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The International Seismological Summary.

1931 July, August, September.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present quarter of the Summary deals with 204 epicentres, 76 being new and 128 repetitions from old epicentres. The quality of the material according to the new notation is as follows :—

N.1=19	R.1= 8	X.=85
N.2=18	R.2=10	
N.3=89	R.3=25	

Cases of abnormal focus are as follows :—

	Date. d. h. m. s.	Epicentre. ° °	Focal Depth. (Below Normal).
July	28 14 21 0	7·0N. 155·0E.	+0·050
Aug.	15 4 1 4	36·0N. 71·0E.	+0·025
Aug.	15 12 48 48	26·2N. 141·0E.	+0·070
Sept.	9 20 38 28	19·3N. 145·7E.	+0·020

UNIVERSITY OBSERVATORY,
OXFORD.

1936, August 11.

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1931 JULY, AUGUST, SEPTEMBER.

July 1d. 6h. 42m. 35s. Epicentre 34°·0N. 134°·8E. (as on 1930 Feb. 11d.). X.

A = −·584, B = +·588, C = +·559.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·4	11	0 5	− 1	0 11	+ 1	—	0·2
Kobe	0·7	25	0 10	0	0 22	+ 4	—	0·4
Osaka	0·9	38	0 12	− 1	(0 25)	+ 2	0·4	0·8
Koti	1·1	250	e 0 21	+ 5	0 38	S_g	—	—
Toyooka	1·6	0	0 27	+ 4	i 0 47	+ 6	—	0·8
Matuyama	1·7	264	e 0 33	P_g	i 0 58	S_g	—	—
Nagoya	2·1	57	—	—	e 0 48	− 6	—	—

July 1d. 7h. 48m. 39s. Epicentre 30°·0N. 109°·0E. N.3.

A = −·282, B = +·819, C = +·500; D = +·946, E = +·326;
G = −·163, H = +·473, K = −·866.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	9·4	194	—	—	3 21?	−38	—	—
Calcutta	19·9	253	e 4 29	0	6 19	?	7·2	—
Irkutsk	22·6	353	—	—	10 37	?	14·6	—
Almata	28·7	306	e 8 46	(−20)	—	—	—	—
Andijan	31·5	301	e 6 8	−10	e 11 9	−19	—	—
Tashkent	33·9	301	6 45	+ 6	12 33	+29	e 16·0	18·4
Ekaterinburg	42·8	324	e 7 57	+ 2	e 14 2	−16	19·4	—
Pulkovo	58·9	325	e 9 55	− 2	e 17 56	− 5	23·4	32·4

Long waves were also recorded at Hong Kong and Kucino.

July 1d. Readings also at 0h. (Nagoya, Tyosi, and near Taihoku), 1h. (near Apia), 2h. (San Juan (2)), 4h. (Tyosi), 5h. (Nagoya, Mizusawa, Osaka, near Tyosi, and Tokyo), 6h. (Medan, Baku, Ekaterinburg, Tashkent, and Zi-ka-wei), 7h. (Andijan), 8h. (De Bilt, Almata, Andijan, Tashkent, and Irkutsk), 9h. (Collurania and near Rome), 10h. (Andijan, near Hastings, and Wellington), 11h. (near Tyosi), 13h. (near Sumoto), 20h. (Strasbourg, near Chur, Neuchatel and Zurich), 22h. (Tyosi, near Nagoya, and Tokyo), 23h. (near Mizusawa and Tyosi).

July 2d. 3h. 38m. 46s. Epicentre 24°·2N. 141°·6E. N.2.

A = −·715, B = +·567, C = +·410; D = +·621, E = +·784;
G = −·321, H = +·256, K = −·912.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		11·5	357	e 2 42	0	e 4 47	− 3	—	—
Nagoya		11·7	340	e 2 51	+ 7	—	—	—	—
Osaka		11·7	335	2 53	+ 9	(4 53)	− 2	4·9	6·7
Sumoto		11·7	335	e 2 51	+ 7	e 3 43	−72	—	5 3
Koti		11·7	325	e 2 58	+14	—	—	6·6	—
Kobe		11·9	333	e 2 50	+ 3	i 5 48	+48	—	—
Mizusawa	E.	14·9	358	3 31	+ 4	6 12	− 1	—	—
Zi-ka-wei		19·2	296	e 4 29	+ 8	8 15	+25	—	8·7
Vladivostok		20·5	339	e 4 35	0	i 8 36	+20	—	—
Manila		21·7	247	4 48	0	9 18	+38	12·1	—

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.
Andijan		59·1	306	e 11 23	?	e 18 13	+ 9	—	—
Ekaterinburg		65·0	324	i 10 35	− 4	i 19 19	− 1	—	—
Baku		75·8	308	e 11 44	− 1	e 21 26	− 3	38·2	48·9
Kucino		77·5	326	—	—	21 39	− 9	e 40·0	49·5
Pulkovo		79·2	332	e 11 57	− 7	21 53	−14	40·2	—
Helsingfors		81·3	333	e 14 44	?	e 19 44	?	e 41·7	—
Scoresby Sund		84·7	355	—	—	22 53	[− 4]	39·2	—
Copenhagen		89·2	334	—	—	23 14	[−14]	45·2	—
De Bilt		94·7	334	—	—	e 23 44	[−15]	e 48·2	—
Uccle		96·0	334	—	—	e 23 50	[−16]	e 47·2	—
Florissant		100·4	40	—	—	e 24 4	[−24]	e 47·2	—
La Paz	z.	151·1	80	e 19 39	[− 4]	—	—	—	—

Additional readings :—
Sumoto eSN = +3m.54s.
Kobe eE = +2m.57s.
Zi-ka-wei iZ = +4m.55s. and +5m.1s.
Manila iN = +4m.54s., iZ = +5m.10s., iE = +5m.12s.
Scoresby Sund +23m.17s. =S +12s.
Florissant eEN = +24m.34s.
Long waves were also recorded at Hong Kong, Phu-Lien, Ottawa, Tashkent, and other European stations.

July 2d. Readings also at 3h. (Tyosi, near Andijan, and near Santiago), 7h. (near Takaka and Wellington), 8h. (Takaka and Wellington), 10h. (Alicante), 12h. (Tyosi and near Mizusawa), 21h. (Taihoku), 23h. (near Ksara and near La Paz).

July 3d. Readings at 2h. (near Manila and near Wellington), 12h. (near La Paz and near Manila), 18h. (Alicante, Florence, and Tyosi), 23h. (Ottawa).

July 4d. 16h. 2m. 27s. Epicentre 34°·4N. 134°·8E. (as on 1931 March 31d.). X.

A = −·581, B = +·585, C = +·565 ; D = +·710, E = +·705 ;
G = −·398, H = +·401, K = −·825.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·1	128	−i 0 1	− 2	i 0 3	0	—	0·1
Kobe	0·4	48	0 7	+ 1	0 16	+ 6	—	0·3
Osaka	0·7	68	0 7	− 3	—	—	0·3	0·9
Toyooka	1·2	1	i 0 20	+ 3	i 0 39	+ 8	—	0·7
Koti	1·4	231	e 0 19	− 1	i 0 36	0	—	0·6
Matuyama	1·8	252	i 0 28	+ 2	i 0 51	+ 5	—	0·9
Nagoya	1·9	67	(e 0 32)	+ 4	(0 54)	+ 5	—	—
Hukuoka	3·7	258	1 5	P*	1 54	S*	—	—

Additional readings and note :—
Osaka i = +9s. and +12s.
Toyooka ePE = +24s.
Nagoya readings have been *increased* by 1m.

July 4d. 21h. 0m. 54s. Epicentre 37°·5N. 145°·5E. (as on 1931 May 12d.). R.3.

A = +·556, B = +·566, C = +·609 ; D = +·713, E = −·701 ;
G = +·427, H = +·434, K = −·793.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	e 1 9	+ 5	(e 1 53)	− 2	e 1·9	4·0
Ksara	E.	8·6	248	2 43	P*	4 47	S_E	5·7	—
Theodosia		10·7	318	e 3 28	+57	—	—	—	—
Yalta		11·0	313	e 2 22	−13	—	—	—	—
Tashkent		18·7	71	e 3 19	−56	(e 7 48)	+ 8	e 7·8	13·9

Continued on next page.

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	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Kucino	19·0	347	4 14	− 5	i 7 39	− 7	e 8·3	11·4
Andijan	21·0	73	e 4 46	+ 6	—	—	—	—
Ekaterinburg	21·8	22	e 4 42	− 7	e 8 32	−10	11·1	14·7
Pulkovo	24·3	341	i 5 10	− 3	i 9 27	− 1	12·6	14·7
Helsingfors	26·1	337	—	—	e 10 3	+ 3	e 12·1	—
Stuttgart	28·5	305	—	—	e 10 54	+14	e 18·4	—
Copenhagen	28·7	320	—	—	11 6?	+23	—	—

Additional readings :—
Helsingfors e = +6m.2s. = PP − 3s., eE = +6m.57s., eN = +7m.5s., e = +10m.18s., eE = +11m.10s.
Long waves were also recorded at Irkutsk, De Bilt, and Uccle.

July 4d. Readings also at 1h. (near Tyosi), 7h. (Andijan and Messina (2)), 10h. (Almata), 11h. (Baku, Ekaterinburg, Irkutsk, Tashkent, Vladivostok, Hong Kong, Phu-Lien, Batavia, Medan, near Tyosi, and near Zagreb), 12h. (near Zagreb), 13h. (Batavia), 14h. (Andijan), 21h. (Ekaterinburg, Pulkovo, Vladivostok, and near Mizusawa), 22h. (Baku, Irkutsk, Tashkent, Kucino, Copenhagen, De Bilt, Uccle, Stuttgart, Helsingfors, Granada, San Juan, and near Manila).

July 5d. 4h. 30m. 5s. (I)
7h. 16m. 22s. (II)
7h. 40m. 20s. (III)
7h. 46m. 25s. (IV)
Epicentre 56°·8N. 33°·6W. X. X. X. X.

(as on 1926 Nov. 12d.).

A = +·456, B = −·303, C = +·837 ; D = −·553, E = −·833 ;
G = +·697, H = −·463, K = −·548.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
I	Edinburgh	16·7	80	—	—	e 6 55	0	—	—
II	Stonyhurst	17·8	86	e 3 56	− 8	—	—	8·1	10·1
III		17·8	86	—	—	(e 6 55)	−25	e 6·9	10·3
II	Kew	20·0	88	e 4 36	+ 6	—	—	9·2	10·7
III		20·0	88	e 4 34	+ 4	—	—	e 8·7	11·1
I	De Bilt	22·7	85	4 57	− 1	—	—	e 10·9	14·6
III		22·7	85	4 55	− 3	—	—	e 9·7	12·8
IV		22·7	85	e 4 58	0	—	—	—	14·7
I	Uccle	22·9	89	e 5 0	0	e 9 9	+ 6	e 10·9	—
II		22·9	89	e 5 0	0	e 9 6	+ 3	e 10·4	—
III		22·9	89	e 5 0	0	e 9 5	+ 2	e 10·7	—
IV		22·9	89	e 5 0	0	—	—	—	—
II	Hamburg	24·7	79	e 5 10	− 7	—	—	e 12·6	13·6
IV	E.	24·7	79	e 5 35?	+18	—	—	—	8·6
I	Copenhagen	25·1	73	—	—	8 55?	P$_e$P	11·9	—
II		25·1	73	5 21	0	9 33	−10	11·6	—
III		25·1	73	5 16	− 5	—	—	11·7	—
IV	Z.	25·1	73	e 5 17	− 4	—	—	—	—
II	Lund	25·5	72	5 25	0	9 39	−11	12·6	—
II	Neuchatel	26·4	94	e 5 37	+ 4	e 14 50	?	—	—
II	Harvard	27·8	255	—	—	e 11 31	+63	e 15·6	—
II	Helsingfors	29·8	59	—	—	e 10 49	−12	e 13·1	—
II	Florence	30·8	95	(6 38)	+26	6 38	P	15·6	18·3
III		30·8	95	3 41	?	9 11	?	—	16·7

Additional readings :—
Harvard eN = 7h.19m.12s.
Helsingfors eSE = 7h.27m.18s., eE = 7h.44m.56s., eN = 7h.48m.6s., eE = 7h.49m.7s., eN = 7h.50m.0s.?, eE = 7h.50m.55s.
Long waves were recorded for the shocks at Reykjavik, Ivigtut, the American, European, and Russian stations.

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July 5d. 17h. 57m. 22s. Epicentre 39°·0N. 47°·5E. (as on 1924 Feb. 19d.). X.

A = +·525, B = +·573, C = +·629 ; D = +·737, E = −·676 ;
G = +·425, H = +·464, K = −·777.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		2·3	54	i 0 18	−15	—	—	1·0	—
Ksara	E.	10·7	245	2 31	0	5 43	+72	7·5	—
Theodosia		10·8	307	e 2 33	+ 1	—	—	—	—
Yalta		11·3	303	e 2 40	+ 1	—	—	—	—
Simferopol		11·6	305	e 2 46	+ 3	—	—	—	—
Helwan		16·1	240	3 38	− 5	9 10	L	(9·2)	—
Andijan		19·1	77	e 3 58	−22	—	—	e 11·3	—
Pulkovo		23·4	338	i 4 57	− 8	9 10	− 2	13·6	17·8
Zagreb		24·1	297	e 5 7	− 4	e 9 24	− 1	—	—
Helsingfors	E.	25·4	334	e 6 30	+66	e 9 39	− 9	e 12·4	—
Florence		27·4	292	e 4 36	−66	10 38	+16	—	16·6
Upsala	N.	28·1	328	—	—	e 11 14	+40	—	—
Copenhagen		28·6	317	—	—	10 38?	− 4	—	—
Stuttgart		29·0	302	—	—	e 13 38?	?	e 19·6	—
Hamburg		29·3	312	—	—	e 12 38?	SS	—	—
De Bilt		31·9	309	—	—	e 13 38?	SS	e 16·6	—
Uccle		32·2	307	—	—	e 11 38?	0	e 16·6	—
Irkutsk		40·7	52	e 9 38?	(+ 6)	—	—	23·6	24·7
Scoresby Sund		46·8	335	—	—	15 14	− 2	—	—

Additional readings and note :—
Zagreb e = +9m.52s.
Helsingfors eE = +11m.0s.
Irkutsk e = +16m.38s.? =SS +11s. and +20m.38s. ?
Scoresby Sund +18m.38s. =SS +14s.

July 5d. Readings also at 0h. (Berkeley), 7h. (Reykjavik, Ivigtut, Stonyhurst, Kew, De Bilt, Strasbourg, Upsala, Stuttgart, Paris, Piacenza, Toronto, and Copenhagen), 12h. (Tyosi), 14h. (Andijan), 17h. (La Paz), 18h. (Andijan, Tashkent, Baku, and De Bilt), 20h. (Hastings and Wellington), 22h. (Bozeman).

July 6d. 12h. 20m. 37s. Epicentre 41°·0N. 16°·0E. (as on 1930 Dec. 11d.) X.

A = +·725, B = +·208, C = +·656.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Naples	E.	1·3	263	e 0 18	0	e 0 36	+ 3	—
Casamicciola		1·6	261	0 26	+ 3	0 41	0	0·8
Trenta		1·8	172	i 0 23	− 3	i 0 48	+ 2	—
Rome		2·8	289	1 9	S	(1 9)	− 3	1·6
Florence		4·5	311	2 38	S_g	—	—	3·1

Additional readings :—
Rome e? = +56s., S = +1m.26s. =S*.

July 6d. Readings also at 0h. (Sumoto, near Kobe, and Toyooka), 1h. (near Balboa Heights and near Sumoto), 3h. (La Paz), 4h. (Charlottesville, Messina, and near Catania), 6h. (Kobe), 11h. (Nagoya, near Mizusawa, and Tyosi (2)), 12h. (near Almata and near Manila), 13h. (Suva), 17h. (Uccle and near Tyosi), 18h. (Copenhagen), 19h. (Ekaterinburg, Vladivostok, Melbourne, and Wellington), 22h. (near Santiago),

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July 7d. 3h. 54m. 15s. Epicentre 13°·3N. 96°·2W. N.3.

$A = -\cdot105$, $B = -\cdot968$, $C = +\cdot230$; $D = -\cdot994$, $E = +\cdot108$; $G = -\cdot025$, $H = -\cdot229$, $K = -\cdot973$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		23·3	327	5 0	− 4	9 11	+ 1	e 11·6	—
Columbia		24·9	31	5 9	−10	9 26	−13	13·7	—
St. Louis		25·9	11	e 5 18	−10	9 40	−17	—	—
Florissant		26·1	11	i 5 20	−10	i 9 43	−17	—	—
Denver		27·5	345	e 5 43	0	e 10 25	+ 1	—	15·9
Riverside		28·2	321	e 5 49	0	—	—	—	—
Pasadena		28·8	320	e 5 54	0	—	—	—	—
Mount Wilson		28·8	320	e 5 55	+ 1	—	—	—	—
San Juan		29·3	76	i 6 3	+ 4	e 11 27	+34	i 16·9	—
Chicago		29·4	13	—	—	e 10 29	−26	e 17·0	—
Pittsburgh		30·7	25	—	—	i 10 55	−21	20·4	—
Ann Arbor	N.	31·0	20	—	—	11 9	−11	e 20·9	—
Toronto		33·6	22	—	—	i 11 37	−23	19·1	—
Berkeley		33·8	322	e 6 40	+ 1	—	—	e 16·4	19·3
Bozeman		34·8	341	—	—	12 8	−10	18·0	—
Harvard		36·3	31	—	—	e 12 10	−31	22·5	—
Ottawa		36·5	25	—	—	e 12 21	−23	23·5	—
La Paz		40·7	137	—	—	i 13 13	−34	—	—
Victoria		41·7	333	13 50	S	(13 50)	−12	22·6	26·2
Scoresby Sund		72·3	20	11 22	− 3	20 39	− 9	41·7	—
Edinburgh		80·7	35	—	—	e 22 15	− 8	—	—
Toledo		83·2	50	e 12 21	− 3	e 22 52	+ 3	—	—
Kew		83·3	39	e 12 27	+ 2	e 22 41	− 9	e 44·7	—
Malaga		83·5	53	e 12 48	+22	e 22 50	− 2	—	—
Granada		84·1	53	i 12 31	+ 2	i 23 6	+ 7	40·2	43·7
Almeria		85·1	53	e 12 17	−17	—	—	—	—
Paris		85·7	40	i 12 39	+ 2	e 23 4	−11	46·7	55·7
Alicante		86·2	51	e 11 6	−93	—	—	—	—
Uccle		86·2	39	12 42	+ 3	e 23 6	−13	e 38·7	—
De Bilt		86·4	37	12 44	+ 4	e 23 14	− 7	e 43·7	—
Hamburg		88·7	35	e 12 51	0	e 23 33	−11	e 46·7	—
Feldberg		88·9	39	—	—	e 24 32	PS	—	—
Strasbourg		89·0	40	e 12 56	+ 3	e 23 49	+ 3	e 27·7	—
Copenhagen		89·1	31	12 59	+ 6	23 27	[0]	41·7	—
Stuttgart		89·8	39	12 51	− 5	e 24 33	PS	e 48·7	—
Cheb		91·4	37	—	—	e 23 47	[+ 6]	—	—
Pulkovo		95·3	24	e 17 8	PP	e 24 1	[− 1]	49·7	—
Kucino		101·0	25	e 17 51	PP	e 24 27	[− 4]	e 46·7	61·4
Vladivostok		108·4	325	—	—	e 24 42	[−24]	61·6	—
Irkutsk		112·1	346	e 18 45?	[+21]	e 26 45?	{+23}	e 62·7	69·4
Andijan		124·9	10	e 31 33	?	—	—	—	—

Additional readings :—
St. Louis iPN = +5m.20s., iSN = +9m.37s.
Florissant iPPZ = +5m.57s., iN = +6m.6s., eSSEN = +10m.52s., iSSSN = +11m.25s.
San Juan iPP = +7m.34s., eSS = +12m.33s.
Pittsburgh iSS = +12m.56s.
Ann Arbor e?E = +13m.27s., eE = +19m.21s., eN = +19m.39s.
Toronto eN = +10m.59s., eE = +11m.14s., eN = +11m.41s.
Berkeley eE = +6m.19s.
Bozeman eSS = +14m.15s.
Harvard eN = +17m.13s.
La Paz PSE? = +17m.48s. = S_cS − 3s., SSE = +20m.13s.
Victoria SN = +17m.35s., SE = +17m.58s. = S_cS +13s.
Granada i = +15m.6s. = PP − 29s., PS = +23m.50s.
De Bilt ePPZ = +15m.56s.
Strasbourg ePP = +16m.17s.
Copenhagen +16m.19s.
Stuttgart ePPE = +16m.21s.
Vladivostok e = +27m.58s. = PS − 5s.
Long waves were also recorded at Baku, Tashkent, Sitka, Lick, and Seattle.

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July 7d. 5h. 41m. 10s. Epicentre 34°·5N. 137°·2E. (as on 1930 Aug. 10d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		0·7	345	e 0 8	− 2	0 13	− 5	—	—
Osaka		1·4	276	0 21	+ 1	—	—	0·7	1·0
Kobe	E.	1·7	276	e 0 26	+ 2	—	—	—	1 0
Sumoto		1·9	266	e 0 49	S	(e 0 49)	0	—	1·2
Toyooka		2·2	298	i 0 41	P*	i 0 49	− 8	—	—

Sumoto gives eS = +1m.4s. = S_g.

July 7d. 20h. 46m. 20s. Epicentre 35°·5N. 139°·7E. N.3.

A = −·621, B = +·527, C = +·581; D = +·647, E = +·763;
G = −·443, H = +·376, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·2	16	i 0 4	+ 1	0 11	+ 6	—	0·2
Tyosi	1·0	76	0 13	− 1	0 29	+ 3	—	—
Nagoya	2·3	262	e 0 34	+ 1	0 59	0	—	—
Osaka	3·5	257	0 57	+ 7	i 1 7	P_g	1·8	2·0
Mizusawa	3·8	17	0 54	0	1 31	− 6	—	—
Kobe	3·8	259	e 1 8	P*	1 54	S*	—	2·0

July 7d. Readings also at 3h. (near Apia), 7h. (Wellington), 8h. (Lick), 9h. (near Batavia and Malabar), 10h. (Ekaterinburg, Irkutsk, Takaka, and Wellington), 11h. (Apia), 12h. (Helsingfors), 13h. (Lick), 14h. (near Sumoto), 16h. (Baku, Ekaterinburg, Irkutsk, and Vladivostok), 17h. (San Juan, Hong Kong, and Phu-Lien), 18h. (near Manila), 19h. (near Manila and near Tyosi), 22h. (La Paz), 23h. (Baku, Ekaterinburg, Irkutsk, Tashkent, Vladivostok, and near Mizusawa).

July 8d. 9h. 44m. 43s. (I)
10h. 25m. 32s. (II)
11h. 32m. 21s. (III)
} Epicentre 34°·0N. 134°·8E. (as on 1d.). X. X. X.

A = −·584, B = +·588, C = +·559; D = +·710, E = +·705;
G = −·394, H = +·397, K = −·829.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Sumoto	0·4	11	i 0 4	− 2	i 0 8	− 2	—	0·2
II	0·4	11	i 0 6	0	i 0 10	0	—	0·2
III	0·4	11	e 0 6	0	0 8	− 2	—	0·2
I Kobe	0·7	25	e 0 12	+ 2	0 18	0	—	0·4
II	0·7	25	e 0 15	P_g	i 0 20	+ 2	—	0·3
I Osaka	0·9	38	0 12	− 1	—	—	0·3	0·8
II	0·9	38	0 15	P*	—	—	0·4	0·9
I Nagoya	2·1	57	0 39	P*	—	—	—	—
II	2·1	57	—	—	0 59	S*	—	—

No additional readings.

July 8d. 13h. 13m. 13s. Epicentre 33°·7N 49°·4E (as on 1929 July 15d.). X.

A = +·541, B = +·632, C = +·555.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	6·6	3	e 1 38	+ 4	e 3 17	S*	e 4·9	—
Ksara	11·2	274	e 2 38	+ 1	e 4 46	+ 3	5·5	—
Tashkent	17·4	58	e 3 53	− 6	—	—	e 6·5	9·8
Ekaterinburg	24·4	15	—	—	e 9 21	− 9	12·8	—

Ksara ePE = +2m.46s.

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July 8d. Readings also at 0h. (Wellington and Takaka), 1h. (Wellington and Manila), 3h. (Sumoto), 7h. (Tyosi), 9h. (Nagoya), 11h. (Tokyo and Strasbourg), 12h. (Königsberg), 13h. (Mizusawa, Tyosi (2), Batavia, and Malabar), 18h. (Wellington), 19h. (Ekaterinburg, Wellington, Melbourne, and Adelaide), 20h. (Wellington, Hastings, Baku, Scoresby Sund, Paris, and Granada).

July 9d. 12h. 0m. 26s. Epicentre 40°·4N 29°·5W. N.2.

A = +·663, B = −·375, C = +·648 ; D = −·492, E = −·870 ;
G = +·564, H = −·319, K = −·762.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Azores	4·0	130	2 10	S_g	—	—	—	3·6
Toledo	19·4	83	e 4 18	− 5	i 8 12	SS	e 9·0	—
Malaga	19·9	92	4 31	+ 2	8 20	SS	10·8	—
Granada	20·4	91	i 4 33	− 1	i 8 12	− 2	9·6	10·6
Almeria	21·4	91	e 4 49	+ 5	e 8 40	+ 6	—	—
Bidston	22·0	45	i 5 54	+63	i 8 50	+ 4	11·1	11·5
Alicante	22·4	86	e 3 52	−63	e 7 52	−61	e 10·9	—
Oxford	22·4	50	—	—	i 8 57	+ 4	e 10·2	11·3
Stonyhurst	22·6	44	4 52	− 5	i 9 2	+ 5	11·0	—
Kew	22·9	51	e 4 55	− 5	e 9 4	+ 1	11·3	12·0
Edinburgh	23·2	39	e 5 34?	+31	—	—	—	12·6
Ivigtut	23·7	337	5 2	− 5	—	—	10·6	—
Barcelona	23·8	77	(e 5 15)	+ 7	(9 49)	SS	—	9·8
Paris	24·1	59	i 5 4	− 7	9 20	− 5	11·6	12·6
Uccle	25·6	55	5 20	− 5	e 9 47	− 4	e 11·6	—
Strasbourg	27·5	60	e 4 34	−69	i 10 21	− 3	e 12·6	—
Feldberg	28·1	57	—	—	e 10 46	+12	—	15·8
Stuttgart	28·4	60	e 5 46	− 5	—	—	e 13·6	15·6
Hamburg	29·5	50	e 8 34?	(−25)	—	—	—	15·6
Florence	30·1	71	e 5 34	−32	—	—	—	15·6
Scoresby Sund	30·4	6	6 10	+ 1	—	—	12·6	—
Cheb	30·6	59	—	—	e 13 34?	?	—	17·1
Fordham	33·3	285	e 6 36	+ 2	e 12 0	+ 5	e 15·5	—
Ottawa E.	33·8	294	e 7 44	PP	e 12 6	+ 3	e 15·6	—
Pittsburgh	37·9	288	e 7 12	− 2	e 13 2	− 3	e 19·1	—
San Juan	38·4	248	7 21	+ 3	13 22	+10	17·6	—
Pulkovo	41·2	40	e 7 41	− 1	e 13 32	−22	19·6	24·2
Kucino	45·6	47	e 8 10	− 8	e 14 55	− 4	21·9	26·7
St. Louis	45·9	289	i 8 20	0	i 15 5	+ 2	i 21·8	—
Florissant	46·0	289	e 8 19	− 2	e 15 9	+ 5	e 22·1	26·6
Ekaterinburg	57·2	40	i 9 41	− 4	17 38	− 1	24·6	31·8

Additional readings and note :—
Toledo i = +4m.21s., SS = +8m.53s., SSS = +9m.8s.
Granada PS = +8m.32s.
Stonyhurst PP = +5m.13s.
Kew ePP = +5m.17s.
Barcelona gives P as eS and S as M.
Strasbourg i = +10m.48s.
Feldberg e = 11h.52m.23s.
Scoresby Sund +7m.4s. = PP + 2s.
Fordham ePP = +7m.39s.
Pittsburgh ePP = +8m.23s.
Pulkovo e = +9m.14s. = PP + 2s.
Florissant eEZ = +9m.39s.
Long waves were also recorded at De Bilt and Tashkent.

July 9d. Readings also at 1h. (La Paz), 2h. (Taihoku), 7h. (Wellington), 13h. (Mineo, Naples (2), Belgrade, Zagreb, Rome, Catania, and Trenta), 14h. (Helsingfors), 16h. (Almata (2), and Manila (2)), 17h. (Apia), 18h. (Manila, Tashkent, and Ekaterinburg), 19h. (La Paz and Sumoto), 21h. (La Paz, Florissant, St. Louis, Buffalo, Tucson, Chicago, Ottawa, Pittsburgh, San Juan, Granada, and Scoresby Sund), 22h. (Port au Prince, Almata, and Manila), 23h. (Andijan and Mizusawa).

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July 10d. 1h. 34m. 30s. Epicentre 33°·7N. 135°·2E. (as on 1931 April 9d.). X.

A = −·590, B = +·586, C = +·555.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Sumoto		0·7	i 0 10	0	0 15	− 3	—	0·3
Kobe		1·0	0 16	+2	0 28	+ 2	—	0·5
Osaka		1·0	0 10	− 4	i 0 14	−12	0·3	1·0
Toyooka	E.	1·9	i 0 47	+19	i 0 50	+ 1	—	0·8
Nagoya		2·0	—	—	e 0 51	0	—	—
Helsingfors	E.	70·2	e 11 57	(+22)	e 20 38	PS	e 35·7	—

Additional readings :—
Kobe iE = +23s.
Helsingfors eE = +21m.20s.

July 10d. 5h. 59m. 7s. Epicentre 35°·6N. 140°·8E. (as on 1930 Dec. 15d.). X.

A = −·630, B = +·514, C = +·582.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·2	0 1	− 4	0 5	0	—	0·1
Nagoya		3·2	e 0 46	0	1 30	+ 8	—	—
Mizusawa		3·5	0 53	+ 3	1 24	− 6	—	—
Osaka		4·4	1 3	0	i 1 59	+ 6	2·1	2·6
Kobe	E.	4·7	—	—	i 2 55	S_g	—	—
Toyooka		4·8	i 1 17	+ 9	e 2 16	S*	—	2·9
Sumoto	N.	5·0	e 1 16	+ 5	2 32	S*	—	2·9

Additional readings :—
Tyosi S = +3s.
Toyooka eSZ = +2m.25s.
Sumoto ePEZ = +1m.24s. SE = +2m.34s.

July 10d. 13h. 10m. 30s. Epicentre 35°·6N. 140°·8E. (as at 5h.). R.1.

Probable error of epicentre ±0°·13.

K. Wadati in " Shallow and Deep Earthquakes," Geoph. Mag., Tokyo, Vol. IV., No. 4, gives epicentre 35°·7N. 140°·7E.

A = −·630, B = +·514, C = +·582 ; D = +·632, E = +·775 ;
G = −·451, H = +·368, K = −·813.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	0·2	17	i 0 6	+ 3	0 10	+ 5	—	0·2
Kakioka	0·8	322	0 10	− 1	0 19	− 2	—	—
Tukubasan	0·8	318	0 9	− 2	0 18	− 3	—	—
Tokyo	0·9	276	0 12	− 1	e 0 24	+ 1	—	0·5
Mera	1·0	229	0 15	+ 1	0 27	+ 1	—	—
Yokohama	1·0	260	0 14	0	0 28	+ 2	—	—
Utunomiya	1·2	322	0 16	− 1	0 34	+ 3	—	—
Kumagaya	1·3	296	0 17	− 1	0 28	− 5	—	—
Onahama	1·4	2	0 13	− 7	0 29	− 7	—	—
Misima	1·5	252	0 20	− 1	0 31	− 8	—	—
Maebasi	1·6	300	0 20	− 3	0 41	0	—	—
Numadu	1·6	253	0 23	0	0 47	S*	—	—
Oiwake	1·9	292	0 28	0	0 51	+ 2	—	—
Hukusima	2·2	353	0 29	− 2	1 3	S*	—	—
Nagano	2·4	297	0 32	− 2	0 57	− 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.
Takada		2·5	306	0 39	+ 3	1 12	+ 8	—	—
Sendai		2·7	1	0 37	− 2	1 9	0	—	—
Hamamatu		2·7	251	0 39	0	1 17	S*	—	—
Niigata		2·7	329	0 46	+ 7	1 23	S*	—	—
Isinomaki		2·9	8	0 40	− 1	1 5	− 9	—	—
Nagoya		3·2	262	e 0 45	− 1	1 38	S*	—	1·8
Gihu		3·3	267	0 48	+ 1	1 39	S*	—	—
Mizusawa	E.	3·5	4	0 51	+ 1	1 29	− 1	—	—
	N.	3·5	4	0 54	+ 4	1 26	− 4	—	—
Kameyama		3·6	259	0 52	+ 1	1 54	S*	—	—
Wazima		3·6	301	0 50	− 1	1 38	+ 6	—	—
Hikone		3·7	266	0 52	− 1	1 37	+ 2	—	—
Morioka		4·1	3	0 58	0	1 43	− 2	—	—
Akita		4·2	352	1 2	+ 2	2 1	S*	—	—
Osaka		4·4	259	1 0	− 3	i 1 11	−42	2·0	2·9
Kobe	E.N.	4·7	260	1 7	0	2 17	S*	—	2·7
	Z.	4·7	260	1 6	− 1	2 14	S*	—	2·6
Siomisaki		4·7	244	1 4	− 3	2 37	S_g	—	—
Toyooka	E.	4·8	271	i 1 8	0	i 2 28	S*	—	2·7
	N.	4·8	271	i 1 7	− 1	e 2 23	S*	—	2·6
	Z.	4·8	271	i 1 7	− 1	i 2 30	S*	—	2·6
Sumoto	E.	5·0	257	1 9	− 2	2 24	S*	—	3·0
	N.	5·0	257	1 10	− 1	2 17	+ 9	—	2·7
Aomori		5·2	1	1 17	+ 3	2 19	+ 6	—	—
Koti		6·3	256	1 26?	− 4	e 2 52	+11	—	—
Hamada		7·1	267	1 47	+ 6	3 13	+12	—	—
Miyazaki		8·6	247	2 2	0	3 47	+ 8	—	—
Hukuoka		8·8	260	2 9	+ 4	4 7	+23	—	—
Nagasaki		9·5	256	e 2 28	+14	e 4 54	S*	—	—
Vladivostok		10·1	320	2 18	− 4	4 23	+ 7	5·6	—
Irkutsk		30·6	312	e 6 30?	+20	—	—	17·5	—
Tashkent		54·7	299	—	—	e 17 30?	+25	28·4	32·5
Ekaterinburg		55·7	319	i 9 31	− 3	e 17 11	− 8	24·5	—
Baku		68·4	305	—	—	e 20 19	+17	33·1	43·1

Additional readings :—
Kobe iZ = +1m.23s. iE = +1m.26s. =P*
Toyooka eP_gZ = +1m.24s.
Sumoto SZ = +2m.14s.
Irkutsk e = +30s?
Long waves were also recorded at Kucino and Hong Kong.

July 10d. 16h. 52m. 14s. Epicentre 35°·7N. 2°·3W. (as on 1927 Dec. 3d.). X.

A = +·809, B = −·033, C = +·586; D = −·040, E = −·999; G = +·586, H = −·024, K = −·810.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Almeria		1·0	352	i 0 10	− 4	(i 0 16)	−10	0.3
Granada		1·6	321	i 0 24	+ 1	i 0 44	+ 3	1·9
Malaga		1·9	296	0 27	− 1	0 52	+ 3	—
Alicante		2·8	30	1 15	S	1 45	S_g	—
San Fernando		3·2	281	1 22	S	(1 22)	0	—
Toledo		4·2	342	e 1 9	+ 9	2 16	S*	—
Tortosa	N.	5·4	24	e 1 33	P*	—	—	3·5

Additional readings :—
Granada P_gP = +28s., PP = +34s., P_gS = +24s., S_gS = +51s., SS = +59s., i = +1m.4s., +1m.9s., and +1m.22s.
Toledo P_g = +1m.24s. SS = +2m.24s.
Long waves were recorded at Barcelona.

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July 10d. 16h. 57m. 55s. Epicentre 51°·0N. 6°·5E. (as on 1928 Dec. 13d.). R.3.

A = +·625, B = +·071, C = +·777 ; D = +·113, E = −·994 ;
G = +·772, H = +·088, K = −·629.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		1·4	325	—	—	e 0 41	+ 5	e 3·1	4·4
Uccle		1·4	264	0 19	− 1	0 37	+ 1	—	—
Feldberg		1·5	120	i 0 20	− 1	i 0 36	− 3	4·0	4·9
Göttingen	N.	2·3	76	e 0 28	− 5	0 55	− 4	—	1·1
Strasbourg		2·6	161	(e 0 42)	+ 5	e 0 42	P	—	—
Stuttgart		2·8	141	e 0 42	+ 2	e 1 10	− 2	e 3·3	—
Hohenheim		2·9	140	e 0 40	− 1	e 1 27	S*	—	—
Jena	E.	3·2	90	e 0 49	+ 3	e 1 13	− 9	e 1·4	1·7
Hamburg		3·4	38	—	—	e 1 44	S*	—	—
Ravensburg		3·8	146	—	—	e 1 25	−12	—	—
Zurich	N.	3·9	159	e 0 53	− 3	—	—	—	—
Neuchatel	N.	4·0	175	e 0 52	− 5	e 1 39	− 3	—	—
Chur		4·6	152	e 1 7	+ 1	e 2 17	S*	—	—

Additional readings :—
Feldberg i = +32s. = P_g.
Göttingen iP*N = +35s., iP_gN = +39s., iN = +40s., i = +59s., iS_gN = +1m.3s.
Strasbourg eSS = +1m.11s., i = +1m.20s. = S* and +1m.28s. = S_g.
Hohenheim e = +43s. iN = +1m.35s.
Jena eE = +55s.
Hamburg i = +1m.53s. = S_g.
Long waves were also recorded at Paris and Kew.

July 10d. 19h. 17m. 41s. Epicentre 34°·5N. 135°·0E. (as on 1927 July 4d.). R.3.

A = −·583, B = +·583, C = +·566 ; D = +·707, E = +·707 ;
G = −·401, H = +·401, K = −·824.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe	0·2	39	0 1	− 2	0 2	− 3	—	0·1
Sumoto	0·2	214	0 0	− 3	0 7	+ 2	—	0·1
Osaka	0·4	67	0 6	0	—	—	0·2	1·4
Toyooka	1·1	352	i 0 16	0	i 0 26	− 2	—	—
Nagoya	1·7	67	e 0 29	+ 5	—	—	—	—

No additional readings.

July 10d. 21h. 20m. 39s. Epicentre 35°·5N. 25°·0E. (as on 1930 Mar. 6d.). X.

A = +·738, B = +·344, C = +·581 ; D = +·423, E = −·906 ;
G = +·526, H = +·245, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	13·4	312	(e 3 21)	+14	—	—	—	13·4
Stuttgart	17·6	323	—	—	e 10 39	?	e 13·4	14·9
Feldberg	19·0	326	—	—	e 10 32	?	—	13·4
Granada	23·0	282	i 5 2	+ 1	i 9 4	− 1	i 10·0	12·4
Toledo	23·3	289	—	—	e 9 25	+15	—	—
Malaga	23·7	282	e 4 58	− 9	e 8 54	P_gP	—	—
Kew	24·1	319	e 5 9	− 2	e 8 45	P_gP	10·4	—
Pulkovo	24·5	6	—	—	e 13 31	?	23·4	—
Edinburgh	28·0	326	—	—	e 10 21?	−11	—	—
Ekaterinburg	32·0	37	—	—	e 17 26	(+31)	24·9	—

Additional readings :—
Florence eP has been *increased* by 10m.
Pulkovo e = +16m.9s. = S_gS − 5s.
Long waves were also recorded at Scoresby Sund, Baku, Kucino, Tashkent, and many other European stations.

July 10d. Readings also at 8h. (Wellington), 11h. (Medan), 12h. (Irkutsk), 13h. (Ekaterinburg and Tyosi), 14h. (Tyosi (3) and Algiers), 16h. (Florence and Granada), 17h. (Uccle), 18h. (Alicante), 20h. (Bozeman), 21h. (Buffalo and Ottawa).

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July 11d. 5h. 56m. 10s. Epicentre 8°·3S. 74°·0W. N.2.

A = +·273, B = −·951, C = −·144 ; D = −·961, E = −·276 ;
G = −·040, H = +·139, K = −·990.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		10·0	146	i 2 21	0	i 4 19	+ 6	5·2	5·5
San Juan		27·7	16	e 6 8	+24	e 10 32	+ 5	16·6	—
La Plata		30·4	153	6 7	− 2	—	—	17·8	—
Georgetown		47·3	357	i 8 30	− 1	15 14	− 9	19·8	26·6
Pittsburgh		49·0	354	e 8 41	− 3	i 15 45	− 2	e 25·8	—
Fordham		49·1	0	e 8 46	+ 2	e 15 46	− 2	e 22·8	—
St. Louis	N.	49·3	344	e 8 44	− 2	i 15 30	−21	—	—
Florissant		49·5	344	e 8 46	− 1	e 15 15	−39	—	—
Buffalo		51·4	355	9 8	+ 6	i 16 26	+ 6	e 26·7	—
Ottawa	E.	53·7	359	—	−	e 17 5	+13	23·8	—
Pasadena		59·5	319	e 10 1	0	—	—	—	—
Mount Wilson		59·5	319	e 10 3	+ 2	—	—	—	—
Granada		79·7	49	i 12 4	− 2	i 22 24	+12	40·3	48·0
Scoresby Sund		86·1	15	12 38	− 1	23 6	[− 1]	39·8	—
Ekaterinburg		120·1	28	—	—	e 30 11	PS	52·8	66·9
Tashkent		133·7	39	e 21 43	PP	—	—	e 63·8	76·7
Andijan		135·9	38	e 20 45	[+89]	—	—	—	—

Additional reading :—
San Juan SS = +12m.50s.
Long waves were also recorded at other European and Russian stations.

July 11d. Readings also at 0h. (Almata, Irkutsk, Ekaterinburg, Andijan, and Tashkent), 4h. (Andijan), 6h. (Amboina), 8h. (Andijan and Manila), 13h. (Sumoto), 15h. (Andijan and Amboina), 16h. (Nagoya and Ottawa), 19h. (Santiago), 20h. (Nagoya and Alicante), 23h. (Andijan and Lick).

July 12d. 16h. 45m. 30s. Epicentre **12·°0N. 123°·1E.** **R.1.**
(as on 1925 May 25d.).

Probable error of epicentre ±0°·35.

A = −·534, B = +·819, C = +·208 ; D = +·838, E = +·546 ;
G = −·114, H = +·174, K = −·978.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	3·3	322	i 0 48	+ 1	i 1 36	S*	—	—
Taihoku	13·1	354	e 3 11	+ 8	e 5 28	− 1	8·1	—
Hong Kong	13·4	322	3 6	− 1	6 4	+27	7·3	9·4
Amboina	16·5	162	4 40	+52	7 9	+19	—	—
Phu-Lien	18·1	301	i 4 12	+ 4	7 41	+14	9·5	14·7
Zi-ka-wei	19·2	356	4 6	−15	7 38	−12	—	12·7
Miyazaki	21·4	20	4 38	− 6	8 19	−15	—	—
Nagasaki	21·5	16	4 41	− 4	e 8 33	− 3	e 11·3	12·4
Hukuoka	22·5	16	4 51	− 5	8 53	− 2	—	—
Koti	23·6	22	e 5 0	− 6	i 9 14	− 2	—	—
Matuyama	23·7	21	i 4 59	− 8	i 9 6	−12	—	—
Batavia	24·4	222	i 5 18	+ 4	9 53	+23	—	—
Sumoto	24·8	24	5 8	−10	9 32	− 5	—	10·5
Kobe	25·2	24	5 15	− 7	9 46	+ 2	10·6	10·7
Osaka	25·3	24	5 21	− 2	(10 3)	+17	10·0	10·7
Medan	25·6	253	5 39	+14	e 10 9	+18	—	—
Zinsen	25·7	7	5 3	−23	9 5	−48	—	—
Toyooka E.	25·8	23	e 5 26	− 1	e 10 38	SS	i 13·7	16·6
Toyooka N.	25·8	23	i 5 21	− 6	i 10 13	+18	e 13·5	—
Nagoya	26·3	26	e 5 27	− 5	—	—	11·2	—

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.
Gihu		26·4	26	5 27	− 6	10 4	− 1	—	—
Chiufeng		28·7	349	e 5 45	− 8	10 40	− 3	i 16·6	—
Tyosi		28·7	31	e 6 37	PP	e 11 41	SS	—	—
Mizusawa	E.	31·5	29	6 18	0	13 0	SS	—	—
	N.	31·5	29	6 24	+ 6	12 54	SS	—	—
Vladivistok		32·0	12	6 10	−13	i 11 18	−17	13·7	17·1
Calcutta		34·7	291	6 2	−44	11 17	−60	16·2	—
Irkutsk		43·0	345	e 7 53	− 4	e 13 59	−22	21·5	26·3
Colombo		43·0	267	8 3	+ 6	14 34	+13	23·7	28·8
Hyderabad		43·4	283	7 6	−54	13 57	−30	20·6	28·0
Perth		44·5	189	e 7 55	−14	i 14 50	+ 7	e 21·9	—
Kodaikanal		44·8	276	14 0	S	(14 0)	−47	—	—
Dehra Dun		45·5	301	8 10	− 7	14 50	− 7	19·0	20·5
Bombay		48·4	283	8 53	+14	15 53	+15	24·9	34·9
Adelaide		49·2	164	—	—	i 15 48	− 2	—	26·6
Almata		50·5	317	e 8 58	+ 3	e 16 13	+ 5	e 30·6	—
Andijan		52·8	313	9 14	+ 2	e 16 43	+ 4	e 28·5	—
Riverview		53·0	151	i 9 19	+ 5	i 16 44	+ 2	—	27·1
Sydney		53·0	151	—	—	i 16 48	+ 6	21·4	22·4
Melbourne		53·8	160	e 9 57	+37	16 48	− 5	26·1	30·9
Tashkent		55·2	313	i 9 33	+ 3	i 17 23	+11	27·5	32·1
Ekaterinburg		65·0	329	i 10 37	− 2	i 19 19	− 1	29·5	36·2
Wellington		71·4	141	—	—	i 20 40	+ 2	30·0	—
Honolulu T.H.		75·6	71	—	—	21 16	−11	31·0	—
Kucino		77·4	325	11 53	− 1	21 37	−10	37·6	44·4
Theodosia		79·9	315	12 7	0	22 9	− 6	41·5	—
Tananarive		80·6	249	—	—	e 22 28	+ 6	39·2	44·5
Simferopol		80·8	315	e 12 10	− 2	e 22 23	− 1	—	—
Yalta		80·8	315	e 12 13	+ 1	—	—	—	—
Pulkovo		81·0	330	i 12 12	− 1	i 22 16	−10	41·5	49·1
Ksara	N.	81·0	303	e 12 18	+ 5	22 32	[+ 5]	35·2	—
Helsingfors		83·5	330	e 12 35	+ 9	e 22 44	[− 4]	44·1	—
Helwan		85·4	300	12 38	+ 3	22 58	[− 4]	—	54·0
Sitka		86·0	32	—	—	23 5	[− 1]	e 35·4	—
Königsberg		87·2	326	—	—	e 23 19	[+ 4]	e 45·0	48·5
Upsala		87·2	331	e 12 50	+ 6	23 40	+11	e 41·5	48·2
Budapest		90·4	320	e 13 0	+ 1	24 0	0	e 37·5	51·5
Lund		90·9	328	—	—	23 54	−10	44·5	—
Copenhagen		91·2	328	13 5	+ 2	23 33	[− 7]	46·5	—
Vienna		91·9	321	e 13 9	+ 3	23 48	[+ 4]	e 38·5	53·5
Potsdam		92·3	325	—	—	e 24 12	− 5	e 46·5	52·5
Bergen		92·5	334	—	—	23 30?	[−17]	e 34·5	—
Graz		92·8	320	e 13 37	+27	e 23 38	[−11]	49·5	59·9
Zagreb		93·0	319	e 13 14	+ 3	e 23 41	[− 9]	47·5	51·1
Cheb		93·4	322	e 17 0	PP	e 23 45	[− 7]	e 50·5	51·5
Hamburg		93·5	327	e 15 30?	?	e 23 48	[− 5]	e 46·5	57·0
Jena		93·7	323	—	—	e 24 30	0	e 45·5	62·0
Scoresby Sund		94·1	350	e 13 22	+ 6	e 23 36	[−20]	—	—
Göttingen		94·4	324	—	—	e 23 48	[−10]	e 50·0	53·5
Triest		94·5	320	e 17 5	PP	—	—	e 38·4	53·5
Feldberg		95·8	325	e 13 37	+13	i 24 42	− 7	—	54·1
Padova		95·8	319	e 17 26	PP	26 59	?	—	—
Victoria	E.	95·9	38	17 3	PP	23 55	[−10]	30·9	31·7
Stuttgart		96·0	324	e 13 26	+ 1	e 23 36	[−30]	e 48·5	53·6
Catania		96·5	311	e 17 27	PP	24 15	{−11}	e 64·9	—
De Bilt		96·8	327	e 13 30	+ 1	e 24 4	[− 6]	e 49·5	56·5
Rome		96·8	316	e 17 19	PP	e 23 52	[−18]	—	—
Florence		96·8	318	13 30	+ 1	23 45	[−25]	45·5	50·5
Prato		96·8	317	e 17 38	PP	29 30	?	50·5	—
Strasbourg		97·0	323	e 13 30?	0	24 52	− 8	e 39·5	—
Zurich		97·0	321	e 13 31	+ 1	e 23 59	[−12]	—	—
Piacenza		97·3	319	e 13 8	−23	24 8	[− 5]	39·5	59·4
Dyce		97·5	334	—	—	e 24 34	{ 0}	e 46·5	53·0
Uccle		97·8	326	e 14 30?	+57	e 23 30?	[−45]	e 48·5	54·9
Neuchatel		98·2	320	e 13 34	− 1	—	—	—	—

Continued on next page.

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		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Edinburgh		98·6	333	18 0	PP	i 24 15	[− 4]	43·5	57·6
Durham		98·7	331	24 13	S	(24 13)	[− 6]	—	57·2
Stonyhurst		99·6	331	e 19 14	PPP	e 24 14	[− 9]	47·5	57·8
Kew		99·8	328	e 17 52	PP	e 25 2	−23	49·6	55·6
Paris		99·8	325	e 13 46	+ 3	e 24 30?	{−22}	39·5	56·5
Bidston		100·1	331	—	—	e 24 0	[−26]	e 41·5	57·7
Berkeley	z.	101·7	46	e 18 4	[+ 9]	e 47 42	—	—	—
Ivigtut		106·5	355	—	—	24 42	[−15]	50·5	—
Alicante		107·2	319	—	—	e 25 55	{+ 8}	e 57·7	—
Toledo		108·7	320	e 18 54	PP	e 28 38	PS	e 39·2	63·6
Almeria		109·2	317	e 18 59	PP	e 28 27	PS	e 36·5	—
Granada		109·8	319	14 33	+ 3	28 40	PS	57·7	60·7
Malaga		110·7	318	e 19 34	PP	e 29 48	?	35·5	—
San Fernando		111·9	318	29 30	PS	39 0	SSS	—	68·5
Tucson		112·1	47	e 19 18	PP	—	—	—	—
Chicago		119·3	26	—	—	e 29 54	PS	e 48·5	—
Ottawa		120·2	15	—	—	e 30 25	PS	e 49·5	—
Florissant		120·4	30	e 19 1	[+14]	—	—	e 57·0	—
Toronto		120·7	19	e 20 5	PP	e 30 30?	PS	48·1	—
Buffalo		121·5	19	e 20 30	PP	e 29 48	PS	e 58·5	—
Pittsburgh		123·4	20	—	—	e 25 43	[−17]	e 56·7	—
Harvard		124·1	13	e 21 7	PP	e 32 33	?	e 54·5	—
Fordham		124·9	15	i 21 7	PP	e 31 16	PS	e 52·5	—
Charlottesville		126·0	18	e 21 30?	PP	—	—	e 51·5	—
Port au Prince		145·9	26	i 19 43	[+ 7]	—	—	—	—
San Juan		148·3	16	i 19 48	[+ 9]	—	—	e 61·5	—
La Paz		168·2	113	i 20 6	[+ 4]	27 10	?	79·5	—

Additional readings :—
Zi-ka-wei iN = +4m.12s.
Koti PE = +5m.5s.
Sumoto PN = +5m.11s.
Adelaide e = +14m.36s., i = +19m.30s.
Riverview PS = +17m.3s. and +18m.3s.
Melbourne PS = +17m.7s., SS = +20m.55s.
Wellington iS? = +26m.1s.
Tananarive ePPE = +15m.21s., SKSE = +22m.44s., SSE = +28m.4s.
Helsingfors ePSEN = +23m.40s., eSSE = +28m.37s., eSSN = +28m.47s., eSSSN = +32m.29s., eSSSE = +32m.51s., T_0 = 16h.45m.17s.
Königsberg eN = +29m.52s., +36m.36s., and +37m.54s.
Upsala SKS = +23m.17s., PSN = +24m.28s.
Lund +25m.18s. = PS +16s.
Copenhagen PP = +16m.44s., +23m.59s., PS = +25m.18s., SS = +29m.30s?.
Vienna PPP = +19m.10s., PS = +24m.47s., PPS = +25m.37s.
Potsdam eE = +18m.30s?, eN = +20m.30s?, eEN = +23m.18s.
Graz i = +25m.36s. = PS +12s.
Zagreb ePP = +16m.59s., e = +24m.43s. = S +19s. and +25m.36s. = PS +9s., eSS = +30m.3s., eE = +34m.37s.
Cheb e = +31m.15s.
Jena e = +32m.30s. and +39m.30s.
Scoresby Sund eN = +23m.49s. and +30m.54s. = SS +16s.
Feldberg e = +17m.36s. = PP +25s., +31m.32s., and +38m.55s.
Stuttgart eEZ = +14m.54s., ePPEZ = +17m.12s., e = +17m.54s., ePS = +26m.0s., eZ = +27m.13s., eSS = +31m.24s.
De Bilt ePPZ = +17m.25s.
Rome e = +18m.0s.
Florence i = +17m.25s. = PP +7s.
Strasbourg ePP = +17m.30s.?, SKS = +24m.0s.
Uccle e = +31m.30s.? = SS −1s.
Neuchatel ePP = +17m.34s.
Kew eZ = +26m.40s. = PP −3s., eEN = +32m.19s., and +34m.44s.
Paris e = +17m.52s. = PP +11s.
Granada PP = +19m.3s., PPP = +21m.59s., PPS = +29m.12s., SSS = +39m.15s.
Chicago eSS = +36m.30s.?
Ottawa eE = +35m.8s.
Buffalo e = +23m.20s.
Pittsburgh ePP = +20m.22s., ePS = +30m.11s., eSS = +37m.9s.
Port au Prince i = +20m.34s.
La Paz PPE = +24m.10s., SKKSE = +30m.26s., PPSE = +37m.28s., iE = +47m.6s., SSE = +49m.30s.
Long waves were also recorded at Barcelona, Suva, Ann Arbor, and Bozeman.

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July 12d. 22h. 24m. 29s. Epicentre 39°·5N. 26°·0E. N.1.

Probable error of epicentre ± 0°·30.

A = +·694, B = +·338, C = +·636; D = +·438, E = −·899; G = +·572, H = +·279, K = −·772.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade		6·7	325	e 0 49	−46	2 54	+ 3	—	3·4
Bari		7·1	287	3 1	S	(3 1)	0	4·2	—
Trenta		7·4	271	e 1 31	−14	—	—	—	4·0
Yalta		7·9	48	e 2 27	P*	—	—	e 8·5	—
Simferopol		8·1	45	e 2 6	+11	e 5 57	?	e 9·5	—
Catania		8·7	260	3 31	S	(3 31)	−10	—	8·0
Theodosia		8·9	49	e 2 24	+18	—	—	e 8·8	—
Naples	E.	9·0	283	e 2 6	− 1	e 4 56	S_g	—	—
Budapest		9·4	330	2 53	P_g	—	—	5·0	—
Zagreb		9·7	314	2 23	+ 6	i 4 46	S*	—	5·3
Ksara	N.	9·7	123	e 4 47	S	(e 4 47)	S*	6·5	—
Collurania		9·8	293	2 35	+17	—	—	—	—
Rome		10·5	288	e 2 27	− 1	4 1	−25	—	6·7
Graz		10·7	318	i 3 1	+30	5 21	L	(5·3)	5·7
Triest		10·9	308	i 2 28	− 5	e 4 35	− 1	i 5·3	5·7
Vienna		11·1	325	e 2 41	+ 5	5 44	L	(5·7)	8·0
Venice		11·6	305	e 5 16	S	(e 5 16)	+23	6·7	8·6
Florence		11·8	296	e 4 41	S	(4 41)	−17	—	7·3
Treviso		11·9	305	e 5 19	S	(e 5 19)	+19	(6·0)	6·5
Padova		12·0	304	e 3 49	+61	i 6 7	+64	—	—
Piacenza		13·2	300	e 2 58	− 7	6 51	L	(6·9)	9·7
Cheb		14·3	322	—	—	e 6 7	+ 9	e 7·3	10·0
Ravensburg		14·4	311	—	—	e 5 31?	−30	e 7·4	—
Zurich		14·8	308	e 3 16	−10	—	—	—	—
Stuttgart		15·2	313	2 31	−60	e 6 43	+23	e 7·7	—
Potsdam		15·6	329	e 3 49	+13	—	—	e 7·5	10·5
Neuchatel		15·7	305	e 3 29	− 9	e 6 49	+18	—	—
Strasbourg		15·9	311	e 3 41	+ 1	—	—	e 6·5	8·5
Feldberg		16·3	317	i 3 38	− 7	e 6 26	−19	8·1	9·1
Göttingen		16·4	322	i 3 51	+ 5	—	—	e 8·1	8·5
Hamburg		17·8	328	e 4 2	− 2	e 7 25	+ 5	e 9·7	12·5
Kucino		18·1	22	—	—	e 7 30	+ 3	9·1	11·8
Copenhagen		18·5	335	4 13	0	(7 31?)	− 5	7·5	—
Uccle		18·9	314	e 4 14	− 3	e 7 38	− 6	8·5	10·5
Paris		19·1	307	e 4 15	− 5	—	—	10·5	11·5
De Bilt		19·1	318	4 22	+ 2	7 47	− 1	e 8·5	10·5
Pulkovo		20·5	6	i 4 32	− 3	8 29	+13	11·0	12·4
Alicante		20·6	275	e 4 36	0	e 8 40	SS	e 12·4	—
Helsingfors	E.	20·7	358	e 4 47	+10	e 8 28	+ 8	e 11·0	—
	N.	20·7	358	e 4 35	− 2	e 8 31?	+11	e 10·9	—
Upsala		21·0	348	e 4 31?	− 9	—	—	e 11·5	13·2
Kew		21·8	312	i 4 49	0	e 8 43	+ 1	11·0	12·2
Almeria		22·3	272	e 4 53	− 1	e 8 58	+ 6	—	—
Toledo		23·0	281	e 5 1	0	e 9 3	− 2	e 9·7	—
Granada		23·2	274	i 5 21	PP	i 9 23	+15	—	14·0
Durham		23·9	319	—	—	9 11	−10	—	13·5
Malaga		24·0	273	—	—	e 9 45	+22	—	—
Bidston		24·1	315	i 9 6	(+14)	12 11	L	12·5	13·0
Edinburgh		25·3	320	—	—	e 9 31?	−15	i 13·9	—
Ekaterinburg		28·4	41	e 10 41	S	(e 10 41)	+ 3	13·5	17·7
Tashkent		32·7	73	—	—	e 11 19	−27	e 14·5	24·4
Scoresby Sund		39·5	337	9 31?	(− 9)	—	—	17·5?	—

Additional readings and notes:—
Belgrade e = +3m.4s.
Bari S = +3m.39s. = S*.
Catania S = +6m.52s.
Zagreb eNE = +2m.36s., e = +3m.5s., iNE = +3m.50s. = S −16s.
Vienna i = +4m.7s. +4m.38s. = S −3s., and +5m.55s., P_cP = +7m.1s.
Venice iS = +6m.16s.

Continued on next page.

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Treviso gives S as P and L as S.
Feldberg i = +3m.50s.
Helsingfors eE = +6m.45s., eSSE = +9m.40s., T_0 = 22h.24m.6s.
Granada iZ = +9m.26s.
Ekaterinburg e = +4m.34s. and +6m.4s.
Long waves were also recorded at Bergen, Lund, Tortosa, Königsberg, Stonyhurst, Innsbruck, Prato, Jena, and Irkutsk.

July 12d. Readings also at 2h. (Almeria, Granada, and Apia), 3h. (Tyosi), 5h. (Wellington), 10h. (Yalta, Simferopol, Suva, Pasadena, and Manila), 12h. (Wellington (2)), 14h. (Apia and Manila), 17h. (Triest), 18h. (Riverview), 22h. (Manila), 23h. (Ekaterinburg and Vladivostok).

July 13d. 14h. 59m. 10s. Epicentre 34°·8N. 135°·7E. (as on 1931 May 30d.). X.

A = −·588, B = +·574, C = +·571.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	0·2	218	0 9	P_g	i 0 10	S*	0·2	0·2
Kobe	0·4	254	0 4	− 2	0 5	− 5	—	0·1
Sumoto	0·8	236	e 0 12	+ 1	0 19	− 2	—	0·3
Toyooka	1·0	316	—	—	i 0 29	+ 3	—	0·5

Toyooka eEN = +26s.

July 13d. Readings also at 0h. (Granada), 1h. (Naples), 2h. (Tortosa, Wellington, and Strasbourg), 4h. (Apia), 6h. (Lick, Irkutsk, Tashkent, and Ekaterinburg), 8h. (La Paz), 11h. (Ekaterinburg and Tashkent), 12h. (Ekaterinburg, Irkutsk, Pulkovo, Tashkent, Copenhagen, Ksara, Andijan, and Helsingfors), 14h. (near Hokoto (2)), 15h. (Kobe (2)), 16h. (Tucson), 17h. (Helsingfors), 19h. (Manila), 21h. (Hastings, Wellington, Theodosia, Simferopol, and Yalta).

July 14d. 15h. 39m. 38s. Epicentre 2°·0S. 144°·0E. N.3.

A = −·809, B = +·587, C = −·035; D = +·588, E = +·809;
G = +·028, H = −·021, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		15·9	264	i 3 40	0	7 20	L	(7·3)	—
Manila		28·2	307	i 6 0	+11	i 11 7	+32	—	—
Riverview		32·5	169	i 6 27	0	(e 11 40)	− 3	e 11·7	16·2
Sydney		32·5	169	e 9 46	(+28)	—	—	14·4	15·7
Adelaide		33·3	189	e 6 57?	+23	i 12 13	+18	15·1	17·3
Melbourne		35·8	180	e 7 9?	+13	10 58	?	13·2?	19·3
Batavia		37·3	264	e 8 58	PP	—	—	—	—
Suva		37·3	119	7 22?	+13	—	—	—	—
Hong Kong		38·4	311	9 36	(− 1)	13 27	+15	14·8	18·0
Zi-ka-wei	Z.	39·6	330	e 7 36	+ 7	—	—	—	—
Perth		40·0	220	e 9 42	(0)	i 16 22	SS	—	—
Vladivostok		46·4	349	e 8 23	− 1	—	—	—	—
Wellington		48·1	149	—	—	i 13 41	?	23·4	—
Andijan		77·5	314	e 12 13	+18	—	—	—	—
Tashkent		80·1	314	e 13 10	+62	e 23 33	+76	e 34·5	40·6
Ekaterinburg		88·1	327	e 12 35	−13	e 22 48	[−33]	38·4	46·5
Baku		94·4	310	—	—	e 25 4	+27	e 47·4	—
Pulkovo		103·7	331	e 19 22	?	e 26 31	+32	50·4	55·7
Helsingfors	E.	105·8	333	e 19 9	[+65]	—	—	e 41·9	—
Scoresby Sund		110·9	355	20 22?	?	—	—	—	—
Copenhagen		113·8	332	20 22?	PP	—	—	56·4	—
De Bilt		119·4	331	e 20 10	PP	—	—	e 59·4	—
Granada		133·9	323	i 20 35	[+82]	e 35 0	?	74·4	—

Additional readings and note:—
Riverview iS = +9m.55s.
Perth i = +13m.52s. = S+16s. and +19m.22s.
Vladivostok e = +9m.10s. and +11m.26s.
Ekaterinburg ePS = +24m.29s.
Baku e = +31m.28s. and +40m.12s.
Helsingfors eE = +5m.44s. and +21m.44s.
Long waves were also recorded at Kucino, Ksara, Honolulu T.H., and other European stations.

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July 14d. Readings also at 1h. (Baku and Ksara), 2h. (Andijan, Granada, Ekaterinburg, San Juan, La Plata, and La Paz), 3h. (Baku, Paris, De Bilt, Tashkent, Copenhagen, and Scoresby Sund), 7h. (La Paz), 8h. (Copenhagen, Scoresby Sund, Irkutsk, Ekaterinburg, Baku, Tashkent, De Bilt, Paris, Granada, Stuttgart, and Strasbourg), 11h. (Irkutsk and Manila), 12h. (Tyosi and Ekaterinburg (2)), 13h. (De Bilt, Baku, Copenhagen, and Scoresby Sund), 16h. (Wellington), 17h. (Andijan, Almata, and Hukuoka), 19h. (Wellington), 21h. (Manila), 22h. (Tyosi, Sumoto, and Santiago).

July 15d. 2h. 17m. 17s. Epicentre 39°·0N. 67°·0E. (as on 1928 Jan. 3d.). X.

A = +·304, B = +·715, C = +·629; D = +·921, E = −·391;
G = +·246, H = +·579, K = −·777.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	2·9	37	e 0 39	− 2	i 1 10	− 4	i 1·1	1·7
Andijan	4·5	65	e 1 7	+ 3	—	—	—	—
Almata	8·6	57	2 47	P*	(4 0)	S*	4·0	—
Ekaterinburg	18·3	349	—	—	e 7 50	+19	—	—

Tashkent e = +1m.18s.

July 15d. 10h. 27m. 15s. Epicentre 35°·0N. 135°·5E. (as on 1931 June 6d.). X.

A = −·584, B = +·574, C = +·574.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	0·4	173	0 6	0	i 0 8	− 2	0·2	0·2
Kobe	0·5	219	0 2	− 5	0 3	−10	—	0·1
Toyooka	0·8	314	i 0 22	P_g	e 0 25	+ 4	—	0·5
Sumoto	0·9	212	(0 16)	+ 3	0 16	P	—	0·3

July 15d. 16h. 27m. 4s. Epicentre **59°·3N. 147°·8E.** **N.1.**

Probable error of epicentre ±0°·30.

A = −·432, B = +·272, C = +·860; D = +·533, E = +·846;
G = −·728, H = +·458, K = −·510.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok		18·9	218	4 12	− 5	i 8 0	+16	—	12·4
Misusawa	E.	20·6	195	4 26	−10	8 30	+12	10·3	—
	N.	20·6	195	4 20	−16	8 37	+19	10·1	—
Sendai		21·5	195	4 43	− 2	8 49	+13	—	—
Kumagaya		23·8	197	5 12	+ 4	9 34	+15	—	—
Tyosi		24·0	194	e 5 17	+ 7	e 9 7	−16	e 12·9	—
Misima		24·9	197	5 18	− 1	9 44	+ 5	—	—
Irkutsk		25·0	273	i 5 26	+ 6	i 9 50	+ 9	12·6	—
Nagoya		25·2	201	e 5 22	0	—	—	—	—
Toyooka	N.	25·2	206	i 5 20	− 2	—	—	—	—
Zinsen		25·7	221	5 28	+ 2	10 0	+ 7	—	—
Osaka		25·9	204	5 35	+ 7	(10 0)	+ 3	10·0	11·3
Kobe		26·0	204	e 5 28	− 1	e 9 31	−27	e 13·4	16·7
Sumoto		26·4	204	e 5 38	+ 5	10 24	+19	—	17·8
Koti		27·4	206	e 5 39	− 3	10 32	+10	—	17·2
Chiufeng		27·6	240	e 10 45	S	(e 10 45)	+20	(15·5)	—
Tientsin		27·9	237	e 7 46	+120	12 46	+136	—	17·8
Nagasaki		29·1	212	e 5 54	− 3	e 16 43	(+ 4)	—	—
Zi-ka-wei	E.	33·2	223	e 6 18	−16	—	—	—	22·6
Sitka		38·3	58	e 7 20	+ 2	e 13 15	+ 4	e 19·5	—

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.
Ekaterinburg	42·8	308	e 7 55	0	14 20	+ 2	19·9	27·3
Hong Kong	44·0	228	14 33	S	(14 33)	− 3	—	28·7
Almata	44·6	281	e 8 19	+ 9	—	—	e 23·5	24·4
Andijan	48·8	283	e 8 46	+ 4	—	—	e 25·7	—
Manila	48·9	216	e 8 46	+ 3	15 56	+11	23·5	27·9
Victoria	49·5	60	9 7	+20	16 1	+ 7	23·2	27·7
Tashkent	49·9	286	e 8 52	+ 1	i 16 4	+ 5	e 27·9	—
Scoresby Sund	50·0	355	8 56	+ 5	16 9	+ 8	22·9	—
Seattle	50·5	60	—	—	e 19 56	SS	e 28·3	—
Pulkovo	51·5	325	i 9 4	+ 1	e 16 24	+ 2	26·9	32·8
Kucino	52·2	319	9 12	+ 4	e 16 1	−30	e 25·6	33·7
Helsingfors	52·5	329	e 12 44	PPP	e 16 34	− 1	e 28·4	—
Honolulu T.H.	53·9	110	—	—	e 16 56	+ 2	e 22·9	—
Dehra Dun	54·1	270	16 6	S	(16 6)	−51	28·8	29·9
Upsala	54·7	332	e 9 25	− 1	e 17 9	+ 4	e 26·9	31·0
Calcutta	55·3	257	17 1	S	(17 1)	−12	29·8	—
Agra	56·7	269	e 23 6	SSS	—	—	28·2	30·4
Bozeman	56·9	55	—	—	e 17 44	+ 9	e 29·1	—
Königsberg	58·3	327	—	—	e 18 2	+ 9	e 27·4	36·5
Lund	59·5	333	—	—	18 13	+ 4	26·9	—
Copenhagen	59·6	333	10 1	− 1	18 14	+ 3	26·9	—
Theodosia	61·9	313	e 10 18	0	e 18 43	+ 2	33·9	—
Hamburg	62·2	333	e 10 20	0	i 18 55	+10	e 33·3	36·2
Edinburgh	62·5	341	—	—	i 18 54	+ 6	29·9	—
Simferopol	62·5	313	e 10 22	0	—	—	e 30·0	—
Yalta	62·8	313	e 10 23	− 1	—	—	—	—
Stonyhurst	64·3	340	—	—	e 19 8	− 3	—	44·3
De Bilt	64·6	335	10 41	+ 5	19 20	+ 5	e 33·9	39·5
Bidston	64·8	341	—	—	e 18 56	−21	e 25·9	44·1
Cheb	64·8	330	e 19 26	S	(e 19 26)	+ 9	e 34·9	38·7
Budapest	65·3	324	—	—	e 19 26	+ 2	36·9	42·9
Vienna	65·4	326	e 25 56?	SSS	—	—	e 43·9	—
Feldberg	65·6	332	e 11 26	+44	i 19 32	+ 5	—	41·8
Bombay	66·2	269	e 17 40	?	—	—	—	41·1
Oxford	66·2	340	—	—	e 19 35	0	—	—
Kew	66·3	339	e 11 26	(+ 8)	e 19 43	+ 7	i 39·4	39·8
Graz	66·7	326	—	—	e 23 21	SS	e 35·9	45·8
Stuttgart	66·8	331	e 10 49	− 2	e 19 36	− 6	e 32·4	41·0
Medan	67·2	234	—	—	e 18 56?	−51	e 34·9	—
Strasbourg	67·3	332	e 10 58	+ 4	i 19 56	+ 8	—	—
Belgrade	67·3	321	—	—	e 27 16	?	37·6	42·6
Zagreb	67·7	325	e 10 41	−15	e 19 56?	+ 3	e 33·4	36·5
Paris	68·2	337	i 11 3	+ 4	e 20 31	+32	27·9	41·9
Zurich	68·2	331	e 10 55	− 4	—	—	—	—
Triest	68·5	327	—	—	e 21 4	+61	e 39·1	47·1
Neuchatel	69·0	333	e 11 2	− 3	e 20 14	+ 5	—	—
Ottawa	69·4	30	—	—	e 20 6	− 8	e 38·[illegible]	—
Toronto	69·9	34	—	—	e 20 18	− 2	36·6	—
Piacenza	70·2	330	20 28	S	(20 28)	+ 4	—	41·6
Buffalo	70·8	34	e 11 16	0	e 24 28	SS	—	44·3
Florence	70·9	328	11 26	+10	20 36	+ 4	35·4	39·9
Ksara	71·3	306	—	—	e 18 41	?	e 43·2	—
Colombo	72·9	256	20 34	S	(20 34)	−22	40·0	49·3
Fordham	74·0	31	e 11 32	− 3	e 21 3	− 5	e 33·9	—
Georgetown	75·0	34	e 11 41	+ 1	e 21 12	− 8	e 31·9	39·6
Toledo	78·1	338	e 12 0	+ 2	e 21 58	+ 3	e 36·8	50·5
Alicante	78·9	335	e 12 43	+41	—	—	e 41·1	—
Granada	80·7	337	i 12 17	+ 5	i 22 26	+ 3	i 43·4	49·3
Malaga	81·3	338	e 12 19	+ 4	22 29	− 1	e 27·9	—
San Juan	97·5	31	—	—	e 23 56?	[−18]	e 48·9	—

For Notes see next page.

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NOTES TO JULY 15d. 16h. 27m. 4s.

Additional readings and note :—
Sumoto eE = +6m.12s. =PP +3s.
Chiufeng gives S as P and L as S.
Tientsin PP = +8m.44s., i = +11m.4s., SS = +15m.2s.
Sitka ePP = +8m.47s., eSS = +16m.5s.
Hong Kong SS = +17m.56s.
Seattle eSSS = +20m.38s.
Kucino e = +11m.6s. =PP +6s., SS = +20m.14s.
Helsingfors ePPSE = +17m.47s., eN = +20m.12s. =SS +7s., eSSE = +22m.48s., eN = +24m.47s.
Dehra Dun S = +23m.16s.
Calcutta S = +23m.11s.
Bozeman eSS = +21m.38s.
Königsberg e?N = +17m.2s., eN = +20m.6s., +23m.54s. =SSS +7s., and +25m.39s.
Copenhagen (no phase) +13m.38s. =PPP +13s., and +21m.56s. =SS −8s.
Cheb eS = +26m.37s.
Feldberg e = +26m.29s. and +30m.44s.
Stuttgart e = +13m.14s. =PP +4s., +15m.8s. and +23m.56s. =SS +2s., eSSS = +26m.56s.
Belgrade e = +30m.54s.
Triest e = +38m.9s.
Ottawa eN = +21m.10s. =S_gS +9s., eE = +27m.56s.
Toronto e = +27m.11s.
Long waves were also recorded at Phu-Lien, Hyderabad, Kodaikanal, Algiers, La Paz, Ivigtut, and other European and American stations.

July 15d. Readings also at 2h. (Amboina), 3h. (Bozeman), 8h. (Granada), 9h. (Manila), 12h. (Nagoya, near Tyosi, Simferopol (2), Theodosia (2), and Yalta (3)), 13h. (near Simferopol and Yalta), 14h. (Calcutta), 17h. (Ekaterinburg, Vladivostok, near Theodosia, Simferopol, and Yalta), 18h. (Almata, Andijan, Tashkent, Irkutsk, Pulkovo, Helsingfors, Copenhagen, Berkeley, Lick, Tucson, and Bozeman), 19h. (Scoresby Sund).

July 16d. Readings at 1h. (Kobe), 3h. (near Tucson), 5h. (Mizusawa and Tananarive), 7h. (Medan), 9h. (Wellington), 10h. (La Plata), 14h. (Kobe (2)), 15h. (La Paz), 17h. (Kobe), 19h. (Tientsin, Vladivostok, and Ekaterinburg), 20h. (Almata, Andijan, Tashkent, Irkutsk, Pulkovo, Kucino, Baku, Helsingfors, Stuttgart, Strasbourg, Feldberg, Paris, Copenhagen, De Bilt, Granada, Scoresby Sund, Edinburgh, Kew, Ottawa, and Hong Kong).

July 17d. 9h. 13m. 50s. Epicentre 16°·2N. 97°·2W. (as on 1928 Nov. 28d.). R.1.

Probable error of epicentre ±0°·25.

A = −·120, B = −·953, C = +·279 ; D = −·992, E = +·125 ;
G = −·035, H = −·277, K = −·960.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Little Rock	N.	19·0	12	i 4 35	+16	i 8 15	+29	—	14·5
Tucson		20·3	325	4 35	+ 2	8 29	+17	10·6	—
Columbia		23·0	36	e 5 0	− 1	9 11	+ 6	11·5	—
St. Louis		23·2	14	i 5 2	− 1	i 9 0	− 8	e 12·1	—
Florissant		23·4	13	i 5 4	− 1	i 9 19	+ 7	e 12·3	14·8
Denver		24·5	345	e 5 17	+ 2	e 9 43	+11	—	13·2
La Jolla		24·7	316	i 5 22	+ 5	—	—	—	—
Riverside		25·4	318	e 5 28	+ 4	—	—	—	—
Pasadena		25·9	317	i 5 33	+ 5	e 10 5	+ 8	—	—
Mount Wilson		26·0	317	e 5 33	+ 4	—	—	—	—
Chicago		26·9	16	i 5 34	− 3	10 11	− 3	14·2	—
Charlotesville		27·3	34	e 5 40	− 1	10 12	− 8	e 14·2	—
Ann Arbor		28·5	21	—	—	e 11 28	+48	e 18·8	—
Pittsburgh		28·5	28	(i 5 49)	− 3	(i 10 36)	− 4	(18·2)	—
Georgetown		28·7	34	5 53	0	10 42	− 1	14·3	15·6
San Juan		29·7	81	e 6 2	0	11 1	+ 2	13·9	—
Lick		30·2	320	e 6 10†	+ 3	—	—	—	—
Berkeley		31·0	320	i 6 27	+13	e 11 25	+ 5	e 14·9	16·8
Buffalo		31·0	27	i 6 14	0	e 11 12	− 8	—	—
Toronto		31·3	26	e 6 12	− 5	i 11 20	− 4	16·0	—

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.
Bozeman		31·7	340	—	—	e 11 34	+ 3	17·3	—
Fordham		31·8	35	e 6 19	− 2	e 11 30	− 2	e 16·2	—
Harvard		34·2	36	e 6 41	− 1	e 12 8	− 1	e 18·2	—
Ottawa		34·3	28	e 6 41	− 2	e 12 9	− 2	e 18·2	—
Seattle		37·7	333	—	—	e 13 46	+44	e 19·8	—
Victoria		38·7	333	7 23	+ 2	13 21	+ 4	20·4	24 8
La Paz		43·5	139	i 8 1	0	14 43	+15	19·6	23 8
Sitka		49·9	335	e 8 53	+ 2	16 10	+11	e 25·6	—
Ivigtut		56·8	27	9 40	− 2	17 34	0	28·2	—
Honolulu T.H.		57·3	286	—	—	e 17 10	−30	e 27·2	—
Scoresby Sund		69·9	20	11 8	− 2	20 19	− 1	34·2	—
Edinburgh		78·9	35	e 12 15	+13	i 22 2	− 2	39·2	—
Apia		79·6	254	e 32 2	?	—	—	—	32·1
Kew		81·6	40	e 12 22	+ 6	e 23 20	PS	e 38·2	44·0
Toledo		82·1	51	e 12 17	− 2	e 23 12	PS	—	—
Malaga		82·5	54	e 12 25	+ 4	e 22 37	− 5	—	—
Granada		83·1	54	i 12 26	+ 2	23 1	+13	i 39·6	42·9
Paris		84·1	41	e 12 37	+ 8	—	—	42·2	46·2
De Bilt		84·6	37	12 41	+10	e 22 54	[− 2]	e 40·2	49·2
Alicante		85·1	51	e 11 59	−35	—	—	e 44·4	—
Hamburg		86·8	35	e 16 10?	PP	e 23 10	[− 2]	e 47·2	54·2
Copenhagen		87·2	32	—	—	23 8	[− 7]	41·2	—
Feldberg		87·2	39	i 13 26	−18	e 23 19	[+ 4]	—	—
Strasbourg		87·4	40	e 12 52	+ 7	23 25	− 6	e 34·2	—
Stuttgart		88·2	39	e 12 50	+ 1	e 23 16	[− 5]	e 41·2	49·2
Piacenza		90·0	42	23 18	S	(23 18)	[−15]	—	49·5
Helsingfors	E.	90·7	25	e 14 27	?	e 23 33	[− 4]	e 46·8	—
Florence		91·5	44	e 12 10	−54	23 10?	−60	43·2	48·2
Pulkovo		93·0	24	13 20	+ 9	23 43	[− 7]	47·2	52·7
Ekaterinburg		104·6	13	—	—	24 44	[− 4]	46·2	57·5
Vladivostok		105·6	325	—	—	e 24 49	[− 4]	e 58·7	—
Baku		115·7	27	—	—	e 29 28	PS	54·6	64·3
Tashkent		121·1	11	—	—	e 25 58	[+ 4]	e 59·2	72·2

Additional readings and note :—
Little Rock iN = +4m.48s.
St. Louis iN = +9m.14s., eE = +9m.55s.
Florissant iPPNZ = +5m.35s., iEN = +9m.33s. and +10m.1s., iSSN = +10m.27s.
Ann Arbor eE = +12m.10s., e?N = +12m.58s., eE = +16m.46s. = S_cS +11s., eN = +22m.4s., eE = +23m.10s.
Pittsburgh e = (+11m.29s.) eSS = (+12m.10s.), all readings have been *diminished* by 18m.
Berkeley ePE = +6m.45s., iN = +11m.29s.
Buffalo ePPP = +7m.26s.
Toronto ePPPN = +7m.28s., iSN = +11m.17s., eN = +12m.21s., iSSSE = +14m.15s., T_e = 9h.13m.31s.
Ottawa eSSSE? = +15m.13s., T_e = 9h.13m.37s.
Victoria SE = +13m.33s.
La Paz iSE = +14m.47s.
Sitka e = +18m.46s. = S_cS +2s.
Kew ePPN = +15m.59s., ePPPN = +17m.53s., eSSN = +27m.24s.
Granada PS = +22m.36s.
Paris e = +16m.10s.?
De Bilt ePPZ = +15m.46s.
Copenhagen +16m.8s. = PP +5s.
Strasbourg e = +15m.10s.? PP = +16m.10s.
Stuttgart ePP = +16m.15s.
Helsingfors eSKSN = +23m.30s., eE = +27m.42s. and +32m.31s.
Pulkovo PP = +16m.53s., PS = +25m.40s.
Ekaterinburg PP = +18m.20s., PS = +27m.42s., SS = +33m.10s.
Long waves were also recorded by Bidston, Stonyhurst, Lund, Irkutsk, Tortosa, and Uccle.

July 17d. Readings also at 2h. (Kobe), 3h. (Lick and Sitka), 4h. (Almata and Ottawa), 7h. (Suva and Batavia), 8h. (Medan), 11h. (Ekaterinburg, San Juan, Charlottesville, La Paz, and La Plata), 12h. (Tashkent, Baku, Stuttgart, Strasbourg, Feldberg, Copenhagen, Paris, Ottawa, and Kew), 14h. (Sumoto), 16h. (Balboa Heights), 17h. (Matuyama), 19h. (Santiago), 23h. (Tashkent, Ekaterinburg, and Manila).

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July 18d. 5h. 27m. 5s. Epicentre 20°·7S. 69°·0W. (as on 1927 Nov. 2d.). R.2.

A = +·335, B = −·873, C = −·353; D = −·934, E = −·358; G = −·127, H = +·330, K = −·935.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		4·3	12	i 1 32	P_g	i 2 20	S_g	2·5	2·7
Santiago		12·8	186	e 2 57	− 2	5 21	− 1	6·7	—
La Plata		17·2	148	3 31	−26	—	—	6·7	—
San Juan		39·2	4	e 7 47	+22	i 13 23	− 1	16·7	—
Columbia		55·8	349	9 46	+12	17 30	+10	—	—
Little Rock	N.	59·7	338	e 10 9	+ 7	e 18 4	− 8	—	—
Georgetown		60·1	354	10 8	+ 3	i 18 21	+ 4	—	—
Fordham		61·7	356	e 10 18	+ 2	i 18 42	+ 4	—	—
Pittsburgh		62·0	350	i 10 19	+ 1	i 18 45	+ 3	—	—
St. Louis		62·5	341	i 10 22	0	e 18 40	− 8	—	—
Florissant		62·8	341	i 10 22	− 2	i 18 50	− 2	—	—
Harvard		63·1	358	—	—	e 18 48	− 8	e 28·9	—
Buffalo		64·2	351	i 10 53	+19	e 17 11	−119	—	—
Chicago		64·8	345	—	—	e 19 13	− 4	—	—
Toronto		65·0	351	i 10 38	− 1	e 19 15	− 5	30·3	—
Ottawa		66·3	335	e 10 47	0	e 19 39	+ 3	e 26·9	—
Tucson		66·4	322	10 46	− 2	19 36	− 1	—	—
La Jolla	N.	70·6	319	e 11 14	0	—	—	—	—
Riverside		71·4	320	e 11 18	− 1	—	—	—	—
Mount Wilson		72·0	320	e 11 23	0	—	—	—	—
Pasadena		72·0	320	i 11 22	− 1	e 20 45	0	—	—
Lick	N.	76·3	320	e 11 47	− 1	—	—	—	—
Berkeley		77·0	320	e 11 50	− 2	21 40	− 3	—	—
Malaga		83·6	46	e 12 22	− 4	e 22 40	[− 8]	—	—
Ivigtut		84·2	10	12 55	+26	22 43	[−10]	—	—
Victoria	N.	84·3	328	12 27	− 3	—	—	23·6	23·7
Granada		84·4	46	i 12 25	− 5	i 23 4	+ 2	48·8	56·6
Toledo		85·5	45	e 12 34	− 2	22 55	[− 8]	—	—
Alicante		87·1	46	e 12 18	−26	e 23 2	[−12]	e 30·0	—
Kew	Z.	93·7	35	—	—	e 24 55?	+25	—	—
Paris		94·1	39	e 13 55?	+39	—	—	48·9	—
Edinburgh		94·5	30	—	—	i 23 50	[− 8]	—	—
Apia		96·7	255	11 12	?	—	—	—	—
Piacenza		96·9	44	e 16 5	?	(24 55)	− 4	—	24·9
Scoresby Sund		96·9	14	—	—	27 1	?	50·9	—
Strasbourg		97·1	40	—	—	e 23 55?	[−17]	—	—
Rome		97·6	48	e 13 17	−15	—	—	—	—
Catania		98·0	53	e 21 39	?	—	—	—	—
Feldberg		98·2	39	—	—	e 24 6	[−11]	—	31·8
Stuttgart		98·3	40	e 13 57	+21	e 24 3	[−14]	e 54·9	—
Hamburg		100·3	36	e 15 55?	?	i 24 16	[−11]	e 36·9	—
Copenhagen		102·4	35	—	—	24 31	[− 6]	50·9	—
Lund		102·8	35	19 13	?	—	—	—	—
Helsingfors		109·8	31	e 16 7	?	e 25 53	{−13}	54·9	—
Pulkovo		112·3	31	—	—	25 58	[+35]	—	—
Kucino		116·5	36	—	—	e 35 1	SS	—	—
Baku		125·0	53	21 21	PP	31 21	PS	64·9	—
Ekaterinburg		128·5	33	19 0	[− 4]	28 1	{−11}	51·9	—
Tashkent		139·3	50	19 38	[+18]	—	—	—	83·1
Andijan		141·7	50	e 19 36	[+12]	—	—	—	—
Almata		143·8	43	e 19 5	[−25]	—	—	—	—
Irkutsk		148·0	8	e 19 35	[− 4]	29 55	{−16}	e 80·9	—
Vladivostok		151·6	327	e 19 32	[−12]	—	—	—	—
Batavia		152·8	171	e 20 1	{−11}	—	—	—	—
Medan		159·1	143	e 20 22	{−18}	—	—	—	—
Manila		168·7	239	19 55	[− 8]	—	—	—	—
Phu Lien		175·9	89	25 55?	PP	—	—	—	—
Hong Kong		176·6	299	25 38	PP	32 26	{−20}	—	107·3

For Notes see next page.

