

Original bulletins of the International Seismological Summary (ISS) have been obtained thanks to funding provided by the US National Science Foundation through grant EAR-9725140 (Villaseñor et al., 1997) and have been scanned and collected by SGA Storia Geofisica Ambiente (Bologna) thanks to funding provided by the Istituto Nazionale di Geofisica e Vulcanologia (Rome), in the frame of the EUROSEISMOS project.

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The International Seismological Summary for 1929 April, May, June.

FORMERLY THE BULLETIN OF THE
BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present number deals with 190 epicentres, 60 being new and 130 repetitions from old epicentres. In June there are many repetitions of $41^{\circ}8S$, $172^{\circ}2E$, as on June 16d. 22h. Near stations also record times of repetition for the two epicentres $43^{\circ}8N$, $11^{\circ}2E$, and $50^{\circ}8N$, $12^{\circ}5E$.

Cases of abnormal focus are as follows :—

	Date, 1929.				Epicentre.		Focal Depth. (Below normal).
	d.	h.	m.	s.	°	'	
April	8	10	16	48	$7\cdot8N$.	$124\cdot6E$.	+0·090
April	17	18	34	12	$36\cdot5N$.	$140\cdot5E$.	+0·015
May	25	11	59	37	$9\cdot8S$.	$76\cdot6W$.	+0·040
June	1	7	43	36	$6\cdot7S$.	$131\cdot2E$.	+0·025
June	2	21	38	28	$34\cdot5N$.	$137\cdot2E$.	+0·050
June	4	15	15	55	$7\cdot5N$.	$126\cdot0E$.	+0·060
June	12	11	42	56	$4\cdot0S$.	$144\cdot5E$.	+0·020

The following was received after the proofs were passed ;
El Terremoto Sudmencino del 30 de Mayo de 1929, by
Dr. F. Lünkenheimer.

University Observatory,
Oxford.

1933 May 30.

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1929 APRIL, MAY, JUNE.

April 1d. Readings at 4h. (Granada and Strasbourg), 5h. (Irkutsk, Manila, Adelaide, Melbourne, Riverview, Sydney, Christchurch, and Wellington), 6h. (Ekaterinburg), 8h. (La Paz and Zagreb), 9h. (Bombay and Ksara), 12h. (near Batavia), 20h. (Samarkand).

April 2d. 3h. 26m. 20s. Epicentre 37°·2N. 101°·4E. (as on 1925 April 20d.).

A = -·157, B = +·781, C = +·605; D = +·980, E = +·198;
G = -·120, H = +·593, K = -·797.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	15·2	7	i 3 39	- 3	e 6 42	+ 5	7·6	9·2
Phu-Lien	17·0	163	—	—	—	—	8·7	—
Zi-ka-wei	z. 17·6	104	—	—	e 7 38	+ 7	(9·7)	11·3
Hong Kong	18·5	140	—	—	—	—	e 10·1	12·0
Andijan	22·8	287	6 26	+71	—	—	—	—
Tashkent	25·0	290	5 41	+ 3	10 10	+ 7	12·7	18·1
Samarkand	26·9	286	6 14	+17	—	—	—	—
Hyderabad	28·2	232	—	—	—	—	—	18·0
Manila	28·6	137	e 6 40?	+26	—	—	—	20·2
Bombay	30·9	243	5 24	-73	11 24	-26	17·5	21·6
Ekaterinburg	33·2	321	i 6 51	- 7	12 8	-19	15·2	20·5
Baku	39·7	292	—	—	—	—	22·7	28·7
Pulkovo	49·3	321	9 2	0	e 16 6	- 4	26·7	—
Copenhagen	59·5	320	—	—	—	—	31·7	—
Cheb	61·8	314	—	—	—	—	e 37·7	—
De Bilt	64·9	318	—	—	—	—	e 34·7	37·8
Scorsby Sund	64·9	343	—	—	—	—	39·7	—
Uccle	66·0	318	—	—	—	—	e 34·7	—
Kew	68·1	319	—	—	—	—	e 41·7	—

Zi-ka-wei gives S as e and L as S. De Bilt MZ = +40·8m.

April 2d. Readings also at 0h. (near Andijan), 1h. (Sucre), 3h. (Andijan and near Samarkand), 6h. (Tacubaya, Ekaterinburg, Hong Kong, Phu-Lien, Tashkent, and near Manila (4)), 7h. (Baku, Kucino, and Pulkovo), 11h. (Baku, Ekaterinburg, Irkutsk, Kucino, Nagoya, near Akita, and Mizusawa), 14h. (near Tacubaya), 16h. (Simferopol, near Sebastopol, Theodosia, and Yalta), 19h. (Tacubaya (2), Sebastopol, Simferopol, Yalta, and near Sumoto), 20h. (Suva, Florissant, Manila, near Akita, and Mizusawa), 21h. (Manila and Samarkand), 23h. (near Manila).

April 3d. Readings at 0h. (La Paz and near Manila), 4h. (near Kobe and Sumoto), 5h. (Almata, Andijan, and Samarkand), 7h. (Hong Kong and Phu-Lien), 8h. (near Samarkand), 11h. (Almata), 12h. (Baku and Ekaterinburg), 15h. (near Santiago), 16h. (near Lick), 17h. (near La Paz), 21h. and 22h. (Samarkand).

April 4d. Readings at 0h. (near Christchurch), 1h. (Port au Prince), 5h. (La Paz), 6h. (near Taihoku), 8h. (near Tacubaya and near Samarkand), 16h. (Almata), 17h. (near Manila), 18h. (Andijan and near Samarkand), 19h. and 22h. (near Manila), 23h. (near Samarkand).

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April 5d. 8h. 26m. 46s. Epicentre 20°·0N. 121°·0E. (as on 1928 June 27d.).

A = -·484, B = +·806, C = +·342; D = +·857, E = +·515;
G = -·176, H = +·293, K = -·940.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	E.	5·1	6	e 1 33	+14	—	—	—	—
Manila		5·4	180	e 1 17	- 6	i 2 24	- 4	—	—
Hong Kong		6·7	292	1 42	0	—	—	3·6	4·7
Phu-Lien		13·5	276	e 3 14	- 6	—	—	7·2	—
Irkutsk		34·8	344	6 14?	-57	—	—	20·2	22·5
Tashkent		48·5	309	8 46	-11	—	—	e 27·2	33·2
Ekaterinburg		57·3	327	e 9 52	- 2	i 17 51	+ 1	27·2	35·4
Baku		63·1	308	e 10 45	+12	e 19 10	+ 8	32·9	43·1
Pulkovo		73·2	329	e 11 34	- 3	e 21 2	- 2	36·2	46·6
Lund		83·1	327	—	—	—	—	—	51·2
Copenhagen		83·4	327	—	—	—	—	44·2	—
Scoresby Sund		85·9	349	—	—	—	—	45·2	—
De Bilt		89·0	325	—	—	—	—	e 48·2	57·4
Uccle		90·1	325	—	—	—	—	e 48·2	—
Paris		92·1	325	—	—	—	—	e 58·2	—
Kew		92·1	327	—	—	—	—	e 58·2	—

Additional readings and note : Taihoku reading is given as simply eE. Hong Kong MN = +5·4m. Irkutsk e = +15m.22s. Tashkent i = +17m.54s., e = +21m.36s. De Bilt MN = +57·2m.

April 5d. 23h. 38m. 15s. Epicentre 41°·5N. 31°·5E.

A = +·639, B = +·391, C = +·663; D = +·522, E = -·853;
G = +·565, H = +·346, K = -·749.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol		3·5	25	1 8	+13	i 1 50	+13	—	—
Yalta		3·6	33	0 45?	-11	1 32?	- 7	—	—
Simferopol		3·9	29	1 15	+14	2 7	+20	—	—
Theodosia		4·5	38	1 20	+10	2 20	+16	—	—
Ksara		8·4	154	e 2 14	+ 7	e 5 2	+75	5·8	—
Belgrade	N.	8·7	296	e 2 12	0	—	—	e 4·2	—
Budapest		10·6	308	6 17	?	—	—	7·4	—
Zagreb		12·0	296	—	—	—	—	e 6·8	—
Baku		14·0	89	3 40	+14	e 6 18	+10	8·2	9·8
Kucino		14·9	14	—	—	e 6 31	+ 1	e 8·4	12·8
Florence	Z.	15·0	286	e 6 15	?S	(e 6 15)	-17	(7·8)	9·8
Konigsberg	E.	15·1	335	—	—	e 6 27	- 7	e 6·9	—
Cheb		15·7	310	—	—	—	—	e 8·8	11·2
Moncalieri		17·6	290	—	—	e 5 34	?	10·2	—
Strasbourg		18·1	301	i 4 19	+ 1	e 7 45?	+ 3	10·8	—
Feldberg	N.	18·1	306	—	—	—	—	e 10·6	—
Neubatel		18·3	296	e 4 16	- 5	—	—	—	—
Pulkovo		18·3	358	4 19	- 2	e 7 49	+ 2	9·8	12·6
Lund		18·5	326	—	—	—	—	9·8	—
Hamburg		18·7	318	e 4 25	0	—	—	—	11·8
Copenhagen		18·9	325	—	—	—	—	9·8	—
Upsala		20·2	340	—	—	e 8 15	-12	—	—
De Bilt		20·7	310	e 4 56	+ 7	e 8 44	+ 6	e 10·8	15·0
Uccle		20·8	306	e 4 47	- 4	e 8 48	+ 8	e 10·8	—
Paris		21·5	300	—	—	e 8 59	+ 4	14·8	—
Kew		23·8	306	—	—	e 9 42	+ 2	12·8	—
Ekaterinburg		24·2	41	e 5 24	- 6	e 9 45	- 3	12·2	—
Granada		27·3	273	—	—	e 11 20	+34	e 14·0	15·5
Tashkent		28·1	78	e 6 21	+12	e 10 34	-27	e 13·8	23·2
Scoresby Sund		39·3	336	—	—	—	—	21·8	—
Irkutsk		48·8	51	—	—	—	—	e 28·8	—

For Notes see next page.

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NOTES TO APRIL 5d. 23h. 38m. 15s.

Additional readings and note: Belgrade eN = +4m.55s., +5m.18s., and +5m.37s. Kucino e = +6m.52s. and +7m.45s. Florence gives S as P and L as S. Konigsberg eSN = +6m.28s. Copenhagen +8m.3s. = S + 3s. De Bilt MN = +14.7m., MZ = +14.8m. Irkutsk e = +19m.46s. = SR₁ + 2s.

April 5d. Readings also at 1h. (near Amboina), 4h. (Tananarive), 5h. (Amboina), 7h. (Tananarive), 8h. (La Paz), 11h. (Almata), 14h. (Amboina, Graz, Ekaterinburg, Tananarive, and near Manila), 15h. (Baku, Ekaterinburg, Andijan, near Samarkand, and near Granada), 17h. (Baku, Ekaterinburg, and Pulkovo), 19h. (La Paz and Sucre), 21h. (Sebastopol, Simferopol, and near Yalta), 23h. (Ksara).

April 6d. 20h. 34m. 6s. Epicentre 36°·0N. 136°·5E.

A = -·587, B = +·557, C = +·588.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·9	155	i 0 14	0	0 24	- 1	0·5	0·7
Toyooka	1·4	251	i 0 22	+ 1	(i 0 39)	- 0	i 0·6	0·7
Kobe	1·7	219	0 26	0	(0 46)	- 2	0·8	0·8
Sumoto	2·1	218	0 34	+ 1	(0 57)	- 1	0·9	1·0

Nagoya gives also MN = +0·6m., MZ = +0·8m.

April 6d. Readings also at 0h. (Samarkand and Georgetown), 1h. (Scoresby Sund, Florissant, Tucson, Fordham, Ottawa, and Toronto), 2h. (Florissant), 3h. (Andijan, Entebbe, Samarkand, Georgetown, and near Victoria), 4h. (Florissant, Fordham, Scoresby Sund, Ottawa, Toronto, Copenhagen, De Bilt, and Uccle), 5h. (Baku, Ekaterinburg, Irkutsk, Scoresby Sund, Tashkent, Florissant, Fordham, Georgetown, Ottawa, and Toronto), 18h. (Ekaterinburg, Irkutsk, Pulkovo, De Bilt, Nagoya, near Akita, and Mizusawa), 19h. (Uccle), 23h. (Konigsberg).

April 7d. 19h. 31m. 45s. Epicentre 12°·0N. 95°·5W. (as on 1928 August 30d.).

A = -·094, B = -·974, C = +·208; D = -·995, E = +·096;
G = -·020, H = -·207, K = -·978.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	5·2	347	(1 12)	- 8	—	—	(1·8)	(2·2)
Vera Cruz	7·2	355	(1 45)	- 4	—	—	(2·6)	(4·2)
Puebla	7·5	340	—	—	—	—	4·8	5·6
Tacubaya	8·2	334	2 16	+12	3 40	- 2	3·8	4·2
Merida	10·6	31	3 20	+42	4 48	+ 3	4·9	5·9
Tucson	24·7	328	5 42	+ 7	10 2	+ 5	13·0	—
Florissant	27·2	9	i 5 36	-24	i 10 8	-37	e 14·1	17·9
Cincinnati	28·8	18	e 6 22	+ 6	i 11 27	+14	16·5	19·1
Denver	E. 28·9	345	—	—	e 10 55	-20	—	—
Charlottesville	E. 30·1	27	—	—	e 11 39	+ 3	e 16·2	18·8
	N. 30·1	27	e 6 15	-14	e 10 3	-93	e 16·8	19·0
Chicago	N. 30·6	12	—	—	e 11 10	-34	e 16·4	23·6
Georgetown	Z. 31·5	28	6 23	-20	12 4	+ 4	e 15·4	19·9
Ann Arbor	N. 32·0	17	—	—	—	—	e 20·4	21·8
Toronto	34·5	21	—	—	e 12 27	-21	e 13·4	20·1
Fordham	34·6	30	e 7 19	+ 9	—	—	e 18·3	21·2

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley	35.3	322	—	—	—	—	e 18.4	—
Ottawa	37.4	23	e 7 15	-18	e 12 50	-40	e 17.6	23.8
La Paz	39.3	136	e 8 7	+18	i 17 28	?SR ₁	28.2	34.2
Sucre	43.0	136	e 10 25	+127	—	—	23.2	26.9
Victoria	E. 43.2	333	8 17	-3	14 46	-5	22.6	26.6
	N. 43.2	333	8 17	-3	14 37	-14	22.8	—
Rio de Janeiro	E. 62.0	125	—	—	e 18 55	+ 7	e 30.9	—
Scoresby Sund	73.3	20	11 45	+ 7	21 3	- 3	34.2	—
Edinburgh	81.4	34	—	—	e 22 45	+ 6	41.2	51.2
Stonyhurst	82.1	36	e 17 24	?	e 22 41	- 6	40.2	48.2
San Fernando	E. 82.4	54	—	—	—	—	—	76.4
Orford	83.2	39	—	—	—	—	e 39.2	50.4
Toledo	83.5	50	—	—	—	—	e 40.7	52.9
Kew	83.9	39	e 12 46	+ 5	e 22 54	-14	40.2	45.2
Granada	84.3	53	i 12 51	+ 7	i 23 9	- 2	48.4	51.2
Paris	86.2	41	e 13 1	+ 7	e 23 19	-13	43.2	45.2
Alicante	86.4	51	—	—	—	—	e 42.0	—
Tortosa	N. 86.7	49	—	—	—	—	e 40.2	51.4
Uccle	86.8	39	e 13 1	+ 3	e 23 34	- 5	41.2	47.0
De Bilt	87.0	37	e 12 54	- 5	e 23 30	-11	e 40.2	49.6
Hamburg	89.3	35	e 13 15	+ 3	—	—	e 47.2	60.2
Feldberg	N. 89.5	38	e 13 18	+ 5	—	—	—	57.2
Strasbourg	89.6	39	e 13 16	+ 2	e 24 15?	+ 5	28.2	—
Copenhagen	89.9	31	13 20	+ 5	e 23 51	? 2	—	—
Göttingen	E. 90.0	37	—	—	e 23 51	? 2	e 45.4	52.8
Suva	E. 90.1	253	—	—	—	—	e 42.2	—
Lund	90.4	31	—	—	23 55	? 2	45.2	—
Moncalleri	90.7	44	—	—	e 24 20	- 1	32.6	—
Upsala	90.8	27	—	—	—	—	e 47.2	53.8
Cheb	92.0	37	—	—	e 24 2	? 2	e 45.2	54.2
Florence	Z. 93.4	44	13 37	+ 3	i 24 35	-14	47.2	48.2
Königsberg	94.4	31	—	—	—	—	e 52.2	56.2
Pulkovo	96.3	24	13 48	- 3	24 21	[+17]	46.2	58.4
Wellington	E. 97.6	230	—	—	—	—	e 47.0	—
Kucino	101.9	25	—	—	—	—	e 38.6	58.6
Ekaterinburg	108.4	13	—	—	25 23	[+20]	48.2	61.4
Irkutsk	113.5	347	—	—	—	—	68.2	74.8
Baku	118.6	29	—	—	e 30 15?	?PS	55.6	68.0
Tashkent	124.9	14	—	—	26 21	[+23]	e 61.2	79.6
Bombay	147.0	24	e 20 9	[+18]	—	—	82.4	92.4

Additional readings and notes : Oaxaca readings have been *diminished* by 10m. Vera Cruz readings have been *increased* by 1m. Florissant iNZ = +5m.48s., iSN = +10m.3s., iSZ = +10m.6s., e = +11m.18s., MN = +16.8m.; epicentre 13°-7'N, 92°-7'W. Cincinnati iPR₁ = +6m.56s., iZ = +10m.11s., iSR₁ = +14m.50s. Chicago ePR₁E = +11m.50s., eLE = +19.4m. Georgetown PR₁Z = +7m.24s., SR₁Z = +13m.55s., SR₁Z = +14m.22s., SR₁Z = +14m.44s. Ann Arbor eIE = +10m.21s., eIN = +10m.39s., eE = +12m.51s., and +13m.33s., eIN = +16m.51s., eLE = +19.0m. Toronto eE = +11m.23s., LN = +20.6m., MN = +23.2m. Fordham e = +8m.34s. and +11m.29s. Ottawa e = +8m.30s. -PR₁ = 20s. La Paz eSN = +17m.17s. Toledo MNW = +53.1m. Paris MN = +53.2m. De Bilt MN = +56.6m. Hamburg MNZ = +64.2m. Suva eN = +42m.27s. Florence I = +19m.43s. -PR₁ = 13s. Königsberg eLN = +55.2m. Pulkovo PR₁ = +17m.30s., SR₁ = +30m.51s. Ekaterinburg ePR₁ = +19m.3s., PS = +28m.17s. Irkutsk PR₁ = +19m.45s., ePS = +29m.20s., SR₁ = +35m.27s. Tashkent PR₁ = +21m.1s., PS = +30m.45s.

April 7d. Readings also at 3h. (Entebbe), 4h. (near Misusawa), 5h. (Samarkand), 6h. (near Taihoku), 8h. (Zagreb and near Sumoto), 10h. (Hamburg), 14h. (Tashkent, near Andijan, Samarkand, and near Lick (2)), 16h. (La Paz and Sucre), 17h. (Florence (2)), 22h. (Helsingfors).

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April 8d. 1h. 12m. 14s. Epicentre 41°·2N, 32°·3E. (as given by the Crimean stations).

A = +·636, B = +·402, C = +·659 ; D = +·534, E = -·845 ;
G = +·557, H = +·352, K = -·752.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol	3·5	14	e 0 54	- 1	1 40	+ 3	—	—
Yalta	3·6	22	e 0 52?	- 4	e 1 42?	+ 3	—	—
Simferopol	3·9	19	e 0 56	- 5	1 47	0	—	—
Theodosia	4·4	29	1 7	- 1	2 3	+ 2	—	—
Ksara	7·9	158	e 2 27	+27	e 4 18	+44	e 5·7	—
Baku	13·3	88	—	—	—	—	e 8·8	—
Florence	z.	15·7	286	8 32	?L	—	(8·5)	10·1
Pulkovo	18·6	357	e 4 55	+31	—	—	11·8	—
Strasbourg	18·8	301	—	—	—	—	9·8	—
Feldberg	n.	18·8	306	—	—	—	e 10·2	—
Copenhagen	19·5	325	—	—	—	—	11·8	—
De Bilt	21·4	310	—	—	—	—	e 11·8	—
Uccle	21·5	306	—	—	—	—	12·8	—
Ekaterinburg	24·0	40	e 5 8	-20	e 9 36	- 8	12·3	—
Tashkent	27·6	77	—	—	—	—	e 14·8	21·0

No additional readings.

April 8d. 10h. 16m. 48s. Epicentre 7°·8N, 124°·6E.

A = -·563, B = +·816, C = +·136 ; D = +·823, E = +·568 ;
G = -·077, H = +·112, K = -·991.

A depth of focus 0·090 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	s.	m.	m.
Manila	0·0	7·7	333	i 2 3	+ 6	i 3 36	+ 7	—	—
Ambona	-1·6	12·0	162	i 1 48	-48	i 4 9	-31	—	—
Hokoto	-2·8	16·4	343	3 24	+ 3	—	—	—	—
Taihoku	-3·0	17·5	351	4 43	+70	(7 39)	+79	7·6	—
Hong Kong	-3·1	17·7	327	3 38	+ 4	(6 25)	+ 3	6·4	6·8
Phu-Lien	-3·9	21·7	309	e 4 14	- 1	e 6 47	-49	e 7·5	—
Batavia	-4·0	22·6	232	i 4 24	0	i 7 50	- 3	—	—
Malabar	-4·0	22·7	229	e 5 27	+62	8 0	+ 5	—	—
Zi-ka-wei	-4·2	23·5	353	e 4 33	0	—	—	—	28·8
Miyazaki	-4·4	24·9	14	4 52	+ 5	8 33	- 1	—	—
Sumoto	-5·1	28·2	18	5 18	0	9 23	- 4	—	9·6
Kobe	-5·2	28·6	18	i 5 23	+ 2	9 33	0	e 12·9	—
Nagoya	-5·5	29·6	21	e 5 39	+10	e 9 58	+12	—	—
Tokyo	-5·6	31·1	25	5 37	- 6	9 58	-15	—	—
Mizusawa	z.	34·7	25	6 15	0	11 3	- 9	—	—
Akita	-6·0	34·8	21	e 6 15	- 1	11 5	- 8	—	—
Calcutta	z.	37·8	299	9 12	?	14 30	?	—	—
Perth	-6·5	40·6	191	9 12	?	—	—	—	—
Colombo	-7·3	44·4	273	7 21	-10	11 53	-92	23·7	28·4
Adelaide	-7·4	44·8	165	i 7 31	- 2	i 13 27?	- 3	e 17·4	28·4
Hyderabad	-7·6	46·0	288	7 39	- 2	13 34	-10	19·2	28·1
Kodaikanal	-7·7	46·6	277	15 0	?S	(15 0)	+69	17·3	18·1
Irkutsk	-7·8	47·5	345	i 7 50	- 2	13 59	- 3	23·2	—
Riverview	-8·0	48·7	150	i 8 4	+ 3	i 14 25	+ 8	e 20·9	30·4
Dehra Dun	-8·0	49·0	305	8 12?	+ 9	(14 12?)	—	14·2	18·2
Melbourne	-8·1	49·4	159	i 8 10	+ 5	14 37	+12	26·9	28·9
Bombay	-8·3	51·4	289	8 18	- 1	14 47	- 2	22·5	23·9
Almata	-8·6	54·6	320	8 43	+ 3	—	—	—	—
Andian	-8·7	56·7	315	8 53	- 1	16 4	+10	—	—
Tashkent	-8·9	59·2	315	i 9 8	- 1	i 16 28	+ 5	—	40·5

Continued on next page.

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	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Samarland	- 8-9	60.3	313	9 20	+ 4	16 41	+ 5	—	—
Christchurch	- 9-3	67.3	145	—	—	(e 18 21)	+22	e 18.4	—
Wellington	N. - 9-3	67.3	141	—	—	i 18 13	+14	—	—
Ekaterinburg	- 9-4	69.4	329	i 10 15	+ 3	i 18 32	+ 9	—	—
Baku	- 9-6	73.4	310	i 10 46	+ 9	i 19 22	+11	31.0	32.8
Honolulu T.H.	- 9-7	75.7	70	e 14 12 $\frac{1}{2}$	$\frac{1}{2}$ PR ₁	i 20 8	+31	—	20.2
Kucino	-10-2	81.7	326	11 25	- 2	20 43	- 1	e 35.7	46.4
Theodosia	-10-3	84.0	316	11 37	- 3	21 9	- 1	—	—
Ksara	-10-4	84.6	304	i 11 45	+ 2	i 21 19	+ 3	e 26.4	—
Simferopol	-10-4	84.9	315	11 41	- 5	21 17	- 3	—	—
Yalta	-10-4	84.9	315	11 42	- 4	21 17	- 3	—	—
Sebastopol	-10-4	85.3	315	11 44	- 4	21 24	- 1	—	—
Pulkovo	-10-4	85.5	330	11 42	- 8	i 21 22	- 5	—	—
Helingsfors	-10-6	88.0	330	e 11 47	-16	e 21 49	- 4	38.2	—
Helwan	-10-6	89.0	300	12 0	- 9	e 21 59	- 6	—	—
Konigsberg	N. -10-7	91.6	326	e 14 19	+115	e 23 37	[- 1]	e 36.2	42.2
Upsala	-10-7	91.6	331	—	—	i 22 17	-17	e 32.2	—
Budapest	-10-8	94.5	320	e 13 12 $\frac{1}{2}$	+32	—	—	—	—
Lund	-10-8	95.2	329	—	—	22 53	-19	—	—
Copenhagen	-10-8	95.6	329	—	—	—	—	22.2	—
Zagreb	-10-8	97.0	319	e 12 39	-15	e 22 14	[-114]	—	—
Hamburg	-10-8	97.7	328	e 12 42	-16	i 22 23	[-108]	e 54.2	—
Cheb	-10-8	97.8	323	—	—	e 23 12 $\frac{1}{2}$	-29	—	—
Victoria	E. -10-9	98.3	39	—	—	—	—	22.5	22.7
Scoresby Sund	-10-9	98.4	350	—	—	i 22 29	[-106]	—	—
Feldberg	N. -10-9	100.1	325	e 16 42	$\frac{1}{2}$ PR ₁	e 23 35	-30	—	—
Florence	Z. -10-9	100.9	318	i 12 57	-19	i 17 17	$\frac{1}{2}$ PR ₁	—	25.1
De Bilt	-10-9	101.0	327	e 12 59	-18	e 22 39	[-110]	e 44.2	56.4
Strasbourg	-10-9	101.2	323	e 12 58	-20	e 23 47	-30	33.2	—
Uccle	-10-9	102.1	326	—	—	e 22 43	[-111]	—	—
Berkeley	-11-1	102.9	47	e 20 54	$\frac{1}{2}$ PR ₂	e 22 54	[-104]	—	—
Edinburgh	-11-0	103.1	333	—	—	e 22 12 $\frac{1}{2}$	[-146]	—	69.2
Paris	-11-0	104.1	325	e 13 13	-20	e 24 11	-35	35.2	35.2
Kew	-11-0	104.3	329	e 13 13	-21	—	—	60.2	—
Cape Town	-11-1	107.7	236	—	—	26 12 $\frac{1}{2}$	+50	—	—
Granada	-11-1	114.0	316	e 20 54	$\frac{1}{2}$ PR ₂	i 27 41	+78	—	32.4
San Fernando	E. —	116.1	317	—	—	—	—	—	44.4
Florissant	Z. —	123.2	31	e 18 0	[-61]	—	—	—	—
Ottawa	—	123.7	15	e 21 24	?	—	—	56.2	—
Toronto	E. —	124.1	20	—	—	e 25 50	?	38.8	—
Georgetown	Z. —	129.1	21	18 12	[-64]	—	—	e 31.3	—
La Paz	—	164.8	126	i 19 14	[-58]	i 24 52	$\frac{1}{2}$ PR ₂	—	—

Additional readings and note: Batavia P = +4m.26s., i = +5m.30s., +6m.26s., +6m.57s., +7m.4s., and +7m.47s. Malabar i = +5m.32s.
 Zi-ka-wei IPZ = +14m.35s. and +17m.17s. Sumoto MN = +9.4m.
 Kobe SN = +9m.22s. Mizusawa SN = +11m.6s. Perth i = +12m.27s.
 -S -15s. Adelaide ePR₂ = +9m.15s., iSR₂ = +16m.24s., iSR₁ = +16m.42s., MN = +25.0m. Hyderabad SR₁ = +16m.44s., MN = +29.6m. Riverview PS = +14m.29s., +14m.35s., +14m.40s., iSR₂ = +16m.55s., MN = +25.1m.; T₂ = 10h.16m.42s. Dehra Dun S = +10m.12s. = PR₂ + 7s. Melbourne i = +16m.59s. = SR₁ - 15s., and +18m.14s. = SR₂ + 7s. Wellington iE = +18m.17s. Honolulu T.H. MN = +24.7m. Helingsfors eE = +21m.25s., eN = +21m.26s., eSN = +21m.46s., ePSE? = +22m.52s. Konigsberg eN = +15m.26s. = PR₁ - 31s., e = +21m.50s., eE = +22m.21s., eN = +22m.26s., all readings being given without phase. Upsala eE = +21m.44s. Lund +23m.3s.
 Zagreb e = +16m.12s. and +16m.20s. Scoresby Sund +23m.26s.
 Feldberg iN = +23m.37s. De Bilt eZ = +17m.16s., eN = +23m.44s.
 Strasbourg ePR₁? = +17m.12s. †, iPS? = +25m.14s. = E - 3s.
 i = +23m.51s., e = +29m.12s. † Kew eZ = +17m.44s., e = +26m.46s.
 Florissant eEZ = +20m.17s., eEN = +24m.7s. = PR₂ - 4s., iN = +25m.50s., iE = +35m.51s., eZ = +29m.7s. Ottawa eN = +24m.12s., e = +26m.0s.
 eN = +32m.54s., eE = +35m.42s. Georgetown iPR₂Z = +20m.36s., iZ = +22m.26s., +24m.39s., +26m.28s., and +29m.36s., La Paz S = +29m.47s.

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April 8d. Readings also at 0h. (Zi-ka-wei and near Zagreb), 1h. (near Zagreb), 2h. (near La Paz), 4h. (Perth, Sebastopol, Theodosia, Yalta, and near Simferopol), 6h. (Riverview and Melbourne), 7h. (La Paz and La Plata), 8h. (Florence), 17h. (Riverview, Manila, and near Andijan), 18h. (Aelaide, Christchurch, Melbourne, Perth, Baku, Ekaterinburg, Irkutsk, Tashkent, and Andijan (2)), 22h. (near Andijan).

April 9d. 3h. 52m. 39s. Epicentre 34°-0S. 57°-0E. (as on 1929 Jan. 8d.).

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

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Tananarive	17.3	329	14 18	+ 9	e 7 30	+ 5	—	8.1
Cape Town	31.7	262	—	—	—	—	—	18.4
Entebbe	41.1	321	8 1	- 3	14 31	+ 9	—	23.7
Colombo	46.3	32	7 41	-61	15 11	-21	18.7	22.8
Bombay	55.0	19	9 34	- 5	17 14	- 7	—	—
Hyderabad	55.4	25	9 21	-21	16 57	-29	25.8	48.9
Helwan	68.3	337	11 11	+ 5	20 23	+17	—	42.3
Melbourne	68.6	122	—	—	—	—	32.2	35.4
Ksara	70.8	341	11 30	+ 9	e 20 57	+24	e 36.4	—
Phu-Lien	72.3	49	e 11 32	0	e 18 21	?	25.4	—
Samarkand	74.2	9	11 47	+ 4	—	—	—	—
Baku	74.7	355	11 57	+10	e 21 32	+10	35.2	41.8
Riverview	74.9	121	—	—	e 21 27	+ 2	—	39.8
Sydney	74.9	121	21 39	?S	(21 39)	+14	38.0	40.6
Tashkent	76.1	10	i 11 55	- 1	i 21 32	- 6	e 35.4	43.6
Manila	77.8	64	e 12 5	- 1	(e 21 21)	-37	e 21.4	—
Almata	79.4	16	12 13	- 2	—	—	—	—
Rio de Janeiro E.	85.2	246	—	—	e 23 21	0	—	—
Wellington N.	85.5	139	—	—	—	—	e 40.0	—
Algiers	86.8	320	e 12 56	- 2	e 23 44	+ 5	—	53.8
Zagreb	88.0	334	e 13 2	- 3	e 23 21?	[+ 6]	—	—
Florence	88.2	330	13 1	- 5	26 36	?	52.4	53.4
Vienna	89.8	335	13 8	- 7	—	—	—	—
Alicante	89.8	320	—	—	—	—	e 47.4	—
Moncalleri	90.7	328	e 13 21	+ 1	24 15	- 6	29.9	—
Granada	90.8	317	i 13 16	- 4	e 23 15	[-18]	47.8	55.2
Malaga	90.9	317	e 13 9	-12	e 23 36	[+ 3]	e 32.4	—
Ekaterinburg	90.9	3	i 13 10	-11	i 24 10	-13	37.4	53.6
Tortosa	91.1	321	—	—	—	—	e 46.4	52.5
San Fernando	91.8	315	—	—	—	—	—	58.8
Toledo	92.8	319	—	—	e 24 30	-13	e 37.2	61.6
Cheb	92.8	333	—	—	e 34 3	?	e 51.4	63.4
Strasbourg	93.5	330	e 13 26	- 9	e 24 21?	-30	29.4	—
Irkutsk	95.6	27	13 31	-16	—	—	48.4	53.4
Paris	95.9	329	e 13 18	-30	—	—	56.4	64.4
Pulkovo	96.3	348	e 13 41	-10	24 13	[+ 9]	51.4	56.8
Uocle	96.6	330	e 20 21?	?PR ₁	e 24 21?	[+15]	e 50.4	—
De Bilt	97.3	332	e 13 39	-17	e 26 38	?PS	e 50.4	62.2
Copenhagen	97.4	338	21 45	?	24 32	[+22]	—	—
Helsingfors	97.8	344	e 13 44	-15	e 24 33	[+21]	e 51.4	—
Kew	99.1	328	e 13 55	-11	e 18 2	?PR ₁	54.4	—
Oxford	99.7	328	—	—	—	—	e 50.4	64.8
Edinburgh	103.4	330	—	—	—	—	e 62.4	—
La Paz	107.4	235	—	—	—	—	54.4	58.9
Scoresby Sund	118.3	333	—	—	28 21?	-15	61.4	—
Fordham	140.9	294	e 20 21?	?	—	—	—	—
Ottawa	E. 142.5	302	e 23 21?	?PR ₁	—	—	e 69.4	—
Georgetown	Z. 143.1	291	i 19 46	[+ 1]	—	—	e 73.6	—
Toronto	145.1	299	30 44	?	—	—	e 75.4	—
Florissant	153.4	290	e 20 6	[+ 6]	—	—	e 79.4	89.4
Victoria	E. 165.6	1	—	—	—	—	94.2	98.8

For Notes see next page.

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NOTES TO APRIL 9d. 3h. 52m. 39s.

Additional readings and note : Tananarive PR₁ = +4m.22s. ; S is given without phase. Riverview MN = +40.5m. Manila S = +17m.21s. = PR₁ - 1s. Granada PR₁ = +16m.28s., PS = +24m.28s. = Σ +24s. Toledo MNW = +63.4m. Irkutsk S_CP_CP_CS = +24m.14s., ePPS = +26m.11s. Pulkovo PS = +26m.17s., SR₁ = +31m.3s. De Bilt ePR.Z = +17m.44s., MZ = +69.9m., MN = +70.0m. Helsingfors ePS? = +26m.32s. Georgetown eLZ? = +23m.6s., LZ = +27m.48s. Florissant eE = +26m.11s., +33m.21s., and +76m.21s.

April 9d. Readings also at 1h. (near Andijan), 2h. (Fordham, Georgetown, Ottawa, Toronto, Florissant, Tucson, near Tacubaya (2), and near Vera Cruz), 3h. (De Bilt, Uccle, Copenhagen, Pulkovo, Ekaterinburg, Scoresby Sund, and Victoria), 4h. (Kobe and near Tacubaya), 6h. (De Bilt, Uccle, Scoresby Sund, and Granada), 7h. (Copenhagen, Nagoya, near Kobe, and Sumoto), 11h. (Taihoku), 13h. (Andijan and near Samarkand), 17h. (Tucson), 19h. (Ekaterinburg, Tashkent, Andijan, and near Samarkand), 21h. (near Lick (2)).

April 10d. 5h. 43m. 12s. Epicentre 43°·8N. 11°·2E. (as on 1926 July 19d.).

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

The epicentre 44°·5N. 11°·5E. of 1928 June 9d. fits the observations less closely than the above.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		m. s.	°	m. s.	m. s.	m. s.	m. s.	m.	m.
Florence		0·0	—	0 19	+19	—	—	—	0·6
Placenza		1·6	319	0 34	+10	—	—	—	—
Venice		1·9	26	10 20	- 9	0 42	-11	—	1·4
Moncalieri		2·8	295	1 1	+17	1 52	+35	—	2·8
Chur		3·2	338	e 0 52	+ 2	i 1 24	- 4	—	—
Laibach	E.	3·3	46	e 0 50	- 2	i 1 32	+ 1	—	1·9
Innsbruck		3·5	2	0 54	- 1	—	—	1·5	—
Naples	N.	3·7	141	e 1 32	+34	e 2 34	+52	—	3·3
Pompeii		3·9	142	e 1 28	+27	e 2 43	+56	—	3·3
Zagreb		4·0	58	e 1 1†	- 1	i 2 0	+10	—	2·5
Zurich		4·0	332	e 1 2	0	—	—	—	—
Ravensburg		4·2	345	e 1 4	- 1	i 1 45	-10	i 2·0	2·4
Neuchatel		4·4	318	e 1 8	0	i 1 54	- 7	—	—
Graz		4·5	41	i 1 9	- 1	e 2 8	+ 4	—	2·6
Besançon		5·0	316	1 21	+ 4	2 33	+16	3·3	—
Hohenheim		5·1	346	e 1 15	- 4	12 6	-14	i 2·5	2·6
Strasbourg		5·3	334	e 1 19	- 3	2 32	+ 7	—	—
Karlsruhe		5·6	341	1 31	+ 4	—	—	2·9	3·1
Vienna		5·7	37	e 1 4	-24	(i 2 40)	+ 4	i 2·7	3·4
Cheb		6·3	8	e 1 55	+19	—	—	—	3·6
Feldberg	N.	6·6	345	e 1 37	- 4	—	—	—	3·7
Budapest		6·6	53	1 57	+16	—	—	3·4	4·1
Belgrade	N.	6·7	78	1 18	-24	e 3 3	+ 1	e 3·4	—
Barcelona		7·0	254	e 2 46	+60	—	—	e 4·5	5·7
Jena		7·1	2	e 1 48	0	13 18	+ 5	i 3·6	4·0
Gottingen	N.	7·8	355	e 1 50	- 8	e 3 18	-13	e 4·0	4·1
Paris		7·8	313	2 8	+10	e 3 50	+19	5·8	5·8
Uccle		8·4	329	e 2 12	+ 5	e 4 2	+15	14·4	—
Tortosa	N.	8·4	253	e 2 39	+32	4 8	+21	—	6·4
De Bilt		9·2	336	e 3 6	+47	—	—	e 4·7	6·3
Algiers		9·3	224	—	—	—	—	—	5·8
Hamburg		9·8	356	e 2 48	+21	—	—	e 4·6	6·7
Alicante		10·4	242	e 3 9	+33	e 5 47	+67	—	—
Kew		10·8	316	—	—	e 4 1	-49	5·9	7·5
Oxford		11·5	318	—	—	15 5	- 2	16·1	—

Continued on next page,

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Copenhagen	12.0	3	—	—	5 48?	+29	—	—
Lund	12.0	5	—	—	5 36	+17	6.4	—
Toledo	12.0	256	e 3 4	+ 5	e 5 59	+40	e 6.6	9.0
Konigsberg	N, 12.6	25	—	—	e 6 7	+33	e 7.9	9.5
Granada	13.0	244	i 3 32	+19	i 4 12	-92	i 4.9	9.2
Stonyhurst	13.4	323	e 3 42	+24	e 7 10	1L	(e 7.2)	9.5
Malaga	13.8	244	e 3 32	+ 9	e 6 4	+ 1	e 7.8	—
San Fernando E.	15.2	247	—	—	—	—	—	11.2
Edinburgh	15.3	328	—	—	—	—	—	10.8
Upsala	16.5	11	e 4 12	+13	—	—	e 8.4	10.6
Helsingfors	18.3	22	e 4 20	- 1	e 7 34	-13	—	—
Pulkovo	19.7	29	e 4 27	-10	e 8 18	+ 1	11.8	12.5
Scoresby Sund	31.3	340	—	—	—	—	16.8	—
Ekaterinburg	33.3	49	i 6 38	-21	—	—	14.8	21.1
Tashkent	42.0	72	e 9 39	+88	e 14 28	- 7	e 22.8	29.9

Additional readings: Moncalieri MN = +3.5m. Chur i = +54s. Laibach ePE = +1m.0s., iP₂SE = +1m.20s. Innsbruck P = +1m.4s., PR₁ = +1m.9s. Zagreb iNW = +1m.5s., eNE = +1m.6s., iNW = +1m.7s., i = +1m.10s., iNW = +1m.14s., i = +1m.16s., iNW = +1m.24s., iNE = +1m.27s., i = +1m.34s., iNE = +1m.37s., i = +1m.43s., iNE = +1m.47s., iNW = +1m.55s., i = +2m.4s., iNW = +2m.5s. +2m.9s., +2m.11s., +2m.12s., and +2m.14s. Zurich i = +1m.15s. and +1m.20s. Ravensburg iP = +1m.8s. and +1m.17s., iS* = +1m.56s., i = +2m.0s., MN = +2.2m. Neuchatel iP = +1m.20s. Hohenheim iP = +1m.21s. and +1m.34s., iN = +2m.0s., iS* = +2m.23s. Strasbourg P = +1m.39s., PR₁ = +1m.48s., S = +2m.51s., SR₁ = +2m.58s., SR₂ = +3m.9s. Vienna P* = +1m.13s. P = +1m.34s., P₂S = +2m.3s., PS₂ = +2m.27s., MZ = +3.2m. Feldberg iN = +1m.44s. and +2m.14s., eN = +1m.45s., and +2m.14s. Belgrade eN = +2m.10s., +2m.39s., +3m.11s., and +4m.4s. Jena eN = +2m.18s., eE = +2m.31s., iE = +2m.46s., +3m.2s., and +3m.7s. Göttingen iNZ = +2m.24s., eN = +2m.26s., and +2m.36s., eSE = +3m.12s., eSZ = +3m.24s., eEN = +4m.0s., eLN = +4.3m., eLE = +4.4m., ME = +4.9m., MZ = +5.1m. Uccle e = +4m.5s. Oxford i = +6m.31s. Toledo MNW = +9.3m. Konigsberg eE = +6m.39s. and +8m.2s. ME = +10.7m. San Fernando MN = +10.2m. Ekaterinburg i = +6m.45s. Tashkent e = +17m.17s.

April 10d. 6h. 4m. 24s. Epicentre 28°-5N. 140°-5E. (as on 1928 Aug. 16d.).

A = -678, B = +559, C = +477; D = +636, E = +772;
G = -368, H = +304, K = -379.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	7.2	355	1 56	+ 7	5 23	+128	—	—
Nagoya	7.3	336	e 2 1	+10	—	—	—	—
Sumoto	7.5	322	e 2 8	+14	—	—	—	—
Kobe	7.7	325	1 56	- 1	—	—	5.4	5.5
Akita	11.2	358	e 4 3	?	—	—	—	—
Irkutsk	35.8	322	e 7 7	-13	e 12 33	-34	18.6	22.3
Tashkent	55.2	305	i 10 10	+10	—	—	e 29.6	36.9
Ekaterinburg	61.0	323	10 17	- 2	18 32	- 4	30.6	40.4
Baku	72.4	309	—	—	—	—	e 34.1	—
Pulkovo	74.9	331	—	—	e 21 12	-13	40.6	—
Copenhagen	84.9	335	—	—	—	—	43.6	—
Strasbourg	92.1	332	—	—	—	—	60.6	—
Paris	94.0	335	—	—	—	—	e 60.6	—

Additional readings: Kobe MN = +5.7m. Irkutsk i = +16m.15s.

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April 10d. 6h. 48m. 28s. (I) } Epicentre 43°·8N. 11°·2E. (as at 5h.).
 16h. 32m. 30s. (II)
 20h. 46m. 22s. (III)

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Florence	0·0	—	i 0 13	+13	—	—	—	—
II	0·0	—	i 0 13	+13	—	—	—	0·3
III	0·0	—	i 0 13	+13	—	—	—	0·6
I Venice	1·9	26	i 0 17	-12	—	—	—	—
II	1·9	26	i 0 16	-13	—	—	—	—
I Moncalieri	2·8	295	e 0 48	+ 4	1 38	+21	—	—
II	2·8	295	1 56	+72	2 42	+85	—	—
I Chur	3·2	338	e 0 49	- 1	i 1 15	-13	—	—
II	3·2	338	i 0 46	- 4	i 1 18	-10	—	—
III	3·2	338	e 0 44	- 6	e 1 9	-19	—	—
II Laibach	3·3	46	e 0 51	- 1	i 1 36	+ 5	—	2·8
I Innsbruck	3·5	2	e 0 56	+ 1	i 1 25	-12	—	—
II	3·5	2	e 0 58	+ 3	(i 1 28)	- 9	i 1·5	—
I Zurich	4·0	332	e 0 54	- 8	—	—	—	—
III	4·0	332	e 1 2	0	—	—	—	—
I Zagreb	4·0	58	e 1 7	+ 5	e 1 40	-10	i 2·0	—
II	4·0	58	e 1 10	+ 8	e 1 43	- 2	e 2·0	—
III	4·0	58	e 1 0	- 2	e 1 46	- 4	e 2·0	—
I Ravensburg	4·2	345	e 1 22	+17	i 1 57	+ 2	i 2·1	—
II	4·2	345	e 1 13	+ 8	i 1 54	- 1	—	—
III	4·2	345	e 1 23	+18	i 2 0	+ 5	—	—
I Neuchatel	4·4	318	e 1 0	- 8	—	—	e 2·2	—
II	4·4	318	i 1 2	- 6	i 1 46	-15	—	—
III	4·4	318	e 0 53	-15	e 1 37	-24	—	—
II Besançon	5·0	316	—	—	e 2 3	-14	—	—
I Hohenheim	5·1	346	e 1 56	+37	e 2 24	+ 4	—	—
II	5·1	346	e 1 30	+11	—	—	e 2·6	—
III	5·1	346	e 1 38?	+19	e 2 21	+ 1	—	—
I Strasbourg	5·3	334	—	—	—	—	e 2·5	—
II	5·3	334	1 42	+20	—	—	—	—
III	5·3	334	2 32	?S	(2 32)	+ 7	—	—
II Karlsruhe	5·6	341	e 2 30?	?S	(e 2 30?)	- 4	—	—
III Vienna	5·7	37	e 1 43	+15	—	—	—	3·0
II Budapest	6·6	53	—	—	—	—	e 3·5	—
I Feldberg	6·6	345	—	—	—	—	e 3·4	9·5
II	6·6	345	e 2 2	+21	—	—	i 3·5	4·3
I Uccle	8·4	329	—	—	—	—	e 8·5	—
I De Bilt	9·2	336	—	—	—	—	e 7·5	—
II	9·2	336	—	—	—	—	e 5·5	6·2
II Kew	Z. 10·8	316	—	—	e 4 30?	-20	—	—

Additional readings and note : Venice III eP = +20h.46m. Chur II eP = +51s. Laibach II eP*N = +58s., iP,SN = +1m.30s. Zagreb I e = +1m.46s. and +1m.51s., II eNE = +1m.20s. and +1m.54s., eNW = +1m.24s. Ravensburg I eN = +1m.47s., eE = +1m.50s., iE = +2m.0s., II iN = +1m.38s., iE = +2m.0s. Neuchatel II iP = +1m.12s. Hohenheim I eE = +2m.4s. Strasbourg II and III the readings are given as PR₂?

April 10d. 23h. 53m. 0s. Epicentre 25°·0N. 77°·5E. (as on 1926 Dec. 31d.).

A = +·196, B = +·885, C = +·423; D = +·976, E = -·216;
 G = +·091, H = +·413, K = -·906.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun	5·3	4	-3 0?	?	0 0?	?	1·0	5·0
Bombay	7·5	216	1 59	+ 5	3 58	+34	4·7	6·8
Hyderabad	E. 7·6	173	—	—	—	—	—	7·8
Calcutta	E. 10·2	102	2 32	- 1	4 32	- 3	7·1	—
	N. 10·2	102	2 40	+ 7	4 30	- 5	6·9	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Andijan	15.8	345	(3 40)	- 9	—	—	—	—
Samarkand	17.1	331	(4 4)	- 2	(7 18)	- 2	—	—
Baku	27.7	310	e 6 12	+ 7	—	—	—	—
Ekaterinburg	34.1	343	(e 6 26)	-40	e 6 26	?P	9.5	—
Ksara	37.1	294	10 0?	?	—	—	—	—
Pulkovo	47.5	330	e 9 2	+11	—	—	17.0	—
Copenhagen	55.6	322	—	—	—	—	24.0	—
Karlsruhe	57.9	315	e 5 0?	?	—	—	—	—

Additional readings and notes : Hyderabad MN = +7.4m. Andijan readings have been increased by 4m. Samarkand readings have been increased by 6m. Ekaterinburg e = +1m.43s.

April 10d. Readings also at 0h. (near Zagreb), 1h. (near La Paz), 2h. (near Tacubaya), 3h. (Entebbe), 6h. (Georgetown, Ottawa, and Zagreb (3)), 7h. (Taihoku and Zagreb), 8h. (Zagreb, Zurich, Neuchatel, Almata, Andijan, near Samarkand, Tashkent, near Ekaterinburg, near Ksara, and near Sucre), 9h. (Florence, Venice, Neuchatel, Zurich, Zagreb (2), Georgetown, Ottawa, Florissant, Tucson, Victoria, near Merida, Tacubaya, near Christchurch (2) and Wellington), 10h. (Scoresby Sund, and near Malabar), 13h. (Georgetown and near Tacubaya), 14h. (Sebastopol), 16h. (Zagreb), 18h. (Georgetown, Ottawa, Toronto, Scoresby Sund, Baku, Ekaterinburg, Tashkent, Irkutsk, Pulkovo, Copenhagen, and near Algiers), 19h. (Zurich and near La Paz), 20h. (Andijan, Samarkand, and near Kobe), 21h. (near Akita), 23h. (Andijan).

April 11d. 0h. 56m. 8s. (I) } Epicentre 43°-8N. 11°-2E.
1h. 40m. 0s. (II) } (as on 10d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
I Florence	0.0	—	10 14	+14	—	—	—	0.6
II	0.0	—	10 0	0	—	—	—	0.7
I Piacenza	1.6	319	e 0 30	+ 6	—	—	—	—
II	1.6	319	e 0 30	+ 6	—	—	—	—
I Venice	1.9	26	10 15	-14	—	—	—	—
II	1.9	26	10 13	-16	—	—	—	—
I Moncalieri	2.8	295	1 17	+33	2 7	+50	—	—
II	2.8	295	1 2	+18	1 39	+22	—	2.5
I Chur	3.2	338	0 53	+ 3	11 20	- 8	—	—
II	3.2	338	10 52	+ 2	11 24	- 4	—	—
I Laibach	3.3	46	e 0 51	- 1	11 34	+ 3	—	1.9
II	3.3	46	e 0 45	- 7	e 1 30	- 1	—	2.0
I Innsbruck	3.5	2	e 0 52?	- 3	11 23	-14	11.6	—
II	3.5	2	e 0 56	+ 1	11 25	-12	11.6	2.1
I Pompeii	3.9	142	e 2 42	+101	—	—	—	—
II	3.9	142	e 1 10	- 9	—	—	—	—
I Zurich	4.0	332	e 1 8	+ 6	—	—	—	—
II	4.0	332	e 0 58	- 4	—	—	—	—
I Zagreb	4.0	58	e 1 4	+ 2	e 1 44	- 6	e 1.8	2.4
II	4.0	58	e 1 8	+ 6	e 1 48	- 2	e 1.9	2.5
I Ravensburg	4.2	345	e 1 13	+ 8	11 55	0	—	—
II	4.2	345	e 1 2	- 3	11 43	-12	12.0	—
I Neuchatel	4.4	318	11 4	- 4	11 50	-11	—	—
II	4.4	318	11 8	0	1 54	- 7	—	—
I Graz	4.5	41	e 1 2	- 8	e 2 1	- 3	—	2.7
II	4.5	41	e 1 22	+12	e 2 16	+12	—	3.2
I Besançon	5.0	316	e 1 34	+17	—	—	—	—
II	5.0	316	e 1 31	+14	—	—	—	—
I Hohenheim	5.1	346	e 1 29	+10	—	—	—	—
II	5.1	346	e 1 15	- 4	—	—	12.6	—
I Strasbourg	5.3	334	e 1 46	+24	e 2 49	+24	—	—
II	5.3	334	e 1 27	+ 5	e 2 51	+26	—	—
I Vienna	5.7	37	1 46	+18	—	—	—	3.1
II	5.7	37	1 32	+ 4	—	—	—	3.2
I Ohep	6.3	8	—	—	—	—	e 3.9	—

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.	
		°	°	m. s.	s.	m. s.	s.	m.	m.	
I	Feldberg	N.	6.6	345	e 1 37	- 4	—	i 3.5	—	
II		N.	6.6	345	e 1 41	0	—	i 3.6	4.5	
I	Budapest		6.6	53	—	—	—	e 3.4	—	
II			6.6	53	—	—	—	e 3.3	—	
I	Jena		7.1	2	—	—	—	e 3.4	3.7	
II			7.1	2	e 2 12	+24	e 3 0	-13	e 3.6	3.7
I	Gottingen		7.8	355	—	—	—	e 3.9	—	
II			7.8	355	e 2 20	+22	e 4 0	+29	e 4.5	—
I	Paris		7.8	313	—	—	—	e 4.9	—	
II			7.8	313	e 2 27	+29	—	—	5.0	5.0
II	Uccle		8.4	329	e 2 12	+ 5	—	—	e 4.5	—
I	De Bilt		9.2	336	—	—	—	e 5.9	6.3	
II			9.2	336	—	—	—	e 5.0	6.3	
I	Hamburg		9.8	356	—	—	—	e 4.9	—	
II			9.8	356	—	—	—	e 4.4	5.9	
I	Kew	Z.	10.8	316	—	—	—	e 5.9	—	
II		Z.	10.8	316	—	—	—	e 5.0	—	
I	Copenhagen		12.0	3	—	—	—	7.9	—	
II			12.0	3	—	—	—	6.0	—	
II	Konigsberg		12.6	25	—	—	—	e 8.0	—	
I	Granada		13.0	244	—	—	—	e 6.9	9.5	
II			13.0	244	—	—	e 5 0?	-44	7.1	9.2
I	Pulkovo		19.7	29	e 4 53	+16	—	—	11.9	—
II			19.7	29	—	—	—	e 10.2	12.5	
I	Ekaterinburg		33.3	49	—	—	—	—	18.9	—
II			33.3	49	—	—	—	—	19.0	—

Additional readings and note: Laibach I ePN = +1m.2s., iP,SN = +1m.24s., II e = +1m.6s., iPS = +1m.25s., iS = +1m.45s. Zurich I e = +1m.15s., II e = +1m.18s. Zagreb I e = +1m.8s. and +1m.12s., eNW = +1m.18s., +1m.24s., and +1m.27s., eNE = +1m.22s. and 1m.26s., II eNE = +1m.20s., +1m.31s., +1m.44s., and +1m.50s., eNW = +1m.22s. and +1m.26s., e = +1m.40s. Ravensburg I iE = +2m.6s., II iP = +1m.14s. Neuchatel I iP = +1m.14s., II iP = +1m.22s. Hohenheim II iP = +1m.32s. Feldberg I eN = +2m.12s., II iN = +2m.10s.; all readings are given without phase. Jena II eE = +2m.42s. and +2m.55s. Pulkovo II L = +12.0m.

April 11d. Readings also at 0h. (Karlsruhe), 2h. (Florence, Chur, and Zurich), 4h. (Bombay, Florence (2), and Zagreb), 5h. (Venice (2), Chur, Zurich (2), Zagreb, Nagoya, near Mizusawa, and near Neuchatel), 8h. (La Paz), 9h. (near Zagreb), 11h. (Ravensburg, near Chur, Neuchatel, and Zurich), 12h. (near Nagoya), 13h. (Sumoto and near Kobe), 14h. (Florence), 15h. (near Chur), 16h. (near Suva), 17h. (Wellington), 18h. (Andijan and near Tacubaya), 21h. (near Nagasaki, near Kobe, and Sumoto), 22h. (Suva), 23h. (near La Paz).

April 12d. 0h. 32m. 12s. (I) } Epicentre 43°-8N. 11°-2E.
5h. 20m. 55s. (II) } (as on 11d.).

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.	
		°	°	m. s.	s.	m. s.	s.	m.	m.	
I	Florence		0.0	—	0 15	+15	—	—	0.8	
II			0.0	—	0 8	+ 8	—	—	0.4	
I	Piacenza		1.6	319	e 0 32	+ 8	—	—	—	
I	Venice		1.9	26	i 0 28	- 1	i 0 32	-21	—	
II			1.9	26	i 0 19	-10	—	—	—	
I	Moncalieri		2.8	295	0 48	+ 4	1 35	+18	—	
II			2.8	295	(e 0 45)	+ 1	(1 31)	+14	—	
I	Chur		3.2	338	e 0 55	+ 5	—	—	—	
II			3.2	338	e 0 42	- 8	1 1 30	+ 2	—	
I	Laibach	N.	3.3	46	e 0 49	- 3	i 1 29	- 2	—	1.6
II		N.	3.3	46	e 0 53	+ 1	i 1 10	-21	—	1.7

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Innsbruck	3.5	2	0 34	-21	(1 18)	-19	1.3	—
II	3.5	2	0 42	-13	(1 23)	-14	1.4	—
II Pompeii	3.9	142	e 2 5	?L	—	—	(e 2.1)	—
I Zurich	4.0	332	e 1 13	+11	—	—	—	—
II	4.0	332	e 0 58	-4	—	—	—	—
I Zagreb	4.0	58	e 1 2	0	i 1 45	-5	i 1.9	2.2
II	4.0	58	e 0 55	-7	i 1 52	+2	—	2.2
I Ravensburg	4.2	345	e 1 3	-2	i 2 3	+8	—	—
II	4.2	345	i 1 12	+7	i 1 59	+4	—	—
I Neuchatel	4.4	318	e 1 50	+42	i 2 3	+2	—	—
II	4.4	318	e 0 59	-9	—	—	—	—
II Graz	4.5	41	e 0 59	-11	i 1 53	-11	—	2.3
I Besançon	5.0	316	e 1 18	+1	—	—	—	—
II	5.0	316	1 5?	-12	—	—	—	—
I Hohenheim	5.1	346	e 1 13	-6	i 2 30	+10	—	—
II	5.1	346	e 1 5?	-14	i 2 26	+6	—	—
I Strasbourg	5.3	334	e 1 13	-9	—	—	—	—
II	5.3	334	(1 40)	?	—	—	—	—
I Karlsruhe	5.6	341	1 23	-4	—	—	—	—
II	5.6	341	1 35	+8	—	—	—	—
I Vienna	Z. 5.7	37	1 41	+13	—	—	—	3.1
II	Z. 5.7	37	1 30	+2	—	—	—	3.0
I Feldberg	N. 6.6	345	e 1 40	-1	—	—	i 3.5	4.4
II	N. 6.6	345	e 1 32	-9	—	—	—	4.2
I Budapest	6.6	53	—	—	—	—	e 3.3	—
II	6.6	53	—	—	—	—	e 3.1	—
I Jena	E. 7.1	2	—	—	e 2 19	-54	e 3.4	3.6
I Uccle	8.4	329	e 2 48?	+41	—	—	—	—
I De Bilt	9.2	336	—	—	—	—	e 5.8	6.2
II	9.2	336	—	—	—	—	e 5.1	6.2
I Kew	Z. 10.8	316	—	—	—	—	e 5.8	—
II	Z. 10.8	316	—	—	—	—	e 7.1	—
I Copenhagen	12.0	3	—	—	—	—	6.8	—
II	12.0	3	—	—	—	—	7.1	—
I Granada	13.0	244	—	—	e 5 6	-38	—	—
II	13.0	244	—	—	—	—	e 6.1	9.1
II Kucino	20.8	46	—	—	—	—	e 12.1	—
II Irkutsk	58.4	46	—	—	—	—	e 48.1	48.9

Additional readings and notes: Moncalieri II readings have been increased by 1m. Laibach I iP, SN = +1m.17s. Zagreb I e = +1m.9s., eNW = +1m.12s., +1m.14s., +1m.20s., and +1m.30s., iNE = +1m.26s. and +1m.35s., II e = +1m.15s., +1m.35s., and +1m.45s., eNW = +1m.22s., MNW = +2.3m. Ravensburg I iP = +1m.16s., i = +1m.37s. and +1m.48s. II i = +1m.28s., iS* = +1m.50s. Neuchatel II i = +1m.11s. Hohenheim I iP = +1m.29s., i = +2m.37s., II iP = +1m.28s. Strasbourg I SR₁? = +2m.48s., II PR₂ = +1m.40s., SR₂? = +3m.1s. Feldberg I iN = +2m.12s. Granada I e = +8m.54s. and +10m.0s.

April 12d. 8h. 10m. 20s. (I)
 23h. 31m. 10s. (II)
 23h. 42m. 32s. (III) } Epicentre 44° 5N. 34° 5E. (as on 1929 Mar. 23d.)

A = +.588, B = +.404, C = +.701.

	Δ	P.	O-C.	S.	O-C.	L.
	°	m. s.	s.	m. s.	s.	m.
I Yalta	0.2	0 2?	-2	(0 6?)	0	0.1?
II	0.2	0 4?	0	(0 8)	+2	0.1
III	0.2	—	—	—	—	0.0?
I Simferopol	0.5	e 0 6	-2	(0 14)	0	0.2
II	0.5	e 0 6	-2	(0 13)	-1	0.2
III	0.5	e 0 6	-2	(e 0 13)	-1	e 0.2

Continued on next page.

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	Δ	P.	O-C.	S.	O-C.	L.
		m. s.	s.	m. s.	s.	m.
I Sebastopol	0.7	0 14	+ 3	(0 24)	+ 4	0.4
II	0.7	0 14	+ 3	(0 25)	+ 5	0.4
III	0.7	—	—	(0 21)	+ 1	0.4
I Theodosia	0.8	0 15	+ 3	(0 25)	+ 3	0.4
II	0.8	0 14	+ 2	(0 25)	+ 3	0.4
III	0.8	—	—	(0 22)	0	0.4

No additional readings.

April 12d. Readings also at 0h. (Nagoya, near Sumoto, Matuyama, near Chur, Neuchatel, Zurich, and Ravensburg), 4h. (Florence), 5h. (Zagreb), 6h. (Zagreb), 8h. (Sebastopol, Simferopol, Theodosia, and Vaita), 9h. (Samar-kand, Malabar, and near Batavia), 10h. (Taihoku), 13h. (near Matuyama), 15h. (Phu-Lien, Hong Kong, Zi-ka-wei, and near Taihoku), 16h. (Ekaterinburg and Tashkent), 18h. (Hong Kong, Phu-Lien, Zi-ka-wei, Taihoku (2), Ekaterinburg, Bombay, and near Tananarive), 19h. (Baku, Tashkent, Irkutsk, Entebbe, and Granada), 20h. (near Kobe and Sumoto), 21h. and 22h. (Andijan and near Samarkand).

April 13d. 6h. 43m. 45s. Epicentre 57°-08. 20°-0W.

A = +.512, B = -.186, C = -.839; D = -.342, E = -.940;
G = -.788, H = +.287, K = -.545.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
			m. s.	s.	m. s.	s.	m.	m.
La Plata	33.7	295	7 43	+41	—	—	16.2	—
Rio de Janeiro	E. 38.1	324	e 7 46	+ 7	13 32	- 7	18.4	—
	N. 38.1	324	e 7 41	+ 2	13 35	- 4	18.6	—
Sucre	50.6	300	9 11	0	e 16 26	0	24.8	28.1
La Paz	54.1	298	9 33	- 1	e 17 16	+ 6	26.8	30.6
Entebbe	70.7	57	—	—	—	—	—	21.8
Christchurch	78.9	190	—	—	i 22 9	- 2	—	—
Wellington	80.9	192	—	—	—	—	46.2	—
Perth	83.6	144	—	—	i 23 15	+10	—	—
Melbourne	84.4	168	—	—	e 24 0	†PS	42.8	48.2
Adelaide	86.3	164	i 16 25	†PR ₁	i 23 23	-10	—	50.9
Riverview	88.9	173	e 19 50	?	—	—	e 44.8	53.2
San Fernando	94.1	11	—	—	26 55	?	50.5	57.2
Granada	95.2	13	i 17 54	†PR ₁	—	—	—	51.2
Algiers	95.8	20	—	—	e 24 16	[+15]	e 50.2	54.2
Tortosa	N. 99.3	15	—	—	—	—	e 49.2	53.7
Moncalleri	104.6	21	—	—	—	—	e 53.6	—
Georgetown	Z. 107.3	317	e 14 4	-41	e 26 34	-30	e 51.9	60.6
Paris	107.4	16	—	—	—	—	e 54.2	—
Fordham	107.8	320	—	—	—	—	e 58.1	—
Strasbourg	108.0	20	—	—	—	—	e 53.2	—
Uccle	109.6	16	—	—	e 29 15†	†PS	e 54.2	—
Kew	109.7	12	—	—	—	—	e 51.2	—
Feldberg	N. 109.7	19	—	—	e 29 57	?	—	61.2
Cincinnati	Z. 110.4	312	—	—	—	—	e 55.0	62.8
De Bilt	111.0	16	—	—	—	—	e 53.2	—
Toronto	N. 112.2	318	—	—	e 29 45	?	e 54.2	60.3
Ottawa	112.4	322	—	—	—	—	e 57.5	—
Florisant	112.6	308	e 19 30	†PR ₁	e 29 15†	†PS	e 59.2	—
Copenhagen	115.7	20	—	—	e 29 0	†PS	e 54.2	59.8
					30 9	†PS	58.2	—
Lund	115.8	20	—	—	—	—	58.2	—
Tashkent	123.2	64	e 19 50	[+49]	—	—	e 55.2	74.4
Pulkovo	123.3	28	e 19 19	[+17]	e 31 26	†PS	64.2	72.4
Phu-Lien	126.9	110	—	—	—	—	47.2	—
Scoresby Sund	127.6	—	—	—	—	—	70.2	—
Ekaterinburg	130.8	45	e 19 37	[+17]	—	—	e 61.2	81.2
Hong Kong	132.0	116	23 26	?	—	—	—	66.8
Zi-ka-wei	Z. 143.0	118	e 19 58	[+13]	123 28	†PR ₁	—	74.7
Irkutsk	148.3	75	1 20 9	[+16]	1 25 5	?	e 76.2	—

For Notes see next page.

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NOTES TO APRIL 13d. 6h. 43m. 45s.

Additional readings: La Paz eSN = +17m.21s. Adelaide e = +29m.15s. = SR₁ - 25s., MN = +49.4m. Riverview MN = +52.1m. San Fernando MN = +58.0m. Georgetown eZ? = 6h.38m.30s. and 6h.48m.47s., IZ = +18m.58s. = PR₁ - 3s. and +36m.21s. Uccle e = +35m.15s. ? = SR₁ + 37s. De Bilt eZ = +63.0m., MN = +63.1m. Ottawa eN = +35m.45s. = SR₁ + 33s. Florissant eEN = +35m.15s. = SR₁ - 1s., eLZ = +56.2m., MZ = +61.2m. Tashkent e = +20m.15s. and +22m.43s. Ekaterinburg e = +20m.0s., +22m.7s., and +39m.45s. Hong Kong MN = +69.8m.

April 13d. 21h. 5m. 55s. Epicentre 55°08. 24°0W. (as on 1928 Sept. 3d.)

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	e	s	m. s.	s.	m. s.	s.	m.	m.
La Plata	30.8	297	—	—	—	—	14.3	—
Rio de Janeiro E.	35.1	329	—	—	—	—	e 17.5	—
Sucre	47.6	303	8 45	- 6	—	—	—	—
La Paz	51.2	302	9 9	- 5	i 16 23	-11	24.4	29.6
Tananarive	N. 64.1	86	e 10 43	+ 4	e 19 23	+ 9	—	—
Entebbe	71.6	60	—	—	—	—	31.1	—
Wellington	E. 82.4	194	—	—	i 21 45	-65	—	—
Melbourne	86.7	172	—	—	i 22 30	[- 37]	34.6	36.5
Tortosa	N. 89.1	20	—	—	e 24 13	+ 9	54.4	56.3
Riverview	91.1	176	e 16 11	?PR ₁	—	—	e 26.9	55.3
San Fernando	92.7	14	i 26 44	?	35 5	?	—	56.8
Granada	93.8	16	—	—	i 25 46	?PS	47.1	50.3
Ksara	102.5	46	e 17 16	?	24 32	[- 4]	e 33.4	—
Moncalleri	103.6	24	e 25 12	?S	(e 25 12)	[+ 31]	46.8	—
Paris	106.2	19	—	—	—	—	e 59.1	61.1
Strasbourg	106.9	22	—	—	—	—	e 44.1	—
Karlsruhe	107.5	20	20 22	?	—	—	—	—
Kew	108.3	15	—	—	e 25 5?	[+ 2]	e 45.1	—
Oxford	108.4	14	—	—	e 27 5	- 9	e 60.1	—
Uccle	108.4	20	—	—	e 26 59	-15	e 39.1	—
Bombay	109.3	84	19 5	?PR ₁	28 25	?PS	45.4	57.4
Toronto	N. 109.3	321	—	—	e 29 0	?PS	—	—
Ottawa	109.5	326	—	—	e 28 5?	+41	51.1	—
De Bilt	109.8	20	—	—	e 27 11	-15	e 55.1	61.3
Hyderabad	111.3	88	—	—	—	—	—	61.9
Edinburgh	112.2	12	—	—	39 5?	?SR ₁	—	—
Baku	114.2	52	—	—	25 23	[- 4]	49.3	71.0
Copenhagen	114.6	21	—	—	25 17	[- 11]	60.1	—
Kucino	121.7	36	—	—	e 26 33	[+ 43]	e 37.3	41.9
Pulkovo	122.6	30	19 30	[+ 30]	26 45	[+ 52]	63.1	71.3
Tashkent	124.4	65	18 55	[- 9]	—	—	—	73.6
Scoresby Sund	125.5	1	30 5?	?	—	—	—	—
Phu-Lien	129.8	114	21 5?	?PR ₁	—	—	—	—
Ekaterinburg	131.0	46	19 10	[- 11]	—	—	e 54.1	84.6
Hong Kong	135.0	120	21 28	?PR ₁	—	—	—	76.6
Zi-ka-wei	z. 145.9	123	i 19 28	[- 21]	—	—	—	75.4
Irkutsk	149.9	75	19 41	[- 15]	—	—	e 75.1	—

Additional readings: Rio de Janeiro eLN = +16.6m. La Paz i = +17m.16s., MN = +35.2m. Tananarive eN = +13m.15s. = PR₁ - 20s., +14m.35s. = PR₁ - 17s. and +20m.32s. = [S] + 6s. Melbourne i = +28m.5s. San Fernando MN = +57.3m. Granada i = +26m.4s. Moncalleri S? = +33m.17s. = SR₁ - 5s. Kew eLNZ = +56.1m. Toronto eN = +30m.18s. Ottawa e = +34m.35s. = SR₁ - 1s., eLE? = +43.1m., LN = +59.1m. De Bilt eZ = +28m.55s. = PS - 1s., e = +29m.47s., MNZ = +63.0m. Baku PR₁ = +20m.0s., PS = +29m.48s. Kucino e = +29m.45s. = PR₁ - 14s., S_cP_cP_cS = +28m.31s. Pulkovo PR₁ = +21m.30s., S_cP_cP_cS = +28m.28s. Tashkent PR₁ = +20m.55s., P_cP_cS = +21m.52s., SR₁ = +37m.53s. Ekaterinburg iPR₁ = +21m.54s., iS_cP_cP_cS = +28m.23s. Zi-ka-wei IZ = +20m.8s. and +22m.50s. = PR₁ - 21s. Irkutsk iP_cP_cS = +23m.31s., S_cP_cSP = +34m.2s.

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April 13d. 21h. 24m. 26s. Epicentre 43°·8N. 11°·2E. (as on April 12d.).

	Δ °	Az. °	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Florence	0·0	—	i 0 3	+ 3	—	—	—	0·1
Placenza	1·6	319	e 0 30	+ 6	—	—	—	—
Venice	1·9	26	i 0 23	— 1	—	—	—	—
Moncalieri	2·8	295	0 46	+ 2	i 1 36	+ 19	—	—
Chur	3·2	338	e 0 43	- 2	i 1 29	+ 1	—	—
Innsbruck	3·5	2	0 47	- 8	(1 27)	- 10	1·4	—
Zurich	4·0	332	e 1 4	+ 2	—	—	—	—
Zagreb	4·0	58	e 1 10	+ 8	e 1 52	+ 2	i 2·0	—
Ravensburg	4·2	345	e 1 7	+ 2	i 1 55	0	i 2·2	—
Neuchatel	4·4	318	e 1 3	- 5	e 2 3	+ 2	—	—
Besançon	5·0	316	e 1 24	+ 7	2 53	+ 36	—	—
Strasbourg	5·3	334	e 1 12	- 10	—	—	—	—
Vienna	5·7	37	1 23	- 5	—	—	—	3·4
Budapest	6·6	53	—	—	e 2 4	- 56	—	—
Jena	E. 7·1	2	e 2 4	+ 16	(e 3 26)	+ 13	e 3·4	4·0
Paris	7·8	313	—	—	e 3 10	- 21	e 4·3	—
Uccle	8·4	329	2 34?	+ 27	—	—	—	—
De Bilt	9·2	336	—	—	—	—	e 5·6	6·2
Hamburg	9·8	356	—	—	—	—	e 5·3	7·4

Additional readings: Chur iP = +54s. Innsbruck PR₁ = +1m.3s. Zagreb eNE = +1m.14s., +1m.34s., and +1m.47s. Ravensburg e = +1m.13s., i = +1m.25s. and +1m.39s. Neuchatel eP = +1m.14s., eSN = +1m.50s. Strasbourg eSR₁? = +2m.41s. Jena eE = +3m.0s.

April 13d. Readings also at 0h. (Baku, Ekaterinburg, Irkutsk, Copenhagen, Kucino, Pulkovo, Tashkent, Granada, Andijan, and Samarkand), 1h. (Sebastopol, Simferopol, Yalta, and Theodosia), 4h. and 8h. (Granada), 9h. (Hong Kong, Phu-Lien, Zi-ka-wel, Taihoku, Adelaide, Melbourne, Perth, Riverview, Sydney, La Paz, Ekaterinburg, Irkutsk, and Tashkent), 12h. (Wellington and Marseilles), 13h. (Tashkent, Ekaterinburg, Bombay, Riverview, Melbourne, Perth, Wellington), 16h. (near Kobe, Matuyama, and Sumoto), 17h. (Andijan and Samarkand), 18h. (La Paz), 19h. (Andijan, Samarkand, and near Lick), 21h. (Andijan, Samarkand, and Perth), 23h. (Copenhagen, Ekaterinburg, Tashkent, Pulkovo, Bombay, Kucino, near Andijan, and Samarkand).

April 14d. 19h. 25m. 41s. Epicentre 21°·5S. 169°·0E. (as on 1926 Aug. 26d.).

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

A deep focus is suggested by the [P].

	Δ °	Az. °	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Suva	9·5	71	e 2 19	- 4	13 55	- 21	15·3	—
Riverview	20·0	228	e 4 45	+ 4	18 25	+ 2	e 9·9	11·8
Wellington	E. 20·4	168	—	—	18 30	- 2	—	—
Melbourne	28·3	227	—	—	19 22	- 66	14·2	14·8
Adelaide	29·8	237	—	—	—	—	e 13·1	18·5
Tashkent	111·1	307	—	—	e 29 19?	?PS	—	62·8
Ekaterinburg	117·8	324	e 18 28	[-18]	—	—	51·3	—
Ottawa	E. 122·7	49	—	—	—	—	e 61·3	—
Baku	125·6	305	—	—	—	—	e 63·0	—
Vienna	Z. 145·4	328	i 19 16	[-33]	—	—	—	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt	147.0	341	i 19 20	[-31]	—	—	e 78.3	—
Zagreb	147.2	324	e 19 19?	[-32]	—	—	—	—
Uccle	148.3	341	e 19 25	[-28]	—	—	e 79.3	—
Strasbourg	149.1	336	e 19 10	[-44]	—	—	—	—
Zurich	149.7	333	i 19 28	[-27]	1 19 39	?	—	—
Chur	149.8	331	e 19 29	[-27]	1 19 43	?	—	—
Neuchatel	150.7	335	e 19 33	[-24]	—	—	—	—
San Fernando	E. 164.5	346	—	—	—	—	—	102.9

Additional readings and notes : Suva readings are given without phase. Riverview MN = +12.8m. Wellington iN = +8m.48s., the S entered is given as iE simply. Adelaide MN = +18.8m. Strasbourg i = +19m.27s. and +19m.36s. San Fernando MN = +99.4m. The European readings may refer to a local shock, i.e., Zurich, Chur, etc.; they are entered here to show their connection with the [P] phase.

April 14d. Readings also at 0h. (Andijan), 1h. (La Plata, Sebastopol, Simferopol, and Yalta), 5h. (near Granada and Malaga), 7h. (near Sumoto), 8h. (Andijan and Samarkand), 9h. (near Sumoto), 10h. (near Tacubaya), 12h. (near Mizusawa and Nagoya), 13h. (near Tacubaya), 16h. (La Paz), 21h. (Feldberg, Almata, Andijan, Samarkand, and Tashkent), 23h. (La Plata).

April 15d. 16h. 14m. 27s. Epicentre 7°0S. 162°0E.

A = -.944, B = +.307, C = -.122; D = +.309, E = +.951;
G = +.116, H = -.038, K = -.993.

Rough.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	N. 19.5	126	e 4 33	- 2	—	—	i 10.4	14.0
Riverview	28.6	199	e 6 15	+ 1	e 11 9	- 1	e 16.6	18.8
Melbourne	34.5	205	i 7 18	+ 9	—	—	18.6	21.8
Adelaide	35.3	215	—	—	e 12 48	-12	e 19.0	21.1
Wellington	36.1	165	—	—	—	—	15.6	—
Perth	49.6	235	15 33?	?S	(15 33?)	-41	—	—
Irkutsk	76.8	329	(e 12 3)	+ 3	(e 22 9)	[+ 8]	(37.6)	—
Tashkent	96.6	311	e 18 30	?PR ₁	e 25 12	-10	—	54.8
Samarkand	98.3	309	e 41 28	?L	—	—	(e 41.5)	—
Ekaterinburg	102.0	328	—	—	—	—	44.6	—
Baku	111.3	311	—	—	e 28 43	?PS	e 57.8	—

Additional readings : Suva iE = +5m.33s., ME = +11.4m. Riverview MN = +20.5m. Adelaide eS = +16m.50s., MN = +20.1m. Irkutsk (e = +34m.27s.); readings have been decreased by 1m. Tashkent e = +26m.7s. = PS -19s.

April 15d. 19h. 15m. 57s. Epicentre 43°8N. 11°2E. (as on 13d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0.0	—	0 11	+11	—	—	—	0.5
Piacenza	1.6	319	0 43	+19	—	—	—	—
Venice	1.9	26	e 0 19	-10	—	—	—	—
Moncalieri	2.8	295	—	—	—	—	1.7	—
Chur	3.2	338	0 49	- 1	1 1 23	- 5	—	—
Zagreb	4.0	58	e 1 3?	+ 1	e 1 56	+ 6	—	—
Ravensburg	4.2	345	e 1 33	+28	—	—	—	—
Neuchatel	N. 4.4	318	e 0 58	-10	e 1 44	-17	—	—
Strasbourg	5.3	334	—	—	e 2 3?	-22	—	—
Vienna	5.7	37	2 39	?S	(2 39)	+ 3	—	—
De Bilt	9.2	336	—	—	—	—	e 5.0	—

Additional readings : Chur i = +1m.13s. Neuchatel eP = +1m.11s.

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April 15d. Readings also at 0h. (Adelaide and Riverview), 1h. (Melbourne, Perth, and La Paz), 2h. (Lick, La Paz, near Kobe, Sumoto, and Nagoya), 5h. (Taihoku, near Koti, Matuyama, Hukuoka, and Nagasaki), 6h. (Sumoto), 10h. (Baku and Ekaterinburg), 13h. (near Samarkand), 14h. (La Paz and Taihoku), 16h. (La Paz), 18h. (Moncalieri and near Santiago), 19h. (Feldberg).

April 16d. 0h. 52m. 54s. Epicentre 36°·5N. 141°·5E. (as on 1929 Jan. 8d.).

A = -·629, B = +·500, C = +·595; D = +·623, E = +·783;
G = -·466, H = +·370, K = -·804.

Tokyo in Geophys. Mag., Vol. IV, No. 4, gives epicentre 36°·6N. 141°·3E.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mito		0·8	262	0 15	+ 3	0 25	+ 3	—	—
Kakioka		1·1	256	0 19	+ 2	0 30	- 1	—	—
Tokyo		1·7	240	0 29	+ 3	0 45	- 3	—	—
Sendai		1·8	344	0 41	+13	1 2	+11	—	—
Mera		2·1	220	0 37	+ 4	0 59	+ 1	—	—
Mizusawa	E.	2·6	354	0 49	+ 8	1 16	+ 4	—	—
	N.	2·6	354	0 48	+ 7	1 11	- 1	—	—
Akita		3·4	342	0 57	+ 4	(1 38)	+ 4	1·6	2·2
Nagoya		4·0	252	i 1 2	0	(1 50)	0	1·8	2·1
Kyoto		5·0	254	1 17	0	2 19	+ 2	—	—
Osaka		5·3	252	1 28	+ 6	(2 38)	+13	2·6	4·0
Kobe		5·5	253	1 22	- 3	(2 45)	+14	2·8	4·8
Toyooka		5·5	262	i 1 23	- 2	(2 29)	- 2	2·5	2·6
Sumoto		5·8	250	1 24	- 6	2 44	+ 5	—	3·1
Muroto		6·8	244	e 1 49	+ 5	3 20	+15	—	—
Koti		7·2	249	1 48	- 1	3 12	- 3	3·4	4·2
Hukuoka		9·6	255	—	—	e 4 6	-12	e 5·0	—
Nagasaki		10·3	252	2 36	+ 2	5 9	+32	(5·2)	—
Hong Kong		27·6	247	10 22	PS	(10 22)	-30	14·4	18·6
Irkutsk		30·5	313	6 12	-21	e 10 54	-49	15·1	19·0
Phu-Lien		34·2	254	e 6 44	-23	—	—	—	—
Andijan		53·0	299	e 9 34	+ 8	—	—	—	—
Tashkent		54·8	299	i 9 31	- 7	i 6 59	-20	e 26·6	33·8
Ekaterinburg		55·4	320	i 9 35	- 7	17 18	- 8	26·1	35·4
Samarkand		57·0	299	e 9 46	- 6	—	—	—	—
Bombay		62·0	275	10 22	- 3	19 22	PS	35·4	—
Kucino		67·3	325	e 10 57	- 3	19 49	- 5	31·0	42·1
Baku		68·4	306	e 11 5	- 2	—	—	33·9	43·4
Pulkovo		68·4	330	10 59	- 8	20 2	- 5	33·1	42·9
Copenhagen		78·1	335	12 1	- 7	22 16	+15	40·1	—
Vienna		82·2	328	e 12 22	- 9	—	—	—	—
Cheb		82·3	330	—	—	—	—	e 43·1	—
De Bilt		83·6	336	—	—	—	—	e 43·1	51·5
Uccle		84·9	336	—	—	—	—	e 43·1	—
Strasbourg		85·5	333	—	—	—	—	e 49·1	—
Kew	E.	85·9	339	—	—	—	—	e 42·1	—
Florence		87·9	326	—	—	—	—	e 53·9	54·4
Ottawa		91·5	26	—	—	—	—	e 47·1	—
Georgetown	Z.	96·6	30	e 14 21	+29	—	—	e 17·9	—
Granada		99·6	334	—	—	—	—	e 60·1	64·6
La Paz		147·0	62	e 19 44	[- 7]	—	—	—	—

Additional readings: Akita ePEN = +1m.0s., S = +1m.18s., MZ = +1·9m.,
MN = +2·4m. Nagoya P = +1m.9s., PS = +1m.18s., S = +1m.26s.,
MZ = +2·3m., MN = +2·4m. Osaka MN = +3·6m. Kobe P =
+1m.36s., S = +2m.26s., LN = +2·6m., MZ = +2·6m., MN = +2·8m.
Toyooka MN = +3·2m. Sumoto MZ = +3·2m. Koti iLNZ = +4·2m.
Baku ePS = +20m.32s. De Bilt MN = +53·0m. Florence e =
+47m.46s.

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April 16d. 14h. 2m. 51s. Epicentre 31°-0S. 71°-0W. (as on 1929 Feb. 23d.).

A = +.279, B = -.811, C = -.515; D = -.946, E = -.326;
G = -.168, H = +.487, K = -.857.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago	2.5	171	1 1	+22	1 41	+32	—	—
Copiapo	3.7	9	—	—	—	—	1.9	—
La Plata	11.7	113	3 2	+ 7	5 24	+12	6.2	—
Sucre	13.0	25	3 15	+ 2	5 51	+ 7	6.7	7.8
La Paz	14.7	11	3 37	+ 2	1 6 21	- 4	7.3	8.8
Rio de Janeiro	E. 26.0	79	e 5 44	- 4	10 19	- 3	12.8	16.7
	N. 26.0	79	e 5 40	- 8	10 21	- 1	12.8	16.8
Georgetown	Z. 70.2	356	—	—	e 23 14	?	—	—
Ottawa	76.5	357	—	—	e 21 27	-16	e 31.2	—
Granada	92.8	49	—	—	—	—	e 45.2	55.0
Toledo	94.1	45	—	—	—	—	e 51.6	—
Kew	103.1	38	—	—	—	—	e 57.2	—
Paris	103.1	41	—	—	—	—	e 55.2	—
Moncalleri	104.2	45	—	—	—	—	51.6	—
Uccle	105.2	40	—	—	—	—	e 58.2	—
Florence	105.8	50	—	—	—	—	e 57.6	60.2
Strasbourg	105.9	43	—	—	—	—	e 50.2	—
De Bilt	106.3	40	—	—	—	—	e 55.2	66.7
Scoresby Sund	107.3	15	—	—	—	—	57.2	—
Copenhagen	111.7	37	—	—	29 3	?PS	57.2	—
Pulkovo	121.9	35	—	—	—	—	e 57.2	71.6
Kucino	125.6	41	—	—	—	—	66.0	74.8
Baku	132.0	60	—	—	—	—	e 67.2	—
Ekaterinburg	138.0	38	e 19 26	[-10]	—	—	59.2	79.8
Tashkent	146.6	61	i 19 45	[- 6]	e 53 9?	?	77.2	90.2
Irkutsk	158.4	8	e 24 12	?PR ₁	—	—	e 85.2	—

Additional readings: La Paz SN = +6m.12s., MN = +9.8m. Florence e = +50m.29s. and +53m.9s. De Bilt MN = +61.2m., MZ = +64.6m. Ekaterinburg i = +22m.10s. =PR₁ - 12s.

April 16d. Readings also at 0h. (near Osaka, Kobe, and Sumoto), 1h. (Bombay), 2h. (La Paz, near Akita, and Mizusawa), 5h. (La Paz, Georgetown, Toronto, Ottawa, Florissant, Granada, De Bilt, Copenhagen, Ekaterinburg, and near Kobe), 6h. (Kobe and Tashkent), 10h. (Tucson), 11h. (Florissant), 14h. (Feldberg), 17h. (Apta), 18h. (near Toyooka), 19h. (Phu-Lien), 21h. (Florence), 22h. (Suva).

April 17d. 3h. 14m. 42s. Epicentre 35°-0N. 27°-5E.

A = +.727, B = +.378, C = +.574; D = +.462, E = -.887;
G = +.509, H = +.265, K = -.819.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	7.0	95	1 52	+ 6	3 8	- 2	4.1	—
Yalta	10.8	26	e 2 31	-10	—	—	—	—
Simferopol	11.1	25	e 3 3	+17	—	—	—	—
Theodosia	11.7	28	e 3 3	+ 8	—	—	—	—
Budapest	13.9	336	e 3 24	- 1	—	—	—	—
Zagreb	13.9	324	3 18?	- 7	—	—	—	—
Florence	Z. 15.3	310	e 6 20	?S	(e 6 20)	-19	(e 9.3)	11.4
Chur	17.9	317	e 4 22	+ 6	e 7 53	+15	—	—
Moncalleri	18.1	310	1 2 28	-110	8 57	+75	9.6	—
Baku	18.5	66	—	—	e 7 54	+ 3	11.5	13.1
Cheb	18.6	328	—	—	—	—	e 12.3	—
Zurich	18.7	317	e 4 29	+ 4	e 8 2	+ 7	—	—
Strasbourg	19.9	319	e 5 18?	+38	—	—	e 11.3	—
Feldberg	N. 20.4	324	e 4 52	+ 6	—	—	—	14.4
Kucino	22.0	19	e 5 1	- 4	e 9 3	- 2	12.1	15.3

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Hamburg	22.3	332	e 5 18	+ 9	—	—	e 11.3	—
Lund	22.9	339	—	—	—	—	13.3	—
Paris	23.0	315	—	—	—	—	e 14.3	—
Uccle	23.0	320	e 5 24	+ 7	e 9 24	- 1	e 12.3	—
Copenhagen	23.1	338	—	—	9 25	- 2	13.3	—
De Bilt	23.3	324	—	—	—	—	e 12.8	16.0
Pulkovo	24.8	3	5 33	- 3	9 57	- 2	13.3	15.9
Granada	25.1	284	—	—	—	—	15.5	18.1
Helsingfors	25.2	357	e 5 17	-23	e 9 49	-18	e 14.3	—
Kew	25.8	318	—	—	—	—	e 13.3	—
Tashkent	33.1	66	—	—	e 11 42	-44	e 15.1	22.2
Scoresby Sund	44.1	338	—	—	—	—	21.3	—

Additional readings and note : Florence gives S as P and L as S. Moncalleri
 e = +6m.3s., L = +10.6m. Baku e = +9m.38s. Feldberg eN =
 +4m.48s. and +5m.0s. De Bilt MN = +15.4m., MZ = +16.4m. Granada
 e = +13m.18s. ?

April 17d. 6h. 19m. 50s. Epicentre 34°5S. 71°5W.

A = +.261, B = -.782, C = -.566 ; D = -.948, E = -.317 ;
 G = -.180, H = +.537, K = -.824.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Santiago	1.2	32	0 26	+ 8	0 36	+ 3	0.8	—
La Plata	11.2	96	2 56	+ 9	—	—	6.1	—
Sucre	16.4	21	3 51	- 6	—	—	9.0	—
La Paz	18.2	10	4 20	+ 1	7 45	+ 1	9.6	12.7
Rio de Janeiro E.	27.3	72	—	—	e 10 42	- 4	—	—
De Bilt	109.3	39	—	—	—	—	e 62.2	—

Additional readings : La Paz MN = +11.5m. Rio de Janeiro eN = +10m.39s.

April 17d. 11h. 48m. 27s. Epicentre 37°8N. 25°0E.

A = +.716, B = +.334, C = +.613 ; D = +.423, E = -.906 ;
 G = +.555, H = +.259, K = -.790.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Trenta	6.9	285	1 1 28	-17	—	—	—	—
Helwan	9.5	145	2 2	-21	1 3 34	-42	—	3.6
Ksara	9.6	111	1 2 18	- 6	4 1	-17	5.0	—
Zagreb	10.4	323	2 33†	- 3	—	—	—	—
Chur	14.5	313	e 3 33	0	6 29	+ 9	—	—
Zurich	15.4	314	e 3 44	0	6 43	+ 2	—	—
Neuchatel	16.1	310	e 3 51	- 2	e 6 41	-16	—	—
Strasbourg	16.5	316	e 3 33†	-26	—	—	—	—
Feldberg	17.1	321	4 9	+ 3	e 7 26	+ 6	—	—
Baku	19.4	75	—	—	e 8 21	+11	—	—
Paris	19.6	311	e 4 33	- 3	—	—	8.6	—
Uccle	19.6	318	1 4 33	- 3	e 8 13	- 2	—	—
Copenhagen	19.8	339	—	—	8 33†	+14	—	—
De Bilt	19.9	322	4 41	+ 1	e 8 29	+ 8	—	—
Kucino	19.9	22	—	—	—	—	e 9.6	—
Pulkovo	22.2	7	5 8	+ 1	9 9	0	—	—
Ekaterinburg	30.2	39	6 18	-12	e 11 20	-17	15.6	—

Additional readings : Neuchatel IP = +3m.54s; Feldberg eN = +7m.36s.

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April 17d. 18h. 34m. 12s. Epicentre 36°·5N. 140°·5E. (as on 1928 Jan. 16d.).

A = -·620, B = +·511, C = +·595; D = +·636, E = +·772;
G = -·459, H = +·378, K = -·804.

A depth of focus 0·015 has been assumed. Tokyo in Geophys. Mag., Vol. IV, No. 4, gives epicentre 36°·3N. 140°·9E.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	+0·4	0·5	36	0 7	- 7	0 12	-13	—	—
Tyosi	+0·3	0·9	160	0 14	- 4	0 26	- 7	—	—
Tokyo	+0·3	1·1	216	0 25	+ 4	0 41	+ 2	—	—
Mizusawa	+0·2	2·6	10	0 38	- 6	1 6	-11	—	—
Akita	+0·1	3·2	354	1 0	50 - 2	(1 26)	- 5	1·4	1·7
Morioka	+0·1	3·2	8	0 46	- 6	1 19	-12	—	—
Nagoya	+0·1	3·2	245	e 0 53	+ 1	(1 35)	+ 4	1·6	2·0
Hikone	+0·1	3·7	251	1 2	+ 3	1 50	+ 6	—	—
Osaka	0·0	4·5	248	1 14	+ 4	—	—	2·5	3·4
Kobe	0·0	4·7	249	1 13	0	e 1 49	-20	2·5	3·6
Toyooka	0·0	4·7	260	e 1 14	+ 1	(2 18)	+ 9	2·3	2·8
Sumoto	0·0	5·1	246	1 11	- 8	2 37	+17	—	3·2
Muroto	0·0	6·1	240	e 2 51	+ 3	(e 2 51)	+ 5	(3·1)	—
Koti	-0·1	6·4	245	1 39	+ 3	3 1	+ 9	3·7	—
Sapporo	-0·1	6·5	6	1 39	+ 1	2 40	-15	—	—
Hukuoka	-0·2	8·8	254	—	—	e 4 5	+12	—	—
Irkutsk	-1·0	29·8	313	e 6 2	-14	e 10 58	-15	15·8	18·9
Tashkent	-1·7	54·1	299	i 9 21	- 1	16 56	+ 7	e 27·6	33·0
Ekaterinburg	-1·7	54·8	320	i 9 25	- 2	17 5	+ 8	23·8	35·1
Kucino	-1·9	66·8	325	—	—	19 38	+14	e 32·6	43·1
Baku	-2·0	67·7	306	—	—	—	—	e 34·5	43·3
Pulkovo	-2·0	67·7	330	e 10 53	+ 4	e 19 40	+ 7	35·8	—
Copenhagen	-2·1	77·7	334	—	—	—	—	41·8	—
Vienna	z. -2·1	81·8	327	12 8	- 9	—	—	—	—
De Bilt	-2·1	83·2	334	—	—	—	—	e 42·8	52·5
Feldberg	n. -2·1	83·5	333	—	—	—	—	e 44·8	—
Uccle	-2·1	84·5	335	—	—	—	—	e 42·8	—
Kew	-2·1	85·5	339	—	—	—	—	e 52·8	—
Paris	-2·1	86·8	335	—	—	—	—	e 50·8	—
Granada	-2·2	99·2	333	—	—	—	—	54·8	60·8
La Paz	—	147·7	59	19 37	[-15]	—	—	—	—

Additional readings and note: Mizusawa PN = +39s. Akita MZ = +2·0m.,
MN = +2·1m. Nagoya S = +1m.18s., MN = +2·3m. Kobe PE =
+1m.23s., MNZ = +2·7m. Sumoto MN = +2·7m., MZ = +2·9m.
Muroto gives S as P and L as S. Kucino e = +24m.2s. = SR₁ - 28s. De
Bilt MN = +52·8m.

April 17d. Readings also at 0h. (Taihoku), 1h. (Suva), 9h. (La Paz), 18h. (Ksara, Lick, and Wellington), 22h. (near Toyooka), 23h. (near Zagreb).

April 18d. 3h. 38m. 38s. Epicentre 5°·1N. 124°·8E. (as on 1926 May 20d.).

A = -·568, B = +·818, C = +·089; D = +·821, E = +·571;
G = -·051, H = +·073, K = -·996.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	10·2	339	i 2 38	+ 5	4 34	- 1	i 5·8	—
Hong Kong	20·0	330	4 22	-19	—	—	—	12·9
Phu-Lien	23·6	313	e 5 17	- 7	e 9 22	-14	—	—
Tashkent	61·2	316	10 20	0	18 45	+ 7	e 32·4	39·3
Ekaterinburg	71·8	329	11 29	+ 1	20 45	- 3	29·4	—
Baku	75·2	310	—	—	e 21 31	+ 3	—	—
Copenhagen	98·1	329	—	—	—	—	51·4	—
De Bilt	E. 103·5	326	—	—	—	—	e 55·4	—
Uccle	104·5	325	—	—	—	—	e 55·4	—

De Bilt gives also eLN = +53·4m.; epicentre 7°·2N. 123°·7E.

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April 18d. Readings also at 1h. (Moncalieri), 2h. (near Chur), 5h. (Tucson), 8h. (Bombay and Taihoku), 12h. (Andijan), 13h. (Bombay), 15h. (Entebbe).

