91·2	93·8
Manila		160·0	285	e 20 15?	[+ 7]	—	—	—	—

For Notes see next page.

NOTES TO Nov. 17d. 0h. 17m. 45s.

Additional readings: La Plata iE = +13m.6s. = SR_3 −32s., and +13m.48s. = SR_3 −21s. Rio de Janeiro PR_1E = +8m.30s., PR_1N = +8m.53s., SR_1N = +15m.30s., SR_1E = +15m.38s. Tucson eE = +26m.37s. and +27m.38s. Chicago eE = +19m.10s., SR_1E = +21m.5s., SR_2E = 22m.44s., SR_3E = +23m.21s. Ann Arbor eN = +20m.57s. = SR_1 +3s., and +27m.51s., eE = +23m.57s. = SR_3 +50s. Harvard eN = +16m.27s., SR_1N = +20m.33s., SR_3 = +23m.21s., eE = +25m.41s.; T_0 = 0h.17m.51s. and 0h.17m.55s. Toronto eE = +6m.47s., and +19m.15s. Ottawa $iPR_1N?$ = +12m.5s., iN = +14m.45s., eSR_1N = +21m.41s., $eSR_2E?$ = +23m.27s., MN = +34·2m.; T_0 = 0h.17m.50s. Victoria MN = +45·4m.; T_0 = 0h.17m.48s. Honolulu SR_3N = +34m.33s., iN = +36m.21s., eLE = +39·4m. Granada PS = +24m.44s., MZ = +45·4m. Uccle SR_1 = +30m.19s. De Bilt MZ = +54·7m. Rocca di Papa e = +32m.12s. = SR_1 +1s. Leningrad e = +19m.19s. = PR_1 +11s., MN = +73·3m. Pulkovo PR_1 = +19m.15s., MZ = +66·9m. Kucino e = +35m.42s. = SR_1 +20s. Zi-ka-wei PR_1 = +23m.35s., PR_2 = +28m.38s.

Nov. 17d. Continuation of the list of times for P at Manila for repetitions of the shock of 13d. (13°·0N. 124°·7E.).

h.	m.	s.	h.	m.	s.	h.	m.	s.
4	30	14	5	54	12	17	16	14
5	20	34	8	7	31	23	14	55

Nov. 17d. Readings also at 6h. (Batavia (2)), 7h. (Apia), 9h. (Bergen), 10h. (Baku and Ekaterinburg), 16h. (near La Paz), 17h. (La Plata, Cape Town, Irkutsk, and Ekaterinburg), 18h. (Ekaterinburg), 19h. (Graz, Vienna, and Cape Town), 21h. (Batavia and Malabar), 22h. (Baku), 23h. (Ekaterinburg (2), Irkutsk, and Zurich).

Nov. 18d. Continuation of the list of times for P at Manila for repetitions of the shock of 13d. (13°·0N. 124°·7E).

h.	m.	s.	h.	m.	s.	h.	m.	s.
11	48	32	13	45	40	15	20	0

Nov. 18d. Readings also at 7h. (La Paz and near Athens), 10h. (Wellington), 12h. (La Paz), 16h. (Honolulu), 18h. (La Plata and La Paz), 19h. (near Taihoku (2)), 22h. (near La Paz).

Nov. 19d. 12h. 25m. 5s. Epicentre 26°·5N. 27°·5E.

A = +·794, B = +·413, C = +·446; D = +·462, E = −·887; G = +·396, H = +·206, K = −·895.

		Δ	Az.	P.	O−C	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	N.	11·8	346	—	—	—	—	5·7	6·3
Belgrade	E.	19·2	345	e 5 7	+36	e 6 13	−113	—	7·8
	N.	19·2	345	e 5 12	+41	e 6 21	−105	—	6·8
Rocca di Papa		19·5	325	e 6 8	+93	—	—	e 10·1	11·3
Zagreb		21·4	337	—	—	e 8 55?	+ 2	—	10·4
Budapest		22·0	345	e 7 55?	?	e 8 55?	−10	—	—
Baku		23·2	48	e 9 22	?S	(e 9 22)	− 7	e 11·7	14·3
Vienna		23·4	341	—	—	e 9 43	+10	i 10·5	11·4
Innsbruck		24·3	333	e 6 18	+47	—	—	—	—
Moncalieri		24·3	325	5 43	+12	10 13	+23	12·5	14·6
Strasbourg		26·9	331	5 55?	− 2	—	—	12·9	—
Granada		28·3	300	—	—	—	—	e 17·2	20·1
Paris		29·6	326	—	—	—	—	e 14·9	14·9
Uccle		30·0	330	—	—	e 10 55?	−39	—	—
Kucino		30·2	12	—	—	—	—	e 12·7	—
De Bilt		30·6	333	—	—	e 11 31	−13	e 13·9	—

Additional readings and notes: Athens ME = +6·2m. Vienna i = +9m.58s. Granada readings are given as at 13h.

Nov. 19d. 14h. 6m. 42s. Epicentre 0°·0 125°·0E. (as on 1925 July 28d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Amboina		4·8	139	i 6 48	?	i 8 48	?	—
Manila		15·1	345	e 3 46	+ 6	—	—	i 7·3
Malabar		18·8	247	4 25	− 2	8 17	+19	—
Batavia		19·2	251	4 35	+ 4	7 59	− 7	—
Hong Kong		24·7	335	5 35	0	—	—	—
Rocca di Papa		106·4	314	i 67 14	?L	—	—	(i 67·2)
La Paz		159·0	142	20 3	[− 4]	—	—	—

No additional readings.

Nov. 19d. 16h. 3m. 0s. Epicentre 31°·0N. 116°·0W. (as on 1923 Nov. 7d.).

A = −·376, B = −·770, C = +·515; D = −·899, E = +·438; G = −·226, H = −·463, K = −·857.

Very uncertain. An epicentre 32°·5N. 114°·0W. would suit Tucson and Victoria better.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson	E.	4·6	72	e 1 18	+ 7	1 49	−17	e 2·6	3·4
Berkeley	E.	8·6	324	—	—	—	—	e 6·0	—
Denver		12·5	43	—	—	—	—	17·0	—
Victoria		18·3	344	4 46	+25	—	—	11·7	13·8
Chicago		25·1	57	—	—	—	—	e 12·8	14·5
Ann Arbor		28·1	57	—	—	—	—	e 14·3	15·8
Toronto		31·4	55	—	—	—	—	i 16·1	18·0
Ithaca		33·3	60	—	—	—	—	e 17·0	—
Ottawa		34·3	54	—	—	—	—	e 17·2	18·5
Fordham		35·1	63	e 17 53	?L	—	—	(e 17·9)	19·1
Harvard		37·3	59	—	—	—	—	e 18·7	20·0
De Bilt		82·3	32	—	—	—	—	e 44·0	—
Granada		87·0	48	—	—	—	—	e 46·3	50·7

Additional readings: Tucson iE = +2m.10s. and +2m.15s. Victoria MN = +15·6m. Chicago LE = +13·2m., LN = +13·3m., MN = +13·5m. Ann Arbor i = +14m.36s. and +15m.36s., iL? = +14·9m. Toronto iE = +16m.20s., LE = +17·0m., MN = +16·8m. Ottawa iL = +17·6m., MN = +18·4m. Harvard LN = +19·4m., eLE = +19·6m.

Nov. 19d. 19h. 10m. 35s. Epicentre 10°·0S. 176°·0E.

A = −·982, B = +·069, C = −·174; D = +·070, E = +·998; G = +·173, H = −·015, K = −·985.

Very uncertain.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		12·6	109	3 7	0	5 32	− 2	6·0	6·2
Wellington		31·3	182	—	—	e 11 20	−36	—	16·7
Sydney		32·9	220	7 49	+53	—	—	16·4	17·7
Melbourne		39·3	220	—	—	e 14 1	+ 5	—	22·5
Honolulu	E.	40·4	40	—	—	—	—	18·5	19·9
	N.	40·4	40	—	—	—	—	18·4	19·8
Toronto	N.	107·5	47	—	—	e 46 25?	?	49·4	—
Ottawa	E.	109·9	45	—	—	—	—	e 54·4	—
De Bilt		137·3	351	—	—	—	—	e 70·4	—
Uccle		138·6	352	—	—	—	—	e 69·4	—
Granada		152·9	359	—	—	—	—	e 85·4	88·6
San Fernando	E.	153·5	4	—	—	—	—	—	90·9

Additional readings: Honolulu eN = +19m.28s. and +20m.37s., eE = +19m.40s. Ottawa eLN = +48·4m. San Fernando MN = +96·4m.

Nov. 19d. Readings also at 3h. (La Paz), 6h. (near Sumoto), 19h. (La Paz and near Manila), 22h. (Apia and near Irkutsk), 23h. (Adelaide and near Taihoku).

Nov. 20d. Readings at 0h. (De Bilt and Uccle), 6h. (Phu-Lien and near Sumoto), 9h. (near Sumoto and near Tacubaya), 10h. (Malabar and near Batavia), 11h. (Baku), 14h. (La Paz), 16h. (near Matuyama), 18h. (near Athens).

Nov. 21d. Readings at 5h. (La Paz), 6h. (Port au Prince (3), Manila, and near Taihoku), 14h. (near Tacubaya), 20h. (Simla), 23h. (Manila).

Nov. 22d. 0h. 5m. 45s. Epicentre 13°·0N. 124°·7E. (as on Nov. 14d.).

$A = -\cdot555$, $B = +\cdot801$, $C = +\cdot225$; $D = +\cdot822$, $E = +\cdot569$; $G = -\cdot128$, $H = +\cdot185$, $K = -\cdot974$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	4·0	294	e 1 15	+13	—	—	i 2·4	3·5
Hong Kong	13·7	314	3 25	+ 3	—	—	—	—
Zi-ka-wei	18·4	351	e 4 20	− 2	e 7 52	+ 3	—	12·7
Batavia	26·2	224	e 5 15?	−35	—	—	—	—
Irkutsk	42·6	344	14 22	?S	(14 22)	−21	20·2	—
De Bilt	96·8	327	—	—	—	—	e 54·2	—

Additional readings: Manila MN = +3·9m. Irkutsk S = +17m.50s. = SR_1 +10s.

Nov. 22d. Readings also at 1h. (Manila), 2h. (near Amboina), 4h. (Manila), 9h. (Bergen), 12h. (near Sumoto), 18h. (Rocca di Papa and Cape Town), 19h. (Cape Town), 20h. (Manila and near Nagasaki), 22h. (Platigorsk), 23h. (Ekaterinburg and near La Paz).

Nov. 23d. 14h. 38m. 22s. Epicentre 36°·7N. 63°·0E. (as on 1925 Aug. 6d.).

$A = +\cdot364$, $B = +\cdot714$, $C = +\cdot598$; $D = +\cdot891$, $E = -\cdot454$; $G = +\cdot271$, $H = +\cdot532$, $K = -\cdot802$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Simla	13·0	111	3 26	+13	—	—	—
Ekaterinburg	20·2	356	i 4 42	− 1	i 8 28	+ 1	—
Makeyevka	21·5	310	—	—	—	—	i 10·7
Hyderabad	23·6	141	8 0	?S	(8 0)	−96	(10·6)
Pulkovo	31·1	328	i 6 39	0	11 54	+ 1	14·4
Leningrad	31·2	328	i 6 40	0	i 11 57	+ 3	14·1

Additional readings and notes: Ekaterinburg i = +5m.45s. Hyderabad gives S as P and L as S. Leningrad iPR_1 = +7m.48s.

Nov. 23d. Readings also at 0h. (Riverview and Melbourne), 1h. (Ekaterinburg), 6h. (Vienna and near Malabar), 9h. (Manila and Toronto), 12h. (Bombay), 17h. and 23h. (Manila).

Nov. 24d. Readings at 1h. (La Paz), 2h. (Ekaterinburg), 5h. (near Amboina), 6h. (Batavia and Manila), 11h. (Irkutsk (2), Ekaterinburg, Riverview, and near Amboina), 13h. (Cape Town and Taihoku), 15h. and 17h. (2) (near Manila), 23h. (near Mizusawa).

Nov. 25d. Readings at 0h. (near Laibach and Zagreb), 2h. (La Paz), 3h. (Ekaterinburg), 7h. (La Paz), 9h. (Ekaterinburg and Amboina), 10h. (La Paz and La Plata), 12h. (Ekaterinburg, Leningrad, and near Manila), 14h. (Manila and near Amboina), 21h. (Ekaterinburg).

Nov. 26d. 15h. 49m. 56s. Epicentre 30°·1N. 131°·6E. (as on 1925 June 26d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe	5·5	32	—	—	—	—	—	5·8
Osaka	5·6	34	1 27	0	(2 31)	− 3	2·5	3·0
Manila	18·4	214	—	—	e 7 4?	−45	—	—
Irkutsk	29·8	326	e 6 23	− 3	11 25	− 6	16·1	—
Ekaterinburg	54·9	321	i 9 41	+ 3	17 44	+24	29·6	—
Baku	65·2	304	e 10 57	+11	—	—	36·6	39·8
Leningrad	69·5	328	—	—	—	—	45·4	—
Pulkovo	69·6	328	—	—	—	—	e 42·5	—
De Bilt	85·4	330	—	—	—	—	e 48·1	—
Uccle	86·7	330	—	—	—	—	e 48·1	—
La Paz	157·3	57	19 10	[−55]	—	—	—	—

Additional readings: Osaka MN = +3·4m. Baku MZ = +47·9m. Ekaterinburg readings have been diminished by 1h.

Nov. 26d. 17h. 0m. 0s. Epicentre 35°·7N. 134°·8E. (as on 1925 Aug. 19d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe	1·1	163	0 18	+ 1	(0 33)	+ 2	0·6	0·6
Osaka	1·2	154	0 14	− 4	(0 29)	− 4	0·5	0·9
Sumoto	1·4	177	0 22	+ 1	(0 39)	0	0·6	0·7
Nagoya	1·8	107	0 25	− 3	(0 45)	− 6	0·8	0·9
Matuyama	2·5	222	2 3	+84	—	—	i 2·6	2·7
Hukuoka	4·3	240	1 9	+ 2	(2 1)	+ 3	2·0	2·1
Nagasaki	5·1	235	1 23	+ 4	—	—	2·5	2·8
Irkutsk	27·1	317	—	—	e 11 0?	+17	15·0	—
Ekaterinburg	52·4	319	—	—	—	—	27·5	—

Additional readings: Osaka MN = +1·9m. Nagasaki MN = +2·6m.

Nov. 26d. Readings also at 4h. (near Malabar), 5h. (La Paz), 7h. (Baku, Ekaterinburg and Irkutsk), 11h. (Manila), 12h. (near La Paz), 14h. (near Matuyama), 17h. (Kobe (2) and near Sumoto), 19h. (Balboa Heights), 21h. (Cape Town and Victoria), 23h. (Hong Kong and Irkutsk).

Nov. 27d. Readings at 8h. (Ekaterinburg and Manila (2)), 10h. (Manila), 11h. (Baku, Ekaterinburg, Irkutsk, and La Paz), 12h. (Irkutsk and Ekaterinburg), 13h. (La Paz and La Plata), 14h. (Adelaide, Riverview, Ekaterinburg, Apia, Melbourne, and Wellington (2)), 15h. (Granada and Ottawa).

Nov. 28d. 5h. 43m. 6s. Epicentre 25°·8N. 128°·0E. (as on 1924 July 7d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	5·9	263	1 50	+19	—	—	2·7	3·8
Manila	13·0	212	e 6 12	?S	(e 6 12)	+28	7·4	—
Hong Kong	13·1	257	—	—	—	—	—	7·4
Phu-Lien	20·3	260	e 4 47	+ 2	e 13 34	+305	22·9	—
Irkutsk	31·9	332	e 6 39	− 7	e 11 53	−14	17·9	19·0
Ekaterinburg	56·3	324	e 9 44	− 4	e 17 41	+ 3	27·4	37·7
Baku	64·9	305	—	—	—	—	33·4	41·0
Kucino	69·0	324	—	—	—	—	e 34·5	—
Leningrad	71·5	329	—	—	—	—	37·4	48·0
Pulkovo	71·6	329	e 11 40	+13	e 21 53	[+30]	32·9	48·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Upsala	E.	77·4	331	—	—	—	—	e 50·9	—
Konigsberg		78·4	326	—	—	—	—	e 44·9	—
Hamburg		84·1	328	—	—	—	—	e 46·9	—
De Bilt		87·5	328	—	—	—	—	e 48·9	51·6
Strasbourg		88·5	325	—	—	—	—	e 47·9	—
Uccle		88·7	328	—	—	—	—	e 48·9	—
Granada		102·4	324	—	—	—	—	i 56·4	59·0
Ottawa	N.	105·6	17	—	—	—	—	e 66·5	—
Toronto	N.	106·2	20	—	—	—	—	e 67·4	—

Additional readings: Ekaterinburg MN = +33·8m. Baku MN = +40·6m., MZ = +45·5m. Leningrad MN = +42·0m., MZ = +48·2m. Pulkovo MN = +41·9m. De Bilt MN = +52·0m.