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NOTES TO JULY 18d. 5h. 27m. 5s.

Additional readings and note :—
San Juan PP = +9m.40s. = P_cP +1s., iS = +14m.6s.
Little Rock eN = +17m.46s., +18m.1s., and +18m.47s.
Pittsburgh ePP = +12m.39s., i = +19m.27s.
St. Louis iSEN = +18m.48s., iE = +19m.31s.
Florissant iZ = +11m.1s. = P_cP −3s., iE = +19m.33s., and +20m.57s.
Harvard iE = +19m.43s., eE = +20m.56s.
Buffalo e = +8m.45s.
Toronto iE = +20m.5s. = S_cS −23s., SSSN = +26m.30s., T_o = 5h.27m.11s.
Ottawa iE = +20m.22s. = S_cS −15s.
Lick eE = +11m.55s.
Berkeley iN = +22m.24s. = PS +14s.
Granada PS = +22m.45s.
Toledo P_cP = +13m.1s.
Stuttgart ePPZ = +17m.56s., eEN = +24m.33s. = SKKS −7s.
Copenhagen +32m.49s. = SS +14s.
Helsingfors ePPE = +19m.7s., eSKPE = +25m.16s., ePSE = +28m.11s., ePPSE = +29m.58s.
Pulkovo PP = +19m.43s., SKKS = +26m.55s., PS = +28m.55s., SS = +35m.1s.
Baku SS = +38m.31s.
Ekaterinburg PKS = +22m.15s., SS = +38m.31s.
Tashkent PP = +23m.0s., SS = +40m.19s.
Irkutsk eSS = +41m.55s. ?
Manila iE = +20m.1s., iEZ = +24m.23s., iZ = +24m.51s.
Hong Kong ? = +33m.5s. = SKKS +19s., and +36m.11s. = SKSP −6s.

July 18d. 11h. 23m. 50s. Epicentre **54°·0N. 161°·0E.** **R.1.**

(as on 1929 Dec. 29d.).

Probable error of epicentre ±0°·24.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sapporo		16·9	238	3 57	+ 3	7 46	−13	—	—
Mizusawa		20·1	230	4 32	+ 1	8 24	+16	—	—
Akita		20·1	233	4 33	+ 2	8 26	+18	—	—
Vladivostok		21·9	252	4 44	− 6	8 42	− 2	—	—
Kakioka		22·9	228	5 2	+ 2	9 10	+ 7	—	—
Tyosi		23·0	226	5 5	+ 4	e 9 14	+ 9	—	—
Misima		24·4	228	5 18	+ 4	9 35	+ 5	—	—
Nagoya		25·2	231	e 5 26	+ 4	—	—	—	—
Toyooka		25·9	235	i 5 31	+ 3	e 9 58	+ 1	—	—
Osaka		26·3	233	5 28	− 4	—	—	10·0	10·9
Kobe		26·5	234	5 37	+ 3	e 10 10	+ 3	e 14·2	16·0
Sumoto		26·9	234	5 39	+ 2	10 11	− 3	14·7	17·6
Kotl		28·1	235	i 5 52	+ 4	10 34	0	15·8	—
Nagasaki		30·6	240	6 14	+ 4	11 14	0	—	—
Tientsin		32·9	261	i 8 32	?	19 18	?	22·2	24·3
Irkutsk		33·2	290	6 33	− 1	11 52	− 2	18·2	21·1
Sitka		34·8	60	i 6 49	+ 2	12 17	− 1	e 14·6	—
Zi-ka-wei	Z.	36·2	248	i 7 3	+ 3	—	—	18·5	23·3
Chiufeng		39·1	266	e 6 34	−50	11 48	−94	—	21·9
Honolulu T.H.		45·1	120	8 25	+11	14 50	− 2	20·7	—
Victoria	N.	45·4	66	8 18	+ 2	—	—	18·2	25·2
Seattle		46·4	65	e 9 10	+46	e 14 52	−18	—	—
Hong Kong		47·2	247	8 30	0	—	—	23·2	31·7
Manila		50·3	234	e 8 55	+ 1	16 7	+ 2	24·7	38·5
Ekaterinburg		51·7	318	9 5	+ 1	i 16 18	− 6	24·2	33·1
Phu-Lien		52·6	255	e 9 10	− 1	—	—	27·2	—
Berkeley	E.	52·9	76	i 9 10	− 3	e 16 38	− 3	e 25·3	—
Almata		53·2	295	9 14	− 1	e 16 6	−39	e 28·9	—
Lick		53·6	76	e 9 18	0	—	—	—	—
Bozeman		53·6	60	9 21	+ 3	16 50	0	e 20·5	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		55·5	1	i 9 33	+ 1	—	—	—	—
Andijan		57·4	296	e 9 43	− 3	e 18 1	+19	30·2	—
Pasadena		57·9	76	i 9 51	+ 1	i 17 50	+ 2	—	—
Mount Wilson		57·9	76	i 9 50	0	e 17 49	+ 1	—	—
Riverside		58·4	76	e 9 53	0	e 17 54	− 1	—	—
Tashkent		58·7	300	i 9 55	0	17 51	− 8	e 30·2	46·2
La Jolla		59·3	76	i 10 2	+ 2	—	—	—	—
Pulkovo		59·6	335	i 9 59	− 3	18 4	− 7	32·2	38·0
Helsingfors	E.	60·6	338	e 10 7	− 2	e 18 16	− 8	e 28·2	—
	N.	60·6	338	i 10 4	− 5	e 18 15	− 9	e 31·2	—
Kucino		60·8	328	i 10 9	− 1	18 23	− 3	29·4	41·5
Calcutta		61·9	272	10 37	+19	20 25	(+20)	40·8	—
Ivigtut		62·5	15	i 10 19	− 3	18 42	− 6	30·2	—
Upsala		62·5	340	i 10 19	− 3	e 18 39	− 9	e 31·2	42·0
Tucson		63·4	73	10 29	+ 1	19 1	+ 1	31·8	—
Königsberg		66·4	337	10 45	− 3	19 33	− 4	—	44·2
Lund		67·2	343	10 51	− 2	19 43	− 4	36·2	—
Copenhagen		67·3	343	i 10 52	− 2	i 19 43	− 5	—	—
Chicago		67·7	50	—	—	19 46	− 7	e 35·7	—
Dyce		67·9	352	i 10 57	− 1	19 53	− 3	24·9	41·4
Baku		68·8	311	11 2	− 1	19 59	− 8	34·2	45·2
Florissant		68·8	54	i 11 2	− 1	i 20 2	− 5	e 30·7	35·7
Ann Arbor	E.	69·0	47	i 20 4	S	(i 20 4)	− 5	e 32·9	—
St. Louis		69·1	54	i 11 3	− 2	i 20 4	− 6	e 32·7	—
Edinburgh		69·4	351	—	—	e 20 10?	− 4	—	—
Ottawa		69·5	40	e 11 5	− 3	e 20 7	− 8	e 32 2	—
Toronto		69·6	42	e 11 4	− 4	e 20 7	− 9	33·4	38·4
Hamburg		69·8	342	i 11 8	− 1	i 10 18	− 1	e 35·2	45·2
Durham		70·3	350	11 13	0	20 20	− 5	—	48·0
Potsdam		70·4	340	i 11 5	− 8	i 20 15	−11	e 36·2	47·7
Buffalo		70·5	42	i 11 29	+15	e 19 30	−57	—	—
Theodosia		70·7	323	11 13	− 2	20 22	− 8	e 36·2	—
Medan		71·2	250	11 18	0	i 20 29	− 6	41·2	—
Little Rock		71·2	56	i 11 18	0	e 20 30	− 5	e 33·2	—
Simferopol		71·3	323	11 17	− 2	20 29	− 8	42·2	—
Yalta		71·6	323	11 19	− 1	e 20 56	+16	e 41·7	—
Hyderabad		71·7	276	11 16	− 5	20 30	−11	38·2	45·3
Göttingen		71·8	341	i 11 19	− 3	i 20 35	− 8	e 38·2	42·2
Bidston		71·8	350	i 11 10	−12	i 20 35	− 8	e 37·2	—
Jena	E.	72·0	341	i 11 21	− 2	e 20 39	− 6	e 37·2	44·8
	N.	72·0	341	i 11 18	− 5	e 20 33	−12	e 38·2	40·1
De Bilt		72·0	346	11 22	− 1	20 41	− 4	e 35·2	42·4
Pittsburgh		72·1	44	i 11 21	− 2	i 20 36	−10	e 36·2	—
Cheb		72·7	340	e 20 47	S	(e 20 47)	− 6	(e 40·2)	(50·2)
Oxford		73·2	350	i 11 29	− 1	i 20 50	− 9	—	—
Feldberg		73·3	344	i 11 28	− 3	i 20 55	− 5	36·5	43·1
Kew		73 4	350	i 11 29	− 2	e 20 56	− 5	e 30·2	47·1
Uccle		73·4	347	i 11 29	− 2	e 20 55	− 6	e 36·2	—
Budapest		73·5	335	11 30	− 2	20 59	− 4	e 41·6	48·7
Vienna		73·5	338	i 11 33	+ 1	20 58	− 5	e 38·2	49·2
Harvard		73·8	39	e 11 31	− 2	e 21 19	+13	e 39·2	—
Bombay		73·8	281	11 29	− 4	21 14	+ 8	38·3	42·7
Fordham		74·1	41	i 11 33	− 2	e 20 58	−12	—	—
Karlsruhe		74·4	341	11 39	+ 2	—	—	—	—
Stuttgart		74·5	341	i 11 36	− 1	e 21 7	− 7	e 35·2	—
Georgetown		74·5	45	i 11 36	− 1	e 21 6	− 8	34·2	42·2
Graz		74·8	338	i 11 37	− 2	i 21 14	− 4	36·2	43·3
Strasbourg		75·0	344	i 11 38	− 2	e 21 13	− 7	39·2	—
Batavia		75·2	238	i 11 39	− 2	—	—	—	—
Innsbruck		75·5	340	e 11 45	+ 2	—	—	37·0	—
Paris		75·6	347	—	—	e 20 10?	−77	36 2	56 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.
Belgrade		75·6	332	11 40	− 4	e 20 18	−69	32·0	50·9
Zagreb		75·8	337	e 11 43	− 2	e 21 23	− 6	e 36·6	—
Zurich		76·0	341	e 11 44	− 2	e 21 22	−10	—	—
Triest		76·5	337	i 11 48	− 1	e 21 33	− 4	e 32·2	51·3
Neuchatel		76·6	342	e 11 48	− 1	e 21 31	− 7	—	—
Besançon		76·6	344	i 11 50	+ 1	—	—	40·2	—
Venice		77·0	339	i 11 58	+ 6	e 21 25	−18	—	—
Columbia		77·1	49	11 55	+ 2	21 38	− 6	—	—
Padova		77·2	339	e 11 55	+ 2	i 21 42	− 3	—	—
Piacenza		78·0	340	11 54	− 3	21 46	− 8	32·2	48·8
Kodaikanal		78·0	272	36 4	?	—	—	45·9	47·9
Pavia		78·0	340	i 12 1	+ 4	—	—	—	—
Prato		78·8	338	e 12 10	+ 9	e 21 45	−18	e 32·2	—
Florence		78·9	340	12 0	− 2	i 22 5	+ 1	31·2	39·8
Colombo		79·2	269	11 59	− 5	21 59	− 8	38·5	48·6
Collurania		79·3	336	11 54	−10	—	—	—	—
Ksara	N.	80·3	318	12 10	+ 1	22 3	−16	44·0	—
Rome		80·4	339	i 12 9	− 1	e 22 14	− 6	—	—
Naples	E.	81·2	335	e 11 13	−61	e 23 10	PS	56·2	—
Trenta		81·9	333	e 11 45	−33	e 21 40	−56	—	—
Tortosa	N.	83·7	347	i 12 27	0	—	—	—	—
Toledo		85·3	350	i 12 34	− 1	22 52	[− 9]	e 38·0	58·1
Helwan		85·6	319	12 30	− 6	22 53	[−10]	—	58·8
Alicante		86·3	347	e 12 41	+ 1	e 23 16	− 4	e 50·7	—
Algiers		87·3	343	12 42	− 3	23 22	[+ 7]	—	—
Almeria		88·0	349	e 13 6	+18	e 23 22	[+ 2]	e 33·0	—
Riverview		88·3	189	e 12 47	− 2	e 23 40	0	e 42·5	—
Malaga		88·4	350	12 47	− 3	23 34	[+11]	32·2	—
San Fernando		88·9	350	12 58	+ 6	23 10	−36	49·2	—
Melbourne		92·8	194	—	—	i 24 12	−10	—	—
San Juan		97·1	45	e 13 28	− 2	24 42	{+11}	e 49·2	—
La Paz		126·7	65	i 19 3	[+ 3]	—	—	72·2	79·0
La Plata		146·9	72	i 19 39	[+ 2]	—	—	—	—

Additional readings and note :—
Tientsin i = +9m.58s., +12m.18s., +13m.0s., +13m.50s., and +14m.24s.
Sitka ePP = +8m.22s., eS = +12m.46s.
Zi-ka-wei iZ = +9m.30s. = P_cP +1s., and +13m.37s.
Honolulu T.H. e = +15m.46s., eSS = +18m.40s.
Seattle e = +10m.50s., ePP = +11m.4s., eS = +15m.10s.
Berkeley iPNZ = +9m.15s., iSE = +16m.43s.
Scoresby Sund +10m.32s. = P_cP −4s.
Helsingfors eE = +9m.57s. and +14m.4s., eN = +14m.8s., PSNZ = +19m.40s., iPSE = +19m.46s., iS_cS = +20m.16s., eSSN = +22m.32s., eSSE = +23m.5s., eSSSN = +25m.8s., eSSSE = +25m.28s., T_o = 11h.23m.46s.
Upsala ePS = +19m.0s., i = +20m.6s. = S_cS −4s., SKS = +20m.27s.
Tucson i = +20m.18s. = S_cS +1s., eSS = +23m.28s.
Königsberg iPPZ = +13m.3s., ePSEN = +19m.53s., eN = +20m.30s. = S_cS −8s. and +21m.4s.
Copenhagen +20m.33s. = S_cS +12s., +27m.52s.
Chicago eSS = +24m.10s.†, eSSS = +27m.46s.
Florissant iSSEN = +24m.36s., iSSSEN = +27m.57s.
St. Louis eE = +20m.31s.
Ottawa ePPPN = +15m.17s., eSSN = +25m.5s., eSSSE = +28m.21s.
Toronto ePP = +13m.29s., ePPP = +15m.22s., i = +18m.29s., T_o = 11h.23m.59s.
Hamburg iN = +21m.9s. = S_cS +5s.
Medan i = +21m.15s. = PS +21s.
Little Rock iSN = +20m.33s., iN = +20m.59s. = PS +5s.
De Bilt ePPZ = +14m.3s.
Pittsburgh eSS = +25m.10s.
Cheb eS = +29m.20s.
Feldberg i = +11m.36s. and +21m.57s.
Kew eNZ = +21m.58s.
Uccle PP = +14m.8s.
Vienna PP = +13m.41s.
Harvard eSS = +25m.46s., T_o = 11h.23m.31s.
Stuttgart iZ = +11m.49s., eZ = +12m.15s., eP_cPZ = +13m.6s., ePS = +21m.25s., eS_cSE = +22m.0s., eSS = +26m.22s., eSSSE = +31m.10s.

Continued on next page.

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Strasbourg iPP = +14m.53s., ePS = +21m.32s., e = +23m.10s. ?
Belgrade ePP = +14m.48s.
Zagreb i = +11m.58s., ePPNZ = +14m.47s., ePS = +21m.49s., e = +30m.37s.
Triest PS = +22m.7s.
Riverview e = +25m.15s.
San Juan PP = +17m.23s., eS = +24m.22s.
Long waves were also recorded at Agra, Bergen, Stonyhurst, and Wellington.

July 18d. Readings also at 2h. (Andijan), 4h. (Mizusawa and Nagoya), 5h. (Mizusawa), 6h. (Medan, Batavia, and Andijan), 8h. (Scoresby Sund and Ivigtut), 11h. (Nagoya, Tyosi, La Paz, and Ekaterinburg), 12h. (Pasadena and Mount Wilson), 13h. (Granada), 14h. (Manila, Andijan, Florissant, St. Louis, and Little Rock), 15h. (Manila), 16h. (Sumoto and La Paz), 17h. (Malabar and Batavia), 19h. (Phu-Lien), 20h. (San Juan).

July 19d. 9h. 43m. 2s. Epicentre 41°·6N. 142°·1E. N.2
(epicentre determined at Tokyo).

A = −·590, B = +·459, C = +·664; D = +·614, E = +·789;
G = −·524, H = +·408, K = −·748.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Urakawa	0·7	43	0 15	+ 5	0 29	S_g	—	—
Muroran	1·1	311	0 15	− 1	0 31	+ 3	—	—
Hakodate	1·1	280	0 9	− 7	0 24	− 4	—	—
Aomori	1·3	232	0 21	+ 3	0 36	+ 3	—	—
Obihiro	1·5	32	0 23	+ 2	0 44	S*	—	—
Sapporo	1·5	339	0 8	−13	0 31	− 8	—	—
Miyako	2·0	183	0 26	− 3	0 49	− 2	—	—
Morioka	2·1	201	0 30	0	0 55	+ 1	—	—
Akita	2·5	218	0 34	− 2	1 1	− 3	—	—
Mizusawa	2·6	197	0 41	+ 4	1 10	+ 3	—	—
Sendai	3·5	198	0 51	+ 1	1 28	− 2	—	—
Hukusima	4·1	198	0 59	+ 1	1 51	+ 6	—	—
Onahama	4·8	192	1 6	− 2	1 59	− 4	—	—
Kakioka	5·6	196	1 13	− 7	2 34	+11	—	—
Tukubasan	5·6	197	1 22	+ 2	2 28	+ 5	—	—
Wazima	5·8	225	1 25	+ 3	—	—	—	—
Oiwake	5·9	209	1 29	+ 5	2 37	+ 6	—	—
Kumagaya	5·9	203	1 33	+ 9	2 38	+ 7	—	—
Tyosi	6·0	189	e 1 25	0	e 2 44	+11	—	—
Tokyo	6·3	198	1 34	+ 4	2 44	+ 3	—	—
Yokohama	6·5	198	1 20	−12	2 59	+13	—	—
Nagoya	7·6	214	e 1 54	+ 6	3 26	+12	—	—
Osaka	8·6	219	1 19	−43	(3 26)	−13	3·4	5·2
Irkutsk	27·5	304	e 5 38	− 5	e 10 15	− 9	15·0	17·1
Ekaterinburg	51·9	317	—	—	e 20 11	SS	24·0	—

Irkutsk gives also e = +12m.59s.
Long waves were also recorded at Baku, Tashkent, and De Bilt.

July 19d. 12h. 23m. 30s. Epicentre 37°·2N. 140°·8E. N.1.

Probable error of epicentre ±0°·17.

Epicentre given by Wadati in "Shallow and Deep Earthquakes," Geoph. Mag., Tokyo, Vol. IV, No. 4.

A = −·617, B = +·503, C = +·605; D = +·632, E = +·775;
G = −·469, H = +·382, K = −·797.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·3	163	0 4	0	0 14	+ 6	—	—
Hukusima	0·6	334	0 11	+ 2	0 21	+ 6	—	—
Aidu	0·7	304	0 6	− 4	0 16	− 2	—	—
Sendai	1·1	4	0 16	0	0 30	+ 2	—	—
Yamagata	1·1	342	0 16	0	0 31	+ 3	—	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tukubasan	1·2	209	0 19	+ 2	0 35	+ 4	—	—
Kakioka	1·3	207	0 12	− 6	0 28	− 5	—	—
Isinomaki	1·3	18	0 17	− 1	0 34	+ 1	—	—
Tyosi	1·5	178	0 24	+ 3	0 43	+ 4	—	—
Niigata	1·5	297	0 13	− 8	0 38	− 1	—	—
Kumagaya	1·6	227	0 26	+ 3	0 47	+ 6	—	—
Maebasi	1·6	240	0 26	+ 3	0 46	+ 5	—	—
Tokyo	1·8	209	e 0 29	+ 3	i 0 50	+ 4	—	0·9
Mizusawa	1·9	7	0 29	+ 1	0 51	+ 2	—	—
Oiwake	2·0	244	0 30	+ 1	0 53	+ 2	—	—
Nagano	2·2	256	0 32	+ 1	0 58	+ 1	—	—
Mera	2·5	199	0 41	+ 5	1 7	+ 3	—	—
Morioka	2·5	6	0 35	− 1	1 3	− 1	—	—
Akita	2·5	348	0 34	− 2	1 2	− 2	—	—
Misima	2·6	216	0 39	+ 2	1 9	+ 2	—	—
Numadu	2·6	217	0 34	− 3	1 11	+ 4	—	—
Wazima	3·2	275	0 43	− 3	1 17	− 5	—	—
Gihu	3·7	242	0 53	0	1 36	+ 1	—	—
Nagoya	3·7	238	e 0 54	+ 1	1 41	+ 6	—	—
Hikone	4·2	244	0 56	− 4	1 58	+10	—	—
Kameyama	4·2	237	1 12	+12	1 57	+ 9	—	—
Osaka	5·0	242	1 12	+ 1	(2 19)	+11	2·3	3·0
Toyooka	5·1	252	i 1 12	− 1	—	—	—	—
Kobe	5·2	243	e 1 14	0	e 2 44	S*	e 3·8	3·9
Sumoto	5·6	241	e 1 17	− 3	2 48	S*	—	3·0
Vladivostok	9·0	314	—	—	e 6 30?	?	e 10·5?	—
Ekaterinburg	54·5	318	e 9 16	− 9	e 16 48	−14	26·5	—

Additional readings :—
Kobe eSE = +2m.49s.
Sumoto SN = +2m.58s.
Long waves were also recorded at Koti.

July 19d. 20h. 10m. 53s. Epicentre 51°·6N. 179°·0W. (as on 1930 May 16d.). X.

A = −·621, B = −·011, C = +·784 ; D = −·017, E = +1·000 ;
G = −·784, H = −·014, K = −·621.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		25·5	60	e 0 43	?	e 15 34	(−45)	18·1	—
Victoria	N.	35·0	75	12 17	S	(12 17)	− 4	15·3	21·4
Berkeley		41·4	87	—	—	e 13 57	0	e 20·7	—
Irkutsk		45·0	304	e 8 19	+ 6	e 16 7?	?	23·1	27·3
Scoresby Sund		56·8	10	13 7?	?	—	—	31·1	—
Florissant		59·8	65	e 10 3	0	e 18 10	− 3	—	34·1
St. Louis		60·0	65	e 10 6	+ 2	i 18 9	− 7	—	—
Ekaterinburg		61·0	328	i 10 21	+10	e 18 54	PS	32·1	38·3
Toronto		62·2	54	—	—	e 18 44	− 1	e 30·2	—
Fordham		67·0	53	e 10 50	− 2	e 19 44	− 1	—	—
Kucino		68·4	340	—	—	e 20 49	(− 4)	e 38·4	46·7
Tashkent		69·9	313	—	—	e 25 7?	SS	e 37·1	43·8
Copenhagen		72·2	354	—	—	21 25	PS	37·1	—
De Bilt	N.	76·2	357	—	—	e 22 25	PS	e 44·1	—
Baku		78·7	325	e 12 47	+46	e 22 28	+26	42·1	44·8

Baku gives also e = +28m.0s. and +32m.9s.
Long waves were recorded at Vladivostok, Ivigtut, Pulkovo, Granada, Strasbourg, Feldberg, Ottawa, and Honolulu T.H.

July 19d. Readings also at 1h. (Tyosi, Nagoya, Mizusawa, Apia, and Alicante), 2h. (Vladivostok and La Paz), 3h. (Ekaterinburg), 5h. (Tortosa), 7h. (Wellington), 9h. (Wellington (2)), 11h. (Seattle, Ottawa, and Berkeley), 12h. (Trenta), 13h. (Batavia), 15h. (Santiago and Manila), 18h. (Medan), 20h. (Ekaterinburg, Florissant, and St. Louis), 21h. (Kew), 22h. (Baku and Ekaterinburg), 23h. (Granada (2), Apia, Tyosi, and Nagoya).

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July 20d. 0h. 29m. 5s. Epicentre 35°·0N. 142°·0E. (as on 1930 Oct. 12d.). X.

A = −·646, B = +·504, C = +·574.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Tyosi		1·2	308	0 15	− 2	0 38	+ 7
Nagoya		4·2	274	e 1 0	0	—	—
Mizusawa	E.	4·2	351	1 1	+ 1	1 47	− 1

July 20d. 8h. 30m. 33s. Epicentre 15°·0S. 172°·0W. (as on 1929 July 21d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		1·2	11	i 0 7	−10	—	—	0·4	0·6
Suva		9·7	250	i 2 21	+ 4	i 4 9	+ 3	—	6·7
Christchurch		31·4	201	e 6 45	+28	e 12 13	+47	15·6	—
Riverview		38·1	233	i 8 23	PP	—	—	e 17·9	19·6
Sydney		38·1	233	e 7 39	+23	e 12 45	−23	e 17·7	20·7
Honolulu T.H.		38·9	21	e 7 27?	+ 4	e 13 27?	+ 7	e 16·4	—
Melbourne		44·2	231	e 7 41	−25	e 14 37	− 2	20·7	23·2
Adelaide		48·4	237	e 10 33	PP	e 15 18	−20	23·2	28·8
Berkeley		70·5	40	e 11 7	− 7	e 20 19	− 8	e 32·1	—
Pasadena		71·0	45	11 8	− 9	—	—	e 32·5	—
Mount Wilson	E.	71·1	45	e 11 13	− 4	—	—	—	—
Riverside		71·4	46	e 11 12	− 7	—	—	—	—
Manila		72·5	291	11 5	−21	20 51	0	33·4	—
Victoria	N.	76·7	31	12 0	+10	21 47	+ 8	34·9	39·3
Bozeman		81·8	38	—	—	e 22 26	− 9	e 40·1	—
St. Louis		93·1	50	i 13 14	+ 2	e 23 35	[−16]	e 42·4	—
Florissant		93·6	50	e 13 16	+ 2	e 23 36	[−17]	e 43·0	—
Chicago		95·9	50	—	—	e 23 51	[−14]	e 45·4	—
Irkutsk		98·0	322	e 13 30	− 4	e 23 10	[−66]	44·4	51·4
La Paz	N.	98·6	109	—	—	e 24 27	[+ 8]	—	—
Toronto		102·2	48	—	—	e 24 23	[−13]	49·4	—
Ottawa		105·0	45	—	—	e 24 33	[−17]	e 49·4	—
Fordham		105·9	52	—	—	e 24 47	[− 7]	e 50·4	—
San Juan		109·4	75	—	—	e 24 27?	[−44]	—	—
Tashkent		121·3	310	—	—	e 27 51	{+26}	e 52·4	70·8
Scoresby Sund		121·6	12	20 27	PP	25 39	[−16]	55·4	—
Ekaterinburg		122·5	329	e 18 54	[+ 2]	e 26 41	[+43]	47·4	69·6
Pulkovo		132·4	345	e 19 21	[+10]	e 31 27	SKSP	65·4	74 6
Helsingfors		133·2	349	e 22 39	PKS	—	—	e 67·4	—
Kucino		133·3	338	e 21 25	PP	e 31 59	PS	e 64·8	70·8
Upsala		134 6	354	e 22 39	PKS	—	—	e 66·4	—
Baku		135·7	313	e 22 38	PKS	—	—	e 62·4	75·3
Copenhagen		139·2	357	22 57	PKS	—	—	65·4	—
Hamburg		141·4	359	e 22 9	PP	—	—	e 69·4	—
De Bilt		142·9	3	19 32	[+ 5]	—	—	e 66·4	74·4
Uccle		144·1	5	19 32	[+ 1]	e 41 27?	SS	e 67·4	—
Stuttgart		146·3	359	e 19 38	[+ 2]	e 29 39	{−22}	e 67·4	80 4
Strasbourg		146·5	0	e 19 28	[− 8]	—	—	e 59·4	—
Zurich		147·7	0	e 19 31	[− 7]	—	—	—	—
Neuchatel		148·0	3	e 19 33	[− 6]	—	—	—	—
Belgrade		148·4	343	e 19 38	[− 2]	—	—	—	—
Zagreb		148·5	349	e 19 38	[− 2]	—	—	—	—
Florence		151·1	355	i 18 27	?	i 24 22	?	71·4	76·4
Naples	E.	153·6	349	e 19 57	[+10]	—	—	—	—
Granada		155·6	23	i 19 59	[+10]	i 32 55	?	72·9	78·4

For Notes see next page.

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NOTES TO JULY 20d. 8h. 30m. 33s.

Additional readings :—
Suva S = +5m.54s.
Riverview ePP = +9m.34s. = P_cP − 2s., eSS = +15m.46s.
Melbourne i = +9m.52s. = P_cP − 4s.
Berkeley iZ = +11m.10s., eSNZ = +20m.30s. = PS − 16s., iN = +32m.1s.
Irkutsk ePP = +17m.8s., eSS = +31m.27s. ?
Toronto eN = +25m.34s. = S − 13s.
Ottawa eN? = +21m.33s., e = +33m.27s. = SS + 16s.
Tashkent e = +36m.15s.
Scoresby Sund e = +30m.9s. = PS − 8s.
Ekaterinburg i = +20m.15s. = PP − 11s., +20m.27s., and +28m.11s., e = +29m.58s. = PS − 27s., i = +36m.54s. = SS − 11s.
Pulkovo e = +21m.22s. = PP − 11s., and +22m.27s. = PKS − 18s.
Kucino e = +22m.25s. = PKS − 22s.
Baku e = +39m.40s. = SS − 10s., +44m.32s. = SSS − 8s., and +51m.59s.
De Bilt eZ = +22m.50s.
Stuttgart eN = +20m.33s., +32m.57s. = SKSP − 16s., and +43m.7s.
Belgrade e = +20m.51s. and +21m.13s.
Granada i = +20m.23s. = P_g' − 1s., PP = +24m.0s.
Long waves were recorded at Durham, Edinburgh, Alicante, Cheb Stonyhurst, Kew, Paris, Ivigtut, Feldberg, Harvard, and Wellington.

July 20d. Readings also at 4h. (Andijan), 5h. (Pasadena, Baku, Ekaterinburg, Irkutsk, La Paz, and Manila), 8h. (Taihoku), 13h. (Apia), 14h. (Manila), 19h. (Manila), 20h. (La Paz), 21h. (Manila).

July 21d. 2h. 39m. 50s. Epicentre 44°·6N. 10°·6E. (as on 1930 Sept. 24d.). X.

A = +·700, B = +·131, C = +·702.

	Δ	Az.	P.	O − C.	S.	O − C.
	°	°	m. s.	s.	m. s.	s.
Zurich	3·1	334	e 0 45	+ 1	e 1 15	− 5
Ravensburg	3·3	348	—	—	e 1 21	− 4
Neuchatel	3·5	314	e 0 56	+ 6	e 1 29	− 1
Stuttgart	4·3	348	—	—	e 1 53	+ 3
Hohenheim	4·3	348	—	—	e 1 51	+ 1

Ravensburg e = +1m.10s. = P_g.
Hohenheim e = +1m.30s.? = P_g.

July 21d. 3h. 36m. 13s. Epicentre 20°·5S. 170°·0E. N.1.

Probable error of epicentre ±0°·24.

A = −·923, B = +·163, C = −·350 ; D = +·174, E = +·985 ;
G = +·345, H = −·061, K = −·937.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	8·3	75	3 11	?	6 47	?	—	7·1
Apia	18·6	72	e 5 11	+57	e 8 47	+69	—	—
Wellington	21·2	170	i 4 43	+ 1	i 9 25	+55	11·8	13·8
Riverview	21·4	227	i 4 48	+ 4	i 8 36	+ 2	e 10·8	12·0
Sydney	21·4	227	i 4 29	−15	i 8 29	− 5	10·5	11·0
Christchurch	23·2	175	i 5 1	− 2	i 9 1	− 7	—	—
Melbourne	27·8	226	i 5 47	+ 2	10 14	−14	12·0?	15·7
Adelaide	31·1	235	i 6 15	0	11 12	− 9	15·3	17·9
Amboina	44·0	286	i 8 1	− 4	14 30	− 6	—	—
Perth	49·5	245	18 17	S_cS	(18 17)	(−24)	—	—
Honolulu T.H.	52·3	39	i 9 15	+ 6	16 30	− 3	e 21·7	—
Titizima	54·7	330	9 28	+ 2	16 56	− 9	—	—
Manila	59·6	303	e 10 3	+ 1	i 18 7	− 4	—	—
Tyosi	62·6	334	10 27	+ 5	18 43	− 7	—	—
Batavia	62·7	275	i 10 24	+ 1	i 18 43	− 8	—	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Misima	62·9	332	10 27	+ 2	18 48	− 6	—	—
Isigakizima	63·2	313	10 31	+ 4	18 53	− 4	—	—
Nagoya	63·9	330	e 10 32	+ 1	—	—	—	—
Sumoto	64·2	328	10 33	− 1	19 4	− 6	26·0	—
Osaka	64·2	330	10 21	−13	—	—	18·5	20·4
Kobe	64·3	330	10 35	+ 1	19 4	− 7	—	—
Koti	64·3	326	i 10 35	+ 1	19 3	− 8	—	—
Sendai	64·8	335	10 35	− 2	19 11	− 6	—	—
Mizusawa	65·5	336	10 40	− 2	19 21	− 5	—	—
Hong Kong	69·2	305	11 7	+ 1	19 59	−12	—	—
Vladivostok	72·5	331	10 25	−61	i 19 42	−69	—	—
Medan	73·9	280	i 11 38	+ 4	i 20 41	−26	—	—
Phu-Lien	74·4	300	e 11 37	0	21 1	−12	32·8	—
Tientsin	77·3	322	i 14 2	PP	—	—	—	—
Chiufeng	78·6	322	e 12 0	0	i 21 47	−13	—	—
Berkeley	86·2	47	12 39	0	i 23 12	− 7	41·6	—
Lick	86·5	47	e 12 41	0	—	—	—	—
Pasadena	87·4	51	e 12 44	− 1	23 20	−11	—	—
La Jolla	87·5	54	i 12 45	0	e 23 1	[−16]	—	—
Mount Wilson	87·5	52	e 12 45	0	e 22 59	[−18]	—	—
Riverside	87·9	52	12 47	0	i 23 3	[−16]	—	—
Sitka	89·9	26	12 53	− 4	23 29	[− 3]	—	—
Calcutta	90·5	295	17 14	?	26 33	?	44·4	—
Victoria	90·8	38	13 2	+ 1	23 16	[−21]	36·9	39·2
Seattle	91·1	39	e 13 39	+36	23 47	[+ 8]	—	—
Tucson	92·2	56	13 3	− 5	24 3	[+17]	e 43·8	—
Irkutsk	92·3	325	13 7	− 1	23 26	[−20]	40·8	—
Colombo	92·5	276	13 38	+29	23 30	[−17]	—	—
Bozeman	97·2	44	e 13 29	− 2	24 46	−15	e 41·4	—
Hyderabad	97·4	286	—	—	23 54	[−19]	28·2	32·9
Bombay	102·8	286	24 25	SKS	(24 25)	[−14]	44·8	—
Almata	106·0	312	e 17 45	[−20]	—	—	—	—
Little Rock	107·6	58	e 18 35	PP	e 24 33	[−29]	—	—
Andijan	108·8	308	e 19 28	?	—	—	—	—
Florissant	110·0	54	e 14 29	− 2	i 24 50	[−23]	—	—
Tashkent	111·2	308	18 35	[+13]	26 5	{−10}	—	53·6
La Paz	112·0	118	e 18 6	[−18]	i 29 49	?	47·8	—
Chicago	112·5	50	—	—	26 53	{+29}	e 51·8	—
Ekaterinburg	117·5	324	18 44	[+ 4]	26 44	{−16}	—	—
Toronto E.	118·7	49	e 18 37	[− 5]	e 29 27	PS	56·8	—
Buffalo	119·1	50	e 18 37	[− 6]	i 29 55	PS	—	65·8
Georgetown	120·3	55	i 18 44	[− 3]	i 28 1	{+43}	50·5	—
Ottawa	121·3	46	20 21	PP	e 25 33	[−21]	e 56·8	—
Fordham	122·8	52	e 18 53	[+ 1]	i 27 17	{−19}	—	—
Harvard	124·7	50	i 20 44	PP	e 25 44	[−20]	e 62·8	—
Baku	125·7	306	19 3	[+ 5]	—	—	e 58·8	—
San Juan	127·6	80	—	—	i 25 54	[−18]	e 54·8	—
Kucino	129·9	326	e 19 3	[− 4]	27 51	{−30}	—	—
Pulkovo	131·4	335	18 58	[−11]	26 6	[−17]	—	—
Ivigtut	131·4	23	21 31	PP	—	—	—	—
Helsingfors	133·3	336	e 19 11	[− 1]	e 26 9	[−20]	e 57·4	—
Theodosia	135·4	314	e 19 18	[+ 3]	—	—	—	—
Upsala	136·0	340	e 19 30	[+14]	e 28 36	{−23}	—	—
Simferopol	136·3	313	e 19 22	[+ 5]	—	—	—	—
Yalta	136·4	313	e 19 18	[+ 1]	—	—	—	—
Königsberg	138·6	334	e 19 30	[+10]	i 28 47!	{−29}	—	—
Bergen	138·6	348	—	—	e 23 45!	PKS	45·8	—
Lund	140·7	340	19 29	[+ 7]	22 35	PP	—	—
Copenhagen	141·0	340	19 21	[− 2]	29 5	{−25}	—	—
Potsdam	143·4	336	i 19 29	[0]	—	—	—	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hamburg	143·5	340	i 19 29	[0]	—	—	e 60·8	—
Budapest	144·2	325	i 19 29	[− 3]	(e 42 17)	SS	e 42·3	—
Edinburgh	144·2	352	e 19 37	[+ 5]	i 38 37	?	—	—
Vienna	145·0	330	19 33	[− 1]	—	—	—	—
Jena	145·2	336	i 19 35	[+ 1]	—	—	—	—
Göttingen	145·2	337	i 19 33	[− 1]	—	—	—	—
Cheb	145·5	333	e 19 37	[+ 2]	e 29 39	{−17}	e 41·8	—
Stonyhurst	146·1	350	e 19 42	[+ 6]	—	—	—	—
De Bilt	146·3	341	e 19 36	[0]	e 29 43	{−18}	73·8	79·3
Feldberg	146·9	338	i 19 39	[+ 2]	e 29 47	{−17}	—	72·6
Zagreb	146·9	326	(e 19 37)	[0]	e 19 37	PKP	—	—
Uccle	147·6	342	i 19 37	[− 1]	e 29 49	{−20}	—	—
Stuttgart	147·8	335	i 19 38	[− 1]	e 29 48	{−22}	e 73·8	—
Oxford	148·0	350	i 19 40	[+ 1]	—	—	—	—
Kew	148·1	349	i 19 38	[− 1]	e 29 50	{−22}	e 73·8	—
Strasbourg	148·5	339	i 19 41	[+ 1]	26 35	PPP	e 63·8	—
Zurich	149·2	334	e 19 37	[− 3]	—	—	—	—
Paris	149·9	344	i 19 42	[0]	e 30 0	{−21}	42·8	43·8
Neuchatel	150·1	336	e 19 41	[− 1]	—	—	—	—
Camerino	150·2	325	19 57	[+15]	—	—	—	—
Besançon	150·2	338	19 50	[+ 8]	—	—	—	—
Piacenza	150·5	331	19 47	[+ 4]	—	—	—	—
Trenta	150·6	316	i 19 32	[−11]	—	—	—	—
Pavia	150·7	332	e 19 45	[+ 2]	—	—	—	—
Prato	150·7	328	e 19 47	[+ 4]	23 47	PP	—	—
Rome	151·4	324	e 19 48	[+ 5]	—	—	—	—
Catania	152·3	314	19 48	[+ 3]	—	—	—	—
Toledo	160·0	347	e 19 54	[0]	e 32 18	{+59}	—	—
Alicante	160·4	337	e 19 51	[− 3]	e 23 52	PKS	—	—
Almeria	162·3	340	20 10	[+14]	e 25 23	?	—	—
Granada	162·4	343	i 19 58	[+ 2]	—	—	78·7	88·6
Malaga	163·0	345	e 20 1	[+ 4]	e 24 39	PP	—	—
San Fernando	163·7	349	25 17	?	34 47	SKSP	45·8	—

Additional readings :—
Suva i = +4m.50s. and +6m.7s.
Wellington iPP = +5m.12s., SS = +10m.35s.
Riverview PP = +5m.14s., PPP = +5m.20s., PPPP = +5m.26s., iP_cP = +8m.44s., SS = +9m.21s., SSS = +9m.39s., T_s = 3h.36m.9s.
Melbourne PP = +6m.42s., SS = +11m.15s.
Adelaide i = +7m.23s. = PP +12s.
Honolulu T.H. S = +17m.38s.
Batavia P = +10m.27s., i = +11m.0s. = P_cP −4s.
Sumoto PN = +10m.36s.
Kobe iEN = +20m.20s. = S_cS −3s.
Hong Kong PP = +13m.40s., S_cS = +20m.56s.
Tientsin i = +14m.49s. = PP +8s., and +16m.39s. = PPP +18s.
Chiufeng SZ = +21m.51s.
Berkeley eE = +12m.28s., iPE = +12m.43s., eE = +13m.10s., iZ = +13m.18s., ePPZ = +16m.1s., eSKS = +22m.46s., and +22m.50s., eSZ = +23m.5s., ePSE = +24m.3s.
Lick eN = +12m.53s., eE = +13m.21s., eN = +13m.28s.
Pasadena iPPZ = +16m.10s., eN = +22m.59s. = SKS −17s.
Riverside eE = +23m.25s. = S −11s.
Sitka ePP = +16m.29s., ePPP = +19m.23s., SKS = +22m.59s., PS = +24m.29s.
Seattle ePP = +17m.9s., SKS = +23m.35s.
Tucson iSKS = +23m.32s., ePS = +25m.17s.
Irkutsk ePP = +16m.5s.?, PS = +25m.11s., SS = +29m.59s.
Bozeman ePP = +16m.59s., SKS = +23m.56s.
Bombay S = +32m.35s. = SS −5s.
Little Rock eN = +25m.28s., ePS = +27m.10s.
Florissant iPPEZ = +19m.1s., iE = +25m.50s. = SKKS −17s., iN = +26m.34s., iPSN = +27m.46s.
Tashkent e = +33m.47s.
Chicago ePP = +19m.17s., SKS = +24m.53s., e = +26m.5s. = SKKS −20s., SS = +34m.47s. ?
Ekaterinburg eP = +15m.4s., PP = +19m.58s., SKS = +25m.24s., PS = +29m.29s., PPS = +30m.49s.

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Toronto eE = +19m.59s. =PP −1s., iE = +25m.17s.
Buffalo eP = +15m.11s. =P −4s., iPP = +20m.5s., iPPS = +30m.49s.
Georgetown PPEZ = +20m.12s., iN = +36m.35s. =SS −1s., and +37m.38s.
Ottawa eE = +22m.25s., +27m.5s. =SKKS −20s., and +30m.3s. =SKSP −2s., eN = +36m.47s. =SS −2s., eE = +39m.11s.
Fordham iPP = +20m.33s.
Baku PP = +21m.0s., PPS = +32m.43s., SS = +37m.47s., SSS = +43m.5s.
San Juan ePP = +21m.0s., i = +22m.19s., iS = +27m.39s., ePS = +30m.47s.?
Kucino PP = +20m.50s., PS = +30m.59s., PPS = +32m.51s.
Pulkovo PP = +21m.33s., PKS = +22m.20s., SKKS = +28m.8s., PS = +31m.19s., PPS = +33m.19s., SS = +38m.47s.
Ivigtut +22m.20s., e = +22m.34s. and +24m.5s.
Helsingfors ePPE = +21m.46s., iPKS = +22m.39s., ePPSN = +33m.28s., ePPSE = +33m.37s., eSSN = +39m.1s., eSSSEN = +44m.23s.
Upsala ePPN = +22m.38s., iPKS = +22m.48s.
Königsberg eN = +22m.45s. =PP +32s., +22m.50s., +22m.59s., and +33m.47s. ?, eE = +39m.17s.
Copenhagen PP = +22m.27s., PPP = +25m.17s., SKS = +26m.25s., SKSP = +32m.32s., PS = +33m.47s., PPS = +34m.47s., SS = +40m.53s.
Potsdam iN = +20m.40s., and +20m.49s., iEN = +22m.39s., and +22m.51s. = PP +9s.
Jena iZ = +20m.25s., and +22m.59s. =PP +6s.
Göttingen iZ = +23m.2s. =PP +9s.
Stonyhurst i = +20m.22s.
De Bilt iZ = +19m.39s. and +20m.17s., eZ = +22m.59s. =PP +0s.
Feldberg i = +20m.40s., e = +33m.11s. =SKSP −6s., +37m.8s., and +47m.25s. =SSS +6s.
Uccle i = +20m.20s., e = +41m.47s. ?
Stuttgart ePKPNZ = +20m.19s., ePP = +23m.7s., eSSEN = +43m.17s.
Kew iPKP$_2$Z = +20m.24s., eZ = +21m.14s., ePPZ = +23m.9s., ePKSN = +23m.17s., ePPPZ = +26m.15s., eSKSPN = +33m.24s.
Strasbourg i = +20m.26s., SKP = +23m.17s. =PP +5s.
Zurich i = +19m.45s.
Paris e = +23m.28s. =PP +8s.
Granada iPKP$_2$ = +20m.48s., PP = +24m.34s., i = +24m.45s., PPP = +28m.22s., i = +37m.52s., SS = +44m.52s.

July 21d. Readings also at 2h. (Pittsburgh, Manila, and Koti), 3h. (Pittsburgh, Berkeley, and Lick), 6h. (La Paz), 12h. (Berkeley, Lick, Tucson, Bozeman, and Ottawa), 14h. (Manila), 15h. (Ottawa), 16h. (Sumoto), 20h. (Hong Kong, Phu-Lien, Tashkent, Calcutta, and Vladivostok).

July 22d. 6h. 5m. 50s. Epicentre 36°·5N. 140°·5E. (as on 1930 Nov. 19d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·9	160	−0 7	−20	0 2	−21	—	—
Mizusawa	E.	2·6	10	0 40	+ 3	1 6	− 1	—	—
	N.	2·6	10	0 46	P*	1 10	+ 3	—	—
Nagoya		3·2	245	e 0 43	− 3	1 20	− 2	—	—
Osaka		4·5	248	0 57	− 7	—	—	2·1	2·6
Sumoto		5·1	246	e 1 38	P*	2 34	S*	—	2·7

July 22d. Readings also at 4h. (Tyosi), 6h. (Berkeley and Lick), 8h. (Tyosi and Apia), 10h. (Sydney and Wellington), 11h. (Apia and Andijan), 12h. (Wellington, Manila, Suva, Riverview, Zurich, Neuchatel, and Paris), 13h. (Baku, Tashkent, and Ottawa), 14h. (Almata and Andijan (2)), 15h. (Tashkent), 19h. (Wellington and La Paz), 22h. (Manila).

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July 23d. 3h. 8m. 44s. Epicentre 41°·4N. 22°·3E. N.3.

A = +·694, B = +·285, C = +·661 ; D = +·380, E = −·925 ;
G = +·612, H = +·251, K = −·750.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	3·7	339	0 55	+ 2	1 37	+ 2	—	2·1
Zagreb	6·3	315	1 38	+ 8	e 2 32	− 9	e 3·1	3·8
Budapest	6·5	340	e 2 51	S	(e 2 51)	S*	3·8	—
Graz	7·5	322	e 0 45	−61	i 3 44	S*	—	5·0
Triest	7·5	307	e 1 30	−16	3 34	S*	3·9	4·4
Venice	8·3	302	3 56	S*	—	—	—	6·4
Treviso	8·5	303	e 4 46	S_g	e 5 16	?	—	—
Padova	8·6	301	e 3 7	+65	e 4 44	+65	—	—
Piacenza	9·9	296	3 56	S	(3 56)	−15	—	6·4
Cheb	11·1	325	—	—	e 5 16?	+35	—	6·8
Zurich	11·5	306	2 41	− 1	—	—	—	—
Stuttgart	11·8	313	e 3 36	P*	e 6 41	S_g	e 7·3	7·7
Feldberg	13·0	317	—	—	e 6 44	?	—	8·7
Copenhagen	15·7	339	—	—	6 40	+ 9	8·3	—

Additional readings :—
Belgrade eP* = +59s., eP_g = +1m.4s., ePP = +1m.6s., e = +1m.22s., S = +1m.43s.
Zagreb e = +1m.51s. = P* and +2m.2s. = P_g.
Long waves were also recorded at Kew, Strasbourg, Uccle, De Bilt, and Paris.

July 23d. 4h. 45m. 56s. Epicentre 40°·0N. 71°·0E. (as on 1926 April 11d.). X.

A = +·249, B = +·724, C = +·643.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·3	54	e 0 20	+ 2	—	—	0·9	1·0
Tashkent	1·8	323	i 0 23	− 3	e 0 35	P*	—	—
Almata	5·5	52	e 2 16	S	(e 2 16)	− 4	e 3·5	—

Almata S = +3m.10s.
Baku records long waves only.

July 23d. 14h. 21m. 0s. Epicentre 7°·0S. 155°·0E. (as on 1931 April 6d.). R.1.

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

A depth of focus +0·050 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	−2·6	25·4	118	5 45	?	9 42	?	11·4	—
Amboina	−2·8	26·9	276	5 4	− 7	11 16	L	(11·3)	—
Riverview	−2·9	27·1	187	i 5 11	− 1	i 9 15	−12	i 11·5	15·3
Sydney	−2·9	27·1	187	e 6 0	+48	i 9 30	+ 3	13·2	14·2
Adelaide	−3·3	31·8	206	e 5 53	+ 1	i 10 26	−14	i 12·7	13·3
Melbourne	−3·4	32·1	195	6 2	+ 9	i 10 38	− 5	13·1	—
Wellington	−3·9	38·6	156	i 6 44	− 2	i 12 6	−11	15·0	—
Christchurch	−4·0	39·7	160	i 6 54	− 1	i 12 30	− 2	—	26·8
Manila	−4·0	40·1	303	6 59	0	12 41	+ 3	17·5	20·7
Naha	−4·2	42·5	322	7 19	+ 1	13 15	+ 4	—	—
Hatidyozima	−4·2	42·6	342	7 34	+16	13 50	+38	—	—
Tyosi	−4·4	44·8	345	7 39	+ 4	13 40	− 2	—	—
Tokyo	−4·4	45·0	344	7 42	+ 5	13 53	+ 8	—	—
Miyazaki	−4·4	45·1	330	7 36	− 2	13 43	− 4	—	—
Koti	−4·4	45·4	337	7 39	− 1	e 13 48	− 3	e 19·2	—

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.
Nagoya		−4·4	45·5	340	e 8 42	+61	(14 55)	+62	14·9	—
Sumoto		−4·4	45·5	338	e 7 29	−12	e 13 46	− 7	e 19·0	—
Osaka		−4·4	45·6	337	7 39	− 3	(13 56)	+ 2	13·9	17·9
Kobe		−4·4	45·7	337	7 46	+ 3	i 14 3	+ 7	—	—
Matuyama		−4·5	46·0	335	i 7 43	− 1	e 14 2	+ 3	—	—
Nagasaki		−4·5	46·4	330	e 7 52	+ 4	e 14 4	− 1	—	—
Toyooka		−4·5	46·6	337	i 7 47	− 2	i 14 9	+ 1	—	14·2
Hukuoka		−4·5	46·8	332	7 53	+ 2	14 14	+ 4	—	—
Mizusawa	E.	−4·6	47·9	345	8 1	+ 2	14 30	+ 5	—	—
	N.	−4·6	47·9	345	7 54	− 5	14 28	+ 3	—	—
Batavia		−4·6	47·9	267	8 7	+ 8	17 12	SS	—	—
Morioka		−4·7	48·5	345	8 7	+ 4	14 43	+10	—	—
Hong Kong		−4·8	49·6	309	8 11	0	14 58	+11	—	21·2
Zi-ka-wei		−4·8	49·9	322	i 8 15	+ 1	14 55	+ 3	19·0	26·7
Zinsen		−4·9	51·8	330	8 27	− 1	15 19	+ 2	—	—
Honolulu T.H.		−5·2	54·2	57	e 8 40	− 4	15 54	+ 7	e 22·0	—
Vladivostok		−5·2	54·3	340	e 8 45	+ 1	e 15 48	0	—	—
Phu-Lien		−5·2	55·1	301	e 8 52	+ 1	16 10	+11	22·0	—
Medan		−5·4	57·2	279	9 12	+ 7	—	—	—	—
Chiufeng		−5·5	59·2	326	i 9 25	+ 6	i 16 59	+ 7	—	—
Calcutta		−5·9	71·6	298	11 18	+35	16 25	?	20·1	—
Irkutsk		−6·0	73·3	330	e 10 44	−10	e 19 27	−21	29·0	33·5
Colombo		−6·1	76·3	279	11 15	+ 3	20 28	+ 4	—	—
Hyderabad		−6·2	79·4	290	10 42	−48	20 12	−47	34·7	44·3
Bombay	N.	−6·4	85·0	290	12 0	0	21 40	−20	38·9	—
Sitka		−6·4	85·1	31	e 11 48	−13	i 21 40	−22	e 33·0	—
Almata		−6·4	86·2	316	12 6	− 1	23 4	?	—	—
Berkeley		−6·5	88·6	52	e 12 18	− 1	e 21 58	−40	e 25·7	—
Andijan		−6·5	89·0	312	e 12 13	− 8	—	—	—	—
Victoria	E.	−6·5	89·8	41	12 31	+ 6	22 3	−47	42·4	47·4
Santa Barbara	N.	−6·5	90·2	55	e 12 17	−10	—	—	—	—
Seattle		−6·5	90·3	43	—	—	e 21 14	−101	—	—
Tashkent		−6·5	91·4	313	e 12 24	− 9	e 22 24	−43	—	—
Pasadena		−6·5	91·4	56	i 12 19	−14	e 22 57	−10	—	—
Mount Wilson		−6·5	91·5	56	e 11 23	−10	—	—	—	—
Riverside		−6·5	92·0	56	e 12 30	− 6	22 22	−51	—	—
Bozeman		−6·7	97·7	45	—	—	e 23 46	[−29]	e 36·1	—
Baku		—	106·0	310	—	—	24 25	[−30]	53·0	—
Little Rock	N.	—	112·5	54	e 18 43	PP	e 24 6	[−78]	—	—
Pulkovo		—	113·0	333	e 14 4	−41	25 4	[−22]	53·0	—
Florissant		—	113·5	51	e 18 43	PP	e 25 10	[−18]	—	—
St. Louis		—	113·7	51	e 18 48	PP	e 24 0	[−89]	—	—
Helsingfors		—	115·0	334	—	—	i 24 7	[−87]	—	—
Theodosia		—	115·7	317	e 18 48	PP	—	—	—	—
Simferopol		—	116·5	317	e 18 5	[−32]	—	—	—	—
Yalta		—	116·6	317	e 18 2	[−35]	—	—	—	—
Kasra	N.	—	117·9	303	e 18 9	[−31]	—	—	—	—
Upsala		—	118·2	337	e 19 20	PP	i 24 16	[−89]	—	—
Königsberg	N.	—	120·0	331	—	—	e 24 28	[−82]	—	—
Toronto	E.	—	120·1	43	e 19 32	PP	e 24 14	[−97]	—	—
Buffalo		—	120·8	43	i 18 14	[−34]	—	—	e 49·0	—
Ottawa		—	121·9	40	e 19 47	PP	e 24 32	[−84]	e 49·0	—
Lund		—	122·7	335	19 57	PP	36 6	SS	—	—
Copenhagen		—	123·0	335	19 58	PP	35 48	?	51·0	—
Georgetown		—	123·4	47	18 16	[−38]	24 41	?	—	72·0
Budapest		—	125·0	325	18 21	[−36]	—	—	—	—
Fordham		—	125·0	44	20 10	PP	e 24 47	?	—	—
Belgrade		—	125·4	322	18 18	[−40]	e 24 44	?	e 36·8	—
Hamburg	Z.	—	125·5	335	e 18 16?	[−42]	—	—	—	—
Cheb		—	126·8	330	e 26 0?	?	—	—	—	—

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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.
Göttingen	—	126·9	334	i 18 23	[−38]	(e 31 0?)	PS	e 31·0	64·0
Zagreb	—	127·6	325	e 18 25	[−37]	—	—	—	61·0
Edinburgh	—	128·1	345	—	—	e 28 0?	{− 9}	—	—
De Bilt	—	128·6	337	i 18 28	[−36]	—	—	e 61·0	65·7
Feldberg	—	128·6	334	e 18 30	[−34]	—	—	—	—
Stuttgart	—	129·3	331	e 18 20	[−46]	—	—	e 51·0	—
Venice	—	129·8	327	i 18 26	[−41]	22 24	PP	—	—
Treviso	—	129·8	327	18 29	[−38]	21 55	PP	—	—
Uccle	—	129·9	336	18 28	[−39]	—	—	e 59·0	—
Padova	—	130·1	327	e 18 36	[−31]	e 21 12	PP	—	—
Strasbourg	—	130·1	331	e 18 28	[−39]	e 31 0	PPS	e 39·0	—
Bidston	—	130·3	343	e 21 50	PP	e 30 50	SKSP	—	—
Zurich	—	130·7	330	e 19 25	?	—	—	—	—
Trenta	—	130·8	318	e 20 45	PP	21 35	?	—	—
Kew	—	131·1	340	e 18 31	[−38]	—	—	e 59·0	—
Oxford	—	131·1	340	i 21 19	PP	—	—	e 64·0	—
La Paz	—	131·3	119	e 18 31	[−38]	—	—	63·8	—
Piacenza	—	131·5	328	e 18 33	[−36]	—	—	—	63·4
Neuchatel	—	131·5	330	e 18 19	[−50]	i 21 18	PP	—	—
Rome	—	131·8	322	18 40	[−30]	e 21 2	PP	—	—
Besançon	—	131·8	332	e 21 0	PP	—	—	—	—
Paris	—	132·1	337	e 18 33	[−37]	—	—	32·0	38·0
Catania	—	132·5	315	e 20 44	PP	—	—	—	—
San Juan	—	138·4	71	18 48	[−31]	—	—	e 56·0	—
Tortosa N.	—	139·2	330	21 45	PP	—	—	—	—
Alicante	—	141·6	329	e 18 41	[−43]	—	—	—	—
Toledo	—	142·1	334	i 18 49	[−35]	—	—	—	80·8
Almeria	—	143·7	331	18 51	[−39]	—	—	—	—
Granada	—	144·1	330	i 18 57	[−34]	i 29 21	{−27}	e 70·3	75·2
Malaga	—	144·8	331	i 18 54	[−39]	—	—	—	—
San Fernando	—	145·9	332	19 0	[−36]	—	—	—	—

Additional readings :—

Amboina iP = +5m.11s.
Riverview iN = +6m.26s., iZ = +6m.29s.
Adelaide i = +7m.15s. and +11m.30s.
Melbourne i = +7m.30s.
Koti i = +7m.44s., iZ = +7m.48s., eNZ = +12m.31s., eSN = +13m.50s., iEN = +13m.57s.
Sumoto e = +7m.32s.
Kobe iZ = +7m.51s.
Toyooka ePE = iPNZ = +7m.52s., iPE = +7m.55s.
Batavia i = +9m.5s. = PP − 29s.
Hong Kong PP = +10m.9s., SS = +17m.30s.
Zi-ka-wei iZ = +8m.18s., iN = +8m.25s., iZ = +9m.37s., PPZ = +10m.17s., PSE? = +14m.59s., iE = +17m.31s.
Honolulu T.H. e = +17m.40s. and +18m.0s., SS = +18m.43s.
Berkeley iZ = +14m.22s., iSNZ = +22m.4s., iN = +25m.4s.
Pasadena i = +12m.27s., eZ = +13m.58s.
Bozeman SKS = +22m.58s.
Baku ePP = +17m.57s., PPS = +27m.1s., SS = +32m.0s.
Little Rock iN = +23m.58s., eN = +29m.0s., and +38m.51s.
Pulkovo PP = +18m.42s., PS = +27m.58s., SS = +30m.6s.
Florissant eN = +24m.1s.
St. Louis eEN = +25m.7s.
Helsingfors ePPE = +19m.2s., ePPN = +19m.8s., eN = +26m.3s. = SKKS − 39s., eE = +26m.8s., ePSE = +26m.57s., eSSE = +34m.22s., eSSN = +34m.29s., eSSSE = +37m.54s., eSSSN = +38m.9s.
Ksara eE = +18m.13s., +19m.25s., and +19m.30s.
Upsala ePPP = +21m.28s., eSKKS = +26m.27s.
Königsberg eN = +26m.24s., +35m.36s., and +38m.30s.
Buffalo iPP = +19m.46s.
Ottawa e = +26m.8s., and +38m.10s., eN = +42m.40s.
Georgetown ePP = +20m.1s., iEZ = +21m.13s.
Belgrade e = +20m.17s., +22m.3s., and +28m.45s.
Hamburg iZ = +18m.21s.
Cheb e = +27m.0s. ?
Göttingen eZ = +20m.54s.

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Zagreb iE = +18m.33s., e = +20m.22s., +21m.42s., and +37m.0s. ?
Edinburgh i = +37m.24s. = SS − 52s.
De Bilt e = +20m.36s., iZ = +21m.7s., eEN = +37m.26s.
Feldberg i = +20m.35s., +21m.6s., and +21m.59s., e = +31m.44s.
Stuttgart eEN = iZ = +18m.27s., ePPZ = +20m.34s., ePP = +20m.43s., eZ = +21m.4s., ePKSEN = +21m.50s., eZ = +22m.42s., eSSEN = +37m.38s., eN = +39m.48s.
Uccle i = +21m.12s., e = +21m.50s., and +37m.30s.
Strasbourg PP = +20m.43s., i = +21m.13s., ePPP = +22m.50s.
Bidston e = +37m.45s.
Kew eZ = +20m.54s., iZ = +21m.18s., iEN = +21m.57s.
Oxford i = +21m.56s.
La Paz PPN = +21m.31s., iN = +25m.8s.
Piacenza PP = +21m.20s.
Paris iPP = +21m.20s.
Granada i = +22m.38s. and +40m.29s.
San Juan PP = +21m.41s.
Long waves were recorded at Arapuni and Jena.

July 23d. Readings also at 0h. (La Paz), 2h. (Sumoto, Malaga, Toledo, and Wellington), 5h. (Tyosi and San Juan), 9h. (Wellington), 10h. (Perth), 12h. (Apia), 13h. (Chur), 14h. (Florissant and Koti), 15h. (Rome, Collurania, and Jena), 16h. (Ksara, Zagreb, and Alicante), 17h. (Malabar, near Nagoya, Mizusawa, Tyosi, near Neuchatel, and Zurich), 20h. (near Santiago), 21h. (near Andijan).

July 24d. 14h. 3m. 46s. Epicentre 41°·5S. 173°·7E. N.3.

A = −·745, B = +·082, C = −·663; D = +·110, E = +·994;
G = +·659, H = −·073, K = −·749.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	0·8	75	0 15	+ 4	0 28	+ 7	—	—
Takaka	1·0	314	0 14	0	0 27	+ 1	—	0·5
Christchurch	2·2	200	e 0 31	0	i 0 53	− 4	—	—
Hastings	3·0	52	0 34	− 9	1 8	− 9	—	—
Arapuni	3·7	25	0 54	+ 1	1 39	+ 4	—	—
Sydney	19·3	286	e 4 44	+22	—	—	e 8·0	8·4
Riverview	19·4	287	e 4 34	PP	8 5	+11	e 9·6	—

Additional readings:—
Wellington P* = +19s., P_g = +26s. = S+0s., S_g +32s.
Hastings P_g = +56s., S_g = +1m.35s.

July 24d. Readings also at 0h. (Manila and Adelaide), 2h. (Baku, Almata, and Tashkent), 4h. (San Juan), 5h. (Tucson), 6h. (Zagreb), 8h. (Mizusawa), 11h. (Hukuoka and Matuyama), 14h. (Wellington), 15h. (Mizusawa), 16h. (Santiago), 17h. (Medan), 20h. (Wellington), 21h. (Andijan).

July 25d. 7h. 39m. 23s. Epicentre 41°·5N. 49°·0E. (as on 1929 Dec. 25d.). X.

A = +·491, B = +·565, C = +·663; D = +·755, E = −·656;
G = +·435, H = +·500. K = −·749.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	15·2	84	e 5 31	+120	i 6 20	0	7·6	—
Kucino	16·0	337	—	—	e 6 30	− 8	e 8·2	—
Andijan	17·6	86	e 4 5	+ 3	—	—	—	—
Almata	20·6	76	e 9 11	SS	—	—	—	—
Pulkovo	21·6	334	4 48	+ 2	8 37	− 1	12·6	14·5
Helsingfors E.	23·7	330	e 3 51	−76	e 9 10	− 8	e 13·3	—

Long waves were also recorded at Scoresby Sund, Strasbourg, Paris, De Bilt, Copenhagen, Irkutsk, Vladivostok, and Feldberg.

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July 25d. 12h. 40m. 6s. Epicentre 25°·5N. 98°·5E. (as on 1931 April 2d.). R.3.

A = −·133, B = +·893, C = +·431; D = +·989, E = +·148; G = −·064, H = +·426, K = −·903.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		8·9	120	e 2 7	+ 1	e 4 40	S_g	4·9	—
Calcutta		9·7	254	(2 58)	P*	(4 16)	+10	(4·9)	—
Hong Kong		14·7	99	6 24	S	(6 24)	+16	7·9	8·7
Hyderabad		20·3	251	4 44	+11	8 30	+18	10·6	15·7
Chiufeng	N.	20·7	41	e 8 33	S	(e 8 33)	+13	—	—
Zi-ka-wei	E.	21·0	69	e 4 35	− 5	—	—	i 12·8	—
Medan		21·9	179	—	—	e 8 2	−42	i 12·4	—
Manila		23·7	113	5 9	+ 2	9 43	+25	12·7	15·4
Bombay		24·6	260	5 20	+ 4	9 43	+ 9	12·7	—
Almata		24·9	321	e 5 24	+ 5	9 48	+ 9	—	—
Irkutsk		27·1	8	e 5 36	− 3	e 10 14	− 3	13·9	14·8
Tashkent		28·8	311	e 6 48	PP	i 10 40	− 5	16·3	17·0
Vladivostok		32·4	48	—	—	e 11 35	− 6	17·3	18·7
Kucino		52·7	322	—	—	16 27	−11	e 27·5	29·6
Pulkovo		57·3	327	9 37	− 8	17 36	− 4	27·9	32·1
Copenhagen		67·0	323	—	—	19 42	− 3	31·9	—
Stuttgart		70·7	318	e 11 11	− 4	e 20 24	− 6	e 37·9	—
Feldberg		70·7	318	—	—	e 28 12	?	—	40·1

Additional readings and note :—
Calcutta readings have been *increased* by 9m.
Hong Kong S = +7m.24s.
Manila PEN? = +5m.14s.
Tashkent e = +8m.24s.
Kucino SS = +20m.31s., e = +25m.20s.
Pulkovo SS = +21m.30s.
Stuttgart eE = +28m.24s.
Long waves were also recorded at Koti, Scoresby Sund, and other European stations.

July 25d. Readings also at 2h. (Manila, Andijan, Amboina, and La Paz), 4h. (Zurich and Neuchatel), 6h. (Almata, Andijan, Irkutsk, Tashkent, Kucino, Copenhagen, and Pulkovo), 7h. (Manila and Vladivostok), 8h. (La Paz), 11h. (Irkutsk, Tashkent, Vladivostok, Edinburgh, Phu-Lien, Hong Kong, and Manila), 12h. (Pulkovo and Copenhagen), 15h. (Irkutsk, Vladivostok, Calcutta, Hong Kong (2), Phu-Lien (2)), 17h. (Andijan), 19h. (Cheb and San Juan), 21h. (Rome), 23h. (Manila).

July 26d. 1h. 41m. 13s. Epicentre 36°·1N. 140°·0E. (as on 1931 Jan. 30d.). R.3.

A = −·619, B = +·519, C = +·589.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·5	206	i 0 6	− 1	0 15	+ 2	—	0·3
Tyosi	0·8	118	0 8	− 3	0 20	− 1	—	0·4
Nagoya	2·7	249	e 0 39	0	1 28	S*	—	1·7
Mizusawa	3·0	16	0 46	+ 3	1 27	S*	—	—
Osaka	3·9	250	0 53	− 3	—	—	1·9	2·5
Toyooka	4·2	264	i 1 11	P*	i 2 8	S*	—	2·5
Sumoto	4·5	248	1 6	+ 2	2 25	S_g	—	2·6

July 26d. Readings also at 4h. (Medan and La Plata), 6h. (Tananarive), 7h. (Andijan, Rome, and Lick), 11h. (Manila), 12h. (Andijan), 18h. (Sumoto), 19h. (Simferopol and Yalta), 20h. (Andijan and Hastings), 21h. (Manila), 22h. (Lick and Andijan).

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July 27d. 6h. 0m. 0s. Epicentre 29°·5N. 101°·0E. (as on 1927 July 2d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	10·1	148	2 0?	−22	—	—	—	—
Calcutta	13·3	241	3 8	+ 2	5 26	− 8	6·6	—
Hong Kong	13·8	118	—	—	5 50	+ 4	—	7·2
Medan	26·0	185	10 11	S	(10 11)	+13	—	—

Medan S = +11m.26s.
Long waves were also recorded at Helsingfors, Copenhagen, and the Russian stations.

July 27d. 7h. 16m. 19s. Epicentre 17°·0N. 85°·0W. N.2.

A = +·083, B = −·953, C = +·292 ; D = −·996, E = −·087 ;
G = +·026, H = −·291, K = −·956.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		12·2	81	i 3 17	+26	i 4 15	−53	—	—
Columbia		17·4	11	i 4 0	+ 1	7 25	+14	9·3	—
San Juan		18·0	83	e 4 13	+ 6	7 39	+14	e 9·7	—
Little Rock	N.	19·0	341	e 3 46	−33	i 7 2	−44	—	13·7
Charlottesville		21·8	15	i 4 48	− 1	8 54	+12	e 11·0	—
St. Louis		22·1	349	i 4 50	− 2	i 8 45	− 3	e 10·5	—
Florissant		22·4	349	e 4 54	− 1	e 8 47	− 6	e 10·6	—
Georgetown		23·0	16	i 5 1	0	i 9 13	+ 8	11·8	—
Pittsburgh		23·9	10	i 5 9	0	9 23	+ 2	11·8	—
Chicago		24·9	355	e 5 17	− 2	e 9 29	−10	13·9	—
Ann Arbor		25·4	2	e 5 29	+ 5	i 9 53	+ 5	e 13·5	—
Fordham		25·8	20	e 5 26	− 1	i 10 0	+ 5	e 13·2	—
Buffalo		26·5	10	i 5 37	+ 3	i 10 27	+20	—	15·3
Toronto		27·1	9	e 5 47	+18	i 10 14	− 3	13·2	—
Tucson		27·9	308	5 45	− 1	10 39	+ 9	e 17·1	—
Harvard		28·0	22	e 6 0	+13	i 10 51	+19	e 14·2	—
Ottawa		29·5	13	e 6 1	0	e 10 55	− 1	e 14·7	—
La Jolla		33·1	307	i 6 29	− 4	—	—	—	—
Riverside		33·6	308	e 6 32	− 5	—	—	—	—
Mount Wilson		34·2	308	e 6 38	− 4	—	—	—	—
Pasadena		34·5	308	i 6 38	− 7	e 12 5	− 9	—	—
Bozeman		36·0	329	—	—	e 12 35	− 1	e 17·7	—
La Paz		37·4	153	e 7 24	+14	i 13 6	+ 9	16·4	24·5
Lick		38·1	311	e 7 12	− 4	—	—	—	—
Berkeley	E.	38·8	311	—	—	e 13 12	− 6	e 21·6	—
Sitka		54·8	330	—	—	e 16 59	− 7	e 23·2	—
Scoresby Sund		65·2	20	—	—	19 20	− 2	25·7	—
Toledo		72·4	53	e 11 24	− 1	e 20 51	+ 1	—	—
Malaga		72·5	56	10 52	−34	—	—	—	—
Granada		73·1	56	i 11 30	+ 1	i 21 8	+10	33·2	36·3
Feldberg		79·2	41	e 16 10	PP	e 22 53	PS	e 37·0	46·4
Stuttgart		80·1	41	e 12 6	− 2	e 22 29	+12	e 36·2	—
Helsingfors		84·8	28	—	—	e 22 58	− 8	e 37·4	—
Pulkovo		87·4	27	—	—	e 23 23	− 8	39·7	51·1

Additional readings :—
San Juan PP = +4m.23s.
St. Louis iN = +4m.55s. and +4m.59s., iSEN = +8m.52s. = SS −2s.
Florissant iSEN = +8m.56s.
Ann Arbor iSSE = +11m.5s., T_e = 7h.16m.0s.
Toronto ePE = +5m.53s., PPE = +10m.52s., T_e = 7h.16m.30s.
Pasadena eN = +9m.13s. = P_cP −11s.
Bozeman eSS = +14m.47s.
Granada i = +25m.55s. = SS +26s.
Helsingfors eSKSN = +22m.4s., eN = +25m.55s., eSSN = +28m.55s. = SS +31s., eSSE = +29m.3s.
Long waves were also recorded at Kew, Edinburgh, Balboa Heights, Ivigtut, Baku, Kucino, Copenhagen, De Bilt, Strasbourg, and Paris.

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July 27d. 16h. 29m. 1s. Epicentre 1°·5N. 90°·0W. N.2.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	28·1	131	i 5 50	+ 2	i 10 44	+10	13·1	16·2
San Juan	28·8	53	e 5 59?	+ 5	e 10 57	+12	e 16·0	—
Little Rock	33·3	356	e 6 42	+ 8	e 12 5	+10	—	18·7
Columbia	33·5	14	—	—	e 11 59	+ 1	—	—
Tucson	36·5	330	7 2	0	e 15 23	?	e 17·6	—
St. Louis	37·1	0	e 7 6	− 1	e 12 55	+ 2	—	—
Florissant	37·3	0	i 7 9	0	i 12 57	+ 1	e 19·0	—
Georgetown	39·2	18	7 27	+ 2	e 13 32	+ 8	18·4	—
Pittsburgh	40·0	13	—	—	e 13 39	+ 3	—	—
Chicago	40·3	3	—	—	e 13 41	0	—	—
La Jolla	40·5	324	e 7 37	+ 1	—	—	—	—
Ann Arbor	41·2	9	e 9 23	PP	e 13 59	+ 5	e 17·0	—
Riverside	41·3	325	e 7 40	− 3	—	—	—	—
Mount Wilson	41·9	324	e 7 43	− 5	—	—	—	—
Pasadena	41·9	325	i 7 44	− 4	—	—	—	—
Fordham	42·0	20	e 7 45	− 4	e 14 10	+ 4	—	—
Buffalo	42·6	13	e 7 54	+ 1	i 14 25	+10	e 20·2	—
Toronto	43·2	11	e 7 59?	+ 1	i 14 23	− 1	e 20·5	—
Ottawa	45·6	15	e 8 11	− 7	e 15 2	+ 3	e 22·0	—
Scoresby Sund	81·4	19	—	—	22 29	− 2	37·0	—
Malaga	85·5	54	e 13 42	+66	e 24 10	+57	e 33·0	—
Toledo	85·9	51	i 12 43	+ 5	e 23 17	0	—	—
Granada	86·2	54	i 12 39	0	i 23 19	0	i 40·9	43·0
Edinburgh	87·0	35	—	—	e 22 59?	[−14]	—	—
Kew	88·6	39	e 19 23	?	—	—	e 42·0	—
Paris	90·5	41	—	—	e 24 59?	PS	43·0	47·0
Feldberg	94·3	40	—	—	e 26 11	PS	—	50·7
Stuttgart	94·9	41	—	—	e 25 59	PS	e 45·5	—
Copenhagen	95·8	35	—	—	25 53	PS	49·0	—
Pulkovo	103·4	27	—	—	e 24 41	[− 1]	49·0?	54·6
Kucino	108·9	28	—	—	e 34 19	SS	e 48·8	61·0
Manila	145·4	299	e 19 32	[− 3]	—	—	—	—

Additional readings:—
San Juan eSS = +12m.35s.
Columbia eSS = +13m.59s.
Florissant iN = +8m.8s., eEN = +15m.1s.
Pittsburgh e = +13m.27s., eSS = +16m.43s.
Chicago eSS = +16m.41s.
Ann Arbor e?E = +10m.41s.
Fordham eSS = +17m.22s.
Stuttgart ePPPE = +19m.59s.?
Long waves were also recorded at De Bilt, Uccle, Strasbourg, Tashkent, Balboa Heights, Bozeman, and Honolulu T.H.

July 27d. Readings also at 5h. (Andijan and Manila), 8h. (Riverview), 9h. (Batavia), 10h. (Mizusawa and Tyosi), 11h. (Andijan and Almata), 12h. (Adelaide), 17h. (Andijan), 23h. (Koti).

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July 28d. 2h. 5m. 34s. Epicentre 36°·1N. 140°·0E. (as on 26d.). R.3.

A = −·619, B = +·519, C = +·589.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·5	206	0 7	0	i 0 16	+ 3	—	0·3
Tyosi	0·8	118	0 10	− 1	0 16	− 5	—	0·4
Nagoya	2·7	249	e 0 37	− 2	1 30	S_g	—	—
Osaka	3·9	250	0 37	−19	—	—	1·6	2·4
Toyooka	4·2	264	e 1 0	0	e 2 6	S*	—	2·5
Kobe	4·3	251	e 1 5	+ 4	e 2 7	S*	—	2·5
Sumoto	4·5	248	1 19	S*	2 14	S*	—	2·4
Koti	5·9	247	e 1 50	P*	—	—	—	3·4

Additional readings :—
Tyosi SS = +19s.
Toyooka ePN = +1m.10s.
Kobe ePE = +1m.9s.
Sumoto SN = +2m.18s.

July 28d. 3h. 38m. 0s. Epicentre 10°·2S. 120°·2E. N.3.

A = −·495, B = +·851, C = −·177 ; D = +·864, E = +·503 ;
G = +·089, H = −·153, K = −·984.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	13·8	286	e 3 21	+ 8	—	—	—	—
Perth	22·1	190	8 0?	S	(8 0?)	−48	—	—
Manila	24·8	2	e 5 19	+ 1	9 35	− 2	12·0	—
Medan	25·5	302	4 35	−50	10 36	SS	—	—
Melbourne	35·5	145	—	—	e 12 23	− 6	20·2	23·7
Vladivostok	54·4	11	e 8 24	−60	e 15 58	−63	e 29·0	—
Bombay	55·0	302	—	—	e 17 0	− 9	—	—
Andijan	67·3	323	e 10 58	+ 4	—	—	—	—
Tashkent	69·6	321	e 11 12	+ 4	i 20 0	−16	e 36·0	42·7

Long waves were also recorded at Riverview, Adelaide, Hong Kong, Phu-Lien, Copenhagen, De Bilt, and La Paz.

July 28d. 8h. 39m. 6s. Epicentre 36°·4N. 111°·0W. N.3.

A = −·288, B = −·751, C = +·593 ; D = −·934, E = +·358 ;
G = −·213, H = −·554, K = −·805.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Tucson		4·1	178	e 0 58	0	1 40	− 5
Riverside		5·7	247	e 1 15	− 6	e 2 8	−17
La Jolla		6·2	238	—	—	e 2 37	− 1
Mount Wilson	E.	6·2	251	e 1 28	0	e 2 22	−16
Pasadena		6·2	251	e 1 44	+16	e 2 49	+11

Tucson S* = +1m.52s., eS_g = +2m.1s.
Pasadena eE = +1m.49s., eNE = +2m.51s.

July 28d. 8h. 46m. 38s. Epicentre 43°·4N. 15°·2E. N.3.

A = +·701, B = +·191, C = +·687 ; D = +·262, E = −·965 ;
G = +·663, H = +·180, K = −·727.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Camerino		1·6	260	e 1 5	S_g	1 49	†	—
Casamari		2·2	218	0 57	S	(0 57)	0	—
Rome		2·5	234	e 0 38	+ 2	1 3	− 1	1·4
Naples	E.	2·6	196	e 1 7	S	(e 1 7)	0	—
Paris		10·3	307	1 22?	−63	—	—	—

Rome iP = +51s. = P_g.
Naples eS = +3m.22s. †

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July 28d. 17h. 36m. 32s. Epicentre 29°·4N. 51°·4E. (as on 1930 Oct. 18d.). R.3.

$A = +·544$, $B = +·681$, $C = +·491$; $D = +·782$, $E = -·624$; $G = +·306$, $H = +·384$, $K = -·871$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	N.	13·9	293	e 3 27	+13	7 46	?	9·2	—
Helwan		17·4	276	4 7	+ 8	7 18	+ 7	—	12·8
Tashkent		18·8	46	i 4 16	0	i 7 50	+ 8	10·4	14·0
Theodosia		20·1	325	e 4 35	+ 4	8 25	SS	—	—
Yalta		20·3	323	e 4 33	0	8 25	+13	—	—
Andijan		20·5	51	e 4 26	− 9	—	—	e 22·5	—
Simferopol		20·7	323	4 36	− 1	8 31	+11	—	—
Pulkovo		33·6	341	6 35	− 2	e 11 53	− 7	18·5	21·2
Calcutta		33·8	93	(6 33)	− 6	—	—	—	—
Stuttgart		37·4	315	—	—	e 12 58	+ 1	e 25·5	—
Copenhagen		38·1	326	—	—	13 9	+ 1	23·5	—
Feldberg		38·2	316	—	—	e 12 13	−56	—	24·7
De Bilt		40·8	318	—	—	12 57	−51	e 23·5	—
Irkutsk		44·8	44	—	—	e 18 6	(− 5)	e 27·5	28·4
Granada		46·0	295	—	—	i 15 3	− 1	41·6	—

Additional readings and note :—
Calcutta readings have been *increased* by 5m.
Stuttgart e = +18m.52s.
Irkutsk e = +22m.28s. ?
Long waves were also recorded at Edinburgh, Helsingfors, Strasbourg, Kucino, Scoresby Sund, and Vladivostok.

July 28d. Readings also at 1h. (Taihoku), 2h. (Tyosi and Nagoya), 4h. (Granada, Vladivostok, Stuttgart, and Scoresby Sund), 5h. (Nagoya, Hong Kong, and Irkutsk), 6h. (Scoresby Sund), 7h. (Andijan), 9h. (Rome), 10h. (Ksara), 11h. (Casamari, Rome, and Alicante), 14h. (La Paz, Wellington, Christchurch, and Riverview), 15h. (Messina), 17h. (Irkutsk, Tashkent, Vladivostok, Tyosi, and Mizusawa), 21h. (Hastings), 23h. (Bombay, Andijan, Tashkent, Colombo, Kucino, and Scoresby Sund).

July 29d. 11h. 35m. 32s. Epicentre 35°·0N. 98°·0E. N.3.

$A = -·114$, $B = +·811$, $C = +·574$; $D = +·990$, $E = +·139$; $G = -·080$, $H = +·568$, $K = -·819$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	16·1	150	—	—	6 28?	−13	8·5	—
Irkutsk	17·8	13	4 4	0	e 7 24	+ 4	9·0	—
Andijan	20·9	294	e 4 47	+ 8	(e 7 10)	?	e 7·2	—
Tashkent	23·3	294	e 5 31	PP	i 9 11	+ 1	e 12·6	13·0
Bombay	27·5	241	e 8 12	?	—	—	—	19·0
Pulkovo	49·3	322	8 43	− 3	e 15 51	0	26·5	29·0
Helsingfors	51·9	323	—	—	e 16 4	−23	e 25·5	—

Additional readings :—
Pulkovo PP = +10m.38s., eSS = +19m.22s.
Helsingfors eE = +17m.43s., eN = +18m.36s., eE = +21m.49s.
Long waves were also recorded at Calcutta, Hong Kong, and other European stations.

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July 29d. 11h. 36m. 13s. Epicentre 35°·0S. 71°·3W. N.3.

$A = +\cdot263$, $B = -\cdot776$, $C = -\cdot574$; $D = -\cdot947$, $E = -\cdot321$; $G = -\cdot184$, $H = +\cdot543$, $K = -\cdot819$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		1·6	18	0 29	+ 6	0 42	+ 1	0·7	0·7
La Plata		10·9	94	2 33	0	—	—	—	—
La Paz	N.	18·7	9	e 4 15	0	7 32	− 8	—	—
La Jolla		80·4	322	e 12 9	− 1	—	—	—	—
Riverside	N.	81·4	322	e 12 17	+ 2	—	—	—	—
Pasadena		81·8	322	i 12 12	− 5	e 20 15	?	—	—
Mount Wilson		81·9	322	e 12 17	− 1	—	—	—	—
Stuttgart		110·0	43	—	—	e 34 47?	SS	e 38·1	—
Copenhagen		115·1	39	18 47?	[+14]	(29 47?)	PS	29·8	—

Long waves were also recorded at De Bilt.

July 29d. 17h. 9m. 45s. Epicentre 24°·0N. 97°·0E. (suggested by Strasbourg). N.3.