April 19d. 4h. 15m. 22s. Epicentre 43° 8'N. 11° 2'E. (as on 15d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	o	o	m. s.	s.	m. s.	s.	m.	m.
Florence	0.0	—	i 0 15	+15	—	—	—	0.5
Piacenza	1.6	319	0 33	+ 9	—	—	—	—
Venice	1.9	26	i 0 28	- 1	i 0 42	-11	—	1.3
Moncalieri	2.8	295	0 53	+ 9	1 46	+29	(1.8)	2.6
Chur	3.2	338	e 0 49	- 1	i 1 22	- 6	—	—
Innsbruck	3.5	2	0 52	- 3	—	—	1.4	—
Pompeii	3.9	142	e 0 28	-33	e 1 18	-29	—	—
Zagreb	4.0	58	1 6	+ 4	1 2 9	+19	—	2.5
Zurich	4.0	332	e 1 0	- 2	—	—	—	—
Grenoble	4.2	290	i 1 12	+ 7	1 2 6	+11	—	—
Ravensburg	4.2	345	e 0 57	- 8	i 1 42	-13	i 2.1	—
Marseilles	4.3	266	e 1 32	+25	—	—	—	—
Neuchatel	4.4	318	e 1 6	- 2	i 1 57	- 4	—	—
Graz	4.5	41	i 1 12	+ 2	i 2 5	+ 1	—	2.6
Besançon	5.0	316	e 1 15	- 2	2 9	- 8	—	2.7
Hohenheim	5.1	346	e 1 8	-11	1 2 20	0	i 2.6	—
Strasbourg	5.3	334	e 1 12	-10	2 43	+18	—	—
Karlsruhe	5.6	341	1 44	+17	2 52	+18	(2.9)	3.0
Vienna	5.7	37	1 19	- 9	2 27	- 9	i 2.9	3.8
Cheb	6.3	8	e 1 36	0	e 3 8	+16	—	3.6
Budapest	6.6	53	e 1 48	+ 7	—	—	3.6	—
Feldberg	N. 6.6	345	e 1 34	- 7	i 2 58	- 2	i 3.4	4.5
Jena	7.1	2	e 2 8	+20	e 2 55	-18	e 3.3	3.6
Gottingen	E. 7.8	355	—	—	e 3 20	-11	e 4.0	4.3
	N. 7.8	355	e 1 53	- 5	e 3 26	- 5	e 3.9	4.9
Paris	7.8	313	e 2 6	+ 8	e 4 13	+42	4.6	4.6
Uccle	8.4	329	e 2 20	+13	e 4 0	+13	i 4.3	—
Tortosa	N. 8.4	253	3 15	+68	4 46	+59	6.6	—
De Blit	9.2	336	e 3 8	+49	—	—	e 4.6	6.3
Hamburg	9.8	356	e 3 14	+47	e 4 35	+12	—	8.4
Alicante	10.4	242	—	—	—	—	e 7.4	—
Kew	10.8	316	—	—	e 4 2	-48	e 6.7	7.6
Oxford	11.5	318	—	—	e 4 31	-36	i 6.1	7.0
Copenhagen	12.0	3	—	—	5 38†	+19	—	—
Lund	12.0	5	—	—	—	—	6.4	—
Toledo	12.0	256	—	—	—	—	e 8.2	—
Granada	13.0	244	—	—	—	—	e 6.6	9.0
Stonyhurst	13.4	323	—	—	e 5 48†	-17	—	9.6
Edinburgh	15.3	328	—	—	—	—	e 7.6	—
Upsala	N. 16.5	11	—	—	—	—	e 10.4	—
Heisingfors	18.3	22	—	—	—	—	e 9.9	—
Pulkovo	19.7	29	—	—	e 8 7	-10	11.6	12.4
Kucino	20.8	46	—	—	—	—	e 10.8	—
Ekaterinburg	33.3	49	—	—	—	—	19.6	21.1
Tashkent	42.0	72	—	—	—	—	e 22.6	30.7
Irkutsk	58.4	46	—	—	—	—	36.6	—

Additional readings: Moncalieri MN = +5.2m. Chur iP = +50s. Innsbruck P* = +55s., P = +1m.15s. Zagreb eNE = +1m.19s. and +1m.33s., eNW = +1m.21s., +1m.52s., and +1m.27s., iNE = +1m.45s., iNW = +2m.5s., iSNW = +2m.10s., MNW = +2.2m. Zurich iP = +1m.11s. Ravensburg iP* = +1m.7s., iP = +1m.13s., i = +1m.29s., iE = +1m.35s., i = +1m.49s., iS* = +1m.57s., iN = +2m.41s. Neuchatel iP = +1m.18s., iSN = +1m.46s. Besançon i = +1m.38s. Hohenheim iP* = +1m.17s. iP = +1m.29s., iE = +1m.39s., iN = +1m.56s., iS* = +2m.20s. Strasbourg P = +1m.31s., PR = +1m.42s., SR = +2m.48s., SR = +2m.59s. Vienna P = +1m.22s., P* = +1m.33s., P = +1m.40s., P₂S = +2m.13s., P₃ = +2m.47s., MZ = +3.1m., MN = +3.2m. Cheb e = +2m.4s., MN = +3.5m. Feldberg iN = +2m.10s. Jena MZ = +4.0m. Gottingen eN = +2m.25s., eZ = +2m.26s., iN = +2m.28s., and +2m.47s. Uccle e = +4m.2s. Hamburg MN = +6.7m., Kew eN = +5m.54s., eZ = +6m.24s.

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April 19d. 12h. 16m. 21s. Epicentre 44°-5N. 34°-5E. (as on April 12d.).

A = +.588, B = +.404, C = +.701.

	Δ °	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.
Yalta	0.2	0 3	- 1	(e 0 6)	0	e 0.1
Simferopol	0.5	0 9	+ 1	(d 0 17)	+ 3	10.3
Sebastopol	0.7	e 0 9	- 2	(d 0 19)	- 1	10.3
Theodosia	0.8	e 0 21	+ 9	—	—	e 0.5

No additional readings.

April 19d. Readings also at 4h. (Georgetown), 5h. (Zagreb), 6h. (Florence, Zagreb, near Algiers, and Santiago), 7h. (Samarkand), 9h. (Florence, Belgrade, and Laibach), 12h. (Riverview, Suva, Wellington, and near Apia), 13h. (Manila), 17h. (Tortosa), 19h. (Strasbourg), 20h. (Feldberg), 21h. (Copenhagen, Kucino, Ekaterinburg, Pulkovo, Tashkent, Strasbourg, Cheb, De Bilt, Uccle, Paris, Zagreb, Tortosa, Scoresby Sund, and Georgetown), 22h. (Zagreb, Zurich, and near Chur), 23h. (Zagreb).

April 20d. 1h. 9m. 46s. Epicentre 43°-8N. 11°-2E. (as on 19d.).

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

	Δ °	Az. °	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Florence	0.0	—	i 0 21	+21	—	—	—	—
Piacenza	1.6	319	0 30	+ 6	—	—	—	—
Venice	1.9	26	i 0 31	+ 2	i 0 46	- 7	—	1.2
Moncalieri	2.8	295	0 53	+ 9	1 38	+21	—	2.6
Chur	3.2	338	e 0 51	+ 1	i 1 36	+ 8	—	—
Laibach	N.	3.3	46	e 0 50	- 2	i 1 36	+ 5	—
Innsbruck		3.5	2	0 49	- 6	(1 36)	- 1	1.6
Naples	E.	3.7	141	e 1 16	+18	e 2 7	+25	3.6
Pompeii		3.9	142	1 26	+25	e 3 14	?	—
Zagreb		4.0	58	1 10	+ 8	i 2 9	+19	2.8
Zurich		4.0	332	i 1 2	0	—	—	—
Grenoble	E.	4.2	290	i 1 5	0	i 2 2	+ 7	—
Ravensburg		4.2	345	e 1 2	- 3	i 1 59	+ 4	i 2.1
Marseilles		4.3	266	e 1 32	+25	—	—	i 2.5
Neuchatel	N.	4.4	318	i 1 8	0	i 1 52	- 9	—
Graz		4.5	41	i 1 8	- 2	i 2 2	- 2	2.6
Mostar		4.9	93	1 7	- 9	e 2 11	- 3	—
Besançon		5.0	316	1 18	+ 1	—	—	2.2
Hohenheim		5.1	346	i 1 14	- 5	i 2 26	+ 6	i 2.6
Strasbourg		5.3	334	e 1 11	-11	2 46	+21	—
Karlsruhe		5.6	341	1 26	- 1	2 46	+12	2.8
Vienna		5.7	37	i 1 23	- 5	—	—	i 2.9
Puy de Dôme		6.2	293	i 1 48	+13	i 2 24	-25	—
Cheb		6.3	8	e 1 37	+ 1	e 2 49	- 3	e 3.1
Budapest		6.6	53	2 14?	+33	—	—	3.6
Feldberg	N.	6.6	345	i 1 37	- 4	i 2 49	-11	3.4
Belgrade	N.	6.7	78	e 2 0	+18	3 45	1L	(3.8)
Barcelona		7.0	254	e 3 7	7S	(e 3 7)	- 3	(e 4.4)
Jena	E.	7.1	2	e 1 43	- 5	(e 3 14)	+ 1	e 3.2
N.		7.1	2	e 1 50	+ 2	(e 3 14)	+ 1	e 3.2
Z.		7.1	2	e 1 51	+ 3	(e 3 26)	+13	e 3.4
Gottingen	Z.	7.8	355	e 2 30	+32	e 3 25	- 6	14.0
Paris		7.8	313	e 2 1	+ 3	—	—	5.2
Tortosa		8.4	253	e 2 28	+21	e 3 57	+10	4.4
Uccle		8.4	329	e 2 2	- 5	e 4 0	+13	14.4
De Bilt		9.2	336	e 2 24	+ 5	(e 4 20)	+12	e 4.5

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers	9.3	224	—	—	—	—	—	5.2
Hamburg	9.8	356	e 2 36	+ 9	e 4 28	+ 5	e 4.9	6.6
Alicante	10.4	242	e 6 1	?L	e 8 4	?	(e 6.0)	—
Kew	10.8	316	e 2 50	+ 9	—	—	15.9	7.5
Oxford	11.5	318	—	—	—	—	e 5.2	6.9
Copenhagen	12.0	3	—	—	5 14?	- 5	6.2	—
Lund	12.0	5	—	—	—	—	6.0	—
Konigsberg	12.6	25	—	—	e 5 52	+18	e 6.4	8.2
Granada	13.0	244	e 3 46	+33	16 18	+34	7.6	9.1
Stonyhurst	13.4	323	e 3 21	+ 3	—	—	—	8.3
San Fernando	15.2	247	—	—	—	—	—	10.3
Edinburgh	15.3	328	—	—	—	—	e 7.2	—
Simferopol	16.4	78	e 3 44	-13	—	—	—	—
Upsala	16.5	11	e 3 54	- 5	—	—	e 8.8	10.6
Yalta	16.5	80	e 3 44	-15	—	—	—	—
Theodosia	17.3	77	e 4 14	+ 5	—	—	—	—
Helsingfors	18.3	22	—	—	—	—	e 36.2	—
Pulkovo	19.7	29	e 4 31	- 6	e 8 24	+ 7	11.7	12.4
Kucno	20.8	46	—	—	e 8 42	+ 2	10.8	13.7
Scoresby Sund	31.3	340	—	—	—	—	14.2	—
Ekaterinburg	33.3	49	e 6 41	-18	e 12 1	-28	16.2	21.2
Tashkent	42.0	72	e 9 38	?PR ₁	e 14 30	- 5	e 22.2	31.0
Irkutsk	58.4	46	—	—	—	—	33.2	—
Ottawa	58.6	307	—	—	—	—	e 27.2	—
Toronto	61.8	307	—	—	—	—	—	36.2
Georgetown	63.2	300	—	—	(e 24 24)	?SR ₁	37.7	—
Florissant	z. 71.3	306	—	—	—	—	e 41.7	42.7

Additional readings and notes: Moncalieri MN = +2.1m. Laibach ePN = +1m.2s., iP₁SN = +1m.24s. Innsbruck P = +56s. Zagreb e = +1m.20s. and +1m.26s., i = +1m.29s., +1m.35s., +1m.44s., +1m.54s., and +2m.4s. Zurich iP = +1m.12s., i = +1m.19s. Grenoble ePN = +1m.14s. Ravensburg iP = +1m.4s., iP* = +1m.10s., iP = +1m.17s., iN = +1m.43s., iSE = +1m.45s., iE = +1m.50s. Neuchatel eP = +1m.23s. Mostar eP* = +1m.18s., e = +1m.46s., and +2m.2s., eS = +2m.42s., i = +2m.51s. Hohenheim i = +1m.21s., iP = +1m.34s., i = +2m.5s., iS = +2m.8s., i = +2m.19s. Strasbourg P = +1m.32s., PR₁ = +1m.4s., SR₁ = +2m.49s., SR₂ = +2m.59s. Karlsruhe MN = +3.1m. Vienna P = +1m.28s., P* = +1m.38s., P = +1m.42s., P₁S = +2m.12s., PS = +2m.23s., PS₂ = +2m.47s., SR₁ = +3m.10s., MNZ = +3.2m. Cheb e = +2m.34s., MN = +4.2m. Feldberg iN = +2m.12s., eN = +2m.20s., iN = +3m.14s. Belgrade eN = +3m.6s., iN = +3m.58s. Barcelona gives S as P and L as S. Jena eE = +2m.5s., iN = +2m.28s., iE = +2m.34s., iZ = +2m.46s., iE = eN = +2m.49s., iE = +2m.51s., iE = +3m.1s., iN = +3m.3s., iZ = +3m.7s. Gottingen iZ = +4m.16s. and +4m.58s. Tortosa SE = +4m.0s. Uccle e = +2m.39s., +3m.4s., i = +4m.5s., +4m.19s., and +4m.23s. Hamburg eLZ = +4.7m., MZ = +6.1m., MN = +6.7m. Kew iZ = +5m.47s. Lund +6m.31s. Tashkent e = +17m.8s. = SR₁ - 20s. Irkutsk e = +24m.53s. and +28m.46s. Georgetown readings are given as separate L's.

April 20d. 5h. 49m. 16s. Epicentre 43°8N. 11°2E. (as at 1h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0.0	—	0 10	+10	—	—	—	0.5
Piacenza	1.6	319	e 0 40	+16	—	—	—	—
Chur	3.2	338	1 0 40	-10	1 1 21	- 7	—	—
Laibach	N. 3.3	46	e 0 51	- 1	e 1 12	-19	—	1.7
Pompeii	3.9	142	e 2 34	?L	—	—	(e 2.6)	—
Zagreb	4.0	58	0 59	- 3	e 1 54	+ 4	—	2.3
Zurich	4.0	332	e 1 24	+22	—	—	—	—
Ravensburg	4.2	345	e 1 14	+ 9	—	—	1 2.1	—
Neuchatel	N. 4.4	318	e 0 55	-13	e 2 41	+40	—	—
Gras	4.5	41	e 1 16	+ 6	e 2 16	+12	—	2.7

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	.	.	m. s.	s.	m. s.	s.	m.	m.
Hohenheim	5.1	346	e 1 29	+10	—	—	—	—
Strasbourg	5.3	334	e 0 44?	-38	—	—	—	—
Vienna	5.7	37	e 1 47	+19	—	—	12.8	3.3
De Bilt	9.2	336	—	—	—	—	e 5.7	6.2

Neuchatel gives also eP = +1m.8s.

April 20d. Repetitions from the epicentre 43°-8N. 11°-2E. were recorded by the close stations at the following times, the earliest phase recorded being entered :

At Florence.	At Chur.	At Zagreb.	At Zurich.	At Neuchatel.
h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
1 19 25				
1 24 0		1 26 6		
1 36 20	1 37 0	1 37 26		
1 41 30	1 42 26	1 43 1		
1 45 30	1 44 0	1 45 11		1 44 18
2 51 0	2 51 36	2 52 23		
5 15 0		5 16 37		
5 55 40				
6 21 45				
9 34 10	9 33 48	9 35 8	9 34 39	
11 23 20				
21 10 0				
21 13 40	21 14 16	21 14 56		

April 20d. Readings also at 0h. (La Paz and Zagreb), 2h. (Zagreb), 3h. (Zagreb (2) and La Paz), 4h. (Zagreb (2)), 8h. (Almata), 9h. (Neuchatel), 10h. (Ekaterinburg, Irkutsk, Tashkent, and near Manila), 11h. (Calcutta), 12h. (near Samarkand), 15h. (near Amboina), 17h. (near Uccle), 20h. (near Zagreb).

April 21d. 9h. 39m. 55s. (I) } Epicentre 43°-8N. 11°-2E.
9h. 46m. 56s. (II) } (as on 20d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	.	.	m. s.	s.	m. s.	s.	m.	m.
I Florence	0.0	—	0 10	+10	—	—	—	0.4
II	0.0	—	0 10	+10	—	—	—	0.4
II Piacenza	1.6	319	e 0 24	0	—	—	—	—
I Moncalieri	2.8	295	e 1 32	+48	—	—	—	—
II	2.8	295	0 56	+12	1 44	+27	(1.7)	—
I Chur	3.2	338	e 0 49	-1	e 1 23	-5	—	—
II	3.2	338	e 0 39	-11	1 23	-5	—	—
II Innsbruck	3.5	2	e 0 34	-21	1 15	-22	11.4	—
I Zagreb	4.0	58	e 0 58	-4	e 1 54	+4	e 1.9	2.2
II	4.0	58	1 3	+1	e 1 54	+4	—	—
I Zurich	4.0	332	e 1 2	0	e 1 54	+4	—	—
II	4.0	332	10 50	-12	—	—	—	—
II Ravensburg	4.2	345	e 1 9	+4	1 52	-3	—	—
I Neuchatel	N. 4.4	318	e 0 57	-11	e 1 42	-19	—	—
II	N. 4.4	318	10 55	-13	e 1 38	-23	—	—
II Besançon	5.0	316	e 1 34	+17	—	—	—	—
II Hohenheim	5.1	346	e 1 22	+3	—	—	—	—
I Strasbourg	5.3	334	—	—	—	—	e 2.6	—
II	5.3	334	1 1	-21	1 34	-51	—	—
I Vienna	Z. 5.7	37	—	—	e 2 6	-30	—	—
II	Z. 5.7	37	e 1 34	+6	—	—	—	—
II De Bilt	9.2	336	—	—	—	—	e 5.6	6.1

Additional readings: Chur II i = +1m.12s. Zurich II e = +1m.7s. and
+2m.56s. Ravensburg II i = +1m.30s. Neuchatel II eP = +1m.8s.
Strasbourg II PR₁ = +1m.30s., SR₁ = +2m.38s., SR₂ = +2m.60s.

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April 21d. 12h. 37m. 42s. Epicentre 35°-0N. 38°-0W.

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

Very rough.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Toledo	27.2	70	—	—	e 10 47	+ 2	—	—
Granada	27.7	75	—	—	e 10 18?	-36	—	19.3
Fordham	28.7	293	—	—	e 12 21	?SR ₁	e 13.6	—
Alicante	29.8	72	—	—	—	—	e 15.2	—
Ottawa	30.3	302	e 7 6	?PR ₁	e 11 30	- 9	e 13.9	—
Bidston	30.6	44	—	—	9 41	-123	13.7	15.3
Tortosa	N. 30.7	69	—	—	—	—	e 13.3	15.2
Oxford	31.0	48	—	—	e 11 54	+ 3	e 14.0	17.8
Stonyhurst	31.1	44	—	—	—	—	e 15.3	18.8
Georgetown	Z. 31.2	290	e 6 40	0	—	—	e 15.2	19.8
Kew	31.5	48	—	—	—	—	e 14.3	—
Edinburgh	31.6	40	—	—	—	—	e 14.3	—
Paris	32.7	54	—	—	—	—	e 15.3	17.3
Toronto	N. 32.8	299	—	—	e 12 3	-18	14.6	—
Uccle	34.3	50	e 7 4	- 3	e 12 41	- 3	e 16.3	—
De Bilt	34.9	49	—	—	12 55	+ 1	e 16.3	18.5
Neuchatel	35.4	59	i 7 14	- 3	—	—	—	—
Moncalieri	35.9	61	e 7 57	+36	11 30	-99	15.8	—
Scoresby Sund	36.4	9	—	—	—	—	15.3	—
Feldberg	N. 36.6	52	e 7 30	+ 3	e 13 28	+10	—	19.7
Gottingen	N. 37.8	50	—	—	e 13 30	- 5	e 18.5	—
Hamburg	38.1	48	e 7 37	- 2	—	—	e 16.3	19.3
Cheb	39.2	52	—	—	—	—	e 19.3	21.8
Copenhagen	39.8	43	7 56	+ 3	14 9	+ 6	20.3	—
Lund	40.3	43	—	—	—	—	18.3	—
Florissant	Z. 41.5	292	e 8 6	- 1	—	—	e 18.3	22.1
Zagreb	41.6	60	e 8 9	+ 1	—	—	—	—
Upsala	43.2	38	—	—	—	—	18.3	—
Konigsberg	44.3	45	—	—	—	—	e 22.3	—
Helsingfors	46.9	38	—	—	—	—	e 20.3	—
Pulkovo	49.6	38	—	—	—	—	e 17.3	26.8
Kucino	54.1	43	—	—	—	—	26.8	29.1
Simferopol	54.3	57	e 9 18	-17	—	—	—	—
Yalta	54.5	57	e 9 45	+ 9	—	—	—	—
Rio de Janeiro	E. 58.1	187	—	—	—	—	e 28.6	—
La Paz	59.0	216	10 5	0	—	—	—	—
Victoria	E. 61.8	313	14 23	?PR ₁	—	—	31.4	37.4
Ekaterinburg	65.6	38	e 11 0	+11	19 57	+25	29.3	35.3
Baku	66.7	56	—	—	e 20 19	?PS	33.5	—
Tashkent	78.7	47	e 14 18?	?	e 23 18?	+70	e 39.3	46.3

Additional readings: Georgetown eZ = +12h.30m.37s. De Bilt MN = +17.4m. Florissant eZ = +9m.48s. = PR₁ + 8s. Zagreb ePR₁ = +10m.6s.

April 21d. Readings also at 0h. (St. Louis), 2h. (Akita and near Mizusawa), 3h. (La Paz), 5h. (Apia), 7h. (Sucre), 9h. (Feldberg), 12h. (Granada and near Malaga), 15h. (Florence), 17h. (near Oaxaca), 20h. (Copenhagen).

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April 22d. 8h. 25m. 33s. Epicentre 43°·8N. 11°·2E. (as on 21d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0·0	—	0 7	+ 7	—	—	—	0·4
Piacenza	1·6	319	0 33	+ 9	—	—	—	—
Moncalieri	2·8	295	0 43	- 1	1 39	+22	—	2·3
Chur	3·2	338	e 0 47	- 3	i 1 19	- 9	—	—
Laibach	N. 3·3	46	e 0 41	-11	e 1 26	- 5	—	1·7
Innsbruck	3·5	2	0 44	-11	(i 1 31)	- 6	1·5	1·5
Naples	E. 3·7	141	e 1 33	?S	(e 1 33)	- 9	(e 2·8)	3·5
Pompei	3·9	142	e 1 35	+34	e 2 47	+60	—	—
Zagreb	4·0	58	1 11	+ 9	1 2 1	+51	i 2·1	2·7
Zurich	N. 4·0	332	e 0 59	- 3	—	—	—	—
Grenoble	4·2	290	—	—	2 7	+12	—	—
Ravensburg	4·2	345	e 0 58	- 7	i 1 52	- 3	i 2·0	—
Marseilles	4·3	266	—	—	—	—	e 2·2	—
Neuchatel	N. 4·4	318	e 1 3	- 5	i 1 48	-13	—	—
Mostar	4·9	93	e 1 19	+ 3	e 2 11	- 3	—	—
Besançon	5·0	316	e 1 11	- 6	2 20	+ 3	—	—
Hohenheim	N. 5·1	346	e 1 12	- 7	—	—	—	—
Strasbourg	5·3	334	e 1 20	- 2	2 22	- 3	—	—
Karlsruhe	5·6	341	e 1 19	- 8	2 33	- 1	2·7	—
Vienna	5·7	37	e 1 39	+11	2 32	- 4	i 2·8	3·2
Puy de Dôme	6·2	293	—	—	—	—	e 3·2	—
Cheb	6·3	8	—	—	e 2 56	+ 4	e 3·1	3·7
Budapest	6·6	53	—	—	e 2 57	- 3	3·5	—
Feldberg	N. 6·6	345	e 1 31	-10	e 3 5	+ 5	—	4·4
Belgrade	N. 6·7	78	—	—	e 3 0	- 2	e 4·1	—
Jena	7·1	2	e 2 7	+19	—	—	e 3·4	3·8
Göttingen	7·8	355	i 2 19	+21	e 3 25	- 6	e 3·9	4·2
Paris	7·8	313	e 2 12	+14	e 3 45	+14	4·4	5·4
Tortosa	N. 8·4	253	—	—	3 59	+12	4·8	5·9
Uccle	8·4	329	e 2 45	+38	e 3 58	+11	e 4·2	—
De Bilt	9·2	336	—	—	—	—	e 4·8	—
Hamburg	Z. 9·8	356	—	—	e 3 59	-24	—	5·8
Kew	10·8	316	—	—	—	—	e 5·2	7·4
Copenhagen	12·0	3	—	—	—	—	6·4	—
Granada	13·0	244	—	—	—	—	e 7·4	11·4
Stonyhurst	13·4	323	—	—	—	—	e 6·5	9·0
Pulkovo	19·7	29	—	—	—	—	12·0	12·5
Kucino	20·8	46	—	—	—	—	e 10·2	13·8
Baku	28·7	83	—	—	—	—	e 12·2	—
Scoresby Sund	31·3	340	—	—	—	—	16·4	—
Ekaterinburg	33·3	49	—	—	—	—	12·4	20·8
Tashkent	42·3	72	—	—	—	—	e 23·4	30·8

Additional readings: Moncalieri MN = +2·0m. Chur i = +1m.31s. Laibach eN = +5s. Innsbruck P* = +48s., iP = +51s. Naples gives S as P and L as S. Zurich iP = +1m.14s. Grenoble PR₁ = +1m.23s. Ravensburg P* = +1m.4s., iP = +1m.11s., iS = +1m.38s., i = +1m.44s. Neuchatel iP = +1m.17s. Mostar e = +1m.31s. and +1m.57s. Hohenheim iP = +1m.31s. Strasbourg P = +1m.36s., PR₁ = +1m.41s., S = +1m.37s. SR₁ = +2m.56s. Vienna iN = +1m.49s., P₁S₁ = +2m.9s. Cheb MN = +3·8m. Feldberg eN = +2m.9s., +2m.44s., iN = +2m.46s. and +3m.20s. Belgrade eN = +4m.56s. Jena eEN = +2m.27s. Göttingen iZ = +2m.23s., eEN = +3m.15s., eZ = +3m.26s., MN = +4·0m. Hamburg MEN = +6·6m.

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April 22d. 9h. 23m. 32s. (I) } Epicentre 43°-8N. 11°-2E.
 10h. 1m. 43s. (II) } (as at 8h.).
 14h. 18m. 47s. (III)
 14b. 37m. 0s. (IV)

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Florence	0-0	—	0 7	+ 7	—	—	—	0-5
II	0-0	—	0 7	+ 7	—	—	—	0-5
III	0-0	—	0 7	+ 7	—	—	—	0-7
IV	0-0	—	0 7	+ 7	—	—	—	0-4
III Piacenza	1-6	319	e 0 13	-11	—	—	—	—
IV Venice	1-9	26	i 0 43	+14	—	—	—	—
III Moncalieri	2-8	295	e 1 0	+12	1 49	+32	—	—
III Chur	3-2	338	e 0 32	-18	—	—	e 1-6	—
IV	3-2	338	e 0 39	-11	—	—	—	—
I Innsbruck	3-5	2	—	—	i 1 13	-24	—	—
III	3-5	2	0 40	-15	(i 1 29)	- 8	i 1-5	—
III Pompeii	3-9	142	e 2 23	?L	—	—	(e 2-4)	—
I Zagreb	4-0	58	e 1 24	+22	—	—	—	—
II	4-0	58	1 7	+ 5	e 2 3	+13	—	—
III	4-0	58	1 10	+ 8	—	—	—	2-6
IV	4-0	58	1 0?	- 2	e 1 59	+ 9	—	—
I Zurich	4-0	332	e 0 52	-10	—	—	—	—
II	4-0	332	e 0 41	-21	—	—	—	—
III	4-0	332	e 0 46	-16	—	—	—	—
IV	4-0	332	e 0 48	-14	—	—	—	—
I Ravensburg	4-2	345	e 1 28	+23	—	—	—	—
III	4-2	345	e 1 13	+ 8	i 1 54	- 1	—	—
I Neuchatel	4-4	318	i 0 55	-13	e 1 40	-21	—	—
II	N. 4-4	318	e 0 44	-24	e 1 39	-22	—	—
III Besançon	5-0	316	e 1 13?	- 4	—	—	—	—
I Hohenheim	5-1	346	e 1 58	+39	—	—	—	—
III	5-1	346	e 1 28	+ 9	—	—	—	—
I Strasbourg	5-3	334	—	—	e 2 25	0	e 2-6	—
III	5-3	334	—	—	1 44	-41	i 3-0	—
III Karlsruhe	5-6	341	e 3 13?	?L	—	—	(e 3-2)	—
III Vienna	5-7	37	e 1 50	+22	—	—	—	3-2
III Feldberg	N. 6-6	345	e 2 2	+21	—	—	i 3-8	4-3
IV	N. 6-6	345	—	—	—	—	e 3-2	4-2
III De Bilt	9-2	336	—	—	—	—	e 5-7	—

Additional readings: Innsbruck III i = +59s. Zagreb III MNW = +2.5m.
 Ravensburg III iE = +1m.45s. Neuchatel I eP = +1m.8s., eS = +2m.3s.
 Strasbourg III i = +3m.16s. Feldberg III eN = +2m.13s.

April 22d. Repetitions from the epicentre 43°-8N. 11°-2E. were recorded at the following times:—

At Florence			At Zagreb			At Zurich			At Neuchatel		
h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
4	22	24	4	24	11	4	23	9	4	23	—
10	0	50	—	—	—	—	—	—	—	—	—
16	15	30	16	16	45	—	—	—	—	—	—

April 22d. Readings also at 0h. (Georgetown and near Tahoku), 1h. (Bombay, near Andijan, and near Wellington), 3h. (Lick), 5h. (La Paz and Sucre), 14h. (Yalta), 15h. (Manila), 18h. (Lund), 21h. (Georgetown, Ottawa, Toronto, St. Louis, Florissant, Tucson, and Wellington), 22h. (near Andijan), 23h. (La Paz and near Lick).

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April 23d. 5h. 53m. 44s. Epicentre 43°·8N. 11°·2E. (as on 22d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0·0	—	0 14	+14	—	—	—	0·5
Piacenza	1·6	319	e 0 28	+ 4	—	—	—	—
Chur	3·2	338	i 0 43	- 7	i 1 27	- 1	—	—
Innsbruck	3·5	2	i 0 52	- 3	1 18	-19	i 1·4	—
Zagreb	4·0	58	1 7	+ 5	e 2 0	+10	—	—
Zurich	4·0	332	e 0 50	-12	—	—	—	—
Ravensburg	4·2	345	e 1 31	+26	i 1 59	+ 4	—	—
Neuchâtel	4·4	318	i 0 59	- 9	i 1 43	-18	—	—
Besançon	5·0	316	e 2 21	?S	(e 2 21)	+ 4	—	—
Hohenheim	5·1	346	e 1 46	+27	—	—	—	—
Strasbourg	5·3	334	e 1 42	+20	2 31	+ 6	e 2·7	—
De Bilt	9·2	336	—	—	—	—	e 5·8	—

Additional readings : Innsbruck eP? = 5h.53m.44s., l = +1m.4s. and +1m.8s.
Neuchâtel eP = +1m.12s.

April 23d. 14h. 16m. 3s. Epicentre 36°·1N. 140°·0E. (given by Tokyo in Geophys. Mag., Vol. IV., No. 4).

A = -·619, B = +·519, C = +·589 ; D = +·643, E = +·766 ;
G = -·451, H = +·379, K = -·808.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kakioka	0·2	48	0 6	+ 2	0 12	+ 6	—	—
Tokyo	0·5	208	0 5	- 3	0 13	- 1	—	—
Mera	1·2	186	0 14	- 4	0 29	- 4	—	—
Hukusima	1·7	11	0 25	- 1	0 46	- 2	—	—
Sendai	2·2	17	0 35	+ 1	1 11	+11	—	—
Nagoya	2·7	249	e 0 39	- 3	(1 13)	- 1	1·2	1·2
Mizusawa	E. 3·0	16	0 46	- 1	1 24	+ 1	—	—
	N. 3·0	16	0 45	- 2	1 21	- 2	—	—
Akita	3·6	1	e 0 55	- 1	(1 41)	+ 2	1·7	2·4
Osaka	3·9	250	1 1	0	(1 58)	+11	2·0	2·9
Toyooka	4·2	264	e 1 9	+ 4	—	—	2·1	2·2
Kobe	4·3	251	1 7	0	(1 59)	+ 1	2·0	2·5
Sumoto	4·5	248	1 14	+ 4	2 10	+ 6	—	2·5
Muroto	5·6	241	—	—	—	—	e 2·7	—
Koti	5·9	247	—	—	—	—	—	3·1

Additional readings : Nagoya S = +1m.0s., MN = +1·6m. Akita MN = +1·7m., MZ = +2·2m. Osaka MN = +2·7m. Toyooka PN = +1m.11s.
Kobe P = +1m.16s., MZ = +2·1m., MN = +2·4m. Sumoto MN = +2·4m., MZ = +2·6m.

April 23d. Readings also at 0h. (Georgetown and Fordham), 1h. (Ottawa, Toronto, Scoresby Sund, Granada, Tortosa, Kew, De Bilt, Cheb, Uccle, Paris, Strasbourg, Feldberg, Ekaterinburg, Kucino, La Paz, and near Sucre), 2h. (near Victoria, near Kobe, and Sumoto), 5h. (near Florence and near Samarkand), 6h. (near Sucre), 7h. (La Paz), 8h. (La Paz), 9h. (near Lick), 11h. (near Florence and near Toyooka), 12h. (near Florence), 14h. (Fordham and near Florence), 16h. (Santiago), 17h. (Chur, Florissant, St. Louis, Georgetown, Apia, Tucson, and near Victoria), 18h. (Ann Arbor, Chicago, Toronto, Ottawa, Ekaterinburg, Irkutsk, Tashkent, near Manila, and near Lick), 19h. (near Samarkand), 21h. (La Paz), 22h. (near Santiago).

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April 24d. 4h. 59m. 15s. Epicentre 36°·5N. 65°·5E. (as on 1928 Aug. 2d.).

A = +·333, B = +·731, C = +·595; D = +·910, E = -·415;
G = +·247, H = +·541, K = -·804.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	3·3	20	1 1 23	+31	(1 1 23)	- 8	—	—
Tashkent	5·6	30	1 1 34	+ 7	(1 2 29)	- 5	12·5	3·0
Andijan	6·5	53	1 27	-12	—	—	12·2	2·8
Baku	12·8	293	—	—	—	—	17·2	—
Ekaterinburg	20·6	353	14 49	+ 1	1 8 37	+ 1	—	—
Irkutsk	31·3	48	—	—	e 11 45?	-11	—	—
Pulkovo	32·3	329	1 6 48	- 3	—	—	—	—

Ekaterinburg gives also $i = +5m.52s.$

April 24d. 22h. 50m. 52s. Epicentre 43°·8N. 11°·2E. (as on 23d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0·0	—	0 10	+10	—	—	—	0·5
Piacenza	1·6	319	e 0 36	+12	—	—	—	—
Venice	1·9	26	1 0 26	- 3	1 0 41	-12	—	—
Moncalieri	2·8	295	e 0 43	- 1	1 24	+ 7	—	—
Chur	3·2	338	e 0 48	- 2	1 29	+ 1	—	—
Laibach	N. 3·3	46	e 0 48	- 4	1 1 35	+ 4	—	1·7
Innsbruck	3·5	2	e 0 50	- 5	1 1 31	- 6	11·6	—
Zagreb	4·0	58	1 5	+ 3	1 1 56	+ 6	—	2·3
Zurich	4·0	332	e 1 0	- 2	—	—	—	—
Ravensburg	4·2	345	e 1 8	+ 3	—	—	—	—
Neuchatel	4·3	318	1 1 4	- 3	e 1 49	- 9	—	—
Besançon	5·0	316	—	—	2 14	- 3	—	—
Hohenheim	5·1	346	e 1 26	+ 7	—	—	—	—
Strasbourg	5·3	334	1 56	+34	2 44	+19	—	—
Karlsruhe	5·6	341	e 2 8?	?S	(e 2 8?)	-26	—	—
Vienna	5·7	37	e 1 46	+18	—	—	—	3·1
Feldberg	N. 6·6	345	e 1 39	- 2	—	—	e 3·5	8·3
De Bilt	9·2	336	—	—	—	—	e 5·6	—

Additional readings and note: Laibach ePR₁N = +1m.2s., iPR₁N = +1m.20s.
Innsbruck iP = +59s., i = +1m.22s. Zagreb e = +1m.14s., iNE = +1m.21s., iNW = +1m.29s. +1m.51s. and +2m.5s., i = +2m.0s. Neuchatel eP = +1m.18s. Strasbourg SR₁ = +2m.50s., SR₂ = +3m.18s.
Feldberg readings are given for 23h.

April 24d. Readings also at 1h. (Chur, Zagreb, near Florence, and near La Paz), 2h. (Georgetown), 4h. (near Toyooka), 6h. (Apsa, Suva, and near La Paz), 7h. (Riverview, Sydney, Melbourne, Christchurch, Wellington, St. Louis, Florissant, Cincinnati, Ekaterinburg, Irkutsk, and near Florence), 8h. (Granada, Paris, Uccle, Chur, Baku, Zagreb, near Florence, and near Samarkand), 10h. (Ekaterinburg), 13h. (near Sumoto), 14h. (Almata, Andijan (2), Taihoku, and near Sumoto), 15h. (Wellington), 16h. (Ekaterinburg), 17h. (Chur, Zagreb, and near Florence), 22h. (near Florence).

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April 25d. 22h. 42m. 38s. (I) } Epicentre 44°·2N. 34°·4E.
22h. 43m. 59s. (II) } (given by the Crimean station).

A = +·592, B = +·405, C = +·697.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Yalta	0·3	331	0 2	- 3	(0 7)	- 1	0·1	0·1
II	0·3	331	i 0 3	- 2	(i 0 8)	0	i 0·1	0·3
I Sebastopol	0·7	304	e 0 14	+ 3	(0 24)	+ 4	0·4	—
II	0·7	304	0 11	0	(i 0 21)	+ 1	i 0·4	0·4
I Simferopol	0·8	345	e 0 10	- 2	(i 0 20)	- 2	i 0·3	—
II	0·8	345	e 0 12	0	(e 0 23)	+ 1	e 0·4	0·4
I Theodosia	1·1	41	e 0 18	+ 1	(i 0 32)	+ 1	i 0·5	—
II	1·1	41	i 0 19	+ 2	(i 0 34)	+ 3	i 0·6	—

No additional readings :

April 25d. Readings also at 3h. (Andijan and Samarkand), 4h. (Andijan, near Samarkand, Tashkent, near Kobe, and Sumoto), 7h. (near Florence), 8h. (Florissant, St. Louis, Tucson, and Florence), 9h. (Georgetown (2), Florissant, St. Louis, and Tucson (2)), 10h. (near Manila), 11h. (Nagoya), 15h. (Venice (2)), 16h. (Venice and near Sumoto), 17h. (Sucre, near La Paz (2) and Santiago), 18h. (Graz), 20h. (La Paz), 22h. (Neuchatel).

April 26d. 18h. 5m. 5s. Epicentre 4°·7S. 107°·5E.

A = -·300, B = +·950, C = -·082; D = +·954, E = +·301;

G = +·025, H = -·078, K = -·997.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	1·6	204	1 0 26	+ 2	i 0 45	0	—	—
Bombay	41·5	307	—	—	—	—	e 13·9	—
Irkutsk	57·0	357	—	—	—	—	—	33·9
Tashkent	57·7	328	1 9 56	- 1	e 17 54	- 1	e 28·9	42·7
Baku	69·3	318	e 11 16	+ 3	e 20 20	+ 2	36·1	—
Ekaterinburg	72·3	335	i 11 30	- 2	i 20 59	+ 5	34·9	—

Batavia gives also i = +22s. and +24s.

April 26d. Readings also at 1h. (Batavia), 2h. (Florence and Victoria), 3h. (Honolulu T.H.), 5h. (near Wellington), 6h. (Ekaterinburg, Tashkent, Phu-Lien, and near Sumoto), 7h. (La Plata and near Santiago), 11h. (Batavia and Victoria), 14h. (Ekaterinburg), 15h. (Baku and near Toyooka), 18h. (Batavia and near Samarkand), 21h. (near Almeria), 22h. (Tacubaya), 23h. (Ekaterinburg and near Tacubaya).

April 27d. 11h. 41m. 6s. Epicentre 12°·3N. 93°·8W. (as on 1929 Mar. 30d.).

A = -·065, B = -·975, C = +·213; D = -·998, E = +·066;

G = -·014, H = -·213, K = -·977.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	5·5	329	(1 20)	- 5	(2 53)	+ 22	(3·0)	(3·2)
Tacubaya	8·8	324	(2 5)	- 8	(4 22)	+ 24	(4·6)	(5·2)
Merida	9·6	24	(2 16)	- 8	(3 58)	- 20	(4·1)	(5·0)
Tucson	25·4	325	6 5	+ 23	10 54	+ 43	14·4	17·7
St. Louis	E. 26·5	6	—	—	e 11 34	+ 62	e 13·9	16·9
	N. 26·5	6	i 5 54	+ 1	e 10 33	+ 1	e 14·9	19·6
Florissant	26·7	6	1 5 55	0	i 10 24	- 11	e 14·9	19·4
Cincinnati	28·1	15	1 6 2	- 7	e 10 51	- 10	e 16·0	18·4
Charlottesville	N. 29·1	25	e 5 54	- 25	e 10 54	- 25	e 15·3	19·8
Chicago	N. 30·0	9	8 23	- 5	e 11 18	- 16	e 17·8	22·0
Georgetown	Z. 30·5	26	6 21	- 12	11 43	0	e 14·9	19·6

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M
	°	°	m. s.	s.	m. s.	s.	m.	m
Ann Arbor	31.3	16	—	—	e 11 36	-20	e 18.7	22.1
Fordham	33.5	29	—	—	—	—	e 15.4	17.5
Toronto	33.7	20	—	—	i 12 6	-30	18.3	22.8
Berkeley	36.1	320	—	—	—	—	e 25.3	—
Ottawa	36.5	22	e 8 48	?PR ₁	12 49	-28	e 17.9	22.5
La Paz	38.4	139	1 7 49	+ 8	e 13 23	-21	20.4	23.4
Sucre	42.1	139	e 8 42	+30	e 14 51	+15	19.6	24.8
Rio de Janeiro	60.5	126	—	—	e 18 21	- 9	e 35.4	—
Scoresby Sund	60.5	126	—	—	e 18 25	- 5	e 35.2	—
	72.4	20	—	—	20 54?	- 1	36.9	—
Edinburgh	80.2	35	—	—	—	—	e 46.9	—
Kew	82.6	39	—	—	—	—	e 40.9	—
Paris	84.9	41	—	—	—	—	e 42.9	—
Uccle	85.6	39	—	—	—	—	—	46.9
De Bilt	85.7	38	—	—	e 22 54	[- 6]	e 43.9	49.5
Feldberg	88.2	40	—	—	—	—	e 48.9	—
Strasbourg	88.3	40	e 12 54?	-13	e 24 54?	?PS	42.9	—
Copenhagen	88.7	33	—	—	—	—	45.9	—
Pulkovo	95.2	25	e 13 38	- 6	e 24 16	[+18]	45.9	56.4
Ekaterinburg	107.7	15	—	—	—	[+21]	46.9	63.3
Irkutsk	113.6	348	—	—	—	—	e 62.9	72.9
Tashkent	124.2	15	—	—	26 33	[+36]	e 55.9	71.6

Additional readings and notes: Oaxaca readings have been *diminished* by 7m. Tacubaya and Merida readings have been *diminished* by 1m. Tucson MN = +17.5m. St. Louis eN = +10m.23s., eE = +11m.0s., eN = +11m.4s., eEN = +11m.52s. Florissant iZ = +6m.7s., eN = +7m.15s., eE = +8m.17s., +8m.54s. and +10m.24s., eNZ = +8m.36s., iSN? = +10m.16s., e = +11m.54s., MNZ = +20.1m. Cincinnati P₀SZ = +10m.35s., iS₀SZ = iSR₁Z = +15m.15s. Charlottesville eE = +13m.54s., eLE = +16.9m., ME = +18.5m. Chicago eE? = +11m.0s., eE = +12m.46s., eN = +13m.54s., eE = +15m.0s., eLE = +18.2m., ME = +20.5m. Georgetown PR₁Z = +7m.17s., PR₂Z = +7m.37s., SR₁Z = +13m.34s., SR₂Z = +14m.19s. Ann Arbor e?N = +11m.54s., eE = +13m.24s. = SR₁ - 10s., e?N = +14m.36s., eE = +14m.48s., e?N = +16m.0s., eE = +16m.24s., eN = +19m.6s., eLN = +20.5m. Fordham e = +5m.21s. and +8m.21s. Toronto iE = +17m.16s. Ottawa MN = +22.7m. De Bilt MN = +55.4m. Pulkovo PR₁ = +17m.19s. Ekaterinburg PR₁ = +18m.54s. PPS = +28m.23s. Tashkent PR₁ = +20m.32s.

April 27d. 21h. 2m. 48s. Epicentre 3° 5S. 146° 5E. (as on 1928 Jan. 4d.).

A = -832, B = +551, C = -061; D = +552, E = +834;
G = +050, H = -034, K = -998.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	30.6	172	e 5 20	-74	e 13 17	?SR ₁	e 15.7	18.3
Sydney	30.6	172	—	—	8 0	?	17.9	19.2
Manila	31.2	308	e 6 52	+12	e 12 47	+53	—	—
Adelaide	32.3	191	e 5 7?	-104	e 12 12	- 1	18.8	19.4
Melbourne	34.3	181	(17 36)	+29	(12 38)	- 6	19.8	21.9
Perth	40.4	221	e 16 52	?L	20 32	?	21.6	22.6
Hong Kong	40.8	311	7 52	- 9	i 14 0	-18	e 17.6	22.5
Zi-ka-wel	42.1	328	e 8 4	- 8	—	—	20.6	22.7
Wellington	45.5	150	—	—	—	—	—	27.2
Phu-Lien	46.0	304	e 8 37	- 3	e 15 12	-16	20.2	—
Christchurch	46.3	154	—	—	—	—	—	35.0
Bombay	75.7	290	e 14 44	?PR ₁	21 30	- 4	30.2	—
Andijan	80.3	312	e 12 32	+11	—	—	—	—
Tashkent	82.8	312	e 13 39	+64	e 23 53	+58	e 40.2	47.5
Samarkand	84.2	311	e 11 51	-52	—	—	—	—
Ekaterinburg	90.6	326	e 13 19	0	e 23 48	-12	36.2	49.9
Victoria	92.7	41	—	—	—	—	43.7	47.9
Baku	97.3	311	—	—	e 26 28	?PS	46.4	55.9
Kucno	103.2	326	—	—	—	—	e 54.8	—
Pulkovo	106.0	333	e 15 58	+79	e 25 53	[+61]	51.2	63.8

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Upsala	111.6	335	—	—	—	—	—	66.2
Scoresby Sund	112.6	355	—	—	35 12?	?SR ₁	63.2	—
Konigsberg	112.8	330	—	—	—	—	e 59.2	66.2
Lund	115.9	334	—	—	—	—	65.2	—
Copenhagen	116.2	332	21 12?	?	—	—	56.2	—
Florissant	117.6	47	—	—	—	—	e 55.2	60.2
St. Louis	N. 117.8	47	—	—	—	—	e 60.9	—
Hamburg	118.6	332	—	—	—	—	e 62.2	71.2
Cheb	119.5	328	—	—	—	—	e 60.2	71.2
Feldberg	N. 121.5	330	—	—	e 30 12?	?PS	—	—
Cincinnati	Z. 121.7	44	—	—	—	—	e 60.2	77.9
De Bilt	121.8	332	—	—	—	—	e 57.2	75.7
Edinburgh	122.3	339	—	—	—	—	e 62.2	—
Uccle	123.0	332	—	—	e 42 12?	?	e 58.2	—
Toronto	123.0	38	—	—	—	—	62.2	—
Stonyhurst	123.6	337	—	—	—	—	e 62.2	—
Ottawa	N. 124.2	34	—	—	—	—	e 60.2	—
Kew	124.6	334	—	—	—	—	e 57.2	—
Moncalieri	125.0	325	—	—	—	—	e 62.1	—
Paris	125.3	331	—	—	—	—	e 69.2	73.2
Georgetown	Z. 127.0	41	e 20 58	?PR ₁	—	—	e 67.6	75.5
Fordham	128.0	38	—	—	—	—	e 61.6	—
Granada	136.6	323	—	—	—	—	74.2	79.5
San Fernando	E. 138.6	325	—	—	—	—	—	84.6

Additional readings and note : Riverview MNZ = +21.3m. Adelaide MN = +22.4m. Melbourne P and S readings have been diminished by 5m. Ekaterinburg e = +16m.55s. = PR₁ - 15s.; all readings being given without phase. Baku e = +31m.20s. Pulkovo e = +23m.7s. St. Louis eEN = +58m.42s. De Bilt eLN = +59.2m., MNZ = +74.5m. Moncalieri L = +67.0m. Ottawa eN = +55m.42s. Georgetown eZ = +23m.56s., +43m.30s., and + 52m.1s. San Fernando MN = +82.1m.

April 27d. 22h. 18m. 3s. Epicentre 41°·0N. 31°·0E. (as on 1928 Jan. 24d.).

A = +.647, B = +.389, C = +.656; D = +.515, E = -.857;
G = +.562, H = +.338, K = -.755.

The Crimean stations suggest epicentre 40°·1N. 33°·3E. This position suits their own observations and those of Ekaterinburg (in roughly the same Azimuth), but none of the others. The above previously adopted origin affords a rough compromise.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol	4.1	26	e 1 8	+ 4	1 57	+ 4	—	—
Yalta	4.2	33	1 9	+ 4	1 59	+ 4	—	—
Simferopol	4.5	29	1 12	+ 2	(2 2)	- 2	2.0	—
Theodosia	5.1	37	1 22	+ 3	e 2 16	- 4	—	—
Ksara	8.1	150	e 2 14	+11	e 4 2	+22	—	—
Budapest	10.7	311	—	—	—	—	e 6.5	—
Zagreb	11.9	299	—	—	—	—	e 6.7	—
Baku	14.3	86	—	—	—	—	1.9	—
Florence	Z. 14.8	288	(e 3 29)	- 7	(e 6 30)	+ 3	6.9	10.4
Konigsberg	15.5	337	—	—	e 6 52	+ 8	e 10.5	12.0
Cheb	15.8	311	—	—	e 5 57?	-53	—	12.0
Ohur	16.5	298	3 59	0	—	—	—	—
Zurich	17.2	299	e 4 8	+ 1	—	—	—	—
Neuchatel	18.3	297	1 4 17	- 4	—	—	—	—
Pulkovo	18.8	359	1 4 20	- 7	7 54	- 4	9.5	—
Ekaterinburg	24.8	40	e 5 25	-11	9 53	- 6	—	—
Florissant	E. 84.0	318	—	—	—	—	e 48.0	54.0
St. Louis	84.1	318	—	—	—	—	e 50.0	54.0

Additional reading and note : Ksara PR₁ = +3m.6s.; T₁ = 22h.17m.59s. Florence eP and eS have been increased by 5m.

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April 27d. Readings also at 3h. (Sebastopol, Simferopol, Theodosia, and near Yalta), 4h. (Andijan), 9h. (Batavia), 10h. (Almata), 13h. (near Neuchatel), 18h. (Ksara and near Lick), 19h. (near Taihoku), 20h. (Samarkand), 21h. (near Taihoku).

April 28d. 4h. 58m. 32s. Epicentre 14°·5N. 54°·0E.

A = +·569, B = +·783, C = +·250; D = +·809, E = -·588;
G = +·147, H = +·203, K = -·968.

Deduced by comparing with 14°·5N. 53°·0E. of 1928 Mar. 19d.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay	18·6	74	e 4 43	+19	8 19	+26	10·5	—
Ksara	25·3	323	5 42	+ 1	(10 16)	+ 7	—	—
Helwan	25·9	310	5 45	- 2	10 30	+10	—	15·2
Baku	26·1	353	e 5 55	+ 6	e 10 24	0	14·2	18·2
Tashkent	29·9	23	1 6 28	+ 1	1 11 35	+ 3	i 15·5	19·5
Ekaterinburg	42·6	5	i 8 12	- 3	—	—	—	—
Kucino	43·1	347	8 13	- 6	14 41	- 8	e 27·5	—
Pulkovo	48·5	346	8 57	0	e 15 57	- 3	28·5	32·5
Moncalieri	49·4	320	(e 9 2)	- 1	(16 13)	+ 2	(16·2)	—
Strasbourg	50·9	323	e 9 28?	+16	(16 28?)	- 2	16·5	—
Feldberg	N. 51·2	325	—	—	e 16 28?	- 6	—	—
Copenhagen	52·1	332	9 24	+ 3	16 48	+ 3	—	—
De Bilt	53·9	326	—	—	e 17 19	+11	e 27·5	—
Kew	Z. 56·8	324	—	—	e 17 28?	-16	—	—
Scoresby Sund	71·7	340	—	—	—	—	43·5	—

Additional readings and notes: Ksara gives S as PR₁, also S = +14m.4s. Ekaterinburg e = +9m.54s., i = +10m.6s. Moncalieri readings have been increased by 4m. De Bilt eLN = +29·5m.

April 28d. 8h. 35m. 45s. Epicentre 43°·8N. 11°·2E. (as on April 24d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0·0	—	0 6	+ 6	—	—	—	0·4
Venice	1·9	26	0 25	- 4	—	—	—	—
Chur	3·2	338	e 0 39	-11	e 1 30	+ 2	—	—
Innsbruck	3·5	2	e 1 21	+26	—	—	—	—
Zagreb	4·0	58	1 2	0	e 1 53	+ 3	—	—
Neuchatel	4·4	318	e 1 17	+ 9	—	—	—	—
Strasbourg	5·3	334	0 15?	-67	—	—	—	—
Vienna	5·7	37	e 2 12	?S	(e 2 12)	-24	i 2·9	3·2
De Bilt	9·2	336	—	—	—	—	e 5·8	—

Zagreb gives also eNE = +1m.33s., eNW = +1m.42s., eSNE = +1m.48s.

April 28d. 14h. 33m. 3s. Epicentre 4°·5S. 134°·0E. (as on 1928 Dec. 7d.).

A = -·693, B = +·717, C = -·078; D = +·719, E = +·695;
G = +·055, H = -·056, K = -·997.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	23·0	326	1 5 16	- 1	i 9 24	- 1	—	—
Adelaide	30·8	174	e 6 51?	+15	e 13 15?	?SR ₁	i 17·3	18·3
Perth	32·3	210	13 57?	?L	—	—	(14·0)	—
Riverview	33·4	154	e 12 3	?S	(e 12 3)	-27	e 21·4	22·3
Melbourne	34·8	186	—	—	—	—	19·3	20·6
Irkutsk	62·1	340	e 10 31	+ 5	e 18 49	0	e 29·0	—
Tashkent	74·5	316	—	—	22 25	+65	i 36·0	46·6
Baku	88·4	311	e 13 16	+ 9	e 23 41	-15	e 42·6	—

Additional readings: Adelaide MN = +20·5m. Riverview eS? = +18m.15s., and +19m.18s. MZ = +23·2m., MN = +24·3m. Melbourne i = +14m.27s. = SR₁ - 27s., e = +16m.37s.

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April 28d. 19h. 39m. 54s. Epicentre 43°-8N. 11°-2E. (as at 8h.).

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		0-0	—	0 11	+11	—	—	—	0-5
Piacenza		1-6	319	e 0 26	+2	—	—	—	—
Venice		1-9	26	e 0 6?	-23	—	—	—	—
Moncalieri		2-8	295	0 51	+7	1 26	+9	—	—
Chur		3-2	338	i 0 45	-5	—	—	—	—
Laibach	N.	3-3	46	e 0 54	+2	e 1 45	+14	—	1-8
Innsbruck		3-5	2	e 0 48	-7	i 1 26	-11	i 1-8	—
Naples	E.	3-7	141	e 2 2	+64	—	—	(e 2-0)	—
Pompeii		3-9	142	e 2 16	+75	—	—	(e 2-3)	—
Zagreb		4-0	58	i 1 6?	+4	i 1 48	-2	i 2-2	2-5
Zurich	N.	4-0	332	i 0 55	-7	—	—	—	—
Ravensburg		4-2	345	e 1 9	+4	(i 1 54)	-1	i 1-9	—
Neuchatel		4-4	318	i 1 1	-7	i 2 0	-1	—	—
Graz		4-5	41	i 1 4	-6	i 1 52	-12	—	2-4
Besançon		5-0	316	e 1 30	+13	e 2 35	+18	—	—
Hohenheim		5-1	346	e 1 25	+6	(i 2 25)	+5	i 2-4	—
Strasbourg		5-3	334	e 1 13	-9	2 19	-6	—	—
Karlsruhe		5-6	341	e 0 6?	-81	—	—	—	—
Vienna		5-7	37	e 1 22	-6	i 2 48	+12	i 3-0	3-7
Budapest		6-6	53	—	—	e 3 6?	+6	—	—
Feldberg	N.	6-6	345	e 1 30	-11	—	—	i 3-3	4-3
Jena	E.	7-1	2	e 1 48	0	(e 3 25)	+12	e 3-4	3-9
Gottingen	N.	7-8	355	e 1 43	-15	—	—	e 4-0	—
Paris		7-8	313	—	—	—	—	e 3-8	6-1
Uccle		8-4	329	—	—	3 6?	-41	—	—
De Bilt		9-2	336	—	—	—	—	e 5-1	6-2
Kew		10-8	316	—	—	—	—	e 5-1	—
Copenhagen		12-0	3	—	—	—	—	6-1	—

Additional readings: Chur i = +55s. Laibach eP* = +1m.0s. Innsbruck iPR = +58s. Zagreb e = +1m.14s., +1m.20s., +1m.24s., and +1m.32s., iSN E = +1m.49s. Zurich e = +56s. Ravensburg iN = +1m.13s., i = +1m.23s., iS = +1m.35s., iE = +1m.48s. Neuchatel iP = +1m.15s., iSN = +1m.46s. Hohenheim iN = +1m.56s., iS = +1m.59s. Strasbourg P = +1m.31s., PR = +1m.38s., SR = +2m.38s., SR = +2m.59s. Feldberg iN = +2m.6s. Jena eE = +2m.45s. Gottingen eN = +2m.25s. and +3m.14s.

April 28d. Readings also at 0h. (Moncalieri), 1h. (Ekaterinburg and Tashkent), 2h. (Kobe), 6h. (near Suva), 7h. (Theodosia, near Sebastopol, Simferopol, near Batavia, and near Manila), 8h. (Florissant), 9h. (Neuchatel, Andijan, and near Samarkand), 10h. (near Oaxaca, Tacubaya, and Vera Cruz), 12h. (Andijan, Samarkand, and near Florence), 13h. (Venice and near Manila), 15h. (Wellington, near Amboina, and near Tananarive), 16h. (Suva and near Apia), 18h. (Samarkand and near Ksara), 19h. (Andijan and Samarkand), 21h. (Batavia), 22h. (near Sumoto).

April 29d. 18h. 35m. 59s. Epicentre 43°-8N. 11°-2E. (as on 28d.).

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		0-0	—	i 0 14	+14	—	—	—	—
Piacenza		1-6	319	0 27	+3	—	—	—	—
Venice		1-9	26	i 0 25	-4	i 0 42	-11	—	3-0
Moncalieri		2-8	295	0 53	+9	1 28	+11	—	2-5
Chur		3-2	338	e 0 46	-4	i 1 14	-14	—	—
Laibach	N.	3-3	46	e 0 48	-4	i 1 34	+3	—	1-9
Innsbruck		3-5	2	e 0 49	-6	(i 1 30)	-7	1-5	2-2
Naples	E.	3-7	141	e 1 42	?S	(e 1 42)	0	(e 2-4)	3-4
Pompeii		3-9	142	e 1 41	?S	(e 1 41)	-6	(e 2-7)	—
Zagreb		4-0	58	(1 8)	+6	(i 1 57)	+7	—	(2-8)

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zurich	4.0	332	e 0 56	- 6	—	—	—	—
Grenoble	4.2	290	—	—	2 12	+17	—	—
Ravensburg	4.2	345	e 0 58	- 7	i 1 50	- 5	i 2.0	—
Marselles	4.3	266	e 1 31	+24	—	—	e 2.2	—
Neuchatel	4.4	318	i 1 2	- 6	i 2 5	+ 4	—	—
Graz	4.5	41	e 1 4	- 6	1 51	-13	—	2.5
Besançon	5.0	316	e 1 17	0	2 20	+ 3	—	—
Hohenheim	5.1	346	i 1 9	-10	i 2 18	- 2	i 2.4	—
Strasbourg	5.3	334	1 13	- 9	2 39	+14	—	—
Karlsruhe	5.6	341	1 41	+14	2 41	+ 7	2.8	—
Vienna	5.7	37	e 1 23	- 5	i 2 51	+15	i 2.8	3.8
Cheb	6.3	8	e 1 37	+ 1	e 2 30	-22	—	3.6
Budapest	6.6	53	2 13	+32	—	—	3.7	—
Feldberg	N. 6.6	345	i 1 32	- 9	i 3 8	+ 8	i 3.3	4.4
Jena	7.1	2	e 1 55	+ 7	—	—	e 3.4	4.0
Paris	7.8	313	e 1 59	+ 1	e 3 42	+11	6.0	6.0
Tortosa	N. 8.4	253	—	—	e 3 43	- 4	—	5.9
Uccle	8.4	329	e 2 19	+12	e 3 58	+11	i 4.3	—
De Bilt	9.2	336	e 3 13	+54	—	—	e 4.5	6.2
Hamburg	9.8	356	e 3 1?	+34	(e 4 37)	+14	e 4.6	6.6
Alicante	10.4	242	—	—	—	—	e 6.5	—
Kew	10.8	316	—	—	e 4 1?	-49	—	7.0
Oxford	11.5	318	—	—	(i 4 49)	-18	i 4.8	7.7
Toledo	12.0	256	—	—	—	—	e 6.1	—
Copenhagen	12.0	3	—	—	5 1?	-18	—	—
Lund	12.0	5	—	—	5 31	+12	—	—
Konigsberg	12.6	25	e 0 1?	?	—	—	—	—
San Fernando	E. 15.2	247	—	—	—	—	—	10.9
Edinburgh	15.3	328	—	—	—	—	e 7.0	—
Dyce	15.8	333	—	—	—	—	e 8.0	9.8
Uppsala	16.5	11	—	—	—	—	e 8.2	10.5
Helsingfors	18.3	22	—	—	—	—	e 9.5	—
Pulkovo	19.7	29	4 23	-14	7 58	-19	11.0	12.3
Baku	28.7	83	—	—	e 11 46	+34	e 17.3	—
Scoresby Sund	31.3	340	—	—	—	—	18.0	—
Ekaterinburg	33.3	49	e 6 16	-43	e 11 56	-33	14.5	21.2
Tashkent	42.0	72	—	—	e 15 28	+51	e 24.0	31.1
Ottawa	58.6	307	—	—	—	—	e 30.0	—
Irkutsk	58.4	46	—	—	—	—	e 31.0	37.4
Toronto	61.8	307	—	—	—	—	35.8	—
Georgetown	Z. 63.2	300	—	—	—	—	e 38.8	—
Cincinnati	Z. 67.6	303	—	—	—	—	e 38.6	—

Additional readings and notes : Moncalieri MN = +3.0m. Chur i = +1m.18s.
 Leibach ePN = +59s. Innsbruck IP = +49s. and +53s. Naples and
 Pompeii gives S as P and L as S. Zagreb eNW = (+1m.11s.) and
 (+1m.20s.), e = (+1m.14s.), and (+1m.26s.), i = (+1m.43s.), iNW =
 (+1m.49s.); readings have been increased by 5m. Zurich IP = +1m.7s.
 Grenoble PR₁ = +1m.20s. Ravensburg IP* = +1m.5s., iP = +1m.11s.,
 iS = +1m.38s., iN = +1m.46s. Neuchatel IP = +1m.16s., iSN = +1m.48s.,
 Hohenheim iN = +1m.15s., iP = +1m.27s. Strasbourg P = +1m.39s.,
 PR₁ = +1m.46s., PR₂ = +1m.54s., SR₁ = +2m.57s., SR₂ = +3m.9s. Vienna
 P = +1m.44s., i = +1m.46s. and +1m.53s. Cheb MN = +2.8m. Feldberg
 eN = -1N = +2m.8s. Jena eP = +2m.1s., eE = +2m.31s., iE = +2m.45s.,
 iEN = +2m.58s., MNZ = +4.5m. Uccle e = +3m.0s. San Fernando
 MN = +10.4m. Tashkent e = +18m.31s. = SR₁ + 63s. Georgetown
 eZ = +29m.30s. Cincinnati LZ = +40.2m.

April 29d. Readings also at 2h. (Samarkand and Zi-ka-wel), 7h. (Florence and
 Melbourne), 8h. (Samarkand), 12h. (Georgetown), 13h. (Cincinnati, near
 La Paz and Sucre), 14h. (Florence), 15h. (Ekaterinburg, Tashkent,
 Nagasaki, Koti, and Sumoto), 16h. (near Sumoto), 18h. (Andijan and
 near Sumoto), 19h. (near Lick), 20h. (Zurich),

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April 30d. 18h. 48m. 36s. Epicentre $12^{\circ}7'N$, $94^{\circ}5'E$. (as on 1926 July 6d., and near the epicentres given by the Russian stations).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E. 11.4	330	5 29	?L	9 59	?	13.9	—
	N. 11.4	330	5 24	?L	10 4	?	13.8	—
Phu-Lien	14.1	53	—	—	6 24?	+14	7.4	—
Colombo	15.6	250	3 11	-36	—	—	—	11.2
Hyderabad	E. 16.2	289	—	—	—	—	—	18.0
Kodalkanal	16.9	264	10 0	?L	—	—	(10.0)	—
Hong Kong	21.0	60	4 54	+1	8 41	-3	e 11.4	13.8
Bombay	21.7	289	e 4 42	-19	9 36	+37	13.5	25.6
Batavia	22.5	146	e 5 30	+19	—	—	i 13.2	—
Dehra Dun	23.2	322	(5 24?)	+5	(9 24?)	-5	(12.4)	(17.4)
Manila	25.8	83	e 5 8	-38	—	—	—	—
Zi-ka-wei	30.9	49	e 7 29	?PR ₁	—	—	e 17.0	19.6
Andijan	33.8	330	8 29	?PR ₁	—	—	—	—
Tashkent	36.1	328	7 24	+1	13 9	-2	e 18.4	25.7
Samarkand	36.3	324	8 24?	?PR ₁	—	—	—	—
Irkutsk	40.4	9	9 53	?PR ₁	e 13 55	-18	21.4	24.8
Baku	47.9	314	—	—	e 16 6	+13	25.7	38.7
Ekaterinburg	51.2	337	i 9 22	+8	e 16 37	+3	27.4	33.6
Pulkovo	66.2	330	e 11 10	+17	e 19 47	+7	38.4	46.7
Copenhagen	75.1	325	—	—	22 24?	+57	41.4	—
Strasbourg	78.5	319	—	—	—	—	e 46.4	—
De Bilt	79.3	321	—	—	—	—	e 47.4	54.1
Kew	83.1	322	—	—	—	—	e 52.4	—
Edinburgh	83.8	326	—	—	—	—	e 56.1	—
Stonyhurst	83.8	324	—	—	—	—	e 51.9	55.6
Scoresby Sund	86.5	344	—	—	24 24?	?PS	47.4	—
Ottawa	121.2	352	—	—	—	—	e 73.4	—
Toronto	123.4	355	—	—	—	—	—	83.4
Georgetown	Z. 127.8	352	—	—	—	—	e 73.5	—
Cincinnati	Z. 128.2	359	—	—	—	—	e 73.4	109.4

Additional readings and notes: Hyderabad MN = +19.0m. Dehra Dun readings have been diminished by 4m. Baku e = +20m.12s. De Bilt MN = +52.0m., MZ = +54.3m. The Russian stations give epicentre $12^{\circ}5'N$, $94^{\circ}0'E$.

April 30d. Readings also at 0h. (Entebbe), 2h. (Batavia and near Florence), 3h. (Zagreb, Florence, near Naples, and Pompeii), 4h. (Samarkand and near Tacubaya), 8h. (Sucre, Andijan, and near Samarkand), 10h. (Zagreb), 11h. (Zagreb and near Florence), 12h. (Adelaide, Riverview, Wellington, Phu-Lien, near Calcutta, near La Paz, and Sucre), 13h. (Samarkand), 14h. (near Florence and near Tacubaya), 15h. (Florissant), 16h. (La Paz), 18h. (Ann Arbor, Florissant (2), St. Louis, Georgetown, Toronto, Ottawa, near Chihuahua and Tucson), 19h. (Phu-Lien), 20h. (near Florence), 21h. (Andijan), 23h. (Tucson, Florissant, St. Louis, Georgetown, Theodosia, Simferopol, and near Sebastopol).

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May 1d. 7h. 38m. 36s. Epicentre 13°·0N. 144°·0E. (a variation of 13°N. 144°·5E. of 1928 Oct. 10d.).

A = -·788, B = +·573, C = +·225; D = +·588, E = +·809;
G = -·182, H = +·132, K = -·974.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima	14·2	353	3 45	+16	6 43	+30	—	—
Manila	22·4	277	e 2 25	?	—	—	—	—
Miyazaki	22·8	333	5 5	-10	9 6	-15	—	—
Sumoto	22·9	340	e 5 58	+42	—	—	—	—
Kobe	23·1	341	5 26	+ 8	—	—	12·3	13·7
Nagoya	23·1	345	e 5 7	-11	—	—	—	—
Mizusawa	26·2	355	5 45	- 5	10 25	- 1	—	—
Akita	26·9	353	e 6 10	+13	(10 55)	+16	10·9	—
Hong Kong	29·8	293	e 6 28	+ 2	—	—	e 15·4	21·4
Phu-Lien	36·5	287	e 7 24	- 2	13 24?	+ 7	18·4	—
Batavia	41·6	245	1 8 11	+ 3	—	—	—	—
Irkutsk	50·5	350	1 9 3	- 7	1 16 18	- 7	24·4	31·3
Melbourne	50·8	180	—	—	1 16 24	- 5	—	29·7
Almata	64·4	313	e 11 24	+43	—	—	—	—
Andijan	67·7	309	e 11 12	+10	—	—	—	—
Bombay	68·2	285	e 12 24?	+79	—	—	—	—
Tashkent	70·0	310	1 11 24	+ 7	—	—	—	45·8
Samarkand	71·8	308	e 11 24	- 4	—	—	—	—
Ekaterinburg	75·5	325	1 11 51	- 1	1 21 30	- 2	33·4	45·1
Victoria	82·1	42	22 18	?S	(22 18)	-29	40·5	49·9
Baku	84·7	310	e 12 48	+ 2	23 9	- 7	42·7	62·4
Kucino	88·0	327	—	—	23 20	[+ 5]	44·5	54·7
Pulkovo	90·2	333	13 3	-14	23 31	[+ 2]	46·4	57·2
Tucson	95·5	55	—	—	23 50	[-10]	—	54·8
Scoresby Sund	95·9	356	17 12	[-18]	24 42	?Σ	45·4	—
Ksara	97·2	307	e 17 24	[-12]	e 24 18	[+ 9]	—	—
Lund	99·9	335	—	—	30 24?	?	51·4	—
Copenhagen	100·2	335	—	—	24 30	[+ 5]	51·4	—
Hamburg	102·7	335	—	—	—	—	e 51·4	—
Zagreb	104·9	325	e 24 51	?S	(e 24 51)	[+ 4]	—	64·7
Feldberg	105·8	333	—	—	e 24 58	[+ 7]	—	65·0
De Bilt	105·9	335	—	—	e 27 54	?PS	—	—
Uccle	107·1	335	—	—	e 25 0	[+ 3]	e 80·4	—
Strasbourg	107·3	331	e 18 55	?PR ₁	e 27 24?	+20	e 33·4	—
Florissant	107·5	41	e 16 47	+ 121	e 24 53	[- 6]	e 57·9	—
St. Louis	107·8	41	e 15 29	+42	e 24 53	[- 7]	e 53·4	—
Kew	108·5	339	e 18 24?	[+ 7]	—	—	e 59·4	—
Paris	109·4	335	e 19 3	?PR ₁	—	—	66·4	72·4
Toronto	110·9	32	—	—	24 24?	[-50]	52·4	—
Ottawa	111·5	29	—	—	e 25 12	[- 4]	e 48·9	—
Georgetown	115·5	35	e 19 34	?PR ₁	e 29 11	+57	e 56·2	66·6
San Fernando	123·1	331	—	—	—	—	—	79·9

Additional readings: Hong Kong 1 = +7m.30s. = PR₁ + 14s. Batavia 1Z = +8m.12s. Tashkent 1 = +17m.40s., PS = +21m.20s. Zagreb eS = +30m.40s., e = +34m.47s. De Bilt ePR₁Z = +18m.37s. Strasbourg e = +23m.24s.? Florissant eZ = +18m.39s. = [P] + 26s., eEN = +26m.4s. = Σ + 7s. and +33m.33s., eE = +36m.8s., eEN = +51m.53s. St. Louis eE = +33m.32s. Toronto eN = +60m.2s., LN = +65·4m. Georgetown eZ = +20m.41s., +25m.8s., and +30m.21s. San Fernando MN = +80·3m.

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May 1d. 15h. 37m. 22s. 38°-0N. 56°-8E.

A = +.431, B = +.659, C = +.616 ; D = +.837, E = -.548 ;
G = +.337, H = +.515, K = -.788.

		Δ	Az.	P. m. s.	O-C.	S. m. s.	O-C. s.	L. m.	M. m.
Baku		5.8	297	e 1 49	+19	—	—	—	—
Tashkent		10.1	67	i 2 26	- 5	i 4 16	-16	—	—
Theodosia		17.4	301	i 4 24	+14	8 0	+33	11.6	18.8
Ksara		17.4	263	i 4 23	+13	i 8 2	+35	9.2	11.2
Yalta		18.1	298	i 4 31?	+13	8 9?	+27	12.5	15.2
Sebastopol		18.6	298	i 4 36	+12	8 17	+24	—	—
Ekaterinburg		19.0	7	i 4 29	0	i 8 5	+ 3	—	—
Dehra Dun		19.1	107	4 38	+ 8	7 58	- 6	10.0	18.6
Kucino		21.8	331	15 10	+ 7	i 9 10	+ 9	e 9.8	17.6
Helwan		22.6	256	15 19	+ 7	i 9 34	+17	—	16.3
Bombay		23.7	139	5 45	+20	10 5	+27	12.9	14.1
Lemberg	E.	26.1	308	e 6 1	+12	e 10 57	+33	e 14.9	18.1
	N.	26.1	308	e 5 54	+ 5	e 10 29	+ 5	e 14.7	16.4
Pulkovo		27.5	331	16 2	- 1	10 48	- 2	15.6	32.1
Belgrade		27.8	296	e 6 9	+ 3	e 11 8	+13	e 15.8	20.9
Budapest		28.9	301	6 21	+ 4	11 19	+ 4	e 16.1	24.6
Konigsberg	E.	29.6	316	e 6 23	- 1	i 11 47	+20	e 15.6	24.9
	N.	29.6	316	e 6 25	+ 1	e 11 38?	+11	e 15.6	21.0
Helsingfors		29.8	328	i 6 25	- 1	11 38?	+ 7	16.0	—
Vienna		30.8	305	6 33	- 3	11 49	+ 1	—	22.6
Zagreb		31.0	299	e 6 30	- 8	i 11 44	- 7	—	22.1
Calcutta	E.	31.1	111	6 28	-11	11 36	-17	16.8	—
	N.	31.1	111	6 25	-14	11 29	-24	16.6	—
Sebenico		31.1	294	5 40	-59	—	—	e 15.4	16.9
Graz		31.4	304	16 39	- 3	i 11 54	- 4	14.6	20.2
Laibach		32.0	300	e 6 47	0	e 12 8	0	e 20.2	29.6
Pompeii		32.5	290	e 6 56	+ 3	e 12 1	-15	—	34.6
Naples	E.	32.7	290	e 6 59	+ 5	e 12 29	+10	—	37.6
Upsala		32.9	325	16 51	- 5	i 12 18	- 4	e 18.6	26.9
Kodalkanal		33.4	141	8 26	+86	(12 26)	- 4	12.4	19.3
Venice		33.5	298	17 0	- 1	12 23?	- 9	17.6	—
Cheb		33.5	308	16 58	- 3	e 12 29	- 3	e 18.6	28.1
Lund		33.8	317	17 0	- 3	12 30	- 8	16.6	—
Jena	E.	34.1	309	17 5	- 1	i 12 32	-10	e 17.6	23.4
	N.	34.1	309	17 5	- 1	e 12 38	- 4	e 17.6	29.8
	Z.	34.1	309	17 2	- 4	e 12 30	-12	e 18.6	23.5
Innsbruck		34.1	303	17 0	- 6	11 33	-69	e 15.3	28.7
Copenhagen		34.3	317	7 4	- 3	12 39	- 5	—	—
Florence		34.4	295	e 7 6	- 2	12 23	-23	16.6	21.6
Gottingen		35.1	310	17 14	0	i 12 38	-19	e 13.8	21.8
Hamburg		35.3	313	e 7 13	- 3	i 12 54	- 6	—	35.6
Ravensburg		35.3	304	17 14	- 2	i 12 59	- 1	i 20.7	26.6
Chur		35.4	300	e 7 13	- 4	—	—	e 21.6	—
Hohenheim		35.5	308	e 7 15	- 3	i 12 59	- 4	i 20.6	26.6
Irkutsk		35.6	50	17 8	-10	12 44	-20	17.6	—
Zurich		36.0	300	e 7 18	- 4	e 13 5	- 5	—	—
Feldberg		36.1	307	7 24	+ 1	13 11	0	e 21.3	31.6
Karlsruhe		36.1	306	17 21	- 2	13 9	- 2	e 19.6	32.9
Strasbourg		36.6	305	17 24	- 3	i 13 14	- 4	16.6	27.1
Moncalieri		36.8	297	7 24	- 4	13 13	- 8	18.8	29.2
Neuchatel		37.2	300	e 7 28	- 4	i 13 20	- 7	—	—
Besancon		37.8	301	17 35	- 1	13 33	- 2	19.6	30.6
Grenoble		38.2	299	17 42	+ 2	i 13 39	- 2	17.6	—
De Bilt		38.2	310	17 39	- 1	13 34	- 7	19.6	31.1
Uccle		38.7	308	17 41	- 3	i 13 48	0	e 18.6	26.5
Marseilles	E.	38.8	295	i 8 14	+30	14 19	+30	18.6	—
	N.	38.8	295	i 8 17	+33	i 14 16	+27	—	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bergen	38-9	322	7 48	+ 3	13 51	- 0	16-6	28-6
Paris	40-0	305	17 52	- 3	i 14 5	- 2	20-6	28-6
Puy de Dôme	40-1	300	17 53	- 3	e 14 6	- 2	17-6	—
Barcelona	41-5	292	8 6	- 1	i 14 26	- 2	e 20-0	26-4
Kew	41-5	310	18 6	- 1	i 14 27	- 1	24-3	29-2
Algiers	42-1	286	18 9	- 3	14 38	+ 2	23-6	29-1
Oxford	42-1	310	18 10	- 2	i 14 34	- 2	i 17-6	30-1
Dyce	42-4	318	e 8 21	+ 7	14 36	- 4	—	23-8
Stonyhurst	42-7	312	18 15	- 1	i 14 41	- 3	24-6	34-6
Tortosa	N. 42-8	292	18 15	- 2	i 14 46	+ 1	19-8	37-5
Edinburgh	43-0	316	8 20	+ 2	15 17	+29	23-6	31-4
Bidston	43-1	312	8 37	+18	14 46	- 3	21-5	25-6
Eintebbe	44-1	219	10 8	+101	16 51	+108	23-6	—
Alicante	44-3	290	18 31	+ 3	i 15 16	+10	e 20-2	32-3
Phu-Lien	46-0	98	8 31	- 9	e 15 1	-27	20-6	29-8
Almeria	46-2	288	8 52	+11	i 15 44	+13	20-5	38-4
Toledo	46-4	293	18 44	+ 1	i 15 36	+ 3	e 21-0	35-3
Granada	47-0	289	18 48	+ 1	i 15 45	+ 4	22-1	34-2
Malaga	47-8	289	18 55	+ 2	i 15 57	+ 6	19-0	41-8
San Fernando	49-2	289	19 31	+30	i 16 35	+26	25-5	32-6
Scoresby Sund	50-8	336	9 18	+ 6	i 16 40	+11	—	—
Hong Kong	51-2	91	9 9	- 5	16 29	- 5	26-0	32-5
Reykjavik	51-6	328	9 28	+11	17 2	+23	27-2	35-6
Zi-ka-wei	N. 52-5	76	e 9 25	+ 2	16 49	- 1	29-8	34-9
Taihoku	E. 55-6	85	9 43	0	17 45	+16	26-5	36-9
Tananarive	57-6	190	10 4	+ 8	18 3	+ 9	28-4	30-3
Nagasaki	58-1	71	13 25	1PR ₂	17 38	-22	31-6	34-7
Hukuoka	58-2	70	e 10 7	+ 7	e 18 25	+24	33-4	35-3
Matuyama	59-9	69	e 27 12	1L	e 33 52	?	e 34-9	37-8
Koti	60-6	69	e 10 18	+ 2	18 34	+ 3	e 28-6	35-4
Toyooka	60-6	67	11 10 15	- 1	i 18 33	+ 2	28-4	35-2
Manila	60-8	94	e 10 54	+36	i 18 48	+15	e 30-0	39-6
Ootomari	60-9	51	10 22	+ 4	18 36	+ 1	—	—
Muroto	61-2	69	e 10 39	+19	—	—	e 34-3	35-1
Sumoto	61-2	68	e 10 18	- 2	—	—	e 27-2	37-6
Kobe	61-2	67	10 27	+ 7	18 41	+ 3	e 28-8	35-8
Osaka	61-5	67	10 47	+25	19 24	+42	34-6	36-4
Nagoya	62-3	65	e 10 35	+ 8	e 18 11	-41	29-2	37-9
Akita	62-3	60	11 0 34	+ 7	i 18 54	+ 2	e 33-6	36-6
Mizusawa	E. 63-3	60	10 42	+ 8	19 13	+ 8	34-4	—
	N. 63-3	60	10 45	+11	19 12	+ 7	34-2	—
Tokyo	64-0	64	10 57	+19	19 33	+20	—	—
Batavia	64-1	123	e 10 36	- 3	i 19 20	+ 6	28-7	36-3
Johannesburg	69-6	208	11 38?	+23	—	—	—	—
Cape Town	80-3	212	—	—	i 22 28	+ 1	38-3	45-1
Sitka	84-4	6	e 23 6	1S	(e 23 6)	- 6	47-2	51-4
Ottawa	86-3	329	11 12 59	+ 4	123 40	+ 7	e 42-6	50-6
Harvard	86-7	325	11 8 0	- 1	123 40	+ 2	—	—
Perth	89-0	134	e 14 38	+88	124 28	+25	37-7	—
Fordham	89-1	325	11 3 18	+ 7	124 29	+25	37-0	43-6
Toronto	E. 89-2	330	e 13 10	- 1	123 55	- 10	42-9	50-1
	N. 89-2	330	13 15	+ 4	i 23 57	- 8	44-6	55-4
Ann Arbor	E. 92-0	332	e 15 50	- 1	e 23 50	[+10]	e 42-5	49-1
	N. 92-0	332	e 13 26	- 1	e 23 56	[+16]	e 43-4	55-4
Georgetown	E. 92-2	326	e 13 29	+ 1	e 23 56	[+15]	e 39-2	54-5
	Z. 92-2	326	11 3 27	- 1	123 56	[+15]	e 38-5	57-7
Charlottesville	E. 93-5	326	—	—	e 24 8	[+19]	e 46-3	56-0
	N. 93-5	326	—	—	e 24 6	[+17]	e 46-7	60-1
Victoria	E. 93-6	0	13 57	+21	24 30	-22	40-3	54-3
	N. 93-6	0	13 47	+11	24 7	[+17]	43-7	58-0
Chicago	E. 93-9	335	—	—	24 3	[+12]	e 39-0	48-7
	N. 93-9	335	—	—	24 5	[+14]	46-4	56-6
Cincinnati	N. 95-1	331	e 13 54	+10	e 23 14	[-44]	41-2	46-6

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	m. s.	m. s.	s.	m. s.	s.	m.	m.
Florissant		97.3	336	113 49	- 7	125 20	- 9	e 42.1	49.1
		97.3	336	e 14 6	+10	e 24 17	[+ 8]	e 42.1	48.6
St. Louis	E.	97.6	336	e 14 3	+ 5	125 15	-17	e 41.6	48.6
Denver	E.	100.5	346	—	—	—	—	—	54.6
Berkeley		104.1	359	e 18 34	?PR ₁	e 24 57	[+14]	e 51.8	—
Lick	N.	104.6	359	e 18 44	?PR ₁	—	—	e 53.8	—
Adelaide		105.1	121	e 18 0	?PR ₁	e 24 48	[0]	43.6	64.6
Tucson	N.	108.7	349	—	—	—	—	e 64.3	—
Melbourne		110.9	121	e 19 24	?PR ₁	125 21	[+ 7]	49.6	58.3
Rio de Janeiro	E.	111.4	257	e 19 27	?PR ₁	28 57	?PS	e 45.9	58.0
	N.	111.4	257	e 19 28	?PR ₁	28 56	?PS	43.7	66.9
Honolulu T.H.	E.	112.4	35	—	—	—	—	e 48.7	—
Riverview		113.2	115	e 17 8	?	—	—	e 33.4	61.6
Sydney	E.	113.2	115	28 50	?S	(28 50)	+54	66.6	68.1
Tacubaya		118.3	334	20 21	?PR ₁	37 19	?	60.1	72.0
Sucree		126.6	273	19 18	[+ 8]	27 2	?PR ₁	62.6	65.9
La Paz		127.4	278	119 15	[+ 3]	27 29	?PR ₁	65.6	83.9
La Plata		128.5	251	21 26	?PR ₁	—	—	66.1	—
Apia		130.8	73	—	—	—	—	63.6	74.6
Wellington	E.	133.2	113	122 24	?PR ₁	35 18	?	—	72.0
	N.	133.2	113	122 49	?	38 59	?SR ₁	56.5	63.8

Additional readings: Tashkent $i = +3m.3s.$, Belgrade $iPE = +6m.13s.$,
 $PR_1E = +7m.18s.$, $PR_1N = +7m.19s.$, $iN = +8m.26s.$, $iE = +8m.31s.$, $eSE =$
 $+11m.11s.$, $iE = +11m.24s.$ and $+13m.3s.$, $iEN = +13m.19s.$, $iEN =$
 $+13m.47s.$ Budapest $PR_1 = +6m.46s.$, $PR_2 = +7m.38s.?$, $SR_1 =$
 $+11m.44s.$, $SR_2 = +13m.38s.?$ MN = +18.6m. Konigsberg $iPR_1E =$
 $+7m.35s.$, $iPR_1N = +7m.38s.$, $ePR_1E = +7m.44s.$, $iN = +10m.13s.$, $iE =$
 $+12m.35s. = SR_1 - 14s.$, $iPSSE = +14m.8s.$, $iSR_1E = +14m.29s.$ Helsingfors
 $PR_1Z = +7m.11s.$, $PR_1 = +7m.27s.$, $SR_1 = +14m.1s.$ Vienna $iPZ =$
 $+6m.35s.$, $iEN = +8m.55s.$, $iZ = +9m.32s.$, $SR_1 = +13m.49s.$, $iEZ = +18m.19s.$,
 $iN = +18m.53s.$, $MZ = +24.1m.$, $MN = +27.1m.$ Zagreb $i = +6m.55s.$,
 $+7m.45s. = PR_1 + 13s.$, $+8m.28s.$, $+9m.59s.$, and $+12m.13s.$, $iNW =$
 $+7m.16s.$, $+7m.51s.$, $+8m.10s.$, $+8m.18s.$, $+8m.47s.$, $+8m.58s.$, $+9m.13s.$,
and $+9m.27s.$, $iNE = +7m.19s.$, $+8m.1s.$, $+8m.20s.$, $+8m.43s.$, $+9m.17s.$,
and $+11m.53s.$, $iSR_1 = +13m.47s.$, $iSR_2 = +15m.21s.$, $iSR_1NW = +16m.45s.$
Sebenico $eS = +9m.38s.?$, $e = +12m.29s.$ Graz $iSR_1 = +12m.49s.$
Laibach $e = +7m.19s.$, $ePR_1 = +8m.1s.$, $e = +9m.10s.$, $+10m.24s.$,
 $+11m.31s.$, and $+13m.8s.$, $eSR_2 = +14m.40s.$, $e = +15m.35s.$, and $+16m.39s.$
Upsala $PR_1E = +7m.53s.$, $MN = +24.8m.$ Cheb $ePR_1 = +8m.15s.$, $MN =$
 $+27.1m.$ Jena $iPR_1Z = +8m.22s.$, $iPR_1EN = +8m.24s.$, $eN = +9m.33s.$,
 $iE = +9m.36s.$, $iPSZ = +13m.16s.$, $iPSEN = +13m.31s.$, $iZ = +15m.38s.$,
 $+15m.28s.$, $iE = +15m.30s.$, $eN = +16m.8s.$, $eZ = +17m.1s.$ Inns-
bruck $PR_1 = +8m.7s.$, $PR_1 = +8m.27s.$ Copenhagen $iP = +7m.6s.$, also
 $+8m.32s.$ Göttingen $iZ = +7m.35s.$, $iPR_1N = +8m.19s.$ and $+8m.29s.$,
 $iPR_1Z = +8m.30s.$, $iPR_1E = +8m.35s.$, $iZ = +9m.21s.$, $eLN = +15.6m.$,
 $eLZ = +15.7m.$, $MN = +21.3m.$, $MZ = +23.8m.$ Hamburg $iPEZ = ePN =$
 $+7m.15s.$, $iPR_1EZ = +8m.36s.$, $iSN = +13m.2s.$, $eSR_1 = +15m.52s.$, $eSR_2 =$
 $+16m.21s.$ Ravensburg $iPR_1 = +8m.31s.$, $iPR_2 = +8m.51s.$, $iSR_1 =$
 $+15m.17s.$ Hohenheim $iP = +7m.16s.$, $iPR_1N = +8m.33s.$, $iE =$
 $+8m.43s.$, and $+9m.7s.$, $iSR_1N = +15m.18s.$, $iN = +16m.50s.$ Feldberg
 $iE = +16m.35s.$, $+18m.11s.$, and $+20m.35s.$, $iLN = +21.6m.$, $MN = +30.3m.$
Karlsruhe $MN = +19.8m.$ Strasbourg $iSR_1 = +15m.48s.$, $MZ = +26.1m.$,
 $MN = +27.0m.$ Grenoble $PR_1 = +9m.18s.$, $SR_1 = +16m.18s.$ De Bilt
 $iPR_1 = +9m.4s.$, $eN = +13m.39s.$, $eSR_1 = +16m.20s.$, $MN = +28.0m.$, $MZ =$
 $+31.2m.$ Uccle $iPR_1 = +9m.3s.$, $iSR_1 = +16m.36s.$, $MN = +33.0m.$,
 $MZ = +34.4m.$ Marseilles $PR_1 = +8m.22s.$ Bergen $PR_1 = +9m.11s.$,
 $PR_2 = +9m.58s.$, $e = +10m.18s.$, $SR_1 = +16m.8s.$, $MN = +29.6m.$ Paris
 $PR_1 = +9m.31s.$, $SR_1 = 17m.3s.$, $MN = +24.6m.$ Barcelona $PR_1 =$
 $+9m.44s.$, $SR_1 = +17m.36s.$, $MN = +25.4m.$ Kew $PR_1EZ = +9m.47s.$,
 $SR_1NZ = +17m.29s.$ LN = +22.5m. LZ = +24.9m. MN = +29.6m. MZ =
 $+34.4m.$ Algiers $PR_1 = +9m.57s.$ MN = +27.6m. Stonyhurst
 $PR_1 = +9m.57s.$, $PR_2 = +10m.31s.$, $PR_3 = +10m.46s.$, $SR_1 = +20m.55s.$;
 $T_1 = 15h.37m.21s.$ Tortosa $PZ = +8m.14s.$ Edinburgh $PR_1 =$
 $+10m.8s.$, $i = +14m.49s. = S + 1s.$, and $+15m.1s.$, $SR_1 = +19m.8s.$, $i =$
 $+21m.19s.$ Phylliden $ePR_1 = +10m.13s.$, $eSR_1 = +18m.11s.$, $MN =$
 $+27.1m.$ Almeria $MN = +37.4m.$ Toledo $PR_1 = +10m.40s.$, $PR_1NE =$
 $+11m.19s.$, $PR_1NE = +11m.33s.$, $SR_1 = +19m.13s.$, $MNW = +35.0m.$
Granada $iP = +8m.50s.$, $PR_1 = +10m.53s.$, $i = +11m.40s. = PR_1 - 2s.$, and
 $+19m.42s.$ Malaga $PR_1Z = +10m.53s.$, $PR_1E = +19m.57s.$, $PR_1N =$

Continued on next page.

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+10m.59s., MN = +42.3m. San Fernando MN = +32.3m. Scoresby
 Sund +11m.20s. = PR₁-4s., PR₂ = +12m.20s., iE = +16m.30s., iN =
 +16m.51s. = PS-1s., iN = +21m.8s. Hong Kong PR₁ = +11m.17s.,
 SR₁ = +20m.41s. Reykjavik PR₁ = +11m.29s., e = +12m.17s. = PR₂-4s.,
 and +14m.13s., SR₁ = +20m.58s., LN = +28.0m., MN = +31.8m.
 Zi-ka-wei ME = +36.2m. Tananarive PR₁E = +13m.28s., PR₂N =
 +13m.33s., PR₂N = +14m.15s., SN = +18m.6s., PSE = +18m.19s., S₃SE =
 +20m.10s., SR₁ = +22m.28s., SR₂ = +24m.37s. Hukuoka MN = +36.1m.
 Koti ePEN = +10m.21s., i = +10m.38s., SR₁E = +22m.38s., eLqEN =
 +34.0m., MZ = +39.6m. Toyooka MN = +37.2m. Manila iPP =
 +11m.18s., iPS = +19m.8s., MN = +42.4m. Muroto e = +26m.39s.,
 SR₁ + 3s. Sumoto MN = +37.8m. Kobe MZ = +37.1m., MN =
 +37.3m. Osaka MN = +38.7m. Akita MZ = +35.6m., MN = +37.9m.
 Batavia i = +10m.46s., +12m.5s., and +15m.3s. = PR₂-26s.; all readings
 are given without phase. Sitka eE = +28m.18s., eN = +28m.19s., eEN =
 +39m.3s., eN = +42m.20s. and +45m.11s., MN = +55.7m. Ottawa
 i = +23m.23s. = [S] +19s., eSR₁ = +34m.50s., MN = +52.1m. T₁ =
 15h.37m.37s. Perth iS = +24m.53s., iSR₁ = +30m.38s. Fordham
 i = +15m.52s., e = +23m.3s. = [S] -20s., +23m.48s. = Z-5s., +24m.6s.,
 +26m.18s., +26m.55s., +27m.18s., +29m.25s., +30m.25s. = SR₁ + 6s.,
 +31m.33s., +33m.25s., MZ = +53.6m. Toronto eEN = +23m.38s. =
 [S] +15s. Ann Arbor eE = +17m.8s., eE = +20m.14s., eEN =
 +25m.38s. = PS + 7s., eN = +30m.8s. and +34m.44s. Georgetown PR₁Z =
 +17m.3s., PR₂EZ = +19m.3s., iZ = +25m.45s. = PS + 11s., iE = +25m.49s.,
 PS + 15s., SR₁Z = +30m.2s., iE = +30m.56s. = SR₁-2s., SR₂Z = +33m.37s.,
 SR₁E = +33m.42s. Charlottesville eE = +39m.56s. Chicago PR₁E =
 +17m.18s., PR₂N = +17m.22s., PSN = +25m.50s., SR₁E = +30m.32s.,
 SR₂E = +34m.45s. Cincinnati eN = +26m.4s. = PS-5s. Florissant
 (first line) eZ = +14m.52s., iZ = +17m.2s. = [P] -34s., iPR₁NZ = +17m.47s.,
 iNZ = +19m.55s. and +21m.44s., iPR₂Z = +20m.30s., eS₁P₁C₁SN = +24m.19s.,
 iN = +26m.12s., ePSN = +26m.32s., iZ = +26m.58s., iPC₁P₁C₁PNZ =
 +30m.33s., eSR₁N = +32m.35s., eN = +35m.48s., eSR₂N = +36m.41s.,
 iN = +39m.30s., MZ = +50.8m.; (second line) eE = +25m.14s. and
 +26m.38s. = PS + 4s. St. Louis ePR₁E = +17m.47s., iE = +19m.57s.,
 eE = +21m.46s., iS₁P₁C₁SE = +24m.27s., iS₁P₁C₁SE = +24m.46s., iPSE =
 +26m.44s., eP₁C₁P₁C₁PE = +30m.27s., eSR₁E = +31m.47s., eE = +35m.42s.,
 iSR₂E = +37m.13s., iE = +38m.18s. Berkeley eZ = +42m.17s., eE =
 +47m.17s.; all readings are given without phase. Lick eE = +18m.48s.,
 PR₁ + 4s., eN = +19m.8s., +28m.59s., +40m.56s., and +42m.36s., also
 eN = +56m.44s., +57m.2s., and +58m.26s., eZ = +60m.14s. Adelaide
 iSR₁ = +31m.34s., MN = +57.0m. Tucson PR₁N = +19m.28s., PSN =
 +28m.44s., eN = +42m.20s. and +49m.44s. Melbourne PS = +28m.41s.,
 SR₁ = +36m.30s., SR₂ = +39m.23s. Honolulu T.H. eSR₁E = +35m.14s.,
 eSR₂N = +35m.38s., eLN = +46.1m. Riverview e = +19m.8s., ePS =
 +29m.10s. and +34m.6s., eL₁ = +48.0m. and +50.3m., MN = +54.5m.
 Sydney S = +40m.38s., SR₁ = +55m.50s. Sucre e = +21m.26s. = PR₁ + 18s.,
 i = +32m.28s., SR₁ = +37m.50s. La Paz PR₁N = +22m.21s., PR₁E =
 +25m.54s., S₁C₁P₁SP = +33m.8s., SR₁E = +38m.59s., MN = +80.6m.

May 1d. 19h. 36m. 33s. Epicentre 33°-5N. 27°-0E. (as on 1925 Jan. 27d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Helwan	5.2	133	1 7	-13	11 57	-25	2-0
Ksara	7.4	85	1 34	-18	2 39	-42	—
Chur	18.8	320	e 4 31	+ 4	e 7 59	+ 1	—
Zurich	19.6	320	e 4 38	+ 2	e 8 10	- 5	—
Neuchatel	20.3	318	i 4 45	0	e 8 33	+ 4	—
Strasbourg	20.8	322	e 4 57	+ 6	e 8 52	+ 12	—
Uccle	23.9	323	e 5 21	- 6	e 9 51	+ 9	—
Pulkovo	26.5	4	i 5 36	-17	—	—	—
Samarkand	32.4	67	e 12 30	?S	(e 12 30)	+ 16	—
Tashkent	34.1	64	e 3 12	?	—	—	—
Andijan	36.4	66	e 14 10	?S	(e 14 10)	+ 54	—

No additional readings.