Nov. 28d. 8h. 14m. 40s. Epicentre 70°·0N. 19°·0W.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Edinburgh		15·8	146	—	—	—	—	e 7·3	10·8
Bidston		18·1	148	(4 17)	− 1	(7 8)	−34	7·1	12·0
Upsala		18·1	105	—	—	—	—	e 11·3	—
Oxford		20·0	147	—	—	—	—	e 10·0	13·3
Hamburg		21·0	126	—	—	—	—	e 12·3	—
De Bilt		21·1	135	4 54	0	8 42	− 4	e 10·0	—
Uccle		22·0	138	—	—	(e 8 20?)	−45	e 8·3	—
Leningrad		22·3	92	5 9	0	e 9 11	0	11·8	14·1
Pulkovo		22·4	92	5 9	− 1	9 13	0	11·3	13·6
Konigsberg		23·1	111	—	—	(e 9 20?)	− 7	e 9·3	—
Paris		23·6	142	—	—	e 9 38	+ 2	12·3	12·3
Strasbourg		25·0	135	—	—	(e 9 20)	−43	e 9·3	—
Kucino		28·1	91	—	—	e 11 2	+ 1	13·4	14·8
Granada		33·9	158	—	—	—	—	e 16·3	19·0
Makeyevka		34·6	99	—	—	—	—	14·3	—
Ekaterinburg		34·9	70	e 7 7	− 5	e 12 45	− 9	17·3	18·0
Ottawa	E.	36·9	259	e 13 23	?S	(e 13 23)	+ 1	e 16·8	21·3
Toronto	N.	39·6	261	—	—	e 19 1	?L	21·9	26·1
Chicago		44·0	268	—	—	—	—	21·8	24·3
Baku		45·4	93	—	—	—	—	19·3	—
Victoria		49·7	303	—	—	—	—	29·1	30·6
Irkutsk		51·1	41	—	—	e 16 49	+17	26·3	—

Additional readings and notes: Edinburgh readings have been diminished by 1h. Leningrad MZ = +15·0m. Ekaterinburg MZ = +20·0m., MN = +20·7m. Ottawa eSE? = +16m.2s. = SR_3 −16s., MN = +22·3m. Toronto LE = +27·5m. Chicago readings have been diminished by 1h.

Nov. 28d. 12h. 33m. 25s. Epicentre 16°·5N. 86°·0W.

A = +·067, B = −·956, C = +·284; D = −·998, E = −·070; G = +·020, H = −·283, K = −·959.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Merida		5·6	324	0 53	−34	—	—	2·0	2·2
Oaxaca		10·3	275	2 5	−29	—	—	3·1	3·3
Tacubaya		12·9	285	2 22	−50	—	—	4·1	4·8
St. Louis	N.	22·4	351	i 5 1	− 9	i 9 1	−12	e 10·1	—
Georgetown		23·7	18	i 6 30	+65	i 9 58	+20	17·3	—
Chicago	E.	25·3	357	e 5 44	+ 3	i 9 47	−22	11·1	11·4
Ann Arbor		25·9	4	i 5 47	0	i 10 17	− 3	e 12·6	13·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Fordham		26·5	21	5 55	+ 2	10 35	+ 3	—	—
Ithaca		27·2	16	6 3	+ 3	10 45	0	12·7	—
Toronto	N.	27·7	10	i 5 58	− 7	i 10 43	−11	13·9	14·6
Denver	N.	28·5	329	—	—	—	—	14·6	—
Harvard	N.	28·8	23	6 18	+ 2	11 32	+19	—	14·6
Ottawa		30·1	15	i 6 24	− 5	i 11 26	−10	13·8	16·1
La Paz		37·4	151	7 9	−24	i 12 48	−42	17·4	20·1
Victoria	E.	44·1	324	—	—	—	—	17·5	18·9
Granada		74·1	56	i 8 42	−181	19 5	−130	—	41·6
De Bilt		77·7	39	e 12 5	0	e 21 58	+ 1	e 35·6	—
Upsala		82·4	30	—	—	e 22 41	− 9	—	—
Leningrad		88·0	27	i 5 4	?	i 16 32	?PR_1	22·6	—
Pulkovo		88·1	27	e 16 14	?PR_1	—	—	23·6	—
Ekaterinburg		101·6	18	i 18 7	?PR_1	—	—	33·6	—
Irkutsk		110·6	353	19 2	?PR_1	28 46	+73	47·6	—

Additional readings and notes: Oaxaca readings have been increased by 5m. St. Louis $iN = +5$m.39s. and +6m.5s. Georgetown eSE? = +12m.47s. Toronto ME = +14·7m.; $T_o = 12$h.33m.24s. Harvard $PR_1N = +7$m.39s., SE = +11m.19s., O−C = +6s., $SR_1N = +12$m.47s., $SR_2N = +13$m.48s.; $T_o = 12$h.33m.7s. and 12h.33m.24s. Ottawa $eSR_1E = +12$m.39s., $eSR_2E = +13$m.4s. $= SR_1 - 2$s.; $T_o = 12$h.33m.28s. La Paz $SR_1 = +15$m.28s.; $T_o = 12$h.33m.26s. Granada i = +21m.29s. De Bilt eZ = +13m.13s., eN = +23m.25s. Upsala e = +24m.9s. Ekaterinburg e = +19m.18s., i = +24m.7s. = [S] − 25s., +25m.43s., +27m.33s., and +28m.35s.

Nov. 28d. 16h. 13m. 20s. Epicentre 18°·0S. 167°·0E. (as on 1922 April 11d.).

A = −·927, B = +·214, C = −·309; D = +·225, E = +·974; G = +·301, H = −·070, K = −·951.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		10·8	92	i 1 10	−91	i 3 40	−70	i 4·2	4·7
Apia		20·8	82	4 45	− 6	8 49	+ 9	9·9	15·2
Riverview		21·3	219	e 5 4	+ 7	i 9 8	+18	e 10·6	12·4
Sydney		21·3	219	4 58	+ 1	9 22	+32	12·1	13·2
Wellington	E.	24·2	166	e 5 27?	− 3	i 9 34	−14	i 12·4	14·2
	N.	24·2	166	e 5 22	− 8	i 9 40	− 8	i 12·4	16·0
Melbourne		27·7	220	e 5 46	−19	i 11 40	+46	i 16·1	17·8
Adelaide		30·4	231	6 20	−12	11 30	−11	13·9	19·3
Amboina		40·6	286	i 7 58	− 2	—	—	22·7	—
Perth		48·0	243	6 40?	−134	15 40?	−14	25·8	29·7
Honolulu		52·2	43	e 9 16	− 5	17 10	+24	—	31·1
Manila		55·9	303	e 9 39	− 6	(i 17 40)	+ 7	i 17·7	—
Batavia		59·8	273	10 20	+ 9	—	—	32·7	—
Kobe		60·8	330	—	—	—	—	—	34·4
Hong Kong		65·5	306	—	—	—	—	—	19·8
Phu-Lien		70·8	301	—	—	e 20 51	+15	28·7	—
Irkutsk		88·7	327	i 13 3	− 6	i 23 37	[+17]	42·7	—
Colombo		89·4	278	—	—	23 40	[+16]	—	77·7
Victoria	E.	90·7	39	13 6	−14	23 50	[+18]	43·2	58·3
	N.	90·7	39	13 6	−14	23 41	[+ 9]	—	52·4
Kodaikanal		92·8	280	24 16	?S	(24 16)	−27	—	—
Hyderabad		93·9	287	e 13 51	+14	24 6	[+15]	45·9	56·6
Simla		99·0	300	—	—	e 24 46	[+27]	—	—
Bombay		99·5	287	e 14 16	+ 8	24 35	[+13]	—	—
La Plata	N.	112·1	141	—	—	—	—	60·2	66·2
Chicago	E.	113·2	50	—	—	—	—	e 51·7	66·6
	N.	113·2	50	—	—	e 26 22	−94	e 49·7	56·8
Ekaterinburg		113·9	325	15 12	− 4	i 27 29	−32	46·7	63·7
La Paz		115·7	119	19 23	?PR_1	29 45	+89	55·5	63·1
Ann Arbor		116·1	50	—	—	e 25 28	[− 4]	e 58·7	64·9
Toronto	E.	119·3	49	e 30 6	?	—	—	64·7	—
Georgetown		121·2	53	—	—	—	—	63·8	—
Ithaca		121·4	49	—	—	—	—	69·2	—
Ottawa		121·7	48	e 19 46	?PR_1	—	—	e 50·7	78·7
Baku		122·0	308	e 20 40	?PR_1	—	—	e 61·7	68·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Fordham		123·5	52	e 16 58	+59	—	—	64·7	68·0
Harvard	E.	125·4	50	—	—	—	—	e 63·1	73·7
Kucino		126·3	327	e 21 34	?PR$_1$	e 28 18	−77	e 59·7	64·9
Piatigorsk		126·6	313	—	—	—	—	37·7	—
Leningrad		127·9	334	e 16 22	+ 4	e 31 5	?	56·2	78·7
Pulkovo		128·0	334	i 19 14	[0]	—	—	59·7	79·0
Makeyevka		129·0	318	i 22 36	?PR$_1$	—	—	66·7	—
Rio de Janeiro		129·6	142	e 22 44	?PR$_1$	33 25	?	e 59·2	87·2
Upsala		132·7	340	e 22 50	?PR$_1$	—	—	e 61·7	83·0
Konigsberg		135·2	333	—	—	—	—	e 68·7	83·7
Hamburg		140·2	339	e 19 44	[+ 5]	e 23 15	?PR$_1$	e 65·7	82·7
Edinburgh		141·4	351	—	—	—	—	e 40·7	94·7
Cheb		142·0	333	e 22 13	?PR$_1$	—	—	e 66·7	73·7
Graz		142·7	328	33 19	?	46 42	?	e 66·1	—
De Bilt		143·1	342	19 44	[− 1]	—	—	e 72·7	93·6
Stonyhurst		143·2	350	—	—	—	—	e 82·7	—
Bidston		143·7	350	20 0?	[+14]	26 49?	?PR$_2$	58·7	80·0
Uccle		144·4	340	e 19 44	[− 3]	—	—	e 57·7	—
Innsbruck	N.W.	144·5	331	19 49	[+ 1]	—	—	—	—
Oxford		145·0	347	e 19 55	[+ 7]	—	—	—	106·9
Strasbourg		145·1	336	i 19 48	[0]	—	—	106·7	—
Paris		146·7	341	e 19 57	[+ 6]	e 42 22	?SR$_1$	77·7	80·7
Rocca di Papa		147·7	323	i 19 58	[+ 6]	—	—	—	—
Algiers		156·5	326	—	—	—	—	108·7	115·7
Granada		159·1	338	i 20 14	[+ 7]	e 32 16	?	84·7	108·2
San Fernando		160·6	343	20 27	[+18]	45 7	?SR$_1$	86·7	104·7

Additional readings and notes: Suva MN = +5·0m. Apia PR$_1$ = +5m.0s., +7m.5s., MNZ = +13·8m. Riverview eP = +5m.16s., PS = +9m.27s. = SR$_1$ −6s., MN = +17·4m.; T$_0$ = 16h.13m.6s. Wellington PR$_1$N = +5m.52s., PR$_2$N = +6m.5s. PR$_2$E = +6m.11s., iE = +7m.36s. and +7m.57s., iN = +8m.7s. and +8m.35s., SR$_1$E = +10m.32s., SR$_1$N = +10m.35s., SR$_2$ = +10m.57s.; T$_0$ = 16h.13m.12s. Adelaide MN = +18·1m. Perth PR$_1$ = +10m.40s., SR$_1$ = +20m.30s. = SR$_2$ −15s., SR$_2$ = +21m.50s. = SR$_3$ +34s. Honolulu ePR$_1$N = +11m.40s., eN = +15m.28s. and +16m.40s.; T$_0$ = 16h.12m.42s. Batavia iN = +19m.54s., iE = +32m.14s. Chicago PR$_1$E = +19m.18s., PR$_2$E = +25m.33s., ePSE = +28m.58s., ePSN = +29m.10s., eSR$_1$N = +34m.12s., eSR$_1$E = +35m.22s., eSR$_2$E = +38m.52s., eSR$_2$N = +39m.42s., eSR$_3$E = +44m.46s., eSR$_3$N = +46m.4s. Ekaterinburg i = +29m.22s. and +36m.14s., iSR$_1$ = +35m.17s., iSR$_2$ = +39m.25s., MN = +56·9m. Ann Arbor e = +58m.40s. and +62m.58s., i = +64m.10s. Toronto eE = +37m.3s. Ottawa e = +26m.0s. = [S] +10s. and +30m.21s., iE = +37m.48s. = SR$_1$ +40s., MN = +70·7m. Baku e = +26m.4s. = [S] +13s. Fordham e = +24m.32s. = PR$_2$ +18s. and +49m.39s., i = +57m.16s. Harvard ePR$_1$ = +22m.19s., ePR$_2$ = +24m.6s., ePR$_3$ = +26m.58s., PS = +30m.46s., P$_2$SE = +32m.13s., SR$_1$ = +38m.40s., SR$_2$E = +43m.4s., SR$_2$N = +43m.28s., eN = +54m.40s., eLN = +62·7m., MN = +73·5m. Kucino e = +22m.44s., +38m.22s. = SR$_1$ +17s. and +42m.34s. Leningrad e = +17m.56s. and +19m.13s. = [P] ±0s., SR$_1$ = +39m.10s., MN = +78·3m., MZ = +78·5m. Pulkovo e = +21m.17s. = PR$_1$ +1s., i = +22m.51s., MN = +77·3m., MZ = +79·1m. Rio de Janeiro eL = +68·5m. Konigsberg e = +42m.40s.? +58m.46s. and +64m.28s. La Plata LE = +60·8m. Graz readings have been diminished by 1h. De Bilt eZ = +23m.14s. = PR$_1$ +20s., eN = +41m.44s. = SR$_1$ +15s., MZ = +88·8m., MN = +89·4m. Bidston readings have been diminished by 1h. Innsbruck eNE = +19m.50s. = [P] +3s. Strasbourg ePEN = +19m.49s. (O−C = [+1s.]) i = +42m.7s. = SR$_1$ +24s. Paris e = +35m.34s. Rocca di Papa ePE = +20m.2s. ePN = +20m.16s. Algiers MN = +58·7m. Granada MZ = +93·4m. San Fernando MN = +105·7m.

Nov. 28d. Readings also at 0h. (Ekaterinburg) 2h. (Ekaterinburg and Leningrad) 4h. (Manila) 10h. (Balboa Heights), 14h. (Batavia), 17h. (Manila).

Nov. 29d. Readings at 5h. (Baku), 8h. (Hong Kong and Ekaterinburg), 9h. and 10h. (Ekaterinburg), 12h. (Ekaterinburg, Taihoku, Hong Kong, Phu-Lien, Irkutsk, Strasbourg, and Granada), 13h. (Baku, Leningrad, Pulkovo, Kucino, Uccle, and De Bilt), 19h. (Manila and La Paz).

Nov. 30d. 17h. 46m. 32s. Epicentre 29°·5N. 129°·0E.

A = −·548, B = +·676, C = +·492; D = +·777, E = +·629; G = −·310, H = +·383, K = −·870.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		3·3	13	e 0 52	0	2 18	+47	2·5	2·9
Zi-ka-wei		6·8	286	e 1 43	− 1	—	—	—	4·0
Kobe		7·3	44	—	—	—	—	—	8·8
Taihoku	N.	8·0	237	e 1 35	−26	—	—	—	—
Nagoya		8·8	48	2 18	+ 5	—	—	—	—
Hong Kong		15·1	245	6 32	?S	(6 32)	− 2	8·1	9·1
Manila		16·6	208	e 3 52	− 7	(6 57)	−12	7·0	—
Phu-Lien		22·0	252	(e 5 12)	+ 7	(e 8 58)	− 7	9·5	—
Irkutsk		29·2	328	e 6 15	− 5	e 10 57	−23	16·5	19·2
Bombay		51·8	273	16 47	?S	(16 47)	+ 6	—	—
Ekaterinburg		54·0	321	e 9 35	+ 2	e 17 18	+ 9	24·5	31·3
Baku		63·7	304	—	—	—	—	32·0	40·5
Kucino		66·6	322	—	—	—	—	e 35·8	37·3
Leningrad		68·9	328	—	—	—	—	e 37·2	45·5
Pulkovo		69·0	328	—	—	—	—	e 36·5	40·0
Makeyevka		69·2	315	—	—	—	—	38·5	—
Upsala		74·6	330	—	—	—	—	e 42·5	49·2
Hamburg		81·7	328	—	—	—	—	e 46·5	—
De Bilt	N.	84·8	329	—	—	—	—	e 45·5	50·9
Uccle		86·0	329	—	—	—	—	e 44·5	—
Strasbourg		86·0	325	—	—	—	—	46·5	—
Granada	Z.	100·0	324	—	—	—	—	—	59·0

Additional readings: Kobe MN = +1·3m. Phu-Lien: All the readings have been diminished by 4 min. Ekaterinburg i = +9m.38s., MN = +31·0m., MZ = +34·6m. Baku MZ = +40·0m. Pulkovo MZ = +45·5m. De Bilt eLE = +46·5m.

Nov. 30d. Readings also at 5h. (Ekaterinburg), 7h. (near Sumoto), 12h. (Manila). 16h. (near Sumoto), 22h. (Ekaterinburg).

Dec. 1d. Readings at 0h. (La Paz), 2h. (Ekaterinburg and Irkutsk), 7h. (near Manila), 8h. (Ekaterinburg and Irkutsk), 9h. (Baku and Ekaterinburg), 11h. (Ekateringburg, Irkutsk, Taihoku, and near Sumoto), 17h. (Ekaterinburg), 19h. (Ekaterinburg, Kobe, and near Sumoto), 20h. (near Mizusawa), 21h. (Ekaterinburg, Irkutsk, Kucino, Leningrad, Pulkovo, and De Bilt).

Dec. 2d. Readings at 1h. (Nagoya), 2h. (Ekaterinburg and near Mizusawa), 4h. (Manila), 9h. (near Mizusawa), 11h. (Batavia), 12h. (near Amboina), 13h. and 14h. (La Paz), 16h. (Ekaterinburg), 20h. (La Paz and La Plata), 21h. (La Paz (2) and La Plata (2)), 23h. (La Paz, La Plata (2), Ekaterinburg, Irkutsk, Zi-ka-wei, Pulkovo, Leningrad, De Bilt, and near Mizusawa).

Dec. 3d. 18h. 58m. 40s. Epicentre 44°·5N. 4°·0E. (as on 1925 Sept. 26d.).