$A = -\cdot111$, $B = +\cdot907$, $C = +\cdot407$; $D = +\cdot993$, $E = +\cdot122$; $G = -\cdot050$, $H = +\cdot404$, $K = -\cdot914$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		8·0	261	3 39	S	(3 39)	+15	5·9	—
Phu-Lien		9·4	108	e 2 11	− 2	e 4 47	S*	5·3	—
Hong Kong		15·9	93	3 27	−13	6 34	− 2	7·9	9·0
Agra		17·3	285	6 57	S	(6 57)	−12	—	—
Hyderabad		18·5	253	4 55	+42	8 53	+77	11·0	15·3
Tientsin		22·8	44	e 5 11	+12	9 3	+ 2	11·6	16·0
Zi-ka-wei	Z.	22·8	66	5 3	+ 4	8 59	− 2	i 12·2	13·4
Bombay		23·0	262	9 53	?	13 20	?	15·5	—
Manila		24·5	108	e 5 19	+ 4	9 43	+11	—	18·7
Andijan		26·5	315	e 5 40	+ 6	e 10 27	+20	e 14·2	—
Tashkent		28·8	314	—	—	e 11 48	SS	16·9	18·0
Pulkovo		57·8	327	9 46	− 3	e 17 40	− 7	30·3	34·4
Copenhagen		67·4	323	—	—	19 15?	−35	32·3	—
Feldberg		70·9	317	—	—	e 19 45	−47	e 38·4	41·1
Scoresby Sund		76·4	344	—	—	21 15?	−21	—	—

Additional readings :—
Calcutta S = +5m.9s.
Tientsin SS = +9m.45s., SSS = +10m.12s., SSSS = +10m.29s.
Tashkent e = +8m.9s. and +16m.15s. ? = S_cS −22s.
Long waves were also recorded at Ottawa and other European stations.

July 29d. Readings also at 0h. (Kobe, Feldberg, Strasbourg, Andijan, Riverview, near Hastings, Takaka, Wellington, and Manila), 1h. (Granada and Andijan (2)), 4h. (Hastings), 5h. (Batavia, Ksara, and Berkeley), 6h. (Scoresby Sund), 7h. (Stuttgart), 8h. (Manila), 10h. (Chiufeng and San Juan), 14h. (Christchurch), 16h. (Taihoku and Wellington), 17h. (Granada and San Juan), 18h. (Edinburgh, La Paz, Vladivostok, De Bilt, Uccle, Granada, Copenhagen, Scoresby Sund, and Tashkent), 21h. (Batavia).

July 30d. 15h. 16m. 13s. Epicentre 33°·6N. 134°·5E. (as on 1931 March 31d.). X.

$A = -\cdot584$, $B = +\cdot594$, $C = +\cdot553$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Koti	0·8	266	i 0 26	S*	0 42	S_g	—	0·8
Sumoto	0·8	23	0 11	0	0 18	P_g	—	0·3
Kobe	1·2	28	0 18	+ 1	0 31	0	—	0·5
Osaka	1·4	40	0 20	0	(0 32)	− 4	0·5	1·0
Matuyama	1·5	279	i 0 46	+25	e 1 8	+29	—	—
Nagoya	2·6	52	—	—	e 2 52	?	—	—

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July 30d. 19h. 46m. 3s. Epicentre 36°·3N. 141°·2E. (as on 1930 Nov. 10d.). X.

A = −·628, B = +·505, C = +·592.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·6	207	0 7	− 2	0 15	0	—	0·3
Mizusawa	E.	2·8	359	0 49	P*	1 14	+ 2	—	—
Nagoya		3·6	253	(e 0 58)	+ 7	(1 2)	P*	—	—
Osaka		4·9	251	1 22	+12	(2 30)	S*	2·5	2·8
Kobe		5·2	252	e 1 28	P*	e 2 33	S*	—	4·2
Koti		6·8	249	—	—	e 3 39	S_g	—	—

Additional reading and note :—
Mizusawa SN = +2m.21s.
Nagoya readings have been *diminished* by 11m.

July 30d. Readings also at 0h. (Uccle), 3h. (Granada), 4h. (Tyosi), 7h. (Almata, Andijan, and Tashkent), 15h. (Victoria and La Paz), 16h. (Strasbourg), 17h. (Batavia), 20h. (Cheb).

July 31d. 0h. 25m. 57s. Epicentre 41°·0N. 40°·2E. N.2.

A = +·577, B = +·488, C = +·656 ; D = +·646, E = −·764 ;
G = +·501, H = +·424, K = −·755.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Theodosia		5·3	320	1 15	0	2 15	0	—	—
Yalta		5·7	310	1 12	− 9	2 17	− 8	—	—
Simferopol		5·9	313	1 24	0	2 32	+ 1	—	2·6
Ksara		7·9	207	e 1 34	−18	3 9	−12	3·5	—
Kucino		14·8	355	e 3 28	+ 2	e 6 55	+45	e 8·9	11·9
Pulkovo		19·8	345	i 4 27	0	8 14	SS	e 13·1	14·7
Rome		20·7	282	4 47	PP	—	—	—	—
Helsingfors	E.	21·4	339	e 4 47	+ 3	e 8 43	P_gP	e 10·6	—
Tashkent		21·8	80	i 3 53	−56	8 4	−38	11·9	15·7
Piacenza		22·6	291	3 3	?	—	—	—	17·3
Stuttgart		23·2	300	5 3?	0	e 9 7	− 1	e 13·1	15·5
Copenhagen		23·4	319	5 3?	− 2	9 15	+ 3	14·1	—
Feldberg		23·8	303	—	—	e 9 32	SS	—	16·9
Andijan		24·2	80	e 5 20	+ 8	e 10 33	SS	—	—
De Bilt		26·2	307	—	—	10 14	+12	e 13·1	—
Scoresby Sund		42·7	335	—	—	17 3?	SS	—	—

Additional readings :—
Rome e = +5m.23s.
Helsingfors eE = +9m.22s. ; T_g = 0h.25m.42s.
Long waves were also recorded at Strasbourg, Lund, Belgrade, Budapest, Granada, Kew, and Edinburgh.

July 31d. Readings also at 1h. (Berkeley), 2h. (Lick), 4h. (Andijan, Manila, and Vladivostok), 5h. (Tucson and Tashkent), 9h. (Mizusawa), 12h. (Kew, Rome (2), Stuttgart, Paris, De Bilt, Uccle, Granada, Casamicciola, Naples, Zagreb, Catania, Trenta, Cheb, Hamburg, Strasbourg, Camerino, and Collurania), 13h. (Batavia and La Paz), 15h. (Rome and Prato), 17h. (La Paz), 19h. (Manila), 22h. (La Paz, Kew, Granada, Uccle, and De Bilt), 23h. (La Paz (2), Paris, Stuttgart, Scoresby Sund, Copenhagen, Apia, and Balboa Heights).

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Aug. 1d. 19h. 14m. 47s. Epicentre 51°·0S. 138°·0E. (as on 1929 Dec. 31d.). X.

A = −·468, B = +·421, C = −·777; D = +·669, E = +·743;
G = +·578, H = −·520, K = −·629.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne	14·1	23	(3 15)	− 2	3 15	P	i 5·7	8·4
Adelaide	16·0	2	i 3 40	− 1	i 6 35	− 3	i 7·4	8·7
Riverview	19·6	34	i 4 22	− 3	i 8 1	+ 3	9·7	12·6
Sydney	19·6	34	e 4 25	0	e 8 19	SS	10·2	11·7
Christchurch	24·4	86	—	—	i 9 39	+ 9	10·7	—
Perth	25·1	311	10 3	S	(10 3)	+20	e 12·7	—
Wellington	26·9	83	5 48	+11	10 13	− 1	13·7	15·3
Amboina	48·0	346	5 43	?	i 6 26	?	—	—
Manila	67·3	342	10 58	+ 4	19 46	− 2	—	—
Hyderabad	85·9	305	22 2	?	29 42	?	41·8	45·6
Tashkent	109·9	312	—	—	e 25 13	[0]	e 52·2	63·0
Kucino	134·8	310	—	—	e 40 13	SS	e 65·7	78·8
Stuttgart	147·6	286	e 19 55	[+17]	—	—	e 83·2	—
Copenhagen	148·1	301	e 20 13?	[+34]	—	—	75·2	—
Granada	149·6	258	i 20 51	[+70]	—	—	75·1	80·3
De Bilt	151·2	291	e 19 57	[+14]	—	—	e 75·2	—
Paris	151·7	283	e 20 13?	[+29]	—	—	89·2	—
Kew	154·2	287	e 20 13?	[+26]	—	—	e 85·2	—
Scoresby Sund	158·4	342	21 13?	?	—	—	75·2	—

Additional readings :—
Riverview iPZ = +4m.29s.
Wellington SS = +11m.38s.
Tashkent e = +28m.13s. = PS − 14s. and +34m.13s.? = SS − 4s.
Long waves were also recorded at Kodaikanal, Vladivostok, Bombay, and Feldberg.

Aug. 1d. Readings also at 0h. (Granada, De Bilt, Scoresby Sund, La Paz, Berkeley, Ottawa, San Juan, Balboa Heights, Columbia, Harvard, Pittsburgh, Sumoto, and Kobe), 1h. (Copenhagen and Stuttgart), 9h. (Casamicciola), 10h. (Wellington), 15h. (Manila and De Bilt), 17h. (Andijan), 18h. (Wellington), 19h. (Granada and Kucino), 20h. (Helsingfors, Berkeley, and Ottawa), 21h. (Tyosi (2), Suva, and La Paz), 22h. (Andijan), 23h. (Pulkovo, Kucino, Scoresby Sund, Copenhagen, and De Bilt).

Aug. 2d. 18h. 4m. 39s. (I) } Epicentre 32°·8N. 84°·3E. N.3.
18h. 16m. 55s. (II) } X.

A = +·084, B = +·836, C = +·542; D = +·995, E = −·099;
G = +·054, H = +·539, K = −·841.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Agra N.	7·8	226	e 2 25	P*	—	—	—	—
II	N.	7·8	226	e 3 19	S	(e 3 19)	0	e 5·9	—
I	Calcutta	10·9	160	(3 1)	+28	(5 16)	+40	(6·3)	—
II		10·9	160	(2 40)	+ 7	(4 44)	+ 8	(5·9)	—
I	Andijan	12·4	314	e 3 8	+14	—	—	—	—
II		12·4	314	e 2 51	− 3	—	—	—	—
I	Hyderabad	16·2	200	3 27	−17	7 3	+20	8·6	9·1
II		16·2	200	3 41	− 3	6 36	− 7	7·8	9·3
I	Bombay	17·3	219	3 11	−47	5 0	?	5·6	6·8
II		17·3	219	2 58	−60	4 47	?	5·4	8·6
II	Kodaikanal	23·4	197	e 9 17	S	(e 9 17)	+ 5	—	—
I	Irkutsk	24·6	30	—	—	e 13 21?	?	e 20·4	—
II		24·6	30	—	—	e 14 5?	?	20·1	—
I	Kucino	39·2	320	—	—	e 13 20	− 4	—	—
II		39·2	320	e ? 29	+ 4	e 13 35	+11	—	21·4
I	Pulkovo	44·2	325	e 11 8	?	i 19 15	?	25·4	39·7
I	Copenhagen	52·5	319	20 21?	SS	—	—	27·2	—
II	Stuttgart	56·5	311	—	—	e 22 5?	?	e 31·7	—

Additional readings and note :—
Agra II eSN = +4m.43s.
Calcutta I and II readings have been *diminished* by 4m.
Irkutsk II e = +16m.5s.? = S_0S − 9s.
Long waves were also recorded at Helsingfors, Tashkent, Scoresby Sund, Granada, De Bilt, Feldberg, Vladivostok, and Paris.

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Aug. 2d. 20h. 10m. 15s. Epicentre 17°·6N. 148°·1E. (as on 1921 Feb. 10d.). X.

A = −·809, B = +·504, C = +·302; D = +·528, E = +·849;
G = −·257, H = +·160, K = −·953.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		20·2	331	e 4 35	+ 3	—	—	—	—
Osaka		20·5	329	4 11	−24	—	—	7·6	8·4
Kobe		20·6	328	4 58	PP	—	—	—	—
Koti		20·6	323	e 4 57	PP	7 45	−33	8·5	—
Mizusawa	E.	22·4	345	4 39	−16	8 39	−14	—	—
	N.	22·4	345	4 57	+ 2	8 40	−13	—	—
Manila		26·2	267	5 24	− 7	10 3	+ 1	13·1	—
Zi-ka-wei	Z.	27·7	304	e 6 5	+21	10 47	+20	—	—
Vladivostok		28·9	335	e 6 25	PP	i 11 32	SS	—	—
Hong Kong		32·2	283	7 5	PP	12 2	+24	—	16·7
Irkutsk		48·7	325	e 8 51	+10	e 16 9	+26	18·7	24·5
Tashkent		70·2	310	—	—	e 23 15	?	—	41·7
Pasadena	Z.	83·3	55	i 13 39	+74	—	—	—	—
Kucino		86·3	328	e 13 9	+29	e 23 56	PS	e 40·0	47·2
Pulkovo		87·8	334	e 13 28	+41	e 24 5	PS	43·7	52·0
Scoresby Sund		91·7	356	17 15	?	e 24 15	+ 3	—	—
Copenhagen		97·7	336	17 45?	PP	—	—	49·8	—
Feldberg		103·3	335	—	—	e 27 38	PS	—	—
Stuttgart		104·3	334	—	—	e 28 9	?	e 56·2	—
La Paz		145·4	92	i 19 57	[+22]	—	—	—	—

Additional readings:—
Kobe eN = +5m.2s.
Zi-ka-wei iZ = +6m.29s., +11m.21s., and +13m.9s.
Irkutsk e = +11m.25s. and +15m.5s.
Tashkent e = +31m.45s. ?
Pasadena iZ = +14m.22s.
Kucino e = +22m.45s.
Pulkovo e = +22m.50s.
Scoresby Sund +23m.27s. =SKS −16s.
Stuttgart eE = +33m.45s.
Long waves were also recorded at De Bilt and Helsingfors.

Aug. 2d. 22h. 6m. 8s. Epicentre 36°·3N. 141°·2E. (as on July 30d.). X.

A = −·628, B = +·505, C = +·592; D = +·627, E = +·779;
G = −·461, H = +·371, K = −·806.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·6	207	0 6	− 3	0 15	0	—	0·2
Mizusawa	E.	2·8	359	0 41	+ 1	1 13	+ 1	—	—
Nagoya		3·6	253	e 0 55	+ 4	1 51	S*	—	—
Osaka		4·9	251	1 9	− 1	—	—	2·3	3·1
Kobe	E.	5·2	252	—	—	e 2 20	+ 7	—	—

Mizusawa SN = +1m.16s.

Aug. 2d. 23h. 29m. 32s. Epicentre 40°·5N. 159°·0E. N.3.

A = −·710, B = +·272, C = +·649; D = +·358, E = +·934;
G = −·606, H = +·233, K = −·760.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	13·8	273	3 23	+10	5 54	+ 8	—	—
	N.	13·8	273	3 22	+ 9	5 51	+ 5	—	—
Tyosi		15·0	257	e 3 55	+27	e 6 58	L	(e 7·0)	—
Osaka		19·4	260	4 22	− 1	—	—	7·8	10·2
Kobe	E.	19·7	260	e 4 25	− 1	7 46	−14	—	—
Sumoto		20·1	260	e 4 17	−14	—	—	—	—
Koti		21·4	259	4 40	− 4	8 20	−14	—	—

Sumoto gives also e = +4m.31s.

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Aug. 2d. 23h. 29m. 42s. Epicentre 57°·8N. 156°·0E. N.2.

A = −·487, B = +·217, C = +·846; D = +·407, E = +·914;
G = −·773, H = +·344, K = −·533.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		29·4	282	e 5 30	−30	e 9 50	−65	—	12·3
Manila		50·5	226	9 38	+43	13 42	?	—	—
Scoresby Sund		51·7	359	9 20	+16	16 52	+28	—	—
Tashkent		54·5	293	—	—	e 16 18?	−44	—	39·3
Pulkovo		55·0	330	i 9 28	− 1	e 17 7	− 2	24·3	—
Helsingfors		56·0	333	e 9 38	+ 2	e 17 21	− 2	e 24·3	—
Kucino		56·1	324	9 18	−19	17 9	−15	e 24·3	24·5
Tinemaha		57·2	71	i 9 47	+ 2	—	—	—	—
Upsala		57·9	338	i 9 52	+ 2	e 17 45	− 3	—	—
Haiwee	N.	58·1	72	e 9 52	+ 1	—	—	—	—
Mount Wilson		59·6	75	e 10 0	− 2	—	—	—	—
Pasadena		59·6	75	i 9 59	− 3	e 18 6	− 5	—	—
Riverside		60·1	74	e 10 2	− 3	—	—	—	—
Copenhagen		62·8	339	10 23	− 1	18 51	− 1	—	—
Theodosia		66·0	320	e 10 30	−15	—	—	—	—
De Bilt		67·5	341	i 10 53	− 2	19 47	− 4	e 33·3	—
Florissant		68·7	50	i 11 4	+ 1	i 20 7	+ 2	—	—
St. Louis		68·9	50	e 11 6	+ 2	i 20 9	+ 1	—	—
Buffalo		69·4	40	i 11 12	+ 5	e 20 18	+ 4	—	—
Stuttgart		70·0	339	i 11 5	− 6	e 20 11	−10	—	—
Zurich		71·5	338	e 11 13	− 7	e 20 51	+12	—	—
Neuchatel		72·1	339	e 11 18	− 5	—	—	—	—
Granada		83·5	345	i 15 54	PP	—	—	42·9	—
La Paz	Z.	127·4	57	e 18 44	[−18]	—	—	—	—

Additional readings:—
Irkutsk e = +6m.52s. = PP +3s.
Manila iE = +14m.34s.
Tashkent e = +2m.18s.? and +22m.18s.?
Helsingfors eSKSN = +19m.48s.; T_o = 23h.29m.36s.
Florissant eEZ = +17m.52s.
Buffalo e = +17m.18s.

Aug. 2d. Readings also at 1h. (Apia), 4h. (Scoresby Sund), 5h. and 8h. (near Tyosi), 12h. (Scoresby Sund, Wellington, Hastings, and Christchurch), 14h. (Amboina and Granada), 15h. (Triest, Calcutta), 16h. (Irkutsk and Collurania), 17h. (Andijan), 21h. (Granada and Messina), 22h. (Bombay and Calcutta).

Aug. 3d. 21h. 12m. 34s. Epicentre 37°·7N. 15°·0E. (as on 1914 May 8d.). X.

A = +·764, B = +·205, C = +·612; D = +·259, E = −·966;
G = +·591, H = +·158, K = −·791.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Catania	0·2	162	0 3	0	0 5	0	0·2	0·4
Messina	0·6	41	0 14	S	(0 14)	− 1	—	—
Mineo	0·6	206	−0 16	−25	—	—	—	—
Trenta	1·8	33	e 0 26	0	0 36	−10	—	—
Naples	2·6	350	e 2 14	?	e 7 26?	?	—	—

Aug. 3d. Readings also at 6h. (Messina), 7h. (Santiago), 8h. (Andijan), 9h. (Andijan, Tashkent, Pulkovo, Sydney, Adelaide, and Riverview), 12h. (Andijan), 14h. (Tyosi and Catania), 15h. (Catania), 17h. (Almata), 19h. (Almata), 20h. (Andijan), 22h. (near Neuchatel), 23h. (Manila (2)).

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Aug. 4d. 5h. 40m. 8s. Epicentre 28°·3N. 98°·0E. N.3.

A = −·123, B = +·872, C = +·474; D = +·990, E = +·139; G = −·066, H = +·470, K = −881.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	10 5	239	3 44	+76	4 44	+18	5·1	—
Hong Kong	15·8	108	6 13	S	(6 13)	−21	(7·5)	8·6
Hyderabad	21·0	243	4 39	−1	8 31	+5	10·6	14·8
Almata	22·6	317	e 5 3	+6	—	—	—	—
Bombay	24·9	253	e 4 26	−53	—	—	—	—
Manila	25·3	118	5 18	−5	9 30	−16	—	—
Pulkovo	54·7	327	—	—	e 23 16	?	29·9	—
De Bilt	69·7	321	—	—	e 21 52?	(+49)	e 38·9	40·0
Uccle	70·6	320	—	—	20 28	0	e 38·9	—

Additional reading and note :—
Hong Kong gives S as P and L as S.
Manila 1E = +13m.8s.
Long waves were also recorded at Copenhagen, Kucino, and Medan.

Aug. 4d. Readings also at 0h. (Nagoya), 1h. (Andijan and Almata), 4h. (Tientsin), 5h. (Apia and Santiago), 7h. (Hong Kong and Manila), 8h. (Wellington, De Bilt, and Uccle), 11h. (Manila), 14h. (Tientsin), 15h. (Almata, Copenhagen, Irkutsk (2) and Vladivostok (2)), 18h. (La Paz), 19h. (Suva and Andijan).

Aug. 5d. 7h. 26m. 11s. Epicentre 36°·0N. 149°·5E. N.3.

A = −·697, B = +·411, C = +·588; D = +·508, E = +·862; G = −·506, H = +·298, K = −·809.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		7·0	270	e 1 33	−6	—	—	—	—
Mizusawa	N.	7·3	298	1 49	+5	3 1	−5	—	—
Nagoya		10·2	269	e 1 49?	−35	—	—	—	—
Osaka		11·4	268	3 16	+36	i 4 13	−35	7·9	9·7
Kobe	E.	11·8	268	e 3 4	+18	e 4 47	−11	—	9·8
Sumoto		11·9	266	e 4 17	?	—	—	—	9·9
Koti		13·3	264	e 2 49?	−17	—	—	6·1	—

Long waves were also recorded at Kew, De Bilt, Paris, Uccle, Stuttgart, Helsingfors, Copenhagen, Granada, and Hong Kong.

Aug. 5d. Readings also at 0h. (Pittsburgh), 1h. (Sumoto), 3h. (Sumoto), 4h. (Ottawa, San Juan, and Granada), 9h. (Sitka and Helsingfors), 11h. (Andijan), 17h. (Tientsin), 20h. (Malabar, Batavia, Almata, and Andijan), 21h. (Tashkent), 22h. (Andijan, La Paz (2), Port au Prince, and San Juan).

Aug. 6d. 15h. 21m. 15s. Epicentre 0°·0, 151°·0E. N.3.

A = −·875, B = +·485, C = ·000; D = +·485, E = +·875 G = ·000, H = ·000, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	23·1	261	i 4 58	−4	i 9 6	−1	—	—
Manila	33·1	300	e 6 39	+6	11 31	−21	15·0	—
Riverview	33·8	180	—	—	e 12 51	+48	e 17·8	19·4
Sydney	33·8	180	e 12 45	S	(e 12 45)	+42	19·0	20·0
Adelaide	36·8	197	—	—	i 13 14	+26	—	22·3

Continued on next page.

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		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Nagoya		37·6	342	e 8 42	PPP	—	—	—	—
Zi-ka-wei	z.	41·9	323	e 7 51	+ 3	14 11	+ 6	—	27·4
Hong Kong		42·2	305	9 50	PPP	14 15	+ 6	17·4	24·0
Vladivostok		46·4	341	e 8 22	− 2	e 15 8	− 2	—	—
Honolulu T.H.		54·3	64	—	—	e 24 12	?	25·6	—
Irkutsk		65·2	331	e 10 41	+ 1	e 19 18	− 4	e 26·8	—
Almata		78·4	315	e 12 18	+19	—	—	—	—
Andijan		81·4	311	e 12 15	0	—	—	—	—
Tashkent		83·9	312	e 12 39	+11	e 23 49	PS	e 30·8	53·2
Scoresby Sund		109·3	358	—	—	25 3	[− 7]	56·8	—
De Bilt		120·6	336	e 20 24	PP	—	—	e 56·8	—
Stuttgart		121·2	332	—	—	e 35 45?	?	e 69·2	—
Granada		136·0	331	i 22 5	PP	e 34 43	?	74·8	81·9

Additional readings :—
Sydney eS = +16m.15s.
Vladivostok i = +8m.26s.
Irkutsk e = +13m.26s. and +23m.11s. = SS − 18s.
Scoresby Sund +28m.33s. = PS + 12s.
Long waves were also recorded at Wellington, Melbourne, Koti, Berkeley, Ottawa, Kucino, Helsingfors, Copenhagen, Kew, and Feldberg.

Aug. 6d. 18h. 16m. 10s. Epicentre 56°·0N. 110°·3E. N.1.

A = −·194, B = +·525, C = +·829 ; D = +·938, E = +·347 ;
G = −·288, H = +·778, K = −·559.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Irkutsk		5·1	226	i 1 1	−12	—	—	2·2	—
Chiufeng		16·3	164	e 3 46	+ 1	8 2	L	(8·0)	—
Vladivostok		18·9	124	4 16	− 1	7 54	+10	e 9·0	10·4
Almata		24·7	253	e 5 14	− 3	9 34	− 2	12·5	13·7
Zi-ka-wei	z.	26·0	158	e 5 26	− 3	10 18	+20	—	17·8
Kobe		27·2	131	e 5 41	+ 1	—	—	e 14·8	17·7
Osaka		27·4	130	5 7	−35	11 4	SS	14·0	17·2
Sumoto	E.	27·5	132	e 5 53	+10	e 14 13	L	(e 14·2)	16·1
	N.	27·5	132	e 5 39	− 4	e 14 35	L	(e 14·6)	17·1
	z.	27·5	132	e 5 39	− 4	e 14 27	L	(e 14·4)	16·1
Koti		27·5	136	e 5 42	− 1	14 14	?	17·5	—
Andijan		28·9	254	e 6 1	+ 6	e 10 39	− 8	13·5	16·8
Tashkent		30·2	260	e 5 42	−25	10 44	−23	14·7	16·9
Hong Kong		33·8	175	11 54	S	(11 54)	− 9	(15·2)	20·9
Kucino		38·8	301	7 20	− 2	e 13 14	− 4	20·1	25·0
Pulkovo		40·1	310	i 7 32	− 1	13 32	− 6	19·8	25·0
Helsingfors		42·2	313	—	—	e 14 17	+ 8	e 20·5	—
Manila		42·2	165	7 45	− 5	14 23	+14	21·4	25·1
Upsala		45·3	316	i 8 16	+ 1	—	—	—	25·2
Theodosia		46·4	290	i 8 23	− 1	e 15 11	+ 1	e 22·5	—
Simferopol		47·1	290	8 28	− 1	e 15 27	+ 7	—	—
Königsberg		47·3	309	i 8 31	0	e 15 23	0	e 21·9	—
Yalta		47·4	290	e 8 31	− 1	—	—	—	—
Scoresby Sund		49·1	342	8 49	+ 5	15 57	+ 9	25·8	—
Bergen		49·5	321	—	—	e 22 50	?	26·5	—
Lund		49·8	315	8 51	+ 1	—	—	—	—
Copenhagen		50·1	315	8 53	+ 1	16 2	0	—	—
Potsdam		52·2	311	e 9 26	+18	e 16 26	− 5	e 34·8	36·8
Hamburg		52·6	314	i 9 12	+ 1	e 23 50?	?	—	31·5
Budapest		52·9	303	9 15	+ 2	e 22 50?	?	e 26·8	34·3
Vienna		53·6	306	i 9 20	+ 2	—	—	—	30·8
Prague		53·8	308	e 24 37	?	e 28 22	?	e 33·1	34·3
Jena		53·9	310	e 9 20	− 1	—	—	e 32·8	33·8
Cheb		54·1	309	e 24 36	?	e 27 45	?	e 33·8	34·8
Göttingen		54·7	312	—	—	e 23 50	?	—	37·6

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.
Belgrade		54·8	299	e 9 22	− 5	—	—	e 34·4	—
Graz		54·9	305	i 9 27	− 1	e 17 26	+18	e 24·8	35·8
Zagreb		55·6	304	e 9 34	+ 1	—	—	—	35·6
De Bilt		55·7	315	i 9 35	+ 1	—	—	e 29·8	35·8
Feldberg		56·1	312	i 9 35	− 2	—	—	—	31·2
Durham		56·2	320	17 39	S	(17 39)	+14	—	37·0
Karlsruhe		56·6	310	9 44	+ 4	—	—	—	—
Stuttgart		57·1	310	i 9 40	− 4	e 17 38	0	e 35·5	37·9
Uccle		57·1	315	i 9 43	− 1	e 17 40	+ 2	e 30·8	37·0
Strasbourg		57·3	311	i 9 31	−14	e 17 51	+11	e 36·8	—
Treviso		57·5	306	e 18 50?	?	e 26 50?	?	—	37·8
Venice		57·5	306	e 14 37	?	e 26 10	?	—	—
Zurich		57·8	309	i 9 49	0	—	—	—	—
Chur		57·8	309	i 9 49	0	—	—	—	—
Kew		58·3	319	e 9 54	+ 2	—	—	34·8	40·2
Oxford		58·4	320	—	—	e 17 57	+ 2	e 28·8	40·3
Neuchatel		58·8	311	i 13 56	PPPP	—	—	—	—
Piacenza		59·1	307	e 10 50	(0)	—	—	—	38·3
Paris		59·3	315	—	—	e 28 50?	?	37·8	37·8
Prato		59·3	305	e 30 50	?	33 11	?	—	37·4
Ivigtut		61·6	349	i 10 18	+ 2	—	—	37·8	—
Tortosa		66·5	310	e 10 48	− 1	—	—	e 41·8	42·9
Alicante		68·5	309	e 13 41	PP	—	—	e 44·4	—
Toledo		69·3	313	11 6	0	e 21 8	(+ 8)	e 36·0	46·3
Almeria		71·0	310	i 11 11	− 6	e 21 10	PS	43·4	45·9
Granada		71·3	311	i 10 26	−53	i 20 33	− 4	43·4	47·6
Malaga		72·1	311	e 11 30	+ 7	e 21 8	+22	—	—
Tinemaha	E.	78·3	38	e 12 4	+ 5	—	—	—	—
Ottawa		78·5	5	—	—	e 22 5	+ 6	e 41·8	—
Haiwee	N.	79·2	39	e 12 10	+ 6	—	—	—	—
Mount Wilson		80·9	40	e 12 19	+ 6	—	—	—	—
Pasadena		80·9	40	i 12 18	+ 5	—	—	—	—
Riverside		81·3	40	e 12 23	+ 8	—	—	—	—
Fordham		83·1	4	e 12 36	+12	e 22 51	+ 3	e 38·8	—
Florissant		83·6	18	e 12 29	+ 3	e 22 53	0	e 45·3	—
St. Louis	N.	83·8	18	e 12 30	+ 3	—	—	—	—
La Paz	Z.	140·5	358	e 22 33	PP	—	—	—	—

Additional readings and note :—
Chiufeng SN = +8m.9s., iZ = +8m.47s., iE = +8m.50s.
Koti iZ = +15m.6s.
Hong Kong gives S as P and L as S.
Helsingfors ePP = +9m.29s., eZ = +14m.26s., eSSE = +17m.29s., eSSSN = +18m.32s., eSSSE = +18m.36s.
Upsala e = +10m.0s. = P_cP +1s.
Königsberg eEN = +8m.40s., ePPEN = +10m.25s., ePPPZ = +11m.10s., e?E = +15m.50s. ?
Scoresby Sund +10m.44s. = PP +13s.
Copenhagen +10m.50s. = PP +9s. and +19m.38s. = SS +14s.
Potsdam eN = +10m.26s. = P_cP +2s., eE = +22m.26s., iEN = +28m.27s.
Vienna P? = +12m.44s., PP? = +13m.52s.
Jena e = +28m.50s., eE = +29m.32s.
Belgrade e = +12m.34s., +12m.56s., +21m.45s., +28m.16s., and +30m.14s.
Zagreb i = +9m.40s., e = +11m.40s., +12m.50s ?, +27m.10s., and +30m.30s.
Feldberg e = +13m.44s., +25m.8s., and +29m.37s.
Durham S? = +25m.59s.
Stuttgart eZ = +9m.47s., ePZ = +13m.2s., e = +26m.20s. and +30m.8s.
Strasbourg e = +24m.52s. and +29m.13s.
Granada i = +14m.3s. = PP +14s.
Long waves were also recorded at Edinburgh, Bidston, Stonyhurst, Phu-Lien, Nagoya, Hukuoka, Bombay, and Nagasaki.

Aug. 6d. Readings also at 1h. (Scoresby Sund), 2h. (La Paz and San Juan), 3h. (Apia), 4h. and 11h. (Andijan), 16h. (Wellington), 23h. (Lick and Mizusawa).

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Aug. 7d. 2h. 11m. 37s. Epicentre **3°·0S. 143°·5E.** R.1.

(as on 1931 May 4d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		15·3	267	i 3 21	−11	i 6 11	−11	9·0	—
Manila		28·4	309	i 5 46	− 5	10 49	+11	15·9	17·4
Titizima		30·1	359	6 6	0	11 13	+ 5	—	—
Riverview		31·7	168	i 6 28	+ 8	i 11 42	+11	—	18·4
Sydney		31·7	168	i 5 23	−57	i 11 47	+16	17·4	19·9
Adelaide		32·3	188	i 6 21	− 4	i 11 31	− 9	i 14·0	21·1
Naha		33·0	332	6 32	0	11 53	+ 2	—	—
Melbourne		34·8	178	e 6 33	−14	12 18	0	15·8	20·4
Taihoku		35·2	324	e 6 50	− 1	12 26	+ 2	15·2	—
Batavia		36·7	264	e 7 50	+46	i 16 9	?	22·8	—
Koti		37·7	348	e 7 10	− 2	i 13 10	+ 8	15·7	18·2
Nagasaki		38·0	342	e 7 11	− 4	13 12	+ 6	e 16·3	21·2
Hong Kong		38·2	314	6 58	−19	13 0	− 9	—	25·6
Sumoto		38·2	350	7 15	− 2	13 7	− 2	18·5	20·4
Osaka		38·4	350	7 15	− 3	13 19	+ 7	18·7	—
Kobe		38·5	350	e 7 16	− 3	e 13 19	+ 5	e 18·1	19·0
Hukuoka		38·6	344	e 7 16	− 4	e 13 25	+10	19·8	—
Nagoya		38·6	353	e 7 23	+ 3	—	—	e 16·5	—
Tokyo		38·8	356	7 24	+ 2	13 34	+16	—	—
Tyosi		38·8	357	e 7 27	+ 5	e 13 28	+10	e 16·5	—
Perth		38·9	219	e 7 8	−15	i 13 13	− 7	14·8	—
Toyooka	N.	39·4	350	i 7 30	+ 3	i 13 33	+ 6	e 16·5	22·5
Zi-ka-wei		40·1	330	i 7 28	− 5	13 41	+ 3	20·0	25·2
Mizusawa	N.	42·2	357	7 54	+ 4	14 12	+ 3	18·4	—
Morioka		42·8	358	7 54	− 1	14 28	+10	—	—
Phu-Lien		43·3	305	7 56	− 3	14 23	− 2	18·4	25·4
Medan		45·3	278	i 8 8	− 7	i 14 28	−27	—	—
Apia		45·5	106	e 8 20	+ 3	—	—	e 19·9	—
Arapuni		45·8	143	—	—	15 23?	+21	21·8	27·4
Wellington		47·5	148	i 8 35	+ 3	15 38	+12	26·4	27·8
Christchurch		48·1	151	i 8 38	+ 1	i 15 49	+15	—	—
Tientsin		48·6	333	i 9 10	+29	—	—	—	—
Chiufeng		49·8	334	e 8 50	0	15 55	− 3	25·8	29·0
Calcutta		59·5	298	10 6	+ 5	17 58	−11	29·7	32·8
Honolulu T.H.		62·3	64	i 10 33	+13	i 19 5	PS	e 31·2	—
Colombo		64·3	279	10 33	− 1	18 51	−20	23·5	35·2
Irkutsk		64·4	335	10 30	− 5	20 18	(− 6)	—	38·3
Hyderabad		67·3	291	10 57	+ 3	19 33	−15	35·1	42·5
Dehra Dun		70·6	305	11 13	− 1	20 33	+ 5	28·6	—
Bombay		72·8	291	11 53	+25	20 37	−17	35·1	40·5
Almata		75·3	317	e 11 46	+ 4	21 23	− 1	33·4	—
Andijan		77·8	313	e 11 53	− 4	21 48	− 4	e 39·4	—
Tashkent		80·3	313	e 10 53	−76	e 20 38	−101	35·4	45·3
Sitka		87·7	33	i 12 58	+12	i 23 27	− 7	i 35·8	—
Victoria	E.	94·4	42	13 29	+11	24 3	[+ 5]	—	—
	N.	94·4	42	13 31	+13	24 33	− 4	40·5	52·1
Tananarive	E.	94·7	250	13 8	−11	22 55	[−64]	42·4	49·6
Seattle		95·0	43	e 17 45	PP	e 24 21	{+ 6}	e 38·5	—
Berkeley		95·1	52	e 13 35	+14	e 24 16	{+ 1}	e 32·1	—
Lick		95·7	53	e 13 41	+17	—	—	—	—
Santa Barbara	N.	97·2	55	e 17 44	PP	—	—	—	—
Tinemaha	E.	98·3	52	e 13 46	+10	—	—	—	—
Haiwee	N.	98·6	53	e 14 3	+26	—	—	—	—
Mount Wilson		98·6	56	e 13 49	+12	—	—	—	—
Pasadena		98·6	56	e 13 45	+ 8	i 24 34	{− 9}	i 30·5	—
Riverside	E.	99·3	56	13 50	+10	e 24 38	{−10}	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Jolla		99·4	57	e 14 2	+21	—	—	—	—
Kucino		101·2	327	13 51	+ 2	25 34	− 3	e 44·5	57·8
Pulkovo		104·1	331	e 14 5	+ 3	25 55	− 7	37·4	64·6
Tucson		104·8	57	—	—	i 25 8	[+19]	47·5	—
Theodosia		104·9	317	e 14 7	+ 1	—	—	47·4	—
Simferopol		105·8	316	e 14 18	+ 8	—	—	e 58·9	—
Helsingfors	z.	106·4	332	e 14 23?	+10	e 26 53	[+117]	e 39·4	—
Upsala		109·8	335	e 14 19	−11	e 25 5	[− 7]	e 43·4	65·9
Helwan		110·7	301	e 15 58	+84	28 38	PS	—	70·9
Königsberg		110·8	329	e 19 18	PP	e 25 29	[+12]	—	49·4
Scoresby Sund		111·8	355	14 47	+ 7	25 23	[+ 2]	e 46·2	—
Lund		114·0	332	19 17	PP	27 17	{+42}	42·4	—
Bergen		114·4	338	19 42	PP	e 35 23?	SS	54·4	66·4
Copenhagen		114·4	332	14 59	+ 7	25 23	[− 8]	—	—
Budapest		114·8	322	e 19 32	PP	27 32	?	39·4	64·4
Belgrade		115·0	319	e 18 46	+13	e 29 22	PS	e 60·5	71·6
Potsdam		115·9	330	e 19 23?	PP	i 29 57	PS	e 48·4	60·4
Vienna		116·1	323	e 18 39	+ 4	—	—	e 47·4	66·4
Prague		116·3	325	e 18 51	[+15]	—	—	e 46·4	63·4
Hamburg		116·7	331	e 18 32	[− 5]	e 25 40	[0]	e 46·4	69·4
Graz		117·2	323	e 19 50	PP	e 29 24	PS	e 47·4	62·7
Cheb		117·5	327	e 19 54	PP	e 29 36	PS	e 52·4	70·9
Jena		117·5	327	e 18 53	[+14]	e 25 41	[− 1]	e 47·4	62·4
Zagreb		117·5	321	e 15 14	+ 7	e 25 44	[+ 2]	e 51·4	60·2
Göttingen		117·9	330	i 19 1	[+20]	e 29 56	PS	e 48·4	69·8
Triest		118·9	322	e 16 10	?	e 30 3	PS	e 42·4	62·6
Florissant		119·4	45	e 15 27	+11	i 27 35	{+23}	—	60·4
Feldberg		119·5	329	e 18 56	[+12]	i 25 45	[− 4]	—	68·1
St. Louis		119·8	45	e 18 42	[− 3]	e 27 34	{+19}	e 50·7	60·7
Stuttgart		119·9	327	e 15 18	− 1	e 27 43	{+27}	e 48·4	75·7
Treviso		119·9	322	e 19 8	[+22]	28 20	?	63·4	—
Venice		119·9	322	20 11	PP	29 23?	SKSP	—	—
De Bilt		120·0	332	e 15 22	+ 3	e 29 59	PS	e 49·4	62·0
Trenta		120·0	314	e 18 53	[+ 7]	29 23	SKSP	—	68·4
Chicago		120·1	42	e 20 18	PP	e 27 40	{+23}	59·7	—
Karlsruhe		120·2	327	19 4	[+18]	—	—	e 62·4	—
Edinburgh		120·7	339	e 20 23?	PP	i 27 38	{+17}	50·4	72·9
Chur		120·8	325	e 18 53	[+ 5]	—	—	—	—
Naples		120·8	317	e 20 18	PP	e 31 3	?	65·4	76·4
Strasbourg		120·8	330	15 23	0	25 57	[+ 4]	48·4	77·1
Durham		121·0	336	e 20 20	PP	30 5	PS	—	64·4
Zurich		121·0	325	e 18 52	[+ 4]	—	—	—	—
Ivigtut		121·1	6	—	—	30 5	PS	54·4	—
Uccle		121·2	331	e 15 23	− 1	i 30 10	PS	49·4	62·6
Prato		121·4	320	e 19 23	[+34]	28 23	{+57}	40·4	—
Catania		121·6	313	e 20 20	PP	29 14	?	e 70·6	80·2
Piacenza		121·7	323	e 19 1	[+12]	28 38	?	—	76·0
Stonyhurst		122·0	335	e 17 14	?	30 24	PS	58·4	66·4
Neuchatel		122·2	326	e 18 52	[+ 1]	—	—	—	—
Ann Arbor		122·5	39	e 20 53	PP	e 30 59	PS	e 56·4	—
Bidston		122·6	336	i 19 47	PP	e 30 33	PS	e 50·4	73·0
Kew		122·9	334	e 19 1	[+ 8]	e 25 59	[0]	47·4	71·9
Oxford		123·1	336	i 20 41	PP	i 26 3	[+ 3]	e 48·4	78·9
Paris		123·4	330	e 18 57	[+ 3]	—	—	44·4	75·4
Toronto		124·4	37	e 19 3	[+ 7]	31 23	PS	58·4	68·4
Buffalo		125·2	36	e 19 6	[+ 9]	e 30 40	PS	—	64·9
Ottawa		125·5	33	e 20 37	PP	e 33 29	?	58·4	—
Pittsburgh		125·8	39	e 21 3	PP	e 31 9	PS	e 59·1	—
Charlottesville		128·1	41	—	—	e 31 38	PS	e 60·2	—
Barcelona		128·2	323	e 21 14	PP	e 38 39	SS	e 51·5	80·3
Columbia		128·4	47	e 21 23	PP	e 31 41	PS	59·4	—
Georgetown		128·5	40	e 19 9	[+ 5]	i 22 54	SKP	67·3	—
Fordham		129·4	36	e 19 14	[+ 8]	i 31 46	PS	e 59·4	—
Tortosa	N.	129·6	324	e 18 58	[− 8]	—	—	e 52·4	83·8
Harvard		129·9	32	e 19 15	[+ 9]	i 31 40	PS	e 57·9	—

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.
Algiers	130·4	318	e 19 28	[+21]	31 38	PS	58·4	78·4
Santiago	131·4	140	(22 29)	PKS	—	—	22·5	—
Alicante	131·8	322	e 19 20	[+10]	(e 39 19)	SS	e 39·3	—
Toledo	132·8	326	e 19 11	[− 1]	27 24	[+57]	e 55·1	77·9
Almeria	133·8	321	19 13	[0]	32 5	PS	65·9	81·6
Granada	134·4	323	i 19 21	[+ 7]	—	—	e 72·4	82·5
Malaga	135·2	322	19 20	[+ 5]	e 35 8	?	43·2	—
San Fernando	136·4	324	20 3	?	—	—	—	87·9
La Plata	137·1	154	22 57	PKS	—	—	58·4	—
Port au Prince	141·6	62	e 19 30	[+ 6]	—	—	—	—
La Paz	143·1	123	i 19 33	[+ 6]	29 13	{−29}	68·4	—
San Juan	147·1	57	i 19 49	[+12]	e 32 47	SKSP	61·4	—

Additional readings :—
Amboina iN = +3m.10s.
Manila iPEN = +5m.49s., SSN = +12m.40s., SSSN = +13m.11s.
Riverview PPP = +7m.43s., PPPP = +7m.49s., SS = +13m.40s., SSS = +14m.11s., SSSS = +14m.22s.
Sydney PP = +7m.59s., SS = +13m.47s.
Adelaide iPP = +7m.19s., iPPP = +7m.32s., i = +11m.43s., and +12m.9s.
Melbourne e = +7m.9s., PP = +8m.3s., SS = +14m.28s.
Taihoku PP = +8m.27s.
Batavia i = +9m.20s. = P_cP − 11s.
Koti iPP = +7m.25s.
Hong Kong ? = +7m.16s., PP = +8m.34s., SS = +15m.34s.
Sumoto SE = +13m.15s., SZ = +13m.31s.
Kobe iPN = +7m.24s., iE = +9m.33s. = P_cP − 4s., iSE = +13m.22s.
Perth eSS = +14m.58s.
Toyooka iPZ = +7m.23s.
Zi-ka-wei iN = +9m.23s. = P_cP − 19s., SSE = +16m.35s.
Phu-Lien PP = +9m.37s.
Wellington PP = +11m.13s., SS = +19m.43s., SSS = +22m.23s. ?
Christchurch iPPPN = +11m.41s., iN = +18m.47s., SS = +19m.43s., SSS = +20m.34s.
Honolulu T.H. ePP = +13m.10s., i = +15m.36s., e = +26m.13s.
Irkutsk PP = +13m.20s., SSS = +27m.23s. ?
Sitka iPS = +24m.33s.
Tananarive SKSN = +24m.23s?, PSE = +24m.35s., PSN = +24m.44s., E = +25m.50s. and +28m.32s., SSE = +29m.35s., SSN = +30m.38s., SSSN = +33m.53s.
Seattle e = +28m.31s.
Berkeley eE = +13m.39s. and +24m.19s., eE = +44m.9s. and +50m.59s.
Tinemaha eE = +17m.52s. = PP + 22s.
Haiwee eN = +17m.58s.
Pasadena ePE = +13m.49s., eZ = +17m.29s. = PP − 3s., eEN = +17m.53s.
La Jolla eEN = +18m.2s.
Kucino PP = +18m.1s., SKS = +24m.21s.
Pulkovo PP = +18m.23s., PPP = +20m.59s., SKS = +24m.37s.
Tucson e = +17m.17s., ePP = +18m.30s., ePS = +27m.57s., eSS = +33m.48s., eSSS = +37m.35s.
Theodosia PP = +18m.25s.
Helsingfors eZ = +18m.43s. and +29m.10s.
Upsala eP = +18m.30s., iPP = +19m.6s., ePPPE = +21m.30s., ePS = +28m.23s., eSSE = +34m.29s., eSSN = +34m.33s., eSSSE = +38m.57s.
Helwan PP = +25m.8s.
Königsberg eN = +25m.0s., iPSE = +28m.51s., eE = +34m.45s. = SS + 14s., eN = +47m.23s. ?
Scoresby Sund PKP = +18m.41s., PP = +19m.18s., PS = +28m.47s., SS = +35m.5s., eN = +40m.59s.
Lund +19m.17s. = PP − 9s.
Bergen e = +25m.23s. ?, +27m.23s. ?, and +30m.23s. ?
Copenhagen PP = +19m.35s., PPP = +21m.59s., eN = +27m.23s., PS = +29m.5s., eE = +30m.59s., SSS = +35m.29s.
Belgrade e = +19m.40s. = PP + 7s., +20m.37s., and +29m.25s.
Potsdam iEN = +19m.54s., iN = +27m.48s. and +35m.56s. = SS + 18s.
Vienna PKP = +19m.54s. = PP + 13s., PPP = +27m.48s., PPP = +31m.53s.
Prague e = +28m.0s. and +34m.53s.
Hamburg ePPZ = +19m.49s., ePSE = +29m.30s. = PS − 1s., eSSE = +36m.23s. ?
Graz e = +27m.54s.
Cheb ePPP? = +25m.33s. = SKS − 9s., eSS? = +36m.21s.
Jena eEZ = +19m.59s. = PP + 8s., eE = +24m.23s. and +27m.55s. eN = +27m.59s., eE = +29m.35s. = PS − 4s., eN = +29m.53s., eE = +36m.3s. = SS + 4s., eN = +36m.23s.
Zagreb ePKP = +19m.7s., ePP = +19m.57s., ePPP = +22m.31s., ePS = +27m.57s., ePPS = +29m.57s.

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Göttingen eEZ = +20m.5s. =PP +11s., eEN = +31m.29s. and +36m.29s. = SS +25s.
Triest e = +22m.43s. =PPP +16s.
Florissant eZ = +18m.26s. =PKP −18s., eEZ = +20m.16s. =PP +11s., iPPZ = +20m.22s., iPSE = +30m.11s., iSSN = +36m.49s.
Feldberg e = +19m.0s. =PKP +16s., +20m.7s. =PP +2s., i = +21m.16s., e = +22m.37s., i = +27m.56s., and +29m.59s. =PS +1s.
St. Louis iPP = +20m.23s., eN = +26m.32s. and +28m.3s., ePSEN = +30m.11s., eSSN = +36m.44s.
Stuttgart ePKPZ = +18m.53s., iPKPZ = +19m.5s., ePP = +19m.57s., i = +20m.36s., e = +21m.6s. and +22m.41s., ePPPE = +23m.43s., eSKSZ = +25m.23s., eSKSEN = +25m.44s., eS = +28m.23s., e = +29m.23s., ePS = +30m.1s., eEN = +35m.35s. and +40m.23s.
De Bilt iPPZ = +20m.15s.
Chicago ePS = +30m.14s., iSS = +36m.54s.
Edinburgh i = +30m.17s. =PS +8s.
Strasbourg ePKP = +18m.31s., iPP = +20m.23s., PS = +29m.57s., PPS = +30m.53s.
Ivigtut PP = +20m.29s., SS = +37m.11s.
Uccle ePKP = +18m.55s., PP = +20m.19s.
Piacenza P = +20m.28s. =PP +7s.
Stonyhurst ePP? = +20m.26s., e = +32m.46s. and +49m.34s.
Ann Arbor eN = +33m.5s., +37m.23s. =SS +18s. and +48m.23s.
Bidston i = +20m.53s.
Kew ePP = +20m.30s., iPPP = +23m.15s., ePKPPKPEN = +28m.50s., iPSEN = +30m.31s., iZ = +35m.13s., iSSE = +37m.58s., iPSSEN = +40m.31s., iSSE = +40m.39s.
Oxford i = +28m.47s.. and +30m.29s. =PS −1s.
Paris PP = +20m.42s.
Toronto ePP = +20m.46s., ePPPE = +23m.44s., iE = +28m.57s., PSN = +31m.1s., iSSN = +37m.38s., iSSE = +37m.45s. ; T_0 = 2h.11m.26s.
Buffalo eP = +16m.2s., iPP = +21m.9s., iPPS = +32m.28s.
Ottawa ePPN = +22m.43s., eSKSPE = +33m.29s., ePSN = +33m.53s., eSKKS= +37m.37s., eSSS = +45m.44s.
Pittsburgh eSS = +37m.55s.
Charlottesville ePPP = +23m.39s., eSS = +38m.33s.
Columbia i = +22m.40s., eSS = +38m.24s.
Georgetown iPKPZ = +19m.13s., ePPZ = +19m.19s.
Fordham iPPZ = +21m.38s., eSS = +38m.44s.
Harvard eN = +21m.11s. =PP −6s., i = +22m.34s., e = +34m.8s., eSS = +38m.45s., e = +46m.45s. and +50m.53s.
Toledo i = +22m.23s., PPZ = +22m.44s., i = +23m.26s., e = +35m.29s.
Almeria PP = +21m.47s., i = +26m.5s., +34m.53s., and +37m.10s., SS = +38m.53s.
Granada PP = +21m.51s., i = +22m.47s. =PKS +5s., PPP = +25m.39s., SPPP = +27m.42s., SPSP = +29m.6s., SKSP = +32m.13s., SS = +39m.11s., SSP = +42m.53s., SSS = +44m.27s., i = +54m.21s., G = +57m.29s.
Port au Prince iNE = +20m.8s., iNW = +20m.33s., i = +21m.40s., e = +24m.7s. and +25m.40s.
La Paz PPZ = +23m.4s., SKSE = +26m.38s., iE = +29m.55s. =SKKS −7s., iSSN = +41m.51s., iSSE = +42m.29s.
San Juan e = +21m.12s., ePP = +22m.8s., eSS = +42m.3s.
Long waves were also recorded at Dakar, Cape Town, Besançon, and Bagnères.

Aug. 7d. 10h. 49m. 45s. Epicentre 40°·0N. 60°·0E. (as on 1925 Dec. 10d.). X.

A = +·383, B = +·664, C = +·643 ; D = +·866, E = −·500 ; G = +·321, H = +·557, K = −·766.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent		7·1	77	e 1 34	− 7	—	—	e 2·6	3·6
Andijan		9·5	81	e 2 16	+ 2	e 4 2	+ 1	e 4·6	6·8
Almata		13·1	70	e 4 4	+61	(e 6 3)	+34	e 6·0	—
Kucino		21·5	325	e 3 51	−54	e 8 27	− 9	12·6	16·6
Pulkovo		27·1	327	5 37	− 2	10 21	+ 4	15·2	18·2
Helsingfors		29·6	325	—	—	e 11 45	+47	e 16·2	—
Copenhagen		34·7	315	—	—	11 57	−20	22·3	—
Hamburg		36·0	310	—	—	e 14 15?	?	e 25·2	27·2
Stuttgart	z.	36·7	303	e 6 20	−44	—	—	e 23·3	—
Feldberg		37·0	305	—	—	e 14 27	?	e 20·6	26·4
Granada		48·7	289	—	—	e 14 21	?	e 32·0	36·4
Scoresby Sund		50·1	334	—	—	16 15?	+13	28·2	—
Adelaide		104·1	124	—	—	e 26 39	+37	30·2	30·4

For Notes see next page.

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NOTES TO AUGUST 7d. 10h. 49m. 45s.

Additional readings :—
Tashkent e = +46s. and +1m.56s.
Granada i = +19m.4s. = SS + 5s.
Long waves were also recorded at Hong Kong and at other European stations.

Aug. 7d. 23h. 34m. 47s. Epicentre 34°·7N. 134°·5E. (as on 1931 Feb. 4d.). X

A = −·576, B = +·586, C = +·569.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·5	138	0 5	− 2	0 9	− 4	—	0·2
Kobe	0·5	92	0 10	+ 3	0 18	S_g	—	0·3
Osaka	0·8	94	0 13	+ 2	(0 21)	0	0·4	0·9
Koti	1·4	215	e 0 26	+ 6	e 0 47	S_g	—	0·9

Aug. 7d. Readings also at 2h. and 3h. (La Paz), 4h. (Prato), 5h. (Lick), 7h. (Andijan, Almata, and La Paz), 8h. (Andijan), 11h. (Alicante and near Manila), 12h. (Perth, Adelaide, Melbourne, Riverview, near Amboina), 13h. (Andijan). 14h. (Budapest), 16h. (Paris), 18h. (Port au Prince), 21h. (Lick).

Aug. 8d. 0h. 57m. 6s. Epicentre 1°·3S. 92°·3E. N.3.

A = −·040, B = +·999, C = −·023 ; D = +·999, E = +·040 ;
G = ·000, H = −·023, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		8·1	54	1 38	−17	i 3 11	−15	—	—
Colombo		14·9	304	5 43	S	(5 43)	−30	—	14·5
Batavia		15·3	109	e 3 33	+ 1	6 21	− 1	—	—
Calcutta		24·1	352	(5 30)	+19	(9 30)	+ 5	(12·0)	—
Bombay	E.	27·8	318	—	—	e 10 54	+26	—	—
Hong Kong		31·9	42	—	—	11 28	− 6	—	18·4
Tashkent		47·5	337	—	—	e 16 0	+34	e 28·9	32·7
Kucino		72·0	331	—	—	e 21 50	PS	e 37·8	42·0
Copenhagen		85·4	327	—	—	24 24	PS	56·9	—
De Bilt		89·3	323	—	—	e 27 24	?	e 57·9	—
Granada		95·5	308	—	—	e 42 42	?	57·9	64·9
Scoresby Sund		99·1	342	—	—	25 6	−13	56·9	—

Additional readings and note :—
Calcutta readings have been *diminished* by 13m.
Kucino e = +26m.24s.
Long waves were also recorded at Kew, Uccle, Stuttgart, Pulkovo, and Helsingfors.

Aug. 8d. 0h. 58m. 24s. Epicentre 46°·7N. 7°·2E. (as on 1927 Feb. 28d.). X.

A = +·680, B = +·086, C = +·728.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	0·3	331	i 0 5	+ 1	e 0 18	S_g
Zurich	1·1	55	i 0 18	+ 2	i 0 37	S_g
Chur	1·6	85	i 0 22	− 1	e 0 47	S*
Ravensburg	1·9	57	—	—	e 0 58	S*
Stuttgart	2·4	33	—	—	e 1 18	S*

Neuchatel gives also eP_g = +8s.

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Aug. 8d. 4h. 7m. 8s. Epicentre 8°·0N. 94°·0E. (as on 1930 Dec. 13d.). R.2.

$A = -\cdot069$, $B = +\cdot988$, $C = +139$; $D = +\cdot998$, $E = +\cdot070$; $G = -\cdot010$, $H = +\cdot139$, $K = -\cdot990$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo		14·1	266	3 53	+36	—	—	—	12·5
Calcutta		15·5	340	2 6	−89	6 21	− 6	9·7	—
Phu-Lien		17·7	42	e 4 0	− 3	e 7 21	+ 4	8·9	—
Hyderabad		17·9	303	4 10	+ 5	7 26	+ 4	—	13·7
Bombay		23·3	300	5 10	+ 6	9 21	+11	12·1	—
Hong Kong		24·1	51	5 12	+ 1	9 32	+ 7	12·0	15·2
Agra	N.	24·4	324	4 46	−28	8 57	P_cP	—	—
Manila		27·2	74	5 56	+16	10 13	− 5	13·1	15·5
Andijan		38·0	332	e 7 10	− 5	—	—	—	—
Almata		38·3	340	e 7 18	0	—	—	—	—
Tashkent		39·9	331	—	—	e 13 15	−20	e 18·9	25·4
Irkutsk		45·1	9	e 8 52?	+38	16 52?	?	24·9	27·8
Vladivostok		48·3	38	e 10 11	(+ 1)	e 15 22	−15	e 27·0	—
Kucino		64·8	330	e 10 34	− 3	19 2	−15	31·7	42·5
Pulkovo		70·1	332	e 11 4	− 7	e 20 10	−12	20·5	—
Helsingfors		72·7	331	—	—	e 20 38	−15	e 22·9	—
Copenhagen		78·7	327	—	—	21 52	−10	46·9	—
Stuttgart		80·6	320	e 12 8	− 3	e 21 58	−24	e 55·9	—
De Bilt		83·0	323	—	—	e 22 37	−10	e 48·9	—
Kew		86·5	322	e 12 41	0	—	—	e 55·9	—
Scoresby Sund		90·2	344	12 58	0	23 28	[− 6]	40·8	—
Granada		91·2	309	e 17 16	?	i 23 34	[− 6]	e 58·7	59·9
St. Louis	E.	133·2	5	i 22 42	PKS	—	—	—	—
La Paz		160·6	242	e 20 5	[+10]	—	—	79·9	89·0

Additional readings :—
Tashkent e = +6m.52s. ? and +15m.52s.
Long waves were also recorded at Uccle, Feldberg, and Kodaikanal.

Aug. 8d. 8h. 54m. 24s. Epicentre 37°·0N. 58°·5E. (as on 1930 Oct. 6d.). R.3.

$A = +\cdot417$, $B = +\cdot681$, $C = +\cdot602$; $D = +\cdot853$, $E = -\cdot522$; $G = +\cdot314$, $H = +\cdot513$, $K = -\cdot799$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent		9·4	59	e 1 55	−18	e 3 30	−29	—	4·5
Andijan		11·4	66	e 2 45	+ 5	e 4 47	− 1	5·5	7·8
Almata		15·4	60	e 3 49	+15	e 6 49	+25	—	—
Ksara	E.	18·7	267	e 4 14	− 1	e 7 51	SS	—	—
Theodosia		19·1	302	e 4 14	− 6	e 7 46	− 2	—	—
Yalta		19·8	300	e 4 8	−19	—	—	—	—
Simferopol		20·0	301	e 4 23	− 7	e 7 57	− 9	—	—
Bombay		22·0	141	4 39	−12	—	—	—	—
Kucino		23·3	330	e 5 4	0	e 9 7	− 3	12·6	16·8
Pulkovo		29·0	331	6 2	+ 6	10 58	+10	15·6	—
Belgrade		29·5	299	e 9 55	?	e 16 52	(+11)	e 23·0	—
Königsberg	E.	31·3	318	e 7 24	+67	e 10 54	−30	e 23·1	23·6
Helsingfors		31·4	330	e 7 4	+47	e 12 18	+52	e 15·6	—
Upsala		34·6	325	e 9 36?	(+12)	e 12 36?	+21	21·6	24·4
Copenhagen		36·0	319	—	—	13 36?	+60	23·6	—
Hamburg		37·0	314	e 8 36?	PP	e 15 36	SS	e 25·6	27·6
Piacenza		37·1	299	e 5 36	?	—	—	—	30·4
Stuttgart		37·3	307	e 7 2	− 7	e 15 36	SS	e 24·7	—
Feldberg		37·8	307	e 8 27	PP	e 13 25	+22	—	26·9
Strasbourg		38·3	306	—	—	e 15 43	SS	e 20·6	—
Granada		48·6	289	—	—	i 15 51	+10	31·7	32·6
Scoresby Sund		52·3	335	—	—	16 36	+ 3	23·6	—

For Notes see next page.

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NOTES TO AUGUST 8d. 8h. 54m. 24s.

Additional readings :—
Tashkent e = +2m.30s.
Helsingfors eN = +7m.19s. =PP +4s., ePPE = +8m.3s., eE = +9m.53s. and +11m.17s. =S −9s., eSN = +12m.21s., eE = +13m.9s. =SS +6s., eSSN = +14m.56s.
Strasbourg e = +10m.59s.
Long waves were also recorded at Agra, Vladivostok, Ottawa, and European stations.

Aug. 8d. 17h. 0m. 38s. Epicentre 39°·0N. 135°·5E. (as on 1930 March 29d.) X.

A = −·554, B = +·545, C = +·629 ; D = +·701, E = +·713 ;
G = −·449, H = +·441, K = −·777.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Toyooka	3·5	189	i 0 54	+ 4	i 1 39	S*	—	1·7
Nagoya	4·0	163	e 1 2	+ 5	1 50	+ 8	—	—
Osaka	4·3	180	1 1	0	(1 53)	+ 3	1·9	1·9
Kobe	4·3	184	1 1	0	1 50	0	—	1·9
Mizusawa	4·4	83	1 20	P*	2 20	S*	—	—
Vladivostok	4·9	324	i 1 10	0	e 2 15	+10	i 2·4	—
Tyosi	5·4	125	1 20	+ 3	2 24	L	(2·4)	—
Koti	5·6	196	i 1 14	− 6	i 2 12	−11	—	2·2
Matuyama	5·6	204	i 1 12	− 8	i 2 11	−12	—	2·2

Koti gives also SZ = +2m.16s.

Aug. 8d. 20h. 55m. 20s. Epicentre 3°·5S. 142°·0E. (as on 1931 May 30d.). X.

A = −·787, B = +·615, C = −·061 ; D = +·616, E = +·788 ;
G = +·048, H = −·038, K = −·998.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	27·7	312	7 5	?	10 20	− 7	12·1	—
Riverview	31·5	165	—	—	e 12 46	SS	e 19·0	20·8
Sydney	31·5	165	e 11 58	S	(e 11 58)	+30	e 17·7	20·2
Adelaide	31·6	185	—	—	i 17 10	(+17)	18·8	20·0
Hong Kong	37·5	315	8 44	PP	13 2	+ 3	—	20·1
Vladivostok	47·5	350	8 25	− 7	15 17	− 9	24·2	—
Irkutsk	64·2	336	e 10 31	− 3	19 11	+ 1	e 31·7	35·8
Andijan	77·1	314	e 11 59	+ 6	e 21 44	0	—	—
Tashkent	79·5	313	e 10 31	−94	i 20 3	−127	e 35·7	43·3
Scoresby Sund	112·2	354	19 22	PP	29 16	PS	58·7	—
La Paz z.	144·1	125	e 19 46	[+15]	—	—	—	—

Additional readings :—
Riverview i = +17m.0s. =S_gS +8s.
Adelaide e? = +13m.15s. =SS +8s.
Hong Kong SS = +15m.49s.
Tashkent e = +25m.4s. =SS −121s.
Scoresby Sund +37m.22s.
Long waves were also recorded at Berkeley, Ottawa, Wellington, Melbourne, Kucino, Pulkovo, and other European stations.

Aug. 8d. Readings also at 0h. (Apia), 2h. (Feldberg and La Paz), 5h. (Andijan), 10h. (Prato and Sumoto), 12h. (Apia and Sumoto), 13h. (Tashkent, Granada, Scoresby Sund, Irkutsk, Ottawa, and near La Paz), 14h. (Lick and Berkeley), 17h. (Sumoto), 18h. (Berkeley), 21h. (Manila), 22h. (Andijan and Berkeley), 23h. (Scoresby Sund).

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Aug. 9d. Readings at 0h. (Scoresby Sund), 1h. (Scoresby Sund, Helsingfors, Florissant, Ottawa, Pasadena, and San Juan), 2h. (Wellington), 3h. (San Juan, Port au Prince, Algiers, and Granada), 4h. (La Paz), 5h. (Irkutsk), 6h. (Sumoto, St. Louis, and Florissant), 7h. (St. Louis, Florissant, and Nagoya), 9h. (Wellington and Takaka), 10h. (Wellington, Takaka, Christchurch, Hastings, Kucino, Copenhagen, and Pulkovo), 14h. (Lick), 15h. (Collurania), 17h. (Tyosi), 20h. (Göttingen and Feldberg), 21h. (Tananarive), 23h. (Scoresby Sund).

Aug. 10d. 9h. 44m. 4s. Epicentre 52°·2S. 137°·2E. N.3.

A = −·450, B = +·416, C = −·790 ; D = +·679, E = +·734 ;
G = +·580, H = −·537, K = −·613.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		15·4	24	i 3 31	− 3	6 4	−20	i 7·0	9·4
Adelaide		17·3	4	i 4 2	+ 4	i 7 14	+ 5	i 7·7	9·4
Riverview		20·9	34	i 4 39	0	i 8 28	+ 4	e 9·7	11·9
Sydney		20·9	34	e 4 38	− 1	i 8 14	−10	10·4	11·4
Christchurch		25·0	84	e 5 22	+ 2	9 50	+ 9	—	—
Wellington		27·6	82	—	—	10 21	− 4	12·3	12·6
Agra	N.	94·6	310	—	—	e 38 40	?	—	—
La Paz		107·8	153	e 37 58	SSS	—	—	54·9	60·4
Berkeley		124·9	70	—	—	e 29 56?	?	e 58·2	—
Kucino		135·2	309	—	—	e 24 26	PPP	e 65·7	69·7
Stuttgart		147·5	286	e 20 8	[+30]	e 41 56	SS	e 79·9	—
Strasbourg		148·3	285	e 19 56?	[+17]	—	—	e 75·9	—
Granada		148·9	256	e 20 14	[+34]	—	—	74·9	80·6
Paris		151·5	282	19 56?	[+12]	—	—	—	—
Scoresby Sund		159·4	340	21 56?	?	—	—	75·9	—

Additional readings :—
Melbourne eP = +2m.34s. ?
Christchurch sSN = +10m.49s., SSS = +10m.51s.
Kucino e = +34m.18s.
Strasbourg e = +21m.56s. ?
Long waves were also recorded at Perth, Hong Kong, Ottawa, and European stations.

Aug. 10d. 10h. 21m. 40s. Epicentre 18°·0N. 97°·0E. (as on 1929 Dec. 15d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hyderabad	17·7	271	2 25	?	7 23	+ 6	11·3	13·4
Kodaikanal	20·5	250	e 4 38	+ 3	—	—	—	—
Bombay	23·0	277	e 6 22	+81	—	—	—	16·8
Almata	30·4	330	e 6 0	− 9	—	—	—	—
Andijan	31·0	322	e 6 41	+27	e 12 9	+49	—	—
Tashkent	33·2	320	e 3 20?	?	(11 50)	− 4	11·8	20·2
Irkutsk	34·8	7	e 6 45	− 2	e 12 10	− 8	17·3	19·7
Vladivostok	38·7	42	—	—	e 17 18	(−16)	20·2	—

Long waves were recorded at Medan, Almeria, and Phu-Lien.

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Aug. 10d. 14h. 34m. 7s. Epicentre 35°·1N. 137°·7E. N.1.

A = −·605, B = +·551, C = +·575 ; D = +·673, E = +·740 ;
G = −·425, H = +·387, K = −·818.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hamamatu		0·4	178	0 3	− 3	0 11	+ 1	—	—
Nagoya		0·6	276	i 0 15	+ 6	0 29	+14	—	—
Gihu		0·8	291	0 18	+ 7	0 33	+12	—	—
Numadu		1·0	90	0 4	−10	0 13	−13	—	—
Kameyama		1·0	256	0 20	+ 6	0 42	+16	—	—
Kohu		1·0	53	0 13	− 1	0 22	− 4	—	—
Takayama		1·1	341	0 18	+ 2	0 34	+ 6	—	—
Matumoto		1·2	11	0 20	+ 3	0 36	+ 5	—	—
Hikone		1·2	278	0 19	+ 2	0 43	+12	—	—
Oiwake		1·5	29	0 21	0	0 39	0	—	—
Yokosuka		1·6	82	0 19	− 4	0 39	− 2	—	—
Kyoto		1·6	267	0 28	+ 5	0 58	S_g	—	—
Yokohama		1·6	78	0 20	− 3	0 38	− 3	—	—
Yagi		1·6	250	0 29	+ 6	1 3	S_g	—	—
Nagano		1·6	14	0 27	+ 4	0 47	+ 6	—	—
Kumagaya		1·7	52	0 23	− 1	0 43	− 1	—	—
Tokyo		1·8	71	0 23	− 3	0 44	− 2	—	—
Husiki		1·8	342	0 29	+ 3	1 6	S_g	—	—
Osaka		1·8	256	0 31	+ 5	i 0 37	− 9	1·1	1·4
Mera		1·8	96	0 22	− 4	0 40	S_g	—	—
Kobe		2·1	259	0 35	+ 5	1 11	S_g	—	1·3
Takada		2·1	13	0 34	+ 4	1 1	S*	—	—
Tukubasan		2·2	60	0 28	− 3	0 54	− 3	—	—
Wakayama		2·2	247	0 36	+ 5	1 15	S_g	—	—
Siomisaki		2·3	224	0 34	+ 1	1 1	+ 2	—	—
Toyooka		2·3	280	i 0 39	+ 6	i 1 24	S_g	—	1·4
Kakioka		2·3	61	0 28	− 5	0 58	− 1	—	—
Sumoto		2·4	252	i 0 37	+ 3	1 23	S_g	—	1·6
Wazima		2·4	344	0 37	+ 3	1 18	S*	—	—
Mito		2·6	60	0 32	− 5	1 13	+ 6	—	—
Tyosi		2·7	76	0 33	− 6	1 5	− 4	—	—
Hatidyozima		2·7	138	0 36	− 3	1 16	S*	—	—
Hukusima		3·5	39	0 49	− 1	1 37	+ 7	—	—
Koti		3·7	247	e 0 57	+ 4	e 1 54	S_g	—	2·1
Sendai		4·0	38	0 57	0	1 56	S*	—	—
Matuyama		4·2	254	i 1 3	+ 3	i 2 17	S_g	—	2·5
Hamada		4·6	269	1 10	+ 4	2 10	S*	—	—
Mizusawa		4·9	33	1 10	0	2 16	+11	—	—
Akita		5·1	21	1 7	− 6	2 38	S*	—	—
Miyazaki		6·0	240	1 31	+ 6	2 58	S*	—	—
Hukuoka		6·2	258	1 43	P*	3 20	S_g	3·5	3·7
Kumamoto		6·2	251	1 33	+ 5	3 16	S*	—	—
Nagasaki		6·9	252	e 1 58?	+20	3 36	S*	—	4·3
Vladivostok		9·1	332	e 1 12	+ 3	(3 35)	−16	3·6	—
Irkutsk		29·2	316	—	—	e 10 53?	+ 2	14·9	—
Tashkent		52·7	299	—	—	e 17 4	+26	e 25·7	32·4
Kucino		66·6	323	—	—	e 19 37	− 3	e 32·9	36·7
Pasadena	z.	81·0	55	e 12 7	− 6	—	—	—	—

Additional readings :—
Kobe iE = +37s., PE = +40s., iE = +1m.6s.
Toyooka iP_g = +48s.
Koti eP_gZ = +1m.8s., iP_g = +1m.15s., iZ = +1m.56s., iS_gZ = +2m.8s.
Kucino e = +27m.29s.
Long waves were also recorded at Granada, Stuttgart, Copenhagen, Scoresby Sund, and Hong Kong.

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Aug. 10d. 21h. 18m. 47s. Epicentre **46°·9N. 90°·0E.** R.1.
(as on 1917 Nov. 28d.).

A = ·000, B = +·683, C = +·730 ; D = +1·000, E = ·000 ;
G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		9·9	253	2 19	0	4 39	+28	—	—
Andijan		14·0	250	3 13	− 2	6 11	+20	7·5	—
Tashkent		15·9	257	i 3 23	−17	—	—	—	25·2
Dehra Dun		19·0	213	3 53	−26	7 43	− 3	—	15·2
Chiufeng		20·0	99	e 4 29	− 1	i 8 25	+19	11·0	14·8
Peking		20·0	100	4 29	− 1	8 39	+33	—	—
Ekaterinburg		20·4	310	i 4 27	− 7	i 8 33	+19	—	—
Tientsin		21·2	102	i 5 13	PP	—	—	—	—
Agra	N.	21·9	209	i 4 36	−14	e 8 59	+15	—	—
Dairen		24·3	98	5 19	+ 6	9 54	SS	—	—
Calcutta		24·4	184	4 46	−28	(9 16)	−14	9·3	—
Zinsen		28·4	96	5 49	− 2	10 45	+ 7	—	—
Keizyo		28·6	95	5 56	+ 3	10 54	+12	—	—
Zi-ka-wei		28·7	112	e 5 55	+ 2	11 9	+26	15·3	18·1
Phu-Lien		29·4	147	e 5 57	− 3	10 55	0	12·7	36·6
Vladivostok		29·5	82	5 2	−59	i 9 51	−65	—	—
Hyderabad		31·0	203	6 13	− 1	10 43	−37	—	17·2
Bombay		31·4	212	6 18	+ 1	11 32	+ 6	16·0	30·7
Hong Kong		31·4	133	6 22	+ 5	11 43	+17	—	16·2
Kucino		32·9	307	i 6 33	+ 2	11 57	+ 8	—	20·4
Hukuoka		33·1	98	6 35	+ 2	12 19	+27	15·5	18·5
Taihoku		33·2	119	6 40	+ 6	12 18	+24	15·5	17·7
Nagasaki		33·3	100	e 6 36	+ 2	e 12 20?	+25	e 16·0?	23·5
Taityu		33·4	120	6 59	+24	12 11	+14	—	—
Hamada		33·5	94	6 36	0	12 18	+20	—	—
Kumamoto		33·8	100	6 42	+ 3	12 25	+22	—	—
Tainan		34·1	124	6 41	0	12 35	+27	—	—
Ooita		34·2	98	6 44	+ 2	12 40	+31	—	—
Kagosima		34·4	101	6 45	+ 1	12 29	+17	—	—
Matuyama		34·6	97	e 6 44	− 2	i 12 36	+21	16·2	19·5
Taito		34·7	124	7 8	+22	12 58	+41	—	—
Miyazaki		34·8	100	6 50	+ 3	12 39	+21	—	—
Toyooka	E.	35·1	92	i 6 51	+ 1	i 12 42	+19	i 16·7	22·6
	N.	35·1	92	i 6 58	+ 8	i 12 47	+24	i 16·4	22·8
Simidu		35·3	98	6 55	+ 3	12 48	+22	—	—
Koti		35·4	97	e 6 53	0	i 12 45	+18	15·5	19·6
Ootomari		35·4	70	6 21	−32	12 31	+ 4	—	—
Kobe		35·7	94	e 6 57	+ 2	i 12 53	+21	e 21·2	22·8
Nake		35·8	108	7 6	+10	13 4	+31	—	—
Sumoto	E.	35·8	96	i 6 54	− 2	12 52	+19	17·0	18·7
	N.	35·8	96	i 6 56	0	12 55	+22	16·6	18·4
	Z.	35·8	96	i 6 57	+ 1	13 3	+30	—	22·7
Osaka		36·0	94	6 56	− 2	12 58	+22	17·6	23·6
Yagi		36·3	94	7 6	+ 6	13 13	+32	—	—
Gihu		36·4	90	6 59	− 2	13 1	+19	—	—
Pulkovo		36·4	313	6 55	− 6	12 56	+14	17·2	—
Nagoya		36·7	91	e 7 7	+ 3	13 15	+28	—	25·1
Morioka		37·2	81	7 10	+ 2	13 18	+24	—	—
Theodosia		37·2	290	7 6	− 2	13 3	+ 9	18·2	27·7
Urakawa		37·2	77	7 12	+ 4	13 13	+19	—	—
Mizusawa	E.	37·5	82	7 12	+ 1	16 31	?	—	—
	N.	37·5	82	7 10	− 1	16 5	?	—	—
Hukusima		37·7	86	7 12	0	13 26	+24	—	—
Sendai		37·7	85	7 12	0	13 27	+25	—	—
Misima		38·1	90	7 16	0	13 13	+ 5	—	—
Simferopol		38·1	289	7 10	− 6	13 25	+17	17·5	29·7
Kodaikanal		38·2	200	e 7 37	+20	—	—	e 12·0	—
Yalta		38·2	289	7 20	+ 3	e 13 40	+31	e 20·7	—
Tokyo		38·3	88	7 24	+ 6	13 36	+25	—	—

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.
Tyosi		39·1	87	e 7 26	+ 2	13 44	+22	18·1	22·4
Colombo		41·0	196	7 38	− 2	14 13?	+22	20·7	—
Manila		41·3	131	i 7 42	− 1	14 28	+32	21·7	26·0
Ksara	N.	42·3	273	7 52	+ 1	14 22	+12	—	—
Lemberg	E.	42·4	299	e 7 53	+ 1	e 14 12	+ 1	e 17·8	24·1
	N.	42·4	299	e 7 49	− 3	e 14 16	+ 5	e 17·3	23·4
Königsberg		42·7	309	e 7 52	− 2	14 15?	− 1	23·2	23·2
Upsala		42·7	317	e 7 50	− 4	i 14 12	− 4	—	23·2
Medan		44·0	167	i 8 9	+ 4	i 14 58	+22	i 21·9	—
Titizima		45·1	98	7 30	−44	14 21	−31	—	—
Lund		46·3	312	8 26	+ 3	15 29	+20	—	—
Budapest		46·4	299	8 23	− 1	i 15 27	+17	20·2	24·2
Copenhagen		46·7	312	8 20	− 6	15 16	+ 2	21·2	—
Belgrade		46·8	295	e 8 24	− 3	15 26	+10	—	29·0
Potsdam		47·7	308	e 8 29	− 5	i 15 57	+28	—	—
Vienna		47·7	300	e 8 34	0	15 43	+14	i 24·9	29·7
Bergen		48·2	320	8 39	+ 1	15 41	+ 5	—	28·2
Graz		48·7	299	i 8 44	+ 3	i 16 19	+36	e 22·2	26·0
Hamburg		48·9	310	e 8 38	− 5	16 15	+30	i 25·2	32·2
Cheb		49·1	304	e 8 46	+ 2	e 16 6	+18	e 25·7	31·2
Zagreb		49·1	298	e 8 35	− 9	i 15 55	+ 7	i 23·7	28·5
Jena	N.	49·2	305	e 8 21	−24	e 15 38	−12	e 20·2	24·2
	Z.	49·2	305	e 8 13	−32	e 15 24	−26	e 20·2	27·7
Göttingen		49·8	308	e 8 46	− 4	i 16 15	+17	—	32·8
Laibach		49·9	300	e 8 54	+ 3	e 15 58	− 1	—	41·2
Triest		50·5	299	8 59	+ 4	i 16 22	+14	22·4	—
Innsbruck		51·1	302	e 9 1	+ 1	i 17 5	+49	i 24·4	33·5
Feldberg		51·3	307	i 9 4	+ 3	—	—	—	27·9
Venice		51·4	299	i 9 6	+ 4	16 13?	− 7	—	—
Treviso		51·5	300	i 9 7	+ 4	i 16 34	+12	26·2	—
Stuttgart		51·6	305	e 8 59	− 4	e 16 26	+ 3	i 24·0	—
Padova		51·8	299	e 9 11	+ 6	16 43	+18	—	—
Karlsruhe		51·9	305	i 9 9	+ 3	17 13?	+46	e 27·2	28·6
Collurania		52·1	295	9 4	− 3	24 13	L	(24·2)	—
De Bilt		52·1	309	i 9 10	+ 3	16 37	+ 7	e 27·2	31·2
Chur		52·3	303	e 9 7	− 2	—	—	—	—
Trenta		52·3	290	i 8 3	−66	e 15 33	−60	36·2	—
Strasbourg		52·5	305	9 19	+ 9	16 55	+20	25·2	29·7
Zurich		52·7	304	e 9 10	− 2	e 16 50	+12	—	—
Naples		52·8	292	e 9 6	− 6	e 17 53	+74	—	67·2
Casamari		52·9	295	9 16	+ 3	—	—	—	—
Scoresby Sund		52·9	338	9 11	− 2	16 36	− 5	—	—
Casamicciola		53·0	292	10 24	+70	17 44	+62	24·9	—
Prato		53·0	297	e 9 13	− 1	i 17 3	+21	—	26·2
Uccle		53·2	310	e 9 14	− 1	16 54	+ 9	25·2	34·3
Piacenza		53·3	299	9 19	+ 3	17 3	+17	21·5	28·5
Rome		53·3	295	e 9 25	+ 9	17 25	+39	e 35·9	—
Messina		53·4	289	9 17	0	16 57	+10	—	—
Pavia		53·5	299	i 9 22	+ 4	—	—	—	—
Neuchatel		53·8	304	e 9 15	− 5	e 17 0	+ 7	—	—
Catania		54·1	289	9 25	+ 3	17 16	+19	23·8	36·8
Besançon		54·2	304	9 25	+ 2	17 15	+17	28·2	—
Durham		54·2	315	9 29	+ 6	16 53	− 5	—	—
Edinburgh		54·3	316	e 9 25	+ 2	17 17	+18	i 30·1	31·3
Stonyhurst		55·1	314	9 32	+ 2	i 17 53	+42	—	39·9
Batavia		55·2	160	i 10 31	+61	19 40	(+23)	28·7	30·7
Kew		55·3	311	i 9 34	+ 3	i 17 32	+19	25·2	31·2
Paris		55·3	308	i 9 33	+ 2	17 53	+40	21·2	36·2
Bidston		55·6	314	i 9 34	+ 1	i 17 48	+31	—	37·2
Oxford		55·7	312	e 9 33	− 1	i 17 13?	− 6	—	—
Puy de Dôme		56·8	305	i 9 46	+ 4	e 17 45	+11	26·2	—
Reykjavik		56·9	331	e 10 1	+19	18 8	+33	31·1	—
Carloforte		57·5	295	e 9 39	− 8	i 17 52	+ 9	—	—
Barcelona		59·8	300	10 7	+ 4	18 21	+ 8	26·9	33·4

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.
Bagnères		59·9	304	9 50	−14	18 20	+ 5	33·2	—
Amboina		60·7	135	i 7 30	?	11 17	?	22·7	—
Tortosa		61·2	300	i 10 16	+ 3	18 51	+19	—	36·2
Algiers		62·2	295	e 10 19	− 1	18 53	+ 8	29·2	48·2
Alicante		62·9	300	i 10 28	+ 3	i 19 4	+10	e 26·0	40·6
Toledo		64·5	302	e 10 27	− 8	i 19 30	+16	i 29·9	35·1
Almeria		65·4	299	e 10 36	− 5	i 19 32	+ 7	31·0	46·0
Granada		66·0	300	i 10 37	− 8	19 42	+10	—	42·0
Ivigtut		66·7	339	10 50	0	e 19 49	+ 8	—	—
Malaga		66·8	300	10 49	− 2	20 11	+29	24·2	47·4
San Fernando		67·9	300	10 33	−25	20 13	+17	33·7	—
Entebbe		68·4	245	10 51	−10	19 55	− 7	31·2	38·9
Sitka		69·4	24	i 11 10	+ 3	i 20 17	+ 3	i 29·0	—
Tananarive	E.	76·1	221	11 37	−10	21 25	− 8	35·6	46·4
	N.	76·1	221	11 31	−16	—	—	36·0	45·2
Azores		77·7	314	11 25	−31	—	—	—	24·3
Saskatoon		79·9	11	e 12 19	+12	e 22 19	+ 4	—	—
Victoria		80·4	22	12 17	+ 7	22 19	− 1	35·3	56·4
Seattle		81·4	21	e 12 13	− 2	22 55	+24	46·7	—
Perth		82·9	158	e 12 18	− 5	i 22 43	− 3	37·3	—
Bozeman		85·8	15	12 41	+ 4	23 7	[+ 2]	e 36·2	—
Ottawa		86·9	350	e 12 42	− 1	e 23 23	− 3	e 36·2	—
Honolulu T.H.		88·6	60	i 12 45	− 6	i 23 47	+ 4	36·2	—
Toronto		88·9	353	e 12 49	− 3	i 23 35	−11	42·2	57·5
Harvard		89·1	347	e 12 52	− 1	e 23 40	− 7	e 36·2	—
Buffalo		89·6	352	i 12 59	+ 3	—	—	—	—
Berkeley	E.	90·4	25	e 12 53	− 6	e 23 32	[− 3]	i 51·3	58·1
	N.	90·4	25	e 12 52	− 7	e 23 37	[+ 2]	—	—
Ann Arbor		90·6	355	e 13 37	+37	i 24 31	+29	i 37·6	57·0
Dakar		90·8	293	e 13 9	+ 8	23 47	[+10]	e 41·2	66·6
Fordham		91·1	349	i 13 2	− 1	i 23 14	[−25]	—	—
Lick	E.	91·1	25	e 13 7	+ 4	—	—	—	—
Chicago		91·4	358	e 17 3	PP	i 24 59	PS	37·7	—
Johannesburg		92·0	233	13 13	+ 6	24 13	− 2	—	—
Pittsburgh		92·2	353	13 12	+ 4	i 24 24	+ 7	36·2	—
Adelaide		92·8	142	e 13 8	− 2	i 27 51	?	i 32·1	45·7
Haiwee		93·2	22	e 13 16	+ 4	—	—	—	—
Georgetown		93·4	350	13 13	0	23 42	[−10]	—	—
Florissant		94·3	0	e 13 17	0	i 23 44	[−13]	—	—
Charlottesville		94·4	352	e 17 13	PP	e 23 53	[− 5]	i 49·6	—
Santa Barbara		94·4	25	e 13 22	+ 4	e 26 18	PS	—	—
St. Louis		94·5	0	e 13 18	0	i 24 29	− 9	e 40·6	57·3
Mount Wilson		95·1	24	e 13 25	+ 4	—	—	—	—
Pasadena	E.	95·2	24	e 13 27	+ 6	i 25 3	+19	e 42·6	—
	N.	95·2	24	e 13 25	+ 4	e 24 20	[+18]	—	56·2
Riverside	N.	95·4	23	e 13 23	+ 1	e 24 21	[+18]	—	—
La Jolla		96·6	23	e 13 38	+10	—	—	—	—
Riverview		97·6	133	i 13 44	+12	i 26 36	PS	e 40·6	56·6
Sydney		97·6	133	(e 13 31)	− 1	e 13 31	P	44·7	61·2
Melbourne		97·9	140	e 13 45	+11	23 21	[−55]	40·0	60·0
Tucson		98·6	19	e 13 47	+10	e 24 13?	[− 6]	41·7	—
Columbia		98·7	353	e 17 9	PP	e 23 57	[−22]	57·2	—
Cape Town		103·2	234	18 25	PP	26 13	+18	48·6	58·7
Apia		105·6	91	e 26 21	S	(e 26 21)	{+46}	—	—
San Juan		111·2	336	e 18 21	[− 1]	i 26 53	{+38}	e 43·2	—
Port au Prince		112·7	340	e 18 30	[+ 4]	29 25	PS	e 53·6	70·7
Arapuni		114·2	120	—	—	22 43	?	49·2	62·2
Wellington		115·8	124	12 13?	?	24 2	[−94]	50·6	66·2
Christchurch		116·1	127	15 29	+28	28 24	PS	—	—
Balboa Heights		123·4	348	—	—	e 32 13?	?	—	—
La Paz		144·6	322	i 19 34	[+ 1]	29 50	{− 1}	77·2	92·6
La Plata		153·2	285	20 1	[+15]	—	—	59·2	—
Santiago		160·1	306	20 23	[+29]	—	—	53·5	—

For Notes see next page.