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May 1d. 21h. 12m. 20s. Epicentre 43°-8N. 11°-2E. (as on April 29d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0.0	—	0 9	+ 9	—	—	—	0.4
Piacenza	1.6	319	e 0 36	+12	—	—	—	—
Padova	1.7	17	i 0 34	+ 8	—	—	—	—
Venice	1.9	26	i 0 28	- 1	10 41	-12	—	—
Treviso	2.0	21	0 29	- 2	—	—	—	—
Moncalieri	2.8	295	0 57	+13	1 32	+15	—	—
Chur	3.2	338	e 0 49	- 1	i 1 35	+ 7	—	—
Laibach	3.3	46	e 0 50	- 2	i 1 37	+ 6	—	1.8
Innsbruck	3.5	2	e 0 52	- 3	i 1 31	- 6	1 2.0	—
Zagreb	4.0	58	e 1 1	- 1	—	—	—	—
Zurich	4.0	332	e 1 0	- 2	—	—	—	—
Ravensburg	4.2	345	e 1 10	+ 5	—	—	—	—
Neuchatel	4.4	318	i 1 4	- 4	i 2 2	+ 1	—	—
Besançon	5.0	316	e 1 36	+19	—	—	—	—
Hohenheim	5.1	346	e 1 25	+ 6	—	—	—	—
Strasbourg	5.3	334	e 1 27	+ 5	2 48	+23	—	—
Karlsruhe	5.6	341	e 1 43	+16	—	—	(1.7)	—
Vienna	5.7	37	e 1 22	- 6	—	—	13.0	3.3
Feldberg	6.6	345	i 1 40	- 1	—	—	13.5	3.4
Paris	7.8	313	e 3 53	?L	—	—	(e 3.9)	—
Uccle	8.4	329	—	—	e 3 40?	- 7	—	—
De Bilt	9.2	336	—	—	—	—	e 4.7	6.3
Hamburg	9.8	356	—	—	e 4 10?	+17	—	—
Kew	10.8	316	—	—	—	—	e 5.7	—
Copenhagen	12.0	3	- 0 40?	?	—	—	—	—
Pulkovo	19.7	29	—	—	e 7 48	-29	—	—
Ekaterinburg	33.3	49	—	—	—	—	—	19.7
Tashkent	42.0	72	—	—	—	—	e 19.1	—

Additional readings: Laibach eP*N = +57s. Innsbruck i = +1m.17s.
and +1m.21s. Zagreb ePNE = +1m.3s., eNW = +1m.12s., eNE =
+1m.13s. and +1m.20s. Neuchatel eP = +1m.18s., iSN = +1m.50s.
Strasbourg P = +1m.45s., SR₁ = +2m.53s., SR₂ = +3m.5s. Vienna iN =
+1m.59s., PS₁ = +2m.53s. De Bilt eL = +5.7m., MZ = +6.2m.

May 1d. 22h. 3m. 32s. Epicentre 5°-0S. 78°-5W.

A = +.199, B = -.976, C = -.087; D = -.980, E = -.199;
G = -.018, H = +.085, K = -.996.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	15.3	139	3 47	+ 4	16 41	+ 2	7.9	9.4
Sucre	19.1	138	4 28	- 2	17 59	- 5	9.5	10.8
Rio de Janeiro	38.5	123	—	—	e 13 23	-22	20.6	—
Georgetown	43.9	1	e 8 26	+ 1	1 15 9	+ 8	e 21.2	27.8
Cincinnati	44.5	355	—	—	e 14 44	-25	22.3	—
St. Louis	44.9	349	—	—	e 15 2	-12	e 22.0	30.5
Florissant	45.2	349	e 10 28	?PR ₁	e 15 28	+10	e 24.8	—
Fordham	46.1	5	—	—	e 15 2	-27	—	—
Toronto	48.6	359	—	—	16 28?	+27	—	—
Ottawa	50.4	3	—	—	e 16 16	- 8	26.5	—
Scoresby Sund	84.2	16	—	—	23 16	+ 6	—	—
Stonyhurst	85.9	36	—	—	—	—	e 46.5	—
Kew	86.6	38	—	—	—	—	e 42.5	—
Paris	87.9	41	—	—	—	—	47.5	—
Uccle	89.4	39	—	—	e 23 28?	[+ 4]	e 44.5	—
De Bilt	90.0	38	—	—	24 13	- 1	e 43.5	48.6
Feldberg	91.9	40	—	—	e 24 28	- 6	—	—
Cheb	94.4	40	—	—	—	—	e 49.5	—
Copenhagen	94.6	35	—	—	—	—	44.5	—

For Notes see next page.

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NOTES TO MAY 1d. 22h. 3m. 32s.

Additional readings and note: La Paz SE = +6m.46s. Rio de Janeiro
 eN = +13m.28s., LN = +20.5m. Georgetown SR, Z = +18m.41s.
 Cincinnati eZ = +19m.3s. St. Louis eE = +18m.27s. = SR, -1s. Ottawa
 eN = +20m.28s. = SR, -14s. De Bilt eN = +24m.51s. = PS -16s., eLN =
 +40.5m., MZ = +48.9m. La Paz, Sucre, and Georgetown are the only
 stations to give their readings as P and S phases.

May 1d. 22h. 42m. 45s. Epicentre 38°-0N. 56°-8E. (as at 15h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	5.8	297	e 1 52	+22	e 3 27	+48	—	7.2
Samarkand	8.1	75	e 2 0?	-3	3 23?	-17	4.2?	5.1
Tashkent	10.1	67	e 2 26	-5	i 4 12	-20	e 4.3	6.0
Andijan	12.2	75	i 2 57	-5	5 2	-22	—	—
Ksara	17.4	263	e 3 46	-24	7 57	+30	12.2	—
Ekaterinburg	19.0	7	e 4 31	+2	i 8 5	+3	10.2	12.8
Kucino	21.8	331	e 5 5	+2	e 9 17	+16	e 11.0	22.0
Bombay	23.7	139	e 8 56	?	(e 8 56)	-42	—	—
Pulkovo	27.5	331	i 5 58	-5	10 56	+6	14.2	—
Lund	33.8	317	—	—	—	—	—	23.2
Hamburg	35.3	313	—	—	—	—	e 21.2	—

Baku gives e = +3m.2s.

May 1d. Readings also at 0h. (Scoresby Sund, Ottawa, and Toronto), 2h. (Ksara, and Neuchatel), 3h. (Pulkovo and Zagreb), 4h. (near Taihoku), 5h. (Zi-ka-wei), 6h. (Ekaterinburg, Pulkovo, Tashkent, Copenhagen, De Bilt, Feldberg, and near Florence), 8h. (near La Paz), 10h. (Samarkand, near Andijan, and Almata), 11h. (Bombay), 12h. (near Irkutsk), 13h. (near Ksara), 15h. (near Amboina), 16h. (Suva, Andijan (2), and near Samarkand (2)), 17h. (Suva, Almata, Andijan (2), and Samarkand (3)), 18h. (Andijan and Samarkand (2)), 19h. (Andijan), 21h. (Andijan and Samarkand), 22h. (Andijan and Samarkand), 23h. (Andijan (3), Samarkand, Tashkent, Ekaterinburg, and near Baku).

May 2d. 14h. 25m. 51s. Epicentre 44°-6N. 149°-5E.

A = -614, B = +361, C = +702; D = +508, E = +862;
 G = -605, H = +356, K = -712.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	8.4	231	2 7	0	3 36	-11	—
	N.	8.4	231	2 9	+2	3 37	-10	—
Akita		8.6	238	e 2 13	+3	(3 53)	0	3.9
Nagoya		13.5	230	e 3 20	0	—	—	—
Osaka		14.6	232	3 39	+5	(6 1)	-21	6.0
Kobe		14.9	233	3 37	-1	6 43	+13	e 9.3
Koti		16.6	234	e 3 57	-3	7 15	+6	9.2
Nagasaki		19.4	239	4 17	-17	8 6	-4	—
Zi-ka-wei	Z.	25.8	248	i 5 36	-10	10 14	-4	13.8
Taihoku	N.	29.9	238	—	—	—	—	e 14.2
Irkutsk		30.4	302	e 6 19	-13	i 11 43	+2	17.2
Hong Kong		36.5	244	7 13	-13	12 53	-24	17.8
Manila		38.6	229	e 7 31	-12	i 13 41	-5	—
Phu-Lien		42.6	250	e 8 4	-11	e 14 21	-22	20.2
Honolulu T.H.		48.9	101	—	—	—	—	26.2
Ekaterinburg		53.5	318	9 24	-6	16 51	-12	24.2
Tashkent		56.4	299	i 10 20	+32	i 18 36	+57	—
Dehra Dun		56.7	281	16 59	?	(16 59)	-43	29.2
Kucino		64.3	325	10 42	+2	e 19 18	+1	33.4
Pulkovo		64.4	331	10 42	+1	e 19 10	-8	32.2

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund	64.8	357	10 46	+ 2	19 21	- 2	28.2	—
Helsingfors	65.9	334	e 10 54	+ 4	e 19 39	+ 3	e 34.2	—
Upsala	68.4	337	e 11 7	0	e 21 15	[+15]	—	45.4
Baku	68.7	308	11 13	+ 4	20 18	+ 8	35.4	50.8
Konigsberg	71.6	332	e 10 6	-81	—	—	e 35.2	46.2
Theodosia	73.1	319	e 11 41	+ 4	—	—	—	—
Lund	73.2	336	11 38	+ 1	21 4	0	34.2	—
Copenhagen	73.4	336	11 39	+ 1	21 7	0	35.2	—
Simferopol	73.8	319	i 11 43	+ 2	—	—	—	—
Yalta	74.1	319	e 11 45	+ 2	—	—	—	—
Sebastopol	74.3	319	e 11 47	+ 3	—	—	—	—
Hamburg	75.9	337	e 11 58	+ 4	e 21 34	- 2	e 38.2	49.2
Edinburgh	76.9	345	—	—	e 22 9?	[+ 7]	43.2	69.2
Göttingen	N. 77.8	336	e 12 8	+ 2	—	—	44.4	50.2
Budapest	78.2	328	12 11	+ 3	e 22 9?	+ 7	e 40.6	52.2
Cheb	78.3	333	—	—	e 22 9?	+ 5	e 43.2	45.2
Vienna	78.5	330	e 12 7	- 3	—	—	e 46.2	56.2
De Bilt	78.6	339	12 9	- 2	—	—	e 36.2	45.1
Stonyhurst	78.7	344	—	—	—	—	e 43.2	—
Feldberg	N. 79.4	337	12 16	+ 1	e 22 14	- 2	—	49.2
Graz	79.8	330	e 12 17	- 1	e 22 37	+16	e 43.0	51.2
Uccle	80.0	340	e 12 16	- 3	e 22 17	- 6	e 37.2	45.6
Oxford	N. 80.4	342	12 20	- 1	22 35	+ 7	e 41.6	50.6
Kew	80.5	342	i 12 21	- 1	—	—	46.2	—
Florissant	N.Z. 80.7	44	i 12 22	- 1	e 22 24	- 7	e 43.2	—
Zagreb	80.7	330	e 12 21	- 2	e 22 18	-13	e 43.8	49.2
St. Louis	80.9	44	e 12 22	- 2	i 22 26	- 8	—	44.0
Strasbourg	81.0	336	i 12 24	- 1	e 22 29	- 6	34.2	—
Innsbruck	81.0	334	e 12 21	- 4	—	—	—	—
Keara	81.2	310	12 28	+ 2	e 22 30	- 7	49.2	—
Ottawa	81.5	30	—	—	e 31 39	?	e 44.6	—
Toronto	81.6	34	—	—	—	—	e 45.4	—
Paris	82.3	340	i 12 30	- 2	e 22.42	- 7	45.2	50.2
Melbourne	82.6	184	—	—	i 22 46	- 7	e 42.1	44.0
Moncalieri	84.3	334	e 12 45	+ 1	22 59	-12	34.9	—
Pompeii	85.6	328	e 12 9	-42	—	—	—	—
Georgetown	Z. 86.5	35	i 12 55	- 1	24 4	+28	e 42.2	56.1
Algiers	93.1	334	e 13 23	-10	e 24 23	-23	39.2	—
Granada	94.6	339	13 26	-15	—	—	e 49.2	53.2
San Fernando	E. 96.0	340	—	—	—	—	—	66.2
La Paz	137.7	60	e 19 9	[-26]	—	—	—	—

Additional readings: Akita MN = +5.2m. Osaka MN = +8.4m. Kobe eSN = +6m.45s. Zi-ka-wei SR₁Z = +11m.6s., MN = +16.2m. Dehra Dun S = +21m.9s. Helsingfors eN = +21m.4s. = Σ -14s. Upsala MN = +46.6m. Vienna iPZ = +12m.9s. De Bilt MZ = +49.2m., MN = +49.3m. Uccle MN = +47.5m. St. Louis eSEN? = +22m.22s., iSN = +22m.28s., iE = +22m.37s., and +22m.47s. Georgetown PR₁Z = +16m.50s. San Fernando MN = +64.6m.

May 2d. Readings also at 1h. (Suva, Andijan, Samarkand, Tashkent, and near Baku), 2h. (Ekaterinburg), 3h. (La Paz, Ekaterinburg, Baku, Andijan (2), Tashkent, and Samarkand (2)), 6h. (near Manila), 7h. (near Keara), 8h. (Baku, Ekaterinburg, Andijan, Samarkand, and Tashkent), 9h. (Florissant, St. Louis, and near Samarkand), 13h. (La Paz), 14h. (Andijan, Fordham, Ottawa, and near Samarkand), 15h. (Adelaide, Riverview, Almata, Samarkand, and La Paz), 19h. (Baku, Tashkent, Ekaterinburg, Andijan, and Samarkand).

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May 3d. 8h. 8m. 27s. Epicentre 34°0S. 57°0E. (as on 1929 April 9d.).

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

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Tananarive	17.3	329	i 4 19	+10	(7 43)	+18	7.7	8.6
Bombay	55.0	19	e 9 38	- 1	15 35	-46	e 25.8	—
Hyderabad	55.4	35	—	—	—	—	—	32.4
Ksara	70.6	341	e 11 27	+ 6	—	—	—	—
Baku	74.7	355	e 11 47	0	e 21 30	+ 8	37.4	42.8
Tashkent	76.1	10	11 53	- 3	21 31	- 7	e 36.6	45.2
Granada	90.8	317	—	—	—	—	e 52.6	55.6
Ekaterinburg	90.9	3	i 13 11	-10	e 23 16	[-17]	42.6	55.2
San Fernando	E. 91.8	315	—	—	—	—	—	59.0
Feldberg	N. 94.5	331	—	—	—	—	—	65.8
Irkutsk	95.6	27	e 17 31	[+ 2]	e 26 6	?PS	e 50.6	—
Pulkovo	96.3	348	—	—	—	—	—	51.6
De Bilt	97.3	332	—	—	—	—	e 51.6	—
Copenhagen	97.4	338	—	—	—	—	—	45.6
Scoresby Sund	118.3	338	—	—	—	—	—	63.6
Ottawa	142.5	302	—	—	—	—	e 76.6	—
Georgetown	Z. 143.1	291	—	—	—	—	e 76.7	—
Toronto	145.1	299	—	—	—	—	—	76.6

Additional readings: Ekaterinburg e = +24m.6s. = Σ +1s. San Fernando
MN = +57.6m.

May 3d. 16h. 19m. 56s. Epicentre 38°4N. 57°7E. (deduced by comparison with the epicentre of May 1d.).

A = +.419, B = +.662, C = +.621; D = +.845, E = -.534;
G = +.332, H = +.525, K = -.784.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Baku	6.3	291	e 1 45	+ 9	(e 2 56)	+ 4	e 2.9	11.0
Samarkand	7.3	77	1 58	+ 7	(3 21)	+ 3	3.4	4.9
Tashkent	9.4	68	e 2 16	- 6	e 4 37	+24	i 5.4	7.0
Andijan	11.4	76	2 56	+ 6	4.59	- 5	—	—
Almata	15.3	65	5 53	?	—	—	—	—
Theodosia	17.9	299	e 4 20	+ 4	7 46	+ 8	—	—
Ekaterinburg	18.5	5	4 25	+ 2	8 5	+14	9.1	12.4
Dehra Dun	18.6	110	7 4	?S	(7 4)	-49	—	9.1
Simferopol	18.7	298	4 30	+ 5	8 2	+ 7	—	—
Sebastopol	19.0	297	e 4 36	+ 7	—	—	—	—
Kucino	21.8	329	e 5 4	+ 1	e 9 7	+ 6	e 10.5	17.5
Bombay	23.5	142	5 11	-12	9 34	- 1	12.6	16.7
Pulkovo	27.5	330	5 58	- 5	e 10 39	-11	15.1	20.5
Hyderabad	27.7	133	—	—	10 45	- 9	15.9	21.6
Helsingfors	29.9	327	e 5 48	-39	—	—	e 16.6	—
Uppsala	33.0	324	—	—	—	—	e 16.1	24.2
Cheb	33.9	306	—	—	—	—	e 22.1	28.1
Lund	34.1	315	—	—	—	—	—	23.1
Copenhagen	34.5	315	—	—	12 34	-14	18.1	—
Irkutsk	34.8	52	—	—	e 12 41	-11	i 19.0	—
Florence	34.9	292	—	—	e 14 4	+70	—	23.1
Hamburg	35.6	312	—	—	e 14 4?	+60	—	26.1
Strasbourg	36.9	304	—	—	—	—	e 17.1	—
De Bilt	38.5	309	—	—	e 13 36	- 9	e 21.1	31.0
Uccle	39.0	307	—	—	—	—	e 26.1	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Paris	40.3	305	—	—	—	—	e 26.1	27.1
Kew	41.8	309	—	—	—	—	e 26.1	—
Stonyhurst	42.9	310	—	—	—	—	e 28.1	—
Edinburgh	43.2	315	—	—	—	—	e 26.1	—
Entebbe	44.8	219	—	—	—	—	24.1	—
Granada	47.5	289	—	—	—	—	e 27.1	30.1
Scoresby Sund	50.8	335	—	—	16 40	+11	28.1	—
Mizusawa	E. 62.5	60	—	—	15 41	?	—	—

Additional readings: Tashkent i = +4m.8s. Hyderabad MN = +20.1m.
 Lund +14m.4s. Irkutsk e = +14m.51s. = SR₁ - 3s. De Bilt MN =
 +29.0m., MZ = +30.9m.

May 3d. Readings also at 0h. (Ekaterinburg, Tashkent, Samarkand, and near Sumoto), 1h. (Baku, Ekaterinburg (2), Tashkent (2), Andijan, Samarkand, and Georgetown (2)), 4h. (near Santiago), 5h. (near Akita and Mizusawa), 6h. (Lick and near Sumoto), 7h. (Wellington), 9h. (near Granada), 11h. (Ksara), 12h. (Theodosia, Simferopol, near Sebastopol, and Yalta), 14h. (Georgetown), 15h. (Baku, Ekaterinburg, Tashkent, Andijan, and near Samarkand), 19h. (La Paz), 20h. (Andijan and near Samarkand), 22h. (Baku, Tashkent, Andijan, Honolulu T.H., and La Paz), 23h. (Florence, Zagreb, Zurich, near Chur, and Neuchatel).

May 4d. 6h. 31m. 12s. Epicentre 38°4N. 57°7E. (as on 3d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	6.3	291	1 40	+ 4	2 58	+ 6	5.0	11.8
Samarkand	7.3	77	0 56	-55	—	—	2.8	—
Tashkent	9.4	68	e 2 10	-12	1 4 6	- 7	e 4.9	5.3
Andijan	11.4	76	e 2 49	- 1	e 4 59	- 5	—	6.9
Ksara	18.1	262	e 4 1	-17	e 7 41	- 1	10.9	—
Ekaterinburg	18.5	5	e 4 20	- 3	1 8 1	+10	8.8	13.4
Simferopol	18.7	298	e 4 15	-10	—	—	—	—
Kucino	21.8	329	—	—	e 8 59	- 2	e 12.3	17.0
Pulkovo	27.5	330	e 6 8	+ 5	e 10 53	+ 3	15.8	18.6
Helsingfors	29.9	327	—	—	—	—	e 17.8	—
Upsala	33.0	324	—	—	—	—	—	22.8
Lund	34.1	315	—	—	—	—	16.8	—
Copenhagen	34.5	315	—	—	—	—	16.5	—
Irkutsk	34.8	52	—	—	—	—	e 14.8	—
Hamburg	35.6	312	—	—	—	—	e 21.8	29.8
Feldberg	N. 36.4	305	—	—	—	—	—	28.8
Strasbourg	36.9	304	—	—	—	—	—	25.8
De Bilt	38.5	309	—	—	—	—	e 25.8	29.1
Uccle	39.0	307	—	—	—	—	e 23.8	—
Edinburgh	43.2	315	—	—	—	—	e 31.8	—
Scoresby Sund	50.8	335	—	—	—	—	22.8	—

Additional readings: Copenhagen L = +22.8m. Irkutsk e = +18m.48s.?
 and +21m.48s. Hamburg MN = +27.8m.

May 4d. Readings also at 3h. (Wellington, Ekaterinburg, Sucre, La Paz, and Rio de Janeiro), 4h. (Baku, Bombay, Copenhagen, Granada, Pulkovo, Scoresby Sund, De Bilt, Uccle, near Andijan (2), Tashkent (2), and Samarkand (3)), 5h. (Bombay), 6h. (near Samarkand), 8h. (Manila), 9h. (Entebbe, Baku, Ekaterinburg, and Tashkent), 11h. (near Port au Prince), 12h. (Mizusawa and near Manila), 13h. (near Mizusawa and Toyooka), 14h. (Andijan and Samarkand), 15h. (near Almeria), 18h. (near Tananarive), 20h. (La Paz, near Granada, and Malaga), 21h. (Almeria).

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May 5d. 16h. 56m. 40s. Epicentre 13°-0S. 66°-0E.

A = +.396, B = +.890, C = -.225; D = +.914, E = -.407;
G = -.091, H = -.206, K = -.974.

	△	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive	18.7	249	14 24	- 1	(18 2)	+ 7	18.0	9.3
Colombo	24.2	35	3 38	?	9 53	+ 5	12.1	16.0
Kodaikanal	25.9	27	13 14	?L	—	—	(13.2)	—
Bombay	32.6	12	6 37	-16	11 58	-20	16.6	20.8
Hyderabad	32.8	22	—	—	11 38	-43	15.3	19.0
Dehra Dun	44.8	15	6 20	?	14 20	-52	21.3	25.3
Cape Town	47.8	236	—	—	—	—	21.3	—
Perth	49.3	121	18 20?	?	—	—	—	—
Tashkent	54.4	4	19 34	- 1	17 22	+ 8	e 25.3	29.3
Ksara	54.9	330	e 9 39	+ 1	—	—	26.3	—
Baku	55.4	346	e 9 58	+16	e 17 34	+ 8	27.2	30.3
Ekaterinburg	70.0	357	e 11 15	- 2	e 20 24	- 2	30.3	39.6
Kucino	72.7	345	—	—	—	—	e 32.4	37.7
Irkutsk	73.1	24	e 11 38	+ 1	e 21 0	- 3	33.3	—
Zagreb	74.0	326	e 11 40	- 2	—	—	—	—
Pulkovo	78.2	344	e 12 11	+ 3	e 21 59	- 3	32.3	43.5
Copenhagen	82.0	334	—	—	22 44	- 2	33.3	—
Granada	82.2	311	e 15 56	?PR ₁	—	—	e 41.1	45.9
Paris	83.3	324	—	—	—	—	e 46.3	—
De Bilt	83.4	329	—	—	—	—	e 45.3	—
Ottawa	134.2	322	—	—	—	—	e 56.3	—
Georgetown	z. 138.4	315	e 22 43	?PR ₁	e 27 58	?	e 68.9	79.7
Florisant	146.8	325	e 19 50	[- 1]	e 42 20	?SR ₁	e 72.3	—

Additional readings: Tananarive MN = +10.1m. Irkutsk e = +25m.54s.
Georgetown eZ = +31m.36s. and +39m.31s.

May 5d. Readings also at 0h. (near Andijan and Samarkand), 1h. (Samarkand), 5h. (Almata, Samarkand, Baku (2), Ekaterinburg, Tashkent, Kucino, Pulkovo, Copenhagen, Georgetown, Tucson, and near Manila), 6h. (Manila, Andijan, Samarkand, Tashkent, and Ekaterinburg), 7h. (Almata, Andijan, Samarkand, Tashkent, Baku, and near Amboina), 8h. (Samarkand, Manila, and Riverview), 9h. (near Kobe), 10h. (Ekaterinburg, Tashkent, Irkutsk, Akita, and near Mizusawa), 13h. (La Plata and Manila), 14h. (Nagoya), 17h. (near Lick), 19h. (Andijan), 21h. (Andijan and Samarkand), 22h. (Andijan and Samarkand (2)).

May 6d. 5h. 8m. 36s. Epicentre 5°-2S. 132°-7E. (given by Batavia and quoted by De Bilt).

A = -.675, B = -.732, C = -.091; D = +.735, E = +.678;
G = +.061, H = -.067, K = -.996.

	△	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	4.7	289	10 16	-57	11 14	-55	—	—
Manila	23.0	330	15 8	- 9	19 18	- 7	—	—
Batavia	25.7	267	e 5 33	-12	10 1	-15	—	—
Adelaide	30.2	170	e 5 14?	-76	e 11 12	-25	15.2	20.4
Perth	31.0	210	e 6 24	-14	11 54	+ 3	16.6	18.7
Hong Kong	33.0	327	6 56	0	(12 17)	- 7	12.3	14.9
Riverview	33.4	152	16 50	-10	112 3	-27	—	18.9
Sydney	E. 33.4	152	12 12	?S	(12 12)	-18	18.4	19.3
Melbourne	34.4	164	6 55	-13	12 19	-27	16.0	29.0
Phu-Lien	36.5	317	7 11	-15	e 12 44	-33	15.4	—
Zi-ka-wei	38.0	345	7 22	-16	13 10	-28	—	23.8
Kobe	40.0	3	7 56	+ 1	e 13 56	-11	20.0	24.6
Nagoya	40.6	6	e 7 46	-14	e 13 16	-59	20.2	—
Mizusawa	E. 45.0	10	8 24	- 9	8 52	?	—	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Akita	45.4	9	e 8 55	+19	15 4	-16	15.1	15.3
Wellington E.	52.0	140	i 9 30	+10	i 16 34	-10	23.6	29.0
N.	52.0	140	9 26	+6	i 16 29	-15	23.4	27.8
Colombo	54.1	282	9 44	+10	16 54	-16	25.7	33.2
Kodalkanal	57.1	286	17 48	?S	(17 48)	+1	—	—
Hyderabad	58.1	295	10 8	+8	17 52	-8	27.4	35.1
Irkutsk	62.4	340	e 10 28	0	i 18 51	-2	30.4	41.6
Dehra Dun	63.2	309	18 54	?S	(18 54)	-9	27.4	28.4
Bombay	63.6	296	10 40	+4	18 59	-9	32.4	42.4
Almata	69.7	321	e 11 27	+12	—	—	—	—
Andijan	71.5	316	11 32	+5	20 48	+4	—	—
Tashkent	74.0	316	i 11 42	0	i 21 11	-3	e 31.4	36.3
Samarkand	75.1	314	e 12 24	+34	21 54	[+5]	—	—
Ekaterinburg	84.7	329	i 12 40	-6	i 22 59	[+5]	36.4	44.7
Baku	87.9	312	i 13 4	0	e 23 41	-10	40.8	53.7
Pulkovo	100.7	330	14 9	-5	24 54	[+27]	45.4	62.7
Victoria E.	103.2	41	24 57	?[S]	(24 57)	[+18]	48.3	51.1
N.	103.2	41	26 19	?S	(26 19)	-7	43.0	—
Helsingfors	103.3	331	—	—	—	—	e 51.9	—
Budapest	109.7	319	e 19 24?	?PR ₁	—	—	—	—
Lund	110.6	329	—	—	25 24?	[+12]	48.4	—
Copenhagen	111.0	329	19 35	?PR ₁	29 0	?PS	45.4	—
Vienna	111.2	320	e 19 13	?PR ₁	e 29 5	?PS	—	63.4
Zagreb	112.2	317	e 19 44	?PR ₁	e 28 50	?PS	e 45.2	—
Scoresby Sund	112.7	351	19 47	?PR ₁	29 6	?PS	51.4	—
Hamburg	113.1	326	—	—	e 27 24?	-31	—	—
Cheb	113.4	322	—	—	e 29 23	?PS	e 58.4	68.4
Tucson	115.1	55	e 20 6	?PR ₁	—	—	—	59.7
Feldberg	115.4	323	e 23 31	?PR ₁	e 29 26	?PS	—	71.7
N.	116.0	315	e 20 12	?PR ₁	30 14	?PS	—	76.4
Florence	—	—	—	—	—	—	—	—
Chur	116.1	320	e 19 58	?PR ₁	—	—	—	—
De Bilt	116.4	326	e 20 12	?PR ₁	e 29 44	?PS	e 52.4	70.4
Strasbourg	116.5	322	(e 18 24?)	[-18]	—	—	e 18.4	—
Uccle	117.5	325	e 20 24?	?PR ₁	—	—	e 52.4	—
Edinburgh	118.4	333	—	—	e 27 24?	?Z	61.4	—
Stonyhurst	119.3	330	e 20 9	?PR ₁	—	—	63.4	—
Paris	119.4	324	e 20 26	?PR ₁	—	—	63.4	71.4
Kew	119.6	329	e 19 24?	[+33]	—	—	63.4	—
Tortosa	124.6	318	—	—	—	—	e 77.4	—
N.	128.6	42	e 19 34	[+19]	—	—	e 54.4	71.4
Florissant	—	—	—	—	—	—	—	—
St. Louis	128.8	42	e 21 21	?PR ₁	—	—	e 54.4	72.4
Granada	129.0	315	e 21 41	?PR ₁	—	—	63.4	79.4
Cincinnati	132.3	38	e 19 38	[+14]	—	—	63.4	69.4
Toronto	132.3	30	e 22 54	?PR ₁	e 39 39	?SR ₁	59.8	—
N.	132.8	25	e 22 54	?PR ₁	e 39 42	?SR ₁	e 55.4	—
Ottawa	—	—	—	—	—	—	—	—
Georgetown z.	136.9	33	e 19 40	[+6]	e 32 35	?PR ₁	e 58.6	80.0
Harvard	137.3	24	e 22 42	?PR ₁	—	—	—	—
Sucre	150.0	144	20 4	[+8]	—	—	—	—
La Paz	150.1	137	20 4	[+8]	—	—	—	—

Additional readings: Batavia i = +6m.17s. = PR₁ - 5s. and +11m.11s. = SR₁ - 10s. Adelaide MN = +20.6m. Perth S = +11m.19s. Hong Kong MN = +18.2m. Riverview SR₁ = +14m.38s. MZ = +20.8m.; T₁ = 5h.9m.36s. Sydney S = +16m.24s. Melbourne SR₁ = +14m.26s. Zi-ka-wei iPZ = +7m.40s., PR₁Z = +7m.58s., PR₂Z = +8m.52s. = PR₁ - 6s., SZ = +15m.40s. = SR₁ - 24s. Kobe MN = +22.6m. Wellington SR₁E = +19m.31s., SR₁E = +20m.32s., SR₁N = +21m.7s.; T₁E = 5h.9m.8s. Hyderabad MN = +35.8m. Dehra Dun S = +22m.24s. Ekaterinburg iPR₁ = +16m.8s. Baku S₂P₂S = +23m.29s. = [S] + 15s. Pulkovo PR₁ = +18m.13s. Hamburg e = +34m.24s.? Cheb e = +40m.24s. = SR₁ - 21s. De Bilt MN = +77.7m., MZ = +77.8m. Paris e = +30m.24s.? = PS - 14s. Florissant eZ = +21m.34s. = PR₁ + 14s., eEZ = +22m.39s., eEN = +26m.9s. = [S] + 1s., +28m.24s. = Z + 19s., +38m.24s. = SR₁ - 10s., +41m.24s. and +47m.14s. St. Louis eEN = +21m.37s. = PR₁ + 15s., +22m.49s., +34m.12s., +38m.37s. = SR₁ + 1s. and +41m.22s., MN = +71.4m. Cincinnati ePR₁Z = +21m.51s., iS₂P₂S = +22m.47s., ePPS₁EZ = +33m.50s., eSR₁ = +39m.38s. Georgetown iPZ = +19m.47s., PR₁Z = +22m.31s., LZ = +23m.26s., iSZ = +32m.47s., SR₁Z = +35m.39s.

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May 6d. Readings also at 0h. (near La Paz and Sucre), 1h. (Baku and Tashkent), 2h. (near Hukuoka and Nagasaki), 5h. (near Nagasaki), 7h. (Edinburgh and Ksara), 11h. (near Samarkand), 12h. (Baku, Ekaterinburg, Tashkent, and near Andijan), 15h. (Andijan and Samarkand), 17h. (Zagreb and near Florence (2)), 18h. and 19h. (La Paz), 20h. (La Plata), 21h. (Yalta).

May 7d. 8h. 44m. 37s. Epicentre 3°·2N. 127°·5E. (as on 1928 Sept. 13d.).

A = -·608, B = +·792, C = +·056; D = +·793, E = +·609;
G = -·034, H = +·044, K = -·998.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	6·9	175	10 43	-62	2 10	-57	—	—
Manila	13·1	331	e 3 17	+ 3	i 5 57	+11	—	—
Taihoku	22·6	346	e 5 8	- 4	—	—	—	—
Batavia	22·7	246	e 5 50	+37	9 10	- 9	—	—
Hong Kong	23·1	327	5 13	- 5	(9 23)	- 4	9·4	9·9
Irkutsk	52·7	344	9 23	- 1	16 50	- 2	27·4	—
Tashkent	64·4	315	i 10 44	+ 3	19 18	0	e 33·4	42·3
Ekaterinburg	74·8	330	i 11 47	- 1	i 21 20	- 4	36·4	—
Baku	78·5	311	e 12 14	+ 4	22 6	0	39·4	—
Ksara	89·5	305	—	—	e 24 2	- 7	—	—
Copenhagen	101·1	330	—	—	—	—	51·4	—
Scoresby Sund	103·5	351	—	—	—	—	63·4	—

Amboina gives also $i = +48s.$

May 7d. 16h. 14m. 4s. Epicentre 40°·0S. 174°·0E. (as on 1928 Dec. 9d.).

A = -·762, B = +·080, C = -·643; D = +·105, E = +·995;
G = +·639, H = -·067, K = -·766.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	1·4	156	i 0 16	- 5	i 0 32	- 7	—	—
Christchurch	3·7	195	1 38	18	(1 38)	- 4	(2·1)	2·9
Riverview	19·2	282	e 4 33	+ 2	i 8 19	+13	e 10·3	11·2
Suva	22·2	11	e 5 8	+ 1	e 9 14	+ 5	—	—
Melbourne	22·6	266	i 4 59	-13	i 9 28	+11	11·4	12·7

Additional readings: Christchurch gives S as P and L as S. Riverview $i = +4m.42s.$ and $+4m.46s.$, MN = +12·0m.

May 7d. 16h. 35m. 8s. Epicentre 3°·2S. 135°·6E. (given by Batavia and quoted by De Bilt).

A = -·713, B = +·699, C = -·056; D = +·700, E = +·714;
G = +·040, H = -·039, K = -·998.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	7·4	266	e 1 5	-47	3 29	+ 8	4·9	—
Manila	23·0	321	i 5 11	- 6	i 9 26	+ 1	11·9	—
Batavia	28·8	263	e 6 17	+ 1	—	—	i 16·3	—
Titigima	30·9	12	6 5	-32	11 18	-32	—	—
Taihoku	31·3	336	—	—	e 10 52?	-64	—	—
Adelaide	31·9	176	e 6 41	- 5	i 11 43	-24	i 14·2	17·9
Hong Kong	33·0	322	6 52	- 4	11 59	-25	15·5	21·1
Riverview	33·9	158	i 7 3	- 1	i 12 14	-25	e 14·2	21·7
Sydney	33·9	158	(e 7 10)	+ 6	(12 52)	+13	(15·1)	21·9
Perth	34·2	211	e 7 52	+45	14 2	+79	19·4	23·5
Melbourne	35·6	168	—	—	12 52	-12	15·0	21·9
Koti	38·8	356	—	—	—	—	17·9	—
Zi-ka-wei	37·0	341	7 15	-15	15 47	18R ₁	18·2	20·8
Phu-Lien	37·2	313	e 7 36	+ 4	e 13 6	-21	15·9	—
Sumoto	37·5	0	e 16 41	1	—	—	(e 16·7)	19·8

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°		m. s.	s.	m. s.	s.	m.	m.
Kobe	37.9	0	e 7 7	-30	—	—	e 18.4	20.5
Nagoya	38.4	2	—	—	—	—	e 18.8	—
Toyooka	38.8	0	—	—	—	—	e 18.6	21.2
Hukusima	41.2	6	7 48	-17	14 0	-24	—	—
Mizusawa	42.6	7	8 4	-11	14 11	-32	20.2	—
	E.	7	8 7	-8	14 13	-30	20.3	—
	N.	7	8 7	-12	14 31	-18	—	—
Akita	43.1	6	e 8 7	-12	14 31	-18	—	—
Wellington	51.8	144	—	—	—	—	i 24.4	—
Colombo	56.5	280	9 50	+ 1	17 40	0	30.7	33.1
Kodaikanal	59.4	285	17 46	†S	(17 46)	-30	—	—
Hyderabad	60.0	294	10 21	+ 9	18 36	+13	30.1	39.6
Irkutsk	61.4	340	i 10 35	+14	i 18 39	- 2	28.9	37.2
Dehra Dun	64.2	307	18 52	†S	(18 52)	-23	26.9	26.9
Bombay	65.5	294	10 57	+ 9	19 41	+10	34.2	41.9
Honolulu T.H.	69.6	65	—	—	e 20 17	- 4	32.9	—
Almata	70.1	320	11 25	+ 7	20 34	+ 7	—	—
Andijan	72.1	315	11 35	+ 4	20 57	+ 6	—	—
Tashkent	74.7	315	i 11 50	+ 3	i 21 26	+ 4	e 35.9	46.5
Samarkand	75.8	314	11 57	+ 3	21 46	+11	—	—
Ekaterinburg	84.5	329	i 12 41	- 4	i 23 7	- 7	35.9	50.9
Tananarive	87.1	251	—	—	(23 52?)	+10	23.9	—
Baku	88.8	312	e 13 9	0	i 23 57	- 4	42.9	57.8
Kucino	97.0	326	e 13 36	-18	24 53	†S	52.5	61.5
Victoria	99.7	41	24 30	†S	(24 30)	[+ 8]	45.9	48.9
	E.	41	25 18	†S	(25 18)	†S	41.0	48.3
	N.	41	25 18	†S	(25 18)	†S	41.0	48.3
Ksara	99.8	305	e 17 52	[+10]	—	—	51.9	—
Pulkovo	100.4	331	e 13 55	-18	25 27	†S	44.9	60.8
Helsingfors	102.9	332	e 14 11	-14	25 43	†S	e 48.9	—
Upsala	106.4	333	—	—	e 28 46	†PS	—	66.1
Budapest	110.0	320	e 15 22	+25	—	—	e 58.7	69.9
Cape Town	110.2	232	—	—	e 25 5	[- 6]	—	—
Lund	110.3	330	—	—	28 46	†PS	50.9	—
Copenhagen	110.7	330	19 34	†PR ₁	—	—	50.9	—
Scoresby Sund	111.1	352	18 52?	?	—	—	48.9	—
Graz	112.5	321	—	—	—	—	e 61.9	—
Zagreb	112.6	319	e 19 38	†PR ₁	e 28 52?	†PS	e 63.5	—
Hamburg	112.9	329	—	—	e 34 52?	†SR ₁	e 55.9	—
Cheb	113.2	323	e 23 52?	?	—	—	e 58.9	70.9
Jena	113.3	325	—	—	—	—	e 62.9	70.4
Gottingen	113.9	326	—	—	e 39 18	?	e 62.1	72.1
Feldberg	115.4	326	—	—	e 26 58	†S	—	71.9
Ravensburg	115.8	323	—	—	—	—	64.9	—
De Bilt	116.2	329	e 20 6	†PR ₁	e 36 8	†SR ₁	e 54.9	71.8
Florence	116.4	317	20 8	†PR ₁	29 46	†PS	62.9	67.9
Dyce	116.5	336	1 20 15	†PR ₁	e 29 22	†PS	e 56.1	74.9
Strasbourg	116.6	324	e 16 52?	?	e 27 7	†S	54.9	73.4
Uocle	117.3	328	—	—	e 28 52?	+24	e 55.9	68.0
Edinburgh	117.8	335	—	—	e 29 52?	†PS	e 59.9	73.9
Neuchatel	117.8	321	e 19 58	†PR ₁	—	—	e 73.9	—
Moncalieri	118.2	320	19 36	†PR ₁	30 27	†PS	49.0	75.2
Besançon	118.2	322	—	—	—	—	e 67.9	—
Stonyhurst	118.8	333	e 20 12	†PR ₁	e 30 12	†PS	59.9	64.9
Kew	119.3	331	e 20 28	†PR ₁	e 30 11	†PS	64.0	75.5
Paris	119.4	327	e 20 22	†PR ₁	—	—	55.9	70.9
Grenoble	119.4	321	—	—	—	—	e 58.9	—
Oxford	119.6	331	—	—	—	—	e 57.5	74.4
Tortosa	124.8	320	—	—	—	—	e 59.9	78.8
St. Louis	125.4	43	e 20 52	†PR ₁	e 27 50	†S	e 52.9	65.9
Chicago	125.5	38	—	—	—	—	e 61.2	—
Florisant	125.7	43	e 20 52	†PR ₁	e 30 52	?	e 60.4	64.4
Alicante	126.8	318	e 21 34	†PR ₁	—	—	e 73.0	—

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ann Arbor	E.	127.5	35	—	—	—	—	e 63.6	—
Toledo	N.E.	128.3	321	e 22 3	?	—	—	e 63.5	83.6
Cincinnati		128.9	39	e 15 10	-73	—	—	—	56.9
Toronto	N.	129.1	31	e 21 30	?PR ₁	e 38 37	?SR ₁	65.9	—
Granada		129.5	318	e 21 45	?PR ₁	—	—	69.6	77.9
Ottawa		129.7	26	e 15 40	-47	—	—	65.9	—
Malaga		130.3	318	e 21 34	?PR ₁	—	—	e 61.8	—
San Fernando		131.6	319	—	—	—	—	77.8	88.4
Charlottesville	E.	133.3	36	—	—	—	—	e 66.9	69.0
Georgetown	Z.	133.6	34	e 18 35	[-52]	—	—	e 60.9	69.9
Fordham		134.0	30	—	—	—	—	69.8	—
La Plata		139.9	162	—	—	—	—	71.7	—
La Paz		149.4	131	19 58	[+ 3]	—	—	75.9	85.1
Sucre		149.8	138	19 55	[- 1]	—	—	83.9	93.2
Rio de Janeiro		153.9	183	e 23 52	?PR ₁	—	—	e 76.9	86.2

Additional readings and note: Manila i = +5m.27s. Batavia iN = +7m.10s. = PR₁ + 6s. : T₀ = 16h.35m.9s. Adelaide MN = +20.4m. Hong Kong PR₁ = +8m.4s., MN = +18.1m. Riverview eL = +17.5m. and +17.7m., MZ = +21.9m., MN = +22.5m. Sydney P, S, and L have been diminished by 6m. Perth ePR₁ = +9m.27s., eS = +14m.52s., eSR₁ = +16m.57s. Melbourne PR₁ = +8m.54s. Kōti L₀NZ = +18.9m. Zi-ka-wei MN = +20.1m., ME = +21.1m. Sumoto MZ = +20.0m. Kobe MNZ = +20.2m. Dehra Dun S = +23m.52s. = SR₁ - 28s. Ekaterinburg PR₁ = +16m.3s., PS = +23m.57s. Baku SeP₀S = +23m.36s. Kucino PR₁ = +17m.43s., SeP₀S = +24m.13s. Victoria SE = +32m.31s. = SR₁ - 3s., Ksara ePR₁ = +24m.55s. = [S] + 32s., PS = +30m.37s. Pulkovo PR₁ = +18m.2s., SeP₀S = +24m.29s. Helsingfors PR₁ = +18m.25s., SeP₀S = +24m.42s. Uppsala MN = +65.5m. Jena eLZ = +68.9m., MNZ = +71.4m. Göttingen eLZ = +68.1m., MN = +72.6m. Feldberg eN = +35m.58s. = SR₁ + 8s. De Bilt e = +29m.40s. = PS - 25s., MN = +71.2m., MZ = +73.8m. Strasbourg P = +20m.8s., ePR₁ = +21m.9s., i = +29m.39s., ePS = +30m.52s., SeP₀S = +31m.40s. Uccle e = +36m.52s. = SR₁ + 39s. Moncalleri MN = +75.8m. Kew LE = +56.9m., ME = +74.3m., MN = +75.6m. Paris e = +30m.12s. = PS - 26s., MN = +79.9m. St. Louis eEN = +30m.55s. +37m.40s. = SR₁ - 14s. and +42m.15s. Chicago eE = +52m.52s. ? and +53m.10s. Florissant iZ = +20m.59s. = PR₁ - 3s., iN = +37m.44s. = SR₁ - 14s. Ann Arbor eLN? = +62.0m. Toledo eNE = +38m.18s. = SR₁ - 11s., MNW = +83.7m. Cincinnati eZ = +17m.24s., iZ = +21m.26s. = PR₁ + 3s., eZ? = +31m.52s. = PS - 21s. Granada i = +22m.36s. and +24m.34s. = PR₁ - 25s. Ottawa e = +22m.52s., i = +31m.37s., e = +38m.52s. = SR₁ + 5s. San Fernando MN = +84.7m. Charlottesville eN = +65m.52s., MN = +69.2m. Georgetown iZ = +22m.5s. = PR₁ + 12s., PR₁Z? = +22m.54s. La Paz MN = +95.0m.

May 7d. 21h. 17m. 48s. Epicentre 37° 3N. 141° 7E. (given in Geophys. Mag., Vol. IV, No. 4).

A = -624, B = +493, C = +606; D = +620, E = +785;
G = -476, H = +376, K = -795.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0.7	240	0 10	- 1	0 20	0	—	—
Hukusima	1.1	294	0 17	0	0 28	- 3	—	—
Tokyo	2.3	224	0 36	0	1 1	- 2	—	—
Morioka	2.4	350	0 35	- 2	0 58	- 8	—	—
Nomadu	2.6	242	0 52	+11	1 32	+20	—	—
Akita	2.7	332	e 0 39	- 3	(1 12)	- 2	1.2	1.4
Nagoya	4.4	242	e 1 13	+ 5	(2 0)	- 1	2.0	2.2
Hakodate	4.5	353	e 1 22	+12	2 16	+12	—	—
Kobe	5.9	245	e 1 34	+ 3	e 2 28	-13	3.1	3.2
Sumoto	6.3	243	e 1 46	+10	—	—	—	—
Irkutsk	30.0	312	—	—	e 13 12?	?SR ₁	e 18.2	—
Tashkent	54.5	298	—	—	e 17 0	-15	—	33.5
Ekaterinburg	54.9	319	i 9 28	-10	—	—	—	26.2
Baku	68.1	305	—	—	—	—	e 41.6	—

Additional readings: Akita MN = +1.8m, Kobe MNZ = +3.3m, Tashkent e = +14m.36s.

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May 7d. Readings also at 2h. (Samarkand), 3h. (Riverview), 6h. (Mizusawa and near Nagoya), 7h. (Baku, Tashkent, Almata, Andijan, near Samarkand, and near La Paz), 8h. (Ekaterinburg), 13h. (Sydney), 16h. (Sebastopol, Simferopol, and near Ksara), 17h. (Wellington), 18h. (Florence, Kew, Stonyhurst, Edinburgh, Toledo, Tortosa, and Florissant), 19h. (Konigsberg), 21h. (La Paz and near Mizusawa).

May 8d. 12h. 27m. 30s. Epicentre 38°-0N. 29°-5E. (as on 1926 Jan. 13d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	6.6	127	e 1 50	+ 9	3 1	+ 1	3.3	—
Moncalieri	17.7	300	—	—	—	—	10.9	—
Zurich	17.9	308	e 4 4	-12	—	—	—	—
Neuchatel	18.8	305	e 4 13	-14	—	—	—	—
Strasbourg	18.9	311	e 2 30?	?	—	—	e 10.5	—
Feldberg	N. 19.3	316	—	—	—	—	—	13.7
Copenhagen	21.1	332	—	—	—	—	14.5	—
Pulkovo	21.8	1	1 5 15	+12	10 21	+80	12.5	—
De Bilt	22.1	318	—	—	—	—	e 13.5	—
Ekaterinburg	27.8	37	—	—	—	—	8.5	—
Tashkent	30.5	71	—	—	—	—	e 14.5	19.6

No additional readings.

May 8d. Readings also at 1h. (Baku, Ekaterinburg, Kucino, Andijan, Samarkand, and Tashkent), 2h. (near Wellington), 5h. (near Nagasaki and Hukuoka), 6h. (Florence), 10h. (Neuchatel and near Tacubaya), 11h. (Taihoku), 12h. (Florence, Melbourne, Suva, and Wellington), 13h. (Adelaide, Riverview, Ekaterinburg, Tashkent, Florissant, Georgetown, Toronto, and Ottawa), 14h. (Copenhagen, De Bilt, Paris, and near Tacubaya (2)), 15h. (Toledo, Malaga, Almeria, near Granada and San Fernando), 19h. (La Paz, La Plata, and Sucre), 20h. (Phu-Lien).

May 9d. Readings at 0h. (Cincinnati), 3h. (Granada), 8h. (Almata, Baku, Ekaterinburg, Irkutsk, Samarkand, Tashkent), 9h. (Akita, Mizusawa, and Nagoya), 10h. (Cheb), 16h. (Georgetown), 17h. (Ottawa, Wellington, near Kobe, and Sumoto), 18h. (Matuyama, Toyooka, and Nagoya), 19h. (La Paz).

May 10d. 11h. 17m. 33s. Epicentre 50°-5N. 106°-0E.

A = -.175, B = +.611, C = +.772; D = +.961, E = +.276;
G = -.213, H = +.742, K = -.636.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	2.0	329	1 0 51	+20	—	—	i 1.5	—
Almata	20.9	261	e 6 7	+75	—	—	—	—
Zi-ka-wei	z. 22.5	144	e 5 11	0	—	—	—	14.5
Andijan	25.5	259	e 5 39	- 4	—	—	—	—
Tashkent	26.9	264	e 5 53	- 4	—	—	i 14.5	15.3
Ekaterinburg	27.0	301	1 5 59	+ 1	10 42	+ 1	14.5	17.8
Samarkand	29.2	263	e 6 23	+ 3	—	—	16.1	16.5
Phu-Lien	29.7	179	—	—	—	—	14.5	—
Kucino	39.5	306	—	—	—	—	e 22.1	—
Baku	39.6	278	—	—	e 14 6	+ 6	e 21.0	26.0
Bombay	41.1	234	e 21 9	?L	—	—	(e 21.2)	—
Pulkovo	41.8	313	8 5	- 4	14 31	- 1	23.5	27.8
Copenhagen	52.0	316	—	—	—	—	28.5	—
De Bilt	57.6	314	—	—	—	—	e 33.0	39.2
Uccle	58.8	314	—	—	—	—	e 33.5	—
Strasbourg	58.8	310	—	—	—	—	e 32.5	—
Florence	60.2	305	—	—	—	—	e 33.5	39.5
Kew	60.5	319	—	—	—	—	e 38.5	—
Paris	61.1	313	—	—	—	—	e 39.5	—

Additional readings: Tashkent e = +9m.1s. and +11m.41s. = 8E₂ - 7s.
Kucino e = +22m.59s., eL = +25.0m. Baku e = +18m.24s. De Bilt
eLZ = +37.4m., MNZ = +38.2m.

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May 10d. 17h. 17m. 28s. Epicentre 39°-0S. 180°-0. (as on 1925 Oct. 21d.).

A = -0.777, B = -0.00, C = -0.629; D = -0.00, E = +1.000;
G = +0.629, H = -0.00, K = -0.777.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
				m. s.	s.	m. s.	s.	m.	m.
Wellington		4.6	238	i 2 7	+56	(12 7)	+1	(13.2)	—
Suva	E.	21.3	356	4 56	-1	18 38	-12	—	9.7
	N.	21.3	356	5 2	+5	18 38	-12	—	9.4
Riverview		23.7	276	1 5 17	-8	e 9 50	+12	e 11.8	13.7
Sydney	E.	23.7	276	(5 38)	+13	—	—	5.6	6.6
Melbourne		27.3	261	1 5 59	-2	(11 27)	+41	11.4	12.1
Adelaide		33.1	263	1 9 46	?	i 12 55	+29	14.0	16.7
Batavia	Z.	73.0	276	i 11 32	-4	—	—	—	—
Manila	E.	76.8	302	i 11 46	-14	—	—	—	—
Tucson		95.9	51	e 13 38	-10	24 38	[+36]	—	—
Bombay		114.9	274	e 19 48	?PR ₁	—	—	—	—
Georgetown	Z.	122.1	63	e 21 24	?	—	—	e 33.1	—
Ottawa		125.6	56	e 22 32?	?	—	—	37.5	—
Andijan		126.0	296	e 19 10	[+2]	—	—	—	—
Tashkent		128.5	296	19 10	[-5]	—	—	e 56.5	69.8
Samarkand		129.4	293	e 19 15	[-2]	—	—	—	—
Ekaterinburg		137.3	315	i 19 27	[-8]	i 22 38	?PR ₁	55.5	64.7
Baku		142.1	289	e 19 40	[-3]	e 22 42	?PR ₁	e 50.5	—
Kucino		149.9	315	e 19 48	[-8]	—	—	—	—
Ksara		150.9	271	20 1	[+4]	21 35	?	—	—
Pulkovo		151.8	328	19 55	[-4]	—	—	—	—
Theodosia		153.3	294	e 20 3	[+3]	—	—	—	—
Yalta		154.1	293	e 19 57	[-4]	—	—	—	—
Simferopol		154.2	294	e 20 5	[+4]	—	—	—	—
Sebastopol		154.6	293	e 19 59	[-3]	—	—	—	—
Vienna		165.0	313	i 20 9	[-3]	—	—	—	—
De Bilt		166.4	346	i 20 10	[-2]	—	—	e 44.9	—
Zagreb		166.4	305	e 20 13	[+1]	—	—	—	—
Zurich		169.6	326	e 20 29	[+14]	—	—	—	—
Florence		170.2	305	19 22	[-53]	—	—	—	—
Neuchatel		170.6	330	e 20 13	[-2]	—	—	—	—
Granada		176.6	122	i 20 20	[+3]	26 5	?PR ₁	42.5	—
Toledo		176.8	74	e 20 25	[+8]	—	—	—	—

Additional readings and note: Wellington iPN = +2m.5s., S is given as P and L as S. Riverview PR₁ = +5m.24s. and +5m.44s., PR₁ = +5m.57s., PR₁ = +6m.1s., SE₁ = +10m.32s., MN = +14.6m.; T₀ = 17h.16m.46s. Sydney PE = 17h.16m.30s. Melbourne i = +6m.46s. = PR₁ + 3s. Adelaide MN = +15.4m. Batavia i = +11m.35s. and +15m.24s. Tashkent i = +20m.58s. = PR₁ - 21s., e = +23m.32s. and +32m.2s. = PS - 7s. Ekaterinburg i = +21m.59s. = PR₁ - 18s. Kucino e = +20m.40s. Vienna iZ = +20m.55s. Zagreb e = +21m.5s. Florence e = +17m.32s., i = +20m.17s. and +21m.27s. Neuchatel e = +21m.18s. Granada i = +22m.12s., +22m.30s., and +22m.55s.

May 10d. Readings also at 0h. (La Paz), 1h. (near Zagreb), 12h. (Florissant, St. Louis, Georgetown, Ottawa, Granada, near Akita, and Mizusawa), 13h. (Scoresby Sund and near La Paz), 15h. (Andijan), 16h. (Florence), 20h. (Andijan), 22h. (Andijan and near Samarkand).

May 11d. 8h. 10m. 40s. Epicentre 22°-7S. 65°-6W. (given by La Paz).

A = +0.381, B = -0.840, C = -0.386; D = -0.911, E = -0.413;
G = -0.159, H = +0.351, K = -0.923.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
				m. s.	s.	m. s.	s.	m.	m.
Sucre		3.7	6	i 1 10	+12	1 52	+10	2.2	—
Copiapó		6.3	222	—	—	—	—	3.3	—
La Paz		6.6	338	1 46	+5	1 3 0	0	3.2	3.6
La Plata		13.9	153	3 17	-8	5 52?	-14	8.1?	—
Rio de Janeiro	N.	20.7	95	e 4 37	-12	—	—	—	—

No additional readings.

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May 11d. 19h. 22m. 48s. Epicentre 44°·5N. 11°·0E. (as on 1926 July 1d.),

A = +·700, B = +·136, C = +·701; D = +·191, E = -·982;

G = +·688, H = +·134, K = -·713.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Florence	0·7	166	i 0 10	- 1	—	—	—	—
Piacenza	1·1	300	o 24	+ 7	—	—	—	—
Venice	1·3	45	i 0 21	+ 1	i 0 33	- 3	—	—
Moncalieri	2·4	290	o 43	+ 6	i 1 24	+18	—	2·4
Chur	2·6	337	i 0 41	0	i 1 26	+14	—	—
Innsbruck	2·8	6	e 0 42	- 2	—	—	1·4	—
Laibach	2·9	58	e 0 39	- 6	i 1 25	+ 5	—	2·7
Zurich	3·3	330	e 0 51	- 1	i 1 53	+22	—	—
Ravensburg	3·4	344	e 0 53	0	i 1 33	- 1	i 1·8	—
Neuchatel	3·7	313	e 0 58	0	i 1 46	+ 4	—	—
Zagreb	3·8	68	e 0 55	- 4	i 1 44	0	12·0	2·7
Grenoble	3·8	283	1 4	+ 5	1 57	+13	—	—
Basel	3·9	323	—	—	—	—	—	2·6
Marseilles	4·2	255	i 1 23	+18	—	—	—	—
Besançon	4·4	310	1 7	- 1	2 14	+13	—	—
Hohenheim	4·4	345	e 1 6	- 2	i 1 55	- 6	12·4	3·2
Naples	4·4	146	e 1 12	+ 4	e 2 2	+ 1	—	4·5
Pompeii	4·6	144	e 1 22	+11	e 2 22	+16	—	3·0
Strasbourg	4·6	336	1 9	- 2	2 6	0	—	—
Karlsruhe	4·8	340	1 15	+ 1	2 29	+18	2·6	3·6
Vienna	5·2	44	e 1 24	+ 4	2 27	+ 5	12·8	3·8
Cheb	5·6	9	—	—	e 2 26	- 8	e 3·0	3·6
Puy de Dôme	5·8	285	i 0 36	-54	i 2 20	-19	—	—
Feldberg	6·0	344	e 1 25	- 7	i 2 50	+ 6	13·2	4·3
Budapest	6·3	59	e 1 12	-24	—	—	3·5	3·8
Jena	E. 6·4	4	e 1 40	+ 2	i 2 52	- 3	13·4	4·3
	N. 6·4	4	e 1 42	+ 4	—	—	e 3·4	3·6
Belgrade	N. 6·7	84	o 37	-65	e 1 45	-77	12·0	2·3
Gottingen	7·0	355	e 1 40	- 6	e 3 22	+12	e 3·8	4·1
Paris	7·2	310	e 1 54	+ 5	e 3 36	+21	4·2	4·2
Barcelona	7·2	248	e 3 3	+74	e 4 3	+48	4·9	—
Uccle	7·7	327	e 1 54	- 3	e 3 47	+18	14·2	—
De Bilt	8·5	335	e 2 17	+ 8	—	—	e 4·5	6·2
Tortosa	E. 8·5	248	—	—	3 55	+ 5	—	6·5
	N. 8·5	248	e 2 37	+28	3 56	+ 6	4·4	6·0
Hamburg	N. 9·1	356	e 2 50	+32	e 4 27	+21	—	6·6
Kew	10·2	317	e 2 54	+21	e 4 53	+18	15·8	7·1
Alicante	10·6	238	e 4 1	18	(e 4 1)	-44	(e 7·0)	—
Oxford	10·9	316	—	—	e 4 55	+ 3	—	6·9
Copenhagen	11·2	4	—	—	e 5 12?	+13	—	—
Lund	11·3	6	—	—	5 0	- 2	7·2	—
Toledo	12·1	253	e 3 53	+53	e 6 56	+95	e 7·4	9·6
Almeria	12·7	238	—	—	e 6 55	11	(e 6·9)	—
Stonyhurst	12·8	322	—	—	e 5 49	+10	—	8·9
Granada	13·2	241	4 15	+59	1 6 54	+65	17·5	9·5
Edinburgh	14·5	327	—	—	—	—	e 7·2	—
Dyce	15·1	332	—	—	6 43	+ 9	8·1	11·4
San Fernando	E. 15·3	244	—	—	—	—	—	11·2
Upsala	15·8	12	—	—	—	—	e 8·4	10·4
Helsingfors	17·7	23	e 4 39	+26	—	—	e 9·7	—
Pulkovo	19·2	31	4 24	- 7	7 54	-12	10·2	12·4
Kucino	20·4	47	—	—	e 8 36	+ 4	—	—
Ksara	21·9	111	e 4 57	- 7	e 8 54	- 9	e 14·2	—
Baku	28·7	84	—	—	e 10 59	-13	e 17·3	21·8
Scoresby Sund	30·6	339	—	—	—	—	13·2	—
Ekaterinburg	32·9	50	e 6 32	-24	11 51	-31	15·2	21·0
Tashkent	41·9	74	—	—	e 14 22	-12	e 23·2	29·5
Irkutsk	58·0	46	—	—	—	—	35·2	—
Ottawa	58·2	306	—	—	—	—	e 26·2	—
Georgetown	Z. 62·6	300	e 11 54	+85	—	—	—	37·4
Cincinnati	Z. 67·1	305	—	—	—	—	e 33·7	40·5

For Notes see next page.

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NOTES TO MAY 11d. 19h. 22m. 48s.

Additional readings and note: Florence P = +16s. Moncalieri MN = +1.9m. Innsbruck iP = +47s., +50s., iPR₁ = +1m.4s. Laibach eP*N = +45s., iN = +54s. Zurich iP = +1m.2s. Ravensburg iP = +56s., iP* = +1m.0s., iP = +1m.6s., i = +1m.20s., iS* = +1m.45s. Neuchatel iP = +1m.12s., iS = +2m.10s. Zagreb e = +1m.0s. and +1m.10s., eNW = +1m.3s., i = +1m.21s. and iNW = +1m.36s., MNW = +2.2m. Grenoble P = +1m.11s., S = +2m.13s. Hohenheim iP* = +1m.15s., iP = +1m.23s., iS* = +2m.14s. Strasbourg P = +1m.14s., PR₁ = +1m.36s., S = +2m.29s., SR₁ = +2m.39s., SR₂ = +2m.49s. Vienna P* = +1m.31s., P = +1m.38s., iEN = +1m.53s., PS₁ = +2m.34s., MN = +3.5m., MZ = +3.6m. Feldberg iPN = +1m.27s., iN = +1m.34s., and +1m.53s. Jena eE = +2m.5s., +2m.6s., and +2m.31s., iE = +2m.41s., iEN = +2m.48s., iLZ = +3.5m. Göttingen eN = +1m.43s., eNZ = +2m.15s., eN = +2m.58s., eLNZ = +3.9m., MZ = +4.0m. Uccle eN = +2m.32s. and +2m.56s., iN = +3m.54s. and +4m.10s. Hamburg ME = +6.5m. Kew iZ = +5m.37s., MN = +6.8m., MZ = +7.2m. Alicante gives S as P and L as S. Toledo MNW = +9.3m. San Fernando MN = +9.7m. Tashkent e = +12m.36s., SR₁ = +17m.20s.

May 11d. Readings also at 0h. (Cincinnati), 2h. (Christchurch, Wellington, Adelaide, Melbourne, Riverview, Manila, Ekaterinburg, Tashkent, La Paz, and near Tacubaya), 10h. (Baku and Tashkent), 11h. (Ekaterinburg, Tashkent, and Manila), 12h. (Irkutsk and near Samarkand), 13h. (Florence), 14h. (Granada), 20h. (Florence and near Florissant), 21h. (Andijan, Samarkand (2), Florence, Zagreb, and near Florissant), 22h. (Florence), 23h. (Chur, Florence, Piacenza, Strasbourg, Vienna, and Zagreb).

May 12d. 1h. 13m. 15s. Epicentre 44°-5N. 11°-0E. (as on 11d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m.	s.	m. s.	s.	m. s.	s.	m.	m.
Florence	0.7	166	e 0 9	- 2	—	—	—	0.4
Piacenza	1.1	300	0 43	+26	—	—	—	—
Chur	2.6	337	e 0 41	0	i 1 12	0	(1 1.4)	—
Zurich	3.3	330	1 0 55	+ 3	—	—	—	—
Neuchatel	N.	3.7	313	e 0 57	—	e 1 42	0	—
Zagreb		3.8	368	—	—	e 1 27	-17	e 2.1
De Bilt		8.5	335	—	—	—	—	e 5.8

Additional readings and notes: Chur gives S as i and L as S. Neuchatel eP = +1m.10s., eS = +1m.56s. Readings for Florence, Zurich, and Zagreb are given without phase.

May 12d. 9h. 34m. 30s. Epicentre 12°-8N. 91°-0W. (as on 1929 Feb. 15d.).

A = -017, B = -0975, C = +022; D = -1.000, E = +017; G = -004, H = -0222, K = -0975.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m.	s.	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	7.0	308	(2 19)	+33	(3 14)	+ 4	(3.2)	(3.6)
Vera Cruz	8.1	323	(2 10)	+ 7	(3 14)	-26	(3.2)	(3.6)
Merida	8.3	9	(2 24)	+18	(3 48)	+ 3	(3.8)	(4.8)
Puebla	9.3	313	2 36†	+16	3 50†	-20	3.9	4.2
Tacubaya	10.3	311	2 34	0	(4 16)	-21	4.3	5.0
St. Louis	N.	25.8	1 15 45	- 1	e 10 10	- 8	e 15.8	19.4
Florissant		26.0	1 15 47	- 1	i 10 22	0	e 15.5	17.5
Tucson	E.	26.6	320 5 45	- 9	10 15	-18	13.4	16.2
	N.	26.6	320 5 45	- 9	10 12	-21	13.6	16.2
Cincinnati		26.9	11 e 5 55	- 2	e 10 54	+16	17.2	18.5

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Charlottesville	N. 27.5	22	e 11 6	?S	(e 11 6)	+16	e 17.3	18.4
Georgetown	Z. 28.9	23	e 6 11	—	e 11 18	+ 3	—	18.0
Chicago	29.1	5	—	—	e 11 57	+38	e 18.4	20.3
Ann Arbor	E. 30.2	11	—	—	e 13 12	?SR ₁	e 18.5	—
Fordham	31.8	26	e 9 31	?	e 12 8	+ 3	e 19.7	21.6
Toronto	32.4	16	—	—	e 12 0	-14	19.1	23.0
Ottawa	N. 35.0	20	—	—	e 12 57	+ 2	e 17.5	22.5
Victoria	E. 44.5	330	—	—	—	—	22.9	26.9
Scoresby Sund	71.0	20	11 42	+19	—	—	37.5	—
Edinburgh	78.2	35	—	—	—	—	e 45.5	—
Granada	80.2	54	—	—	—	—	e 37.5	41.5
Kew	80.4	40	—	—	—	—	e 42.5	—
Paris	82.7	42	—	—	—	—	e 41.5	52.5
Uccle	83.4	40	—	—	—	—	e 44.5	—
De Bilt	83.6	38	e 12 59	+19	—	—	e 40.5	50.1
Strasbourg	86.1	41	—	—	—	—	e 42.5	—
Copenhagen	86.8	33	—	—	—	—	e 43.5	—
Cheb	88.6	39	—	—	—	—	e 53.5	—
Pulkovo	93.6	25	e 17 30	[+ 9]	—	—	46.5	57.2
Kucino	99.2	26	—	—	—	—	e 53.1	—
Ekaterinburg	106.5	16	—	—	e 25 35	?Σ	51.5	60.3
Irkutsk	113.6	350	—	—	—	—	e 64.5	—
Baku	115.6	32	—	—	—	—	e 58.6	—
Tashkent	122.9	17	—	—	—	—	e 61.5	73.3

Additional readings and notes: Oaxaca readings have been increased by 1m. Vera Cruz readings have been increased by 2m. Merida readings have been diminished by 2m. St. Louis eSE = +10m.13s. Florissant eSN = +10m.3s., iN = +10m.23s. Cincinnati ePR₁E = +6m.29s., ePR₂Z = +7m.9s., iPCSEN = +11m.39s. Charlottesville eE = +14m.30s., eLE = +16.3m. Georgetown PR₁Z = +6m.54s., SR₁Z = +12m.5s. Chicago eE = +14m.4s., eLN = +19.6m., MN = +20.5m. Ann Arbor eE = +16m.30s. Fordham e = +15m.38s., +17m.18s., and +18m.30s. Toronto LN = +19.8m. Ottawa e = +8m.42s., eE = +16m.54s., ME = +20.5m.

May 12d. 17h. 1m. 2s. Epicentre 39°2N. 10°0E.

A = +.763, B = +.135, C = +.632; D = +.174, E = -.985;
G = +.622, H = +.110, K = -.775.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tunis	2.4	178	10 38	+ 1	e 1 2	- 4	—	—
Catania	4.4	111	e 1 7	- 1	—	—	—	2.7
Florence	4.7	11	—	—	—	—	e 4.0	5.0
Moncalieri	6.0	344	e 1 32	0	—	—	4.3	—
Alicante	8.3	267	—	—	—	—	e 6.1	—
Strasbourg	9.5	351	—	—	—	—	—	6.0
Toledo	N.E. 10.9	278	—	—	—	—	e 6.5	—
Granada	10.9	264	—	—	—	—	e 6.0	8.2
Cheb	11.0	8	—	—	—	—	e 8.0	—
Paris	11.0	333	—	—	—	—	e 8.0	8.0
De Bilt	13.3	347	—	—	—	—	e 9.0	—
Kew	14.2	333	—	—	—	—	e 10.0	—
Copenhagen	16.6	5	—	—	—	—	11.0	—
Edinburgh	18.8	337	—	—	—	—	—	19.0

Paris gives also MN = +9.0m.

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May 12d. Readings also at 0h. (Cincinnati, De Bilt, and near Nagasaki), 2h. (Manila), 3h. and 4h. (Florissant), 8h. (Baku, Ekaterinburg, Andijan, Tashkent, and Florence), 9h. (Samarkand), 10h. (Lund), 11h. (Florence), 13h. (Almata, Tashkent, near Andijan, and Samarkand), 19h. (near Granada (2)), 20h. (Scoresby Sund, near Neuchatel, and Zurich), 21h. (near La Paz), 22h. (Andijan and Samarkand).

May 13d. 6h. 32m. 22s. Epicentre 38°4N. 57°7E. (as on 4d.).

A = +419, B = +662, C = +621; D = +845, E = -534;
G = +332, H = +525, K = -784.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	7.3	77	2 5	+14	3 17	- 1	3.5	3.8
Tashkent	9.4	68	—	—	—	- 8	7.3	8.9
Andijan	11.4	76	2 53	+ 3	4 56	—	—	7.7
Ksara	18.1	262	e 7 48	?S	(e 7 48)	+ 6	e 18.6	—
Ekaterinburg	18.5	5	e 4 25	+ 2	8 16	+24	—	9.1
Kucno	21.8	329	—	—	—	—	e 14.1	—
Pulkovo	27.5	330	5 55	- 8	10 55	+ 5	15.6	19.1
Copenhagen	34.5	315	—	—	—	—	—	19.6
Irkutsk	34.8	52	—	—	e 15 38?	?	—	19.6
De Bilt	38.5	309	—	—	e 14 38?	+53	e 24.6	—
Scoresby Sund	50.8	335	—	—	—	—	27.6	—

Tashkent gives also e = +5m.22s., i = +7m.6s.

May 13d. 9h. 24m. 30s. Epicentre 15°5N. 96°4W. (as on 1928 July 8d.).

A = -107, B = -958, C = +267; D = -994, E = +111;
G = -030, H = -266, K = -964.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	1.6	347	0 32	+ 8	—	—	0.9	0.9
Vera Cruz	3.7	4	(0 34)	-24	(1 18)	-24	(1.3)	(1.7)
Puebla	3.9	334	0 49	-12	(1 20)	-27	1.3	1.4
Tacubaya	4.8	326	1 17	+ 3	(2 2)	- 9	2.0	2.2
Tucson	21.4	325	e 4 48	-10	10 27	+94	—	—
St. Louis	23.8	12	e 5 25	- 1	e 9 44	+ 4	e 15.8	—
Florissant	24.0	12	15 27	- 1	e 9 48	+ 4	—	16.2
Georgetown z.	28.9	32	—	—	—	—	e 18.5	—
Ottawa	34.6	27	—	—	—	—	e 20.5	—
Victoria e.	39.7	333	—	—	—	—	21.4	24.9
Scoresby Sund	70.3	20	—	—	—	—	—	41.5
Ekaterinburg	105.2	13	—	—	—	—	e 53.5	—
Tashkent	121.7	11	—	—	—	—	e 72.5	82.1

Additional reading and note: Vera Cruz readings have been increased by 2m. Georgetown eZ = +22m.3s., eLZ = +26.1m.

May 13d. 13h. 27m. 3s. Epicentre 38°0N. 56°8E. (as on May 1d.).

A = +431, B = +659, C = +616; D = +837, E = -548;
G = +337, H = +515, K = -788.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	5.8	297	e 1 44	+14	—	—	12.9	—
Samarkand	8.1	75	1 59	- 4	(13 19)	-21	13.3	—
Tashkent	10.1	67	—	—	—	—	e 8.3	9.1
Andijan	12.2	75	3 0	- 2	5 10	-14	—	8.3
Almata	16.1	65	4 7	+14	7 3	+ 6	—	—
Theodosia	17.4	300	4 17	+ 7	7 41	+14	—	—
Ksara	17.4	263	4 19	+ 9	17 49	+22	10.5	—
Yalta	18.1	298	4 29	+11	8 2	+20	—	—
Simferopol	18.3	299	14 29	+ 8	8 1	+14	—	—
Ekaterinburg	19.0	7	14 28	- 1	18 0	- 2	9.0	12.3

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun	19.1	107	(5 57?)	+87	5 57?	?P	10.0	11.0
Helwan	22.6	256	5 17	+5	9 29	+12	—	17.1
Bombay	23.7	139	5 14	-11	9 34	-4	12.9	17.9
Lemberg	26.1	308	—	—	e 10 21	-3	—	17.7
Pulkovo	27.5	331	i 6 0	-3	e 10 42	-8	14.9	19.1
Belgrade	N. 27.8	296	—	—	(e 10 40)	-15	e 10.7	—
Hyderabad	28.0	131	6 2	-6	10 34	-25	e 13.9	17.3
Budapest	28.9	301	e 6 27	+10	—	—	e 12.0	28.0
Konigsberg	N. 29.6	316	—	—	e 11 50	+23	e 14.4	24.1
Helsingfors	29.8	328	e 7 20	+54	e 12 15	+44	e 17.0	—
Vienna	30.8	305	6 37	+1	—	—	—	26.4
Zagreb	31.0	299	e 6 31	-7	e 11 33	-18	e 18.0	22.0
Calcutta	E. 31.1	111	8 58	?	12 22	+29	15.6	—
Laibach	N. 31.1	111	8 54	?	12 10	+17	15.3	—
	32.0	300	—	—	—	—	e 16.3	28.4
Upsala	32.9	325	e 7 42	+46	e 13 11	+49	e 18.0	23.1
Kodaikanal	33.4	141	15 3	?	—	—	20.0	21.3
Cheb	33.5	308	—	—	e 14 9	?SR ₁	e 17.7	27.1
Lund	33.8	317	—	—	—	—	16.0	—
Jena	34.1	309	—	—	—	—	e 15.4	27.7
Copenhagen	34.3	317	7 6	-1	12 30	-14	—	—
Florence	34.4	295	e 6 47	-21	11 52	-54	15.1	17.8
Gottingen	N. 35.1	310	e 6 39?	-35	—	—	e 26.0	28.1
Ravensburg	35.3	304	—	—	—	—	23.0	—
Hamburg	35.3	313	e 9 36	?	—	—	e 15.2	32.1
Chur	35.4	300	e 7 11	-6	—	—	e 28.4	—
Irkutsk	35.6	50	7 10	-8	e 12 40	-24	19.0	—
Zurich	36.0	300	e 7 16	-6	e 13 20	+10	—	—
Feldberg	N. 36.1	307	e 7 12	-11	e 13 5	-6	—	21.7
Strasbourg	36.6	305	e 7 29	+2	e 13 20	+2	e 21.0	—
Moncalieri	36.8	297	e 6 45	-43	13 12	-9	18.0	24.2
Neuchatel	37.2	300	i 7 26	-6	e 13 24	-3	—	—
De Bilt	38.2	310	e 7 43	+3	13 35	-6	e 19.0	31.3
Uccle	38.7	308	—	—	e 13 42	-6	e 20.0	26.1
Bergen	38.9	322	—	—	—	—	e 23.0	—
Paris	40.0	305	—	?	e 15 57?	+110	22.0	34.0
Kew	41.5	310	—	—	e 17 32	?SR ₁	e 25.0	—
Algiers	42.1	286	e 6 56	?	—	—	e 26.0	36.0
Oxford	42.1	310	—	—	14 25	-11	e 23.0	31.3
Dyce	42.4	318	—	—	14 40	0	e 21.0	30.4
Stonyhurst	42.7	312	e 9 57?	?PR ₁	e 17 57?	?SR ₁	24.0	29.4
Edinburgh	43.0	316	—	—	e 18 2	?SR ₁	26.0	36.0
Entebbe	44.1	219	15 47	?S	(15 47)	+44	(19.6)	25.3
Alicante	44.3	290	—	—	—	—	e 35.0	—
Phu-Lien	46.0	98	e 9 57	+77	—	—	26.0	—
Granada	47.0	289	e 10 36	?PR ₁	1 19 24	?SR ₁	24.5	32.6
San Fernando	E. 49.2	289	—	—	—	—	—	32.1
Scoresby Sund	50.8	336	—	—	16 39	+10	—	—
Hong Kong	51.2	91	16 33	?S	(16 33)	-1	e 27.0	33.3
Zi-ka-wei	Z. 52.5	76	—	—	27 11	?L	(27.2)	34.8
Taihoku	E. 55.6	85	—	—	—	—	e 31.0	—
Koti	60.6	69	—	—	—	—	53.0	—
Manila	60.8	94	—	—	e 17 57	-36	—	—
Cape Town	80.3	212	—	—	—	—	42.8	44.3
Ottawa	86.3	329	—	—	e 23 42	+9	e 41.3	—
Toronto	E. 89.2	330	—	—	—	—	41.0	—
Georgetown	Z. 92.2	326	e 13 51	+23	—	—	e 38.4	57.4
Victoria	E. 93.6	0	—	—	—	—	51.6	58.1
Cincinnati	Z. 95.1	331	—	—	—	—	51.0	—
Florissant	97.3	336	—	—	—	—	e 47.4	55.7
St. Louis	97.6	336	—	—	—	—	e 46.7	56.2

For Notes see next page.

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NOTES TO MAY 13d. 13h. 27m. 3s.

Additional readings: Tashkent $i = +5m.7s.$ and $+7m.49s.$ Dehra Dun
 $P = 13h.27m.0s.$ Lemberg $eE = +10m.39s.$ Belgrade $eN = +1m.7s.$
 and $+8m.57s.$ Hyderabad $MN = +20.1m.$ Budapest $MN = +22.0m.$
 Konigsberg $eN = +12m.42s. = SR_1 - 12s., +13m.9s. = SR_1 - 6s., +16m.4s.,$
 $+18m.26s.,$ and $+20m.57s.?$ Laibach $eLE = +24.2m.$ and $+26.6m.$
 Upsala $MN = +23.9m.$ Cheb $eL = +23.0m.$ Jena $eEN = +18m.57s.,$
 $eN = +20m.15s., eE = +22m.53s., eLN = +23.0m., MN = +25.7m.$
 Gottingen $ePN = +9m.1s., eEN = +15m.9s. = SR_1 + 9s.$ and $+20m.9s.,$
 $eLE = +25.7m., ME = +30.6m.$ Hamburg $MN = +27.3m.$ Irkutsk
 $e = +14m.53s. = SR_1 - 19s.$ Feldberg $eN = +15m.7s. = SR_1 - 15s.$
 Strasbourg $eSR_1 = +15m.38s.$ De Bilt $eSR_1 = +16m.16s., MN = +22.5m.,$
 $MZ = +31.4m.$ Paris $MN = +23.0m.$ Oxford $i = +17m.37s. = SR_1 + 7s.$
 Entebbe gives S as P and L as S, also L = $+22.8m.$ San Fernando $MN =$
 $+31.0m.$ Zi-ka-wei $eZ = +20m.59s. = SR_1 + 5s.$ Georgetown $eZ =$
 $+4m.49s.$ Cincinnati $eZ = +41m.17s., iZ = +50m.34s.$ Florissant
 $eE = +36m.26s., eEN = +39m.46s.$ and $+42m.41s.$ St. Louis $eEN =$
 $+39m.12s. = SR_1 - 16s.$

May 13d. Readings also at 0h. (Florissant, Georgetown, Ottawa, Andijan, Samarkand, and La Paz), 1h. (Baku, Ekaterinburg, Tashkent, Florence, and near Tacubaya), 3h. (Florissant), 4h. (Moncalieri), 5h. (Taihoku), 9h. (Almata, Andijan, Samarkand, Tashkent, Ekaterinburg, and near Tacubaya), 10h. (near La Paz), 12h. (St. Louis), 13h. (Laibach, near Samarkand (2)), 14h. (Andijan and near Samarkand (2)), 15h. (Tucson, Andijan, near Samarkand (2), near Tacubaya (2), Oaxaca, Puebla, and Vera Cruz), 17h. (near Tacubaya), 18h. (near Algiers), 21h. (near Tacubaya).

May 14d. Readings at 0h. (Baku, Ekaterinburg, Andijan, Tashkent, near Samarkand (3), and near Manila), 2h. (Sebastopol), 3h. (Tucson, near Oaxaca, Puebla, Tacubaya, and Vera Cruz), 7h. (Baku, Andijan, Tashkent, and near Samarkand), 9h. (Andijan and Samarkand), 15h. (Lick), 16h. (Nagoya and near Akita), 17h. (near Ksara), 19h. (near Samarkand), 20h. (Apia (2)).

May 15d. 23h. 51m. 25s. Epicentre $50^{\circ}1'N. 12^{\circ}4'E.$ (very near Cheb).

A = +.627, B = +.138, C = +.767; D = +.215, E = -.977;
 G = +.749, H = +.165, K = -.641.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	o	o	m. s.	s.	m. s.	s.	m.	m.
Cheb	0.0	—	e 0 0	0	i 0 2	+ 2	—	0.1
Jena	1.0	328	i 0 10	- 5	i 0 20	- 8	—	0.4
Gottingen	2.1	313	e 0 33	0	(0 59)	+ 1	1.0	1.0
Hohenheim	2.4	236	—	—	e 1 15	+ 9	i 1.3	—
Zurich	3.7	224	e 1 9	+11	i 1 58	+16	—	—
Chur	3.8	211	e 1 12	+13	—	—	—	—
Neuchatel	4.8	231	e 1 25	+11	e 2 29	+18	—	—

No additional readings.

This determination is made on the assumption that the shock occurred very near Cheb and depends entirely on its readings. The following epicentre, which fits the other stations better, was made before the Cheb readings were received.

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ALTERNATIVE DETERMINATION.

May 15d. 23h. 51m. 27s. Epicentre 50°·8N. 12°·5E.

A = +·617, B = +·137, C = +·775 ; D = +·216, E = -·976 ;
G = +·757, H = +·168, K = -·632.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Jena	0·6	287	i 0 8	- 1	i 0 18	+ 1	—	0·3
Gottingen	1·7	295	—	—	0 31	-17	0·9	—
Hohenheim	2·9	225	—	—	e 1 13	- 7	i 1·3	—
Zurich	4·3	218	e 1 7	0	i 1 56	- 2	—	—
Chur	4·5	208	e 1 10	0	—	—	—	—
Neuchatel	z. 5·3	226	e 1 23	+ 1	e 2 27	+ 2	—	—

Hohenheim gives also i = +1m.17s.

Several earlier shocks from the above origin are recorded by Jena, Cheb, and Gottingen. The following are the lists of the earliest phases recorded by the two stations, iP in the case of Jena and e in that of Gottingen.

JENA.								
h.	m.	s.	h.	m.	s.	h.	m.	s.
8	46	33	10	9	15	20	12	37
9	8	19	10	42	3	20	35	5
9	46	10	10	42	45	21	37	33
			19	51	54			

CHEB.								
h.	m.	s.	h.	m.	s.	h.	m.	s.
8	46	22	10	42	37	21	4	46
9	4	24	12	13	51	21	5	8
9	8	10	13	54	22	21	5	21
9	46	2?	18	44	32	21	37	25
10	9	6	19	51	46	23	1	13
10	41	55	20	34	58			

GOTTINGEN.								
h.	m.	s.	h.	m.	s.	h.	m.	s.
8	46	55	10	9	36	19	52	43
9	8	43	10	42	30	20	35	48
9	46	57	10	43	33	21	38	18

May 15d. Readings also at 0h. (Lick), 3h. (Almata, Andijan, and Samarkand), 8h. (Ekaterinburg, Phu-Lien, Irkutsk, Sumoto, near Kobe, and near Nagasaki), 9h. (Pulkovo, Baku, Tashkent, Copenhagen, De Bilt, Gottingen, Jena, and near Mizusawa), 10h. (Gottingen), 12h. (Copenhagen), 13h. (Gottingen, La Paz, and near Manila), 16h. (near Taihoku), 17h. (Georgetown and Taihoku), 18h. (Jena), 22h. (La Paz, Taihoku, and Nagoya).

May 16d. 1h. 22m. 34s. Epicentre 36°·5N. 36°·0E. (as on 1928 Aug. 23d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	n. 2·7	182	1 12	+30	i 1 52	+38	—	—
Yalta	8·1	351	—	—	e 3 51	+11	—	—
Sebastopol	8·3	348	i 2 11	+ 5	i 3 57	+12	—	—
Theodosia	8·5	357	e 2 13	+ 4	e 4 3	+13	—	—
Simferopol	8·5	351	e 2 2	- 7	—	—	—	—
Baku	11·5	66	—	—	—	—	e 5·9	8·0
Vienna	z. 18·5	315	4 22	- 1	—	—	—	—
Cheb	21·7	316	—	—	—	—	e 13·4	14·9
Pulkovo	23·5	353	5 12	-11	9 26	- 9	12·4	—
Copenhagen	24·9	328	—	—	9 56	- 5	14·4	—
Ekaterinburg	26·1	31	e 5 48	- 1	e 10 20	- 4	13·4	—
Tashkent	26·2	69	—	—	e 10 48	+22	—	18·1
De Bilt	26·7	315	—	—	e 10 35	0	e 15·4	—

Baku gives also eL = +7·3m.

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May 16d. Readings also at 0h. (Florissant), 1h. (near Akita and Mizusawa), 3h. (Simferopol), 5h. (Cheb), 8h. (Yalta, Cheb, near Jena, and near Malaga), 10h. (Copenhagen, Ekaterinburg, Pulkovo, Simferopol, Taihoku, and Zagreb), 12h. (Adelaide, Melbourne, Riverview, Suva, and Simferopol), 17h. (La Paz and Sucre), 18h. (Georgetown), 19h. (near Jena and Cheb (2)), 20h. (Göttingen, near Granada, and Malaga), 21h. (Copenhagen), 22h. (La Paz), 23h. (Entebbe).

May 17d. 19h. 33m. 33s. Epicentre 32° 0N. 57° 0E. (as on 1923 May 25d.).

A = +.462, B = +.711, C = +.530; D = +.839, E = -.545;
G = +.289, H = +.444, K = -.848.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	10.1	328	e 2 31	0	e 4 31	- 1	e 6.4	—
Samarkand	11.1	44	e 2 39	- 7	—	—	—	—
Tashkent	13.5	43	e 3 45	+25	—	—	e 8.6	11.6
Andijan	14.8	52	e 4 32	+56	—	—	—	—
Ksara	17.8	282	—	—	—	—	e 9.0	—
Ekaterinburg	24.9	5	e 5 38	+ 1	e 9 53	- 8	—	12.4
Irkutsk	39.5	45	—	—	—	—	e 19.4	—

Additional readings: Baku e = +4m.8s. Tashkent e = +7m.51s.

May 17d. Readings also at 0h. (Rio de Janeiro, Tucson, Ottawa, Fordham, Uccle, De Bilt, Copenhagen, Scoresby Sund, Pulkovo, Ekaterinburg, and Tashkent), 1h. (San Fernando), 5h. (Lick), 7h. (Ekaterinburg and Tashkent), 11h. (Baku, Almata, Andijan, Samarkand, Tashkent, Ekaterinburg, and Irkutsk), 12h. (near Amboina), 14h. (Samarkand), 17h. (Baku, Tashkent, Ekaterinburg, Irkutsk, Granada, Entebbe (2), and Melbourne), 19h. (Florissant, Bombay, and near Calcutta), 20h. (Andijan).

May 18d. 1h. 2m. 0s. Epicentre 11° 5N. 42° 0E.

A = +.728, B = +.656, C = +.199; D = +.669, E = -.743;
G = +.148, H = +.133, K = -.980.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Entebbe	14.9	220	3 48	+10	6 53	+23	—	10.1
Ksara	23.1	347	6 8	+50	(9 34)	+ 7	(12.9)	—
Baku	29.7	12	e 6 30	+ 5	11 32	+ 3	15.2	18.9
Bombay	30.6	72	7 42	+68	11 54	+10	14.7	16.3
Sebastopol	33.9	350	e 6 57	- 7	—	—	—	—
Kodaikanal	34.8	88	18 18	?L	—	—	(18.3)	—
Hyderabad	35.7	76	7 19	0	12 57	- 9	17.6	19.8
Samarkand	35.8	34	7 18	- 2	17 29	?L	21.0	—
Tashkent	38.2	34	7 38	- 2	—	—	e 20.0	23.1
Algiers	43.2	315	e 8 3	-17	—	—	22.0	28.0
Moncalieri	44.5	325	8 22	- 8	14 6	-63	23.7	—
Cheb	45.6	334	e 8 32	- 5	—	—	—	29.0
Alicante	46.4	315	—	—	—	—	e 30.0	—
Tortosa	46.7	318	—	—	—	—	e 22.0	31.1
Strasbourg	46.8	330	18 41	- 5	—	—	e 25.0	—
Ekaterinburg	47.6	15	18 51	0	15 50	+ 1	22.0	31.0
Granada	48.2	310	18 53	- 2	16 0	+ 4	28.0	30.1
Malaga	48.7	310	e 8 58	0	e 16 5	+ 3	e 30.6	33.8
Pulkovo	49.1	354	18 59	- 2	e 16 4	- 3	22.0	31.8
Hamburg	49.2	335	e 9 6	+ 5	—	—	e 32.0	36.5
Toledo	49.5	315	e 9 4	0	e 16 13	0	e 23.1	33.6
Paris	49.6	327	e 9 3	- 1	e 16 24	+10	28.0	38.0
Lund	49.6	340	9 0	- 4	16 15	+ 1	28.0	—
Copenhagen	49.9	340	9 7	+ 1	16 14	- 4	22.0	—
Uccle	49.9	330	—	—	e 13 0?	?L	e 28.0	—
De Bilt	50.3	332	e 9 10	+ 1	e 16 30	+ 7	e 28.0	—
Helsingfors	50.3	350	e 9 10	+ 1	e 16 25	+ 2	e 25.5	—

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m. s.	m. s.	m. s.	s.	m. s.	s.	m.	m.
Cape Town	50.6	207	—	—	—	—	e 26.3	27.1
Kew	52.6	329	9 26	+ 2	—	—	—	28.0
Stonyhurst	55.0	330	—	—	e 15 0	-141	e 35.0	—
Edinburgh	56.5	332	—	—	—	—	e 32.0	—
Irkutsk	64.1	37	e 10 52	+13	e 19 30	+16	35.0	37.1
Scoresby Sund	71.0	342	—	—	—	—	28.0	—
Ottawa	E. 100.3	322	—	—	—	—	55.0	—
Georgetown	Z. 104.2	316	—	—	—	—	63.8	—
Florissant	E. 113.0	322	—	—	—	—	e 59.5	—
Apia	147.0	98	e 19 37	[-14]	—	—	—	—

Additional readings and notes : Ksara gives S as PR₁ and L as S. Baku i = +7m.15s. = PR₁ + 1s. Tashkent i = +15m.47s. = SR₁ - 21s. and +18m.58s.
 Algiers MN = +23.7m. Tortosa ME = +33.7m. Strasbourg iPR₁ = +10m.33s. Granada iP = +8m.55s., PR₁ = +10m.48s. Hamburg MN = +38.8m. Florissant eE = +66m.15s. and +71m.0s.

May 18d. 6h. 37m. 39s. Epicentre 39°-0N. 37°-5E.

A = +.617, B = +.473, C = +.629 ; D = +.609, E = -.793 ;
 G = +.499, H = +.383, K = -.777.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m. s.	m. s.	m. s.	s.	m. s.	s.	m.	m.
Ksara	5.3	195	1 49	+27	13 34	+69	—	—
Yalta	6.0	336	1 33	+ 1	2 36	- 8	i 2.8	—
Theodosia	6.2	346	1 13	- 2	(1 2 53)	+ 4	i 2.9	—
Sebastopol	6.4	333	1 36	- 2	(2 57)	+ 2	3.0	—
Simferopol	6.4	338	1 37	- 1	2 44	-11	—	—
Baku	9.7	78	2 28	+ 2	14 19	- 2	—	—
Helwan	10.4	211	i 3 4	+28	5 16	+36	—	9.1
Belgrade	13.9	300	e 4 35	+70	18 7	+121	i 9.0	—
Lemberg	E. 14.4	323	e 3 39	+ 7	—	—	e 7.6	13.6
	N. 14.4	323	e 3 21	-11	—	—	e 7.4	12.4
Budapest	15.8	308	3 48	- 1	6 57	+ 7	8.8	11.6
Zagreb	17.2	300	e 4 12	+ 5	e 7 37	+15	e 8.4	13.0
Pompeii	17.6	283	e 4 26	+14	e 8 16	+45	—	17.4
Vienna	17.8	308	e 4 18	+ 3	7 43	+ 7	i 10.6	16.4
Graz	17.9	304	4 16	0	17 44	+ 6	8.4	17.4
Naples	E. 17.9	283	e 4 25	+ 9	e 7 55	+17	16.4	—
Laibach	N. 18.3	300	e 4 25	+ 4	e 7 58	+11	e 10.2	12.5
Konigsberg	E. 19.5	330	e 4 31	- 4	18 6	- 7	—	15.2
	N. 19.5	330	e 4 34	- 1	18 5	- 8	e 9.4	15.4
Venice	19.6	297	e 4 43	+ 7	18 32	+17	—	14.3
Florence	20.2	292	14 48	+ 5	8 36	+ 9	11.4	12.4
Innsbruck	20.6	302	e 4 39	- 9	8 39	+ 3	11.4	—
Cheb	20.9	310	14 52	0	18 46	+ 4	e 9.4	13.4
Pulkovo	21.3	350	14 46	-11	18 32	-18	10.8	15.6
Jena	21.7	312	e 5 0	- 1	19 1	+ 2	e 10.4	11.8
Chur	21.8	300	e 5 4	+ 1	19 13	+12	—	—
Ravensburg	21.9	303	15 5	+ 1	19 6	+ 3	12.4	—
Hohenheim	22.4	305	e 5 12	+ 2	19 16	+ 3	12.4	—
Zurich	22.5	301	e 5 11	0	19 17	+ 2	—	—
Helsingfors	22.6	344	e 5 4	- 8	19 3	-14	e 11.0	—
Gottingen E. or Z.	22.8	312	e 5 13	- 2	e 9 25	+ 4	e 9.8	13.6
	N. 22.8	312	e 5 17	+ 2	19 22	+ 1	e 10.0	12.6
Moncalleri	22.8	295	5 16	+ 1	9 21	0	13.4	21.2
Samarkand	22.8	79	5 9	- 6	—	—	12.6	—
Karlsruhe	23.0	305	5 21	+ 4	19 21	- 4	—	13.5
Lund	23.2	324	5 15	- 4	9 21	- 8	10.4	—
Strasbourg	23.3	304	15 19	- 1	19 49	- 2	11.4	15.8
Ekaterinburg	23.4	33	15 10	-11	19 12	-21	9.4	14.8
Neuchatel	23.5	300	15 21	- 2	19 36	+ 1	—	—
Copenhagen	23.6	323	5 20	- 4	19 27	- 9	11.4	—

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hamburg	23.7	317	i 5 29	+ 4	9 37	- 1	e 13.0	19.2
Besançon	24.2	300	i 5 28	- 2	i 9 49	+ 1	13.4	—
Grenoble	24.2	295	i 5 31	+ 1	e 10 54	?SR _r	13.4	—
Tashkent	24.3	74	i 5 25	- 6	i 9 43	- 7	—	15.8
Upsala	24.3	335	e 5 21	- 10	i 9 37	- 13	e 14.4	17.8
Marseilles	24.4	291	i 5 48	+ 16	i 10 15	+ 23	12.4	—
De Bilt	25.9	311	5 43	- 4	i 10 14	- 6	e 12.4	18.4
Uccle	26.0	308	i 5 45	- 3	i 10 17	- 5	e 12.4	16.9
Puy de Dôme	26.1	296	e 5 52	+ 3	e 10 31	+ 7	19.4	—
Andijan	26.7	76	e 5 48	- 7	10 24	- 11	—	—
Paris	26.8	303	e 5 51	- 5	e 10 27	- 10	13.4	18.4
Barcelona	26.9	287	e 6 39	+ 42	e 10 51	+ 12	e 12.7	15.2
Algiers	27.1	276	e 5 57	- 2	(10 21?)	- 22	10.4	25.4
Tortosa	28.2	286	6 10	0	10 56	- 7	—	22.5
E. N.	28.2	286	e 6 11	+ 1	10 43	- 20	12.2	19.5
Kew	29.0	308	6 9	- 9	e 11 1	- 16	12.6	18.4
Bergen	29.3	328	e 6 38	+ 17	—	—	—	20.8
Alicante	29.5	281	e 6 22	- 1	e 11 16	- 10	e 13.8	—
Stonyhurst	30.7	311	e 6 47	+ 12	11 35	- 11	16.4	18.4
Bidston	31.0	311	7 6	+ 28	11 27	- 24	13.8	22.4
Edinburgh	31.6	316	—	—	i 11 51	- 10	17.4	26.4
Dyce	31.6	320	—	—	i 11 36	- 25	14.1	20.3
Toledo	31.8	285	e 6 40	- 5	e 11 49	- 16	e 14.2	20.6
Granada	32.1	280	i 6 44	- 4	i 11 55	- 15	e 15.4	21.4
Malaga	32.9	280	e 6 49	- 7	e 12 9	- 13	e 14.4	—
Dehra Dun	34.1	92	(8 21)	?PR _r	(12 21)	- 21	(16.7)	(21.4)
San Fernando	34.3	280	6 39	- 28	12 39	- 5	16.2	23.6
Entebbe	39.2	190	7 56	+ 8	14 4	+ 10	—	24.5
Hyderabad	41.5	110	7 58	- 9	14 15	- 13	21.0	25.8
Scoresby Sund	43.5	335	8 21	- 1	i 14 43	- 12	—	—
Kodaikanal	45.7	119	15 9	?S	(15 9)	- 15	26.0	26.2
E. Calcutta	46.1	96	e 15 25	?S	(e 15 25)	- 4	26.2	—
N. Calcutta	46.1	96	e 14 59	?S	(e 14 59)	- 30	26.0	—
Irkutsk	46.8	50	8 35	- 11	i 15 19	- 19	22.4	28.6
Colombo	49.8	120	9 10	+ 4	16 24	+ 8	24.6	30.8
Tananarive	58.6	169	—	—	e 18 34	+ 28	—	31.7
Phu-Lien	61.2	86	e 10 30	+ 10	e 18 41	+ 3	29.4	—
Hong Kong	66.2	80	19 38	?S	(19 38)	- 2	e 38.0	44.2
Zi-ka-wei	66.7	67	e 11 1	+ 5	—	—	37.6	45.9
Taihoku	N. 70.2	73	—	—	—	—	37.4	—
Kobe	74.2	58	—	—	—	—	e 37.6	41.0
Cape Town	75.0	196	—	—	—	—	—	44.2
Manila	75.9	82	e 11 59	+ 5	i 21 40	+ 4	36.5	—
Harvard	E. 76.1	315	—	—	i 21 47	+ 9	e 32.4	—
Ottawa	76.6	320	—	—	i 21 48	+ 4	e 30.4	42.4
Fordham	78.6	315	—	—	i 23 5	?PS	34.3	43.0
Toronto	N. 79.6	320	—	—	i 22 24	+ 5	39.1	—
Georgetown	Z. 81.7	315	—	—	e 23 34	?PS	43.2	55.4
Chicago	85.0	322	—	—	e 23 9	- 10	e 32.4	—
Cincinnati	85.6	320	—	—	—	—	44.5	50.4
Florissant	88.7	322	—	—	i 23 51	- 9	e 45.4	54.7
St. Louis	88.8	322	—	—	e 23 21	[- 0]	e 42.4	48.4
Victoria	E. 91.0	348	24 14	?S	(24 14)	- 10	40.6	45.4
N. Rio de Janeiro	91.0	348	23 45	?S	(23 45)	[+ 11]	46.5	48.7
Rio de Janeiro	N. 97.3	247	—	—	e 24 21	[+ 12]	e 48.4	—
Perth	101.5	121	46 21?	?L	—	—	(46.4)	—
Tucson	N. 102.9	334	—	—	—	—	—	52.5
La Paz	112.3	266	—	—	—	—	—	74.6
Honolulu T.H.	N. 118.1	15	—	—	—	—	61.2	—
Adelaide	118.9	111	—	—	—	—	e 61.3	—
Melbourne	124.7	112	—	—	e 32 26	?	e 57.6	70.8
Riverview	127.5	105	—	—	—	—	61.2	71.8
Wellington	E. 147.6	106	—	—	—	—	e 58.6	74.8
							e 67.7	—

For Notes see next page.