A = +·711, B = +·050, C = +·701; D = +·070, E = −·998; G = +·699, H = +·049, K = −·713.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Puy de Dôme		1·4	330	0 11	−10	0 23	−16	—	0·5
Besançon		3·0	32	—	—	1 1 18	− 5	—	—
Zurich	E.	4·3	47	e 1 16	+ 9	e 2 12	+14	—	2·4
Paris		4·4	348	e 1 39	+31	e 2 3	+ 2	2 2	2·3
Strasbourg		4·8	31	—	—	e 2 11	0	—	2·5
Uccle		6·3	2	e 1 20	−16	—	—	—	—
De Bilt		7·6	6	—	—	e 3 20?	− 6	—	—

No additional readings.

Dec. 3d. Readings also at 0h. (La Paz), 4h. (near Manila), 7h. (near Berkeley and Lick), 9h. (Baku and Ekaterinburg), 12h. (La Paz), 14h. (Amboina), 16h. (Rocca di Papa and near Mizusawa), 19h. (near Tortosa).

Dec. 4d. Readings at 2h. (Ekaterinburg), 3h. (De Bilt and near Manila), 4h. (near Amboina and near Manila), 8h. (Irkutsk), 10h. (near Matuyama), 11h. (La Paz, Kobe, and near Sumoto), 15h. (Nagoya, Irkutsk, and near Mizusawa), 19h. (near Taihoku), 20h. (Nagoya, Osaka, Irkutsk (2), Tacubaya, and Oaxaca), 21h. (Baku and Vera Cruz).

Dec. 5d. Readings at 3h. (Apia), 4h. (near Nagasaki), 6h. (La Paz), 7h. (Irkutsk, Batavia, near Manila, and near Amboina), 11h. (La Paz), 15h. (Ekaterinburg), 21h. (Ann Arbor and Ekaterinburg), 22h. (La Paz and Irkutsk), 23h. (La Paz and Tacubaya).

Dec. 6d. 16h. 17m. 54s. Epicentre 37°·7N. 118°·5W. (as on 1925 Aug. 21d.).

$A = -\cdot378$, $B = -\cdot695$, $C = +\cdot612$; $D = -\cdot879$, $E = +\cdot477$; $G = -\cdot292$, $H = -\cdot537$, $K = -\cdot791$.

Probably a double shock; see note at end.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Lick	E.	2·5	262	e 0 33	− 6	i 1 17	+ 8	e 2·6	3·4
Tucson	E.	8·3	129	—	—	e 4 19	+34	4·6	5·4
Victoria	E.	11·2	343	2 41	− 6	—	—	3·4	4·9
Sitka	N.	22·3	335	—	—	(e 9 12)	+ 1	e 9·2	—
Chicago	N.	24·0	71	(6 51)	+83	—	—	6·8	9·4
Ann Arbor		26·9	71	e 6 30	+33	—	—	e 10·5	—
Georgetown		32·3	75	e 10 6?	?	i 11 42	−31	e 12·6	—
Cheltenham	E.	32·5	75	—	—	—	—	e 12·1	12·4
Ottawa		32·5	62	e 8 47	?PR_1	—	—	11·1	11·5
Ithaca		32·8	68	—	—	e 10 31	−110	—	—
Fordham		34·4	72	e 8 28	+80	i 12 25	−21	—	—
Ekaterinburg		85·5	1	—	—	—	—	40·1	—

Additional readings: Lick MN = +3·5m. Tucson e = +4m.51s. Victoria MN = +3·6m. Ann Arbor i = +8m.24s. Georgetown SR_1N = +12m.25s. Cheltenham eLN = +11·8m., MN = +12·5m.

Note: The above is about the best that can be done on the hypothesis of a single shock. But if we take T_2 from Fordham, we get indications of a shock about 3½min. later and in the Mexican direction, say as follows:—

Dec. 6d. 16h. 21m. 24s. Epicentre 30°·0N. 97°·0W.

$A = -\cdot108$, $B = -\cdot860$, $C = +\cdot500$.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Chicago	14·1	(3 21)	− 6	—	—	3·3	6·9
Ann Arbor	16·5	e 3 0	−59	—	—	e 7·0	—
Georgetown	18·7	e 6 36	+131	i 8 12	+17	e 9·1	—
Ithaca	20·7	—	—	e 7 1	−97	—	—
Fordham	21·8	e 4 48	−15	i 8 55	− 6	—	—
Ottawa	22·8	e 5 17	+ 2	—	—	7·6	—

The L and M phases may of course belong to the earlier shock, if there were two.

Dec. 6d. Readings also at 0h. (near Amboina), 1h. (La Paz, Batavia, near Malabar, and near Nagasaki), 2h. and 5h. (near Nagasaki), 6h. (near La Paz), 10h. (Athens and Baku), 12h. (near Nagasaki), 19h. (La Paz, Ekaterinburg, and near Manila), 23h. (Ekaterinburg and near Manila).

Dec. 7d. 8h. 34m. 24s. Epicentre 38°·0N. 76°·5E.

A = +·184, B = +·766, C = +·616; D = +·972, E = −·233; G = +·144, H = +·599, K = −·788.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	E.	6·9	175	2 18	+33	2 54	−13	3·7	3·8
	N.	6·9	175	1 54	+ 9	—	—	—	4·4
Dehra Dun		7·7	171	2 36	+39	3 51	+22	5·1	5·4
Calcutta	E.	18·5	144	4 12	−11	7 38	−13	10·5	12·1
	N.	18·5	144	4 9	−14	7 26	−25	10·1	11·3
Bombay		19·4	191	4 20	−14	8 6	− 4	10·2	11·8
Hyderabad		20·6	175	e 4 45	− 3	8 11	−25	10·1	11·0
Baku		20·7	285	e 4 48	− 1	i 8 48	+10	9·6	13·9
Ekaterinburg		21·5	336	i 5 4	+ 5	i 9 1	+ 6	11·1	12·3
Irkutsk		24·0	44	i 5 22	− 6	i 9 38	− 6	13·6	15·9
Piatigorsk		25·7	294	e 6 21	?PR_1	e 10 6	−10	—	12·1
Kodaikanal		27·8	178	11 0	?S	(11 0)	+ 5	13·7	15·4
Makeyevka		29·5	303	—	—	e 12 29	+63	21·6	—
Phu-Lien		31·2	117	—	—	e 11 20	−34	23·6	—
Kucino		31·2	317	e 6 30	−10	e 11 48	− 6	17·1	20·2
Colombo		31·3	175	12 1	?S	(12 1)	+ 5	16·1	19·2
Hong Kong		35·8	105	12 48	?S	(12 48)	−19	—	26·4
Pulkovo		36·2	322	7 15	− 9	12 56	−17	18·6	24·7
Leningrad		36·3	322	e 7 15	− 9	12 56	−18	15·6	22·5
Zi-ka-wei		37·2	87	e 7 20	−12	—	—	—	—
Taihoku	E.	40·1	95	i 8 23	+27	12 25	−103	15·1	17·0
Konigsberg	Z.	40·7	314	e 7 59	− 2	—	—	—	—
Upsala	N.	42·5	321	—	—	e 17 36?	?SR_1	e 22·6	—
Manila		45·6	109	—	—	e 14 36?	−46	e 28·1	—
Kobe	E.	46·6	76	—	—	—	—	—	2·4
Osaka		46·8	76	24 16	?L	—	—	28·9	33·1
Hamburg		47·0	313	e 10 36?	?PR_1	—	—	—	32·6
Innsbruck	N.W.	47·4	305	e 9 24	+34	—	—	—	—
Rocca di Papa		48·0	296	—	—	e 20 19	?SR_2	i 30·3	37·1
Ootomari		48·2	57	e 22 23	?L	—	—	(e 22·4)	—
Strasbourg		49·4	306	—	—	—	—	e 28·6	—
De Bilt		50·2	311	—	—	—	—	e 27·6	34·1
Uccle		50·9	310	—	—	e 20 36	?SR_1	e 26·6	—
Batavia		52·5	142	e 13 0	?PR_2	—	—	29·2	—
Toledo		60·4	299	—	—	—	—	e 27·3	35·8
Granada		61·3	296	—	—	—	—	e 35·6	41·1
Victoria	N.	91·8	13	23 46	?[S]	(23 46)	[+ 7]	58·5	60·1
Ottawa		92·9	341	—	—	—	—	e 43·6	—
Toronto	N.	95·5	343	—	—	e 47 30	?L	57·6	64·3
Georgetown	E.	99·3	340	—	—	—	—	48·6	—

Additional readings and notes: Baku e = +4m.52s., MZ = +14·2m., MN = +14·6m. Ekaterinburg i = +6m.58s. and +9m.4s. =SR_4 +7s., MN = +12·4m., MZ = +13·9m. Irkutsk MZ = +15·8m., MN = +17·3m. Phu Lien, eS = +17m.25s. (?L). Pulkovo SR_1 = +15m.6s., MN = +21·2m. Leningrad MZ = +22·6m. Taihoku readings have been diminished by 10m. Konigsberg reading is given for 7h. Upsala eN = +20m.48s. Osaka MN = +30·8m. Hamburg MN = +26·6m. Innsbruck eNE = +9m.29s. De Bilt MN = +29·3m., MZ = +32·4m. Toledo MNW = +34·7m. Victoria LE = +56·1m. Ottawa eL = +47·6m. Toronto LE = +65·0m.

Dec. 7d. Readings also at 0h. (La Paz), 7h. (Ekaterinburg), 12h. (La Paz), 13h. (La Plata), 15h. (Ekaterinburg and Baku), 16h. (Irkutsk (2) and Granada), 20h. (near Tacubaya).

Dec. 8d. Readings at 0h. (Malabar and near Batavia), 2h. (Baku, Ekaterinburg, Irkutsk, La Paz, and near Mizusawa), 5h. (Wellington), 7h. (near Nagasaki (2)), 9h. (Paris, Vienna, and near Belgrade and Sarajevo), 18h. (near Mizusawa), 20h. (near Mizusawa and near Taihoku), 21h. (La Paz), 22h. (Irkutsk and near Manila), 23h. (La Paz).

Dec. 9d. Readings at 1h. (Batavia and Malabar), 2h. (Manila, Batavia, Malabar, and near Amboina), 3h. (La Paz), 5h. (Bombay), 6h. (Tacubaya), 7h. (near Nagasaki), 8h. (Taihoku), 10h. (La Paz), 11h. (Georgetown, Ann Arbor, Ottawa, Toronto, and Victoria), 12h. (Irkutsk), 13h. (La Paz and near Christchurch and Wellington), 14h. (Azores and Rio Tinto), 16h. (Zagreb), 18h. (Amboina), 19h. (Adelaide, Melbourne, Riverview, Sydney, Ekaterinburg, Irkutsk, Ottawa, and near Manila).

Dec. 10d. 4h. 59m. 40s. Epicentre 40°·0N. 60°·0E. (as on 1919 July 14d.).

$A = +\cdot383$, $B = +\cdot664$, $C = +\cdot643$; $D = +\cdot866$, $E = -\cdot500$; $G = +\cdot321$, $H = +\cdot557$, $K = -\cdot766$.

Very rough.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		7·8	276	e 1 33	−25	i 3 58	+27	—	4·2
Piatigorsk		13·2	293	e 2 56	−20	e 5 11	−38	—	7·3
Ekaterinburg		16·8	1	4 17	+15	i 7 49	+36	10·3	12·6
Bombay		23·8	149	5 20?	− 6	—	—	—	—
Pulkovo		27·1	327	6 15	+16	e 11 9	+26	15·3	19·4
Leningrad		27·2	327	e 6 17	+17	e 11 0	+15	e 14·4	—
Konigsberg	N.	30·0	313	—	—	—	—	e 23·8	—
Vienna	Z.	31·9	300	6 16	−30	—	—	—	—
Irkutsk		32·4	53	6 48	− 4	12 23	+ 9	17·3	—
De Bilt		39·0	307	—	—	—	—	e 27·3	—

Additional readings: Baku e = +2m.40s., i = +2m.54s., MN = +6·4m. Ekaterinburg i = +4m.30s., MN = +12·3m., MZ = +12·4m. Leningrad e = +6m.28s., i = +10m.30s.

Dec. 10d. 14h. 14m. 42s. Epicentre **15°·5N. 92°·5W.**

$A = -\cdot042$, $B = -\cdot963$, $C = +\cdot267$; $D = -\cdot999$, $E = +\cdot044$; $G = -\cdot012$, $H = -\cdot267$, $K = -\cdot964$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca		4·4	292	0 36	−32	—	—	1·2	1·6
Vera Cruz		5·1	318	2 2	+43	—	—	2·8	3·9
Merida		6·1	26	2 18	+45	—	—	3·7	4·6
Puebla		6·5	304	6 55	+316	—	—	8·0	8·6
Tacubaya		7·5	302	1 54	0	(3 10)	−14	3·2	4·1
Guadalajara		11·7	298	3 39	+44	5 37	+25	5·9	6·8
Manzanillo		11·8	289	—	—	4 56	−18	5·1	5·3
Balboa Hts.	E.	14·2	115	3 56	+27	7 54	+101	9·0	9·8
	N.	14·2	115	4 10	+41	7 10	+57	9·2	10·0
Mazatlan		15·2	303	3 6	−36	(6 14)	−23	6·2	9·5
Port au Prince		19·5	78	e 4 50	+15	9 8	+55	12·2	14·6
St. Louis		23·2	4	e 5 19	0	e 9 38	+ 9	e 12·0	17·3
Tucson	E.	23·7	318	5 32	+ 7	9 58	+20	e 13·2	14·0
Chicago	E.	26·6	8	i 5 48	− 6	11 0	+27	14·3	18·7
	N.	26·6	8	i 5 48	− 6	i 10 18	−15	e 15·8	19·9
Denver		26·6	338	2 18?	−216	6 18?	−255	11·3?	12·3
Cheltenham	E.	27·0	28	e 6 33	+35	11 2	+21	e 15·0	18·3
	N.	27·0	28	i 7 32?	+94	10 53?	+12	e 16·1?	18·8?
Georgetown	E.	27·1	27	e 5 59	0	i 11 1	+18	—	18·4
	N.	27·1	27	e 5 59	0	i 10 59	+16	e 12·6	18·9
Ann Arbor		27·9	14	6 48	?PR_1	i 12 48	?SR_2	e 17·8	18·4
Fordham		30·1	30	e 6 33	+ 4	i 11 34	− 2	17·9	20·6
Ithaca		30·2	25	e 6 39	+ 9	(11 56)	+19	11·9	20·5
Toronto	N.	30·3	20	e 6 22	− 9	i 11 33	− 6	i 14·7	22·8
Harvard	E.	32·6	30	—	—	e 12 34	+16	e 16·7	24·3
	N.	32·6	30	6 51	− 2	12 11	− 7	e 17·3	22·3
Ottawa		33·1	23	e 6 48	− 9	i 12 16	−10	i 16·3	20·3
Berkeley	E.	34·5	317	e 6 58	−11	e 12 34	−14	16·3	18·9
La Paz		40·0	144	i 7 49	− 6	—	—	30·0	32·9
Victoria	E.	41·5	330	8 1	− 6	14 26	− 2	22·6	26·4
Sitka	N.	52·5	333	—	—	17 6	+16	e 23·8	36·0
La Plata	E.	60·1	148	10 17	+ 4	18 14	−10	29·6	41·5
	N.	60·1	148	10 19	+ 6	18 8	−16	30·0	35·9
Rio de Janeiro		61·7	129	e 10 33	+10	i 18 41	− 3	e 27·8	42·2
Honolulu		62·1	286	e 10 36	+10	i 18 58	+ 9	e 28·7	31·0
Edinburgh		76·9	36	12 8	+ 8	22 13	+25	36·3	47·5
Bidston		77·3	39	14 6	+123	22 7	+15	30·8	50·1
Stonyhurst		77·6	39	i 12 24	+19	23 6	+70	39·3	47·8
San Fernando		78·0	56	12 27	+20	23 5	+65	35·8	45·3
Oxford		78·7	40	e 12 19	+ 8	22 22	+14	e 38·2	48·5
Toledo		79·0	51	12 15	+ 2	e 22 16	+ 4	e 34·2	47·9