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NOTES TO AUGUST 10d. 21h. 18m. 47s.

Additional readings and note :—

Chiufeng iPP = +4m.33s., iPPPN = +5m.39s., iPPPE = +5m.47s., iN = +6m.17s., iE = +6m.26s., iN = +6m.34s., iZ = +6m.44s., iE = +6m.50s., iN = +7m.21s., iE = +7m.25s., iZ = +7m.30s.

Zi-ka-wei iE = +6m.5s., +6m.13s., +6m.19s., and +6m.35s., iN = +6m.41s., PPE = +7m.1s., PPPE = +7m.11s., iN = +7m.49s., iE = +9m.25s., PSE = +11m.25s., SSE = +13m.25s., SSSE = +14m.13s., SSSSN = +14m.33s.

Taihoku PP = +8m.14s.

Toyooka iZ = +7m.26s., iN = +7m.28s., iE = +7m.31s.

Kobe iN = +7m.18s., iE = +7m.29s., iPP = +8m.54s.

Tyosi P = +7m.49s.

Manila PSN = +14m.37s.

Königsberg ePEN = +7m.58s., iNZ = +8m.0s., iZ = +8m.15s., i = +8m.40s. and +8m.54s., iPPZ = +9m.30s., iEZ = +9m.39s., eN = +9m.42s., iPPP = +10m.10s., iN = +10m.19s., and +10m.53s., iNZ = +11m.23s., iN = +11m.41s., eE = +11m.43s., iEN = +12m.25s., eEN = +12m.41s., iN = +13m.12s., iPPSEN = +14m.30s., iEZ = +14m.45s., iZ = +15m.15s., iN = +15m.40s., iZ = +16m.7s., and +16m.43s., iSSEN = +17m.25s., iSSSEN = +18m.4s.

Upsala iP = +7m.55s., iPP = +9m.36s.. Also two after-shocks recorded : For the first iP = 21h.27m.1s., iPP = 28m.41s., iS = 33m.16s. For the second iP = 21h.27m.14s., iPP = 28m.54s., iS = 33m.31s., and SS = 36m.12s.

Lund NE = +8m.38s., i = +8m.56s., PPNE = +10m.25s., PPNW = +10m.41s., eNW = +12m.41s., NW = +15m.43s., SSNW = +19m.1s., SSNE = +19m.7s.

Copenhagen PP = +10m.34s. and +10m.53s., SN = +15m.24s., SEN = +15m.34s., SZ = +15m.48s., SE = +15m.58s., and +16m.5s., SN = +16m.8s., SSN = +18m.55s., SSE = +19m.25s.

Belgrade eP = +8m.29s., e = +8m.37s., i = +9m.0s., +10m.50s., +15m.50s., and +15m.57s., e = +16m.28s. and +17m.25s.

Potsdam iEN = +8m.38s. and +9m.5s., iPPEN = +10m.49s., iN = +15m.31s., iSSN = +19m.36s.

Vienna iPE = +8m.54s., PP = +10m.51s., PPP = +11m.45s., P_cS = +13m.15s., SS = +20m.10s., SSS = +22m.6s.

Bergen PP = +9m.12s., PPP = +11m.4s., SS = +20m.1s.

Graz iP_cP = +9m.54s., iPP = +11m.4s., iPPP = +11m.49s., iP_cS = +14m.6s., iPS = +16m.30s., iS_cS = +18m.28s., iSS = +20m.2s.

Hamburg ePEN = +8m.47s., iPPZ = +10m.54s., eSSZ = +20m.7s.

Cheb e = +9m.22s., ePP = +11m.1s., ePPP = +12m.56s., eSS = +20m.3s.

Zagreb iP = +8m.49s., i = +9m.5s., iP_cP = +9m.20s., iPP = +10m.52s., iPPPNW = +11m.39s., iPPPNE = +11m.57s., iPPPP = +12m.53s., i = +13m.19s., iP_cS = +14m.34s., iSNE = +15m.59s., iPSNE = +16m.21s., iPPSNW = +16m.29s., iS_cS = +17m.49s., iPKS = +18m.51s., iSKKS = +18m.58s., iSS = +20m.1s., i = +20m.29s., iSSS = +21m.5s., iSSSSNW = +22m.19s., iSSSSNE = +22m.28s.

Jena iPZ = +8m.35s., iPN = +8m.38s. and +8m.45s., iZ = +10m.26s., iN = +10m.36s., eZ = +13m.31s., eN = +13m.33s., iNZ = +13m.40s., iN = +18m.33s., iZ = +18m.49s.

Göttingen ePEN = +8m.49s., iP = +8m.53s., iEN = +9m.18s., i = +9m.19s., iPP = +11m.14s., iPSZ = +16m.28s., eZ = +17m.25s.

Laibach e = +9m.25s., +10m.58s., +14m.28s., +17m.32s., and +19m.31s.

Triest iP = +9m.18s., iPP = +11m.15s., iPPP = +12m.13s., iPPPP = +13m.13s., PS = +16m.43s., iSS = +20m.8s., iSSS = +21m.36s.

Innsbruck iP_cP? +9m.35s., iPP = +11m.33s., iPPP = +12m.43s., i = +16m.29s., iPPS = +17m.48s., i = +20m.32s.

Feldberg iN = +9m.35s., +10m.42s., +10m.54s., +11m.32s., +13m.4s., +13m.31s., +14m.52s., +15m.53s., +17m.3s., +21m.49s., and +24m.23s. iE = +9m.55s., +10m.33s., +10m.48s., +11m.32s., +14m.1s., and +16m.33s.

Stuttgart i = +9m.6s., +9m.24s., +9m.31s., and +9m.38s., ePP = +11m.26s., ePPP = +11m.58s., i = +12m.57s., iP_cS = +14m.11s., i = +14m.38s., +17m.0s. and +17m.46s., iS_cS = +18m.58s., i = +19m.33s., iSS = +20m.34s.

Strasbourg PP = +11m.40s., iSS = +20m.58s.

Scoresby Sund +9m.52s., PPZ = +11m.17s., eEN = +11m.49s., PPPZ = +12m.21s., eN = + 12m.34s., eZ = +16m.43s., and +17m.14s.

Uccle i = +9m.48s., PP = +11m.46s., i = +17m.19s., SS = +21m.5s.

Rome iP = +9m.50s.

Durham PPPP = +13m.2s.

Edinburgh i = +9m.29s., PPP = +13m.8s., i = +16m.21s., +21m.51s., +25m.49s., +26m.23s., +27m.31s., +28m.49s., and +29m.13s.

Stoneyhurst i? = +10m.3s., PP = +12m.6s.

Kew i = +9m.46s., iP_cP = +10m.4s., iPP = +11m.50s., iPPPN = +13m.12s., iP_cS = +13m.58s., iE = +16m.32s., i = +17m.4s.

Paris PP = +12m.2s.

Bidston PP = +11m.58s.

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Oxford iP = +9m.39s., PP = +12m.13s.
Reykjavik i = +10m.8s. and +10m.22s., PPP = +13m.28s., PS = +18m.33s.
Barcelona P = +10m.22s., PP = +12m.35s., PPP = +14m.4s.
Bagnères PP = +12m.40s., PPP = +14m.0s., PS = +18m.30s., SS = +22m.50s.
Tortosa SN = +19m.0s.
Algiers P = +10m.22s.
Toledo iZ = +10m.39s., P_cP = +11m.5s., PP = +13m.38s., PPP = +15m.20s., PPPP = +16m.10s., PS = +20m.4s., i = +23m.29s., SS = +24m.40s., SSS = +27m.59s., SSSS = +29m.35s.
Almeria iP = +10m.43s., i = +11m.10s., PP = +13m.30s., PPP = +14m.45s., i = +21m.1s.
Granada iP_g = +10m.45s., +10m.48s., +11m.16s., and +11m.56s., PP = +12m.27s., PPP = +15m.57s., PS = +20m.8s., i = +20m.15s., SS = +22m.51s., SSS = +24m.14s.
Ivigtut PEN = +11m.1s., e = +11m.19s., PP = +13m.49s., eN = +15m.43s., iN = +20m.14s., iE = +20m.19s., eE = +21m.25s., and +24m.19s.
Malaga PP = +14m.3s., PPP = +15m.51s., PPPP = +17m.21s.
Sitka iPP = +14m.0s.
Tananarive P_cP = +12m.0s., EN = +12m.16s., PP = +14m.50s., N = +15m.58s., PPPE = +16m.28s., PPPN = +16m.43s., PPPPE = +17m.58s., PPPPN = +19m.58s., iSKSE = +21m.40s., iSKSN = +22m.4s., PSE = +22m.10s., iSKKS = +22m.34s., EN = +22m.56s., S_cSE = +23m.52s., S_cSN = +23m.55s., SS = +26m.43s., EN = +27m.10s., E = +29m.26s., SSSN = +30m.2s., SSSE = +31m.28s., N = +32m.4s.
Seattle PS = +23m.43s.
Perth eP = +12m.38s., SS = +28m.33s., SSS = +29m.28s., SSS = +30m.13s.
Bozeman S = +23m.53s.
Ottawa eSSN = +29m.49s. ; T_0 = 21h.18m.45s.
Honolulu T.H. iPP = +16m.33s., eSS = +29m.21s.
Toronto iSS = +29m.41s.
Harvard i = +13m.16s., eSS = +30m.43s. ; T_0 = 21h.18m.48s.
Berkeley ePZ = +12m.58s., iP = +13m.4s., i = +13m.10s., ePE = +13m.12s., ePPE = +16m.28s., eE = +16m.59s., iE = +21m.56s., iSE = +23m.44s., eSN = +23m.55s., iPSE = +24m.31s.
Ann Arbor ePP = +17m.19s., e = +20m.43s., iSKS = +23m.55s., iPS = +25m.31s., iSS = +30m.49s., iSSS = +34m.31s. ; T_0 = 21h.19m.0s.
Dakar PP = +16m.58s., PPP = +19m.9s., PPPP = +20m.36s., PS = +25m.7s., SS = +30m.7s., SSS = +34m.55s.
Fordham iPS = +25m.2s., iSS = +30m.6s.
Lick eN = +13m.10s.
Chicago eSS = +30m.55s.
Johannesburg +22m.25s.
Adelaide i = +18m.47s. and +20m.13s.
Georgetown iPN = +13m.25s., SKSN = +24m.23s., PSZ = +26m.23s., W = +48m.31s. ; T_0 = 21h.18m.27s.
Florissant iPZ = +13m.19s., iZ = +13m.29s., iPPZ = +17m.8s., iN = +19m.26s., and +24m.47s.
Charlottesville eSS = +31m.13s., iSSS = +34m.35s.
St. Louis iN = +16m.46s., iPPN = +17m.4s., iSKSN = +23m.47s., iN = +24m.8s., iSSE = +30m.45s.
Pasadena eNZ = +13m.22s., eN = +13m.40s., and +26m.21s.
Riverview iSS = +32m.18s.
Sydney eP = 21h.21m.0s., iSS = +18m.55s.
Melbourne i = +14m.8s., +14m.45s., and +17m.37s., e = +19m.13s., i = +26m.28s., SSS = +32m.23s.
Tucson ePP = +17m.41s., eSKS = +23m.10s., ePS = +27m.13s., eSS = +32m.29s.
Columbia ePS = +25m.25s., eSS = +32m.25s.
San Juan eP = +15m.4s., iPP = +19m.33s., iPS = +28m.28s., iSS = +34m.44s.
Port au Prince ePEN = +18m.41s., PP = +19m.47s., iNW = +20m.41s., PPP = +22m.19s., iNW = +22m.55s., PPS = +30m.35s., SS = +35m.38s., e = +36m.39s., and +37m.25s.
Arapuni PP = +17m.13s., PS = +27m.13s., SSS = +36m.43s., SSSS = +41m.13s.
Wellington PP = +17m.29s., PPP = +20m.3s., SS = +29m.33s., SSS = +35m.50s.
Christchurch iN = +17m.21s., +21m.26s., and +22m.35s., iPPP = +23m.50s., iN = +29m.46s., iSS = +35m.59s., iSSS = +41m.8s.
La Paz PKPEN = +19m.37s., PPN = +23m.19s., SKSN = +26m.30s., PPSN = +37m.3s., SSN = +43m.0s., eN = +61m.13s.

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Aug. 10d. Readings also at 1h. (near Amboina), 3h. (Copenhagen, Stuttgart, De Bilt, Cheb, Feldberg, Zagreb, near Neuchatel (2), and near Apia), 4h. (La Paz and near Matuyama), 7h. (Vladivostok), 8h. (Irkutsk, Kucino, Helsingfors, Scoresby Sund, near Koti, Matuyama, and Sumoto), 9h. (Calcutta and near Wellington), 11h. (San Fernando and near La Paz), 13h. (Berkeley and Messina), 14h. (Ekaterinburg), 16h. (Tyosi, near Hastings, and Wellington), 18h. (Nagoya and Tyosi), 19h. (near Lick), 21h. (Nagoya, Azores, Serra do Pilar, and near Angra do Heroismo), 23h. (Andijan (2), Simferopol, Lemberg, Copenhagen, Upsala, Stuttgart, and La Paz (2)).

Aug. 11d. 7h. 3m. 36s. Epicentre 46°·9N. 90°·0E. (as on 10d.). X.

A = ·000, B = +·683, C = +·730 ; D = +1·000, E = ·000 ;
G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		9·9	253	2 21	+ 2	4 4	− 7	4·6	5·4
Irkutsk		10·7	55	e 3 30	+59	e 5 38	+67	6·3	6·7
Andijan		14·0	250	e 3 17	+ 2	—	—	—	7·4
Dehra Dun		19·0	213	3 34	−45	7 44	− 2	12·4	13·4
Chiufeng		20·0	99	e 8 23	S	(e 8 23)	+17	11·9	—
Ekaterinburg		20·4	310	e 4 24	−10	i 8 19	+ 5	10·4	—
Calcutta		24·4	184	5 28	+14	9 48	+18	13·6	—
Zi-ka-wei		28·7	112	—	—	e 11 7	+24	17·3	18·4
Phu-Lien		29·4	147	—	—	(11 24?)	+29	11·4	—
Hyderabad		31·0	203	12 58	SS	—	—	18·5	20·3
Bombay		31·4	212	12 9	S	(12 9)	+43	—	—
Kucino		32·9	307	—	—	e 11 32	−17	e 16·8	18·7
Pulkovo		36·4	313	6 55	− 6	12 38	− 4	18·4	22·2
Upsala		42·7	317	—	—	e 17 16	SS	e 22·1	26·4
Lund		46·3	312	—	—	18 12	SS	24·4	—
Copenhagen		46·7	312	—	—	18 30	SS	24·4	—
Hamburg	z.	48·9	310	—	—	e 22 24?	?	—	—
Feldberg		51·3	307	—	—	e 19 4	(+11)	e 25·1	30·6
Stuttgart		51·6	305	—	—	e 20 0	SS	e 25·9	31·3
Strasbourg		52·5	305	—	—	e 19 48	SS	31·4	—
Scoresby Sund		52·9	338	9 11	− 2	16 40	− 1	—	—
Piacenza		53·3	299	e 20 2	SS	27 19	L	(27·3)	34·8

Additional readings :—
Chiufeng SN = +10m.34s.
Ekaterinburg i = +8m.2s.
Zi-ka-wei SZ = +15m.45s.
Kucino e = +15m.20s.
Feldberg e = +19m.46s. = SS + 1s.
Strasbourg eSSSS = +27m.8s.
Long waves were also recorded at Koti, Hong Kong, Vladivostok, Ottawa, and other European stations.

Aug. 11d. 17h. 40m. 49s. Epicentre 27°·5N. 98°·5E. (as on 1931 May 27d.). X.

A = −·131, B = +·877, C = +·462 ; D = +·989, E = +·148 ;
G = −·068, H = +·457, K = −·887.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		10·0	130	e 3 11	P*	—	—	4·7	—
Hong Kong		15·1	106	6 20	S	(6 20)	+ 3	8·1	8·8
Chiufeng	E.	19·2	45	e 8 30	S	(e 8 30)	+40	e 11·1	—
Zi-ka-wei	z.	20·3	74	4 37	+ 4	8 27	+15	—	12·8
Hyderabad		21·0	247	4 34	− 6	8 14	−12	10·6	15·1
Bombay		25·0	255	6 55	?	—	—	—	—
Tashkent		27·6	308	e 6 23	PP	e 10 23	− 2	—	15·2
Vladivostok		31·1	50	—	—	e 14 1	?	e 18·4	—
Pulkovo		55·6	325	e 9 35	+ 2	e 17 33	+16	26·2	32·0

Hong Kong gives also S = +7m.41s.
Long waves were also recorded at Irkutsk, Scoresby Sund, and European stations.

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Aug. 11d. Many after-shocks were recorded from the epicentre 46°·9N. 90°·0E. of Aug. 10d. These are mostly small and, except for the long waves, were not recorded far from the origin. Below are tabulated the records from Almata and Andijan, and in the final list of additional readings many of the notes belong to these shocks. The earliest phase given for each is listed.

	Almata. h.	m.	s.		Andijan. h.	m.	s.
eP	3	55	21				
eL	4	29	47				
eP	4	37	57				
eP	4	46	24				
eP	5	33	18	eP	4	48	30
eP	5	47	3	eP	5	44	50
eP	6	1	13				
eP	6	24	8	eP	6	27	31
eL	6	33	52	eL	6	35	9
L	6	40	44	eL	6	41	45
P	7	5	57	eP	7	6	53
eP	8	17	36	eP	8	19	44
eS	8	21	8				
eP	9	5	14	eP	9	7	16
eP	9	22	54				
eP	10	5	37	eL	10	9	45
eP	12	38	53				
eP	13	33	55				
eP	13	41	42	eP	13	42	13
eL	22	5	20				
eP	23	7	25	eP	23	9	21

Aug. 11d. Readings also at 0h. (Stuttgart), 1h. (Hamburg, Copenhagen, Zagreb, Upsala, Ekaterinburg (3), Kucino, Irkutsk (3), Chiufeng (2), Vladivostok, Hong Kong, and near Simferopol), 2h. (De Bilt, Göttingen, Copenhagen, Kucino, Ekaterinburg, and Irkutsk), 3h. (Andijan, Scoresby Sund, Uccle, Kew, Paris, Simferopol, Upsala, Hamburg, De Bilt, Copenhagen, Granada (2), Feldberg, Stuttgart, Strasbourg, Ekaterinburg, Hong Kong, Kucino, Irkutsk, Vladivostok, Chiufeng, Tyosi, and near Mizusawa), 4h. (Copenhagen, Kucino, Ekaterinburg, Irkutsk, Vladivostok, and near Tyosi), 5h. (Ekaterinburg and Irkutsk), 6h. (Stuttgart, Copenhagen, Pulkovo, Ekaterinburg (3), Irkutsk (3), Vladivostok, and Tyosi), 7h. (De Bilt (2) and Granada), 8h. (De Bilt, Copenhagen, Pulkovo, Kucino, Ekaterinburg, Irkutsk, and near Hukuoka), 9h. (near Hukuoka), 10h. (De Bilt, Feldberg, Stuttgart, Copenhagen, Pulkovo, Ekaterinburg, Vladivostok, and near Manila), 12h. (Hong Kong, Vladivostok, Irkutsk, Ekaterinburg, Pulkovo, Kucino, and Helsingfors), 13h. (Vladivostok, Irkutsk, Ekaterinburg, Kucino, Scoresby Sund, Copenhagen, Stuttgart, Feldberg, De Bilt, Strasbourg, Paris, Kew, and Granada), 14h. (De Bilt, Kew, Copenhagen, and Stuttgart), 15h. (La Paz), 17h. (Calcutta and Dehra Dun), 19h. (Tucson), 22h. (Irkutsk), 23h. (Ekaterinburg, Pulkovo, Copenhagen, De Bilt, Feldberg, and Stuttgart).

Aug. 12d. Continuation of the list of repetitions from the epicentre 46°·9N. 90°·0E. of Aug. 10d. recorded at Almata and Andijan.

	Almata. h.	m.	s.		Andijan. h.	m.	s.
eP	0	2	10				
eP	1	38	5	eP	1	41	15
eP	2	18	0	eP	2	20	41
eP	3	51	30	eL	3	55	30
eP	4	40	9	eP	4	42	38
eP	5	59	8	eP	5	59	55
eP	7	1	51	eL	7	6	11
eP	7	54	3	eL	7	58	36
P	15	5	23	eP	15	6	22
eP	16	50	31	eP	16	52	42
eP	17	20	41	eL	17	24	36
eL	17	30	24				
eP	19	52	10	eP	19	52	35
eP	21	9	0				
eP	23	39	0	eP	23	42	3

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Aug. 12d. Readings also at 0h. (Sumoto), 1h. (Bombay), 3h. (Ekaterinburg, Pulkovo, and Irkutsk), 4h. (Copenhagen, Stuttgart, Helsingfors, Scoresby Sund, Vladivostok, and near La Paz), 6h. (Lick, De Bilt, Uccle, Feldberg, Copenhagen (2), Pulkovo (2), Ekaterinburg (2), Irkutsk (2), Vladivostok (2), Sumoto, Hukuoka, Zi-ka-wei, Hong Kong, Phu-Lien, and near Calcutta), 7h. (Scoresby Sund (2), Strasbourg, Stuttgart (2), Copenhagen, Helsingfors, Pulkovo, Ekaterinburg (2), Irkutsk, Vladivostok, and near Manila), 8h. (Alicante, De Bilt (2), Stuttgart (2), Copenhagen, Ekaterinburg, Pulkovo (2) Helsingfors, Theodosia, Yalta, and near Ksara), 9h. (Irkutsk), 10h. (Hong Kong), 14h. (near Almata and Andijan), 15h. (De Bilt, Feldberg, Paris, Strasbourg, Hamburg, Stuttgart, Copenhagen, Scoresby Sund, Lund, Helsingfors, Pulkovo, Kucino, Ekaterinburg, Tashkent, Vladivostok), 16h. (Catania), 17h. (De Bilt, Feldberg, Strasbourg, Stuttgart, Hamburg, Copenhagen, Pulkovo, Helsingfors, Ekaterinburg, Tashkent, Irkutsk (2), and Vladivostok (2)), 19h. (Ekaterinburg, Pulkovo, and Tashkent), 20h. (De Bilt, Feldberg, Stuttgart, Hamburg, Copenhagen, Kucino, Helsingfors, and Vladivostok), 23h. (Ekaterinburg, Kucino, and Tashkent).

Aug. 13d. 22h. 9m. 18s. Epicentre 29°·2S. 177°·0W. (as on 1927 Oct. 10d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		10·8	212	—	—	3 42?	P_g	—	5·7
Suva		11·8	338	3 10	+24	5 40	+42	6·2	12·7
Wellington		13·8	206	3 6	− 7	5 2	−44	6·1	10·4
Christchurch		16·6	207	3 47	− 2	6 49	− 3	9·1	—
Riverview		27·5	251	i 5 27	−16	e 10 3	−21	e 12·7	14·7
Sydney		27·5	251	e 5 48	+ 5	i 9 30	−54	14·0	15·7
Melbourne		32·7	244	i 6 19	−10	e 11 17	−29	14·9	16·9
Adelaide		37·8	249	i 5 12	−121	i 11 12	−111	15·1	20·8
Honolulu T.H.		53·8	22	e 9 22	+ 2	e 16 59	+ 6	e 23·0	—
Perth		57·0	249	—	—	24 42	?	e 30·0	—
Nagoya		77·6	322	e 11 53	− 2	—	—	—	—
Osaka		78·1	322	11 55	− 3	17 32	PPPP	21·6	22·9
Sumoto		78·1	320	e 11 29	−29	—	—	—	—
Kobe		78·3	320	e 11 56	− 3	—	—	—	—
Hong Kong		83·9	299	—	—	22 56	0	44·2	—
Zi-ka-wei	Z.	84·2	311	i 12 26	− 3	16 2	?	—	43·7
Berkeley	E.	84·3	40	e 12 31	+ 1	i 22 56	[+ 2]	38·7	—
	N.	84·3	40	i 12 30	0	e 22 53	[− 1]	39·0	—
	Z.	84·3	40	i 12 28	− 2	i 23 6	+ 5	38·9	—
Pasadena		84·3	44	12 30	0	e 22 54	[0]	—	—
Mount Wilson	E.	84·4	44	e 12 32	+ 2	—	—	—	—
Lick		84·4	40	e 12 29	− 1	—	—	—	—
Riverside		84·7	45	e 12 33	+ 1	—	—	—	—
Haiwee	N.	85·7	43	e 12 39	+ 2	—	—	—	—
Tucson		87·8	51	e 12 50	+ 3	e 23 16	[− 3]	e 36·7	—
Victoria		91·3	32	13 6	+ 3	23 38	[− 2]	42·6	45·1
Sitka		93·1	21	e 8 57	?	i 24 24	− 1	—	—
Bozeman		95·7	39	—	—	e 24 48	0	e 44·7	—
La Paz		97·6	114	13 27	− 5	i 24 8	[− 6]	44·7	52·0
Colombo		104·7	270	27 14	S	(27 14)	PS	—	60·6
Florissant		105·4	52	e 14 17	+ 8	i 25 32	{− 2}	e 48·7	—
St. Louis		105·4	52	e 18 31	PP	e 25 33	{− 1}	—	60·7
Irkutsk		106·3	321	16 42	?	27 19	PS	e 46·7	—
Kodaikanal		108·5	272	e 24 48	S	(e 24 48)	[−18]	—	—
Hyderabad		110·8	278	28 29	PS	37 25	?	53·6	61·3
Toronto	E.	114·8	52	—	—	i 29 19	PS	50·7	—
Georgetown		115·0	58	19 52	PP	29 43	PS	—	51·2
San Juan		116·6	82	—	—	e 25 30	[− 9]	e 56·7	—
Ottawa		117·8	51	e 20 10	PP	e 25 32	[−11]	51·7	—
Fordham		118·0	56	e 20 12	PP	e 26 57	{− 6}	e 51·7	—
Tashkent		125·9	301	e 21 0	PP	e 31 42?	?	—	71·7
Ekaterinburg		131·6	322	i 19 4	[− 6]	22 38	PKS	50·7	75·2
Ivigtut		133·7	31	22 42?	PKS	—	—	68·7	—
Scoresby Sund		136·4	11	19 12	[− 5]	22 49	PKS	62·7	—
Kucino		143·7	326	e 19 52	[+22]	32 44	SKSP	e 62·7	79·7

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.
Pulkovo		144·3	337	i 19 28	[− 4]	—	—	—	—
Helsingfors	E.	145·7	341	e 19 34	[− 1]	e 26 40	[− 7]	e 59·7	—
	N.	145·7	341	e 19 32	[− 3]	e 32 40	SKSP	66·7	—
Yalta		147·3	310	e 19 39	[+ 1]	—	—	—	—
Upsala		147·8	347	e 19 39	[0]	—	—	e 75·7	—
Theodosia		150·0	310	e 19 42	[0]	—	—	—	—
Simferopol		150·9	311	19 49	[+ 6]	—	—	—	—
Königsberg		151·4	339	i 19 49	[+ 6]	—	—	e 81·2	84·7
Lund		152·5	348	20 2	{− 8}	—	—	74·7	—
Copenhagen		152·7	348	19 43	[− 2]	—	—	74·7	—
Edinburgh		152·9	8	e 23 42?	PP	—	—	—	—
Stonyhurst		155·1	8	—	—	e 59 42?	?	76·7	85·7
Hamburg		155·1	350	e 19 46	[− 2]	—	—	e 72·7	81·7
De Bilt		157·1	357	i 19 48	[− 2]	24 0	PP	e 80·7	91·2
Oxford		157·2	7	e 19 55	[+ 5]	i 24 23	PP	e 74·7	91·9
Kew		157·6	6	e 19 49	[− 2]	e 34 20	SKSP	e 80·7	91·9
Cheb		157·9	344	—	—	e 33 42?	?	e 76·7	86·7
Uccle		158·4	358	i 19 48	[− 3]	e 34 12	SKSP	e 61·7	—
Feldberg		158·6	350	e 19 58	[+ 6]	e 34 34	SKSP	e 72·7	87·5
Stuttgart		159·9	348	i 19 52	[− 2]	e 34 30	SKSP	e 75·7	—
Strasbourg		160·3	351	i 19 50	[− 4]	—	—	82·7	—
Paris		160·4	1	e 19 52	[− 2]	—	—	79·7	90·7
Zagreb		160·5	332	e 19 54	[0]	—	—	—	—
Zurich		161·3	348	e 19 54	[− 1]	—	—	—	—
Chur		161·6	346	e 19 54	[− 2]	—	—	—	—
Piacenza		163·3	343	e 19 42	[−15]	—	—	—	78·2
Florence		164·0	338	—	—	24 42	PP	79·7	84·7
Toledo		167·9	27	e 19 56	[− 6]	e 31 46	{−14}	84·3	—
Tortosa	N.	168·1	11	19 42?	[−20]	—	—	e 44·7	92·9
Granada		170·3	33	i 20 2	[− 2]	—	—	82·9	94·9
Alicante		170·4	17	e 20 11	[+ 7]	—	—	—	—

Additional readings :—
Christchurch e = +6m.10s., iN = +7m.9s. =SS +7s.
Melbourne PP = +7m.42s.
Adelaide i = +12m.9s.
Sumoto e = +11m.54s.
Kobe eE = +12m.12s.
Zi-ka-wei iZ = +12m.50s. and +24m.8s.
Berkeley ePE = +12m.36s., eZ = +12m.48s., eE = +12m.59s., ePPZ = +15m.59s. iPSN = +23m.11s., eSE = +23m.18s., eE = +28m.27s. =SS +10s., and +34m.52s.
Pasadena iZ = +16m.2s., eE = +22m.16s., eZ = +23m.5s., and +23m.57s.
Sitka ePP = +16m.57s.
Bozeman ePS = +26m.12s.
Florissant ePPNZ = +18m.28s., eEN = +24m.43s., iPSZ = +27m.50s.
Irkutsk e = +24m.39s. =SKS −17s. and +32m.59s.
San Juan ePS = +29m.32s.
Ottawa eN = +26m.54s. =SKKS −7s., e = +29m.48s., eN = +41m.3s.
Fordham ePP = +20m.32s., ePS = +29m.48s.
Tashkent e = +34m.42s.? and +38m.42s.?
Ekaterinburg iPP = +21m.23s., SS = +40m.6s.
Scoresby Sund +22m.0s. =PP +1s.
Kucino ePP = +22m.37s.
Pulkovo PP = +22m.27s., PS = +33m.19s. =SKSP +20s., SS = +40m.0s.
Helsingfors eE = +23m.11s., eE = +23m.37s. =PKS +16s., eSSEN = +42m.12s., eSSE = +48m.6s.
Upsala eN = +18m.13s.
Copenhagen +23m.36s. =PP +0s.
Kew ePPZ = +24m.3s., eZ = +30m.9s., +33m.2s., and +43m.54s. =SS −11s.
Uccle e = +23m.27s. =PKS −8s., i = +37m.30s., e = +44m.35s. =SS +21s.
Feldberg i = +20m.21s., e = +20m.27s. =P'_2 −11s., +23m.36s. =PKS +2s., +37m.38s., and +44m.30s.
Stuttgart iZ = +20m.36s. =P'_2 −8s., eE = +21m.0s., iPPZ =ePPEN = +24m.14s. ePPSZ = +37m.42s.?
Strasbourg iPP = +24m.16s., ePPS = +37m.42s.?
Zurich e = +20m.44s. =P'_2 −6s.
Florence e = +10m.42s., i = +18m.42s.?
Toledo i = +21m.13s. =P'_2 −7s., iP = +21m.14s., PKP_2 = +22m.11s., iZ = +25m.0s., PP = +25m.46s., SPS = +28m.10s.
Granada i = +21m.23s., PP = +25m.15s., PPP = +29m.21s., +31m.16s., SS = +46m.26s.
Long waves were also recorded at Göttingen, Bombay, Harvard, and Stonyhurst.

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Aug. 13d. Readings also at 0h. (De Bilt, Copenhagen, Ekaterinburg, Tashkent, Hong Kong, near Sumoto, and near Amboina), 1h. (Copenhagen), 3h. (Granada and Malaga), 4h. (near Mizusawa), 6h. (Perth and Granada), 7h. (Ekaterinburg, Irkutsk, and near Ksara), 8h. (near Sumoto, near Koti, and Matuyama), 10h. (Calcutta and near Tokyo), 12h. (Ekaterinburg and Irkutsk), 14h. (Copenhagen, Ekaterinburg, Kucino, Tashkent, and Nagoya), 15h. (Chicago), 19h. (Mineo and near Granada), 22h. (near Santiago).

Aug. 14d. 16h. 12m. 8s. Epicentre 53°·2N. 168°·0W. N.2.

A = −·586, B = −·125, C = +·801 ; D = −·208, E = +·978 ;
G = −·783, H = −·166, K = −·599.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		18·8	65	e 4 44	+28	i 8 6	+24	i 10·9	—
Berkeley		34·7	98	e 6 57	+11	e 12 21	+ 4	—	17·3
Haiwee	N.	38·4	96	e 7 23	+ 5	—	—	—	—
Mount Wilson		39·7	100	e 7 32	+ 3	—	—	—	—
Pasadena		39·7	100	e 7 28	− 1	—	—	—	—
Riverside		40·3	99	e 7 28	− 7	—	—	—	—
Osaka		43·3	270	7 59	0	—	—	10·2	14·7
Irkutsk		49·6	309	—	—	e 12 52?	?	e 23·9	32·6
St. Louis	E.	53·2	74	e 9 14	− 1	e 16 44	− 1	—	—
Scoresby Sund		54·0	15	9 22	+ 1	17 11	PS	29·9	—
Zi-ka-wei	Z.	54·2	277	9 22	− 1	i 17 16	PS	28·2	35·1
Toronto		55·7	62	e 11 23	PP	e 17 24	+ 5	34·4	—
Ottawa		56·4	58	e 10 37	(− 3)	e 17 34	+ 6	e 29·9	—
Fordham		60·5	61	e 10 8	0	e 18 30	+ 7	e 29·9	—
Pulkovo		66·1	351	10 45	− 1	19 43	+ 9	30·9	45·7
Copenhagen		71·1	0	11 17	0	20 52	PS	35·9	—
Tashkent		73·5	320	—	—	e 21 4	+ 1	e 37·9	46·3
Stuttgart		78·0	3	e 11 58	+ 1	—	—	e 41·9	52·9
Strasbourg		78·2	4	e 11 52?	− 6	e 15 52?	?	e 44·9	—
Zurich		79·4	3	e 12 3	− 2	—	—	—	—
Neuchatel		79·7	4	e 12 5	− 1	—	—	—	—
Theodosia		79·8	346	e 11 52	−15	—	—	—	—
Yalta		80·5	346	e 12 9	− 1	—	—	—	—
Baku		80·9	332	e 12 19	+ 6	e 22 34	+ 9	e 40·9	54·8
San Juan		82·2	70	22 37	S	(22 37)	− 2	49·9	—
Florence		83·0	1	e 12 22	− 1	—	—	—	42·9
Granada		88·6	14	—	—	e 24 58	PS	e 49·9	56·4

Additional readings :—
Berkeley eZ = +14m.34s., eN = +15m.4s.
Pasadena eEN = +7m.32s.
Irkutsk e = +17m.52s. ?
Toronto e = +27m.6s.
Long waves were also recorded at Honolulu T.H., Bozeman, Ivigtut, and other European stations.

Aug. 14d. Readings also at 0h. (La Paz (2)), 1h. (Ekaterinburg, Irkutsk, Kucino, Tashkent, Copenhagen, De Bilt, Andijan, near Almata, near Kobe, Sumoto, and near Balboa Heights), 2h. (Ekaterinburg, Irkutsk, Kucino, Copenhagen, Andijan, Almata, De Bilt, Nagoya, near Osaka, Kobe, and Sumoto), 4h. (Sydney), 5h. (Scoresby Sund and St. Louis), 7h. (near Almata), 8h. (Almata and Irkutsk), 9h. (Ekaterinburg and Tashkent), 12h. (Ekaterinburg, Irkutsk, Pulkovo, Almata, and Andijan), 13h. (Copenhagen, Helsingfors, De Bilt, Feldberg, Stuttgart, Reykjavik, Scoresby Sund, and near Malabar), 14h. (near Malabar), 17h. (Almata and Andijan), 18h. (near Zurich), 22h. (Nagoya), 23h. (near Tyosi).

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Aug. 15d. 4h. 1m. 4s. Epicentre 36°·0N. 71°·0E. (as 1931 May 16d.). R.2.

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

Depth of focus 0·025 has been assumed.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		0·0	4·9	13	i 1 12	+ 2	(i 2 4)	− 1	i 2·1	—
Tashkent		0·0	5·4	347	i 1 16	− 1	—	—	i 2·2	2·4
Almata		−0·3	8·6	31	i 1 58	0	—	—	2·9	4·5
Agra	N.	−0·3	10·7	143	i 1 42	−44	3 33	−50	—	—
Baku		−0·8	17·1	291	e 3 51	+ 6	i 7 1	+16	e 8·2	8·7
Bombay		−0·8	17·2	174	3 49	+ 3	7 3	+15	8·6	—
Calcutta		−1·0	20·2	127	3 8	−73	(7 53)	+ 3	7·9	—
Ekaterinburg		−1·1	21·9	345	i 14 38	0	i 8 23	+ 1	—	—
Theodosia		−1·6	28·3	300	e 5 56	+21	—	—	—	—
Irkutsk		−1·6	28·5	45	e 5 35	− 2	—	—	10·0	—
Yalta		−1·6	29·1	298	5 44	+ 1	—	—	—	—
Kucino		−1·7	29·9	322	e 5 45	− 4	e 10 21	−14	e 11·2	14·3
Pulkovo		−2·0	35·3	325	i 6 34	0	11 53	− 2	13·9	16·5
Helsingfors		−2·1	37·9	324	e 7 2	+ 6	e 12 31	− 2	e 14·5	—
Königsberg		−2·1	39·0	315	i 7 8	+ 2	e 13 38	+48	e 16·0	17·1
Upsala	E.	−2·2	41·4	323	e 7 25	0	—	—	—	—
Lund		−2·3	43·2	317	6 56?	−44	—	—	—	—
Copenhagen		−2·3	43·7	317	i 7 44	0	13 56	− 1	—	—
Cheb		−2·3	43·8	308	e 9 56?	(+ 2)	—	—	—	—
Hamburg	N.	−2·4	45·1	313	e 9 56?	(− 3)	—	—	—	—
Florence		−2·4	45·5	299	e 7 56	− 2	10 56?	?	—	24·9
Stuttgart		−2·4	46·1	309	e 8 6	+ 4	—	—	—	—
Chur		−2·4	46·1	305	e 8 4	+ 2	—	—	—	—
Zurich		−2·4	46·7	305	e 8 6	− 1	—	—	—	—
Strasbourg		−2·5	47·1	308	e 7 56?	−14	—	—	e 15·9	—
Neuchatel		−2·5	47·8	306	e 8 17	+ 2	—	—	—	—
De Bilt		−2·5	48·2	312	e 8 38	+20	—	—	e 18·9	19·6
Edinburgh		−2·6	52·4	318	—	—	e 19 56?	SS	—	—
Scoresby Sund		−2·9	57·3	338	9 20	− 4	17 8	+ 7	23·4	—
Granada		−2·9	58·2	297	e 9 32	+ 1	i 13 32	?	33·0	—

Additional readings:—
Calcutta S = +5m.15s.
Helsingfors ePPE = +8m.48s., eE = +9m.13s. and +14m.7s.
Königsberg eE = +9m.47s. = P_cP +8s. and +14m.19s.
Upsala eE = +10m.7s.
Copenhagen +10m.37s., eN = +15m.17s., SS = +17m.14s.
Stuttgart eEZ = +9m.11s., eZ = +9m.59s., eEZ = +10m.31s., e = +15m.56s. and +18m.20s.
Scoresby Sund +10m.42s., +13m.44s., and +18m.38s.

Aug. 15d. 12h. 43m. 48s. Epicentre 26°·2N. 141°·0E. N.2.

A = −·697, B = +·565, C = +·442; D = +·629, E = +·777; G = −·343, H = +·278, K = −·897.

A depth of focus 0·070 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	−0·7	9·5	359	2 4	− 1	3 43	− 1	—	—
Nagoya	−0·7	9·6	340	e 2 7	+ 1	—	—	—	—
Sumoto	−0·7	9·6	328	i 2 6	0	3 47	+ 1	—	3·9
Osaka	−0·7	9·7	332	2 7	0	(3 53)	+ 4	3·9	4·2
Koti	−0·8	9·8	320	i 2 10	+ 3	3 52	+ 3	—	—

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.
Kobe		−0·8	9·8	331	2 9	+ 2	3 51	+ 2	—	—
Matuyama		−0·9	10·4	319	i 2 16	+ 2	e 4 4	+ 3	—	—
Toyooka		−0·9	10·7	332	i 2 17	− 1	i 4 8	0	—	4·2
Hukuoka		−1·1	11·7	311	2 30	+ 1	4 31	+ 3	—	4·6
Nagasaki		−1·1	11·7	306	2 30	+ 1	4 30	+ 2	—	—
Mizusawa		−1·4	12·9	0	2 44	+ 2	4 55	+ 5	—	—
Irkutsk		−5·1	37·8	323	—	—	e 11 40	− 6	e 15·2	—
Tashkent		−7·0	59·8	306	—	—	i 16 50	+11	—	—
Ekaterinburg		−7·2	63·1	325	i 11 42	PP	19 32	?	26·2	—
Pulkovo		−8·1	77·2	332	e 11 3	− 2	e 20 9	− 1	—	—
Simferopol		−8·3	82·6	318	e 11 33	− 3	—	—	—	—
Haiwee	N.	−8·3	83·0	53	e 11 40	+ 1	—	—	—	—
Pasadena		−8·4	83·8	55	i 11 43	0	—	—	—	—
Mount Wilson		−8·4	83·9	55	e 11 44	+ 1	—	—	—	—
Riverside	N.	−8·4	84·5	55	e 11 46	− 1	—	—	—	—

Pasadena gives also eZ = +13m.22s.

Aug. 15d. 13h. 52m. 6s. Epicentre 35°·3N. 3°·5E. (as on 1925 June 24d.). R.3.

A = +·815, B = +·050, C = +·578; D = +·061, E = −·998;
G = +·577, H = +·035, K = −·816.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers		1·5	346	i 0 12	− 9	0 23	−16	—	0·6
Alicante		4·4	314	1 14	+11	2 26	S_g	—	—
Almeria		5·0	290	e 1 11	0	i 2 7	− 1	—	4·4
Tunis		5·6	73	2 29	S	(2 29)	+ 6	—	—
Tortosa	N.	6·0	338	1 18	− 7	2 51	S*	—	—
Granada		6·0	290	i 1 31	+ 6	i 2 36	+ 3	—	5·0
Barcelona		6·2	350	2 14	P_g	3 17	S*	3·5	3·8
Malaga		6·6	285	e 0 31	−63	e 1 53	−55	2·9	—
Toledo		7·5	310	e 1 43	− 3	e 3 20	+ 9	3·7	4·3
Naples		10·1	54	e 4 39	S	(e 4 39)	+23	—	—
Florence		10·3	33	1 24	−61	4 24	+ 3	—	10·9
Strasbourg		13·7	12	e 1 54?	?	e 5 14	−30	7·9	—
Feldberg		15·3	12	i 3 27	− 5	e 7 12	+50	—	—
Uccle		15·5	2	e 3 30	− 5	(e 6 54?)	+27	e 6·9	—
Cheb		16·1	21	—	—	e 6 44	+ 3	—	8·9
Ekaterinburg		43·5	42	e 10 0	(+ 7)	19 38	?	22·9	—

Additional readings :—
Alicante P_g = +1m.30s.
Almeria i = +1m.27s., +1m.51s., +2m.35s., and +3m.5s.
Tortosa PZ = +1m.14s.
Granada iP = +1m.56s., i = +2m.5s., +2m.46s., +2m.56s., and +3m.42s.
Toledo i = +3m.2s.
Long waves were also recorded at Kucino, Pulkovo, and several European stations.

Aug. 15d. Readings also at 2h. (Ekaterinburg, near Hastings, and Wellington), 15h. (Almata, Andijan, Tashkent, Pulkovo, Ekaterinburg, Irkutsk, Kucino, Copenhagen, Feldberg, De Bilt, Stuttgart, Pasadena, Haiwee, La Plata, and near Algiers), 17h. (Florissant), 22h. (Haiwee, Mount Wilson, and Pasadena).

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Aug. 16d. 2h. 0m. 58s. Epicentre 46°·9N. 90°·0E. (as on 11d.). R.3.

A = ·000, B = +·683, C = +·730 ; D = +1·000, E = ·000 ;
G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		9·9	253	e 2 27	+ 8	4 2	− 9	4·4	5·2
Irkutsk		10·7	55	2 37	+ 6	4 49	+18	5·5	5·8
Andijan		14·0	250	e 3 12	− 3	e 5 39	−12	6·1	8·8
Tashkent		15·9	257	3 34	− 6	6 21	−15	7·9	8·7
Chiufeng		20·0	99	e 7 7	?	13 9	?	—	—
Ekaterinburg		20·4	310	i 6 33	+119	e 10 11	+117	12·0	14·2
Calcutta		24·4	184	4 44	−30	7 59	−91	9·7	—
Zi-ka-wei	Z.	28·7	112	—	—	e 12 16	SS	(15·8)	20·4
Baku		29·4	272	—	—	10 52	− 3	15·0	—
Vladivostok		29·5	82	e 6 6	+ 5	e 11 39	+43	16·7	—
Kucino		32·9	307	e 7 13	PP	e 13 17	SS	17·0	21·1
Pulkovo		36·4	313	i 6 57	− 4	i 12 38	− 4	15·0	26·7
Simferopol		38·1	289	e 7 12	− 4	—	—	—	—
Yalta		38·2	289	e 7 12	− 5	—	—	—	—
Copenhagen		46·7	312	10 2?	(− 2)	—	—	23·0	—
Chur		52·3	303	e 9 7	− 2	—	—	—	—
Zurich		52·7	304	e 9 9	− 3	—	—	—	—
Scoresby Sund		52·9	338	9 14	+ 1	16 48	+ 7	—	—
Florence		53·0	297	i 16 16	S	(i 16 16)	−26	28·0	30·0
Piacenza		53·3	299	—	—	e 18 2	?	—	33·9
Neuchatel		53·8	304	e 9 11	− 9	—	—	—	—
Ottawa		86·9	350	—	—	e 23 4	[− 9]	e 41·0	—
Haiwee	N.	93·2	22	e 13 20	+ 8	—	—	—	—
Pasadena	Z.	95·2	24	i 13 21	0	—	—	—	—

Additional readings and note :—
Almata i = +3m.5s.
Tashkent e = +3m.51s.
Chiufeng iN = +14m.2s.
Ekaterinburg i = +7m.17s., +7m.39s., and +10m.29s.
Zi-ka-wei iZ = +16m.28s. = S_cS −9s. and +17m.0s. ; L is given as S.
Baku e = +13m.24s.
Vladivostok e = +15m.50s.
Simferopol i = +8m.38s. = PP −1s.
Yalta i = +8m.39s. = PP −1s.
Scoresby Sund +20m.32s. = SS +20s.
Florence i = +22m.2s., S = +23m.32s.
Long waves were also recorded at Phu-Lien, Hong Kong, Hyderabad, Ivigtut, and other European stations.

Aug. 16d. 8h. 6m. 18s. Epicentre 28°·8N. 65°·2W. N.3.

A = +·368, B = −·796, C = +·482 ; D = −·908, E = −·419 ;
G = +·202, H = −·437, K = −·876.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		10·5	184	e 2 25	− 3	e 4 12	−14	e 4·9	—
Port au Prince		12·1	214	e 2 51	+ 1	i 5 12	+ 7	—	—
Fordham		14·0	332	e 3 34	+19	e 6 34	+43	e 8·1	—
Columbia		14·5	295	—	—	e 6 0	− 3	e 8·7	—
Pittsburgh		16·8	318	e 3 42	−10	7 4	+ 7	—	—
Ottawa		18·6	336	e 4 8	− 6	e 7 52	+14	e 9·7	—
Toronto		18·7	326	e 4 3	−12	e 7 49	+ 9	9·7	—
Chicago		22·3	311	—	—	i 9 2	+10	e 13·9	—
St. Louis		22·9	302	i 5 1	+ 1	i 9 12	+ 9	—	—
Florissant		23·1	302	i 5 2	0	i 9 14	+ 7	—	14·4
Little Rock	N.	23·8	291	e 5 19	+11	—	—	—	—
Haiwee	N.	44·6	294	e 8 16	+ 6	—	—	—	—
Pasadena	Z.	45·0	291	i 8 14	+ 1	—	—	—	—
Scoresby Sund		48·2	18	—	—	15 36	0	23·7	—
Ekaterinburg		83·0	27	i 12 23	0	i 22 44	− 3	32·7	—

Additional readings :—
San Juan iS = +4m.19s.
Scoresby Sund +19m.18s.
Long waves were also recorded at Granada, De Bilt, Paris, and Suttgart.

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Aug. 16d. 11h. 15m. 10s. Epicentre 30°·6N. 104°·1W. X.

Anticipation of great shock at 11h.40m.

A = −·210, B = −·835, C = +·509; D = −·970, E = +·244; G = −·124, H = −·494, K = −·861.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		6·0	288	e 1 33	+ 8	i 2 44	+11	—	—
Denver	E.	9·1	356	—	—	i 4 36	S*	—	—
Little Rock	N.	10·7	64	e 2 44	+13	e 4 34	+ 3	—	6·0
St. Louis		14·0	51	e 3 4	−11	e 5 33	−18	—	7·0
Florissant	E.	14·0	50	i 3 4	−11	i 5 32	−19	—	7·2
Toronto		23·5	49	—	—	e 10 8	+54	i 12·2	—

Additional readings:—
Tucson e = +1m.41s. and +1m.59s. = P_g, i = +2m.58s. = S*.
Denver iSN = +4m.39s.
Long waves were also recorded at other American stations.

Aug. 16d. 11h. 40m. 29s. Epicentre 30°·6N. 104°·1W. N.1.

(See previous shock).

Epicentre given by Perry Byerly as 30°53′N. 104°11′W.; T_0 11h.40m.21s. in Bull. Seis. Soc. Amer.: Vol. 24, Nos. 2 and 3, "The Texas Earthquake of August 16d., 1931."

A = −·210, B = −·835, C = +·509; D = −·970, E = +·244; G = −·124, H = −·494, K = −·861.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		6·0	288	i 1 19	− 6	i 2 39	+ 6	—	—
Denton		6·4	64	e 1 28	− 3	—	—	—	3·3
Denver		9·1	356	e 2 21	+12	i 4 46	+55	—	—
Little Rock		10·7	64	e 2 39	+ 8	i 4 37	+ 6	—	—
Tacubaya		12·0	157	i 2 51	+ 3	i 5 29	+26	6·1	6·4
Pasadena		12·3	290	i 2 50	− 2	—	—	e 5·4	—
Mount Wilson		12·3	291	e 2 50	− 2	—	—	—	—
Haiwee	N.	12·8	300	e 3 0	+ 1	—	—	—	—
Vera Cruz		13·5	146	e 3 18	+ 9	—	—	—	7·8
Florissant		14·0	50	e 3 11	− 4	i 5 45	− 6	—	—
St. Louis		14·0	51	i 3 12	− 3	i 5 43	− 8	e 6·7	e 7·2
Bozeman		16·0	342	i 3 42	+ 1	6 42	+ 4	i 8·4	—
Lick		16·0	300	e 3 40	− 1	e 6 47	+ 9	—	—
Santa Clara		16·2	300	e 3 46	+ 2	—	—	—	8·8
Berkeley		16·7	301	e 3 47	− 3	e 6 54	− 1	7·8	i 9·1
Chicago		17·3	45	i 3 59	+ 1	e 7 2	− 7	i 8·6	—
Columbia		19·8	74	4 30	+ 3	i 8 14	+12	i 10·2	—
Ann Arbor		20·1	49	i 4 31	0	i 8 13	+ 5	i 9·6	12·4
Saskatoon		21·6	356	e 3 55	−51	i 7 47	−51	—	—
Pittsburgh		21·9	57	i 4 48	− 2	i 8 36	− 8	11·0	—
Seattle		22·0	326	e 4 56	+ 5	9 0	+14	11·9	—
Charlottesville		22·3	64	i 4 58	+ 4	i 9 6	+14	i 11·2	—
Victoria	E.	23·0	326	5 5	+ 4	9 17	+12	13·9	14·9
	N.	23·0	326	4 59	− 2	9 13	+ 8	13·9	—
Toronto	E.	23·5	49	i 5 9	+ 4	i 9 20	+ 6	12·1	14·0
		23·5	49	i 5 5	0	e 9 18	+ 4	11·8	—
Georgetown		23·6	62	i 5 10	+ 4	i 9 23	+ 7	12·4	—
Fordham		26·4	59	i 5 36	+ 3	i 10 12	+ 7	13·1	—
Ottawa		26·6	48	i 5 37	+ 2	e 10 12	+ 3	e 13·5	—
Port au Prince		31·2	105	i 6 23	+ 7	i 11 22	− 1	e 17·8	24·8
Balboa Heights		31·5	129	5 31?	−47	—	—	—	—
Sitka		34·2	330	i 6 42	0	i 12 10	+ 1	e 17·5	—
San Juan		36·5	100	i 7 3	+ 1	i 12 50	+ 6	e 16·8	—
Ivigtut		47·3	33	8 31	0	e 15 27	+ 4	22·5	32·5
Honolulu T.H.		48·7	274	e 8 42	+ 1	i 15 49	+ 6	21·7	—
La Paz		58·4	139	i 9 52	− 1	i 18 1	+ 6	29·1	35·0

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.
Scoresby Sund		58·8	23	9 54	− 2	18 3	+ 3	—	—
Edinburgh		70·8	36	11 16	0	20 38	+ 7	34·5	42·9
Bidston		71·9	39	11 1	−21	20 43	− 1	e 28·5	41·6
Stonyhurst		72·0	39	e 11 25	+ 2	e 20 47	+ 2	36·5	43·7
Durham		72·1	38	11 38	+15	20 41	− 5	—	39·5
Abisko		72·5	20	i 11 23	− 3	e 20 42	− 9	i 35·4	i 39·2
Bergen		72·5	29	—	—	e 20 54	+ 3	e 33·1	—
Oxford		73·7	40	e 11 20	−13	i 21 8	+ 3	e 31·5	45·0
Kew		74·4	40	e 11 35	− 2	e 21 17	+ 4	i 35·2	44·8
De Bilt		76·9	37	e 11 49	− 2	e 21 42	0	e 35·5	42·7
Uccle		77·2	39	e 11 51	− 2	e 21 42	− 3	e 34·5	—
Paris		77·3	41	i 11 53	− 1	e 21 41	− 5	30·5	40·5
Upsala		77·8	25	e 11 55	− 2	e 21 42	−10	e 35·5	38·7
Toledo		77·9	51	e 11 56	− 1	e 21 51	− 2	e 37·6	48·2
Copenhagen		78·2	30	11 57	− 1	21 56	0	26·5	—
Hamburg		78·5	34	e 12 0	0	e 21 56	− 3	e 35·5	48·6
Lund		78·6	30	11 59	− 1	21 59	− 1	—	—
Malaga		79·1	54	e 11 59	− 4	20 31	−95	27·4	—
Rio de Janeiro	E.	79·2	125	e 12 0	− 4	e 21 16	−51	—	—
	N.	79·2	125	e 12 1	− 3	e 22 2	− 5	—	—
Granada		79·5	53	12 7	+ 2	i 22 17	+ 7	i 39·9	47·5
Feldberg		79·7	38	e 12 15	+ 9	i 22 14	+ 2	e 34·8	49·5
Göttingen		79·7	36	e 12 3	− 3	e 22 13	+ 1	e 37·5	49·3
Besançon		80·1	40	—	—	e 22 36	+19	42·5	—
Strasbourg		80·3	39	e 12 2	− 7	e 22 13	− 6	35·5	—
Tortosa	N.	80·4	48	e 12 17	+ 7	22 15	− 5	e 38·5	40·3
Almeria		80·5	52	i 12 10	0	22 19	− 2	39·1	42·1
Potsdam		80·6	34	—	—	e 22 31?	+ 9	e 37·5	49·5
Neuchatel		80·8	40	e 12 10	− 2	e 22 41	+17	—	—
Jena	E.	80·9	36	e 12 13	0	e 22 31	+ 6	e 37·5	44·8
	N.	80·9	36	e 12 7	− 6	e 22 24	− 1	e 36·5	45·0
Stuttgart		80·9	38	i 12 12	− 1	e 22 23	− 2	e 42·5	48·3
Alicante		81·0	50	e 12 20	+ 7	e 22 30	+ 4	e 38·9	—
Zurich		81·4	40	e 12 14	− 1	—	—	—	—
Cheb		81·8	35	e 12 20	+ 3	e 23 18	PS	e 48·5	50·5
Chur		82·2	40	e 12 19	0	—	—	—	—
Pulkovo		82·2	21	i 12 15	− 4	22 28	−11	35·5	48·7
Königsberg		82·3	29	e 12 18	− 2	e 22 41	+ 1	e 31·5	46·5
Munich		82·5	37	e 12 30	+ 9	i 22 50	+ 8	e 44·6	i 51·5
Innsbruck		83·0	38	12 25	+ 2	—	—	—	—
Piacenza		83·5	40	11 31	−55	—	—	—	49·4
Algiers		84·2	50	e 12 28	− 1	22 57	− 3	42·5	51·5
Vienna		84·9	35	e 12 34	+ 1	22 31	[−27]	e 41·0	49·0
Florence		85·1	42	12 31	− 3	23 16	+ 7	34·5	39·2
Graz		85·2	36	e 13 0	+26	e 23 6	[+ 5]	e 38·5	52·2
Triest		85·2	38	e 17 21	PPP	e 23 5	[+ 4]	e 41·8	50·7
Zagreb		86·3	37	e 12 38	− 2	e 23 3	[− 5]	—	43·7
Budapest		86·8	34	e 12 55	+13	23 25	0	e 37·0	52·5
Kucino		87·8	20	12 44	− 3	23 12	[− 7]	39·5	49·7
Naples	E.	88·6	42	e 12 47	− 4	e 23 17	[− 7]	50·5	60·5
Belgrade		89·3	35	e 11 57	−57	e 24 14	+25	48·0	54·1
Vladivostok		90·2	323	e 12 56	− 2	23 30	[− 4]	49·4	60·4
Ekaterinburg		91·6	10	i 13 5	0	i 24 6	− 5	39·5	54·8
Irkutsk		93·5	344	e 12 47	−27	e 23 45	[− 8]	44·5	59·8
Yalta		95·8	28	17 17	PP	—	—	46·7	—
Wellington		103·6	230	—	—	29 31?	?	—	—
Zi-ka-wei	Z.	104·6	320	e 18 19	PP	i 27 37	PS	58·5	69·7
Baku		105·0	20	e 14 11	+ 5	27 31	PS	51·5	63·6
Sydney		117·7	246	e 30 13	PS	—	—	e 59·5	65·5
Bombay		130·4	4	—	—	e 48 31	?	—	—
Colombo		142·3	354	29 50	SKKS	(29 50)	{+13}	—	77·1

For Notes see next page.

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NOTES TO AUGUST 16d. 11h. 40m. 29s.

Additional readings :—
Tucson i = +1m.43s. and +2m.1s. = P_g.
Denton iPP?E = +1m.31s., iPPE = +1m.51s., iP_gE = +2m.0s.
Denver eN = +2m.26s., iEN = +2m.28s., iN = +2m.35s., iPN = +2m.51s. = P*, iEN = +2m.56s. = P_g, iE = +5m.6s. = S_g.
Tacubaya iPPE = +2m.53s., iN = +3m.6s., iZ = +3m.18s., iE = +4m.45s.
Pasadena ePZ = +2m.49s., iPZ = +2m.56s.
Vera Cruz iN? = +3m.27s., iSSZ? = +7m.11s.
Florissant iEN = +3m.16s.
St. Louis iN = +5m.30s. and +5m.37s.
Bozeman iS = +6m.57s.
Lick eE = +6m.53s., eN = +8m.20s., eE = +8m.27s., eN = +8m.52s., eE = +8m.59s., and +11m.1s.
Santa Clara iPPE = +3m.53s., iE = +4m.30s., iE = eN = +8m.37s., iEN = +8m.45s.
Berkeley ePN = +3m.48s., iEN = +3m.53s. = PP − 3s., iN = +7m.3s., eE = +7m.7s.
Chicago iPP = +4m.21s., iS = +7m.15s.
Ann Arbor eE = +6m.43s., iSS = +9m.1s. ; T_0 = 11h.40m.12s.
Charlottesville eSS = +10m.32s.
Toronto iS = +9m.29s.
Fordham iPPN = +6m.18s.
Ottawa e = +12m.3s. : T_0 = 11h.40m.20s.
Port au Prince iPNE = +6m.26s., PPNW = +7m.15s.
Sitka iSS = +14m.12s.
San Juan iPP = +8m.18s., i = +13m.1s.
Ivigtut +10m.24s. = PP + 10s., eSN = +15m.32s., eE = +15m.43s., eSN = +15m.32s. also +18m.43s.
Honolulu T.H. eSS = +19m.11s.
La Paz PP = +12m.41s., PPPN = +13m.43s., iPSN = +18m.43s., iSSN = +22m.49s., SSSN = +24m.33s., iSSSE = +25m.1s.
Scoresby Sund +13m.26s., +18m.31s., and +22m.15s., eN = +24m.31s.
Edinburgh i = +14m.11s., +28m.39s., and +36m.2s.
Bidston PP = +14m.16s., PPP = +15m.51s., PPPP = +16m.23s., SS = +24m.51s., SSS = +28m.13s.
Stonyhurst PP = +14m.5s., PPP = +15m.48s., PS = +21m.15s.
Abisko iPPN = +14m.4s., iPPZ = +14m.8s., iN = +15m.47s., iE = +15m.52s., iZ = +15m.55s., and +21m.39s., iSSN = +25m.21s., eSSE = +25m.25s., iSSE = +25m.31s., eSSSE = +29m.2s., eGE = +33m.37s., eGN = +34m.1s., eE = +35m.3s., eN = +35m.13s.
Oxford ePP = +13m.33s.
Kew iPPEZ = +14m.24s., iSSE = +26m.10s., iN = +27m.51s., iSSSZ = +29m.56s.
De Bilt iPPZ = +14m.49s.
Uccle PP = +14m.48s.
Upsala PP = +14m.48s., PPP = +16m.46s., SS = +26m.38s., SSS = +30m.38s.
Rio de Janeiro eN = +12m.3s., ePP = +15m.3s., ePPPE = +16m.56s., ePPPN = +17m.4s., iSE = +22m.5s., eGE = +37m.31s.?
Granada SS = +24m.51s., SSS = +28m.21s.
Feldberg e = +15m.7s. = PP + 6s., and +22m.59s. = PS + 13s., i = +26m.37s.
Göttingen eEZ = +15m.13s. = PP + 12s.
Strasbourg PP = +14m.49s.
Almeria PP = +15m.16s., SS = +25m.11s.
Jena ePPN = +14m.55s.
Stuttgart eP_0PZ = +12m.42s., ePPEZ = +15m.19s., e = +16m.47s. = PPP − 7s., ePPP = +17m.5s., e = +18m.31s., eSKKS = +23m.11s., eEN = +27m.1s., eSSEN = +27m.43s., eE = +28m.49s., eSSS = +31m.28s., eE = +33m.55s.
Pulkovo PP = +15m.31s., PPP = +17m.15s., i = +22m.34s., PS = +23m.25s.
Königsberg e = +29m.17s.
Munich eE = +22m.7s., eSN = +22m.33s., eN = +37m.50s.
Vienna PP = +15m.20s., PPP = +18m.28s., i = +25m.21s.
Triest eS = +28m.12s.
Zagreb e = +21m.46s., eSS = +26m.13s., eNE = +38m.54s.
Kucino PP = +16m.14s., SS = +29m.25s., SSS = +33m.1s.
Belgrade e = +5m.54s., +18m.26s., and +41m.58s.
Vladivostok PP = +16m.33s.
Ekaterinburg PP = +16m.48s., iSKS = +23m.34s., SS = +30m.25s.
Irkutsk PPS = +25m.39s., SS = +30m.31s.
Zi-ka-wei iZ = +29m.3s., and +34m.5s.
Baku ePP = +18m.24s., SS = +33m.55s.
Long waves were also recorded at Simferopol, Barcelona, Hong Kong, Phu Lien, Christchurch, and Riverview.

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Aug. 16d. 13h. 33m. 20s. Epicentre 30°·6N. 104°·1W. (as at 11h.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Tucson		6·0	288	e 1 16	− 9	i 2 46	+13	—
Denver		9·1	356	e 2 50	P*	i 4 42	S*	—
Little Rock	N.	10·7	64	e 2 41	+10	e 4 37	+ 6	5·9
Pasadena	Z.	12·3	290	e 2 51	− 1	—	—	—
Haiwee	N.	12·8	300	e 3 10	+11	—	—	—
Florissant		14·0	50	e 3 10	− 5	e 5 36	−15	—
St. Louis		14·0	51	i 3 10	− 5	i 5 39	−12	—
Ottawa		26·6	48	6 40?	+65	—	—	—

Additional readings :—
Tucson e = +1m.34s., i = +1m.43s., and +1m.55s., e = +2m.14s., i = +3m.0s. = S*.
Pasadena eE = +3m.9s., eN = +5m.52s.
St. Louis iE = +3m.20s., eEN = +5m.31s.
Long waves were also recorded at other American and European stations.

Aug. 16d. 16h. 54m. 26s. Epicentre 35°·2N. 136°·3E. (as on 1928 Jan. 28d.). X.

A = −·591, B = +·565, C = +·576.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·5	93	e 0 16	+ 9	0 27	+14	—	—
Osaka	0·8	232	0 11	0	(0 20)	− 1	0·3	0·3
Kobe	1·1	240	0 14	− 2	0 25	− 3	—	0·4
Toyooka	1·2	291	i 0 17	0	i 0 30	− 1	—	0·5
Sumoto	1·4	234	0 20	0	0 36	0	—	0·6

Aug. 16d. Readings also at 0h. (near Berkeley), 1h. (Baku), 3h. (Bergen), 9h. (near Algiers), 10h. (Ekaterinburg, Vladivostok, near Mizusawa, and Tyosi), 12h. and 15h. (near Sumoto), 18h. (Sydney), 22h. (Almata and Tucson).

Aug. 17d. 5h. 5m. 25s. Epicentre 32°·5S. 69°·5W. (as on 1928 Feb. 18d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		1·4	315	0 22	+ 2	0 40	+ 4	0·7	0·7
La Plata		10·0	108	2 21	0	—	—	5·1	—
La Paz		16·0	5	i 3 40	− 1	i 6 38	0	7·4	8·5
Pasadena	Z.	80·7	321	i 12 3	− 9	—	—	—	—
Haiwee		82·2	322	e 12 12	− 7	—	—	—	—
Andijan		148·6	64	e 20 17	[+37]	—	—	—	—

Additional readings :—
La Paz iN = +6m.48s.
Pasadena iZ = +12m.33s., and +12m.46s.

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Aug. 17d. 17h. 48m. 53s. Epicentre 27°·6N. 127°·9E. N.2.

A = −·544, B = +·699, C = +·463 ; D = +·789, E = +·614 :
G = −·285, H = +·366, K = −·886.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		5·4	18	e 1 22	+ 5	e 2 25	+ 7	—	—
Hukuoka		6·4	19	1 33	+ 2	e 2 51	+ 8	—	3·1
Zi-ka-wei	Z.	6·7	304	i 1 47	+12	3 17	S*	4·1	4·8
Matuyama		7·5	33	e 3 45	+119	i 5 20	+129	—	—
Koti		7·7	38	1 47	− 2	3 10	− 6	—	3·8
Sumoto		9·0	40	(1 52)	−15	(3 54)	+ 5	—	(4·4)
Osaka		9·6	41	2 13	− 3	(4 11)	+ 8	4·2	6·3
Toyooka		9·9	35	i 2 15	− 4	e 4 27	+16	—	—
Nagoya		10·8	44	e 2 36	+ 4	—	—	—	—
Hong Kong		13·5	250	3 18	+ 9	7 17	L	(7·3)	11·8
Tientsin		14·5	325	4 27	+65	7 24	L	(7·4)	10·7
Vladivostok		15·8	11	e 3 43	+ 5	e 7 1	+27	8·3	—
Mizusawa	E.	15·9	40	2 37	−63	3 38	?	—	—
Phu-Lien		20·5	255	4 7?	−28	—	—	—	—
Andijan		46·9	302	e 8 32	+ 4	e 13 59	?	—	—
Tashkent		49·3	303	e 9 7	+21	e 20 12	SSS	e 27·9	31·7
Ekaterinburg		54·8	322	i 12 36	?	e 19 55	?	29·1	39·2
Baku		63·8	305	e 10 34	+ 3	e 19 22	PS	35·1	44·0
Kucino		67·4	322	e 10 49	− 5	e 19 45	− 5	33·3	37·1
Pulkovo		70·0	329	11 11	0	20 23	+ 2	31·1	46·1
Helsingfors	N.	72·3	330	e 11 25	0	e 21 24	PS	33·1	—
Scoresby Sund		79·6	350	i 12 4	− 2	22 1	−10	41·1	—
Lund		80·0	329	12 7	− 1	—	—	—	—
Copenhagen		80·3	329	12 10	+ 1	22 13	− 6	41·1	—
Göttingen		84·0	326	i 12 30	+ 2	—	—	—	54·8
Stuttgart		86·1	325	i 12 40	+ 1	e 23 2	[− 5]	e 45·1	55·6
Chur		87·0	323	e 12 44	+ 1	—	—	—	—
Florence		88·0	319	12 52	+ 4	—	—	—	51·1
Piacenza		88·2	320	—	—	e 23 7	[−14]	—	56·9
Haiwee	E.	91·1	47	e 13 0	− 3	—	—	—	—
Pasadena	Z.	92·2	49	i 13 5	− 3	—	—	—	—
Granada		100·9	323	—	—	e 28 49	?	59·7	62·8
Ottawa		104·0	16	—	—	e 22 27	—	51·1	—

Additional readings and note :—
Zi-ka-wei iZ = +1m.55s., +2m.9s. = P_g, +2m.22s., +2m.39s., and +3m.1s.
Sumoto readings have been *increased* by 5m.
Osaka i = +2m.35s.
Toyooka eE = +2m.17s., eN = +2m.24s.
Tashkent e = +25m.41s.
Ekaterinburg i = +13m.35s.
Helsingfors eE = +11m.39s., +13m.52s., = PP − 6s., and +15m.44s. = PPP + 10s., eSE = +21m.27s., eSSE = +26m.35s., eN = +27m.31s., eE = +29m.31s.
Granada i = +30m.17s.
Long waves were also recorded at Kobe and other European stations.

Aug. 17d. Readings also at 0h. (Ekaterinburg, Tashkent, near Almata, Andijan, and near La Paz), 1h. (La Paz), 2h. (La Plata and Santiago), 4h. (La Paz), 6h. (La Paz, Adelaide, Melbourne, Andijan, Ekaterinburg, and near Almata), 7h. (Baku), 9h.(Alicante, Granada, Toledo, Strasbourg, Paris, Stuttgart, De Bilt, Edinburgh, Copenhagen, Kucino, Baku, Ekaterinburg, Scoresby Sund, and Ottawa), 10h. (Göttingen), 11h. (Ksara), 13h. (Berkeley, Haiwee, Tucson, Florissant, Ann Arbor, Ottawa, Toronto, and Scoresby Sund), 15h. (Pasadena, Tyosi, near Mizusawa, and Nagoya), 16h. (near Matuyama), 17h. (Calcutta), 19h. (near Almata), 20h. (Chiufeng), 22h. (Andijan).

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Aug. 18d. 5h. 40m. 20s. Epicentre **36°·5N. 141°·3E.** N.1.

Probable error of epicentre ±0°·28.

Epicentre determined by Tokyo.

A = −·627, B = +·503, C = +·595; D = +·625, E = +·780; G = −·464, H = +·372, K = −·804.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama		0·5	324	0 3	− 4	0 10	− 3	—	—
Mito		0·6	260	0 9	0	0 18	+ 3	—	—
Tyosi		0·8	205	0 8	− 3	0 17	− 4	—	0·3
Kakioka		0·8	253	0 13	+ 2	0 28	+ 7	—	—
Tukubasan		1·0	254	0 13	− 1	0 29	+ 3	—	—
Utunomiya		1·1	273	0 16	0	0 41	S_g	—	—
Hukusima		1·4	332	0 21	+ 1	0 42	S*	—	—
Tokyo		1·5	237	0 21	0	0 43	+ 4	—	1·0
Kumagaya		1·6	257	0 24	+ 1	0 46	+ 5	—	—
Yokohama		1·7	231	0 26	+ 2	0 48	+ 4	—	—
Yokosuka		1·8	228	0 18	− 8	0 39	− 7	—	—
Sendai		1·8	350	0 26	0	0 49	+ 3	—	—
Oiwake		2·2	266	0 32	+ 1	1 3	S*	—	—
Misima		2·3	234	0 35	+ 2	1 11	S*	—	—
Niigata		2·3	309	0 39	+ 6	1 19	S_g	—	—
Kohu		2·4	249	0 35	+ 1	1 0	− 2	—	—
Numadu		2·4	235	0 33	− 1	1 6	+ 4	—	—
Nagano		2·5	274	0 38	+ 2	1 21	S_g	—	—
Mizusawa		2·6	357	0 40	+ 3	1 14	S*	—	—
Morioka		3·2	358	0 46	0	1 25	+ 3	—	—
Akita		3·3	343	0 54	+ 7	1 44	S_g	—	—
Hatidyozima		3·6	201	0 53	+ 2	1 27	− 5	—	—
Wazima		3·6	285	0 54	+ 3	1 18	P_g	—	—
Nagoya		3·7	249	e 0 58	+ 5	2 1	S*	—	2·4
Gihu		3·8	254	0 58	+ 4	1 57	S*	—	—
Kameyama		4·2	248	1 6	+ 6	2 14	S*	—	—
Aomori		4·3	354	1 3	+ 2	2 8	S*	—	—
Hikone		4·3	154	0 59	− 2	2 3	S*	—	—
Kyoto		4·7	154	1 15	+ 8	2 19	S*	—	—
Osaka		5·0	251	1 13	+ 2	—	—	2·3	3·1
Kobe		5·3	252	e 1 24	+ 9	2 40	S*	2·9	3·0
Toyooka		5·3	262	i 1 15	0	i 2 29	+14	—	3·1
Siomisaki		5·4	237	1 17	0	2 50	S*	—	—
Sumoto	E.	5·6	249	1 24	+ 4	2 55	S*	—	3·3
	N.	5·6	249	1 25	+ 5	2 52	S*	—	3·4
	Z.	5·6	249	1 20	0	2 53	S*	—	3·3
Obihiro		6·6	12	1 29	− 5	3 1	+13	—	—
Sapporo		6·6	0	1 43	+ 9	2 55	+ 7	—	—
Koti		7·0	248	1 40	+ 1	3 15	+16	—	3·9
Matuyama		7·4	253	e 1 45	0	e 3 48	S*	—	—
Nemuro		7·6	24	1 42	− 6	3 0	−14	—	—
Vladivostok		9·7	315	2 15	− 2	4 30	+24	4·9	6·0
Nagasaki		10·1	252	—	—	e 5 0	S*	—	—
Zi-ka-wei	Z.	17·3	258	3 50	− 8	7 50	+41	10·2	11·5
Tientsin		19·1	285	5 18	+58	9 8	+80	12·4	15·0
Irkutsk		30·3	313	e 6 16	+ 8	e 11 8	− 1	15·7	19·3
Almata		48·6	300	e 8 44	+ 3	—	—	—	—
Andijan		52·6	298	e 9 11	0	(e 16 43)	+ 6	e 16·7	—
Ekaterinburg		55·3	320	i 9 30	− 1	17 15	+ 2	25·7	35·5
Baku		68·2	305	e 10 57	− 2	e 21 17	(+25)	34·7	43·7
Pulkovo		68·3	330	10 56	− 4	20 2	+ 1	32·7	43·5
Helsingfors	E.	70·2	331	e 11 40?	+28	e 19 40?	−44	e 32·7	—
Scoresby Sund		72·3	354	11 21	− 4	20 46	− 2	37·7	—
Haiwee	N.	76·7	54	e 12 0	+10	—	—	—	—
Pasadena	E.	77·8	56	i 12 2	+ 5	—	—	—	—
Copenhagen		78·0	333	11 52	− 5	22 10	PS	37·7	—
Stuttgart		84·7	331	e 12 28	− 4	e 23 40	PS	e 43·7	53·7
Piacenza		87·5	328	e 13 40	+55	—	—	—	56·4
La Paz	Z.	147·2	60	e 19 36	[− 1]	—	—	—	—

For Notes see next page.

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NOTES TO AUGUST 18d. 5h. 40m. 20s.

Additional readings :—
Osaka i = +1m.39s. =P_g.
Toyooka iPEN = +1m.18s., SNZ = +2m.33s. =S*.
Koti eS_gN = +3m.34s.
Zi-ka-wei iZ = +4m.6s. =PP +1s.
Helsingfors eE = +28m.52s.
Long waves were also recorded at Hong Kong, Phu-Lien, Kucino, and other European stations.

Aug. 18d. 9h. 47m. 10s. Epicentre 39°·5N. 24°·0E. (as on 1923 Aug. 14d.). R.2.

A = +·705, B = +·314, C = +·636 ; D = +·407, E = −·914 ;
G = +·581, H = +·256, K = −·772.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta		5·9	270	e 1 15	− 9	—	—	—	—
Belgrade		6·0	336	e 1 8	−17	e 2 8	−25	—	4·2
Catania		7·2	258	e 3 6	S	(e 3 6)	+ 2	—	—
Naples	E.	7·6	284	e 1 46	− 2	e 4 27	+73	—	—
Collurania		8·4	296	2 0	+ 1	—	—	—	—
Zagreb		8·6	320	e 2 2	0	e 3 38	− 1	e 4·0	i 4·8
Budapest		8·7	338	e 2 20	+17	4 17	S*	5·3	—
Yalta		9·1	53	2 11	+ 2	5 20	S_g	—	—
Triest		9·7	313	e 2 18	+ 1	e 3 56	−10	e 4·5	5·3
Graz		9·8	324	e 2 16	− 2	e 3 41	−27	e 4·5	5·4
Theodosia		10·0	53	e 1 50	−31	—	—	—	—
Vienna		10·3	331	e 2 37	+12	4 0	−21	—	6·8
Venice		10·4	308	i 5 6	S*	i 5 41	L	(i 5·7)	—
Florence		10·4	299	3 50	P_g	—	—	—	5·8
Treviso		10·7	309	e 0 8	?	e 5 40	L	(e 5·7)	—
Ksara		11·1	117	e 6 0	?	e 8 8	?	—	—
Piacenza		11·9	303	—	—	e 4 34	−26	—	8·8
Innsbruck		12·0	315	2 26	−22	—	—	—	—
Chur		12·9	310	e 2 59	− 2	—	—	—	—
Ravensburg		13·3	314	—	—	e 6 8	+34	e 6·9	7·4
Cheb		13·4	326	—	—	e 4 50?	−47	e 6·8	7·2
Zurich		13·7	310	e 3 9	− 2	—	—	—	—
Stuttgart		14·1	316	e 3 10	− 7	e 6 8	+15	e 7·3	7·8
Feldberg		15·3	319	3 33	+ 1	—	—	—	10·5
Königsberg		15·5	352	e 3 32	− 3	6 36	+ 9	e 8·6	9·8
Uccle		17·8	316	e 4 7	+ 3	—	—	e 8·8	—
Copenhagen		18·0	338	4 7	0	7 26	+ 1	9·8	—
De Bilt		18·1	320	4 8	0	7 35	SS	e 9·3	10·1
Kucino		18·7	25	e 4 11	− 4	e 7 40	0	e 8·9	12·0
Baku		19·8	79	e 4 41	+14	e 8 34	+32	e 12·3	—
Pulkovo		20·6	9	i 4 36	0	8 18	0	10·8	12·6
Kew		20·6	314	e 4 38	+ 2	e 8 33	+15	11·0	11·6
Helsingfors	N.	20·7	1	i 4 38	+ 1	e 8 22	+ 2	e 9·4	—
	Z.	20·7	1	e 4 39	+ 2	e 8 17	− 3	e 10·8	—
Upsala		20·8	351	e 4 34	− 4	—	—	e 10·8	14·3
Oxford		21·4	314	—	—	e 8 35	+ 1	e 10·8	11·3
Toledo		21·5	280	e 5 0	+15	e 8 46	+10	e 11·0	—
Granada		21·6	273	i 5 1	+15	i 8 57	+19	i 12·4	13·5
Ekaterinburg		29·4	42	e 6 7	+ 7	e 11 6	+11	13·8	18·1
Scoresby Sund		38·9	338	8 56	PP	—	—	18·8	—
Irkutsk		54·4	48	—	—	e 27 50?	?	e 33·8	—

Additional readings :—
Belgrade e = +1m.16s., +1m.23s., and +2m.16s.
Zagreb e = +3m.30s.
Vienna S = +4m.49s.
Stuttgart e = +3m.18s. =PP −2s., eNZ = +6m.38s.
Strasbourg (Δ =14°·5) PPP = +5m.20s.
Königsberg eN = +6m.42s.
Helsingfors ePE = +4m.43s., ePP = +5m.4s.
Long waves were also recorded at Edinburgh, Paris, Lund, and Vladivostok.

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Aug. 18d. 14h. 21m. 8s. Epicentre **46°·9N. 90°·0E.** R.1.
(as on 16d.)

Probable error of epicentre ±0°·26.