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NOTES TO MAY 18d. 6h. 37m. 39s.

Additional readings and note: Belgrade iE = +10m.25s. Zagreb e = +5m.42s., MNW = +13.1m. Vienna iP = +4m.20s., PR₁ = +4m.28s., PR₂ = +4m.39s., iEZ = +5m.19s., SR₁ = +8m.36s. Labach eN = +5m.40s. Konigsberg iPR₁N = +4m.50s., iN = +5m.18s., eN = +6m.14s., eE = +6m.16s., iSR₁E = +8m.32s., iSR₁N = +8m.34s. Florence PR₁ = +5m.31s., PR₂ = +6m.51s. Innsbruck i = +4m.51s. = PR₁ - 17s. Cheb ePR₁ = +5m.56s. Jena iP = +5m.2s., iPR₁Z = +5m.37s., eZ = +6m.50s., iSZ = +9m.3s., iSE = +9m.5s., iSNZ = +9m.7s., eLZ = +11.4m. Ravensburg iPR₁ = +5m.35s. Hohenheim i = +6m.29s. Helsingfors iP = +5m.7s., PR₁ = +5m.31s. Gottingen ePR₁N = +5m.48s., MZ = +16.0m. Strasbourg MN = +17.3m. Upsala iP = +5m.29s., eLN = +15.4m., MN = +19.3m. De Bilt MZ = +18.6m., MN = +20.5m. Uccle MN = +15.4m. Paris MN = +15.4m. Kew LZ = +15.4m., MN = +14.6m., MZ = +21.1m. Toledo iP = +6m.45s. Granada PR₁ = +7m.56s., PR₂ = +8m.17s., SR₁ = +12m.26s. Dehra Dun readings have been diminished by 2m. San Fernando MN = +29.6m. Scoresby Sund +9m.57s. = PR₁ - 7s. and +17m.27s. = SR₁ - 33s. Calcutta SN = +20m.35s., SE = +20m.49s. Hong Kong e = +24m.11s. Zi-ka-wei iZ = +28m.1s. and +30m.39s. Harvard eLN = +31.4m. Ottawa eLN = +32.4m., MN = +46.4m. Toronto iN = +27m.29s. = SR₁ - 37s. Cincinnati eZ = +35m.16s. = SR₂ - 16s. Florissant eEN = +36m.43s. = SR₂ + 9s. and +39m.21s., eE = +42m.21s., eEN = +44m.21s. St. Louis eEN = +36m.21s. ? = SR₂ - 15s. and +39m.21s. ? Tucson ME = +46.5m. La Paz PR₁ ? = +19m.18s. Honolulu T.H., eN = +67m.21s. Adelaide MN = +65.7m. Riverview MN = +69.9m. Wellington eLN = +64.2m.

May 18d. Readings also at 0h. (Andijan), 2h. (Florence), 3h. (Entebbe), 6h. (La Plata), 9h. (Ksara (2), Upsala, and Florissant), 11h. (Ksara), 12h. (Konigsberg), 14h. (Baku, Ekaterinburg, Ksara (2), and Tashkent), 15h. (Granada, Konigsberg, and near Lick), 16h. (Baku, Ekaterinburg, Andijan, and Samarkand), 19h. (Baku, Ekaterinburg, Tashkent, Samarkand, Kucino, Ksara (2), Entebbe, Taihoku, and Zi-ka-wei), 20h. (Granada, Irkutsk, and Phu-Lien), 21h. (Florissant and Sebastopol), 22h. (La Paz (2)).

May 19d. 5h. 8m. 56s. Epicentre 4°5S. 131°0E. (as on 1926 Nov. 6d.).

A = -0.654, B = +0.752, C = -0.078; D = +0.755, E = +0.656;
G = +0.051, H = -0.059, K = -0.997.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	'	m. s.	s.	m. s.	s.	m.	m.
Amboina	2.9	286	0 52	+ 7	12 22	+62	—	—
Batavia	24.1	267	4 59	-30	9 43	- 3	—	—
Perth	30.9	206	15 4?	?L	—	—	(15.1)	—
Hong Kong	31.4	329	e 6 29	-13	i 10 50	-68	—	12.9
Phu-Lien	34.8	318	e 6 45	-26	—	—	—	—
Riverview	34.8	150	—	—	—	—	e 18.4	28.5
Melbourne	35.7	161	—	—	—	—	e 15.6	28.3
Zi-ka-wei	z.	36.9	e 7 38	+ 9	—	—	—	22.1
Christchurch	53.6	144	—	—	—	—	—	32.8
Wellington	e.	53.7	140	—	—	—	e 36.9	—
Bombay	61.9	294	17 40	?S	(17 40)	-67	—	—
Almata	68.1	321	11 34	+29	—	—	—	—
Andijan	68.8	317	11 24	+ 8	—	—	—	—
Tashkent	72.3	317	i 11 30	- 2	i 20 50	- 4	e 23.1	41.7
Samarkand	73.3	315	11 36	- 2	—	—	—	—
Ekaterinburg	83.3	329	12 44	+ 6	23 1	+ 1	e 34.1	—
Baku	86.2	311	e 12 9	-45	22 54	-38	e 41.1	—
Ksara	N.	96.8	305	e 12 59	-54	—	e 14.0	—
Copenhagen	109.5	330	19 4?	?PR ₁	—	—	—	51.1
Feldberg	N.	113.8	325	e 56 3	?L	—	(e 56.0)	87.1
De Bilt	z.	114.9	326	e 19 55	?PR ₁	—	e 68.1	—
La Paz	151.7	138	21 14	[+76]	—	—	—	—

Additional readings and note: Batavia eP = +5m.1s., iZ = +5m.4s., i = +5m.7s.; T₀ = 5h.9m.57s. Riverview eL = +24.2m., MN = +26.6m. Melbourne i = +20m.34s., L = +24.2m. Feldberg eN = +65m.59s.; all readings have been increased by 1h.

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May 19d. 6h. 33m. 18s. Epicentre 39°-0N. 37°-5E. (as on 18d.).

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	N.	5.3	195	1 49	+27	3 42	+67	—	—
Yalta		6.0	336	e 1 31	—	—	—	—	—
Theodosia		6.2	346	e 1 34	—	—	—	—	—
Sebastopol		6.4	333	e 1 39	+ 1	—	—	—	—
Simferopol		6.4	338	1 38?	0	—	—	—	—
Baku		9.7	78	—	—	e 4 6	-15	e 5.7	—
Ekaterinburg		23.4	33	e 5 6	-15	e 9 20	-13	12.7	—

Baku gives also $e = +5m.9s.$

May 19d. Readings also at 2h. (Ksara), 4h. (Taihoku), 7h. (Ekaterinburg, Ksara, Cheb, and Tashkent), 8h. (Florence, Zagreb, Zurich, and near Neuchatel), 9h. (Ekaterinburg, Tashkent (2), Zagreb, Zurich, near Tacubaya, and near La Paz), 11h. (Tacubaya), 14h. (Sebastopol and Simferopol), 18h. (Nagoya, near Kobe, and Sumoto), 20h. (Suva), 21h. (Baku, Ksara, near Andijan, and Samarkand), 22h. (Ekaterinburg, Tashkent, and Stonyhurst) 23h. (Samarkand (2)).

May 20d. 4h. 52m. 51s. Epicentre 51°-2N. 176°-0W.

(as on 1928 Nov. 15d.).

A = -0.625, B = -0.044, C = +0.779; D = -0.070, E = +0.998;
G = -0.777, H = -0.054, K = -0.627.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	N.	24.1	60	e 9 44	?S	(e 9 44)	- 2	17.9	18.3
Sapporo		29.7	271	6 30	+ 5	14 34	?	—	—
Mizusawa		32.0	266	6 39	- 8	11 48	-20	—	—
Akita		32.3	270	e 6 49	- 2	11 44	-29	—	—
Honolulu T.H.	E.	32.9	150	e 7 39	+43	e 12 9	-13	13.8	—
	N.	32.9	150	e 7 39	+43	e 11 57	-25	13.6	—
Victoria	E.	33.4	76	6 48	-12	12 5	-25	15.8	18.7
	N.	33.4	76	6 48	-12	12 10	-20	15.0	14.6
Tokyo		35.0	261	7 12	- 1	12 37	-18	—	—
Toyoooka		38.1	266	e 7 5	-34	—	—	—	—
Osaka		38.3	265	7 32	- 8	(12 56)	-46	12.9	13.7
Kobe		38.5	265	7 32	-10	13 27	-18	16.5	20.6
Sumoto		38.7	265	e 7 19	-25	—	—	—	—
Berkeley	N.	39.5	90	e 7 37	-14	e 13 58	- 1	e 19.1	—
Irkutsk		46.8	305	i 8 35	-11	15 31	- 7	22.2	29.2
Zi-ka-wei	Z.	49.4	272	8 55	- 8	16 3	- 8	25.2	37.8
Tucson	E.	50.3	88	9 2	- 7	e 16 19	- 4	e 24.2	—
	N.	50.3	88	9 1	- 8	e 16 13	-10	e 21.8	—
Taihoku	N.	53.7	268	—	—	e 16 39	-26	—	—
Scoresby Sund		56.9	11	9 49	- 2	17 51	+ 6	—	—
Chicago		57.8	63	9 49	- 9	17 43	-13	26.8	—
Florissant	E.	58.3	68	e 10 0	- 1	e 17 59	- 4	e 30.2	34.9
		58.3	68	1 9 59	- 2	i 17 57	- 6	e 30.2	35.0
St. Louis	E.	58.5	68	e 10 2	0	i 18 0	- 5	e 26.5	32.5
	N.	58.5	68	e 10 1	- 1	i 17 59	- 6	e 26.5	32.5
Ann Arbor	E.	59.6	60	e 9 57	-12	e 18 27	+ 9	e 34.8	—
Hong Kong		60.3	270	10 15	+ 1	18 26	- 1	—	34.0
Toronto		60.9	56	i 10 16	- 2	e 18 34	- 1	29.4	38.4
Cincinnati		61.3	64	i 10 24	+ 3	i 18 38	- 2	29.5	34.2
Ottawa		61.5	52	i 10 22	0	e 18 34	- 8	e 28.8	36.4
Manila		61.9	260	i 10 48	+24	i 18 53	+ 6	—	—
Ekaterinburg		62.4	330	i 10 31	+ 3	—	—	—	39.2
Apia		65.1	176	—	—	19 49	+23	30.5	—
Charlottesville	E.	65.4	60	i 10 47	0	i 19 29	- 1	e 31.2	—
	N.	65.4	60	i 10 47	0	i 19 31	+ 1	e 29.2	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Georgetown E.	65.5	59	10 47	- 1	19 29	- 2	e 30.4	41.2
Fordham	65.7	55	11 51	+ 2	e 19 39	+ 6	e 39.2	—
Phu-Lien	66.2	274	e 10 56	+ 3	e 19 42	+ 2	e 30.2	—
Almata	66.4	311	e 13 2	?PR ₁	—	—	—	—
Pulkovo	67.0	347	i 10 59	+ 1	e 19 49	- 1	31.2	42.2
Helsingfors	67.4	349	e 11 0	0	e 19 51	- 4	e 31.6	—
Upsala	68.1	353	e 11 4	- 1	e 20 4	+ 1	34.2	43.4
Andijan	70.9	312	e 11 22	0	—	—	—	—
Tashkent	71.5	315	i 11 27	0	i 20 45	+ 1	e 32.8	39.4
Dyce	71.5	4	11 27	0	20 40	- 4	—	—
Edinburgh	72.7	5	e 14 39	?PR ₁	i 21 45	[+13]	37.2	50.2
Copenhagen	72.8	355	11 34	- 1	21 0	0	35.2	—
Lund	72.8	355	11 33	- 2	20 58	- 2	34.2	—
Konigsberg	73.0	350	e 12 32	+56	e 21 2	0	e 29.8	44.2
Samarkand	73.9	316	e 11 42	+ 1	—	—	—	—
Stonyhurst	74.8	4	e 11 44	- 4	21 20	- 4	37.2	47.2
Hamburg	75.1	357	e 11 53	+ 3	e 21 29	+ 2	e 36.2	51.2
Dehra Dun	75.8	301	12 9?	+15	e 21 9?	-26	35.2	45.2
De Bilt	76.7	359	11 57	- 2	e 21 45	0	e 37.2	51.8
Oxford	77.0	4	12 1	0	i 21 40	- 9	e 38.2	48.6
Gottingen E.	77.2	356	—	—	e 21 44	- 7	e 37.8	47.4
Kew N.	77.2	356	e 11 51	-11	e 21 51	0	e 38.8	43.2
Uccle	77.3	3	11 58	- 5	e 21 47	- 5	39.2	54.2
Cheb	78.0	0	e 12 3	- 4	e 21 55	- 5	e 37.2	52.4
	78.5	354	e 16 38	?	—	—	e 38.2	42.2
Paris	80.0	1	i 12 15	- 4	e 22 15	- 8	28.2	58.2
Vienna	80.0	352	e 12 13	- 6	e 22 18	- 5	e 36.2	55.2
Theodosia	80.0	340	e 12 18	- 1	—	—	—	—
Baku	80.1	326	12 19	- 1	i 22 23	- 1	41.2	45.6
Strasbourg	80.2	358	i 12 15	- 5	e 22 20	- 5	34.2	53.6
Simferopol	80.4	340	e 12 39	+18	—	—	—	—
Budapest	80.5	350	e 12 9?	-13	—	—	e 42.6	56.2
Sebastopol	80.8	340	e 12 26	+ 2	—	—	—	—
Ravensburg	80.8	357	—	—	—	—	42.2	—
Graz	81.2	352	e 12 34	+ 8	e 23 48	?PS	42.2	55.5
Zurich	81.4	357	e 12 21	- 6	e 22 31	- 8	—	—
Neuchatel	81.8	358	i 12 23	- 6	e 22 36	- 8	—	—
Zagreb	82.4	352	e 12 15	-17	e 22 44	- 6	—	—
Moncalieri	83.7	357	12 31	- 9	22 22	[-26]	32.2	55.6
Florence	84.8	354	12 39	- 8	e 23 9	- 8	42.6	44.2
Hyderabad	85.8	294	12 39	-13	23 1	[0]	43.2	47.4
Barcelona	87.3	0	—	—	e 23 36	- 8	—	58.5
Naples E.	87.5	351	e 13 9?	+ 7	e 23 9?	[- 3]	—	—
Pompeii	87.6	351	e 13 14	+11	e 24 14	?PS	—	—
Bombay	87.8	299	12 57	- 7	23 21	[+ 7]	44.3	48.7
Tortosa N.	87.9	2	e 12 56	- 8	e 23 22	[+ 8]	e 41.2	58.2
Toledo	88.7	6	e 13 0	- 9	e 23 23	[+ 3]	e 37.8	61.0
Riverview	89.8	207	e 13 17	+ 2	i 23 12	[-15]	e 41.4	47.1
Sydney E.	89.8	207	23 27	?S	(23 27)	[0]	56.4	60.2
Ksara	90.5	334	—	—	—	—	63.2	—
Granada	91.5	6	i 13 57	+33	—	—	45.2	—
Malaga	91.8	6	e 13 17	- 9	e 24 7	?E	e 35.2	—
Algiers	92.0	0	—	—	—	—	27.2	31.6
Kodalkanal	92.1	289	52 39	?L	—	—	(52.6)	—
Wellington E.	92.9	187	—	—	i 23 44	[- 1]	e 43.6	48.7
N.	92.9	187	—	—	i 23 45	[0]	e 43.6	50.8
Colombo	93.4	285	13 26	- 8	23 55	[+ 7]	45.7	—
Adelaide	94.9	217	i 12 53	-50	i 23 31	?	e 40.8	54.6
Christchurch	95.2	189	—	—	—	—	—	61.6
Melbourne	95.3	210	120 4	?PR ₁	—	—	45.6	51.8
La Paz	113.9	86	e 18 20	[-14]	—	—	64.2	75.8
La Plata	133.4	94	65 3	?L	—	—	72.6	—
Rio de Janeiro E.	134.1	70	e 22 53	?PR ₁	—	—	—	—

For Notes see next page.

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NOTES TO MAY 20d. 4h. 52m. 51s.

Additional readings and notes: Sitka eSN = +14m.41s. Mizusawa PN = +6m.45s. Kobe MN = +19.9m. MZ = +20.4m. Berkeley ePEZ = +7m.38s., eZ = +10m.9s., eE = +13m.7s., eN = +17m.5s., eE = +18m.1s., eZ = +18m.38s., eZ = +21m.6s., eN = +21m.20s., and several other readings. Tucson PRE = +10m.53s., eSR₂N = +19m.53s. Scoresby Sund +13m.27s. = PR₂ +1s. Chicago PE = +9m.52s., eSR₂N = +21m.21s., SR₁E = +22m.36s. Florissant (first line) iPE = +10m.1s., iSE = +18m.19s.; (second line) iZ = +10m.12s., +10m.30s., and +12m.14s., iSZ = +18m.0s., iE = +19m.52s. = [S] +10s., iN = +21m.58s., iEN = +22m.39s. = SR₁ +0s., eE = +24m.39s. = SR₂ +6s. St. Louis eEN = +12m.13s., eS₂SEN = +19m.54s., eEN = +21m.32s., eSR₁ = +22m.28s. Ann Arbor eEN = +10m.15s., e₁N = +18m.39s. and = +20m.21s. = E +2s., e₁E = +28m.39s., eN = +29m.51s., eE = +30m.39s., eN = +31m.3s., eLN = +36.2m. Hong Kong MN = +32.5m. Toronto iPE = +10m.17s., eSR₁E = +23m.26s., eSR₁N = +23m.37s.; T₀ = 4h.52m.51s. Cincinnati eZ = +23m.37s. = SR₁ +7s. and +26m.7s. = SR₂ -31s. Ottawa eSR₁ = +23m.21s., MN = +37.2m.; T₀ = 4h.53m.3s. Ekaterinburg i = +12m.1s., e = +13m.5s. = PR₁ -15s. and +14m.23s. = PR₂ -10s. Charlottesville eSR₁E = +23m.21s., eSR₁N = +23m.45s. Georgetown iE = +20m.41s. = [S] +4s., eLZ = +29.2m. Helsingfors PR₁ = +13m.51s., PR₂ = +15m.16s., SR₁ = +24m.36s., SR₂ = +27m.8s. Upsala MN = +39.8m. Edinburgh readings are given without phase. Copenhagen e = +21m.47s. = [S] +14s., and +26m.7s. = SR₂ -25s. Konigsberg eE = +13m.57s., eEN = +17m.2s. eE = +18m.23s., ePSN = +21m.30s., eSR₁N = +26m.3s., eE = +26m.21s. Hamburg eSR₁ = +26m.38s., MN = +39.2m. De Bilt eN = +21m.13s. and +22m.41s., eSR₁N = +27m.4s., MN = +40.4m., MZ = +55.6m. Göttingen eSR₁E = +26m.45s., eSR₁N = +26m.55s. Kew eN = +22m.43s., SR₁N = +27m.23s. Uccle eSR₁ = +27m.9s.?, MN = +41.0m. Vienna PS = +23m.14s. Strasbourg ePS = +23m.20s., MZ = +44.2m. Zagreb ePS = +23m.54s. Moncalieri MN = +61.7m. Barcelona PS? = +24m.47s. Toledo MNW = +60.8m. Riverview PS = +23m.36s. and +23m.57s., MN = +47.5m. Granada PR₁ = +17m.27s. Algiers MN = +38.2m. Adelaide iPR₁ = +16m.44s., i = +24m.1s., MN = +49.5m. Melbourne i = +23m.56s. = [S] -3s., +24m.51s. = E +13s., and +26m.11s. = PS +0s., e = +31m.9s. = SR₁ -30s. La Paz eP = +19m.45s. = PR₁ +2s.; [P] is given as e simply. Rio de Janeiro eN = +22m.50s.

May 20d. 12h. 17m. 34s. Epicentre 44°·5N. 26°·5E. (as on 1928 Mar. 30d.).

A = +·638, B = +·318, C = +·701; D = +·446, E = -·895;
G = +·627, H = +·313, K = -·713.

De Bilt says "felt at Bucharest," 44°·4N. 26°·1E.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol	5·0	87	1 35	+18	—	—	—	—
Simferopol	5·4	83	1 40?	+17	—	—	2·7?	—
Yalta	5·5	87	1 45	+20	—	—	2·8	—
Budapest	5·9	303	1 53	+22	—	—	3·4	3·9
Theodosia	6·2	82	1 54	+19	—	—	3·1	—
Zagreb	7·5	284	e 2 8	+14	—	—	—	—
Vienna	7·9	302	2 6	+ 6	—	—	—	4·7
Konigsberg	11·0	342	—	—	e 4 27	-27	e 5·0	6·0
Chur	12·1	287	e 3 18	+18	—	—	—	—
Neuchatel	13·8	287	e 3 25	+ 2	e 6 8	+ 5	—	—
Lund	14·0	328	3 20	- 6	—	—	—	—
Hamburg	14·0	319	—	—	e 5 26?	-42	—	—
Copenhagen	14·3	326	3 21	- 9	6 5	-10	8·4	—
Pulkovo	15·4	7	13 35	- 9	6 11	-30	7·4	—
De Bilt	16·0	306	3 50	- 2	6 55	0	e 8·9	—
Baku	17·7	95	—	—	e 7 44	+11	—	—
Ekaterinburg	24·5	48	e 5 27	- 6	e 8 33	-81	—	—

Additional readings and note: Konigsberg eSN = +4m.29s., eSR₁N = +4m.34s., eE = +5m.19s., +5m.35s. and +5m.38s. Ekaterinburg S is given as e simply.

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May 20d. Readings also at 0h. (Baku, Ekaterinburg, Andijan, and Tashkent), 2h. (Samarkand, near Kobe, and Sumoto), 3h. (Mizusawa, Baku, Ekaterinburg, Andijan (2), Samarkand (2), and Tashkent), 4h. (near Manila), 5h. (Neuchatel), 6h. (Sebastopol, Simferopol, Theodosia, Samarkand, Tananarive, and Zagreb), 7h. (near Andijan), 9h. (Ksara, Simferopol, and Theodosia), 12h. (Batavia), 14h. (Koti, Kobe, near Hukuoka, and Matuyama), 15h. (Samarkand), 18h. (Andijan, Samarkand, Tashkent, Baku, Ekaterinburg, Irkutsk, Copenhagen, and De Bilt), 19h. (La Paz), 22h. (Christchurch and near Wellington).

May 21d. 16h. 35m. 25s. Epicentre 31°-8N. 131°-8E.

(as given by Tokyo in Geophys. Mag., Vol. IV, No. 4).

A = -566, B = +634, C = +527; D = +745, E = +667;
G = -351, H = +393, K = -850.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Miyazaki	0.4	291	0 12	+ 6	0 20	+ 9	—	—
Kagosima	1.0	258	0 29	+14	0 46	+18	—	—
Kumamoto	1.4	317	0 34	+13	0 50	+11	—	—
Nagasaki	1.9	300	0 34	+ 5	1 0	+ 7	—	1.6
Hukuoka	2.1	327	0 39	+ 6	1 12	+14	—	1.7
Matuyama	2.2	21	1 0 50	+16	—	—	1 1.4	1.6
Koti	2.3	40	e 0 41	+ 5	1 1 7	+ 4	—	1.7
Muroto	2.5	54	i 0 49	+10	—	—	1.3	3.6
Sumoto	3.7	44	i 1 5	+ 7	i 2 0	+18	(12.0)	2.5
Wakayama	3.8	48	1 9	+10	2 14	+30	—	—
Nake	4.0	211	1 48	+46	3 21	?	—	2.7
Kobe	4.0	43	1 10	+ 8	2 6	+16	2.3	2.7
Osaka	4.2	46	1 13	+ 8	—	—	2.2	3.5
Toyooka	4.5	33	i 1 16	+ 6	—	—	i 2.3	2.8
Gihu	5.5	48	1 24	- 1	3 7	+36	(3.1)	—
Nagoya	5.5	50	i 1 32	+ 7	2 30	- 1	3.2	3.8
Tokyo	7.7	57	e 2 5	+ 8	4 4	+35	(4.1)	—
Zi-ka-wei	8.8	269	2 14	+ 1	13 56	- 2	(4.5)	5.0
Sendai	9.8	46	2 34	+ 7	5 13	+50	—	—
Akita	10.4	38	2 37	+ 1	4 30	-10	5.5	5.9
Mizusawa	10.6	43	2 44	+ 6	5 29	+44	(5.5)	—
Taihoku	11.2	236	e 3 11	+24	(5 15)	+16	5.3	9.8
Ootomari	17.1	26	4 4	- 2	7 13	- 7	—	—
Hong Kong	18.3	243	4 15	- 6	7 45	- 2	9.1	12.8
Manila	19.8	212	1 4 58	+19	1 8 35?	+16	—	—
Phu-Lien	25.0	250	e 5 27	-11	e 9 59	- 4	11.6	16.8
Irkutsk	28.6	324	15 58	-16	e 11 28	+18	17.6	22.4
Calcutta	E. 39.4	270	9 10	?PR ₁	16 38	?SR ₁	23.8	26.6
	N. 39.4	270	8 56	+66	16 22	?SR ₁	23.6	—
Dehra Dun	45.6	284	8 35	- 2	14 55	-27	24.1	29.6
Andijan	47.9	299	8 43	-10	—	—	18.6	—
Hyderabad	50.0	270	9 7	0	16 25	+ 6	27.0	32.7
Tashkent	50.0	301	8 59	- 8	1 16 12	- 7	e 24.4	32.9
Samarkand	52.0	300	9 18	- 2	16 37	- 7	17.9	—
Ekaterinburg	53.7	321	1 9 27	- 4	1 16 57	- 8	24.6	36.2
Bombay	54.1	275	9 32	- 2	17 7	- 3	28.2	42.1
Kolombo	54.3	257	9 24	-11	17 24	+11	25.8	37.6
Kodafkanal	54.4	263	20 11	?	—	—	29.6	41.8
Honolulu T.H.	62.8	81	—	—	19 5	+ 7	e 30.6	31.6
Baku	64.4	305	e 10 46	+ 5	e 19 29	+11	33.6	—
Kucino	66.3	323	e 10 53	0	e 19 41	+ 1	30.3	43.1
Adelaide	67.1	175	—	—	—	—	e 29.1	41.3
Riverview	68.1	165	e 11 23	+18	1 20 7	+ 4	e 29.7	36.9
Sydney	E. 68.1	165	19 53	18	(19 53)	-10	38.2	41.8
Pulkovo	68.3	329	11 2	- 4	e 20 2	- 4	32.6	43.9

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Helsingfors	70.5	331	e 11 20	0	e 20 25	- 7	e 33.6	—
Melbourne	70.7	170	—	—	i 20 32	- 2	32.6	41.1
Apia	70.7	120	—	—	—	—	41.6	—
Theodosia	72.2	314	e 11 31	0	e 21 14	+22	35.6	—
Simferopol	73.0	314	e 11 32	- 4	—	—	64.9	—
Yalta	73.2	314	e 11 47	+10	—	—	40.1	—
Sebastopol	73.5	314	e 12 23	+44	—	—	e 40.4	—
Upsala	73.6	333	e 11 38	- 2	e 21 4	- 5	e 35.6	47.1
Konigsberg	75.3	327	e 11 53	+ 2	e 21 22	- 7	e 37.6	48.6
Victoria	75.6	42	21 33	?S	(21 33)	0	36.6	39.9
Scoresby Sund	76.0	353	11 53	- 2	22 11	?PS	36.6	—
Lembyg	E. 76.4	321	20 59	?S	(20 59)	-43	e 45.2	48.3
	N. 76.4	321	21 53	?S	(21 53)	+11	e 44.9	51.1
Ksara	N. 77.2	304	(12 2)	0	(22 14)	+23	44.6	—
Bergen	78.0	337	—	—	—	—	e 37.6	43.6
Lund	78.1	330	12 6	- 2	21 56	- 5	37.6	—
Copenhagen	78.4	330	12 5	- 4	21 59	- 6	37.6	—
Budapest	80.4	321	12 21	0	22 45	+17	43.6	51.1
Hamburg	80.9	330	e 12 30	+ 6	e 22 49	+15	e 39.6	49.9
Belgrade	N. 81.3	319	e 17 34	?PR ₂	e 23 6	+28	e 48.4	—
Vienna	81.4	324	e 12 22	- 5	22 32	- 7	e 43.6	49.6
Jena	E. 82.0	328	e 12 25	- 5	e 23 5	+19	e 41.6	47.1
	Z. 82.0	328	e 12 27	- 3	—	—	e 42.6	53.1
Cheb	82.2	326	e 12 27	- 4	e 22 59	+11	e 39.6	53.4
Gottingen	82.3	328	e 12 24	- 8	e 22 47	- 2	e 41.0	53.0
Graz	82.5	323	i 12 30	- 3	e 22 58	+ 6	42.6	49.8
Helwan	82.6	300	13 28	+54	e 23 43	+50	—	55.6
Dyce	82.9	338	e 12 31	- 4	e 22 58	+ 2	e 39.6	49.9
Wellington	E. 83.1	150	12 40	+ 3	1 22 45	-13	e 43.2	—
	N. 83.1	150	12 28	- 9	1 22 40	-18	e 40.5	—
Zagreb	83.1	321	e 12 34	- 3	e 22 54	- 4	e 41.6	46.1
Laibach	N. 83.7	323	—	—	—	—	e 44.0	50.5
Feldberg	N. 83.9	328	e 12 25	-16	e 23 55	?PS	—	46.2
De Bilt	84.0	330	12 37	- 5	e 23 8	0	e 40.6	50.3
Edinburgh	84.3	337	—	—	e 23 0	-11	40.6	47.1
Innsbruck	84.5	325	e 12 35?	-10	—	—	—	55.2
Hohenheim	84.6	327	e 12 35?	-11	—	—	e 44.6	54.4
Karlsruhe	84.8	327	12 38	- 9	—	—	—	—
Ravensburg	85.0	326	(e 12 45)	- 3	(1 23 30)	+11	e 44.6	55.1
Uccle	85.3	330	e 12 42	- 8	e 23 20	- 2	e 40.6	54.9
Strasbourg	85.4	327	12 41	- 9	e 23 8	-15	38.6	55.1
Stonyhurst	85.6	335	—	—	—	—	39.6	53.2
Chur	85.7	325	e 12 46	- 6	e 23 2	[+ 2]	—	—
Zurich	85.9	325	e 12 46	- 7	e 22 58	[- 3]	e 43.6	—
Kew	86.4	334	e 12 51	- 4	e 23 12	[+ 7]	42.6	48.2
Oxford	86.8	334	—	—	e 23 4?	[- 4]	e 40.6	57.2
Florence	86.9	321	12 53	- 5	23 30	-10	e 46.6	57.6
Neuchatel	86.9	325	e 12 47	-11	e 23 9	[+ 1]	—	—
Pompeii	87.1	319	e 12 50	-10	e 19 50	?PR ₂	54.6	—
Besançon	87.2	326	—	—	e 23 26	[+16]	44.6	—
Paris	87.6	330	e 12 56	- 7	23 19	[+ 6]	42.6	55.6
Moncalleri	87.9	325	13 1	- 3	23 23	[+ 9]	36.8	56.7
Grenoble	88.8	325	—	—	—	—	e 22.8	—
Puy de Dôme	89.7	327	—	—	—	—	e 47.6	—
Marselles	90.4	325	—	—	—	—	e 46.6	—
Tucson	92.8	50	13 23	- 8	24 21	-22	42.7	—
Barcelona	93.3	325	e 20 53	?	—	—	e 38.6	61.1
Tortosa	E. 94.6	326	—	—	—	—	e 42.6	62.0
Tananarive	95.2	251	—	—	24 21	[+23]	49.8	54.6
Algiers	96.3	322	—	—	e 24 15	[+11]	49.8	59.6
Alicante	97.0	325	e 17 37	?PR ₂	e 27 53	?	e 50.9	61.9
Toledo	97.5	328	e 17 31	?PR ₂	e 26 51	?PS	—	63.9
Chicago	98.0	30	—	—	e 25 29	- 7	e 44.2	53.2

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	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Ottawa	98.9	20	e 17 23	?PR ₁	e 24 5	[-13]	e 45.6	51.1
Ann Arbor	E. 99.1	26	—	—	e 24 47	[+28]	e 48.7	—
	N. 99.1	26	—	—	e 24 53	[+34]	e 49.6	64.7
Almeria	99.1	325	e 16 27	?	e 24 23	[+4]	e 33.9	63.4
Granada	99.4	326	e 13 54	-13	e 25 30	-20	e 51.1	64.4
Toronto	N. 99.4	24	—	—	e 23 43	?	47.1	55.1
St. Louis	99.5	34	e 17 58	?PR ₁	e 24 49	[+28]	i 43.9	51.9
Malaga	100.2	326	e 17 27	?PR ₁	e 27 10	?PS	e 35.6	64.8
San Fernando	101.2	328	11 46	?	—	—	51.0	59.8
Cincinnati	E. 101.5	29	—	—	—	—	45.9	55.0
Fordham	103.6	21	e 18 6	[+6]	e 25 3	[+22]	e 52.1	64.8
Georgetown	Z. 104.4	24	e 14 14	-18	—	—	e 46.1	68.6
Charlottesville	N. 104.7	25	—	—	e 25 19	[+33]	e 65.6	68.3
La Paz	156.3	55	120 8	[+4]	—	—	e 74.6	90.9
Rio de Janeiro	E. 170.0	332	e 25 11	?PR ₁	—	—	e 47.5	—
La Plata	171.4	114	—	—	—	—	92.9	—

Additional readings and notes: Nagasaki MZ = +1.1m., MN = +1.8m. Koti
P* = +46s., IP = +56s., MZ = +1.6m. Muroto IP = +1m.0s., MN =
+2.9m. Sumoto MN = +2.6m., MZ = +2.9m. Kobe eP = +1m.23s.
Osaka MN = +2.7m. Nagoya MN = +4.3m. Zi-ka-wei iZ = +2m.32s.,
+2m.56s., and +3m.20s.; S is given as iZ? and L as SZ. Akita PEN =
+2m.39s., MNZ = +5.8m. Mizusawa SE = +5m.37s. Hong Kong
i = +5m.39s., MN = +11.6m. Phu-Lien MN = +15.0m. Irkutsk
PR₁ = +7m.2s., e = +10m.27s. Honolulu T.H. eSR₁ = +23m.35s., eL =
+26.6m. Riverview iS = +20m.14s., +20m.53s. = [S]-5s., and
+21m.14s., MN = +38.2m.; T₁ = 16h.36m.9s. Sydney SE = +7m.41s.
Helsingfors PR₁ = +14m.17s. Melbourne SR₂ = +28m.5s. Apia e =
+31m.35s. ? and +36m.35s. ? Upsala MN = +48.1m. Konigsberg
ePR₁E = +14m.46s., ePR₂ = +16m.23s., ePSE = +21m.45s., e = +22m.22s.,
eE = +23m.47s., ePSS = +26m.23s., eE = +32m.9s., eN = +32m.36s., eLN =
+38.6m., MN = +47.6m. Victoria LN = +32.6m., MN = +35.0m.
Ksara P and S have been *diminished* by 10m. Copenhagen +14m.59s. and
+26m.59s. Budapest MN = +49.6m. Hamburg eN = +21m.59s.,
MN = +48.4m. Vienna iP = +12m.23s., PS = +23m.34s. Jena eE =
+12m.42s., iZ = +13m.0s. Cheb ePR₂ = +15m.55s., e = +19m.7s. = PR₁-3s.
and +28m.21s. = SR₁-23s. Gottingen ePZ = +12m.26s., eE = +28m.24s.
SR₁-22s., eN = +28m.43s. = SR₁-3s., eEN = +32m.47s. = SR₁+21s., eLN =
+41.6m., eLZ = +43.8m., MN = +46.8m., MZ = +52.8m. Wellington
SR₁N = +28m.4s., SR₁E = +28m.20s.; T₁N = 16h.35m.26s.; T₁E = 16h.
35m.45s. Zagreb e = +23m.14s. = Z + 2s., ePS = +23m.52s., eNE? =
+28m.35s. ? = SR₁-22s. Laibach eN = +36m.26s. Feldberg iPN =
+12m.28s., PN = +12m.31s. De Bilt PR₁Z = +15m.51s. eSR₁ =
+28m.59s., MZ = +54.0m., MN = +54.3m. Ravensburg gives P and S
as ePR₁? and iPPS? respectively. Uccle ePR₁ = +15m.59s., ePR₂ =
+28m.59s., MN = +55.0m. Strasbourg ePR₁ = +16m.5s., ePR₂ =
+19m.30s. ePS = +23m.53s., MN = +55.3m. Kew SR₁EN = +30m.17s.,
LZ = +47.6m., MN = +49.3m., MZ = +58.2m. Paris e = +16m.19s. =
PR₁-29s., MN = +52.6m. Moncalieri MN = +58.0m. Tucson LN =
+39.3m. Barcelona MN = +56.3m. Tortosa eLN = +43.6m., MN
+61.7m. Tananarive eE = +26m.20s. = PS + 10s. Algiers PR₁?
+17m.30s. Alicante MN = +59.2m. Chicago eSR₁E = +31m.59s.,
eSR₁N = +32m.9s., eSR₂E = +37m.11s., eSR₂N = +37m.23s., eLN = +45.2m.,
MN = +64.1m. Ottawa eE = +24m.59s. = Z + 0s., eN =
+32m.23s. = SR₁-1s., MN = +60.0m. Ann Arbor eIE = +25m.11s. =
Z + 9s. and +35m.23s., eIN = +32m.11s. = SR₁-16s. Granada PR₁ =
+17m.38s. = [P]-6s., MZ = +64.0m. Toronto LE = +47.2m., ME =
+62.8m. St. Louis e = +21m.55s., i = +25m.12s. = Z + 7s., and
+27m.3s. = PS + 4s., e = +31m.55s. Cincinnati MZ = +56.4m. George-
town PR₁Z = +18m.26s., PSZ = +27m.54s., SR₁Z = +33m.50s. Chalot-
ville eN = +42m.45s., +50m.31s., and +57m.35s. La Paz MN =
+86.2m. Rio de Janeiro eN = +25m.15s. = PR₁-21s., eLN = +46.8m.

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May 21d.	16h. 52m.	3s. (I)	} Epicentre 31°·8N. 131°·8E. (as at 16h. 35m).
	16h. 57m.	59s. (II)	
	17h. 10m.	20s. (III)	
	17h. 20m.	57s. (IV)	
	18h. 11m.	39s. (V)	
	21h. 27m.	48s. (VI)	

The T_0 is taken to make the P for the station nearest the epicentre, Nagasaki, equal to its value for the shock of 16h. 35m.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Nagasaki	1·9	300	0 34	+ 5	0 59	+ 6	—	—
II		1·9	300	0 34	+ 5	0 56	+ 3	—	—
III		1·9	300	0 34	+ 5	1 0	+ 7	—	—
IV		1·9	300	0 34	+ 5	1 2	+ 9	—	1·1
V		1·9	300	0 34	+ 5	1 3	+ 10	—	—
VI		1·9	300	0 34	+ 5	0 59	+ 6	—	—
II	Hukuoka	2·1	327	0 41	+ 8	1 11	+ 13	—	—
III		2·1	327	0 40	+ 7	1 5	+ 7	—	1·3
IV		2·1	327	0 39	+ 6	1 8	+ 10	—	1·3
V		2·1	327	e 0 35	+ 2	1 1	+ 3	—	—
VI		2·2	21	i 0 34	0	—	—	i 1·1	1·3
I	Matuyama	2·2	21	e 1 4	?S	(e 1 4)	+ 4	e 1·5	1·6
II		2·2	21	0 46	+ 12	—	—	—	1·3
III		N. 2·2	21	0 55	+ 21	—	—	—	1·5
IV		N. 2·2	21	0 55	+ 21	—	—	—	—
II	Koti	2·3	40	e 1 1?	?S	(e 1 1?)	- 2	—	—
III		2·3	40	e 0 46	+ 10	1 10	+ 7	—	—
IV		2·3	40	e 1 1	?S	(e 1 1)	- 2	(e 1·4)	—
V		2·3	40	—	—	—	—	e 1·4	—
III	Muroto	2·5	54	e 1 2	+ 23	—	—	—	—
II	Kobe	4·0	43	e 1 35	+ 33	—	—	—	—
III		4·0	43	1 21	+ 19	2 8	+ 18	—	2·6
IV		4·0	43	1 28	+ 26	—	—	—	—
III	Osaka	4·2	46	e 1 33	+ 28	—	—	2·4	3·2
IV		4·2	46	e 1 49	+ 44	—	—	2·7	3·2
III	Toyooka	4·5	33	e 1 29	+ 19	—	—	e 2·4	—
IV		4·5	33	e 1 40	+ 30	—	—	—	—
III	Nagoya	5·5	50	e 2 23	?S	(e 2 23)	- 8	—	—
IV		5·5	50	e 2 32	?S	(e 2 32)	+ 1	—	—

Additional readings and note: Hukuoka iv MN = +1·2m. Koti iii P = +54s., iv S is given as P and L as S.

May 21d. Readings also at 0h. (Perth), 2h. (Copenhagen, De Bilt, Scoresby Sund, and Rio de Janeiro), 4h. (Entebbe and Nagoya), 5h. (Ekaterinburg, Baku, Tashkent, Yalta, Ksara, Kucino, Pulkovo, De Bilt, Copenhagen, Granada, Toledo, Phu-Lien, Zi-ka-wei, near Taihoku, and near Tananarive), 8h. (Port au Prince), 9h. (Ekaterinburg, Baku, Pulkovo, Phu-Lien, Zi-ka-wei, Kobe, near Koti, near Nagasaki, and Hukuoka), 12h. (Belgrade), 19h. (Bidston, Andijan (2), Samarkand, and near Taihoku), 22h. (Samarkand), 23h. (Batavia).

May 22d. 0h. 26m. 12s. Epicentre 14°·0S. 166°·5E. (as on 1926 Sept. 6d.).

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

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	E.	12·2	119	13 24	+ 22	—	—	—	4·4
	N.	12·2	119	13 12	+ 10	15 18	- 6	16·7	8·0
Apta		21·1	92	e 4 48?	- 6	—	—	—	—
Riverview		24·2	212	15 39	+ 9	19 55	+ 7	e 12·0	15·9
Wellington	N.	28·2	167	16 13	+ 3	—	—	—	—
Melbourne		30·6	215	8 4	—	12 20	+ 37	13·6	15·0
Adelaide		32·7	226	—	—	10 48	- 91	114·3	21·0

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	53.3	300	e 9 28	0	e 16 29	-31	—	—
Kobe	57.0	330	e 9 53	+	—	—	—	—
Tashkent	104.5	310	e 14 14	-18	24 45	[0]	e 48.8	49.9
Florissant	E. 108.9	53	—	—	e 25 48	[?]	e 52.8	62.8
St. Louis	E. 109.0	53	—	—	—	—	e 58.8	—
Ekaterinburg	110.3	326	—	—	25 12	[+ 1]	51.8	—
Baku	119.2	310	(19 59)	?PR ₁	—	—	63.2	—
Georgetown	Z. 119.3	51	—	—	—	—	e 60.8	—
Ottawa	E. 119.3	44	—	—	—	—	e 54.7	61.6
Kucino	122.7	329	—	—	—	—	—	—
Pulkovo	124.2	335	19 6	[+ 2]	—	—	63.8	—
Konigsberg	N. 131.4	335	i 22 48	?	—	—	—	—
Copenhagen	133.8	340	19 25	[- 2]	22 46	?	—	—
Hamburg	136.3	340	e 22 42	?PR ₁	—	—	—	—
Vienna	Z. 137.8	330	e 19 33	[- 3]	i 22 17	?PR ₁	e 60.4	—
De Bilt	139.1	342	i 19 36	[- 2]	i 22 26	?PR ₁	e 69.8	—
Zagreb	139.7	327	e 19 39	[- 0]	—	—	—	—
Uccle	140.5	342	e 22 42	?PR ₁	—	—	—	—
Strasbourg	141.2	336	i 19 33	[- 8]	—	—	e 66.8	—
Zurich	141.9	334	e 18 48?	[- 55]	—	—	—	—
Chur	142.0	334	e 19 33	[- 10]	e 23 16	?PR ₁	—	—
Paris	142.8	343	e 21 48?	?	—	—	—	—
Moncalleri	144.2	332	e 19 42	[- 5]	22 55	?PR ₁	—	—
Granada	155.2	341	i 19 59	[- 3]	—	—	e 88.8	103.8

Additional readings and note: Suva iE = +2m.6s.; all readings are given without phase. Riverview SR₁ = +10m.52s., SR₂ = +11m.9s., MN = +16.3m.; T₁ = 0h.26m.18s. Wellington eE = +7m.22s. Adelaide MN = +16.8m. Tashkent PR₁ = +18m.31s. Florissant eE = +27m.18s. = S + 0s., +27m.58s., and +33m.48s. St. Louis eLE = +63.5m. Ekaterinburg PR₁ = +19m.1s., PS = +28m.35s. Baku S₀P₀P₀S = +27m.8s., S₀P₀SP = +30m.57s. Kucino PR₁ = +20m.40s., S₀P₀P₀S = +27m.26s. Pulkovo PR₁ = +20m.47s., PS = +30m.22s., SR₁ = +37m.18s. Konigsberg eE = +22m.50s. and +23m.18s. De Bilt eEN = +35m.48s.? Zagreb e = +22m.32s. = PR₁ + 0s., and +23m.14s. Strasbourg iPR₁ = +22m.40s. Granada i = +20m.28s. and +27m.30s.

May 22d. 20h. 6m. 5s. Epicentre 61°7S. 152°6E.

A = -0.421, B = +0.218, C = -0.880; D = +0.460, E = +0.888;
G = +0.782, H = -0.405, K = -0.474.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch	E. 21.6	42	(5 1)	+ 1	0 1	+ 4	11.8	—
Wellington	N. 24.3	43	15 27	- 4	19 51	+ 1	i 12.2	14.9
Melbourne	24.3	43	15 31	0	19 52	+ 2	i 12.0	14.2
Riverview	24.4	345	15 37	+ 5	19 57	+ 5	11.0	11.9
Adelaide	27.9	357	16 5	- 2	i 10 58	+ 1	i 12.0	14.3
Perth	28.2	335	i 6 11	+ 1	i 10 58	- 3	i 13.1	13.7
Suva	38.0	306	—	—	i 14 40	+62	i 18.6	—
Manila	N. 47.3	35	e 8 25	-23	—	—	—	30.1
Colombo	80.3	330	e 12 36	+15	—	—	i 28.1	—
Hong Kong	88.0	288	6 44	?	—	—	—	44.0
Phu-Lien	89.5	325	16 45	?PR ₁	e 24 5	- 4	30.1	38.7
Kodalkanal	90.3	318	16 55?	?PR ₁	—	—	—	—
Rio de Janeiro	92.1	288	43 7	?L	—	—	(43.1)	—
La Paz	E. 94.5	186	—	—	e 24 51	-10	e 44.9	—
Zi-ka-wei	95.4	141	e 13 48	+ 3	—	—	44.9	54.3
Hyderabad	Z. 96.3	334	e 13 45	- 6	—	—	50.0	54.3
Bombay	98.1	292	18 9	?PR ₁	26 52	?PS	40.9	55.2
Dehra Dun	101.9	288	18 30	?PR ₁	27 32	?PS	43.6	54.0
Irkutsk	109.6	298	19 55?	?PR ₁	28 55?	?PS	34.9	56.9
Irkutsk	120.2	328	e 19 55	?PR ₁	e 36 55?	?SR ₁	63.9	73.9

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	129.7	297	19 34	?	—	—	e 47.9	65.3
Victoria	128.7	57	—	—	—	—	60.9	65.3
Baku	130.5	282	e 23 0	?	—	—	57.9	69.1
Ksara	N. 131.9	264	e 22 27	?	—	—	—	—
Florissant	136.0	89	—	—	e 25 20	?	e 63.9	70.4
Cincinnati	Z. 139.1	94	—	—	—	—	e 67.3	—
Georgetown	Z. 142.4	101	20 14	[+30]	—	—	e 71.8	85.3
Toronto	E. 145.0	94	—	—	—	—	78.6	—
Kucino	147.1	290	20 1	[+10]	—	—	63.3	79.1
Ottawa	148.0	96	—	—	e 33 19	?	e 61.9	—
Algiers	148.7	231	e 19 40	[-14]	—	—	76.9	83.9
Zagreb	150.7	257	—	—	—	—	e 80.4	94.9
Florence	151.2	250	20 5	[+ 8]	—	—	73.9	88.9
Malaga	151.2	220	e 17 17	?	—	—	e 37.9	—
Granada	151.4	222	i 20 11	[+13]	—	—	74.9	80.4
Alicante	151.4	228	—	—	—	—	e 83.7	—
San Fernando	E. 151.5	217	—	—	—	—	—	90.9
Vienna	152.2	261	e 20 20	[+21]	—	—	—	—
Pulkovo	152.7	292	20 16	[+16]	—	—	71.9	84.9
Tortosa	N. 153.2	232	—	—	—	—	e 65.9	77.1
Moncalleri	153.7	247	e 20 44	[+43]	29 18	?	44.8	96.5
Toledo	N.E. 154.0	224	—	—	—	—	e 44.5	85.1
Helsingfors	155.2	280	—	—	—	—	e 77.9	—
Cheb	155.4	260	e 30 7	?	—	—	e 82.9	93.9
Strasbourg	156.5	252	e 20 35	[+31]	—	—	47.9	—
Gottingen	N. 157.5	260	—	—	—	—	e 95.1	—
Hamburg	158.8	265	—	—	—	—	e 79.9	—
Copenhagen	158.9	272	20 31	[+24]	—	—	77.9	—
Paris	159.0	246	e 20 55?	[+48]	—	—	78.9	100.9
Uccle	159.6	252	—	—	e 44 55?	?SR ₁	e 66.9	—
De Bilt	160.1	256	e 20 35	[+27]	e 44 55?	?SR ₁	e 77.9	96.0
Kew	162.1	248	—	—	—	—	e 79.9	—
Oxford	162.8	247	—	—	—	—	e 79.9	104.9
Bidston	164.7	249	—	—	(43 55?)	?SR ₁	43.9	75.1
Stonyhurst	164.7	250	—	—	—	—	78.9	101.9
Edinburgh	166.3	256	—	—	—	—	e 85.9	—
Dyce	166.5	262	—	—	—	—	e 77.0	92.7
Scoresby Sund	171.0	349	23 55?	?	—	—	71.9	—

Additional readings and notes : Christchurch P = +3m.55s., true P is given as PR₁, Wellington PR₁E = +6m.8s., T₁E = 20h.5m.55s., T₁N = 20h.6m.2s., Riverview iP = +6m.52s. = PR₁ + 1s., iL = +12.2m., MN = +16.3m., T₁ = 20h.5m.46s., Adelaide i = +7m.23s., MN = +17.3m., Perth iPR₁ = +10m.15s., Hong Kong e = +17m.32s., MN = +37.7m., Hyderabad MN = +53.5m., Tashkent PR₁ = +19m.49s., SePcPcS = +26m.49s., PPS = +30m.43s., Baku e = +25m.21s., +33m.37s., and +37m.42s., i = +40m.1s., Florissant eEN = +27m.25s., +34m.25s., +40m.10s., and +44m.50s., eE = +52m.25s., Cincinnati eZ = +73m.42s., and +79m.19s., Georgetown PSZ = +35m.8s., Kucino PR₁ = +21m.38s., P₁cPcS = +23m.23s., PPS = +33m.43s., Ottawa e = +42m.43s. = SR₁ + 15s., and +47m.55s., Algiers i = +43m.20s., Florence e = +19m.5s., Pulkovo eP = +16m.58s., P₁cPcS = +23m.33s., ePS = +32m.11s., PPS = +34m.19s., Strasbourg SePcPcS = +29m.55s., De Bilt eLNZ = +80.9m., MN = +94.8m., MZ = +95.4m.

May 22d. Readings also at 0h. (Hukuoka and Nagasaki), 1h. (Apia (2)), 2h. (Ekaterinburg, Pulkovo, Tashkent, and Zagreb), 5h. (Alicante, Toledo, Granada, near Malaga, and near Akita), 10h. (Andijan), 16h. (Ksara), 18h. (Sydney), 20h. (near La Paz), 22h. (Hong Kong, Manila, Phu-Lien, Pulkovo, Wellington, and Zi-ka-wei), 23h. (Bombay, Tashkent, Irkutsk, Copenhagen, Cheb, De Bilt, and Uccle).

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May 23d. 18h. 36m. 15s. Epicentre 57°·5N. 5°·8E. (given by De Bilt).

A = +·535, B = +·055, C = +·843; D = +·101, E = -·995;
G = +·839, H = +·086, K = -·537.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bergen		2·9	355	1 0	+15	—	—	e 1·6	2·8
Copenhagen		4·0	114	1 3	+1	—	—	—	—
Hamburg		4·5	146	—	—	e 1 45?	-19	—	4·0
Edinburgh		5·2	256	—	—	—	—	—	3·8
De Bilt		5·4	184	—	—	e 2 35	+7	e 3·8	—
Gottingen	N.	6·4	156	e 1 35	-3	1 2 35	-20	e 3·4	—
Upsala		6·5	64	e 1 40	+1	e 3 23	+26	—	5·6
Uccle		6·9	192	e 1 47	+2	e 2 52	-15	—	—
Feldberg	N.	7·4	167	e 1 48	-4	—	—	1 4·0	5·4
Jena	E.	7·4	150	1 54	+2	1 2 59	-22	e 3·2	3·4
Konigsberg		8·6	101	—	—	e 4 2	+9	e 5·8	6·0
Strasbourg		8·9	172	—	—	4 24	?L	(4·4)	—
Hohenheim		9·0	165	e 2 45?	+29	—	—	—	—
Ravensburg		9·9	165	—	—	e 3 45?	-41	—	—
Helsingfors		10·2	67	e 2 30	-3	e 4 27	-8	e 5·0	5·4
Zurich		10·2	169	e 2 38	+5	—	—	—	—
Neuchatel		10·5	176	e 2 40	+3	e 4 57	+14	—	—
Vienna	Z.	11·2	141	(e 3 30)	+43	—	—	—	—
Pulkovo		12·8	70	e 3 9	-1	e 6 7	+28	7·2	—
Zagreb		13·2	147	—	—	—	—	e 7·5	—
Simferopol		21·4	114	e 10 3	?L	—	—	(e 10·0)	—
Theodosia		22·0	112	e 10 27	?L	—	—	(e 10·4)	—
Tashkent		42·5	84	—	—	—	—	e 23·0	27·4

Additional readings and note: Bergen e = +1m.45s. and +2m.30s. Copenhagen P = +1m.19s., PZ = +1m.53s., PE = +1m.55s., PN = +2m.5s. Hamburg MN = +3·0m. De Bilt eZ = +2m.0s. Gottingen eN = +1m.43s., +1m.55s., and +2m.25s., e = +2m.26s., 1N = +2m.37s., and +3m.39s. Upsala e = +2m.32s., MN = +4·4m. Feldberg e?N = +2m.31s., eN = +2m.38s., 1N = +2m.54s. Jena 1E = +2m.42s. Konigsberg eE = +4m.16s., eNZ = +4m.23s., eE = +4m.46s., 1N = +5m.14s., 1Z = +5m.24s., MN = +6·2m. Strasbourg e = +3m.37s., SR₁ = +5m.28s. Helsingfors e = +3m.6s. Vienna reading has been increased by 10m. Zagreb e = +8m.7s.

May 23d. Readings also at 0h. (Ksara), 3h. (near Kobe, Nagoya, Osaka, and Toyooka), 4h. (Matuyama), 5h. (La Paz, La Plata, and near Santiago), 10h. (Zagreb), 11h. (Baku, Ksara, Tashkent, and Entebbe), 12h. (near Akita and Mizusawa), 14h. (Florissant), 15h. (Andijan and Samarkand), 16h. (Samarkand and near La Paz), 17h. (Andijan and Samarkand), 22h. (Andijan and near Samarkand), 23h. (Cheb).

May 24d. 18h. 37m. 44s. Epicentre 29°·3N. 98°·7E.

A = -·132, B = +·862, C = +·489; D = +·989, E = +·151;
G = -·074, H = +·484, K = -·872.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		11·1	138	—	—	—	—	e 5·6	6·4
Calcutta	E.	11·5	236	e 5 13	?S	(e 5 13)	+6	7·6	—
	N.	11·5	236	e 4 51	?S	(e 4 51)	-16	7·4	—
Hong Kong		15·8	113	7 1	?S	(7 1)	+15	e 8·0	8·9
Dehra Dun		18·0	278	7 6	?S	(7 6)	-34	(9·6)	13·3
Zi-ka-wei	Z.	19·7	79	e 4 37	0	1 8 21	+4	—	12·3
Taihoku	N.	20·7	96	—	—	—	—	e 11·3	—
Hyderabad		22·0	242	5 6	+1	9 6	+1	12·0	15·0
Irkutsk		23·4	9	e 5 17	-4	1 9 35	+2	1 12·9	13·1
Manila		25·2	121	e 3 55	?L	—	—	13·8	—
Bombay		25·7	252	10 16	?S	(10 16)	0	15·3	16·1

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	26.7	305	e 7 46	?	i 10 33	- 2	e 14.6	18.8
Baku	41.0	300	—	—	—	—	e 21.3	—
Kucino	49.9	320	—	—	e 16 13	- 5	e 26.4	29.0
Pulkovo	54.3	325	—	—	—	—	e 28.3	33.8
Helsingfors	56.9	325	—	—	—	—	e 31.3	—
Copenhagen	64.2	322	—	—	—	—	34.3	—
Strasbourg	69.1	315	—	—	—	—	e 38.3	—
De Bilt	69.4	319	—	—	—	—	e 37.3	44.6
Uccle	70.3	318	—	—	—	—	e 39.3	—
Scoresby Sund	71.8	343	—	—	—	—	40.3	—
Kew	72.7	320	—	—	—	—	e 38.3	—
Ottawa	105.2	355	—	—	—	—	e 57.3	—
Florissant	111.3	6	—	—	—	—	e 61.3	63.8
Georgetown	z. 111.7	356	—	—	—	—	e 45.7	—

Additional readings and note : Phu-Lien L = +6.3m., MN = +6.6m. Calcutta SN = +6m.27s., SE = +6m.47s. Hong Kong i = +8m.31s. Dehra Dun gives S as P and L as S., also L = +11.6m. Hyderabad MN = +14.7m. Bombay S = +13m.37s. Baku e = +12m.6s. and +17m.15s. = SR₁ + 7s. Kucino PR₁ = +18m.43s., e = +22m.59s. De Bilt MZ = +44.7m. Georgetown eZ = +57m.23s., eLZ = +67.4m.

May 24d. Readings also at 0h. (Andijan and near Samarkand), 2h. (La Paz), 4h. (near Tacubaya), 5h. (near Hukuoka and Nagasaki), 6h. (near Akita and near Santiago), 9h. (Taihoku), 12h. (Fordham), 13h. (Florissant, near Tucson, near Ksara, and near Nagasaki), 15h. (Florissant), 18h. (Chur, Florence, Hohenheim, Moncalieri, Naples, Pompeii, Ravensburg, Strasbourg, Venice, Vienna, and Zagreb, records of a shock presumably in Italy, but not warranting a determination), 22h. (La Paz).

May 25d. 3h. 44m. 42s. Epicentre 18°-5N. 107°-0W.

A = - .277, B = - .907, C = + .317 ; D = - .956, E = + .292 ;
G = - .093, H = - .303, K = - .948.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Guadalajara	3.9	56	0 58	- 3	(1 38)	- 9	1.6	1.8
Tacubaya	7.4	82	1 52	0	3 28	+ 7	3.6	4.6
Tucson	14.2	346	4 1	+ 32	8 50	?L	(8.8)	—
St. Louis	24.9	32	e 5 42	+ 5	e 10 8	+ 7	e 13.5	—
Florissant	24.9	32	15 43	+ 6	e 10 9	+ 8	e 12.8	13.5
Georgetown	z. 33.0	45	e 6 55	- 1	—	—	e 19.5	—
Toronto	34.2	37	—	—	—	—	18.7	—
Ottawa	37.3	37	—	—	e 13 24	- 4	e 19.9	—
Scoresby Sund	71.0	21	—	—	—	—	39.3	—

Florissant gives also eSN = +10m.11s.

May 25d. 11h. 59m. 37s. Epicentre 9°-3S. 76°-6W.

A = + .229, B = - .960, C = - .162 ; D = - .973, E = - .232 ;
G = - .037, H = + .167, K = - .987.

A depth of focus 0.040 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	-0.6	10.9	132	i 2 34	0	i 4 28	- 9	4.9	6.3
Sucre	-1.0	14.6	133	i 3 25	+ 4	6 1	+ 3	6.9	—
La Plata	-2.6	30.7	150	6 8	- 1	11 0	- 1	—	—
Rio de Janeiro	N. -3.0	34.7	119	e 6 31	- 13	—	—	—	—
Georgetown	z. -3.9	48.2	0	i 8 20	- 8	i 15 0	- 6	e 21.2	—
Cincinnati	-3.9	49.0	354	i 8 30	- 4	i 15 12	- 4	—	—

Continued on next page.

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	Corr. for Focus	Δ	Az.	P.		O-C.		S.		O-C.		L.	M.
				m.	s.	s.	m.	s.	m.	s.			
St. Louis	-4.0	49.6	347	e 8	37	0	e 15	23	+ 1	—	—	—	—
Florissant	-4.0	49.8	347	i 8	38	- 1	i 15	26	+ 1	e 21.9	—	—	—
Harvard	E. -4.2	51.9	5	i 19	23 ²	SR ₁	—	—	—	—	—	—	—
Ann Arbor	N. -4.2	52.0	355	e 15	53	—	e 15	53	+ 2	e 21.4	—	—	—
Tucson	N. -4.2	52.9	324	9	20	+22	e 16	35	+33	—	—	—	—
Toronto	N. -4.2	53.0	358	i 9	34	+35	i 16	4	0	22.4	—	—	—
Ottawa	-4.4	54.7	1	e 9	11	+ 2	i 16	29	+ 6	e 23.4	—	—	—
Victoria	-4.9	70.9	330	—	—	—	—	—	—	20.3	—	—	21.0
Malaga	-5.2	81.6	50	e 11	59	+ 2	e 21	39	- 3	27.4	—	—	—
Granada	-5.2	82.6	50	i 12	1	- 2	i 21	55	+ 2	—	—	—	—
Toledo	-5.2	82.9	47	e 12	5	0	i 21	57	0	e 34.3	—	—	—
Alicante	-5.3	85.1	49	i 12	38	+20	e 22	20	- 1	—	—	—	—
Scoresby Sund	-5.4	87.8	15	i 12	33	—	e 22	44	- 6	—	—	—	—
Oxford	-5.4	88.4	38	—	—	—	i 22	42	-15	—	—	—	—
Stonyhurst	-5.4	88.4	36	e 12	35	- 1	i 22	41	-16	—	—	—	—
Edinburgh	-5.4	88.6	32	—	—	—	i 22	53	- 6	—	—	—	—
Kew	-5.4	88.9	38	i 12	34	- 5	i 22	45	-18	36.4	—	—	—
Paris	-5.4	90.0	40	e 12	39	- 7	e 23	7	- 8	39.4	—	—	—
Ucle	-5.4	91.6	40	i 12	47	- 7	i 23	2	- 3	e 31.4	—	—	—
De Bilt	-5.4	92.3	39	i 12	51	- 7	e 23	29	-11	e 37.4	—	—	39.3
Neuchatel	-5.4	92.4	44	e 12	50	- 9	—	—	—	—	—	—	—
Moncalieri	-5.5	92.6	45	i 12	48	-12	i 23	7	-35	31.6	—	—	—
Strasbourg	-5.5	93.2	41	i 12	54	- 9	i 23	12	-37	e 33.4	—	—	—
Feldberg	N. -5.5	94.0	40	—	—	—	—	—	—	—	—	—	30.4
Chur	-5.5	94.1	44	e 12	59	- 9	e 22	51	[-61]	—	—	—	—
Florence	-5.5	94.9	47	e 13	0	-12	(23 23 ²)	[-31]	—	—	—	—	23.4
Hamburg	-5.5	95.4	37	e 12	52	-23	i 23	28	[-31]	—	—	—	—
Copenhagen	-5.6	97.1	35	i 13	13	-11	i 23	36	[-32]	42.4	—	—	—
Lund	-5.6	97.6	35	—	—	—	i 23	39	[-32]	—	—	—	—
Zagreb	-5.6	98.4	45	e 13	20	-11	e 23	40	[-35]	—	—	—	—
Vienna	Z. -5.6	98.9	43	e 13	20	-14	—	—	—	—	—	—	—
Pulkovo	—	106.5	30	e 13	53	-49	24	19	[-35]	44.4	—	—	—
Kucino	—	111.3	33	—	—	—	24	44	[-31]	e 41.5	—	—	49.0
Kara	N. —	113.8	55	e 19	6	?	e 25	42	[+17]	—	—	—	—
Baku	—	123.5	45	—	—	—	e 27	3	? 2'	49.5	—	—	—
Samarkand	—	135.6	39	e 19	11	[-20]	—	—	—	—	—	—	—
Tashkent	—	136.1	37	e 19	11	[-21]	—	—	—	—	—	—	72.7
Andijan	—	138.5	36	e 19	4	[-33]	—	—	—	—	—	—	—
Almata	—	139.0	30	e 19	23	[-15]	—	—	—	—	—	—	—

Additional readings: La Paz MN = +5.5m. Rio de Janeiro eE = +6m.33s.
 Georgetown iPZ = +8m.55s., PRZ₁ = +9m.48s., PR₂Z = +10m.35s., PR₃Z = +10m.47s., SR₁Z = +18m.11s., SR₂Z = +19m.32s., SR₃Z = +19m.47s.
 Cincinnati i = +9m.5s., eNZ = +10m.57s. = PR₁ - 1s., eN = +14m.38s., eE = +16m.13s., eZ = +16m.55s. St. Louis eEN = +9m.10s., eE = +10m.45s. = PR₁ + 1s., eN = +11m.6s. = PR₁ + 0s., eE = +16m.21s., iE = +18m.11s., iN = +18m.13s. Florissant iPN = +8m.39s., iNZ = +9m.13s., iZ = +10m.42s. = PR₁ + 10s. and +11m.6s. = PR₁ - 2s., iNZ = +11m.11s. = PR₁ + 3s., iSZ = +15m.27s., iE = +16m.28s., eZ = +16m.59s., eE = +17m.6s., iN = +18m.14s., iE = +19m.18s. = SR₁ + 32s., and +19m.40s. = SR₁ - 15s., eNZ = +20m.23s. = SR₁ + 1s. Ann Arbor eE = +15m.59s. and +16m.29s. eN = +16m.47s., eE = +16m.59s. Toronto iSE = +16m.6s., iE = +19m.40s. = SR₁ - 4s., LE? = +21.5m. Ottawa iP = +9m.49s., iE = +17m.31s. = PS - 11s. and +19m.55s. Z + 18s., eLN = +26.4m. Scoresby Sund +13m.9s. and +23m.17s. = Z + 2s. Kew iSEN = +22m.55s. De Bilt iZ = +15m.29s., eSE = +23m.8s. Strasbourg i = +13m.30s., ePS = +24m.35s. = Z + 14s. Copenhagen +24m.15s. = S - 9s. Vienna iPZ = +13m.21s. Pulkovo PS = +26m.34s., PPS = +27m.20s., SR₁ = +32m.5s. Kucino S₂P₂C₂S = +25m.38s., PS = +28m.1s., SR₁ = +33m.35s. Tashkent P₂P₂S = +22m.43s., S₂C₂P₂C₂S = +28m.17s., PS = +31m.22s., SR₁ = +41m.17s.

May 25d. Readings also at 2h. (Baku, Tashkent, near Andijan (3), Samarkand (2); epicentre gives as 38° 16' N. 70° 47' E., and near Taihoku), 3h. (near Andijan and Samarkand), 4h. (Andijan and Samarkand), 7h. (Akita), 10h. (Baku, Bombay, Kucino, Samarkand, and near Andijan), 16h. (La Paz), 22h. (La Paz and Tananarive).

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May 26d. 8h. 42m. 12s. Epicentre 3°-2S. 129°-9E. (as given by De Bilt).

A = -0.640, B = +0.766, C = -0.056; D = +0.767, E = +0.641;
G = +0.036, H = -0.043, K = -0.998.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Amboina		1.7	254	i 0 37	+11				
Manila		19.9	334	i 4 45	+ 5	i 8 21	0		
Batavia	Z.	23.2	262	i 5 12	- 7				
Hong Kong		29.8	330	e 6 19	- 7	11 7	-24	e 14.0	
Perth		31.6	204	11 28	?S	(11 28)	-33	21.6	
Adelaide		32.8	167	i 6 48	- 7	i 12 6	-15	15.2	20.2
Phu-Lien		33.1	318	7 47	?PR ₁	e 11 58	-28		
Zi-ka-wei		35.3	349	e 7 10	- 6	i 12 16	-44	i 17.7	
Riverview		36.5	150	i 7 25	- 1	e 13 4	-13	e 16.0	22.2
Sydney	E.	36.5	150			13 6	-11	22.1	24.6
Koti		36.9	6	e 7 25	- 4	e 13 9	-13		
Melbourne		37.2	160	i 7 28	- 4	13 20	- 7	21.8	24.3
Kobe		38.2	8	7 34	- 6	e 13 29	-12	e 16.0	
Osaka		38.2	8	6 49	-51	(13 25)	-16	13.4	
Nagoya		38.9	10	e 7 42	- 3	13 42	- 9		
Mizusawa	E.	43.6	14	8 23	0	14 50	- 6		
	N.	43.6	14	8 26	+ 3	14 55	- 1		
Akita		43.9	12	i 8 25	0	14 59	- 2		
Calcutta	E.	48.0	306	8 50	- 4	15 38	-16	24.4	
	N.	48.0	306	8 43	-11	15 35	-19		
Colombo		50.9	281	9 7	- 5				34.9
Hyderabad		54.8	296	9 43	+ 5	17 15	- 4	28.8	34.9
Dehra Dun		59.7	310	10 48?	+38	18 48?	+29	26.8	36.8
Bombay		60.3	296	10 22	+ 8	18 20	- 7	30.9	31.6
Almata		66.4	321	e 11 7	+13				
Andijan		68.1	318	e 11 16	+11				
Tashkent		70.6	318	i 12 23	+67	i 21 33	+60	e 36.8	44.2
Samarkand		71.6	315	e 11 34	+ 7				
Baku		84.5	312	12 49	+ 4	23 12	- 2	41.8	59.4
Ksara		95.1	305	e 13 56	+12	e 24 13	[+15]		
Pulkovo		97.6	331	13 45	-13	24 52	?Z	47.8	68.2
Victoria	E.	103.5	40					54.1	55.5
Lund		107.4	330					53.8	
Copenhagen		107.8	330					55.8	
Zagreb		108.8	318	e 18 42	?PR ₁				
Cheb		109.8	323					57.8	
Scoresby Sund		110.3	350	19 36	?PR ₁			59.8	
Feldberg		112.1	325						47.8
Florence		112.6	317	e 18 19	[-11]				
De Bilt		113.2	327	e 19 42	?PR ₁			e 54.8	59.7
Moncalieri		114.6	320	18 4	[-32]	30 8	?PS	41.0	
Paris		116.2	325	i 20 3	?PR ₁	e 29 18	+58	64.8	65.8
Kew		116.4	330					e 60.8	
Granada		125.6	315	i 21 4	?PR ₁			75.8	82.8
Toronto		132.0	29	i 22 55	?			73.8	
Ottawa		132.2	23	i 22 59	?	e 32 11	?	75.8	
Cincinnati		132.4	36	21 56	?PR ₁			66.8	
Georgetown	Z.	136.7	31	19 42	[+ 9]	32 39	?	e 60.4	76.8
Sucre		153.3	147	e 20 16	[+16]				
La Paz		153.4	139	20 10	[+10]			20.8	20.9

Additional readings and note: Batavia i = +5m.14s.; T₀ = 8h.42m.6s. Perth PR₁ = +12m.48s., S = +17m.28s., SR₁ = +17m.48s. Adelaide i = +7m.37s. = PR₁ - 17s. and +14m.20s. = SR₁ + 12s., MN = +21.0m. Zi-ka-wei iZ = +15m.30s.; all readings are given without phase. Riverview MN = +25.4m. Pulkovo PR₁ = +17m.30s. Toronto LN = +71.8m. Ottawa eLE? = +53.8m. Cincinnati i = +22m.1s., eZ = +30m.37s. = S + 21s. Georgetown PR₂Z = +27m.36s., PSZ = +34m.32s.

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May 26d. 22h. 39m. 48s. Epicentre 50°2N. 130°7W.

(as on 1929 Mar. 1d.).

A = -·417, B = -·485, C = +·768 ; D = -·758, E = +·652 ;
G = -·501, H = -·582, K = -·640.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		o	o	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	5·1	108	1 37	+18	—	—	3·1	8·6
Sitka	N.	7·4	340	i 1 46	- 6	3 3	-18	—	—
Berkeley		13·7	151	e 3 38	+16	i 7 8	+67	i 9·1	—
Lick	E.	14·4	150	e 3 59	+27	e 7 4	+46	—	—
Saskatoon		15·1	74	i 3 42	+ 2	i 6 57	+23	i 8·3	10·2
Denver		20·9	110	e 3 59	-53	i 8 19	-23	i 10·4	11·3
Tucson	E.	23·2	133	e 5 27	+ 8	i 10 24	+55	i 13·2	—
Chihuahua		28·5	130	(6 18)	+ 5	(11 19)	+11	(13·6)	(18·3)
Florissant	E.	30·5	96	e 6 26	- 7	i 11 48	+ 5	e 14·3	16·7
		30·5	96	i 6 27	- 6	i 11 52	+ 9	—	16·7
Chicago	E.	30·6	89	6 29	- 5	11 42	- 2	e 15·5	—
	N.	30·6	89	6 28	- 6	11 41	- 3	16·3	—
St. Louis		30·7	96	e 6 52	+17	e 11 53	+ 7	—	17·2
Ann Arbor		32·8	85	e 6 48	- 7	e 12 18	- 3	e 16·4	20·8
Cincinnati		34·0	91	e 6 58	- 7	12 44	+ 4	17·7	21·2
Toronto	E.	34·9	81	e 7 2	-10	i 12 42	-12	16·8	22·0
Honolulu T.H.	E.	35·9	229	e 7 42	+21	i 13 25	+16	i 15·7	—
	N.	35·9	229	e 7 44	+23	e 13 32	+23	i 16·0	—
Ottawa		36·4	76	e 7 15	-10	i 13 15	- 1	i 13·6	20·9
Guadalajara		36·5	134	7 23?	- 3	13 59	+42	20·7	27·7
Charlottesville	E.	38·5	88	e 7 42	0	e 13 24	-21	i 20·0	—
	N.	38·5	88	e 7 44	+ 2	e 13 40	- 5	i 20·6	—
Georgetown		38·9	86	e 7 40	- 5	e 14 1	+10	e 19·0	22·0
Tacubaya		39·6	130	7 53	+ 2	14 53	+53	22·4	26·6
Fordham		39·8	82	e 7 42	-11	i 13 59	- 4	i 20·2	—
Harvard		40·8	78	e 8 3	+ 2	i 14 25	+ 7	—	—
Vera Cruz		41·4	126	(7 40)	-26	(14 51)	+24	(22·1)	(30·6)
Halifax		44·1	70	e 8 35	+ 8	i 15 12	+ 9	i 22·4	23·5
Scoresby Sund		49·0	25	e 8 54	- 6	15 59	- 7	—	—
Reykjavik		53·0	31	—	—	e 21 1	?SR ₁	23·0	30·5
Ootomari		54·1	304	10 5	+31	—	—	—	—
Port au Prince		55·7	102	—	—	—	—	29·3	36·8
Sapporo		57·2	300	10 6	+13	17 41	- 8	—	—
Mizusawa	E.	60·0	297	10 29	+17	18 40	+17	25·0	—
	N.	60·0	297	10 28	+16	18 42	+19	25·1	—
Akita		60·2	299	e 10 20	+ 7	21 8	? Σ	30·7	40·1
Tokyo		63·1	294	e 10 53	+20	—	+36	—	—
Yokohama		63·4	294	10 47	+13	19 42	+36	—	—
Bergen		63·9	22	e 9 51	-46	18 12?	-60	—	38·2
Dyce		64·5	28	i 10 49	+ 7	20 24	[- 5]	—	—
Nagoya		65·1	297	e 11 18	+32	19 43	+17	28·2	—
Edinburgh		65·3	30	e 10 57	+10	19 43	+14	27·2	39·2
Toyooka	E.	66·0	298	—	—	—	—	e 31·8	44·0
	N.	66·0	298	i 19 53	?S	(e 19 53)	+16	31·6	36·7
Osaka		66·2	298	10 50	- 3	18 23	-77	29·0	37·3
Kobe		66·5	298	e 10 55	0	19 40	- 4	e 27·6	44·5
Sumoto		66·9	297	e 11 16	+19	e 20 6	+17	e 28·9	35·0
Upsala	E.	67·0	17	—	—	e 19 54	+ 4	e 27·2	37·2
	N.	67·0	17	e 11 2	+ 4	e 19 53	+ 3	e 27·2	43·4
Stonyhurst		67·2	30	11 7	+ 8	20 12	+20	27·2	42·2
Bidston		67·4	30	11 18	+18	20 5	+10	27·5	47·3
Irkutsk		67·4	329	11 10	+10	20 4	+ 9	35·2	38·7
Helsingfors		67·9	12	e 11 13	+10	i 20 8	+ 7	e 29·2	—
Muroto		68·1	296	—	—	e 20 18	+15	e 29·4	—
Koti		68·2	297	e 11 9	+ 4	e 20 19	+15	—	—
Pulkovo		68·9	10	e 11 5	- 5	i 20 17	+ 4	32·2	34·7

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oxford		69.4	31	i 11 28	+15	i 20 23	+ 4	e 27.7	44.7
Copenhagen		69.7	21	i 11 14	- 1	20 35	+13	e 27.2	—
Lund		69.9	20	i 11 16	0	20 36	+11	28.2	—
Hukuoka		69.9	300	i 11 26	+10	20 57	[-14]	36.8	43.8
Kew		69.9	30	e 11 31	+15	e 20 37	+12	28.7	31.3
Azores		70.2	54	11 48	+30	—	—	—	—
Nagasaki		70.2	300	e 11 34	+16	e 19 46	-42	e 30.5	50.7
De Bilt		71.1	27	e 11 23	- 1	20 51	+12	e 30.2	35.7
Hamburg	E.	71.1	24	e 11 35	+11	i 20 50	+11	e 29.5	42.0
	N.	71.1	24	e 11 37	+13	e 20 55	+16	—	45.5
Uccle		71.9	29	e 11 28	- 1	i 20 59	+10	30.2	32.2
Konigsberg	E.	72.2	17	e 11 41	+10	e 21 2	+10	e 30.2	44.6
	N.	72.2	17	e 11 39	+ 8	—	—	e 30.2	46.2
	Z.	72.2	17	i 11 58	+27	—	—	e 35.2	46.3
Gottingen	E.	72.9	24	e 11 45	+10	e 21 13	+12	e 30.4	43.9
	N.	72.9	24	e 11 50	+15	e 21 14	+13	e 29.4	46.4
	Z.	72.9	24	e 11 43	+ 8	—	—	e 34.4	43.2
Paris		73.1	30	e 11 36	- 1	i 21 16	+13	31.2	34.2
Apia		73.4	223	—	—	21 36	[- 1]	37.7	—
Kucino		73.6	6	i 11 48	+ 8	i 21 14	+ 5	32.1	36.0
Feldberg	E.	73.7	26	e 11 48	+ 8	e 21 14	+ 4	e 31.1	47.1
Jena	E.	73.9	24	e 12 0	+19	e 21 22	+ 9	e 29.2	45.4
	N.	73.9	24	e 12 0	+19	e 21 26	+13	e 30.2	35.2
Karlsruhe		74.8	27	12 6	+18	21 33	+ 9	e 42.2	47.7
Cheb		74.9	23	e 12 3	+15	e 21 40	+15	e 35.2	46.2
Strasbourg		75.0	27	e 11 44	- 5	i 21 30	+ 4	32.2	46.6
Hohenheim		75.2	27	e 11 56	+ 6	i 21 38	+10	e 35.2	45.2
Besançon		75.6	29	e 12 16	+23	21 43	+10	30.2	41.2
Puy de Dôme		76.0	30	—	—	e 21 14	-23	34.2	—
Ravensburg		76.1	27	e 11 56	0	i 21 54	+16	e 32.2	43.2
Neuchatel		76.1	28	e 11 52	- 4	i 30 37	?SR ₂	—	—
Zurich		76.3	27	e 11 53	- 4	e 30 54	?SR ₂	—	—
Zi-ka-wei		76.7	304	e 12 0	+ 1	22 0	+15	37.8	56.6
Chur		77.0	27	e 12 4	+ 3	e 30 57	?SR ₂	—	—
Innsbruck		77.1	25	e 12 18	+16	e 21 54	+ 4	e 31.2	50.4
Grenoble		77.3	30	e 12 21	+18	e 22 2	+10	33.2	—
Bagnères		77.4	35	—	—	(e 21 12?)	-41	e 21.2	—
Vienna		77.5	22	e 11 59	- 5	22 4	+ 9	31.7	47.7
Lemberg	E.	77.7	16	e 10 36	?	e 22 6	+ 9	e 38.4	50.3
	N.	77.7	16	e 10 6	?	e 22 12	+15	e 38.1	49.4
Moncalieri		78.1	29	i 12 18	+10	22 13	+12	30.2	55.1
Graz		78.4	22	e 12 10	+ 1	i 22 18	+13	33.2	49.7
Toledo		78.5	39	e 12 13	+ 3	e 22 1	- 5	e 32.1	50.2
Budapest		78.9	20	e 12 2	-10	21 53	-18	33.2	44.2
Marseilles		79.0	30	e 12 12	- 1	—	—	33.2	—
Lalbach		79.1	23	e 11 46	-28	e 22 8	- 5	e 32.1	48.3
Venice	N.	79.1	25	e 12 13	- 1	e 22 19	+ 6	44.4	49.2
Barcelona		79.4	33	e 12 35	+20	e 22 27	+11	e 31.8	38.7
Tortosa	E.	79.4	35	12 22	+ 7	22 32	+16	33.0	47.7
	N.	79.4	35	12 23	+ 8	22 16	0	32.7	51.0
Zagreb		79.7	24	e 12 17	0	e 22 7	-13	e 33.1	51.8
Florence		80.3	26	12 29	+ 8	22 35	+ 8	37.5	45.7
San Fernando		80.5	43	13 32	+70	i 22 44	+15	33.7	56.2
Granada		80.9	40	i 12 37	+13	1 22 44	+10	31.2	53.4
Malaga		81.0	40	e 12 35	+10	e 22 41	+ 6	29.2	48.5
Alicante		81.1	37	e 12 48	+22	1 22 53	+17	e 35.6	46.0
Taliboku	E.	81.5	300	22 55	?S	(22 55)	+14	(35.1)	52.8
Almeria		81.7	40	e 12 45	+16	22 45	+ 2	32.1	47.5
Belgrade	N.	81.7	20	e 11 43	-46	e 21 59	-44	e 35.4	61.1
Naples	E.	83.9	26	e 12 45	+ 4	e 23 5	- 3	37.2	50.2
Theodosia		83.9	10	e 12 41	0	e 23 14	+ 6	—	—
Simferopol		83.9	10	e 12 35?	- 6	—	—	—	—
Algiers		84.0	35	e 12 48	+ 6	23 14	+ 6	e 33.2	47.7

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Pompeii	84.0	26	e 13 12?	+30	e 23 12?	+ 4	36.2	50.2
Sebastopol	84.1	10	e 12 36	- 7	e 23 7	- 2	36.1	—
Yalta	84.4	10	e 12 38	- 6	e 23 10	- 2	36.3	46.5
La Paz	86.3	122	e 13 9	+14	23 43	+10	44.4	53.2
Tashkent	86.8	346	i 12 48	-10	i 23 36	- 3	e 35.2	55.2
Andijan	87.3	343	12 47	-14	23 33	-11	—	—
Hong Kong	87.6	304	13 4	+ 1	23 39	- 9	e 36.2	56.1
Samarkand	88.8	348	e 12 58	-11	e 23 43	-18	—	—
Baku	89.4	0	e 13 15	+ 3	—	—	—	—
Sucre	89.9	121	e 13 6	- 9	i 24 32	+19	48.5	58.2
Manila	90.1	294	e 13 12	- 5	i 23 42	[+13]	i 41.0	65.2
Phu-Lien	92.9	309	13 42	+10	e 24 35	- 9	45.2	53.8
Ksara	N. 95.1	11	e 13 44	0	24 28	[+30]	31.8	49.0
Dehra Dun	95.6	335	14 12?	+25	25 22	+10	42.2	58.2
Helwan	98.4	15	14 17	+15	25 17	-23	—	—
Calcutta	E. 99.5	325	16 56	[-49]	27 34	?PS	49.3	—
	N. 99.5	325	17 1	[-44]	27 23	?PS	—	—
Wellington	E. 103.2	220	—	—	—	—	e 41.2	53.2
Rio de Janeiro	E. 105.9	108	e 17 22	[-46]	28 35	?PS	50.0	64.7
	N. 105.9	108	e 17 32	[-36]	28 33	?PS	50.0	65.0
La Plata	106.6	125	—	—	—	—	56.7	—
Hyderabad	107.6	331	14 38	- 8	25 44	?Z	44.0	78.5
Bombay	107.8	336	14 35	-12	25 21	[+21]	47.5	66.5
Riverview	108.6	240	e 17 57	?	—	?	e 44.4	57.5
Sydney	E. 108.6	240	25 0	?S	(25 0)	[- 4]	35.4	37.2
Kodaikanal	114.7	330	28 24	?S	(28 24)	+16	48.1	71.4
Melbourne	114.9	240	i 17 47	[-51]	i 28 33	+24	47.0	67.7
Batavia	115.1	293	e 18 54	[+16]	—	—	53.2	65.2
Adelaide	116.6	248	e 20 56	?PR ₁	i 30 45	?PS	45.9	73.2
Colombo	117.1	325	16 41	?	28 11	-16	47.8	69.0
Entebbe	127.7	21	21 2	?PR ₁	38 32	?SR ₁	61.2	82.2
Perth	128.5	265	26 12	?	40 27	?	64.2	—
Tananarive	148.7	3	e 20 11	[+17]	—	—	73.6	84.3
Johannesburg	151.0	42	21 12?	?	—	—	—	—
Cape Town	152.2	66	—	—	—	—	80.5	108.2

Additional readings and notes: Victoria PN = +1m.36s.; T₀ = 22h.39m.37s.
 Sitka iP = +1m.52s., S = +2m.38s. Berkeley eN = +3m.39s., eEN = +3m.57s., iN = +4m.1s., eE = +4m.3s., eEZ = +4m.8s., iNZ = +4m.29s., eN = +5m.34s., eZ = +5m.35s., eN = +6m.20s., iZ = +6m.52s., eN = +6m.56s., iSE = +7m.11s., iSN = +7m.13s., iE = +7m.33s., eN = +7m.34s., iZ = +8m.22s., iE = +8m.28s. Lick eE = +4m.8s., +4m.21s., +9m.12s., and +11m.30s. Saskatoon MN = +8.6m.; T₀ = 22h.39m.28s. Denver iPR₁N = +4m.26s., iPR₁E = +4m.29s., iEN = +5m.2s., iN = +7m.52s., iE = +8m.42s., iSR₁ = +9m.36s., iSR₁N = +10m.18s., iE = +10m.19s. Tucson iPE = +5m.41s. = PR₁-5s. Chihuahua readings have been increased by 3m. Florissant (first line) iE = +6m.37s. and +6m.39s., iEN = +6m.54s., iPR₁E = +7m.38s., iE = +7m.53s., +10m.42s., and +13m.6s. = SR₁-11s. (second line) iEZ = +6m.37s., iEN = +6m.49s., iPR₁Z = +7m.50s., iPR₁Z = +7m.58s. Chicago PR₁E = +7m.51s., PR₁N = +7m.53s., SR₁E = +14m.3s. St. Louis ePR₁E = +7m.47s. Ann Arbor ePR₁ = +8m.0s., eSR₁ = +14m.18s.; T₀ = 22h.39m.30s. Cincinnati ePR₁N = +8m.38s., iZ = +9m.57s., iPCPNZ = +10m.32s., eSR₁E = +15m.30s., iPSZ = +18m.10s. Toronto eEN = +7m.12s., iE = +7m.25s. and +8m.38s., iSN = +12m.46s., MN = +25.1m.; T₀ = 22h.39m.41s. Honolulu T.H. iPR₁N = +9m.11s., eSR₁N = +15m.48s. Ottawa i = +9m.3s., iN = +10m.43s., iSN = +13m.22s., iN = +13m.47s. and +15m.22s. = SR₁-6s., eSR₁ = +16m.12s., MN = +21.2m.; T₀ = 22h.39m.29s. Charlottesville ePR₁N = +9m.12s., eSR₁E = +17m.12s. = SR₁+12s. George-town PR₁Z = +9m.25s., PR₁Z = +9m.40s., PR₁Z = +10m.12s., SR₁Z = +10m.48s., SR₁Z = +17m.20s., SR₁Z = +19m.2s. Fordham i = +9m.44s., +10m.35s., +11m.13s., and +13m.55s. Vera Cruz readings have been increased by 3m. Halifax iSR₁ = +18m.35s.; T₀ = 22h.40m.2s. Scoresby Sund +11m.4s. = PR₁-2s. and +19m.54s. = SR₁+6s. Reykjavik MN = +29.8m. Akita PR₁ = +13m.10s., MN = +45.0m. Edinburgh i = +20m.27s. = [S]-8s. and +21m.25s. = Z+13s. Toyooka eSN = +27m.38s., eSE = +27m.50s. Kobe MN = +37.3m., MZ = +43.4m. Sumoto MZ = +35.3m., MN = +39.0m. Helsingfors e = +10m.39s.

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and +19m.44s. Kew LZ = +33.2m., MN = +33.4m., MZ = +41.6m.
 Nagasaki MN = +45.8m. De Bilt iPZ = +11m.35s., MN = +48.2m.,
 MZ = +48.5m. Uccle MN = +43.0m., MZ = +44.4m. Konigsberg
 eP₀PNZ = +12m.28s., eE = +12m.48s., ePR₁E = +14m.36s., ePR₁N =
 +14m.40s., eE = +16m.26s. = PR₂ + 0s., eS₀P₀SE = +22m.16s., ePPSN =
 +25m.44s., ePPSE = +26m.4s., eE = +27m.12s., and +29m.22s. = SR₂ + 6s.
 Apia ePR₁? = +13m.27s., SR₁ = +26m.34s., also +33m.27s., +34m.30s., and
 +36m.12s. ? Feldberg eE = +10m.47s. Jena eN = +14m.20s., eE =
 +14m.42s., eN = +17m.58s., and +20m.16s. Karlsruhe MN =
 +50.9m. Cheb e = +14m.32s., MN = +48.2m. Strasbourg PR₁ =
 +15m.12s., PR₂ = +16m.42s., iPR₂ = +17m.37s., i = +20m.33s., MZ =
 +45.7m., MN = +47.1m. Hohenheim iPR₁ = +15m.2s., iS = +22m.3s.
 = PS - 3s. Ravensburg iPR₁ = +15m.3s., iPS = +22m.39s., iPPS? =
 +22m.54s., iN = +24m.3s., iSR₁ = +27m.32s., iE = +28m.25s. Zi-ka-wei
 LZ = +35.5m., LN = +37.6m., MZ = +38.7m., MN = +52.2m. Innsbruck
 iP₀P = +12m.50s., ePR₁? = +15m.24s. Vienna PR₂ = +17m.13s.,
 S₀P₀S = +22m.24s., SR₁? = +29m.10s. Moncalieri MN = +43.5m. Graz
 MN = +47.2m. Toledo MNW = +50.0m. Barcelona PS = +22m.38s.,
 SR₁ = +24m.47s. Zagreb eNE = +12m.34s., eNW = +12m.37s., e =
 +12m.49s., ePR₁ = +15m.32s., e = +22m.31s., +22m.55s., and +31m.2s.,
 eLNW = +33.4m., MNW = +55.0m. Florence e = +12m.12s. San
 Fernando MN = +54.7m. Granada i = +12m.52s., PR₁ = +16m.24s.,
 Alcañete MN = +52.6m. Taihoku gives S as P and L as S. Almeria
 MN = +47.6m. Belgrade eN = +20m.30s., and many LN readings.
 Algiers MN = +54.2m. La Paz PR₁ = +16m.51s., PS = +24m.54s.,
 SR₁N = +29m.45s., MN = +76.2m. Hong Kong i = +24m.5s., MN =
 +54.4m. Sucre PR₁ = +17m.10s. Phu-Lien SR₁? = +38m.12s.?,
 MN = +59.5m. Ksara PR₁EN? = +19m.2s., LE = +43.6m.; T₀ = 22h.
 40m.31s. Wellington eLN = +42.7m., MN = +77.1m. Hyderabad
 MN = +64.8m. Riverview +31m.36s. and +35m.19s., eL = +45.3m. and
 +46.3m., MN = +59.6m. Melbourne i = +20m.17s., +20m.39s.,
 +29m.42s. = PS + 9s., and +31m.32s. Adelaide i = +37m.11s., MN =
 +61.5m. Perth P? = +29m.37s., P = +30m.12s., S = +40m.44s.
 Tananarive eN = +20m.35s., eEN = +21m.47s., PPS = +36m.47s., PPS =
 +37m.53s., SR₁ = +42m.40s., SR₂ = +48m.5s., eN = +54m.52s., +63m.22s.,
 and +67m.38s., eE = +63m.35s., and +67m.29s., LN = +74.4m., MN =
 +83.4m.; T₀ = 22h.39m.45s.

May 26d. Readings also at 2h. (Moncalieri), 3h. (Christchurch, Wellington, Mizusawa, and near Akita), 10h. (Feldberg), 11h. (near Zagreb), 12h. (Adelaide, Riverview, and Georgetown), 13h. (Suva), 17h. (Akita and Mizusawa), 19h. (Copenhagen, De Bilt, La Paz, and Rio de Janeiro), 20h. (Scoresby Sund), 21h. (Strasbourg), 23h. (near Nagasaki).

May 27d. 19h. 18m. 35s. Epicentre 44°5N. 11°0E. (as on 12d.).

A = +.700, B = +.136, C = +.701.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0.7	166	0 10	- 1	—	—	—	0.4
Venice	1.3	45	1 0 21	+ 1	—	—	—	—
Chur	2.6	337	e 0 32	- 9	1 1 19	+ 7	—	—
Zurich	3.3	330	e 1 15	+23	—	—	e 1.9	—
Neuchatel N.	3.7	313	e 0 51	- 7	e 1 39	- 3	—	—
Zagreb	3.8	68	e 1 3	+ 4	e 1 42	- 2	—	—
Strasbourg	4.6	336	e 1 24?	+14	—	—	—	—

Additional readings: Florence e = +6s. Neuchatel eP = +1m.5s.

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May 27d. 23h. 55m. 48s. Epicentre 13°-0N. 94°-5W. (deduced by comparison with the epicentre 12°-3N. 93°-8W. of 1928 April 27d.).

A = -076, B = -0971, C = +0225; D = -0997, E = +0078;
G = -0018, H = -0224, K = -0974.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m.	s.	m. s.	s.	m. s.	s.	m.	m.
Vera Cruz	6.4	346	(2 8)	+30	—	—	(3.3)	(7.7)
Tacubaya	7.8	325	2 6	+ 8	3 50	+19	4.0	4.5
Merida	9.2	30	2 48	+29	4 29?	+21	4.6	5.0
Tucson	24.4	325	5 38	+ 4	9 59	+ 7	13.3	15.8
Florissant	26.1	7	1 5 39	-10	e 10 6	-18	e 18.2	20.7
	26.1	7	e 5 40	- 9	e 10 10	-14	e 18.4	20.7
Cincinnati	27.5	17	e 5 50	-13	e 10 35	-15	15.5	19.0
Charlottesville N.	28.8	27	—	—	e 10 36	-37	e 16.4	18.2
Georgetown Z.	30.1	29	e 6 18	-11	12 9	+33	e 16.4	20.8
Ann Arbor E.	30.7	17	—	—	e 11 54	+ 8	e 20.8	—
	30.7	17	—	—	e 11 24	-22	e 19.9	—
Fordham	33.2	29	e 7 50	?PR ₁	e 11 12	-75	e 16.7	19.2
Toronto	33.3	20	e 7 35	+36	e 14 20	?SR ₁	19.2	23.4
Ottawa	36.1	23	e 7 12?	-11	e 12 12	-59	e 18.2	21.6
La Paz	39.3	139	—	—	—	—	23.3	30.7
Victoria	42.7	333	8 11	- 5	—	—	24.0	31.5
Rio de Janeiro E.	61.7	127	—	—	e 19 12	+28	—	—
Scoresby Sund	71.9	20	11 35	+ 6	21 0	+11	40.2	—
Edinburgh	80.0	35	—	—	—	—	e 40.2	47.2
Kew	82.4	39	e 12 36	+ 4	—	—	42.2	—
Granada	82.8	54	—	—	—	—	39.2	—
Paris	84.8	41	e 12 48	+ 1	—	—	43.2	50.2
Uccle	85.4	40	—	—	—	—	e 40.2	—
De Bilt	85.5	39	e 12 51	0	e 23 23	- 2	e 40.2	50.7
Hamburg	87.9	36	—	—	—	—	e 48.2	—
Strasbourg	88.2	40	e 13 4	- 2	e 23 40	-14	44.2	—
Copenhagen	88.4	32	—	—	23 43	-13	40.2	—
Lund	88.9	32	—	—	—	—	46.2	—
Cheb	90.5	39	—	—	e 23 58	-21	e 49.2	54.7
Pulkovo	94.9	25	13 35	- 8	24 15	[+19]	45.2	56.9
Kucino	100.6	26	—	—	25 0	[+33]	e 47.2	56.8
Irkutsk	112.7	348	—	—	—	—	64.2	—
Baku	117.2	30	—	—	e 31 6	?	60.2	67.4
Tashkent	123.7	14	e 20 38	?PR ₁	e 30 48	?	e 63.2	73.6

Additional readings and notes: Vera Cruz readings have been increased by 4m. Florissant (first line) eSN = +10m.7s., 1E = +11m.1s.; (second line) eE = +5m.55s. Cincinnati ePR₁Z = +7m.6s., eP₁PNZ = +8m.51s. Readings for Charlottesville, Ann Arbor, Fordham, Toronto, Ottawa, and Rio de Janeiro are given without phase. Charlottesville eLE = +15.2m., ME = +17.2m. Georgetown PR₁Z = +7m.35s., SR₁Z = +14m.32s., SR₂Z = +15m.23s. Ann Arbor e1E = +12m.30s., eE = +13m.42s., and +17m.30s. eN = +19m.0s., eE = +19m.30s. Fordham e = +13m.28s. Toronto LN = +21.3m. Ottawa eE = +17m.20s. De Bilt MZ = +50.9m. Strasbourg ePS = +24m.46s., eSR₁ = +29m.32s. Pulkovo PR₁ = +17m.22s., PS = +26m.9s. Kucino PS = +27m.10s., SR₁ = +33m.36s. Tashkent e = +56m.12s.