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Malaga	79·3	55	12 17	+ 2	22 17	+ 2	31·6	46·3
Granada	79·9	55	i 12 23	+ 5	i 22 28	+ 6	e 39·0	48·6
Bergen	80·4	30	—	—	e 23 57	+89	34·3	—
Almeria	80·9	55	12 24	0	22 29	− 5	i 39·8	48·9
Paris	81·7	42	e 12 34	+ 5	e 22 42	− 1	28·3	52·3
Alicante	82·0	52	12 21	− 9	22 37	− 9	e 30·7	49·8
Tortosa N.	82·2	50	—	—	21 48	−60	e 35·7	44·6
Uccle	82·3	40	12 37	+ 5	22 51	+ 2	e 39·3	50·1
De Bilt	82·4	39	12 39	+ 7	22 57	+ 7	e 39·3	51·0
Puy de Dôme	82·7	45	—	—	22 18?	−36	—	51·3
Barcelona	83·2	49	—	—	—	—	e 36·1	46·7
Apia	83·7	256	—	—	e 23 18?	+12	—	39·3
Besançon	84·4	43	—	—	e 23 5	− 7	29·3	44·3
Hamburg	84·8	37	i 12 52	+ 5	23 17	0	e 39·3	53·3
Strasbourg	85·0	41	i 12 51	+ 3	23 33	+14	30·3	53·8
Algiers	85·2	53	e 12 49	0	e 23 27	+ 6	40·3	54·3
Zurich	86·0	43	e 12 53	0	e 23 22	− 8	—	—
Moncalieri	86·1	45	12 30	−24	23 21	−10	26·8	58·9
Upsala E.	86·3	28	e 12 56	+ 1	e 23 27	− 6	e 39·3	50·0
Cheb	87·4	37	e 13 34	+33	e 29 25	?SR_1	e 40·3	54·3
Innsbruck N.E.	87·8	41	—	—	—	—	e 41·3	—
Florence	88·9	45	e 13 13	+ 3	—	—	30·3	44·3
Konigsberg	90·0	32	e 13 28	+12	e 24 15	+ 1	e 46·3	47·3
Laibach	90·2	40	13 50	+33	25 41	+85	e 44·6	59·4
Graz	90·4	40	—	—	e 24 15	− 3	34·2	57·5
Vienna	90·5	39	e 13 28	+ 9	23 51	[+20]	—	50·3
Rocca di Papa	90·6	45	i 12 57	−22	e 24 55	+35	e 43·0	66·0
Leningrad	91·7	25	i 13 23	− 2	e 24 16	−16	37·3	58·1
Pulkovo	91·8	25	13 21	− 5	24 28	− 5	43·3	54·4
Naples	92·0	46	(e 13 18)	− 9	(e 23 48)	[+ 8]	(53·3)	—
Pompeii	92·3	46	e 12 18?	−71	e 23 18?	−80	47·3	59·3
Budapest	92·3	39	—	—	e 25 18?	+40	e 34·3	60·3
Lemberg	94·2	36	—	—	—	—	e 53·6	59·7
Belgrade	94·5	41	e 14 6	+25	e 25 58	+57	e 33·3	43·4
Kucino	97·5	26	13 48	− 9	—	—	44·3	55·9
Athens	99·9	45	e 13 38	−32	24 31	[+ 7]	37·3	54·1
Wellington	102·1	230	—	—	i 24 39	[+ 5]	e 46·6	51·3
Makeyevka	102·7	31	—	—	e 26 57	+36	55·3	67·7
Ekaterinburg	104·3	15	i 14 22	− 9	—	—	40·3	59·5
Piatigorsk	108·0	31	—	—	—	—	e 34·3	59·3
Helwan	109·4	50	e 14 50	− 5	28 43	+80	—	82·7
Irkutsk	110·7	350	e 14 44	−17	—	—	60·3	70·6
Baku	114·1	30	e 15 17	+ 1	i 29 34	+91	58·3	68·0
Cape Town	115·8	121	19 59	?PR_1	—	—	—	63·3
Riverview	120·2	240	e 16 18	+35	e 28 30	−21	e 55·6	61·6
Sydney	120·2	240	19 48	?PR_1	25 30	[−16]	59·3	62·5
Melbourne	125·0	234	e 20 0	?PR_1	e 33 42	?	—	64·3
Taihoku E.	127·6	320	—	—	—	—	e 67·3	—
Adelaide	130·5	237	e 22 43	?PR_1	e 37 18	?SR_1	65·9	77·5
Simla E.	132·3	12	23 12	?PR_1	—	—	e 75·0	81·7
N.	132·3	12	23 6	?PR_1	—	—	76·0	80·7
Manila	135·3	312	e 21 18?	?	—	—	—	—
Phu-Lien	139·2	332	—	—	—	—	79·3	90·6
Bombay	142·7	22	19 28	[−16]	33 6	?	72·4	87·7
Hyderabad	145·9	16	19 54	[+ 4]	—	—	48·7	89·5
Kodaikanal	152·4	22	31 42	?	—	—	83·9	106·4
Colombo	156·4	19	20 38	[+34]	24 18	?PR_1	104·8	107·3
Batavia	158·9	294	—	—	—	—	e 53·3	—

Additional readings: St. Louis gives many other i and e readings. Tucson ePE = +5m.38s., eE = +7m.33s. + 9m.7s. and +10m.11s. = SR_1 −20s., SR_2E = +11m.30s.; T_0 = 14h.14m.26s. and 14h.14m.39s. Chicago ePR₂N? = +6m.38s. = PR_1 +4s., PR_1N? = +7m.39s. = PR_1 +65s., iN = +9m.50s., also several e readings; T_0 = 14h.14m.35s. and 14h.14m.50s. Cheltenham eE = +10m.1s., eN = +10m.30s.?, eE = 13m.48s. Georgetown SR_1 = +11m.36s. Ann Arbor iPR_2N = +8m.24s., eSR_1 = +15m.6s., iSR_2E = +15m.42s., MN = +19·9m. Fordham i = +7m.26s. = PR_1 +7s.; T_0 = 14h.14m.40s. Toronto iPN = +6m.30s., iN = +7m.40s. = PR_1 +18s.; T_0 = 14h.14m.31s. Harvard eN = +10m.49s., SR_1N = +13m.36s., SR_2E = +14m.2s., SR_3 = +14m.28s.; T_0 = 14h.13m.34s. and 14h.14m.49s. Ottawa eSR_2 = +14m.28s. = SR_1 +14s., MN = +21·3m.; T_0 = 14h.14m.36s. Berkeley SR_1E = +14m.51s., i = +17m.14s., MN = +22·6m. Victoria LN = +22·9m., MN = +28·0m.; T_0 = 14h.14m.37s. Sitka eN = +15m.36s.

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and +18m.54s., LE = +27·5m., ME = +28·3m. La Plata PR_1N = +12m.35s., and several other readings. Rio de Janeiro PR_1 = +12m.48s., PS = +23m.3s. = SR_1 − 35s. Honolulu eE = +20m.16s., eN = +20m.28s. and +22m.42s., iLN = +26·2m., MN = +26·3; T_0 = 14h.15m.0s. Oxford iP = +12m.34s. Toledo SR_1 = +28m.0s., MNW = +41·9m., MZ = +42·3m. Malaga MN = +42·8m. Granada PS = +23m.51s., SR_1 = +28m.21s. Almeria MN = +44·1m. Alicante MN = +43·4m. Tortosa ME = +39·9m. Uccle SR_1 = +28m.42s., SR_2 = +32m.18s. De Bilt SR_1 = +28m.40s., SR_2 = +32m.24s., MZ = +51·3m. MN = +58·0m. Hamburg SR_2 = +33m.6s. Strasbourg MN = +52·8m., MZ = +54·8m. Upsala SR_1E = +29m.7s., MN = +56·0m. Cheb eP = +13m.39s. = P + 38s., eS = +29m.29s. = SR_1 − 27s.; the P's have been diminished by 10m., but an alternative is to presume a separate shock. Konigsberg PS = +25m.18s., PPS = +25m.51s., e = +34m.48s. = SR_2 + 6s., and +36m.48s. = SR_2 − 12s.; T_0 = 14h.14m.50s. Vienna PR_1 = +16m.55s., iZ = +25m.59s., SR_1? = +30m.45s., MZ = +58·8m. Rocca di Papa iP = +16m.39s., eS = +25m.27s. Leningrad PR_1 = +17m.7s., PR_2 = +19m.16s., MNZ = +56·8m. Pulkovo PR_1 = +17m.9s., i = +23m.59s. = [S] + 20s., SR_1 = +30m.42s., MZ = +56·3m., MN = +56·8m. Naples: All the readings have been diminished by 2min. Budapest MN = +59·0m. Belgrade iS = +26m.57s. Kucino PR_1 = +17m.50s., e = +22m.30s. = PR_2 + 23s., i = +26m.45s. Athens MN = +60·6m. Wellington SR_1 = +42m.18s.?, MN = +54·7m. Makeyevka MZ = +63·4m. Ekaterinburg i = +18m.43s. = PR_1 + 1s., +21m.9s. = PR_2 − 24s., +24m.24s. = [S] − 20s., +24m.51s. = [S] + 7s., and +28m.1s., MNZ = +60·0m. Irkutsk PR_1 = +19m.17s., PS = +28m.34s., SR_1 = +33m.44s., MZ = +70·6m., MN = 70·9m. Baku PR_1 = +19m.52s., PR_2 = +22m.54s., SR_1 = +36m.48s., SR_2 = +40m.50s., SR_3 = +46m.8s., MN = +66·1m., MZ = +71·7m. Riverview e = +21m.36s. + 32m.12s. +32m.48s. +37m.54s. and +38m.24s., MN = +64·5m. Melbourne i = +38m.18s. = SR_1 + 28s. Adelaide PR_1 = +28m.8s.? = PR_2 + 35s., SR_1 = +43m.48s., MN = +73·3m. Colombo S = +96m.48s.

Dec. 10d. 16h. 6m. 50s. (I)
20h. 34m. 20s. (II) } Epicentre 15°·5N. 92°·5W. (as at 14h.).

Only the earliest record (which may or may not be P) is given here for each station. The residuals are compared with those of the first phases of the shocks from the same epicentre at 10d. 14h. and 11d. 1h.

		Δ	Az.	P.	O − C.		
						10d. 14h.	11d. 1h.
		°	°	m. s.	s.	s.	s.
I	Oaxaca	4·4	292	1 49	+41	−32	—
II		4·4	292	0 47	−21	−32	—
I	Vera Cruz	5·1	318	3 14	+115	+43	+43
II		5·1	318	3 0	+101	+43	+43
II	Merida	6·1	26	0 46	−47	+45	+17
I	Puebla	6·5	304	7 20	+341	+316	+137
II		6·5	304	4 13	+154	+316	+137
I	Tacubaya	7·5	302	1 49	− 5	0	0
II		7·5	302	2 3	+ 9	0	0
I	Guadalajara	11·7	298	3 1	+ 6	+44	—
I	Manzanillo	11·8	289	0 57	−119	—	—
I	Mazatlan	15·2	303	4 34	+52	−36	—
II	Chicago	26·6	8	? 11 40	?SR_1	—	—
II	Denver	26·6	338	13 40	?L	—	—
II	Ann Arbor	27·9	14	e 18 4	?L	—	—
II	Toronto	30·3	20	e 16 50	?L	—	—
II	Harvard	32·6	30	e 11 28	?	—	—
II	Ottawa	33·1	23	e 12 36	?S	—	—
I	La Paz	40·0	144	i 9 59	?PR_1	—	—
II	Victoria E.	41·5	330	24 13	?L	—	—
II	Ekaterinburg	104·3	15	50 40?	?L	—	—
II	Irkutsk	110·7	350	e 67 40	?L	—	—

Dec. 10d. Readings also at 6h. (Rocca di Papa, near Laibach, and Zagreb), 9h. (Adelaide, Riverview, Sydney, La Paz, and near Lick), 10h. (Hong Kong), 13h. (Rio de Janeiro, La Paz, and La Plata), 14h. (La Paz, La Plata, and near Batavia and Malabar), 17h. (La Paz), 19h. (Toronto, Ottawa, Tacubaya, and near Manila), 21h. and 22h. (near Tacubaya).

Dec 11d. 0h. 44m. 15s. Epicentre 48°·0N. 178°·0W. (as on 1913 June 22d.).

A = −·669, B = −·023, C = +·743 ; D = −·035, E = +·999 ; G = −·743, H = −·026, K = −·669.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu		31·1	142	—	—	—	—	e 15·4	19·2
Victoria		35·7	68	12 25	?S	(12 25)	−41	17·4	23·2
Berkeley		41·1	84	—	—	—	—	e 37·5	—
Irkutsk		47·5	306	e 8 46	− 5	15 47	− 1	22·8	—
Manila		59·9	258	e 12 45?	?PR_1	—	—	—	—
Chicago	N.	60·6	60	—	—	18 27	− 4	32·2	—
Toronto	N.	63·9	53	—	—	e 19 9	− 3	33·9	39·2
Ekaterinburg		64·4	329	10 49	+ 8	e 19 27	+ 9	32·8	39·1
Ottawa	N.	64·6	49	—	—	e 19 23	+ 3	e 28·8	38·8
Fordham		68·7	52	—	—	—	—	e 55·5	64·0
Leningrad		69·6	345	—	—	—	—	43·8	—
Pulkovo		69·8	345	—	—	—	—	e 42·0	—
Kucino		72·0	340	—	—	—	—	e 38·1	—
De Bilt		79·9	357	—	—	—	—	e 46·8	—
Baku		82·0	325	—	—	—	—	e 42·8	53·4
Paris		83·2	0	—	—	—	—	e 49·8	—
Bombay		88·1	297	—	—	19 45?	?PR_2	—	—
Granada		94·8	4	—	—	—	—	e 52·2	57·4

Readings also at Chicago eSR_2N = +26m.21s. = SR_1 − 1s., LE = +33·2m.
Toronto LE = +37·0m. Ekaterinburg MN = +40·4m., MZ = +70·6m.
Ottawa ME = +40·2m. Baku MN = +53·7m.

Dec. 11d. 1h. 27m. 48s. Epicentre 15°·5N. 92°·5W. (as on Dec. 10d.).

A = −·042, B = −·963, C = +·267 ; D = −·999, E = +·044 ; G = −·012, H = −·267, K = −·964.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca		4·4	292	—	—	—	—	1·8	1·8
Vera Cruz		5·1	318	2 2	+43	—	—	3·0	3·2
Merida		6·1	26	1 50	+17	—	—	3·3	4·8
Puebla		6·5	304	3 56	+137	—	—	5·2	5·9
Tacubaya		7·5	302	1 54	0	(3 20)	− 4	3·3	4·3
Tucson	E.	23·7	318	—	—	9 7	−31	11·1	13·1
Chicago	E.	26·6	8	—	—	e 10 54	+21	e 14·7	19·1
	N.	26·6	8	—	—	e 9 48	−45	—	19·0
Cheltenham	N.	27·0	28	—	—	—	—	e 17·2	—
Georgetown		27·1	27	—	—	e 12 16	?SR_2	e 17·6	—
Ann Arbor	E.	27·9	14	—	—	e 13 0	+123	e 17·8	—
Ithaca		30·2	25	—	—	1 14 52	?L	19·2	—
Toronto	E.	30·3	20	—	—	e 11 38	− 1	e 16·4	19·5
Ottawa		33·1	23	—	—	1 12 20	− 6	e 16·6	22·2
Berkeley		34·5	317	—	—	e 12 8	−40	e 18·1	—
La Paz		40·0	144	1 8 12	+17	e 16 22	?SR_1	22·0	24·4
Victoria	E.	41·5	330	—	—	—	—	22·6	28·2
Rio de Janeiro		61·7	129	—	—	e 18 42	− 2	e 31·6	—
Edinburgh		76·9	36	—	—	—	—	—	47·2
Oxford		78·7	40	—	—	—	—	e 47·2	—
Granada		79·9	55	—	—	1 24 27	+125	1 38·9	46·5
Uccle		82·3	40	—	—	—	—	e 40·2	—
De Bilt		82·4	39	—	—	—	—	e 40·2	43·8
Strasbourg		85·0	41	e 12 18?	−30	—	—	47·2	54·2
Leningrad		91·7	25	—	—	—	—	47·2	—
Pulkovo		91·8	25	—	—	—	—	e 52·2	57·4
Kucino		97·5	26	—	—	—	—	48·2	—
Ekaterinburg		104·3	15	—	—	—	—	52·2	60·0

Additional readings and notes: Georgetown eN = +14m.44s. Ann Arbor eE = +16m.12s. Toronto MN = +22·6m. Berkeley eZ = +20m.38s., eE = +22m.38s. Victoria MN = +32·1m. Kucino e = +36m.54s. = SR_2 + 9s.

Dec. 11d. 7h. 19m. 40s. Epicentre 37°·0N. 138°·5E. (as on 1925 Feb. 14d.).

A = −·599, B = +·529, C = +·602.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		2·2	214	0 39	+ 5	—	—	—	—
Mizusawa	E.	2·9	44	0 41	− 4	1 21	+ 1	—	—
Osaka		3·5	227	0 56	+ 1	—	—	2·0	2·9
Kobe		3·6	230	0 50	− 6	—	—	—	—

Additional readings: Mizusawa SN = +1m.22s. Osaka MN = +2·4m.

Dec. 11d. Readings also at 1h. (Irkutsk), 2h. (near Lick), 8h. (near Tacubaya), 9h. (La Paz), 12h. (Ottawa, Toronto, Chicago, Ann Arbor, near Tacubaya, and Merida), 13h. (Victoria), 16h. (Manila), 19h. (Ottawa, Toronto, Merida, Tacubaya, near Apia, and near Manila).

Dec. 12d. Readings at 0h. (Riverview), 3h (Wellington and near Mizusawa), 8h. (near Balboa Heights and near Manila), 12h. (near Tacubaya, Guadalajara and Manzanillo), 14h. (La Paz and La Plata), 15h. (Ekaterinburg), 22h. (near Puebla, Tacubaya and Vera Cruz).

Dec. 13d. 15h. 31m. 36s. Epicentre 35°·7N. 134°·8E. (as on 1925 Nov. 26d.).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe	1·1	163	e 0 18	+ 1	0 33	+ 2	e 0·6	0·7
Osaka	1·2	154	0 9	− 9	(0 31)	− 2	0·5	0·7
Sumoto	1·4	177	0 25	+ 4	0 30	− 9	0·6	—
Nagoya	1·8	107	−0 6	−34	—	—	—	—

Osaka gives also MN = +0·5m.

Dec. 13d. Readings also at 3h. (Baku, Ekaterinburg, Irkutsk, and Simla), 4h. (Vienna), 5h. (Ekaterinburg and near Manila), 13h. (near Mizusawa), 15h. (near Osaka), 17h. (near La Paz), 21h. (Apia, Ekaterinburg, Irkutsk, Vienna, and Strasbourg), 22h. (Baku), 23h. (Manila).

Dec. 14d. 7h. 0m. 0s. Epicentre 18°·0S. 173°·5E. (as on 1924 Sept. 7d.).

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

Very doubtful identification.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	25·5	227	—	—	e 11 12	+59	e 15·8	20·4
Sydney	25·5	227	—	—	10 24	+11	16·1	17·2
Melbourne	31·8	227	e 0 0	?	—	—	—	20·3
Adelaide	35·3	234	—	—	e 12 40	−20	e 16·0	18·3
Manila	61·2	299	e 10 23	+ 3	—	—	—	—
Irkutsk	92·2	325	18 36	?	23 56	[+15]	28·0	—
La Paz	110·2	118	44 53	?L	—	—	(44·9)	—
Toronto	114·6	49	—	—	—	—	61·5	—
Ottawa	117·2	46	—	—	—	—	e 63·0	—
Ekaterinburg	117·4	325	e 22 51	?PR_1	—	—	35·0	49·9
Baku	126·9	308	(e 24 0?)	?PR_2	—	—	e 24·0	—
Kucino	129·6	330	—	—	—	—	e 49·3	—
Leningrad	130·4	336	—	—	—	—	e 51·0	—
Pulkovo	130·6	336	—	—	e 40 29	?SR_1	48·0	64·6
De Bilt	144·7	348	—	—	—	—	e 60·0	—
Uccle	146·1	349	—	—	—	—	e 61·0	—

Additional readings: Riverview MN = +19·2m. Adelaide e = +10m.55s., MN = +30·8m. Ekaterinburg MN = +43·8m., MZ = +51·6m. Pulkovo MZ = +64·4m.