A = ·000, B = +·683, C = +·730; D = +1·000, E = ·000; G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		9·9	253	2 21	+ 2	i 3 58	−13	4·4	5·9
Irkutsk		10·7	55	2 22	− 9	—	—	—	—
Andijan		14·0	250	3 16	+ 1	6 3	+12	6·9	8·8
Dehra Dun		19·0	213	3 42	−37	7 32	−14	10·5	13·9
Chiufeng		20·0	99	i 7 14	S	(i 7 14)	−52	—	16·5
Ekaterinburg		20·4	310	i 4 33	− 1	i 8 1	−13	—	—
Tientsin		21·2	102	i 5 3	PP	—	—	—	—
Agra		21·9	209	i 3 32	−78	i 6 35	−129	10·3	13·4
Calcutta		24·4	184	6 9	+55	10 47	+77	14·3	16·1
Zinsen		28·4	96	5 53	+ 2	10 59	+21	—	—
Zi-ka-wei		28·7	112	i 5 52	− 1	10 58	+15	—	18·2
Baku		29·4	272	i 6 4	+ 4	i 10 53	− 2	—	—
Phu-Lien		29·4	147	e 6 1	+ 1	i 10 57	+ 2	14·9	16·7
Vladivostok		29·5	82	i 5 59	− 2	11 1	+ 5	14·5	—
Hyderabad		31·0	203	6 14	0	11 20	0	14·9	20·4
Bombay		31·4	212	6 17	0	11 24	− 2	15·3	22·8
Hong Kong		31·4	133	6 16	− 1	11 28	+ 2	16·7	17·2
Kucino		32·9	307	6 19	−12	11 34	−15	14·0	19·2
Hokoto		33·1	124	4 15	?	7 50	?	—	—
Hukuoka		33·1	98	e 11 36	S	(e 11 36)	−16	20·4	21·0
Taihoku		33·2	119	e 6 38	+ 4	—	—	17·6	18·3
Nagasaki		33·3	100	e 12 6	S	(e 12 6)	+11	(18·6)	21·4
Matuyama		34·6	97	e 6 46	0	—	—	21·5	21·9
Toyooka		35·1	92	i 6 50	0	—	—	e 18·2	22·4
Koti		35·4	97	e 6 53	0	e 12 31	+ 4	17·9	22·3
Kobe		35·7	94	6 56	+ 1	e 12 37	+ 5	e 18·2	22·6
Sumoto		35·8	96	e 6 57	+ 1	e 12 22	−11	e 18·3	23·0
Osaka		36·0	94	7 1	+ 3	12 51	+15	18·2	22·9
Pulkovo		36·4	313	e 7 0	− 1	12 37	− 5	15·9	21·6
Nagoya		36·7	91	e 7 7	+ 3	—	—	19·5	22·3
Theodosia		37·2	290	e 8 37	PP	14 13	?	16·9	—
Morioka		37·2	81	7 8	0	12 55	+ 1	—	—
Mizusawa		37·5	82	7 9	− 2	13 2	+ 3	19·0	—
Hukusima		37·7	86	7 14	+ 2	13 14	+12	—	—
Simferopol		38·1	289	i 7 18	+ 2	13 12	+ 4	16·4	—
Kodaikanal		38·2	200	i 13 34	S	(i 13 34)	+25	i 20·3	24·4
Yalta		38·2	289	7 16	− 1	e 13 5	− 4	15·9	21·2
Helsingfors		39·0	314	i 7 21	− 3	e 13 13	− 8	e 16·7	—
Tyosi		39·1	87	7 25	+ 1	e 13 28	+ 6	e 20·2	24·5
Colombo		41·0	196	7 27	−13	13 54	+ 3	23·7	26·0
Manila		41·3	131	7 44	+ 1	14 5	+ 9	20·1	23·8
Ksara	E.	42·3	273	i 7 55	+ 4	i 14 23	+13	—	—
Lemberg	E.	42·4	299	7 46	− 6	16 56	SS	e 21·5	23·1
	N.	42·4	299	8 2	+10	17 0	SS	e 21·5	22·5
Upsala		42·7	317	e 7 51	− 3	i 14 10	− 6	—	23·2
Königsberg		42·7	309	e 7 54	0	14 15	− 1	—	—
Medan		44·0	167	11 52	?	i 18 22	(+15)	i 28·7	—
Lund		46·3	312	8 23	0	i 15 5	− 4	—	—
Budapest		46·4	299	8 19	− 5	15 19	+ 9	18·4	25·4
Copenhagen		46·7	312	8 23	− 3	i 15 12	− 2	—	—
Belgrade		46·8	295	e 8 9	−18	e 15 7	− 9	—	26·2
Potsdam		47·7	308	e 8 35	+ 1	15 30	+ 1	22·9	30·3
Vienna		47·7	300	e 8 34	0	15 37	+ 8	i 24·6	26·4
Prague		48·0	304	i 8 41	+ 5	15 37	+ 4	e 21·5	25·9
Bergen		48·2	320	8 20	−18	15 41	+ 5	20·9	25·9

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.
Graz		48·7	299	i 8 46	+ 5	i 15 48	+ 5	19·7	30·3
Hamburg		48·9	310	8 44	+ 1	i 15 50	+ 5	e 24·0	—
Zagreb		49·1	298	e 8 44	0	i 15 53	+ 5	—	27·3
Cheb		49·1	304	e 8 42	− 2	e 15 47	− 1	e 25·7	29·9
Jena		49·2	305	e 8 43	− 2	i 15 52	+ 2	e 22·9	29·1
Göttingen		49·8	308	e 8 48	− 2	15 57	− 1	e 21·9	30·7
Laibach		49·9	300	8 56	+ 5	e 16 13	+14	—	27·6
Triest		50·5	299	8 52	− 3	16 8	0	i 24·3	28·2
Innsbruck		51·1	302	(e 8 58)	− 2	e 16 21	+ 5	e 30·3	31·2
Feldberg		51·3	307	e 9 6	+ 5	e 16 22	+ 3	—	28·0
Venice		51·4	299	i 9 0	− 2	i 16 29	+ 9	21·7	32·6
Treviso		51·5	300	i 9 4	+ 1	i 16 31	+ 9	27·7	—
Stuttgart		51·6	305	e 9 1	− 2	i 16 23	0	e 23·9	—
Padova		51·8	299	i 9 12	+ 7	16 24	− 1	—	—
Karlsruhe		51·9	305	9 10	+ 4	16 6	−21	e 26·9	31·4
Collurania		52·1	295	9 9	+ 2	—	—	—	—
De Bilt		52·1	309	9 8	+ 1	16 31	+ 1	e 24·9	32·0
Camerino		52·3	296	e 9 19	+10	—	—	—	—
Trenta		52·3	290	i 8 42	−27	i 16 12	−21	—	28·9
Chur		52·3	303	e 9 7	− 2	e 16 32	− 1	—	—
Strasbourg		52·5	305	i 9 7	− 3	16 30	− 5	25·9	27·9
Zurich		52·7	304	e 9 9	− 3	e 16 32	− 6	—	—
Naples	E.	52·8	292	e 9 9	− 3	e 16 39	0	28·9	33·4
Scoresby Sund		52·9	338	9 14	+ 1	i 16 44	+ 3	—	—
Florence		53·0	297	i 9 21	+ 7	16 51	+ 9	21·9	28·9
Prato		53·0	297	e 9 16	+ 2	i 16 57	+15	20·9	33·8
Casamicciola		53·0	292	9 17	+ 3	16 35	− 7	24·3	—
Uccle		53·2	310	e 9 13	− 2	i 16 45	0	23·9	31·8
Piacenza		53·3	299	9 16	0	i 16 48	+ 2	i 20·9	33·2
Messina		53·4	289	9 22	+ 5	16 52?	+ 5	—	—
Neuchatel		53·8	304	e 9 17	− 3	i 16 48	− 5	—	—
Catania		54·1	289	9 35	+13	17 10	+13	24·4	37·5
Durham		54·2	315	9 24	+ 1	16 54	− 4	—	30·9
Besançon		54·2	304	e 9 23	0	e 17 3	+ 5	27·9	28·9
Edinburgh		54·3	316	e 9 23	0	16 57	− 2	26·9	35·5
Stonyhurst		55·1	314	e 9 29	− 1	i 17 9	− 2	26·9	—
Batavia		55·2	160	e 11 26	PP	—	—	30·5	35·1
Paris		55·3	308	i 9 29	− 2	17 13	0	26·9	33·9
Kew		55·3	311	e 9 32	+ 1	i 17 12	− 1	23·1	33·2
Bidston		55·6	314	e 9 29	− 4	i 17 14	− 3	e 23·9	34·9
Oxford		55·7	312	i 9 31	− 3	i 17 15	− 4	e 24·4	36·4
Puy de Dôme		56·8	305	e 9 41	− 1	e 17 33	− 1	28·9	—
Reykjavik		56·9	331	9 54	+12	17 55	+20	28·1	—
Carloforte		57·5	295	i 9 48	+ 1	e 17 48	+ 5	—	—
Barcelona		59·8	300	e 10 6	+ 3	18 18	+ 5	27·7	37·1
Bagnères		59·9	304	e 10 7	+ 3	e 18 19	+ 4	28·9	—
Amboina		60·7	135	i 10 15	+ 6	i 18 18	− 7	30·9	—
Tortosa	E.	61·2	300	10 15	+ 2	18 35	+ 3	e 27·9	37·1
	N.	61·2	300	10 12	− 1	18 33	+ 1	28·1	38·0
Algiers		62·2	295	e 10 17	− 3	18 50	+ 5	35·4	40·1
Alicante		62·9	300	e 10 31	+ 6	i 19 3	PS	e 28·8	49·6
Toledo		64·5	302	10 32	− 3	i 19 13	− 1	e 29·6	35·0
Almeria		65·4	299	e 10 36	− 5	i 19 31	+ 6	32·1	37·1
Granada		66·0	300	i 10 43	− 2	i 19 7	−25	32·0	40·9
Ivigtut		66·7	339	10 46	− 4	i 19 38	− 3	26·9	—
Malaga		66·8	300	i 10 42	− 9	19 35	− 7	27·4	42·2
San Fernando		67·9	300	10 52	− 6	20 2	+ 6	33·4	35·4
Entebbe		68·4	245	10 52	− 9	19 48	−14	—	—
Sitka		69·4	24	i 11 3	− 4	i 19 59	−15	i 34·4	—
Tananarive		76·1	221	—	—	21 28	− 5	35·5	42·6

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.
Azores		77·7	314	11 28	−28	(26 28)	SS	—	26·5
Saskatoon		79·9	11	e 10 55	−72	i 20 56	?	—	—
Victoria	E.	80·4	22	12 6	− 4	21 55	−25	39·7	50·2
Seattle		81·4	21	e 12 10	− 5	e 22 35	+ 4	e 45·2	—
Bozeman		85·8	15	e 12 35	− 2	i 22 59	[− 6]	e 42·9	—
Ottawa		86·9	350	e 12 42	− 1	e 23 13	−13	e 37·9	—
Honolulu T.H.		88·6	60	e 12 56	+ 5	e 22 23	[− 1]	e 36·8	—
Toronto		88·9	353	e 12 44	− 8	i 23 34	−12	40·2	—
Harvard		89·1	347	e 12 38	−15	i 23 17	[−10]	e 36·1	—
Berkeley		90·4	25	13 0	+ 1	23 40	[+ 5]	e 41·5	47·1
Ann Arbor		90·6	355	e 18 52	?	i 23 28	[− 8]	e 43·1	55·1
Dakar		90·8	293	e 12 36	−25	e 23 5	[−32]	—	—
Lick		91·1	25	e 14 52	?	—	—	—	—
Fordham		91·1	349	e 12 59	− 4	e 24 4	− 2	e 43·1	—
Chicago		91·4	358	—	—	e 29 57	SS	e 37·0	—
Pittsburgh		92·2	353	e 13 5	− 3	i 23 33	[−13]	e 42·0	—
Adelaide		92·8	142	—	—	e 23 52	[+ 3]	i 52·7	67·9
Haiwee	N.	93·2	22	e 13 16	+ 4	e 24 25	− 1	—	—
Georgetown		93·4	350	13 12	− 1	i 23 42	[−10]	44·9	51·1
Florissant		94·3	0	i 13 13	− 4	i 23 44	[−13]	e 43·4	52·4
Charlottesville		94·4	352	—	—	e 23 49	[− 9]	e 38·1	—
St. Louis		94·5	0	e 13 18	0	i 23 46	[−12]	e 43·2	57·5
Mount Wilson	N.	95·1	24	e 13 18	− 3	—	—	—	—
Pasadena		95·2	24	i 13 20	− 1	e 24 33	−11	—	—
Riverview		97·6	133	—	—	e 24 4	[−10]	e 49·2	54·9
Sydney		97·6	133	e 20 52	?	(i 24 4)	[−10]	e 44·6	58·9
Melbourne		97·9	140	—	—	e 24 10	[− 6]	48·5?	60·8
Little Rock	N.	98·3	2	e 13 38	+ 2	e 24 10	[− 7]	—	58·4
Tucson		98·6	19	—	—	e 25 13	− 1	e 39·6	—
Columbia		98·7	353	—	—	i 24 8	[−11]	e 44·8	—
Suva		102·1	104	—	—	28 52?	?	—	—
San Juan		111·2	336	—	—	e 25 2	[−17]	e 53·3	—
Arapuni		114·2	120	—	—	28 52?	PS	—	—
Wellington		115·8	124	e 26 28	SKKS	35 52	SS	62·9	—
Christchurch		116·1	127	e 19 55	PP	e 28 1	?	e 56·2	—
La Paz		144·6	322	i 19 36	[+ 3]	—	—	i 71·1	81·4

Additional readings and note :—
Almata i = +2m.28s.
Andijan P = +3m.28s.
Chiufeng PPz = +7m.41s., S = +11m.4s., SE = +11m.14s.
Zi-ka-wei SSE = +12m.20s., SSSE = +13m.0s.
Hong Kong PP = +7m.3s., SS = +13m.12s., ? = +13m.26s.
Hukuoka eS? = +17m.52s.
Nagasaki gives S as P and L as S.
Sumoto eSN = +12m.36s.
Mizusawa SN = +13m.12s.
Helsingfors iPNZ = +7m.24s., ePPE = +8m.47s., ePPZ = +9m.3s., ePPN = +9m.5s., eSSE = +15m.35s., eSSN = +15m.42s., eSSZ = +15m.51s., eN = +16m.7s., eE = +16m.11s. ; T_o = 14h.21m.16s.
Upsala iP = +7m.55s., iPP = +9m.28s., PPP = +10m.0s.
Königsberg iZ = +8m.43s., Z = +8m.50s., eENZ = +9m.38s. = PP + 10s., iN = +10m.20s., iZ = +11m.14s., iE = +12m.29s., iZ = +12m.34s., iEN = +12m.38s., iE = +12m.59s., eEN = +13m.34s., eSN = +14m.10s., iN = +14m.18s., iPSE = +14m.36s., iN = +14m.42s., +15m.4s., +15m.23s., and +16m.18s., SSN = +16m.54s., and +17m.26s., SSSN = +17m.43s.
Lund i = +8m.26s., +10m.11s. = PP + 8s., eNE = +11m.16s., eSS = +18m.22s., i = +18m.36s.
Copenhagen +10m.14s. = PP + 6s., and +18m.22s. = SS + 0s.
Belgrade eP = +8m.14s., e = +10m.4s. = PP − 5s. +12m.54s., +17m.51s., +18m.56s., +19m.48s., +20m.58s., and +22m.53s.
Potsdam iPEN = +8m.39s., iEN = +10m.15s., iPPEN = +10m.25s., iPPPN = +11m.35s., iSE = +15m.35s., iN = +18m.38s. = SS − 3s., iE = +19m.2s., and +19m.16s., iN = +19m.20s.
Vienna iP = +8m.40s., PP = +10m.53s., PPP = +11m.56s., P_oS = +13m.54s., S_oS = +18m.10s., SS? = +21m.49s., SSS = +22m.47s.
Prague PP = +10m.27s., eSS = +18m.47s.
Bergen PP = +10m.29s., PS? = +18m.55s.

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Graz iPP = +10m.42s., iSS = +19m.22s.
Hamburg iPPZ = +10m.39s., iPPPZ = +11m.20s., iSSZ = +19m.23s., iSSSZ = +20m.33s., iZ = +22m.28s.
Zagreb i = +10m.42s. = PP +11s. and +11m.26s. = PPP +8s., iNW = +12m.28s., e = +15m.34s., iNW = +16m.0s., e = +19m.28s., i = +21m.33s., +22m.27s., +24m.3s., +24m.54s., +25m.33s., and +26m.22s.
Cheb ePP = +10m.38s., eSS = +19m.16s.
Jena iP = +8m.48s., iN = +10m.34s. = PP +2s., iE = +10m.39s., eE = +19m.22s. = SS +14s.
Göttingen ePNZ = +8m.54s., ePPEN = +10m.40s., iSE = +16m.2s., eSSE = +19m.24s., iSSN = +19m.30s.
Laibach e = +10m.52s. = PP +13s., eS = +18m.43s. = S_cS −1s., e = +19m.57s., and +22m.46s.
Triest PP = +10m.45s.. SS = +19m.39s., SSS = +20m.39s.
Innsbruck e? = +19m.58s. = SS +17s., SSS = +26m.28s., P is given as ePP?
Feldberg eN = +9m.36s., eE = +18m.21s., and +20m.4s., iE = +23m.19s., iN = +25m.8s.
Stuttgart eE = +9m.28s., iP_cPEZ = +10m.22s., ePP = +11m.2s., ePPP = +11m.52s., eE = +12m.58s., iP_cSZ = +14m.4s., eSS = +19m.58s.
De Bilt PP = +11m.7s., eSSE = +20m.1s., eN = +20m.9s.
Camerino P = +9m.28s.
Chur e = +9m.14s.
Strasbourg PP = +11m.17s., PPP = +12m.5s., PPPP = +12m.42s., PS = +16m.48s., SS = +20m.27s.
Scoresby Sund iP = +9m.19s., PP = +11m.16s. = PP +10s., eE = +12m.26s., +20m.34s., eN = +18m.40s. = S_cS −24s., SSSN = +21m.52s.
Uccle iP = +9m.16s., iP_cP = +10m.28s., PP = +11m.17s., SS = +20m.22s.
Edinburgh iP = +9m.28s., i = +21m.13s., +22m.10s.
Stonyhurst iP = +9m.32s., PP? = +11m.32s., SS? = +21m.17s., SSS = +23m.37s.
Paris SS? = +21m.0s.
Kew iP = +9m.36s., ePPEZ = +11m.30s., iPPPEZ = +12m.40s., iS_cSEN = +19m.22s., i = +20m.57s., iSS = +21m.39s., iEN = +22m.31s.
Bidston iP = +9m.34s., PP = +11m.39s., PPP = +12m.34s., PPPP = +12m.58s., SS = +21m.4s., SSS = +22m.22s.; T_0 = 14h.21m.3s.
Oxford iPP = +11m.40s., iPPP = +12m.40s., i = +20m.56s. = SS −3s.
Reykjavik PP? = +12m.34s., PPP = +13m.20s., PS = +18m.0s., SSS = +23m.47s.
Algiers iP = +10m.21s.
Toledo i = +10m.38s. and +10m.41s., PS = +19m.32s.
Almeria iP = +10m.42s., SS = +23m.27s.
Granada i = +14m.5s.
Ivigtut e = +10m.53s., +23m.51s. = SS −1s.
Sitka iPP = +13m.44s., iPPP = +15m.21s., eSS = +24m.44s., iSSS = +27m.35s.
Tananarive PS = +21m.50s., SSE = +26m.30s., E = +31m.25s., and +32m.19s., N = +32m.22s.
Victoria SN = +22m.12s.
Seattle i = +24m.11s.
Bozeman ePP = +16m.3s., ePPP = +19m.31s., ePS = +23m.57s., eSS = +28m.34s., eSSS = +32m.46s.
Ottawa iE = +23m.1s. = SKS −12s., eSSE = +29m.0s., eSSSE = +32m.59s.
Honolulu T.H. eSKS = +23m.5s., eSS = +29m.34s.
Toronto i = +23m.9s. = SKS −17s., iSE = +23m.37s., SS = +29m.52s.?
Harvard ePS = +24m.26s., eSS = +30m.7s.; T_0 = 14h.21m.4s.
Berkeley ePP = +16m.47s.
Ann Arbor ePPPN = +19m.10s., iPSN = +24m.58s., eN = +35m.28s., eE = +37m.10s., and +39m.28s.
Adelaide e = +32m.54s. and +37m.10s.
Georgetown ePS = +25m.24s.; T_0 = 14h.20m.53s.
Florissant iEN = +24m.20s. = S −16s., iPSZ = +25m.41s., iEN = +30m.55s. = SS +14s.
St. Louis eE = +24m.27s. = S −11s., iPSN = +25m.43s.
Pasadena eN = +23m.40s. = SKS −22s., +24m.39s., and +24m.57s., iN = +25m.55s., eE = +26m.0s.
Sydney gives S as iP.
Melbourne i = +24m.52s. = S −12s., e = +35m.47s.
Little Rock eP = +17m.37s. = PP +7s., eN = +24m.54s., and +26m.32s. = PS +5s.
Tucson ePP = +17m.58s., eSKS = +24m.15s., ePS = +26m.40s., eSS = +31m.57s.
Columbia ePP = +17m.33s., eSS = +31m.40s.
San Juan ePP = +19m.16s., ePS = +28m.48s.
Wellington PP = +29m.15s. = PS −9s.
Christchurch ePPP = +22m.57s., iN = +29m.27s. = PS +1s., iSS = +35m.47s., eSSS = +41m.27s., iN = +49m.52s., +51m.12s., and +52m.14s.
La Paz iPPN = +23m.12s., PPS = +36m.56s., SSN = +41m.46s.
Long waves were also recorded at Serra do Pilar, Cape Town, Perth, and La Plata.

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Aug. 18d. 19h. 36m. 18s. Epicentre 30°·6N. 104°·1W. (as on 16d.). X.

A = −·210, B = −·835, C = +·509; D = −·970, E = +·244; G = −·124, H = −·494, K = −·861.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		6·0	288	e 1 26	+ 1	2 53	S*	—	—
Haiwee	N.	12·8	300	e 3 12	+13	—	—	e 6·5	—
Florissant		14·0	50	e 3 18	+ 3	e 5 45	− 6	—	7·4
St. Louis		14·0	51	e 3 12	− 3	e 5 43	− 8	e 7·4	—
Toronto		23·5	49	—	—	e 9 9	− 5	e 12·2	—
Ottawa	E.	26·6	48	—	—	e 10 18	+ 9	—	—

Additional readings :—
Tucson iP = +1m.46s., e = +2m.19s., i = +3m.10s.
Long waves were also recorded at Ann Arbor, Pittsburgh, Harvard, Pasadena, and Scoresby Sund.

Aug. 18d. Readings also at 3h. (near Tananarive), 4h. (Andijan, Almata, near Tananarive, and near Tyosi), 9h. (Tyosi (2)), 11h. (near Hastings), 14h. (near Ksara), 16h. (near Tananarive), 17h. (Almata (2), Andijan, Tashkent (2), Baku, Pulkovo, Irkutsk (2), Ekaterinburg (2), Kucino, Vladivostok, Helsingfors, Hong Kong, Phu-Lien, and Granada), 18h. (Andijan, Vladivostok, Baku, Pulkovo, Upsala, Copenhagen (2), Lund (2), Agra, Bombay, Hamburg, Vienna, Stonyhurst, Edinburgh, Göttingen, Stuttgart, Feldberg, Strasbourg, Piacenza, Budapest, Cheb (2), Chur, Zurich, Uccle, Paris, De Bilt (2), Zagreb (2), Florence, Kew, Granada, and Scoresby Sund). These two shocks with readings at 17h. and 18h. are from an origin in Central Asia, but the data is not adequate for their determination, although they were widely recorded in Europe and Asia. 21h. (Ekaterinburg, Pasadena, and Haiwee), 22h. (Baku, Ekaterinburg, Irkutsk, Tashkent, and Granada), 23h. (Copenhagen and near Tyosi).

Aug. 19d. 1h. 27m. 52s. Epicentre 33°·5N. 133°·2E. (as on 1931, Jan 23d.). R.3.

A = −·571, B = +·608, C = +·552; D = +·727, E = +·685; G = −·378, H = +·402, K = −·834.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Koti		0·3	80	i 0 1	− 3	i 0 3	− 5	—	0·1
Matuyama		0·5	312	i 0 10	+ 3	i 0 19	+ 6	—	0·4
Sumoto		1·6	59	0 24	+ 1	0 42	+ 1	—	0·7
Kobe		2·0	54	0 29	0	0 50	− 1	—	1·1
Osaka		2·2	60	0 31	0	(0 57)	0	1·0	2·1
Hukuoka		2·3	271	i 0 43	P*	1 12	S*	—	1·4
Toyooka		2·5	33	i 0 36	0	1 1	− 3	—	1·2
Nagasaki		2·9	255	e 0 57	P_g	e 1 40	S_g	—	—
Nagoya		3·5	62	e 0 49	− 1	1 41	S*	—	—
Helsingfors	E.	69·5	330	—	—	e 19 8?	−67	e 42·1	—

Long waves were also recorded at Scoresby Sund and other Asiatic and European stations.

Aug. 19d. 1h. 29m. 45s. Epicentre 46°·9N. 90°·0E. (as on 18d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	9·9	253	e 2 19	0	(4 5)	− 6	4·1	4·6
Irkutsk	10·7	55	e 2 21	−10	e 3 56	−35	4·6	—
Tashkent	15·9	257	e 4 12	+32	i 6 16	−20	e 6·3	7·6
Ekaterinburg	20·4	310	e 3 50	−44	e 7 26	−48	e 9·9	—
Baku	29·4	272	—	—	e 11 38	+43	e 14·7	—
Pulkovo	36·4	313	—	—	e 11 59	−43	e 16·4	—

Additional readings :—
Almata S = +3m.49s.
Tashkent e = +5m.53s.
Long waves were also recorded at Andijan, Kucino, Copenhagen, De Bilt, Uccle, Feldberg, and Stuttgart.

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Aug. 19d. Readings also at 1h. (Almata, Andijan, Irkutsk, Ekaterinburg, Tashkent, and Suva), 2h. (Kobe, Baku, Kucino, Pulkovo, and near Malabar), 4h. (Tucson, and near Nagoya), 7h. (Hohenheim, Ravensburg, Stuttgart, Strasbourg, Chur, Neuchatel, and Zurich), 12h. (Baku, Ekaterinburg, and Ksara), 13h. (Messina and near Wellington), 14h. (Irkutsk, Ekaterinburg, Messina (2), Florissant, and Entebbe), 15h. (Baku and Tashkent), 16h. (Irkutsk and Tashkent), 18h. (Nagoya), 19h. (near Wellington), 21h. (Strasbourg), 23h. (Baku, Ekaterinburg, Irkutsk, Kucino, Pulkovo, Tashkent and Copenhagen).

Aug. 20d. 0h. 3m. 30s. Epicentre 22°·0N. 146°·5E. N.3.

A = −·773, B = +·512, C = +·375; D = +·552, E = +·834; G = −·312, H = +·207, K = −·927.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		14·5	342	e 3 18	− 4	e 6 4	+ 1	—	—
Nagoya		15·5	330	e 3 40	+ 5	—	—	—	—
Osaka		15·9	325	3 41	+ 1	(6 23)	−13	6·4	7·8
Sumoto		16·0	323	(3 43)	+ 2	3 43	P	—	—
Kobe		16·1	324	e 3 45	+ 2	—	—	—	—
Koti		16·2	318	(i 3 47)	+ 3	—	—	—	—
Mizusawa	E.	17·7	346	4 6	+ 3	4 54	?	—	—
Nagasaki		18·2	310	4 11	+ 2	e 7 43	+14	—	—
Irkutsk		44·2	324	e 8 6	0	e 14 36	− 3	e 20·5	23·6
Andijan		64·1	307	e 10 34	+ 1	e 19 11	+ 2	—	—
Tashkent		66·3	308	—	—	e 18 17	−79	e 32·5	40·6
Ekaterinburg		69·4	325	i 11 6	− 1	e 20 4	−10	31·5	—
Baku		80·7	311	—	—	e 22 15	− 8	39·9	—
Kucino		81·8	328	—	—	e 22 20	−15	38·7	41·9
Pulkovo		83·2	334	e 12 42	+18	e 22 50	+ 1	39·5	53·9
Copenhagen		93·1	336	—	—	30 30?	SS	44·5	—
Florence		102·4	329	—	—	e 27 0	PS	—	67·5

Additional readings and note:—
Sumoto e = +3m.15s.
Koti reading has been *increased* by 6m.
Irkutsk e = +18m.6s. = S_gS − 1s.
Kucino e = +27m.36s. = SS − 3s.

Aug. 20d. 6h. 31m. 49s. Epicentre 34°·0N. 134°·8E. (as on July 8d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·4	11	0 4	− 2	0 8	− 2	—	0·2
Kobe	0·7	25	0 13	+ 3	0 23	+ 5	—	—
Osaka	0·9	38	0 12	− 1	(0 22)	− 1	0·4	0·8
Nagoya	2·1	57	e 0 46	P_g	—	—	—	—

Kobe gives also iE = +18s.

Aug. 20d. 8h. 50m. 22s. Epicentre 35°·2N. 136°·3E. (as on 16d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·5	93	e 0 16	S	(e 0 16)	+ 3	(0·4)	—
Osaka	0·8	232	0 10	− 1	i 0 13	− 8	0·3	0·4
Kobe	1·1	240	0 15	− 1	0 26	− 2	—	0·4
Toyooka	1·2	291	i 0 18	+ 1	i 0 20	−11	—	0·6
Sumoto	1·4	234	0 21	+ 1	0 37	+ 1	—	0·6

Nagoya gives S as P and L as S.

Aug. 20d. Readings also at 0h. (Nagoya), 1h. (near New Plymouth), 2h. (near New Plymouth (3), and near Sumoto), 3h. (near Tyosi), 5h. (Almata and Andijan), 8h. (Almata and Andijan), 10h. (Baku, Ekaterinburg, Kucino, and Granada), 13h. (near Hukuoka (2)), 15h. (Alicante), 17h. (Irkutsk, Almata, Andijan, and Tashkent), 22h. (La Paz).

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Aug. 21d. Readings at 0h. (Irkutsk and Tashkent), 1h. (Ekaterinburg, Irkutsk, Kucino, Tashkent, Vladivostok, Copenhagen, Taihoku, and near Hokoto), 2h. (Ekaterinburg, Irkutsk, Kucino, Pulkovo, Tashkent, Vladivostok, Copenhagen, Helsingfors, De Bilt, Stuttgart, Phu-Lien, and near Hong Kong), 4h. (Almata, Tashkent, and Irkutsk), 5h. (Almata, Tashkent, and Irkutsk), 6h. (Ekaterinburg, Alicante, and near La Paz), 6h. (Ekaterinburg, Alicante, and near La Paz), 8h. (Mizusawa (2), Nagoya (2), and Tyosi (2)), 15h. (Almata), 16h. (near Berkeley and Lick), 18h. (La Paz), 19h. (Pulkovo, Tashkent, Kucino, Vladivostok, Bozeman, Scoresby Sund, Koti, Nagoya, Osaka, Kobe, and Sumoto), 20h. (Baku and Stuttgart), 22h. (near New Plymouth).

Aug. 22d. Readings at 0h. (near Zagreb), 9h. (near Chur), 13h. and 14h. (near Tyosi), 15h. (Andijan and Tyosi), 16h. (Ekaterinburg, Tashkent, Vladivostok, Phu-Lien, Hong Kong, and near Manila), 17h. (Hong Kong, Copenhagen, Helsingfors, Pulkovo, De Bilt, Uccle, Feldberg, Paris, Strasbourg, Stuttgart, and Scoresby Sund), 18h. (Baku, Pulkovo, Kucino, Ekaterinburg, Vladivostok, Uccle, De Bilt, Copenhagen, Hong Kong, Stuttgart, Helsingfors, Tashkent, near Almata, and Andijan), 19h. (near Sumoto), 20h. (San Juan and near Granada), 21h. (near La Paz and near Sumoto), 22h. (Adelaide, Riverview, Perth, Wellington, Haiwee, Pasadena, Berkeley, Victoria, Hong Kong, Vladivostok, Almata, Andijan, Tashkent, Ekaterinburg, De Bilt, Uccle, Stuttgart, Strasbourg, Paris, Granada, Scoresby Sund, also Toyooka, near Nagasaki, Hukuoka, Koti, and Sumoto), 23h. (Feldberg, Kew, Baku, Pulkovo, and Ottawa).

Aug. 23d. 18h. 1m. 44s. Epicentre 40°·0N. 126°·2W. N.2.

A = −·452, B = −·618, C = +·643 ; D = −·807, E = +·591 ;
G = −·380, H = −·519, K = −·766.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley	3·7	124	e 0 51	− 2	e 2 8	S_g	—	—
Lick	4·4	125	e 1 3	0	i 1 50	− 3	—	1·9
Haiwee	7·5	118	e 1 48	+ 2	i 3 28	+17	—	—
Seattle	8·1	19	e 2 4	+ 9	e 3 31	+ 5	e 4·2	—
Victoria	8·6	13	2 3	+ 1	—	—	3·7	5·7
Pasadena	8·7	130	i 2 2	− 1	e 3 36	− 5	e 4·5	—
Mount Wilson	8·7	129	e 2 4	+ 1	—	—	—	—
Bozeman	12·4	58	e 2 47	− 7	e 5 10	− 3	e 6·1	—
Tucson	14·6	117	3 25	+ 2	6 20	+15	e 7·8	—
Denver	16·2	84	e 3 28	−16	e 6 36	− 7	i 8·5	9·7
Sitka	18·1	344	i 4 13	+ 5	—	—	i 9·8	—
Florissant	27·5	81	i 5 41	− 2	i 10 17	− 7	e 13·8	15·0
St. Louis	27·7	81	i 5 41	− 3	e 10 18	− 9	e 14·2	—
Chicago	28·9	74	e 6 4	+ 9	10 38	− 9	14·3	—
Ann Arbor	31·7	72	e 6 22	+ 2	—	—	e 16·4	—
Toronto	34·6	69	e 6 42	− 4	e 12 6	− 9	16·7	19·3
Ottawa	36·8	65	e 7 3	− 2	e 12 45	− 3	e 18·3	—
Fordham	39·2	72	e 7 25	0	e 13 23	− 1	e 18·8	—
San Juan	55·5	95	—	—	e 17 16?	0	—	—
Scoresby Sund	57·1	23	—	—	17 39	+ 1	25·3	—
Pulkovo	78·4	13	—	—	e 21 55	− 3	37·3	48·5
Paris	80·3	32	—	—	e 22 16?	− 3	41·3	46·3
Strasbourg	82·5	29	—	—	e 22 16?	−26	e 38·3	—
Stuttgart	82·9	28	—	—	e 23 34	PS	e 38·3	—
Ekaterinburg	83·0	357	e 12 35	+12	e 22 48	+ 1	33·3	—
Kucino	83·3	10	—	—	e 22 46	− 4	e 34·2	51·8
Granada	86·6	43	e 12 16	−25	i 23 37	+14	43·9	51·2
Prato	87·7	30	i 23 56	S	(i 23 56)	+22	—	—

Additional readings :—
Berkeley eE = +1m.12s., eZ = +1m.17s., eSZ = +2m.13s.
Lick iEN = +1m.5s., iE = +1m.28s.
Haiwee iE = +1m.51s.
Pasadena eEN = +2m.6s.
Tucson ePP = +3m.54s.
St. Louis eEN = +13m.21s.
Toronto eSN = +12m.6s.
Strasbourg e = +19m.16s.?
Kucino e = +28m.18s.
Long waves were also recorded at Honolulu T.H., Columbia, Pittsburgh, Harvard, Baku, Tashkent, Ivigtut, and other European stations.

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Aug. 23d. Readings also at 1h. (Ekaterinburg, Pulkovo, Copenhagen, Tashkent, Baku, and Vladivostok), 2h. (Stuttgart, Uccle, near Tananarive, and near Hastings), 10h. (Scoresby Sund and near Reykjavik), 13h. (near Reykjavik), 14h. (Baku, Ekaterinburg, near Batavia, Malabar, and near Mizusawa), 15h. (Scoresby Sund and near Reykjavik), 16h. (Ekaterinburg, Tashkent, Pulkovo, Kucino, Copenhagen, Helsingfors, Stuttgart, Strasbourg, Feldberg, Edinburgh, De Bilt, Paris, and Ivigtut), 20h. (Suva).

Aug. 24d. 2h. 58m. 52s. Epicentre 46°·9N. 90°·0E. (as on 19d.). X.

A = ·000, B = +·683, C = +·730; D = +1·000, E = ·000; G = ·000, H = +·730, K = −·683.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	14·0	250	e 3 10	− 5	—	—	7·0	8·6
Tashkent	15·9	257	e 3 44	+ 4	—	—	e 5·2	6·0
Ekaterinburg	20·4	310	i 4 34	0	e 8 33	+19	10·1	12·5
Baku	29·4	272	—	—	e 11 16	+21	15·6	—
Kucino	32·9	307	—	—	e 12 51	+62	e 17·9	19·6
Pulkovo	36·4	313	e 7 4	+ 3	e 12 41	− 1	19·1	24·3
Helsingfors	39·0	314	e 7 45	+21	e 13 26	+ 5	e 20·1	—

Additional readings :—
Tashkent e = +52s., and +3m.30s. = PP − 15s.
Baku e = +13m.3s.
Kucino e = +15m.12s.
Helsingfors eE = +7m.57s., eN = +8m.3s., eSSE = +15m.49s.
Long waves were also recorded at Phu-Lien, Hong Kong, Chiufeng, Vladivostok, Scoresby Sund, and European stations.

Aug. 24d. 21h. 35m. 30s. Epicentre 30°·2N. 67°·7E. N.1.

W. D. West in "The Baluchistan Earthquake" gives epicentre 30°11′ N., 67°42′·5E., with T$_0$ 21h. 35m. 27s. See Mem. Geolog. Survey of India, LXVII Pt. I.

A = +·328, B = +·800, C = +·503; D = +·925, E = −·379; G = +·191, H = +·465, K = −·864.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		8·9	87	2 10	+ 4	3 40	− 6	5·0	7·5
Agra	N.	9·6	106	1 33	−43	3 15	−48	i 4·2	—
Tashkent		11·2	6	2 36	− 1	—	—	—	—
Andijan		11·2	18	e 2 6	−31	e 4 52	+ 9	e 6·1	6·8
Bombay		12·2	157	2 42	− 9	5 52	+44	7·3	10·8
Baku		17·7	310	i 4 4	+ 1	—	—	—	—
Calcutta		20·0	108	4 19	−11	7 42	−24	9·8	12·0
Kodaikanal		21·9	153	i 5 0	+10	(i 8 36)	− 8	i 8·6	12·4
Colombo		25·9	152	5 28	0	10 18	+21	14·3	17·6
Ekaterinburg		27·1	352	i 5 41	+ 2	10 21	+ 4	13·5	17·7
Ksara		27·1	286	5 48	+ 9	10 36	+19	13·6	—
Theodosia		29·3	309	6 22	+23	11 12	+19	14·5	—
Yalta		29·9	308	6 5	+ 1	e 11 4	+ 1	22·2	—
Simferopol		30·1	309	e 6 4	− 2	11 3	− 3	15·9	27·9
Helwan		31·4	278	e 6 12	− 5	12 25	+59	—	21·9
Kucino		33·1	329	i 6 20	−13	11 47	− 5	16·5	20·3
Irkutsk		34·7	40	6 46	0	e 11 50	−27	15·5	17·0
Phu-Lien		36·2	96	e 6 59	− 1	12 30	− 9	16·5	23·1
Lemberg	E.	38·0	314	e 7 20	+ 5	e 16 26	?	e 25·3	28·3
	N.	38·0	314	e 7 2	−13	e 16 28	?	e 25·5	29·1
Pulkovo		38·7	330	i 7 18	− 3	i 13 21	+ 4	17·5	25·1
Medan		39·6	125	—	—	i 15 42	SS	—	—
Belgrade		39·6	305	e 6 5	−84	e 12 16	−74	e 21·3	26·9
Chiufeng		40·3	61	e 7 47	+12	e 13 50	+ 9	e 22·8	—
Budapest		40·8	310	7 37	− 2	13 56	+ 8	20·0	31·5

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helsingfors	E.	41·2	329	i 7 40	− 2	e 13 48	− 6	e 19·8	—
	N.	41·2	329	i 7 41	− 1	e 13 44	−10	e 20·9	—
Königsberg		41·4	320	e 7 46	+ 2	13 58	+ 1	e 20·5	30·5
Taranto		41·8	300	7 30	−17	17 10	(−43)	—	—
Hong Kong		42·1	90	7 50	+ 1	14 4	− 4	20·0	25·2
Trenta		42·6	297	e 7 50	− 3	e 17 50	(− 7)	—	—
Vienna		42·7	312	i 7 54	0	17 48	(−10)	i 27·5	32·5
Zagreb		42·8	307	e 7 52	− 3	e 14 20	+ 2	e 23·7	e 30·8
Graz		43·2	310	i 7 58	0	i 14 42	+18	20·5	32·0
Messina		43·3	296	8 5	+ 6	—	—	—	—
Catania		43·7	295	8 8	+ 6	14 31	0	24·2	37·1
Laibach		43·8	309	e 8 7	+ 4	e 14 29	− 4	e 21·7	—
Benevento		44·0	300	e 7 44	−21	—	—	—	—
Naples	E.	44·1	300	e 8 15	+ 9	e 14 20	−17	27·5	35·5
Prague		44·2	313	e 8 9	+ 3	e 15 0	+21	e 27·3	32·5
Triest		44·4	307	e 8 6	− 2	e 14 42	+ 1	e 23·3	33·0
Collurania		44·4	302	8 13	+ 5	—	—	—	—
Upsala		44·5	326	e 8 5	− 4	14 50	+ 7	e 23·5	29·1
Entebbe		45·1	234	e 7 55	−19	14 40	−12	—	—
Potsdam		45·3	317	i 8 15	0	i 14 58	+ 3	e 21·5	31·5
Treviso		45·5	306	i 7 53	−24	i 15 3	+ 6	27·5	32·8
Cheb		45·5	313	e 8 16	− 1	e 15 6	+ 9	26·5	33·0
Lund		45·7	321	8 17	− 1	15 3	+ 3	24·5	—
Zi-ka-wei		45·7	74	e 8 20	+ 2	15 4	+ 4	25·8	29·8
Jena	N.	46·0	314	e 8 18	− 3	e 15 12	+ 8	e 23·5	31·0
Innsbruck		46·0	310	e 8 23	+ 2	—	—	—	—
Florence		46·1	304	8 23	+ 2	15 5	− 1	21·5	27·0
Prato		46·2	304	e 8 2	−20	i 15 10	+ 3	24·5	34·5
Copenhagen		46·2	321	8 19	− 3	15 11	+ 4	24·5	—
Livorno		46·8	303	e 6 35	−112	13 55	−81	—	—
Göttingen		47·1	314	i 8 27	− 2	e 15 3	−17	e 24·5	33·5
Piacenza		47·2	305	8 30	0	i 15 30	+ 9	i 19·7	30·4
Hamburg		47·3	318	e 8 28	− 3	e 15 24	+ 1	e 26·5	32·5
Chur		47·3	308	e 8 27	− 4	e 15 31	+ 8	—	—
Stuttgart		47·5	312	8 30	− 2	i 15 32	+ 6	e 27·0	32·1
Pavia		47·6	305	8 32	− 1	—	—	—	—
Taihoku		47·6	83	15 22	S	(15 22)	− 5	25·5	—
Zurich		47·9	308	e 8 32	− 3	—	—	—	—
Karlsruhe		48·0	312	9 30?	+54	—	—	e 32·5	—
Strasbourg		48·5	311	8 40	0	15 48	+ 8	24·5	35·0
Zinsen		48·7	65	8 36	− 5	15 44	+ 1	—	—
Neuchatel		49·0	309	e 8 41	− 3	e 15 47	0	—	—
Besançon		49·7	309	i 8 50	+ 1	e 16 0	+ 3	28·5	—
De Bilt		50·1	315	8 52	0	i 16 13	+11	e 25·5	33·0
Bergen		50·6	326	8 51	− 5	16 10	+ 1	24·5	30·5
Uccle		50·6	313	8 55	− 1	16 18	+ 9	e 26·5	30·2
Manila		51·2	95	8 56	− 4	16 25	+ 7	24·5	30·5
Vladivostok		51·8	57	e 9 2	− 3	16 28	+ 3	28·1	31·1
Paris		51·9	311	e 9 5	− 1	e 16 40	+13	20·5	36·5
Nagasaki		52·3	70	e 16 56	S	(e 16 56)	+23	e 29·1	—
Batavia		52·3	128	i 9 11	+ 2	i 16 45	+12	31·5	—
Hukuoka		52·5	69	—	—	e 16 40	+ 5	e 27·5	35·7
Tananarive		52·8	204	9 20	+ 8	16 35	− 4	25·9	29·5
Barcelona		53·1	301	9 14	− 1	e 16 51	+ 8	e 26·3	38·2
Algiers		53·3	296	e 9 15	− 1	16 52	+ 6	25·5	34·0
Kew		53·5	315	i 9 23	+ 5	i 16 57	+ 8	27·5	38·1
Bagnères		54·1	305	e 9 20	− 2	—	—	24·5	—
Durham		54·1	319	9 21	− 1	17 2	+ 5	—	34·5
Oxford		54·1	315	9 20	− 2	e 16 57	0	e 31·1	38·5
Tortosa		54·4	301	e 9 30?	+ 6	17 12	+11	23·0	40·9

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Stonyhurst		54·6	317	9 30	+ 4	17 8	+ 4	35·0	38·0
Edinburgh		54·9	320	9 34	+ 6	17 19	+11	29·5	38·9
Bidston		55·0	317	e 10 0	+31	i 17 15	+ 6	e 22·5	38·2
Koti		55·1	68	e 9 30	0	e 17 15	+ 4	—	—
Toyooka		55·6	65	9 33	0	—	—	e 31·1	36·0
Alicante		55·7	299	e 9 35	+ 1	e 17 30	+11	e 23·7	—
Sumoto		55·9	67	9 36	+ 1	17 27	+ 6	31·7	38·0
Kobe		56·0	66	e 9 35	− 1	17 27	+ 4	e 30·6	38·3
Kyoto		56·4	66	9 40	+ 1	17 40	+12	—	—
Osaka		56·4	66	9 45	+ 6	17 34	+ 6	31·8	—
Nagoya		57·3	65	e 9 46	+ 1	17 46	+ 6	32·1	—
Almeria		57·5	298	9 42	− 5	i 17 50	+ 7	28·1	30·4
Toledo		58·0	301	e 9 43	− 7	e 17 49	0	e 27·4	43·7
Granada		58·3	298	i 9 51	− 1	i 18 0	+ 7	i 28·4	46·7
Sapporo		58·6	55	9 53	− 2	18 2	+ 5	—	—
Malaga		59·1	298	9 59	+ 1	18 8	+ 4	23·5	—
Mizusawa	E.	59·4	60	10 3	+ 3	18 11	+ 3	25·7	—
	N.	59·4	60	10 6	+ 6	18 9	+ 1	25·8	—
Tokyo		59·4	64	10 20	+20	18 16	+ 8	—	—
Sendai		59·5	61	9 59	− 2	18 9	0	—	—
Tyosi		60·3	64	18 22	S	(e 18 22)	+ 2	e 32·8	—
San Fernando		60·6	298	10 3	− 6	18 30	+ 6	32·0	41·5
Scoresby Sund		61·6	339	10 14	− 2	18 42	+ 5	—	—
Ivigtut		75·0	334	11 31	− 9	21 18	− 2	—	—
Perth		77·1	139	e 21 30	S	(e 21 30)	−14	—	—
Dakar		78·6	280	—	—	e 21 30?	−30	—	44·8
Sitka		90·6	13	i 13 1	+ 1	i 23 38	[+ 2]	e 37·6	—
Ottawa		97·4	335	e 13 37	+ 5	e 24 7	[− 6]	e 48·5	—
Harvard		98·1	331	—	—	e 25 22	+12	e 48·0	—
Melbourne		99·0	129	—	—	i 24 13	[− 8]	49·0	—
Toronto	E.	100·3	337	e 17 45	PP	i 24 17	[−10]	47·6	59·0
Fordham		100·6	332	e 17 50	PP	e 24 20	[− 9]	—	—
Victoria	N.	100·8	9	13 49	+ 2	24 17	[−13]	41·0	68·3
Riverview		101·4	123	—	—	e 27 0	PS	48·7	58·5
Seattle		101·6	8	e 18 36	PP	e 24 42	[+ 9]	e 60·6	—
Ann Arbor		102·9	339	—	—	e 24 36	[− 4]	e 51·2	70·5
Pittsburgh		103·2	335	—	—	e 24 30	[−11]	e 44·5	—
Georgetown		103·5	333	e 14 3	+ 3	i 24 33	[−10]	51·4	62·8
Bozeman		104·1	0	e 18 31	PP	e 24 49	[+ 4]	e 52·5	—
Chicago		104·5	340	—	—	e 24 40	[− 7]	e 50·0	—
Charlottesville		104·8	333	—	—	e 24 49	[0]	e 50·5	—
Florissant		108·0	341	e 14 20	− 1	i 25 0	[− 4]	—	65·1
St. Louis		108·2	341	—	—	e 24 53	[−12]	—	65·0
Columbia		109·4	333	e 19 3	PP	e 25 1	[−10]	e 47·2	—
Berkeley		111·3	9	i 19 5	PP	e 28 50	PS	e 65·0	—
Little Rock	N.	112·4	342	e 18 56	PP	e 28 38	PS	—	67·5
Honolulu T.H.		112·5	45	—	—	e 25 30	[+ 6]	e 53·5	—
Haiwee	N.	113·5	5	e 19 2	PP	—	—	—	—
San Juan		114·1	312	i 19 39	PP	e 25 10	[−20]	58·3	—
Pasadena	N.	115·4	6	e 19 46	PP	—	—	—	—
Tucson		117·5	359	20 2	PP	—	—	45·5	—
La Plata		134·4	249	22 18	PP	—	—	71·5	—
La Paz		137·5	279	i 19 31	[+13]	26 39	SKS	70·5	81·7

Additional readings :—
Irkutsk PP = +7m.41s.
Helsingfors iPPE = +9m.23s., ePPZ = +9m.28s., eSSN = +16m.47s., eSSE = +17m.5s., eSSZ = +17m.8s., eSSSE = +18m.41s., eSSSN = +18m.53s., eSSSZ = +18m.58s.
Königsberg ePP = +9m.23s., eE = +13m.43s., ePSEN = +14m.14s., eEN = +17m.14s., eE = +17m.30s., and +17m.38s. = S_gS −12s., eN = +19m.0s.
Hong Kong PP = +9m.35s., SS = +17m.21s.
Vienna PP = +9m.24s., PPP = +10m.37s., iN = +14m.25s. = S +9s., iE = +14m.37s., PS = +18m.38s.

Continued on next page.

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Zagreb iP = +8m.0s., iP_cPNW = +8m.14s., iPP = +9m.44s., iPPPNE = +10m.50s., ePS = +14m.44s., eSS = +17m.53s. = S_cS −6s., eSSSNW = +19m.1s., eSSSS = +20m.43s.
Graz iP = +8m.0s., i = +8m.18s., e = +18m.6s. = S_cS +7s.
Prague ePP = +10m.7s., eSS = +18m.13s. = S_cS +6s.
Triest SS = +17m.50s.
Upsala iP = +8m.8s., iPP = +9m.59s., iPPP = +10m.27s., P_cSE = +13m.38s., eSS = +18m.2s., S_cS = +18m.16s.
Potsdam iPPE = +10m.14s., iPPPE = +10m.55s., iE = +11m.25s., iSSN = +18m.3s., iSSE = +18m.27s.
Cheb eSS? = +18m.42s.
Lund +8m.23s. and +10m.12s. = P_cP +11s., eNW = +15m.25s., +18m.24s. = S_cS +7s.
Zi-ka-wei iN = +15m.16s., SSN = +18m.44s.
Jena iPZ = +8m.19s., iPE = +8m.24s., eE = +10m.13s., eN = +11m.0s., iSN = +15m.15s., eN = +18m.30s., eE = +18m.47s.
Florence iPP = +10m.20s., iSS = +19m.0s.
Copenhagen eEZ = +9m.12s., +10m.14s., e = +17m.6s., +18m.30s.
Göttingen ePPEZ = +10m.25s., eSN = +15m.30s., eSSE = +19m.0s.
Hamburg iZ = +8m.32s., ePPZ = +10m.25s., iPPZ = +10m.29s., ePPE = +12m.0s., eS_cSE = +17m.57s., eSSZ = +19m.23s.
Stuttgart i = +8m.33s., iE = +8m.37s., and +9m.0s., iP_cPE = +10m.8s., ePP = +10m.21s., eP_cSE = +13m.54s., eE = +15m.0s., e = +18m.0s.
Taihoku S = +21m.46s.
Zurich ePP = +10m.30s.?
Strasbourg PP = +10m.33s., SS = +19m.49s.
De Bilt PPZ = +10m.53s., eSSE = +19m.53s.
Bergen SS = +19m.30s.?
Uccle PP = +10m.53s., iSS = +22m.7s.
Tananarive PS = +17m.26s., SSN = +20m.20s., SSSSE = +23m.11s.
Algiers P = +9m.20s.
Kew iPPZ = +11m.20s., eN = +18m.52s. = S_cS −16s., eSSN = +20m.43s., eSSE = +21m.9s., iN = +22m.53s., and +24m.22s.
Oxford iPN = +9m.32s.
Stonyhurst PP = +11m.46s., iPS = +17m.21s., i = +21m.44s.
Edinburgh i = +19m.30s., +21m.6s., and +24m.42s.
Bidston SS = +20m.25s., SSS = +22m.5s.
Toyooka PN = +9m.42s.
Kobe PZ = +9m.38s.
Almeria iP = +9m.45s., i = +13m.42s.
Toledo i = +9m.48s., +9m.53s., and +17m.57s., iPS = +18m.5s., SS = +22m.7s., SSS = +24m.17s., SSSS = +25m.34s.
Granada iP = +9m.54s., i = +11m.26s., +14m.4s., and +26m.9s.
Tyosi eS = +25m.37s.
Scoresby Sund +13m.58s.
Ivigtut +21m.54s. = PS +10s.
Perth ePP = +26m.50s., PPPP = +34m.30s., PPPPP = +35m.30s., PS = +39m.30s., PPS = +40m.35s., PPPS = +42m.0s., SS = +50m.20s., SSS = +56m.20s., SSSS = +58m.30s.
Sitka iPP = +16m.35s., iPS = +25m.13s., iSS = +30m.3s.
Ottawa e = +17m.34s. = PP +10s., +19m.34s. = PPP +14s., +23m.58s., and +26m.30s. = PS +13s., eE = +30m.56s., e = +31m.43s.
Harvard ePP = +17m.24s., eSKS = +24m.7s., ePS = +26m.39s.
Melbourne e = +25m.0s. = S −18s., i = +26m.25s. = PS −10s.
Toronto iE = +26m.59s. = PS +10s.
Fordham ePS = +25m.40s. = S +8s., eSS = +32m.28s.
Seattle e = +25m.50s. = S +9s.
Ann Arbor e?N = +16m.30s., e?E = +19m.12s., eN = +27m.30s. = PS +14s.
Georgetown PSN = +27m.24s.; T_o = 21h.35m.12s.
Bozeman e = +19m.9s., ePS = +27m.34s., eSS = +33m.41s.
Chicago ePPP = +20m.40s., ePS = +27m.35s., e = +28m.33s., eSS = +33m.36s., eSSS = +37m.12s.
Charlottesville ePS = +27m.45s.
Florissant ePPNZ = +18m.50s., iNZ = +21m.13s., iN = +28m.4s. = PS −4s.
St. Louis ePPN = +18m.49s., iEN = +25m.53s. = SKKS −1s., iPSEN = +27m.59s.
Columbia e = +25m.17s., ePS = +28m.19s.
Berkeley iZ = +28m.59s. = PS +18s.
Little Rock ePPN = +19m.24s., ePPSN = +29m.40s.
Honolulu T.H. ePS = +29m.0s., eSS = +35m.9s.
Haiwee eE = +19m.7s.
San Juan ePS = +29m.15s., eSS = +35m.45s., eSSS = +39m.50s.
Pasadena eE = +19m.51s.
La Paz PPN = +22m.13s., iPPE = +23m.0s., PPSN = +25m.30s., SSE = +40m.3s., SSSE = +45m.45s.
Long waves were also recorded at Reykjavik, Cape Town, Sydney, and Lick.

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Aug. 24d. 23h. 30m. 15s. Epicentre 30°·2N. 67°·7E. (as at 21h.). X.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		8·9	87	0 35	?	3 45	− 1	5·1	5·8
Agra	N.	9·6	106	3 11	+55	4 32	+29	5·1	—
Tashkent		11·2	6	(i 3 13)	+36	i 3 13	P	—	6·6
Andijan		11·2	18	e 2 37	0	e 4 46	+ 3	—	5·4
Bombay		12·2	157	2 32	−19	5 7	− 1	6·3	9·2
Calcutta		20·0	108	4 44	+14	8 7	+ 1	10·4	11·8
Ekaterinburg		27·1	352	i 5 40	+ 1	—	—	13·8	18·2
Ksara		27·1	286	e 5 47	+ 8	e 10 45?	+28	—	—
Pulkovo		38·7	330	7 17	− 4	—	—	19·8	26·8
Copenhagen		46·2	321	8 21	− 1	—	—	23·8	—
Neuchatel	E.	49·0	309	e 8 40	− 4	—	—	—	—

Pulkovo gives PP = +8m.57s.
Long waves were also recorded at Kucino, Lund, Helsingfors, Cheb, De Bilt, Hamburg, and Upsala.

Aug. 24d. Readings also at 2h. (Ksara and Upsala), 3h. (near Granada), 4h. (La Paz), 12h. (Sumoto), 17h. (Sumoto, near Andijan, and near Granada), 19h. (Nagoya, Kobe, Sumoto, near Osaka, and Koti), 20h. (Irkutsk and Tashkent), 22h. (Neuchatel, Hong Kong, and Andijan (2)).

Aug. 25d. 0h. 31m. 8s. (I)
0h. 54m. 9s. (II)
3h. 6m. 25s. (III)
15h. 45m. 35s. (IV)
18h. 52m. 57s. (V)
} Epicentre 30°·2N. 67°·7E. (as on 24d.) X. X. X. X. X.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Debra Dun	8·9	87	—	—	3 42	− 4	5·2	—
III		8·9	87	3 35	S	(3 35)	−11	(5·1)	5·6
IV		8·9	87	0 25	−101	—	—	—	—
I	Agra N.	9·6	106	3 22	S	(3 22)	−41	—	—
III	N.	9·6	106	e 1 51	−25	3 16	−47	—	—
I	Andijan	11·2	18	e 2 31	− 6	e 4 54	+11	—	—
II		11·2	18	e 2 43	+ 6	e 4 39	− 4	—	6·5
III		11·2	18	e 2 37	0	4 41	− 2	—	6·7
IV		11·2	18	e 2 38	+ 1	e 4 37	− 6	—	6·1
V		11·2	18	e 2 38	+ 1	e 4 42	− 1	—	5·5
I	Tashkent	11·2	6	i 2 29	− 8	i 3 38	−65	—	7·3
II		11·2	6	e 2 15	−22	i 3 30	−73	—	4·0
III		11·2	6	i 2 14	−23	—	—	—	4·5
IV		11·2	6	e 0 59	−98	e 1 25	−198	e 2·4	3·1
V		11·2	6	(e 2 31)	− 6	(e 4 26)	−17	(e 5·6)	(7·6)
I	Bombay	12·2	157	2 39	−12	—	—	—	10·6
II		12·2	157	3 8	+17	—	—	—	—
III		12·2	157	3 27	+36	6 5	+57	7·0	10·5
IV		12·2	157	5 13	S	(5 13)	+ 5	—	—
III	Baku	17·7	310	—	—	e 7 32	+15	9·9	12·3
IV		17·7	310	—	—	e 7 32	+15	10·9	12·6
V		17·7	310	e 4 5	+ 2	e 7 32	+15	10·0	12·4
I	Calcutta	20·0	108	5 4	+34	8 27	+21	10·6	—
III		20·0	108	4 33	+ 3	8 3	− 3	10·2	—
IV		20·0	108	4 29	− 1	7 52	−14	9·9	—
V		20·0	108	4 31	+ 1	8 1	− 5	10·3	—
III	Kodaikanal	21·9	153	3 11	−99	—	—	—	—
III	Colombo	25·9	152	10 0	S	(10 0)	+ 3	—	17·3
V		25·9	152	9 59	S	(9 59)	+ 2	—	17·3
I	Ekaterinburg	27·1	352	e 5 52	+13	—	—	14·9	17·8
II		27·1	352	e 5 44	+ 5	—	—	13·8	18·0
III		27·1	352	e 5 41	+ 2	e 10 20	+ 3	13·6	17·6
IV		27·1	352	e 5 39	0	e 10 37	+20	13·4	17·2
V		27·1	352	e 5 36	− 3	e 10 37	+20	14·0	18·0

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.
III Ksara	E.	27·1	286	e 5 42	+ 3	e 11 46	SS	17·5	—
III Kucino		33·1	329	e 6 17	−16	—	—	e 17·1	22·4
IV		33·1	329	—	—	e 10 37	−75	e 18·5	23·0
V		33·1	329	e 7 33	PP	e 9 39	P_cP	e 18·8	21·3
V Irkutsk		34·7	40	e 7 51	PP	—	—	e 19·0	21·6
I Pulkovo		38·7	330	7 28	+ 7	e 13 44	+27	19·9	26·6
II		38·7	330	e 12 21	S	(e 12 21)	−56	22·8	26·4
III		38·7	330	e 7 19	− 2	e 13 15	− 2	16·6	26·2
IV		38·7	330	e 8 59	PP	14 56	+99	19·4	26·2
V		38·7	330	e 7 22	+ 1	e 13 27	+10	20·0	26·3
III Helsingfors	E.	41·2	329	—	—	e 13 35?	−19	e 23·6	—
III Upsala	E.	44·5	326	—	—	e 18 20	(+11)	e 29·1	31·4
III Lund		45·7	321	—	—	18 41	(+24)	29·6	—
III Florence		46·1	304	e 14 20	?	17 35	SS	—	26·6
III Copenhagen		46·2	321	8 23	+ 1	15 8	+ 1	29·6	—
IV		46·2	321	—	—	15 25?	+18	26·4	—
V		46·2	321	—	—	15 3?	− 4	25·0	—
III Granada		58·3	298	—	—	e 21 35?	SS	e 39·1	47·0

Additional readings and notes :—
Dehra Dun III gives S as P and L as S.
Tashkent I e =0h.22m.19s. and 0h.31m.36s., II e =0h.54m.24s., III e =3h.5m.52s.; V readings have been *increased* by 3m.
Ekaterinburg III e = +10m.39s.
Pulkovo II e = +18m.41s., III PP = +8m.57s. =PP +11s.
Copenhagen III +18m.53s.
Long waves were also recorded at Irkutsk, Copenhagen, Kucino, Baku, Vladivostok, Hyderabad, Kodaikanal, Bombay, Ottawa, Scoresby Sund, and other European stations.

Aug. 25d. 22h. 20m. 45s. Epicentre 11°·7N. 89°·6W. (as on 1926 Feb. 15d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		23·6	71	e 5 15	+ 9	e 9 47	SS	12·0	—
Columbia		23·6	18	—	—	e 9 15	− 1	e 13·9	—
St. Louis	N.	26·9	359	1 5 35	− 2	e 10 18	+ 4	—	16·2
Florissant		27·1	359	e 5 36	− 3	e 10 24	+ 7	—	17·2
Tucson		28·4	320	—	—	(11 45)	SS	11·8	—
Pittsburgh		30·0	15	—	—	(e 11 39)	+35	e 11·6	—
Mount Wilson		34·3	316	e 6 45	+ 2	—	—	—	—
Pasadena		34·3	318	e 6 45	+ 2	—	—	—	—
Haiwee		35·4	320	e 6 54	+ 1	—	—	—	—
Ottawa		35·7	16	—	—	e 12 55	+23	e 16·2	—
Lick		38·5	318	e 7 20	+ 1	—	—	—	—
Ekaterinburg		107·2	17	—	—	e 25 11	[+11]	51·2	—

Additional readings :—
Columbia e = +9m.42s. =SS −13s.
Ekaterinburg e = +28m.7s. =PS +7s.
Long waves were also recorded at Hyderabad, Berkeley, Harvard, Scoresby Sund, and several European and Russian stations.

Aug. 25d. Readings also at 0h. (Irkutsk), 1h. (near Andijan), 2h. (Ravensburg, near Chur, Neuchatel, and Zurich), 3h. (Nagoya, near Mizusawa (2), and Tyosi), 5h. (Baku, Ekaterinburg, and Tashkent), 6h. (near Sumoto), 7h. (Baku, Ekaterinburg, Tashkent, Kucino, and Pulkovo), 8h. (near Chur, near Kobe, and Sumoto), 9h. (Tashkent and Ekaterinburg), 10h. (Baku, Ekaterinburg, Tashkent, Kucino, Pulkovo, Helsingfors, Copenhagen, Bombay, and Hyderabad), 11h. (Lick), 14h. (Baku, Tashkent, and near Manila), 15h. (Ekaterinburg), 16h. (Baku, Ekaterinburg, Andijan, Bombay, Tashkent, Irkutsk, and Hyderabad), 18h. (Baku, Ekaterinburg, Tashkent, Hyderabad, near Amboina, and near Sumoto), 19h. (Andijan, Tashkent, Hyderabad, Ekaterinburg, Kucino, Vladivostok, Alicante, and near Berkeley), 20h. (Baku, Ekaterinburg, Andijan, Tashkent, Nagoya, and near Tyosi), 21h. (Baku, Ekaterinburg, Kucino, Irkutsk (2), Pulkovo (2), Tashkent (2), Andijan, Bombay, Hyderabad, Helsingfors, Scoresby Sund, and near New Plymouth), 22h. (Andijan, Copenhagen, and near New Plymouth).

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Aug. 26d. 10h. 50m. 14s. Epicentre 46°·9N. 90°·0E. (as on 24d.). R.3.

A = ·000, B = +·683, C = +·730 ; D = +1·000, E = ·000 ;
G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		10·7	55	e 2 50	+19	e 4 40	+ 9	5·5	6·3
Andijan		14·0	250	e 2 24	−51	e 5 24	−27	—	5·8
Tashkent		15·9	257	i 3 8	−32	i 6 2	−34	7·4	—
Dehra Dun		19·0	213	(4 36)	+17	4 36	P	8·1	8·8
Ekaterinburg		20·4	310	i 4 34	0	i 8 14	0	9·8	11·7
Baku		29·4	272	—	—	e 10 59	+ 4	14·8	—
Hyderabad		31·0	203	11 9	S	(11 9)	−11	18·6	22·4
Bombay		31·4	212	11 35	S	(11 35)	+ 9	—	—
Kucino		32·9	307	—	—	11 50	+ 1	e 16·6	18·1
Pulkovo		36·4	313	7 0	− 1	12 36	− 6	16·8	22·0
Helsingfors	E.	39·0	314	—	—	e 13 10	−11	e 17·8	—
Budapest		46·4	299	—	—	e 18 26	SS	—	—
Copenhagen		46·7	312	—	—	15 22	+ 8	21·8	—
Hamburg		48·9	310	—	—	e 20 46?	?	e 25·8	29·8
Feldberg		51·3	307	—	—	e 16 22	+ 3	e 22·4	27·8
Stuttgart		51·6	305	e 9 3	0	e 20 16	SS	e 27·3	31·4
Strasbourg		52·5	305	e 10 46?	PP	—	—	e 26·8	—
Zurich		52·7	304	i 9 11	− 1	—	—	—	—
Scoresby Sund		52·9	338	—	—	16 40	− 1	27·8	—
Florence		53·0	297	e 23 16	?	e 24 46?	?	e 27·8	29·0
Uccle		53·2	310	—	—	e 20 46?	S	e 25·8	—
Paris		55·3	308	—	—	e 19 46?	?	28·8	31·8
Granada		66·0	300	e 11 58	+73	—	—	e 37·4	43·5

Additional readings :—
Dehra Dun P = 10h.50m.50s.
Kucino e = +15m.48s.
Strasbourg ePP = +21m.46s.?, eSSS = +23m.46s. ?
Long waves were also recorded at Chiufeng, Hong Kong, Phu-Lien, and at other European stations.

Aug. 26d. 19h. 29m. 26s. Epicentre 28°·5N. 69°·0E. N.3.

A = +·315, B = +·821, C = +·477 ; D = +·934, E = −·358 ;
G = +·171, H = +·446, K = −·879.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	N.	8·1	97	i 3 11	S	(i 3 11)	−15	—	—
Dehra Dun		8·1	75	(1 44)	−11	(3 4)	−22	(4·6)	(4·6)
Bombay		10·2	159	5 31	L	—	—	(5·5)	10·2
Andijan		12·6	12	e 2 56	0	e 5 11	− 6	—	6·7
Tashkent		12·8	1	(e 2 36)	−23	(e 5 2)	−20	(e 5·1)	(7·6)
Calcutta		18·4	105	(3 34)	−37	(7 34)	+ 1	(10·2)	—
Baku		19·7	312	e 4 48	+22	e 7 53	− 7	10·1	12·8
Colombo		23·9	153	10 22	SS	—	—	—	18·9
Ksara		28·7	289	e 5 52	− 1	—	—	e 17·7	—
Ekaterinburg		29·0	351	i 6 0	+ 4	10 57	+ 9	14·6	18·3
Kucino		35·2	329	—	—	e 12 10	−14	18·2	22·8
Irkutsk		35·3	37	—	—	e 15 34	?	20·6	22·1
Pulkovo		40·8	331	7 36	− 3	13 46	− 2	17·6	27·4
Helsingfors		43·3	329	e 7 58	− 1	e 14 6	−19	22·6	—
Copenhagen		48·2	321	—	—	15 28	− 8	24·6	—
Chur		49·2	309	e 8 46	+ 1	—	—	—	—
Stuttgart		49·5	314	e 8 49	+ 2	—	—	e 31·6	34·6
Zurich		49·9	309	i 8 51	0	—	—	—	—
Feldberg		50·0	315	—	—	e 15 52	− 9	—	33·5
Strasbourg		50·5	312	—	—	19 34?	SS	—	—

For Notes see next page.

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NOTES TO AUGUST 26d. 19h. 29m. 26s.

Additional readings and notes :—
Dehra Dun readings have been *diminished* by 3m.
Tashkent readings have been *increased* by 3m.
Calcutta readings have been *diminished* by 3m.
Kucino e = +16m.58s. = S_eS −15s.
Helsingfors eE = +9m.7s., +9m.46s., and +17m.54s. = S_eS −8s.
Long waves were recorded at Vladivostok, Hyderabad, Scoresby Sund, and European stations.

Aug. 26d. 22h. European shock, not giving a determination of epicentre. The readings are as follows :—
Florence e = 22h.6m.55s., S = 17m.0s., M = 40m.0s.
Trenta eP = 22h.13m.0s., eS = 14m.0s.
Zagreb e = 22h.14m.21s. and 16h.4s.
Chur eP = 22h.14m.51s.
Neuchatel eP = 22h.15m.7s.
Zurich eP = 22h.15m.7s.
Copenhagen 22h.16m.18s. and 19m.54s., L = 24m.0s.
Pulkovo P = 22h.16m.50s., e = 21m.8s., L = 24m., M = 26m.48s.
Ekaterinburg eP = 22h.18m.19s., L = 25m.
Kucino e = 22h.19m.36s. and 24m.26s., eL = 38m., M = 44m.18s.
Tashkent e = 22h.22m.48s. and 23m.37s., M = 25m.18s.
Helsingfors eSE = 22h.23m.57s., eLE = 26m.0s.
Kew e = 22h.24m.
Andijan eP = 22h.24m.42s.
Bombay P = 22h.26m.15s.
Granada e = 22h.28m.42s., eL = 30m.54s.
Long waves were recorded at Baku, Hyderabad, and other European stations.

Aug. 26d. Readings also at 0h. (Baku, Ekaterinburg, Irkutsk, Pulkovo, Kucino, Tashkent, Andijan, Bombay, Hyderabad, and near New Plymouth), 1h. (Copenhagen and Scoresby Sund), 4h. (Baku, Pulkovo, Kucino, Tashkent, Andijan, Bombay, Hyderabad, and Tyosi), 5h. (Ekaterinburg, Irkutsk, Pulkovo, Tashkent, Kucino, Bombay, and Hyderabad), 6h. (Bombay, Hyderabad, Tashkent, Irkutsk, Ekaterinburg, Scoresby Sund, and Pulkovo), 7h. (Andijan and Dehra Dun), 8h. (Pulkovo, Ekaterinburg (2), Irkutsk (2), Bombay, Hyderabad, Kucino, Copenhagen, Vladivostok, Helsingfors, De Bilt, Nagoya, near Mizusawa and Tyosi), 10h. (near Nagasaki), 11h. (Tyosi), 14h. (near Christchurch), 15h. (Ekaterinburg, Tashkent, Irkutsk, Pulkovo, Kucino, Copenhagen, Helsingfors, Bombay, Dehra Dun, Hyderabad, and Wellington), 16h. (Ekaterinburg, Tashkent, Irkutsk, and Zurich), 17h. (Kucino, Copenhagen, and Stuttgart), 19h. (Ekaterinburg, Irkutsk, and Tashkent), 20h. (Irkutsk, Tashkent, and near Andijan), 21h. (Apia, Florissant, Ottawa, and near Tucson), 22h. (Wellington), 23h. (Nagoya, near Tokyo, and Tyosi).

Aug. 27d. 6h. 21m.45s. Epicentre 38°·7N. 46°·1E. (as on 1931 April 27d.). X.

A = +·541, B = +·562, C = +·625 ; D = +·721, E = −·693 ;
G = +·434, H = +·451, K = −·780.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	N.	9·5	243	e 1 56	−18	4 0	− 1	5·1	—
Tashkent		17·9	74	e 4 0	− 5	6 50	∟32	—	15·8
Ekaterinburg		20·5	23	i 4 30	− 5	e 7 26	−50	9·2	—
Pulkovo		23·2	340	i 5 9	+ 6	8 59	− 9	11·2	—
Helsingfors	N.	25·2	335	e 5 56	+34	—	—	e 10·8	—

Additional readings :—
Ekaterinburg i = +7m.33s.
Helsingfors ePPE = +7m.42s.
Long waves were also recorded at Irkutsk, Copenhagen, De Bilt, and Feldberg.

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Aug. 27d. 15h. 27m. 25s. Epicentre **29°·8N. 67°·3E.** **N.1.**

Epicentre given by W. D. West, Mem. Geol. Survey of India, Vol. LXVII, pt. 1, 1934.

A = +·335, B = +·801, C = +·497 ; D = +·923, E = −·386 ;
G = +·192, H = +·458. K = −·868.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		9·3	84	2 45	+34	4 5	+ 9	5·6	7·6
Agra	N.	9·8	103	1 37	−41	3 25	−43	4·4	—
Andijan		11·7	19	2 43	− 1	e 4 58	+ 3	e 5·3	6·9
Bombay		12·0	154	2 47	− 1	5 25	+22	6·7	13·8
Hyderabad		16·0	138	3 36	− 5	6 50	SS	—	14·8
Baku		17·7	312	i 4 6	+ 3	—	—	—	—
Calcutta		20·2	106	4 13	−19	7 43	−27	—	10·4
Kodaikanal		21·7	152	i 4 59	+11	(i 9 5)	SS	9·1	—
Colombo		25·8	150	5 25	− 2	10 10	+15	17·3	20·9
Ksara		26·9	287	5 39	+ 2	10 41	+27	—	—
Ekaterinburg		27·4	352	i 5 45	+ 3	i 10 27	+ 5	—	—
Theodosia		29·3	310	6 4	+ 5	—	—	15·1	—
Yalta		29·9	309	6 8	+ 4	e 11 7	+ 4	13·6	—
Simferopol		30·1	309	6 9	+ 3	e 11 7	+ 1	14·6	28·5
Helwan		31·1	278	6 13	− 2	12 33	SS	—	25·8
Kucino		33·3	329	i 6 32	− 2	11 54	− 1	14·2	20·6
Irkutsk		35·2	40	i 6 49	− 2	12 51	+27	21·6	50·7
Phu-Lien		36·5	96	7 3	+ 1	12 38	− 6	15·9	23·7
Lemberg	E.	38·1	314	e 7 22	+ 6	e 13 12	+ 4	e 24·8	29·5
	N.	38·1	314	e 7 23	+ 7	e 12 29	−39	e 24·7	33·4
Pulkovo		38·9	330	i 7 21	− 2	13 23	+ 3	15·6	27·1
Belgrade		39·6	305	e 7 28	− 1	e 13 47	+17	e 20·5	27·5
Medan		39·6	125	i 6 53	−36	i 14 29	+59	—	—
Budapest		40·8	310	7 38	− 1	13 52	+ 4	19·6	28·6
Chiufeng	E.	40·8	61	e 7 40	+ 1	e 13 43	− 5	—	28·8
	N.	40·8	61	e 7 42	+ 3	e 13 45	− 3	22·6	27·4
Helsingfors		41·4	329	i 7 43	− 1	e 13 43	−14	e 16·8	—
Königsberg		41·5	320	e 7 48	+ 4	i 13 53	− 6	e 20·1	27·6
Taranto		41·7	300	7 55	+ 9	17 25	(−27)	—	—
Bari		42·0	301	8 36	+47	17 16	SS	24·3	—
Hong Kong		42·5	90	7 53	0	14 19	+ 6	21·4	25·6
Trenta		42·5	297	i 8 5	+12	14 35	+22	—	25·6
Vienna		42·7	312	e 7 54	0	19 57	?	—	33·6
Zagreb		42·8	307	e 7 55	0	i 14 12	− 6	i 21·9	29·7
Messina		43·1	296	8 7	+ 9	15 22	+60	—	—
Graz		43·2	310	i 8 1	+ 3	i 14 47	+23	e 20·7	33·6
Catania		43·6	295	8 2	0	14 51	+21	29·5	45·4
Laibach		43·8	309	e 8 8	+ 5	e 14 53	+20	e 27·2	34·6
Mineo		43·9	295	7 56	− 8	—	—	—	—
Benevento		44·0	300	e 8 8	+ 3	—	—	—	—
Naples	E.	44·0	300	e 7 56	− 9	e 14 26	−10	21·6	35·6
Prague		44·2	313	8 11	+ 5	e 14 55	+16	e 27·6	32·1
Collurania		44·3	302	8 10	+ 3	—	—	—	—
Triest		44·3	307	i 8 8	+ 1	i 14 55	+15	e 19·9	33·6
Entebbe		44·6	234	(8 0)	−10	13 35?	−69	—	28·1
Upsala		44·7	326	e 8 4	− 6	i 14 52	+ 6	—	31·3
Camerino		44·8	303	8 49	+38	—	—	—	—
Potsdam		45·3	317	e 8 5	−10	e 14 53	− 2	e 26·6	30·6
Venice		45·3	306	i 8 14	− 1	e 15 16	+21	32·1	33·1
Treviso		45·4	306	i 8 13	− 3	e 15 1	+ 5	—	34·2
Cheb		45·5	313	e 8 17	0	e 15 1	+ 4	e 26·6	33·2
Padova		45·6	306	i 8 17	− 1	e 15 2	+ 3	—	—
Lund		45·8	321	8 18	− 1	15 6	+ 4	—	—
Innsbruck		46·0	310	e 8 23	+ 2	—	—	—	32·5
Florence		46·1	304	i 9 25	+64	16 5	+59	22·1	27·1
Jena		46·1	314	e 8 18	− 3	e 15 11	+ 5	e 22·6	34·4

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Copenhagen		46·2	321	8 21	− 1	15 6	− 1	—	—
Prato		46·2	304	i 8 35	+13	16 35	?	25·6	30·6
Zi-ka-wei		46·2	74	i 8 29	+ 7	i 15 13	+ 6	25·9	27·8
Livorno		46·8	303	7 40	−47	13 15	?	—	—
Göttingen		47·1	314	e 8 27	− 2	i 15 21	+ 1	e 25·6	33·9
Piacenza		47·2	305	8 27	− 3	15 39	+18	19·1	33·5
Chur		47·3	308	e 8 29	− 2	e 15 12	−11	—	—
Hamburg		47·3	318	e 8 22	− 9	i 15 25	+ 2	e 22·2	34·6
Pavia		47·5	305	8 37	+ 5	—	—	—	—
Stuttgart		47·5	312	i 8 31	− 1	i 15 11	−15	e 27·6	34·4
Zurich		47·9	308	e 8 33	− 2	e 15 22	− 9	—	—
Feldberg	E.	48·0	314	i 8 37	+ 1	i 15 36	+ 3	e 27·4	35·9
Karlsruhe		48·0	312	8 40	+ 4	15 30	− 3	e 32·6	34·9
Taihoku		48·0	83	8 38	+ 2	15 33	0	27·0	—
Strasbourg		48·5	311	i 8 39	− 1	15 41	+ 1	22·6	34·1
Carloforte		48·7	300	e 8 42	+ 1	e 15 47	+ 4	—	—
Neuchatel		49·0	309	e 8 43	− 1	e 15 13	−34	—	—
Zinsen		49·2	65	8 43	− 2	15 52	+ 2	—	—
Besançon		49·7	309	e 8 47	− 2	15 59	+ 2	26·6	—
De Bilt		50·2	315	8 51	− 2	16 4	0	e 24·6	33·9
Isigakizima		50·5	83	8 57	+ 2	16 3	− 5	—	—
Uccle		50·6	313	i 8 55	− 1	16 15	+ 6	25·6	37·6
Bergen		50·7	326	8 45	−12	16 58	+47	26·6	34·6
Manila		51·5	95	e 9 4	+ 1	16 24	+ 2	24·6	28·6
Paris		51·9	311	9 6	0	16 31	+ 4	25·6	38·6
Puy de Dôme		51·9	308	i 9 53	+47	17 17	+50	24·6	—
Batavia		52·3	128	i 9 9	0	i 16 27	− 6	33·6	—
Tananarive		52·3	205	9 13	+ 4	i 16 33	0	26·0	29·6
Nagasaki		52·8	70	9 14	+ 2	16 40	+ 1	e 26·6	35·9
Barcelona		53·0	301	9 13	− 1	16 41	− 1	e 21·0	39·9
Hukuoka		53·0	69	9 15	+ 1	16 44	+ 2	e 26·1	36·1
Algiers		53·2	296	e 9 12	− 3	16 50	+ 5	24·6	41·6
Kew		53·5	315	i 9 17	− 1	i 16 52	+ 3	26·6	40·1
Hamada		54·0	65	9 18	− 3	16 56	0	—	—
Bagnères		54·1	305	e 9 20	− 2	e 16 53	− 4	22·6	—
Durham		54·1	319	9 25	+ 3	17 7	+10	—	32·6
Oxford	E.	54·1	315	i 9 28	+ 6	i 17 15	+18	e 32·4	38·1
	N.	54·1	315	i 9 34	+12	i 17 2	+ 5	e 31·6	38·1
Tortosa	E.	54·3	301	9 21	− 2	17 6	+ 7	e 27·6	41·7
	N.	54·3	301	9 28	+ 5	17 11	+12	27·1	42·1
Stonyhurst		54·7	317	i 9 26	0	i 17 1	− 4	—	43·9
Matuyama		54·8	67	i 9 31	+ 4	—	—	e 27·4	38·4
Edinburgh		55·0	320	e 9 27	− 2	17 19	+10	28·1	40·8
Bidston		55·1	317	i 8 55	−35	i 16 17	−54	e 22·1	37·6
Koti		55·5	68	i 9 34	+ 2	e 17 17	+ 1	28·1	37·4
Alicante		55·6	299	e 9 35	+ 2	e 17 31	+14	e 22·3	42·4
Toyooka		56·1	65	9 37	0	e 23 30	SSS	30·9	40·6
Sumoto		56·4	67	9 39	0	17 26	− 2	30·6	31·9
Kobe	E.	56·4	66	e 9 41	+ 2	17 32	+ 4	—	39·6
	N.	56·4	66	e 9 38	− 1	e 17 28	0	e 29·7	34·9
Osaka		56·8	66	9 47	+ 5	17 39	+ 5	31·4	34·9
Almeria		57·4	297	e 9 43	− 3	i 17 49	+ 7	i 34·6	46·4
Nagoya		57·9	65	e 10 53	+63	18 49	+61	32·7	39·2
Toledo		57·9	301	9 46	− 4	i 17 46	− 2	e 25·8	45·9
Granada		58·2	298	i 9 48	− 4	i 17 36	−16	35·1	46·6
Hamamatu		58·5	66	9 49	− 5	17 49	− 7	—	—
Malaga		59·0	298	9 37	−20	17 25	−38	22·6	50·9
Mizusawa	E.	59·9	59	9 58	− 6	18 16	+ 1	25·0	—
	N.	59·9	59	10 11	+ 7	18 14	− 1	24·9	—
Tokyo		59·9	64	10 8	+ 4	18 14	− 1	—	—

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		Δ	Az.	P.	O−C.	S.	O.−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando		60·5	298	10 7	− 1	18 23	0	28·1	48·1
Tyosi		60·7	64	10 10	+ 1	18 24	− 1	e 32·1	42·4
Serra do Pilar		61·0	306	11 35?	+84	—	—	—	—
Scoresby Sund		61·9	339	10 18	0	18 55	+14	—	—
Reykjavik		63·2	331	10 34	+ 7	19 37	PS	e 36·4	—
Amboina		67·1	109	10 52	0	i 19 29	−17	27·5	—
Azores		74·5	307	11 35	− 2	16 41	PPPP	—	—
Ivigtut		75·2	334	10 41	−60	20 23	?	—	—
Perth		77·0	139	e 11 55	+ 3	e 21 30	−13	34·6	—
Dakar		78·4	280	e 11 44	−15	e 21 59	+ 1	e 40·5	51·6
Cape Town		78·6	220	12 20	+20	22 1	+ 1	41·1	44·2
Sitka		91·0	13	i 13 5	+ 3	i 23 37	[− 2]	e 36·4	—
Adelaide		93·2	129	e 13 20	+ 8	i 23 48	[− 3]	i 38·2	56·2
Ottawa		97·6	335	e 12 21	−71	e 24 1	[−13]	e 44·6	—
Harvard		98·3	331	—	—	e 24 13	[− 4]	e 46·6	—
Melbourne		99·0	129	e 13 42	+ 3	24 5	[−16]	45·6?	62·3
Toronto	E.	100·5	337	e 13 42	− 4	i 25 19	−12	48·6	55·6
Fordham		100·7	332	e 13 45	− 2	i 24 20	[− 9]	e 48·1	—
Victoria	E.	101·2	9	13 58	+ 9	25 13	{+11}	45·7	67·3
Riverview		101·4	123	e 17 24	PP	i 24 28	[− 5]	e 52·9	63·5
Sydney		101·4	123	e 13 5	−45	i 24 17	[−16]	56·6	64·8
Seattle		102·0	8	e 18 23	PP	e 24 26	[− 9]	e 60·3	—
Ann Arbor		103·1	339	—	—	i 24 35	[− 6]	i 44·5	67·4
Pittsburgh		103·4	335	e 13 54	− 5	e 24 32	[−10]	e 45·6	—
Georgetown		103·7	330	13 59	− 2	27 25	PS	—	57·6
Chicago		104·8	340	e 18 17	PP	i 24 38	[−11]	e 46·9	—
Florissant		108·3	341	i 14 19	− 4	i 24 58	[− 7]	—	65·3
St. Louis		108·5	341	—	—	e 24 57	[− 9]	—	65·2
Columbia		109·6	333	e 18 57	PP	e 25 4	[− 7]	55·6	—
Berkeley		111·7	9	e 18 49	[+26]	i 27 3	{+44}	61·3	63·6
Lick		112·3	9	e 18 53	[+28]	—	—	—	—
Honolulu T.H.		112·9	45	e 19 59	PP	e 27 15	{+48}	e 52·6	—
Haiwee	E.	113·8	5	e 18 41	[+12]	—	—	—	—
San Juan		114·1	312	e 19 16	PP	e 25 20	[−10]	60·3	—
Mount Wilson	E.	115·8	6	e 19 28	PP	—	—	—	—
Pasadena		115·9	6	e 19 46	PP	—	—	—	74·8
Port au Prince		117·9	316	e 19 55	PP	—	—	i 67·6	—
Tucson		117·9	359	19 59	PP	29 35	PS	—	—
Arapuni		121·4	118	19 35?	[+46]	31 25	PS	55·6	58·6
Wellington		121·6	122	i 20 20	PP	32 35	?	54·6	73·6
La Plata		134·0	249	19 17	[+ 4]	—	—	59·3	—
La Paz		137·2	279	i 19 19	[+ 1]	26 23	?	64·1	69·2
Santiago		144·3	254	19 35	[+ 3]	—	—	—	—

Additional readings and note :—
Belgrade e = +9m.16s. = P_cP − 24s. and +9m.20s., eSN = +13m.33s.
Medan i = +17m.23s. = S_cS − 16s.
Chiufeng PPN = +9m.21s., PPE = +10m.8s. and +10m.19s., iE = +14m.9s., iN = +14m.37s., iSSE = +16m.23s.
Helsingfors iPP = +9m.23s., eZ = +10m.6s., eSSN = +16m.11s., eSSE = +16m.23s.
Königsberg ePN = +7m.59s., iZ = +8m.10s., iPPZ = +8m.45s., iZ = +8m.52s., eN = +8m.57s., iPPPZE = +9m.31s., iZ = +9m.45s. = P_cP − 2s., iE = +10m.5s. and +10m.47s., iN = +11m.46s., eN = +12m.35s. ? and +13m.38s., iE = +13m.42s., iPSE = +14m.18s., iE = +14m.33s., iZ = +15m.5s., iSSSE = +17m.13s., iEN = +17m.41s., and +18m.38s.
Hong Kong PP = +9m.25s., SS = +17m.5s.
Vienna iP = +7m.58s., iE = +10m.55s., PP = +12m.45s., PPP = +14m.24s., PS = +20m.47s., PKKP = +23m.55s., SSS? = +29m.22s.
Zagreb iP = +8m.0s., iP_cP = +19m.21s., iPP = +9m.47s., iPPP = +10m.23s., iPPPP = +11m.8s., eP_cS = +13m.8s., eSNW = +14m.15s., iPS = +14m.23s., iPPS = +14m.38s., iNW = +14m.46s. and +16m.21s., iS_cS = +17m.39s., iSKS = +17m.54s., iSKKS = +18m.11s., iSS = +18m.23s., iSSS = +18m.43s., iSSSS = +19m.54s.
Graz iSS = +18m.15s.
Laibach e = +9m.39s. = PP + 0s., ePPPP = +11m.1s., e = +17m.58s. = S_cS − 7s.
Prague eSS = +18m.5s. = S_cS − 2s.
Triest PP = +9m.58s., PPP = +10m.28s., SS = +18m.11s., SSS = +19m.18s.
Entebbe gives P as S.