May 27d. Readings also at 0h. (Florence), 1h. (Samarkand), 2h. (Andijan and Samarkand), 3h. (near Taihoku), 4h. (La Paz), 5h. (La Paz, Cincinnati, Florissant, Georgetown, Ottawa, Toronto, Granada, Strasbourg, Hamburg, Scoresby Sund, Florence, Edinburgh, Kew, Stonyhurst, De Bilt, Uccle, Copenhagen, Pulkovo, and Tashkent), 6h. (Baku, Cheb, Kucino, Irkutsk, Victoria (2), Georgetown, Ottawa, and Toronto), 12h. (La Paz), 14h. (Suva), 15h. (Suva and near Kobe), 16h. (Suva, Phu-Lien, Simferopol, Yalta, and near Sebastopol), 21h. (Samarkand), 22h. (Andijan).

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May 28d. 4h. 49m. 0s. Epicentre 34°-0S. 109°-7W.

A = -0.280, B = -0.781, C = -0.559; D = -0.941, E = +0.337;
G = +0.186, H = +0.526, K = -0.829.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	41.1	75	e 8 4	0	i 14 14	- 8	18.6	25.4
Wellington	58.3	239	—	—	—	—	31.0	—
Rio de Janeiro E.	58.6	98	—	—	e 18 16	+10	e 28.6	—
Florissant	75.0	15	e 11 48	- 1	e 21 28	+ 2	—	—
Cincinnati z.	76.7	20	—	—	—	—	e 38.5	—
Georgetown	78.9	25	e 12 12	0	22 17	+ 6	e 34.6	44.0
Toronto	82.4	22	—	—	—	—	45.0	—
Ottawa	85.1	23	—	—	e 23 20	0	e 49.0	—
Adelaide	86.1	229	—	—	—	—	e 38.3	46.3
Scoresby Sund	121.0	21	—	—	—	—	59.0	—
Granada	121.4	62	—	—	—	—	61.0	—
Kew	127.5	46	—	—	—	—	e 63.0	—
De Bilt	130.9	47	—	—	—	—	e 63.0	—
Copenhagen	135.2	41	—	—	—	—	65.0	—
Pulkovo	143.4	31	i 19 41	[- 5]	—	—	71.0	—
Irkutsk	149.6	317	e 19 55	[0]	—	—	74.0	—
Ksara N.	151.6	80	20 12	[+14]	e 23 36	?PR ₁	—	—
Baku	162.6	63	—	—	—	—	e 74.0	102.0
Tashkent	172.6	6	e 20 26	[+10]	—	—	e 77.0	99.8

Additional readings: Adelaide MN = +47.9m. Tashkent e = +25m.48s. = PR₁-2s., and +32m.0s. = Σ -11s.

May 28d. 7h. 12m. 18s. Epicentre 44°-0N. 20°-0E. (as on 1919 Oct. 7d.).

A = +0.676, B = +0.246, C = +0.695; D = +0.342, E = -0.940;
G = +0.653, H = +0.238, K = -0.719.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	0.9	21	e 0 25	+11	i 0 54	+29	i 1.3	1.3
Mostar	1.7	248	(e 0 32)	+ 6	(e 0 44)	- 4	—	(0.9)
Zagreb	3.3	302	e 1 6	+14	i 1 33	+ 2	i 1.6	2.0
Budapest	3.5	350	e 1 12	+17	—	—	2.4	—
Graz	4.4	316	i 1 20	+12	i 1 55	- 6	—	2.4
Pompeii	5.2	233	e 2 22	?S	(e 2 22)	0	—	—
Venice	5.6	287	e 1 31	+ 4	i 2 34	0	—	5.3
Florence	6.3	271	—	—	2 22	-30	—	3.2
Innsbruck	6.8	302	e 1 42?	- 2	2 54	-11	i 3.3	—
Chur	7.9	294	e 2 2	+ 2	—	—	—	—
Cheb	8.0	322	—	—	—	—	e 4.3	—
Ravensburg	8.2	301	e 2 32	+28	—	—	i 4.1	—
Zurich	8.6	297	i 2 11	+ 1	—	—	—	—
Moncalieri	8.8	280	2 7	- 6	3 54	- 4	—	—
Hohenheim	8.8	306	e 1 42?	-31	—	—	—	—
Jena E.	9.1	325	e 3 6	+48	(e 4 38)	+32	e 4.6	4.9
Karlsruhe	9.4	306	e 2 42?	+20	—	—	—	—
Strasbourg	9.6	303	e 2 24	0	e 4 26	+ 8	—	—
Neuchatel	N. 9.6	292	e 2 24	0	e 3 52	-26	—	—
Gottingen N.	N. 10.0	322	—	—	e 4 36	+ 7	e 5.3	6.4
Beaunon	10.3	292	2 42?	+ 8	—	—	—	—
Hamburg	11.6	329	—	—	—	—	e 5.7	7.9
Ucle	12.5	308	—	—	—	—	6.7	—
Copenhagen	12.7	340	—	—	—	—	6.7	—
De Bilt	12.8	315	—	—	—	—	e 6.5	—
Kew z.	15.5	306	—	—	—	—	e 7.7	—

Additional readings and notes: Belgrade iE = +34s. Mostar readings have been increased by 1m. Zagreb i = +1m.7s., +1m.10s., +1m.11s., +1m.15s., and +1m.30s., iNW = +1m.18s., +1m.24s., MNW = +1.9m. Florence e = +1m.42s. Innsbruck iP = +2m.7s., j = +2m.36s. Gottingen eN = +3m.54s., eE = +5m.16s., eZ = +5m.20s., ME = +6.5m., MZ = +5.6m. Hamburg MN = +7.8m.

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May 28d. Readings also at 0h. (near Tacubaya and Vera Cruz), 2h. (Ksara and Tashkent), 3h. (Samarkand and Tashkent), 4h. (Ottawa and Toronto), 6h. (Granada, Ksara, and near Batavia), 8h. (Zagreb), 10h. (Georgetown), 13h. (Florissant), 15h. (Zagreb), 16h. (near Toyooka), 17h. (Georgetown and Ottawa), 18h. (Andijan, Samarkand, Tashkent, Baku, Copenhagen, Scoresby Sund, and Irkutsk), 19h. (near Lick), 20h. (Zagreb and near Lick (2)), 22h. (Taihoku), 23h. (Zagreb).

May 29d. 23h. 31m. 0s. Epicentre 57° 5N. 7° 0E.

A = +.533, B = +.065, C = +.843; D = +.122, E = -.993;
G = +.837, H = +.103, K = -.537.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bergen		3-0	343	i 3 2	?	—	—	—	—
Copenhagen		3-5	120	0 56	+ 1	—	—	i 2-2	—
Hamburg	E.	4-3	155	e 1 44	+37	e 1 44	-14	—	2-8
De Bilt		5-5	192	—	—	e 2 24	- 7	—	—
Upsala		6-0	63	e 1 46	+14	e 3 31	+47	(e 3-5)	—
Gottingen	N.	6-2	162	e 1 39	+ 4	e 2 47	- 2	—	—
Uccle		6-8	194	e 1 54	+10	e 2 59	- 6	—	—
Feldberg	N.	7-3	173	e 1 50	- 1	i 3 13	- 5	—	5-8
Konigsberg	E.	8-0	104	—	—	—	—	e 4-1	—
Strasbourg		8-9	177	—	—	e 4 0?	- 1	—	—
Helsingfors		9-6	67	—	—	—	—	e 5-4	5-7
Zurich		10-2	174	e 2 45	+12	e 4 16	-19	—	—
Neuchatel		10-5	180	e 2 35	- 2	—	—	—	—

Additional readings: Copenhagen P = +1m.15s. Hamburg MN = +3.3m.
Gottingen eN = +1m.37s. Konigsberg eE = +4m.21s., +4m.32s.,
+4m.41s., and +5m.14s., eN = +4m.28s., eZ = +4m.36s., +5m.1s., and
+6m.2s., eNZ = +5m.27s.

May 29d. Readings also at 3h. (Ksara and near Wellington), 4h. (Kobe, Tucson, Florissant, Chicago, Toronto, Ottawa, Cincinnati, Georgetown, and Tacubaya), 5h. (Scoresby Sund), 6h. (Kobe), 7h. (Zagreb), 12h. (Ottawa, Toronto, and Victoria), 13h. (Georgetown, Ottawa, and near Barcelona), 14h. (Ann Arbor, Chicago, Florissant, Victoria, Fordham, Georgetown, and Ottawa), 17h. (Georgetown, Ottawa, and Toronto), 21h. (Taihoku).

May 30d. 9h. 43m. 16s. Epicentre 34° 7S. 68° 0W.

(given by La Paz).

A = +.308, B = -.762, C = -.569; D = -.927, E = -.375;
G = -.213, H = +.528, K = -.822.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		2-5	299	0 54	+15	1 19	+10	1-6	—
La Plata		8-3	94	2 8	+ 2	3 49	+ 4	4-6	—
Sucre		15-9	9	13 53	+ 2	17 6	+13	9-0	10-4
La Paz		18-2	359	14 27	+ 9	17 59	+15	9-0	11-1
Rio de Janeiro	E.	24-7	68	1 5 30	- 5	9 44	-13	11-5	15-6
	N.	24-7	68	1 5 32	- 5	9 44	-13	11-5	23-4
Cape Town		68-9	117	1 20 18	?	(i 20 18)	+ 5	(e 30-5)	—
Charlottesville	E.	73-4	351	—	—	20 44	-23	—	39-7
	N.	73-4	351	11 44	+ 6	21 9	+ 2	44-9	47-7
Georgetown		74-1	353	1 11 47	+ 4	21 22	+ 7	e 32-2	47-1
Cincinnati		75-4	347	1 11 51	0	1 21 21	- 9	33-7	39-2
Fordham		75-7	355	1 12 14	+21	1 21 42	+ 8	e 35-0	46-1
St. Louis		76-1	342	e 11 57	+ 1	e 21 41	+ 3	—	—
Florissant		76-4	342	1 11 57	0	1 21 41	- 1	e 36-2	41-9
Harvard		77-1	357	1 12 0	- 2	1 21 52	+ 2	—	—
Tucson	N.	78-1	324	1 2 10	+ 2	22 4	+ 3	33-4	—

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		\circ		m. s.	s.	m. s.	s.	m.	m.
Ann Arbor	E.	78.4	349	—	—	e 22 8	+ 3	e 36.5	—
Chicago	E.	78.5	345	12 12	+ 2	e 21 43	- 23	e 33.7	40.6
	N.	78.5	345	12 12	+ 2	e 21 56	- 10	e 36.6	49.5
Toronto	E.	79.0	355	12 14	+ 1	e 22 7	- 5	e 40.7	—
	N.	79.0	355	i 12 11	- 2	i 22 4	- 8	e 38.4	49.4
Johannesburg		80.0	115	—	—	22 44?	+ 21	—	—
Ottawa		80.4	355	i 12 17	- 4	i 22 24	- 4	e 39.3	51.4
Christchurch		84.3	220	i 13 0	+ 16	i 23 27	+ 16	—	42.3
Wellington		84.6	223	12 40	- 6	i 23 10	- 5	—	—
Berkeley		88.3	320	e 13 0	- 7	e 23 41	- 14	e 44.3	—
Malaga		92.7	46	e 13 8	- 23	e 24 22	- 20	e 32.7	—
Granada		93.5	46	16 21	?	—	—	e 38.7	57.9
Almeria		94.1	46	13 41	+ 2	24 20	[+ 28]	e 32.7	—
Toledo		95.0	44	e 13 33	- 10	e 24 5	[+ 8]	e 40.6	53.6
Alicante		96.1	46	e 13 22	- 28	e 24 22	[+ 19]	e 40.8	—
Victoria		96.6	326	13 50	- 2	24 20	[+ 14]	e 44.7	51.8
Algiers		97.3	50	e 13 52	- 4	24 24	[+ 15]	e 44.7	58.7
Tortosa	N.	98.3	45	e 13 34	- 28	24 23	[+ 8]	e 36.7	51.0
Entebbe		98.6	95	—	—	24 34	[+ 17]	—	—
Tananarive		98.7	120	—	—	e 24 33	[+ 16]	e 53.2	57.1
Barcelona		99.6	46	—	—	—	—	e 41.5	52.6
Melbourne		101.3	205	—	—	i 24 44	[+ 14]	e 43.3	63.7
Honolulu T.H.	E.	101.8	288	—	—	—	—	e 47.2	—
Rivervlew		102.3	212	e 14 32	+ 10	e 24 49	[+ 14]	e 44.0	52.0
Puy de Dôme		102.7	42	—	—	—	—	e 48.7	—
Grenoble		104.0	43	—	—	(e 24 44)?	[+ 1]	e 24.7	—
Oxford		104.2	36	—	—	e 24 56	[+ 12]	e 47.1	60.1
Paris		104.4	40	e 14 17	- 15	e 26 9	- 28	e 44.7	55.7
Bidston		104.5	34	18 44?	!PR ₁	—	—	—	—
Kew		104.6	36	e 14 15	- 17	—	—	e 45.7	58.8
Moncalieri		105.0	45	14 0	- 34	28 48	!PS	e 46.6	65.6
Stonyhurst		105.0	34	—	—	—	—	e 48.5	60.5
Besançon		105.3	43	—	—	—	—	e 48.7	—
Neuchâtel		105.7	44	e 9 50	- 48	—	—	e 51.7	—
Adelaide		106.0	202	e 15 2?	+ 23	i 26 4	!Σ	e 47.2	58.1
Edinburgh		106.0	31	e 18 44?	[+ 36]	i 25 12	[+ 20]	e 44.7	59.7
Florence		106.5	48	e 9 8	?	e 18 39	!PR ₁	e 50.7	56.7
Uccle		106.5	39	—	—	—	—	e 48.7	—
Zurich		106.8	44	e 10 25	?	e 21 13	!	—	—
Pompeii		106.9	51	e 19 44?	?	e 26 44?	- 16	e 61.7	—
Strasbourg		107.0	42	i 14 31	- 13	e 25 14	[+ 17]	e 46.7	59.2
Chur		107.1	44	e 10 7	?	e 18 50	!PR ₁	—	—
Dyce		107.3	30	—	—	e 25 0	[+ 12]	e 50.7	64.6
De Bilt		107.6	38	14 32	- 14	—	—	e 46.7	57.6
Ravensburg		107.7	42	—	—	26 44?	- 23	—	—
Hohenheim		108.0	41	—	—	—	—	e 46.7	—
Feldberg	N.	108.3	40	e 18 45	!PR ₁	e 26 33	- 40	—	51.2
Laibach	N.	109.6	45	—	—	—	—	e 50.6	—
Gottingen	E.	109.8	40	e 19 16	!PR ₁	e 28 51	!PS	e 50.9	53.9
	N.	109.8	40	—	—	e 28 41	!PS	e 49.9	68.9
	Z.	109.8	40	e 19 13	!PR ₁	—	—	e 57.9	60.4
Scoresby Sund		110.2	14	14 44	- 14	28 50	!PS	e 46.7	—
Cheb		110.4	41	e 18 44?	!PR ₁	e 28 55	!PS	e 48.7	56.7
Zagreb		110.4	46	e 19 9	!PR ₁	—	—	e 50.5	—
Jena		110.4	40	—	—	—	—	e 51.7	62.2
Graz		110.7	45	—	—	—	—	e 47.7	69.7
Hamburg		110.9	37	e 19 17	!PR ₁	e 28 56	!PS	e 51.7	65.7
Vienna		111.8	44	e 19 28	!PR ₁	29 7	!PS	—	67.7
Bergen		112.2	30	e 9 14	!	—	—	—	—
Budapest		113.0	45	e 20 14	!PR ₁	—	—	e 52.7	56.2
Copenhagen		113.2	36	18 38	[+ 6]	—	—	e 50.7	—
Perth		113.3	184	26 44?	!Σ	—	—	—	—
Helwan		113.5	70	e 19 44	!PR ₁	e 29 18	!PS	—	68.7

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Lund	113.6	36	19 36	?PR ₁	—	—	51.7	—
Königsberg	E. 117.0	40	—	—	e 25 58	[+22]	—	—
Upsala	117.4	34	—	—	e 29 56	?PS	e 55.7	67.3
Ksara	118.7	67	(16 17)	+40	—	—	62.7	—
Sebastopol	121.1	53	—	—	—	—	e 69.2	—
Simferopol	121.6	53	e 20 38	?PR ₁	—	—	—	—
Theodosia	122.5	53	e 20 44	?PR ₁	—	—	e 60.8	—
Pulkovo	123.5	36	19 8	[+ 6]	26 5	[+ 9]	54.7	71.7
Kucino	126.7	41	19 14	[+ 4]	—	—	56.7	72.2
Batavia	138.8	170	e 18 56	[-42]	1 23 14	?	73.7	—
Colombo	139.4	125	19 44	[+ 6]	—	—	66.8	86.0
Kodakanal	140.1	119	67 26	?L	—	—	74.6	96.1
Bombay	142.0	101	19 47	[+ 4]	33 7	?	69.0	102.7
Hyderabad	145.5	110	19 51	[+ 2]	33 3	?	61.9	89.2
Tashkent	146.0	65	19 51	[+ 1]	—	—	e 58.7	92.8
Calcutta	R. 156.0	114	e 19 28	[-35]	—	—	—	—
Irkutsk	161.6	15	i 20 9	[0]	—	—	74.7	96.7
Phu-Lien	165.3	160	e 20 26	[+14]	—	—	68.7	—
Hong Kong	167.5	189	19 14	[-60]	—	—	—	98.9

Additional readings and notes: La Paz iE = +4m.46s., MN = +11.3m.;
T₀ = 9h.43m.15s. Cape Town gives S as P and L as S. Charlottesville
eSR₁N = +25m.44s., eE = +31m.44s., eN = +34m.56s. Cincinnati
iPR₁NZ = +14m.41s., iPR₂Z = +16m.35s., iPSN = +21m.51s., iZ = +24m.41s.
and +27m.59s., iSR₁ = +31m.30s., MZ = +39.7m. Fordham e =
+12m.41s., +14m.41s. = PR₁ - 32s., +16m.35s. = PR₂ - 26s., and +16m.43s.,
i = +22m.24s. = PS + 12s., e = +24m.4s., +29m.59s. = SR₂ - 24s., and
+31m.57s. = SR₂ - 5s. Florissant eZ = +14m.29s., iZ = +16m.34s., eN =
+21m.39s., iN = +22m.7s., MZ = +48.9m. Ann Arbor e?E = +18m.20s.
and +20m.8s., e?N = +22m.14s., eE = +23m.20s., e?N = +26m.44s., eN =
+27m.56s. = SR₁ + 6s., eEN = +33m.20s. = SR₂ + 20s., eLN = +43.2m.
Toronto eE = +21m.52s.; T₀ = 9h.43m.32s. Ottawa eN = +14m.56s.,
iN = +23m.44s., eE = +34m.2s., MN = +50.4m.; T₀ = 9h.43m.23s.
Wellington PR₁N = +16m.25s., iSR₂E = +29m.10s., SR₂E = +34m.32s.,
SR₁N = +35m.35s., T₀E = 9h.43m.9s. Berkeley eN = +13m.1s.,
+14m.41s., +21m.52s., +23m.33s., and +44m.11s., eZ = +13m.56s.,
+21m.44s., and +44m.6s. Granada PR₁ = +18m.24s. Toledo iP =
+13m.36s., MNW = +63.6m. Victoria LN = +43.0m., MN = +51.3m.
Tortosa eLE = +38.7m., ME = +62.8m. Tananarive eEN = +25m.38s.,
N = +43m.3s., +46m.17s., and +48m.53s., E = +49m.14s. Melbourne
e = +27m.52s. = PS + 32s., i = +32m.51s. = SR₁ - 2s. Honolulu T.H.,
PS = +27m.4s., eLN = +43.0m. Riverview eP' = +18m.21s., ePR₁ =
+18m.35s., ePS = +27m.23s., ePPS = +28m.19s., eSR₁ = +33m.14s., eSR₂ =
+37m.49s., MZ = +51.6m. Paris e = +18m.34s. = PR₁ - 8s. Kew
PR₂Z = +18m.31s., LZ = +52.7m., MN = +58.3m., MZ = +58.5m.
Moncalieri MN = +61.2m. Adelaide MN = +64.6m. Edinburgh
i = +28m.8s. = PS - 5s. Strasbourg iPR₁ = +18m.51s., iPR₂ = +21m.7s.,
iPS = +28m.21s., iPPS = +29m.22s., ePPPS = +29m.37s., eSR₁ =
+34m.2s., MN = +72.0m. Dyce PR₁ = +18m.52s. De Bilt eZ =
+18m.11s. = [P] - 3s., +18m.54s. = PR₁ - 10s., and +21m.16s., MZ =
+63.4m., MN = +68.9m. Feldberg eN = +18m.52s. = PR₁ - 16s., iN =
+18m.58s. Laibach eN = +67m.7s. and +69m.57s. Gottingen eN =
+22m.56s. = PR₂ + 3s. Scoresby Sund +19m.14s. = PR₁ - 6s. Cheb
MN = +66.7m. Zagreb eNE = +19m.19s. = PR₁ - 1s., eNW = +19m.27s.,
ePSNW = +26m.54s., eSR₁EN = +29m.14s. Graz MN = +54.0m.
Hamburg eN = +29m.2s. = PS - 6s., MN = +60.7m. Copenhagen PR₁E =
+19m.29s., SR₁ = +35m.20s., SR₂ = +39m.14s. Königsberg ePR₁E =
+20m.5s., eScPcPSN = +26m.55s., ePSN = +29m.52s., eN = +31m.50s.
and +35m.5s., eE = +34m.44s., eSR₁N = +42m.8s., eN = +45m.32s.
Upsala eN = +36m.2s. = SR₁ - 12s., MN = +68.4m. Ksara readings have
been diminished by 4m. P'E = (+18m.49s.) = [P] + 0s., PR₂ = (+23m.21s.) =
PR₁ - 12s., PR₃ = (+26m.14s.) = [S] + 33s., PR₄ = (+27m.21s.) = E + 15s.,
PSE = (+31m.6s.) = PS + 35s., PPS = (+32m.6s.) SR₂ = (+42m.32s.) =
SR₁ + 33s., SR₂E = (+46m.56s.) Pulkovo eP = +15m.41s. = P - 18s.,
PR₁ = +20m.47s., PS = +30m.22s., SR₁ = +37m.44s. Kucino PR₁ =
+21m.7s., PcPcS = +22m.22s., PPS = +43m.6s. Hyderabad MN =
+94.5m. Tashkent PcPcS = +23m.14s., PR₁ = +23m.21s., iScPcPcS =
+29m.48s., PS = +34m.32s. Calcutta ePN = +19m.34s. Irkutsk
iPR₁ = +24m.45s., iPR₂ = +28m.17s., Hong Kong MN = +97.2m.

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May 30d. 10h. 54m. 42s. (I) }
 11h. 47m. 38s. (II) } Epicentre 34°-7S. 68°-0W. (as at 9h.).
 12h. 10m. 43s. (III) }

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Santiago	2-5	299	e 0 50	+11	1 24	+15	1-7	—
II	2-5	299	0 52	+13	1 24	+15	1-7	—
III	2-5	299	0 51	+12	1 15	+ 6	1-5	—
I La Plata	8-3	94	e 2 6	0	3 45	0	4-5	—
II	8-3	94	2 5	- 1	—	—	4-6	—
III	8-3	94	2 6	0	—	—	4-6	—
I Sucre	15-9	9	3 58	+ 7	—	—	—	—
III	15-9	9	i 3 55	+ 4	7 8	+15	8-6	11-2
I La Paz	18-2	359	4 24	+ 5	—	—	10-6	13-4
II	18-2	359	4 27	+ 8	—	—	—	—
III	18-2	359	4 26	+ 7	i 7 55	+11	9-9	11-3
I Rio de Janeiro	24-7	68	—	—	—	—	13-3	—
III E.	24-7	68	e 5 27	- 8	9 50	- 7	11-8	15-5
III N.	24-7	68	e 5 30	- 5	9 49	- 8	11-9	15-5
III Georgetown	Z. 74-1	353	i 11 47	+ 4	—	—	—	44-1
III Florissant	76-4	342	i 11 57	0	e 21 39	- 3	—	—
III Ottawa	80-4	355	—	—	e 22 29	+ 1	37-3	—
III San Fernando	91-5	45	—	—	—	—	—	53-6
III Granada	93-5	46	—	—	e 26 0	?	48-3	59-3
III Kew	Z. 104-6	36	—	—	—	—	—	52-3
III Stonyhurst	105-0	34	—	—	—	—	e 59-3	—
III Edinburgh	106-0	31	—	—	—	—	e 59-3	—
III De Bilt	107-6	38	—	—	—	—	e 54-3	57-5
III Hamburg	110-9	37	—	—	—	—	e 58-3	—
III Copenhagen	113-2	36	—	—	—	—	55-3	—
III Pulkovo	123-5	36	—	—	—	—	58-3	73-9
III Kucino	126-7	41	—	—	—	—	e 57-7	60-7
III Tashkent	146-0	65	i 19 49	[- 1]	—	—	e 69-3	87-6

Additional readings: La Paz i MN = +12-1m. Georgetown III PSZ = +14m.33s. Florissant III eN = +22m.5s. Ottawa III LN = +46-3m. De Bilt III MZ = +63-3m. Tashkent III i = +21m.18s. and +24m.11s.

May 30d. Readings also at 0h. (near Andijan and Samarkand), 2h. (Georgetown, Ottawa, Toronto, La Paz, (2), and near Amboina), 3h. (Manila and Taihoku), 4h. (Taihoku), 7h. (La Plata, Sucre, and La Paz), 9h. (Zagreb and near Santiago), 14h. (Florissant, La Plata, Nagoya, near Akita, and Mizusawa), 15h. (Sucre, and near La Paz), 17h. (Mizusawa), 19h. (La Paz and Taihoku), 22h. (Florissant), 23h. (La Paz).

May 31d. 0h. 10m. 2s. Epicentre 42°-2N. 143°-8E.

A = -.598, B = +.438, C = +.672; D = +.591, E = +.807;
 G = -.542, H = +.397, K = -.741.

Tokyo, in Geophys. Mag. Vol. IV, No. 4, gives epicentre 41°-9N. 142°-5E. The above determination is deduced, after trial of this position, from the readings given by the Japanese and European stations.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Muroran	2-1	274	0 29	- 4	0 42	-16	—	—
Hakodate	2-3	259	0 39	+ 3	1 2	- 1	—	—
Morioka	3-2	219	0 50	0	1 21	- 7	—	—
Mizusawa	E. 3-7	214	0 58	0	1 32	-10	—	—
	N. 3-7	214	0 57	- 1	1 33	- 9	—	—
Akita	3-8	233	i 0 59	0	(1 36)	- 8	1-6	4-3
Hokusima	5-2	211	1 18	- 2	2 6	-16	—	—
Tokyo	7-2	207	1 48	- 1	2 53	-22	—	—
Nagoya	8-8	220	e 2 14	+ 1	(4 7)	+ 9	4-1	4-9
Toyooka	9-6	229	i 2 20	- 4	i 4 23	+ 5	e 5-6	—

Continued on next page,

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	9.9	223	2 31	+ 2	(4 32)	+ 6	4.5	5.4
Kobe	10.1	225	2 26	- 5	e 4 30	- 2	—	—
Sumoto	10.5	224	e 2 29	- 8	e 4 33	-10	—	5.7
Koti	11.8	226	e 2 58	+ 2	5 17	+ 3	—	6.7
Nagasaki	14.5	234	e 3 25	- 8	e 6 29	+ 9	—	—
Taihoku	E. 25.1	234	e 5 29	-10	—	—	—	—
Irkutsk	28.2	305	1 6 59	+49	i 11 40	+37	15.0	—
Hong Kong	31.7	241	6 18	-26	11 29	-34	—	17.2
Phu-Lien	37.8	248	7 18	-18	13 0	-35	17.5	—
Almata	47.7	295	e 8 46	- 6	—	—	—	—
Andjan	52.2	294	e 10 10	+49	—	—	—	—
Tashkent	53.7	298	1 9 28	- 3	16 57	- 8	27.0	33.3
Samarkand	56.0	297	e 9 46	0	—	—	—	—
Bombay	63.5	274	e 15 6	?PR ₁	—	—	—	—
Kucino	63.8	323	10 36	- 1	19 6	- 5	32.1	40.9
Pulkovo	64.5	330	i 10 44	+ 2	i 19 18	- 1	35.0	39.6
Scoresby Sund	66.9	356	—	—	19 57	+ 8	32.0	—
Upsala	68.9	335	—	—	—	—	e 38.0	—
Konigsberg	71.6	330	—	—	—	—	e 39.0	44.0
Simferopol	72.7	316	e 11 35	+ 1	—	—	—	—
Yalta	72.9	316	e 37 58	?L	—	—	(e 38.0)	—
Lund	73.6	335	—	—	—	—	38.0	—
Copenhagen	73.8	335	11 42	+ 1	21 22	+10	36.0	—
Hamburg	76.4	335	e 11 58?	+ 1	—	—	e 40.0	42.0
Budapest	77.9	325	—	—	—	—	e 43.0	—
Edinburgh	78.0	343	—	—	—	—	e 45.0	—
Cheb	78.4	330	—	—	e 34 58?	?	e 42.0	48.0
Vienna	Z. 78.4	329	12 9	0	—	—	—	—
De Bilt	79.2	337	12 13	- 1	e 22 30	+16	e 38.0	42.6
Ksara	79.3	309	12 7	- 8	22 34	+19	40.0	—
Feldberg	N. 79.7	334	e 12 9	- 8	e 22 4	-16	—	49.7
Stonyhurst	79.7	340	—	—	—	—	e 43.0	—
Ucele	80.5	336	—	—	e 22 28	- 1	e 40.0	51.0
Zagreb	80.5	327	e 12 20	- 2	e 22 58?	+29	e 44.0	50.2
Oxford	81.3	340	—	—	e 22 36	- 2	e 42.0	49.3
Strasbourg	81.4	333	i 12 26	- 1	e 22 58?	+19	40.0	—
Paris	82.9	337	e 12 35	0	—	—	45.0	46.0
Florence	84.1	328	e 12 37	- 6	—	—	48.0	53.5
Moncalieri	84.4	331	e 13 0	+16	23 32	+20	47.6	—
Florissant	85.3	40	i 12 50	0	e 23 17	- 5	e 45.0	—
Ottawa	E. 85.6	27	—	—	e 23 4	-22	e 39.0	—
Toronto	E. 85.8	30	—	—	e 23 16	-12	49.0	—
Cincinnati	Z. 87.6	35	—	—	—	—	60.8	—
Harvard	E. 89.8	25	—	—	i 23 58	-14	—	—
Georgetown	Z. 90.8	30	e 13 20	0	—	—	e 49.0	62.5
Toledo	92.9	337	—	—	e 24 2	[+17]	e 45.2	58.1
Granada	95.2	336	e 21 42	?	—	—	e 48.0	53.0
San Fernando	E. 96.7	337	—	—	—	—	—	63.8
La Paz	142.5	57	19 50	[+ 6]	—	—	—	—

Additional readings: Akita MN = +2.4m., MZ = +2.6m. Toyooka PR₁ = +2m.36s. Osaka MN = +6.0m. Sumoto MN = +5.9m., MZ = +6.0m. Koti eNZ = +3m.10s., MN = +6.4m. Konigsberg MN = +4.0m. De Bilt eLN = +39.0m., MN = +43.5m., MZ = +49.9m. Paris MN = +52.0m. Florissant eEN = +9m.58s., eSN = +23m.16s., iSE = +23m.24s., eEN = +28m.58s. Toledo MNW = +57.9m. San Fernando MN = +63.2m.

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May 31d. 14h. 51m. 55s. Epicentre 34°·7S. 68°·0W. (as on 30d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Santiago	2·5	299	e 0 39	0	1 15	+ 6	1·5
La Plata	8·3	94	1 59	- 7	3 44	- 1	4·4
La Paz	18·2	359	4 23	+ 4	10 23	?L	15·3

No additional readings.

May 31d. Readings also at 1h. (Nagoya, Osaka, near Kobe, Toyooka, and near Taihoku), 2h. (Samarkand), 4h. (Kobe), 9h. (Andijan), 16h. (near Lick), 17h. (Almata and Andijan), 18h. (near Batavia), 19h. (Akita), 20h. (Pulkovo and Tashkent) 22h., (Florissant), 23h. (Taihoku).

June 1d. 7h. 43m. 36s. Epicentre 6°·7S. 131°·2E. (as on 1927 Nov. 6d.).

A = -·654, B = +·747, C = -·117; D = +·752, E = +·659;
G = +·077, H = -·088, K = -·993.

On the two dates 1927 June 3d. and Nov. 6d. depths of focus 0·025 and 0·030 were assumed respectively. Below we retain the correction for depth 0·025.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m. s.	m.	m.
Amboina	+0·1	4·3	315	i 1 50	+42	i 2 38	+37	—	—
Manila	-1·2	23·6	335	e 4 58	-12	i 9 4	- 9	—	—
Melbourne	-1·9	33·5	160	(e 7 17)	+34	(e 12 49)	+48	(14·5)	(14·9)
Wellington	E. -2·6	51·9	140	—	—	—	—	e 30·6	—
Tashkent	-3·2	74·1	317	i 11 27	+ 5	i 20 46	+ 9	e 41·4	47·6

Melbourne readings have been *diminished* by 5m.

June 1d. 17h. 58m. 33s. Epicentre 27°·5N. 127°·5E.

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

Tokyo in *Geophys. Mag.*, Vol. IV, No. 4, gives epicentre as 26°·0N. 129°·8E. The Russian stations give epicentre 28°N. 130°E.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kagosima	4·9	32	1 21	+ 5	2 21	+ 7	—	—
Nagasaki	5·6	20	1 34	+ 7	2 49	+15	—	—
Taihoku	N. 5·9	247	e 2 10	+39	—	—	3·6	—
Kumanoto	6·0	27	1 40	+ 8	2 57	+13	—	—
Zi-ka-wei	Z. 6·4	306	1 53	+15	3 31	+36	4·7	5·5
Hukuoka	6·6	21	1 43	+ 2	e 3 4	+ 4	e 3·5	—
Kofu	8·0	39	e 3 19	?S	(e 3 19)	-18	—	4·6
Sumoto	9·3	41	e 2 13	- 7	e 3 53	-17	—	4·8
Kobe	9·7	40	2 20	- 6	e 4 51	+30	(e 4·8)	—
Osaka	9·9	41	2 20	- 9	(4 32)	+ 6	4·5	5·7
Toyooka	10·2	36	2 31	- 2	(e 4 34)	- 1	(e 4·8)	—
Nagoya	11·1	44	e 2 43	- 3	—	—	—	—
Hong Kong	13·1	250	3 30	+16	—	—	e 7·2	10·9
Kumagaya	13·3	46	2 12	-65	4 29	-22	—	—
Manila	14·3	207	i 3 54	+24	1 6 35	+20	—	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Akita	16.0	37	e 3 54	+ 2	—	—	—	—
Phu-Lien	20.2	255	e 4 54	+11	e 8 50	+23	11.0	—
Irkutsk	30.2	331	e 6 33	+ 3	e 11 43	+ 6	16.4	20.4
Almata	43.3	306	e 8 18	- 2	—	—	—	—
Andijan	46.8	300	e 8 55	+ 9	—	—	—	—
Tashkent	49.0	303	1 9 1	+ 1	1 16 32	+26	e 26.4	32.4
Bombay	50.6	274	e 16 39	?S	(e 16 39)	+13	—	31.4
Samarkand	50.9	300	e 9 16	+ 4	—	—	—	—
Kucino	67.4	323	—	—	—	—	—	43.6
Pulkovo	70.0	329	11 22	+ 5	20 32	+ 6	37.4	47.4
Helsingfors	72.2	330	—	—	—	—	e 39.0	—
Simferopol	73.2	313	e 11 42	+ 5	—	—	—	—
Upsala	N. 75.7	331	—	—	—	—	e 41.4	48.9
Ksara	E. 76.3	301	e 12 5	+ 8	19 42	-119	29.4	—
Konigsberg	76.8	325	—	—	—	—	e 42.4	44.4
Scoresby Sund	79.7	350	12 15	- 2	22 21	+ 1	37.4	—
Copenhagen	80.2	330	12 21	+ 1	22 33	+ 8	37.4	—
Vienna	82.4	322	e 12 33	+ 1	—	—	—	52.4
Hamburg	82.6	329	e 12 41	+ 7	e 22 56	+ 3	e 46.4	53.4
Cheb	83.5	324	e 23 6	?S	(e 23 6)	+ 3	e 44.4	54.4
Graz	83.6	321	—	—	—	—	e 51.4	—
Gottingen	E. 83.9	327	—	—	—	—	e 42.4	55.2
Zagreb	84.0	320	—	—	—	—	e 41.4	—
Dyce	85.3	336	—	—	—	—	e 45.9	56.4
Feldberg	N. 85.5	326	—	—	—	—	—	56.4
De Bilt	85.9	329	12 50	- 3	e 23 23	- 6	e 45.4	56.6
Edinburgh	86.7	335	—	—	e 22 57	[-10]	e 46.4	—
Strasbourg	86.9	325	e 13 6	+ 8	e 23 46	+ 6	e 46.4	56.2
Uccle	87.0	329	e 12 55	- 4	e 23 24	- 7	e 46.4	57.4
Florence	87.9	320	1 13 4	0	23 44	- 7.	49.4	55.4
Stonyhurst	87.9	332	—	—	—	—	49.4	59.4
Besançon	88.7	325	—	—	—	—	e 55.4	—
Kew	88.7	331	e 13 5	- 4	e 23 53	- 7	42.4	—
Oxford	89.0	331	—	—	e 23 48	-15	e 48.4	59.4
Moncalleri	89.2	323	—	—	e 23 54	-11	49.6	—
Paris	89.3	328	—	—	—	—	e 50.4	58.4
Alicante	98.2	322	—	—	—	—	e 63.6	—
Granada	100.7	323	—	—	—	—	e 49.4	55.0
San Fernando	E. 102.6	324	—	—	—	—	—	71.2
Ottawa	104.1	16	—	—	—	—	e 55.4	—
Toronto	104.6	20	—	—	—	—	—	60.4
Georgetown	Z. 109.7	20	—	—	—	—	e 52.6	—

Additional readings and note : Zi-ka-wei iZ = +2m.5s. and +3m.45s. Sumoto
 MZ = +4.6m., MN = +5.1m. Kobe e = +8m.52s. Osaka MN =
 +6.3m. Toyooka S and L are given respectively as LN and LE. Cheb
 eS = +32m.57s. Gottingen eE = +47m.27s., eN = +47m.39s., eE =
 +49m.21s., eN = +51m.59s., eE = +52m.30s., eN = +52m.32s., eLN =
 +53.7m., eLE = +54.2m., eLZ = +54.3m., MZ = +55.0m. De Bilt
 MN = +56.4m., MZ = +56.8m. Florence eP = +11m.54s. San Fer-
 nando MN = +73.0m. Georgetown eZ = +61m.19s., eLZ = +68.9m.

June 1d. Readings also at 0h. (Victoria), 2h. (La Plata), 4h. (Taihoku and near La Paz), 6h. (near Sumoto), 8h. (near Rocca di Papa), 9h. (Scoresby Sund), 10h. (La Plata), 13h. (Taihoku), 14h. (Victoria, Cincinnati, Florissant, Georgetown, Toronto, Ottawa, and near Port au Prince), 16h. (Bombay, Kucino, and Tashkent), 17h. (near Rocca di Papa (2)), 22h. (La Plata and near Santiago), 23h. (near Manila).

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June 2d. 21h. 38m. 28s. Epicentre 34°·5N. 137°·2E.

A = -·605, B = +·560, C = +·566 ; D = +·679, E = +·734 ;
G = -·416, H = +·385, K = -·824.

The epicentre is given by Tokyo in *Geophys. Mag.*, Vol. IV, No. 4.

A depth of focus 0·050 is assumed.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Tsu	+1·8	0·6	292	0 43	+ 6	1 18	+12	—	—
Nagoya	+1·8	0·7	345	i 0 56	+17	1 32	+23	—	1·7
Kyoto	+1·6	1·4	294	0 58	+11	1 36	+13	—	—
Osaka	+1·6	1·4	276	0 57	+10	(1 36)	+13	1·6	2·1
Siomisaki	+1·4	1·6	228	0 46	- 1	1 26	+ 3	—	—
Kobe	+1·4	1·7	276	i 0 58	+ 9	(1 38)	+12	1·6	1·7
Sumoto	+1·4	1·9	266	i 0 55	+ 3	1 35	+ 4	—	1·6
Toyooka	+1·2	2·2	298	i 1 2	+ 9	—	—	i 1·8	1·8
Tokyo	+1·2	2·4	61	i 1 7	+11	1 51	+12	—	—
Muroto	+1·1	2·8	243	i 1 6	+ 5	1 50	+ 3	—	1·9
Koti	+0·9	3·2	254	i 1 9	+ 5	1 52	- 1	e 3·5	4·8
Matuyama	+0·7	3·7	261	i 1 15	+ 7	—	—	—	2·2
Hamada	+0·5	4·3	276	i 1 20	+ 6	2 17	+ 6	—	—
Sendai	+0·4	4·8	37	1 29	+ 9	2 30	+ 8	—	—
Kumanoto	+0·2	5·6	254	1 40	+10	2 59	+20	—	—
Mizusawa	+0·2	5·6	33	1 39	+ 9	2 48	+ 9	—	—
Akita	+0·2	5·7	23	i 1 43	+12	(2 54)	+13	2·9	3·0
Hukuoka	+0·2	5·7	262	i 1 37	+ 6	(2 46)	+ 5	2·8	2·9
Nagasaki	+0·1	6·4	256	e 1 41	+ 2	2 52	- 5	—	3·0
Nake	-0·5	9·0	229	2 42	+33	5 7	+77	—	—
Sapporo	-0·5	9·2	19	2 25	+13	4 8	+12	—	—
Otomari	-1·0	12·9	17	3 4	+ 6	5 32	+15	—	—
Dairen	-1·1	13·2	294	3 0	+ 0	5 27	+ 6	—	—
Zi-ka-wei	-1·1	13·6	260	i 3 6	+ 6	i 5 26	- 6	—	8·6
Taihouku	-1·5	16·5	239	4 35	+50	(6 19)	-13	6·3	6·7
Hong Kong	-2·2	23·5	245	i 4 43	-14	8 31	-19	—	15·1
Manila	-2·3	24·7	220	i 4 52	- 6	i 9 48	+55	i 13·6	16·2
Irkutsk	-3·1	29·4	317	i 5 45	- 6	i 10 16	-12	i 12·2	18·0
Phu-Lien	-3·2	30·2	251	i 5 46	-12	i 10 18	-23	18·0	20·5
Amboina	-3·9	39·1	195	i 5 59	-76	i 11 26	-92	i 15·5	—
Calcutta	E. -4·3	44·1	270	7 42	-11	13 50	-13	18·8	—
N. -4·3	44·1	270	7 40	-13	13 54	- 9	19·2	—	—
Almata	-4·5	46·7	300	8 8	- 4	14 31	- 7	—	—
Dehra Dun	-4·7	49·4	283	8 32 ²	+ 1	14 32 ²	-39	20·5	29·5
Batavia	-4·8	49·8	223	i 8 21	-12	i 14 56	-19	—	—
Andijan	-4·9	50·8	297	8 35	- 4	15 24	- 3	—	—
Tashkent	-5·0	52·7	300	i 8 50	- 2	i 15 51	+ 1	26·5	32·3
Hyderabad	-5·2	54·7	270	i 9 3	- 1	i 16 12	- 1	25·9	34·5
Samarkand	-5·2	54·8	299	i 9 7	+ 3	16 21	+ 7	—	—
Honolulu T.H.	E. -5·4	57·9	85	i 9 28	+ 3	i 17 3	+13	e 25·2	—
N. -5·4	57·9	85	i 9 29	+ 6	i 17 5	+15	24·1	—	—
Bombay	-5·4	58·6	275	9 28	+ 1	17 3	+ 4	28·0	29·9
Colombo	-5·5	59·4	259	9 32	0	17 10	+ 2	23·3	26·0
Kodaikanal	-5·5	59·4	264	17 44	25	(17 44)	+36	—	—
Kucino	-5·8	66·9	323	11 11	+51	i 19 35	+58	32·0	39·7
Pulkovo	-5·9	68·4	330	10 37	+ 8	i 19 11	+16	37·5	45·7
Adelaide	-5·9	69·4	179	e 10 32 ²	- 3	i 19 9	+ 2	—	34·0
Riverview	-5·9	69·5	168	10 39	+ 3	i 19 11	+ 3	e 28·2	31·3
Helsingfors	-5·9	70·5	331	e 10 49	+ 7	i 19 34	+14	e 29·5	—
Victoria	-5·9	70·6	44	11 0	+17	(18 45)	-36	18·8	23·0
Melbourne	-6·0	72·6	174	—	—	i 19 45	0	30·3	—
Theodosia	-6·0	73·0	315	e 11 11	+13	—	—	—	—
Upsala	-6·0	73·4	334	e 11 5	+ 5	i 20 5	+10	—	44·9

Continued on next page.

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	Corr. for Focus	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Scoresby Sund	-6.0	74.0	354	11 12	+ 8	20 20	+18	—	—
Simferopol	-6.0	74.5	315	11 12	+ 4	e 20 17	+ 9	—	—
Yalta	-6.0	74.6	315	e 11 13	+ 5	e 20 24	+15	—	—
Konigsberg	-6.0	75.5	329	—	—	i 20 31	+11	e 42.5	51.5
Berkeley	-6.1	76.7	53	11 27	+ 6	e 20 48	+15	e 34.0	—
Bergen	-6.1	77.3	339	11 52	+28	20 47	+ 7	—	—
Copenhagen	-6.1	78.3	332	i 11 33	+ 2	i 21 0	+ 8	—	—
Ksara	-6.2	79.6	305	11 40	+ 2	i 21 13	+ 6	30.5	—
Hamburg	-6.2	80.8	331	e 11 47	+ 1	i 21 26	+ 5	e 41.5	53.5
Budapest	-6.2	81.1	323	11 52	+ 4	21 34	+ 9	45.5	53.2
Vienna	-6.3	81.9	325	e 11 51	- 2	21 36	+ 3	e 45.5	53.5
Belgrade	N. -6.3	82.2	320	e 11 53	- 1	e 21 32?	- 4	—	—
Dyce	-6.3	82.2	340	—	—	i 21 39	+ 3	—	47.6
Jena	E. -6.3	82.2	330	i 11 55	+ 1	e 21 41	+ 5	e 44.5	49.0
	N. -6.3	82.2	330	i 12 1	+ 7	e 21 33	- 3	e 44.5	49.2
Gottingen	E. -6.3	82.4	330	i 13 17	+81	i 21 43	+ 5	e 47.4	51.5
Cheb	-6.3	82.4	328	e 7 46	?	i 21 43	+ 5	e 46.5	52.2
Graz	-6.3	83.1	325	i 12 1	+ 1	i 21 51	+ 4	42.5	47.1
Wellington	E. -6.3	83.2	151	i 11 50	-10	i 21 33	-15	—	—
	N. -6.3	83.2	151	i 11 53	- 7	i 21 36	-12	e 36.5	—
Edinburgh	-6.3	83.5	340	—	—	i 21 52	+ 1	—	—
Zagreb	-6.4	83.8	324	e 12 4	+ 1	e 21 46	- 7	—	44.2
De Bilt	-6.4	83.9	333	e 12 4	0	i 21 52	- 3	—	56.4
Feldberg	N. -6.4	84.0	331	i 11 58	- 7	21 44	-12	—	56.0
Hohenheim	-6.4	84.8	330	e 12 8	- 1	i 22 6	+ 1	—	—
Karlsruhe	-6.4	85.0	330	e 12 2	- 9	i 22 6	- 1	—	—
Stonyhurst	-6.4	85.0	338	e 10 37	?	i 22 9	+ 2	39.5	48.5
Helwan	-6.4	85.1	303	12 7	- 4	21 51	-17	—	—
Uccle	-6.4	85.2	333	e 12 7	- 5	22 2	- 8	e 37.5	—
Ravensburg	-6.4	85.3	329	e 12 12	0	i 22 10	- 1	—	—
Strasbourg	-6.4	85.6	330	i 12 10	- 4	i 21 58	-16	35.5	55.5
Venice	-6.4	85.8	325	e 13 39	+84	i 22 18	+ 2	—	—
Zurich	-6.4	86.1	328	e 12 12	- 5	e 22 14	- 6	—	—
Chur	-6.4	86.1	328	e 12 13	- 4	—	—	—	—
Kew	-6.4	86.3	336	e 12 16	- 2	i 22 21	- 1	—	50.5
Oxford	-6.4	86.4	336	—	—	i 22 2	-21	—	—
Neuchatel	-6.4	87.1	329	e 12 18	- 5	e 22 26	- 5	—	—
Beauneon	-6.4	87.3	329	e 13 38	+74	22 28	- 6	—	55.5
Paris	-6.5	87.5	333	i 12 22	- 3	22 14	-21	45.5	61.5
Florence	-6.5	87.6	325	e 12 21	- 5	22 20	-16	48.2	55.8
Tucson	-6.5	87.6	52	12 21	- 5	22 18	-18	e 37.2	—
Pompeii	-6.5	88.2	320	e 13 32?	+63	e 21 32?	-71	—	—
Moncalieri	-6.5	88.3	327	13 43	+74	22 14	-30	43.9	53.0
Grenoble	-6.5	89.0	329	i 21 29	?	i 30 44	?	—	—
Florissant	-6.6	94.5	36	i 12 54	-10	i 23 40	-11	e 32.0	48.0
	E. -6.6	94.5	36	i 12 53	-11	i 23 15	[-39]	—	—
Ann Arbor	N. -6.6	94.6	29	—	—	e 22 56	-56	e 50.0	—
Ottawa	-6.6	94.7	23	e 16 51	?	e 23 34	-19	43.5	—
Tortosa	N. -6.6	94.8	330	e 14 17	?	e 22 52	?	e 39.5	55.9
Toronto	-6.6	95.0	26	e 16 49	?	e 23 40	-16	42.9	—
Cincinnati	Z. -6.6	96.9	30	i 13 3	-15	e 26 8	?	—	—
Algiers	-6.6	96.9	325	—	—	22 58	[-69]	—	57.5
Alicante	-6.6	97.4	329	e 14 33	+73	e 23 7	[-63]	e 30.8	—
Toledo	-6.7	97.5	331	e 14 27	+67	e 23 4	[-66]	e 38.6	—
Harvard	N. -6.7	98.9	21	—	—	i 23 32?	[-46]	—	—
Fordham	-6.7	99.4	25	e 17 32	?	i 23 32	[-49]	e 25.5	—
Granada	-6.7	99.6	330	i 14 39	+67	i 23 24	[-58]	57.5	61.0
Georgetown	Z. -6.8	100.1	27	i 13 21	-13	—	—	48.4	57.9
Tananarive	-6.8	100.3	255	—	—	(e 25 57)	?	—	—
Malaga	-6.8	100.3	330	e 13 47	+12	(e 26 31)	?	e 26.5	—
San Fernando	N. -6.8	101.3	331	—	—	—	?	—	66.2
Cape Town	—	130.5	252	i 21 24	?	—	—	—	—
La Paz	—	151.1	58	19 16	[-41]	—	—	—	—

For Notes see next page.

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NOTES TO JUNE 2d. 21h. 38m. 28s.

Additional readings and note: Koti i = +1m.58s. Mizusawa PN = +1m.40s. Akita MN = +2.9m., MZ = +3.3m. Hukuoka MN = +3.1m. Nagasaki i = +1m.43s. Zi-ka-wei MN = +8.8m. Taihoku MN = +6.6m. Hong Kong i = +5m.44s., +6m.24s., and +7m.2s., MN = +13.8m. Phulien iPR₁ = +7m.5s., eS = +12m.32s., true S is given as i simply. Batavia iF = +8m.24s., iZ = +9m.37s., iSZ = +14m.58s. Honolulu T.H. ePR₁E = +11m.2s. Adelaide i = +19m.58s. Riverview i = +20m.7s.; T₁ = 21h.38m.34s. Helsingfors e = +12m.7s., i = +20m.13s. Victoria LE = +19.8m. Melbourne i = +20m.32s., +21m.54s. = [S] +23s., +22m.52s. and +26m.9s., e = +24m.24s. = SR₁ -34s. Upsala MN = +48.2m. Scoresby Sund +22m.40s. Konigsberg iZ = +12m.20s., eNZ = +12m.40s. eB = +12m.41s., ePR₁E = +14m.28s., eZ = +20m.35s., eE = +20m.53s., ePSN = +21m.14s., ePPSE = +21m.37s., MN = +48.5m. Berkeley iZ = +11m.29s., eZ = +12m.47s., eSNZ = +20m.49s. Copenhagen +16m.14s. = PR₂ -12s. Ksara SN = +21m.16s., LN = +35.5m. Hamburg iZ = +13m.4s., iPR₁Z = +14m.58s., PSN = +22m.1s., iE = +23m.0s. = PS -17s., iN = +23m.7s. = PS -10s. Vienna iPZ = +11m.53s., iEZ = +13m.13s., PR₂? = +16m.18s., PS = +23m.7s. Belgrade eN = +13m.16s. Gottingen iPZ = +13m.15s., eEN = +27m.9s., eLN = +45.5m., eLZ = +52.8m., MN = +51.8m. Chob MN = +49.5m. Wellington PR₂E = +16m.41s., iSR₁E = +26m.57s., SR₂N = +30m.23s., T₁E = 21h.38m.22s., T₁N = 21h.38m.25s. Zagreb eNW = +12m.22s., e = +13m.24s., eNE = +14m.2s., e = +15m.19s. = PR₁ -8s., eNW = +17m.4s. = PR₂ -14s., eSNE = +21m.49s., eNW = +21m.57s., eNE = +22m.1s., ePS = +22m.48s., e = +24m.8s. De Bilt iZ = +13m.23s., iE = +21m.54s., MN = +55.5m., MZ = +56.6m. Feldberg iN = +13m.18s. and +15m.17s. = PR₁ -11s. Stonyhurst PR₁? = +13m.52s., iSR₁ = +27m.58s. Ucele i = +13m.31s. Ravensburg eN = +14m.16s., iPSE = +23m.7s. Strasbourg iP₁? = +13m.31s., S₂ = +23m.18s. Chur e = +13m.34s. Kew iZ = +13m.36s. Oxford PR₁ = +13m.36s., i = +24m.43s. = PS +20s. Neuchatel ePR₁ = +15m.45s. Paris PR₁ = +13m.42s. Florence iP = +12m.43s. Tucson PR₁E = +15m.52s., SE = +22m.19s., PSE = +24m.15s., eSR₁E = +31m.20s. Moncalieri MN = +58.2m. Florissant (First line) iNZ = +16m.51s. = PR₁ +0s. and +18m.44s. = PR₂ -19s., iEN = +22m.54s., iE = +23m.36s., iN = +24m.55s., iEN = +25m.22s., iN = +26m.8s., MN = +27m.2s.; (Second line) eE = +17m.46s., +18m.32s., and +25m.32s. Ann Arbor eN = +23m.44s. = [S] -11s., and +25m.26s. = PS -37s. Ottawa i = +22m.54s., eN = +24m.55s., iE = +26m.0s. = PS -4s., e = +27m.19s., eE = +30m.18s., SR₁ +13s., e = +32m.32s., LN = +55.5m. Toronto iEN = +22m.55s., iE = +26m.10s. Cincinnati iZ = +17m.7s. and +20m.2s., eZ = +27m.0s. and +29m.2s. Harvard iEN = +24m.32s.? Granada i = +17m.9s. and +24m.19s. Georgetown iPR₁Z = +17m.32s., PSZ = +27m.3s. Tananarive iPR₂ = +23m.18s., ePR₁E = +24m.19s., iPR₁N = +24m.21s., PS = +28m.9s., e = +31m.9s. Malaga e = +21m.47s.

June 2d. Readings also at 2h. (Samarkand), 6h. (Almata, Andijan, and Samarkand), 8h. (Almata (2), Andijan (2), Samarkand (2)), Zagreb and near Florence (2)), 9h. (Zagreb and Samarkand), 11h. (Almata), 12h. (Ksara, near Andijan, Almata, and near Batavia), 16h. (near Nagasaki and near Ksara), 21h. (Copenhagen, Kucino, and Pulkovo), 22h. (Andijan and Samarkand), 23h. (Almata).

June 3d. 20h. 29m. 37s. Epicentre 44°3N. 67°3E.

A = +.276, B = +.660, C = +.698; D = +.923, E = -.386;
G = +.270, H = +.644, K = -.716.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	m. s.	m. s.	s.	m. s.	s.	m.	m.
Tashkent	3.3	153	11 1	+ 9	—	—	—	—
Samarkand	4.7	183	11 13	0	—	—	—	—
Andijan	5.5	136	1 25	0	—	—	2.6	8.5
Almata	7.0	95	2 2	+16	3 34	+24	14.1	7.2
Dehra Dun	16.3	145	4 3	+ 7	6 33	-29	8.4	10.4
Theodosia	22.6	283	5 16	+ 4	9 23	+ 6	—	—
Simferopol	23.5	283	5 23	0	9 39	+ 4	—	—
Yalta	23.5	282	5 25	+ 2	e 9 42	+ 7	—	—
Irkutsk	25.5	58	15 52	+ 9	i 10 37	+24	14.4	14.7
Bombay	25.8	168	5 34	-12	9 54	-24	12.7	14.1

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksars		26.3	257	15 47	- 4	10 29	+ 1	17.6	—
Pulkovo		27.0	313	16 3	+ 5	10 47	+ 6	14.4	17.5
Calcutta	E.	27.8	134	6 43	+37	11 17	+22	—	—
	N.	27.8	134	6 36	+30	11 12	+17	—	—
Hyderabad		28.4	157	5 39	-33	10 39	-27	14.0	19.7
Lemberg	E.	29.5	296	e 6 17	- 6	e 10 5	-81	—	21.2
	N.	29.5	296	e 5 23	-60	e 11 35	+ 9	—	17.2
Helisingfors		29.6	317	e 6 30	+ 6	e 11 36	+ 9	e 15.9	—
Konigsberg		31.4	308	e 6 42	0	e 12 1	+ 3	15.7	23.4
Helwan		31.8	255	6 31	-14	13 38	?SR ₁	—	27.0
Belgrade		32.9	288	e 7 52	+56	e 13 8	+46	e 22.0	—
Budapest	N.	33.2	295	6 56	- 2	14 51	?	20.4	—
Upsala		33.2	317	e 6 58	0	e 13 31	+64	—	23.4
Vienna		34.8	293	17 8	- 3	14 6	?SR ₁	—	20.4
Graz		35.6	295	e 7 15	- 3	e 13 5	+ 1	—	22.5
Zagreb		35.6	291	e 7 15	- 3	e 17 5	?L	(e 17.1)	—
Copenhagen		36.0	310	7 20	- 2	13 6	- 4	—	—
Laibach		36.6	293	e 8 44	+77	e 14 9	+51	e 15.6	—
Cheb		36.9	300	e 7 30	+ 1	e 13 32	+10	e 19.4	24.4
Jena	E.	37.2	302	17 30	- 2	e 13 23	- 4	e 19.4	24.4
	N.	37.2	302	17 29	- 3	—	—	e 19.4	22.9
	Z.	37.2	302	e 7 30	- 2	e 13 16	-11	e 19.4	21.2
Hamburg		37.7	307	e 7 34	- 2	e 13 23	-11	—	27.3
Gottingen	E.	38.1	304	e 7 35	- 4	e 13 41	+ 2	e 22.2	22.7
	Z.	38.1	304	e 7 37	- 2	e 13 32	- 7	e 18.7	—
Venice		38.2	292	17 41	+ 1	—	—	—	—
Innsbruck		38.3	296	8 53?	?PR ₁	—	—	—	—
Pompeii		38.4	284	e 7 50	+ 9	e 10 23?	?	—	—
Colombo		39.0	160	13 12	?S	(13 12)	-40	(19.0)	26.4
Hohenheim		39.2	300	e 7 49	+ 1	—	—	—	—
Ravensburg		39.2	299	e 7 48	0	—	—	—	—
Feldberg	N.	39.3	301	e 7 43	- 6	—	—	19.6	25.3
Bergen		39.3	318	e 7 23?	-26	—	—	—	21.4
Florence		39.5	290	7 52	+ 1	16 53	?SR ₁	25.4	30.6
Karlsruhe		39.7	300	7 52	0	—	—	19.0	23.6
Phu-Lien		40.0	114	e 7 44	-11	e 13 36	-31	17.1	26.4
Zurich		40.1	295	e 7 52	- 4	—	—	—	—
Strasbourg		40.2	299	7 54	- 3	14 5	- 5	18.4	29.1
De Bilt		40.9	305	18 3	+ 1	14 19	- 1	e 20.9	28.6
Neuchatel		41.2	295	18 0	- 5	e 17 20	?SR ₁	—	—
Moncalieri		41.4	294	8 5	- 1	14 15	-12	22.2	26.8
Uccle		41.7	303	e 8 7	- 2	—	—	e 21.4	25.6
Besançon		41.8	297	8 6	- 3	e 17 26	?SR ₁	—	—
Grenoble		42.6	295	18 17	+ 2	—	—	—	—
Paris		43.4	300	e 8 21	+ 0	—	—	24.4	27.4
Dyce		43.7	314	—	—	e 15 16	+18	e 20.8	28.6
Zi-ka-wei	Z.	43.9	88	8 23	- 2	15 1	0	—	30.8
Hong Kong		44.1	105	—	—	14 53	-10	e 23.0	29.5
Kew		44.2	306	8 29	+ 2	e 15 16	+11	25.1	27.0
Edinburgh		44.6	311	e 8 23?	- 7	i 15 41	+31	—	31.2
Oxford		44.7	306	—	—	e 15 23?	+12	23.6	28.1
Stonyhurst		44.7	309	e 8 33	+ 2	15 14	+ 3	27.4	32.6
Bidston		45.2	309	15 28	?S	(15 28)	+10	22.7	29.2
Barcelona		46.5	290	e 8 46	+ 2	e 15 37	+ 2	e 27.5	31.8
Taihoku	E.	47.6	95	—	—	—	—	e 26.4	—
Tortosa	N.	47.9	290	8 55	+ 2	19 30	?SR ₁	27.1	31.9
Algiers		48.1	285	8 56	+ 1	e 15 37	-18	e 19.9	29.4
Scoresby Sund		48.6	334	9 7	+ 9	16 17	+16	—	—
Alicante		49.8	289	e 9 11	+ 5	—	—	e 29.6	—
Toledo		51.4	292	e 9 21	+ 5	e 18 59	?	e 28.4	—
Kobe		51.7	76	9 27	+ 9	e 16 54	+14	e 29.0	32.7
Sumoto		51.7	77	e 9 24	+ 6	e 16 53	+13	—	—
Akita		52.4	69	e 9 41	+19	—	—	29.9	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.		m. s.		m.	m.
Granada	52.5	289	i 9 33	+10	—	—	27.4	34.4
Malaga	53.3	289	e 9 30	+2	e 17 12	+12	22.4	—
Entebbe	54.0	226	10 23?	+50	—	—	—	30.9
Manila	54.1	106	i 10 0	+26	i 17 19	+9	—	—
San Fernando E.	54.7	290	—	—	—	—	—	36.9
Ottawa	84.6	335	(e 13 27)	+41	(e 22 44)	[-10]	e 45.7	49.4
Victoria	86.8	8	—	—	23 50	+11	48.4	56.2
Toronto	87.1	337	—	—	e 23 45	+3	50.0	—
Georgetown z.	90.8	333	13 26	+6	25 38	?PS	e 48.6	50.6
Charlottesville N.	92.1	334	—	—	—	—	e 52.4	—
Cincinnati	92.8	339	—	—	—	—	e 46.6	54.4
Floussant	94.5	344	i 13 42	+1	e 24 26	[+32]	e 52.4	57.4
Berkeley	97.4	8	e 17 45	?PR ₁	—	—	—	—
Tucson	103.4	359	e 18 44	?PR ₁	e 27 53	+85	e 59.6	66.5
Sucre	133.3	286	e 22 3	?PR ₁	—	—	67.4	—
La Paz	133.4	291	e 19 28	[+2]	—	—	—	—
La Plata	137.6	263	—	—	e 17 23	?	17.8	—

Additional readings and note : Andijan MN = +8.1m. Almaty MN = +4.3m. Ksara PR₁E = +6m.29s. ; T₀ = 20h.29m.14s. Helsinki PR₁ = +7m.7s. iN = +12m.13s. Konigsberg iPR₁Z = +7m.35s. eN = +7m.38s., ePR₁E = +7m.52s., iZ = +8m.8s., +8m.27s., and +8m.48s., eN = +9m.47s., eZ = +10m.3s., eE = +11m.4s., eP₀SE = +12m.50s., eN = +12m.52s., iZ = +13m.2s., eE = +13m.16s., eN = +13m.28s., iSR₁Z = +14m.4s., eE = +14m.7s., iZ = +14m.33s., MZ = +18.4m., MN = +20.4m. ; T₀ = 20h.29m.32s. Belgrade eN = +16m.6s. Upsala PR₁E = +8m.1s., MN = +19.2m. Vienna i = +8m.27s. = PR₁ + 7s., PR₁? = +10m.9s. PS? = +14m.15s., SR₁? = +17m.25s. Zagreb e = +7m.43s., +8m.23s., PR₁ - 7s., +10m.15s., and +17m.23s., ePS = +18m.56s., e = +22m.5s. Copenhagen +8m.41s. = PR₁ + 7s., and +13m.25s. Cheb ePR₁ = +8m.55s., eSR₁ = +16m.2s., MN = +22.4m. Jena ePR₁EZ = +8m.54s., ePR₁N = +8m.58s., eN = +15m.59s. = SR₁ + 13s., eEZ = +16m.5s., Ham- burg iPR₁Z = +9m.2s., iE = +10m.2s., iN = +10m.9s., iSR₁N = +15m.49s., iSR₁E = +16m.13s., MN = +22.0m., MZ = +23.8m. Göttingen ePR₁E = +8m.57s., ePR₁Z = +8m.59s., ePR₁N = +9m.1s., eN = +16m.22s. = SR₁ + 16s., eE = +16m.23s. = SR₁ + 17s., eLN = +21.1m., MN = +22.4m. Colombo gives S as P and L as S, also L = +25.0m. Feldberg eN = +8m.17s., +9m.4s. = PR₁ - 9s., +9m.23s., +14m.47s., and +16m.33s. = SR₁ + 1s., Karlsruhe i = +22m.1s. Zurich e = +12m.58s. Stras- bourg iPR₁ = +9m.21s. SR₁ = +17m.1s., MN = +23.2m., MZ = +26.3m. De Bilt PR₁Z = +9m.35s., SR₁ = +17m.16s., MN = +25.1m., MZ = +29.7m. Moncalieri MN = +27.3m. Uccle e = +9m.41s. = PR₁ - 2s., i = +17m.30s. = SR₁ + 8s. Paris e = +17m.40s. = SR₁ - 18s., MN = +25.4m. Hong Kong SR₁ = +18m.31s., MN = +27.0m. Kew SR₁EN = +18m.24s., LN = +22.8m. Edinburgh i = +18m.35s. = SR₁ + 13s. Oxford i = +18m.33s. = SR₁ + 9s. Stonyhurst PR₁ = +10m.24s., SR₁ = +18m.34s., SR₁? = +20m.29s. Bidston S = +18m.40s. = SR₁ + 6s. Tortosa SE? = +19m.25s. = SR₁ - 1s. Algiers PR₁ = +10m.45s. Scoresby Sund +11m.5s. = PR₁ + 3s. and +20m.5s. Granada i = +30m.51s., MZ = +35.2m. San Fernando MN = +35.6m. Ottawa SR₁? = (+40m.47s.), P, S, and SR₁ have been diminished by 10m. Cincinnati LZ? = +51.1m. Floussant eNZ? = +17m.23s. = PR₁ - 13s., eN = +26m.8s. = PS + 6s., iN = +26m.28s., eE = +33m.23s., eEN = +38m.23s. = SR₁ - 3s., eE = +46m.43s. Tucson eLN = +63.0m.

June 3d. The table below gives the times for P for the after-shocks of the preceding earthquake as recorded at the four nearest observing stations :—

	Δ	Az.	Shock I			II			III		
			h.	m.	s.	h.	m.	s.	h.	m.	s.
Tashkent	3.3	153	—	—	—	21	23	0	21	45	4
Samarkand	4.7	183	20	56	21	21	23	53	21	45	51
Andijan	5.5	136	20	56	59	21	23	49	21	46	3
Almaty	7.0	95	20	58	50	21	24	56	21	48	20

June 3d. Readings also at 2h. (Vienna and near Tacubaya), 5h. (near Kobe and Sumoto), 12h. (near La Paz), 14h. (Akita (2)), Mizusawa, Ksara, and La Paz), 21h. (near Kobe and Sumoto).

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June 4d. 7h. 4m. 48s. Epicentre 44°-3N. 67°-3E. (as on June 3d.).

This shock is probably not a repetition of that of June 3rd, although this position fits the three close stations, Tashkent, Samarkand, and Andijan, Irkutsk and the European stations, including Simferopol and Yalta, give residuals +1°-0 and Bombay -0°-5. The epicentre 43°-8N. 66°-8E. suggested by Almata is no improvement, and no position can be found even nearly to satisfy the readings of all stations.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	3·3	153	i 0 48	- 4	—	—	—	—
Samarkand	4·7	183	i 1 15	+ 2	—	—	—	—
Andijan	5·5	136	1 30	+ 5	—	—	2·8	4·4
Almata	7·0	95	2 19	+33	—	—	4·2	4·6
Dehra Dun	16·3	145	6 32	?S	(6 32)	-30	8·7	10·2
Kudno	21·8	312	5 12	+ 9	9 12	+11	e 12·1	15·0
Simferopol	23·5	283	e 5 30	+ 7	—	—	—	—
Yalta	23·5	282	e 5 36	+13	—	—	—	—
Irkutsk	25·5	58	6 0	+17	10 43	+30	14·2	—
Bombay	25·8	168	5 42	- 4	10 7	-11	13·3	17·6
Ksara	26·3	257	e 5 47	- 4	10 38	+10	21·6	—
Pulkovo	27·0	318	e 6 12	+14	11 10	+29	15·1	16·0
Hyderabad	28·4	157	—	—	15 12	?L	(15·2)	17·3
Helsingfors	29·6	317	—	—	e 12 16	+49	16·2	—
Konigsberg	31·4	308	—	—	e 12 55	+57	e 18·2	19·2
Upsala	33·2	317	—	—	—	—	e 18·2	—
Zagreb	35·6	291	e 8 30	?PR ₁	—	—	—	—
Copenhagen	36·0	310	—	—	—	—	13·2	—
Cheb	36·9	300	—	—	—	—	e 16·2	24·2
Hamburg	37·7	307	e 9 12?	?PR ₁	—	—	—	25·8
Gottingen	38·1	304	—	—	e 16 41	?SR ₂	e 24·5	24·7
Feldberg	39·3	301	—	—	e 16 36	?SR ₁	—	25·2
Florence	39·5	290	e 7 57	+ 6	14 41	+42	25·0	26·9
Phu-Lien	40·0	114	10 12?	?PR ₂	—	—	—	—
Strasbourg	40·2	299	e 9 12?	?PR ₁	e 17 12?	?SR ₁	e 22·2	—
Moncalleri	41·4	294	e 10 20	?PR ₂	17 25	?SR ₁	24·6	—
Uccle	41·7	303	—	—	e 17 12?	?SR ₁	e 22·2	—
Paris	43·4	300	—	—	e 17 12?	?SR ₁	26·2	26·2
Kew	44·2	306	—	—	—	—	e 19·2	—
Edinburgh	44·6	311	—	—	e 18 12?	?SR ₁	—	—
Stonyhurst	44·7	309	—	—	e 19 12	?SR ₂	—	31·2
Scoresby Sund	48·6	334	—	—	—	—	20·2	—
Granada	52·5	289	—	—	—	—	33·2	35·7

Additional readings: Almata MN = +4·8m. Dehra Dun S = +7m.42s.
 Ksara PR₁ = +7m.38s. Helsingfors SR₁ = +14m.1s. Konigsberg
 eE = +13m.17s., eN = +14m.34s., and +15m.37s., eZ = +16m.12s., eN =
 +16m.43s., iE = +17m.51s. Upsala eE = +14m.48s. Zagreb e =
 +5m.47s. Cheb MN = +22·2m. Hamburg MN = +23·1m. Gottingen
 eE = +22m.3s., eN = +22m.30s.

June 4d. 15h. 15m. 55s. Epicentre 7°-5N. 126°-0E.

A = -·583, B = +·802, C = +·131; D = +·809, E = +·588;
 G = -·077, H = +·106, K = -·991.

A depth of focus 0°-060 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.	
Manila	-0·3	8·6	326	i 2 12	+ 6	i 3 55	+10	—	5·5
Ambona	-1·0	11·4	169	i 2 16	-20	i 4 19	-21	—	—
Taihozu	-2·1	18·0	347	4 1	+10	(7 6)	+13	7·1	—
Hong Kong	-2·2	18·7	324	4 0	+1	5 45	-82	—	7·2
Phu Lien	-2·8	23·0	307	i 4 38	- 5	e 8 9	-18	9·1	9·6
Batavia	-2·8	23·8	236	i 4 29	-24	—	—	—	—

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	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	-3.0	24.1	350	i 4 56	+ 2	8 51	+ 5	14.5	—
Koti	-3.3	27.0	14	e 5 27	+ 2	i 9 39	+ 1	e 12.0	—
Suimoto	-3.3	28.0	16	e 5 39	+ 6	i 9 15	-40	—	10.0
Kobe	-3.5	28.4	16	e 5 35	- 2	(10 7)	+ 6	10.1	—
Osaka	-3.5	28.5	17	e 5 29	- 9	(10 5)	+ 2	10.1	11.3
Nazoya	-3.6	29.4	18	e 5 11	-35	9 49	-29	—	—
Tokyo	-3.8	30.8	22	e 6 3	+ 5	10 39	- 2	—	—
Mizusawa	E. -4.1	34.4	23	e 6 34	+ 3	11 37	- 2	—	—
Akita	-4.2	34.6	20	i 6 26	- 6	(11 41)	0	11.7	13.3
Sapporo	-4.5	38.0	20	7 5	+ 4	12 32	0	—	—
Calcutta	E. -4.6	39.2	298	6 20	-50	12 30	-19	19.6	—
	N. -4.6	39.2	298	6 18	-52	i 12 28	-21	—	—
Perth	-4.7	40.6	193	6 5	-76	i 12 30	-39	—	—
Adelaide	-5.0	44.1	166	i 9 25	?PR ₁	i 13 31	-22	i 14.6	17.7
Colombo	-5.2	45.8	274	7 43	-17	13 53	-22	22.2	22.7
Hyderabad	-5.3	47.4	289	8 0	-12	14 19	-17	21.4	27.0
Riverview	-5.3	47.7	150	e 8 14	0	i 14 34	- 6	20.7	26.2
Kodaikanal	-5.3	48.0	278	6 35	?	—	—	11.8	18.5
Irkutsk	-5.3	48.2	345	i 8 15	- 2	i 14 46	- 1	20.1	—
Melbourne	-5.4	48.6	160	i 14 36	?S	(i 14 36)	-15	26.2	26.7
Dehra Dun	-5.5	50.3	305	8 25	- 7	15 5	- 7	21.1	22.1
Bombay	-5.7	52.8	290	8 44	- 4	15 31	-11	24.2	27.5
Almata	-5.9	55.7	320	9 8	+ 2	16 21	+ 5	—	—
Suva	E. -6.1	57.7	118	9 22	+ 4	i 15 11	-88	—	—
Andijan	-6.1	57.8	315	9 22	+ 4	16 50	+10	—	—
Tashkent	-6.2	60.3	315	i 9 22	-12	i 17 4	- 6	31.1	36.1
Samarkand	-6.3	61.5	313	i 9 45	+ 5	17 31	+ 7	—	—
Christchurch	-6.6	66.2	145	—	—	i 18 23	+ 5	—	—
Wellington	E. -6.6	66.2	142	—	—	i 18 24	+ 6	—	—
Tananarive	-7.3	81.7	250	i 11 36	- 9	20 49	-30	—	—
Kucino	-7.3	82.7	325	i 11 50	- 1	e 21 27	- 3	—	45.8
Theodosia	-7.4	85.1	316	i 12 3	- 2	e 21 54	- 3	—	—
Kasara	E. -7.4	86.0	305	i 12 5	- 6	e 21 49	-18	—	—
Simferopol	-7.4	86.0	316	i 12 5	- 6	e 21 59	- 8	—	—
Yalta	-7.4	86.0	316	12 8	- 3	22 2	- 5	—	—
Pulkovo	-7.4	86.4	330	i 12 8	- 5	i 22 4	- 8	42.1	52.2
Helsingfors	-7.5	88.9	331	12 20	- 7	e 22 34	- 5	—	—
Konigsberg	-7.6	92.6	326	e 12 39	- 9	e 23 5	-14	—	—
Upsala	-7.6	92.6	332	—	—	e 23 1	-18	—	—
Budapest	-7.7	95.7	321	e 12 52	-13	22 44	[-77]	—	—
Copenhagen	-7.7	96.6	330	12 55	-15	22 50	[-76]	—	—
Vienna	-7.8	97.1	322	i 12 56	-16	22 54	[-74]	e 35.1	58.1
Victoria	E. -7.8	97.7	38	—	—	23 7	[-64]	23.1	28.1
Zagreb	-7.8	98.2	319	e 13 5	-13	e 22 57	[-77]	—	—
Hamburg	-7.8	98.8	328	e 16 58	?PR ₁	i 23 5	[-73]	—	—
Cheb	-7.8	98.9	323	e 17 24	?PR ₁	e 23 9	[-77]	e 37.1	60.1
Scoresby Sund	-7.8	99.0	350	i 13 10	-12	23 9	[-70]	—	—
Pompeii	-7.8	100.9	314	e 16 5?	?	e 23 5?	[-83]	—	—
Naples	E. -7.8	101.1	314	e 16 35	?	—	—	—	—
Feldberg	N. -7.8	101.1	325	e 17 20	?PR ₁	i 24 10	?Z'	—	—
Chur	-7.8	102.0	321	e 17 38	?PR ₁	e 23 11	[-83]	—	—
Florence	-7.8	102.1	317	13 18	-22	—	—	—	—
De Bilt	-7.8	102.1	328	e 13 20	-20	e 23 20	[-74]	e 46.1	66.4
Strasbourg	-7.8	102.3	324	i 13 21	-20	i 23 16	[-79]	47.1	—
Zurich	-7.8	102.3	321	e 17 37	?PR ₁	e 23 26	[-69]	—	—
Uccle	-7.9	103.1	326	e 13 25	-19	i 17 49	?PR ₁	e 37.1	—
Neuchatel	-7.9	103.5	321	e 16 26	?PR ₁	e 23 17	[-83]	—	—
Besancon	-7.9	103.9	322	—	—	—	—	e 47.1	—
Moncalieri	-7.9	103.9	320	e 13 25	-24	(24 5)	[-37]	24.1	—
Edinburgh	-7.9	104.0	334	—	—	e 27 5?	?PS	—	—
Paris	-7.9	105.1	325	e 13 35	-20	e 18 1	?PR ₁	50.1	86.1
Kew	-7.9	105.2	330	e 17 53	?PR ₁	e 23 33	[-75]	44.1	—

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	Corr. for Focus	Δ	Az.	P.		O-C.	S.	O-C.	L.	M.
				m.	s.					
Alicante	—	112.5	317	e 19	6	?PR ₁	e 30 19	?	—	—
Toledo	—	113.9	320	e 18	49	?PR ₁	e 28 58	?PS	e 41.2	—
Almeria	—	114.5	316	e 19	2	?PR ₁	29 2	?PS	40.1	—
Granada	—	115.1	317	i 19	4	?PR ₁	—	?PS	e 29.0	31.5
Malaga	—	115.9	317	18	48	?PR ₁	29 4	?PS	—	—
Florissant	—	122.7	33	e 20	5	?PR ₁	—	—	—	—
Ottawa	—	123.6	16	i 20	20	?PR ₁	i 27 31	?Σ	53.1	—
Toronto	N.	123.9	21	i 20	20	?PR ₁	—	—	—	—
Cincinnati	Z.	125.4	28	i 17	23	[-104]	—	—	—	—
Georgetown	Z.	128.9	21	18	38	[-38]	—	—	46.2	—
La Paz	—	163.5	124	i 19	31	[-40]	—	—	44.1	—
Sucre	—	164.1	137	23	30	?	i 30 19	?Σ	—	—

Additional readings: Manila iP = +2m.34s., MN = +4.5m. Phu-Lien e = +6m.34s. Batavia iP = +4m.32s., iZ = +6m.20s., i = +6m.31s., iZ = +7m.32s., i = +7m.56s. Zi-ka-wei iZ = +7m.0s. and +9m.14s., SZ? = +9m.50s. Koti iE = eN = +15m.25s.; may be S of a new shock. Sumoto MZ = +10.6m. Osaka MN = +13.1m. Mizusawa SN = +11m.39s. Akita eP = +7m.11s. = PR₁ - 13s. Adelaide MN = +17.0m. Riverview PS = +14m.39s., iSR₁ = +17m.16s., MN = +30.3m.; T₃ = 15h.15m.57s. Melbourne i = +17m.5s., SR₁ = +23m.28s. Suva iN = +14m.53s. Wellington iS?N = +18m.25s. Tananarive eE = +13m.47s. and +15m.35s. = PR₁ + 31s., eEN = +22m.44s., eE = +26m.23s. = SR₁ - 31s. Kucino PR₁ = +15m.10s., e = +17m.0s. = PR₂ + 2s., PS = +22m.25s., i = +24m.11s., SR₁ = +26m.53s. Pulkovo PR₁ = +15m.40s. i = +17m.31s. = PR₂ - 3s., e = +21m.50s., e = +24m.46s. Helsingfors eE = +17m.59s. = PR₂ + 1s., eEN = +22m.6s., eScPcSN? = +22m.28s., eScPcSE? = +22m.29s., eEN = +25m.20s. Konigsberg eE = +16m.30s. = PR₁ + 0s., eZ = +16m.31s., eE = +18m.28s. = PR₂ - 6s., eEN = +22m.30s. = [S] - 74s., eE = +25m.29s. = PS - 9s. Upsala e = +22m.25s. = [S] - 79s. Copenhagen i = +17m.0s. = PR₁ + 1s. Vienna PR₁ = +17m.4s., ScPcPcP = +23m.51s., PS₁ = +26m.5s. Zagreb e = +16m.47s. = PR₁ - 22s., and +19m.3s. = PR₂ - 25s., eNE = +24m.55s. Cheb e = +19m.23s. = PR₂ - 22s. eS? = +26m.1s. = PS - 51s., e = +28m.25s. Scoresby Sund +17m.24s. = PR₁ + 9s. Feldberg eN = +19m.35s. = PR₂ - 22s., iN = +27m.2s. = PS - 16s. De Bilt i = +17m.40s. = PR₁ + 4s., e = +19m.48s. = PR₂ - 19s., eE = +26m.19s. = PS - 61s., MN = +62.8m. Strasbourg iPR₁ = +17m.40s., PR₂ = +19m.44s., ScPcPcS = +24m.28s., iPS = +26m.59s., ePPS = +27m.52s., P₁P₂P₃P = +28m.45s. Moncalieri S? = +17m.55s. = PR₁ + 7s. Granada i = +19m.37s. = PR₁ - 15s. Florissant eEN = +26m.5s., eN = +29m.30s. and +32m.20s., eEN = +36m.35s. and +39m.5s. Ottawa iN = +21m.40s., eN = +32m.11s., e = +36m.29s. Toronto eN = +21m.42s. and +36m.53s. Cincinnati eZ = +19m.27s., iZ = +20m.2s., eZ = +20m.55s. Georgetown iZ = +21m.22s., eLZ = +34m.38s.

June 4d. Readings also at 0h. (Taihoku), 1h. (Hong Kong, Phu-Lien, Almata (2), Andijan (2), near Samarkand, and Tashkent), 3h. (La Plata, Naples, Pompeii, Andijan, Samarkand, and near Nagoya), 4h. (2) and 5h. (Almata, Andijan, and Samarkand), 6h. (Andijan (2) and Samarkand), 7h. (Andijan), 10h. (Almata and Florissant), 11h. (La Paz and near Almeria), 12h. (Georgetown, Ottawa, near Chur, Neuchatel, and Zurich), 13h. (Naples (2), Pompeii, and Zagreb), 14h. (La Plata, La Paz, Sucre, and near Santiago), 15h. (Ksara and near Honolulu T.H.), 16h. (Cincinnati, Almata, Andijan, and Samarkand), 17h. (Samarkand and Ksara), 18h. (Naples, Pompeii, and near Lick), 19h. (Akita, Mizusawa, near Almata (2), Andijan (2), and Samarkand (2)), 20h. (Moncalieri, Zagreb, and near Mostar), 21h. (Almata, Andijan (2), and Samarkand (2)), 22h. (Zagreb).

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June 5d. 9h. 6m. 36s. Epicentre 44°·3N. 67°·3E. (as on June 4d.).

A = +·276, B = +·660, C = +·698; D = +·923, E = -·386;
G = +·270, H = +·644, K = -·716.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	3·3	153	i 0 40	-12	—	—	i 2·0	3·4
Samarkand	4·7	183	i 1 4	-9	—	—	—	—
Andijan	5·5	136	1 26	+1	—	—	2·8	3·1
Almata	7·0	95	2 6	+20	—	—	4·1	4·5
Dehra Dun	16·3	145	3 24?	-28	6 24?	-38	9·4	10·4
Kucino	21·8	312	5 14	+11	9 26	+25	12·0	14·0
Simferopol	23·5	283	e 5 22	-1	—	—	—	—
Yalta	23·5	282	e 5 24	+1	—	—	—	—
Irkutsk	25·5	58	e 5 50	+7	e 10 36	+23	14·4	—
Ksara	26·3	257	5 49	-2	10 37	+9	19·4	—
Pulkovo	27·0	318	6 5	+7	11 2	+21	14·4	17·2
Helsingfors	29·6	317	e 7 0	+36	e 12 11	+44	e 15·8	—
Konigsberg	E. 31·4	308	e 13 6	?SR ₁	—	—	—	—
Upsala	N. 33·2	317	—	—	—	—	e 17·4	19·1
Budapest	33·2	295	—	—	e 14 24?	?SR ₁	e 21·4	—
Copenhagen	36·0	310	—	—	—	—	18·4	—
Cheb	36·9	300	—	—	—	—	e 17·4	24·9
Hamburg	37·7	307	—	—	—	—	e 16·4	26·3
Feldberg	N. 39·3	301	—	—	—	—	e 16·8	24·4
Strasbourg	40·2	299	—	—	—	—	e 16·4	—
De Bilt	40·9	305	—	—	—	—	e 22·4	25·1
Moncalieri	41·4	294	—	—	e 14 37	+10	35·6	—
Uccle	41·7	303	—	—	—	—	e 22·4	—
Paris	43·4	300	—	—	—	—	e 25·4	27·4
Kew	44·2	306	—	—	—	—	e 23·4	—
Scoresby Sund	48·6	334	—	—	—	—	17·4	—
Granada	52·5	289	—	—	—	—	e 33·4	36·4
Florissant	94·5	344	—	—	—	—	e 57·4	—

Additional readings: Konigsberg eN = +13m.34s., eE = +13m.38s. and +14m.7s., eN = +17m.41s., eZ = +17m.42s., eE = +19m.35s. and +20m.27s.
Cheb MN = +21·9m. Hamburg MN = +21·9m., MZ = +23·5m. De Bilt eSR₁ = +17m.18s. Moncalieri S? = +25m.53s.

June 5d. Readings also at 1h. (Tananarive), 2h. (near Tacubaya), 3h. (Naples (2), and near Wellington), 5h. (Samarkand), 6h. (Andijan, Samarkand, La Plata, and near La Paz), 7h. (Andijan (2) and Samarkand (3) and Almata), 8h. (near Akita), 10h. (Andijan and Samarkand), 12h. (Andijan, Taihoku, and near Samarkand), 14h. (near Tananarive), 18h. (Almata, near Andijan, and Samarkand), 21h. (Simferopol), 23h. (Almata, Andijan (2), Samarkand (2), and near Nagasaki).

June 6d. 10h. 50m. 3s. Epicentre 1°·2S. 14°·2W.

A = +·969, B = -·245, C = -·021; D = -·245, E = -·969;
G = -·020, H = +·005, K = -1·000.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rio de Janeiro	35·5	231	e 7 57	+39	13 27	+24	15·6	20·2
San Fernando	38·4	11	7 13	-28	13 23	-21	18·1	22·2
Malaga	39·0	13	7 36	-10	13 52	0	19·1	24·7
Almeria	39·6	15	e 7 38	-13	e 13 36	-24	18·8	21·4
Granada	39·6	13	17 45	-6	113 51	-9	19·4	21·9
Algiers	41·2	23	e 8 1	-4	14 10	-14	21·3	25·0
Allcante	41·5	16	e 7 58	-9	e 14 20	-8	e 21·5	22·4
Toledo	42·1	12	e 7 55	-17	114 22	-14	e 19·3	23·3
Tortosa	N. 44·1	15	8 19	-8	14 54	-9	19·7	29·6
Cape Town	44·7	140	—	—	114 3	-68	e 20·4	23·2
Barcelona	45·1	18	e 8 28	-6	e 15 2	-14	e 23·4	29·5
Entebbe	46·7	88	8 47	+2	—	—	25·3	28·8

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°		m. s.	s.	m. s.	s.	m.	m.
Naples	E. 49.4	29	e 8 47	-16	e 15 47	-24	27.0	—
Grenoble	49.7	19	i 7 53	-72	—	—	—	—
Moncalieri	50.1	20	9 8	0	16 17	-3	23.6	27.9
Florence	50.4	25	9 13	+4	e 17 7	+43	25.0	28.4
Besançon	51.5	18	—	—	e 14 12	?	25.0	—
Neuchatel	51.6	20	e 9 10	-7	e 16 37	-2	—	—
Paris	52.1	14	e 9 23	+2	e 16 45	0	25.0	30.0
Venice	52.2	25	e 9 6?	-15	—	—	24.8	—
La Plata	52.8	226	—	—	—	—	21.8	25.4
Sucree	53.1	248	e 9 15	-12	17 13	+16	—	—
Ravensburg	53.2	20	e 9 12	-15	e 16 47	-12	28.0	—
Strasbourg	53.3	18	e 9 24	-4	e 17 0	0	24.0	30.4
Helwan	53.3	50	9 29	+1	i 17 7	+7	e 29.0	39.2
Karlsruhe	53.9	19	e 8 57?	-35	—	—	e 29.0	—
Zagreb	53.9	26	e 9 29?	-3	e 17 15	+7	e 29.0	32.5
Kew	54.0	10	e 9 38	+5	i 17 11	+2	24.0	32.0
Oxford	54.1	10	—	—	i 17 7	-3	e 26.0	36.0
Uccle	54.4	14	e 9 32	-3	i 17 16	+2	e 25.0	30.5
Graz	54.8	25	e 9 10	+32	e 17 27	+8	27.0	35.0
Feldberg	N. 54.9	16	e 9 33	-5	e 17 17	-3	—	32.8
La Paz	E. 55.2	251	i 9 42	+2	e 17 19	-5	26.3	31.8
	N. 55.2	251	i 9 42	+2	e 17 24	0	24.4	28.3
Belgrade	N. 55.3	30	—	—	e 18 3	+38	e 26.6	—
De Bilt	55.7	15	9 45	+1	17 38	+8	e 25.0	32.2
Stonyhurst	55.9	9	—	—	17 41	+8	27.2	33.4
Vienna	56.1	24	i 9 49	+2	17 34	-1	—	35.0
Cheb	56.1	20	e 9 57?	+10	—	—	e 29.0	33.4
Jena	56.5	18	e 9 57	+8	e 17 44	+4	e 28.0	32.8
Göttingen	N. 56.6	18	e 9 53	+3	e 17 48	+7	e 30.2	33.2
Budapest	56.7	26	e 9 57?	+7	17 51	+9	32.0	36.4
Edinburgh	57.8	7	e 10 27	+29	i 18 12	+16	—	36.0
Hamburg	58.4	17	e 10 4	+3	e 18 4	0	e 29.6	33.2
Ksara	E. 58.6	49	10 15	+12	18 27	+21	32.0	—
	N. 58.6	49	10 11	+8	18 22	+16	25.0	—
Copenhagen	60.9	16	10 21	+3	18 38	+3	—	—
Konigsberg	62.8	22	e 10 38	+7	e 19 6	+8	e 34.0	35.4
Simferopol	62.8	37	e 10 43	+12	—	—	—	—
Tananarive	62.9	110	11 26	+55	e 19 38	+38	e 31.5	35.4
Theodosia	63.6	37	e 10 42	+6	—	—	36.6	—
Upsala	65.9	17	e 10 56	+6	e 19 42	+6	e 33.0	41.8
Harvard	N. 67.1	319	e 10 51	-8	i 19 43	-8	—	—
Helsingfors	68.4	20	e 11 12	+5	e 20 13	+6	e 34.0	—
Fordham	68.4	316	13 57	?PR ₁	(e 19 57)	-10	e 20.0	32.0
Georgetown	70.0	313	i 11 21	+4	20 36	+10	32.2	41.3
Pulkovo	70.0	22	i 11 23	+6	20 33	+7	34.0	43.2
Kucino	70.8	28	e 11 31	+9	20 42	+6	32.0	40.2
Ottawa	71.4	320	e 11 31	+5	e 20 49	+6	e 33.4	—
Scoresby Sund	71.9	357	11 35	+6	21 3	+14	—	—
Toronto	73.2	318	—	—	21 7	+3	31.2	—
Cincinnati	75.6	313	e 11 47	-6	e 21 27	-6	33.0	36.3
Chicago	E. 78.5	314	e 22 5	?S	(e 22 5)	-1	e 36.2	44.4
	N. 78.5	314	e 22 1	?S	(e 22 1)	-5	e 35.4	44.4
Flouissant	80.0	310	i 12 17	-2	e 22 17	-6	37.0	39.0
Tashkent	85.9	48	12 36	-17	23 2	-27	42.0	56.2
Andijan	88.1	50	e 13 12	+6	(e 23 54)	+1	—	—
Almata	91.6	47	e 13 3	-22	—	—	—	—
Tucson	E. 96.3	303	—	—	24 15	[+11]	31.4	—
Victoria	N. 103.5	320	25 58	?E	—	—	42.6	56.8
Irkutsk	108.0	35	e 19 0	?PR ₁	e 28 28	?PS	e 51.0	69.6
Zi-ka-wei	Z. 128.5	50	e 21 31	?PR ₁	—	—	—	83.2

Additional readings and note : Rio de Janeiro LN = +16.0m. San Fernando MN = +25.0m. Granada PR₁ = +9m.14s. Algiers PR₁ = +9m.26s., MN = +22.4m. Alicante MN = +27.1m. Toledo IP = +8m.7s., PR₁ = +9m.40s., SR₁ = +17m.21s., MNW = +23.7m. Moncalieri MN = +29.7m.

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Florence $i = +11m.8s. = PR_1 - 12s.$ Paris MN = +32.0m. Sucre
 $i = +13m.58s. = PR_2 + 51s.$ Strasbourg $e = +10m.37s.$ PR₁ = +11m.30s.,
 PR₂ = +12m.37s., eSR₁ = +20m.45s., eSR₂ = +22m.37s., MZ = +33.6m.
 Zagreb $e = +9m.39s., i = +9m.55s., e = +11m.29s. = PR_1 - 26s., +12m.37s. =$
 PR₂ - 13s., +17m.20s. and +21m.29s. = SR₁ + 8s., MNW = +30.4m. Kew
 LZ = +26.4m. Uccle MN = +32.9m. Graz eSR₁ = +21m.31s. Feld-
 berg eN = +9m.37s. Belgrade eSR₁N = +20m.53s., eSR₂N = +22m.3s.
 De Bilt $iZ = +9m.53s., MZ = +32.6m., MN = +32.8m.$ Stonyhurst
 SR₁? = +23m.48s. Vienna SR₁ = +21m.37s. Jena eE = +21m.39s. =
 SR₁ - 28s. Gottingen eN = +13m.5s. = PR₂ - 18s., eSE = +17m.46s.,
 eN = +21m.15s., eE = +21m.39s. = SR₁ - 29s., ME = +34.2m. Budapest
 MN = +34.4m. Hamburg iSN = +18m.13s., MNZ = +36.0m. Ksara
 PR₁N = +13m.43s., PR₁E = +13m.47s.; T₀ = 10h.49m.40s. Konigsberg
 ePE = +10m.42s., eE = +12m.58s. = PR₁ - 26s., eZ = +14m.26s., eN =
 +14m.27s., eE = +17m.44s., eSN = +19m.8s., eN = +25m.48s. = SR₂ - 20s.
 Tananarive +15m.2s. = PR₁ - 12s., eEN = +23m.22s. = SR₁ - 32s. Upsala
 MN = +44.1m. Georgetown PSEN = +21m.13s., SR₁EN = +26m.35s.,
 SR₂EN = +28m.38s., SR₂EN = +29m.52s. Ottawa eE = +14m.10s. =
 PR₁ - 28s., SR₂ = +28m.46s.; T₁ = 10h.50m.15s. Scoresby Sund
 +21m.57s. = S - 2s. Toronto eN = +30m.24s. Cincinnati eZ =
 +13m.13s. and +18m.29s. Florissant iZ = +12m.19s., eZ = +13m.37s.
 and +15m.17s., eN = +22m.37s., eEN = +23m.1s., eE = +23m.57s., eEN =
 +27m.57s., eN = +32m.47s. The readings for Andijan and Almata may
 refer to a local shock, the S attributed to the former has been increased by
 10m. Victoria PE = +27m.33s. = PS - 11s., LN = +48.9m., ME = +57.4m.