Dec. 14d. Readings also at 14h. (La Paz (2) and Tacubaya), 18h. (Ottawa and Toronto), 22h. (Athens).

Dec. 15d. 7h. 44m. 30s. Epicentre 30°·0N. 85°·0E. (as on 1924 May 27d.).

A = +·076, B = +·863, C = +·500; D = +·996, E = −·087; G = +·044, H = +·498, K = −·866.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	N.	6·8	281	e 1 48	+ 4	—	—	—	—
Hyderabad		13·9	207	e 3 11	−14	5 41	−25	6·1	8·0
Bombay		15·6	228	4 13	+26	6 58	+12	8·0	8·9
Phu-Lien		21·5	110	(5 30?)	+31	—	—	5·5?	—
Irkutsk		26·4	27	e 4 45	−67	7 23	−187	7·5	—
Baku		30·3	300	—	—	—	—	13·5	—
Ekaterinburg		31·8	335	—	—	—	—	20·5	—
Leningrad		46·9	326	—	—	—	—	e 21·0	—
Pulkovo		46·9	326	—	—	—	—	19·0	22·5
Upsala	N.	53·2	325	—	—	—	—	e 24·5	—
De Bilt	N.	60·8	317	—	—	—	—	e 28·5	30·4
Uccle		61·5	316	—	—	—	—	29·5	—

Additional readings: Simla eE = +2m.0s. Pulkovo: Is L = SR_1? De Bilt eLE = +29·5m.

Dec. 15d. 10h. 31m. 24s. Epicentre 25°·0S. 2°·0W.

A = +·906, B = −·032, C = −·423; D = −·035, E = −·999; G = −·422, H = +·015, K = −·906.

Rough.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	61·9	264	10 21?	− 3	e 18 44	− 3	29·3	32·6
Almeria	61·9	359	10 17	− 7	—	—	—	—
Granada	62·2	358	i 10 22	− 4	i 18 43	− 8	27·3	32·7
Paris	74·0	2	—	—	—	—	e 32·6	—
Strasbourg	74·1	6	—	—	—	—	33·6	—
Uccle	76·0	3	—	—	—	—	—	36·6
De Bilt	77·4	5	e 12 26	+23	—	—	e 34·6	42·2
Baku	81·3	37	e 12 36	+ 9	e 22 40	+ 2	39·6	51·2
Pulkovo	88·9	15	e 13 38	+28	e 23 51	−11	43·6	49·4
Leningrad	89·1	15	e 13 14	+ 3	—	—	e 46·6	—
Ekaterinburg	97·3	29	e 14 33	+37	25 43	+14	43·6	—

Baku gives also MN = +50·1m.

Dec. 15d. Readings also at 0h. (Ekaterinburg), 3h. (Toronto), 6h. (Leningrad), 11h. (La Paz and near Baku).

Dec. 16d. Readings at 4h. (Ekaterinburg, near Tacubaya, Vera Cruz, Puebla, Oaxaca, and Merida), 5h. (Leningrad and Ekaterinburg), 18h. (Azores).

Dec. 17d. 5h. 41m. 45s. Epicentre 48°·0S. 170°·0E. (as on 1922 Feb. 15d.).

A = −·659, B = +·116, C = −·743; D = +·174, E = +·985: G = +·732, H = −·129, K = −·669.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	7·5	29	i 1 59	+ 5	i 3 9	−15	3·7	—
Riverview	20·0	308	—	—	e 9 33	+70	e 10·8	12·6
Sydney	20·0	308	4 39	− 2	—	—	11·4	13·4
Melbourne	20·9	290	—	—	e 8 9	−33	—	16·8
Baku	137·5	283	—	—	—	—	78·2	—
Pulkovo	154·0	312	i 18 48	[−73]	—	—	—	—
Leningrad	154·0	312	i 18 49	[−72]	—	—	—	—
De Bilt	169·5	299	—	—	—	—	e 78·2	—

No additional readings.

Dec. 17d. Readings also at 3h. (La Paz, Victoria, Ottawa, Toronto, Chicago, near Merida, and Tacubaya), 19h. (Sydney).

Dec. 18d. 2h. 28m. 42s. Epicentre 37°·4N. 30°·5E. (as on 1925 Aug. 28d.).

A = +·684, B = +·403, C = +·607; D = +·508, E = −·862; G = +·523, H = +·308, K = −·794.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Budapest	13·1	324	—	—	—	—	e 7·3	—
Rocca di Papa	14·4	293	—	—	—	—	e 9·3	10·6
Baku	15·4	73	e 7 6	?S	(e 7 6)	+25	9·6	11·4
Strasbourg	19·9	311	e 5 48	+68	—	—	e 10·3	—
Pulkovo	22·3	0	i 5 10	+ 1	—	—	e 13·0	—
Uccle	22·9	314	e 5 18?	+ 2	e 9 28	+ 5	e 12·3	—
De Bilt	23·0	318	—	—	—	—	e 12·3	13·4
Paris	23·2	308	—	—	—	—	12·3	—
Ekaterinburg	27·8	36	—	—	—	—	9·3	—
Edinburgh	29·1	320	—	—	—	—	—	16·3

Baku gives also eS = +8m.58s., MZ = +11·6m.

Dec. 18d. 5h. 53m. 20s. Epicentre 30°·0N. 51°·0E. (as on 1925 July 30d.).

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.
Baku	10·4	355	e 2 57	+21	5 11	+31	6·2	8·1
Ksara	13·4	291	3 33	+15	—	—	—	—
Piatigorsk	15·4	338	4 22	+38	7 28	+47	—	10·2
Helwan	17·0	274	4 12	+ 7	i 7 27	+ 9	—	12·2
Makeyevka	20·6	335	5 0	+12	9 3	+27	11·7	13·8
Simla E.	22·5	80	—	—	e 9 22	+ 7	—	—
Bombay	22·7	114	5 1	−12	9 13	− 6	—	—
Athens	23·9	297	—	—	e 9 58	+16	18·0	—
Ekaterinburg	27·7	11	e 6 2	− 3	10 56	+ 2	13·7	16·8
Hyderabad	28·0	110	5 52	−16	—	—	—	20·7
Budapest	30·1	315	—	—	e 10 40?	−56	—	—
Pulkovo	32·9	341	e 6 51	− 5	e 12 11	−11	14·7	21·3
Strasbourg	37·6	312	e 8 40?	+65	—	—	19·2	23·7
Hamburg	37·8	322	e 7 34	− 2	—	—	22·7	—
De Bilt N.	40·1	319	—	—	—	—	e 20·7	24·5
Uccle	40·2	315	e 7 52	− 5	—	—	e 21·7	—
Algiers	40·2	294	7 50	− 7	e 14 1	− 9	—	27·7
Paris	41·0	312	—	—	—	—	e 23·7	27·7
Irkutsk	44·6	44	—	—	e 14 58	−12	24·7	—

Additional readings: Baku e = +3m.0s., MZ = +9·8m., MN = +10·0m. Makeyevka PR_1 = +5m.54s. Simla eN = +9m.28s. Ekaterinburg i = +6m.4s., MN = +18·0m., MZ = +18·9m. De Bilt eLE = +22·7m.

Dec. 18d. 9h. 24m. 25s. Epicentre 41°·5N. 60°·0E.

A = +·374; B = +·649; C = +·663; D = +·866, E = −·500; G = +·331, H = +·574, K = −·749.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	7·8	265	e 2 2	+ 4	e 3 30	− 1	4·7	8·9
Ekaterinburg	15·3	1	e 3 47	+ 4	—	—	11·6	14·6
Pulkovo	25·8	325	e 5 39	− 7	e 10 13	− 5	—	—
Irkutsk	31·5	55	—	—	—	—	e 22·6	—

Baku gives also MN = +6·0m., MZ = +10·1m.

Dec. 18d. 10h. 47m. 15s. Epicentre 33°·0S. 152°·0E.

$A = -\cdot740$, $B = +\cdot394$, $C = -\cdot545$.

Reported as "70 or 80 miles N.N.E of Sydney."

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	1·0	42	i 0 15	0	i 0 29	+ 1	—	—
Sydney	1·0	42	0 9	− 6	—	—	0·3	0·4

Dec. 18d. 18h. 10m. 16s. Epicentre 36°·8N. 69°·5E. (as on 1922 Dec. 6d.).

$A = +\cdot280$, $B = +\cdot750$, $C = +\cdot599$; $D = +\cdot937$, $E = -\cdot350$; $G = +\cdot210$, $H = +\cdot561$, $K = -\cdot801$.

A depth of focus 0·030 is assumed, that of 1922 Dec. 6d. was only 0·020.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Simla	−0·3	8·5	129	2 8	+ 4	—	—	3·7	—
Dehra Dun	−0·4	9·6	130	6 59	?L	8 29	?	9·2	9·6
Baku	−0·8	15·7	289	i 3 56	+18	i 7 3	+33	—	7·2
Bombay	−1·1	18·1	170	3 58	− 7	7 14	− 4	—	7·5
Ekaterinburg	−1·3	20·9	346	i 4 39	+ 3	i 8 18	+ 3	10·7	13·2
Hyderabad	−1·3	20·9	155	4 29	− 7	8 2	−13	8·9	10·6
Piatigorsk	−1·3	21·3	298	4 16	−25	8 13	−10	—	11·7
Calcutta E.	−1·3	21·6	126	4 22	−23	8 6	−23	—	—
N.	−1·3	21·6	126	4 19	−26	7 56	−33	—	—
Makeyevka	−1·6	25·6	306	e 5 34	+ 6	9 50	+ 6	12·7	—
Irkutsk	−1·9	28·8	46	5 44	−13	(10 44)	+ 5	10·7	—
Pulkovo	−2·2	33·9	325	i 6 42	− 2	11 58	− 5	14·5	17·0
Leningrad	−2·2	34·0	325	6 43	− 2	11 59	− 6	15·0	—
Konigsberg	−2·4	37·1	315	i 7 14	+ 3	—	—	14·7	—
Budapest	−2·4	38·2	303	e 6 44?	−36	—	—	—	—
Vienna Z.	−2·5	39·9	305	7 32	− 1	—	—	—	—
Upsala	−2·5	40·0	322	i 7 32	− 2	13 28	− 3	—	—
Innsbruck	−2·7	43·4	302	e 7 56	− 5	—	—	—	—
Rocca di Papa	−2·7	43·5	293	e 7 41	−20	—	—	—	—
Hamburg	−2·7	43·7	312	i 8 4	+ 1	—	—	i 18·1	—
Zurich	−2·8	45·3	301	e 8 14	− 1	i 10 14	? PR_1	—	—

Additional readings: Simla LN = +3·4m. Ekaterinburg $iPR_1 = +5$m.12s., $iPR_2 = +5$m.28s., $iPR_3 = +5$m.36s., iPS = +8m.27s. Makeyevka i = +11m.9s. Leningrad i = +6m.45s., $PR_2 = +8$m.1s. Upsala $PR_1 = +9$m.7s. Rocca di Papa PZ = +8m.3s., $PR_1Z = +10$m.50s., $PR_1N = +11$m.2s., $PR_1E = +11$m.8s.

NOTE TO THE ABOVE SHOCK.

Grouping the residuals in azimuth, we have the following table:

			Without deep focus			*With* deep focus		
No. of Stn.	Az.	Equation.	O_1	C_1	$O-C_1$	O_2	C_2	O_2-C_2
	°		°	°	°	°	°	°
1	49	$+\cdot75x+\cdot66y$	−3·2	−2·9	−0·3	−1·3	−1·1	−0·2
4	150	$+\cdot50x-\cdot87y$	−1·6	+0·6	−2·2	−0·6	−0·3	−0·3
12	307	$-\cdot80x+\cdot60y$	−2·5	+0·5	−3·0	−0·2	+0·8	−1·0
1	344	$-\cdot28x+\cdot97y$	−1·1	−1·3	+0·2	+0·2	0·0	+0·2

The solutions given by the equation are:

(I) ***Without*** **deep focus** $x = -2°\cdot1$ $y = -2°\cdot0$
(II) ***With*** **deep focus** $x = -1°\cdot2$ $y = -0°\cdot4$

which values give the C columns above. The results of comparing columns O and O−C in the case where deep focus is assumed shows that no great improvement in the fit of the observations is effected by making the adjustment indicated.

Dec. 18d. 19h. 1m. 8s. Epicentre 23°·0S. 66°·0W. (as on 1925 July 14d.).

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.
La Paz		6·8	343	i 2 6	+22	3 17	+12	3·5	3·8
La Plata	E.	13·8	151	i 3 17	− 6	i 5 40	−23	6·8	6·9
	N.	13·8	151	i 3 17	− 6	i 5 39	−24	6·6	6·7
	Z.	13·8	151	i 3 17	− 6	5 41	−22	6·9	—
Rio de Janeiro		21·0	94	i 4 52	− 1	i 8 37	− 7	e 9·9	10·0
Irkutsk		150·1	12	e 19 54	[− 2]	—	—	—	—

Additional readings: La Plata N = +5m.7s. Rio de Janeiro PR_1E = +5m.55s., PR_1N = +6m.5s.

Dec. 18d. Readings also at 4h. (near Athens), 8h. (near Batavia and Malabar), 9h. (Baku), 10h. (La Paz), 18h. (La Paz and near Taihoku).

Dec. 19d. 3h. 15m. 30s. Epicentre 6°·5S. 153°·5E. (as on 1921 May 12d.).

A = −·889, B = +·443, C = −·113; D = +·446, E = +·895; G = +·101, H = −·051, K = −·994.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	25·4	275	i 5 48	+ 6	i 10 24	+13	—	—
Riverview	27·4	184	e 5 44	−18	e 10 12	−36	e 12·9	15·2
Adelaide	31·6	204	e 6 12	−31	e 7 30	?PR_1	e 15·7	17·9
Melbourne	32·3	193	—	—	e 11 0	−73	e 16·5	17·5
Malabar	45·6	267	8 35	− 2	15 27	+ 5	i 18·3	—
Batavia	46·4	268	8 59	+16	15 35	+ 2	—	—
Hong Kong	48·1	308	8 50	− 5	—	—	—	—
Irkutsk	72·1	331	i 11 27	− 4	20 51	0	32·5	—
Bombay	83·4	290	22 52	?S	(22 52)	− 9	—	—
Ekaterinburg	97·0	327	i 13 31	−23	—	—	40·5	49·1
Baku	104·6	310	—	—	(e 24 30?)	[−15]	e 24·5	—
Kucino	109·6	328	—	—	e 28 18	+54	—	—
La Paz	132·8	120	19 42	[+17]	—	—	—	—

Additional readings and notes: Amboina readings have been increased by 10m. Riverview MN = +16·3m.

Dec. 19d. 16h. 9m. 20s. Epicentre 32°·5S. 110°·5W.

A = −·295, B = −·790, C = −·537; D = −·937, E = +·350; G = +·188, H = +·503, K = −·843.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		41·4	77	i 8 6	0	14 32	+ 5	18·9	26·2
La Plata	E.	43·3	110	i 8 25	+ 5	14 43	− 9	21·1	26·1
	N.	43·3	110	e 8 28	+ 8	14 44	− 8	20·5	26·2
	Z.	43·3	110	i 8 25	+ 5	—	—	22·4	—
Balboa Heights		50·9	40	9 18	+ 6	—	—	—	—
Tacubaya		53·0	14	9 26	0	16 57	+ 1	24·9	28·3
Wellington	E.	58·6	239	i 10 18	+15	i 18 44	+38	i 24·7	28·2
	N.	58·6	239	i 10 24	+21	i 18 27	+21	i 26·8	27·7
	E.	64·8	359	—	—	—	—	e 33·2	—
Tucson		70·6	350	—	—	e 30 1	?SR_2	e 33·9	—
Lick		71·2	350	e 11 31	+ 7	20 44	+ 4	e 33·5	—
Berkeley	N.	72·4	5	9 40?	?	19 40?	?	38·7	—
Denver	N.	77·2	17	—	—	i 21 50	− 1	37·5	39·2
Chicago	N.	77·8	26	e 12 9	+ 3	i 22 0	+ 2	e 34·7	—
Georgetown	E.	77·8	26	i 12 12	+ 6	e 22 3	+ 5	41·7	—
	N.	77·8	26	e 12 7	− 4	e 22 24	+17	e 36·9	37·8
Riverview		78·6	237	12 28	+17	23 10	+63	39·1	43·4
Sydney		78·6	237	—	—	—	—	e 41·3	—
Ann Arbor		78·7	20	—	—	—	—	39·7	44·7
Melbourne		80·7	231	e 12 10	−13	e 23 4	+33	e 37·5	42·6
Fordham		80·7	28	—	—	—	—	38·7	—
Ithaca		81·1	25	12 25	− 1	22 35	− 1		