Continued on next page.

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Upsala PP = +9m.48s., iP_cSE = +10m.41s., iSS = +18m.5s. = S_cS − 5s.
Potsdam iEN = +8m.19s. and +8m.51s., iE = +9m.10s., iPPEN = +9m.53s., iEN = +11m.20s., +11m.56s., +12m.20s., and +13m.3s., iSEN = +15m.2s., iEN = +15m.37s., eSSN = +17m.41s., eSSE = +18m.5s., iN = +19m.7s.
Cheb e = +12m.14s., eSS? = +18m.35s.? = S_cS + 20s.
Lund e=+9m.2s., PP=+10m.11s., e=+11m.5s., and +15m.54s., SS= +18m.35s.?
Florence PP = +11m.20s., PPP = +11m.50s.
Jena iP = +8m.22s., iE = +9m.45s., iN = +10m.10s., iE = +10m.20s., eN = +11m.0s., eSEZ = +15m.35s., iS = +16m.11s., eZ = +18m.35s., eN = +18m.41s., iE = +18m.54s.
Copenhagen +8m.26s., +9m.4s., PP = +10m.4s., eSSE = +18m.17s., eEN = +15m.59s., SSN = +18m.32s., +18m.47s.
Zi-ka-wei iE = +9m.13s. and +9m.31s., SSN = +18m.49s.
Göttingen eSSSE = +19m.11s.
Hamburg iZ = +8m.35s. and +9m.13s., iPPE = +10m.34s., iSSZ = +19m.20s.
Feldberg iE = +8m.57s., +9m.8s., +10m.33s., +16m.55s., and +19m.53s.
Strasbourg PP = +10m.35s., PPP = +11m.29s., PPPP = +11m.46s., SS = +19m.25s.
De Bilt iPPEZ = +10m.55s.
Uccle iPP = +10m.55s., i = +17m.17s., +17m.38s., and +18m.52s. = S_cS + 4s., SS = +19m.44s.
Bergen P = +8m.50s.
Paris SS? = +20m.59s.
Puy de Dôme e = +9m.57s.
Batavia i = +10m.15s. = P_cP − 10s.
Tananarive P_cP = +10m.11s., E = +15m.48s., iN = +16m.42s., EN = +17m.0s., SS = +20m.18s., SSS = +21m.42s., SSSS = +22m.30s., N = +22m.45s., E = +23m.48s.
Algiers iP = +9m.24s.
Kew iPP = +11m.59s., iSSEN = +20m.39s., iEZ = +21m.4s., iE = +24m.27s.
Durham ? = +17m.48s., SS = +21m.28s., ? = +22m.49s.
Stonyhurst i = +17m.58s., SS = +21m.47s., i = +22m.43s.
Edinburgh iP = +9m.32s., i = +12m.15s., +13m.45s., and +18m.24s.
Toyooka i = +17m.28s.
Almeria iP = +9m.49s., PP = +12m.29s.
Toledo iP = +9m.52s., P_cP = +11m.26s., PP = +12m.37s., PPP = +13m.44s., PPPP = +14m.16s., PS = +18m.9s., SS = +22m.48s., SSS = +24m.31s., SSSS = +25m.31s.
Granada i = +18m.33s.
Scoresby Sund eZ = +10m.47s. = P_cP − 14s., PP = +13m.5s., PPP = +14m.7s., iEN = +19m.47s. = S_cS − 18s., SS = +22m.59s., SSSN = +25m.35s.
Reykjavik PP = +13m.35s., PPP = +14m.59s., PS = +20m.3s., SS = +24m.24s., SSS = +26m.41s.
Amboina i = +20m.39s. = S_cS − 5s.
Ivigtut iZ = +11m.23s., +13m.35s., e = +21m.7s. and +21m.35s. = PS − 13s., +25m.53s. = SS − 9s.
Perth PP = +15m.0s.
Sitka iPP = +16m.41s., iPS = +24m.37s., iSS = +30m.10s.
Adelaide i = +18m.10s., +24m.15s., +24m.30s., +33m.29s., and +34m.46s.
Ottawa ePPN = +13m.36s., ePPPN = +16m.37s., ePPSZ = +24m.50s., eN = +26m.35s. = PS + 16s.
Harvard ePPS = +17m.32s., ePS = +26m.43s., eSS = +36m.35s.
Melbourne iPP? = +17m.48s. = PP + 13s., iPPP? = +19m.53s.
Toronto PPE = +17m.48s., PPPE = +24m.17s. = SKS − 11s., iE = +25m.1s. = SKKS + 4s., SSSE = +37m.4s. : T_o = 15h.27m.12s.
Fordham ePP = +17m.50s., iPS = +26m.32s., eSS = +32m.5s.
Riverview i = +26m.58s. = PS − 2s.
Seattle eSS = +32m.44s.
Ann Arbor ePP = +18m.11s., iPSN = +27m.23s., i = +31m.41s., iN = +34m.29s., e = +38m.23s.
Pittsburgh ePKP = +17m.29s., ePP = +18m.12s.
Georgetown PPZ = +18m.16s. ; To = 15h.27m.0s.
Chicago ePPP = +20m.30s., ePS = +27m.7s., eSS = +38m.17s.
Florissant iPPNZ = +18m.39s., iNZ = +19m.7s. and +21m.50s., iSKKSEN = +25m.51s., iN = +26m.43s., iPSZ = +28m.6s., iEN = +28m.50s.
St. Louis ePP = +18m.38s., eEN = +21m.51s., eSKKS = +25m.51s., iPSEN = +28m.8s., iEN = +29m.1s.
Columbia ePS = +28m.1s., eSS = +35m.3s., e = +51m.35s.
Berkeley ePPE = +19m.47s., eE = +44m.31s.
Honolulu T.H. eSS = +34m.5s., e = +39m.7s. and +44m.35s.
San Juan iPP = +19m.41s., ePS = +29m.12s., eSS = +35m.2s.
Pasadena eN = +19m.51s.
Port au Prince i = +21m.9s.
Tucson eSS = +36m.53s., eSSS = +41m.35s. ?, e = +44m.1s.
Wellington iN = +25m.47s. = SKS − 8s., PPPP = +30m.15s. = SKSP + 9s., SS = +39m.35s., SSS = +42m.55s., i = +48m.45s.
La Paz iPPEZ = +22m.5s., PSZ = +34m.29s., iPSE = +34m.37s., iPSN = +34m.53s., iN = +40m.1s., SSE = +41m.39s., SSSE = +46m.29s., SSSN = +46m.35s.
Long waves were recorded at Denver.

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Aug. 27d. Readings also at 0h. (near Apia), 1h. (Florence, Strasbourg, and near Belgrade), 2h. (Baku and Tashkent), 3h. (Ekaterinburg, Irkutsk, Kucino, Hyderabad, Apia, and Suva), 4h. (Ekaterinburg, Tashkent, Hyderabad, and Bombay), 5h. (Irkutsk and Kucino), 7h. (Bombay, Hyderabad, Tashkent, Ekaterinburg, Irkutsk, Kucino, Pulkovo, Helsingfors, Copenhagen, and Andijan), 8h. (Bombay and Tashkent), 9h. (Ekaterinburg and Irkutsk), 10h. (near Sumoto), 11h. (Ksara, Ekaterinburg, near Baku, and near Apia), 12h. (Tashkent and near Apia), 13h. (La Paz, Tashkent, Baku, and Helsingfors), 15h. (Neuchatel, Suva, and near Apia), 16h. (Neuchatel (2)), 18h. (Neuchatel, Ksara, Andijan, Hyderabad (2), Hamburg, Bombay (2), Agra (2), and Dehra Dun (2)), 19h. (Hamburg and Tyosi), 20h. (De Bilt, Ekaterinburg, Dehra Dun, Agra, Tashkent, Irkutsk, Hyderabad (2), Bombay, and Perth), 21h. (Bombay, Ekaterinburg (2), Irkutsk, Tashkent (2) Tyosi, and La Paz), 23h. (Batavia and La Paz)

Aug. 28d. 0h. 42m. 20s. Epicentre 28°·5N. 69°·0E. (as on 26d.). R.3.

$A = +\cdot315$, $B = +\cdot821$, $C = +\cdot477$; $D = +\cdot934$, $E = -\cdot358$; $G = +\cdot171$, $H = +\cdot446$, $K = -\cdot879$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	N.	8·1	97	e 2 6	+11	3 47	+21	4·4	6·8
Dehra Dun		8·1	75	2 10	+15	5 30	+124	7·8	10·7
Bombay		10·2	159	e 2 10	−14	—	—	—	9·2
Andijan		12·6	12	e 2 59	+ 3	e 5 11	− 6	—	—
Tashkent		12·8	1	i 2 58	− 1	i 5 29	+ 7	6·0	6·2
Hyderabad		14·0	140	3 33	+18	6 38	+47	8·5	11·7
Calcutta		18·4	105	5 13	+62	8 21	+48	10·7	12·4
Baku		19·7	312	e 4 19	− 7	i 7 49	−11	10·2	13·6
Colombo		23·9	153	5 30	+21	10 0	+39	16·0	17·2
Ksara	N.	28·7	289	e 5 58	+ 5	e 15 9	L	(e 15·2)	—
Ekaterinburg		29·0	351	i 6 0	+ 4	10 53	+ 5	13·7	19·5
Helwan		32·8	282	e 6 22	− 8	e 11 40	− 8	—	23·5
Irkutsk		35·3	37	—	—	e 12 40?	+14	21·7	25·2
Pulkovo		40·8	331	i 7 34	− 5	13 36	−12	19·7	28·1
Hong Kong		41·0	88	—	—	14 10	+19	—	28·6
Helsingfors	E.	43·3	329	e 7 55	− 4	e 14 26	+ 1	e 21·0	—
Upsala		46·6	327	—	—	e 20 40?	?	—	31·4
Potsdam		47·3	317	e 8 22	− 9	—	—	—	31·7
Cheb		47·5	314	—	—	e 18 40?	SS	—	35·2
Lund		47·8	321	—	—	15 25	− 5	29·7	—
Florence		48·0	305	e 8 35	− 1	15 25	− 8	25·2	44·7
Copenhagen		48·2	321	8 33	− 5	15 31	− 5	—	—
Piacenza		49·2	307	e 12 40	?	—	—	—	37·9
Hamburg		49·3	319	e 8 40	− 6	—	—	—	32·7
Stuttgart		49·5	314	e 8 44	− 3	—	—	e 29·7	—
Feldberg		50·0	315	—	—	e 15 58	− 3	—	33·5
Strasbourg		50·5	312	e 9 5	+10	—	—	e 27·7	—
De Bilt		52·1	316	9 8	+ 1	e 16 26	− 4	e 29·7	34·8
Paris		53·9	313	e 9 16	− 5	—	—	31·7	37·7
Kew		55·5	316	e 9 31	− 1	e 17 12	− 4	e 32·7	33·5
Granada		60·2	300	—	—	i 20 20	(+27)	40·5	41·8
Scoresby Sund		63·6	339	—	—	19 10	+ 8	—	—

Additional readings :—
Irkutsk e = +15m.40s.
Helsingfors eN = +9m.11s., ePPEN = +9m.42s., eSN = +14m.21s., eSSE = +17m.13s., eSSN = +17m.27s., eSSS = +18m.27s.
Florence i = +10m.25s. = PP + 4s.
Copenhagen +10m.22s. = PP − 1s. and +18m.40s. ?
Kew eE = +21m.32s.
Long waves were also recorded at Kodaikanal, Göttingen, Uccle, Edinburgh, Stonyhurst, and Ottawa.

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Aug. 28d. 3h. 18m. 7s. Epicentre 30°·2N. 67°·7E. (as on 25d.). X.

A = +·328, B = +·800, C = +·503; D = +·925, E = −·379; G = +·191, H = +·465, K = −·864.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	N.	9·6	106	e 3 19	+63	e 4 36	+33	—	—
Andijan		11·2	18	e 2 34	− 3	e 4 29	−14	—	—
Tashkent		11·2	6	(e 2 55)	+18	(e 4 30)	−13	(5·5)	(9·1)
Bombay		12·2	157	4 39	S	(4 39)	−29	—	—
Hyderabad		16·1	140	5 0	+77	8 3	+82	9·2	10·5
Baku		17·7	310	e 4 6	+ 3	e 7 19	+ 2	10·4	—
Calcutta		20·0	108	7 46	S	(7 46)	−20	11·8	—
Ekaterinburg		27·1	352	e 6 36	+57	—	—	12·9	18·2

Additional readings and note :—
Tashkent readings have been *increased* by 4m.
Calcutta S = +10m.29s.
Long waves were also recorded at Irkutsk, Copenhagen, and De Bilt.

Aug. 28d. 19h. 40m. 8s. Epicentre 29°·8N. 67°·3E. (as on 27d.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		9·3	84	2 32	+21	5 12	S_g	7·2	7·9
Agra	N.	9·8	103	e 2 7	−11	3 37	−31	4·7	—
Andijan		11·7	19	e 2 51	+ 7	e 5 7	+12	—	—
Bombay		12·0	154	2 32	−16	5 12	+ 9	6·6	10·5
Hyderabad		16·0	138	3 21	−20	6 32	− 6	8·3	10·6
Baku		17·7	312	e 4 5	+ 2	i 7 37	+20	9·9	—
Calcutta		20·2	106	5 31	+59	9 28	+78	11·6	12·2
Colombo		25·8	150	9 11	S	(9 11)	−44	—	18·9
Ksara	N.	26·9	287	e 5 40	+ 3	—	—	e 16·4	—
Ekaterinburg		27·4	352	e 5 46	+ 4	i 10 37	+15	12·9	17·3
Kucino		33·3	329	e 6 38	+ 4	e 12 7	+12	18·7	19·9
Irkutsk		35·2	40	e 6 52	+ 1	—	—	15·9	—
Pulkovo		38·9	330	7 18	− 5	13 25	+ 5	16·9	25·2
Helsingfors	E.	41·4	329	e 7 42	− 2	e 13 54	− 3	e 22·9	—
	N.	41·4	329	e 7 40	− 4	e 13 46	−11	e 22·9	—
Lund		45·8	321	—	—	15 15	+13	25·9	—
Florence		46·1	304	8 22	+ 1	14 52	−14	21·9	25·9
Copenhagen		46·2	321	8 21	− 1	15 17	+10	25·9	—
Piacenza		47·2	305	e 8 22	− 8	—	—	—	37·7
Feldberg		48·0	314	—	—	e 15 43	+10	—	33·1
De Bilt		50·2	315	8 50	− 3	16 14	+10	e 28·9	34·5
Scoresby Sund		61·9	339	13 52?	?	—	—	—	—

Additional readings :—
Ksara eN = +15m.3s.
Irkutsk e = +8m.16s. and +13m.20s.
Helsingfors ePPE = +9m.12s., eN = +9m.46s., eE = +9m.54s., eN = +12m.24s., eSSN = +16m.41s., eSSSN = +17m.22s.
Long waves were also recorded at Kodaikanal, Hong Kong, and other European stations.

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Aug. 28d. 21h. 24m. 13s. Epicentre 29°·8N. 67°·3E. (as at 19h.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		9·3	84	3 7	+56	—	—	—	4·8
Agra	N.	9·8	103	3 31	+73	5 21	+73	6·4	—
Andijan		11·7	19	e 2 42	− 2	e 5 3	+ 8	—	—
Bombay		12·0	154	4 11	+83	—	—	—	—
Baku		17·7	312	e 4 12	+ 9	e 7 26	+ 9	10·8	14·2
Calcutta		20·2	106	7 28	?	10 13	?	11·6	—
Ekaterinburg		27·4	352	e 5 40	− 2	e 10 47	+25	13·8	18·3
Kucino		33·3	329	—	—	e 10 13	−102	16·7	22·2
Pulkovo		38·9	330	7 14	− 9	13 29	+ 9	19·8	27·3
Helsingfors	E.	41·4	329	e 7 38	− 6	e 13 35	−22	e 20·8	—
Copenhagen		46·2	321	—	—	15 17	+10	29·8	—
De Bilt		50·2	315	—	—	e 16 7	+ 3	e 33·8	—

Additional readings :—
Helsingfors eE = +9m.23s. =PP +9s., +10m.38s., and +16m.23s. =SS −18s.
Long waves were also recorded at Hyderabad and other European stations.

DETERMINATION No. 1.

Aug. 28d. 23h. 22m. 27s. Epicentre 18°·9S. 170°·4W. N.3.

A = −·933, B = −·158, C = −·324 ; D = −·167, E = +·986 ;
G = +·319, H = +·054, K = −·946.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		5·3	345	i 1 15	0	(2 8)	− 7	2·1	2·2
Berkeley	E.	72·5	37	e 11 25	− 1	e 20 49	− 2	—	—
La Jolla		72·5	44	e 11 28	+ 2	—	—	—	—
Pasadena		72·7	43	e 11 28	+ 1	—	—	—	—
Mount Wilson		72·8	43	e 11 28	0	—	—	—	—
Haiwee		74·0	42	i 11 37	+ 2	—	—	—	—
Ottawa		106·5	46	—	—	25 33?	{− 9}	—	—
Ekaterinburg		126·6	329	e 18 47	[−13]	e 28 19	{+19}	53·6	—
Baku		139·4	311	e 22 43	PP	e 39 44	?	59·6	—
De Bilt	Z.	146·6	4	i 19 26	[−11]	e 20 31	?	—	—
Simferopol		146·9	327	e 19 18	[−19]	—	—	—	—
Yalta		147·2	327	e 19 22	[−15]	—	—	—	—
Paris		149·5	10	(e 19 33?)	[− 8]	—	—	e 19·6	—
Stuttgart	Z.	150·1	1	e 19 29	[−13]	e 20 42	?	—	—
Strasbourg		150·3	3	e 19 33?	[− 9]	e 23 33?	PP	—	—
Granada		158·4	30	i 20 34	[+43]	i 26 15	?	e 49·2	—

Additional readings :—
Ekaterinburg e = +34m.6s. and +41m.45s.
Baku e = +35m.3s.

The shock at 23h. is curious as it appears to be well recorded at Apia and in the vicinity of California, but nowhere else within a distance of 100 degrees. This means that the Chinese, Japanese, and Australian observers are completely silent and this, in view of excellent Antipodal observations from Europe, is very unaccountable. In making the determination it is necessary to consider Apia and California as two groups of stations which adopting T_0 from Berkeley P and S give formally two solutions. These are as follows, one to the South and the other to the West of Apia, and are, of course, entirely dependent on the P observation at Apia.

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DETERMINATION No. 2.

Aug. 28d. 23h. 22m. 27s. Epicentre 12°·7S. 177°·1W. N.3.

A = −·974, B = −·049, C = −·220 ; D = −·051, E = +·999 ;
G = +·220, H = +·011, K = −·975.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		5·3	103	i 1 15	0	(2 8)	− 7	2·1	2·2
Berkeley	E.	72·0	42	e 11 25	+ 2	e 20 49	+ 4	—	—
Pasadena		73·0	48	e 11 28	− 1	—	—	—	—
La Jolla		73·0	48	e 11 28	− 1	—	—	—	—
Mount Wilson		73·1	48	e 11 28	− 1	—	—	—	—
Haiwee		74·1	46	i 11 37	+ 2	—	—	—	—
Ottawa		107·0	45	—	—	25 33?	{−12}	—	—
Ekaterinburg		118·0	329	e 18 47	[+ 6]	e 28 19	?	53·6	—
Baku		130·5	313	e 22 43	PKS	e 39 44	?	59·6	—
Simferopol		138·2	326	e 19 18	[− 1]	—	—	—	—
Yalta		138·5	326	e 19 22	[+ 2]	—	—	—	—
De Bilt	Z.	140·6	357	i 19 26	[+ 4]	e 20 31	?	—	—
Stuttgart	Z.	143·6	352	e 19 29	[0]	e 20 42	?	—	—
Paris		143·6	1	(e 19 33?)	[+ 4]	—	—	e 19·6	—
Strasbourg		143·9	354	e 19 33?	[+ 2]	e 23 33?	?	—	—
Granada		154·9	12	i 20 34	[+46]	i 26 15	?	e 49·2	—

Aug. 28d. Readings also at 4h. (Baku, Ekaterinburg, and Tashkent), 5h. (Ekaterinburg and Tashkent), 6h. (Andijan), 7h. (Bombay, Dehra Dun, Hyderabad, Copenhagen, Tashkent (2), Andijan, Ekaterinburg, and Baku), 8h. (Ekaterinburg and Irkutsk), 9h. (Ann Arbor and Andijan), 10h. (Baku, Ekaterinburg, Irkutsk, Helsingfors, Pulkovo, Andijan, Tashkent, Agra, Dehra Dun, Bombay, and Hyderabad), 11h. (Ksara, Baku, Ekaterinburg, and Tashkent), 12h. (Baku (2), Ekaterinburg, Tashkent (2), Hyderabad, La Paz, and near Wellington), 13h. (Tashkent, Ekaterinburg (2), Haiwee, La Jolla, Mount Wilson, Pasadena, Simferopol, and Yalta), 14h. (Baku, Ekaterinburg, and Tashkent), 15h. (Baku, Feldberg, De Bilt, Stuttgart, Pulkovo, Irkutsk, Copenhagen, Ekaterinburg, Bombay, Hyderabad, and Andijan), 16h. (near Andijan), 18h. (Baku, Ekaterinburg, Kucino, Andijan, Dehra Dun, Bombay, Hyderabad, and Lick), 20h. (La Paz, and near Santiago), 21h. (Ksara).

Aug. 29d. 12h. 30m. 51s. Epicentre 32°·0N. 49°·0E. N.3.

A = +·556, B = +·640, C = +·530 ; D = +·755, E = −·656 ;
G = +·348, H = +·400, K = −·848.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		8·4	5	e 2 38	P*	e 3 50	+16	4·2	5·6
Ksara		11·2	283	e 2 30	− 7	5 51	+68	6·7	—
Helwan		15·3	267	3 40	+ 8	6 38	+16	—	12·0
Ekaterinburg		26·1	15	5 32	+ 2	1 9 56	− 4	14·2	—
Pulkovo		30·4	341	e 6 4	− 5	e 11 6	− 4	16·2	17·6
Florence		31·7	301	7 24	PP	10 9	−82	—	15·6
Helsingfors	E.	32·3	338	e 6 2	−23	e 11 45	+ 5	e 16·8	—
Copenhagen		34·8	324	—	—	12 3	−15	17·2	—

Additional readings :—
Helsingfors eE = +6m.33s. and +9m.3s. = P_cP −14s., eN = +12m.57s., eE = +13m.39s. = SS +15s.
Long waves were also recorded at Irkutsk, De Bilt, Feldberg, Stuttgart, and Edinburgh.

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Aug. 29d. 15h. 56m. 55s. Epicentre 45°·5N. 13°·4E. N.2.

See "Il terremoto Istriano," P. Caloi, Est. Boll. della Soc. Seis. Italiano XXX fasc 6, 1931-1932.

A = +·682, B = +·162, C = +·713; D = +·232, E = −·973; G = +·694, H = +·165, K = −·701.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Triest		0·3	57	i 0 4	0	i 0 11	+ 3	—	—
Venice		0·7	264	i 0 15	P_g	i 0 58	?	—	—
Treviso		0·9	281	i 0 12	− 1	i 0 26	+ 3	—	0·6
Laibach		1·0	55	e 0 18	P*	e 0 34	S_g	—	0·6
Padova		1·1	265	i 0 12	− 4	i 0 26	− 2	—	—
Zagreb		1·9	80	0 30	+ 2	i 0 57	S*	—	1·1
Florence		2·3	222	—	—	e 0 54	− 5	—	1·1
Innsbruck		2·3	322	e 0 39	P*	—	—	i 1·3	—
Prato		2·3	225	e 0 35	+ 2	1 5	+ 6	—	1·2
Camerino		2·4	186	1 5	S	(1 5)	+ 3	—	—
Piacenza		2·6	260	—	—	e 1 9	+ 2	—	2·8
Chur	N.	3·0	297	e 0 46	+ 3	e 1 30	S*	—	—
Vienna		3·4	36	0 58	P*	1 34	+ 7	i 2·0	2·1
Ravensburg		3·5	313	e 1 2	P*	1 29	− 1	—	—
Zurich	N.	3·8	302	e 0 55	+ 1	—	—	—	—
Hohenheim		4·3	321	e 1 17	P*	e 2 20	S_g	—	—
Stuttgart		4·3	320	e 1 15	P*	e 2 21	S_g	2·9	—
Neuchatel		4·7	291	e 1 7	0	e 2 58	S_g	—	—
Strasbourg		4·9	311	—	—	e 2 36	S_g	—	—
Jena	E.	5·5	348	e 1 17	− 1	—	—	—	3·4
Feldberg		5·7	326	i 1 46	P*	i 2 34	+ 9	—	3·4
Göttingen	N.	6·4	341	i 1 33	+ 2	i 2 56	+13	—	—

Additional readings:—
Zagreb eP_g = +32s., iPP = +34s., and +40s., iPPS = +50s.
Chur eP_g = +51s.
Vienna iPP = +1m.12s.
Ravensburg eS* = +1m.42s., eS_g = +1m.49s.
Zurich eP_g = +1m.9s.
Hohenheim eE = +1m.22s. =P* and +1m.35s. =P_g, e = +2m.2s. =S*.
Neuchatel eP_g = +1m.23s.
Strasbourg SS = +2m.46s., SSS = +2m.56s., i = +3m.52s.
Jena e = +1m.27s.
Göttingen iP_gN = +2m.3s.
Long waves were recorded at De Bilt.

Aug. 29d. Readings also at 1h. (Bombay, Calcutta, Ekaterinburg, Hyderabad, and near Batavia), 2h. (La Paz, Ekaterinburg, Irkutsk (2), Kucino, Copenhagen, De Bilt, Hong Kong, and near Manila), 4h. (Tucson, St. Louis, and Scoresby Sund), 5h. (Calcutta), 6h. (Dehra Dun, Bombay, Hyderabad, Baku, Ekaterinburg, Pulkovo, De Bilt, and Feldberg), 8h. (near Batavia), 9h. (Lick), 11h. (Strasbourg), 12h. (Neuchatel and near Tortosa), 13h. (Bombay, Dehra Dun, Calcutta, Hyderabad, Baku, Ekaterinburg, Pulkovo, Irkutsk, Helsingfors, Copenhagen, Feldberg, De Bilt, and Strasbourg), 14h. (Paris, Edinburgh, Ekaterinburg, and Tashkent), 15h. (near Wellington), 16h. (Halwee, La Jolla, Mount Wilson, Pasadena, La Paz, and near Mizusawa), 17h. (Ekaterinburg, Tashkent, Pulkovo, Kucino, Irkutsk, and Scoresby Sund), 18h. (near Irkutsk, Tashkent, near Berkeley, and Lick), 19h. (Andijan, Tashkent, Dehra Dun, Bombay, Calcutta, Ekaterinburg, and Lick), 20h. (Bombay, Calcutta, Hyderabad (2), Ekaterinburg, Andijan, Tashkent, Irkutsk, Kucino (2), Pulkovo (2), Copenhagen, De Bilt, and near Hastings), 21h. (De Bilt), 22h. (near Berkeley and near Manila),

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Aug. 30d. 7h. 34m. 39s. Epicentre 6°·0N. 99°·0W. (as on 1928 Dec. 26d.). R.3.

A = −·156, B = −·982, C = +·105 ; D = −·988, E = +·156 ;
G = −·016, H = −·103, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		28·5	339	—	—	e 10 45	+ 5	14·8	—
Little Rock	N.	29·4	11	e 6 3	+ 3	e 10 56	+ 1	—	—
Pasadena	Z.	33·2	331	i 6 29	− 5	—	—	—	—
St. Louis		33·6	14	e 6 38	+ 1	e 12 0	0	—	—
Florissant		33·7	14	i 6 36	− 2	e 11 41	−20	e 14·3	—
San Juan		34·4	65	(e 7 53)	PP	—	—	e 7·9	—
Haiwee	E.	34·8	334	e 6 48	+ 1	—	—	—	—
La Paz		38·0	129	7 17	+ 2	i 13 15	+ 9	19·9	23·0
Berkeley		38·2	330	—	—	e 16 18	?	e 21·2	—
Fordham		41·4	30	e 9 15	PP	e 13 53	− 4	e 20·8	—
Harvard		43·9	30	—	∠	e 13 27	−67	e 20·4	—
Ottawa		44·2	25	e 9 51	PP	e 14 39	0	25·4	—
Scoresby Sund		80·0	20	—	—	22 9	− 7	37·4	—
Edinburgh		88·3	35	—	—	e 23 21?	−19	—	—
Copenhagen		96·8	32	—	—	26 21?	PS	49·4	—
Ekaterinburg		115·0	12	e 19 39	PP	—	—	40·4	—

Additional readings :—
St. Louis eN = +7m.39s. = PP −4s.
Florissant iZ = +7m.36s. = PP −8s.
Haiwee ePN = +6m.51s.
Fordham e = +17m.14s.
Long waves were also recorded at Granada, De Bilt, Strasbourg, Paris, Helsingfors, Pulkovo, Baku, Tashkent, Irkutsk, and Hyderabad.

Aug. 30d. Readings also at 5h. (Baku, Ekaterinburg, Tashkent, Calcutta, Hyderabad, and Andijan), 6h. (Andijan, Tashkent, Ekaterinburg, Irkutsk, Pulkovo, Helsingfors, and Copenhagen), 7h. (Tashkent and near Mizusawa), 8h. (Bombay and Andijan), 9h. (Ekaterinburg, Irkutsk, Tashkent, Andijan, and Calcutta), 10h. (near Wellington), 13h. (Alicante), 14h. (near Mizusawa), 15h. (Ekaterinburg, Tashkent, near Osaka, Kobe, Sumoto, and Nagoya), 17h. (Honolulu T.H.), 18h. (Irkutsk and Tashkent), 20h. (Dehra Dun, Tashkent, Ekaterinburg, Andijan, Nagoya, and near Toyooka), 21h. (Andijan, Tashkent, and Ekaterinburg), 22h. (Andijan, Tashkent, Bombay, Baku, Calcutta, Hyderabad, Ekaterinburg, Pulkovo, Copenhagen, De Bilt, Kucino, and Ksara), 23h. (Bombay, Hyderabad, Tashkent (2), and Ekaterinburg (2)).

Aug. 31d. 6h. 34m. 40s. Epicentre 10°·9N. 142°·7E. N.3.

A = −·781, B = +·595, C = +·189 ; D = +·606, E = +·795 ;
G = −·150, H = +·115, K = −·982.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		21·5	282	1 4 49	+ 4	8 58	S8	11·4	13·7
Miyazaki		23·5	335	5 9	+ 4	9 11	− 3	—	—
Koti		24·2	341	e 5 8	− 4	(9 14)	−13	—	9·2
Sumoto		24·5	344	e 5 11	− 4	9 21	−11	—	—
Osaka		24·7	346	5 14	− 3	(9 21)	−15	9·3	10·3
Yokohama		24·7	354	5 20	+ 3	9 24	−12	—	—
Kobe		24·8	345	e 5 14	− 4	e 9 47	+10	e 13·3	—
Nagoya		24·8	349	e 4 41	−37	—	—	—	—
Hukusima		26·9	356	5 36	− 1	10 12	− 2	—	—
Mizusawa	E.	28·3	357	(6 7)	+17	6 7	P	—	—
Hong Kong		29·5	296	6 0	− 1	9 28	PcP	—	13·9
Batavia		39·6	245	i 7 34	+ 5	—	—	—	—
Sydney		45·5	170	e 14 38	S	(e 14 38)	−19	e 23·2	25·8
Irkutsk		51·7	330	e 8 57	− 7	e 16 21	− 3	e 27·3	31·7
Tashkent		70·4	311	—	—	e 22 50	?	e 28·3	36·1

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg		76·5	327	i 11 52	+ 3	i 22 9	PS	33·3	40·5
Baku		85·1	310	—	—	e 23 1	− 8	e 40·9	—
Kucino		89·1	327	—	—	e 24 32	PS	e 46·0	—
Pulkovo		91·4	330	e 16 43	PP	—	—	47·3	—
Pasadena		91·4	55	e 13 10	+ 6	i 24 4	− 5	—	—
La Jolla	E.	92·3	56	e 13 18	+10	—	—	—	—
Scoresby Sund		97·9	355	19 20?	?	—	—	—	—
De Bilt		107·2	332	e 17 44	?	—	—	e 57·3	—
Granada		122·5	328	—	—	e 29 26	?	66·5	75·8
La Paz	Z.	149·6	102	e 19 55	[+14]	—	—	—	—

Additional readings :—
Manila iE = +4m.59s. = PP +4s. and +5m.13s., iN = +5m.16s.
Kobe eE = +5m.25s.
Batavia i = +9m.25s. = P_cP −15s.
Tashkent e = 6h.28m.43s. and 6h.29m.7s.
Baku e = +31m.31s.
Pasadena eN = +13m.14s., eSN = +24m.7s.
La Jolla eN = +13m.24s.
Long waves are also recorded at Riverview, and other European stations.

Aug. 31d. Readings also at 0h. (Bombay, Calcutta, Hyderabad, Irkutsk, Tashkent, Ekaterinburg, and Kucino), 3h. (Scoresby Sund (2), Tashkent, Ekaterinburg, Kucino, near Osaka, Sumoto, Tyosi, and Nagoya), 4h. (Bombay and Scoresby Sund), 5h. (Florissant, St. Louis, Calcutta, Tashkent, and Irkutsk), 7h. (Vladivostok), 11h. (Tashkent and Mizusawa), 12h. (Baku, Tashkent, and Irkutsk), 13h. (near Tyosi), 14h. (near Granada and near Sumoto), 16h. (Tashkent), 17h. (Baku and Tashkent), 21h. (near Apia), 22h. (Tashkent and Irkutsk).

Sept. 1d. 5h. 30m. 46s. Epicentre 35°·5N. 141°·0E. (as on 1928 Dec. 13d.). X.

A = −·633, B = +·512, C = +·581 ; D = +·629, E = +·777 ;
G = −·451, H = +·365, K = −·814.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·2	332	0 0	− 3	0 5	0	—	0·2
Nagoya		3·4	265	e 0 49	0	1 34	+ 7	—	—
Mizusawa	E.	3·6	1	0 56	+ 5	1 38	+ 6	—	—
Osaka		4·6	261	1 7	+ 1	(2 8)	+10	2·1	2·8
Kobe		4·9	262	e 1 22	+12	e 2 6	+ 1	—	—

Kobe gives also eE = +2m.11s.

Sept. 1d. 13h. 37m. 4s. Epicentre 40°·2N. 142°·4 E. N.1.

A = −·605, B = +·466, C = +·645 ; D = +·610, E = +·792 ;
G = −·511, H = +·394, K = −·764.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Miyako	0·6	209	0 12	+ 3	0 22	S_g	—	—
Morioka	1·1	242	0 15	− 1	0 27	− 1	—	—
Mizusawa	1·4	223	0 22	+ 2	0 39	+ 3	—	—
Aomori	1·4	297	0 19	− 1	0 35	− 1	—	—
Isinomaki	1·9	205	0 27	− 1	0 55	+ 6	—	—
Akita	1·9	254	0 27	− 1	0 46	− 3	—	—
Hakodate	2·0	321	0 42	P_g	1 5	S_g	—	—
Urakawa	2·0	8	0 27	− 2	0 55	+ 4	—	—
Sendai	2·3	211	0 31	− 2	1 9	S*	—	—
Muroran	2·4	333	0 34	0	0 57	− 5	—	—
Yamagata	2·5	219	0 35	− 1	1 6	+ 2	—	—
Obihiro	2·8	12	0 52	P*	1 34	S_g	—	—
Hukusima	2·9	212	0 41	0	1 21	+ 7	—	—
Sapporo	3·0	345	0 41	− 2	1 11	− 6	—	—
Kusiro	3·2	28	0 35	−11	1 9	−13	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Asahigawa		3·6	359	0 50	− 1	1 32	0	—	—
Mito		4·1	202	0 58	0	2 5	S*	—	—
Kakioka		4·3	204	1 1	0	2 11	S*	—	—
Tyosi		4·6	196	1 9	+ 3	e 2 16	S*	—	—
Kumagaya		4·7	212	1 7	0	2 6	+ 6	—	—
Nagano		4·8	225	1 11	+ 3	2 30	S*	—	—
Oiwake		4·9	219	1 11	+ 1	2 15	+10	—	—
Tokyo		5·0	206	1 10	− 1	2 11	+ 3	—	—
Wazima		5·1	238	1 13	0	2 12	+ 2	—	—
Yokohama		5·2	206	1 16	+ 2	2 34	S*	—	—
Mera		5·6	202	1 20	0	2 44	S*	—	—
Misima		5·7	210	1 21	0	2 8	−17	—	—
Numadu		5·8	210	1 24	+ 2	2 49	S_n	—	—
Gihu		6·5	224	1 55	P*	3 10	S*	—	—
Nagoya		6·6	222	e 1 40	+ 6	3 7	S*	—	—
Hikone		6·9	226	1 40	+ 2	—	—	—	—
Kameyama		7·1	223	1 52	+11	2 56	− 7	—	—
Osaka		7·7	227	1 55	+ 6	—	—	3·9	4·4
Kobe	E.	8·0	229	—	—	e 3 21	− 3	e 4·2	—
Sumoto		8·4	228	—	—	e 3 37	+ 3	(e 4·1)	—

Sumoto gives S as e and L as S.

Sept. 1d. 15h. 1m. 54s. Epicentre 20°·0N. 147°·8E. N.3.

A = −·795, B = +·501, C = +·342 ; D = +·533, E = +·846 ;
G = −·289, H = +·182, K = −·940.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Tyosi		16·9	340	7 3	S	(7 3)	+ 4	—
Misima		17·0	335	3 52	− 2	6 58	− 4	—
Oiwake		18·2	336	4 9	0	7 23	− 6	—
Nagano		18·6	335	4 14	0	7 32	− 6	—
Hukusima		18·8	342	4 17	+ 1	7 51	+ 9	—
Mizusawa	E.	20·0	345	—	—	8 11	+ 5	—
Manila		26·1	262	5 32	+ 2	8 50	P_cP	10·4

No additional readings.

Sept. 1d. Readings also at 0h. (near Berkeley), 1h. (near Apia and near Santiago), 5h. (near Tyosi), 6h. (Nagoya and Tyosi), 8h. (Alicante and near La Paz), 9h. (Ekaterinburg and Tashkent), 11h. (Alicante), 19h. (near Mizusawa and Tyosi), 23h. (Tucson).

Sept. 2d. 3h. 28m. 23s. Epicentre 30°·5N. 54°·5E. (as on 1931 May 3d.). X.

A = +·500, B = +·701, C = +·508 ; D = +·814, E = −·581 ;
G = +·295, H = +·413, K = −·862.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		10·5	341	—	—	e 4 23	− 3	e 6·6	7·3
Ksara		16·1	287	e 3 41	− 2	8 39	+118	9·6	—
Theodosia		20·8	319	e 8 18	S	(e 8 18)	− 4	—	—
Yalta		21·2	317	e 8 38	S	(e 8 38)	+ 8	—	—
Simferopol		21·5	318	e 4 46	+ 1	e 8 43	+ 7	—	—
Ekaterinburg		26·6	8	i 6 5	+30	e 10 47	+38	14·6	—
Kucino		27·8	340	—	—	e 10 31	+ 3	e 15·2	—
Florence		36·4	304	—	—	e 12 37	− 5	15·6	20·6

Additional readings :—
Baku e = +4m.41s., +5m.0s., and +5m.41s.
Ekaterinburg e = +11m.3s. and +11m.15s.
Florence e = +8m.32s.
Long waves were recorded at Pulkovo and other European stations.

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Sept. 2d. 15h. 34m. 28s. Epicentre 41°·8N. 123°·0W. N.3.

A = −·406, B = −·625, C = +·667 ; D = −·839, E = +·545 ;
G = −·363, H = −·559, K = −·745.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley	4·0	172	e 0 57	0	i 1 41	− 1	1·8	—
Lick	4·6	166	e 1 6	0	e 2 4	+ 6	—	—
Victoria	6·6	358	0 34	−60	—	—	4·2	8·1
Santa Barbara	7·8	159	e 1 51	0	e 3 18	− 1	—	—
Pasadena	8·6	152	e 2 3	+ 1	e 3 40	+ 1	—	—
Scoresby Sund	54·5	24	—	—	17 32	+30	25·5	—
Ekaterinburg	81·3	358	—	—	e 22 45	+15	51·5	—

Additional readings :—
Berkeley iEN = eZ = +1m.44s.
Ekaterinburg e = +28m.2s.
Long waves were also recorded at Feldberg, Stuttgart, and other American stations.

Sept. 2d. Readings also at 1h. (near New Plymouth), 2h. (near New Plymouth and near Apia), 3h. (Granada, Mount Wilson, Pasadena, Irkutsk, and near New Plymouth (2)), 4h. (Baku, Ekaterinburg, and Strasbourg), 5h. (Florence), 6h. (Paris, Copenhagen, Kucino, Baku, Ekaterinburg, Tashkent, Irkutsk, Bombay, and near Calcutta), 7h. (Baku, Ekaterinburg (2), Tashkent (2), and Bombay), 9h. (near Mizusawa and near Nagoya), 11h. (Ekaterinburg and Tashkent), 15h. (Tashkent), 18h. (near Mizusawa), 19h. (near Santiago and near Trenta), 20h. (Scoresby Sund), 21h. (Baku and Tashkent).

Sept. 3d. 17h. 10m. 47s. Epicentre 29°·8N. 67°·3E. (as on August 28d.). X.

A = +·335, B = +·801, C = +·497 ; D = +·923, E = −·386 ;
G = +·192, H = +·458, K = −·868.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	11·7	19	e 2 38	− 6	e 4 54	− 1	7·0	—
Bombay	12·0	154	4 26	+98	7 9	+126	8·5	10·0
Almata	15·5	27	e 3 5	−30	—	—	e 8·6	—
Hyderabad	16·0	138	6 39	S	(6 39)	+ 1	9·3	10·8
Baku	17·7	312	e 4 5	+ 2	e 7 28	+11	11·4	14·1
Calcutta	20·2	106	4 44	+12	8 24	+14	11·1	—
Ekaterinburg	27·4	352	i 5 43	+ 1	e 10 27	+ 5	14·2	18·2
Kucino	33·3	329	—	—	e 12 1	+ 6	e 20·1	23·4
Irkutsk	35·2	40	—	—	e 12 13?	−11	19·2	23·4
Pulkovo	38·9	330	e 7 17	− 6	—	—	21·2	27·7
Stuttgart	47·5	312	e 8 31	− 1	—	—	e 32·2	—
Granada	58·2	298	e 12 9	PP	—	—	e 44·1	—

Additional readings :—
Hyderabad S = +8m.35s.
Kucino e = +14m.25s. and +16m.31s.
Long waves were also recorded at Tashkent, Kodaikanal, Scoresby Sund, and other European stations.

Sept. 3d.—Readings also at 0h. (Baku, Ekaterinburg, Tashkent, and near Tyosi), 1h. (Tyosi and Laibach), 4h. (Andijan, Ekaterinburg, Irkutsk, and Tyosi), 5h. (Hyderabad), 6h. (near Sumoto), 7h. (Ekaterinburg, Irkutsk, and Tashkent), 9h. (Ottawa), 13h. (Lick), 14h. (Bombay, Calcutta, and Ekaterinburg), 15h. (Irkutsk), 17h. (Bombay (2), Calcutta, Ekaterinburg, and Tashkent), 18h. (Ekaterinburg and Tashkent), 20h. (Ekaterinburg and Wellington), 21h. (Tashkent), 23h. (near Tyosi).

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Sept. 4d. 0h. 42m. 37s. Epicentre 13°·0S. 66°·0E. (as on 1929 May 5d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		32·6	12	e 7 23	PP	—	—	—	—
Hyderabad		32·8	22	11 33	S	(11 33)	−15	14·6	17·5
Tashkent		54·4	4	e 12 31	PPP	—	—	e 38·0	41·3
Baku		55·4	346	—	—	e 16 54	−21	e 27·4	—
Ekaterinburg		70·0	357	i 11 11	0	e 20 16	− 5	31·4	—
Irkutsk		73·1	24	e 11 23?	− 6	—	—	—	—
Stuttgart	E.	79·5	326	e 12 6	+ 1	—	—	—	—
Granada		82·2	311	19 22	?	—	—	51·4	55·2

Additional readings:—
Hyderabad S = +13m.39s. = SS + 3s.
Tashkent e = +12m.51s.

Sept. 4d. Readings also at 1h. (Belgrade and near Vienna), 3h. (Sumoto and La Paz), 11h. (Stuttgart), 12h. (Ekaterinburg and Tashkent), 13h. (near Medan), 14h. (Ekaterinburg, Tashkent, and Andijan), 17h. (Ekaterinburg and Tashkent), 19h. (Baku, Ekaterinburg (2), Tashkent (2), and Lick).

Sept. 5d. 1h. 25m. 53s. Epicentre 43°·5N. 11°·8E. (as on 1931 April 5d.). R.3.

A = +·710, B = +·148, C = +·688; D = +·204, E = −·979;
G = +·674, H = +·141, K = −·725.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		0·5	305	0 15	+ 8	—	—	—	—
Prato		0·6	307	e 0 7	− 2	i 0 14	− 1	—	0·4
Camerino		1·0	112	0 59	+45	—	—	—	1·3
Livorno		1·0	272	0 13	− 1	0 23	− 3	—	—
Collurania		1·6	121	0 49	S_g	—	—	—	—
Venice		2·0	11	i 0 36	+ 7	i 1 2	+11	—	1·3
Treviso		2·2	7	e 0 32	+ 1	e 1 9	S*	—	1·3
Piacenza		2·2	315	0 44	P_g	—	—	1·1	1·6
Pavia		2·5	312	i 0 47	P*	—	—	—	1·4
Triest		2·6	33	0 40	+ 3	1 12	+ 5	1·4	3·6
Chur		3·8	335	e 0 55	+ 1	—	—	—	—
Zagreb		3·8	51	e 1 10	P*	e 1 35	− 2	—	2·5
Graz		4·4	35	e 1 9	+ 6	e 2 33	S_g	—	3·4
Zurich		4·5	331	e 1 5	+ 1	—	—	—	—
Neuchatel	N.	4·9	317	e 1 10	0	—	—	—	—
Besançon		5·5	315	e 2 9	S	(e 2 9)	−11	—	—
Stuttgart		5·6	342	e 1 18	− 2	e 2 27	+ 4	e 3·5	3·8
Strasbourg		5·8	333	1 43	P*	2 49	S*	—	—
Karlsruhe		6·0	339	2 37	S	(2 37)	+ 4	—	—
Budapest		6·4	50	—	—	e 3 37	S_g	—	—
Cheb		6·6	4	e 3 5	S	(e 3 5)	+17	—	—
Feldberg		7·1	345	i 1 44	+ 3	—	—	—	4·1
Uccle		8·9	328	—	—	e 4 1	+15	—	—
Potsdam		8·9	5	e 2 1	− 5	e 3 55	+ 9	—	—
Pulkovo		19·8	28	e 5 15	+48	e 8 23	+21	10·6	12·8

Additional readings:—
Triest iP_g = +47s., S_g = +1m.22s.
Zagreb e = +1m.19s. = P_g, i = +1m.47s., +2m.9s., and +2m.18s.
Neuchatel eP_g = +1m.32s.
Stuttgart e = +1m.33s., eEZ = +2m.12s., iE = +2m.46s., iNZ = +2m.48s., and +2m.58s.
Strasbourg P = +1m.51s., PPP = +2m.11s., SS = +2m.55s., SSS = +3m.18s.
Feldberg e = +2m.10s., i = +3m.34s. = S*
Potsdam iEN = +4m.44s. and +5m.18s.
Long waves were also recorded at Baku, Ekaterinburg, Scoresby Sund, and other European stations.

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Sept. 5d. 20h. 36m. 57s. Epicentre 43°·4N. 17°·8E. (as on 1926 March 24d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	2·4	53	0 30	− 4	e 1 8	+ 6	—	—
Zagreb	2·7	332	e 0 41	+ 2	i 1 13	+ 4	i 1·4	1·5
Triest	3·7	310	i 1 5	P*	i 1 41	+ 6	2·0	—
Trenta	4·3	195	e 1 48	S	(e 1 48)	− 2	—	—
Florence	4·7	278	e 1 3	− 4	—	—	—	2·9
Chur	6·8	304	e 1 37	0	—	—	—	—
Zurich	7·6	305	e 1 53	+ 5	—	—	—	—
Stuttgart	8·0	315	—	—	e 3 36	+12	—	—
Strasbourg	8·7	310	e 4 4	S	(e 4 4)	+23	—	—
Feldberg	9·3	320	e 2 44	P*	—	—	—	5·1
De Bilt	12·1	320	—	—	e 6 45	S_g	—	—

Additional readings :—
Belgrade eP_g = +38s., ePS = +55s.
Stuttgart e = +4m.29s. =S*
Strasbourg i = +4m.39s., iS = +4m.50s. =S_g, i = +5m.15s., and +5m.57s.

Sept. 5d. Readings also at 0h. (near Balboa Heights), 1h. (Stuttgart, near Treviso and Prato (2)), 2h. (Camerino, Chur, Scoresby Sund, Lick, near Treviso, Prato (4), near Balboa Heights, and near Apia), 3h. (Lick), 4h. (Prato, Nagoya, near Mizusawa, and Tyosi), 5h. (3), and 6h. (near Prato), 8h. (Baku, Ekaterinburg, Kucino, Bombay, Calcutta, Andijan, and Helsingfors), 9h. (Hyderabad and Lick), 10h. (Tucson, Pasadena (2), Mount Wilson (2)), 11h. (Alicante, near Berkeley, Lick, and near Nagasaki), 20h. (Seattle, near Kobe and Sumoto), 23h. (near Tyosi).

Sept. 6d. 5h. 20m. 29s. Epicentre 33°·3N. 133°·1E. (given by Osaka). N.3.

A = −·571, B = +·610, C = +·549.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Koti	0·4	56	i 0 5	− 1	i 0 13	+ 3	—	—
Matuyama	0·6	331	i 0 5	− 4	i 0 14	− 1	—	0·3
Sumoto	1·8	55	0 28	+ 2	0 53	+ 7	—	1·0
Kobe	2·2	51	i 0 47	P_g	1 5	S*	—	1·1
Hukuoka	2·3	277	0 35	+ 2	1 0	+ 1	—	—
Osaka	2·4	56	0 50	P_g	(1 21)	S_g	1·3	1·4
Toyooka	2·7	32	e 0 53	P_g	e 1 18	S*	—	—

Kobe gives also eE = +51s., iE = +1m.4s.

Sept. 6d. 5h. 38m. 12s. Epicentre 18°·2N. 96°·4E. (as on 1930 Dec. 3d.). R.2.

A = −·106, B = +·944, C = +·312 ; D = +·994, E = +·111 ;
G = −·035, H = +·310, K = −·950.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		8·7	301	2 4	+ 1	4 4	+23	5·1	—
Medan		14·7	171	e 8 36	?	13 36	?	—	—
Hyderabad		17·1	270	4 0	+ 5	7 14	+10	9·2	14·4
Hong Kong		17·2	73	3 57	0	7 24	+18	—	10·3
Agra	N.	19·1	302	—	—	e 7 33	−15	—	—
Dehra Dun		20·6	309	—	—	(8 18)	0	8·3	12·8
Bombay		22·3	276	4 52	− 2	—	—	—	—
Manila		23·8	95	5 12	+ 4	9 8	−11	11·3	13·4
Zi-ka-wei		26·1	55	10 26	S	(10 26)	+26	—	16·2
Batavia		26·5	156	—	—	e 11 48?	+101	i 14·5	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng	N.	27·7	34	e 11 59	S	(e 11 59)	+92	—	—
Andijan		30·6	323	e 6 10	0	—	—	—	—
Tashkent		32·7	321	e 7 21	PP	e 11 27	−19	e 18·9	24·6
Irkutsk		34·6	8	e 6 45	− 1	e 12 10	− 5	18·8	—
Baku		45·6	310	e 8 24	+ 6	e 14 59	0	24·4	31·9
Ekaterinburg		46·9	334	i 8 27	− 1	i 15 16	− 1	24·8	—
Pulkovo		62·4	330	i 10 17	− 4	e 18 36	−11	31·8	42·2
Helsingfors		65·1	330	e 12 4	+85	e 20 29	+68	e 27·1	—
Stuttgart		74·7	318	e 11 34	− 5	—	—	—	—
Chur		74·8	315	e 11 34	− 5	—	—	—	—
Scoresby Sund		81·8	342	—	—	22 30	− 5	—	—

Additional readings :—
Zi-ka-wei SZ = +14m.50s.
Tashkent e = +13m.33s. = SS +0s., +14m.18s., and +17m.2s.
Helsingfors eE = +12m.39s., and +13m.12s., eN = +15m.35s., eSN = +20m.33s.
Long waves were recorded at Phu-Lien.

Sept. 6d. 8h. 2m. 23s. Epicentre 55°·6N. 34°·8W. N.1.

Probable error of epicentre ±0°·20.

A = +·464, B = −·322, C = +·825 ; D = −·571, E = −·821 :
G = +·677, H = −·471, K = −·565.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ivigtut		9·0	314	i 2 3	− 4	—	—	4·6	—
Reykjavik		10·7	32	2 35	+ 4	5 28	+57	6·1	6·3
Scoresby Sund		15·9	16	i 3 39	− 1	6 54	+18	7·6	—
Edinburgh		17·6	76	4 3	+ 1	7 35	+20	8·6	15·0
Bidston		18·4	83	i 4 15	+ 4	i 7 47	+14	—	—
Stonyhurst		18·6	82	i 4 17	+ 3	7 49	+11	10·1	12·4
Durham		18·8	79	4 16	0	7 49	+ 7	—	10·6
Oxford		20·0	87	e 4 27	− 3	i 8 14	+ 8	9·9	17·5
Kew		20·7	87	e 4 38	+ 1	e 8 30	+10	i 9·5	10·6
Bergen		21·4	61	4 42	− 2	8 42	+ 8	—	—
Paris		23·5	91	i 5 5	0	9 25	+11	11·6	14·6
De Bilt		23·5	82	5 6	+ 1	9 21	+ 7	e 10·8	13·3
Uccle		23·6	85	i 5 7	+ 1	9 21	+ 5	11·6	12·1
Hamburg		25·6	76	e 5 24	− 1	i 10 4	+13	e 13·6	17·6
Toledo		25·6	115	e 5 27	+ 2	9 59	+ 8	e 12·1	—
Copenhagen		26·1	70	5 31	+ 1	10 5	+ 5	—	—
Feldberg		26·2	84	e 5 20	−11	i 10 10	+ 8	—	14·9
Besançon		26·3	91	—	—	e 10 10	+ 7	13·1	—
Göttingen		26·4	80	e 5 31	− 2	e 10 4	− 1	e 12·6	16·7
Lund		26·5	70	6 3	+29	10 29	+22	13·6	—
Strasbourg		26·6	87	i 5 36	+ 1	10 26	+17	13·6	16·9
Harvard		26·8	256	e 5 37?	+ 1	e 9 34	PcP	e 12·6	—
Neuchatel		27·0	91	e 6 9	PP	e 10 31	+16	—	—
Stuttgart		27·3	86	e 5 42	+ 1	e 10 22	+ 2	e 13·4	16·8
Tortosa	N.	27·3	108	e 4 50	−51	10 32	+12	e 11·6	19·0
Ottawa		27·5	265	e 5 47	+ 4	e 10 29	+ 5	e 14·6	—
Upsala		27·5	59	e 5 43	0	e 10 34	+10	e 14·6	21·7
Jena		27·6	80	e 5 37	− 7	e 10 35	+10	e 13·6	15·3
Potsdam		27·7	76	e 6 13	PP	—	—	e 13·6	17·2
Zurich		27·7	89	e 6 27	PP	—	—	—	—
Malaga		27·8	120	e 5 50	+ 5	e 10 34	+ 6	13·1	—
Granada		27·9	113	i 5 47	+ 1	—	—	i 12·6	14·3
Chur		28·5	89	e 5 53	+ 1	e 10 37	− 3	—	—
Cheb		28·5	81	—	—	e 10 37?	− 3	—	16·0
Alicante		28·6	113	e 5 46	− 7	e 10 56	+14	e 14·6	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almeria		28·7	117	e 5 54	+ 1	10 49	+ 6	13·5	—
Innsbruck		29·3	87	—	—	(e 10 37)	−16	e 10·6	—
Piacenza		29·7	92	e 5 37	−25	11 7	+ 8	15·9	20·4
Toronto		30·6	268	(e 6 10)	0	(11 9)	− 5	11·1	14·9
Helsingfors	E.	31·0	56	e 6 12	− 2	e 11 13	− 7	16·5	—
	N.	31·0	56	e 6 14	0	e 11 17	− 3	17·6	—
Prato		31·2	92	e 10 13	?	13 37	?	17·6	—
Florence		31·3	92	6 1	−16	—	—	—	16·2
Algiers		31·6	110	e 5 46	−33	e 12 7	+38	15·6	18·1
Graz		31·8	83	e 6 21	0	e 8 5	?	13·6	19·5
Georgetown		32·5	258	e 6 31	+ 4	i 11 51	+ 8	12·8	15·9
Zagreb		32·8	85	—	—	e 13 55	SS	—	17·1
Pittsburgh		33·0	265	—	—	e 12 0	+ 9	e 16·7	—
Budapest		33·5	80	—	—	e 10 37?	−81	—	22·6
Pulkovo		33·6	55	i 6 35	− 2	11 57	− 3	17·6	20·0
Ann Arbor		33·9	270	e 7 25	PP	e 12 19	+15	e 19·0	—
Chicago		36·5	272	—	—	e 12 50	+ 6	18·6	—
Catania		37·7	97	8 38	PP	—	—	—	27·1
Columbia		38·3	257	e 8 47	PP	e 13 19	+ 8	e 15·6	—
Kucino		39·0	58	e 7 25	+ 1	e 13 23	+ 2	e 15·9	25·2
St. Louis		40·1	271	e 7 33	0	e 13 44	+ 6	e 26·3	—
San Juan		44·1	227	e 8 5	− 1	14 45	+ 8	i 18·9	—
Bozeman		46·8	293	—	—	i 15 24	+ 8	e 22·9	—
Ekaterinburg		48·6	47	i 8 41	0	15 47	+ 6	21·1	28·6
Sitka		50·5	316	—	—	e 16 11	+ 3	e 26·1	—
Mount Wilson		58·8	286	e 10 1	+ 5	—	—	—	—
Pasadena	N.	58·8	287	e 9 55	− 1	—	—	—	—
Tashkent		63·8	54	i 10 26	− 5	i 19 6	+ 1	e 31·6	42·1
Andijan		65·6	52	e 10 33	− 9	e 19 32	+ 5	—	—
Irkutsk		66·9	27	e 10 48	− 3	e 19 37?	− 6	e 31·6	45·4

Additional readings and note :—
Reykjavik PP = +2m.40s.
Oxford iP = +4m.33s., iPP = +5m.16s.
Kew iSEN = +8m.37s.
Uccle i = +6m.8s.
Feldberg i = +5m.31s. and +5m.36s.
Strasbourg PP = +6m.20s., SS = +12m.7s., SSS = +12m.32s.
Stuttgart ePP = +6m.15s., eP_cPZ = +9m.34s., e = +10m.47s., eSS = +11m.22s., eS_cSEN = +12m.43s.
Ottawa e = +7m.11s., +9m.1s. = P_cP −2s., and +12m.53s.
Upsala ePPPE = +6m.49s., SSN = +12m.13s.
Jena eE = +11m.12s. and +11m.22s. = SS −10s., eN = +12m.27s.
Granada i = +6m.20s. = PP −9s., +7m.6s., +7m.47s., and +8m.11s.
Almeria PP = +6m.37s.
Toronto ePN = 8h.2m.37s. = T_c?, P is given as eS and S as L.
Helsingfors eSSEN = +12m.54s.
Ann Arbor e? = +13m.55s.
Chicago eSS = +14m.57s.
Bozeman eS = +14m.49s., eSS = +18m.56s.
Irkutsk e = +13m.14s. = PP +3s.
Long waves were also recorded at Hong Kong, Victoria, Berkeley, Tucson. Kucino, San Fernando, Barcelona, Vienna, Triest, Azores, and Königsberg.

Sept. 6d. 14h. 33m. 3s. Epicentre 30°·2N. 67°·7E. (as on Aug. 28d.). X.

A = +·328, B = +·800, C = +·503 ; D = +·925, E = −·379 ;
G = +·191, H = +·465, K = −·864.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		8·9	87	2 57	+51	4 47	+61	—	8·9
Agra	N.	9·6	106	e 2 14	− 2	3 43	−20	e 4·3	—
Andijan		11·2	18	e 2 39	+ 2	e 4 51	+ 8	—	6·9
Tashkent		11·2	6	e 2 32	− 5	—	—	—	—
Bombay		12·2	157	2 39	−12	5 24	+16	6·6	11·2

Continued on next page.

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		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Almata		15·0	27	e 3 31	+ 3	—	—	7·9	—
Hyderabad		16·1	140	6 38	S	(6 38)	− 3	9·1	11·4
Baku		17·7	310	e 4 2	− 1	7 25	+ 8	9·9	—
Calcutta		20·0	108	7 48	S	(7 48)	−18	10·7	—
Colombo		25·9	152	10 26	S	(10 26)	+29	15·0	15·3
Ksara	N.	27·1	286	e 5 48	+ 9	e 10 39	+22	—	—
Ekaterinburg		27·1	352	e 5 39	0	e 10 15	− 2	12·9	17·5
Irkutsk		34·7	40	—	—	e 16 53	(−18)	19·9	22·1
Pulkovo		38·7	330	7 18	− 3	—	—	19·9	26·3
Helsingfors		41·2	329	e 8 19	+37	e 14 24	+30	e 19·9	—
Hamburg		47·3	318	—	—	e 19 57?	SSSS	—	32·0
Granada		58·3	298	—	—	15 57	?	32·8	43·1
Scoresby Sund		61·6	339	—	—	18 45	+ 8	—	—

Additional readings :—
Hyderabad S = +8m.31s.
Calcutta S = +9m.51s.
Colombo S = +13m.4s.
Helsingfors eN = +8m.34s., eE = +10m.46s. ; T_o = 14h.33m.42s.
Long waves were also recorded at Phu-Lien, Kodaikanal, Kucino, and the European stations.

Sept. 6d. 20h. 34m. 59s. Epicentre 35°·8N. 139°·9E. N.3.
(given by Osaka and Tokyo).

A = −·620, B = +·523, C = +·585 ; D = +·644, E = +·765 ;
A = −·447, H = +·377, K = −·811.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Tokyo		0·2	223	0 5	+ 2	0 9	+ 4	—	0·2
Tyosi		0·9	95	0 10	− 3	0 21	− 2	—	0·4
Nagoya		2·4	255	(e 0 34)	0	(1 8)	+ 6	—	—
Mizusawa	E.	3·5	21	0 52	+ 2	1 30	0	—	—
Osaka		3·7	254	0 54	+ 1	i 1 18	P_g	1·9	2·3
Kobe	N.	4·0	255	e 0 58	+ 1	e 2 1	S*	—	—
Sumoto	E.	4·3	251	1 10	+ 9	e 2 15	S*	—	2·8
	N.	4·3	251	e 0 59	− 2	e 2 20	S_g	—	2·6

Additional readings and note :—
Nagoya readings have been *increased* by 1m.
Kobe eE = +2m.4s., eN = +2m.12s.
Sumoto ePZ = +1m.3s.

Sept. 6d. Readings also at 0h. (near Prato), 6h. (Ksara), 7h. (Tyosi, Ivigtut, Scoresby Sund, Kew, and near Granada), 8h. (Ksara), 9h. (Ekaterinburg, Tashkent, Irkutsk, Almata, and near Andijan), 10h. (Suva), 11h. (Granada, La Paz, near Berkeley, and Lick), 12h. (Baku, Ekaterinburg, Tashkent, Granada (2), and Lick), 13h. (Ekaterinburg, Tashkent, Hong Kong, and Granada), 14h. (Granada), 16h. (Ottawa), 17h. (Wellington and Suva), 18h. (Baku and Tashkent), 19h. (Baku, Granada, Ekaterinburg, and Tashkent), 20h. (Adelaide, Melbourne, Riverview, and Granada), 21h. (Granada and Lick), 22h. (Victoria).

Sept. 7d. 17h. 13m. 54s. Epicentre 35°·0N. 137°·2E. (as on 1927 Jan. 31d.). X.

A = −·601, B = +·557, C = +·574.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Nagoya		0·3	311	i 0 2	− 2	0 7	− 1	—	0·1
Osaka		1·4	255	0 17	− 3	(0 38)	+ 2	0·6	1·0
Kobe	E.	1·7	259	i 0 30	+ 6	0 55	S*	—	1·0
Sumoto		2·0	251	0 32	+ 3	1 1	S*	—	1·2
Toyooka		2·0	285	i 0 30	+ 1	i 0 53	+ 2	—	0·9

Kobe gives iE = +45s.

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Sept. 7d. 21h. 13m. 3s. Epicentre 30°·0N. 71°·0E (as on 1928 Sept. 1d.) X.

A = +·282, B = +·819, C = +·500 ; D = +·946, E = −·326 ;
G = +·163, H = +·473, K = −·866.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	10·8	6	e 2 35	+ 3	e 4 31	− 2	—	—
Bombay	11·2	171	4 36	S	(4 36)	− 7	8·3	—
Tashkent	11·4	354	e 2 45	+ 5	e 4 40	− 8	6·4	6·8
Baku	20·1	307	e 4 31	0	e 7 57	−11	e 10·4	13·6
Ekaterinburg	27·8	348	e 5 33	−12	e 10 23	− 5	13·4	—

Additional readings :—
Bombay S = +7m.11s.
Tashkent e = +7m.54s.
Long waves were also recorded at Calcutta, Hyderabad, Pulkovo, Stuttgart, Copenhagen, and De Bilt.

Sept. 7d. Readings also at 0h. (Baku, Tashkent, Ksara, near Mizusawa, and near La Paz), 2h. (Sumoto), 3h. (Baku, Ekaterinburg, Tashkent, Ksara, San Juan, and near Irkutsk), 5h. (near Manila), 8h. (Ekaterinburg, Irkutsk, Tashkent, and Karlsruhe), 12h. (Baku, Ekaterinburg, Tashkent, Irkutsk, Pulkovo, Almata, Andijan, Copenhagen, and De Bilt), 13h. (Andijan), 14h. (Victoria), 16h. (near La Paz), 21h. (Tashkent, Pulkovo, and Ekaterinburg), 22h. (Ottawa, Lick, Baku, Ekaterinburg, Tashkent, and near Andijan), 23h. (Ekaterinburg and Tashkent).

Sept. 8d. 16h. 12m. 0s. Epicentre 29°·8N. 67°·3E. (as on 3d.). X.

A = +·335, B = +·801, C = +·497 ; D = +·923, E = −·386 ;
G = +·192, H = +·458, K = −·868.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	N.	9·8	103	e 3 32	+74	4 53	+45	5·6	—
Tashkent		11·6	8	e 2 42	− 1	—	—	e 5·6	7·0
Andijan		11·7	19	e 2 47	+ 3	e 4 59	+ 4	—	—
Bombay		12·0	154	4 40	+112	7 20	+137	8·4	—
Baku		17·7	312	e 4 3	0	e 8 28	+11	10·2	14·0
Calcutta		20·2	106	8 12	S	(8 12)	+ 2	11·0	—
Ekaterinburg		27·4	352	e 5 38	− 4	e 10 16	− 6	14·5	18·6
Irkutsk		35·2	40	(e 4 30)	−141	—	—	e 4·5	22·1
Pulkovo		38·9	330	e 8 47	PP	—	—	18·0	—
Helsingfors		41·4	329	e 10 50	?	—	—	e 19·3	—

Additional readings :—
Calcutta S = +10m.20s.
Helsingfors eN = +10m.56s., eE = +12m.30s.
Long waves were also recorded at other European stations.

Sept. 8d. 19h. 9m. 3s. Epicentre **36°·7N. 141°·7E.** N.1.
(as given by Tokyo).

Probable error of epicentre ±0°·21.

A = −·629, B = +·497, C = +·598 ; D = +·620, E = +·785 ;
G = −·469, H = +·370, K = −·802.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·7	290	0 10	0	0 17	− 1	—	—
Mito	1·0	252	0 18	+ 4	0 33	+ 7	—	—
Tyosi	1·2	215	0 13	− 4	0 27	− 4	—	0·5
Kakioka	1·3	249	0 18	0	0 41	S*	—	—
Hukusima	1·4	318	0 26	P*	0 55	S_E	—	—

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.
Tukubasan		1·4	249	0 20	0	0 46	S*	—	—
Utunomiya		1·5	265	0 23	+ 2	0 44	S*	—	—
Isinomaki		1·7	350	0 29	+ 5	0 53	S*	—	—
Sendai		1·7	338	0 28	+ 4	0 53	S*	—	—
Tokyo		1·9	237	0 26	− 2	0 54	+ 5	—	1·1
Kumagaya		2·0	254	0 30	+ 1	0 58	S*	—	—
Maebasi		2·1	262	0 30	0	1 10	S*	—	—
Yokohama		2·1	232	0 32	+ 2	1 7	S*	—	—
Yokosuka		2·2	230	0 26	− 5	0 55	− 2	—	—
Mera		2·4	220	0 32	− 2	1 9	+ 7	—	—
Mizusawa		2·4	349	0 41	P*	1 12	S*	—	—
Niigata		2·4	300	0 42	P*	1 29	S_g	—	—
Oiwake		2·5	262	0 38	+ 2	1 34	S_g	—	—
Misima		2·7	235	0 38	− 1	1 22	S*	—	—
Kohu		2·8	247	0 34	− 6	1 13	+ 1	—	—
Nagano		2·8	269	0 44	+ 4	1 24	S*	—	—
Numadu		2·8	235	0 34	− 6	1 11	− 1	—	—
Takada		2·8	278	0 45	P*	1 22	S*	—	—
Miyako		2·9	4	0 46	+ 5	1 28	S*	—	—
Morioka		3·0	352	0 48	+ 5	1 36	S*	—	—
Akita		3·2	338	0 52	+ 6	1 43	S_g	—	—
Wazima		3·9	282	0 56	0	1 55	S*	—	—
Nagoya		4·1	250	e 1 7	P*	1 57	S*	—	2·9
Aomori		4·2	351	1 9	+ 9	2 26	S_g	—	—
Gihu		4·2	253	1 4	+ 4	2 2	S*	—	—
Hikone		4·7	254	1 6	− 1	2 11	+11	—	—
Kyoto		5·1	253	1 14	+ 1	3 0	S_g	—	—
Osaka		5·4	250	1 18	+ 1	i 2 16	− 2	2·6	3·5
Urakawa		5·5	8	1 21	+ 3	2 23	+ 3	—	—
Muroran		5·6	354	1 22	+ 2	2 33	+10	—	—
Toyooka	E.	5·6	261	e 1 15	− 5	e 3 10	S_g	—	4·0
	N.	5·6	261	e 1 0	−20	e 3 9	S_g	—	3·6
	Z.	5·6	261	i 1 22	+ 2	i 2 47	S*	—	3·4
Kobe	E.	5·7	251	e 1 29	+ 8	—	—	—	4·2
	N.	5·7	251	e 1 31	+10	2 48	S*	3·2	3·3
	Z.	5·7	251	e 1 30	+ 9	2 4	−21	e 3·1	3·3
Sumoto		6·0	249	1 28	+ 3	3 2	S*	—	3·5
Sapporo		6·4	357	1 49	+18	3 4	S*	—	—
Koti		7·3	247	e 1 43	− 1	3 27	+21	—	5·4
Matuyama		7·8	252	e 1 39	−12	i 3 52	S*	—	4·3
Hamada		8·0	260	1 53	0	4 2	S*	—	—
Hukuoka		9·7	255	2 20	+ 3	4 39	+33	—	5·8
Miyazaki		9·7	244	2 16	− 1	4 16	+10	—	—
Kumamoto		9·8	250	2 19	+ 1	4 30	+22	—	—
Nagasaki		10·5	252	e 2 28	0	e 5 20	S*	—	5·9
Taikyu		10·5	265	2 32	+ 4	4 46	+20	—	—
Zi-ka-wei	Z.	17·7	258	3 59	− 4	7 37	+20	10·7	11·9
Chiufeng		20·2	288	e 4 29	− 3	—	—	—	—
Hong Kong		27·8	247	5 39	− 6	10 27	− 1	14·1	17·8
Manila		28·8	225	5 58	+ 4	11 57?	SS	—	—
Irkutsk		30·4	313	i 6 9	0	—	—	15·9	19·2
Phu-Lien		34·4	254	e 6 40	− 4	—	—	16·9	—
Calcutta		47·8	271	8 40	+ 5	15 29	− 1	24·0	—
Almata		48·8	300	e 8 45	+ 3	—	—	—	—
Andijan		52·8	299	e 9 19	+ 7	e 16 55	+16	—	—
Agra	N.	53·9	281	e 9 26	+ 5	—	—	—	—
Tashkent		54·8	300	i 9 25	− 2	i 17 13	+ 7	e 27·5	32·9
Ekaterinburg		55·3	320	i 9 33	+ 2	i 17 19	+ 6	24·4	35·7
Bombay		62·1	275	10 18	− 1	—	—	—	—
Colombo		63·4	260	18 45	S	(18 45)	−15	—	45·6
Kucino		67·2	325	e 10 52	− 1	e 19 47	0	32·6	39·7

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo		68·3	330	i 10 59	− 1	20 2	+ 1	34·9	43·2
Baku		68·4	307	e 11 2	+ 1	e 20 7	+ 5	32·9	43·7
Helsingfors	E.	70·1	332	e 11 12	+ 1	e 20 24	+ 2	e 29·9	—
	N.	70·1	332	e 10 54	−17	e 20 26	+ 4	e 28·2	—
Scoresby Sund		72·2	355	11 27	+ 3	—	—	38·9	—
Upsala		73·1	335	e 11 26	− 3	e 21 12	PS	e 42·9	46·3
Simferopol		75·5	316	e 11 41	− 2	—	—	—	—
Yalta		75·7	317	e 11 39	− 5	—	—	—	—
Copenhagen		78·0	335	11 56	− 1	21 53	− 1	38·9	—
Ksara		81·3	308	—	—	20 57?	?	—	—
Vienna		82·1	328	e 12 21	+ 2	—	—	e 44·9	56·0
De Bilt		83·4	336	12 25	0	e 22 50	− 1	e 42·9	53·0
Feldberg		83·8	333	e 12 26	− 1	e 22 54	− 1	e 44·1	55·0
Stuttgart		84·7	332	12 32	0	e 22 57	[0]	e 44·4	51·4
Uccle		84·8	336	12 32	0	e 23 3	− 3	e 42·9	—
Triest		85·3	328	—	—	e 19 57	?	e 41·9	53·9
Strasbourg		85·4	333	e 12 33	− 2	—	—	47·9	—
Kew		85·8	339	e 12 36	− 1	—	—	47·9	52·8
Oxford		85·8	338	—	—	23 14	− 2	e 47·4	55·4
Paris		87·1	336	e 12 44	0	—	—	48·9	58·9
Piacenza		87·5	330	e 12 57	+12	23 7	[−10]	—	56·2
Florence		87·8	326	12 26	−21	22 42	[−37]	46·9	51·9
Ottawa		91·2	26	e 17 1	PP	e 23 59	− 8	e 44·9	—
Granada		99·4	335	e 17 2	PP	i 32 11	SS	51·9	65·1
La Paz		146·8	62	19 38	[+ 1]	—	—	73·5	81·5

Additional readings :—
Kobe iE = +2m.3s., iN = +2m.19s., iZ = +2m.22s.
Matuyama iSS = +4m.12s.
Hukuoka S_g = +5m.9s.
Zi-ka-wei PPZ = +4m.19s., SSZ = +8m.21s., iZ = +9m.49s. and +10m.13s.
Helsingfors eE = +11m.25s. and +15m.44s., ePSE = +20m.44s., eSSE = +24m.57s.
Copenhagen +14m.51s. = PP +4s.
Stuttgart ePPZ = +15m.51s.
Granada i = +17m.33s. = PP − 5s., +18m.17s., and +35m.15s.
Long waves were recorded at Hyderabad, Ivigtut, and European stations.

Sept. 8d. Readings also at 1h. (Malaga, near Granada, near Takaka and Wellington), 3h. (Dehra Dun and near Sumoto), 5h. (Tyosi), 11h. (Lick and near Manila), 12h. (near Amboina), 17h. (Ekaterinburg, Irkutsk, and Tashkent), 18h. (La Paz), 19h. (near La Paz (2) and near Tyosi), 21h. (Neuchatel and Suva), 22h. (near Santiago), 23h. (near Malabar, near Arapuni, and Wellington).

Sept. 9d. 13h. 40m. 49s. Epicentre 40°·1N. 123°·6W. N.2.

A = −·423, B = −·637, C = +·644 ; D = −·833, E = +·553 ;
G = −·356, H = −·537, K = −·765.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley		2·4	155	i 0 33	− 1	e 1 4	+ 2	—	1·6
Lick		3·1	151	i 0 43	− 1	i 1 26	+ 6	—	—
Tinemaha		5·2	124	e 1 22	+ 8	e 2 45	S*	—	—
Halwee		5·9	130	e 1 31	+ 7	e 2 15	−16	—	—
Santa Barbara	E.	6·4	150	e 1 40	+ 9	—	—	—	—
Pasadena		7·4	143	e 1 46	+ 1	e 3 48	S*	—	—
Mount Wilson		7·4	142	e 1 48	+ 3	e 4 16	S_g	—	—
Seattle		7·6	6	—	—	2 17	−57	e 3·4	—
Riverside		7·9	140	e 1 53	+ 1	e 4 1	S*	—	—
Victoria		8·3	1	2 9	+11	(3 21)	−10	3·4	4·8
Tucson		12·9	124	3 11	+10	5 47	+22	7·1	—
Denver	E.	14·3	85	—	—	e 6 27	+29	e 7·9	—
Sitka		18·6	340	e 4 1	−13	—	—	e 10·5	—
St. Louis		25·7	83	e 5 31	+ 5	e 10 8	+15	e 12·7	14·2
Chicago		27·0	75	—	—	i 10 24	+ 9	e 13·2	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ann Arbor		29·8	73	—	—	e 11 11	+10	—	—
Toronto	E.	32·7	69	6 25	− 4	e 11 40	− 6	15·7	18·3
	N.	32·7	69	6 23	− 6	i 11 43	− 3	—	—
Pittsburgh		32·9	75	—	—	e 11 55	+ 6	e 14·0	—
Buffalo		33·2	71	e 6 35	+ 1	e 11 55	+ 1	e 18·7	—
Columbia		34·2	86	—	—	e 12 12	+ 3	e 16·3	—
Charlottesville		34·7	79	—	—	e 12 21	+ 4	e 17·2	—
Ottawa		35·0	65	e 6 48	− 1	e 12 27	+ 6	e 17·2	—
Georgetown		35·5	78	e 6 59	+ 6	12 41	+12	—	20·2
Fordham		37·3	73	e 7 10	+ 1	e 13 1	+ 5	e 16·8	—
San Juan		53·6	93	—	—	i 16 54	+ 4	23·3	—
Scoresby Sund		56·2	24	—	—	17 35	+10	25·2	—
Helsingfors		76·4	15	—	—	e 14 53	PP	e 32·2	—
La Paz		76·5	126	e 12 22	+33	22 6	PS	36·7	45·4
De Bilt		77·6	29	—	—	e 21 11?	−38	e 34·2	38·2
Feldberg		80·3	28	—	—	e 22 24	+ 5	e 35·4	50·5
Stuttgart		81·8	29	e 12 11	− 6	e 22 31	− 4	e 35·2	54·2
Kucino		82·9	11	—	—	e 22 36	−10	34·2	44·3
Ekaterinburg		83·0	358	e 12 50	+27	e 22 55	+ 8	33·2	45·4
Granada		85·2	45	i 12 40	+ 6	i 24 10	PS	39·4	44·9
Florence		86·7	31	e 7 41	?	23 41	+17	24·2	39·2
Baku		99·3	5	—	—	e 25 14	− 6	e 43·2	55·7

Additional readings :—
Berkeley iE = +36s. and +40s. =P*, iEN = +48s. =P$_g$, iNZ = +1m.2s., iE = +1m.7s., iS = +1m.10s., eE = +1m.26s., and +1m.32s.
Lick eE = +47s., iE = +50s., iEN = +55s., iE = +58s., and +1m.20s., iN = +1m.30s., eN = +1m.52s., iE = +1m.53s., and +2m.7s.
Santa Barbara eN = +1m.43s.
Pasadena eE = +4m.10s. =S$_g$.
Victoria LN = +3m.39s. =S +8s.
Tucson e = +3m.34s.
St. Louis iSSN = +11m.0s.
Toronto ePN = +6m.37s. ; T$_0$ =13h.40m.20s.
Buffalo iPP = +7m.47s.
Ottawa eSSSE = +15m.16s. ; T$_0$ =13h.40m.30s.
Georgetown ePPZ = +8m.11s. ; T$_0$ =13h.40m.18s.
Fordham ePP = +8m.33s., eSS = +15m.23s.
Helsingfors eE = +5m.14s. and +5m.42s., e = +6m.3s. and +8m.46s., eSN = +14m.56s., eE = +18m.44s.
Kucino e = +28m.13s. =SS +17s.
Baku e = +32m.16s., and +39m.10s.
Long waves were recorded at Honolulu T.H., Ivigtut, Irkutsk, Tashkent, Pulkovo, and European stations.

Sept. 9d. 20h. 38m. 28s. Epicentre 19°·3N. 145°·7E. N.1.

A = −·780, B = +·532, C = +·331 ; D = +·564, E = +·826 ; G = −·273, H = +·186, K = −·944.