June 6d. 14h. 18m. 48s. Epicentre 34° 0S. 57° 0E. (as on 1929 May 3d.).

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.	m. s.	s.	m. s.	s.	m.	m.
Tananarive	17.3	329	14 13	+ 4	e 7 23	- 2	—	—
Melbourne	68.6	122	—	—	—	—	31.9	36.2
Ksara	70.6	341	11 25	+ 4	20 35	+ 2	—	—
Andijan	75.6	13	e 11 49	- 4	—	—	—	—
Tashkent	76.1	10	i 11 31	-25	i 18 15	?	e 38.2	43.1
Almata	79.4	16	e 12 14	- 1	—	—	—	—
Theodosia	81.4	346	e 12 31	+ 4	—	—	—	—
Simferopol	81.6	346	e 12 25	- 3	—	—	—	—
Zagreb	88.0	334	e 13 0	- 5	e 16 50	?PR ₁	—	—
Vienna	89.8	335	e 13 3	-12	e 23 51	-21	—	—
Alicante	89.8	320	—	—	e 24 4	- 8	e 50.3	—
Moncalieri	90.7	328	—	—	—	—	e 45.6	—
Granada	90.8	317	e 13 9	-11	—	—	e 47.2	52.7
Tortosa	91.1	321	—	—	—	—	e 44.2	52.4
Kucino	91.2	350	e 13 8	-14	e 24 8	-18	—	—
San Fernando	91.8	315	—	—	—	—	—	58.9
Toledo	92.8	319	—	—	e 24 29	-14	e 28.8	51.4
Strasbourg	93.5	330	e 13 12?	-23	e 23 51	[+ 2]	e 34.2	—
Irkutsk	95.6	27	e 13 17	-30	—	—	e 44.2	—
Paris	95.9	329	—	—	—	—	e 57.2	65.2
Pulkovo	96.3	348	e 13 32	-19	e 24 0	[- 4]	—	—
De Bilt	97.3	332	e 13 37	-19	e 24 12	[+ 3]	e 51.2	—
Copenhagen	97.4	338	—	—	24 12	[+ 2]	—	—
Kew	99.1	328	—	—	e 26 12?	+25	—	—
Scoresby Sund	118.3	338	—	—	23 12?	?	—	—
Ottawa	E. 142.5	302	—	—	—	—	e 70.2	—
Georgetown	Z. 143.1	291	19 40	[- 5]	—	—	74.9	—
Toronto	145.1	299	—	—	—	—	—	80.7
Florissant	Z. 153.4	290	e 19 57	[- 3]	—	—	e 66.2	—

Additional readings and note: Tananarive PR₁ = +4m.17s., eN = +7m.21s.,
 and +7m.41s., iE = +7m.46s., iSR₁ = +7m.56s., iSR₂ = +8m.1s. Ksara
 SR₁E = +27m.9s.; T₁ = 14h.18m.55s. Zagreb e = +13m.8s. and
 +21m.36s., eNW = +23m.36s. = [S] + 21s. Vienna 1P = +13m.7s. Granada
 i = +13m.16s. Kucino e = +23m.28s. = [S] - 7s., all readings being given
 as e simply. San Fernando MN = +54.4m. Toledo MNW = +61.2m.
 Irkutsk e = +17m.12s. and +35m.12s. Georgetown PR₂Z = +23m.8s.

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June 6d. 15h. 43m. 24s. Epicentre 3°0S. 138°0E. (as on 1928 Feb. 25d.).

A = -0.742, B = +0.668, C = -0.052; D = +0.669, E = +0.743;
G = +0.039, H = -0.035, K = -0.999.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Amboina	9.8	266	e 3 3	+36	—	—	—	—
Manila	24.4	317	e 5 26	- 6	i 9 56	+ 4	12.7	—
Batavia	31.2	263	e 6 54	+14	i 12 8	+14	—	—
Adelaide	32.0	179	e 7 22	+35	12 59?	+51	16.8?	18.3
Riverview	33.2	160	e 6 56	- 2	e 11 56	-31	—	19.5
Sydney	33.2	160	11 54	?S	(11 54)	-33	18.8	19.9
Hong Kong	34.4	318	6 51	-17	e 12 4	-42	—	16.3
Melbourne	35.4	170	i 12 48	?S	(i 12 48)	-13	18.9	21.1
Perth	35.7	215	e 12 36	?S	(e 12 36)	-30	(20.9)	—
Sumoto	37.4	356	e 5 16	?	—	—	—	—
Phu-Lien	38.9	310	6 36?	?	—	—	15.6	—
Irkutsk	62.2	339	e 10 29	+ 3	i 18 49	- 2	e 27.6	36.5
Almata	71.5	319	11 33	+ 6	21 1	+17	—	—
Andijan	73.7	315	e 11 44	+ 4	21 28	+18	—	—
Tashkent	76.2	315	i 11 41	-15	i 21 19	-20	—	45.7
Samarkand	77.5	313	12 4	0	21 45	-10	—	—
Victoria	98.0	41	—	—	—	—	46.4	50.0
Kucino	98.1	327	—	—	e 23 43	[-31]	45.6	59.1
Pulkovo	101.4	331	e 18 10	?PR ₁	—	—	53.6	61.0
Helsingfors	103.9	333	—	—	—	—	e 56.6	—
Upsala	107.4	333	—	—	—	—	—	63.6
Scoresby Sund	111.2	353	—	—	26 36?	? Σ	46.6	—
Copenhagen	111.8	330	—	—	—	—	52.6	—
Hamburg	114.0	330	—	—	—	—	e 64.6	—
Cheb	114.4	325	—	—	—	—	e 63.6	72.6
De Bilt	117.3	330	—	—	e 29 48	?PS	e 53.6	68.5
Strasbourg	117.8	325	—	—	e 26 8	[+31]	e 58.6	—
Florence	117.9	319	—	—	—	—	—	67.6
Uccle	118.4	327	—	—	—	—	e 56.6	—
Kew	120.4	331	—	—	—	—	e 61.6	—
Paris	120.5	327	—	—	—	—	e 68.6	90.6
Toronto	127.6	33	—	—	e 57 59	?	69.6	—
Ottawa	128.3	29	—	—	e 54 36?	?	65.6	—
Granada	130.9	319	—	—	—	—	e 70.6	79.6
San Fernando	133.0	320	—	—	—	—	—	80.9
Georgetown	133.7	36	—	—	e 56 48	?	67.6	73.4
La Paz	147.7	128	20 9	[+17]	—	—	—	—

Additional readings: Amboina $i = +3m.43s.$, Adelaide $iSR_2 = +15m.31s.$,
 $i = +16m.12s.$, MN = +20.5m. Riverview MN = +19.6m.; $T_0 =$
15h.43m.45s. Melbourne $e = +15m.6s. = SR_1 + 0s.$, S = +17m.1s. Perth
gives S as P and L as S. De Bilt MZ = +74.1m., MN = +75.5m. Stras-
bourg $ePR_1 = +20m.23s.$, $ePS = +30m.6s.$, $ePPS = +31m.8s.$ Ottawa
 $eN = +59m.36s.?$, LN = +67.6m. San Fernando MN = +81.3m.

June 6d. Readings also at 3h. (La Paz and Samarkand), 4h. (Andijan and near Almata), 6h. (La Paz, Tashkent, Almata, Andijan, and Samarkand (2)), 8h. (Tahoku, Almata, and near Samarkand); 9h. (near Sumoto), 11h. (Almata, Samarkand, and Andijan (2)), 12h. (Almata, Andijan, and near Samarkand), 13h. (Samarkand), 15h. (Chur Neuchatel (2), Zagreb (2), and Zurich), 17h. (Samarkand, Phu-Lien, and Kew), 18h. (Almata, Andijan, Samarkand, Tashkent, Hong Kong, and Irkutsk), 20h. (La Paz and Mizusawa), 22h. (Samarkand), 23h. (Andijan, Samarkand, and Zi-ka-wei),

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June 7d. 0h. 5m. 0s. Epicentre 53°·0S. 65°·5W.

A = +·250, B = -·548, C = -·799; D = -·910, E = -·415;
G = -·331, H = +·727, K = -·602.

Very rough. Determined from La Plata and La Paz only.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	18·9	20	4 28	0	7 59	- 1	10·7	—
La Paz	36·6	356	7 28	+ 1	13 17	- 1	17·5	21·6
Georgetown	Z. 92·5	351	—	—	e 32 52	?	—	—
Florissant	N. 94·3	340	—	—	e 31 25	?SR ₁	e 50·0	—
Toronto	97·3	350	—	—	—	—	—	58·0
Ottawa	E. 98·7	353	—	—	—	—	50·0	—
San Fernando	F. 103·1	45	—	—	—	—	—	63·7
Granada	104·8	47	—	—	—	—	e 53·0	—
Strasbourg	118·9	46	—	—	—	—	e 64·0	—
Copenhagen	126·0	42	—	—	—	—	67·0	—
Scoresby Sund	127·3	16	—	—	—	—	67·0	—
Pulkovo	136·1	45	—	—	—	—	85·0	—
Tashkent	147·7	90	—	—	—	—	e 71·0	84·9
Irkutsk	173·8	93	e 25 26	?PR ₁	e 32 7	?L	e 92·0	—

Additional readings: Ottawa eE = +45m.0s.? San Fernando MN = +62·2m.

June 7d. 19h. 52m. 55s. Epicentre 32°·5N. 132°·5E.

A = -·570, B = +·622, C = +·537; D = +·737, E = +·676;
G = -·363, H = +·396, K = -·843.

Kobe and Sumoto give "in the Bungo channel."

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Koti	1·4	40	e 0 20	- 1	i 0 37	- 2	—	0·6
Matuyama	1·4	9	(i 0 32)	+11	—	—	(0·8)	(0·9)
Muroto	1·6	62	i 0 22	- 2	i 0 39	- 6	—	—
Hukuoka	2·1	302	0 29	- 4	0 57	- 1	—	1·1
Nagasaki	2·3	276	0 36	0	1 7	+ 4	—	—
Sumoto	2·8	47	0 44	0	1 18	+ 1	—	1·4
Kobe	3·1	46	0 58	+ 9	(1 30)	+ 4	1·5	1·7
Osaka	3·4	49	e 1 8	+15	(1 36)	+ 2	1·6	1·8
Nagoya	4·5	53	e 1 39	?S	(e 1 39)	-25	2·4	—

Additional readings and note: Koti iP* = +24s., iP = +30s., iS* = +42s.,
MZ = +0·7m., MN = +0·8m. Matuyama readings have been increased
by 1m. Osaka MN = +2·5m.

June 7d. Readings also at 3h. (Taihoku), 4h. (La Paz), 7h. (near Samarkand),
8h. (Almata, Andijan, and Samarkand), 9h. and 10h. (near Samarkand),
12h. (Amboina), 13h. (Almata, Andijan, and near Samarkand), 14h.
(Alicante, near Akita, and Mizusawa), 15h. (Andijan and near Samar-
kand), 16h. (Almata, Andijan, and near Samarkand (2)), 17h. (Fordham),
20h. (La Paz), 21h. (Bagnères, Andijan, and near Samarkand).

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June 8d. 6h. 10m. 40s. Epicentre 5°·5N. 93°·0E. (as on 1929 March 25d.).

A = -·052, B = +·994, C = +·096 ; D = +·999, E = +·052 ;
G = -·005, H = +·096, K = -·995.

Epicentre very doubtful.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E. 17·6	346	4 22	+10	(7 46)	+15	7·8	—
Bombay	N. 17·6	346	4 10	- 2	(7 34)	+ 3	7·6	—
Phu-Lien	20·2	40	e 4 43	0	(e 9 56)	+16	—	—
Andijan	23·8	306	e 9 56	?S	—	—	—	—
Almata	39·4	335	e 7 24	-26	—	—	—	—
Samarkand	40·3	342	e 7 6	-51	—	—	—	—
Tashkent	41·4	330	e 7 48	-18	—	—	—	—
Irkutsk	41·6	333	i 8 0	- 8	i 14 19	-10	—	20·6
	47·7	10	8 5	-47	—	—	—	—

Additional readings : Tashkent e = +7m.39s., e = +16m.14s. Irkutsk e = +13m.20s. ? and +17m.56s.

June 8d. 12h. 25m. 2s. Epicentre 35°·7N. 134°·8E. (as on 1929 Feb. 20d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Toyooka	0·2	175	i 0 2	- 2	(i 0 4)	- 2	i 0·1	0·1
Kobe	1·1	163	0 17	0	(0 27)	- 4	0·4	0·5
Sumoto	1·4	177	e 0 38	+17	(e 0 38)	- 1	—	—
Nagoya	1·8	107	e 0 31	+ 3	—	—	0·9	—
Manila	24·5	214	i 7 48	?	—	—	—	—

No additional readings.

June 8d. Readings also at 0h. (Mizusawa, Nagoya, Almata, Andijan, and near Samarkand), 1h. (Strasbourg and near Taihoku), 2h. (Nagoya,) 5h. (Granada, Taihoku, Wellington), 7h. (Samarkand), 14h. (Florence), 16h. (near Toyooka), 17h. (Georgetown), 18h. (Ottawa, Toronto, Florissant, Tucson, Scoresby Sund, La Paz, Zurich, and near Neuchatel), 19h. (Andijan and Samarkand), 20h. (Taihoku), 21h. (near Barcelona), 23h. (near Hukuoka and Nagasaki).

June 9d. 1h. 2m. 45s. Epicentre 12°·8N. 91°·0W. (as on 1929 May 12d.).

A = -·017, B = -·975, C = +·222 ; D = -1·000, E = +·017 ;
G = -·004, H = -·222, K = -·975.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vera Cruz	8·1	323	(3 39)	?S	(3 39)	- 1	(5·2)	(6·2)
Merida	8·3	9	3 34?	?S	(3 34?)	-11	5·4	5·9
Tacubaya	10·3	311	2 46	+12	4 31	- 6	4·6	4·8
Florissant	E. 26·0	1	e 5 59	+11	e 10 14	- 8	—	—
	26·0	1	e 5 45	- 3	e 10 15	- 7	e 17·8	—
Tucson	26·6	320	—	—	10 29	- 4	17·9	—
Cincinnati	Z. 26·9	11	—	—	e 11 5	+26	16·5	—
Georgetown	Z. 28·9	23	—	—	—	—	e 12·2	19·6
Toronto	32·4	16	—	—	—	—	20·5	—
Ottawa	35·0	20	—	—	e 12 33	-22	e 18·8	—
Victoria	E. 44·5	330	—	—	—	—	27·1	27·6
Scoresby Sund	71·0	20	—	—	—	—	27·2	—
Pulkovo	93·6	25	—	—	—	—	e 42·2	—
Baku	115·6	32	—	—	—	—	e 69·2	—

Additional readings and note : Vera Cruz readings are given for 8d. and have been diminished by 3m. Florissant (second line) eLN = +15·8m. Tucson LN = +16·7m. Georgetown eZ = +2m.44s. and +7m.16s. Ottawa eE = +14m.51s. -SR₁ - 7s., e = +17m.1s.

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June 9d. 8h. 9m. 12s. Epicentre 62°·6N. 147°·6W. (as on 1929 Jan. 21d.).

A = -·389, B = -·247, C = +·888 ; D = -·536, E = +·844 ;
G = -·750, H = -·476, K = -·460.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	8·2	127	i 2 44	+40	e 4 42	+60	i 5·1	5·8
Victoria		19·5	126	5 0	+25	8 57	+44	10·2	11·4
Tucson	N.	38·2	127	e 7 41	+ 1	—	—	20·3	—
Chicago	E.	40·3	94	—	—	e 14 5	- 6	i 22·0	22·4
	N.	40·3	94	—	—	—	—	e 22·2	22·3
Florissant	E.	41·3	100	e 8 1	- 4	e 14 18	- 7	—	22·0
		41·3	100	i 8 2	- 3	e 14 18	- 7	e 17·3	22·0
Ann Arbor	E.	41·6	90	—	—	—	—	e 21·5	—
Scoresby Sund		41·7	26	9 36	?PR ₁	17 24	?SR ₁	—	—
Toronto	N.	42·6	85	—	—	—	—	21·0	25·6
Ottawa		42·9	80	e 9 48	?PR ₁	e 14 36	-11	—	23·1
Cincinnati		43·8	93	e 18 18	?SR ₁	—	—	i 24·9	—
Harvard		47·3	79	e 10 53	?PR ₁	—	—	e 23·8	—
Fordham		47·3	84	e 19 23	?SR ₁	—	—	24·8	—
Georgetown	Z.	47·4	88	8 50	0	15 51	+ 5	e 23·0	28·8
Charlottesville	N.	47·5	89	—	—	—	—	e 28·4	29·1
Pulkovo		57·7	1	e 9 58	+ 1	e 17 42	-13	28·8	—
Copenhagen		60·7	13	—	—	18 30	- 2	26·8	—
De Bilt		63·4	19	10 40	+ 6	—	—	e 32·8	41·0
Paris		66·1	23	e 10 56	+ 4	—	—	39·8	—
Tashkent		72·0	333	i 11 31	+ 1	i 20 42	- 8	e 34·8	47·8
Samarkand		74·1	334	e 11 43	0	—	—	—	—
Baku		76·1	347	—	—	—	—	e 40·8	—
Granada		76·1	30	i 11 58	+ 2	e 22 2	+24	e 39·8	47·0

Additional readings : Sitka eLN = +5·2m. ; T₀ = 8h.8m.59s. Victoria LN = +10·7m. ; T₀ = 8h.9m.15s. Chicago eE? = +16m.34s., eN = +17m.9s. and +21m.0s., iE = +21m.22s. Florissant (first line) iE = +8m.2s. ; (second line) MNZ = +22·5m. Ann Arbor eEN = +22m.6s., eE = +22m.54s. and +24m.54s., eN = +25m.6s., eL?E = +23·5m. Toronto eN = +19m.3s., ME = +22·8m. Ottawa e = +17m.48s. = SR₁ + 0s. Cincinnati i = +23m.3s., iS?EN = +23m.35s. Georgetown PR₁Z = +10m.44s., SR₁Z = +19m.40s. Charlottesville eE = +24m.48s. and +28m.34s., eN = +25m.27s. Baku e = +30m.3s.

June 9d. 9h. 7m. 48s. Epicentre 45°·5N. 151°·2E.

(as on 1922 Dec. 31d.).

A = -·614, B = +·338, C = +·713 ; D = +·482, E = +·876 ;
G = -·625, H = +·344, K = -·701.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		5·8	284	1 46	+16	3 4	+25	—	—
Muroran		8·0	250	2 0	- 1	3 35	- 2	—	—
Morioka		9·4	236	2 29	+ 7	4 14	+ 1	—	—
Mizusawa	E.	9·8	233	2 32	+ 5	4 21	- 2	—	—
	N.	9·8	233	2 33	+ 6	4 22	- 1	—	—
Akita		10·0	239	e 2 39	+ 9	—	—	12·0	12·7
Tokyo		13·1	225	3 27	+13	6 49	+63	—	—
Nagoya		14·9	231	e 3 49	+11	6 52	+22	10·2	—
Kyoto		15·7	234	3 58	+10	7 3	+15	—	—
Toyooka	N.	15·9	237	i 3 54	+ 3	i 7 12	+19	8·9	11·8
Osaka		16·1	233	3 42	-11	(7 1)	+ 4	7·0	7·5
Kobe		16·3	234	3 58	+ 2	7 19	+17	e 9·8	10·6
Sumoto		16·7	234	i 4 4	+ 3	i 7 26	+15	10·6	12·2
Muroto		17·9	233	e 4 24	+ 8	e 7 59	+21	e 10·2	—
Koti		18·0	235	e 4 21	+ 4	7 51	+11	8·8	11·7
Hukuoka		19·8	240	4 45	+ 6	8 32	+13	e 10·1	14·4

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Miyazaki	20.5	235	4 46	- 1	8 49	+15	—	—
Nagasaki	20.8	240	e 4 54	+ 3	e 8 50	+10	e 10.8	—
Zi-ka-wei	27.1	249	5 53	- 6	10 51	+ 8	15.0	17.4
Irkutsk	31.0	300	—	—	—	—	34.2	—
Taihoku	E. 31.4	239	e 8 15	?	—	—	—	—
Hong Kong	37.9	244	7 27	-10	13 26	-11	—	26.3
Manila	40.0	230	e 7 43	-12	13 49	-18	19.5	19.6
Phu-Lien	43.9	252	e 8 17	- 8	e 14 40	-21	21.2	27.5
Sitka	E. 45.0	48	e 9 19	+46	i 14 55	-20	e 18.1	—
Honolulu T.H.	E. 48.0	103	e 9 9	+15	i 15 38	-16	21.4	—
	N. 48.0	103	—	—	i 15 49	- 5	21.5	—
Almata	51.1	297	9 16	+ 2	—	—	—	—
Calcutta	E. 55.3	269	e 9 5	-36	17 13	-12	31.6	—
Victoria	55.3	54	9 49	+ 8	17 19	- 6	26.8	29.4
Andijan	55.6	296	9 46	+ 3	—	—	27.2	—
Tashkent	57.0	299	i 9 55	+ 3	i 17 40	- 6	29.2	35.2
Dehara Dun	57.6	283	9 52	- 4	17 52	- 2	29.2	36.2
Samarkand	59.4	299	10 14	+ 6	18 33	+17	—	—
Berkeley	61.9	65	e 10 31	+7	e 18 52	+ 5	e 28.7	—
Scoresby Sund	63.9	358	e 10 42	+ 5	19 14	+ 2	27.2	—
Pulkovo	64.2	332	i 10 41	+ 2	i 19 13	- 2	31.2	35.8
Kucino	64.3	325	10 51	+11	19 12	- 5	27.7	40.8
Batavia	65.0	230	i 11 1	+16	i 19 28	+ 3	—	—
Helsinkiors	65.6	335	e 10 50	+ 1	e 19 32	0	e 31.2	—
Hyderabad	65.6	274	10 53	+ 4	19 48	+16	36.4	42.7
Upsala	68.0	337	e 11 5	+ 1	e 20 0	- 2	e 32.2	37.1
Bombay	68.6	275	11 14	+ 6	20 22	+13	36.6	44.3
Baku	69.0	308	i 11 18	+ 7	i 20 20	+ 6	34.7	39.8
Bergen	70.5	344	10 28	-52	—	—	—	47.2
Kodalkanal	71.3	269	—	—	—	—	44.6	48.3
Konigsberg	71.3	333	e 11 28	+ 3	e 20 36	- 6	e 45.2	48.2
Tucson	N. 72.7	62	11 38	+ 4	20 57	- 1	e 30.7	—
Copenhagen	73.0	338	11 36	+ 0	21 3	+ 1	34.2	—
Theodosia	73.2	320	11 42	+ 5	21 12	+ 8	e 37.8	—
Simferopol	73.8	320	i 11 44	+ 3	—	—	e 39.2	—
Yalta	74.2	320	e 11 47	+ 4	—	—	39.8	—
Sebastopol	74.3	320	11 48	+ 4	—	—	39.1	—
Dyce	74.9	346	1 11 48	0	i 21 20	- 5	e 38.4	50.6
Hamburg	75.6	338	1 11 53	0	e 21 31	- 2	e 34.2	37.2
Edinburgh	76.3	345	e 12 12?	+15	i 21 54	+13	34.2	51.7
Gottingen	77.4	337	i 12 5	+ 2	e 21 38	-15	e 36.6	47.8
Jena	E. 77.5	336	e 12 0	- 4	e 21 56	+ 1	e 37.2	50.7
	N. 77.5	336	i 12 4	0	e 22 0	+ 5	e 37.2	52.2
Budapest	78.0	330	e 12 12?	+ 5	22 6	+ 6	e 40.2	50.2
Cheb	78.0	335	e 12 8	+ 1	e 21 59	- 1	e 41.2	49.2
De Bilt	78.1	340	i 12 8	0	22 1	0	e 35.2	44.5
Stonyhurst	78.1	345	—	—	—	—	—	45.2
Chicago	E. 78.2	41	12 5	- 3	21 54	- 8	e 36.2	—
	N. 78.2	41	12 5	- 3	21 57	- 5	e 30.7	—
Vienna	78.3	331	e 12 6	- 3	22 3	- 1	e 27.2	52.2
Bidston	78.7	345	12 9	- 2	22 2	- 6	38.5	64.5
Feldberg	N. 79.0	339	e 12 4	- 9	e 22 0	-12	—	47.5
Florissant	E. 79.2	45	e 12 11	- 3	1 22 6	- 8	e 41.2	43.7
	79.2	45	e 12 11	- 3	1 22 7	- 7	e 40.2	43.5
Riverview	79.3	180	—	—	e 22 12	- 3	e 33.6	39.8
Ann Arbor	E. 79.5	38	—	—	e 22 12	- 6	e 42.2	—
	N. 79.5	38	—	—	e 22 6	-12	e 43.1	—
Graz	79.5	331	i 12 17	+ 1	e 22 16	- 2	28.2	42.5
St. Louis	79.5	45	—	—	e 22 12	- 6	—	44.2
Uccle	79.5	340	12 13	- 3	22 14	- 4	e 37.2	54.5
Belgrade	N. 79.8	326	e 12 29	+11	e 22 29	+ 8	e 44.1	—
Oxford	79.9	344	i 12 17	- 1	—	—	e 39.2	56.2
Kew	80.0	343	i 12 17	- 2	22 19	- 4	36.2	43.9

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hohenheim	N.	80-1	336	e 12 18	- 2	e 22 15	- 9	e 39-2	—
Karlsruhe		80-1	337	i 11 20	-60	—	—	e 40-2	—
Ottawa		80-1	30	e 12 17	- 3	i 22 14	-10	e 36-2	50-2
Toronto		80-2	35	e 12 20	0	e 22 12	-13	37-7	44-7
Zagreb		80-5	330	e 12 20	- 2	e 22 24	- 5	e 28-2	—
Innsbruck		80-7	334	e 12 18	- 5	e 22 24	- 7	—	53-2
Strasbourg		80-7	337	i 12 20	- 3	e 22 27	- 4	36-2	49-7
Laibach	N.	80-8	332	—	—	—	—	42-7	49-8
Ravensburg	E.	80-8	336	e 12 22	- 2	e 22 29	- 4	e 38-2	—
Adelaide		81-3	191	—	—	22 12?	-26	34-9?	51-4
Ksara	N.	81-5	312	12 25	- 3	22 39	- 2	41-2	—
Zurich		81-5	335	e 12 25	- 3	e 22 37	- 4	—	—
Cincinnati		81-7	40	i 12 23	- 6	i 22 31	-12	37-7	46-0
Chur		81-7	336	e 12 26	- 3	e 22 38	- 5	—	—
Paris		81-8	341	i 12 27	- 2	i 22 42	- 2	35-2	37-2
Venice		82-0	332	e 12 37	+ 7	e 22 20?	-26	—	—
Neuchatel		82-3	338	i 12 29	- 3	—	—	—	—
Besançon		82-4	337	i 12 31	- 1	22 46	- 4	38-2	—
Melbourne		83-4	185	i 17 33	?	i 22 51	-10	35-2	44-9
Perth		83-8	210	i 22 11	?S	(i 22 12)	[-37]	—	—
Florence		83-9	332	12 37	- 4	23 32	+24	44-2	57-5
Moncalieri		83-9	335	i 12 36	- 5	i 24 0	+52	40-8	54-9
Harvard		84-4	30	e 12 34	-10	i 23 0	-12	—	—
Fordham		84-7	34	—	—	i 23 2	-14	e 28-2	49-2
Georgetown	Z.	85-1	36	i 12 45	- 4	23 14	- 6	e 40-2	59-3
Charlottesville	N.	85-3	38	—	—	e 23 11	-11	46-2	—
Pompeii		85-4	329	e 12 42	- 8	e 23 12?	-11	44-2	56-2
Naples	N.	85-5	329	e 12 52	+ 1	e 22 2	[-57]	53-2	56-2
Marseilles		86-2	335	i 13 18	+24	i 23 52	+20	42-2	—
Helwan		87-0	311	12 53	- 6	23 30	-11	—	56-6
Barcelona		88-8	337	e 13 45	+36	e 23 46	-15	e 46-4	60-9
Wellington	E.	89-3	164	—	—	i 23 18	[- 6]	e 36-2	—
Tortosa	N.	89-3	164	13 10	- 2	i 23 19	[- 5]	42-0	—
Christchurch		89-8	339	e 13 14	- 1	23 55	-17	e 40-2	51-2
		91-1	166	—	—	—	—	—	71-3
Toledo		91-8	342	e 13 17	- 9	e 23 59	[-20]	e 41-4	60-7
Alicante		92-4	339	e 13 27	- 2	e 24 3	[-21]	e 43-2	62-9
Algiers		92-9	335	13 16	-16	24 23	-21	45-2	60-2
Granada		94-2	341	i 13 24	-15	24 37	-21	32-4	58-0
Almeria		94-3	340	e 13 27	-13	e 23 40	[-13]	32-2	—
Malaga		94-9	341	e 13 43	0	e 24 59	- 6	31-8	—
San Fernando		95-6	343	—	—	24 11	[-11]	52-9	67-4
Tananarive		112-8	266	—	—	—	—	—	65-8
La Paz		136-3	60	19 34	[+ 1]	—	—	65-2	79-0
Rio de Janeiro	N.	154-6	32	e 24 12	?PR ₁	—	—	—	—
La Plata		155-6	74	—	—	—	—	76-3	—

Additional readings: Akita PR₁ = +3m.38s. Toyooka ePR₁E = +4m.31s.,
 ME = +14.6m. Osaka MN = +11.6m. Kobe eLNW = +9.6m., MN =
 +12.4m., MZ = +14.0m. Sumoto MN = +12.5m. Koti SR₁N =
 +8m.34s., L₀E = +10.0m., MN = +13.3m. Zi-ka-wei MN = +18.6m.
 Hong Kong PR₁ = +9m.1s., PHN = +22.0m. Phu-Lien MN = +30.8m.
 Sitka eSN = +18m.2s. = SR₁ - 28s., ISE = +18m.8s. = SR₁ - 22s. Honolulu
 T.H. SR₂E = +19m.43s. = SR₁ + 15s., SR₂N = +19m.48s. = SR₁ + 20s. Cal-
 cutta ePN = +8m.50s. Victoria LN = +28.4m.; T₀ = 9h.8m.13s.
 Berkeley ePN = +10m.36s., eN = +16m.48s., eSR₁E = +23m.42s., eSR₂N =
 +26m.0s., eN = +27m.48s. Scoresby Sund +20m.39s. = [S] +13s.
 Helsingfors PR₁ = +13m.34s., PR₂ = +15m.6s., eS₀F₀SE? = +20m.46s.,
 eS₀F₀SN? = +20m.57s., SR₁ = +24m.1s., SR₂ = +27m.2s. Hyderabad
 MN = +41.9m. Uppsala e = +21m.3s. = [S] + 6s., SR₁N = +24m.36s.,
 MN = +47.9m. Konigsberg eP₀PZ = +11m.55s., eP₁PE = +12m.12s.,
 eZ = +13m.27s., eE = +13m.54s., eN = +14m.41s., ePR₁PE = +15m.51s.,
 eZ = +17m.30s., eNZ = +19m.22s., eZ = +19m.41s., eSE = +20m.55s., eN =
 +21m.23s., eEN = +21m.32s., eN = +21m.45s., eZ = +23m.30s., eE =
 +28m.42s., MN = +47.2m. Tucson eN = +29m.12s. = SR₂ - 14s. Copen-
 hagen +26m.0s. = SR₁ - 34s. Hamburg MN = +40.2m., MZ = +44.2m.

Continued on next page.

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Gottingen eLN = +36.9m., eLZ = +45.9m. De Bilt SR₁ = +27m.40s.,
 eLN = +37.2m., MN = +49.4m., MZ = +49.8m. Chicago PR₁N =
 +15m.2s., PR₁E = +15m.6s., PR₁E = +16m.56s., PR₁N = +16m.57s.,
 SR₁E = +26m.25s., SR₁N = +27m.3s. Vienna iPZ = +12m.9s., PR₁ =
 +15m.33s., PS = +22m.52s., MNZ = +55.2m. Feldberg eN = +12m.5s.
 Florissant (first line) eE = +26m.24s., eSR₁ = +31m.41s.; (second line) iP =
 +12m.12s., ePR₁ = +15m.18s., eZ = +16m.25s., eEN = +22m.11s., iEN =
 +22m.27s., iE = +22m.32s., eSR₁N = +27m.19s., eSR₁E = +27m.53s.,
 eSR₁EN = +31m.41s., iE = +33m.23s. = SR₁ + 7s. Riverview MN =
 +40.4m. Ann Arbor eN = +22m.18s., eE = +33m.42s. = SR₁ + 20s.
 Graz MN = +55.8m. Uccle PR₁ = +15m.18s., iSR₁ = +28m.2s., MN =
 +45.6m. Belgrade eN = +21m.57s. Kew SR₁EN = +28m.0s., MN =
 +50.0m., MZ = +56.8m. Ottawa eN = +15m.24s. = PR₁ - 27s., SR₁E =
 +31m.37s., MN = +53.2m.; T₀ = 9h.8m.6s. Toronto iN = +22m.38s.,
 eN = +26m.57s., MN = +49.6m.; T₀ = 9h.8m.14s. Zagreb e = +12m.32s.,
 i = +12m.40s., e = +12m.58s., +16m.0s., +22m.42s., +23m.4s. = PS - 9s.
 Strasbourg MN = +53.7m., MZ = +55.5m. Laibach eN = +33m.41s.
 and +38m.27s. Adelaide MN = +45.0m. Ksara PR₁E = +13m.23s.,
 LE = +33.2m. Cincinnati iPCPNZ = +12m.47s., eSR₁Z = +27m.52s.,
 eSR₁EN = +31m.42s., LZ = +40.2m. Paris MN = +46.2m. Melbourne
 i = +28m.27s. = SR₁ - 35s. Moncalieri L = +32.5m., MN = +58.8m.
 Fordham MN = +54.2m. Georgetown PR₁Z = +16m.31s., PR₁Z =
 +18m.54s., PSZ = +24m.8s., SR₁Z = +29m.19s., SR₁Z = +35m.23s., SR₁Z =
 +40m.15s. Charlottesville ePSE = +26m.28s., ePSN = +26m.50s.,
 eSR₁N = +29m.48s., eSR₁E = +29m.56s., LE = +42.2m. Wellington
 SR₁N = +29m.35s. Tortosa eLN = +45.2m., MN = +52.7m. Toledo
 i = +13m.49s., MNW = +60.5m. Alicante MN = +65.3m. Granada
 PR₁ = +16m.40s., PS = +25m.6s. San Fernando MN = +62.4m.
 Tananarive SR₁ = +35m.42s. La Paz PR₁E = +23m.2s., LN = +66.2m.,
 MN = +85.7m.

June 9d. 23h. 15m. 12s. Epicentre 45° 5N. 151° 2E. (as at 9h.).

	Δ	Az.	P.	O - C.	S.	O - C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E. 9.8	233	—	—	4 17	- 6	—	—
Irkutsk	31.0	300	e 7 48?	?PR ₁	e 13 48?	?SR ₁	17.8	19.9
Andijan	55.6	296	e 9 47	+ 4	—	—	—	—
Tashkent	57.0	299	i 9 52	0	e 19 55	[+23]	e 26.8	35.4
Samarkand	59.4	299	e 10 14	+ 6	—	—	—	—
Scoresby Sund	63.9	358	—	—	19 48?	+36	26.8	—
Pulkovo	64.2	332	e 10 41	+ 2	e 20 47	[+20]	32.8	42.1
Baku	69.0	308	e 11 14	+ 3	e 20 41	+27	36.3	45.0
Copenhagen	73.0	338	—	—	—	—	34.8	—
De Bilt	78.1	340	12 6	- 2	—	—	e 42.8	—
Florissant	79.2	45	e 21 53	?S	(e 21 53)	-21	e 41.8	—
Uccle	79.5	340	—	—	—	—	e 43.8	—
Kew	80.0	343	—	—	—	—	e 46.8	—
Ottawa	80.1	30	—	—	—	—	e 43.5	—
Toronto	80.2	35	—	—	—	—	—	50.8
Strasbourg	80.7	337	e 11 48?	-35	e 22 48?	+17	e 44.8	—
Paris	81.8	341	i 12 26	- 3	—	—	51.8	—
Georgetown	z. 85.1	36	—	—	—	—	e 42.6	—
Granada	94.2	341	—	—	—	—	e 51.8	59.8

Additional readings: Tashkent e = +21m.48s. = SR₁ - 28s. Florissant
 eEN = +22m.8s. Ottawa LE = +47.8m., LN = +50.8m.

June 9d. Readings also at 3h. (Lick and near Nagasaki), 4h. (near Granada), 6h. (near Victoria), 7h. (Georgetown, Florissant, Ottawa, Toronto, Scoresby Sund, and Wellington), 10h. (near Lick), 11h. (Akita), 12h. and 17h. (Taihoku), 18h. (Akita and La Paz), 19h. (Copenhagen, De Bilt, Strasbourg, Naples, Pompeii, Florence, Zagreb, and near Lick), 20h. (Moncalieri and Venice), 21h. (Batavia, Irkutsk, and Tashkent), 22h. (Granada, Andijan, Samarkand, near Ksara, and near Akita), 23h. (near Lick).

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June 10d. 0h. 18m. 4s. Epicentre 25°·5N. 98°·0E. (as on 1929 Jan. 19d.).

A = -·126, B = +·894, C = +·431; D = +·990, E = +·139;
G = -·060, H = +·426, K = -·903.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Phu-Lien	9·2	119	e 2 24	+ 5	—	—	4·9	—
Calcutta	9·3	254	4 1	?S	(4 1)	- 9	(5·0)	—
Hong Kong	15·1	99	7 27	?	—	—	e 8·1	9·3
Hyderabad	19·9	250	—	—	—	—	—	15·0
Bombay	24·2	259	(e 5 24)	- 6	(e 9 30)	-18	(12·2)	(13·2)
Almata	24·7	321	e 5 39	+ 4	—	—	—	—
Andijan	26·0	311	e 3 49	-119	—	—	—	—
Irkutsk	27·2	8	e 5 52?	- 8	i 10 48	+ 3	14·9	16·4
Tashkent	28·5	311	e 6 6	- 7	e 10 56	-12	e 15·9	18·8
Samarkand	29·5	306	e 6 18	- 5	—	—	—	—
Baku	42·5	305	e 10 0	?PR ₁	—	—	—	—
Pulkovo	57·0	326	9 57	+ 5	17 54	+ 8	31·9	33·4
Copenhagen	66·8	323	—	—	—	—	35·9	—
De Bilt	71·8	320	—	—	—	—	e 39·9	46·6
Uccle	72·7	319	—	—	—	—	e 38·9	—
Kew	75·2	321	—	—	—	—	e 41·9	—
Scoresby Sund	75·3	344	—	—	22 56?	+87	41·9	—
Tortosa	78·9	310	—	—	—	—	e 39·2	—

Additional readings and note: Calcutta gives S as P and L as S. Hong Kong
MN = +8·6m. Bombay readings have been *diminished* by 4m. Tortosa
eLN = +57·9m.

June 10d. 23h. 3m. 6s. Epicentre 71°·0N. 10°·0E.

A = +·321, B = +·057, C = +·946; D = +·174, E = -·985;
G = +·931, H = +·164, K = -·326.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Scoresby Sund	10·4	283	i 2 38	+ 2	i 4 36	- 4	5·4	—
Bergen	10·8	192	2 44	+ 3	4 44	- 6	6·8	8·9
Upsala	11·6	160	e 2 52	- 1	e 5 23	+14	e 6·2	7·4
Helsingfors	12·4	143	3 6	+ 1	15 17	-12	5·6	—
Reykjavik	13·8	256	3 26	+ 3	—	—	7·7	8·9
Pulkovo	13·9	133	i 3 26	+ 1	5 52	-14	7·4	11·7
Dyce	14·7	207	3 33	- 2	6 31	+ 6	7·0	9·4
Copenhagen	15·3	175	i 3 22	-21	6 50	+11	7·9	—
Edinburgh	16·1	207	e 3 56	+ 3	i 7 9	+12	i 7·7	14·2
Konigsberg	16·8	159	e 4 7	+ 5	17 24	+11	e 9·0	10·9
Hamburg	17·4	180	e 4 11	+ 1	i 7 36	+ 9	e 10·2	15·1
Stonyhurst	18·0	204	e 4 33	+16	i 7 42	+ 2	11·3	12·2
Bidston	18·5	205	4 22	- 1	7 50	- 1	10·4	17·4
De Bilt	19·0	189	4 30	+ 1	8 5	+ 3	e 8·9	13·7
Gottingen	E. 19·5	180	e 4 46	+11	e 8 12	- 1	e 12·9	13·4
	N. 19·5	180	e 4 38	+ 3	e 8 16	+ 3	e 12·4	13·4
	Z. 19·5	180	e 4 39	+ 4	e 8 12	- 1	e 12·4	13·9
Oxford	19·9	201	i 4 38	- 2	18 18	- 3	e 11·9	17·9
Kew	20·1	199	i 4 45	+ 3	18 26	+ 1	9·9	12·6
Jena	E. 20·1	177	e 4 48	+ 6	18 33	+ 8	e 11·9	14·4
	N. 20·1	177	1 4 47	+ 5	18 31	+ 6	e 11·9	14·5
	Z. 20·1	177	1 4 45	+ 3	18 27	+ 2	e 11·9	13·2
Uccle	20·4	190	4 47	+ 1	i 8 34	+ 2	e 9·9	15·4
Feldberg	N. 20·8	183	1 4 42	- 9	8 40	0	—	12·3
Cheb	21·0	176	e 4 55	+ 2	e 8 49	+ 5	e 11·9	14·4
Karlsruhe	22·0	183	4 8	-57	i 7 56	?	—	—
Lemberg	F. 22·1	155	e 5 6	0	e 9 6	- 1	—	15·3
	N. 22·1	155	e 5 9	+ 3	e 9 13	+ 6	—	14·9
Hohenheim	22·2	181	1 5 8	+ 1	i 9 12	+ 3	e 14·9	16·9
Strasbourg	22·5	184	5 10	- 1	19 16	+ 1	e 12·9	16·9
Paris	22·5	193	1 5 9	- 2	i 9 16	+ 1	14·9	17·9

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m s.	s.	m.	m.
Vienna		23-0	191	e 5 15	- 2	9 32	+ 7	i 12-6	15-9
Ravensburg		23-2	181	i 5 18	- 1	i 9 29	0	e 15-4	17-3
Zurich		23-6	182	e 5 22	- 2	e 9 37	+ 1	—	—
Innsbruck		23-7	178	i 5 21	- 4	e 9 42	+ 4	—	—
Besançon		23-8	187	5 32	+ 6	9 33	- 7	11-9	15-9
Budapest		23-9	165	5 54?	+27	—	—	13-4	—
Graz		24-0	171	e 5 20	- 8	i 9 48	+ 4	11-9	17-5
Neuchatel		24-0	185	1 5 25	- 3	i 9 48	+ 4	—	—
Chur		24-1	181	e 5 27	- 2	e 9 52	+ 6	—	—
Lalbach	N.	25-0	172	e 5 38	0	e 10 12	+ 9	e 12-9	17-7
Zagreb		25-3	170	e 5 39	- 2	e 10 21	+12	e 14-5	—
Venice		25-6	176	e 5 42	- 2	10 31	+17	—	—
Grenoble		25-9	187	5 40	+ 7	e 9 6	-74	14-9	—
Moncalieri		26-0	184	1 5 49	+ 1	10 10	-12	13-4	18-2
Belgrade	N.	26-7	163	e 5 51	- 4	e 10 40	+ 5	e 16-1	19-2
Florence		27-2	178	1 5 56	- 4	11 27	+42	16-5	21-4
Simferopol		28-6	143	i 6 9	- 5	11 0	-10	17-7	—
Sebastopol		28-7	144	6 12	- 3	e 11 5	- 7	13-9	—
Theodosia		28-7	141	6 12	- 3	11 5	- 7	15-4	—
Yalta		29-0	143	6 13	- 5	11 8	- 9	—	—
Barcelona		29-8	192	e 6 17	- 9	e 11 1	-30	—	23-3
Naples	E.	30-2	173	e 6 12	-18	—	—	—	—
Pompeii		30-3	173	e 6 54?	+23	e 11 54?	+15	—	21-9
Tortosa	N.	30-6	195	6 24	-10	11 31	-13	—	23-4
Toledo		32-0	200	6 36	-11	11 46	-22	e 15-3	23-6
Alicante		33-1	195	e 6 51	- 6	e 12 8	-18	e 13-6	23-6
Algiers		34-4	190	e 6 59	- 9	12 23	-13	18-9	23-4
Granada		34-6	200	i 6 59	-11	i 12 30	-19	15-8	25-2
Almeria		34-7	198	e 7 4	- 7	12 34	-17	16-0	26-4
Malaga		35-1	200	e 7 3	-11	12 37	-20	15-6	—
Baku		36-6	125	i 7 21	- 6	i 13 10	- 8	19-4	24-4
Ksara		39-6	145	7 48	- 3	13 43	-17	18-9	—
Tashkent		41-5	102	i 8 3	- 4	14 15	-13	i 20-2	23-2
Helwan		42-8	151	8 19	+ 2	14 29	-16	—	30-3
Irkutsk		42-9	64	i 8 13	- 4	14 48	+ 1	23-9	31-6
Ottawa		46-4	285	e 8 35	- 8	i 15 22	-11	e 21-6	26-5
Harvard	N.	47-6	279	i 8 46	- 5	e 15 38	-11	26-9	—
Toronto		49-1	287	e 8 56	- 5	e 15 54	-13	e 23-2	28-8
Ann Arbor	N.	51-7	290	e 9 18	0	e 16 30	-10	e 25-4	—
Georgetown	Z.	52-7	281	9 30	+ 6	16 54	+ 2	e 25-1	32-7
Chicago		53-3	294	e 9 33	+ 5	e 17 0	0	e 28-0	35-6
Charlottesville	N.	54-0	282	—	—	e 17 10	+ 1	e 28-9	32-7
Dehra Dun		54-3	100	9 54?	+19	16 54?	-19	24-9	34-9
Cincinnati		54-8	289	e 9 36	- 2	i 17 9	-10	e 28-6	31-8
Victoria	E.	56-1	325	—	—	17 44	+ 9	30-1	38-6
	N.	56-1	325	9 54	+ 7	18 49	+74	30-7	39-5
Florissant		56-9	295	e 9 55	+ 4	e 17 43	- 2	e 24-4	32-2
		56-9	295	e 9 53	+ 2	e 17 43	- 2	e 24-0	32-2
Bombay		63-4	110	10 47	+13	19 22	+16	33-8	40-8
Hyderabad		66-6	105	11 1	+ 6	19 53	+ 8	33-4	46-4
Zi-ka-wei	Z.	67-2	60	e 11 2	+ 3	—	—	—	47-9
Tucson		68-7	310	11 16	+ 7	—	—	36-0	—
Phu-Lien		72-5	77	e 10 59	-34	e 21 8	+12	—	—
Hong Kong		73-4	70	—	—	21 4	- 3	e 37-9	44-6

Additional readings : Scoresby Sund iLN = +6.0m. Upsala iE = +5m.40s.
 iN = +5m.49s., MN = +8.8m. Helsingfors SR₁ = +5m.25s., SR₂ = +5m.30s.
 Reykjavik LN = +6.9m., MN = +9.9m. Copenhagen
 +4m.18s. Konigsberg eEZ = +4m.11s., iZ = +4m.15s., eE = +4m.21s.,
 +4m.39s., iZ = +4m.54s., eNZ = +5m.10s., eZ = +5m.27s., eN = +6m.50s.,
 eE = +6m.59s., iSN = +7m.25s., iSR₁Z = +7m.53s., iE = +8m.8s. and
 +8m.27s., MZ = +9.5m., MN = +11.8m. Hamburg MZ = +12.6m.,
 MN = +14.2m. De Bilt MNZ = +14.1m. Gottingen iE = +10m.22s.,
 iN = +10m.26s. Kucino (Δ = 19°-3, Az. = 127°), S = P + 3m.34s.,

Continued on next page.

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L=P+5.5m., M=P+8.4m. Kew MN = +13.6m., MZ = +16.2m. Jena eSE = +8m.27s., iN = +8m.50s., iE = +8m.54s. Uccle MN = +15.0m. Cheb MN = +14.9m. Hohenheim iPR₁N = +5m.45s. Strasbourg MZ = +15.6m., MN = +17.4m. Vienna iPZ = +5m.16s., SR₁f = +11m.47s. Innsbruck iPR₁ = +5m.46s., iPR₂ = +6m.3s. Graz iP = +5m.29s. = P + 1s. Laibach eN = +6m.1s. = PR₁ - 11s., +7m.16s. and +11m.14s. = SR₁ + 10s. Zagreb e = +5m.53s. and +7m.44s. Moncalieri MN = +17.9m. Belgrade ePSN = +11m.3s. Tortosa ME = +20.7m. Toledo MNW = +24.0m. Algiers PR₁ = +8m.12s. = PR₁ - 2s. Ksara PR₁E = +9m.36s.; T₀ = 23h.3m.14s. Ottawa PR₁N = +10m.28s., SR₁ = +18m.47s., MN = +26.9m.; T₀ = 23h.3m.8s. Georgetown PR₁Z = +11m.41s., PR₁Z = +12m.54s., PSZ = +17m.17s., SR₁Z = +20m.30s., SR₂N = +22m.0s. Chicago eN = +20m.54s., eE = +21m.18s., eLN = +25.8m., MN = +33.1m. Charlottesville eN = +20m.58s., eE = +27m.54s. Cincinnati eZ = +20m.24s. and +25m.36s. Florissant (second line) eSR₁EN = +21m.22s., e = +23m.22s., eN = +24m.27s., MN = +33.6m., MZ = +34.1m. Hyderabad MN = +47.1m. Tucson LN = +38.0m. Hong Kong MN = +51.4m.

June 10d. Readings also at 0h. (near Lick (2)), 4h. (Nagoya, near Kobe, and near Sumoto), 7h. (Andijan and Tashkent), 8h. (Irkutsk and near Taihoku), 10h. (Irkutsk and Tashkent), 11h. (San Fernando), 12h. (Mizusawa and near Akita), 15h. (near Ksara), 17h. (near Tacubaya), 18h. (Apia), 19h. (Irkutsk and Tashkent), 20h. (Florissant and near La Plata), 23h. (Almata, Andijan, Samarkand, and near Sitka).

June 11d. 19h. 32m. 30s. Epicentre 31°·8N. 131°·8E. (as on 1929 May 21d.).

A = -·566, B = +·634, C = +·527.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	1.9	300	0 27	- 2	0 56	+ 3	—	1.1
Hukuoka	2.1	327	0 31	- 2	0 59	+ 1	—	1.1
Matuyama	2.2	21	i 0 30	- 4	—	—	—	1.0
Koti	2.3	40	0 37	+ 1	0 57	- 6	1.1	1.2
Sumoto	3.7	44	1 9	+11	1 38	- 4	—	1.9
Kobe	4.0	43	e 1 7	+ 5	(e 1 50)	0	e 1.8	2.1
Nagoya	5.5	50	—	—	e 2 7	-24	—	—
Tashkent	50.0	301	—	—	—	—	e 39.9	—
Baku	64.4	305	—	—	—	—	e 39.5	—
Kucino	66.2	323	—	—	—	—	e 37.0	—

Additional readings: Hukuoka MN = +1.0m. Matuyama iPR₁ = +49s.
Kobe MNZ = +2.0m. Tashkent e = +40m.15s., eL = +40.5m. Kucino eL = +41.3m.

June 11d. Readings also at 0h. (Fordham and Granada), 2h. (Irkutsk and Tashkent), 4h. (Nagoya), 6h. (La Plata), 11h. (Nagoya), 15h. (Chur, near Neuchatel, and near Zagreb), 16h. (near Nagoya), 22h. (Ksara).

June 12d. 9h. 39m. 54s. Epicentre 43°·8N. 11°·2E. (as on 1929 May 1d.).

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

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	0.0	—	0 9	+ 9	—	—	—	0.7
Padova	1.7	17	e 0 24	- 2	—	—	—	—
Chur	3.2	338	e 0 48	- 2	e 1 30	+ 2	—	—
Zagreb	4.0	58	e 2 0	+58	e 2 13	+23	e 2.4	—
Neuchatel	n. 4.4	318	e 1 5	- 3	e 1 50	-11	—	—
Strasbourg	5.3	334	—	—	e 2 6?	-19	—	—

Neuchatel gives also eP = +1m.18s.

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June 12d. 11h. 42m. 56s. Epicentre 4°0S. 144°5E.

(as on 1920 May 13d.).

A = -·812, B = +·579, C = -·070; D = +·581, E = +·814;
G = +·057, H = -·041, K = -·998.

A depth of focus +0·020 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
				m. s.	s.	m. s.	s.	m.	m.
Ambaina	-0·6	16·3	271	3 9	-39	6 13	-35	—	—
Manila	-1·4	29·8	309	6 2	-10	i 12 12	+66	—	—
Riverview	-1·4	30·5	169	e 6 11	-8	i 11 1	-18	e 15·2	19·5
Sydney	-1·4	30·5	169	e 6 16	-3	i 12 22	SR ₁	19·4	20·1
Adelaide	-1·5	31·4	189	i 6 18	-9	i 12 4	+32	15·6	17·7
Melbourne	-1·6	33·8	179	e 6 2	-48	11 56	-15	16·8	21·0
Isagakiyima	-1·6	34·6	327	7 9	+13	12 25	+ 1	—	—
Taihoku	-1·6	36·6	323	7 4	-9	—	—	—	—
Batavia	-1·7	37·6	265	e 7 22	+ 1	—	—	—	—
Perth	-1·7	38·8	221	—	—	i 13 4	-21	19·2	21·0
Koti	-1·7	39·0	346	e 7 23	-9	e 13 10	-18	18·4	—
Nagasaki	-1·7	39·3	340	7 26	-9	e 13 16	-16	—	—
Sumoto	-1·7	39·4	349	6 58	-38	e 13 48	+14	—	18·9
Kobe	-1·7	39·6	348	7 31	-6	e 13 35	-2	e 18·8	—
Osaka	-1·7	39·6	348	6 17	-80	(11 17)	-140	11·3	11·4
Hong Kong	-1·7	39·7	315	5 29	-129	13 19	-19	—	—
Tokyo	-1·7	39·9	355	e 7 35	-5	—	—	—	—
Nagoya	-1·7	40·5	350	e 7 31	-13	—	—	—	—
Zi-ka-wei	-1·8	41·5	330	i 7 44	-8	13 48	-14	19·7	23·2
Mizusawa	-1·8	43·2	356	8 0	-6	14 22	-5	—	—
Akita	-1·9	43·9	355	e 8 7	-4	—	—	e 12·2	—
Phu-Lien	-1·9	44·7	307	—	—	—	—	2·3	—
Wellington	-1·9	46·1	148	—	—	i 14 59	-6	i 18·7	33·8
	-1·9	46·1	148	—	—	i 15 10	+5	19·1	27·8
Christchurch	-2·0	46·7	150	—	—	i 14 10	-61	—	28·4
Calcutta	E. -2·4	60·9	298	3 15	?	(19 21)	PS	19·4	—
	N. -2·4	60·9	298	3 18	?	(19 32)	PS	19·5	—
Honolulu T.H.	E. -2·4	61·9	63	e 10 21	+12	i 19 23	PS	29·1	19·3
	N. -2·4	61·9	63	e 10 25	+16	i 19 36	PS	27·6	27·7
Irkutsk	-2·5	65·7	335	i 10 42	+9	i 19 18	+15	31·1	35·7
Hyderabad	-2·6	68·4	290	—	—	20 4	+29	30·0	34·0
Dehra Dun	-2·6	72·0	305	7 4?	—	(20 4?)	-15	20·1	21·1
Bombay	-2·6	74·1	291	11 0	-27	20 45	+1	38·9	43·3
Almata	-2·6	76·7	318	11 51	+8	21 25	+10	—	—
Andijan	-2·7	79·2	314	e 12 5	+7	—	—	—	—
Tashkent	-2·7	81·7	315	i 12 13	0	i 22 14	+2	36·1	53·5
Samarkand	-2·7	83·1	312	e 12 22	+1	—	—	—	—
Victoria	E. -2·8	94·4	42	13 22	-3	23 42	[-12]	42·4	50·4
Tananarive	E. -2·8	95·3	250	—	—	e 24 32	-8	—	—
Baku	-2·8	96·1	311	13 22	-12	—	—	e 43·1	—
Pulkovo	—	105·5	333	i 14 4	-33	24 34	[-16]	49·1	55·5
Kaara	—	107·7	305	18 20	[+6]	—	—	36·1	—
Helsingfors	—	107·8	334	—	—	24 46	[-14]	e 51·1	—
Upsala	—	111·2	335	e 19 9	PR ₁	e 28 58	PS	e 46·1	—
Konigsberg	—	112·2	330	e 19 22	PR ₁	e 28 49	PS	e 47·1	58·1
Scoreby Sund	—	113·0	355	19 22	PR ₁	21 52	?	—	—
Copenhagen	—	115·8	333	14 52	-32	19 35	PR ₁	29·3	—
Vienna	—	117·5	324	18 42	[-4]	25 30	[-6]	—	51·1
Hamburg	—	118·1	331	e 20 0	PR ₁	e 30 4	PS	e 51·1	—
Zagreb	—	118·9	321	e 18 47	[-3]	e 27 47	?	e 59·1	—
Gottingen	—	119·3	330	e 20 34	PR ₁	e 29 50	PS	e 37·3	68·6
Florissant	—	119·4	47	e 15 32	-8	i 25 38	[-6]	e 57·1	61·7
Feldberg	N. -	120·9	330	e 16 16	+29	—	—	—	65·0
De Bilt	—	121·4	332	e 15 19	-30	—	—	e 58·1	65·5

Continued on next page.

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	Corr. for Focus	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Edinburgh	—	122.1	339	—	—	e 30 4?	?	—	—
Strasbourg	—	122.3	326	e 18 47	[-12]	—	—	e 47.1	—
Uccle	—	122.6	330	e 20 30	?PR ₁	e 30 14	?	e 46.1	—
Florence	—	122.8	320	18 53	[-7]	—	—	—	67.1
Stonyhurst	—	123.4	337	e 21 4?	?PR ₁	—	—	64.1	—
Toronto	N.	124.0	37	e 20 49	?PR ₁	e 38 17	?SR ₁	59.1	—
Kew	—	124.2	334	e 18 59	[-5]	—	—	61.1	77.1
Moncalieri	—	124.3	320	20 29	?PR ₁	28 25	-56	37.4	—
Oxford	—	124.5	335	e 20 43	?PR ₁	—	—	e 58.1	66.7
Paris	—	124.8	326	e 18 56	[-9]	e 20 47	?PR ₁	59.1	61.1
Ottawa	—	125.8	34	e 20 52	?PR ₁	—	—	e 59.1	—
Georgetown	Z.	128.7	42	19 11	[-4]	—	—	e 59.2	74.7
Harvard	—	130.3	34	e 21 19	?PR ₁	—	—	—	—
Tortosa	N.	131.1	324	e 22 27	?	33 40	?	e 52.1	81.6
Algiers	—	131.8	319	—	—	27 24	?	—	—
Alicante	—	133.2	322	e 19 20	[-6]	e 29 46	?	—	—
Toledo	—	134.3	325	e 19 14	[-15]	e 29 21	?	—	77.4
Granada	—	135.8	323	i 19 15	[-17]	—	—	70.1	78.1
San Fernando	Z.	137.9	324	—	—	—	—	—	89.3
La Paz	—	141.8	123	19 28	[-15]	—	—	—	—
Rio de Janeiro	Z.	152.1	165	e 25 4	?	—	—	—	—

Additional readings: Riverview +11m.6s., +12m.23s., +12m.44s., and +12m.59s., eL = +16.2m., MN = +19.2m., Sydney SR₁ = +15m.22s. Adelaide i = +11m.7s. and +13m.32s., MN = +19.6m., Melbourne i = +6m.56s., SR₁ = +14m.29s., Batavia i = +9m.9s., Perth PR₁ = +8m.39s., SR₁ = +15m.39s., SR₁ = +16m.14s., Koti e = +7m.53s., ePR₁ = +9m.30s., eSN = +13m.28s., eE = +16m.10s. = SR₁ + 22s., Kobe iPR₁N = +9m.26s., Osaka MN = +13.1m., Hong Kong i = +9m.36s., Phu-Lien 11h.42m.0s., Dehra Dun S = +14m.4s. ? = PR₁ - 18s., Tashkent i = +23m.1s. = Z - 2s., Tananarive eE = +23m.42s. = [S] - 17s., e = +25m.41s. = PS - 31s., +31m.17s. = SR₁ + 14s., and +31m.53s., Baku PR₁ = +17m.15s., PPS = +26m.37s., Pulkovo PR₁ = +18m.26s., ScPcPcS = +25m.17s., SR₁ = +33m.58s., Ksara LN = +34.1m., Helisingfors PR₁ = +13m.37s., PR₁ = +21m.33s., ScPcPcS = +25m.37s., S = +26m.2s., PS = +27m.56s., PPS = +29m.0s., SR₁ = +34m.33s., Konigsberg eE = +20m.4s. ? and +23m.55s., eEN = +25m.7s., eE = +26m.4s. ?, eN = +26m.44s., eE = +27m.46s. and +28m.29s., eN = +29m.18s., eE = +29m.23s., Vienna i = +26m.19s., Zagreb e = +23m.1s. = PR₁ - 33s., +25m.32s. = [S] - 10s. and +26m.21s., Florissant iE = +20m.13s. = PR₁ - 7s. and +26m.32s., eEN = +29m.52s., eE = +31m.57s., and +34m.27s., eLN = +57.6m., Feldberg iN = +18m.44s. = [P] - 10s., and +20m.14s. = PR₁ - 17s., eN = +30m.5s. = PS - 48s., and +37m.16s. = SR₁ + 18s., De Bilt eZ = +18m.51s. = [P] - 5s., e = +20m.22s. = PR₁ - 14s., +22m.58s. and +30m.10s. = PS - 48s., MN = +65.2m., MZ = +73.1m., Strasbourg i = +20m.28s. = PR₁ - 12s., e = +23m.4s. ? and +31m.4s. ? = PS - 3s., Florence e = +20m.36s. = PR₁ - 6s. and +23m.4s., Kew eZ = +20m.45s. = PR₁ - 7s., and +23m.25s., eEN = +31m.22s. = PS - 4s., Oxford i = +24m.25s. = PR₁ + 4s., and +31m.22s. = PS - 6s., Ottawa e = +31m.4s., eE = +38m.40s., Georgetown iZ = +21m.17s. = PR₁ - 4s., and +22m.24s., PSZ = +32m.4s., Harvard i = +22m.34s., Algiers PR₁ ? = +22m.26s., Toledo PR₁NW = +22m.48s., MNW = +73.4m., Granada PR₁ = +21m.58s., San Fernando MN = +87.0m., La Paz PR₁E ? = +22m.43s.

June 12d. 14h. 30m. 4s. Epicentre 25°5N. 98°0E. (as on 10d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	9.2	119	e 2 17	—	—	—	4.9	—
Calcutta	E. 9.3	254	3 54	IS	(3 54)	-16	(5.6)	—
	N. 9.3	254	e 4 10	IS	(e 4 10)	0	(5.7)	—
Hong Kong	15.1	99	6 36	IS	(6 36)	+2	8.3	9.3
Dehra Dun	18.3	290	7 56?	IS	(7 56?)	+9	13.9	15.9
Hyderabad	19.9	250	8 30	IS	(8 30)	+9	—	14.3
Taihoku	E. 21.3	86	—	—	—	—	e 11.5	—
Zi-ka-wei	Z. 21.3	69	e 4 54	-3	8 46	-4	—	12.7
Manila	24.1	112	e 5 36	+7	—	—	—	—
Bombay	24.2	259	(5 55)	+25	(9 21)	-27	(11.0)	(12.6)

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	24.7	321	5 35	0	9 59	+ 2	—	—
Andijan	26.0	311	5 47	- 1	10 34	+12	—	—
Irkutsk	27.2	8	e 5 48	-12	10 24	-21	i 14.6	15.0
Tashkent	28.5	311	e 6 5	- 8	e 10 50	-18	e 15.9	17.8
Samarkand	29.5	306	e 6 13	-10	—	—	—	—
Batavia	32.9	165	—	—	—	—	e 17.9	—
Baku	42.5	305	e 8 8	- 7	e 15 12	+30	22.9	31.6
Kucino	52.5	321	—	—	e 16 50	0	e 25.5	29.6
Ksara	53.8	295	e 8 56?	-36	17 14	+ 8	23.3	—
Pulkovo	57.0	326	i 9 56	+ 4	e 17 52	+ 6	28.9	—
Helsingfors	59.7	326	—	—	—	—	e 32.4	—
Copenhagen	66.8	323	—	—	—	—	35.9	—
Strasbourg	71.4	316	—	—	—	—	37.9	—
De Bilt	71.8	320	—	—	e 24 56?	?	e 38.9	40.5
Uccle	72.7	319	—	—	—	—	e 39.9	—
Scoresby Sund	75.3	344	—	—	—	—	35.9	—

Additional readings and notes: Calcutta gives S as P and L as S., also LE = +7.1m., LN = +7.3m. Hong Kong MN = +8.4m. Dehra Dun S = +9m.56s. ? Bombay readings have been *diminished* by 4m. Tashkent i = +8m.8s. Kucino e = +10m.56s. and +20m.56s. = SR₁ + 2s. De Bilt eLN = +37.9m.

June 12d. Readings also at 0h. (near Samarkand), 2h. (Suva and Riverview), 3h. (Baku, Pulkovo, Tashkent, and Florissant), 5h. (Matuyama and near Nagasaki (2)), 6h. (Nagoya), 7h. (Ksara (2) and near La Paz), 11h. (Almata and Andijan), 18h. (Florissant), 19h. (Almata, Andijan, and Samarkand), 21h. (Dehra Dun), 23h. (La Paz).

June 13d. 0h. 12m. 9s. (I)
 0h. 14m. 7s. (II)
 0h. 25m. 45s. (III) } Epicentre 45°·5N. 151°·2E.
 (as on June 9d.).

A = -.614, B = +.338, C = +.713; D = +.482, E = +.876;
 G = -.625, H = +.344, K = -.701.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Sapporo	7.4	254	2 1	+ 9	3 39	+18	—	—
I Muroran	8.0	250	1 48	-13	3 24	-13	—	—
I Morioka	9.4	236	2 25	+ 3	4 7	- 6	—	—
I Mizusawa	E. 9.8	233	2 31	+ 4	4 15	- 8	—	—
I	N. 9.8	233	2 33	+ 6	4 14	- 9	—	—
III	E. 9.8	233	2 39	+12	4 22	- 1	—	—
I Akita	10.0	239	e 2 39	+ 9	4 26	- 3	6.3	10.8
III	10.0	239	e 2 43	+13	(4 33)	+ 4	4.5	5.4
I Tokyo	13.1	225	3 22	+ 8	6 0	+14	—	—
I Nagoya	14.9	231	e 3 48	+10	6 57	+27	9.6	—
III	14.9	231	e 3 49	+11	6 51	+21	9.2	—
I Toyooka	15.9	237	e 3 52	+ 1	e 6 56	+ 3	e 9.0	13.9
I Osaka	16.1	233	3 53	0	(6 7)	-50	6.1	12.1
III	16.1	233	4 7	+14	—	—	7.5	10.2
I Kobe	16.3	234	4 4	+ 8	7 15	+13	e 9.2	13.2
II	16.3	234	3 59	+ 3	7 33	+31	—	13.3
III	16.3	234	e 4 2	+ 6	1 7 19	+17	e 8.4	12.5
I Sumoto	16.7	234	4 3	+ 2	7 37	+26	10.3	15.2
I Muroto	17.9	233	e 4 24	+ 8	e 7 59	+21	e 11.7	—
I Kofu	18.0	235	e 4 18	+ 1	e 7 52	+12	—	10.4
II	18.0	235	e 4 19	+ 2	e 7 55	+15	—	10.4
III	18.0	235	e 4 23	+ 6	7 55	+15	9.8	12.2
I Hukuoka	19.8	240	4 40	+ 1	8 30	+11	10.0	16.2
I Miyazaki	20.5	235	4 50	+ 3	8 43	+ 9	—	—

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
				m. s.	s.	m. s.	s.	m.	m.
I	Nagasaki	20.8	240	e 4 52	+ 1	e 8 54	+14	—	—
II		20.8	240	e 4 53	+ 2	e 8 53	+13	e 10.3	12.7
III		20.8	240	e 4 50	- 1	e 8 58	+18	e 10.8	11.3
I	Zi-ka-wei	27.1	249	1 5 51	- 8	10 34	- 9	—	—
III		27.1	249	—	—	10 46	+ 3	14.8	17.4
I	Taihoku	F. 31.4	239	—	—	e 11 51	- 7	—	—
I	Hong Kong	37.9	244	e 7 30	- 7	13 31	- 6	18.5	28.8
I	Manila	40.0	230	e 7 47	- 8	14 11	+ 4	19.1	31.1
I	Phu-Lien	43.9	252	e 8 17	- 8	e 14 59	- 2	20.8	26.2
III		43.9	252	8 15	-10	—	—	—	28.3
I	Sitka	N. 45.0	48	e 14 51	iS	(e 14 51)	-24	—	—
III		N. 45.0	48	—	—	i 15 7	- 8	e 28.6	28.9
I	Honolulu T.H.	E. 48.0	103	e 9 9	+15	115 40	-14	21.3	—
II		48.0	103	—	—	i 15 43	-11	—	—
III		E. 48.0	103	—	—	i 15 41	-13	22.1	—
III		N. 48.0	103	—	—	i 15 46	- 8	21.7	—
I	Almata	51.1	297	9 15	+ 1	—	—	38.8	—
I	Victoria	55.3	54	9 49	+ 8	17 19	- 6	26.8	41.7
I	Calcutta	E. 55.3	269	9 50	+ 9	18 2	?PS	31.0	—
I		N. 55.3	269	9 45	+ 4	17 53	+28	31.1	—
I	Andijan	55.6	296	9 44	+ 1	—	—	29.9	—
I	Tashkent	57.0	299	i 9 54	+ 2	i 17 48	+ 2	31.9	37.9
I	Dehra Dun	57.6	283	9 51?	- 5	18 51?	?PS	30.8	49.8
I	Samarkand	59.4	299	e 10 12	+ 4	—	—	—	—
I	Berkeley	61.9	65	e 10 27	+ 3	e 18 52	+ 5	—	—
III		61.9	65	i 10 35	+11	e 18 52	+ 5	—	—
I	Lick	E. 62.6	65	e 10 35	+ 6	e 18 55	- 1	—	—
I		N. 62.6	65	e 10 34	+ 5	e 19 0	+ 4	—	—
II		E. 62.6	65	e 10 34	+ 5	—	—	—	—
II		N. 62.6	65	e 10 37	+ 8	—	—	—	—
III		E. 62.6	65	e 10 36	+ 7	e 18 57	+ 1	—	—
III		N. 62.6	65	e 10 34	+ 5	e 19 1	+ 5	—	—
I	Scoresby Sund	63.9	358	i 10 41	+ 4	19 20	+ 8	—	—
II		63.9	358	e 10 42	+ 5	18 35	-37	—	—
III		63.9	358	i 10 38	+ 1	19 16	+ 4	—	—
I	Pulkovo	64.2	332	i 10 41	+ 2	19 14	- 1	32.8	49.4
I	Kucino	64.3	325	10 43	+ 3	19 16	- 1	—	37.0
I	Batavia	65.0	230	i 10 47	+ 2	i 19 32	+ 7	e 42.8	—
II		65.0	230	i 10 48	+ 3	—	—	—	—
III		65.0	230	i 10 48	+ 3	—	—	29.3	—
I	Hyderabad	65.6	274	10 50	+ 1	19 37	+ 5	35.6	44.1
I	Helsingfors	65.6	335	e 10 50	+ 1	e 19 25	- 7	e 33.4	34.8
II		65.6	335	e 10 56	+ 7	e 19 41	+ 9	—	—
III		65.6	335	e 10 44	- 5	e 19 25	- 7	e 34.7	—
I	Upsala	68.0	337	e 11 4	0	e 19 54	- 8	e 31.9	40.5
II		68.0	337	e 11 6	+ 2	—	—	i 32.9	—
III		68.0	337	e 11 2	- 2	—	—	e 34.2	40.6
I	Bombay	68.6	275	11 10	+ 2	20 20	+11	36.6	59.2
I	Baku	69.0	308	i 11 17	+ 6	i 20 26	+12	35.4	—
I	Bergen	70.5	344	i 11 51?	+31	e 20 41	+ 9	—	47.9
II		70.5	344	i 11 17	- 3	—	—	—	—
III		70.5	344	i 11 15	- 5	e 20 15?	-17	—	—
I	Denver	71.0	53	e 14 5	?PR ₁	e 20 33	- 5	—	—
III		71.0	53	e 11 43	+20	e 20 34	- 4	—	—
I	Kodaikanal	71.3	268	14 27	?PR ₁	—	—	34.5	61.8
I	Konigsberg	71.3	333	e 11 30	+ 5	e 21 34	[+13]	e 37.8	47.8
II		71.3	333	e 11 30	+ 5	e 21 31	[+10]	—	—
III		71.3	333	—	—	i 21 45	[+24]	—	—
III	Colombo	72.0	265	—	—	20 49	- 1	—	52.7
I	Tucson	E. 72.7	62	11 34	0	20 58	0	e 31.6	—
I		N. 72.7	62	11 38	+ 4	20 58	- 2	e 31.5	—
III		E. 72.7	62	e 12 7	+33	20 55	- 3	e 33.5	—
III		N. 72.7	62	e 11 56	+22	20 58	0	28.9	—

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Copenhagen	73-0	338	i 11 37	+ 1	21 3	+ 1	35-9	—
II		73-0	338	i 11 37	+ 1	21 5	+ 3	—	—
III		73-0	338	11 33	- 3	20 59	- 3	—	—
I	Theodosia	73-2	320	e 11 41	+ 4	—	—	e 34-3	—
I	Simferopol	73-8	320	11 45	+ 4	—	—	e 46-9	—
I	Yalta	74-2	320	e 11 45	+ 2	—	—	45-7	—
I	Lemberg	74-2	327	e 10 15	-88	—	—	e 44-1	59-7
III		74-2	327	—	—	e 21 21	+ 5	—	—
I	Sebastopol	74-3	320	e 11 51	+ 7	—	—	39-2	—
I	Dyce	74-9	346	i 11 50	+ 2	i 21 19	- 6	e 40-4	—
II		74-9	346	11 51	+ 3	—	—	—	—
III		74-9	346	—	—	—	—	e 35-4	49-6
I	Hamburg	75-6	338	11 51	- 2	e 21 36	+ 3	e 35-4	54-8
II		75-6	338	i 11 53	0	—	—	—	—
III		75-6	338	e 11 9	-44	e 21 32	- 1	—	—
I	Edinburgh	76-3	345	—	—	i 21 56	[- 2]	45-8	65-3
III		76-3	345	—	—	i 21 57	[- 1]	—	—
I	Gottingen	77-4	337	e 12 5	+ 2	e 21 53	0	e 37-4	54-8
II		77-4	337	e 12 7	+ 4	—	—	—	—
III		77-4	337	e 12 3	0	e 21 55	+ 2	—	—
I	Jena	E. 77-5	336	i 12 3	- 1	e 22 3	+ 8	e 39-8	53-3
II		N. 77-5	336	i 12 4	0	e 22 8	+13	e 39-8	67-3
III		77-5	336	i 12 6	+ 2	—	—	—	—
III		E. 77-5	336	i 12 6	+ 2	e 22 27	+32	e 26-2	39-8
III		N. 77-5	336	i 12 5	+ 1	e 22 3	+ 8	e 26-2	53-8
III		Z. 77-5	336	i 12 0	- 4	e 22 15	+20	e 29-2	49-2
I	Cheb	78-0	335	e 12 6	- 1	e 22 2	+ 2	e 41-9	51-9
I	De Bilt	78-1	340	i 12 3	0	22 2	+ 1	e 37-9	58-1
II		78-1	340	i 12 3	0	—	—	—	—
III		78-1	340	i 12 3	0	e 22 5	+ 4	—	—
I	Stonyhurst	78-1	345	e 12 9	+ 1	i 22 15	+14	—	—
III		78-1	345	11 16†	-52	i 22 13	+12	—	50-6
I	Chicago	E. 78-2	41	12 18	+10	20 58	-64	—	—
II		N. 78-2	41	12 10	+ 2	22 3	+ 1	—	—
III		E. 78-2	41	—	—	21 51	-11	35-4	—
III		N. 78-2	41	—	—	21 50	-12	41-9	—
I	Vienna	78-3	331	e 12 8	- 1	22 7	+ 3	e 39-5	51-8
II		78-3	331	i 12 10	+ 1	—	—	—	—
III		78-3	331	i 12 4	- 5	21 57	- 7	e 43-3	52-3
I	Bidston	78-7	345	12 10	- 1	22 5	- 3	35-5	63-4
I	Feldberg	N. 79-0	339	e 12 4	- 9	e 21 57	-15	—	61-1
II		N. 79-0	339	e 12 5	- 8	—	—	—	—
III		N. 79-0	339	e 12 2	-11	—	—	—	—
I	Florissant	79-2	45	e 12 12	- 2	i 22 8	- 6	—	—
II		E. 79-2	45	e 12 14	0	e 22 9	- 5	—	—
III		79-2	45	e 12 11	- 3	e 22 3	-11	—	—
I	Riverview	79-3	180	i 12 26	+11	i 22 9	- 6	e 36-4	50-0
III		79-3	180	—	—	i 22 9	- 6	—	—
I	Graz	79-5	331	i 12 14	- 2	i 22 14	- 4	30-9	62-6
II		79-5	331	i 12 19	+ 3	—	—	—	—
III		79-5	331	i 12 23	+ 7	—	—	—	—
I	Ann Arbor	79-5	38	e 12 27	+11	e 22 15	- 3	e 43-7	70-4
II		79-5	38	e 12 29	+13	—	—	—	—
III		79-5	38	e 12 33	+17	i 22 15	- 3	—	—
I	St. Louis	E. 79-5	45	—	—	e 22 10	- 8	—	55-8
II		E. 79-5	45	—	—	e 22 10	- 8	—	—
III		F. 79-5	45	—	—	i 21 9	-69	—	—
I	Uccle	79-5	340	e 12 12	- 4	e 22 16	- 2	37-8	58-6
II		79-5	340	i 12 13	- 3	—	—	—	—
III		79-5	340	12 9	- 7	i 22 15	- 3	—	—
I	Belgrade	N. 79-8	326	e 12 15	- 3	e 22 15	- 6	e 42-3	—
II		N. 79-8	326	e 12 17	- 1	—	—	—	—
III		N. 79-8	326	e 12 15	- 3	e 22 19	- 2	e 28-6	—
I	Oxford	79-9	344	i 12 15	- 3	22 13†	- 9	e 40-5	69-9
II		79-9	344	i 12 20	+ 2	—	—	—	—
III		79-9	344	—	—	i 22 18	- 4	—	—

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	o.	o.	m. s.	s.	m. s.	s.	m.	m.
I Kew	80-0	343	i 12 17	- 2	22 19	- 4	—	49-4
II	80-0	343	i 12 18	- 1	—	—	—	—
III	80-0	343	i 12 17	- 2	22 22	- 1	—	43-6
I Hohenheim	80-1	336	e 12 18	- 2	e 22 21	- 3	42-8	47-8
III	80-1	336	—	—	e 22 21	- 3	—	—
I Karlsruhe	80-1	337	12 22	+ 2	i 22 47	+23	e 47-8	—
III	80-1	337	—	—	i 22 37	+13	—	—
I Ottawa	80-1	30	e 12 16	- 4	i 22 16	- 8	e 36-8	64-3
III	80-1	30	—	—	i 22 17	- 7	—	—
I Toronto	80-2	35	e 12 16	- 4	e 22 14	-11	44-2	53-3
III	80-2	35	—	—	i 22 15	-10	—	—
I Zagreb	80-5	330	e 12 22	0	e 22 24	- 5	e 40-1	—
II	80-5	330	e 12 30	+ 8	—	—	e 41-4	—
III	80-5	330	e 12 22	0	e 22 24	- 5	—	—
I Innsbruck	80-7	334	e 12 21	- 2	—	—	—	—
II	80-7	334	i 12 38	+15	—	—	—	—
III	80-7	334	12 20	- 3	e 22 27	- 4	e 32-2	52-8
I Strasbourg	80-7	337	i 12 19	- 4	i 22 26	- 5	41-9	62-3
II	80-7	337	i 12 21	- 2	—	—	—	—
III	80-7	337	i 12 16	- 7	i 22 22	- 9	—	—
I Ravensburg	80-8	336	e 12 20	- 4	e 22 31	- 2	e 40-8	46-8
II	80-8	336	—	—	i 22 46	+13	—	—
III	80-8	336	—	—	i 22 44	+11	—	—
I Adelaide	81-3	191	e 13 56?	+89	22 26	-12	e 40-6	61-9
III	81-3	191	—	—	i 22 30	- 8	—	—
I Ksara	81-5	312	12 27	- 1	22 37	- 4	42-8	—
II	81-5	312	12 29	+ 1	—	—	—	—
III	81-5	312	12 31	+ 3	22 38	- 3	—	—
I Zurich	81-5	335	e 12 27	- 1	e 22 35	- 6	—	—
II	81-5	335	e 12 28	0	e 22 30	-11	—	—
III	81-5	335	e 12 21	- 7	e 22 36	- 5	—	—
I Chur	81-7	336	e 12 27	- 2	22 40	- 3	—	—
II	81-7	336	e 12 23	- 6	i 22 42	- 1	—	—
III	81-7	336	e 13 11	+42	e 22 41	- 2	—	—
I Paris	81-8	341	i 12 28	- 1	i 22 40	- 4	39-8	58-8
II	81-8	341	i 12 29	0	—	—	—	—
III	81-8	341	i 12 29	0	i 22 41	- 3	—	—
I Venice	82-0	332	e 12 18	-12	22 42	- 4	—	—
III	82-0	332	i 12 15	-15	e 22 59	+13	—	—
I Neuchatel	82-3	338	i 12 29	- 3	22 45	- 4	—	—
II	82-3	338	e 12 30	- 2	e 22 47	- 2	—	—
III	82-3	338	e 12 25	- 7	e 22 40	- 9	—	—
I Besançon	82-4	337	e 12 25	- 7	e 22 48	- 2	39-9	—
II	82-4	337	i 12 33	+ 1	—	—	—	—
III	82-4	337	12 21	-11	22 47	- 3	—	—
I Melbourne	83-4	185	—	—	22 51	-10	40-9	—
II	83-4	185	—	—	i 22 53	- 8	—	—
III	83-4	185	—	—	22 55	- 6	42-1	45-1
I Moncalleri	83-9	335	12 41	0	23 10	+ 2	32-7	51-7
I Florence	83-9	332	i 12 38	- 3	e 23 21	+13	42-8	48-6
II	83-9	332	i 12 38	- 3	—	—	—	—
III	83-9	332	i 12 34	- 7	22 55	-13	—	—
I Harvard	84-4	30	e 12 43	- 1	i 22 59	-12	—	—
III	84-4	30	e 12 45	+ 1	i 22 59	-12	—	—
I Fordham	84-7	34	e 22 37	†[S]	(e 22 37)	[-17]	39-5	49-5
II	84-7	34	—	—	e 23 5	-11	—	—
III	84-7	34	—	—	22 51	[- 3]	—	—
I Georgetown	85-1	36	12 46	- 3	23 20	0	e 36-9	71-9
II	85-1	36	i 13 4	+15	i 24 24	†PS	—	—
I Charlottesville E.	85-3	38	—	—	i 23 13	- 9	e 45-9	—
III	85-3	38	—	—	i 23 13	- 9	—	—
I Pompeii	85-4	329	e 12 51	+ 1	e 23 31	+ 8	42-9	52-9
I Naples	85-5	329	e 13 29	+38	e 24 4	+39	47-9	57-9
I Helwan	87-0	311	12 53	- 6	23 22	[+13]	—	70-2

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Barcelona	88.8	337	—	—	e 23 35	[+14]	37.4	57.4
I	Wellington	E. 89.3	164	—	—	i 23 45	-21	42.8	60.3
I		N. 89.3	164	—	—	i 23 21	[-3]	44.3	66.5
III		E. 89.3	164	—	—	i 23 23	[-1]	—	—
III		N. 89.3	164	—	—	i 23 25	[+1]	—	—
I	Tortosa	N. 89.8	339	13 8	-7	23 55	? Z	—	67.2
III		E. 89.8	339	—	—	23 52	? Z	—	60.1
I	Toledo	91.8	342	e 13 10	-16	e 23 58	[+19]	e 42.5	72.4
I	Alicante	92.4	339	e 13 23	-6	e 24 33	-6	e 37.5	59.3
III		92.4	339	—	—	e 23 55	[+13]	—	—
I	Algiers	92.9	335	e 13 15	-17	24 25	-19	45.9	72.9
II		92.9	335	13 19	-13	24 25	-19	—	—
III		92.9	335	e 12 47	-45	24 8	? Z	—	—
I	Granada	94.2	341	i 13 27	-12	—	—	49.6	63.9
I	Almeria	94.3	340	—	—	e 24 18	? Z	43.9	—
I	Malaga	94.9	341	e 23 51	?[S]	(e 23 51)	[-5]	—	—
I	San Fernando	95.6	343	12 6	-101	24 6	[+6]	48.1	56.6
I	Entebbe	109.6	291	—	—	25 11	[+3]	—	74.1
I	Tananarive	112.8	266	—	—	—	—	59.6	66.3
III		112.8	266	18 37	[+7]	25 57	[+36]	—	—
I	La Paz	136.3	60	i 19 33	[0]	26 21	[-1]	75.8	92.6
III		136.3	60	i 19 46	[+13]	—	—	—	—
I	Sucre	140.0	60	e 19 29	[-10]	—	—	68.2	78.7
I	Cape Town	142.4	271	—	—	—	—	—	99.4
I	Rio de Janeiro	154.6	32	e 21 15	?	—	—	e 57.8	—
I	La Plata	155.6	74	—	—	—	—	83.4	—

Additional readings and notes: Mizusawa III SN = +4m.13s. Akita III
 MZ = +5.5m., MN = +5.7m. Toyooka i eSN = +6m.59s., MN = +11.3m.
 II ePR₁N = +3m.53s. Kobe i MN = +10.9m., II MN = +12.4m., MZ =
 +13.6m., III iPN = +4m.8s., MNZ = +10.4m. Sumoto i MNZ =
 +14.5m. Hukuoka i MN = +14.4m., III ME = +14.5m. Nagasaki III
 MNZ = +13.0m. Zi-ka-wei i SZ? = +10m.51s., SR₁E = +11m.18s.,
 SR₂E = +13m.10s., iE = +17m.18s., iN = +17m.51s., III LN = +15.1m.,
 MN = +17.0m. Hong Kong i PR₁ = +8m.49s., SR₁ = +15m.31s., MN =
 +35.4m. Manila gives Epicentre 47°1N, 153°7E.; T₁ 0h.11m.4s.
 Sitka i PR₁ = +15m.1s., PR₂ = +18m.32s. = PR₁ + 2s., eSN = +26m.25s.,
 III iSR₁E = +15m.27s., iSR₂N = +18m.32s., iSR₃E = +18m.43s. = SR₁ + 13s.,
 iN = +23m.37s., iLE = +29.1m., ME = +29.2m. Honolulu T.H. i ePR₁ =
 +10m.51s., iSN = +15m.45s., LN = +21.7m., II SR₁N = +15m.25s. = S - 29s.
 III SR₁E = +19m.5s. Victoria i LN = +28.5m., MN = +41.8m.; T₁
 0h.12m.34s. Berkeley III ePR₁N = +12m.50s., ePR₂N = +14m.51s.,
 eSE = +17m.51s., eN = +26m.9s. = SR₂ + 19s., eEZ = +40m.15s. Lick i
 ePEN = +6m.32s., III eSN = +13m.37s. = PR₁ + 15s. Batavia i =
 +10m.54s., i = +11m.1s., III i = +21m.9s. Hyderabad III MN = +41.7m.
 Helsingfors i PR₂ = +14m.50s., e = +20m.23s. = [S] - 14s., eN = +20m.58s.,
 II e = +20m.46s. = [S] + 8s. = +23m.20s. and +23m.41s. Uppsala i eE =
 +21m.0s. = [S] + 3s., eN = +21m.16s. = [S] - 19s., MN = +42.3m., III MN =
 +47.0m. Bergen i eP = +9m.45s. Denver III ePR₁E = +14m.24s.
 Konigsberg i eE = +12m.6s., ePR₁E = +15m.8s., ePR₂N = +16m.15s., eE =
 +17m.44s., eN = +17m.48s., II eN = +16m.19s. = PR₁ + 2s., eN = +19m.44s.
 eE = +19m.52s., III iE = +21m.30s., E = +22m.6s., MN = +46.2m. Tucson
 i eSR₁E = +25m.59s., III eSR₁E = +24m.0s., eSR₂E = +30m.9s. Copen-
 hagen i = +21m.59s. = [S] + 25s., II PS = +22m.5s., III PS = +22m.1s. Ham-
 burg i MZ = +44.8m., MN = +63.4m. Göttingen i ePN = +12m.4s.,
 eSN = +21m.41s., eLN = +41.2m., eLZ = +43.4m., MZ = +60.4m., MN =
 +61.4m., II ePZ = +12m.3s., III ePZ = +12m.0s. Jena II iZ = +12m.4s.,
 III eE = +21m.45s. De Bilt i SR₁ = +27m.41s., MN = +63.2m., MZ =
 +63.4m. Stonyhurst III SR₁ = +27m.50s. Chicago III eSR₁E =
 +29m.3s. Vienna i PR₁ = +15m.44s., III PS = +22m.46s. Feldberg II
 eN = +12m.7s., III eN = +12m.8s., iN = +18m.21s. Florissant i eSR₁N =
 +27m.21s., III ePR₂Z = +15m.13s. = PR₁ - 29s. Riverview i eSR₁ =
 +27m.39s., MN = +54.4m., III i = +22m.22s. Graz i MN = +51.9m.
 Ann Arbor i eLN = +15m.33s. = PR₁ - 12s., eLN = +42.9m., III e =
 +27m.39s. = SR₁ - 26s. Uccle i MN = +59.1m. Kew i eSR₁N =
 +28m.7s., MN = +49.4m., MZ = +49.9m., III SR₁N = +28m.15s.?, MN =
 +51.3m., MZ = +56.8m.; epicentre 47°1N, 153°7E. Ottawa i MN =
 +59.9m.; T₁ = 0h.12m.23s. Toronto i MN = +61.7m., III iEN =
 +22m.30s. Zagreb i e = +12m.40s., III e = +18m.42s., +32m.16s. and
 +33m.59s. Strasbourg i MZ = +62.6m., MN = +69.1m., III e =

Continued on next page.

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+18m.59s. Ravensburg i iS = +22m.44s. Adelaide i e = +21m.45s.,
 MN = +58.6m. Paris i MN = +59.8m. Melbourne III i = +18m.15s. =
 PR₁ - 3s. Moncalieri i MN = +66.1m. Florence i i = +13m.11s.,
 III i = +13m.40s. Fordham i iP = +23m.3s. = S-13s., e = +23m.30s.
 Charlottesville i iSN = +23m.15s., eLN = +46.7m., III eE = +27m.15s.,
 eN = +29m.7s. = SR₁ - 20s. Barcelona i PS = +23m.53s. Tortosa
 i SE = +23m.56s., III LN = +23m.55s. = E-3s.: epicentre 47° 1N. 153° 7E.
 Toledo i MNW = +72.3m. Alicante i MN = +55.4m. Granada i iP =
 +13m.29s., PR₁ = +17m.19s., i = +17m.47s. = PR₁ + 11s., and +28m.8s.
 Malaga i eS = +24m.27s. San Fernando MN = +76.0m. Tananarive i
 ePSE = +29m.6s., III eE = +19m.54s. = PR₁ + 18s., e = +29m.15s. =
 PS - 14s., SR₁E = +35m.12s., e = +39m.33s. La Paz i PR₁E = +23m.4s.,
 i = +36m.47s., SR₁E = +42m.12s., LN = +72.8m., MN = +82.0m. Sucre i
 iN = +22m.38s. = PR₁ + 4s. Rio de Janeiro i eN = +21m.21s.

June 13d. 9h. 24m. 23s. Epicentre 8° 3N. 126° 9E.

(as given by Manila).