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Toronto	N.	81·2	22	e 12 23	− 3	e 22 32	− 5	39·8	42·8
Victoria	E.	81·7	352	12 32	+ 3	22 40	− 3	35·0	42·0
	N.	81·7	352	12 32	+ 3	22 39	− 4	34·6	39·7
Harvard	E.	83·1	28	—	—	23 8	+10	e 39·2	49·5
Ottawa		84·0	25	i 12 42	0	i 23 6	− 2	e 38·7	43·7
Adelaide		86·5	230	e 12 18	−38	e 23 46	+10	40·9	52·2
Sitka	E.	92·0	348	—	—	—	—	e 45·8	46·6
Dekar		100·3	79	e 17 57	?PR_1	—	—	—	—
San Fernando		119·1	63	—	—	36 52	?SR_1	58·2	60·7
Malaga		120·5	64	20 29	?PR_1	e 36 57	?SR_1	e 58·8	—
Granada		121·3	64	(e 16 1)	+14	(i 25 53)	[+ 5]	(e 60·9)	(67·8)
Toledo		121·8	60	19 46	?PR_1	37 21	?SR_1	—	38·1
Almeria		122·2	64	—	—	20 13	?PR_1	—	64·2
Alicante		124·0	63	20 4	?PR_1	e 37 12	?SR_1	e 56·9	62·0
Malabar		126·2	229	i 20 17	?PR_1	—	—	61·6	—
Algiers		126·3	66	e 21 7	?PR_1	e 32 51	?	52·7	62·7
Batavia	N.	127·5	229	20 2	?PR_1	i 22 42	?	60·9	62·7
Paris		128·4	50	(e 16 40?)	+20	(e 29 40?)	−10	57·7	—
Uccle		129·8	49	e 22 46	?PR_1	e 31 40	?	e 52·7	—
De Bilt	E.	130·4	47	e 22 52	?PR_1	—	—	e 56·7	64·0
Moncalieri		131·4	56	21 2	?PR_1	31 38	?	57·2	—
Strasbourg		131·8	51	—	—	—	—	e 38·7	—
Hamburg		133·3	45	e 19 33	[+ 7]	i 23 27	?	e 57·7	63·7
Florence		133·8	60	21 45	?PR_1	29 40	?	46·7	62·7
Bergen		134·3	36	—	—	—	—	e 72·7	—
Rocca di Papa		134·6	61	e 19 31	[+ 2]	—	—	—	—
Cheb		134·9	48	e 23 4	?PR_1	—	—	e 55·7	76·7
Upsala		136·5	35	—	—	e 40 15	?SR_1	e 62·7	—
Hong Kong		139·4	268	23 15	?PR_1	—	—	—	—
Budapest		139·4	52	—	—	e 40 40?	?SR_1	e 69·7	70·4
Leningrad		142·4	31	i 23 25	?PR_1	—	—	65·2	81·8
Pulkovo		142·5	31	19 37	[− 7]	—	—	61·7	76·5
Athens		142·6	70	e 19 46	[+ 2]	—	—	67·5	75·5
Kucino		148·0	36	i 20 1	[+ 8]	—	—	70·7	75·7
Irkutsk		148·1	320	20 55	[+62]	e 46 40?	?SR_1	60·7	—
Makeyevka		151·7	48	e 20 14	[+16]	e 43 20	?SR_1	62·2	88·5
Ekaterinburg		154·9	12	e 20 6	[+ 4]	—	—	58·7	80·7
Piatigorsk		156·4	53	e 13 20	?	—	—	—	—
Kodaikanal		156·6	200	56 16	?	—	—	(80·7)	—
Baku		162·4	58	20 21	[+12]	e 35 35	?	67·7	100·3
Hyderabad		162·9	210	e 15 4	?	—	—	—	91·4
Bombay		166·1	193	13 24	?	25 13	?PR_1	52·2	87·6
Simla	E.	173·4	260	e 32 46	?	47 28	?SR_1	e 81·0	95·0
	N.	173·4	260	26 16	?	47 22	?SR_1	88·7	98·4

Additional readings and notes: La Paz $PR_1 = +10$m.12s. and +10m.59s., PS = +14m.50s., $SR_1 = +17$m.40s.; $T_0 = 16$h 9m.8s. La Plata $SR_1N = +18$m.10s., $SR_1E = +18$m.24s. Wellington $SR_1E = +22$m.30s., e = +24m.45s. $= SR_2 + 4$s.; $T_0 = 16$h.9m.9s. and 16h.9m.42s. Berkeley eZ = +11m.29s., eLZ = +33·7m., eLE = +34·2m. Chicago $iSR_1N = +27$m.23s., $eSR_2N = +30$m.10s., eN = +33m.52s., eN = +36m.40s. Riverview $SR_1 = +27$m.59s., MN = +38·9m. Ann Arbor e = +41m.16s. and +42m.16s., eLN = +43·7m. Melbourne $SR_1 = +28$m.58s. Toronto iP = +12m.33s., iS = +22m.40s.; $T_0 = 16$h.9m.31s. Harvard e = +22m.14s., PSN = +23m.52s., $SR_1E = +28$m.18s., $SR_2E = +31$m.46s., eLN = +39·8m., MN = +41·3m. Ottawa $iSR_1 = +28$m.37s., eLN = +40·2m., MN = +45·7m.; $T_0 = 16$h.9m.35s. Adelaide $SR_1 = +29$m.40s., MN = +49·8m. Sitka $SR_1N = +31$m.22s., eLN = +43·9m., MN = +44·6m. San Fernando MN = +64·7m. Granada i = (+17m.14s.); all the observations have been increased by 6 min. See note for Paris. Toledo PE = +31m.4s., MNW = +51·1m. Alicante MN = +67·8m. Paris: All the observations have been increased by 6 min. as for Granada above, or was there possibly an earlier shock? See Piatigorsk, Hyderabad, Bombay, etc. Uccle e = +38m.52s. = $SR_1 + 4$s. De Bilt eE = +31m.46s., e = +39m.4s. $= SR_1 - 50$s., eE = +43m.46s., eLN = +53·7m., MN = +58·0m., MZ = +68·0m. Hamburg iZ = +23m.27s., $SR_2 = +44$m.40s. Rocca di Papa ePZ = +19m.38s., ePE = +19m.41s. Budapest eN = +57m.40s.? Leningrad MZ = +82·0m. Pulkovo i = +22m.56s. $= PR_1 + 7$s., $eSR_1 = +41$m.12s., $eSR_2 = +46$m.20s., MZ = +73·2m., MN = +78·7m. Athens i = +22m.57s. $= PR_1 + 7$s., e = +47m.20s. $= SR_2 - 5$s. Kucino e = +29m.56s. $= PR_2 - 4$s., +34m.1s., +42m.5s. $= SR_1 - 23$s. Ekaterinburg i = +20m.7s., +23m.56s. $= PR_1 - 11$s., and +30m.26s. $= PR_2 - 30$s., e = +43m.44s. $= SR_1 - 4$s., and +49m.1s. $= SR_2 - 57$s., MN = +80·9m. Kodaikanal readings are given as separate P's. Baku $iPR_1 = +26$m.25s., $iSR_1 = +45$m.20s., $iSR_2 = +53$m.14s., MN = +43·8m., MZ = +45·6m.

Dec. 19d. Readings also at 3h. (near Athens), 5h. (near Mizusawa, Tacubaya, and Merida), 6h. (near Malabar), 9h. (near Sumoto), 13h. (Cheltenham), 6h. (near Malabar), 9h. (near Sumoto), 13h. (Cheltenham), 16h. (Baku), 17h. (Taihoku), 19h. (La Paz and Balboa Heights), 20h. (Baku, Athens, La Paz, Rio de Janeiro, Hyderabad, Irkutsk, and Bombay), 21h. (Taihoku), 23h. (near Sumoto).

Dec. 20d. Readings at 11h. (Kucino and La Paz), 16h. (La Paz and La Plata), 17h. (Irkutsk), 21h. (near Batavia and Malabar), 22h. (Batavia and Malabar).

Dec. 21d. Readings at 3h. (near Batavia and Malabar), 5h. (Baku and Rio Tinto), 11h. (near Berkeley), 17h. (Ekaterinburg, Bombay, and Simla), 18h. (Baku, Hong Kong, Kucino, Pulkovo, and Leningrad), 19h. (La Paz).

Dec. 22d. 5h. 5m. 25s. Epicentre 20°·0N. 101°·5E.

$A = -\cdot187$, $B = +\cdot921$, $C = +\cdot342$; $D = +\cdot980$, $E = +\cdot199$; $G = -\cdot068$, $H = +\cdot335$. $K = -\cdot940$

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		4·9	82	i 1 21	+ 5	2 25	+11	2·7	3·5
Hong Kong		12·1	77	2 55	− 5	5 25	+ 4	6·3	7·7
Calcutta	E.	12·5	284	3 1	− 5	5 17	−15	7·6	12·3
	N.	12·5	284	3 11	+ 5	5 33	+ 1	7·9	—
Hokoto		17·1	75	i 4 6	0	—	—	i 9·0	—
Taihoku	E.	19·2	71	4 35	+ 4	8 15	+ 9	11·8	12·4
Manila		19·4	103	i 4 43	+ 9	i 8 2	− 8	i 9·0	14·2
Zi-ka-wei		21·1	54	4 53	− 1	8 47	+ 1	—	11·9
Hyderabad		21·9	267	i 5 5	+ 1	9 11	+ 8	12·0	16·0
Simla		24·5	302	5 35	+ 2	9 53	− 1	15·4	15·8
Colombo		24·7	241	5 35	0	10 5	+ 8	16·2	20·1
Kodaikanal		25·1	251	8 11	?	(9 59)	− 6	10·0	24·1
Batavia		26·7	168	i 5 55	0	10 35	0	—	—
Bombay		27·0	273	5 56	− 2	10 45	+ 4	14·4	17·9
Malabar		27·9	167	6 7	0	11 23	+26	16·0	—
Irkutsk		32·4	3	i 6 36	−16	11 48	−26	16·6	17·8
Ekaterinburg		47·5	332	8 41	−10	i 15 37	−11	21·6	27·6
Baku		48·2	309	e 8 48	− 7	i 15 52	− 4	24·0	28·5
Piatigorsk		53·7	313	e 9 55	+24	17 57	+52	—	34·6
Makeyevka		57·7	317	—	—	e 17 58	+ 3	30·6	40·7
Kucino		58·8	325	e 10 47	+43	e 18 59	+50	30·7	39·6
Pulkovo		63·4	330	10 31	− 3	i 19 10	+ 4	30·6	39·0
Leningrad		63·4	330	e 10 31	− 3	i 19 9	+ 3	31·1	43·3
Helwan		63·5	295	10 40	+ 5	19 12	+ 5	—	41·0
Adelaide		65·3	148	—	—	e 26 5	?	35·5?	41·5
Konigsberg		68·6	324	—	—	e 20 17	+ 8	e 37·1	38·6
Upsala	N.	69·8	329	—	—	20 26	+ 2	e 33·6	39·0
Budapest		70·4	317	e 11 5	−14	21 22	[+14]	e 37·1	42·7
Melbourne		70·8	146	e 7 47	?	—	—	—	50·3
Riverview		71·7	140	e 9 30	−118	—	—	e 30·3	36·2
Vienna		72·0	318	e 11 31	+ 1	—	—	e 38·6	41·6
Zagreb		72·7	315	e 21 6	?S	(e 21 6)	+ 8	e 37·6	42·9
Graz		72·8	317	10 53	−42	21 6	+ 6	e 41·6	—
Cheb		74·2	320	—	—	e 21 5	−11	e 39·6	42·6
Hamburg		74·9	323	e 11 55	+ 7	e 21 28	+ 3	e 34·6	41·6
Innsbruck		75·5	318	e 11 59	+ 7	—	—	e 39·6	—
Bergen		75·7	330	—	—	—	—	e 33·6	—
Rocca di Papa		76·0	311	e 13 42	?	—	—	—	—
Florence		76·5	314	18 20	?PR_3	—	—	—	39·6
Zurich		77·4	316	e 12 5	+ 2	i 21 56	+ 3	e 41·1	—
Strasbourg		77·6	319	—	—	e 21 35?	−21	e 32·6	—
De Bilt		78·1	323	—	—	22 6	+ 5	e 36·6	43·8
Moncalieri		78·5	315	5 4	?	35 33	?	37·5	48·4
Uccle		79·0	321	—	—	22 13	+ 1	e 36·6	43·8
Besançon		79·1	318	—	—	—	—	44·6	—
Paris		80·8	320	e 22 32	?S	(e 22 32)	− 1	38·6	52·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Edinburgh		81·5	327	—	—	e 26 35?	?	40·6	45·9
Stonyhurst		81·8	325	—	—	—	—	e 42·6	—
Oxford		82·0	324	—	—	—	—	e 40·6	53·2
Bidston		82·3	325	22 47	?S	(22 47)	− 2	37·8	45·8
Algiers		84·6	309	e 12 45	− 1	e 23 10	− 5	e 41·6	64·6
Tortosa	N.	84·9	312	—	—	—	—	e 45·7	48·8
Toledo		88·5	314	—	—	23 45	−13	e 46·9	51·4
Almeria		88·5	311	e 14 55	+107	23 45	−13	52·0	53·0
Granada		89·3	311	i 14 18	+66	—	—	e 51·2	59·3
San Fernando		91·6	311	24 17	?S	(24 17)	−14	49·6	53·6
Victoria	E.	100·8	29	24 40	?S	(24 40)	[+12]	47·6	57·0
Ottawa		114·6	358	i 29 29	?S	(i 29 29)	+82	e 53·1	—
Toronto	N.	116·4	1	28 58	?S	(28 58)	+37	e 60·6	65·5
Ann Arbor	E.	117·5	5	—	—	—	—	e 62·5	—
Chicago	E.	117·7	8	—	—	—	—	e 53·9	63·0
Georgetown	E.	121·1	359	—	—	—	—	65·6	—
Rio de Janeiro		147·0	259	e 19 58	[+ 7]	—	—	e 48·1	—
La Paz		169·5	288	i 21 24	[+69]	25 31	?PR_1	85·3	89·6

Additional readings: Phu-Lien i = +1m.40s., +1m.49s., +2m.9s., and +2m.18s. Taihoku SN = +8m.12s. (O − C = +6s). Zi-ka-wei MN = +11·8m. Simla LN = +13·7m., MN = +14·9m. Batavia iN = +10m.56s. and +17m.56s., i = +15m.17s. Malabar i = +15m.31s., iN = +15m.58s., LN = +17·9m. Irkutsk MN = +19·6m. Ekaterinburg iPR_1 = +10m.37s., i = +19m.2s. = SR_1 −16s., MN = +26·4m., MZ = +30·3m. Baku iSR_1 = +18m.45s., iSR_2 = +20m.16s., MN = +28·4m., MZ = +34·2m. Perth (Δ = 53°·7) gives 5h. simply. Makeyevka i = +21m.58s. = SR_1 −30s., eSR_1 = +24m.9s. = SR_2 −11s., MN = +33·7m. Pulkovo iPR_1 = +13m.28s., SR_2 = +26m.35s., MN = +35·6m. Leningrad iPR_1 = +24m.4s. = SR_2 −2s. Adelaide e = +30m.15s. Upsala ME = +44·3m. Budapest MN = +43·0m. Riverview MN = +35·8m. Vienna PR_1? = +15m.15s., SR_1? = +29m.59s. = SR_2 +47s. Zagreb e = +21m.42s. = [S] +10s. Hamburg SR_3 = +30m.17s., L = +39 6m., MZ = +50·6m. Rocca di Papa eZ = +14m.54s. = PR_1 −22s. De Bilt eSR_1 = +31m.23s. = SR_2 +15s., MN = +44·0m., MZ = +50·5m. Uccle MN = +43·5m. Paris eS = +33m.52s. = SR_3 +4s., MN = +44·6m. Bidston S = +32m.45s. = SR_2 +19s. San Fernando SR_1 = +40m.2s., MN = +54·6m. Victoria MN = +59·4m. Ottawa eE = +40m.5s. Toronto eN = +29m.43s., ePN = +29m.47s., ME = +66·0m. Ann Arbor eLN = +64·6m.

Dec. 22d. 5h. 18m. 42s. Epicentre 28°·0N. 130°·0E. (as on 1921 Nov. 29d.).

A = −·568, B = +·676, C = +·470; D = +·766, E = −·643; G = −·302, H = +·360, K = −·883.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	4·7	359	e 1 14	+ 1	2 11	+ 2	2·6	4·9
Hukuoka	5·6	3	—	—	—	—	2·7	4·0
Matuyama	6·3	21	e 2 48	?S	(e 2 48)	− 4	e 5·8	6·2
Sumoto	7·5	32	e 3 54	?S	(e 3 54)	+30	5·3	7·5
Kobe	7·9	32	—	—	—	—	—	5·3
Osaka	8·1	33	0 4	−119	—	—	4·1	5·1
Nagoya	9·2	38	2 24	+ 5	—	—	5·8	8·8

Additional readings: Nagasaki MN = +3·3m. Hukuoka MN = +3·4m. Kobe MN = +5·1m. Osaka MN = +8·0m.

Dec. 22d. 7h. 6m. 12s. Epicentre 35°·7N. 134°·8E. (as on 1925 Dec. 13d.).

A = −·572, B = +·576, C = +·584.

	Δ	Az.	P.	O−C.	L.	ME.	MN.
	°	°	m. s.	s.	m.	m.	m.
Kobe	1·1	163	0 22	+5	0·5	0·5	0·5
Osaka	1·2	154	0 18	0	0·5	1·0	1·3
Sumoto	1·4	177	0 19	−2	0·5	0·5	0·5
Nagoya	1·8	107	0 28	0	—	—	—

Dec. 22d. Readings also at 4h. (Sydney), 6h. and 7h. (2) (near Phu-Lien), 9h. and 10h. (Ekaterinburg), 11h. (Sitka), 12h. (near Sumoto), 15h., 16h., and 18h. (La Paz).

Dec. 23d. 10h. 59m. 45s. Epicentre 56°·0N. 150°·0W. (as on 1923 Sept. 23d.).

$A = -\cdot484$, $B = -\cdot280$, $C = +\cdot829$; $D = -\cdot500$, $E = +\cdot866$; $G = -\cdot718$, $H = -\cdot415$, $K = -\cdot559$.

Very uncertain.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	17·9	104	4 34	+18	—	—	8·4	12·2
Honolulu	E.	35·2	193	—	—	—	—	18·4	23·4
Chicago	N.	41·8	84	—	—	e 14 18	−14	e 21·4	25·2
Ann Arbor	N.	43·6	80	—	—	e 15 15	+19	e 22·8	—
Toronto	N.	45·0	76	—	—	e 14 40	−35	23·0	23·6
Ottawa		45·8	70	—	—	e 14 57	−28	21·6	23·6
Georgetown		49·5	78	—	—	e 16 15?	+ 2	(i 25·8)	—
Budapest		76·1	8	—	—	—	—	e 36·2	—
Baku		82·2	346	e 12 15	−16	e 21 43	−65	39·2	49·1

Additional readings: Honolulu eN = +20m.55s. Chicago SR_1N = +17m.25s. Ann Arbor eE = +13m.3s. and +22m.45s., eLE? = +23·0m. Ottawa e = +18m.3s. = SR_1 −43s. Georgetown gives S as e and L as iS. Budapest eN = +38m.15s., eL = +60·2m. Baku MN = +49·7m., MZ = +55·9m.