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.
Titizima	−0·1	8·4	338	1 55	− 3	3 24	− 7	—	—
Palau	−0·6	16·2	224	3 36	0	6 30	+ 1	—	—
Mera	−0·6	16·4	343	3 42	+ 4	6 46	+12	—	—
Tyosi	−0·6	17·0	347	3 50	+ 4	6 53	+ 5	—	7·4
Tokyo	−0·6	17·2	346	3 52	+ 3	7 4	+12	—	—
Nagoya	−0·7	17·6	336	e 3 56	+ 3	7 3	+ 4	—	7·3
Osaka	−0·7	17·8	332	3 57	+ 2	(6 57)	− 7	7·0	8·1
Sumoto	−0·7	17·8	330	3 56	+ 1	7 8	+ 4	—	7·2
Koti	−0·7	17·9	325	e 3 57	0	e 7 10	+ 4	—	9·4
Kobe	−0·7	18·0	331	3 58	0	7 12	+ 3	—	7·4

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.	s.	m.	m.
Miyazaki		−0·7	18·0	318	4	2	+ 4	7	23	+14	—	—
Nagano		−0·7	18·5	341	4	5	+ 1	7	26	+ 6	—	—
Matuyama		−0·7	18·5	324	i 4	1	− 3	(7	24)	+ 4	7·4	7·5
Toyooka		−0·7	18·9	332	i 4	11	+ 2	e 7	28	− 1	—	—
Sendai		−0·8	19·4	349	4	14	0	7	46	+ 8	—	—
Nagasaki		−0·8	19·5	317	e 4	13	− 2	7	45	+ 5	—	—
Hukuoka		−0·8	19·7	319	e 4	17	0	7	49	+ 5	—	8·8
Mizusawa		−0·8	20·2	350	4	22	− 1	8	3	+ 9	—	—
Morioka		−0·8	20·8	350	4	29	− 1	8	16	+10	—	—
Taihoku		−1·0	23·0	289	4	52	+ 1	(8	57)	+11	8·9	—
Manila		−1·0	24·1	263	5	2	0	9	36	+29	12·5	—
Zinsen		−1·1	24·7	322	5	4	− 2	9	16	0	—	—
Zi-ka-wei		−1·1	24·9	303	i 5	6	− 2	9	30	+11	—	10·9
Amboina		−1·3	28·7	219	i 5	37	− 5	—		—	—	—
Hong Kong		−1·4	29·6	282	5	50	+ 1	10	34	− 1	13·4	13·8
Chiufeng		−1·5	32·8	315	i 6	15	− 2	11	19	− 5	—	—
Phu-Lien		−1·6	36·7	279	i 6	52	+ 2	i 12	25	+ 2	15·9	18·4
Irkutsk		−1·9	46·0	325	8	6	0	i 14	40	+ 3	21·5	25·3
Batavia		−1·9	46·0	241	i 8	6	0	i 14	34	− 3	—	—
Medan		−2·0	48·5	259	10	30	+125	i 17	6	+114	—	—
Suva		−2·1	49·3	137	9	2	+32	16	22	+61	—	—
Honolulu T.H.		−2·2	52·8	77	i 9	1	+ 5	i 16	31	+22	21·5	—
Calcutta		−2·2	53·3	284	9	4	+ 4	(16	57)	+41	17·0	19·8
Riverview		−2·2	53·4	174	i 8	57	− 3	i 16	13	− 5	e 28·6	33·7
Sydney		−2·2	53·4	174	—		—	i 16	2	−16	27·2	28·5
Adelaide		−2·3	54·7	187	i 9	10	+ 1	i 16	32	− 2	23·8?	35·8
Melbourne		−2·3	57·1	181	e 10	0	+33	i 17	2	− 4	27·5	—
Dehra Dun		−2·4	61·5	295	9	22	−36	(18	32?)	+28	—	18·5
Almata		−2·4	61·6	310	10	0	+ 1	e 18	10	+ 5	—	—
Agra	N.	−2·4	62·0	292	e 9	49	−13	i 17	49	−22	e 30·3	—
Hyderabad		−2·5	63·5	280	10	13	+ 2	18	33	+ 4	30·1	34·7
Colombo		−2·5	65·0	270	10	21	− 1	18	51	+ 3	24·6	32·9
Andijan		−2·5	65·1	308	e 10	24	+ 2	e 18	56	+ 6	—	—
Wellington		−2·5	66·4	156	10	39	+ 8	18	56	−10	30·5	—
Tashkent		−2·5	67·4	309	i 10	36	− 2	i 19	16	− 3	25·5	37·8
Christchurch		−2·6	67·6	159	e 10	27	−12	i 19	16	− 4	31·0	—
Sitka		−2·6	67·9	35	i 10	45	+ 4	i 19	34	+10	i 27·3	—
Bombay		−2·6	68·3	283	10	46	+ 3	19	30	+ 1	34·6	—
Ekaterinburg		−2·6	71·2	325	i 11	2	0	i 20	4	0	30·5	42·5
Victoria		−2·6	76·4	43	11	30	− 3	21	2	− 4	31·2	33·1
Seattle		−2·6	77·2	44	i 11	46	+ 8	i 21	18	+ 3	e 31·2	—
Berkeley		−2·7	79·8	53	i 11	52	− 1	i 21	38	− 6	e 36·1	39·1
Lick		−2·7	80·5	53	e 11	55	− 2	—		—	—	—
Baku		−2·7	81·9	311	i 12	5	+ 1	i 22	4	− 3	—	—
Santa Barbara		−2·7	82·8	55	e 12	8	0	i 22	14	− 3	—	—
Tinemaha		−2·7	83·1	53	i 12	11	+ 1	i 22	17	− 3	—	—
Kucino		−2·7	83·6	327	12	9	− 4	22	12	−13	38·5	46·6
Haiwee		−2·7	83·6	53	i 12	14	+ 1	i 22	20	− 5	—	—
Pasadena		−2·7	84·2	56	i 12	15	− 1	i 22	19	−13	—	—
Mount Wilson		−2·7	84·2	56	i 12	17	+ 1	i 22	22	−10	—	—
Riverside		−2·7	84·8	56	i 12	18	− 1	i 22	25	−13	—	—
Pulkovo		−2·7	85·3	333	i 12	17	− 4	i 22	30	−13	39·5	46·9
Helsingfors		−2·7	87·3	335	i 12	27	− 4	i 22	49	−15	e 33·5	—
Scoresby Sund		−2·8	89·8	356	i 12	41	− 2	23	19	− 8	—	—
Theodosia		−2·8	89·8	320	12	36	− 7	23	12	−15	e 45·5	—
Upsala		−2·8	90·4	336	e 13	39	+53	23	10	−23	e 41·5	48·9
Tucson		−2·8	90·5	55	12	47	+ 1	23	28	− 6	37·3	—
Simferopol		−2·8	90·7	319	e 13	27	+40	24	14	+38	—	—
Yalta		−2·8	90·9	319	12	45	− 3	23	27	−11	43·5	—
Sebastopol		−2·8	91·2	319	—		—	24	2	+21	—	—
Denver	E.	−2·8	91·6	46	e 16	42	?	e 21	7	?	—	—
Königsberg		−2·8	92·4	331	i 12	50	− 6	i 23	32	−20	e 45·5	52·5
Bergen		−2·8	94·0	341	16	48	PP	e 24	32	+25	—	—
Ksara	E.	−2·8	94·6	309	e 13	32?	+26	i 25	8	PS	50·5	—
Lund		−2·8	94·9	335	16	54	PP	e 23	57	[− 3]	45·5	—

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.
Copenhagen	−2·8	95·2	335	13 4	− 5	24 6	−12	45·5	—
Potsdam	−2·8	97·4	333	e 16 8	?	i 24 46	+ 8	e 46·5	53·1
Hamburg	−2·9	97·7	335	e 13 32?	+12	i 24 51	+11	e 49·9	51·5
Budapest	−2·9	97·8	326	15 16	?	25 42	PS	33·5	52·5
Vienna	−2·9	98·7	329	14 2	+38	24 55	+ 6	e 50·5	59·5
Ivigtut	−2·9	98·7	6	13 21	− 3	e 24 38	−11	—	—
Belgrade	−2·9	98·8	324	e 15 49	?	e 24 37	−12	e 37·9	—
Jena	−2·9	99·1	334	e 17 26	PP	e 24 56	+ 3	e 37·5	54·0
Göttingen	−2·9	99·2	334	e 16 32	?	—	—	e 56·5	62·5
Cheb	−2·9	99·3	331	e 17 8	PP	e 24 57	+ 2	—	55·5
Graz	−2·9	99·9	328	e 17 16	PP	e 24 42	−18	32·5	52·8
Edinburgh	−2·9	100·3	342	e 13 56	+24	24 46	−19	43·5	—
Zagreb	−2·9	100·6	326	e 14 32?	+59	e 25 4	− 2	47·0	50·9
De Bilt	−2·9	100·8	336	i 13 30	− 4	—	—	e 46·5	55·8
Durham	−2·9	100·8	341	17 41	PP	27 23	?	—	50·2
Feldberg	−2·9	100·9	333	e 13 30	− 4	e 24 53	−16	—	58·5
Chicago	−2·9	101·5	39	e 13 41	+ 4	i 23 58	[−35]	e 45·2	—
Stuttgart	−2·9	101·6	333	13 33	− 5	e 23 53	[−40]	e 49·5	54·9
Innsbruck	−2·9	101·7	330	e 17 50	PP	—	—	—	—
Karlsruhe	−2·9	101·8	333	17 52	PP	e 24 57	−20	e 54·5	—
Triest	−2·9	101·8	328	e 17 2	PP	(24 50)	−27	e 37·1	52·0
Stonyhurst	−2·9	101·8	340	—	—	25 0	{− 6}	46·5	54·5
St. Louis	−2·9	101·9	42	e 13 36	− 3	i 25 13	− 5	—	46·2
Uccle	−2·9	102·1	336	i 13 35	− 5	23 57	[−39]	46·5	56·3
Strasbourg	−2·9	102·4	333	i 13 37	− 4	25 5	−17	42·5	—
Bidston	−2·9	102·4	340	i 17 56	PP	i 25 17	− 5	—	—
Venice	−2·9	102·6	324	e 16 32	?	e 29 13	?	—	—
Chur	−2·9	102·9	331	e 17 49	PP	e 25 8	−18	—	—
Zurich	−2·9	102·9	331	e 17 58	PP	e 25 29	+ 3	—	—
Padova	−2·9	102·9	329	e 17 58	PP	e 25 19	− 7	e 53·5	—
Kew	−2·9	103·2	339	e 13 41	− 4	i 25 11	−18	46·5	50·5
Oxford	−2·9	103·3	340	e 13 42	− 3	i 24 2	[−40]	e 47·5	—
Ann Arbor	−2·9	103·4	35	e 13 44	− 2	i 25 14	−17	e 47·6	—
Tananarive	−2·9	103·5	255	—	—	24 4	[−39]	—	—
Neuchatel	−2·9	104·0	333	e 13 41	− 8	—	—	—	—
Besançon	−2·9	104·2	333	e 18 8	PP	—	—	42·5	—
Piacenza	−2·9	104·2	329	e 14 2	+12	25 22	−16	—	57·8
Florence	−2·9	104·4	327	12 57	−53	24 12	[−35]	—	—
Paris	−2·9	104·4	336	e 13 45	− 5	e 28 9	?	41·5	57·5
Toronto	−2·9	104·7	31	e 13 47	− 5	i 25 23	−19	48·5	—
Ottawa	−2·9	105·1	28	e 13 50	− 4	i 24 11	[−39]	e 43·5	—
Buffalo	−2·9	105·5	32	i 13 52	− 3	—	—	e 43·5	—
Catania	−2·9	106·6	321	18 24	PP	25 38	−21	e 56·1	—
Pittsburgh	−2·9	106·7	34	e 18 6	[− 1]	i 25 0	{−43}	e 47·5	—
Charlottesville	−3·0	109·2	35	18 35	[+19]	i 24 32	[−38]	e 42·5	—
Georgetown	−3·0	109·3	34	e 14 8	− 5	—	—	52·5	60·5
Harvard	−3·0	109·5	28	e 18 8	[− 9]	i 25 31	{−32}	e 44·5	—
Fordham	−3·0	109·5	30	e 14 11	− 3	i 24 32	[−39]	e 52·5	—
Barcelona	−3·0	110·5	331	e 18 49	PP	e 29 7	?	e 44·4	—
Columbia	−3·0	110·6	40	i 18 52	PP	i 25 40	{−31}	e 51·5	—
Tortosa N.	−3·0	111·7	333	19 4	PP	29 5	?	—	63·6
Algiers	−3·0	113·7	328	19 14	PP	e 27 48	?	—	57·5
Alicante	−3·0	114·2	332	e 19 17	PP	e 29 49	?	e 45·3	—
Toledo	−3·0	114·4	335	19 14	PP	—	—	e 53·4	62·3
Almeria	−3·0	116·2	332	e 19 28	PP	e 30 4	?	42·6	—
Granada	−3·0	116·5	333	i 14 39	− 9	26 38	{−15}	50·5	72·1
Malaga	−3·0	116·9	334	19 49	PP	32 49	?	39·5	—
San Fernando	−3·1	118·2	335	—	—	30 32	?	—	80·5
San Juan	—	131·0	41	e 18 54	[−15]	—	—	53·4	—
Santiago	—	144·7	120	19 10	[−23]	—	—	—	—
La Paz	—	147·7	89	i 19 24	[−14]	26 31	?	68·5	82·0

For Notes see next page.

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NOTES TO SEPT. 9d. 20h. 38m. 28s.

Additional readings and note :—
Koti eE = +4m.42s., iSEN = +7m.16s.
Kobe iE = +4m.14s., iZ = +4m.22s.
Matuyama PPZ = +4m.32s., PPPZ = +4m.48s.
Toyooka iZ = +4m.52s., iEN = +4m.57s.
Nagasaki iPP? = +4m.41s., PPP? = +5m.24s., SZ = +7m.49s., SS? = +8m.15s.
Hukuoka e = +4m.28s., i = +4m.45s.
Mizusawa SE = +8m.12s.
Zi-ka-wei PPE = +5m.46s., iZ = +5m.56s., and +6m.4s.
Amboina i = +6m.36s., +7m.9s., and +15m.57s.
Hong Kong ? = +11m.32s. and +11m.52s. =SS +5s.
Batavia i = +8m.41s.
Medan i = +11m.3s.
Suva PP? = +12m.12s.
Honolulu T.H. i = +18m.32s. =S_cS −31s.
Calcutta S = +13m.31s.
Riverview iN = +9m.37s., and +12m.13s., iE = +18m.35s. =S_cS −32s.
Adelaide i= +9m.41s., +12m.22s., +17m.7s., and +18m.35s., iSSS= +21m.23s.
Melbourne i = +13m.2s. and +18m.4s.
Wellington PS? = +20m.2s., SS = +23m.12s.
Christchurch iZ = +11m.8s. =P_cP −16s., iPPP = +15m.18s., iNZ = +20m.13s. = S_cS −34s., iN = +20m.19s.
Sitka e = +15m.22s., eSS = +24m.48s.
Seattle e = +27m.14s.
Berkeley iPPZ = +14m.52s., iPPE = +14m.57s., eSEN = +21m.43s., SZ = +21m.47s.
Pasadena iE =eEZ = +15m.32s., iSN = +22m.23s., eSZ = +22m.27s., iE = +23m.33s.
Helsingfors ePP = +16m.7s., ePPPEN = +18m.15s., ePSN = +23m.49s., eN = +25m.31s., eSS = +29m.3s., eN = +32m.39s., eE = +33m.11s.
Scoresby Sund eZ = +13m.21s., eE =iN = +13m.39s., eZ = +16m.8s., eEN = +16m.20s., eEZ =iN = +16m.59s., iN = +22m.54s., eE = +24m.2s., iN = +24m.8s., eN = +24m.26s., eEZ = +24m.30s., eN = +28m.50s., and +30m.38s.
Upsala PP = +16m.20s., SKS = +22m.48s., iPS = +24m.24s., SS = +29m.12s.
Tucson PP = +16m.34s., PPP = +18m.53s., SKS = +23m.6s., PS = +24m.34s.
Königsberg iPPN = +16m.16s., e?N = +18m.55s., PSEN = +24m.20s.?, eN = +24m.34s., and +24m.48s., PPSN = +25m.0s., iN = +26m.30s., eE = +30m.0s., eN = +30m.57s.
Ksara iE = +26m.31s.
Lund e = +17m.26s. and +17m.50s., eNE = +23m.22s., and +24m.32s., eNW = +25m.6s., eNE = +26m.12s., e = +26m.22s.
Copenhagen +16m.55s. =PP +10s., +24m.32s., and +25m.14s. =PS −36s., SS = +30m.32s.
Potsdam iEN = +17m.14s. and +17m.49s., iE = +17m.58s., iN = +18m.10s., eN = +28m.8s. and +30m.50s. =SS +5s., iN = +31m.0s., +31m.47s., and +32m.34s., eN = +38m.8s.
Hamburg e = +17m.21s. =PP +18s.
Vienna PP = +17m.48s., PPP = +20m.43s., iE = +23m.46s. =SKS −33s., PPS = +26m.48s., PKKP = +30m.57s.
Ivigtut i = +17m.22s., and (no phase) +23m.41s. =SKS −38s.
Belgrade e = +18m.38s. and +25m.47s.
Jena e = +18m.18s., eE = +25m.2s., eN = +26m.53s., eE = +27m.8s., eEN = +31m.32s. =SS +24s.
Göttingen e = +17m.28s. =PP +13s. and +18m.14s.
Edinburgh i = +17m.38s. =PP +15s., +23m.50s., +25m.30s., +27m.28s., and +31m.52s. =SS +27s.
Zagreb eNE = +17m.39s. =PP +14s., e = +20m.40s., eNE = +23m.45s., +28m.2s., and +39m.2s.
De Bilt iZ = +14m.28s. and +17m.40s. =PP +13s., eEN = +17m.42s., eZ = +18m.10s., iZ = +20m.38s.
Feldberg e = +14m.21s., i = +17m.42s., e = +18m.15s., i = +31m.54s.
Chicago iPP = +17m.48s., i = +26m.15s., and +26m.55s.
Stuttgart eZ = +14m.14s., eN = +16m.43s., ePKPZ = +17m.26s., ePP = +17m.45s., ePPP = +19m.49s., e = +22m.42s., eEN = +24m.52s. = S −23s., ePSEN = +27m.20s., eSSEN? = +32m.32s.?
Karlsruhe e = +26m.3s.
Triest SKS = +27m.36s., S is given as PP.
Stonyhurst PP = +17m.48s., PPS = +27m.35s., SS = +32m.10s.
St. Louis eN = +17m.0s. =PP −35s., iPPE = +17m.48s., iEN = +23m.57s., and +24m.36s., iN = +25m.4s., and +25m.11s., ePSEN = +26m.36s., iEN = +26m.57s.
Uccle i = +14m.33s., iPP = +17m.50s., i = +18m.23s., +25m.0s., and +25m.14s., iPPS = +27m.38s., SS = +32m.11s., i = +34m.4s.

Continued on next page.

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Strasbourg PP = +17m.53s., SKS= +23m.58s., PS = +26m.11s., SS = +31m.41s.
Bidston i = +18m.49s., +24m.2s., and +27m.32s.
Kew epP = +14m.31s., iPP = +18m.0s., iNZ = +18m.56s., eZ = +20m.49s., SKSN = +24m.3s., isSEN = +26m.27s., iEN = +27m.48s., eN = +33m.26s., eE = +37m.29s.
Oxford ePP = +17m.49s., i = +18m.2s., +18m.49s., and +20m.55s.
Ann Arbor e? = +17m.2s., ePP = +17m.50s., iSKS = +24m.2s., i = +24m.44s., iPS = +27m.14s., eSSN = +32m.32s.
Tananarive PPS = +21m.49s., P_cSS_cP = +29m.0s., SS = +32m.26s., e = +37m.46s.
Neuchatel ePP = +18m.3s.
Placenza P = +18m.44s.
Paris iPP = +18m.7s.
Toronto PPN = +18m.2s., iN = +24m.11s. =SKS - 37s. and +24m.55s., iPSN = +27m.24s., iSSN = +33m.51s. ; T_0 =20h.38m.0s.
Ottawa ePKPE? = +17m.44s., ePP = +18m.15s., ePPPN = +20m.32s., eSKKS = +24m.56s., i = +25m.24s. ; T_0 =20h.38m.6s.
Buffalo iPP = +18m.18s., iPS = +27m.22s., iPPS = +28m.24s.
Pittsburgh eSKS = +24m.18s., e = +24m.34s., ePS = +28m.23s.
Charlottesville e = +25m.26s. =SKKS −35s., and +27m.50s. =PS −30s.
Georgetown ePKPZ = +17m.58s., iPSZ = +27m.56s. ; T_0 =20h.37m.54s.
Harvard iPP = +18m.40s., i = +19m.19s., iSKS = +24m.31s., ePS = +28m.1s., eSS = +34m.41s.
Fordham ePKP = +17m.52s., ePP = +18m.47s., iPS = +27m.57s., eSS = +33m.59s.
Columbia SKS = +24m.39s., ePS = +28m.9s.
Toledo PS = +29m.44s., PPS = +31m.0s.
Almeria PP = +20m.7s.
Granada PP = +19m.34s., PPP = +22m.2s., SKSP = +30m.9s., SS = +33m.45s., i = +36m.51s.
San Juan iPP = +21m.10s., e = +30m.59s. =SKSP −21s., iPS = +31m.51s.
La Paz iPPZ = +22m.56s., iPPN = +23m.3s., SKS = +26m.39s., iN = +29m.32s., SKSP = +33m.3s., iSKSP = +33m.11s., iN= +35m.21s., PPSN= +36m.21s., iSS = +41m.51s., SSSN = +47m.35s., L_gN = +62·1m.
Long waves were also recorded at Kodaikanal and Laibach.

Sept. 9d. 20h. 39m. 0s. Epicentre 19°·3N. 145°·7E. (as at 20h.38m.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	46·0	325	8 22	+ 1	—	—	—	—
Tashkent	67·4	309	10 42	−12	—	—	—	—
Ekaterinburg	71·2	325	i 11 16	− 2	i 20 34	− 1	—	—
Kucino	83·6	327	12 28	+ 2	22 49	− 4	—	—
Pulkovo	85·3	333	12 34	− 1	23 4	− 7	—	—
Helsingfors	87·3	335	e 12 37	− 8	e 23 11	[− 4]	e 35·0	—
Upsala	90·4	336	e 13 5	+ 6	i 23 34	[− 1]	e 41·0	48·4
Copenhagen	95·2	335	13 24	+ 3	25 43	PS	—	—
Stuttgart	101·6	333	i 13 58	+ 7	e 25 35	− 6	—	—

Additional readings and note :—
Pulkovo PP = +16m.4s., PS = +24m.0s., SS = +28m.18s.
Helsingfors eN = +16m.17s., iPSE = +24m.6s., ePPSE = +24m.42s., PPSN = +24m.50s., eSSEN = +28m.55s., eSSSEN = +33m.12s.
Upsala PP = +16m.37s., SKSE = +23m.14s., iPS = +25m.0s.
Copenhagen +17m.12s. =PP +6s., +26m.0s., and +26m.47s.
Stuttgart ePP = +18m.10s., ePPP = +20m.10s.
This shock is attributed to the epicentre of 20h.38m. and many additional readings to that earthquake may belong here. Only the above 9 stations record both shocks.

Sept. 9d. Readings also at 0h. (Ekaterinburg, Tashkent, Melbourne, and Riverview), 1h. (Baku, Andijan, Camerino, Casamari, and Granada), 2h. (near Wellington), 5h. (Ekaterinburg (2), Irkutsk, and near Tyosi), 6h. (Baku and Tashkent), 10h. (near Hastings and Wellington), 11h. (Christchurch and near Wellington), 12h. (Tashkent, near Almata, Andijan, and near Medan), 13h. (Baku and Ekaterinburg), 14h. (La Paz), 15h. (near Balboa Heights), 17h. (near Wellington), 18h. (Ekaterinburg, Tashkent, and Manila), 22h. (Ksara, and near Tananarive).

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Sept. 10d. 22h. 27m. 8s. Epicentre 32°·5N. 64°·0E. (as 1928 Sept. 10d.). X.

A = +·370, B = +·758, C = +·537; D = +·899, E = −·438;
G = +·236, H = +·483, K = −·843.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	9·8	24	—	—	e 4 15	+ 7	e 5·6	6·8
Andijan	10·7	37	e 2 22	− 9	e 4 26	− 5	—	—
Baku	13·8	309	e 3 19	+ 6	e 6 1	+15	e 10·4	12·1
Bombay	15·7	148	3 38	0	6 22	− 9	7·4	—
Calcutta	23·7	109	6 10	+63	9 10	− 8	10·8	—
Ekaterinburg	24·5	356	e 4 50	−25	e 10 31	SS	e 14·2	—

Additional readings :—
Tashkent e = +38s., i = +4m.38s.
Long waves were also recorded at Pulkovo, Helsingfors, Copenhagen, and De Bilt.

Sept. 10d. Readings also at 1h. (Scoresby Sund), 3h. (near Amboina and near Tyosi), 4h. (Pasadena, Tucson, Lick, and near Santiago), 9h. (Baku, Tashkent, Ekaterinburg, and Andijan), 10h. (Pulkovo), 13h. (Baku and Ekaterinburg), 14h. (Ekaterinburg, Tashkent, near Almata, and Andijan), 15h. (Almata, Andijan, Baku, Ekaterinburg, Tashkent, and near Ksara), 16h. (near Mizusawa), 19h. (Andijan, Ekaterinburg, Tashkent, and Prato), 20h. (Ekaterinburg, Tashkent, and Calcutta), 21h. (Copenhagen, Strasbourg, De Bilt, Feldberg, Kew, Stuttgart, Uccle, Paris, Prato (2), Malaga, near Alicante, Almeria, Toledo, and Granada), 22h. and 23h. (near Tyosi).

Sept. 11d. 14h. 34m. 2s. Epicentre 37°·5N. 23°·0E. R.3.
(as on 1927 July 1d.: but see also 16h. below).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta		5·5	293	e 1 58	P_g	—	—	—	—
Belgrade		7·5	347	2 13	P*	3 42	S*	—	4·0
Naples	E.	7·6	299	e 3 19	S	(e 3 19)	+ 5	—	—
Zagreb		9·8	330	2 19	+ 1	—	—	e 4·7	5·8
Budapest		10·4	346	e 5 28	?	—	—	7·5	8·0
Triest		10·7	323	e 2 34	+ 3	e 4 16	−15	e 5·0	5·6
Florence		10·9	309	e 2 58	+25	4 58?	+22	—	6·9
Graz		11·0	332	e 2 40	+ 5	e 5 36	+58	—	6·5
Venice		11·2	318	e 4 8	?	i 6 12	?	—	—
Treviso		11·5	318	e 4 38	S	(e 4 38)	−12	—	—
Padova		11·5	317	e 4 13	?	6 37	S_g	—	—
Vienna		11·8	338	—	—	6 10	S*	i 7·2	8·0
Piacenza		12·5	311	—	—	e 4 18	−57	—	10·4
Chur		13·6	318	e 3 17	+ 7	—	—	—	—
Zurich		14·5	318	e 3 21	− 1	—	—	—	—
Neuchatel		15·1	314	e 3 30	0	—	—	—	—
Stuttgart		15·1	323	—	—	e 6 28	+11	e 8·0	9·5
Strasbourg		15·6	320	—	—	e 6 31	+ 2	9·0	—
Uccle		18·8	321	—	—	e 6 58?	−44	—	—
De Bilt		19·2	325	4 25	+ 4	7 57	+ 7	e 10·0	12·5
Copenhagen		19·5	342	4 22	− 2	7 52	− 4	10·0	—
Kew		21·5	318	—	—	e 8 58?	+22	—	—
Oxford		22·2	318	e 5 3	+10	e 8 53	+ 3	e 11·5	12·5
Helsingfors		22·7	3	e 6 0	+62	e 9 51	+52	e 11·0	—
Pulkovo		22·7	10	4 54	− 4	8 54	− 5	11·0	14·5
Ekaterinburg		31·4	40	e 6 18	+ 1	—	—	e 15·3	—
Scoresby Sund		40·4	339	—	—	13 58?	+16	—	—

Additional readings :—
Belgrade e = +2m.25s.
Naples eSE = +4m.54s.
Treviso eS = +6m.8s.
Vienna e = +4m.24s.
Strasbourg e = +7m.21s., i = +8m.6s., and +8m.38s.
Long waves were also recorded at Tashkent and other European stations.

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Sept. 11d. 16h. 23m. 8s. Epicentre 37°·5N. 23°·0E. (as at 14h.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta		5·5	293	e 1 22	+ 4	3 17	S_g	—	—
Catania		6·2	272	e 2 47	S	(e 2 47)	+ 9	—	8·2
Belgrade		7·5	347	1 45	− 1	e 3 11	0	—	4·0
Naples	E.	7·6	299	e 1 48	0	e 3 48	S*	—	6·2
Zagreb		9·8	330	2 17	− 1	e 4 41	S*	—	6·4
Budapest		10·4	346	(e 2 22)	− 4	(4 10)	−13	(5·4)	(6·9)
Laibach		10·6	326	e 2 29	0	e 4 50	+22	—	7·6
Triest		10·7	323	e 2 36	+ 5	4 18	−13	i 5·0	5·6
Florence		10·9	309	e 2 22	−11	4 22	−14	—	6·9
Yalta		10·9	47	e 2 46	+13	—	—	—	—
Graz		11·0	332	e 2 38	+ 3	e 4 52	+14	—	6·9
Simferopol		11·1	45	e 1 32	−64	—	—	—	—
Ksara	N.	11·1	105	e 2 55	+19	e 5 59	L	(6·0)	—
Venice		11·2	318	e 4 30	S	(e 4 30)	−13	(i 6·2)	8·1
Treviso		11·5	318	e 3 50	+68	i 6 13	+83	—	6·9
Padova		11·5	317	4 27	S	(4 27)	−23	(6·2)	—
Vienna		11·8	338	e 2 52	+ 6	5 21	+23	—	7·9
Theodosia		11·9	47	e 4 40	S	(e 4 40)	−20	—	—
Lemberg		12·3	3	e 2 52	0	—	—	—	8·1
Piacenza		12·5	311	5 4	S	(5 4)	−11	8·3	10·4
Innsbruck		13·0	323	3 28	+26	—	—	6·4	—
Chur		13·6	318	e 3 16	+ 6	—	—	—	—
Zurich		14·5	318	e 3 23	+ 1	—	—	—	—
Cheb		14·7	332	—	—	e 6 22	+14	e 7·3	8·9
Stuttgart		15·1	323	e 3 58	+28	e 6 30	+13	—	—
Neuchatel		15·1	314	3 32	+ 2	e 7 43	L	(e 7·7)	—
Karlsruhe		15·6	322	e 6 52?	S	(e 6 52?)	+23	—	8·8
Strasbourg		15·6	320	e 5 18	+102	e 8 12	+103	—	—
Feldberg		16·4	325	i 3 57	+11	e 6 24	−24	e 8·1	10·4
Königsberg		17·4	355	e 4 10	+11	e 7 2	− 9	—	10·3
Hamburg		18·5	335	—	—	e 6 52	−44	—	11·9
Paris		18·6	314	e 4 20	+ 6	e 7 45	+ 7	8·9	11·9
Uccle		18·8	321	e 4 20	+ 4	e 7 46	+ 4	9·4	—
De Bilt		19·2	325	4 27	+ 6	7 58	+ 8	e 9·9	12·6
Lund		19·3	343	4 22	0	7 40	−12	11·9	—
Copenhagen		19·5	342	4 23	− 1	7 52	− 4	9·9	—
Granada		21·1	277	i 4 57	+16	—	—	e 12·7	14·4
Kew		21·5	318	—	—	e 8 47	+11	13·9	14·1
Oxford		22·2	318	—	—	i 9 0	+10	e 11·4	12·4
Upsala		22·6	354	e 4 55	− 2	e 8 46	−11	e 12·3	13·3
Pulkovo		22·7	10	4 55	− 3	8 53	− 6	11·9	13·9
Helsingfors		22·7	3	e 4 52?	− 6	e 8 55	− 4	e 12·3	—
Stonyhurst		23·9	321	—	—	i 9 28	+ 7	—	15·4
Durham		24·0	324	—	—	9 34	+11	13·6	16·1
Edinburgh		25·4	325	—	—	i 9·52	+ 4	—	—
Ekaterinburg		31·4	40	i 6 18	+ 1	—	—	10·9	20·1
Scoresby Sund		40·4	339	9 52?	(+ 9)	16 46	SS	—	—

Additional readings and notes:—
Belgrade e = +2m.15s., and +3m.26s.
Zagreb e = +2m.23s. and +2m.53s., i = +3m.9s. and +5m.4s.
Budapest readings have been *diminished* by 2m.
Laibach e = +2m.48s., ePP = +4m.26s. =SS −2s.
Venice and Padova give S as P and L as S.
Vienna Pd = +4m.20s., i = +6m.1s., and +6m.17s.
Lemberg eE = +3m.28s.
Piacenza S = +6m.36s.
Stuttgart e = +7m.17s., iEN = +8m.18s. eEZ = +8m.58s.
Strasbourg iSS = +8m.40s.

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Feldberg i = +4m.22s.
Königsberg eN = +6m.22s., eSN = +7m.7s.
Kew e = +11m.11s., iN = +11m.59s.
Helsingfors ePcPEN = +8m.50s., eSSEN = +11m.8s.; T_0 = 16h.22m.54s.
Ekaterinburg e = +4m.32s.
Long waves were also recorded at Bergen, Tashkent, Irkutsk, and other European stations.

Sept. 11d. 22h. 22m. 53s. Epicentre 39°·5S. 176°·9E. (as on 1931 May 6d.). X.

A = −·770, B = +·042, C = −·636; D = +·054, E = +·999; G = +·635, H = −·034, K = −·772.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hastings	0·1	185	(0 7)	P_g	(0 11)	S_g	—	(0·4)
Arapuni	1·7	324	0 9	−15	0 35	− 9	—	1·1
New Plymouth	2·2	181	0 35	+ 4	1 8	S*	—	—
Wellington	2·4	223	0 32	− 2	0 58	− 4	—	1·3
Takaka	3·4	246	0 49	0	1 30	+ 3	—	1·7
Christchurch	5·1	217	1 28	P*	2 23	S*	—	—
Melbourne	24·9	264	e 5 20	+ 1	9 50	+11	12·0	13·4
Adelaide	30·6	269	—	—	e 9 17	P_cP	—	16·6
Manila	75·0	305	11 37	− 3	20 24	−56	—	—
Ekaterinburg	136·0	316	—	—	e 27 49	?	61·1	—
Florence	168·5	297	—	—	e 45 7	SS	—	92·1
Granada	177·6	170	i 25 51	PP	i 32 49	{− 2}	e 96·0	104·1

Additional readings and note:—
Hastings readings have been *increased* by 1m.
Arapuni P_g = +22s., P_g = +28s., S_g? = +46s.
New Plymouth P_g = +45s., P_g = +58s., S_g = +1m.26s. = +1m.41s.
Wellington P* = +38s., P_g = +42s., P_g = +52s., S* = +59s., S_g = +1m.9s.
Takaka P* = +54s., P_g? = +1m.12s., i = +1m.39s., S_g? = +1m.54s.
Christchurch P_g = +1m.35s., i = +1m.38s., P_g = +1m.54s.
Melbourne e = +6m.12s.
Long waves were also recorded at Sydney, Perth, Bombay, Scoresby Sund, Tashkent, and other European and American stations.

Sept. 11d. Readings also at 1h. (Nagoya, near Mizusawa, and Tyosi), 2h. (Ekaterinburg and Tashkent), 3h. (Irkutsk, Tashkent, near Mizusawa, and Tyosi (3)), 4h. (Andijan, Ekaterinburg, and Tashkent), 7h. (near Baku (2)), 8h. (Vienna, Messina, Piacenza, Triest, Padova, Zagreb, De Bilt, Florence, Feldberg, Paris, Stuttgart, Strasbourg, and near Sumoto), 9h. (Lick), 11h. (Ekaterinburg, Tashkent, and near Medan), 12h. (near Sumoto), 13h. (Edinburgh), 14h. (Ksara, Nagoya, Tyosi, and Trenta), 15h. (Toledo), 16h. (Baku, Bombay, Andijan, Tashkent, and Calcutta), 20h. (Manila), 21h. (Almata, Andijan, Ekaterinburg, Tashkent, Manila, Adelaide, Melbourne, Perth, Christchurch, Victoria, near Amboina, and near Santiago), 22h. (Copenhagen and Uccle), 23h. (Ekaterinburg, Pulkovo, Tashkent, near Almata, Andijan, near Tyosi, and Mizusawa).

Sept. 12d. 1h. 45m. 7s. Epicentre 56°·2N. 161°·2E. N.2.

A = −·527, B = +·179, C = +·831; D = +·322, E = +·947; G = −·787, H = +·268, K = −·556.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	21·6	226	4 45	− 1	8 57	+19	—	—
	N.	21·6	226	4 59	+13	8 53	+15	—	—
Sendai		22·4	225	5 26	PP	9 6	+13	—	—
Irkutsk		32·6	287	e 6 18	−10	e 11 31	−14	16·6	81·3
Chiufeng		33·3	263	e 15 36	?	—	—	—	—
Victoria	E.	44·4	68	—	—	14 57	+16	20·4	29·5
	N.	44·4	68	—	—	14 52	+11	20·2	24·8
Ekaterinburg		50·2	317	i 8 50	− 3	16 3	− 1	24·9	27·8
Berkeley		52·2	78	e 9 6	− 2	—	—	—	—
Lick		53·0	78	e 9 12	− 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		53·3	2	—	—	16 50	+ 4	23·9	—
Tinemaha		55·0	75	i 9 29	0	—	—	—	—
Haiwee		55·8	76	e 9 35	+ 1	—	—	—	—
Andijan		56·6	295	e 9 37	− 3	e 17 31	0	28·9	—
Mount Wilson		57·2	78	e 9 44	− 1	—	—	—	—
Pasadena		57·2	78	i 9 43	− 2	—	—	—	—
Riverside	N.	57·7	77	e 9 48	0	—	—	—	—
Pulkovo		57·7	334	9 46	− 2	i 17 43	− 3	29·9	32·9
Tashkent		57·7	298	e 9 50	+ 2	e 17 29	−17	28·6	35·7
Helsingfors		58·6	337	e 9 55	0	i 17 56	− 1	e 28·9	—
Upsala		60·5	340	—	—	e 18 18	− 5	e 35·9	—
Lund		65·2	341	—	—	19 22	0	32·9	—
Copenhagen		65·3	341	10 41	0	19 21	− 3	32·9	—
Edinburgh		67·2	351	—	—	e 19 53?	+ 6	—	—
Ottawa		67·8	40	—	—	e 29 7	?	e 30·9	—
Stonyhurst		69·1	350	—	—	19 59	−11	—	44·9
De Bilt		70·0	345	11 13	+ 2	20 21	0	e 37·9	41·3
Feldberg		71·2	344	—	—	e 20 31	− 4	e 29·0	42·0
Uccle		71·3	346	—	—	e 20 33	− 4	34·9	—
Harvard		72·0	39	—	—	e 20 36	− 9	e 37·4	—
Stuttgart		72·5	341	e 11 28	+ 2	e 20 48	− 3	e 38·9	—
Graz		72·8	337	—	—	(e 23 53)	?	e 23·9	—
Strasbourg		73·0	344	e 11 34	+ 5	20 57	0	e 39·9	—
Bombay		73·5	280	20 18	S	(20 18)	−45	—	—
Paris		73·5	347	e 11 34	+ 2	—	—	43·9	43·9
Piacenza		76·0	340	21 29	S	(21 29)	− 3	—	47·2
Florence		76·8	339	e 12 53	+63	21 33	− 8	29·9	38·9
Granada		85·7	349	12 42	+ 5	—	—	e 53·0	—

Additional readings :—
Tashkent e = +11m.40s. = PP − 10s.
Helsingfors eE = +9m.59s., +12m.2s. = PP +4s., and +12m.47s., eSSE = +19m.53s.? = S_cS +11s.
Stuttgart eNZ = +14m.11s. = PP +11s. and +15m.59s.
Granada i = +4m.40s.
Long waves were also recorded at Honolulu T.H., Buffalo, Pittsburgh, Charlottesville, Hong Kong, Phu-Lien, Hyderabad, Almata, Hamburg, Kew, Budapest, Göttingen, and San Juan.

Sept. 12d. 6h. 58m. 35s. Epicentre 79°·0N. 2°·0E. N.3.

A = +·191, B = +·007, C = +·982 ; D = +·035, E = −·999 ;
G = +·981, H = +·034, K = −·191.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helsingfors	E.	20·1	146	e 5 8	+37	e 8 55	+47	e 11·7	—
Pulkovo		21·1	138	4 39	− 2	8 27	− 1	11·4	13·6
Copenhagen		23·5	165	—	—	9 19	+ 5	12·4	—
Ekaterinburg		28·8	104	i 5 54	0	10 42	− 3	13·4	—
Tashkent		45·3	103	—	—	e 14 7	−48	e 24·1	25·2

Additional reading :—
Helsingfors eE = +8m.4s.
Long waves are also recorded at Scoresby Sund, De Bilt, Feldberg, Stuttgart, and Irkutsk.

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Sept. 12d. 15h. 41m. 40s. Epicentre 5°·5N. 77°·5W. (as on 1925 July 31d.). R.2.

A = +·215, B = −·972, C = +·096; D = −·976, E = −·216; G = +·021, H = −·094, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		4·0	330	i 0 53	− 4	i 1 37	− 5	2·6	—
Port au Prince		14·0	21	e 3 17	+ 2	i 5 26	−25	—	6·0
San Juan		17·0	40	i 3 55	+ 1	i 7 11	+ 9	—	—
La Paz		23·9	157	i 5 1	− 8	i 9 27	+ 6	11·1	16·8
Pittsburgh		35·0	357	—	—	e 12 20	− 1	—	—
St. Louis		35·1	344	e 6 48	− 2	e 12 18	− 5	—	—
Fordham		35·5	5	e 7 0	+ 7	e 12 28	− 1	e 19·3	—
Ann Arbor		37·2	353	—	—	e 12 56	+ 2	e 22·3	—
Chicago		37·4	349	—	—	e 12 53	− 4	e 18·8	—
Buffalo		37·4	358	e 9 36	(+ 3)	e 13 2	+ 5	—	23·2
Ottawa		39·9	3	—	—	e 13 24	−11	e 19·3	—
Riverside	N.	46·6	314	e 8 34	+ 9	—	—	—	—
Mount Wilson		47·2	314	e 8 31	+ 1	—	—	—	—
Pasadena		47·2	314	e 8 31	+ 1	—	—	—	—
Haiwee	E.	48·1	316	e 8 38	+ 1	—	—	—	—
Tinemaha		48·7	317	e 8 46	+ 5	—	—	—	—
Victoria		57·8	326	17 49	S	(17 49)	+ 2	32·1	32·1
Granada		73·9	53	i 11 33	− 1	i 20 1	−66	—	—
Edinburgh		76·7	35	—	—	e 21 20?	−19	—	—
Kew		77·8	39	e 11 56	− 1	e 21 47	− 5	41·3	—
Paris		79·3	41	e 12 1	− 3	—	—	40·3	—
De Bilt		81·2	38	—	—	e 22 25	− 3	e 43·3	—
Neuchatel		82·2	43	e 12 19	0	—	—	—	—
Strasbourg		82·8	42	e 12 24	+ 2	(e 22 20?)	−25	e 22·3	—
Feldberg		83·2	40	—	—	i 22 45	− 4	—	—
Stuttgart		83·7	41	e 12 25	− 2	e 22 52	− 2	e 44·3	—
Copenhagen		85·4	35	12 38	+ 3	23 9	− 3	42·3	—
Helsingfors		91·4	29	—	—	e 24 20?	+11	—	—
Pulkovo		94·0	29	e 13 14	− 2	e 24 27	− 6	43·3	—
Kucino		99·3	31	—	—	e 23 20	[−62]	—	—
Ekaterinburg		109·0	23	—	—	e 25 14	[+ 5]	38·3	—
Tashkent		124·2	30	—	—	e 26 42	[+39]	e 66·3	78·8

Additional readings :—
Chicago iSS = +15m.40s.
Victoria S = +24m.19s.
Stuttgart e = +12m.48s. and +23m.40s. = PS +5s.
Kucino e = +26m.45s. = PS +7s.
Tashkent e = +37m.32s. = SS +5s.
Long waves were also recorded at Stonyhurst and Irkutsk.

Sept. 12d. Readings also at 0h. (Baku, Tashkent, and Scoresby Sund), 6h. (Tyosi), 7h. (Ekaterinburg and Irkutsk), 8h. (Copenhagen and Pulkovo), 10h. (Almata, Andijan (2), Tashkent, Ekaterinburg, Irkutsk, Tyosi, and near Mizusawa), 11h. (Kucino), 12h. (Ekaterinburg, Pulkovo, Tashkent, Kucino, Bombay, Calcutta, and Hyderabad), 13h. (Copenhagen, Matuyama, and near Hukuoka), 16h. (Andijan, Nagoya, and near Almata), 17h. (Calcutta), 18h. (Ekaterinburg, Irkutsk, Tashkent, Pulkovo, Kucino, and Bombay), 20h. (Ekaterinburg and Manila), 21h. (La Plata).

Sept. 13d. 6h. The following readings belong to a shock from an epicentre in South-East Europe, but no exact determination is attempted.

Taranto P = 22m.10s.
Trenta eP = 23m.20s.
Florence P = 23m.30s., S = 27m.30s., M = 29m.0s.
Belgrade P = 23m.39s., eP = 23m.42s., e = 24m.32s., eS? = 25m.15s., M = 25m.51s.
Triest eP = 23m.59s., eS = 25m.41s., eL = 26m.24s., M = 26m.58s.
Zagreb P = 24m.12s., eS = 26m.21s., e = 26m.33s., M = 27m.50s.
Chur e = 24m.43s.

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Naples eP = 24m.58s., eS = 30m.58s.
Helsingfors eE = 25m.29s., 26m.34s., and 28m.31s., eSE = 30m.9s., eSSE = 31m.25s., eLEN = 34m.
Catania eP = 25m.50s.
Pulkovo P = 26m.19s., S = 30m.56s., L = 33m.
Stuttgart e = 26m.24s., 29m.13s., and 30m.25s.
Budapest eP = 27m.2s., L = 29m.
Vienna e = 27m.36s., M = 29m.18s.
Piacenza P = 27m.54s., M = 32m.15s.
Hamburg e = 28m.0s.
Strasbourg e = 28m.56s., 29m.36s., and 30m.2s., L = 32m.
Baku e = 30m.9s., eL = 33m.
Long waves were also given by Ekaterinburg, Kucino, and other European stations.

Sept. 13d. 16h. 0m. 13s. Epicentre 35°·5N. 136°·8E. (as on 1931 Jan. 17d.). X.

A = −·593, B = +·557, C = +·581.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	1·3	233	0 19	+ 1	(0 35)	+ 2	0·6	0·6
Kobe	1·6	240	i 0 22	− 1	0 38	− 3	—	0·7
Toyooka	1·6	270	i 0 23	0	i 0 39	− 2	—	0·7
Sumoto	2·0	237	e 0 45	P_g	0 52	+ 1	—	0·9

Kobe gives also SZ = +41s.

Sept. 13d. Readings also at 0h. (Almata, Andijan, Irkutsk, Kucino, Ekaterinburg, Copenhagen, and Feldberg), 2h. (Granada), 3h. (Baku, Ekaterinburg, Irkutsk, Bombay, Kucino, near Almata, Andijan, and near Tyosi (2)), 4h. (Bombay and Copenhagen), 5h. (Baku, Bombay, Irkutsk, Ekaterinburg, Almata, and Andijan), 6h. (Feldberg, La Paz, near Padova, Triest, and near Wellington), 7h. (Victoria, Almata, La Paz, Tyosi, near Mizusawa, and near Treviso), 8h. (La Paz and near Andijan), 9h. (Entebbe), 10h. (Ksara), 11h. (Alicante), 16h. (Wellington and near La Paz), 19h. (Manila), 21h. (near Sumoto), 23h. (near Baku).

Sept. 14d. 3h. 32m. 8s. Epicentre 36°·3N. 69°·4E. N.3.

A = +·284, B = +·754, C = +·592; D = +·936, E = −·352;
G = +·208, H = +·554, K = −·806.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	5·0	27	1 16	+ 5	(2 9)	+ 1	2·2	2·3
Almata	9·1	37	i 2 6	− 3	(i 3 39)	−12	i 3·6	3·7
Baku	15·8	291	e 3 55	+17	i 6 59	+25	e 8·1	9·6
Bombay	17·7	169	4 2	− 1	7 14	− 3	8·9	—
Ekaterinburg	21·3	347	i 4 41	− 2	i 8 28	− 4	—	13·2
Calcutta	21·5	125	6 25	+100	9 25	+49	10·4	—
Kucino	28·8	323	—	—	e 10 30	−15	e 21·9	—
Irkutsk	29·2	46	e 8 52?	(−16)	—	—	13·9	—
Pulkovo	34·2	327	6 39	− 3	11 54	−15	14·9	—
Helsingfors	36·8	325	e 7 12	+ 7	e 12 34	−14	e 14·9	—
Lund	42·1	316	—	—	17 22	SS	—	—
Copenhagen	42·5	316	—	—	14 3	−10	—	—
Florence	44·2	298	e 8 52	+46	—	—	—	20·9
Stuttgart	44·8	307	e 8 10	− 1	e 14 37	−10	—	—
Feldberg	45·1	309	—	—	17 52?	SS	—	—
De Bilt	47·0	311	—	—	i 15 10	− 9	e 19·9	—
Manila	50·7	101	8 42	−15	9 31	?	—	—
Scoresby Sund	56·5	336	—	—	17 22	− 8	—	—
Wellington	123·5	119	—	—	(25 52?)	[− 9]	25·9	—

Additional readings and note:—
Kucino e = +11m.2s. and +16m.8s. = S_eS − 29s.
Helsingfors ePPE = +8m.15s., eSE = +12m.23s., eSSE = +14m.25s.
Copenhagen SS = +17m.29s.
Stuttgart eEZ = +8m.54s., e = +15m.58s.
Manila readings apparently belong to a local shock.

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Sept. 14d. 6h. 11m. 21s. Epicentre 45°·7N. 8°·0E. N.3.

A = +·692, B = +·097, C = +·716 ; D = +·139, E = −·990 ;
G = +·709, H = +·100, K = −·698.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	1·5	331	e 0 21	0	e 0 36	− 3
Chur	1·6	42	e 0 23	0	e 0 42	+ 1
Zurich	1·7	14	e 0 24	0	e 0 44	0
Stuttgart	3·2	14	—	—	e 1 27	+ 5
Hohenheim	3·2	15	e 0 47	+ 1	e 1 26	+ 4

Additional readings :—
Chur e = +26s.
Zurich e = +42s.
Hohenheim eN = +1m.14s.

Sept. 14d. Readings also at 1h. (Baku and Ekaterinburg), 4h. (Almata and near Andijan), 7h. (Tyosi), 9h. (Hong Kong and near Manila), 10h. (Monte Cassino and near Wellington), 11h. (Tyosi), 14h. (near Manila), 15h. (Baku, Ekaterinburg, Andijan, and Ksara), 16h. (La Paz), 17h. (Alicante), 21h. (Entebbe), 23h. (near La Paz).

Sept. 15d. 12h. 20m. 42s. Epicentre 44°·0N. 10°·8E. N.2.

A = +·707, B = +·135, C = +·695 ; D = +·187, E = −·982 ;
G = +·682, H = +·130, K = −·719.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Prato	0·3	118	− e 0 2	− 6	—	—	—	0·1
Livorno	0·6	218	0 7	− 2	0 18	+ 3	—	—
Piacenza	1·3	323	0 26	+ 8	—	—	—	1·4
Pavia	1·6	316	e 0 32	+ 9	—	—	—	—
Treviso	1·9	31	e 0 28	0	e 0 48	− 1	—	—
Triest	2·7	52	i 0 37	− 2	i 1 7	− 2	i 1·2	1·3
Chur	3·0	343	e 0 44	+ 1	—	—	—	—
Zurich	3·8	336	e 0 53	− 1	—	—	—	—
Neuchatel	4·0	319	e 1 0	+ 3	e 1 38	− 4	—	—
Zagreb	4·1	62	0 58	0	i 1 47	+ 2	—	2·1
Stuttgart	4·9	347	e 1 7	− 3	e 2 3	− 2	e 2·7	3·5
Strasbourg	5·0	336	e 1 18?	+ 7	—	—	—	—
Vienna	5·7	40	—	—	e 2 33	+ 8	i 3·2	4·0

Additional readings :—
Zagreb eNE = +1m.5s., e = +1m.33s.
Long waves were also recorded at De Bilt, Uccle, Feldberg, Paris, and Granada.

Sept. 15d. Repetitions of the above shock were recorded at Prato as follows :—

eP 12h.29m.0s.
eP 12h.45m.44s. iS 49s. M. 55s.
eP 12h.50m.0s.
eP 13h.46m.50s. iS 56s. M. 67s.
eP 14h.16m.33s. iS 38s.

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Sept 15d. 21h. 8m. 50s. Epicentre 44°·3S. 166°·8E. N.3.

A = −·697, B = +·163, C = −·698 ; D = +·228, E = +·974 ;
G = +·680, H = −·159, K = −·716.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch	4·3	82	1 11	+10	1 47	− 3	—	—
Takaka	5·6	53	1 20	0	2 26	+ 3	—	—
Wellington	6·5	66	1 31	− 1	2 41	− 5	—	4·1
New Plymouth	7·5	49	—	—	3 8	− 3	—	—
Riverview	16·0	306	i 3 45	+ 4	—	—	—	9·2
Melbourne	17·7	284	4 3	0	7 32	SS	8·7	9·0
Adelaide	23·5	284	—	—	9 7?	− 7	i 10·6	12·6
Manila	72·2	314	11 36	+12	21 10	PS	—	—
Irkutsk	110·5	325	e 19 10?	PP	e 28 10?	PS	e 51·2	—
Ekaterinburg	133·9	313	e 19 24	[+11]	—	—	54·2	—
Ksara	141·1	273	i 16 41	?	—	—	—	—
Theodosia	146·0	290	e 19 26	[−10]	—	—	—	—
Pulkovo	149·9	317	i 20 3	[+21]	—	—	—	—
Scoresby Sund	153·4	7	—	—	43 40	SS	75·2	—
De Bilt	165·6	309	e 21 28	{+18}	e 45 28	SS	e 84·2	—
Uccle	166·5	305	—	—	e 35 10?	SKSP	e 84·2	—
Granada	169·9	229	i 21 8	{−21}	—	—	i 89·5	98·4

Additional readings :—
Christchurch P* = +1m.20s., P_g = +1m.38s., S_g? = +2m.31s.
Takaka P_g = +1m.58s., S* = +2m.47s., S_g = +3m.6s.
Wellington P* = +1m.51s., P_g = +2m.13s., P_s? = +2m.31s., S* = +3m.1s., S_g = +3m.22s., S_s = +3m.38s.
New Plymouth S* = +3m.39s., S_g = +3m.58s., S_s = +4m.7s.
Melbourne PP = +4m.25s.
Irkutsk e = +34m.10s.? = SS − 15s.
Ekaterinburg e = +22m.0s., i = +22m.20s., e = +39m.15s.
Uccle e = +45m.10s. = SS − 29s.
Granada i = +24m.56s. = PP − 10s., +28m.59s. = PPP − 2s., +31m.35s., and +33m.41s.
Long waves were also recorded at Baku, Kew, Paris, Strasbourg, and Stuttgart.

Sept. 15d. Readings also at 4h. (near Amboina), 7h. (Lick (2)), 9h. (near Osaka and Kobe), 12h. (near Berkeley, Lick, near Prato, and near Manila), 15h. (Serra do Pilar and Tyosi) 16h. (Andijan, Baku, Hong Kong, Ekaterinburg, Irkutsk, De Bilt, and near Manila), 17h. (Copenhagen, Feldberg, Uccle, Paris, Strasbourg, Stuttgart, and Tyosi), 18h. (La Paz), 20h. (near Berkeley (2), and near Wellington), 21h. (Riverview), 23h. (Piacenza and Prato).

Sept. 16d. 12h. 43m. 11s. Epicentre **35°·5N. 138°·8E.** N.1.

Probable error of epicentre ±0°·22. Epicentre given by Tokyo.

A = −·613, B = +·536, C = +·581 ; D = +·659, E = +·752 ;
G = −·437, H = +·383, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kohu	0·3	305	0 3	− 1	—	—	—	—
Misima	0·4	162	0 4	− 2	0 10	0	—	—
Numadu	0·4	174	0 4	− 2	0 10	0	—	—
Ito	0·6	155	0 9	0	0 17	+ 2	—	—
Yokohama	0·6	95	0 9	0	0 19	+ 4	—	—
Kumagaya	0·8	36	0 12	+ 1	0 22	+ 1	—	—
Tokyo	0·8	77	0 11	0	0 20	− 1	—	0·4
Maebasi	0·9	14	0 12	− 1	0 25	+ 2	—	—
Oiwake	0·9	346	0 14	+ 1	0 26	+ 3	—	—
Mera	1·0	124	0 15	+ 1	0 29	+ 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.
Matumoto		1·0	317	0 23	P_g	0 41	S_g	—	—
Tukubasan		1·2	56	0 18	+ 1	0 34	+ 3	—	—
Hamamatu		1·2	228	0 20	+ 3	0 38	S*	—	—
Nagano		1·3	337	0 21	+ 3	0 39	+ 6	—	—
Utunomiya		1·3	40	0 20	+ 2	0 39	+ 6	—	—
Kakioka		1·3	57	0 18	0	0 34	+ 1	—	—
Takayama		1·4	297	0 25	P*	0 46	S*	—	—
Nagoya		1·6	257	e 0 27	P*	0 50	S*	—	1·3
Mito		1·6	57	0 23	0	0 42	+ 1	—	—
Tyosi		1·7	82	0 22	− 2	0 41	− 3	—	0·9
Gihu		1·7	267	0 28	P*	0 52	S*	—	—
Takada		1·7	344	0 27	+ 3	0 53	S*	—	—
Kameyama		2·0	251	0 34	P*	1 1	S*	—	—
Kanazawa		2·1	301	0 24	− 6	0 37	P*	—	—
Niigata		2·4	5	0 37	+ 3	1 16	S*	—	—
Wazima		2·4	321	0 38	+ 4	1 7	+ 5	—	—
Hukusima		2·6	31	0 38	+ 1	1 10	+ 3	—	—
Kyoto		2·6	259	0 41	+ 4	1 21	S*	—	—
Osaka		2·8	252	0 43	+ 3	(1 28)	S*	1·5	2·4
Kobe		3·1	255	0 47	+ 3	1 26	+ 6	—	1·9
Sendai		3·2	31	0 47	+ 1	1 30	+ 8	—	—
Toyooka		3·2	271	i 0 49	+ 3	1 43	S*	—	1·9
Siomisaki		3·3	231	0 49	+ 2	1 25	0	—	—
Wakayama		3·3	247	0 52	+ 5	1 40	S*	—	—
Sumoto		3·4	251	0 51	+ 2	1 34	+ 7	—	2·0
Tokusima		3·8	248	0 52	− 2	1 40	+ 3	—	—
Mizusawa	E.	4·0	27	0 58	+ 1	1 49	+ 7	—	—
Akita		4·3	14	1 4	+ 3	2 14	S*	—	—
Morioka		4·6	23	1 6	0	2 4	+ 6	—	—
Koti		4·8	248	1 11	+ 3	2 9	+ 6	—	2·6
Hirosima		5·3	259	1 29	P*	2 47	S_g	—	—
Matuyama		5·3	254	e 1 16	+ 1	i 2 36	S*	—	2·9
Aomori		5·5	16	1 22	+ 4	2 40	S*	—	—
Hamada		5·6	265	1 22	+ 2	2 37	S*	—	—
Ooita		6·3	251	1 46	+16	3 8	S*	—	—
Hakodate		6·4	13	1 49	+18	3 21	S*	—	—
Hukuoka		7·0	257	1 55	+16	e 3 36	S*	3·7	4·1
Miyazaki		7·1	242	1 47	+ 6	3 8	+ 7	—	—
Kumamoto		7·2	250	1 46	+ 4	3 53	S*	—	—
Sapporo		7·8	14	1 43	− 8	3 29	+10	—	—
Nagasaki		7·9	252	e 1 57	+ 5	e 3 45	+24	4·2	4·5
Taikyu		8·3	275	2 1	+ 3	3 10	−21	—	—
Titizima		8·9	160	2 1	− 5	3 48	+ 2	—	—
Zinsen		10·0	285	2 31	+10	5 44	S_g	—	—
Heizyo		11·0	293	2 34	− 1	4 42	+ 4	—	—
Ootomari		11·5	14	2 38	− 4	7 10	?	—	—
Naha		13·3	229	3 34	+28	6 39	+65	—	—
Zi-ka-wei	Z.	15·1	258	4 37	+67	7 39	+82	—	10·6
Chiufeng		18·5	291	e 4 12	− 1	7 43	+ 7	—	—
Hong Kong		25·2	245	5 31	+ 9	9 55	+11	12·9	14·2
Manila		26·4	222	5 31	− 2	10 3	− 2	13·5	—
Irkutsk		29·6	316	e 9 49?	(+40)	—	—	15·8	—
Phu-Lien		31·8	250	e 11 15	S	(e 11 15)	−17	15·8	—
Calcutta		45·5	269	8 22	+ 5	15 2	+ 5	23·3	—
Almata		47·3	300	e 8 34	+ 3	—	—	—	—
Medan		48·9	238	—	—	e 16 55	+70	28·9	—
Andijan		51·3	298	e 9 0	− 1	—	—	—	—
Batavia		51·4	222	—	—	i 16 17	− 3	—	—
Ekaterinburg		54·7	320	i 9 18	− 8	16 58	− 7	26·8	35·1
Bombay		59·9	274	10 3	− 1	18 15	0	e 31·8	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		67·2	304	e 10 58	+ 5	19 51	+ 4	33·3	43·0
Pulkovo		68·2	329	10 57	− 2	e 19 56	− 3	34·8	43·0
Helsingfors		70·1	331	e 11 9	− 2	e 20 10	−12	e 38·0	—
Theodosia		73·9	315	e 11 24	−10	—	—	—	—
Berkeley	N.	75·0	53	—	—	e 21 19	− 1	e 34·2	—
Copenhagen		78·0	332	11 54	− 3	—	—	40·8	—
Tinemaha	E.	78·2	51	e 11 56	− 2	—	—	—	—
Santa Barbara	N.	78·8	55	e 11 54	− 7	—	—	—	—
Haiwee		78·9	52	e 11 59	− 3	—	—	—	—
Mount Wilson		80·0	55	e 12 5	− 3	—	—	—	—
Pasadena		80·0	55	e 12 7	− 1	e 22 7	− 9	—	—
Riverside		80·6	55	e 12 25	+14	—	—	—	—
De Bilt		83·5	333	12 23	− 3	22 46	− 6	e 40·8	48·5
Zagreb		83·7	324	e 12 26	− 1	—	—	—	—
Feldberg		83·8	330	i 12 39	+12	e 23 0	+ 5	e 44·3	52·1
Stuttgart		84·6	330	12 28	− 3	e 22 49	[− 7]	e 43·8	48·5
Uccle		84·9	333	i 12 30	− 3	22 52	−15	e 40·8	—
Triest		85·0	325	—	—	e 24 35	PS	e 46·4	—
Strasbourg		85·4	330	i 12 34	− 1	e 23 14	+ 2	e 44·8	—
Oxford		86·0	337	—	—	e 23 3	[− 3]	e 43·8	55·0
Paris		87·2	333	i 12 21	−23	—	—	e 46·8	54·8
Piacenza		87·3	326	e 12 49	+ 4	—	—	—	53·7
Florence		87·5	325	e 12 29	−16	22 44	[−33]	44·8	48·3
Ottawa		93·3	23	—	—	e 23 38	[−14]	e 46·8	—
Granada		99·4	330	i 17 44	PP	—	—	i 57·4	67·3
La Paz	Z.	149·4	58	e 19 43	[+ 2]	—	—	—	—

Additional readings :—
Tyosi SZ = +45s.
Kobe iP_gNZ = +49s., S_gZ = +1m.36s., S_gE = +1m.38s. =S*.
Toyooka iPNZ = +53s., iP_gEZ = +1m.2s., iSZ = +1m.35s., iSN = +1m.41s., S_gZ = +1m.49s.
Sumoto SN = +1m.41s., SZ = +1m.45s.
Mizusawa SN = +1m.56s.
Koti P_gEN = +1m.19s., P_gZ = +1m.29s., eZ = +2m.5s.
Zi-ka-wei SSZ = +7m.59s., iZ = +9m.11s., iE = +9m.19s.
Helsingfors eE = +15m.12s. =PPP − 1s., +24m.38s. =SS − 6s. and +26m.29s.
Feldberg i = +16m.7s., e = +19m.9s.
Stuttgart iZ = +12m.40s., ePPZ = +15m.49s.
Ottawa e = +26m.6s.
Granada i = +19m.53s.
Long waves were also recorded at Kucino, Scoresby Sund, and other European stations.

Sept. 16d. 19h. 13m. 21s. Epicentre 34°·3N. 135°·9E. (given by Osaka). N.3.

A = −·593, B = +·575, C = +·564 ; D = +·696, E = +·718 :
G = −·405, H = +·392, K = −·826.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka		0·4	321	0 6	0	(0 15)	+ 5	0·3	0·3
Kobe		0·7	303	0 8	− 2	0 18	0	—	0·3
Sumoto		0·8	273	0 11	0	0 24	+ 3	—	0·4
Toyooka		1·5	324	i 0 21	0	i 0 39	0	—	0·7
Koti		2·1	249	0 36	+ 6	0 56	+ 2	—	—
Baku		65·8	304	(e 9 39?)	−65	—	—	e 9·6	—
Ksara	N.	78·8	304	—	—	e 28 41	?	—	—
Wellington		83·6	151	(13 39?)	+73	—	—	13·6	—
Florence		87·0	324	9 9	?	—	—	—	41·6

Toyooka gives also iS = +32s., true S is given as S_g.
Long waves were also recorded at Ekaterinburg, Scoresby Sund and the European stations.

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Sept. 16d. Readings also at 0h. (near Manila), 4h. (Apia and Riverview), 6h. (near Manila), 8h. (Apia), 9h. (La Paz), 10h. (Feldberg, Strasbourg, Stuttgart, Paris, Uccle, De Bilt, Granada, Baku, Ekaterinburg, Andijan, Bombay, and Calcutta), 11h. (Tucson and near Sumoto), 12h. (Berkeley, St. Louis, Mount Wilson, Pasadena, Riverside, Haiwee, Tinemaha, Tucson, and Ottawa), 13h. (Nagoya (2) and Tyosi), 14h. (Tyosi, near Osaka, Tokyo, and Nagoya), 16h. (near Sumoto), 18h. (Tyosi, Melbourne, Christchurch, and Wellington), 22h. (Andijan).

Sept. 17d. Readings at 2h. (Ekaterinburg, Pulkovo, Calcutta, Hyderabad, Uccle, De Bilt, and Scoresby Sund), 5h. (La Paz), 6h. (Granada), 7h. (Nagasaki and near Wellington), 8h. (near Wellington), 9h. (Tyosi), 11h. (near Mizusawa), 14h. (La Paz), 15h. (Ekaterinburg and Irkutsk), 16h. (Tyosi), 18h. (near Mizusawa), 19h. (Ekaterinburg, Irkutsk, and Chiufeng), 20h. (Baku and Ekaterinburg), 21h. (Tyosi, near Manila, and near Santiago), 22h. (Baku and Ekaterinburg).

Sept. 18d. 6h. 13m. 36s. Epicentre 35°·1N. 139°·0E. (as on 1931 March 8d.). R.3.

$A = -\cdot617$, $B = +\cdot537$, $C = +\cdot575$; $D = +\cdot656$, $E = +\cdot755$; $G = -\cdot434$, $H = +\cdot377$, $K = -\cdot818$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·8	47	0 8	− 3	0 19	− 2	—	0·4
Tyosi	1·7	67	0 22	− 2	0 42	− 2	—	0·9
Nagoya	1·7	272	i 0 26	+ 2	0 47	+ 3	—	1·0
Osaka	2·8	261	0 42	+ 2	—	—	1·4	1·9
Kobe	3·2	263	0 55	+ 9	1 38	S*	—	1·8
Sumoto	3·4	257	1 3	P*	1 47	S*	—	2·0
Toyooka	3·4	280	e 0 49	0	i 1 42	S*	—	1·7
Mizusawa	4·4	22	1 1	− 2	1 52	− 1	—	—
Koti	4·7	253	1 18	+11	2 5	+ 5	—	2·9
Matuyama	5·3	258	e 1 16	+ 1	—	—	—	—

Toyooka gives also iP = +57s.

Sept. 18d. 13h. 26m. 0s. Epicentre 34°·7N. 134°·5E. (as on 1931 Aug. 7d.). X.

$A = -\cdot576$, $B = +\cdot586$, $C = +\cdot569$.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·5	0 5	− 2	0 8	− 5	—	0·2
Kobe	0·5	0 10	+ 3	0 17	+ 4	—	0·3
Osaka	0·8	0 11	0	(0 20)	− 1	0·3	0·4
Koti	1·4	0 43	S*	—	—	—	—
Nagoya	2·0	—	—	e 0 37	P*	—	—

No additional readings.

Sept. 18d. Readings also 1h. (Ekaterinburg), 2h. (Baku), 3h. (near Tananarive), 4h. (near Manila), 10h. (Sumoto), 15h. (Manila and Ekaterinburg), 17h. (Azores), 18h. (Lick, Hyderabad, and near Bombay), 19h. (Bombay, Calcutta, Hyderabad, Baku, Ekaterinburg, Kucino, Pulkovo, Helsingfors, Copenhagen, Hamburg, Stuttgart, De Bilt, Uccle, and near Tyosi (2)), 21h. (Bombay and near Toyooka), 22h. (Baku, Ekaterinburg, and Kucino), 23h. (Andijan).

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Sept. 19d. 7h. 40m. 47s. Epicentre 8°·0N. 136°·2E. (as on 1930 Oct. 2d.). R.2.

A = −·715, B = +·685, C = +·139 ; D = +·692, E = +·722 ; G = −·100, H = +·096, K = −·990.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		1·9	249	0 21	− 7	0 37	−12	—	—
Manila		16·4	295	3 44	− 2	6 13	−35	7·6	9·0
Isigakizima		20·0	326	4 9	−21	7 53	−13	—	—
Miyazaki		24·3	350	5 18	+ 5	9 40	+12	—	—
Hong Kong		25·6	306	4 23	−62	8 23	−88	9·9	13·4
Sumoto		26·4	358	e 5 36	+ 3	e 10 27	+22	e 13·3	15·8
Kobe	N.	26·7	358	e 5 48	+13	e 11 23	SS	e 13·0	14·1
Osaka		26·7	359	5 31	− 4	(10 23)	+13	10·4	—
Zi-ka-wei	Z.	26·9	331	5 38	+ 1	10 39	+25	—	14·8
Nagoya		27·1	1	e 5 52	+13	—	—	—	—
Phu-Lien		31·3	297	6 13?	− 4	—	—	—	—
Batavia		32·6	245	i 6 28	0	8 18	?	—	—
Chiufeng		36·8	334	e 6 40	−25	—	—	—	—
Medan		37·6	267	7 12	0	i 13 10	+10	30·2	—
Adelaide		43·1	177	e 9 13?	PP	i 14 23?	+ 1	—	26·8
Riverview		44·6	163	8 11	+ 1	14 31	−13	—	25·3
Sydney		44·6	163	—	—	e 17 43	SS	25·0	27·2
Melbourne		46·5	170	—	—	e 15 13	+ 1	—	27·7
Bombay		62·3	289	18 43	S	(18 43)	− 3	—	—
Andijan		65·1	312	e 10 38	− 1	e 19 18	− 3	—	—
Baku		82·1	311	e 12 22	+ 3	e 22 31	− 7	39·7	50·2
Kucino		88·0	326	e 16 24	PP	e 23 31	− 6	e 39·3	59·7
Victoria		90·9	40	23 59	S	(23 59)	− 5	42·4	45·1
Pulkovo		91·0	331	e 15 48	?	e 23 27	[−12]	46·2	56·3
De Bilt		106·9	332	—	—	e 29 13?	?	e 54·2	67·0
Uccle		108·1	331	—	—	e 28 13?	PS	e 57·2	—
Florence		108·3	322	e 26 44	?	—	—	—	57·2
Piacenza		108·5	322	—	—	e 27 23	?	—	70·9
Paris		110·2	330	—	—	e 28 13?	PS	61·2	68·2
San Juan		145·6	40	i 19 35	[0]	—	—	—	—
La Paz	E.	154·7	112	e 20 0	[+12]	—	—	—	—

Additional readings :—
Sumoto ePZ = +5m.41s., ePE = +5m.43s., iE = +5m.58s., iN = +6m.15s.
Zi-ka-wei iZ = +5m.51s.
Batavia iP = +6m.32s.
Riverview iN = +8m.47s., iPP = +9m.57s.
Melbourne e = +18m.30s. =SS +11s.
Kucino e = +19m.49s.
Pulkovo SS = +30m.19s.
Uccle e = +34m.13s.? =SS +20s.
Long waves were also recorded at Wellington, Berkeley, and other European stations.

Sept. 19d. 9h. 25m. 55s. Epicentre 70°·0N. 19°·0W. (as on 1927 April 29d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oxford	20·0	147	i 4 29	− 1	—	—	e 9·6	13·2
Helsingfors	20·3	97	e 5 32	+59	e 9 45	+93	e 11·4	—
De Bilt	21·1	135	4 42	+ 1	8 30	+ 2	e 10·1	12·7
Uccle	22·0	138	e 5 52	+61	—	—	e 10·1	—
Pulkovo	22·4	92	i 5 4	+ 9	i 9 1	+ 8	11·1	—
Strasbourg	25·0	135	e 5 5?	−15	(e 9 5?)	−36	e 9·1	—
Kucino	28·1	91	—	—	(e 10 41)	+ 7	e 10·7	—
Baku	45·4	93	—	—	e 18 41	SSS	e 22·1	—

Additional readings :—
Helsingfors eN = +5m.40s., eSN = +9m.48s., eSSE = +10m.47s.
Long waves were also recorded at Scoresby Sund, Ivigtut, Ottawa, and other European stations.

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Sept. 19d. Readings also at 0h. (Andijan), 2h. (Almata, near Andijan, and near Victoria), 7h. (Florence and near Prato (2)), 10h. (De Bilt, Florence, Scoresby Sund, and Strasbourg), 11h. (Andijan), 12h. (Nagoya), 14h. (near Andijan), 15h. (near Suva), 18h. (La Paz and San Juan), 19h. (Berkeley), 22h. (Scoresby Sund).

Sept. 20d. 15h. 14m. 4s. Epicentre 37°·5N. 141°·3E. (as on 1929 Feb. 22d.). X.

A = −·619, B = +·496, C = +·609.

		Δ	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		1·6	0 23	0	0 42	+ 1	—	—
Tyosi		1·8	e 0 31	+ 5	0 49	+ 3	—	—
Nagoya		4·2	e 1 1	+ 1	1 55	+ 7	—	—
Osaka		5·4	0 59	−18	(2 14)	− 4	2·2	3·0
Kobe	E.	5·7	—	—	e 2 12	−13	—	—
Sumoto		6·1	e 2 27	S	(e 2 27)	− 9	—	3·1

Additional readings :—
Mizusawa PN = +26s.
Tyosi S = +1m.0s. =S*.
Kobe eE = +3m.0s., eN = +3m.3s.

Sept. 20d. 22h. 42m. 52s. Epicentre 34°·7N. 131°·7E. N.3.

A = −·547, B = +·614, C = +·569 ; D = +·747, E = +·665 ;
G = −·379, H = +·425, K = −·822.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama		1·2	135	i 0 16	− 1	i 0 29	− 2	—	0·5
Hukuoka		1·5	224	0 21	0	0 38	− 1	—	0·6
Koti		1·9	127	i 0 23	− 5	i 0 40	− 9	—	0·7
Nagasaki		2·5	218	e 0 44	P*	—	—	—	—
Sumoto		2·7	98	0 40	+ 1	1 8	− 1	—	1·2
Toyooka	E.	2·7	72	e 0 38	− 1	i 1 22	S*	—	1·7
	N.	2·7	72	e 0 40	+ 1	i 1 25	S*	—	—
Osaka		3·2	91	0 45	− 1	1 22	0	1·4	1·9
Nagoya		4·3	82	e 1 28	P_g	2 17	S*	—	—

No additional readings.

Sept. 20d. 23h. 4m. 52s. Epicentre 40°·4N. 84°·2W. N.3.

(Given in the Bulletin of the U.S. Coast and Geodetic Survey).

A = +·077, B = −·758, C = +·648 ; D = −·995, E = −·101 ;
G = +·066, H = −·645, K = −·762.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ann Arbor	2·0	11	i 0 50	S	(i 0 50)	− 1	i 1·2	1·3
Chicago	2·9	298	0 59	P_g	i 1 38	S_g	i 1·8	—
Pittsburgh	3·3	87	1 7	P_g	1 49	S_g	—	—
Buffalo	4·8	56	—	—	i 2 34	S*	—	—
Toronto	4·8	46	—	—	e 2 22	S*	i 2·6	—
St. Louis	5·0	251	e 1 28	P*	i 2 15	+ 7	e 3·4	3·8
Charlottesville	5·0	115	e 0 56	−15	e 1 44	P_g	—	—
Georgetown	5·7	103	1 57	P_g	3 6	S_g	—	3·7
Ottawa	7·9	48	—	—	e 3 33	+12	e 4·2	—

Additional readings :—
Ann Arbor iN = +56s. =S* ; T_o =23h.5m.18s.
Pittsburgh e = +1m.43s.
St. Louis iE = +1m.32s. =P*, iEN = +1m.40s. =P_g, iPE = +1m.43s., iEN = +2m.29s. =S*, +2m.32s., and +2m.38s., iSEN = +2m.48s. =S_g, iN = +2m.52s.
Charlottesville i = +1m.56s.
Long waves were also recorded at Columbia, Tucson, and Seattle.

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Sept. 20d. Readings also at 0h. (near Berkeley), 2h. (La Paz), 3h. (Port au Prince and San Juan), 4h. (Trenta, Taranto, and near Naples), 5h. (Nagoya and near Triest), 14h. (Alicante and near Sumoto), 15h. (Almata, Andijan, Agra, Bombay, Calcutta, Hyderabad, and near Santiago), 19h. (San Juan), 20h. (Riverview, Wellington, and Suva), 23h. (Almata, Andijan, Bombay, Calcutta, Hyderabad, Baku, Tashkent, Melbourne, Wellington, and near Nagasaki).

Sept. 21d. 2h. 20m. 3s. Epicentre 36°·0N. 139°·3E. N.1.

Probable error ±0·21.

The determination of epicentre is that of Tokyo, which gives more exactly 36°·2′N. 139°18′E.

A = −·613, B = +·528, C = +·588; D = +·652, E = +·758; G = −·446, H = +·383, K = −·809.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kumagaya		0·2	24	0 0	− 3	0 4	− 1	—	—
Maebasi		0·4	333	0 1	− 5	—	—	—	—
Tokyo		0·5	134	i 0 8	+ 1	0 17	+ 4	—	0·3
Yokohama		0·6	155	0 12	+ 3	0 24	+ 9	—	—
Oiwake		0·7	297	0 8	− 2	—	—	—	—
Kohu		0·7	236	0 10	0	0 21	+ 3	—	—
Tukubasan		0·7	74	0 9	− 1	0 20	+ 2	—	—
Utunomiya		0·7	41	0 11	+ 1	0 21	+ 3	—	—
Kakioka		0·8	74	0 12	+ 1	0 24	+ 3	—	—
Yokosuka		0·8	158	0 10	− 1	0 22	+ 1	—	—
Misima		0·9	197	0 17	+ 4	0 32	+ 9	—	—
Numadu		1·0	201	0 16	+ 2	0 29	+ 3	—	—
Mito		1·1	69	0 13	− 3	0 27	− 1	—	—
Matumoto		1·1	280	0 18	+ 2	0 33	+ 5	—	—
Nagano		1·1	307	0 15	− 1	0 29	+ 1	—	—
Ito		1·1	189	0 19	+ 3	0 31	+ 3	—	—
Mera		1·2	159	0 20	+ 3	0 40	+ 9	—	—
Tyosi		1·4	104	0 19	− 1	0 36	0	—	0·8
Aidu		1·7	23	0 33	+ 9	0 48	+ 4	—	—
Hamamatu		1·8	224	0 31	+ 5	0 58	+12	—	—
Niigata		1·9	354	0 27	− 1	0 53	+ 4	—	—
Hukusima		2·0	28	0 29	0	0 57	+ 6	—	—
Nagoya		2·0	245	0 34	+ 5	1 3	S*	—	1·2
Gihu		2·1	253	0 35	+ 5	1 4	S*	—	—
Wazima		2·3	305	0 34	+ 1	—	—	—	—
Hukui		2·4	270	0 49	P_g	1 25	S_g	—	—
Yamagata		2·4	21	0 37	+ 3	1 12	S*	—	—
Kameyama		2·6	243	0 41	+ 4	1 13	+ 6	—	—
Tsu		2·6	238	0 39	+ 2	1 15	+ 8	—	—
Sendai		2·6	30	0 38	+ 1	1 13	+ 6	—	—
Hikone		2·6	257	0 38	+ 1	1 14	+ 7	—	—
Hatidyozima		2·9	172	0 45	+ 4	1 24	S*	—	—
Isinomaki		2·9	34	0 42	+ 1	1 25	S*	—	—
Kyoto		3·0	251	0 50	+ 7	1 29	S*	—	—
Yagi		3·2	242	0 55	+ 9	1 40	S*	—	—
Miyadu		3·3	263	0 52	+ 5	1 36	S*	—	—
Osaka		3·3	248	0 52	+ 5	(1 42)	S*	1·7	2·4
Mizusawa	E.	3·4	24	0 50	+ 1	1 37	S*	—	—
	N.	3·4	24	0 52	+ 3	1 41	S*	—	—
Toyooka	E.	3·6	265	i 0 56	+ 5	i 1 40	+ 8	—	1·9
	N.	3·6	265	i 0 58	+ 7	i 1 39	+ 7	—	2·0
	Z.	3·6	265	i 0 54	+ 3	i 1 38	+ 6	—	2·4
Kobe		3·6	250	0 56	+ 5	1 35	+ 3	—	3·7
Akita		3·8	9	0 55	+ 1	1 55	S*	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Siomisaki		3·8	230	0 59	+ 5	1 47	+10	—	2·0
Wakayama		3·8	244	0 58	+ 4	1 57	S*	—	—
Sumoto		3·9	246	0 59	+ 3	2 0	S*	—	2·1
Morioka		4·0	21	0 59	+ 2	1 50	+ 8	—	2·0
Miyako		4·2	30	0 57	− 3	2 1	S*	—	—
Aomori		5·0	13	1 15	+ 4	2 35	S*	—	—
Koti		5·3	245	e 1 18	+ 3	e 2 22	+ 7	—	2·8
Matuyama		5·8	250	i 1 25	+ 3	i 2 59	S*	—	3·7
Hamada		6·0	262	1 28	+ 3	2 34	+ 1	—	3·0
Simidu		6·1	241	1 28	+ 1	2 55	S*	—	—
Muroran		6·4	11	1 35	+ 4	3 6	S*	—	—
Urakawa		6·7	22	1 41	+ 6	3 27	S*	—	—
Hukuoka		7·6	254	1 52	+ 4	3 29	+15	3·8	4·7
Miyazaki		7·6	240	1 52	+ 4	3 22	+ 8	—	3·6
Kumamoto		7·7	249	1 52	+ 3	3 58	S*	—	—
Kusiro		8·0	28	1 57	+ 4	3 21	− 3	—	—
Nagasaki		8·4	250	e 2 1	+ 2	3 49	+15	—	4·7
Taikyu		8·6	272	2 8	+ 6	—	—	—	—
Nemuro		8·8	31	1 57	− 8	3 30	−14	—	—
Tomie		9·3	252	2 16	+ 5	4 32	S*	—	—
Titizima		9·3	164	2 8	− 3	3 28	−28	—	—
Zinsen		10·2	282	2 30	+ 6	—	—	—	—
Ootomari		11·0	12	2 41	+ 6	4 55	+17	—	—
Heizo		11·1	290	2 43	+ 7	4 57	+16	—	—
Nake		11·2	230	2 43	+ 6	4 53	+10	—	—
Naha		13·9	229	3 15	+ 1	6 2	+13	—	—
Dairen		14·3	287	3 25	+ 6	—	—	—	—
Zi-ka-wei		15·6	257	i 3 37	+ 1	6 51	+22	8·0	9·9
Isigakizima		17·5	232	4 6	+ 6	7 27	+14	—	—
Tientsin		17·7	287	i 7 6	S	(i 7 6)	−11	—	—
Chiufeng		18·6	290	4 18	+ 4	i 7 53	SS	i 11·6	—
Taihoku		18·7	239	4 28	+13	8 13	SS	10·1	—
Hong Kong		25·7	245	5 29	+ 3	10 7	+14	13·1	16·9
Manila		27·0	222	6 1	+23	10 47	+32	14·7	—
Irkutsk		29·5	314	5 58	− 3	11 8	+12	16·0	—
Phu-Lien		32·3	250	e 6 27	+ 2	e 11 42	+ 2	16·0	19·3
Amboina		41·0	197	i 7 42	+ 2	—	—	19·3	—
Calcutta		45·8	269	8 36	+17	15 8	+ 6	22·9	27·2
Almata		47·4	300	8 39	+ 7	—	—	e 27·4	—
Medan		49·4	238	9 33	+46	16 21	+29	22·9	24·9
Dehra Dun		50·7	282	16 17	S	(16 17)	+ 6	27·0	28·0
Andijan		51·3	298	e 9 6	+ 5	e 16 28	+ 9	e 26·4	—
Agra	N.	52·0	279	e 9 56	+50	—	—	—	27·8
Batavia		52·0	223	e 9 25	+19	i 16 33	+ 5	36·6	—
Tashkent		53·4	299	e 9 12	− 5	e 16 43	− 4	25·0	—
Honolulu T.H.		56·2	87	—	—	i 17 34	+ 9	25·5	—
Hyderabad		56·5	270	9 34	− 5	17 24	− 6	27·7	33·8
Sitka		58·1	40	—	—	e 17 49	− 2	e 31·6	—
Bombay		60·2	274	10 13	+ 7	18 21	+ 2	31·0	35·5
Kodaikanal		61·3	264	e 18 39	S	(e 18 39)	+ 6	e 35·6	38·4
Colombo		61·4	259	8 56	−78	18 41	+ 7	29·8	40·4
Baku		67·2	305	e 10 54	+ 1	i 19 48	+ 1	35·4	—
Pulkovo		67·9	330	10 56	− 2	19 54	− 2	35·0	40·4
Victoria	E.	68·3	45	11 2	+ 2	20 2	+ 1	35·6	44·0
	N.	68·3	45	11 17	+17	20 2	+ 1	32·9	46·7
Helsingfors		69·8	331	e 10 52	−17	i 20 15	− 4	33·0	—
Riverview		70·8	169	—	—	i 20 23	− 8	e 35·1	—
Sydney		70·8	169	e 20 9	S	(e 20 9)	−22	34·0	36·1
Adelaide		71·0	180	—	—	i 20 26	− 7	31·5	40·9
Perth		71·4	200	e 20 37	S	(e 20 37)	− 1	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		72·7	354	11 21	− 6	i 20 53	0	34·0	—
Upsala		72·8	334	e 11 24	− 4	i 20 47	− 7	e 37·0	45·5
Theodosia		73·8	316	e 11 33	0	e 21 3	− 3	39·0	—
Melbourne		74·0	175	—	—	e 21 10	+ 2	33·4	40·0
Berkeley		74·5	54	e 11 37	0	21 14	0	e 46·0	53·2
Simferopol		74·6	316	e 11 33	− 5	e 21 11	− 4	41·1	—
Yalta		74·8	316	e 11 37	− 2	—	—	41·7	—
Sebastopol		75·1	316	11 17	−24	—	—	42·0	—
Lick		75·2	54	e 11 45	+ 4	—	—	—	—
Königsberg		75·2	329	e 11 39	− 2	e 21 14	− 8	e 39·7	44·4
Bergen		76·5	339	12 17	+28	22 1	PS	40·0	—
Lemberg	N.	76·9	323	—	—	e 21 33	− 9	—	43·0
Lund		77·5	332	11 51	− 4	i 21 42	− 6	40·0	—
Tinemaha		77·6	52	e 11 55	0	e 21 54	+ 5	—	—
Copenhagen		77·8	332	11 54	− 3	21 45	− 7	40·0	—
Santa Barbara	N.	78·2	56	i 11 57	− 1	—	—	—	—
Haiwee		78·3	53	e 11 59	0	—	—	—	—
Pasadena		78·7	55	e 12 6	+ 5	e 22 4	+ 2	—	—
Mount Wilson		79·4	55	e 12 6	+ 1	e 22 4	− 5	—	—
Potsdam		80·0	330	e 11 57?	−11	i 22 7	− 9	e 40·0	49·6
Riverside		80·0	55	e 12 8	0	e 22 10	− 6	—	—
Ksara	E.	80·1	305	e 9 57?	?	i 19 57?	?	—	—
Hamburg		80·3	332	e 12 8	− 1	e 22 28	+ 9	e 41·0	49·0
Budapest		80·9	324	e 12 9	− 4	22 23	− 2	41·0	45·0
Prague		81·1	327	e 12 15	+ 1	22 35	+ 8	e 42·0	48·0
Vienna		81·6	327	e 12 19	+ 3	21 25	−68	e 40·0	53·0
Jena		81·7	330	12 15	− 2	22 21	−13	e 39·0	49·2
Göttingen		81·9	331	—	—	e 22 27	− 9	e 41·0	54·8
Cheb		82·0	329	—	—	e 37 27	?	e 40·2	48·0
Belgrade		82·1	321	12 19	0	22 42	+ 4	38·1	51·4
Edinburgh		82·7	340	—	—	i 22 37	− 7	40·0	58·1
Graz		82·8	326	i 22 38	S	(i 22 38)	− 7	e 43·0	46·8
De Bilt		83·2	334	e 12 26	+ 2	22 43	− 6	e 40·0	49·5
Zagreb		83·5	324	e 12 26	0	e 22 46	− 6	—	43·0
Feldberg		83·5	331	i 12 36	+10	i 22 54	+ 2	e 43·0	50·2
Stuttgart		84·4	330	e 12 28	− 2	e 22 52	[− 3]	e 44·0	51·2
Karlsruhe		84·5	330	12 26	− 5	22 57?	[+ 2]	e 47·0	52·1
Innsbruck		84·6	328	e 12 57?	+26	e 23 39	PS	e 41·0	51·5
Uccle		84·6	334	12 32	+ 1	22 54	[− 2]	e 40·0	50·1
Triest		84·7	326	12 32	0	22 52	[− 5]	e 35·0	53·0
Bidston		84·8	339	12 47	+15	22 57	[− 1]	e 40·0	57·4
Strasbourg		85·1	330	e 12 33	− 1	e 23 2	− 7	e 37·0	51·1
Tucson		85·3	53	12 37	+ 2	23 1	[0]	39·9	—
Treviso		85·4	326	12 34	− 1	e 23 7	− 5	40·0	55·6
Helwan		85·6	305	12 47	+11	22 5	−69	—	45·0
Kew		85·6	337	e 12 35	− 1	e 23 3	[0]	e 43·0	55·7
Oxford		85·7	338	—	—	i 23 5	[+ 1]	e 40·0	51·4
Chur		85·7	329	e 12 35	− 2	e 22 57	[− 7]	—	—
Zurich		85·7	329	e 12 36	− 1	e 22 59	[− 5]	—	—
Padova		85·8	326	12 38	+ 1	i 23 18	+ 2	—	78·0
Neuchatel		86·6	330	e 12 40	− 1	e 23 7	[− 4]	—	—
Paris		86·9	334	i 12 43	0	e 23 12	[− 1]	43·0	52·0
Piacenza		87·0	327	12 47	+ 4	23 19	[+ 6]	42·0	52·5
Florence		87·3	325	12 53	+ 8	i 23 17	[+ 2]	43·2	49·0
Naples	E.	88·1	322	e 12 8	−40	e 22 8	?	59·0	—
Catania		90·1	320	e 23 53	S	(e 23 53)	− 4	e 49·9	62·2
Ann Arbor		92·4	30	—	—	e 24 15	− 3	e 52·0	—
St. Louis		92·5	37	e 13 11	+ 2	i 23 41	[− 6]	—	46·4
Ottawa		92·7	24	—	—	e 23 42	[− 6]	e 40·0	—
Toronto		93·0	27	—	—	e 23 20	[−30]	40·0	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Buffalo		93·8	28	—	—	e 24 35	+ 4	e 46·0	57·8
Tortosa	N.	94·3	330	e 13 22	+ 5	23 55	[− 2]	e 46·0	56·6
Algiers		96·6	326	—	—	e 26 48	PS	40·0	53·0
Harvard		96·8	22	—	—	e 24 44	−14	e 42·0	—
Toledo		96·9	333	e 13 36	+ 7	—	—	e 48·8	59·2
Alicante		96·9	330	e 14 1	+32	e 26 23	PS	e 50·8	58·5
Fordham		97·3	25	—	—	e 24 56	− 7	e 47·7	—
Georgetown		97·9	28	—	—	24 15	[− 1]	—	51·9
Charlottesville		98·1	29	—	—	e 24 27	[+11]	e 49·4	—
Almeria		98·9	330	e 11 8	?	e 23 30	?	e 53·1	—
Granada		99·2	331	e 13 56	+16	27 50	PS	52·0	59·0
Malaga		99·8	332	e 12 59	−44	e 24 3	[−22]	e 33·0	—
Tananarive		102·3	256	—	—	24 36	[− 1]	48·0	56·0
San Juan		120·5	28	—	—	i 27 12	{− 8}	65·0	—
La Paz		148·8	59	19 45	[+ 5]	30 17	{+ 1}	72·4	88·6

Additional readings :—
Tyosi PP = +21s., PPP = +25s.
Toyooka iS_gNZ = +1m.48s., iS_gE = +1m.52s.
Kobe iEN = +1m.7s., iZ = +1m.10s., SNZ = +1m.41s., S_gN = +1m.48s., S_gZ = +1m.50s.
Koti iP_g = +1m.38s., S_g = +2m.33s., iS_gN = +2m.48s.
Zi-ka-wei PPZ = +3m.48s., PPPZ = +3m.51s., PPPPZ = +3m.57s., iZ = +4m.26s.
Chiufeng PPE = +4m.52s., iN = +8m.38s., and +10m.2s.
Hong Kong PP = +6m.12s., SS = +11m.17s.
Batavia iS = +15m.45s.
Dehra Dun S = +21m.17s.
Honolulu T.H. SSS = +23m.21s.
Sitka eSSS = +24m.21s.
Helsingfors ePPN = +13m.46s., ePPE = +13m.55s., ePPPN = +15m.49s., ePPPE = +15m.55s., ePSN = +21m.3s., eSSN = +24m.35s., eSSSE = +27m.34s., eSSSN = +27m.38s. ; T_0 = 0h.19m.39s.
Upsala ePS = +21m.24s., eSS = +25m.53s.
Melbourne e = +24m.11s.
Berkeley eSN = +21m.18s., eSE = +21m.28s., eE = +31m.32s., eN = +31m.57s.
Königsberg e?N = +38m.33s.
Lemberg eE = +21m.39s.
Potsdam eEN = +19m.57s.
Vienna PP = +14m.29s., PPP = +16m.27s., PS = +21m.37s., S_cS = +22m.26s.
Jena eE = +12m.18s., eN = +20m.33s.
Belgrade P = +12m.22s.
Graz e? = +30m.55s.
Zagreb e = +12m.36s. and +19m.10s.
Feldberg e = +12m.45s., i = +15m.47s. = PP +14s., e = +16m.48s. and +29m.24s., i = +31m.14s. = SSS −14s.
Stuttgart eP_cPZ = +12m.47s., eZ = +14m.9s., ePP = +15m.37s., ePPPZ = +17m.51s., eSKS = +23m.4s., ePS = +23m.57s., e = +25m.9s.
Uccle SS = +28m.57s.?
Triest SKS = +22m.58s., SS = +28m.46s.
Ann Arbor eN = +24m.45s., e = +44m.39s.
St. Louis eEN = +14m.36s., iN = +16m.49s. = PP +4s., iSKKSN = +24m.9s. = S −10s.
Ottawa eN = +25m.24s. = PS +1s. and +34m.24s.
Toronto iN = +23m.44s.
Harvard eSKS = +24m.5s., ePS = +26m.9s.
Fordham eSKS = +24m.7s., ePS = +26m.14s.
Georgetown SKKSZ = +25m.3s., SSZ = +31m.57s.
Charlottesville eSS = +31m.27s.
Granada PP = +18m.5s., PPP = +21m.38s., SS = +32m.32s., SSS = +37m.8s., G = +44m.33s.
Tananarive SKKS = +25m.35s.
San Juan ePP = +20m.16s., e = +21m.23s., ePS = +30m.53s.
La Paz iPPN = +23m.35s., SKSE = +26m.51s.
Long waves were also recorded at Entebbe, Ivigtut, Bozeman, Ukiah, Durham, and Barcelona.