A = -594, B = +791, C = +144; D = +800, E = +600;
 G = -087, H = +115, K = -990.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	e 2 19	+ 9	14 2	+ 9	—	—
Ambolina	12.0	174	2 23	-36	—	—	—	—
Taihoku	E. 17.5	344	e 4 20	+ 9	(7 33)	+ 4	7.6	8.2
Hong Kong	18.6	320	4 30	+ 6	8 4	+11	9.1	11.8
Phu-Lien	23.2	305	1 5 18	- 1	e 9 17	-12	11.6	16.6
Zi-ka-wei	23.5	348	1 5 23	0	9 35	0	—	35.8
Titizima	23.7	36	5 28	+ 3	9 1	-37	—	—
Nagasaki	24.6	6	5 34	0	10 23	+28	12.3	17.8
Batavia	24.7	235	e 5 30	- 5	10 24	+27	18.2	—
Hukuoka	25.5	7	5 46	+ 3	10 54	+41	14.4	15.3
Muroto	25.8	14	5 47	+ 1	e 9 32	-46	e 12.3	—
Koti	26.0	13	e 5 48	0	10 28	+ 6	e 10.9	14.8
Sumoto	27.1	15	5 58	- 1	10 45	+ 2	—	14.0
Kobe	27.4	15	e 5 56	- 6	10 53	+ 5	13.4	18.5
Osaka	27.6	16	5 46	- 8	(10 30)	-22	10.5	12.3
Toyooka	28.2	14	1 6 7	- 3	e 11 3	0	e 12.6	—
Nagoya	28.4	18	e 6 11	- 1	9 53	-73	14.3	—
Tokyo	29.8	21	6 11	-15	—	—	—	—
Hukushima	31.9	20	6 40	- 6	12 37	+30	—	—
Mizusawa	E. 33.4	22	6 56	- 4	12 18	-12	17.2	—
	N. 33.4	22	6 55	- 5	12 19	-11	16.2	—
Akita	33.6	20	1 6 57	- 4	—	—	15.8	23.2
Sapporo	37.0	19	7 25	- 5	13 1	-23	—	—
Calcutta	E. 39.6	296	7 48	- 3	14 16	+16	21.8	—
	N. 39.6	296	7 54	+ 3	14 26	+26	22.0	—
Perth	41.6	194	8 2	- 6	14 7	-22	19.2	—
Adelaide	44.6	166	1 8 23	- 7	i 15 33	+23	i 21.6	27.1
Irkutsk	47.7	342	—	—	—	—	26.6	32.4
Riverview	48.0	152	e 9 1	+ 7	i 15 54	0	e 23.4	33.5
Sydney	48.0	152	9 7	+13	16 7	+13	19.6	20.1
Hyderabad	48.0	287	8 52	- 2	15 56	+ 2	24.4	32.2
Kodalkanal	48.8	276	9 37	+38	—	—	11.4	36.0
Melbourne	49.1	161	9 9	+ 8	16 9	+ 2	22.1	27.4
Dehra Dun	50.6	305	9 7	- 4	16 17	- 9	21.6	30.6
Bombay	53.4	288	9 36	+ 7	17 10	+ 9	29.3	40.2
Almata	55.7	318	9 50	+ 6	18 2	+32	—	—
Suva	E. 57.3	119	—	—	i 17 19	-31	i 27.7	—
	N. 57.3	119	9 37	-17	i 17 25	-25	i 29.3	32.5
Andijan	57.9	314	e 10 8	+10	e 18 6	+ 8	—	—
Tashkent	60.5	314	i 10 22	+ 6	—	—	—	—
Samarkand	61.8	313	10 32	+ 8	18 53	+ 7	—	—
Wellington	E. 66.2	142	11 12	+19	i 19 59	+19	i 32.2	35.2
	N. 66.2	142	11 11	+18	i 19 57	+17	34.4	42.6

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		m. s.	m. s.	m. s.	s.	m. s.	s.	m.	m.
Christchurch		66.3	145	—	—	i 20 26	+45	—	37.5
Honolulu T.H.	E.	73.4	70	i 11 53	+15	i 21 23	+16	34.1	—
	N.	73.4	70	i 11 2	-36	i 21 20	+13	e 35.6	—
Baku		74.7	311	i 11 53	+6	i 21 28	+6	—	—
Kucino		82.6	326	i 12 37	+3	22 52	-1	34.7	52.2
Tananarive		82.8	250	12 55	+20	23 9	+14	39.6	46.1
Theodosia		85.2	316	12 51	+2	e 23 21	0	45.9	—
Simferopol		88.1	315	12 52	-2	—	—	45.9	—
Yalta		86.1	315	12 57	+3	e 23 37	+6	45.9	—
Pulkovo		86.1	330	i 12 53	-1	23 29	-2	37.6	53.6
Ksara	N.	86.2	304	12 53	-1	23 23	-9	37.6	—
Sebastopol		88.4	315	12 59	+4	—	—	45.6	—
Sitka	E.	87.2	33	i 13 13	+13	i 24 5	+22	i 43.8	47.7
	N.	87.2	33	e 13 12	+12	e 24 1	+18	e 43.9	37.9
Helsingfors		88.6	331	e 13 7	-1	23 54	-5	e 39.1	—
Helwan		90.7	300	i 13 12	-8	24 12	-9	—	54.5
Lemberg	E.	91.8	321	e 13 25	-1	e 24 1	-32	e 46.9	59.6
	N.	91.8	321	e 13 31	+5	e 24 19	-14	e 45.5	57.4
Upsala		92.3	332	e 13 21	-8	e 24 11	-27	e 40.6	57.9
Konigsberg		92.5	326	e 13 16	-14	e 24 19	-21	e 41.6	57.6
Entebbe		94.4	273	13 37?	-3	24 37?	-23	—	54.6
Belgrade	N.	95.6	318	e 13 46	-1	e 25 23	+11	e 46.8	—
Copenhagen		96.5	330	13 41	-11	24 46	-35	41.6	—
Victoria	E.	96.6	39	13 54	+2	26 14	?PS	44.8	45.9
	N.	96.6	39	13 54	+2	26 36	?PS	40.2	40.8
Vienna		97.1	322	13 45	-10	24 25	[+17]	e 44.6	64.6
Bergen		97.5	336	13 50	-7	—	—	—	61.6
Graz		98.1	321	13 55	-6	i 25 48	+11	—	64.8
Zagreb		98.2	319	e 13 48	-13	e 24 5	[-9]	49.5	56.2
Scoresby Sund		98.4	350	13 53	-9	24 47	[+32]	41.6	—
Hamburg		98.6	329	e 13 51	-12	e 24 37	[+20]	e 44.1	62.2
Cheb		98.8	324	13 52	-12	25 3	?E	e 42.6	62.1
Jena	Z.	98.9	325	e 13 52	-13	—	—	e 48.6	61.6
Laibach	N.	99.1	320	—	—	e 24 55	[+36]	e 46.8	63.1
Gottingen	E.	99.5	326	14 7	-1	e 25 3	?E	e 32.6	56.1
	N.	99.5	326	14 7	-1	e 24 41	[+20]	e 32.7	62.1
Berkeley	Z.	100.9	49	e 14 12	-3	—	—	—	—
Pompeii		101.0	315	e 14 37?	+22	e 24 37?	[+8]	50.6	65.6
Feldberg	N.	101.1	326	e 13 56	-20	—	—	e 50.2	61.6
Naples	E.	101.2	315	e 18 15	[+24]	e 25 25	?E	—	60.6
Hohenheim		101.2	325	e 14 13	-3	i 25 1	[+31]	e 45.6	—
Ravensburg		101.4	324	e 14 12	-5	i 25 6	[+35]	e 47.6	64.1
Karlsruhe		101.6	325	e 14 7	-11	i 25 2	[+30]	e 55.6	—
Liek	E.	101.6	49	e 14 21	+3	e 25 8	[+36]	e 47.3	—
	N.	101.6	49	e 14 24	+6	e 25 8	[+36]	e 47.8	—
De Bilt		101.9	328	—	—	e 24 45	[+12]	e 45.6	65.4
Chur		102.0	324	e 14 8	-12	24 46	[+12]	—	—
Florence		102.1	319	i 14 8	-13	23 7	?E	53.6	62.3
Zurich		102.2	322	e 14 14	-7	—	—	—	—
Strasbourg		102.2	325	i 14 9	-12	25 50	-27	35.6	63.6
Dyce		102.5	335	14 19	-4	24 57	[+21]	e 44.6	67.1
Uccle		103.0	327	e 14 9	-16	i 25 17	[+39]	43.6	64.8
Neuchatel		103.5	324	e 14 13	-15	—	—	—	—
Edinburgh		103.8	334	18 37?	?PR ₁	i 26 32	+1	45.6	65.8
Besancon		103.9	324	e 18 30	?PR ₁	25 18	[+36]	35.6	—
Moncalieri		103.9	320	14 20	-10	23 12	?E	31.6	67.0
Stonyhurst		104.7	332	e 14 23	-10	i 25 21	[+35]	48.6	69.1
Grenoble		105.0	321	—	—	—	—	32.6	—
Paris		105.0	325	e 14 21	-13	e 25 29	[+42]	48.6	65.6
Kew		105.1	330	—	—	—	—	46.6	68.4
Bidston		105.3	332	18 9	[+3]	25 28	[+39]	45.1	65.6
Oxford		105.4	330	—	—	e 25 18	[+29]	e 44.0	70.8
Marseilles		106.1	320	—	—	e 22 7	?E	49.6	—

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Barcelona	109.1	320	—	—	e 25 44	[+38]	e 59.2	73.6
Cape Town	109.9	236	—	—	e 25 34	[+24]	—	—
Tortosa	E. 110.5	320	e 19 27	{PR ₁	e 29 24	{PS	—	67.3
	N. 110.5	320	e 19 28	{PR ₁	e 28 57	{PS	e 46.6	74.8
Tucson	N. 111.7	50	e 18 26	[- 1]	e 27 24	-19	e 46.1	—
Denver	112.2	40	e 19 7	[+38]	e 26 6	[+47]	e 47.3	53.6
Alicante	112.5	318	e 19 11	{PR ₁	e 29 57	{PS	e 36.0	71.2
Toledo	113.9	320	e 18 50	[+16]	—	—	e 45.7	73.8
Granada	115.2	318	15 13	- 8	26 12	[+42]	35.4	73.1
Malaga	116.0	318	e 19 42	{PR ₁	e 30 8	{PS	e 40.9	73.8
San Fernando	117.3	319	18 7	[-38]	30 7	{PS	54.3	73.3
Chicago	120.8	30	—	—	27 47	{P	e 36.0	60.9
Florissant	E. 121.6	34	e 19 8	[+11]	—	—	e 52.6	60.6
	121.6	34	e 15 52	+ 2	—	—	e 51.1	61.1
Ann Arbor	122.2	25	i 20 55	{PR ₁	—	—	61.0	69.8
Ottawa	122.6	17	—	—	26 15	[+23]	e 51.6	65.7
Toronto	N. 122.9	21	e 20 45	{PR ₁	e 26 22	[+29]	61.6	65.8
Harvard	126.7	15	i 21 17	{PR ₁	1 38 34	{SR ₁	e 51.6	—
Fordham	127.3	20	i 21 21	{PR ₁	—	—	33.1	38.8
Georgetown	127.8	23	e 19 26	[+13]	31 46	{PS	e 55.4	82.6
Charlottesville	E. 128.0	25	—	—	—	—	e 50.5	—
La Plata	153.0	171	e 20 19	[+19]	—	—	76.4	—
Rio de Janeiro	F. 162.6	212	e 21 29	[+79]	—	—	e 46.3	—
	N. 162.6	212	e 21 27	[+77]	—	—	e 46.2	—
La Paz	163.2	121	i 20 23	[+13]	27 24	[+30]	71.6	81.3
Sucre	164.1	133	20 23	[+12]	27 15	[+20]	76.3	90.1

Additional readings and note: Manila iP = +2m.22s. Ambona i = +4m.47s. Phu-Lien MN = +14.6m. Zi-ka-wei PR,N? = +5m.43s., PR,N? = +6m.31s., iE = +10m.3s. = SR₁ - 23s., +14m.51s. and +17m.17s., iN = +10m.9s., +21m.55s., and +24m.21s. Nagasaki MN = +14.4m., MZ = +19.2m. Batavia iPN = +5m.32s., iZ = +5m.34s., iP = +5m.36s., iZ = +5m.46s., i = +5m.52s., and +6m.59s. Hukuoka MN = +17.1m. Koti iNZ = +5m.59s., eLN = +11.5m., eLZ = +12.2m. Sumoto MNZ = +17.9m. Kobe iPZ = +5m.59s., MZ = +16.2m., MN = +18.6m. Osaka MN = +14.3m. Toyooka ePR₁ = +7m.13s. Perth P = +8m.7s., e = +10m.22s., S = +15m.7s. Adelaide i = +10m.44s. = PR₁ + 26s., +15m.2s. and +18m.29s. = SR₁ + 7s. Riverview iP = +9m.5s., iPR₁ = +10m.55s., iPR₁ = +11m.52s., PS = +16m.12s., and +16m.37s., iSR₁ = +19m.41s., and +20m.2s., SR₁ = +20m.44s., SR₁ = +21m.24s., MZ = +35.2m., MN = +35.4m.; T₁ = 9h.24m.39s. Melbourne PR₁ = +11m.27s., i = +20m.7s. Suva PR₁EN = +13m.1s., iSR,N = +21m.7s., SR,E = +22m.55s.; T₁N = 9h.24m.12s. Wellington PR₁E = +14m.10s., iSR,N = +24m.57s., SR₁N = +27m.32s., SR,E = +27m.34s.; T₁N = 9h.24m.40s.; T₁E = 9h.24m.42s. Christchurch i = +6m.44s. and +12m.8s. Honolulu T.H. eSR₁N = +30m.31s. Tananarive P.P = +13m.13s., S₆S = +23m.49s., PS = +24m.22s., PPPS = +24m.56s., SR₁ = +29m.25s., SR₁N = +35m.7s., eE = +36m.7s. Ksara LE = +45.6m.; T₁ = 9h.24m.30s. Sitka ePR₁N = +17m.3s., ePR₁N = +19m.28s., eSR₁N = +29m.54s., eSR₁N = +34m.4s., iE = +37m.5s.; T₁ = 9h.24m.42s. Helsingfors ePZ = +13m.8s., PR₁ = +16m.49s., SeP₆S = +23m.0s., SN = +23m.50s., iN = +24m.20s., PSN = +24m.54s. Upsala PR₁E = +17m.10s., MN = +54.6m. Konigsberg eE = +13m.26s., eN = +13m.53s., eE = +16m.17s., eN = +16m.40s., +20m.43s., and +20m.53s., eE = +22m.59s., eN = +23m.6s., eEN = +24m.3s., iE = +24m.57s., iPSEN = +25m.13s., ePPSE = +25m.49s., eEN = +27m.31s., eE = +30m.22s., +31m.3s., +32m.28s., and +33m.56s., MN = +56.6m. Copenhagen PR₁ = +17m.37s., also undefined readings, +25m.27s. = S + 6s., +26m.31s. = PS + 6s., +30m.37s., +35m.1s. and +34m.43s. Vienna PR₁ = +17m.51s., PR₁? = +19m.8s., PS = +25m.34s. Bergen MN = +54.6m. Graz MN = +59.6m. Zagreb e = +14m.0s., +17m.25s. = PR₁ - 10s., +21m.25s., +24m.32s., +24m.46s., +26m.37s. = PS - 7s., +32m.20s. = SR₁ + 6s., and +36m.30s. = SR₁ - 39s. Scoreby Sund +18m.1s. = PR₁ - 1s. Hamburg i = +24m.55s., eLZ = +51.6m. Cheb ePR₁ = +18m.1s. = PR₁ - 5s., e = +32m.44s. = SR₁ + 22s. Jena ePEN = +14m.7s., eE = +24m.49s., eN = +24m.55s., eLEN = +45.6m., MN = +55.6m., ME = +61.1m. Lalbach eN = +16m.3s. and +13m.5s. = PR₁ - 3s. Göttingen eN = +18m.6s., eE = +18m.7s. = PR₁ - 4s. Berkeley eE = +14m.33s., eZ = +17m.24s. = [P] - 26s., and +18m.12s. = PR₁ - 7s., eN = +18m.13s., eZ₁ = +20m.35s., eE = +24m.25s. = [S] - 4s., eZ₁ = +26m.25s., eE = +32m.19s. = SR₁ - 30s., eZ = +46m.25s., eE =

Continued on next page.

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+46m.49s., eZ = +46m.55s., eN = +47m.19s., also other readings greater than +60m. Feldberg eN = +14m.4s., +18m.12s. = PR₁-9s., and +23m.31s., iN = +27m.6s. = PS-12s. Lick ePR₁N? = +18m.6s., eE = +18m.17s., eN = +30m.26s., and +32m.6s., eE = +32m.43s. = SR₁-15s., eSR₂N? = +39m.18s. De Bilt MN = +60.8m., MZ = +65.8m. Florence PR₁ = +18m.32s. Zurich ScPcS = +25m.12s. Strasbourg ePR₁ = +18m.20s., ScPcS = +25m.4s., MZ = +63.4m., MN = +64.4m. Dyce PR₁ = +18m.34s. = PR₁ + 5s. Uccle ePR₁ = +18m.21s., i = +27m.50s. = PS + 12s., and +33m.25s. = SR₁ + 9s., MZ = +64.9m. MN = +65.2m. Neuchâtel eP' = +18m.2s. = [P] + 2s., ePR₁ = +18m.32s., ScPcS = +25m.14s. Edinburgh i = +25m.17s. = E-18s. Moncalieri MN = +68.7m. Paris PR₁ = +18m.54s., MN = +62.6m. Kew ePR₁Z = +17m.49s., iEN = +25m.35s. = E-7s. and +28m.4s. = PS + 2s., MN = +66.8m., MZ = +67.1m. Oxford e = +33m.42s. = SR₁-2s. Barcelona MN = +68.9m. Tucson ePR₁E = +19m.34s., ePR₁N = +19m.58s., ePSE = +29m.3s., ePSN = +29m.16s., eSR₁N = +35m.2s. Denver eN = +26m.37s. = E + 10s., eE = +30m.0s. Alicante MN = +68.4m. Toledo MNW = +53.6m. Granada P' = +18m.55s. = [P] + 16s., PR₁ = +19m.34s., i = +20m.17s., +22m.27s., and +25m.1s. = [S] - 28s., SPSP = +30m.6s., PPS = +32m.7s. Malaga MN = +75.0m. San Fernando MN = +71.3m. Chicago PR₁N = +20m.39s., PR₁E = +20m.55s., PSN = +30m.30s., PSE = +30m.32s. SR₁N = +35m.46s., SR₁E = +36m.55s., SR₁E = +41m.46s., SR₂N = +42m.35s., LN = +50.8m. Florissant (first line) eN = +20m.37s. = PS + 1s., eE = +26m.22s., +27m.52s. = E + 30s., +30m.22s. = PS - 38s., and +36m.37s.; (second line) eZ? = +10m.57s., eP'Z = +19m.7s., iPR₁Z = +20m.41s., iPSE = +30m.34s. Ann Arbor eN = +23m.43s. = PR₁-20s., eN = +30m.55s. = PS - 9s., e = +32m.37s., eE = +37m.55s., eN = +38m.7s., LN = +65.0m., MN = +75.4m. Ottawa iPR₁ = +20m.51s., ScPcPSE = +27m.51s., PSN = +30m.56s., SR₁ = +37m.49s., MN = +72.9m. Toronto eE = -1N = +21m.0s. = PR₁ + 17s., PSN = +30m.50s., ME = +65.0m. Fordham i = +22m.36s., +28m.36s., and +31m.36s. = PS - 21s., e = +35m.21s. Gettysburg iP'EZ = +21m.30s., PR₁Z = +21m.30s., PR₁EZ = +26m.39s., PR₁E = +28m.19s., PSZ = +33m.18s., SR₁E = +39m.1s., SR₁E = +43m.47s., SR₁E = +47m.38s., eLZ = +55.4m. Charlottesville ePR₁N = +21m.28s., ePR₁E = +21m.29s., ePSE = +31m.37s., eSR₁E = +38m.37s., eSR₁N = +38m.58s., eSR₁N = +43m.37s., eLN = +57.6m. La Paz PR₁E = +24m.9s., PR₁E = +31m.49s., iE = +35m.59s., PPSN = +36m.59s., SR₁N = +43m.9s., SR₁E = +49m.16s., MN = +86.4m. Sucre PR₁ = +24m.54s., i = +32m.8s. = PR₁-5s., PPS = +36m.9s., SR₁ = +42m.15s.

June 13d. 19h. 47m. 24s. Epicentre 8°3N. 126°9E. (as at 9h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m.	s.	m.	s.	m.	s.	m.	m.
Manila	8.6	318	e 2 20	+10	14 8	+15	5.3	—
Taihoku	17.5	344	e 4 17	+6	—	—	—	—
Hong Kong	18.6	320	e 4 26	+2	7 56	+3	e 9.1	13.6
Phu-Lien	23.2	305	e 4 8	-71	e 9 26	-3	12.6	—
Zi-ka-wei	23.5	348	i 5 19	-4	e 9 29	-6	—	24.2
Miyazaki	24.0	9	e 5 23	-5	9 36	-8	—	—
Nagasaki	24.6	6	e 5 36	+2	e 9 57	+2	—	—
Batavia	24.7	235	i 5 36	+1	—	—	15.6	—
Koti	26.0	13	e 5 46	-2	e 10 21	-1	15.1	—
Sumoto	27.1	15	e 5 16	-43	10 26	-17	—	15.8
Kobe	27.4	15	e 6 1	-1	e 15 26	?	e 17.9	22.3
Osaka	27.6	16	e 6 25	+21	—	—	e 15.3	18.4
Irkutsk	47.7	342	e 8 46	-6	1 15 40	-10	26.6	39.1
Hyderabad	48.0	287	e 8 50	-4	15 46	-8	25.1	32.6
Riverview	48.0	152	e 7 42	-72	—	—	—	33.2
Kodalkanal	48.8	276	32 42	?	—	—	—	—
Bombay	53.4	288	9 22	-7	17 4	+3	28.5	32.8
Almata	55.7	318	—	+2	(15 55)	-95	15.9	—
Andtjan	57.9	314	e 10 0	+2	—	—	—	—
Tashkent	60.5	314	i 10 13	-3	1 18 33	+3	28.6	35.0
Samarkand	61.8	313	e 10 31	+7	—	—	—	—
Ekaterinburg	70.2	329	i 11 22	+4	4 20 31	+3	30.6	39.6
Baku	74.7	311	e 11 53	+6	e 21 32	+10	36.6	49.9
Kucino	82.6	326	—	—	e 22 45	-9	—	52.0
Pulkovo	86.1	350	12 52	-2	23 25	-6	41.6	53.1
Simferopol	86.1	315	e 13 12	+18	—	—	—	—

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	86.2	304	e 12 52	- 2	23 18	-14	43.6	—
Sebastopol		86.4	315	e 12 54	- 1	—	—	—	—
Upsala		92.3	332	—	—	e 24 22	-16	e 50.6	—
Konigsberg	N.	92.5	326	—	—	—	—	e 48.6	51.6
Copenhagen		96.5	330	18 36	?PR ₁	—	—	48.6	—
Victoria	E.	96.6	39	23 58	?S	(23 58)	[- 8]	45.2	46.6
Scoresby Sund		98.4	350	18 36?	?PR ₁	—	—	54.6	—
Hamburg		98.6	329	—	—	—	—	e 53.6	—
Cheb		98.8	324	—	—	e 24 36?	[+18]	e 50.6	62.1
Jena	E.	98.9	325	—	—	—	—	e 62.6	—
Gottingen	N.	99.5	326	—	—	—	—	e 53.1	56.6
Feldberg	N.	101.1	326	—	—	e 24 54	[+25]	e 59.2	59.2
De Bilt		101.9	328	—	—	e 24 48	[+15]	e 53.6	66.1
Florence		102.1	319	e 13 36?	-45	e 18 36?	?PR ₁	e 65.6	65.6
Strasbourg		102.2	325	—	—	(e 25 36?)	[+61]	e 25.6	—
Uccle		103.0	327	—	—	e 24 36?	[- 2]	e 53.6	—
Edinburgh		103.8	334	—	—	—	—	e 59.6	—
Stonyhurst		104.7	332	—	—	—	—	e 57.6	—
Paris		105.0	325	—	—	e 31 36?	?	e 56.6	74.6
Kew		105.1	330	—	—	—	—	e 55.6	—
Granada		115.2	318	—	—	—	—	e 65.6	73.6
Florissant		121.6	34	e 20 36	?	e 26 6	[+17]	e 60.1	—
Ottawa		122.6	17	—	—	e 26 12	[+20]	78.6	—
Toronto		122.9	21	—	—	27 36?	?S	—	—
Fordham		127.3	20	—	—	—	—	e 25.6	74.6
Georgetown	z.	127.8	23	e 21 29	?PR ₁	—	—	e 69.1	86.4

Additional readings: Hong Kong MN = +15.2m. Batavia 1E = +5m.38s.
 Sumoto MN = +16.8m. Riverview SR₁? = +19m.36s. = PR₁ + 8s., MN =
 +36.6m. Hyderabad MN = +33.1m. De Bilt MN = +63.2m., MZ =
 +66.7m. Florissant eEN = +27m.36s. = S + 14s., and +58m.11s.,
 eE = +42m.36s. = SR₁ - 7s., and +47m.6s. = SR₁ + 22s. Ottawa eN =
 +30m.41s. = PS - 29s., e = +37m.24s. = SR₁ + 4s.

June 13d. 20h. 23m. 17s. Epicentre 37°.1N. 141°.3E. (given by Tokyo in Geophys. Mag., Vol. IV., No. 4).

A = -622, B = +499, C = +603; D = +625, E = +780.
 G = -471, H = +377, K = -798.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Mito		0.9	223	0 14	0	0 26	+ 1	—	—
Sendai		1.2	344	0 18	0	0 32	- 1	—	—
Tokyo		1.9	221	0 29	0	0 53	0	—	—
Mizusawa		2.0	356	0 30	- 1	0 51	- 4	—	—
Morioka		2.6	357	0 36	- 5	1 6	- 6	—	—
Akita		2.8	340	1 42	+58	(2 24)	+67	2.4	2.5
Gihu		4.0	246	0 57	- 5	1 50	0	—	—
Nagoya		4.0	242	e 1 0	- 2	(1 52)	+ 2	1.9	2.3
Osaka		5.1	244	1 27	+ 8	—	—	2.5	2.6
Toyooka		5.4	255	1 20	- 3	2 23	- 5	2.8	3.3
Kobe		5.5	248	1 36	+11	—	—	2.8	3.1
Sumoto		5.8	244	1 27	- 3	2 55	?L	(2.9)	3.3
Koti		7.2	244	e 2 43?	+54	—	—	—	—
Andijan		52.5	297	e 8 13	-70	—	—	—	—
Ekaterinburg		54.8	320	e 9 25	-13	—	—	—	—
Samarkand		56.5	299	e 9 38	-11	—	—	—	—
Pulkovo		67.8	330	i 10 52	-11	—	—	—	—
La Paz		146.9	59	19 41	[-10]	—	—	—	—

Additional readings: Akita MZ = +2.7m., MN = +2.9m. Osaka MN =
 +3.2m. Kobe MNW = +2.9m. Sumoto MNZ = +3.4m.

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June 13d. 22h. 15m. 36s. Epicentre 41°·5N. 63°·5E.

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

Very uncertain.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	3·3	124	1 9	+17	—	—	1·9	—
Tashkent	4·3	91	0 53	-14	(1 32)	-26	1·5	2·0
Andijan	6·7	98	1 40	-2	(2 55)	-7	2·9	3·2
Almata	10·1	76	2 41	+10	4 15	-17	—	—
Baku	10·3	268	—	—	—	—	e 7·4	—
Ekaterinburg	15·4	354	e 3 33	-11	e 6 7	-34	7·9	9·1
Kucino	21·9	319	e 5 12	+ 8	9 16	+13	—	—
Pulkovo	27·4	323	6 6	+ 4	10 54	+ 6	16·4	—
Irkutsk	29·4	54	—	—	—	—	e 14·2	—
Helsingfors	29·9	322	e 5 57	-30	e 11 3	-29	e 15·9	—
Upsala	33·4	319	—	—	—	—	17·9	—
Copenhagen	35·6	313	—	—	—	—	20·4	—
De Bilt	40·2	307	—	—	—	—	e 22·4	—
Akita	56·1	64	e 29 13	?L	—	—	(e 29·2)	—

The Central Asian stations give epicentre 42°·50'N. 66°·20'E, and the Russian stations give 44°·0N. 68°·5E. Irkutsk i = +14m.22s.

June 13d. 23h. 0m. 25s. Epicentre 8°·3N. 126°·9E. (as at 19h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·6	318	e 2 21	+11	14 7	+14	i 5·3	6·1
Taihoku	17·5	344	e 4 15	+ 4	—	—	—	—
Hong Kong	18·6	320	4 25	+ 1	7 53	0	8·7	13·4
Phu-Lien	23·2	305	e 5 16	- 3	e 9 13	-16	10·6	17·0
Zi-ka-wei	23·5	348	i 5 20	- 3	9 35	0	—	35·7
Nagasaki	24·6	6	e 5 31	- 3	e 10 4	+ 9	—	—
Batavia	24·7	235	e 5 34	- 1	—	—	—	—
Hukuoka	25·5	7	e 5 48	+ 5	e 10 27	+14	—	—
Kotl	26·0	13	e 5 46	- 2	e 10 14	- 8	—	—
Sumoto	27·1	15	5 55	- 4	10 44	+ 1	—	15·8
Kobe	27·4	15	6 2	0	e 13 25	?L	e 21·6	22·9
Toyooka	28·2	14	e 6 6	- 4	e 10 50	-13	—	—
Nagoya	28·4	18	e 6 17	+ 5	—	—	—	—
Tokyo	29·8	21	7 35?	?PR ₁	12 55?	?SR ₁	—	—
Akita	33·6	20	e 7 24	+23	10 1	?	14·0	—
Calcutta	39·6	296	8 58	+67	16 41	?SR ₁	27·4	—
Perth	41·6	194	e 8 5	- 3	i 14 15	-14	—	—
Adelaide	44·6	166	e 8 26	- 4	e 14 51	-19	19·8	26·2
Colombo	46·6	272	8 43	- 1	15 18	-18	28·2	29·6
Irkutsk	47·7	342	i 8 47	- 5	i 15 47	- 3	24·6	30·9
Riverview	48·0	152	e 8 50	- 4	i 15 40	-14	e 23·8	33·8
Hyderabad	48·0	287	8 49	- 5	16 1	+ 7	25·8	33·2
Kodalkanal	48·8	276	11 53	?	—	—	20·9	38·1
Melbourne	49·1	161	—	—	i 16 8	+ 1	30·1	35·8
Bombay	53·4	288	9 39	+10	17 7	+ 6	28·2	37·7
Almata	55·7	318	e 10 1	+17	—	—	35·0	—
Andijan	57·9	314	9 53	- 5	—	—	33·6	—
Tashkent	60·5	314	10 21	+ 5	18 41	+11	29·6	36·5
Samarkand	61·8	313	e 10 32	+ 8	e 18 52	+ 6	—	—
Wellington	66·2	142	—	—	i 19 43	+ 3	40·7	—
Ekaterinburg	70·2	329	i 11 24	+ 6	i 20 35	+ 7	32·6	41·7
Baku	74·7	311	i 11 58	+11	i 21 37	+15	37·1	48·0
Tananarive	82·8	250	—	—	e 22 50	- 5	—	44·1
Theodosia	85·2	316	e 12 53	+ 4	—	—	—	—
Pulkovo	86·1	330	i 12 52	- 2	23 25	- 6	41·6	52·6
Simferopol	86·1	315	e 12 52	- 2	—	—	—	—

Continued on next page.

Original bulletins of the International Seismological Summary (ISS) have been obtained thanks to funding provided by the US National Science Foundation through grant EAR-9725140 (Villaseñor et al., 1997) and have been scanned and collected by SGA Stora Geofisica Ambiente (Bologna) thanks to funding provided by the Istituto Nazionale di Geofisica e Vulcanologia (Rome), in the frame of the EUROSEISMOS project.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	86.2	304	e 12 51	- 3	23 28	- 4	34.6	—
Helsingfors		88.6	331	e 13 7	- 1	e 23 54	- 5	e 47.1	—
Upsala		92.3	332	—	—	e 24 19	- 19	e 50.6	69.9
Konigsberg		92.5	326	e 23 57	?S	(e 23 57)	[+14]	e 48.6	52.6
Copenhagen		96.5	330	13 35	- 17	24 17	[+12]	e 47.6	—
Victoria		96.6	39	24 22	?S	(24 22)	[+16]	44.9	58.0
Zagreb		98.2	319	e 18 35?	?PR ₁	e 24 30	[+16]	—	43.3
Scoresby Sund		98.4	350	13 35?	- 27	17 41	?PR ₁	53.6	—
Hamburg		98.6	329	—	—	e 24 35?	[+18]	e 50.6	62.6
Cheb		98.8	324	—	—	e 22 35?	?S	e 51.6	62.6
Jena		98.9	325	—	—	—	—	e 49.6	67.6
Gottingen	N.	99.5	326	e 25 21	?S	(e 25 21)	- 30	e 53.9	55.1
Feldberg	N.	101.1	326	e 16 47	?S	1 25 40	- 26	e 53.6	59.5
De Bilt		101.9	328	e 14 4	- 16	e 25 53	- 21	e 53.6	65.5
Florence		102.1	319	15 35	?S	63 35?	?	—	68.6
Strasbourg		102.2	325	13 35?	- 46	24 35?	[- 0]	29.6	—
Uccle		103.0	327	—	—	e 24 35?	[- 3]	e 54.6	57.7
Edinburgh		103.8	334	—	—	—	—	e 53.6	—
Moncalleri		103.9	320	e 14 8	- 22	24 41	[- 1]	32.9	—
Stonyhurst		104.7	332	—	—	1 26 15	- 24	e 57.9	59.1
Paris		105.0	325	e 18 41	?PR ₁	—	—	56.6	74.6
Kew		105.1	330	e 18 47	?PR ₁	e 25 6	[+18]	55.6	67.6
Oxford		105.4	330	—	—	e 25 0	[+11]	e 51.6	68.1
Tortosa	N.	110.5	320	—	—	—	—	e 60.1	86.0
Alicante		112.5	318	—	—	—	—	e 62.7	—
Toledo	N.E.	113.9	320	e 19 47	?PR ₁	—	—	e 47.1	73.4
Granada		115.2	318	—	—	e 29 50	?PS	61.6	67.6
San Fernando	E.	117.3	319	—	—	—	—	—	77.9
Florissant		121.6	34	e 20 35	?PR ₁	e 26 5	[+16]	e 61.6	73.1
Ottawa		122.6	17	e 20 35?	?PR ₁	e 26 10	[+18]	e 57.6	—
Toronto	N.	122.9	21	—	—	e 26 12	[+19]	75.6	88.6
Harvard		126.7	15	e 21 11	?PR ₁	—	—	74.6	—
Fordham		127.3	20	e 20 35	?PR ₁	e 38 5	?SR ₁	e 67.6	—
Georgetown		127.8	23	e 21 27	?PR ₁	—	—	e 61.6	86.2
La Paz		163.2	121	20 23	[+13]	1 31 48	?S	81.6	95.2
Sucre		164.1	133	20 25	[+14]	—	—	80.6	—

Additional readings and note: Hong Kong MN = +12.4m. Phu-Lien MN = +16.3m. Batavia PZ = +5m.35s., P = +5m.38s., i = +7m.36s. Sumoto MN = +16.6m., MZ = +21.0m. Calcutta PN = +9m.1s. Perth P = +8m.25s. Adelaide iSR₁ = +18m.59s., MN = +29.3m. Riverview iS = +15m.55s., SR₁ = +19m.22s., SR₂ = +20m.26s., SR₃ = +20m.46s., MN = +29.1m. Hyderabad MN = +33.8m. Melbourne e = +19m.35s. = SR₁ - 14s. Wellington iE = +20m.58s. = (S) - 16s., LE = +39.6m. Pulkovo ScPcS = +23m.13s. Ksara LN = +44.6m.; T₀ = 23h.0m.23s. Helsingfors eScPcS = +23m.35s. Upsala MN = +61.4m. Konigsberg eN = +24m.29s., eEN = +26m.9s., eN = +29m.33s., eE = +32m.53s., eSN = +36m.41s., eSE = +37m.11s., eE = +38m.30s. Victoria LN = +40.5m. Jena MN = +71.6m. Gottingen eSN = +36m.53s. De Bilt iPR₁Z = +18m.20s., iEN = +24m.53s. = (S) + 20s., MN = +62.6m., MZ = +65.7m. Florence e = +11m.35s.? i = +18m.25s. = PR₁ - 2s. Strasbourg e = +20m.35s.? All readings being given to the nearest minute. Edinburgh L = +60.6m. San Fernando MN = +77.4m. Florissant eZ = +24m.5s. = PR₁ + 7s., MZ = +74.6m. Ottawa eE = +28m.41s., eN = +34m.20s., eE = +37m.23s. = SR₁ + 17s. Georgetown eZ = +24m.51s., iZ = +32m.54s.

June 13d. Readings also at 1h. (Mizusawa), 2h. (Neuchatel, Akita, and near Mizusawa), 3h. (Florissant), 8h. (Nagoya, Andijan (2), near Samarkand (2), near Akita, and Mizusawa), 9h. (Tahoku), 12h. (Andijan, Samarkand, Sucre, near La Paz, and near Manzanillo), 13h. (Kew), 14h. (Ekaterinburg, Irkutsk, Ksara, Tashkent, Akita, La Paz, and near Sucre), 18h. (Ekaterinburg, Irkutsk, Tashkent, near Samarkand, and near Akita), 21h. (Samarkand), 22h. (Ekaterinburg, Irkutsk, and near Tananarive), 23h. (Ekaterinburg, Pulkovo, Mizusawa, Akita, and Nagoya).

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June 14d. 23h. 13m. 5s. Epicentre 8°·3N. 126°·9E. (as on 13d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·6	318	e 2 19	+ 9	i 4 5	+12	5·3	—
Hong Kong	18·6	320	4 17	- 7	e 8 7	+14	e 9·4	13·2
Phu-Lien	23·2	305	e 5 27	+ 8	e 9 23	- 6	10·9	—
Irkutsk	47·7	342	e 8 45	- 7	—	—	e 24·9	—
Tashkent	60·5	314	e 9 17	-59	e 18 26	- 4	e 29·9	37·4
Ekaterinburg	70·2	329	11 18	0	20 28	0	34·9	39·2
Baku	74·7	311	—	—	e 21 25	+ 3	—	—
Pulkovo	86·1	330	12 47	- 7	23 19	-12	46·9	54·3
Copenhagen	96·5	330	—	—	33 25	?SR ₁	51·9	—
Scoresby Sund	98·4	350	—	—	22 55?	?	58·9	—
Cheb	98·8	324	—	—	—	—	e 60·9	—
De Bilt	101·9	328	—	—	e 25 15	[+42]	e 56·9	66·6
Strasbourg	102·2	325	—	—	—	—	e 55·9	—
Paris	105·0	325	—	—	—	—	e 65·9	—
Kew	105·1	330	—	—	—	—	e 65·9	—
Ottawa	122·6	17	—	—	—	—	e 65·3	—
Georgetown	127·8	23	—	—	—	—	e 60·1	111·2

Additional readings: Irkutsk e = +15m.8s. and +18m.36s. De Bilt MN = +62·8m., MZ = +66·5m.

June 14d. Readings also at 0h. (Ekaterinburg, Kodaikanal, Tashkent, and Manila), 6h. (Strasbourg, De Bilt, Copenhagen, Scoresby Sund, Pulkovo, Sebastopol, Simferopol, Tashkent, Irkutsk, Akita, and Mizusawa), 7h. (Hong Kong, Manila, and Phu-Lien), 8h. (Pulkovo and Tashkent), 11h. (near Port au Prince), 12h. (Ekaterinburg, Irkutsk, and Tashkent), 13h. (Mizusawa and near Akita), 16h. (Georgetown, near Oaxaca, and Tacubaya), 19h. (Baku, Ekaterinburg, Irkutsk, and Tashkent), 20h. (Florissant), 21h. (near Nagasaki).

June 15d. 8h. 58m. 12s. Epicentre 9°·0N. 123°·7E.

A = -·548, B = +·822, C = +·156; D = +·832, E = +·555;
G = -·087, H = +·130, K = -·988.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	6·2	335	i 1 38	+ 3	i 2 33	-16	i 3·3	—
Hong Kong	16·2	327	3 50	- 5	6 50	-10	—	10·1
Phu-Lien	20·3	308	4 38	- 7	8 23	- 6	10·0	—
Zi-ka-wei	z. 22·3	355	e 4 59	-10	9 19	+ 8	13·9	15·7
Batavia	22·6	228	i 5 12	0	i 9 40	+23	i 10·7	—
Adelaide	46·1	163	—	—	e 15 30	+ 1	18·2	18·9
Irkutsk	46·1	345	8 29	-12	—	—	23·8	—
Almata	53·1	320	e 9 30	+ 3	—	—	—	—
Andijan	55·2	315	e 9 46	+ 6	—	—	—	—
Tashkent	57·7	315	i 9 56	- 1	e 17 52	- 3	e 29·8	35·7
Samarkand	58·9	313	e 10 8	+ 4	—	—	—	—
Baku	71·9	310	e 11 31	+ 2	e 20 54	+ 5	e 38·8	49·5
Kucino	80·2	325	—	—	e 22 25	0	40·9	49·4
Ksara	83·2	305	e 12 48?	+11	e 22 58	- 1	—	—
Pulkovo	84·0	330	12 34	- 8	22 52	-16	41·8	51·7
Helsingfors	86·5	330	—	—	—	—	e 51·8	—
Copenhagen	94·2	329	—	—	—	—	43·8	—
Scoresby Sund	97·2	350	19 48?	?	—	—	49·8	—
De Bilt	99·6	326	—	—	—	—	e 59·8	62·4
Strasbourg	99·7	324	—	—	—	—	e 51·8	—
Edinburgh	101·7	334	—	—	—	—	e 53·5	—
Paris	102·6	325	—	—	—	—	e 58·8	—
Kew	102·8	329	—	—	—	—	e 63·8	—
Granada	112·5	316	—	—	—	—	63·8	—
Ottawa	122·9	14	—	—	—	—	e 67·8	—
Georgetown	z. 128·4	20	—	—	—	—	e 65·9	—

Additional readings: Irkutsk e = +10m.21s. = PR₁ - 14s. Georgetown eZ = +70m.38s.

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June 15d. 16h. 1m. 48s. Epicentre 8°3N. 126°9E. (as on 14d.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	i 2 12?	+ 2	i 3 56	+ 3	5.0	—
Phu-Lien	23.2	305	e 5 43	+24	e 9 20	- 9	—	—
Zi-ka-wei	23.5	348	e 5 19	—	—	—	—	—
Irkutsk	47.7	342	e 8 12?	-40	e 15 41	- 9	e 27.2	—
Tashkent	60.5	314	e 9 54	-22	18 33	+ 3	e 29.2	34.4
Baku	74.7	311	—	—	21 27	+ 5	47.2	—
Pulkovo	86.1	330	e 13 3	+ 9	23 25	- 6	46.2	—
Copenhagen	96.5	330	—	—	—	—	52.2	—
Scoresby Sund	98.4	350	—	—	—	—	64.2	—

Irkutsk gives also e = +18m.35s.

June 15d. 19h. 35m. 12s. Epicentre 8°3N. 126°9E. (as at 16h.).

A = -.594, B = +.791, C = +.144; D = +.800, E = +.600;
G = -.087, H = +.115, K = -.990.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	e 2 21	+11	i 4 36	+43	(i 4.6)	—
Taihoku	17.5	344	e 4 28	+17	—	—	—	—
Hong Kong	18.6	320	4 18	- 6	7 58	+ 5	—	13.3
Phu-Lien	23.2	305	e 5 11	- 8	9 27	- 2	11.0	—
Batavia	24.7	235	i 5 35	0	i 11 24	+87	—	—
Sumoto	27.1	15	e 5 13	-46	—	—	—	—
Kobe	27.4	15	e 6 14	+12	—	—	e 14.7	—
Akita	33.6	20	e 7 25	+24	—	—	—	—
Adelaide	44.6	166	—	—	i 14 53	-17	22.2	26.3
Irkutsk	47.7	342	e 8 41	-11	i 15 36	-14	24.8	—
Riverview	48.0	152	—	—	e 15 30	-24	e 31.2	37.7
Melbourne	49.1	161	—	—	i 16 5	- 2	29.0	29.2
Hyderabad	48.0	287	—	—	—	—	—	33.6
Bombay	53.4	288	e 9 41	+12	16 59	- 2	27.2	—
Almata	55.7	318	9 42	- 2	e 17 30	0	—	—
Andijan	57.9	314	10 6	+ 8	17 59	+ 1	—	—
Tashkent	60.5	314	10 15	- 1	i 18 32	+ 2	e 29.8	36.2
Samarkand	61.8	313	10 28	+ 4	18 50	+ 4	—	—
Baku	74.7	311	e 11 52	+ 5	i 21 29	+ 7	36.8	55.4
Kucino	82.6	326	e 12 10	-24	—	—	—	48.5
Pulkovo	86.1	330	12 47	- 7	i 23 18	-13	43.8	52.4
Ksara	86.2	304	e 12 41	-13	23 31	- 1	—	—
Helsingfors	88.6	331	e 12 55	-13	i 23 46	-13	e 45.3	—
Upsala	92.3	332	—	—	—	—	57.8	—
Copenhagen	96.5	330	—	—	24 48	-33	48.8	—
Scoresby Sund	98.4	350	17 48?	?PR ₁	25 16	-24	54.8	—
Hamburg	98.6	329	—	—	—	—	e 54.8	—
Cheb	98.8	324	—	—	—	—	54.8	—
De Bilt	101.9	328	—	—	e 25 46	-28	e 52.8	66.4
Strasbourg	102.2	325	—	—	e 25 48?	-29	e 54.8	—
Uccle	103.0	327	—	—	e 24 48?	[+10]	e 54.8	—
Edinburgh	103.8	334	—	—	—	—	e 58.8	—
Paris	105.0	325	—	—	e 22 48?	?	e 62.8	70.8
Kew	105.1	330	—	—	—	—	e 61.8	—
Toledo	E. 113.9	320	—	—	—	—	e 63.4	—
Granada	115.2	318	—	—	—	—	e 63.8	72.8
Florissant	121.6	34	e 20 48	?PR ₁	e 26 6	[+17]	e 71.8	—
Ottawa	122.6	17	—	—	e 26 6	[+14]	71.8	—
Georgetown	Z. 127.8	23	e 21 21	?PR ₁	e 28 3	?E	e 76.0	—

Additional readings: Adelaide 1SR₁ = +19m.22s., MN = +29.0m. River-
view MN = +37.0m. Melbourne e = +19m.31s. = SR₁ -18s. Hydera-
bad MN = +32.0m. Pulkovo eScPcS = +23m.11s. = [S] +8s. Ksara
SR₁E = +29m.29s.; T₀ = 19h.35m.0s. Helsingfors eScPcS = +23m.28s.
Scoresby Sund +24m.28s. = [S] +13s. and +41m.54s. De Bilt MZ =
+66.6m. Florissant eEN = +27m.33s. = E +11s.

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June 15d. 21h. 7m. 40s. Epicentre 8°3N. 126°9E. (as at 19h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	e 2 20	+10	i 4 10	+17	—	—
Hong Kong	18.6	320	4 20	-4	7 50	-3	—	13.0
Phu-Lien	23.2	305	e 5 25	+6	e 9 22	-7	10.8	—
Zi-ka-wei	23.5	348	e 5 14	-9	i 9 20	-15	18.9	—
Batavia	24.7	235	5 37	+2	11 37	+100	—	—
Adelaide	44.6	166	—	—	—	—	e 21.8	33.8
Irkutsk	47.7	342	e 8 41	-11	i 15 36	-14	27.3	—
Melbourne	49.1	161	—	—	i 16 2	-5	—	35.6
Almata	55.7	318	e 10 14	+30	—	—	—	—
Andijan	57.9	314	e 10 19	+21	—	—	—	—
Tashkent	60.5	314	i 10 15	-1	18 27	-3	e 31.3	37.9
Samarkand	61.8	313	e 10 29	+5	—	—	—	—
Baku	74.7	311	e 12 10	+23	i 21 30	+8	e 37.3	—
Kucino	82.6	326	—	—	e 22 23	-30	—	—
Pulkovo	86.1	330	12 47	-7	e 23 22	-9	44.3	52.3
Ksara	86.2	304	—	—	23 27	-5	—	—
Helsingfors	88.6	331	—	—	—	—	e 49.3	—
Copenhagen	96.5	330	—	—	24 14	[+9]	46.3	—
Scoresby Sund	98.4	350	22 20	{PR,	—	—	58.3	—
Cheb	98.8	324	—	—	—	—	e 58.3	—
De Bilt	101.9	328	—	—	—	—	e 54.3	—
Uccle	103.0	327	—	—	—	—	e 54.3	—
Kew	105.1	330	—	—	—	—	e 59.3	—
Kew	115.2	318	—	—	—	—	e 59.3	63.3
Granada	153.0	171	(22 38)	?	—	—	22.6	—
La Plata	163.2	121	e 21 37	?	—	—	—	—
La Paz	163.2	121	e 21 37	?	—	—	—	—

Additional readings: Adelaide e? = +16m.2s., MN = +36.5m.
e = +19m.30s. =SR, -19s. Pulkovo ScPcS = +23m.10s.

Melbourne

June 15d. Readings also at 0h. (Mizusawa, Nagoya, Honolulu T.H., Lick, Victoria, Tucson, Florissant, near Oaxaca, Puebla, Tacubaya, and Vera Cruz), 1h. (Adelaide, Melbourne, Riverview, Wellington, Tashkent, Pulkovo, Ekaterinburg, De Bilt, Tucson, and near Lick), 2h. (Georgetown, Ottawa, Scoresby Sund, Copenhagen, and Irkutsk), 3h. (Paris, Zi-ka-wei, and near Tacubaya(2)), 4h. (Tanarive), 5h. (near Lick), 6h. (Tacubaya and near Nagasaki), 9h. (La Paz and Sucre), 11h. (Baku, Tashkent, Taihoku, and Manila), 15h. (Port au Prince), 17h. (Tucson, near Manila, near Tacubaya, Guadalajara, and Manzanillo), 20h. (Koti), 21h. (near Santiago).

June 16d. 22h. 47m. 18s. Epicentre 41°8S. 172°2E.

A = -739, B = +101, C = -667; D = +136, E = +991;
G = +660, H = -090, K = -745.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch	1.8	170	0 42	+14	1 2	+11	—	—
Wellington	2.0	75	i 0 40	+9	—	—	—	—
Riverview	18.4	289	i 4 27	+5	8 15	+26	e 9.2	9.6
Sydney	18.4	289	4 36	+14	8 12	+23	9.4	9.7
Melbourne	21.2	272	i 5 55	+60	—	—	—	—
Suva	24.3	14	i 5 45	+14	—	—	—	—
Adelaide	27.0	274	i 5 53	-5	i 10 42	+1	i 12.9	20.6
Apta	31.2	31	6 33	-7	11 58	+4	—	21.7
Perth	45.4	265	8 42	+6	15 35	+15	—	—
Amboina	54.7	301	i 9 40	+3	i 17 43	+26	—	—
Batavia	67.7	281	i 11 5	+3	i 21 15	{Z	32.9	36.7
Honolulu T.H. E.	68.9	29	i 11 15	+5	i 21 1	[-3]	e 27.7	—
N.	68.9	29	i 11 14	+4	i 20 47	+34	28.6	—

Continued on next page.

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		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Manila		73.6	308	—	—	i 21 26	+17	35.7	41.0
Isagakiyima		79.7	317	12 22	+ 5	22 36	+16	—	—
Taihoku	E.	81.6	315	12 46	+18	(22 50)	+ 8	22.8	—
Muroto		82.8	329	e 12 43	+ 8	23 59	?PS	e 35.8	—
Tokyo		83.0	334	12 36	0	24 4	—	—	—
Koti		83.3	329	e 12 34	- 4	e 23 52	?PS	e 39.7	50.3
Nagoya		83.5	331	e 12 34	- 5	24 13	?PS	—	—
Sumoto		83.5	330	12 29	-10	e 23 10	+ 7	—	46.2
Osaka		83.6	330	12 39	- 1	23 8	+ 3	36.1	47.4
Hong Kong		83.6	308	12 37	- 3	23 12	+ 7	—	—
Kobe	E.	83.7	330	12 35	- 5	e 23 15	+ 9	e 35.5	46.5
	N.	83.7	330	12 35	- 5	23 58	?PS	—	48.6
Nagasaki		84.2	325	12 37	- 6	(24 7)	?PS	24.1	43.7
Hukuoka		84.6	326	12 51	+ 5	23 23	+ 8	34.8	42.3
Toyooka	E.	84.6	330	12 47	+ 1	23 22	+ 7	e 36.3	41.2
	N.	84.6	330	12 47	+ 1	23 17	+ 2	e 36.6	43.1
Santiago		85.2	131	(12 52)	+ 3	—	—	12.9	—
Mizusawa		85.7	338	12 49	- 3	(23 17)	-10	23.3	—
Zi-ka-wei		86.7	319	i 12 49	- 8	23 36	- 2	37.5	49.8
Phu-Lien		87.1	301	12 53	- 7	i 23 35	- 7	41.7	59.6
Akita		87.4	337	e 13 4	+ 3	(e 29 1)	? 8	e 29.0	41.9
La Plata		90.6	140	13 13	- 6	23 40	[+ 8]	39.7	—
Otomari		92.3	340	13 21	- 8	24 35	- 3	—	—
Sucre		99.3	125	13 29	-38	i 25 8	? Σ	41.7	47.7
La Paz	E.	99.4	121	13 17	-50	i 24 52	? Σ	42.7	48.2
	N.	99.4	121	13 17	-50	24 46	? Σ	44.7	48.7
Lick	N.	99.4	46	e 13 58	- 9	—	—	e 47.6	54.9
Berkeley	Z.	99.5	46	e 17 18	[-27]	—	—	e 47.5	54.8
Kodaikanal		100.3	275	13 54	-18	(18 36)	?PR ₁	18.6	70.2
Calcutta	E.	100.4	290	17 50	[+ 2]	27 28	?PS	45.4	—
	N.	100.4	290	17 53	[+ 5]	27 23	?PS	—	54.8
Cape Town		100.5	201	—	—	27 38	?PS	41.7	43.8
Tananarive		100.6	232	14 11	- 2	e 25 51	-50	48.7	55.2
Tacubaya		101.7	75	18 27	?PR ₁	27 27	?PS	39.4	52.2
Tucson	N.	102.3	57	14 16	- 6	25 51	-27	47.8	—
Chihuahua		103.0	63	25 12	? Σ	—	—	39.9?	61.7
Vera Cruz		103.8	76	22 6?	? 1	31 5	? 1	—	58.7
Hyderabad		104.2	280	14 20	-11	24 58	[+14]	45.6	53.1
Victoria		106.5	38	18 47	?PR ₁	28 15	?PS	49.5	54.6
Rio de Janeiro		107.5	144	e 15 42	+56	(29 22)	? 1	29.4	36.7
Sitka		108.2	26	—	—	—	—	51.1	56.4
Bombay		109.3	278	14 47	- 7	25 29	[+22]	47.1	68.6
Agra	E.	110.6	239	e 19 27	?PR ₁	29 7	?PS	—	58.7
	N.	110.6	239	15 40	+40	27 4	-29	e 49.8	64.2
Denver		110.7	54	—	—	—	—	e 46.7	54.2
Irkutsk		110.9	322	e 14 39	-23	26 31	? Σ	53.3	66.7
Dehra Dun		112.6	290	19 12	?PR ₁	28 42	? 1	35.5	60.7
Florisant		119.5	61	e 15 25	-15	i 25 53	[+11]	50.2	60.1
Almata		120.4	302	15 37	- 7	—	—	37.7	—
Andijan		121.9	297	16 17	+25	—	—	44.7	—
Chicago	E.	122.8	60	—	—	e 27 54	? Σ	e 51.7	—
	N.	122.8	60	—	—	e 28 54	-16	e 50.9	—
Tashkent		124.4	297	i 19 3	[- 1]	—	—	—	73.0
Entebbe		124.7	230	20 22	?PR ₁	—	—	53.0	66.7
Samarkand		125.1	295	e 19 14	[+ 8]	—	—	—	—
Ann Arbor	E.	125.6	61	—	—	—	—	e 53.6	71.6
Charlottesville	E.	127.2	69	—	—	—	—	e 64.9	—
Georgetown	Z.	128.6	69	19 18	[+ 3]	31 39	? 1	—	67.7
Toronto		129.1	61	e 21 26	?PR ₁	—	—	i 65.7	72.3
Fordham		131.7	67	i 19 25	[+ 3]	—	—	57.5	65.7
Ottawa		132.1	60	e 19 40	[+17]	—	—	e 56.1	74.7
Harvard		134.1	66	e 19 54	[+26]	—	—	i 57.4	—
Ekaterinburg		135.0	314	19 11	[-19]	—	—	—	73.6

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		o.	m. s.	s.	m. s.	s.	m.	m.
Baku	137.3	288	19 27	[- 8]	—	—	—	78.0
Ksara	145.0	270	i 19 47	[- 1]	—	—	—	—
Theodosia	148.9	291	19 58	[+ 4]	—	—	42.7	—
Simferopol	149.7	290	19 58	[+ 3]	—	—	43.7	—
Sebastopol	150.1	289	e 19 57	[+ 1]	—	—	36.3	—
Scoresby Sund	150.4	10	19 48	[- 8]	—	—	—	—
Pulkovo	150.6	321	19 51	[- 6]	27 10	?	—	87.6
Helsingfors	152.9	324	e 19 54	[- 6]	27 1	?	e 62.7	—
Reykjavik	156.2	15	—	—	e 28 12	?PR ₂	e 82.5	—
Upsala	156.2	328	20 11	[+ 8]	—	—	e 59.7	94.1
Lemberg	156.6	301	e 22 6	?	e 55 48	?	e 71.9	77.9
Konigsberg	157.3	315	e 20 17	[+12]	1 35 58	?	e 63.7	84.7
Belgrade	159.3	288	e 20 9	[+ 2]	—	—	e 66.7	89.7
Copenhagen	160.9	323	20 1	[- 8]	—	—	—	—
Vienna	161.8	299	e 20 6	[- 3]	27 18	?	—	112.7
Zagreb	162.4	291	e 20 8	[- 1]	—	—	e 81.2	—
Graz	162.6	295	e 20 14	[+ 4]	—	—	e 65.7	88.1
Pompeii	163.2	274	e 20 32	[+22]	e 33 12	?	e 54.7	99.7
Hamburg	163.3	321	e 20 2	[- 8]	—	—	e 68.0	74.7
Laibach	163.4	292	e 20 18	[+ 8]	—	—	e 74.4	82.7
Naples	163.5	274	e 20 30	[+20]	e 35 32	?	e 67.7	99.7
Cheb	163.8	307	e 20 22	[+11]	—	—	e 70.7	107.7
Jena	163.9	311	e 20 3	[- 8]	—	—	e 66.7	80.7
Dyce	164.1	349	e 20 15	[+ 4]	35 15	?	e 65.2	91.2
Gottingen	164.5	315	e 20 17	[+ 5]	—	—	e 67.3	95.3
Venice	165.0	291	i 20 23	[+11]	—	—	—	—
Innsbruck	165.3	298	e 19 54	[-18]	24 52	?PR ₁	e 45.7	53.3
Edinburgh	165.6	350	e 20 22	[+10]	35 52	?	e 50.7	96.6
Azores	165.7	101	25 18	?PR ₁	—	—	—	54.7
Florence	165.9	284	i 20 16	[+ 4]	35 22	?	e 77.7	93.7
Feldberg	166.0	312	e 20 18	[+ 6]	—	—	—	80.7
Hohenheim	166.2	306	e 20 12	[+ 0]	—	—	e 77.7	98.7
De Bilt	166.5	324	e 20 10	[- 2]	—	—	e 79.7	90.6
Karlsruhe	166.6	308	e 20 12	[- 1]	—	—	e 66.7	—
Chur	166.7	298	20 11	[- 2]	—	—	—	—
Zurich	167.1	301	20 12	[- 1]	—	—	—	—
Strasbourg	167.2	307	20 14	[+ 1]	—	—	72.7	92.7
Stonyhurst	167.4	345	20 13	[+ 0]	—	—	—	97.2
Uccle	167.7	321	e 20 15	[+ 1]	—	—	—	59.4
Bidston	168.0	346	20 28	[+14]	35 49	?	e 45.3	107.4
Moncalieri	168.3	291	20 17	[+ 3]	—	—	46.8	105.4
Neuchatel	168.3	301	20 10	[- 4]	—	—	—	—
Besançon	168.9	303	e 21 24	[+70]	35 49	?	e 49.7	—
Kew	169.1	335	e 20 20	[+ 6]	—	—	e 77.7	90.0
Oxford	169.1	338	20 18	[+ 4]	—	—	e 68.7	96.3
Paris	169.9	318	i 20 18	[+ 3]	—	—	44.7	74.7
Algiers	170.2	243	20 25	[+10]	—	—	76.7	108.7
Marseilles	170.2	283	i 22 9	[+114]	32 48	?	—	—
Barcelona	172.6	270	e 20 37	[+21]	e 32 27	?	e 46.8	96.0
Alicante	173.5	240	e 20 32	[+16]	e 32 32	?	e 54.0	96.6
Almeria	173.6	222	e 20 15	[- 1]	38 6	?	51.0	92.4
Tortosa	173.7	264	20 21	[+ 5]	—	—	72.1	100.0
Bagnères	173.9	284	i 21 13	[+57]	1 32 22	?	38.7	—
Malaga	174.3	208	e 19 41	[-35]	e 37 5	?	e 48.7	101.4
Granada	174.4	216	i 20 17	[+ 1]	—	—	e 65.7	97.0
San Fernando	174.5	193	i 20 31	[+15]	39 21	?	87.1	100.1
Toledo	176.6	236	e 20 16	[- 1]	1 37 9	?	e 45.7	57.8

Additional readings: Wellington iPE = +41s. and +42s. Riverview i = +4m.31s. and +4m.35s., PR₁ = +4m.49s., PR₂ = +5m.0s., PR₃ = +5m.8s., and +5m.47s., SR₁ = +8m.41s., SR₂ = +8m.52s., SR₃ = +9m.3s., MZ = +10.4m.; T₀ = 22h.46m.53s. Adelaide i = +6m.10s. and +10m.20s., iSR₁ = +11m.47s., iSR₂ = +12m.20s., MN = +16.5m. Apla e = +9m.50s. and +12m.28s. Perth PR₁ = +10m.17s. Amboina e = +21m.28s. =

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SR₁-6s. Batavia iP = +11m.7s. Honolulu T.H. PR₁E = +15m.29s., eN = +20m.12s. S-1s., eE = +20m.21s. = S+8s., eSR₁N = +24m.1s., eSR₁N = +27m.32s. Manila P_cP = +12m.3s., iN = +14m.13s., iPR₁N = +14m.52s., iPS = +22m.2s., iS_cS = +22m.24s., i = +26m.30s. = SR₁-12s., SR₁N = +30m.22s., T₀ = 22h.47m.26s. Koti i = +11m.52s., S_cP_cS = +23m.10s., eE = +23m.6s., eN = +28m.24s., eEN = +28m.54s. = SR₁-8s., and +35m.12s., MN = +47.1m. Sumoto MZ = +45.9m., MN = +46.0m. Hong Kong PR₁ = +15m.50s., PR₁ = +18m.2s., iPS = +24m.12s., SR₁ = +29m.1s., MN = +29.5m. Kobe SR₁N = +28m.23s., MZ = +46.2m. Nagasaki S = +15m.40s. Hukuoka MN = +38.5m. Mizusawa SN = +16m.17s., SE = +16m.19s., LZ = +23.4m. Zi-ka-wei iZ = +14m.19s., iN = +16m.15s. = PR₁-26s., iZ = +20m.19s. = PR₁+16s., +23m.33s., +24m.49s. = PS+22s., +27m.31s., and +28m.15s., LN = +29.8m., LZ = +31.0m., MZ = +42.9m., MN = +50.0m. Sucre PR₁ = +16m.17s., SR₁ = +29m.29s., MN = +53.7m. Phu-Lien PR₁ = +17m.38s., PR₁ = +19m.53s., S_cP_cS = +24m.5s., iPS = +26m.35s., SR₁ = +31m.16s., SR₁E = +34m.26s. La Paz iP = +13m.26s., PR₁E = +17m.36s., PR₁E = +19m.51s., S_cP_cSE = +24m.28s., iPSE = +26m.3s., PPSE = +26m.36s., iE = +27m.9s., SR₁N = +31m.31s., SR₁E = +31m.36s., SR₁N = +36m.11s., SR₁N = +38m.28s. Lick eN = +16m.7s., eE = +17m.22s., iPR₁E = +18m.11s., ePR₁N = +18m.15s., eEN = +23m.5s., eE = +26m.25s., eN = +27m.2s. = PS+4s., eE = +28m.50s., eN = +28m.53s., eSR₁N = +31m.48s., eE = +38m.14s., and +42m.2s., eN = +42m.25s., eLE = +47.5m., ME = +55.4m. Berkeley eZ? = +24m.55s., eE = +25m.24s., and +26m.36s., eN = +27m.0s., eZ? = +27m.6s., eZ = +28m.5s., eSR₁?E = +39m.48s., eN = +41m.13s., eEN = +42m.24s., eZ = +45m.42s., eE = +45m.48s., eLE = +47.4m., eLN = +47.6m., ME = +54.9m., MZ = +55.4m. Cape Town PR₁ = +18m.17s. Tananarive eE = +15m.42s., PR₁EN = +18m.11s., eE = +25m.17s. = Σ+4s., SN = +25m.56s., PS = +27m.20s., PPS = +23m.17s., eN = +28m.51s. and +32m.35s., SR₁E = +32m.52s., E = +36m.26s., +40m.5s., and +43m.14s., N = +42m.34s. Tucson P'EN = +17m.44s., PR₁EN = +18m.22s., SE = +25m.58s., SR₁E = +32m.39s., SR₁N = +33m.18s., LE = +47.7m. Hyderabad MN = +58.1m. Victoria SN = +29m.17s. Rio de Janeiro LN = +49.5m., MN = +56.7m. Sitka iPR₁E = +19m.10s., ePSEN = +28m.6s., eSR₁EN = +34m.29s., eSR₁EN = +38m.39s., MN = +57.2m. Denver ePR₁ = +19m.27s., eN = +23m.22s., ePSE = +28m.51s. Irkutsk iPR₁ = +19m.8s., S_cP_cS = +25m.24s., PS = +29m.8s., SR₁ = +35m.0s. Florissant eP'EZ = +19m.1s., iPR₁ = +20m.29s., ePR₁? = +23m.0s., iZ = +24m.23s., iPR₁E = +25m.25s., iE = +26m.0s., iZ = +26m.10s., iPSN = +30m.6s., iPSE = +30m.11s., iPSZ = +30m.16s., iSR₁N = +36m.27s., iSR₁Z = +36m.49s., iSR₁N = +41m.46s., iN = +44m.24s., iSR₁N? = +45m.10s., MZ = +60.0m., MN = +60.3m. Chicago PR₁E = +20m.50s., PR₁N = +20m.51s., eS_cP_cSN = +26m.6s., PSE = +30m.33s., PSN = +30m.51s., eSR₁E = +36m.18s., eSR₁N = +36m.54s. Tashkent P = +15m.48s., iPR₁ = +20m.53s., S_cP_cP_cS = +27m.53s., PS = +31m.1s. Ann Arbor iPR₁ = +21m.12s., eSR₁ = +24m.12s., iPS? = +31m.18s., eE = +33m.0s., eSR₁ = +38m.24s., eSR₁ = +43m.24s., iLN = +52.6m., MN = +69.7m. Charlottesville ePR₁E = +21m.14s., ePR₁N = +21m.16s., ePSN = +30m.42s., iPSE = +31m.26s., eSR₁E = +38m.16s., eSR₁N = +38m.28s., eN = +52m.19s., eE = +52m.30s., eN = +54m.32s., eE = +59m.42s., eLN = +63.7m. Georgetown PR₁Z = +23m.34s., PR₁Z = +26m.24s., PR₁Z = +28m.6s., PSZ = +32m.51s., SR₁Z = +38m.32s., SR₁Z = +43m.15s., SR₁Z = +46m.24s. Toronto eN = +31m.20s., iSR₁E = +39m.39s., LN = +55.3m., MN = +73.1m. Fordham ePN = +18m.7s., iPE = +19m.30s., iE = +19m.36s., iN = +21m.47s. = PR₁+7s., iEN = +21m.54s., iE = +22m.9s., iN = +23m.23s., eN = +28m.44s. = Σ+20s., iEN = +33m.54s. and +39m.31s. = SR₁+20s., iN = +43m.35s., LN = +57.5. Ottawa PR₁ = +21m.46s., PSE = +32m.12s., PPSE? = +33m.46s., SR₁ = +39m.27s., SR₁ = +44m.12s., MN = +74.5m. Harvard iPR₁ = +22m.16s., iSR₁E = +39m.54s. Ekaterinburg P = +16m.34s., iPR₁ = +22m.16s., S_cP_cP_cS = +29m.3s., PS = +32m.11s. Baku P = +16m.49s., iPR₁ = +22m.24s., iPR₁ = +25m.42s. Ksara PR₁E = +23m.34s., PR₁E = +26m.49s., PR₁E = +29m.47s., PPSN = +36m.45s., SR₁E = +42m.23s., SR₁N = +42m.34s. T₀ = 22h.47m.6s. Pulkovo eP = +17m.52s., P_cP_cS = +23m.32s., PPS = +38m.12s. Scoresby Sund i = +20m.14s., PR₁ = +23m.37s., iN = +26m.48s., +28m.15s., +33m.6s., +38m.18s., and +40m.18s., SR₁ = +43m.0s., and +44m.6s. Helsingfors eP'Z = +19m.56s., iP'Z = +20m.4s., S_cP_cS = +23m.40s., PR₁ = +24m.9s., PR₁ = +27m.18s., e = +29m.36s., S_cP_cSP = +34m.14s., e = +36m.54s., and +39m.8s., SR₁ = +43m.12s., SR₁ = +50m.12s., SR₁ = +53m.59s. Reykjavik e = +55m.22s. Upsala eN = +19m.21s., PR₁ = +24m.11s., PR₁ = +27m.51s., S_cP_cSP = +34m.27s., eN = +50m.42s., MN = +95.0m. Konigsberg eE = +20m.24s., eP₁EN = +20m.55s., eN = +21m.56s., eE = +22m.26s., iP₁P₁EN = +24m.1s., ePR₁E = +24m.25s., eN = +25m.2s., iPR₁E = +28m.21s., iP₁P₁EN = +29m.34s., iE = +32m.16s., eSR₁N = +44m.19s., eN = +46m.56s., eSR₁N = +50m.36s., eN = +54m.48s. Belgrade eP'E =

Continued on next page.

+20m.11s., ePR₁E = +24m.37s., ePR₂E = +28m.20s. Copenhagen P' = +20m.59s., PR₁ = +24m.46s., S_cP_cSP = +35m.2s., PPS = +38m.2s., SR₁ = +46m.12s., SR₂ = +50m.42s. Vienna iP = +20m.27s., i = +21m.15s., PR₁' = +24m.54s., PR₂' = +28m.38s., S_cP_cP_cS = +30m.57s., PR₂ = +32m.38s., S_cP_cSP = +35m.14s., PPS = +38m.28s., SR₁ = +46m.5s., MNZ = +102.7m. Zagreb e = +20m.16s. and +20m.29s., i = +21m.9s. and +21m.28s., e = +21m.31s., +21m.54s., +23m.12s., +24m.7s., +24m.42s. = PR₁ - 10s., +32m.2s. = PR₂ + 1s., +35m.8s. +38m.30s., and +40m.17s., eL = +45.3m., +47.7m., +51.2m., +52.5m., +56.3m., +57.9m. Graz eP = +20m.29s., iPPS = +24m.58s., iPR₁ = +25m.14s., iPS = +31m.14s. and +35m.21s., iSR₁ = +45m.23s., iPSSE = +46m.18s., iSR₂ = +51m.10s. Hamburg iP' = +21m.19s., iPR₁ = +25m.8s., iPR₂Z = +28m.51s., iS_cP_cSPE = eS_cP_cSPN = +35m.12s., eZ = +38m.6s., iPSSE = +47m.10s., eSR₁E = +52m.12s., MZ = +86.6m., MN = +90.4m. Laibach ePR₁N = +24m.59s., eS_cP_cP_cSN = +31m.17s., eS_cP_cSPN = +35m.26s., ePPSN = +38m.55s., eSR₁N = +45m.21s. Cheb e = +25m.2s. = PR₁ + 2s., +28m.57s. = PR₂ + 6s., +35m.12s., and +45m.46s. = SR₁ + 16s., MN = +82.7m. Jena eE = +21m.5s., iE = +21m.15s., iN = +21m.16s., iZ = +21m.20s., ePR₁ = +24m.42s., e = +28m.42s. = PR₂ - 9s., eE = +35m.8s., eN = +35m.12s., eE = +38m.42s., +47m.30s. and +48m.12s., eN = +51m.42s. = SR₂ - 7s., and +52m.42s., eE = +53m.42s. and +60m.6s., eN = +60m.42s., eLN = +68.7m. Dyce iP = +21m.15s. Göttingen iP'E = +21m.21s., iP'N = +21m.22s., iP'Z = +21m.23s., iPR₁Z = +25m.7s., iPR₂E = +25m.9s., iPR₁N = +25m.12s., ePR₂Z = +28m.46s., ePR₂E = +28m.50s., eE = +31m.20s. = E - 12s., iS_cP_cSPE = +35m.31s., iS_cP_cSPN = +35m.33s., iPSSE = +46m.18s., iSR₁N = +52m.22s., iSR₂E = +52m.36s., MN = +92.3m., MZ = +92.7m. Innsbruck i = +21m.26s., PR₁' = +36m.0s. Edinburgh i = +25m.9s., +26m.2s., and +45m.44s. Feldberg eE = +20m.21s., +29m.42s., and +34m.36s., iN = +21m.17s. Hohenheim iE = +21m.33s., iP_cP_cS? = +23m.24s., ePR₁ = +24m.54s., iPR₁ = +25m.15s., ePR₂ = +28m.42s., iPR₂ = +29m.6s., ePR₂ = +31m.25s., iPR₂ = +31m.47s., iS_cP_cSP = +35m.37s., iPPS = +38m.54s., iSR₁ = +45m.52s. De Bilt eZ = +20m.17s., e = +21m.20s., PR₁ = +25m.9s., MZ = +91.5m., MN = +91.8m.; T₀ = 22h.47m.33s. Strasbourg i = +21m.27s., PR₁' = +25m.17s., PR₂ = +29m.18s., i = +31m.44s. = E - 4s., PS = +35m.41s., SR₂ = +47m.7s., MZ = +92.9m., MN = +93.2m. Stonyhurst PR₂ = +25m.13s., PR₁ = +29m.16s., PR₂ = +32m.10s., ? = +48m.17s. Uccle i = +21m.28s., iPR₁ = +25m.16s., i = +31m.57s. = E + 8s., +35m.32s., and +47m.34s., MN = +54.4m., MZ = +96.9m. Moncalieri i = +25m.17s. = PR₁ - 9s. and +29m.5s. = PR₂ - 17s., L = +40.7m., MN = +91.6m. Besançon i = +21m.42s., PR₁ = +25m.27s., SR₁ = +47m.29s. Kew iNZ = +21m.38s., iPR₁Z = +25m.20s., iPR₁N = +25m.26s., PR₂Z = +29m.28s., iZ = +35m.50s., iPSN = +39m.18s., SR₁N = +46m.46s., eN = +52m.12s., iSR₁N = +54m.18s., eN = +58m.12s., and +66m.18s., MN = +109.1m., MZ = +112.0m. Oxford i = +21m.28s., +26m.18s., and +35m.42s. ? Paris PR₁ = +25m.40s., e = +32m.37s. and +36m.2s., MN = +89.7m. Algiers P = +21m.46s., PR₁ = +25m.31s., PR₂ = +32m.46s., iSR₁ = +46m.38s., ? = +54m.42s. ? Marseilles i = +22m.13s. Barcelona MN = +105.6m. Almeria iE = +25m.18s., iN = +26m.0s. = PR₁ + 4s. Tortosa LE = +73.3m., ME = +100.3m. Malaga i = +20m.33s., MZ = +101.7m. Granada i = +21m.40s. and +24m.41s., PR₁ = +26m.7s., i = +26m.24s., PR₂ = +30m.54s., PR₂' = +32m.30s. San Fernando MN = +99.6m. Toledo iPZ = +20m.29s., PR₁NE = +25m.52s., MNW = +57.7m.

After-shocks from the epicentre of June 16d. 22h. were recorded by Wellington at:—

h.	m.	s.	h.	m.	s.	h.	m.	s.
23	12	42	23	33	24	23	59	48
23	14	42	23	43	0			

June 16d. Readings also at 1h. (Suva (2)), 4h. (Andijan and near Samarkand), 5h. (Manila), 10h. and 13h. (La Paz), 14h. (Manila, Phu-Lien, and Zi-ka-wei), 15h. (Baku, Copenhagen, Ekaterinburg, Irkutsk, Pulkovo, Tashkent, Scoresby Sund, Georgetown, and Ottawa), 16h. (Georgetown, Ottawa, Toronto, and near Wellington), 17h. (Ottawa, near Granada, and near Nagasaki), 18h. (Florissant, Georgetown, Ottawa, La Paz, Wellington, and Tacubaya), 19h. (Ekaterinburg, Tashkent, Christchurch, and near Wellington), 22h. (Florissant, Fordham, Georgetown (2), Chicago, Ottawa (2), Toronto (2), Tacubaya, Sitka (2), Victoria (2), Scoresby Sund, Ekaterinburg, and Tashkent), 23h. (La Paz).

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June 17d. 6h. 45m. 3s. Epicentre 33°·7N. 135°·2E,

A = -·590, B = +·586, C = +·555.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Sumoto	0·7	338	i 0 11	0	(0 20)	0	0·3	0·3
Muroto	1·0	242	o 15	0	0 28	0	—	—
Kobe	1·0	359	i 0 15	0	(i 0 28)	0	i 0·5	0·5
Osaka	1·0	12	o 8	- 7	(0 23)	- 5	0·4	0·9
Koti	1·4	264	—	—	e 0 39	0	—	—
Toyoooka	N. 1·9	350	o 28	- 1	(0 50)	- 3	0·8	—
Nagoya	2·0	45	e 0 35	+ 4	(1 0)	+ 5	1·0	—

No additional readings.

June 17d. 10h. 16m. 16s. Epicentre 8°·3N. 126°·9E.

(as on 15d.).

A = -·594, B = +·791, C = +·144; D = +·800, E = +·600;
G = -·087, H = +·115, K = -·990.

	Δ	Az.	P. m. s.	O-C. s.	S. m. s.	O-C. s.	L. m.	M. m.
Manila	8·6	318	i 2 18	+ 8	i 4 7	+14	5·3	—
Taihoku	E. 17·5	344	e 4 41	+30	(7 41)	+12	7·7	—
Hong Kong	18·6	320	e 4 25	+ 1	7 54	+ 1	9·5	13·2
Phu-Lien	23·2	305	e 5 15	- 4	e 9 30	+ 1	10·7	15·1
Zi-ka-wei	Z. 23·5	348	e 5 10	-13	9 40	+ 5	15·0	23·2
Miyazaki	24·0	9	e 5 26	- 2	9 40	- 4	12·0	—
Nagasaki	24·6	6	e 5 28	- 6	e 9 46	- 9	—	—
Batavia	24·7	235	i 5 34	- 1	i 11 25	+88	—	—
Hukuooka	25·5	7	e 5 37	- 6	—	—	—	—
Koti	26·0	13	e 5 42	- 6	e 10 5	-17	—	—
Sumoto	27·1	15	e 5 53	- 6	—	—	—	15·3
Kobe	27·4	15	6 0	- 2	e 10 56	+ 8	e 14·9	—
Osaka	27·6	16	5 13	-51	—	—	9·1	12·9
Toyoooka	N. 28·2	14	e 5 57	-13	—	—	—	—
Nagoya	28·4	18	e 6 3	- 9	—	—	—	—
Akita	33·6	20	e 12 11	?S	(e 12 11)	-23	—	—
Calcutta	E. 39·6	296	7 53	+ 2	13 39	-21	—	—
	N. 39·6	296	7 49	- 2	13 31	-29	—	—
Adelaide	44·6	166	e 7 22?	-68	i 14 49	-21	22·3	26·2
Colombo	46·6	272	8 35	- 9	—	—	—	33·3
Irkutsk	47·7	342	i 8 45	- 7	i 15 41	- 9	25·7	—
Hyderabad	48·0	287	8 47	- 7	15 44	-10	25·6	33·2
Riverview	48·0	152	e 9 54	+60	—	—	e 26·8	31·6
Sydney	48·0	152	14 44	?S	(14 44)	-70	19·4	20·2
Melbourne	49·1	161	—	—	i 16 6	- 1	26·6	30·1
Dehra Dun	50·6	305	8 44?	-27	15 44?	-42	26·7	42·7
Bombay	53·4	288	9 34	+ 5	16 56	- 5	27·5	30·2
Almata	55·7	318	e 9 54	+10	—	—	—	—
Andijan	57·9	314	e 11 6	+68	—	—	—	—
Tashkent	60·5	314	i 11 18	+62	i 18 53	+23	e 31·7	37·8
Samarkand	61·8	313	e 10 28	+ 4	—	—	—	—
Wellington	E. 66·2	142	—	—	—	—	35·9	—
Ekaterinburg	70·2	329	i 11 22	+ 4	i 20 31	+ 3	32·7	38·9
Baku	74·7	311	e 11 52	+ 5	21 31	+ 9	35·7	46·4
Kucino	82·6	326	12 33	- 1	22 49	- 4	34·6	53·3
Pulkovo	86·1	330	12 50	- 4	23 22	- 9	43·7	52·6
Smferopol	86·1	315	e 12 47	- 7	—	—	—	—
Ksara	86·2	304	e 12 56	+ 2	23 28	- 4	38·7	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	o	m. s.	m. s.	s.	m. s.	s.	m.	m.
Sebastopol	86.4	315	e 11 58	-57	—	—	—	—
Helsingfors	88.6	331	—	—	23 47	-12	e 45.2	—
Upsala	92.3	332	—	—	e 24 17	-21	e 50.7	—
Copenhagen	96.5	330	13 38	-14	24 55	-26	49.7	—
Victoria	96.6	39	—	—	24 26	[+20]	—	—
Zagreb	98.2	319	e 14 44?	+43	e 25 28	-10	—	—
Scoresby Sund	98.4	350	14 2	0	25 21	-19	55.7	—
Hamburg	98.6	329	—	—	e 24 26	[+9]	e 51.7	67.7
Cheb	98.8	324	—	—	e 23 31	?	53.7	62.2
Gottingen	99.5	326	—	—	e 25 20	-31	e 53.3	55.3
Feldberg	N. 101.0	326	—	—	—	—	e 51.2	89.2
De Bilt	101.9	328	e 14 7	-13	e 24 46	[+13]	e 53.7	65.5
Florence	102.1	319	e 14 29	+8	e 18 3	?PR ₁	—	—
Strasbourg	102.2	325	e 14 12	-9	24 44?	[+9]	43.7	—
Uccle	103.0	327	—	—	e 24 44?	[+6]	e 53.7	—
Edinburgh	103.8	334	—	—	e 24 44?	[+2]	57.7	—
Moncalieri	103.9	320	14 42	+12	25 2	[+20]	37.7	—
Stonyhurst	104.7	332	—	—	—	—	e 57.7	59.7
Paris	105.0	325	e 14 44?	+10	—	—	56.7	58.7
Kew	105.1	330	e 18 38	?PR ₁	—	—	55.7	67.7
Oxford	105.4	330	—	—	—	—	e 54.6	67.9
Alicante	112.5	318	—	—	e 29 45	?PS	—	—
Toledo	N.W. 113.9	320	—	—	e 26 51	?S	—	69.6
Granada	115.2	318	—	—	e 23 53	?	60.7	65.7
Florissant	121.6	34	e 20 39	?PR ₁	e 26 9	[+20]	e 65.7	—
Ottawa	N. 122.6	17	—	—	e 25 32	[-20]	73.7	—
Toronto	122.9	21	—	—	37 44?	?SR ₁	—	—
Fordham	127.3	20	e 19 34	[+22]	—	—	—	—
Georgetown	127.8	23	e 20 51	?PR ₁	—	—	e 67.1	80.0
Sucre	164.1	133	20 21	[+10]	—	—	—	—

Additional readings and notes : Phu-Lien MN = +16.5m. Zi-ka-wei SN = +9m.32s. Batavia 1E = +6m.1s. = PR₁ - 7s. Sumoto MN = +16.1m., MZ = +16.3m. Adelaide e = +8m.42s. = S + 11s., MN = +29.0m., Hyderabad MN = +33.6m. Riverview MN = +37.5m. Melbourne e = +19m.19s. = SR₁ - 30s. Tashkent i = +12m.38s. = PR₁ - 23s., +15m.37s., and +20m.33s. Wellington 1E = +21m.51s., iN = +22m.17s., eLN = +36.7m. Pulkovo SePcP = +23m.15s. Zagreb e = +18m.16s. = PR₁ + 14s. Scoresby Sund +24m.30s. = [S] + 15s. Hamburg eE = +34m.2s., MN = +62.7m. Feldberg i = +55m.35s.; all readings have been increased by 1h. De Bilt ePR₁Z = +18m.20s., eEN = +25m.47s., MN = +63.5m., MZ = +65.6m. Strasbourg ePR₁ = +19m.24s., iSePcPcS = +25m.52s., ePS = +27m.20s.?, ePPS = +28m.49s. Florissant eEN = +29m.44s., eEZ = +36m.44s. = SR₁ - 22s.

June 17d. After-shocks from the epicentre of 16d. 22h. were recorded as follows : the earliest phase given being entered in each case :—

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	41	48	3	22	31	6	14	29
0	45	3	3	24	19	7	18	53
0	50	17	3	29	10	7	23	18
1	2	59	3	32	30	7	51	3
1	21	57	3	47	11	9	1	7
1	25	9	4	19	49	9	40	4
1	34	18	4	28	29	11	21	28
2	34	48	5	1	0	13	55	53
2	52	0	5	9	3	19	28	55
3	3	1	5	57	26	19	47	44
3	18	13	6	13	15	21	23	58

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Wellington iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	0	—	4	12	58	12	41	5
0	2	—	4	15	10	12	47	47
0	6	32	4	19	12	12	58	57
0	7	51	4	25	40	13	4	33
0	8	39	4	27	38	13	6	41
0	9	30	4	40	10	13	22	41
0	10	41	4	45	7	13	42	2
0	20	1	4	51	12	13	45	28
0	28	51	5	0	31	13	51	14
0	34	51	5	7	10	13	53	52
0	35	46	5	9	5	13	55	16
0	41	26	5	10	17	14	16	57
0	44	41	5	10	47	14	19	0
0	48	21	5	20	0	14	23	2
0	49	43	5	27	15	14	24	41
0	51	46	5	30	17	14	38	46
0	57	47	5	35	0	14	50	10
1	3	1	5	37	15	14	54	37
1	9	21	5	40	3	15	5	20
1	13	46	5	44	11	15	10	31
1	21	37	5	47	0	15	12	31
1	24	41	5	49	57	15	18	37
1	31	13	5	56	38	15	36	37
1	34	11	6	0	32	15	40	47
1	37	21	6	12	49	15	43	0
1	40	8	6	16	22	15	47	37
1	43	21	6	18	17	15	59	29
1	45	11	6	24	8	16	3	7
1	46	13	6	27	18	16	31	2
1	48	40	6	32	52	16	44	22
1	49	10	6	37	15	16	45	41
1	51	21	6	38	52	16	58	29
1	53	11	6	43	7	17	10	2
1	56	6	6	45	2	17	18	57
1	59	31	6	49	37	17	36	9
2	1	12	7	9	54	17	42	48
2	18	22	7	13	5	17	53	3
2	25	16	7	16	30	17	57	59
2	26	16	7	18	26	18	36	51
2	34	7	7	22	39	18	39	32
2	37	26	7	26	12	18	47	57
2	38	2	7	30	32	18	53	51
2	39	15	7	34	54	18	9	32
2	40	16	7	51	1	19	18	30
2	41	39	7	53	3	19	18	8
2	45	33	8	5	5	19	23	40
2	47	41	8	16	15	19	25	40
2	48	35	8	30	—	19	27	13
2	49	19	8	33	58	19	28	10
2	49	46	8	44	39	19	37	39
2	51	1	8	49	37	19	43	27
2	51	26	8	50	17	19	47	27
2	56	22	8	51	59	20	22	11
2	57	49	8	52	49	20	24	—
2	58	21	8	56	2	20	31	28
3	1	27	8	56	36	20	32	36
3	8	11	8	57	39	20	38	15
3	10	57	8	57	39	20	48	10
3	15	15	9	0	35	20	52	—
3	16	37	9	6	37	20	57	47
3	18	2	9	6	37	21	0	50
3	19	27	9	12	14	21	14	51
3	19	58	9	13	37	21	18	57
3	22	7	9	21	59	21	23	53
3	23	39	9	39	49	21	35	43
3	28	9	10	2	43	21	46	55
3	28	38	10	27	30	21	53	3
3	30	38	10	32	31	22	4	40
3	32	16	10	42	22	22	22	36
3	34	7	10	45	50	22	31	3
3	43	9	11	19	0	22	50	1
3	46	10	11	20	40	22	56	21
3	47	2	11	26	20	23	17	16
3	52	52	11	31	0	23	20	20
3	54	50	11	39	22	23	32	34
4	2	7	11	46	37	23	43	0
4	3	3	12	3	34	23	50	3
4	10	29	12	32	2	23	54	14
4	10	29	12	37	45			

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June 17d. Readings also at 0h. (Johannesburg), 1h. (Ksara), 4h. (Manila, Yalta, near Sebastopol, Simferopol, and Theodosia), 10h. (Sydney), 12h. (Mizusawa and Nagoya), 13h. (Mizusawa and Nagoya), 14h. (Ekaterinburg, Tashkent, and Scoresby Sund), 16h. (Georgetown, Ottawa, Ekaterinburg, and Tashkent), 17h. (near Tacubaya), 21h. (Manila), 23h. (Fordham).

June 18d. 14h. 10m. 25s. Epicentre 39°-0N. 75°-0E. (as on 1928 April 25d.).

A = +.201, B = +.751, C = +.629 ; D = +.966, E = -.259 ;
G = +.163, H = +.608, K = -.777.

Very uncertain.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	2.4	301	1 3	+26	(1 3)	- 3	2.2	2.4
Almata	4.5	18	e 2 0	?S	(e 2 0)	- 4	—	—
Tashkent	5.0	300	1 1 18	+ 1	—	—	—	—
Samarkand	6.2	278	1 14	-21	—	—	1.9	4.8
Dehra Dun	9.0	163	3 25	+69	—	—	—	3.6
Baku	19.3	282	e 4 17	-16	e 7 24	-44	—	—
Bombay	20.2	186	4 49	+ 6	7 38	-49	—	—
Ekaterinburg	20.2	337	e 4 46	+ 3	8 32	+ 5	10.6	—
Kucino	29.7	317	e 4 47	-98	—	—	—	—
Pulkovo	34.8	323	7 16	+ 5	12 13	-39	15.6	—
Copenhagen	43.8	315	—	—	14 23	-36	—	—
Hamburg	45.5	313	—	—	—	—	e 22.6	26.6
De Bilt	48.7	310	—	—	—	—	e 19.6	—

The Central Asian stations give epicentre 42°15'N. 66°25'E., the Russian stations give 36°N. 37°E.

June 18d. After-shocks from the epicentre of 18d. 22h. were recorded as follows. The earliest phase given being entered in each case.

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	45	48	6	9	57	14	32	0
1	51	15	6	18	8	21	27	53
2	7	15	13	55	34	22	19	1
5	15	27	14	25	45			

Wellington iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	13	58	5	54	57	14	25	34
0	22	45	6	9	43	14	31	47
0	33	31	6	17	47	15	21	38
0	45	56	6	32	40	15	36	16
1	22	40	6	35	0	15	53	47
1	50	40	7	13	10	16	15	44
2	6	27	7	30	28	16	15	44
2	11	5	7	44	8	17	38	23
2	29	49	7	52	0	18	4	0
2	36	0	8	9	32	18	41	25
2	41	—	9	19	13	18	57	56
2	52	38	9	49	55	19	5	17
3	6	0	10	57	35	19	37	10
3	41	59	11	2	14	20	25	55
3	46	10	11	29	38	21	27	25
4	14	0	11	50	13	21	55	46
4	29	25	12	49	—	21	59	26
4	54	9	12	57	39	22	17	49
5	6	39	12	58	25			
5	15	36	13	55	19			

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June 18d. Readings also at 0h. (Samarkand), 1h. (Baku, Ekaterinburg, Kucino, Pulkovo, Tashkent, Copenhagen, Melbourne, and Wellington), 2h. (Granada and Scoresby Sund), 3h. (Andijan and Sebastopol), 4h. (Ekaterinburg and Tashkent), 5h. (Andijan and near Samarkand (2)), 6h. (Almata, Andijan (2), Samarkand (2), Baku, Irkutsk, Ekaterinburg, and Tashkent), 7h. (Feldberg), 9h. (Andijan, near Samarkand, and near Merida), 10h. (Ottawa, Toronto, Georgetown, Florissant, Baku, Ekaterinburg, and near Ksara), 12h. (near Manila), 16h. (Georgetown), 18h. (De Bilt, Strasbourg, Zagreb, Copenhagen, Pulkovo, Ekaterinburg, and Manila), 19h. (Suva and Honolulu T.H.), 20h. (near Honolulu T.H.), 21h. (Suva), 23h. (La Paz and near Tananarive).

June 19d. 3h. 25m. 33s. Epicentre $41^{\circ}8S$. $172^{\circ}2E$. (as on 16d.).

$$A = -739, B = +101, C = -667; D = +136, E = +991; \\ G = +660, H = -090, K = -745.$$

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Christchurch	1.8	170	—	—	0 51	0	—	—
Wellington	2.0	75	i 0 32	+ 1	i 0 57	+ 2	—	—
Riverview	18.4	289	e 4 15	- 7	—	—	e 9.0	11.4
Sydney	18.4	289	0 45	?	—	—	10.0	11.4
Melbourne	21.2	272	e 4 45	- 10	e 8 30	- 18	10.9	12.8
Suva	24.3	14	—	—	—	—	—	14.4
Adelaide	27.0	274	—	—	i 10 52	+ 11	13.2	15.6
Irkutsk	110.9	322	—	—	—	—	e 58.4	—
Tashkent	124.4	297	e 20 35	{PR ₁	e 30 37	?	66.8	76.8
Ekaterinburg	135.0	314	e 19 10	[-20]	—	—	64.4	—
Theodosia	148.9	291	e 19 45	[- 9]	—	—	—	—
Simferopol	149.7	290	e 19 43	[-12]	—	—	—	—
Sebastopol	150.1	289	e 19 44	[-12]	—	—	—	—
Scoresby Sund	150.4	10	—	—	—	—	82.4	—
Pulkovo	150.6	321	e 19 43	[-14]	e 23 16	{PR ₁	—	—
Copenhagen	160.9	323	—	—	—	—	88.4	—
De Bilt	166.5	324	—	—	—	—	e 94.4	—
Uccle	167.7	321	—	—	—	—	e 84.4	—
Granada	174.4	216	—	—	—	—	e 90.4	98.4

Additional readings: Riverview MN = +11.6m. Adelaide MN = +14.0m.
Ekaterinburg e = +22m.43s. and +24m.1s.

June 19d. 7h. 30m. 35s. Epicentre $8^{\circ}3N$. $126^{\circ}9E$.

(as on 17d.).

$$A = -594, B = +791, C = +144; D = +800, E = +600; \\ G = -087, H = +115, K = -990.$$

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	12 18	+ 8	i 4 17	+ 24	—	—
Taihoku	E. 17.5	344	e 4 22	+ 11	(7 39)	+ 10	7.7	—
Hong Kong	18.6	320	4 25	+ 1	7 56	+ 3	9.3	10.4
Phu-Lien	23.2	305	e 5 17	- 2	e 9 28	- 1	10.9	15.1
Zi-ka-wei	Z. 23.5	348	15 17	- 6	i 9 39	+ 4	i 14.9	23.1
Nagasaki	24.6	6	e 5 36	+ 2	e 10 7	+ 12	—	—
Batavia	24.7	235	15 34	- 1	i 11 2	+ 65	—	—
Hukuoka	25.5	7	5 37	- 6	e 10 25	+ 12	—	—
Koti	26.0	13	e 5 44	- 4	e 10 20	- 2	—	—
Sumoto	27.1	15	5 59	0	e 13 31	{L	(e 13.5)	15.9
Kobe	27.4	15	5 59	- 3	13 59	{L	(14.0)	—
Akita	33.6	20	—	—	—	—	14.6	15.8

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E. 39.6	296	10 3	?PR ₁	17 31	?SR ₁	—	—
Adelaide	44.6	166	—	—	114 59	-11	22.0?	35.1
Riverview	48.0	152	e 8 52	- 2	115 51	- 3	25.0	31.6
Sydney	48.0	152	15 7	?S	(15 7)	-47	30.7	33.0
Hyderabad	48.0	287	8 54	0	15 52	- 2	25.6	33.2
Kodalkanal	48.8	276	10 49	?PR ₁	—	—	18.2	34.8
Melbourne	49.1	161	e 10 57	?PR ₁	116 6	- 1	26.8	30.1
Dehra Dun	50.6	305	9 25?	+14	16 15	-11	26.4	34.4
Almata	55.7	318	10 54	+70	—	—	—	—
Suva	N. 57.3	119	e 11 1	+67	19 19	[-15]	28.8	—
Andijan	57.9	314	10 26	+28	—	—	—	—
Tashkent	60.5	314	10 17	+ 1	17 42	-48	e 23.4	35.6
Samarkand	61.8	313	10 30	+ 6	—	—	—	—
Ekaterinburg	70.2	329	i 11 23	+ 5	120 30	+ 2	32.4	39.4
Honolulu T.H.	73.4	70	e 12 35	+57	21 18	+11	e 33.9	—
Baku	74.7	311	e 11 54	+ 7	i 21 32	+10	36.4	50.2
Kucino	82.6	326	12 36	+ 2	22 47	- 6	39.9	47.1
Tananarive	82.8	250	—	—	i 22 55	0	e 45.4	48.9
Theodosia	85.2	316	e 12 49	- 0	—	—	e 46.4	—
Pulkovo	86.1	330	12 50	- 4	e 23 24	- 7	41.4	52.6
Simferopol	86.1	315	e 12 51	- 3	—	—	—	—
Ksara	86.2	304	e 12 56	+ 2	23 9	-23	38.9	—
Sebastopol	86.4	315	e 12 56	+ 1	—	—	—	—
Helsingfors	88.6	331	e 13 6	- 2	e 23 49	-10	e 44.4	—
Helwan	90.7	300	e 13 17	- 3	23 43	[+11]	—	61.8
Uppsala	E. 92.3	332	—	—	e 23 51	[+ 9]	e 50.4	63.7
Konigsberg	92.5	326	—	—	e 23 15	[-23]	e 49.4	59.4
Entebbe	94.4	273	17 25?	?PR ₁	24 25?	[+31]	—	—
Copenhagen	96.5	330	13 44	- 8	24 18	[+13]	49.4	—
Victoria	96.6	39	24 26	?S	(24 26)	[+20]	—	—
Vienna	97.1	322	—	—	—	—	e 50.4	54.4
Zagreb	98.2	319	e 17 55	[+15]	—	—	e 53.4	—
Scoresby Sund	98.4	350	13 49	-13	e 24 32	[+17]	—	—
Hamburg	98.6	329	e 20 25	?PR ₂	e 24 25	[+ 8]	e 52.4	62.4
Jena	E. 98.9	325	—	—	—	—	e 54.4	59.4
Gottingen	99.5	326	e 20 7	?PR ₂	e 28 7	?	e 53.4	56.1
De Bilt	101.9	328	e 14 9	-11	e 24 46	[+13]	—	—
Florence	102.1	319	i 15 55	+94	26 55	+39	59.4	74.4
Strasbourg	102.2	325	e 13 37	-44	124 43	[+ 8]	44.4	—
Dyce	102.5	335	—	—	e 26 36	+16	e 52.4	59.3
Uccle	103.0	327	e 18 25?	?PR ₁	124 55	[+17]	e 49.4	57.9
Neuchatel	103.5	324	—	—	—	—	e 40.4	—
Edinburgh	103.8	334	—	—	e 24 55	[+13]	54.4	—
Moncalieri	103.9	320	e 18 40	?PR ₁	29 48	?	54.9	—
Stonyhurst	104.7	332	—	—	e 25 0	[+14]	58.0	62.7
Paris	105.0	325	e 14 25?	- 9	e 25 2	[+15]	52.4	67.4
Kew	105.1	330	e 14 20	-15	e 25 0	[+12]	51.4	67.4
Oxford	105.4	330	—	—	e 25 2	[+13]	—	68.1
Tortosa	N. 110.5	320	—	—	—	—	e 56.4	60.9
Alicante	112.5	318	—	—	e 29 8	?PS	e 63.7	—
Toledo	113.9	320	e 19 43	?PR ₁	e 29 30	?PS	e 42.5	64.0
Granada	115.2	318	e 19 47	?PR ₁	—	—	59.9	67.6
Malaga	116.0	318	e 20 21	?PR ₁	e 29 38	?PS	—	—
San Fernando	E. 117.3	319	—	—	—	—	—	78.6
Florissant	121.6	34	e 20 25	?PR ₁	e 25 55	[+ 6]	—	73.4
Ottawa	122.6	17	—	—	e 26 8	[+16]	e 56.4	—
Toronto	N. 122.9	21	—	—	e 26 10	[+16]	75.4	—
Harvard	126.7	15	—	—	e 26 45	[+42]	—	—
Fordham	E. 127.3	20	—	—	e 38 25	?SR ₁	e 68.4	88.9
Georgetown	Z. 127.8	23	e 20 7	?	—	—	e 71.7	84.2
La Paz	163.2	121	e 20 42	[+32]	131 38	?Z	77.4	—
Sucre	164.1	133	20 21	[+10]	31 51	?Z	—	—

For Notes see next page.

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NOTES TO JUNE 19d. 7h. 30m. 35s.

Additional readings : Hong Kong MN = +12.9m. Phu-Lien MN = +16.5m. Zi-ka-wei SE = +9m.33s., MN = +16.4m. Sumoto MN = +15.4m. Kobe SZ = +12m.56s., eSR₁N? = +19m.15s. Calcutta PN = +10m.2s. Adelaide ePR₁E = +10m.17s., i = +16m.30s., iSR₁ = +18m.18s., iSR₂ = +19m.36s., MN = +29.1m. Riverview iS = +15m.55s., SR₁ = +19m.25s., MN = +32.6m. Sydney S = +22m.13s. Hyderabad MN = +33.8m. Melbourne i = +19m.35s. = SR₁ - 14s. Honolulu T.H. eSE? = +20m.41s., eN = +33m.25s. Tananarive N = +17m.35s., iN = +23m.10s., eE = +24m.4s., +28m.1s., and +41m.37s. Pulkovo S_cP_cS = +23m.15s. Ksara PR₁E = +16m.3s., PR₂E = +18m.44s., PSE = +24m.13s., SR₁E = +31m.48s. Helsingfors eS_cP_cS = +23m.31s., S_cP_cS = +23m.36s. Upsala e = +24m.24s. = S - 14s., MN = +51.6m. Konigsberg eE = +23m.57s., eN = +24m.1s., eE = +29m.7s., and +38m.40s., MN = +66.4m. Copenhagen +25m.1s. = S - 20s. Scoresby Sund +25m.19s. = S - 21s. Jena eLN = +53.4m., MN = +59.9m. Gottingen eE = +24m.37s. = [S] + 16s., eLN = +53.8m., eLZ = +59.7m. De Bilt ePR₁Z = +18m.21s., eEN = +25m.48s. = S - 26s. Strasbourg ePR₁ = +18m.45s., iS_cP_cS = +25m.55s., ePS = +27m.55s. Stonyhurst i = +26m.12s. = S - 27s., ? = +47m.17s. Paris MN = +57.4m. Kew ePR₁Z = +18m.44s., eEN = +26m.12s. = S - 31s. Toledo MNW = +64.2m. San Fernando MN = +77.0m. Florissant eEN = +27m.25s. = E + 3s., +30m.25s. = PS - 25s., and +36m.25s. Fordham MN = +80.4m. Georgetown PSZ = +38m.37s.

June 19d. 9h. 17m. 10s. Epicentre 41° 8S. 172° 2E. (as at 3h.).

A = -0.739, B = +0.101, C = -0.667; D = +0.136, E = +0.991; G = +0.660, H = -0.090, K = -0.745.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch	1.8	170	—	—	0 53	+ 2	—	—
Wellington	E. 2.0	75	i 0 30	- 1	i 0 52	- 3	—	—
	N. 2.0	75	i 0 31	0	i 0 53	- 2	—	—
Riverview	18.4	289	i 4 13	- 9	i 7 57	+ 8	e 8.8	9.9
Sydney	18.4	289	4 8	-14	8 38	+49	9.8	11.3
Melbourne	21.2	272	i 4 47	- 8	9 0	+12	11.4	13.1
Suva	N. 24.3	14	—	—	—	—	12.8	—
Adelaide	27.0	274	e 5 30?	-28	e 10 4	-37	12.4	16.3
Florissant	E. 119.5	61	—	—	—	—	e 59.8	62.8
Toronto	129.1	61	—	—	—	—	65.8	—
Ottawa	132.1	60	—	—	—	—	e 62.8	—
Ksara	145.0	270	e 19 32	[-16]	—	—	—	—
Theodosia	148.9	291	e 19 45	[- 9]	—	—	—	—
Simferopol	149.7	290	e 19 44	[-11]	—	—	—	—
Sebastopol	150.1	289	e 19 44	[-12]	—	—	—	—
Copenhagen	160.9	323	—	—	—	—	84.8	—
Zagreb	162.4	291	e 20 45	?	e 24 30	?PR ₁	—	—
De Bilt	166.5	324	—	—	—	—	e 94.8	103.8
Granada	174.4	216	e 26 30	?PR ₁	—	—	87.8	93.6

Additional readings : Riverview iP = +4m.27s., MN = +9.6m. Adelaide MN = +13.8m. Ksara PR₁? = +20m.1s. De Bilt MN = +105.4m.