Dec. 23d. 23h. 4m. 12s. Epicentre 20°·0N. 101°·5E. (as on Dec. 22d.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		4·9	82	e 1 17	+ 1	i 2 22	+ 8	2·6	3·2
Hong Kong		12·1	77	5 53	?L	—	—	(5·9)	7·5
Taihoku	N.	19·2	71	e 6 8	+97	—	—	—	—
Manila		19·4	103	e 8 23	?S	(e 8 23)	+13	10·8	—
Zi-ka-wei		21·1	45	e 4 52	− 2	—	—	—	—
Hyderabad		21·9	267	e 5 1	− 3	9 13	+10	—	15·4
Bombay		27·0	273	—	—	9 48?	−53	—	—
Irkutsk		32·4	3	11 4	+252	e 15 12	+178	16·8	18·4
Ekaterinburg		47·5	332	—	—	—	—	23·8	39·7
Baku		48·2	309	—	—	e 19 1	?SR_1	40·8	46·9
Makeyevka		57·7	317	—	—	—	—	e 32·8	—
Pulkovo		63·4	330	—	—	e 25 3	?	e 33·3	48·9
Upsala		69·8	329	—	—	—	—	—	51·8
Hamburg		74·9	323	—	—	—	—	e 49·8	56·8
Strasbourg		77·6	319	—	—	—	—	e 54·8	59·8
De Bilt	E.	78·1	323	—	—	—	—	e 52·8	60·1
Grenoble		79·9	315	e 20 48?	?	—	—	—	—

Additional readings: Phu-Lien MN = +3·0m. Ekaterinburg e = +13m.23s. and +19m.9s. = SR_1 −9s., MN = +35·8m. Baku MZ = +46·1m., MN = +47·1m. Makeyevka L = +48·8m. Pulkovo MN = +49·3m., MZ = +49·4m. De Bilt e = +42m.48s., eLN = +49·8m., MN = +59·9m., MZ = +60·2m.

Dec. 23d. Readings also at 0h. (Leningrad), 1h. (Ekaterinburg, Irkutsk, Bombay, Hong Kong, and Taihoku), 2h. (La Paz), 9h. (Malabar and near Batavia), 10h. (near Taihoku), 12h. (Ekaterinburg), 16h. (La Paz), 18h. (Ekaterinburg, Pulkovo, Ottawa, and Victoria), 19h. and 20h. (Victoria).

Dec. 24d. Readings at 0h. (Graz and Paris), 5h. (Ekaterinburg), 6h. (Ekaterinburg and La Paz), 9h. (Batavia), 17h. (Irkutsk), 22h. (Baku, Pulkovo, Ekaterinburg, Irkutsk, and Kucino).

Dec. 25d. Readings at 2h. (La Paz), 7h. (Matuyama), 11h. (Phu-Lien and near Sumoto), 13h. (near Manila), 19h. (Taihoku), 21h. (La Paz).

Dec. 26d. 18h. 23m. 40s. Epicentre 9°·8N. 126°·2E. (as on 1920 May 9d.).

A = −·582, B = +·795, C = +·170; D = +·807, E = +·591; G = −·101, H = +·137, K = −·985.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	7·0	314	i 1 53	+ 7	(i 3 20)	+10	i 3·3	5·6
Amboina	13·6	172	i 1 20	−121	—	—	—	—
Taihoku E.	15·9	344	e 3 59	+ 8	(6 59)	+ 6	7·0	—
Hong Kong	17·0	319	3 59	− 5	(7 20)	+ 2	7·3	10·0
Phu-Lien	21·8	302	e 4 57	− 6	e 8 53	− 8	11·3	11·8
Zi-ka-wei	21·9	349	i 5 0	− 4	9 10	+ 7	13·3	16·2
Batavia	25·0	231	5 22	−16	i 10 13	+10	22·6	—
Malabar	25·2	228	5 23	−17	9 52	−15	—	—
Kobe	26·2	17	—	—	—	—	—	15·0
Osaka	26·3	17	5 57	+ 6	(10 50)	+22	10·8	16·7
Irkutsk	46·1	343	e 8 14	−27	e 14 41	−48	22·3	28·4
Kodaikanal	48·0	275	29 26	?	—	—	32·6	36·3
Bombay	52·3	287	e 7 4	−138	16 34	−14	—	—
Ekaterinburg	68·6	328	e 11 5	− 3	i 20 12	+ 3	30·3	38·3
Baku	73·3	310	11 50	+12	21 7	+ 1	37·1	49·2
Kucino	81·0	326	—	—	—	—	42·2	50·5
Makeyevka	81·6	319	—	—	e 22 53	+11	41·3	47·1
Pulkovo	84·5	330	e 12 44	− 1	e 22 56	−18	39·3	53·8
Leningrad	84·5	330	12 42	− 3	23 2	−12	39·8	54·9
Upsala N.	90·6	332	—	—	—	—	e 44·3	49·9
Konigsberg	90·9	326	—	—	—	—	e 49·9	51·3
Budapest	94·1	320	—	—	—	—	e 51·3	—
Graz	96·5	320	—	—	—	—	e 53·3	—
Hamburg	97·0	328	—	—	—	—	e 49·3	60·3
Cheb	97·2	325	—	—	—	—	e 49·3	60·3
De Bilt E.	100·3	326	—	—	—	—	e 50·3	54·1
Florence	100·5	318	40 50	?	—	—	52·3	56·3
Strasbourg	100·6	325	—	—	—	—	e 53·3	—
Uccle	101·4	327	—	—	—	—	e 50·3	53·3
Moncalieri	102·3	320	40 59	?	46 41	?	55·5	—
Paris	103·4	325	—	—	—	—	e 41·3	62·3
Toledo	112·3	320	—	—	—	—	e 56·2	63·4
Granada	113·6	318	—	—	—	—	64·3	—
La Paz	164·5	117	21 16	[+64]	—	—	—	—

Additional readings and notes: Phu-Lien MN = +14·6m. Batavia i = +7m.41s. and +11m.25s. = SR_1 +21s. Osaka MN = +13·8m. Ekaterinburg i = +11m.8s. and +12m.6s., MZ = +41·4m. Baku MN = +42·5m., MZ = +45·5m. Pulkovo SR_1 = +28m.32s., MN = +45·5m. Leningrad MN = +46·3m. De Bilt eLN = +48·3m., MN = +54·3m., MZ = +64·0m. Florence readings have all been increased by 1h. Uccle MN = +55·3m. Paris MN = +56·3m.

Dec. 26d. Readings also at 0h. (near Lick), 17h. (La Paz), 19h. (Merida, Tacubaya, Puebla, Vera Cruz, and Oaxaca), 22h. (Apia, La Paz, Paris, De Bilt, Moncalieri, Baku, Granada, Ekaterinburg, Pulkovo, and Kucino), 23h. (Irkutsk).

Dec. 27d. 10h. 28m. 8s. Epicentre 2°·0N. 126°·0E. (as on 1925 Oct. 2d.).

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 3 28	+115	4 40	+114	—	—
Manila	13·5	339	e 3 29	+ 9	—	—	i 7·9	—
Malabar	20·5	243	e 4 53	+ 6	—	—	e 12·9	—
Batavia	20·8	247	5 52	+61	8 56	+16	12·9	—
Hong Kong	23·3	331	5 15	− 5	(9 30?)	− 1	9·5?	—
Taihoku E.	23·4	350	e 5 12	− 9	(9 34)	+ 1	9·6	—
Phu-Lien	26·6	316	5 52	− 2	e 10 42	+ 9	e 13·3	15·7
Zi-ka-wei	29·5	352	(6 14)	− 9	6 14	?P	—	18·6
Osaka	33·8	15	6 58	− 5	(12 32)	− 6	12·5	13·6
Adelaide	38·8	165	e 8 2	+18	e 15 16	+87	e 23·0	27·0
Riverview	43·0	150	e 8 3	−15	e 14 10	−38	e 23·9	25·8

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sydney		43·0	150	6 4	−134	14 22	−26	24·6	26·4
Melbourne		43·5	159	e 7 46	−36	—	—	—	32·9
Colombo		46·2	278	12 32	?	15 27	− 4	32·4	33·8
Kodaikanal		48·9	282	31 34	?L	—	—	(31·6)	—
Hyderabad		49·1	292	9 1	0	16 5	− 2	25·3	30·2
Irkutsk		53·4	345	9 38	+ 9	17 14	+13	25·9	—
Simla	N.	54·4	309	—	—	17 28	+14	—	—
Bombay		54·6	293	e 9 36	− 1	e 17 36	+20	—	—
Ekaterinburg		75·1	329	11 51	+ 1	i 21 28	+ 1	37·9	45·4
Baku		78·1	311	i 12 8	0	i 22 9	+ 8	40·7	55·1
Honolulu	E.	79·2	69	—	—	e 22 34	+20	e 36·0	38·4
	N.	79·2	69	—	—	e 22 28	+14	e 41·3	—
Kucino		87·2	326	i 12 58	− 2	i 23 40	− 3	49·4	53·3
Makeyevka		87·2	320	e 13 14	+14	i 23 34	− 9	46·9	—
Pulkovo		91·1	330	e 13 15	− 7	e 24 8	−17	44·4	58·2
Leningrad		91·1	330	e 13 17	− 5	e 24 14	−11	51·9	—
Upsala	N.	97·3	331	—	—	—	—	e 54·6	64·6
Victoria	E.	102·0	39	24 41	?S	(24 41)	[+ 7]	48·2	62·1
Strasbourg		106·6	322	—	—	—	—	e 63·9	—
De Bilt		106·7	325	—	—	—	—	e 56·9	70·0
Uccle		107·7	325	—	—	—	—	e 56·9	—
Moncalieri		108·0	318	—	—	—	—	e 58·3	—
Paris		109·6	324	—	—	—	—	e 59·9	—
Ottawa		128·8	19	—	—	—	—	e 66·4	—
Toronto	E.	129·0	23	—	—	—	—	e 65·5	—
Georgetown	E.	133·9	25	—	—	—	—	62·9	—
Rio de Janeiro		156·6	206	—	—	—	—	e 82·2	—

Additional readings: Batavia iN = +9m.25s. = SR_1 +5s., iE = +10m.32s. Hong Kong S? = +8m.20s.? (O−C = −71s.). Phu-Lien MN = +14·3m. Zi-ka-wei eP = 10h.24m.47s., PR_1 = 10h.26m.30s., PS = +6m.41s., SR_1 = +7m.46s. Osaka MN = +14·2m. Riverview ePR_1 = +10m.1s. and +10m.12s., MN = +28·5m. Melbourne i = +17m.52s. = SR_1 −14s., and +27m.4s. Simla eE = +17m.40s. = S +26s. Ekaterinburg i = +11m.52s. and +12m.34s., MZ = +45·3m., MN = +58·3m. Baku PS = +22m.31s., MN = +45·5m., MZ = +50·5m. Pulkovo MN = +57·8m., MZ = +58·3m. Upsala eL = +57·9m. De Bilt MN = +62·4m. Moncalieri L = +64·6m. Ottawa eLN = +68·5m. Toronto eE = +67m 29s., LE = +70·0m.

Dec. 27d. 17h. 38m. 12s. Epicentre 6°·5S. 81°·5W.

A = +·147, B = −·983, C = −·113; D = −·989, E = −·148; G = −·017, H = +·112, K = −·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	N.	15·6	7	3 56	+ 9	7 6	+20	8·7	9·3
La Paz		16·4	128	i 4 59	+62	i 7 15	+11	10·8	11·0
La Plata	E.	35·8	146	7 31	+11	12 58	− 9	19·8	24·0
	N.	35·8	146	7 33	+13	12 58	− 9	—	24·1
Rio de Janeiro	E.	40·4	120	e 7 55	− 3	i 14 3	−10	e 19·7	22·9
	N.	40·4	120	e 7 56	− 2	i 14 3	−10	e 19·4	23·3
Georgetown		45·6	5	—	—	e 15 22	0	29·8	—
Tucson	E.	47·8	326	—	—	—	—	25·5	29·2
Chicago	E.	48·6	354	—	—	—	—	e 18·8	—
Harvard	E.	49·8	10	—	—	e 16 18	+ 2	—	—
Toronto	N.	50·2	1	—	—	i 16 11	−10	24·4	27·4
Ottawa	E.	52·1	5	—	—	i 16 41	− 4	e 22·0	27·3
	N.	52·1	5	—	—	e 16 55	+10	—	32·8
Victoria	E.	66·0	331	—	—	(19 54)	+17	33·0	34·4
Honolulu	E.	80·0	293	—	—	—	—	e 37·5	42·6
	N.	80·0	293	—	—	—	—	e 38·1	39·0
Uccle		92·4	40	—	—	—	—	e 39·8	—
De Bilt		93·0	38	—	—	e 24 42	− 3	e 39·8	—
Moncalieri		94·0	44	—	—	—	—	e 45·7	—
Pulkovo		106·4	29	—	—	e 33 50	?SR_1	50·3	62·6
Makeyevka		114·2	38	e 13 44	−93	—	—	52·8	—
Ekaterinburg		121·6	23	20 40	?PR_1	—	—	47·8	72·4
Baku		125·0	43	i 20 56	?PR_1	e 33 43	?SR_1	55·6	58·8
Irkutsk		134·0	355	e 21 48?	?PR_1	e 39 48?	?SR_1	71·8	—
Zi-ka-wei		147·3	322	e 20 1	[+ 9]	e 33 40	?	—	74·1
Bombay		152·1	61	20 48?	[+49]	—	—	—	—

For Notes see next page.

NOTES TO DEC. 27d. 17h. 38m. 12s.

Additional readings and notes: La Paz $PR_1 = +5m.20s.$, $SR_1 = +8m.53s.$; $T_4 = 17h.39m.8s.$ La Plata $E = +15m.26s. = SR_1 + 10s.$, and $+17m.22s.$, $N = +17m.42s.$ Rio de Janeiro $PR_1N = +9m.40s.$; readings have all been increased by 1h. Tucson $SR_2E = +18m.0s.$ Georgetown eE = $+18m.27s. = SR_1 - 15s.$ Harvard $e = +14m.6s.$ Ottawa iE = $+19m.10s.$ Victoria S is given as L of a previous shock Honolulu $eSR_2N = +34m.12s.$, $eE = +39m.24?s.$ Moncalieri $L = +50{\cdot}9m.$ Makeyevka readings have been increased by 10m. Ekaterinburg $i = +20m.51s.$, $e = +26m.13s. = PR_2 + 5s.$, $+27m.38s.$, $+28m.47s. = S - 14s.$, and $+30m.37s.$, also $MN = +67{\cdot}2m.$ Baku $MN = +76{\cdot}6m.$, $MZ = +84{\cdot}0m.$

Dec. 27d. Readings also at 1h. (Cheb and La Paz), 4h. (near Taihoku), 5h. (La Paz, Vera Cruz, Puebla, Oaxaca, Merida, and Tacubaya), 9h. (Perth), 10h. (La Paz and near Taihoku), 11h. (Amboina), 12h. (Riverview), 16h. (Perth), 23h. (La Paz).

Dec. 28d. 19h. 2m. 27s. Epicentre 10°·0N. 127°·5E. (as on 1923 Dec. 19d.).

$A = -{\cdot}600$, $B = +{\cdot}781$, $C = +{\cdot}174$; $D = +{\cdot}793$, $E = +{\cdot}609$; $G = -{\cdot}106$, $H = +{\cdot}138$, $K = -{\cdot}985$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	7·9	307	e 2 3	+ 3	—	—	i 3·9	4·8
Hong Kong	17·7	315	4 13	0	7 28	− 5	—	10·0
Batavia	26·3	232	5 43	− 8	i 10 16	−12	—	—
Irkutsk	46·3	341	e 7 23	−79	e 15 23	− 9	27·6	—
Bombay	53·6	286	—	—	16 33?	−31	—	—
Ekaterinburg	69·1	327	11 15	+ 3	20 17	+ 2	33·6	38·2
Baku	74·2	309	e 39 42	?L	—	—	57·6	68·6
Makeyevka	82·3	318	—	—	—	—	e 44·6	—
Pulkovo	85·0	330	—	—	e 25 30	?	51·6	60·7
Leningrad	85·0	330	—	—	—	—	e 52·8	—
Ottawa	120·8	17	—	—	—	—	e 74·6	—

Additional readings: Manila $MN = +5{\cdot}8m.$ Ekaterinburg $iP = +11m.18s.$, $MN = +38{\cdot}4m.$ Baku $e = +51m.24s.$, $MN = +66{\cdot}9m.$, $MZ = +67{\cdot}1m.$ Pulkovo $e = +33m.51s. = SR_2 + 37s.$

Dec. 28d. 21h. 56m. 10s. Epicentre 39°·0N. 155°·0E. (as on 1925 Jan. 28d.).