June 19d. 19h. 20m. 45s. Epicentre 25° 5N. 98° 0E. (as on June 12d.).

A = -0.126, B = +0.894, C = +0.431; D = +0.990, E = +0.139; G = -0.060, H = +0.426, K = -0.903.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	9.2	119	e 2 20	+ 1	e 4 45	+37	5.1	—
Calcutta	E. 9.3	254	5 51	+211	8 59	+289	—	—
Hong Kong	15.1	99	6 35	?S	(6 35)	+ 1	7.2	9.3
Hyderabad	19.9	250	8 49	?S	(8 49)	+28	—	16.0
Bombay	24.2	259	10 2	?S	(10 2)	+14	15.5	17.2
Almata	24.7	321	e 5 37	+ 2	—	—	—	—
Andijan	26.0	311	e 6 12	+24	—	—	—	—

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	27.2	8	—	—	e 10 15?	-30	14.2	15.0
Tashkent	28.5	311	e 6 7	- 6	e 10 55	-13	e 16.4	19.0
Samarkand	29.5	306	e 6 22	- 1	—	—	—	—
Ekaterinburg	41.1	330	e 7 55	- 9	e 14 10	-12	18.2	—
Baku	42.5	305	—	—	e 14 37	- 5	24.2	—
Pulkovo	57.0	326	—	—	e 18 3	+17	25.2	—
Copenhagen	66.8	323	—	—	—	—	37.2	—
De Bilt	71.8	320	—	—	e 30 31	?SR ₁	e 39.2	—
Suva	89.6	110	—	—	—	—	i 48.2	—

Additional readings: Calcutta PN = +5m.56s. Hong Kong MN = +8.4m.
Bombay S = +13m.32s.

June 19d. Additional after-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
1	20	50	5	6	10	21	16	18
3	35	4	10	30	32	22	34	40

Wellington iP, iS, or i phases.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	1	10	5	6	18	16	19	51
0	28	20	8	16	58	17	36	25
0	55	34	8	36	40	20	9	6
1	20	32	9	5	20	21	16	25
2	56	43	10	30	30	22	8	35
3	34	6	10	53	0	22	20	30
4	26	43	11	28	13	22	34	34
			13	28	40			

June 19d. Readings also at 2h. (near La Paz and Sucre), 4h. (near Andijan and Samarkand), 5h. (Florissant), 7h. (Perth and near Tacubaya), 8h. (Andijan and near Samarkand), 9h. (Graz), 10h. (Ksara and Zagreb), 12h. (Adelaide, Riverview, Melbourne, Perth, Baku, Ekaterinburg, and Tashkent), 13h. (Granada, Copenhagen, Irkutsk, and Scoresby Sund), 14h. (Marseilles), 17h. (Andijan and near Samarkand), 19h. (Suva), 22h. (Ekaterinburg, Tashkent, Manila, Suva, and Riverview).

June 20d. 18h. 22m. 25s. Epicentre 8°.7S. 112°-6E. (given by Batavia).

A = - .380, B = + .913, C = - .151; D = + .923, E = + .384;
G = + .058, H = - .140, K = - .988.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	6.2	293	i 1 47	+12	i 2 52	+ 3	—	—
Perth	23.4	173	(i 5 10)	-11	i 5 10	?P	11.6	—
Manila	24.7	20	e 3 41	-114	i 9 45	-12	—	—
Phu-Lien	30.1	349	e 6 25	- 4	e 11 19	-17	13.6	—
Hong Kong	E. 31.1	1	—	—	—	—	—	15.8
Adelaide	35.5	141	e 13 50?	?S	(13 50?)	+47	21.2	23.1
Zi-ka-wai	Z. 40.8	12	e 7 48	-13	(14 6)	-12	—	14.1
Melbourne	41.2	140	—	—	—	—	21.2	23.5
Hyderabad	42.7	309	14 30	?S	(14 30)	-14	—	29.0
Riverview	43.4	132	e 12 39	?i	e 17 39	?SR ₁	e 23.2	34.6
Sydney	43.4	132	6 11	?i	—	—	26.6	27.1
Bombay	47.9	307	e 8 34	-19	15 52	- 1	24.9	—
Kobe	48.3	25	8 44	-12	15 40	-18	—	—
Akita	54.7	27	e 9 48	+11	17 10	- 7	—	—
Mizusawa	E. 54.7	29	10 41	+64	18 9	+52	—	—
Almata	61.2	331	e 10 29	+ 9	—	—	—	—
Andijan	61.4	325	e 10 34	+13	—	—	—	—
Irkutsk	61.4	355	e 10 22	+ 1	1 18 40	- 1	e 31.6	—
Tashkent	63.9	325	10 38	+ 1	1 19 8	- 4	e 28.6	41.5

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	64.2	323	e 10 41	+ 2	—	—	—	—
Baku	75.7	317	i 11 53	0	i 21 32	- 2	35.6	49.3
Ekaterinburg	78.0	335	i 12 3	- 4	i 21 52	- 8	35.6	48.1
Ksara	84.0	307	12 40	- 2	22 58	-10	28.6	—
Theodosia	87.3	318	e 12 55	- 6	—	—	—	—
Yalta	88.0	317	e 12 58	- 7	—	—	—	—
Simferopol	88.1	317	e 12 57	- 9	—	—	—	—
Sebastopol	88.4	317	e 13 3	- 4	—	—	—	—
Pulkovo	93.6	330	13 22	-14	24 26	-26	46.6	60.4
Helsingfors	96.4	330	e 13 31	-20	24 51	-29	e 47.6	—
Zagreb	100.8	315	—	—	e 24 29	[+ 1]	—	—
Copenhagen	102.9	326	—	—	24 41	[+ 3]	49.6	—
Strasbourg	106.3	319	—	—	e 26 35?	-20	e 62.6	—
De Bilt	107.5	322	—	—	e 25 3	[+ 4]	e 52.6	67.9
Kew	110.9	322	—	—	—	—	e 67.6	—
Scoresby Sund	111.9	345	19 35	?PR ₁	—	—	49.6	—
Granada	116.0	307	—	—	—	—	64.1	68.1
Florissant	E. 143.5	30	—	—	e 26 8	?	—	—
Georgetown	Z. 148.5	13	19 53	[0]	i 22 12	?	94.6	—

Additional readings and note: Batavia iPZ₁ = +1m.49s., iZ = +4m.7s., iE = +4m.44s., Perth SR₁ = +9m.15s. = S-18s., Hong Kong MN = +17.4m., Adelaide iPR₂ = +14m.41s. = SR₁ - 28s., Ksara PSE? = +24m.1s.; T₀ = 18h.22m.51s., Pulkovo ScPcS = +23m.50s., PS = +25m.41s., Helsingfors ScPcS = +24m.7s., De Bilt MN = +63.4m., Florissant [S] is given as the earliest phase of a local shock.

June 20d. 20h. 10m. 22s. Epicentre 8°3N. 126°9E. (as on 19d.).

A = -.594, B = +.791, C = +.144; D = +.800, E = +.600;
G = -.087, H = +.115, K = -.990.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	e 2 19	+ 9	i 4 19	+26	i 5.4	—
Hong Kong	18.6	320	4 9	-15	24 41	- 8	—	13.1
Phu-Lien	23.2	305	3 38?	?	e 9 25	- 4	10.6	—
Zi-ka-wei	Z. 23.5	348	e 5 17	- 6	—	—	—	23.4
Batavia	24.7	235	i 5 49	+14	—	—	—	—
Irkutsk	47.7	342	e 8 44	- 8	i 15 39	-11	e 25.6	33.3
Riverview	48.0	152	—	—	—	—	e 36.8	—
Sydney	48.0	152	13 56	?S	(13 56)	-118	31.6	33.4
Hyderabad	E. 48.0	287	—	—	—	—	—	33.2
Bombay	53.4	288	—	—	—	—	e 31.6	—
Almata	55.7	318	e 18 16	?S	(e 18 16)	+46	—	—
Andijan	57.9	314	e 10 23	+25	—	—	—	—
Tashkent	60.5	314	10 14	- 2	18 30	0	e 30.6	35.7
Samarkand	61.8	313	e 10 27	+ 3	e 18 47	+ 1	—	—
Ekaterinburg	70.2	329	e 11 18	0	i 20 25	- 3	32.6	39.3
Baku	74.7	311	e 11 52	+ 5	i 21 31	+ 9	e 38.1	47.1
Pulkovo	86.1	330	12 50	- 4	23 18	[+15]	47.6	54.7
Ksara	86.2	304	e 23 29	?S	(e 23 29)	- 3	—	—
Helsingfors	88.6	331	e 13 0	- 8	23 45	-14	e 48.6	—
Copenhagen	96.5	330	—	—	24 41	[+36]	43.6	—
Scoresby Sund	E. 98.4	350	—	—	24 27	[+12]	49.6	—
Hamburg	98.6	329	—	—	—	—	e 55.6	—
De Bilt	101.9	328	—	—	e 25 38?	-36	e 53.6	65.4
Strasbourg	102.2	325	—	—	—	—	e 53.6	—
Uccle	103.0	327	—	—	—	—	e 54.6	—
Paris	105.0	325	—	—	—	—	e 57.6	—
Kew	105.1	330	—	—	—	—	e 59.6	—
Granada	115.2	318	—	—	—	—	69.6	—
Georgetown	Z. 127.8	23	—	—	—	—	e 84.5	—

Additional readings: Riverview e = +35m.38s., Pulkovo ePS = +23m.56s., Scoresby Sund +25m.14s., De Bilt MN = +63.6m., MZ = +65.8m.

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June 20d. After-shocks from the epicentre of June 16d. 22h. were recorded as follows:—

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
14	48	12	19	12	59	19	17	33

Wellington iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	21	57	9	0	20	14	47	40
1	33	39	10	2	45	14	58	15
1	55	1	10	23	52	16	48	10
6	16	19	10	56	47	19	15	33
6	42	37	11	58	40	19	17	20
						19	54	28

June 20d. Readings also at 0h. (Granada and Scoresby Sund), 5h. (near Tananarive), 7h. (La Plata, La Paz, Sucre, and near Santiago), 8h. (Florissant, near Tacubaya, and Vera Cruz), 9h. (near La Paz and Sucre), 10h. and 11h. (Mizusawa), 12h. (Florissant, Georgetown, Fordham, Ottawa, Toronto, and Victoria), 14h. (Mizusawa, Melbourne, and Riverview), 16h. (Florissant), 18h. (Sebastopol, Simferopol, Theodosia, near Yalta, and near Florissant), 19h. (Andijan, Samarkand, and near Mizusawa), 21h. (Akita and near Mizusawa), 22h. (Sebastopol, Simferopol, Theodosia, Yalta, and near Batavia).

June 21d. 4h. 40m. 39s. Epicentre 8°-3N. 126°-9E. (as on 20d).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·6	318	i 2 25	+15	i 4 21?	?L	(i 4·4)	—
Taihoku	E. 17·5	344	e 4 21?	+10	—	—	—	—
Hong Kong	18·6	320	4 13	-11	—	—	—	13·0
Phu-Lien	23·2	305	e 5 9	-10	e 9 17	-12	—	—
Zi-ka-wei	Z. 23·5	348	e 5 16	-7	19 34	-1	—	23·4
Batavia	24·7	235	i 5 38	+3	—	—	—	—
Sumoto	27·1	15	6 4	+5	—	—	—	—
Kobe	27·4	15	e 6 51	+49	—	—	—	—
Almata	55·7	318	e 9 58	+14	—	—	—	—
Andijan	57·9	314	e 10 16	+18	—	—	—	—
Tashkent	60·5	314	i 10 17	+1	i 18 45	+15	e 29·4	38·6
Samarkand	61·8	313	e 10 28	+4	e 18 48	+2	—	—
Ekaterinburg	70·2	329	i 11 20	+2	20 29	+1	—	—
Baku	74·7	311	i 11 51	+4	21 30	+8	36·8	—
Theodosia	85·2	316	e 12 32	-17	—	—	—	—
Simferopol	86·1	315	e 12 35	-19	—	—	—	—
Pulkovo	86·1	330	12 48	-6	23 23	-8	47·4	54·8
Keara	86·2	304	13 21?	+27	—	—	—	—
Sebastopol	86·4	315	e 12 49	-6	—	—	—	—
Helsingfors	88·6	331	e 13 12	+4	23 46	-13	—	—
Copenhagen	96·5	330	—	—	—	—	49·4	—
Scoresby Sund	98·4	350	—	—	24 27	[+12]	61·4	—
De Bilt	101·9	328	—	—	—	—	e 55·4	65·3
Strasbourg	102·2	325	—	—	—	—	e 55·4	—
Uccle	103·0	327	—	—	—	—	e 54·4	—
Paris	105·0	325	—	—	—	—	e 65·4	—
Kew	105·1	330	—	—	—	—	e 64·4	—
Granada	115·2	318	—	—	—	—	84·4	—
La Paz	163·2	121	e 20 24	[+14]	—	—	—	—

Additional readings: Zi-ka-wei SN = +9m.32s. Batavia i = +6m.2s. =
 PR - 6s. Pulkovo SeP.S = +23m.10s. = [S] + 7s. Scoresby Sund
 +25m.9s. = Z + 13s. De Bilt MN = +63·4m., MZ = +65·4m.

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June 21d. After-shocks from the epicentre of 16d. 22h. were recorded as follows :—

Christchurch S phase.

h.	m.	s.	h.	m.	s.
7	52	48	10	48	19

Wellington, iP or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	34	53	14	1	50	16	6	38
7	52	14	14	30	40	22	43	0
11	19	6	14	57	9	23	31	59

June 21d. Readings also at 1h. (Ksara), 4h. (Kobe), 7h. (Suva), 8h. (Florissant), 13h. (Ekaterinburg, Tashkent, near Manila, and near Tananarive), 14h. (Sydney and near Merida), 15h. (Toledo).

June 22d. 15h. 30m. 12s. (I) { Epicentre 41°·8S. 172°·2E. (as on 19d.).
18h. 39m. 8s. (II) }

$$A = -.739, B = +.101, C = -.667; \quad D = +.136, E = +.991; \\ G = +.660, H = -.090, K = -.745.$$

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		o	o	m. s.	s.	m. s.	s.	m.	m.
I	Christchurch	1.8	170	0 41	+13	1 1	+10	—	—
II		1.8	170	0 35	+7	0 53	+2	—	—
I	Wellington E.	2.0	75	i 0 32	+1	i 0 57	+2	—	—
I	N.	2.0	75	i 0 30	-1	i 0 53	-2	—	—
II		2.0	75	i 0 32	+1	i 0 54	-1	—	—
I	Riverview	18.4	289	i 4 16	-6	7 52	+3	e 9.2	12.0
II		18.4	289	i 4 19	-3	i 7 56	+7	e 8.6	12.0
I	Sydney	18.4	289	4 18	-4	8 0	+11	9.4	12.1
II		18.4	289	3 52	-30	8 22	+33	10.2	11.9
I	Melbourne	21.2	272	4 50	-5	8 45	-3	20.8	23.4
II		21.2	272	i 4 52	-3	i 8 50	+2	10.4	12.5
I	Suva	24.3	14	6 0	+29	10 48	-2	i 13.9	20.4
II	E.	24.3	14	i 5 58	+27	10 46	-4	—	—
II	N.	24.3	14	e 6 10	+39	10 34	-16	i 13.8	20.9
I	Adelaide	27.0	274	e 5 12?	-46	i 10 22	-19	i 13.0	16.8
II		27.0	274	e 5 39?	-19	e 10 48	+7	13.2	16.9
I	Perth	45.4	265	—	—	14 58	-22	24.3	—
II		45.4	265	—	—	15 52?	+32	—	—
I	Honolulu T.H. E.	68.9	29	—	—	e 20 54	+41	e 32.7	36.4
I	N.	68.9	29	—	—	e 20 48	+35	e 32.7	34.8
I	Manila	73.6	308	i 11 28	-12	—	—	—	—
I	Hong Kong	83.6	308	12 37	-3	22 48	-17	—	50.0
I	Zi-ka-wei	86.7	319	e 12 42	-15	—	—	43.8	51.0
II		86.7	319	e 12 44	-13	—	—	—	—
I	Phu-Lien	87.1	301	e 12 38	-22	e 23 12	[+ 2]	39.8	—
I	La Plata	90.6	140	—	—	—	—	46.2	—
I	Kodafkanal	100.3	275	55 12	?	—	—	66.5	70.1
I	Tananarive	100.6	232	e 19 38	?	—	—	—	50.0
I	Tucson	102.3	57	—	—	—	—	e 48.1	55.8
I	Hyderabad	104.2	280	—	—	—	—	—	64.8
I	Victoria	106.5	38	26 26	?	(26 26)	-31	50.1	55.3
I	Sitka	108.2	26	—	—	—	—	e 51.5	—
II	Bombay	109.3	278	29 34	?	(29 34)	?	65.9	66.7
I	Irkutsk	110.9	322	—	—	—	—	51.8	60.7
I	Florissant	110.9	322	—	—	—	—	e 56.9	—
II		119.5	61	e 20 2	?	e 29 56	+70	e 53.3	58.3
II		119.5	61	20 8	?	e 30 2	+76	—	61.4
I	Almata	120.4	302	e 19 33	[+40]	—	—	—	—
I	Andijan	121.9	297	18 40	[-18]	—	—	—	19.6
I	Chicago	122.8	60	—	—	—	—	e 62.1	—
I	Tashkent	124.4	297	e 17 54	?	—	—	55.8	76.2
II		124.4	297	—	—	—	—	e 55.9	76.0

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Samarkand	125.1	295	e 18 44	[-22]	—	—	—	—
II	125.1	295	e 19 4	[-2]	—	—	—	—
I Ann Arbor E.	125.6	61	—	—	—	—	e 64.7	—
I Charlottesville	127.2	69	—	—	—	—	e 65.8	—
I Georgetown Z.	128.6	69	e 19 11	[-4]	e 31 25	?	e 53.5	75.1
II	128.6	69	e 19 9	[-6]	—	—	—	80.5
I Toronto	129.1	61	e 22 26	?	—	—	67.0	—
II	129.1	61	—	—	—	—	64.9	—
I Fordham	131.7	67	e 17 48?	?	—	—	e 65.3	69.8
II	131.7	67	—	—	—	—	e 61.9	—
I Ottawa	132.1	60	e 21 36	?PR ₁	e 39 6	?SR ₁	e 57.8	—
II	132.1	60	e 22 34	?PR ₁	e 39 24	?SR ₁	e 57.9	—
I Ekaterinburg	135.0	314	i 19 14	[-16]	i 26 18	?	57.8	80.3
II	135.0	314	i 19 15	[-15]	26 14	?	58.9	90.3
I Baku	137.3	288	19 24	[-11]	26 30	?	e 63.8	79.7
II	137.3	288	19 24	[-11]	—	—	e 64.9	—
I Ksara.	145.0	270	19 34	[-14]	—	—	71.8	—
II	145.0	270	19 37	[-11]	—	—	—	—
I Theodosia	148.9	291	e 19 53	[-1]	—	—	—	—
II	148.9	291	e 19 49	[-5]	—	—	—	—
I Yalta	149.6	290	e 19 46	[-9]	—	—	—	—
II	149.6	290	e 19 47	[-8]	—	—	—	—
I Simferopol	149.7	290	e 19 49	[-6]	—	—	—	—
II	149.7	290	e 19 48	[-7]	—	—	—	—
I Sebastopol	150.1	289	e 19 48	[-8]	—	—	—	—
II	150.1	289	e 19 50	[-6]	—	—	—	—
I Scoresby Sund	150.4	10	—	—	—	—	71.8	—
II	150.4	10	19 58	[+2]	—	—	—	—
I Pulkovo	150.6	321	19 45	[-12]	—	—	68.8	88.6
II	150.6	321	i 19 45	[-13]	—	—	—	87.5
I Hel싱fors	152.9	324	e 19 53	[-7]	—	—	e 71.8	—
II	152.9	324	19 57	[-3]	—	—	—	—
I Upsala N.	156.2	328	—	—	—	—	e 90.8	—
I Copenhagen	160.9	323	19 56	[-13]	—	—	—	—
II	160.9	323	19 58	[-11]	—	—	—	—
I Vienna	161.8	299	20 45	[+36]	—	—	—	100.8
II	161.8	299	e 20 46	[+37]	—	—	—	—
I Zagreb	162.4	291	e 20 16	[+7]	—	—	e 86.8	—
II	162.4	291	e 20 52	[+43]	—	—	—	—
I Hamburg	163.3	321	e 20 48	[+38]	—	—	e 77.8	95.8
II	163.3	321	—	—	—	—	e 93.9	102.9
I Cheb	163.8	307	—	—	e 28 36	?	e 89.8	104.8
II	163.8	307	—	—	e 27 52?	?	e 90.9	—
I Dyce	164.1	349	—	—	—	—	e 82.3	95.5
I Gottingen N.	164.5	315	—	—	—	—	e 88.6	98.1
I Venice	165.0	291	e 20 52	[+40]	—	—	—	—
I Edinburgh	165.6	350	—	—	—	—	e 93.8	—
I De Bilt	166.5	324	e 20 3	[-10]	—	—	e 84.8	102.0
II	166.5	324	e 20 6	[-7]	—	—	e 85.9	109.7
I Strasbourg	167.2	307	e 20 0	[-13]	—	—	e 99.8	—
II	167.2	307	e 20 1	[-12]	—	—	e 95.9	—
I Moncalleri	168.3	291	e 21 21	[+67]	34 18	?	55.6	—
II	168.3	291	—	—	—	—	e 88.5	—
I Kew Z.	169.1	335	e 20 2	[-12]	—	—	87.8	100.8
II	169.1	335	e 20 3	[-11]	—	—	91.9	—
I Oxford	169.1	338	—	—	e 25 4	?PR ₁	e 87.8	94.1
I Paris	169.9	318	e 20 5	[-10]	e 25 12	?PR ₁	86.8	97.8
II	169.9	318	e 20 7	[-8]	e 25 13	?PR ₁	91.9	—
I Alicante	173.5	240	—	—	—	—	e 93.1	—
I Tortosa	173.7	264	—	—	—	—	e 90.8	101.1
I Malaga	174.3	208	e 19 40	[-36]	e 37 0	?	e 82.8	—
II	174.3	208	e 18 34	?	—	—	—	—
I Granada	174.4	216	i 20 8	[-8]	—	—	87.0	98.8
II	174.4	216	i 19 59	[-17]	—	—	e 83.9	88.4

For Notes see next page.

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NOTES TO JUNE 22d. 15h. 30m. 12s. (I). 18h. 39m. 8s. (II).

Additional readings: Riverview i IP = +4m.25s., iS = +8m.2s. and +8m.12s., MNZ = +10.0m.; T₀ = 15h.29m.54s., ii IP = +4m.24s., iS = +8m.15s., MN = +10.4m.; T₀ = 18h.38m.52s. Adelaide i ePR₁ = +6m.8s., i = +12m.13s., MN = +17.8m., ii e = +6m.17s., iSR₁ = +12m.44s., MN = +14.7m., Perth i SR₁ = +19m.48s., Honolulu T.H. i eE = +25m.0s. = PR₁ - 34s. and +28m.48s., Zi-ka-wei i iZ = +16m.12s. = PR₁ - 29s., Hyderabad i MN = +62.3m., Irkutsk i PR₁ = +19m.5s., PS = +28m.47s., eE = +25m.16s., +32m.48s., and +41m.38s., MNZ = +58.8m., Florissant i eE = +25m.16s., +32m.48s., and +41m.38s., PS = +28m.46s., Tashkent i iPR₁ = +20m.2s., PS = +30m.47s., PPS = +32m.17s., SR₁ = +37m.0s., ii PR₁ = +20m.34s., PR₂ = +23m.58s., iPPS = +32m.20s., Ann Arbor i eLN = +65.7m., Georgetown i iZ = +21m.14s. = PR₁ - 6s., PSZ = +32m.46s., ii iZ = +21m.15s., PSZ = +32m.14s., Fordham i eLZ = +21m.33s. = PR₁ - 7s., eN = +31m.18s., eE = +31m.48s., Ottawa i e = +30m.24s., Ekaterinburg i iPR₁ = +21m.43s., iPcPcS = +22m.47s., SR₁ = +22m.14s., ii iPR₁ = +21m.47s., iPcPcS = +22m.48s., Baku i PR₁ = +40m.24s., PS = +32m.19s., ii PR₁ = +22m.8s., PS = +32m.23s., Ksara i PR₁E = +23m.18s., PR₁E = +26m.58s., PR₁E = +32m.16s., PPSN = +37m.28s., SR₁N = +59m.12s.; T₀ = 15h.29m.43s., Pulkovo i PcPcS = +23m.20s., ScPcPcS = +30m.11s., SR₁ = +42m.36s., ii PcPcS = +23m.24s., ScPcPcS = +30m.22s., PPS = +37m.58s., SR₁ = +42m.46s., Helingsfors i P' = +19m.57s., PR₁ = +23m.46s., ScPcPcS = +29m.59s., ScPcSP = +33m.55s., SR₁ = +43m.6s., ii PR₁ = +23m.47s., PPS = +37m.26s., SR₁ = +43m.15s., Copenhagen i +20m.39s., PR₁ = +24m.26s., ii +20m.42s., Vienna i PR₁? = +24m.27s., ii PR₁? = +24m.30s., Zagreb i e = +20m.50s., ePR₁ = +24m.42s., Hamburg i eE = +31m.30s., MNZ = +101.8m., De Bilt i eZ = +21m.4s., PR₁ = +24m.57s., MN = +95.4m., MZ = +99.6m., ii eZ = +21m.6s., PR₁ = +25m.7s., Strasbourg i i = +21m.7s., iPR₁ = +24m.57s., e = +28m.48s.?, ii i = +21m.14s., and +24m.59s., e = +28m.52s.?, Kew i eZ = +21m.16s., ePR₁Z = +25m.7s., ePR₁Z = +29m.10s., LEN = +77.8m., ME = +95.8m., ii eZ = +21m.17s., ePR₁Z = +25m.9s., eZ = +26m.51s., LE = +88.9m., Oxford i e = +32m.11s. = Σ +15s., Paris i MN = +100.8m., Granada i i = +21m.48s., +25m.9s., +29m.18s., ii i = +21m.40s., +25m.35s., and +29m.7s.

June 22d. Additional after-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	12	16	15	19	20	21	32	14
14	58	54	21	18	29			

Wellington iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	11	1	13	48	56	19	0	35
2	31	43	14	58	35	20	29	4
5	13	30	15	18	15	21	13	0
5	41	40	16	13	36	21	14	40
6	8	29	16	34	25	21	18	0
6	35	55	16	39	17	21	31	55
8	32	1	16	55	5	23	1	0
9	58	25	18	8	23			

June 22d. Readings also at 0h. (Ekaterinburg, Tashkent, Andijan, and near Samarkand), 4h. (Ksara, Simferopol, and Theodosia), 6h. (Andijan), 7h. (Almata, Samarkand, Ekaterinburg, Tashkent, and near Andijan (2)), 17h. (Ekaterinburg and Manila), 19h. (near Tacubaya), 22h. (Baku, Ekaterinburg, Pulkovo, Tashkent, Scoresby Sund, Florissant, Georgetown, and Ottawa), 23h. (Andijan and Samarkand).

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June 23d. 3h. 12m. 3s. Epicentre 8°-3N. 126°-9E. (as on 21d.).

A = -594, B = +791, C = +144; D = +800, E = +600;
G = -087, H = +115, K = -990.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	e 2 19	+ 9	4 5	+12	5.2	—
Hong Kong	18.6	320	4 21	— 3	—	—	e 9.7	13.0
Zi-ka-wel	23.5	348	e 5 5	-18	—	—	—	—
Tashkent	60.5	314	—	—	i 18 25	- 5	e 27.2	35.2
Ekaterinburg	70.2	329	11 12	- 6	—	—	37.0	—
Baku	74.7	311	—	—	—	—	39.0	—
Pulkovo	86.1	330	—	—	i 23 12	-19	47.0	—
Copenhagen	96.5	330	—	—	—	—	54.0	—
Victoria	96.6	39	—	—	—	—	31.9	32.9
Scoresby Sund	98.4	350	—	—	—	—	54.0	—
De Bilt	101.9	328	—	—	—	—	e 62.0	—
Kew	105.1	330	—	—	—	—	e 66.0	—
Florissant	121.6	34	—	—	e 39 27	?	—	45.4
Ottawa	122.7	17	—	—	—	—	e 48.0	—
Fordham	127.3	20	—	—	—	—	50.4	—
Georgetown	127.8	23	—	—	e 47 36	?	52.1	—

Additional readings: Tashkent i = +20m.1s. = (S) +3s. Ekaterinburg
i = +11m.24s.

June 23d. 21h. 47m. 0s. Epicentre 8°-3N. 126°-9E. (as at 3h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	\circ	\circ	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	i 2 26	+16	i 4 19	+26	5.4	—
Isagakiyima	16.3	351	4 27	+31	9 54	?	—	—
Taihoku	17.5	344	—	—	e 7 0?	-29	—	—
Hong Kong	18.6	320	4 23	- 1	7 53	0	9.3	13.2
Phu-Lien	23.2	305	e 5 10	- 9	e 9 23	- 6	10.8	—
Zi-ka-wel	23.5	348	e 5 10	-13	9 48	+13	—	—
Batavia	24.7	235	5 35	0	—	—	—	—
Kobe	27.4	15	e 5 33	-29	—	—	—	—
Akita	33.6	20	e 7 19	+18	—	—	—	—
Perth	41.6	194	9 0?	+52	—	—	—	—
Adelaide	44.6	166	—	—	—	—	e 25.6	33.6
Irkutsk	47.7	342	e 8 47	- 5	—	—	—	—
Riverview	48.0	152	—	—	—	—	—	26.4
Hyderabad	48.0	287	—	—	—	—	—	27.0
Melbourne	49.1	161	—	—	i 16 5	- 2	—	29.4
Tashkent	60.5	314	e 10 16	0	i 18 36	+ 6	—	46.6
Wellington	66.2	142	—	—	—	—	33.0	—
Ekaterinburg	70.2	329	11 17	- 1	e 20 25	- 3	34.0	44.4
Baku	74.7	311	e 11 56	+ 9	e 22 0	+38	e 44.0	—
Pulkovo	86.1	330	12 48	- 6	e 23 24	- 7	44.0	52.3
Ksara	86.2	304	e 13 3	+ 9	23 30	- 2	—	—
Helsingfors	88.6	331	e 13 0	- 8	e 23 48	-11	e 47.0	—
Copenhagen	96.5	330	—	—	25 0?	-21	49.0	—
Scoresby Sund	98.4	350	—	—	24 29	[+14]	61.0	—
Cheb	98.8	324	e 33 0?	?SR ₁	—	—	—	—
De Bilt	101.9	328	—	—	—	—	e 54.0	66.5
Strasbourg	102.2	325	e 14 0?	-21	e 25 0?	[+25]	e 54.0	—
Uccle	103.0	327	—	—	e 26 0?	-24	e 54.0	—
Paris	105.0	325	—	—	e 31 0?	?	58.0	71.0
Kew	105.1	330	—	—	—	—	e 56.0	—
Tortosa	110.5	320	—	—	—	—	e 66.0	76.2
Granada	115.2	318	—	—	—	—	e 64.0	74.5
Florissant	121.6	34	—	—	e 26 5	[+16]	e 71.0	—
Ottawa	122.6	17	—	—	—	—	e 68.0	—
Toronto	122.9	21	—	—	—	—	—	77.0
Fordham	127.3	20	—	—	—	—	70.0	78.0
Georgetown	127.8	23	—	—	—	—	e 68.2	—

For Notes see next page.

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NOTE TO JUNE 23d. 21h. 47m. 0s.

Additional readings : Hong Kong iS₁ = +8m.8s. Zi-ka-wei iZ = +5m.58s.
 Batavia eP = +5m.36s., iE = +7m.8s. Adelaide e = +4m.10s. ? and
 +13m.40s., MN = +35.5m. Riverview e = +5m.42s. and +14m.0s.,
 MN = +28.6m. Hyderabad MN = +32.1m. Melbourne i = +19m.30s.
 =SR₁ -19s. Pulkovo S_eP_eS = +23m.16s. Helsingfors S_eP_eS =
 +23m.34s. Scoresby Sund +25m.18s. =S-22s. De Bilt MN =
 +62.5m., MZ = +66.6m. Florissant eEZ = +30m.30s. =PS-30s.

June 23d. After-shocks from the epicentre of June 16d. 22h. were recorded as follows :—

Christchurch, S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	2	18	2	13	35	11	2	4
			9	27	57			

Wellington, iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	1	50	4	57	24	11	50	57
1	13	55	9	27	18	12	59	54
1	45	2	10	8	5	16	39	28
2	13	7	10	35	19	19	3	16
3	12	28	10	35	49	19	16	1
4	17	0	11	1	55	20	18	56

June 23d. Readings also at 0h. (La Paz), 1h. (Baku, Ekaterinburg, and Florissant), 3h. (Baku and Ekaterinburg), 4h. (Ksara), 6h. (Florissant, Fordham, Georgetown, Ottawa, and Toronto), 7h. (Scoresby Sund), 8h. (Baku, Ksara, Tashkent, Almata, Andijan, and Samarkand), 9h. (Ekaterinburg and near Mizusawa), 10h. (Theodosia, Sebastopol, near Simferopol, and Yalta), 13h. (La Paz, near Tacubaya, and near Toyooka), 15h. (near Andijan and Samarkand (2)), 16h. (Andijan).

June 24d. 2h. 4m. 27s. Epicentre 37°1N. 141°3E. (as on 13d.).

A = -622, B = +499, C = +603 ; D = +625, E = +780 ;
 G = -471, H = +377, K = -798.

	Δ	Az.	P.		O-C.		S.	O-C.		L.	M.
			m.	s.	s.	m.		s.	m.		
Mito	0.9	223	0	18	+ 4	0	29	+ 4	—	—	—
Sendai	1.2	344	0	22	+ 4	0	37	+ 4	—	—	—
Tokyo	1.9	221	0	31	+ 2	0	52	- 1	—	—	—
Mizusawa	2.0	356	0	36	+ 5	1	11	+16	—	—	—
Akita	2.8	340	10	45	+ 1	—	—	—	1.5	2.7	—
Nagoya	4.0	242	1	1	- 1	(1	48)	- 2	1.8	2.0	—
Osaka	5.1	244	1	16	- 3	(2	22)	+ 2	2.4	3.1	—
Toyooka	5.4	255	1	23	0	2	23	- 5	3.0	3.2	—
Kobe	5.5	248	0	18	- 9	—	—	—	2.8	3.0	—
Sumoto	5.8	244	1	23	- 7	2	36	- 3	—	3.2	—
Tashkent	54.3	300	—	—	—	e 16	56	-17	30.0	33.4	—
Ekaterinburg	54.8	320	19	30	- 8	e 17	7	-12	26.0	34.8	—
Pulkovo	67.8	330	0	55	- 8	e 19	52	- 8	35.6	42.8	—
Baku	67.9	307	—	—	—	—	—	—	e 37.6	—	—
Copenhagen	77.5	335	—	—	—	—	—	—	43.6	—	—
De Bilt	83.0	336	—	—	—	—	—	—	e 44.6	—	—
Uccle	84.3	336	—	—	—	—	—	—	e 41.6	—	—
Kew	85.2	339	—	—	—	—	—	—	e 51.6	—	—
La Paz	146.9	59	19	45	[- 6]	—	—	—	—	—	—

Additional readings : Mizusawa PN = +37s. Akita ePEN = +47s., MNZ = +1.6m. Nagoya MN = +2.2m. Osaka MZ = +3.2m., MN = +3.6m. Toyooka MN = +3.1m. Kobe MZ = +2.9m. Sumoto MZ = +3.1m. Tashkent e = +17m.3s. and +21m.21s. =SR₁ -7s.

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June 24d. After-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch, S phase.

h.	m.	s.
11	54	32

Wellington iP, iS, or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
3	33	9	14	11	24	21	20	44
7	47	2	15	39	34	21	46	18
11	49	5	15	43	4	22	16	41
11	53	42	19	37	29			

June 24d. Readings also at 2h. (Florissant and near Granada), 3h. (Granada), 4h. (near Samarkand), 6h. (Apia), 9h. (Florissant and near Tacubaya), 13h. (Florissant), 15h. (Sucre and near La Paz), 17h. (Ekaterinburg, Andijan, Samarkand, and Tashkent), 18h. (Scoresby Sund, Florissant, Georgetown, Ottawa, Toronto, Tucson, Victoria, near Tacubaya, and Vera Cruz), 21h. (Andijan and Samarkand), 23h. (near La Paz).

June 25d. 6h. 12m. 30s. (I) } Epicentre 29° 0S. 112° 3W.
 9h. 13m. 14s. (II) } (as on 1924 June 7d.).

A = -332, B = -809, C = -485; D = -925, E = +379;
 G = +184, H = +449, K = -875.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
				m. s.	s.	m. s.	s.	m.	m.
I La Paz		42.5	83	e 8 14	- 1	14 48	+ 6	20.5	22.3
II		42.5	83	e 8 14	- 1	14 44	+ 2	20.3	22.3
I Sucre		43.9	88	e 8 26	+ 1	—	—	—	—
II		43.9	88	e 8 24	- 1	—	—	—	—
I La Plata		46.0	111	—	—	—	—	21.7	—
II		46.0	111	—	—	—	—	21.5	—
I Tucson	N.	61.3	1	—	—	—	—	e 30.3	—
II	N.	61.3	1	—	—	—	—	e 30.5	—
I Rio de Janeiro	E.	61.6	102	—	—	—	—	e 28.5	—
II	E.	61.6	102	—	—	—	—	e 30.2	—
I Honolulu	T.H. N.	66.7	314	—	—	e 29 46	?	e 31.8	34.6
I Florissant	E.	70.9	19	—	—	e 25 30	?SR ₁	—	39.0
II		70.9	19	e 11 44	+ 22	e 20 53	+16	—	38.8
I Georgetown	Z.	75.5	28	—	—	e 27 41	?SR ₁	32.8	—
II	Z.	75.5	28	—	—	e 22 13	+41	34.3	—
I Victoria	E.	78.1	353	—	—	—	—	39.2	40.5
II	N.	78.1	353	—	—	—	—	39.6	40.8
I Ottawa		81.5	25	—	—	e 28 12	?SR ₁	e 34.5	—
II		81.5	25	—	—	e 22 46	+ 5	e 32.8	—
II Adelaide		87.5	232	—	—	—	—	e 42.3	49.4
II Granada		121.1	61	—	—	—	—	e 61.8	64.3
II Kew	Z.	125.7	45	—	—	—	—	e 65.8	—
II De Bilt		129.1	43	—	—	—	—	e 63.8	—
II Strasbourg		130.8	48	—	—	—	—	e 65.8	—
I Copenhagen		133.0	39	—	—	—	—	71.5	—
II		133.0	39	—	—	—	—	70.8	—
I Pulkovo		140.3	28	e 19 51	[+11]	—	—	75.5	79.9
II		140.3	28	e 22 34	?PR ₁	—	—	69.8	—
I Irkutsk		144.4	320	e 19 47	[0]	—	—	e 74.5	—
II		144.4	320	e 19 52	[+ 5]	—	—	e 69.8	—
II Kucino		145.9	30	e 18 58	[- 52]	—	—	—	—
I Ekaterinburg		151.7	8	e 20 14	[+16]	—	—	64.5	—
II		151.7	8	e 20 12	[+14]	—	—	62.8	—
I Baku		161.5	47	e 20 41	[+32]	—	—	e 70.5	—
II		161.5	47	e 21 7	[- 2]	—	—	e 68.8	—
I Tashkent		167.7	355	e 23 39	[2]	—	—	e 74.5	98.1
II		167.7	355	e 20 27	[+13]	—	—	e 73.8	97.0

For Notes see next page.

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NOTES TO 25d. 6h. 12m. 30s. (i) and 9h. 13m. 14s. (ii).

Additional readings: Georgetown II eZ = +28m.1s. Ottawa II e? = +28m.4s. = SR₁ -31s. Adelaide II e = +38m.28s., MN = +46.9m. Pulkovo I e = +23m.11s., +30m.8s., and +33m.14s., II e = +26m.47s. Baku I e = +25m.17s. and +39m.27s., II e = +24m.49s. = PR₁ +2s., and +46m.9s. Tashkent I e = +24m.5s., +26m.0s., and +31m.6s., II e = +25m.17s. = PR₁ -6s., I = +25m.39s.

June 25d. After-shocks from the epicentre of 16d. 22h. were recorded as follows: —

Christchurch, S phase.

h.	m.	s.	h.	m.	s.
2	12	2	9	38	14

Wellington, iP or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
2	11	—	6	40	—	9	37	20
5	28	0	6	41	32	19	51	5
5	48	9	8	4	19	20	14	3

June 25d. Readings also at 2h. (Baku, Ekaterinburg, Tashkent, Andijan, Samarkand, and near Sumoto), 4h. (Florence, Ekaterinburg, Irkutsk, Tashkent, and La Paz), 5h. (Scoresby Sund, Pulkovo, Baku, Ekaterinburg, Tashkent, and Irkutsk), 6h. (Almata, Andijan, and Samarkand), 7h. (Scoresby Sund), 8h. (Andijan), 14h. (Sucre and near La Paz), 15h. (Suva), 16h. (Almata, Andijan, Samarkand, and near Taihoku), 18h. (near Manila), 21h. (Ekaterinburg and Tashkent), 22h. (near Tacubaya).

June 26d. 6h. 29m. 18s. Epicentre 50°·2N. 174°·7E.

A = -·637, B = +·059, C = +·768; D = +·092, E = +·996;
G = -·765, H = +·071, K = -·640.

		Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
		°	m. s.	m. s.	s.	m. s.	s.	m.	m.
Honolulu T.H.	E.	35·9	134	—	—	e 13 6	- 3	e 18·7	19·4
Victoria		39·3	69	12 54	18	(12 54)	-62	17·7	28·3
Irkutsk		42·4	302	8 3	-11	e 14 23	-17	21·7	—
Scoresby Sund		58·7	8	10 1	-2	18 0	- 7	30·7	—
Phu-Lien		60·3	270	—	—	—	—	30·7	—
Chicago	E.	63·4	56	—	—	—	—	e 33·4	—
Florissant		64·0	60	e 10 36	- 2	e 19 9	- 4	e 33·7	—
Toronto		66·2	50	—	—	e 19 42?	+ 2	32·7	—
Pulkovo		66·3	342	10 54	0	19 37	- 4	35·7	43·7
Ottawa		66·6	46	—	—	e 19 36	- 9	e 31·7	—
Helsingfors		67·0	345	e 10 58	0	e 19 43	- 7	e 35·2	—
Tashkent		67·7	310	1 11 5	+ 3	20 1	+ 3	e 32·7	44·2
Fordham		70·9	49	—	—	e 20 42	+ 5	e 35·2	37·7
Georgetown	Z.	70·9	51	e 11 24	+ 2	—	—	e 37·3	45·0
Copenhagen		73·0	350	11 34	- 2	21 1	- 1	38·7	—
Hamburg		75·4	352	e 11 51	0	—	—	e 45·7	—
De Bilt		77·3	354	12 0	- 3	21 53	+ 1	e 37·7	—
Baku		77·3	321	e 12 4	+ 1	e 22 1	+ 9	37·7	51·7
Kew		78·2	357	e 12 0	- 8	—	—	36·7	—
Uccle		78·6	354	e 11 42?	-29	e 21 42?	-25	e 37·7	—
Strasbourg		80·6	352	1 12 29	+ 6	(e 21 42?)	-48	e 21·7	—
Paris		80·7	355	e 12 14	- 9	—	—	54·7	—
Neuchatel		82·2	352	e 12 27	- 4	—	—	—	—
Bombay		82·8	291	—	—	—	—	e 44·7	—
Florence		84·9	349	12 42	- 5	24 12	1PS	—	53·7

Additional readings: Honolulu T.H. eN = +16m.12s., 1E = +16m.42s., eN = +17m.36s., eLN = +19·0m., MN = +19·3m. Scoresby Sund +13m.30s.

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June 26d. 8h. 46m. 0s. Epicentre 35°·3N. 130°·8E. (as on 1925 Oct. 14d.).

A = -·533, B = +·618, C = +·578.

	Δ	P.	O-C.	S.	O-C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	1·7	0 30	+ 4	0 50	+ 2	—	0·9
Matuyama	2·2	1 0 33	— 1	—	—	—	1·0
Koti	2·9	—	—	e 1 16	- 4	—	—
Sumoto	3·5	0 55	0	1 35	- 2	—	1·8
Kobe	3·6	—	—	e 1 38	- 1	e 1·7	1·8

No additional readings.

June 26d. 16h. 49m. 6s. Epicentre 36°·2N. 142°·2E. (as on 1928 Aug. 26d.).

A = -·638, B = +·495, C = +·591; D = +·613, E = +·790;
G = -·467, H = +·362, K = -·807.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E. 3·0	344	1 0	+13	1 53	+30	—	—
	N. 3·0	344	0 59	+12	1 48	+25	—	—
Akita	3·9	335	1 8	+ 7	—	—	2·1	3·5
Nagoya	4·4	258	e 1 8	0	(2 2)	+ 1	2·0	2·7
Osaka	5·7	256	1 26	- 2	(2 32)	- 4	2·5	4·0
Kobe	5·9	257	1 32	+ 1	2 23	-18	2·9	4·2
Toyooka	6·0	265	1 43	+11	—	—	3·0	3·8
Sumoto	6·2	255	1 30	- 5	2 58	+ 9	—	3·3
Muroto	7·2	248	e 1 54?	+ 5	—	—	—	—
Koti	7·6	252	1 49	- 6	3 28	+ 2	e 3·8	—
Hukuoka	10·0	258	2 26	- 4	(4 43)	+14	4·7	—
Nagasaki	10·8	254	e 2 33	- 8	e 4 47	- 3	—	—
Zi-ka-wei	18·0	260	e 4 10	- 7	7 30	-10	—	11·7
Hong Kong	28·0	248	—	—	e 10 54?	- 5	—	18·2
Manila	28·8	227	e 6 17	+ 1	—	—	—	—
Irkutsk	31·1	314	6 22	-17	11 28	-25	15·9	19·9
Phu-Lien	34·6	255	2 54?	?	—	—	—	—
Tashkent	55·4	300	1 9 19	-23	1 17 23	- 3	e 24·9	34·3
Ekaterinburg	56·0	320	1 9 46	0	17 33	- 1	24·9	35·5
Pulkovo	69·0	330	11 12	+ 1	20 17	+ 3	34·9	46·9
Baku	69·1	307	—	—	e 20 21	+ 6	e 34·2	38·1
Helsingfors	70·8	332	e 11 25	+ 3	e 20 40	+ 4	e 35·9	—
Scoresby Sund	72·8	356	11 40	+ 5	21 6	+ 6	34·9	—
Upsala	73·8	335	—	—	—	—	—	44·9
Theodosia	75·4	318	e 11 51	0	—	—	—	—
Simferopol	76·1	318	e 11 49	- 7	—	—	—	—
Konigsberg	76·2	330	—	—	—	—	e 42·9	51·9
Copenhagen	78·6	355	12 10	- 1	—	—	41·9	—
Hamburg	81·2	334	e 12 24	- 2	—	—	e 42·9	48·9
Cheb	83·0	331	—	—	—	—	e 40·9	45·9
De Bilt	84·1	335	e 12 43	0	e 23 8	- 1	e 41·9	52·3
Feldberg	84·5	333	—	—	e 22 58	[+ 5]	—	54·3
Uccle	85·5	335	—	—	e 22 54?	[- 5]	e 43·9	—
Strasbourg	86·1	332	e 13 49	+55	e 22 54?	[- 9]	44·9	—
Kew	86·4	340	e 12 48	- 7	—	—	48·9	—
Paris	87·8	336	e 12 59	- 5	—	—	50·9	58·9
Florence	88·5	327	e 12 54	-14	e 24 39	?PS	—	56·9
Ottawa	91·6	26	—	—	—	—	e 46·9	—
Toronto	91·7	36	—	—	—	—	—	56·9
Georgetown	z. 96·6	36	—	—	—	—	e 50·2	—
Toledo	n.w. 97·8	335	—	—	—	—	e 50·2	—
Granada	100·1	334	—	—	—	—	55·9	—
La Paz	146·7	62	19 55	[+ 4]	—	—	—	—

Additional readings: Akita ePEN = +1m.9s., MZ = +2·9m., MN = +3·4m.
Osaka MN = +3·0m., MZ = +3·5m. Kobe MZ = +3·2m., MN = +3·4m.
Toyooka MN = +3·6m. Sumoto MZ = +3·5m., MN = +3·6m. Konigs-
berg MN = +44·9m. De Bilt eLN = +42·9m., MN = +52·1m., MZ =
+55·1m.

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June 26d. After-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch, P or S phase.

	h.	m.	s.	h.	m.	s.	h.	m.	s.
	0	45	54	5	1	9	11	11	2
	2	3	23	9	16	32			

Wellington, iP or i phase.

	h.	m.	s.	h.	m.	s.	h.	m.	s.
	0	45	10	5	0	35	15	7	36
	2	2	34	8	16	43	17	17	49
	3	46	59	9	16	10	20	5	50
				11	10	40			

June 26d. Readings also at 2h. (near Zagreb), 3h. (near Manila), 10h. (Paris), 11h. (Manila), 15h. (Manila and near Tacubaya), 16h. (Ekaterinburg and Tashkent), 17h. (Ekaterinburg, Helsingfors, Pulkovo, and Scoresby Sund), 18h. (near Sumoto), 21h. (Apia), 22h. (Florissant).

June 27d. 12h. 46m. 57s. Epicentre 54° OS. 29° 6W.

(Time and Epicentre given by E. Tams, "Zeitschrift für Geophysik," IV, No. 8.)

A = +.511, B = -.290, C = -.809; D = -.494, E = -.869;
G = -.704, H = +.400, K = -.588.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	m.	s.	m.	s.	m.	s.	m.	m.
La Plata	27.5	303	6 2	- 1	10 58	+ 8	15.4	—
Rio de Janeiro	32.7	335	7 48	+54	—	—	13.0	17.0
Santiago	35.4	289	i 7 12	- 5	13 0	- 1	15.2	—
Cape Town	39.0	79	7 41	- 5	13 41	-11	—	18.2
Sucre	44.4	309	i 8 31	+ 2	i 15 21	+14	23.2	27.8
La Paz	47.9	308	i 8 56	+ 3	i 16 8	+15	24.7	28.4
Johannesburg	50.3	80	9 15	+ 6	—	—	—	—
Tananarive	67.3	91	i 11 14	+14	i 20 13	+19	31.9	37.0
Entebbe	74.1	66	(11 46)	+ 3	11 46	?P	31.7	42.4
Christchurch	80.6	195	—	—	22 49	+19	38.9	—
Port au Prince	81.3	320	e 12 53	+26	23 57	?PS	33.2	44.7
Wellington	82.4	198	i 12 34	+ 2	i 22 42	- 8	40.1	41.2
	82.4	198	i 12 33	+ 1	i 22 46	- 4	139.7	49.7
Melbourne	88.1	175	e 13 6	- 0	23 38	-15	37.7	42.8
Perth	89.0	150	i 13 3	- 7	23 33	-30	42.0	—
Adelaide	90.5	170	i 13 13	- 6	i 23 41	[+10]	139.8	58.2
Azores	91.8	3	13 45	+19	—	—	—	62.6
Riverview	92.2	181	i 13 21	- 7	i 23 52	[+11]	e 44.0	53.9
Sydney	92.2	181	13 33	+ 5	24 3	[+22]	53.6	54.2
Vera Cruz	92.6	300	(13 12)	-18	(24 39)	- 2	(36.6)	(56.3)
San Fernando	92.7	20	i 13 37	+ 6	i 24 5	[+21]	40.0	46.2
Malaga	93.3	21	13 25	- 9	23 49	+ 1	29.0	51.6
Almeria	93.9	22	13 33	- 4	i 24 15	[+24]	31.1	53.9
Granada	93.9	21	i 13 31	- 6	i 24 20	[+29]	29.7	40.2
Tacubaya	94.4	298	13 36	- 4	24 16	[+22]	40.4	55.6
Algiers	95.0	27	e 13 41	- 2	24 19	[+22]	40.0	54.0
Alicante	95.7	24	i 13 48	+ 1	i 24 31	[+30]	e 35.6	53.7
Toledo	96.4	20	13 31	-20	24 32	[+28]	—	52.4
Tortosa	98.3	24	—	—	24 45	[+30]	39.3	66.0
	98.3	24	13 58	- 4	24 34	[+19]	40.9	—
Helwan	98.9	50	e 13 48	-17	24 21	[+ 3]	—	59.4
Barcelona	99.2	25	e 13 57	- 9	e 24 45	[+25]	37.9	55.9
Bagnères	100.3	23	—	—	i 25 10	?E	41.0	—
Charlottesville	101.2	324	—	—	i 24 43	[+13]	47.6	—
Georgetown	101.5	325	14 22	+ 4	—	—	48.7	59.6

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Naples	E. 102-0	35	e 15 44	+84	e 27 43	+85	43-0	63-0
Pompeii	102-1	35	e 14 28	+ 7	e 24 58	[+24]	43-0	55-0
Fordham	102-2	327	e 14 19	- 2	i 18 18	?PR ₁	—	62-0
Harvard	102-7	330	e 14 3	-21	—	—	—	—
Florence	103-8	30	i 14 18	-11	28 3	?PS	41-0	43-0
Moncalieri	104-0	27	i 14 17	-13	25 40	[+57]	33-7	68-9
Suva	E. 104-0	207	e 15 15	+45	19 15	?PR ₁	36-2	—
	N. 104-0	207	e 15 45	+75	19 45	?	—	—
Ksara	104-4	51	i 14 39	+ 7	—	—	51-0	61-0
Apia	104-9	219	18 54	?PR ₁	e 24 56	[+ 9]	50-0	64-0
Le Mans	105-1	21	e 18 53	?PR ₁	34 3?	?SR ₁	57-0	59-2
Besançon	105-6	25	e 18 0	[- 7]	e 34 5	?SR ₁	44-0	56-0
Neuchâtel	105-7	26	e 14 27	-11	e 25 15	[+24]	—	—
Venice	105-7	30	i 14 43?	+ 5	26 5	-44	50-2	59-3
Paris	106-3	23	e 14 32	- 9	e 25 22	[+29]	44-0	46-0
Zurich	106-4	27	e 14 31	-10	—	—	—	—
St. Louis	106-4	315	e 18 56	?PR	i 26 55	- 1	e 46-0	55-0
Florissant	106-5	315	e 14 30	-12	e 25 12	[+18]	e 46-6	60-0
	106-5	315	i 14 30	-12	i 25 12	[+18]	46-0	60-3
Toronto	106-5	325	e 14 33	- 9	26 54	- 3	50-7	65-2
Ottawa	106-9	329	e 14 35	- 9	—	—	i 52-0	64-6
Colombo	106-9	100	e 14 34	-10	24 47	[- 9]	50-0	57-0
Läibach	106-9	30	i 14 30	-14	e 24 30	[-26]	e 40-3	77-6
Zagreb	107-1	31	e 14 35	- 9	—	—	e 51-7	62-5
Innsbruck	107-1	27	—	—	—	—	e 38-0	61-0
Strasbourg	107-3	24	i 14 35	-10	25 12	[+14]	38-0	62-6
Belgrade	107-6	35	e 14 23	-13	e 25 22	[+23]	e 43-9	62-5
Hohenheim	107-8	25	e 14 48	+ 1	e 25 33	[+33]	e 46-0	63-0
Karlsruhe	107-8	25	e 15 33	+46	28 4	?PS	e 46-0	72-6
Ann Arbor	E. 107-9	320	e 17 39	[-36]	—	—	i 49-6	61-8
	N. 107-9	320	e 18 3	[-12]	—	—	50-4	67-2
Chicago	E. 107-9	319	14 35	-13	i 22 44	?	e 44-8	—
	N. 107-9	319	14 38	-10	e 23 51	?PS	e 45-2	—
Graz	108-1	30	e 14 37	-12	i 28 45	?PS	44-0	70-2
Kodalkanal	108-2	95	(18 33)	[+17]	—	—	18-6	61-6
Kew	108-3	17	e 14 40	-10	e 25 45	[+42]	i 45-3	47-4
Oxford	108-4	16	e 14 52	+ 2	—	—	i 45-0	51-4
Uccle	108-6	21	e 14 40	-11	i 24 47	[-17]	e 45-0	59-9
Feldberg	108-9	22	e 14 1	-52	—	—	e 45-0	64-0
Vienna	109-4	30	e 14 46	- 9	—	—	e 38-0	61-0
Batavia	109-6	132	i 14 39	-16	i 26 28	?Σ	i 45-1	—
Bldston	109-7	15	14 49	- 7	28 53	?PS	55-9	65-0
Cheb	109-9	28	e 14 56	- 1	i 29 25	?	e 45-9	47-0
De Bilt	110-0	21	e 14 46	-11	—	—	e 46-0	46-4
Stonyhurst	110-2	15	e 14 42	-16	—	—	54-2	63-8
Jena	E. 110-4	25	e 17 33	[-50]	i 29 15	?PS	e 44-0	47-6
	N. 110-4	25	e 17 21	[-62]	i 29 29	?PS	e 45-0	53-6
Gottingen	E. 110-6	24	e 14 56	- 4	i 29 18	?PS	e 45-4	48-0
	N. 110-6	24	e 14 55	- 5	i 28 6	+33	e 53-2	65-0
	Z. 110-6	24	e 14 53	- 7	i 29 26	?PS	e 53-2	54-2
Tucson	N. 110-9	295	e 14 54	- 8	—	—	—	—
Edinburgh	112-0	14	e 15 23	+16	—	—	48-0	64-8
Bombay	112-5	86	e 19 22	?PR ₁	29 9	?PS	47-8	58-2
Hamburg	112-5	23	e 15 3	- 6	i 25 47	[+27]	e 46-6	49-0
Yalta	112-5	42	e 19 36	?PR ₁	—	—	—	—
Smferopol	112-8	42	e 18 23	[- 7]	—	—	—	—
Lemberg	E. 113-2	34	e 19 15	?PR ₁	e 29 27	?PS	e 44-4	67-2
	N. 113-2	34	e 19 9	?PR ₁	e 29 33	?PS	e 43-0	66-2
Theodosia	113-4	42	e 15 24	+11	—	—	—	—
Dyce	113-5	14	i 15 12	- 2	i 29 21	?PS	52-8	68-0
Hyderabad	114-6	91	19 54	?PR ₁	29 30	?PS	46-6	60-6
Copenhagen	115-0	24	15 11	- 9	—	—	47-0	—
Baku	116-2	55	e 15 22	- 4	—	—	—	—

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Konigsberg	116.4	29 e	19 6	[+24]	—	—	e 47.0	51.0
Bergen	117.7	17	14 3	-90	25 53	[+16]	—	61.0
Reykjavik	118.3	3 i	20 36	?PR ₁	i 25 25	[-14]	e 54.4	—
Uppsala	119.9	24 e	15 37	-5	—	—	e 50.0	53.7
Lick	120.5	291 e	19 7	[+13]	—	—	e 61.4	—
Berkeley	121.3	291 e	19 5	[+9]	—	—	e 61.8	—
Agra	121.9	85 i	21 6	?PR ₁	i 31 0	?PS	—	64.8
Helsingfors	122.2	27 e	15 43	-10	—	—	e 52.8	53.6
Pulkovo	123.4	30	19 12	[+10]	—	—	e 52.0	72.0
Dehra Dun	124.2	83	19 43	[+39]	31 3	?PS	49.7	64.0
Calcutta	124.4	96	18 17	[-47]	28 47	-35	50.6	60.2
	124.4	96	18 14	[-50]	28 54	-28	—	—
Samarkand	124.6	67 e	19 11	[+6]	—	—	58.2	—
Scoresby Sund	124.6	3	15 58	-6	25 51	[-7]	55.0	—
Tashkent	127.0	67 i	19 16	[+5]	—	—	—	—
Andijan	128.2	70 e	18 40	[-34]	—	—	e 47.0	—
Victoria	129.1	300	19 25	[+9]	31 25	?	56.8	79.4
	129.1	300	19 25	[+9]	31 43	?	56.4	77.8
Honolulu T.H.	129.2	251 i	19 21	[+5]	—	—	54.0	—
	129.2	251 i	19 25	[+9]	29 0	?	60.0	—
Almata	132.6	70 e	19 26	[+2]	—	—	53.0	—
Phu-Lien	133.1	117 e	19 28	[+1]	32 18	?	54.6	71.0
Manila	134.3	137 e	19 24	[-5]	—	—	—	—
Hong Kong	138.2	124	19 28	[-8]	29 13	?E	40.4	69.2
Sitka	140.0	305 e	19 27	[-12]	—	—	e 50.6	81.1
Taihoku	144.0	130 e	19 38	[-9]	—	—	33.7	—
Zi-ka-wei	149.2	125 e	19 48	[-6]	—	—	71.6	77.7
Irkutsk	152.8	75 i	20 3	[+3]	27 23	?PR ₂	73.0	96.4
Nagasaki	154.2	137 e	20 2	[+1]	e 24 0	?PR ₁	—	85.1
Hukuoka	155.2	137	20 11	[+9]	e 30 58	?	e 43.7	89.9
Muroto	156.2	145 e	20 13	[+10]	—	—	—	—
Kotl	156.3	143 e	20 2	[-2]	—	—	e 86.6	—
Sumoto	157.5	145	20 7	[+1]	i 30 43	?E	—	45.7
Kobe	157.9	145	20 5	[-1]	—	—	60.0	92.9
Osaka	158.0	146	19 55	[-11]	31 13	?E	45.7	51.1
Toyooka	158.6	143 e	20 26	[+19]	i 45 48	?	—	—
	158.6	143 i	20 20	[+13]	i 45 57	?	—	—
Nagoya	158.9	148 e	20 15	[+8]	—	—	46.1	—
Tokyo	160.2	154	20 13	[+5]	24 54	?PR ₁	—	—
Mizusawa	163.8	153	20 22	[+11]	24 51	?PR ₁	30.8	—
	163.8	153	20 23	[+12]	24 57	?PR ₁	31.1	—
Akita	164.1	150	20 18	[+7]	—	—	36.0	36.5
Ootomari	171.2	144	20 25	[+10]	25 37	?PR ₁	—	—

Additional readings and note : Rio de Janeiro iPN = +7m.51s., MN = +27.0m.
 Santiago PR₁ = +8m.39s. Sucre i = +15m.57s., SR₁ = +18m.47s. La
 Paz iEN = +8m.8s., PR₁E = +10m.58s., PR₁N = +11m.13s., PR₁N =
 +11m.41s., iSN = +16m.10s., iE = +16m.22s., PSN = +16m.35s., SR₁N =
 +19m.58s., SR₁N = +21m.3s.; T₁ = 12h.46m.46s. Tananarive P₁EN =
 +12m.3s., E = +13m.3s., eN = +13m.42s., PR₁ = +14m.13s., E = +14m.41s.,
 PR₁EN = +16m.13s., eE = +16m.45s., EN = +18m.28s., iPSEN =
 +20m.38s., E = +20m.55s., S₁SE = +21m.12s., SR₁EN = +24m.18s., EN =
 +24m.48s., E = +26m.33s., N = +27m.39s., E = +27m.48s., SR₁EN =
 +28m.5s., N = +29m.3s., SR₁E = +29m.18s., LN = +31.8m., MN = +36.4m.
 Christchurch SR₁ = +28m.25s., SR₁ = +32m.15s. Port au Prince i =
 +13m.13s. Wellington iPR₁N = +15m.47s., iPR₁E = +16m.16s., iPR₁N =
 +17m.46s., iPR₁E = +17m.51s., iSR₁E = +28m.41s., iSR₁N = +28m.51s.,
 SR₁E = +32m.56s., T₁N = 12h.47m.2s., T₁E = 12h.47m.8s. Melbourne
 iP = +13m.48s. Perth PR₁ = +16m.8s., SR₁ = +29m.53s., SR₁ =
 +33m.48s. Adelaide i = +16m.20s., iPR₁ = +16m.51s., iPR₁ = +18m.15s.,
 i = +24m.11s. = S-8s., +24m.56s., and +28m.51s., iSR₁ = +29m.58s.,
 iSR₁ = +33m.25s., i = +37m.13s. = SR₁ + 3s., MN = +50.7m. Riverview
 i = +13m.38s., PR₁ = +17m.22s., PR₁ = +19m.46s., iS = +24m.23s., PS =
 +24m.34s., and +25m.18s., P₁PS = +25m.44s., and +26m.14s., SR₁ =
 +31m.1s., SR₁ = +35m.24s., eE = +38m.3s., +38m.44s., +40m.46s., and
 +41m.25s., MN = +53.7m. Sydney SR₁ = +38m.21s., SR₁ = +49m.51s.
 Vera Cruz readings have been diminished by 3m. Malaga iP = +13m.34s.,

Continued on next page.

$i = +25m.58s.$ = PS + 11s., MZ = +51.7m., MN = +52.0m. Almeria MN = +52.8m. Granada $i = +14m.9s.$, PR = +17m.43s., iSN = +24m.18s., $i = +26m.17s.$ = PS + 23s., MN = +36.4m. Algiers PR₁ = +17m.37s., ? = +32m.43s. Alicante MN = +55.2m. Toledo MNW = +36.0m. Barcelona PR₁ = +17m.56s., SR₁ = +31m.30s., MN = +55.5m. Bagnères PR₁ = +18m.40s. Charlottesville iSN = +32m.56s. = SR₁ + 4s., iSE = +32m.57s. = SR₁ + 5s., eE = +38m.47s., eLE = +45.7m. Georgetown PS₁EN = +27m.40s. and +33m.58s., MN = +61.5m. Fordham iE = +21m.3s. = PR₂ - 14s. and +33m.9s. = SR₁ + 3s. Harvard $i = +18m.3s.$ = [P] + 6s. and +33m.18s. = SR₁ + 7s. Florence $i = +33m.3s.$ = SR₁ - 23s. and +37m.13s. Moncalieri MN = +56.9m. Ksara P'N = +18m.33s., PR₁E = +19m.3s., PR₁N = +19m.8s., PR₁E = +21m.11s., PR₁N = +21m.14s., PR₂N = +22m.37s., PR₁E = +22m.45s., PR₁N = +25m.16s., PR₁E = +25m.22s., PS₁E = +28m.14s., PSN = +28m.20s., PPSE = +29m.16s., SR₁N = +34m.0s., SR₂N = +37m.49s., SR₂E = +39m.24s., SR₁E = +52m.51s., MN = +59.0m., T₁ = 12h.46m.37s. Apia S = +29m.52s. Neuchatel eP' = +18m.18s., ePR₁ = +18m.54s. Paris e = +34m.35s., MN = +61.0m. St. Louis eN = +19m.43s., iN = +26m.12s., eEN = +29m.8s., iN = +29m.56s. and +34m.57s. Florissant (first line), eEN = +18m.19s. = [P] + 9s., iE = +18m.50s. = PR₁ - 5s., eE = +20m.26s., eEN = +21m.29s., +26m.2s. = E + 11s., +28m.4s., +28m.33s. = PS + 14s. and +29m.3s.; (second line) ePE = +14m.32s., iZ = +15m.29s., eE = +17m.20s., iN = +18m.50s., iE = +19m.5s., iEN? = +19m.44s., iZ = +26m.12s., iN = +28m.31s. = PS + 12s., iZ = +29m.18s., iNZ = +34m.15s. = SR₁ + 16s. and +37m.49s., iN = +39m.13s. = SR₂ + 4s., Toronto eP₁PN = +18m.31s., iN = +18m.57s. = PR₁ + 2s. and +25m.14s. = [S] + 20s., iEN = +28m.28s. = PS + 9s., iSR₁ = +34m.18s., MN = +64.4m.; T₁ = 12h.46m.55s. Ottawa eP'N? = +18m.7s., iPR₁ = +19m.7s., iPS = +28m.27s., eSR₁ = +34m.21s., iN = +37m.31s., e = +41m.53s., eLN = +50.7m., MN = +48.6m. Colombo iP = +19m.0s. = PR₁ + 1s., SR₁ = +44m.42s. Laibach e = +15m.35s. and +32m.3s.? Zagreb eP = +18m.36s., ePR₁ = +19m.11s., $i = +19m.46s.$, e = +21m.41s. = PR₂ - 16s., +22m.52s., and +25m.30s. = E - 25s., ePS = +28m.35s., e = +29m.48s., and +30m.26s., eNW = +33m.29s., eSR₁ = +34m.30s., e = +35m.23s. and 38m.54s. = SR₂ - 24s., eLNW = +44.3m., +46.0m., and +48.9m. Innsbruck PR₁ = +19m.5s., PS = +28m.27s., SR₁ = +34m.27s. Strasbourg P' = +18m.51s., PR₁ = +19m.53s., PS = +29m.10s., SR₂ = +34m.16s., MZ = +46.0m., MN = +64.9m. Belgrade eP'N = +18m.13s., eN = +28m.40s. = PS + 9s. Hohenheim eP' = +18m.54s., iPR₁ = +19m.14s., PR₁ = +22m.10s., PS = +28m.33s., PPS = +29m.29s., SR₁ = +34m.23s., PPP = PR₂ = +38m.17s. Karlsruhe MN = +62.8m. Ann Arbor e = +18m.27s., iN = +19m.21s. = PR₁ + 16s., e = +21m.39s. = PR₂ - 26s., i = +25m.15s. = [S] + 14s., +28m.21s. = PS - 14s., +29m.21s., and +34m.15s. = SR₁ - 2s., iN = +37m.57s., eE = +38m.39s., i = +44m.21s. Chicago PR₁E = +19m.5s., PR₁N = +19m.10s., ePR₁E = +20m.51s., ePR₁N = +21m.33s., iPS₁E = +28m.16s., iPSN = +28m.33s., iSR₁E = +33m.30s., iSR₁N = +33m.42s. Graz iPR₁ = +19m.19s., PS = +29m.37s., iSR₁ = +34m.45s., MN = +61.1m. Kodalkanal P = +13m.27s. Kew ePR₁Z = +19m.9s., iPR₁Z = +21m.53s., eSE = +27m.0s., iPS = +28m.37s., ePPSE = +29m.21s., eZ = +29m.57s., iSR₁E = +35m.1s., iSR₂E = +38m.40s., iSR₁E = +41m.46s., iLZ = +51.3m., MZ = +61.3m. Oxford e = +18m.12s. = [P] - 4s., i = +27m.3s. Uccle PR₁ = +18m.55s., PR₂ = +22m.59s., iPPS = +28m.45s., iSR₁ = +34m.44s., MZ = +63.7m., MN = +66.2m. Feldberg eN = +17m.55s., iN = +19m.4s. = PR₁ - 7s., eE = +29m.3s. = PS + 17s., and +35m.9s. Vienna iZ = +16m.27s., iN = +16m.33s., P' = +18m.35s., PR₁ = +19m.29s., PR₁ = +21m.40s., iN = +23m.29s., iE = +27m.24s., PS = +28m.51s., P₁P₂P₁P = +29m.23s., iN = +32m.58s., SR₁ = +35m.5s., MN = +63.6m. Batavia iN = +14m.41s., i = +15m.9s., iN = +18m.49s. = [P] + 28s., and +19m.39s. = PR₁ + 23s., i = +25m.19s. = [S] + 11s., iZ = +28m.35s. = PS - 19s. Bidston +18m.53s. = PR₁ - 17s. and +35m.8s. = SR₁ + 29s. Cheb e = +19m.21s. = PR₁ + 4s., +23m.17s., +25m.49s., +35m.11s., and +39m.18s., MN = +60.6m. De Bilt iPR₁Z = +19m.21s., e = +29m.20s. = PS + 22s., and +35m.12s. = SR₁ + 30s., MN = +63.0m., MZ = +63.6m. Stonyhurst PR₁ = +19m.37s., PR₂ = +25m.29s., PS = +29m.13s., SR₁ = +34m.37s., PSSS? = +39m.9s., ? = +45m.49s. Jena eN = +19m.27s. = PR₁ + 7s., eZ = +19m.28s., ePR₁N = +22m.3s. = PR₂ - 21s., ePR₁E = +23m.3s., eN = +25m.3s. = [S] - 9s., e = +29m.3s., eN = +34m.55s. = SR₁ + 7s., eE = +35m.3s. = SR₁ + 15s., eLZ = +52.0m., MZ = +54.0m. Gottingen eZ = +18m.11s. = [P] - 12s., ePR₁Z = +19m.27s., ePR₁EN = +19m.31s. Tucson ePE = +15m.20s., eN = +18m.32s. = [P] + 8s., ePR₁E = +19m.20s., ePR₁N = +19m.26s., ePSN = +28m.26s., ePSE = +28m.56s., iSR₁N = +35m.10s., iSR₂N = +38m.41s. Edinburgh $i = +19m.35s.$ = PR₁ + 3s., +29m.33s. = PS + 13s., +35m.28s. = SR₁ + 20s., +36m.46s. and +39m.42s. Hamburg ePR₁Z = +19m.31s., iPPSZ = +29m.30s., iSR₁NZ = +35m.43s., iSR₁N = +40m.3s., MN = +50.0m., MZ = +54.0m. Dyce $i = +18m.48s.$ = [P] + 26s. Copenhagen P' = +18m.59s., PR₁ = +19m.56s., PR₂ =

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+22m.45s., no phase, +25m.55s. = [S] + 26s., +27m.6s. = Σ + 22s., +28m.9s. and +28m.45s., PS = +29m.55s., SR₁ = +35m.45s., SR₂ = +40m.15s. Baku iPR₁ = +20m.20s. Königsberg eEN = +20m.9s. = PR₁ + 9s., eE = +22m.49s. = PR₁ - 23s., i = +27m.15s. = Σ + 23s., eE = +29m.45s., eN = +30m.8s. = PS + 1s., eE = +31m.42s., iE = +35m.57s. = SR₁ + 5s. and +36m.30s., eN = +36m.39s., and +40m.9s., MN = +50.0m., MZ = +63.0m. Bergen e = +19m.13s., i = +20m.13s. = PR₁ + 5s., e = +30m.28s. = PS + 30m. Reykjavik e = +23m.8s., eN = +30m.25s. = PS - 1s., e = +37m.9s., eN = +37m.14s. Upsala PR₁ = +20m.29s., PS = +30m.43s., iS_CP_CSP = +31m.14s., SR₁ = +37m.12s., SR₂ = +41m.39s., MN = +58.4m. Lick eZ = +20m.5s., eEZ = +20m.43s. = PR₁ + 16s., eE = +23m.27s. = PR₁ - 23s., +29m.8s. and +30m.31s. = PS - 18s., eZ = +33m.7s. and +35m.47s., eE = +36m.47s. = SR₁ - 6s., +45m.40s., eE = +64m.14s. Berkeley eE = +19m.13s., eZ = +19m.18s., eN = +19m.25s., eEN = +20m.43s. = PR₁ + 10s., iZ = +20m.45s., eE = +21m.21s., eN = +21m.24s., eZ = +31m.0s. = PS + 3s., eN = +31m.31s., eENZ = +37m.51s., eE = +45m.33s., eN = +45m.39s., eE = +51m.3s., eN = +61m.27s. Helsingfors P'Z = +19m.14s., PR₁Z = +20m.38s., PR₁N = +20m.49s., ePR₁N? = +21m.21s., S_CP_CSP = +30m.57s., SR₁ = +38m.3s., SR₂ = +42m.3s. Pulkovo P = +15m.47s., iPR₁ = +20m.53s., S_CP_CP_CS = +27m.16s., PS = +30m.26s., SR₁ = +38m.3s. Scoresby Sund +19m.14s. = [P] + 9s., +21m.9s. = PR₁ + 15s., +22m.39s., +28m.3s., +30m.3s.?, +37m.3s.?, and +41m.3s. Tashkent eP = +15m.55s. = P - 19s., PR₁ = +21m.3s. Honolulu T.H. iPR₁E = +21m.34s., iPR₁N = +21m.36s., eN = +22m.45s., eE = +22m.51s., PSN = +31m.51s. Phu-Lien e = +21m.50s. = PR₁ + 0s., i = +22m.59s., SR₁ = +39m.33s., SR₂ = +44m.33s., SR₃ = +47m.33s., MN = +67.1m. Manila iE = +19m.31s., iN = +19m.36s., and +22m.57s., i = +24m.1s., and +25m.37s. Hong Kong iPR₁ = +22m.33s., SR₁ = +34m.25s., MN = +69.9m. Sitka ePR₁N = +23m.24s., ePR₁N = +26m.9s., ePSN = +31m.32s., eSR₁N = +36m.58s., eSR₂N = +41m.23s. Zi-ka-wei iE = +20m.16s., +20m.48s., and +32m.8s. iN = +20m.42s., +21m.28s., and +33m.54s., LE = +43.7m., LN = +43.9m., MZ = +75.6m., MN = +81.7m. Irkutsk eP = +17m.57s., S_CP_CP_CS = +30m.24s., PPS = +37m.13s. Nagasaki MN = +116.1m. Hukuoka MN = +96.4m. Koti i = +20m.7s., eZ = +20m.21s., eP_CP_CS or PR₁ = +24m.10s., S_CP_CP_CS = +30m.53s., SR₁E = +44m.3s., PSSEN = +45m.3s. SR₁E = +49m.27s., eN = +53m.27s. Sumoto MN = +45.9m. Kote PEN = +20m.15s., iPR₁Z = +24m.15s., eZ = +29m.5s., SR₁N = +45m.34s. MN = +89.4m., MZ = +89.6m.

June 27d. 15h. 17m. 10s. Epicentre 54°0S. 29°6W. (as on 12h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	m. s.	m. s.	s.	m.	m.
La Plata	27.5	303	e 6 2	- 1	10 50	0	—	—
Rio de Janeiro	32.7	335	—	—	—	—	21.3	—
Sucre	44.4	309	8 31	+ 2	15 20	+13	22.7	25.8
La Paz	47.9	308	8 57	+ 4	1 16 10	+17	24.1	25.8

La Paz gives also MN = +27.7m.; T₀ = 15h.16m.59s.

June 27d. 22h. 39m. 0s. Epicentre 71°0N. 6°0W.

A = +.324, B = -.034, C = +.946 : D = -.105, E = -.995.
G = +.940, H = -.099, K = -.326.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	m. s.	m. s.	s.	m.	m.
Scoresby Sund	5.3	273	1 24	+ 2	12 25	0	—	—
Reykjavik	9.1	229	—	—	—	—	—	—
Dryce	13.9	171	3 27	+ 2	6 29	+23	e 4.7	—
Upsala	14.7	127	e 3 33	- 2	—	—	e 8.0	8.2
Edinburgh	15.2	174	—	—	—	—	e 7.0	—
Helsingfors	16.4	115	e 3 56	- 1	e 6 44	-20	e 8.5	—
Copenhagen	17.2	143	4 9	+ 2	7 30	+ 8	9.0	—
Stonyhurst	17.2	173	—	—	e 7 14	- 8	—	9.7
Pulkovo	18.4	109	4 22	0	e 7 33	-16	9.0	10.1
Hamburg	18.8	149	e 4 27	0	—	—	e 11.6	14.0
De Bilt	19.6	159	4 37	+ 1	8 19	+ 4	e 11.0	12.6
Kew	19.7	169	4 36	- 1	e 8 22	+ 5	10.0	11.1
Königsberg	19.8	131	e 4 41	+ 2	e 8 32	+13	e 11.0	12.0

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle	20.7	161	e 4 49	0	e 8 37	- 1	e 10.6	—
Feldberg	N. 21.8	155	e 4 52	-11	e 9 7	+ 6	—	17.0
Paris	22.5	165	e 5 7	- 4	—	—	13.0	17.0
Cheb	22.6	148	—	—	e 9 18	+ 1	—	15.5
Strasbourg	23.3	156	i 5 17	- 3	e 9 39	+ 8	15.0	—
Kucino	24.0	106	i 5 25	- 3	e 9 43	- 1	e 12.9	—
Zurich	24.6	156	e 5 0?	-34	—	—	—	—
Neuchatel	24.8	159	e 5 30	- 6	e 10 2	+ 3	—	—
Vienna	25.1	143	5 34	- 5	15 30	?	—	—
Florence	28.5	153	—	—	11 30	+22	—	18.0
Tortosa	N. 30.4	170	e 6 48	+16	—	—	e 16.0	20.6
Granada	33.9	176	—	—	—	—	e 16.0	20.4
Ottawa	N. 41.2	270	—	—	e 14 12	-12	22.0	—
Toronto	N. 44.0	272	—	—	—	—	e 23.0	—
Tashkent	46.7	87	i 8 39	- 6	—	—	e 23.0	27.6
Irkutsk	47.3	51	e 8 44	- 5	—	—	e 28.0	—
Florisant	51.9	280	—	—	—	—	e 23.5	28.0

Additional readings: Scoresby Sund eE = +2m.30s. De Bilt eLN = +10.0m., MN = +13.4m., MZ = +14.6m. Konigsberg ePR₁N = +5m.3s., eN = +7m.28s. Kucino e = +6m.29s. Florence P = 22h.37m.10s., S = 22h.43m.30s. Ottawa eN = +18m.42s. Toronto LN = +26.0m. Tashkent e = +12m.12s. and +18m.48s. -SR₁ -16s.

June 27d. After-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch, S readings.

h.	m.	s.	h.	m.	s.
9	7	0	16	42	47

Wellington iP, iS, or i readings.

h.	m.	s.	h.	m.	s.
5	14	50	15	36	23
9	6	30	16	42	32

June 27d. Readings also at 1h. (La Paz), 6h. (Andijan, Tashkent, and near Irkutsk), 13h. (Kodakanal, La Paz (4), Sucre (2), La Plata, and near Santiago), 14h. (La Paz (4), Sucre (2), and La Plata), 15h. (La Paz, Sucre, and La Plata), 16h. (Andijan, Sucre, and La Paz), 17h. (Batavia, Yalta, La Paz, and Sucre (2)), 18h. (La Paz (2) and Sucre), 20h. (Nagoya and Samarkand), 21h. (Rio de Janeiro), 22h. (Baku, Andijan, Samarkand, Scoresby Sund, and Granada)

June 28d. 22h. 18m. 44s. Epicentre 39°·0N. 37°·5E. (as on 1929 May 19d.).

A = +.617, B = +.473, C = +.629; D = +.609, E = -.793.
G = +.499, H = +.383, K = -.777.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	5.3	195	2 12	+50	3 51	+86	4.2	—
Theodosia	6.2	346	e 2 12	+37	—	—	—	—
Simferopol	6.4	338	e 1 30	- 8	—	—	—	—
Baku	9.7	78	e 2 37	+11	—	—	e 5.2	—
Pulkovo	21.3	350	4 58	+ 1	8 45	- 5	11.3	—
Ekaterinburg	23.4	33	e 5 17	- 4	e 9 27	- 6	11.8	—
Copenhagen	23.6	323	—	—	—	—	—	14.3
Tashkent	24.3	74	e 5 33	+ 2	19 52	+ 2	—	14.1

Additional reading and note: Baku eL = +6.0m. The readings for Ksara cannot be brought into line with the rest of the observations. Both P and S indicate a distance 8°·6 for the epicentre.

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June 28d. After-shocks from the epicentre of June 16d. 22h. were recorded as follows:—

Christchurch, S = 7h.12m.14s.

Wellington, iP or i phase.

	h.	m.	s.	h.	m.	s.	h.	m.	s.
	4	53	48	9	43	17	13	29	35
	7	11	43	10	4	5	16	39	3

June 28d. Readings also at 0h. (La Paz and Rio de Janeiro), 1h. (Baku, Tashkent, Pulkovo, Copenhagen, Vienna, De Bilt (2), Uccle, Granada, Kew, Paris, Strasbourg, Scoresby Sund, Florissant, Toronto, Riverview, Wellington, and Apia), 2h. (Georgetown, Harvard, Scoresby Sund, Kew, Granada, and Copenhagen), 3h. and 4h. (Ksara), 6h. and 7h. (La Paz), 8h. (Ekaterinburg, Kucino, Florissant, and Pulkovo), 9h. (Georgetown, Ottawa, Toronto, Sucre, near La Paz (2), Ekaterinburg, and near Manila), 13h. (Matuyama), 15h. (Matuyama and La Paz), 19h. (Florissant), 20h. (Taihoku), 22h. (near Tacubaya).

June 29d. 1h. 39m. 36s. Epicentre 2°-8N. 96°-0E. (as on 1928 Dec. 14d.).

A = -104, B = +993, C = +049; D = +995, E = +105;
G = -005, H = +049, K = -999.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	$^{\circ}$	$^{\circ}$	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	20.7	29	e 4 48	- 1	e 8 38	0	—	—
Hong Kong	26.0	41	—	—	e 10 14	- 8	—	17.2
Andijan	43.1	333	e 8 14	- 5	—	—	—	—
Almata	43.8	340	e 8 24	0	—	—	—	—
Tashkent	45.3	332	i 8 32	- 3	i 15 11	- 8	—	25.1
Irkutsk	49.9	7	—	—	—	—	25.4	—
Baku	56.2	320	—	—	e 17 56	+20	e 26.4	—
Ekaterinburg	60.9	340	e 10 24	+ 6	18 38	+ 3	29.4	—
Pulkovo	75.5	333	e 11 57	+ 5	21 32	0	41.9	—
Copenhagen	84.0	326	—	—	—	—	44.4	—

No additional readings.

June 29d. After-shocks from the epicentre of 16d. 22h. were recorded as follows:—

Christchurch S = 15h.46m.36s.

Wellington, iP, iS, or i phase.

	h.	m.	s.	h.	m.	s.	h.	m.	s.
	1	21	13	15	46	12	19	45	49
	5	6	16	17	7	7			

June 29d. Readings also at 0h. (Ekaterinburg, Pulkovo, Tashkent, and near Andijan), 3h. (Ekaterinburg), 15h. (near Batavia), 20h. (La Paz and Sucre).

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June 30d. 2h. 44m. 34s. Epicentre 8°3N. 126°9E.

(as on 23d.).

A = -594, B = +791, C = +144; D = +800, E = +600;
G = -087, H = +115, K = -990.

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318		+ 4	i 4 26?	+33	i 5.6	7.2
Isagakiyima	16.3	351	4 7	+11	8 1	?L	(8.0)	—
Taihoku	17.5	344	c 4 29	+18	7 28	- 1	—	—
Hong Kong	18.6	320	4 26	+ 2	7 43	-10	8.6	12.9
Phu-Lien	23.2	305	5 18	- 1	9 25	- 4	e 10.9	16.1
Nagasaki	24.6	6	e 5 31	- 3	e 9 38	-17	—	—
Batavia	24.7	235	5 36	+ 1	—	—	16.3	—
Hukuoka	25.5	7	5 36	- 7	e 10 2	-11	e 13.1	—
Koti	26.0	13	e 5 39	- 9	10 15	- 7	14.1	—
Sumoto	27.1	15	5 50	- 9	12 39	?SR ₁	—	22.6
Kobe	27.4	15	e 5 52	-10	10 37	-11	e 14.9	22.9
Osaka	27.6	16	5 38	-26	(10 34)	-18	10.6	14.6
Nagoya	28.4	18	e 6 9	- 3	18 34	?	—	—
Tokyo	29.8	21	6 26	0	12 47	?SR ₁	—	—
Mizusawa	E. 33.4	22	6 39	-21	17 7	?L	(17.1)	—
Akita	33.6	20	e 6 58	- 3	—	—	e 18.3	—
Calcutta	E. 39.6	296	7 15	-36	14 3	+ 3	23.6	—
	N. 39.6	296	7 19	-32	14 9	+ 9	—	—
Perth	41.6	194	e 5 26?	-162	14 26?	- 3	26.4	—
Adelaide	44.6	166	e 8 29	- 1	i 15 2	- 8	e 21.7	34.1
Colombo	46.6	272	8 46	+ 2	15 14	-22	18.7	29.9
Riverview	48.0	152	e 9 44	+50	—	—	28.7	38.2
Sydney	48.0	152	15 50	?S	(15 50)	- 4	31.4	33.6
Hyderabad	48.0	287	8 53	- 1	15 53	- 1	25.4	33.8
Kodaikanal	48.8	276	11 20	?PR ₁	—	—	20.8	27.6
Melbourne	49.1	161	e 9 11	+10	16 13	+ 6	24.4	26.9
Dehra Dun	50.6	305	—	—	—	—	—	25.4
Bombay	53.4	288	e 9 44	+15	17 8	+ 7	27.6	37.8
Almata	55.7	318	e 9 51	+ 7	—	—	—	—
Andijan	57.9	314	e 10 12	+14	—	—	—	—
Tashkent	60.5	314	i 10 22	+ 6	i 18 37	+ 7	e 30.4	36.4
Samarkand	61.8	313	e 9 52	-32	(18 13)	-33	18.2	—
Wellington	66.2	142	—	—	i 19 50	+10	40.4	52.4
Christchurch	66.3	145	e 11 27	+33	i 19 51	+10	—	—
Ekaterinburg	70.2	329	i 11 24	+ 6	i 20 33	+ 5	38.4	44.1
Honolulu T.H. E.	73.4	70	—	—	e 21 11	+ 4	e 33.9	—
Baku	74.7	311	i 11 56	+ 9	i 21 33	+11	36.8	64.7
Kucino	82.6	326	i 12 36	+ 2	22 49	- 4	e 34.1	48.9
Tananarive	82.8	250	—	—	e 23 2	+ 7	37.8	44.9
Theodosia	85.2	316	e 12 53	+ 4	—	—	—	—
Pulkovo	86.1	330	i 12 53	- 1	i 23 24	- 7	47.4	52.3
Simferopol	86.1	315	e 12 54	0	—	—	—	—
Ksara	86.2	304	12 55	+ 1	23 34	+ 2	40.9	—
Helsingfors	86.6	331	e 13 8	0	23 49	-10	e 45.4	—
Helwan	90.7	300	13 16	- 4	23 59	-22	—	62.1
Uppsala	92.3	332	—	—	e 24 19	-19	—	59.1
Konigsberg	92.5	326	e 14 26	+56	e 23 56	[+13]	e 45.4	50.4
Copenhagen	96.5	330	13 43	- 9	25 6	-15	51.4	—
Victoria	E. 96.6	39	24 22	?S	(24 22)	[+16]	44.8	56.8
Vienna	97.1	322	e 13 43	-12	25 25	- 2	e 44.4	64.4
Graz	98.1	321	e 16 22	?	e 25 26	-11	52.4	66.1
Zagreb	98.2	319	e 13 55	- 6	e 24 17	[+ 3]	—	52.4
Soeraby Sund	98.4	350	13 54	- 8	25 20	-20	—	—
Hamburg	98.6	329	e 13 53	-10	e 24 29	[+12]	e 50.4	62.4
Chab	98.8	324	e 18 26?	?PR ₁	—	—	e 50.4	53.4
Jena	98.9	325	—	—	—	—	e 53.4	70.9

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	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Gottingen	99-5	326	e 24 42	?S	(e 24 42)	[+21]	e 54-4	55-9
Feldberg	N. 101-1	326	e 16 50	?	i 25 43	-23	e 54-0	59-2
De Bilt	101-9	328	e 14 7	-13	e 25 48	-26	e 43-4	62-6
Strasbourg	102-2	325	e 13 26?	-55	i 25 52	-25	e 35-4	—
Uccle	103-0	327	—	—	e 24 59	[+21]	e 50-4	57-4
Edinburgh	103-8	334	—	—	e 24 59	[+17]	55-4	—
Moncalieri	103-9	320	e 13 59	-31	24 6	[-36]	55-8	—
Stonyhurst	104-7	332	e 18 34	?PR ₁	i 26 16	-23	—	58-4
Paris	105-0	325	i 14 31	-3	—	—	43-4	72-4
Kew	105-1	330	e 14 26	-9	e 26 14	-29	55-4	67-4
Oxford	105-4	330	—	—	e 25 2	[+13]	e 51-4	69-7
Cape Town	109-9	236	—	—	e 25 32	[+22]	—	—
Tortosa	N. 110-5	320	—	—	—	—	e 58-4	62-9
Algiers	110-8	314	—	—	—	—	e 61-4	76-4
Tucson	E. 111-7	50	e 19 34	?PR ₁	e 29 2	?PS	51-5	—
Alicante	112-5	318	—	—	e 39 21	?SR ₂	e 60-2	—
Toledo	113-9	320	e 19 45	?PR ₁	e 29 31	?PS	e 42-4	73-2
Granada	115-2	318	i 19 51	?PR ₁	—	—	63-4	67-4
San Fernando	E. 117-3	319	—	—	—	—	—	83-4
Chicago	E. 120-8	30	—	—	e 36 20	?SR ₁	e 62-7	—
Florissant	121-6	34	e 20 42	?PR ₁	i 26 8	[+19]	e 60-4	70-4
Ottawa	122-6	17	e 20 56	?PR ₁	e 26 6	[+14]	e 57-4	—
Toronto	122-9	21	37 26?	?SR ₁	—	—	—	—
Harvard	E. 126-7	15	i 38 19	?SR ₁	—	—	—	—
Fordham	127-3	20	e 21 46	?PR ₁	e 38 56	?SR ₁	e 58-5	80-4
Georgetown	Z. 127-8	23	e 19 23	[+10]	—	—	e 54-7	86-5
Charlottesville	N. 128-0	25	—	—	—	—	e 71-7	—
Rio de Janeiro	N. 162-6	212	e 25 56	?	—	—	—	—
La Paz	163-2	121	20 27	[+17]	—	—	77-4	92-2
Sucre	164-1	133	e 20 24	[+13]	—	—	80-4	91-0

Additional readings : Manila MN = +6-7m. Hong Kong MN = +16-3m.
 Phu-Lien MN = +17-5m. Batavia PZ = +5m.38s., IZ = +5m.42s.,
 i = +6m.5s., +7m.50s., and +10m.59s. = SR₁ + 4s. Sumoto MZ = +15-5m.
 MN = +22-1m. Kobe ePN = +5m.58s. Osaka MN = +15-6m. Mizu-
 sawa PN = +7m.26s. Perth SR₁ = +19m.11s. Adelaide eP =
 +7m.50s.?, iPR₁ = +10m.21s., i = +18m.20s. = SR₁ - 2s. and +19m.8s. =
 SR₁ - 19s., MN = +34-8m. Riverview +19m.54s. = SR₁ + 26s. Sydney
 PR₁ = +19m.26s. = SR₁ - 2s., S = +22m.56s., SR₁ = +26m.8s. Melbourne
 PR₁ = +11m.4s., SR₁ = +19m.43s. Wellington iE = +19m.51s. Honolulu
 T.H. eN = +21m.26s., +23m.14s., eN = +39m.26s., eE = +40m.32s. and
 +49m.26s., eN = +54m.50s. Tananarive PR₁ = +15m.56s., eSR₁ =
 +28m.38s., eSR₁ = +32m.36s. Pulkovo ScPcS = +23m.17s. Ksara
 SN = +23m.36s., LN = +38-4m.; T₀ = 2h.44m.47s. Helsingfors ScPcS =
 +23m.36s., PSN = +24m.48s., PSE = +24m.50s. Upsala eE = +23m.51s. =
 [S] + 9s., MN = +51-2m. Konigsberg eE = +16m.52s., eN = +17m.45s.,
 eE = +20m.25s., eSE = +24m.8s. = Z - 8s., eE = +25m.2s., eN = +25m.28s.
 = PS - 9s., +26m.30s., +26m.40s., +29m.2s., and +37m.8s., eE = +38m.8s.,
 and +42m.20s. Copenhagen +24m.20s. = [S] + 15s. Victoria PN =
 +24m.30s. Zagreb ePR₁ = +17m.57s., e = +33m.26s. ? and +39m.26s. ?
 Scoresby Sund +17m.50s. = PR₁ - 12s. Jena MN = +67-0m. Gottingen
 ePN = +25m.26s., eSEN = +33m.56s., eLN = +53-4m. Feldberg eN =
 +23m.2s., +23m.26s., and +32m.33s. = SR₁ - 18s. De Bilt ePR₁Z =
 +18m.19s., eEN = +24m.46s. = [S] + 13s., MZ = +69-7m. Strasbourg
 e = +18m.26s. ? = PR₁ - 2s. Uccle MN = +57-6m. Paris MN = +58-4m.
 Kew eZ = +18m.49s. = PR₁ + 2s., eE = +25m.2s., SR₁N = +51m.1s. Oxford
 MN = +67-4m. Tucson LN = +65-3m. Toledo MNW = +73-4m.
 Chicago eN = +37m.3s. = SR₁ + 7s. Florissant iSEN = +26m.11s., eEN =
 +27m.38s., +31m.26s., and +36m.26s., eE = +39m.56s., eN = +40m.26s.,
 eEN = +46m.11s., eE = +53m.56s. Ottawa e = +37m.26s. = SR₁ + 6s.
 Fordham eN = +55m.26s., MN = +77-4m. Georgetown PR₁E =
 +21m.35s., PS = +31m.13s. La Paz PR₁E = +31m.42s., SR₁E =
 +45m.39s.

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1929

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June 30d. 5h. 13m. 36s. Epicentre 8°-3N. 126°-9E. (as at 2h.).

	Δ	Az.	P.	O-C.	S.	O-C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8.6	318	i 2 12	+ 2	i 3 54	+ 1	5.1	—
Taihoku	E. 17.5	344	e 4 54	+43	—	—	—	—
Hong Kong	18.6	320	4 18	- 6	—	—	e 8.9	13.0
Phu-Lien	23.2	305	4 24?	-55	(9 54)	+25	9.9	—
Batavia	24.7	235	e 5 42	+ 7	—	—	—	—
Sydney	48.0	152	—	—	—	—	31.1	33.4
Melbourne	49.1	161	—	—	i 15 59	- 8	—	27.1
Almata	55.7	318	e 9 55	+11	—	—	—	—
Andijan	57.9	314	e 10 17	+19	—	—	—	—
Tashkent	60.5	314	e 10 4	-12	e 18 18	-12	30.4	39.8
Samarkand	61.8	313	e 9 37	-47	—	—	—	—
Baku	74.7	311	e 12 1	+14	e 21 51	+29	e 38.4	54.9
Kucino	82.6	326	—	—	—	—	e 16.4	52.8
Pulkovo	86.1	330	e 12 50	- 4	e 23 13	-18	46.4	54.5
Copenhagen	96.5	330	19 36	?	—	—	52.4	—
Scoresby Sund	98.4	350	16 24?	?	—	—	58.4	—
Cheb	98.8	324	—	—	—	—	e 51.4	—
De Bilt	101.9	328	—	—	—	—	e 53.4	66.3
Edinburgh	103.8	334	—	—	—	—	—	84.4
Kew	105.1	330	—	—	—	—	e 65.4	—
Granada	115.2	318	—	—	—	—	e 71.4	76.9
Florissant	121.6	34	e 32 54	?	—	—	—	83.4
Ottawa	122.6	17	—	—	—	—	e 71.4	—
Toronto	122.9	21	—	—	—	—	—	74.4
Georgetown	Z. 127.8	23	—	—	—	—	e 70.5	—

Additional readings: Batavia $i = +6m.6s.$ Melbourne $i = +19m.39s. = SR, -10s.$

June 30d. After-shocks from the epicentre of 16d. 22h. were recorded as follows:

Christchurch S phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
0	24	43	4	39	46	13	7	24

Wellington iP or i phase.

h.	m.	s.	h.	m.	s.	h.	m.	s.
1	49	9	3	6	—	7	27	15
2	52	42	4	49	27	13	7	24

June 30d. Readings also at 0h. (near Samarkand), 3h. (Nagoya), 6h. (La Paz), 9h. (Andijan), 11h. (Ekaterinburg), 12h. (Tashkent), 14h. (Andijan and Samarkand), 15h. (near La Paz), 18h. (Taihoku), 21h. (Zagreb, near Naples, and Pompeii), 22h. (Ekaterinburg), 23h. (near Neuchatel).

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TABLE.

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

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