$A = -{\cdot}704$, $B = +{\cdot}328$, $C = +{\cdot}629$; $D = +{\cdot}423$, $E = +{\cdot}906$; $G = -{\cdot}570$, $H = +{\cdot}266$, $K = -{\cdot}777$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	60·3	322	i 10 16	+ 2	18 22	− 5	26·8	37·1
Leningrad	71·1	334	—	—	—	—	e 40·3	—
Kucino	71·2	329	—	—	—	—	e 34·6	—
Pulkovo	71·3	334	—	—	—	—	e 33·8	44·8
Bombay	72·3	280	—	—	—	—	33·8	—
Baku	75·3	311	—	—	—	—	37·8	47·9
Makeyevka	76·6	323	—	—	—	—	e 40·8	—
Ottawa	84·1	33	—	—	—	—	e 54·4	—
Vienna z.	85·4	335	e 12 52	+ 2	—	—	—	—
Innsbruck N.W.	87·8	337	e 13 5	+ 1	—	—	—	—

Additional readings: Ekaterinburg $SR_1 = +21m.46s.$, $MN = +36{\cdot}6m.$, $MZ = +37{\cdot}3m.$ Baku $MN = +48{\cdot}1m.$, $MZ = +48{\cdot}2m.$

Dec. 28d. Readings also at 4h. (Taihoku and near Amboina), 9h. (near Sumoto and near Taihoku), 10h. (Budapest), 13h. (near Nagasaki), 17h. (near Sumoto), 19h. (Irkutsk), 20h. (Hong Kong, and Taihoku), 21h. (near Baku).

Dec. 29d. 2h. 3m. 54s. Epicentre 45°·3N. 153°·5E. (as on 1922 April 26d.).

$A = -\cdot630$, $B = +\cdot314$, $C = +\cdot711$; $D = +\cdot446$, $E = +\cdot895$; $G = -\cdot636$, $H = +\cdot317$, $K = -\cdot703$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	11·0	240	—	—	e 5 13	+19	8·7	—
Irkutsk		32·5	300	—	—	—	—	—	20·4
Taihoku	E.	32·7	242	—	—	—	—	19·1	—
Hong Kong		39·4	245	7 46?	− 4	—	—	—	—
Manila		41·2	233	e 8 6?	+ 1	—	—	—	—
Honolulu	N.	46·1	103	—	—	15 26	− 3	25·1	—
Victoria	E.	54·1	55	16 56	?S	(16 56)	−14	33·6	40·6
Ekaterinburg		54·9	319	i 9 30	− 8	17 7	−13	26·1	34·4
Simla	N.	59·4	285	—	—	—	—	e 27·7	—
Leningrad		65·0	333	i 10 38	− 7	19 27	+ 2	31·6	47·4
Pulkovo		65·2	333	e 10 56	+10	e 19 30	+ 3	29·1	42·1
Kucino		65·4	326	—	—	—	—	e 34·3	40·2
Upsala		68·9	338	—	—	—	—	e 39·1	49·8
Bombay		70·2	279	e 11 22	+ 4	—	—	—	—
Baku		70·5	310	i 11 20	0	21 6	[− 9]	36·6	45·3
Makeyevka		71·0	321	—	—	e 21 36	[+17]	39·1	44·2
Konigsberg		72·3	334	—	—	—	—	e 45·6	51·1
Hamburg		76·4	339	e 15 39	?PR_1	—	—	e 44·1	—
Chicago	N.	77·3	42	—	—	e 24 12	?	e 51·1	55·6
De Bilt		78·9	340	—	—	—	—	e 44·1	50·2
Cheb		78·9	336	—	—	—	—	e 43·1	51·1
Budapest		79·1	330	—	—	—	—	e 39·1	51·7
Vienna	Z.	79·3	333	e 12 7	− 8	i 15 57	?PR_1	—	—
Toronto		79·4	36	—	—	e 35 28	?	46·6	52·5
Ottawa		79·5	32	e 31 6	?SR_2	—	—	e 47·1	54·6
Uccle		80·3	341	—	—	—	—	e 41·1	—
Strasbourg		81·6	338	—	—	—	—	e 46·1	—
Innsbruck	N.W.	81·6	336	e 16 15	?PR_1	—	—	—	—
Paris		82·6	342	—	—	—	—	e 43·1	—
Moncalieri		84·8	337	e 29 32	?SR_1	—	—	49·5	—
Florence		84·9	334	—	—	—	—	e 51·1	54·1
Tortosa	N.	90·6	341	—	—	—	—	e 48·1	53·6
Toledo		92·5	345	—	—	—	—	50·6	61·7
Granada		95·0	343	—	—	—	—	i 39·7	62·4
Rio Tinto		95·0	346	59 6?	?L	—	—	(59·1)	67·1
San Fernando		96·3	345	—	—	—	—	52·1	59·1
La Paz		134·9	62	e 19 32	[+ 2]	—	—	—	—

Additional readings: Mizusawa SN = +5m.15s. Irkutsk MN = +21·4m. Honolulu SR_1N = +19m.0s., eN = +21m.16s., eE = +22m.6s., iLE = +25·0m. Ekaterinburg iPR_1 = +13m.21s., SR_1 = +21m.10s., SR_2 = +25m.1s., MN = +36·0m., MZ = +36·7m. Simla eE = +37m.6s. Leningrad MN = +41·8m., MZ = +45·6m. Pulkovo PR_2 = +14m.44s., MN = +44·0m. Kucino e = +23m.18s. and +26m.24s. =SR_2 −37s. Baku PR_1 = +15m.11s., MN = +49·2m., MZ = +49·6m. De Bilt MN = +51·1m. Budapest eL = +50·1m., MN = +51·4m. Ottawa e = +39m.6s. and +43m.6s. San Fernando MN = +62·1m. La Paz iP = +19m.47s.

Dec. 29d. 16h. 4m. 6s. Epicentre 1°·0S. 121°·0E. (as on 1923 Dec. 5d.).

$A = -\cdot515$, $B = +\cdot857$, $C = -\cdot017$; $D = +\cdot857$, $E = +\cdot515$; $G = +\cdot009$, $H = -\cdot015$, $K = -1\cdot000$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		7·7	111	0 6	−111	i 3 18	−11	—	—
Malabar		14·8	245	3 30	− 6	i 6 24	− 3	i 7·8	—
Batavia		15·0	249	3 32	− 7	—	—	12·1	—
Manila		15·6	1	i 3 52	+ 5	(i 6 54)	+ 8	i 6·9	7·2
Hong Kong		24·2	344	5 30	0	—	—	9·7	10·0
Phu-Lien		25·9	328	i 5 44	− 3	i 10 16	− 4	e 12·4	—
Taihoku	E.	26·0	1	e 5 54?	+ 6	—	—	—	—

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	32·2	1	e 6 43	− 7	e 12 2	− 9	—	—
Colombo	41·8	280	8 4	− 5	—	—	24·4	27·3
Melbourne	42·9	151	—	—	i 14 18	−29	24·5	27·4
Riverview	43·3	143	e 8 14	− 6	e 14 39	−13	e 22·3	24·0
Sydney	43·4	143	—	—	14 30	−24	23·7	24·9
Kodaikanal	44·8	284	24 24	?L	—	—	28·0	29·0
Hyderabad	45·8	297	8 29	−10	15 11	−14	24·5	33·6
Bombay	51·3	297	9 19	+ 4	16 31	− 4	26·8	33·7
Dehra Dun	51·5	312	19 49	?	25 19	?L	29·6	31·9
Simla	52·5	313	e 16 42	?S	(e 16 42)	− 8	—	40·4
Irkutsk	55·1	348	i 9 44	+ 4	i 17 27	+ 5	29·9	—
Wellington	62·9	138	—	—	i 20 33	+93	e 26·9	42·2
Ekaterinburg	75·1	330	i 11 51	+ 1	i 21 27	0	34·9	44·8
Baku	76·4	315	i 11 58	+ 1	i 21 43	+ 1	38·7	51·4
Makeyevka	86·1	319	—	—	e 23 22	− 9	45·9	—
Kucino	86·9	325	—	—	e 23 30	−10	43·9	—
Pulkovo	91·2	330	e 16 54	?PR_1	e 24 0	−26	40·9	68·1
Leningrad	91·2	330	e 13 15	− 7	e 25 3	+37	41·4	—
Cheb	102·6	322	—	—	—	—	e 58·9	61·9
Strasbourg	105·9	321	—	—	—	—	53·9	—
De Bilt	106·3	324	—	—	—	—	e 55·9	—
Moncalieri	106·9	317	—	—	—	—	e 57·6	—
Paris	109·1	322	—	—	—	—	e 55·9	—
San Fernando	119·8	312	—	—	—	—	—	83·9
Ottawa	133·2	15	—	—	e 35 11	?	e 65·9	—
Georgetown	138·6	20	—	—	e 40 11	?SR_1	—	—
Rio de Janeiro	151·6	212	—	—	—	—	e 58·0	—
La Paz	160·3	153	e 20 21	[+13]	29 54	?	45·9	—

Additional readings: Amboina iE = +42s., iN = +2m.12s., iE = +2m.30s., i = +3m.30s. Batavia i = +7m.22s. and +8m.15s., iN = +9m.53s., iE = +10m.5s. Melbourne e = +9m.54s. = PR_1 −3s. Riverview eS = +14m.51s., PS = +15m.9s., MN = +24·6m. Ekaterinburg i = +14m.28s. and +15m.52s., SR_1 = +26m.17s., SR_2 = +28m.45s., MN = +44·6m. Baku MN = +47·1m., MZ = +55·1m. Kucino e = +33m.36s. San Fernando MN = +72·9m. Ottawa e = +41m.11s. La Paz e? = +8m.22s.

Dec. 29d. Readings also at 2h. (near La Paz), 3h. (near Athens), 7h. and 8h. (Manila), 11h. (Batavia and Malabar), 12h. and 13h. (near Manila), 19h. (Batavia and Malabar), 20h. (Ekaterinburg and Irkutsk), 21h. (Baku), 23h. (Apia).

Dec. 30d. Readings at 7h. (Ekaterinburg (2), Simla, Bombay, Colombo, Kodaikanal, Batavia, Sydney, Melbourne, and Perth), 8h. (San Fernando), 12h. (Taihoku), 19h. (Irkutsk and near Balboa Heights), 21h. (near La Paz).

Dec. 31d. 8h. 46m. 48s. Epicentre 14°·0S. 174°·0W. (as on 1925 July 7d.).

A = −·965, B = −·101, C = −·242; D = −·105, E = +·995; G = +·241, H = +·025, K = −·970.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		2·2	86	1 0 33	− 1	—	—	—	—
Wellington		29·0	198	—	—	e 8 39	?	e 13·2	14·6
Riverview		37·2	232	e 8 34	?PR_1	e 13 36	+ 9	e 15·2	18·4
Sydney		37·2	232	8 54	?PR_1	13 12	−15	17·9	20·7
Honolulu	E.	38·7	24	—	—	—	—	16·8	18·7
	N.	38·7	24	—	—	—	—	17·2	19·3
Melbourne		43·4	229	e 6 48	−93	i 14 54	0	24·5	—
Berkeley	E.	70·9	41	—	—	—	—	e 32·3	—
Victoria	E.	76·9	32	12 14	+14	21 42	− 6	35·2	39·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		96·1	322	e 13 45	− 5	24 5	[+ 2]	44·2	49·5
Chicago	E.	96·7	49	—	—	i 25 3	−20	45·6	52·4
Ann Arbor	E.	99·7	47	—	—	—	—	e 48·1	—
La Paz		100·7	110	—	—	—	—	52·2	53·6
Toronto		102·9	48	—	—	e 24 37	[− 1]	50·3	—
Ottawa		105·7	46	—	—	e 24 49	[− 2]	49·5	—
Rio de Janeiro		119·4	126	—	—	—	—	e 53·7	—
Ekaterinburg		120·6	329	20 24	?PR_1	—	—	50·2	66·0
Pulkovo		130·9	344	e 44 19	?SR_3	—	—	63·2	75·4
Kucino		131·5	335	—	—	—	—	e 68·2	—
Upsala	N.	133·4	351	—	—	—	—	e 68·2	—
Baku		133·6	313	e 22 20	?PR_1	—	—	63·2	73·4
Makeyevka		136·9	329	—	—	—	—	68·2	—
De Bilt		141·9	1	—	—	—	—	e 70·2	—
Uccle		143·2	3	—	—	—	—	73·2	—
Paris		145·1	356	e 19 57	[+ 9]	—	—	71·2	—
Strasbourg	Z.	145·4	358	i 19 55	[+ 6]	—	—	—	—
Florence		149·9	352	19 45	[−11]	20 7	?	—	20·2
Rocca di Papa		151·6	349	e 19 53	[− 5]	—	—	e 68·6	91·3
Tortosa	N.	152·8	9	—	—	—	—	e 72·2	78·5
San Fernando	E.	155·0	24	—	—	—	—	—	83·2
Granada		155·3	19	—	—	i 70 52	?	74·2	85·2

Additional readings: Wellington iLN = +14·4m. Riverview eP = +8m.59s. MN = +16·2m. Berkeley eE = +33m.34s., eNZ = +34m.34s. Irkutsk PR_1 = +17m.36s. Chicago PSE = +27m.24s., eLN = +46·2m. Ann Arbor eLN? = +48·5m. Toronto eN = +25m.47s. = S −36s. Ottawa eE = +27m.52s., e = +33m.30s. = SR_1 −19s., eE = +41m.12s., eN = +44m.12s. Ekaterinburg i = +20m.40s. = PR_1 +12s., e = +25m.56s. = SR_3 −2s., and +30m.10s., i = +36m.50s. = SR_1 −4s., MN = +66·3m., MZ = +75·3m. Baku e = +23m.12s. and +39m.0s. = SR_1 −36s., MZ = +74·4m., MN = +77·6m. Rocca di Papa iPE = +19m.54s., iPN = +19m.59s. San Fernando MN = +80·7m.

Dec. 31d. Readings also at 0h. (near Taihoku), 2h. (near La Paz), 8h. (near Granada), 9h. (near Batavia and Malabar), 11h. (Budapest), 13h. (Batavia and Manila), 16h. (Victoria), 20h. (Taihoku (2) and Irkutsk).

Travnik.

New residuals (O − C) for the corrected position of this Station, viz., 44°·13′N. 17°·41′E. instead of 43°·13′N. 17°·41′E. as used.

1923

Feb. 6d. 15h. 21m. 32s. Epicentre 43°·5N. 17°·0E.
Δ = 0°·9 Az. = 35° P = −10s.

Mar. 15d. 5h. 40m. 20s. Epicentre 43°·5N. 17°·0E.
Δ = 0°·9 Az. = 35° P = +11s.

June 1d. 17h. 24m. 35s. Epicentre 36°·0N. 142°·0E.
Δ = 85°·3 Az. = 324°

Aug. 1d. 8h. 16m. 30s. Epicentre 35°·0N. 24°·0E.
Δ = 10°·3 Az. = 334° P = 0s.

Sept. 1d. 2h. 58m. 28s. Epicentre 35°·0N. 139°·5E.
Δ = 84°·8 Az. = 322° P = +18s. S = +43s.

Sept. 2d. 2h. 46m. 40s. Epicentre 35°·0N. 139°·5E.
−1°·4 Δ = 84°·8 Az. = 322° S = +104s.

Sept. 26d. 1h. 18m. 48s. Epicentre 43°·8N. 15°·7E.
Δ = 1°·5 Az. = 74° P = −2s. S = −2s. (Δ not altered)

Dec. 5d. 20h. 56m. 40s. Epicentre 40°·0N. 24°·0E.
Δ = 6°·5 Az. = 312° P = −1s. S = −23s.

1924

Jan. 29d. 8h. 39m. 12s. Epicentre 45°·0N. 16°·0E.
Δ = 1°·4 Az. = 123° P = +17s. S = +19s.

Feb. 14d. 19h. 46m. 26s. Epicentre 43°·8N. 15°·7E.
Δ = 1°·5 Az. = 74° P = +2s. S = +4s. (Δ not altered)

Feb. 28d. 10h. 44m. 42s. Epicentre 43°·8N. 15°·7E.
Δ = 1°·5 Az. = 74° P = −1s. S = +2s. (Δ not altered)

Mar. 15d. 10h. 31m. 12s. Epicentre 49°·0N. 144°·0E.
Δ = 75°·7 Az. = 323°

April 14d. 16h. 20m. 15s. Epicentre 6°·5N. 127°·0E.
Δ = 99°·1 Az. = 317° P = +21s. S = −32s.

Aug. 14d. 18h. 3m. 33s. Epicentre 36°·0N. 142°·0E.
Δ = 85°·3 Az. = 324°

Belated Readings from Hukuoka 1925 Jan.-Mar.

The following readings from Hukuoka (33°34′·8N., 130°25′·4E.) were received too late for inclusion in the Summary for January—March, and though promised for the following number were accidentally forgotten.

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
22·9	237	4 50	−26	8 49	−34	10·7	13·7

Jan. 19d. eP = 7h. 46m. 28s., eL = 7h. 46m. 36s.

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
16·2	239	4 1	+ 6	—	—	8·5	10·2

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
16·2	239	4 5	+10	—	—	8·5	11·8

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
16·2	239	3 55	0	7 41	+41	9·4	12·2

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
16·2	239	—	—	—	—	11·6	—
16·2	239	—	—	—	—	e 8·9	—

Feb. 2d. 19h. 46m. 45s. Epicentre 43°·2N. 147°·2E.

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
16·2	239	3 47	− 8	—	—	8·2	12·0

Feb. 7d. 18h. 18m. 0s. Epicentre 25°·0N. 121°·5E.

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
11·6	40	2 53	0	—	—	7·3	—

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
18·8	235	4 30	+ 3	(e 8 17)	+19	e 8·3	—

Continued on next page.

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
58·3	283	e 15 43	+342	e 19 17	+74	e 25·8	—

Mar. 9d. P=9h.3m.2s., L=9h.3m.13s., ME=9h.3m.23s., MN=9h.3m.13s.

Mar. 15d. P=6h.9m.22s., L=6h.9m.31s.

Mar. 16d. 4h. 28m. 36s. Epicentre 31°·5N. 130°·0E.

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
2·1	10	0 37	+ 4	—	—	1·1	1·2

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
27·3	65	5 35	−26	10 29	−17	15·0	15·7

Mar. 16d. 23h. 50m. 26s. Epicentre 25°·0N. 100°·5E.

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
27·3	65	—	—	10 42	− 4	16·1	—

Mar. 21d. P=6h.19m.54s., L=6h.20m.2s.

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

Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
°	°	m. s.	s.	m. s.	s.	m.	m.
6·2	179	—	—	—	—	3·5	—

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