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Sept. 21d. 10h. 27m. 22s. Epicentre **19°·5N. 113°·2E.** N.1.

Probable error ±0·21

A = −·371, B = +·866, C = +·334; D = +·919, E = +·394; G = −·132, H = +·307, K = −·943.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hong Kong		3·0	18	0 37	− 6	0 57	P_g	—	1·6
Phu-Lien		6·3	283	i 1 29	− 1	i 2 51	+10	3·1	—
Hokoto		7·1	54	1 42	+ 1	(3 6)	+ 5	(3·8)	—
Manila		8·9	122	2 9	+ 3	4 13	+27	5·0	7·4
Taihoku		9·5	53	i 2 20	+ 6	4 44	S*	5·5	7·2
Isigakizima		11·3	63	2 44	+ 5	5 13	+28	—	—
Zi-ka-wei		13·8	31	i 3 6	− 7	5 58	+12	—	9·9
Tientsin		19·9	9	7 34	S	(7 34)	−30	—	—
Nagasaki		19·9	45	4 28	− 1	8 18	+14	—	13·6
Dairen		20·7	19	4 41	+ 4	8 39	SS	—	—
Chiufeng	E.	20·7	7	e 4 39	+ 2	i 8 33	+13	i 10·8	12·0
	N.	20·7	7	e 4 36	− 1	8 32	+12	i 11·0	12·8
	Z.	20·7	7	e 4 38	+ 1	8 36	+16	—	12·1
Hukuoka		20·8	44	4 36	− 2	8 39	+17	e 11·5	14·3
Medan		21·3	223	i 5 8	PP	i 9 50	L	(9·8)	—
Zinsen		21·5	30	4 42	− 3	8 40	+ 4	—	—
Matuyama		22·5	46	e 4 56	0	—	—	i 13·7	15·2
Koti		22·9	48	e 4 56	− 4	e 9 22	+19	14·5	—
Calcutta		23·3	282	5 3	− 1	9 18	+ 8	12·1	15·2
Sumoto		24·3	48	5 11	− 2	9 43	+15	16·2	16·7
Kobe		24·6	47	5 16	0	9 48	+14	e 13·4	17·6
Toyooka	E.	24·9	45	i 5 19	0	i 10 3	+24	15·4	16·4
	N.	24·9	45	e 5 18	− 1	i 10 9	+30	15·4	16·6
Osaka		24·9	48	5 19	0	9 49	+10	14·5	15·5
Nagoya		26·2	48	e 5 31	0	—	—	17·7	—
Batavia		26·5	194	5 48	+14	—	—	—	—
Wazima		27·3	44	5 44	+ 3	10 21	+ 1	—	—
Amboina		27·5	146	5 48	+ 5	i 10 18	− 6	—	—
Tyosi		29·2	51	e 6 57	PP	e 11 36	+45	—	—
Mizusawa	E.	31·0	45	6 17	+ 3	11 27	+ 7	17·1	—
	N.	31·0	45	6 26	+12	11 56	+36	16·6	—
Hyderabad		33·0	275	7 0	+28	11 58	+ 7	14·6	21·1
Agra	N.	33·0	291	—	—	11 16	−35	16·6	19·6
Dehra Dun		33·5	298	6 38	+ 2	12 28	+30	18·8	20·6
Irkutsk		33·5	350	e 6 33	− 3	e 11 22	−36	17·6	21·0
Colombo		34·7	255	5 57	−49	12 17	0	21·4	24·4
Kodaikanal		35·7	263	e 12 50	S	(e 12 50)	+18	e 19·6	22·7
Bombay		38·0	277	7 17	+ 2	13 13	+ 7	18·7	25·5
Almata		38·5	317	e 7 43	+24	—	—	24·0	—
Andijan		40·6	312	7 21	−16	—	—	22·6	—
Tashkent		43·1	311	e 7 54	− 4	i 14 20	− 2	—	28·6
Perth		51·5	177	8 43	−20	16 23	+ 1	25·5	29·0
Baku		57·4	308	e 9 37	− 9	e 17 56	+14	29·6	38·2
Adelaide		59·6	156	—	—	e 18 8	− 3	25·0?	31·6
Riverview		64·4	145	—	—	e 18 2	−70	—	38·2
Sydney		64·4	145	e 18 26	S	(e 18 26)	−46	36·3	38·2
Melbourne		64·7	152	—	—	i 19 18	+ 2	31·6	—
Theodosia		67·8	313	e 10 57	0	e 19 57	+ 3	37·6	—
Yalta		68·7	313	e 11 3	0	e 20 12	+ 7	41·2	—
Ksara	E.	69·0	300	11 6	+ 1	20 14	+ 5	35·9	—
Pulkovo		69·5	329	i 11 7	− 1	20 21	+ 6	34·6	41·3
Helsingfors		72·2	329	e 11 23	− 1	e 20 51	+ 4	e 34·6	—
Helwan		73·6	297	11 30	− 2	21 38	PS	—	52·1
Tananarive	E.	75·0	242	—	—	e 21 22	+ 2	e 36·9	41·9
Königsberg		75·6	324	i 11 45	+ 1	e 21 40?	+13	e 40·6	48·1
Upsala		75·9	330	e 11 43	− 2	i 21 28	− 2	e 38·6	44·0

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.
Budapest		78·4	317	11 50	− 9	—	—	e 37·6	50·6
Copenhagen		79·7	326	12 8	+ 2	22 7	− 5	38·6	—
Vienna		79·9	320	e 12 11	+ 4	22 1	−14	i 43·3	53·6
Potsdam		80·6	323	e 12 8	− 3	e 22 8	−14	e 42·6	45·9
Zagreb		80·9	316	e 12 7	− 6	e 22 25	0	—	42·6
Bergen		81·5	332	e 23 58	PS	—	—	43·6	—
Jena		81·9	321	e 12 20	+ 2	—	—	e 38·6	48·2
Hamburg		81·9	325	e 12 38?	+20	e 22 38	+ 2	e 41·6	50·6
Triest		82·5	317	e 11 3	−78	22 33	− 9	37·6	45·1
Göttingen		82·7	323	—	—	e 22 38?	− 6	e 41·6	46·0
Innsbruck		83·4	319	e 12 56	+31	—	—	45·3	—
Treviso		83·5	317	12 28	+ 2	22 38	−14	45·6	57·6
Naples	E.	83·8	312	e 12 49	+22	e 23 49	+54	30·6	—
Stuttgart		84·2	320	e 12 29	0	e 22 50	[− 3]	e 42·6	47·2
Catania		84·4	309	e 11 45	−45	22 57	[+ 2]	—	—
Karlsruhe		84·6	321	e 12 38?	+ 7	—	—	e 47·6	—
Sitka		84·6	30	i 13 46	+75	23 6	+ 2	i 45·9	—
Chur		84·7	319	e 12 31	− 1	e 23 0	− 5	—	—
Prato		84·8	315	e 12 18	−14	23 5	− 1	46·6	—
Scoresby Sund		84·8	347	12 37	+ 5	23 2	− 4	38·6	—
Florence		84·8	315	e 12 38	+ 6	23 8	+ 2	37·6	42·6
Strasbourg		85·2	321	12 36	+ 2	e 23 3	[+ 2]	e 30·6	53·1
De Bilt		85·2	324	e 12 38	+ 4	e 23 4	[+ 3]	e 40·6	48·9
Zurich		85·2	319	e 12 35	+ 1	e 22 45	[−16]	—	—
Piacenza		85·4	316	12 38	+ 3	23 11	− 1	43·6	57·1
Neuchatel		86·2	320	e 12 39	0	e 23 7	[− 1]	—	—
Uccle		86·2	323	12 39	0	23 9	[+ 1]	41·6	45·0
Edinburgh		87·6	330	e 16 38?	PP	—	—	e 41·6	49·8
Paris		88·2	322	i 12 51	+ 2	e 23 42	+ 3	44·6	46·6
Kew		88·4	326	e 12 55	+ 5	e 23 25	[+ 2]	43·6	51·8
Bidston		88·8	328	e 12 38?	−14	e 22 38?	[−47]	e 43·6	52·0
Oxford		88·8	327	—	—	23 23	[− 2]	e 41·1	54·0
Alicante		95·2	315	e 13 54	+33	e 26 2	PS	e 47·4	61·9
Victoria	E.	95·4	34	24 15	S	(24 15)	{− 3}	46·0	55·7
Toledo		96·7	317	e 14 23	+55	e 26 20	PS	e 48·1	63·5
Almeria		97·2	314	e 13 20	−11	—	—	e 30·8	—
Granada		97·9	315	i 13 37	+ 3	26 35	PS	52·6	63·8
Malaga		98·7	315	e 13 54	+16	e 25 40	+25	e 33·6	—
Berkeley		102·5	41	—	—	e 33 13	?	e 48·7	—
Ottawa		114·6	6	—	—	e 27 20	{+41}	e 52·6	—
Toronto	E.	115·8	10	—	—	e 28 38?	PS	50·6	—
Buffalo		116·6	10	—	—	e 27 2	{+ 9}	e 35·1	63·0
St. Louis		117·9	20	e 19 59	PP	—	—	—	59·1
Fordham		119·3	5	e 20 16	PP	e 25 52	[+ 4]	e 55·6	—
San Juan		142·1	359	—	—	e 25 1	?	73·6	—
La Paz		176·7	23	i 20 12	[+ 5]	27 14	?	85·6	99·5

Additional readings and note :—
Hong Kong ? = +1m.28s. =S*.
Hokoto S = +2m.25s. =P_g ; true S and L are given as P and S of another quake.
Zi-ka-wei iZ = +3m.26s., iE = +3m.52s., iZ = +3m.58s. and +4m.26s.
Kotti Z = +5m.4s.
Kobe iP = +5m.23s., SN = +9m.54s.
Toyooka iPN = +5m.28s., eSZ = +11m.48s.
Batavia i = +6m.26s.
Irkutsk e = +7m.50s., i = +14m.18s.
Perth P_cP = +9m.28s.? +10m.8s., PPP = +11m.58s., PPPP = +12m.28s., PS = +16m.38s., SS = +20m.23s., SSS = +22m.38s., SSSS = +23m.28s.
Melbourne i = +20m.3s.
Helsingfors ePPE = +14m.17s., ePPPE = +15m.48s., eSSN = +24m.33s., eSSE = +25m.9s. ; T_e =10h.27m.18s.
Tananarive eE = +27m.32s.
Königsberg SSS? = +38m.8s.
Upsala iPSE = +22m.5s.
Vienna PP = +15m.1s., S_cS = +22m.20s.
Zagreb e = +12m.13s.

Continued on next page.

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Bergen S = +30m.58s. =SSS +3s.
Triest SS = +29m.0s.
Stuttgart eP_cPZ = +13m.4s., e = +14m.53s., ePP = +15m.48s., ePPP = +17m.41s., ePS = +23m.47s., eSS = +27m.50s. and +28m.38s., eEN = +34m.38s.
Sitka eSS = +28m.44s.
Scoresby Sund +24m.8s. =PS +19s.
Strasbourg ePS = +24m.3s.
Neuchatel ePP = +15m.55s.
Uccle SS = +29m.13s.
Paris e = +16m.20s. =PP +9s.
Kew ePPZ = +16m.22s., ePSZ = +24m.39s.
Victoria PN = +24m.43s., SE = +31m.43s.
Almeria PP = +17m.27s.
Granada PP = +17m.38s., i = +19m.32s. =PPP +7s., SPP = +27m.15s.
Ottawa e = +25m.46s. =SKS +14s., eN = +40m.58s.
Fordham e = +30m.0s. =PS +4s.
La Paz PPPZ = +30m.4s., iN = +32m.34s., L_gE = +80·6m.
Long waves were also recorded at Algiers, Entebbe, Kucino, Ivigtut, Honolulu T.H., and American and European stations.

Sept. 21d. 13h. 34m. 23s. Epicentre 37°·0S. 178°·0E. N.2.

A = −·798, B = +·027, C = −·602; D = +·035, E = +·999; G = +·601, H = −·021, K = −·799.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		2·2	240	0 37	+ 6	1 17	+20	—	—
Hastings		2·8	198	0 37	− 3	—	—	—	1·2
Wellington		5·0	209	1 15	+ 4	2 19	+11	—	—
Takaka		5·6	225	1 35	P*	2 41	S*	—	—
Christchurch		7·8	210	e 1 49	− 2	3 47	S*	—	—
Suva		18·9	1	4 37	+20	8 27	+43	—	9·3
Riverview		22·1	270	4 53	+ 1	i 8 53	+ 5	—	—
Sydney		22·1	270	i 5 1	+ 9	i 9 1	+13	12·2	13·2
Melbourne		26·2	258	e 5 30	− 1	i 10 48	SS	15·1	—
Adelaide		31·8	265	i 6 21	0	i 11 5	−27	15·4	19·2
Perth		50·6	259	i 9 17	+21	i 15 57	−12	—	—
Batavia		71·3	276	i 11 24	+ 5	i 21 41	+64	—	—
Manila		74·5	303	e 11 37	0	—	—	—	—
Tyosi		80·5	330	—	—	23 9	PS	—	—
Nagoya		81·6	321	e 12 17	+ 1	e 23 13	PS	—	—
Osaka		81·9	326	12 19	+ 1	(22 37)	+ 1	22·6	23·9
Sumoto		81·9	325	e 12 17	− 1	—	—	—	—
Kobe		82·0	325	e 12 18	0	—	—	—	—
Koti	z.	82·5	324	i 12 17	− 4	—	—	—	—
Hong Kong		84·3	304	12 31	+ 1	23 48	PS	—	—
Zi-ka-wei	z.	85·2	315	i 12 37	+ 3	—	—	—	—
Phu-Lien		88·6	298	12 37?	−14	—	—	—	—
La Plata		91·3	137	—	—	e 23 23	[−17]	30·6	—
Santa Barbara		91·9	48	e 13 11	+ 5	—	—	—	—
Pasadena	E.	92·7	48	e 13 14	+ 4	e 24 12	− 9	—	—
Mount Wilson		92·7	49	e 13 14	+ 4	—	—	—	—
Lick		92·9	44	e 13 19	+ 8	—	—	—	—
Riverside		93·0	48	e 13 16	+ 5	24 20	− 4	—	—
Haiwee		94·1	47	e 13 22	+ 6	24 30	− 4	—	—
Tinemaha		94·6	46	e 13 23	+ 4	23 46	[−13]	—	—
La Paz		97·9	119	e 13 48	+14	i 23 57	[−19]	51·3	—
Calcutta		103·1	289	16 29	?	24 14	[−27]	36·4	—
Irkutsk		109·8	321	e 18 37?	PP	(25 37?)	[+25]	e 25·6	—
Bombay		113·2	277	e 17 37	[−51]	—	—	—	—
San Juan		121·3	88	—	—	i 27 10	{−15}	—	—
Almata		121·6	303	e 19 24	[+35]	—	—	—	—
Andijan		123·8	299	e 18 53	[− 1]	—	—	—	—
Fordham		125·6	61	e 22 17	?	i 27 35	{−18}	e 53·6	—
Ottawa		125·8	55	e 22 17	?	e 34 9	?	e 47·6	—
Tashkent		126·2	298	e 22 13	?	—	—	—	60·2

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.
Baku		140·0	291	e 22 30	PP	e 31 39	SKSP	66·6	—
Scoresby Sund		144·9	11	e 19 34	[0]	—	—	—	—
Ksara	N.	149·2	275	e 19 38	[− 2]	—	—	—	—
Pulkovo		149·4	329	i 19 40	[− 1]	—	—	43·6	—
Theodosia		151·0	298	e 19 49	[+ 6]	—	—	—	—
Simferopol		151·9	298	e 19 50	[+ 6]	—	—	—	—
Yalta		151·9	298	e 19 43	[− 1]	—	—	—	—
Sebastopol		152·4	297	e 19 19	[−26]	—	—	—	—
Copenhagen		158·9	338	19 37?	[−15]	—	—	—	—
Edinburgh		161·1	2	—	—	e 44 37?	SS	—	—
Göttingen		163·2	333	—	—	e 49 37?	SS	—	—
Zagreb		164·0	309	e 20 1	[+ 3]	—	—	—	—
De Bilt		164·1	344	e 20 0	[+ 2]	e 29 26	?	—	—
Triest		165·4	311	e 19 18	[−41]	e 26 36	?	e 34·6	—
Kew	Z.	165·5	356	e 20 2	[+ 2]	—	—	—	—
Uccle		165·5	344	e 19 57	[− 3]	—	—	—	—
Stuttgart		165·8	329	i 19 59	[− 1]	—	—	e 45·6	—
Treviso		166·4	314	21 2	[+62]	—	—	—	—
Strasbourg		166·5	332	20 1	[0]	—	—	—	—
Naples	E.	166·9	292	e 20 47	[+46]	e 28 48	?	52·6	—
Chur		167·0	322	e 20 43	[+42]	—	—	—	—
Zurich		167·1	326	e 21 6	[+65]	—	—	—	—
Paris		167·8	346	e 20 21	[+19]	—	—	47·6	48·6
Florence		167·9	308	20 6	[+ 4]	25 37	PP	—	31·6
Piacenza		168·1	316	e 20 2	[0]	—	—	—	47·1
San Fernando		176·5	98	—	—	(37 7)	?	—	37·1
Toledo		176·7	28	e 20 7	[0]	i 32 38	{− 9}	—	—
Malaga		178·0	98	20 9	[+ 2]	e 37 19	SKSP	—	—
Alicante		178·3	318	e 19 47	[−20]	e 30 37	?	—	—
Granada		178·7	82	i 20 9	[+ 2]	32 26	{−31}	i 84·5	92·0
Almeria		179·6	112	e 20 43	[+36]	33 7	{+ 6}	e 86·6	—

Additional readings :—
Arapuni P_g = +1m.1s., i = +1m.7s., S* = +1m.25s., S_g = +1m.34s.
Hastings P_g = +1m.2s.
Wellington i = +1m.29s. = P* and +1m.41s. = P_g, P_g = +2m.1s., i = +2m.25s. = S*, and +2m.47s., S_g = +2m.57s.
Takaka P_g = +2m.11s., S_g = +3m.24s.
Christchurch P* = +2m.14s., P_g = +2m.54s., S_g = +4m.41s.
Suva PP? = +5m.32s.
Riverview iP = +4m.57s., iE = +5m.33s., +5m.49s., and +9m.48s., iSS = +9m.51s.
Melbourne iP = +5m.34s., i = +6m.22s. and +11m.37s.
Adelaide i = +12m.22s. and +13m.22s.
Batavia iP = +11m.27s.
Osaka S = +17m.35s.
Koti eZ = +13m.2s.
Hong Kong PP? = +13m.17s., ? = +15m.49s., +16m.37s., and +22m.33s.
Zi-ka-wei iZ = +13m.37s. and +16m.7s.
Pasadena eEN = +13m.17s., ePPZ = +16m.58s., SN = +24m.14s.
Riverside eEN = +23m.36s. = SKS − 14s., eN = +25m.35s. = PS + 8s.
Haiwee eN = +13m.28s.
Tinemaha eN = +13m.27s.
La Paz iPZ = +14m.23s., iE = +27m.11s., SSE = +29m.19s., SSSE = +32m.1s.
San Juan ePP = +21m.14s., SS = +34m.37s. ?
Fordham eEN = +37m.57s. = SS + 13s.
Ottawa iN = +38m.1s.
Baku e = +41m.39s. and +47m.7s.
Scoresby Sund i = +19m.37s., +20m.31s.
Ksara eE = +19m.47s.
Pulkovo iPKP = +20m.30s., iPPP = +23m.16s., SS = +36m.1s.
Triest SS = +30m.10s.
Kew ePPZ = +24m.46s.
Uccle i = +21m.2s. = PKP_2 − 7s., e = +24m.47s. = PP + 3s.
Stuttgart eEN = iZ = +21m.1s. = PKP_2 − 9s., eZ = +21m.40s. and +22m.3s., ePPEN = iPPZ = +24m.51s., e = +25m.42s. and +28m.37s. = PPP + 5s.
Strasbourg i = +21m.5s. = PKP_2 − 9s., PP = +25m.58s., PPP = +28m.48s., PPPP = +32m.28s.
Paris e = +24m.59s. = PP + 3s. and +29m.17s.
Granada iPKP$_2$ = +22m.3s., i = +22m.44s., PP = +25m.56s., PPP = +30m.22s., G = +43m.12s.
Almeria iPKP = +21m.55s., PP = +26m.57s.
Long waves were recorded at San Fernando and Tortosa.

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Sept. 21d. 21h. 36m. 52s. Epicentre 8°·8S. 82°·3W. (as on 1927 July 14d.). R.3.

$A = +\cdot132$, $B = -\cdot979$, $C = -\cdot153$; $D = -\cdot991$, $E = -\cdot134$; $G = -\cdot020$, $H = +\cdot152$, $K = -\cdot988$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		15·8	120	i 3 37	− 1	i 6 40	+ 6	7·5	8·3
San Juan		31·6	30	e 6 14	− 5	e 11 8	−21	e 16·1	—
Ottawa		54·5	6	—	—	e 16 59	− 3	29·1	—
Victoria	E.	67·6	332	20 7	S	(20 7)	+15	36·4	39·7
	N.	67·6	332	19 7	S	(19 7)	−45	35·9	40·4
Malaga		85·7	51	12 38	+ 1	e 23 14	− 1	—	—
Granada		86·5	51	i 12 42	+ 1	i 23 14	− 8	i 42·7	46·2
Toledo	Z.	86·8	49	i 12 41	− 1	—	—	—	—
Tashkent		139·0	31	e 19 28	[+ 8]	—	—	68·1	90·6

Additional readings :—
La Paz iN = +3m.42s.
San Juan e = +7m.22s. =PP +5s., and +9m.24s. =P_cP +9s.
Tashkent e = +19m.56s.
Long waves were also recorded at La Plata, European and Russian stations.

Sept. 21d. Repetitions of the earthquake at 2h. from the epicentre 36°·0N. 139°·3E. were recorded at Japanese stations as follows. The time of the earliest phase of each repetition is given in each case which, unless otherwise stated, is recorded as P. The e indicates that the reading is given as e without phase.

Tokyo.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
2	35	58	3	55	3	9	32	58	13	30	44
2	42	31	6	21	37	9	47	47	17	51	32
2	46	1	6	49	14	9	50	33			
3	25	16	7	7	31	10	24	6			

Tyosi.

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

Nagoya.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
2	36	23	4	16	24	9	29	40	13	31	8
2	42	53	5	15	41e	9	33	23	15	30	3e
2	46	25	5	25	16e	9	48	14	17	51	58
2	50	1e	6	22	4	9	51	1	18	7	47
3	2	59	6	38	26e	10	24	29	18	23	51
3	11	21	6	49	39	12	22	55e	21	18	8e
3	25	44	7	8	1	13	28	44			
3	55	33	9	3	15e						

Osaka.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
2	43	22	3	55	49	7	46	1	10	25	3
2	46	42	6	22	25	9	29	52	13	31	34
3	11	35	6	49	57	9	48	37	17	52	22
3	26	3	7	8	21	9	51	22	18	8	15
									18	24	10

Mizusawa.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
3	13	18S	6	23	4S	7	8	59S	13	46	48S
3	27	42S	6	49	54	9	51	12	17	52	56S

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Toyooka.

h.	m.	s.	h.	m.	s.	h.	m.	s.
3	12	36S	6	22	39	7	9	17S
3	27	1S	6	50	10	9	51	40

Kobe.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
3	12	35S	6	22	32e	7	8	41e	9	30	49e
3	26	11e	6	50	6	7	45	50	9	51	28

Sumoto.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
3	12	39S	6	22	35	7	45	46	9	51	37
3	27	3S	6	50	12	9	31	8S	17	53	21S

Koti.

h.	m.	s.	h.	m.	s.
6	24	0e	6	51	24e

Sept. 21d. Readings also at 0h. (Baku), 1h. (Tashkent, Feldberg, Strasbourg, Paris, and Granada), 5h. (Phu-Lien and near Medan), 9h. and 12h. (Apia), 13h. (Potsdam), 15h. (Zagreb), 16h. (near Manila), 17h. (near La Paz), 22h. (near Apia).

Sept. 22d. 1h. 25m. 46s. Epicentre 15°·5N. 122°·0E. (as on 1931 March 22d.). X.

A = −·511, B = +·817, C = +·267; D = +·848, E = +·530;
G = −·142, H = +·227, K = −·964.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	1·4	227	i 0 20	0	0 39	+ 3	—	—
Hong Kong	10·1	314	2 18	− 4	4 23	+ 7	—	5·6
Phu-Lien	15·6	292	e 3 31	− 5	—	—	7·2	—
Koti	20·9	28	4 36	− 3	e 8 27	+ 3	—	—
Sumoto	22·1	29	e 4 59	+ 7	e 8 40	− 8	—	—
Kobe	22·5	29	e 4 50	− 6	e 8 55	0	—	—
Nagoya	23·8	31	e 5 52	PP	—	—	—	—
Tientsin	24·0	351	—	—	8 14	−69	(12·5)	—
Irkutsk	39·4	343	e 7 23	− 4	e 13 13	−14	20·2	25·2
Almata	47·3	316	e 8 58	+27	—	—	—	—
Andijan	49·7	311	e 8 58	+ 9	e 15 51	− 6	—	—
Tashkent	52·1	311	—	—	16 10	−20	e 27·0	32·0
Baku	66·5	309	e 10 59	+10	e 19 40	+ 1	32·2	37·3
La Paz	z. 170·2	97	e 20 24	[+20]	—	—	—	—

Additional readings and note:—
Kobe ePN = +4m.54s.
Tientsin gives L as S.
Irkutsk e = +8m.49s. = PP − 4s., and +17m.14s.? = S_gS − 28s.
Tashkent e = +8m.14s., eSS = +20m.38s.
Long waves were also recorded at Pulkovo and several European stations.

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Sept. 22d. 8h. 36m. 23s. Epicentre 32°·7N. 131°·9E. (as on 1930 March 30d.). X.

A = −·562, B = +·626, C = +·540 ; D = +·744, E = +·668 ;
G = −·361, H = +·402, K = −·842.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama	1·3	32	e 0 20	+ 2	—	—	—	1·1
Hukuoka	1·5	305	0 20	− 1	e 0 46	+ 7	—	1·0
Koti	1·6	58	0 23	0	i 0 46	+ 5	—	1·1
Nagasaki	1·7	271	0 18	− 6	0 47	+ 3	—	0·9
Sumoto	3·0	56	1 39	S_g	2 22	+65	—	2·5
Kobe	3·3	54	1 7	P_g	2 7	S_g	—	2·1
Osaka	3·5	56	1 5	P_g	—	—	2·1	2·7
Toyooka	3·7	39	i 1 21	P_g	e 2 7	S_g	—	2·4
Nagoya	4·8	58	e 1 11	+ 3	—	—	—	—

Additional readings :—
Hukuoka S = +51s.
Koti iPZ = +34s., eS?Z = +1m.2s.
Long waves were also recorded at Irkutsk, Tashkent, Melbourne, and Riverview.

Sept. 22d. A repetition of the earthquake from the epicentre 36°·0N. 139°·3E. of 21d. 2h. was recorded as follows :—

Nagoya.

h.	m.	s.	h.	m.	s.
8	50	59 e	13	25	55 e
10	46	54	13	42	0

Tyosi P 13h.41m.6s.

Sept. 22d. Readings also at 0h. (near Almata and Andijan), 9h. (Adelaide, Sydney, Perth, Wellington, Hong Kong, Manila, Batavia, Victoria, Mount Wilson, Tinemaha, Pasadena, La Paz, Irkutsk, Baku, Pulkovo, Tashkent, Andijan, and Granada), 10h. (Berkeley, Ottawa, Harvard, San Juan, Kucino, Copenhagen, Strasbourg, Kew, Paris, Stuttgart, De Bilt, and Tyosi), 11h. (near Sumoto), 12h. (near Apia), 18h. (Phu-Lien), 19h. (Melbourne), 20h. (Phu-Lien, Irkutsk, and Tashkent), 22h. (Adelaide), 23h. (Granada and Riverview.).

Sept. 23d. 13h. 28m. 0s. Epicentre 38°·0N. 20°·5E. (as on 1926 Aug. 18d.). R.3.

A = +·738, B = +·276, C = +·616 ; D = +·350, E = −·937 ;
G = +·577, H = +·216, K = −·788.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta	3·5	293	e 0 55	+ 5	1 45	S*	—	—
Taranto	3·5	316	1 20	S	(1 20)	−10	—	—
Messina	3·9	273	1 36	S	(1 36)	− 4	—	—
Bari	4·2	320	0 14	−46	0 24	−84	0·7	—
Catania	4·3	265	e 2 22	S_g	—	—	—	3·8
Casamari	6·5	306	1 38	+ 6	—	—	—	—
Belgrade	6·8	0	1 28	− 9	2 43	−10	—	3·2
Collurania	7·0	314	1 23	−16	—	—	—	—
Camerino	7·5	315	3 9	S	(3 9)	− 2	—	—
Zagreb	8·5	338	2 9	+ 9	i 3 29	− 7	—	4·5
Florence	9·0	313	2 0	− 7	(4 0?)	+11	—	6·5
Triest	9·1	329	2 2	− 7	i 3 18	P_g	3·6	4·7
Laibach	9·2	333	e 2 41	+31	4 26	+32	—	5·8
Prato	9·2	312	e 3 30	?	4 46	S*	—	5·4
Budapest	9·5	355	3 33	?	—	—	5·8	9·0
Venice	9·6	323	e 3 25	P_g	i 4 44	S*	—	—
Graz	9·8	340	e 2 46	P*	e 3 49	−19	e 4·0	6·1
Padova	9·8	322	e 3 17	P_g	i 5 8	S*	—	—
Vienna	10·6	345	e 3 21	P*	(i 5 9)	S*	i 5·1	6·0
Piacenza	10·7	314	e 3 53	P_g	5 4	S*	6·0	9·7

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Innsbruck		11·4	327	e 2 48	+ 8	(e 5 0?)	+12	e 5·0	—
Prague		12·8	342	—	—	e 5 28	+ 6	—	8·0
Theodosia		13·1	53	e 5 52	S	(e 5 52)	+23	—	—
Neuchatel		13·4	316	e 3 3	− 4	e 4 59	−38	—	—
Stuttgart		13·5	327	e 3 0	− 9	e 5 35	− 4	—	9·5
Karlsruhe		14·0	325	4 32	?	—	—	—	—
Strasbourg		14·0	323	e 5 0?	?	—	—	—	—
Jena	E.	14·3	337	—	—	e 6 24	+26	—	—
Feldberg		14·9	329	e 3 13	−14	e 6 7	− 6	—	10·4
De Bilt		17·7	328	e 4 6	+ 3	—	—	e 8·5	10·7
Granada		19·1	275	i 4 43	+23	i 8 2	+14	10·4	11·9
Pulkovo		22·6	13	4 59	+ 2	e 8 44	−13	11·5	—
Baku		22·8	75	—	—	e 9 39	SS	14·5	—

Additional readings and note :—
Belgrade e = +1m.32s., +1m.46s., +1m.56s., and +2m.27s.
Zagreb eNE = +3m.9s.
Florence S is given as M.
Laibach e = +3m.29s. and +4m.43s.
Stuttgart eEN = +6m.27s., e = +7m.45s.
Jena eE = +6m.30s., eNZ = +7m.0s., eE = +7m.14s., and +7m.30s., eZ = +7m.32s.
Feldberg i = +3m.33s. and +4m.38s.
Granada e = +3m.35s., i = +10m.16s.
Long waves were also recorded at other European stations.

Sept. 23d. Repetitions of the earthquake from epicentre 36°·0N. 139°·3E. of 21d.2h. were recorded as follows :—

Tokyo.

h.	m.	s.	h.	m.	s.
12	46	20	16	22	41

Tyosi.

h.	m.	s.	h.	m.	s.	h.	m.	s.
3	48	5	12	46	32	16	22	53
5	58	12	15	23	11	17	35	50

Nagoya.

h.	m.	s.	h.	m.	s.
12	46	47	16	23	9

Osaka.

h.	m.	s.	h.	m.	s.
12	47	8	16	23	34

Mizusawa

h.	m.	s.	h.	m.	s.
12	47	3	16	23	28

Toyooka.

h.	m.	s.	h.	m.	s.
12	47	32	16	23	38

Kobe.

h.	m.	s.	h.	m.	s.	h.	m.	s.
12	48	4e	16	23	35	21	10	45S

Sumoto.

h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
6	48	6S	12	47	53	16	23	41	21	10	33

Sept. 23d. Readings also at 0h. (Stuttgart), 2h. (Andijan, Bombay, Calcutta, Hyderabad, Baku, Tashkent, Pulkovo, and Copenhagen), 3h. (Nagoya), 5h. (near La Paz), 7h. (Messina), 8h. (near Berkeley and Lick), 9h. (Messina), 15h. (near Andijan), 18h. (Andijan, Irkutsk, Tashkent, Pulkovo, and Copenhagen), 20h. (Tashkent and Irkutsk), 22h. (Buffalo, Ottawa, Toronto, and Pittsburgh).

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Sept. 24d. 4h. 26m. 20s. Epicentre 36°·1N. 140°·0E. (as on 1931 July 28d.). X.

A = −·619, B = +·519, C = +·589.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·5	206	0 6	− 1	0 15	+ 2	—	0·3
Tyosi	0·8	118	0 6	− 5	0 17	− 4	—	—
Nagoya	2·7	249	e 0 38	− 1	1 21	S*	—	—
Mizusawa	3·0	16	0 46	+ 3	1 21	+ 4	—	—
Osaka	3·9	250	e 0 32	−24	i 1 38	− 2	2·0	2·3
Toyooka	4·2	264	e 1 9	+ 9	e 1 56	+ 8	—	—

Additional readings and note :—
Tyosi SSE = +20s., SSN = +23s.
Tokyo gives epicentre 35°·9N. 140°·1E.

Sept. 24d. 12h. 11m. 20s. Epicentre 36°·0N. 139°·3E. (as on 21d.). X.

A = −·613, B = +·528, C = +·588 ; D = +·652, E = +·758 ;
G = −·446, H = +·383, K = −·809.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·5	134	0 5	− 2	0 15	+ 2	—	—
Tyosi	1·4	104	0 19	− 1	0 36	0	—	—
Nagoya	2·0	245	e 0 34	+ 5	1 1	S*	—	—
Osaka	3·3	248	0 58	P*	(1 46)	S_g	1·8	2·0
Mizusawa	3·4	24	0 52	+ 3	1 38	S*	—	—
Sumoto	3·9	246	e 1 20	P_g	e 2 3	S*	—	2·1

No additional readings.

Sept. 24d. Readings also at 2h. (near Sumoto), 3h. (Almata, Andijan, and near New Plymouth), 4h. (Melbourne, Nagoya, near Tyosi, and near New Plymouth), 6h. (near Andijan), 7h. (Serra do Pilar), 8h. (Almata, Andijan, Tashkent, and Irkutsk), 9h. (Andijan), 10h. (Catania, Nagoya, near Mizusawa, and Tyosi), 11h. (near La Paz), 13h. (Buffalo and near Santiago), 14h. (Copiapo, near Santiago, and near Nagasaki), 18h. (Lick (2), Haiwee, Mount Wilson, Pasadena, Tinemaha, Riverside, Riverview, near Apia, Suva, and near Tyosi), 19h. (Lick (2), Bagnères, and near Tortosa), 22h. (near Manila), 23h. (Sumoto, near Mizusawa and Tyosi).

Sept. 25d. 5h. 59m. 52s. Epicentre **5°·1S. 102°·7E.** N.1.

Probable error of epicentre ±0°·15.

Paper by Gutenberg and Richter, " Gerlands Beit, zur Geophysik," Vol. 43, page 66.

A = −·219, B = +·972, C = −·089 ; D = +·976, E = +·220 ;
G = +·020, H = −·087, K = −·996.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	4·3	104	i 1 11	+10	i 2 0	+10	—	—
Malabar	5·3	114	i 1 43	P_g	2 21	+ 6	—	—
Medan	9·6	336	i 2 26	+10	i 3 38	−25	—	—
Amboina	25·5	88	i 5 21	− 4	10 10	+20	17·5	—
Colombo	25·8	297	5 29	+ 2	10 8?	+13	17·1	19·1
Phu-Lien	26·2	8	5 31	0	10 0	− 2	12·1	21·4
Manila	26·8	42	5 39	+ 3	10 53	SS	15·4	18·1
Kodaikanal	29·5	302	i 6 32	+31	(e 10 8)	−48	e 10·1	—
Perth	29·5	157	i 6 3	+ 2	i 10 45	−11	i 13·5	—
Hong Kong	29·7	22	6 2	0	10 42	−17	16·5	19·8

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		31·0	334	6 11	− 3	11 29	+ 9	16·2	21·4
Hyderabad		32·9	315	6 26	− 5	11 40	− 9	17·3	19·3
Taihoku		35·3	29	6 32	−20	12 44	+18	17·7	21·6
Bombay		38·0	311	7 17	+ 2	13 10	+ 4	19·1	22·4
Agra	N.	40·1	325	6 49	−44	12 0	−98	i 16·0	28·9
Zi-ka-wei		40·5	25	e 7 52	+16	14 8	+24	23·0	29·6
Dehra Dun		42·6	328	8 48	+55	14 38	+23	21·5	28·1
Adelaide		44·6	137	i 8 8	− 2	i 14 36	− 8	19·0	23·2
Nagasaki		45·8	31	8 25	+ 6	15 24	+22	—	35·3
Hukuoka		46·7	31	8 26	0	e 15 17	+ 3	e 23·1	38·9
Chiufeng		46·9	14	e 8 26	− 2	15 25	+ 8	e 23·0	32·6
Dairen		47·4	19	8 35	+ 3	15 38	+14	—	—
Zinsen		48·1	25	8 35	− 2	15 47	+13	—	—
Matuyama		48·2	35	i 8 36	− 2	—	—	32·5	36·6
Koti		48·5	36	e 8 40	0	e 15 38	− 2	e 22·1	—
Sumoto	E.	49·8	36	8 51	+ 1	16 25	+27	e 23·1	34·8
	N.	49·8	36	8 53	+ 3	16 6	+ 8	e 23·1	40·5
Titizima		49·9	48	8 50	− 1	16 14	+15	—	—
Kobe		50·2	35	8 52	− 1	16 32	+28	25·3	38·7
Melbourne		50·4	137	i 9 1	+ 7	16 10	+ 4	24·3	28·9
Osaka		50·4	35	8 57	+ 3	16 47	+41	25·9	38·8
Toyooka	E.	50·6	34	i 8 54	− 2	e 16 31	+22	e 25·7	37·6
	N.	50·6	34	8 58	+ 2	e 16 22	+13	e 25·2	37·9
Nagoya		51·6	35	e.9 6	+ 3	—	—	21·0	—
Riverview		53·3	130	i 9 13	− 3	i 16 46	0	—	30·6
Sydney		53·3	130	e 9 20	+ 4	i 16 56	+10	32·5	35·1
Andijan		53·6	331	e 8 17	−61	—	—	25·7	—
Almata		53·7	337	(e 9 13)	− 6	(16 37)	−15	(24·4)	—
Tyosi		54·3	38	e 9 26	+ 3	e 17 6	+ 7	e 23·6	—
Mito		54·5	37	9 22	− 3	16 54	− 8	—	—
Tananarive		55·5	250	e 9 25	− 7	16 51	−25	27·3	—
Tashkent		55·5	330	i 9 28	− 4	i 16 59	−17	—	—
Akita		56·5	34	9 39	0	17 37	+ 7	—	—
Mizusawa	E.	56·7	35	9 44	+ 3	17 43	+11	27·7	—
	N.	56·7	35	9 50	+ 9	17 25	− 7	26·9	—
Irkutsk		57·4	0	i 9 45	− 1	17 35	− 7	29·1	36·6
Nemuro		62·0	33	10 14	− 4	18 29	−13	—	—
Ootomari		62·7	30	10 28	+ 5	19 0	+ 9	—	—
Entebbe		70·3	274	11 8	− 5	20 22	− 3	37·6	44·1
Christchurch		72·0	135	e 11 12	−11	i 20 31	−14	34·8	—
Wellington		73·2	132	11 30	0	20 51	− 8	37·1	43·1
Arapuni		73·5	128	11 8	−24	20 50	−13	39·1	44·1
Johannesburg		74·0	244	11 56	+21	20 56	−12	29·1	36·1
Ksara		74·0	309	11 35	0	i 21 5	− 3	31·4	—
Helwan		76·6	303	i 11 46	− 3	i 21 33	− 5	—	44·6
Theodosia		78·1	319	e 11 56	− 2	21 46	− 9	42·1	—
Yalta		78·6	319	e 12 2	+ 2	e 22 4	+ 4	31·8	—
Simferopol		78·8	319	e 11 59	− 2	e 21 49	−14	31·4	—
Sebastopol		79·1	319	e 11 34	−29	21 26	−40	34·8	—
Kucino		80·5	329	12 11	+ 1	22 9	−12	37·1	50·1
Pulkovo		85·7	331	i 12 34	− 3	i 22 57	[− 7]	36·1	50·7
Lemberg	E.	86·7	321	e 10 20	−142	e 22 56	[−15]	e 43·6	53·7
	N.	86 7	321	e 10 2	−160	e 23 10	[− 1]	e 44·4	52·2
Belgrade		88·2	316	12 47	− 2	23 29	−10	36·7	55·6
Budapest		89·5	319	12 58	+ 3	i 23 36	[+ 6]	36·1	51·1
Königsberg		89·6	325	i 12 54	− 2	i 23 38	[+ 8]	e 35·9	51·1
Taranto		89·8	312	i 12 56	0	i 23 2	[−29]	43·6	57·0
Trenta		90·4	311	e 13 8	+ 9	i 23 43	[+ 8]	36·6	55·6
Messina		90·9	310	13 8	+ 6	23 54	−10	—	—
Catania		91·2	309	e 12 56	− 7	23 55	−12	46·8	57·1

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna	Z.	91·4	320	13 26	+22	—	—	—	—
Zagreb		91·4	316	e 13 1	− 3	i 23 59	−10	e 41·4	57·8
Graz		91·8	319	e 13 6	0	i 23 57	[+14]	e 36·6	58·4
Upsala		92·0	330	12 59	− 8	i 23 55	[+11]	e 43·1	58·2
Naples	E.	92·2	312	e 13 17	+ 9	e 23 37	[− 9]	34·1	52·1
Casamicciola		92·4	312	13 32	+23	23 49	[+ 2]	34·1	—
Laibach		92·4	317	e 12 51	−18	e 23 51	[+ 4]	e 46·6	58·6
Prague		92·8	321	e 12 58	−12	e 23 54	{− 3}	e 44·1	60·1
Triest		92·9	317	e 13 16	+ 5	i 23 56	{− 2}	e 36·0	53·8
Potsdam		93·8	323	i 13 38	+23	i 24 18	−13	e 41·1	59·1
Lund		93·9	326	13 20	+ 5	24 24	− 8	36·1	—
Venice		93·9	316	e 13 33	+18	24 25	− 7	—	28·1
Cheb		94·0	321	e 13 20	+ 4	e 23 38	[−17]	e 45·1	57·7
Treviso		94·0	316	13 19	+ 3	23 58	[+ 3]	e 46·7	59·6
Padova		94·2	316	e 13 57	+40	i 24 13	{+ 4}	e 47·1	60·1
Copenhagen		94·4	326	13 16	− 2	24 26	−11	42·1	—
Florence		94·5	314	i 13 11	− 7	24 23	{+12}	—	—
Innsbruck		94·6	318	e 13 32	+13	24 26	{+14}	37·6	60·8
Jena		94·6	322	e 13 20	+ 1	—	—	e 40·7	60·1
Prato		94·7	314	e 12 45	−34	27 28	?	40·1	56·1
Göttingen		95·6	322	e 13 21	− 2	i 24 36	−12	e 40·1	60·1
Hamburg		95·7	324	e 13 18	− 6	i 24 9	[+ 5]	49·1	59·1
Piacenza		95·7	315	13 16	− 8	24 12	[+ 8]	35·1	65·1
Stuttgart		96·1	319	13 24	− 2	i 25 4	+12	e 41·9	61·9
Feldberg		96·6	320	e 13 26	− 2	e 24 16	[+ 7]	—	61·9
Karlsruhe		96·6	319	13 39	+11	24 8?	[− 1]	e 54·1	62·1
Strasbourg		97·1	319	13 27	− 3	e 24 41	{+10}	e 40·1	60·8
Neuchatel		97·6	317	e 13 31	− 1	e 24 10	[− 4]	—	—
Bergen		98·0	331	13 52	+18	24 13	[− 3]	45·1	64·1
Besançon		98·2	317	e 17 40	PP	24 17	[0]	39·1	—
De Bilt		98·6	322	e 13 35	− 2	e 24 9	[−10]	e 45·2	63·7
Uccle		99·2	321	e 13 37	− 3	i 25 7	−12	41·1	62·3
Paris		100·5	319	e 13 47	+ 1	25 14	−17	36·1	54·1
Algiers		100·7	308	e 14 12	+25	25 22	−11	40·1	62·1
Honolulu T.H.		100·7	70	e 13 56	+ 9	i 25 31	− 2	42·1	—
Barcelona		101·3	311	17 31	PP	e 25 23	−15	40·1	72·6
Kew		102·1	322	e 13 54	+ 1	e 25 30	−15	45·1	67·7
Bagnères		102·5	314	e 18 8	PP	e 24 59	{−13}	35·1	—
Tortosa	N.	102·5	311	e 13 42	−13	25 31	−17	e 46·1	67·1
Oxford		102·6	322	e 13 54	− 1	24 35	[− 3]	e 37·1	68·8
Edinburgh		103·1	328	e 14 14	+16	24 35	[− 6]	50·1	71·7
Alicante		103·6	309	e 13 55	− 5	e 25 43	−15	e 38·3	73·1
Almeria		105·1	308	e 13 53	−14	26 9	− 1	e 43·9	65·2
Scoresby Sund		105·8	345	14 14	+ 4	26 25	+10	—	—
Toledo		106·0	311	e 14 38	+27	i 26 10	− 8	e 52·3	73·8
Granada		106·1	308	i 14 10	− 2	—	—	i 49·1	60·5
Malaga		106·8	308	14 33	+18	e 28 16	PS	38·6	62·6
San Fernando		108·2	308	14 20	− 2	26 14	{+20}	45·1	77·1
Reykjavik		109·1	339	—	—	e 29 6	?	53·4	—
Sitka		111·2	30	e 17 58	[−24]	i 25 13	[− 6]	e 46·2	—
Ivigtut		119·8	340	—	—	30 8?	PS	—	—
Dakar		120·4	284	20 34	PP	—	—	—	67·6
Victoria	E.	121·7	34	15 36	+ 8	25 50	[− 6]	52·0	75·7
	N.	121·7	34	15 28	0	25 54	[− 2]	45·3	79·7
Seattle		122·7	35	e 20 40	PP	e 25 52	[− 6]	e 66·0	—
Ukiah		126·4	42	e 20 56	PP	e 30 56	PS	e 60·1	—
Berkeley		127·6	45	i 19 7	[+ 5]	—	—	e 60·1	—
Bozeman		130·0	30	e 19 30	[+23]	e 28 28	{+ 6}	e 53·7	—
Tinemaha	E.	130·8	43	e 19 15	[+ 6]	—	—	—	—
Santa Barbara		131·0	47	e 19 18	[+ 9]	—	—	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Haiwee	E.	131·5	44	e 19 14	[+ 4]	—	—	—	—
Mount Wilson		132·4	46	e 19 21	[+10]	—	—	—	—
Pasadena		132·4	46	e 19 9	[− 2]	e 26 19	[− 7]	e 62·1	—
Riverside	N.	133·0	46	e 19 24	[+12]	—	—	—	—
La Plata		136·0	202	22 0	PP	—	—	63·5	—
Denver		137·3	31	e 21 54	PP	e 26 3	SKS	—	65·6
Tucson		138·5	44	e 19 33	[+13]	e 27 34	?	65·5	—
Ottawa		139·7	358	e 19 18	[− 3]	e 33 12	PS	64·1	—
Santiago		141·0	188	e 20 21	[+58]	—	—	—	—
Toronto	N.	141·4	3	e 19 16	[− 7]	—	—	65·1	—
Buffalo		142·1	3	i 19 16	[− 8]	—	—	e 65·1	—
Chicago		142·2	12	i 19 27	[+ 3]	—	—	62·8	—
Ann Arbor		142·4	7	e 19 26	[+ 1]	—	—	e 60·3	84·0
Fordham		144·1	355	i 19 30	[− 1]	i 26 23	SKS	e 67·1	—
St. Louis		144·5	17	e 19 31	[− 2]	e 33 10	SKSP	—	81·3
Pittsburgh		144·6	4	i 19 36	[+ 3]	—	—	65·1	—
Georgetown		146·2	0	i 19 39	[+ 3]	26 44	?	—	81·7
Charlottesville		147·1	2	19 44	[+ 7]	—	—	72·1	—
Columbia		150·9	6	e 19 53	[+10]	e 33 44	SKSP	e 50·0	—
Sucre		153·1	206	20 3	[+17]	—	—	—	—
La Paz		156·6	202	i 19 53	[+ 3]	i 30 50	{−10}	71·1	111·2
San Juan		162·8	322	e 20 8	[+11]	e 31 14	{−20}	77·1	—
Port au Prince		165·7	341	e 20 13	[+13]	e 34 5	?	e 92·1	—
Balboa Heights		175·6	30	e 24 8?	PKS	—	—	—	—

Additional readings and note :—
Batavia P = +1m.14s. =P*
Amboina iP = +5m.44s., i = +6m.26s.
Hong Kong PP = +7m.8s., S = +11m.38s., ? = +12m.36s. =SS +13s., SS = +13m.38s.
Zi-ka-wei iE = +14m.36s.
Adelaide iPP = +9m.57s. =P_cP +0s., i = +15m.44s., iSS = +17m.15s., i = +18m.3s.
Chiufeng PPN = +11m.23s., PS = +15m.43s., eZ = +19m.28s., eE = +20m.59s., eN = +21m.26s.
Koti eE = +16m.14s.
Sumoto SZ = +16m.18s.
Kobe PN = +8m.56s.
Melbourne PP = +11m.2s., SS = +19m.33s.
Riverview iS_cS? = +19m.7s.
Sydney iPP = +12m.56s., SS = +21m.50s.
Almata readings have been *increased* by 2m.
Tananarive P_cPE = +10m.45s., PPE = +11m.30s., PPPN = +12m.33s., PPPE = +12m.39s., PSN = +17m.3s., PSE = +17m.9s., EN = +17m.23s., N = +18m.33s., E = +18m.36s., e = +20m.51s., SS = +21m.2s., SSS = +22m.39s., SSSS = +23m.25s., E = +25m.24s., N = +25m.30s.
Christchurch iPPPZ = +16m.8s., iZ = +20m.51s.
Wellington PP = +14m.15s., PPP = +15m.18s., PPPP = +17m.15s., SS = +26m.14s., SSS = +29m.38s., i = +33m.26s.
Arapuni SSS = +30m.8s.
Belgrade e = +16m.19s. and +25m.20s.
Königsberg iPN = +13m.11s., iPPPE = +16m.34s., iE = +16m.54s., iEN = +17m.19s., eN = +18m.9s. =PPP − 2s., and +18m.14s., eSKSE = +23m.24s., eSKSN = +23m.29s., iEN = +24m.4s., iPSN = +24m.38s., ePPSEN = +25m.13s., iEN = +26m.3s., iE = +29m.8s., iSSN = +29m.33s., iSSSN = +33m.53s.
Zagreb i = +13m.15s., eNE = +18m.29s., e = +23m.25s. =SKS − 16s., i = +24m.13s. and +24m.29s., e = +24m.54s., +25m.35s., +29m.56s., and +36m.26s.
Graz i = +24m.21s.
Upsala PPE = +16m.33s., iE = +17m.14s., SKSE = +23m.30s., iSN = +23m.59s. iPSN = +24m.54s., iPPSE = +25m.38s.
Laibach e = +15m.1s., ePP = +16m.42s., e = +25m.57s.
Triest PP = +16m.54s., PPP = +18m.50s., PS = +24m.41s., SS = +29m.46s., SSS = +33m.52s.
Potsdam ePPE = +17m.10s., iE = +23m.50s., iEN = +24m.45s., iPSE = +25m.57s., iPPSE = +26m.53s., iSSE = +31m.16s.
Lund PP = +17m.8s., SKS = +23m.50s., PS = +25m.45s., SS = +30m.50s.
Cheb ePP = +16m.39s., e = +20m.57s.

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Copenhagen PP = +17m.8s., SKS = +23m.55s., PSE = +25m.50s., SS = +31m.8s.
Innsbruck PP = +17m.8s., S_0S = +23m.38s., PS = +25m.32s., PPS? = +26m.15s., SS = +30m.14s.
Jena eE = +13m.26s., eZ = +17m.8s. =PP +6s., eEZ = +21m.20s.
Göttingen eE = +26m.3s. =PS +6s., eEN = +36m.53s.
Hamburg eZ = +17m.31s., +19m.36s., and +45m.8s.?
Stuttgart eN =iEZ = +13m.45s., iPPEZ = +17m.14s., iEZ = +17m.35s., eEZ = +19m.16s., ePPPE = +19m.46s., eSKS = +24m.2s., iSKKSN = +24m.39s., ePSE = +26m.8s., ePPS = +26m.51s., eSSN = +31m.20s.
Feldberg i = +14m.12s., e = +15m.46s. and +17m.42s., i = +19m.48s.
Strasbourg iPP = +17m.21s., i = +17m.44s.
Neuchatel ePP = +17m.44s.
Bergen P = +17m.31s. and +17m.53s. =PP +25s., PS = +27m.22s.
De Bilt ePPZ = +17m.30s., eN = +24m.59s.
Uccle i = +13m.59s., iPP = +17m.24s., PPP = +19m.54s., PPPP = +20m.58s., iSKS = +24m.15s., iPPS = +26m.49s., SS = +31m.18s.
Paris PP = +17m.50s., i = +26m.58s. =PS +7s.
Honolulu T.H. ePP = +17m.48s., iPPP = +20m.15s., iSKS = +24m.29s., ePS = +27m.45s.
Kew eEZ = +14m.13s., ePPEZ = +18m.12s., ePPPZ = +20m.30s., eSKSEN = +24m.36s., iPSEZ = +27m.21s., ePPSNZ = +28m.11s., iSSN = +32m.53s., iSSE = +33m.11s., iEZ = +33m.50s., eN = +36m.25s., iSSSN = +37m.55s.
Oxford PP = +18m.8s., i = +27m.4s. =PS −9s.
Edinburgh i = +18m.22s. =PP +16s., +20m.30s., and +27m.34s. =PS +16s.
Almeria PP = +17m.47s.
Scoresby Sund PPZ = +18m.23s., eEN = +18m.38s., e = +20m.38s., i = +24m.50s., and +28m.5s., SS = +33m.38s.
Toledo PP = +18m.53s., SKS = +25m.4s., SKKS = +26m.33s., PS = +29m.4s., SS = +33m.39s.
Granada PKP = +17m.18s., PP = +18m.28s.
San Fernando SE = +26m.56s.
Reykjavik e = +29m.50s., SS = +34m.23s.
Sitka ePP = +19m.22s., iPS = +28m.45s., iSS = +35m.31s.
Berkeley ePN = +19m.14s., iE = +19m.24s., ePE = +19m.25s., iPN = +19m.37s. ePE = +20m.42s., iEZ = +21m.5s., eE = +22m.14s., iE = +22m.27s., iN = +22m.47s., PSE = +31m.11s., iPSN = +31m.25s.
Bozeman ePP = +22m.31s., eSS = +39m.18s.
Tinemaha PKSE = +22m.41s.
Santa Barbara ePKSN = +22m.44s.
Haiwee ePKSE = +22m.38s.
Mount Wilson ePKSE = +22m.37s.
Pasadena iZ = +19m.16s., ePKP = +19m.19s., eN = +19m.29s., iPPZ = +21m.32s., ePKSE = +22m.43s., ePKSN = +22m.47s., ePKSZ = +23m.40s., eZ = +24m.7s. and +28m.18s., eE = +31m.48s. and +33m.33s., eZ = +34m.45s.
Riverside ePKSN = +22m.54s.
Denver ePSE = +32m.58s., eSSE = +40m.11s.
Tucson ePP = +22m.9s., e = +31m.46s. and +34m.26s., eSS = +40m.40s., SSS = +45m.50s.
Ottawa iPP = +22m.21s., eE = +23m.18s., ePPPN = +25m.36s., ePSKSN = +32m.45s., ePPSZ = +34m.38s., eSS = +40m.33s., eSSSN = +45m.50s.
Buffalo iPP = +22m.26s., iPPP = +25m.44s., ePPS = +34m.18s.
Chicago iPP = +22m.35s., eSS = +40m.53s., SSS = +47m.38s.
Ann Arbor iPP = +23m.2s., eN = +29m.50s. =SKKS +22s., +33m.2s. = SKSP +17s. and +35m.38s., eE = +41m.26s., iSSN = +42m.14s., eSSS = +48m.14s.
Fordham iPP = +22m.50s., SS = +41m.58s.
St. Louis iEN = +19m.34s., iE = +19m.56s., iN = +22m.50s., eE = +41m.20s. = SS −16s., eE = +43m.10s.
Pittsburgh ePP = +23m.26s., eSS = +42m.8s.
Georgetown iPPE = +22m.59s., PKSZ = +23m.29s.
Charlottesville ePP = +22m.56s., PPP = +26m.2s., PPPP = +30m.50s., SKSP = +33m.2s., eSS = +42m.8s.
Toronto iPPN = +22m.22s., iN = +32m.30s., SSN= +40m.59s. ; T_0=5h.59m.27s.
Columbia eP = +20m.32s., e = +38m.26s., eSS = +43m.6s.
Sucre PP = +23m.39s.
La Paz iPPZ = +24m.3s., SKSNZ = +27m.5s., iSKKSZ = +30m.55s., SKSP = +34m.43s., SS = +44m.23s., SSS = +50m.1s.
San Juan i = +20m.34s., e = +21m.25s., iPP = +24m.25s., iSS = +44m.59s.
Port au Prince i = +21m.27s. and +24m.44s., iNE = +25m.57s., iNW = +26m.38s.
Long waves were recorded at Cape Town and Bidston.

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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Sept. 25d. 16h. 35m. 9s. (I) } Epicentre 57°·7S. 143°·8E. N.3.
20h. 31m. 34s. (II) } R.3.

A = −·431, B = +·316, C = −·845; D = +·591, E = +·807;
G = +·682, H = −·499, K = −·534.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Melbourne	19·9	3	e 5 3?	+34	i 8 6	+ 2	9·0	10·4
II		19·9	3	e 4 33	+ 4	8 1	− 3	9·6	10·5
I	Christchurch z.	22·8	64	i 5 0	+ 1	i 9 8	+ 7	11·6	—
II	z.	22·8	64	i 5 2	+ 3	i 9 11	+10	11·6	—
I	Adelaide	23·0	349	e 5 20	+19	i 9 26	+21	10·6	12·2
II		23·0	349	e 4 58	− 3	i 9 11	+ 6	10·6	12·2
I	Riverview	24·4	15	e 5 16	+ 2	8 56	PcP	—	12·8
II		24·4	15	e 4 32	−42	i 9 31	+ 1	e 10·0	12·8
I	Sydney	24·4	15	e 9 21	S	(e 9 21)	− 9	12·0	13·0
II		24·4	15	e 9 14	S	(e 9 14)	−16	11·9	12·9
I	Wellington	25·6	64	5 24	− 1	9 45	− 6	13·8	14·8
II		25·6	64	5 21	− 4	9 41	−10	13·4	15·4
I	Perth	32·0	313	i 12 11	S	(i 12 11)	+36	—	—
II		32·0	313	i 11 26	S	(i 11 26)	− 9	—	—
I	Manila	74·7	338	12 3	+24	18 7	?	23·6	—
II		74·7	338	15 3	?	20 12	−65	—	—
I	Bombay	96·3	296	22 38	?	—	—	—	—
I	Tashkent	116·8	306	—	—	e 29 39	PS	e 54·8	66·6
II		116·8	306	e 22 45	?	—	—	e 55·4	66·6
I	Granada	150·4	240	i 21 20	?	—	—	78·2	84·8

Additional readings :—
Melbourne I SS = +8m.29s., II i = +8m.23s.
Christchurch I iZ = +10m.58s., II iZ = +11m.0s.
Adelaide I iPP = +5m.42s.
Riverview I SS = +9m.30s.
Wellington I SS = +11m.51s.
Perth I i = +14m.11s.
Tashkent I i = +36m.12s.
Long waves were also recorded for shock I at Hyderabad, Baku, Kucino, La Paz, and other European stations, and for shock II at Baku and European stations.

Sept. 25d. 21h. 31m. 46s. Epicentre 5°·1S. 102°·7E. (as at 5h.). R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	4·3	104	i 1 8	+ 7	i 2 2	+12	—	—
Medan	9·6	336	3 14	+58	i 4 14	+11	—	—
Manila	26·8	42	5 39	+ 3	11 1	+49	15·3	18·9
Hong Kong	29·7	22	6 3	+ 1	11 18	+19	16·1	20·6
Calcutta	31·0	334	6 23	+ 9	11 12	− 8	13·5	—
Hyderabad	32·9	315	7 34	PP	11 34	−15	13·2	20·9
Bombay	38·0	311	8 50	PP	13 1	− 5	15·6	—
Andijan	53·6	331	e 9 14	− 4	e 16 42	− 8	—	—
Almata	53·7	337	e 9 9	−10	—	—	—	—
Tashkent	55·5	330	e 9 15	−17	i 16 54	−22	e 30·5	38·1
Irkutsk	57·4	0	9 43	− 3	e 17 38	− 4	30·2	34·0
Baku	66·4	320	—	—	i 19 33	− 4	—	—
Kucino	80·5	329	e 13 14	+64	22 9	−12	40·2	48·5
Pulkovo	85·7	331	12 31	− 6	22 52	−23	45·2	55·1
Helsingfors	88·4	331	—	—	e 23 13	[−10]	e 44·2	—
La Paz	156·6	202	e 19 37	[−13]	—	—	78·1	90·9

Additional readings :—
Medan i = +4m.38s. and +6m.38s.
Kucino eSS = +27m.26s., eSSS = +30m.14s.
Helsingfors eSN = +23m.25s. =SKS +2s.
Long waves were also recorded at Kodaikanal, Stuttgart, De Bilt, and Ottawa.

Sept. 25d. Readings also at 0h. (La Paz), 4h. (Agra, Bombay, Andijan, Tashkent, Baku, Kucino, Irkutsk, and Pulkovo), 5h. (Tananarive and near Algiers), 6h. (Sumoto, near Batavia, and Malabar), 7h. (Andijan), 8h. (near New Plymouth and Wellington), 9h. (near Andijan and near Malabar), 10h. (Batavia (2), Hong Kong, and near Medan), 11h. (near Batavia), 12h. (La Paz), 13h. (Nagoya and near Tyosi), 15h. (Nagoya and near Tyosi), 17h. (Batavia and La Paz), 18h. (near Nagoya and Tyosi), 19h. (Yalta (2) and near Batavia), 20h. (Collurania), 21h. (Nagoya (2) and near Tyosi), 23h. (Lick and near Andijan).

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Sept. 26d. 7h. 2m. 6s. Epicentre 25°·0N. 123°·0E. (as on 1927 Oct. 12d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		1·3	274	0 14	− 4	0 27	− 6	—	—
Hokoto		3·5	245	0 56	+ 6	1 14	P_g	—	—
Zi-ka-wei	E.	6·3	348	—	—	e 3 6	S*	—	—
Hong Kong		8·5	252	1 59	− 1	2 59	P_g	3·4	4·4
Manila		10·6	191	3 30	P_g	5 8	S*	—	—
Irkutsk		30·7	338	6 14	+ 3	e 11 9	− 7	e 14·1	—

Additional readings :—
Zi-ka-wei iE = +4m.12s. and +4m.44s.

Sept. 26d. 19h. 50m. 33s. Epicentre 15°·0N. 91°·5W. N.3.

A = −·025, B = −·966, C = +·259 ; D = −1·000, E = +·026 ;
G = −·007, H = −·259, K = −·966.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		18·7	76	e 4 22	+ 7	8 13	+33	e 10·8	—
Columbia		21·2	24	e 4 53	+11	e 8 51	+21	e 12·4	—
St. Louis		23·6	1	i 5 12	+ 6	i 9 37	+21	—	—
San Juan		24·5	79	e 5 46	+31	e 8 32	P_cP	e 10·9	—
Tucson		24·7	318	e 5 19	+ 2	e 9 55	+19	13·4	—
Charlottesville		25·7	24	—	—	9 57	+ 4	17·4	—
Georgetown	Z.	27·1	25	—	—	i 11 21	SS	(i 16·2)	—
Pittsburgh		27·4	19	—	—	e 10 39	+17	e 17·6	—
Ann Arbor		28·1	12	—	—	e 11 9	+35	e 19·0	32·4
Buffalo		30·0	19	—	—	i 12 14	SS	i 18·1	—
Fordham		30·0	27	—	—	e 11 15	+11	i 17·8	—
Riverside		30·1	315	e 6 6	0	—	—	—	—
Toronto	N.	30·4	17	—	—	e 11 27?	+17	i 18·0	—
Mount Wilson		30·7	315	e 6 11	0	—	—	—	—
Pasadena		30·7	315	i 6 12	+ 1	—	—	—	—
Haiwee	E.	31·7	319	e 6 20	0	—	—	—	—
Tinemaha	E.	32·4	320	e 6 26	0	—	—	—	—
Ottawa		33·2	21	e 8 36	+122	—	—	e 12·4	—
Berkeley		35·6	318	i 6 54	0	i 12 22	− 8	e 17·4	—
La Paz	N.	39·0	144	7 24	0	i 13 11	−10	—	—
Victoria	E.	42·4	329	7 56	+ 4	14 21	+10	24·1	39·5
	N.	42·4	329	7 47	− 5	14 47	+36	24·2	42·4
Sucre		42·7	143	7 34	−20	—	—	—	—
De Bilt		82·2	38	12 21	+ 2	—	—	e 40·4	—
Strasbourg		84·8	41	e 12 32	0	—	—	e 41·4	—
Copenhagen		85·2	32	—	—	22 57	−13	—	—
Stuttgart	Z.	85·6	41	e 12 32	− 4	—	—	—	—
Manila		136·3	312	20 44	[+87]	—	—	51·4	—

Additional readings and note :—
Port au Prince iP = +4m.48s., SS = +8m.52s.
Columbia ePP = +5m.11s.
St. Louis iN = +5m.23s. =PP −8s.
San Juan e = +6m.47s. and +10m.23s.
Georgetown L is given as iPPZ.
Ann Arbor e?E = +13m.57s.
Buffalo i = +13m.20s. and +17m.9s.
Haiwee eN = +6m.23s.
Berkeley iSN = +12m.36s.
La Paz SSN = +16m.4s.
Strasbourg ePPS = +25m.15s.
Long waves were also recorded at Chicago, Harvard, Honolulu T.H., Ivigtut, Dakar, Tortosa, Belgrade, and Hong Kong.

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Sept. 26d. 20h. 3m. 14s. Epicentre 14°·3N. 91°·4W. N.1.

Probable error of epicentre ±0·26.

A = −·024, B = −·969, C = +·247; D −1·000, E +·024; G = −·006, H = −·247, K = −·969.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		12·8	113	e 2 46?	−13	—	—	—	—
Port au Prince		18·8	74	e 4 15	− 1	e 8 33	+51	e 11·3	13·7
Columbia		21·8	24	e 5 6	+17	e 8 52	+10	e 11·8	—
St. Louis		24·3	2	i 5 14	+ 1	i 9 43	+15	e 12·3	—
San Juan		24·6	77	e 5 10	− 6	e 10 5	SS	11·0	—
Tucson		25·3	319	—	—	10 0	+14	13·3	—
Charlottesville		26·4	23	—	—	e 10 16	+11	e 12·6	—
Chicago		27·7	6	—	—	e 10 55	+28	—	—
Georgetown		27·7	24	i 5 37	− 7	—	—	11·4	18·4
Pittsburgh		28·0	19	—	—	i 10 52	+20	i 16·8	—
Fordham		30·6	27	i 7 46	?	—	—	—	20·8
Riverside		30·6	317	e 6 9	− 1	—	—	—	—
Buffalo		30·6	18	i 6 17	+ 7	—	—	—	19·8
Toronto		31·1	17	i 7 15	PP	—	—	—	18·0
Pasadena		31·2	316	e 6 15	− 1	—	—	—	—
Mount Wilson	E.	31·2	315	e 6 16	0	—	—	—	—
Haiwee		32·3	319	e 6 25	0	—	—	—	—
Santa Barbara		32·5	314	e 6 31	+ 4	—	—	—	—
Tinemaha	E.	33·0	320	e 6 30	− 2	—	—	—	—
Ottawa		33·8	20	e 6 41	+ 2	—	—	e 12·8	—
Lick		35·4	318	e 6 53	0	—	—	—	—
Bozeman		35·5	336	e 6 58	+ 5	e 12 0	−29	19·8	—
Berkeley		36·1	318	e 6 57	− 2	—	—	e 17·4	19·0
La Paz		38·4	143	7 20	+ 2	i 13 23	+11	18·7	23·7
Seattle		42·1	329	e 7 53	+ 4	e 13 1	−67	e 22·4	—
Santiago		51·7	159	e 9 6	+ 2	—	—	—	—
Sitka		54·1	333	e 9 19	− 3	i 17 6	+ 9	i 28 4	—
La Plata		58·6	149	9 52	− 3	—	—	33·0	—
Scoresby Sund		69·8	20	11 16	+ 7	—	—	—	—
Edinburgh		77·3	35	—	—	e 21 46?	0	38·8	—
Oxford		78·9	39	—	—	e 22 0	− 4	e 37·8	50·5
Toledo		79·0	51	—	—	e 22 4	− 1	e 38·0	—
Malaga		79·1	55	e 12 22	+19	e 22 2	− 4	—	—
Kew		79·6	39	e 12 8	+ 2	—	—	e 29·8	43·3
Granada		79·7	55	i 12 10	+ 4	i 22 . 5	− 7	i 37·3	39·4
Almeria		80·7	55	e 12 10	− 2	—	—	41·6	—
Paris		81·9	41	e 12 20	+ 2	—	—	28·8	44·8
Alicante		81·9	52	e 12 48	+30	e 23 12	PS	e 39·2	—
Uccle		82·6	40	e 12 22	+ 1	e 22 46	+ 3	e 39·8	—
De Bilt		82·7	38	12 23	+ 1	e 22 51	+ 7	—	47·7
Neuchatel		85·2	43	e 12 37	+ 3	—	—	—	—
Hamburg		85·2	36	e 12 38	+ 4	—	—	e 43·8	48·8
Feldberg		85·2	40	e 12 28	− 6	e 24 26	PS	—	53·7
Copenhagen		85·8	33	e 12 37	0	23 19	+ 3	38·8	—
Göttingen	E.	85·8	39	e 15 46	PP	—	—	—	51·8
Stuttgart		86·1	40	e 11 36	−63	e 23 10	− 8	—	45·8
Lund		86·2	33	—	—	24 22	PS	38·8	—
Upsala	E.	86·9	28	—	—	e 23 9	[− 4]	e 41·8	52·3
Piacenza		87·6	43	12 46	0	23 30	− 3	49·2	—
Florence		89·0	46	12 46	− 7	23 16	[−10]	29·8	35·8
Triest		90·0	42	e 12 59	+ 2	e 23 28	[− 5]	e 42·8	58·9
Helsingfors	E.	90·0	26	e 12 29	−28	e 23 28	[− 5]	e 43·8	—
	N.	90·0	26	e 12 39	−18	e 23 41	[+ 8]	e 40·2	—
Pulkovo		92·5	25	e 13 8	− 1	e 23 38	[− 9]	48·8	56·0
Kucino		98·1	26	e 13 54	+19	e 24 17	[+ 1]	44·8	54·4
Irkutsk		112·0	350	e 19 17	PP	e 26 4	{−17}	e 50·8	65·1
Baku		114·6	31	—	—	e 26 53	{+14}	e 51·8	64·4
Zi-ka-wei		124·6	325	e 20 42	PP	—	—	69·8	87·6
Calcutta		143·2	0	19 23	[− 5]	33 1	PKS	72·9	—
Bombay		143·4	26	19 31	[+ 2]	—	—	—	—
Colombo		157·1	23	20 19	[+29]	—	—	—	100·9

For Notes see next page.

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NOTES TO SEPT. 26d. 20h. 3m. 14s.

Additional readings :—
Port au Prince i = +4m.43s., PP = +5m.12s., i = +5m.45s., +6m.33s., and +6m.53s., SS = +8m.58s.
St. Louis iEN = +5m.17s., iN = +9m.47s.
San Juan ePP = +5m.45s.
Tucson e = +6m.46s.
Buffalo i = +6m.37s.
Toronto iN = +9m.9s. = P_gP −4s.
Bozeman e = +14m.31s. = SS − 7s.
Berkeley eE = +16m.30s.
La Paz iN = +12m.11s., SSN = +15m.57s. = SS +15s.
Seattle e = +11m.22s.
Sitka iSS = +20m.27s.
Scoresby Sund +16m.22s, and +25m.10s.
Granada iS = +23m.53s.
Feldberg e = +22m.10s.
Copenhagen eN = +24m.28s., eE = +29m.16s.
Stuttgart ePEZ = +1m.38s., ePS = +24m.36s., eSSS = +32m.40s.
Upsala ePPSE = +24m.53s.
Helsingfors eZ = +12m.52s., ePP = +16m.24s., eE = +18m.19s., ePSE = +24m.21s., ePSN = +24m.41s., ePPSE = +25m.18s., ePPSN = +25m.21s., eSSEN = +29m.55s., eSSSEN = +33m.48s. ; T_s = 20h.2m.44s.
Kucino e = +11m.28s. and +26m.40s. = PS +15s.
Irkutsk e = +22m.14s., +28m.44s. = PS − 3s., and +34m.46s. = SS +0s.
Baku e = +16m.44s., +29m.30s. = PS +18s. and +36m.39s.
Zi-ka-wei eZ = +23m.30s. = PPP +16s.
Long waves were also recorded at Hong Kong, Perth, Sydney, Wellington, Harvard, Kodaikanal, and other European stations.

Sept. 26d. Readings also at 0h. (near Tananarive and near Tashkent), 3h. (near Nagoya and Tyosi), 8h. (Tyosi), 9h. (San Fernando), 12h. (Hong Kong, Calcutta, and near Nagoya), 13h. (Andijan and near Almata), 14h. (near Wellington), 18h. (Batavia and San Fernando), 21h. (Haiwee, Tinemaha, Pasadena, and near La Paz), 22h. (San Fernando), 23h. (Andijan, La Plata, Sucre, near Santiago, and La Paz).

Sept. 27d. 0h. 23m. 48s. Epicentre 5°·1S. 102°·7E. (as on 25d.). X.

A = −·219, B = +·972, C = −·089.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	4·3	104	i 1 4	+ 3	1 53	+ 3	—	—
Medan	9·6	336	3 24	P_g	—	—	—	—
Phu-Lien	26·2	8	5 12?	−19	—	—	—	—
Manila	26·8	42	5 52	+16	11 3	SS	15·3	—
Andijan	53·6	331	e 9 8	−10	e 16 32	−18	—	—
Irkutsk	57·4	0	e 9 35	−11	—	—	32·2	35·7
Ottawa	139·7	358	17 12?	?	—	—	—	—

Additional readings :—
Medan i = +5m.42s., +6m.0s., and +7m.12s.
Irkutsk e = +15m.12s. ?, +16m.12s.?, and +26m.12s.?
Long waves were also recorded at Kodaikanal, Hong Kong, Kucino, and Uccle.

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Sept. 27d. 19h. 50m. 33s. Epicentre 36°·1N. 140°·0E. (as on 24d.). R.3.

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.
Tokyo	0·5	206	0 3	− 4	0 12	− 1	—	0·9
Tyosi	0·8	118	0 10	− 1	0 18	− 3	—	0·4
Nagoya	2·7	249	e 0 37	− 2	1 8	− 1	—	1·4
Mizusawa	3·0	16	0 46	+ 3	1 19	+ 2	—	—
Osaka	3·9	250	0 58	+ 2	—	—	1·9	2·1
Toyooka	4·2	264	e 0 59	− 1	i 2 1	S*	—	2·2
Kobe	4·3	251	e 1 4	+ 3	1 47	− 3	—	2·1
Sumoto	4·5	248	1 14	+10	2 9	+14	—	2·3

Additional readings:—
Mizusawa PN = +51s.
Toyooka iP = +1m.10s., iSEN = +2m.4s.
Kobe iP = +1m.11s.

Sept. 27d. Readings also at 6h. (Port au Prince, La Paz, La Plata, and near Santiago) 9h. (La Paz), 10h. (Batavia), 11h. (Medan), 13h. (Baku, Kucino, and Pulkovo), 15h. (Suva), 16h. (Lick), 17h. (Nagoya and Tyosi), 18h. (Baku and near Ksara), 19h. (Lick), 21h. (near Medan and near Tyosi), 23h. (Andijan).

Sept. 28d. 4h. 54m. 22s. Epicentre 36°·0N. 139°·3E. R.3.
(given by Tokyo and as on Sept. 24d.).

A = −·613, B = +·528, C = +·588;

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·5	134	0 4	− 3	0 14	+ 1	—	0·7
Tyosi	1·4	104	0 16	− 4	0 31	− 5	—	0·7
Nagoya	2·0	245	i 0 30	+ 1	0 58	+ 7	—	1·1
Osaka	3·3	248	0 48	+ 1	—	—	1·7	2·1
Mizusawa	3·4	24	0 50	+ 1	1 27	0	—	—
Kobe	3·6	250	0 51	0	i 1 47	S*	—	1·9
Toyooka	3·6	265	i 0 54	+ 3	i 1 48	S*	—	1·8
Sumoto	3·9	246	0 55	− 1	1 57	S*	—	2·1
Koti	5·3	245	1 16	+ 1	2 14	− 1	—	2·7
Matuyama	5·8	250	e 1 20	− 2	i 2 52	S*	—	—
Hukuoka	7·6	254	e 2 1	+13	—	—	3·9	4·1
Nagasaki	8·4	250	e 4 18	S*	—	—	—	—
Irkutsk	29·5	314	—	—	e 11 38?	+42	15·6	—
Wellington	83·9	154	—	—	22 38?	−18	—	—

Additional readings:—
Kobe iP_g = +1m.0s. = P*.
Toyooka iPEN = +56s., iP_g = +1m.1s.
Koti eP_gN = +1m.32s. = P*.
Long waves were also recorded at Tashkent and Yalta.

Sept. 28d. 9h. 24m. 31s. Epicentre 34°·7N. 131°·7E. (as on 20d.). X.

A = −·547, B = +·614, C = +·569; D = +·747, E = +·665; G = −·379, H = +·425, K = −·822.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama	1·2	135	e 0 17	0	i 0 27	− 4	e 0·6	0·6
Hukuoka	1·5	224	0 25	+ 4	0 45	S*	—	0·8
Nagoya	4·3	82	e 1 0	− 1	1 20	S*	—	—
Tyosi	7·6	80	1 43	− 5	2 2	?	—	—

No additional readings.

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Sept. 28d. 17h. 18m. 47s. Epicentre 5°·1S. 102°·7E. (as on 27d.). R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	4·3	104	i 1 3	+ 2	i 1 53	+ 3	—	—
Malabar	5·3	114	1 20	+ 5	2 9	− 6	—	—
Medan	9·6	336	1 49	−27	3 49	−14	—	—
Colombo	25·8	297	5 32	+ 5	9 54	− 1	12·2	16·5
Phu-Lien	26·2	8	e 5 29	− 2	—	—	13·2	—
Manila	26·8	42	5 37	+ 1	10 29	+17	13·4	16·4
Perth	29·5	157	13 53	?	—	—	—	—
Kodaikanal	29·5	302	e 12 13	SS	—	—	e 17·8	19·4
Hong Kong	29·7	22	6 21	+19	10 53	− 6	—	19·9
Calcutta	31·0	334	5 40	−34	10 40	−40	14·1	—
Bombay	38·0	311	7 2	−13	—	—	—	—
Andijan	53·6	331	e 9 26	+ 8	e 17 7	+17	—	—
Almata	53·7	337	e 9 12	− 7	e 16 50	− 2	—	—
Tashkent	55·5	330	e 9 55	+23	i 17 5	−11	e 27·2	34·6
Irkutsk	57·4	0	9 42	− 4	17 37	− 5	e 29·2	—
Theodosia	78·1	319	e 11 54	− 4	—	—	—	—
Yalta	78·6	319	e 11 55	− 5	—	—	—	—
Pulkovo	85·7	331	12 42	+ 5	i 23 27	+12	47·2	49·3
Stuttgart	96·1	319	e 14 1	+35	e 17 31	PP	e 63·2	69·2
Tinemaha	E. 130·8	43	e 19 41	[+32]	—	—	—	—
Haiwee	N. 131·5	44	e 22 41	PKS	—	—	—	—
Pasadena	Z. 132·4	46	e 19 7	[− 4]	e 22 30	PKS	—	—
La Paz	Z. 156·6	202	e 18 7	[−103]	—	—	—	—

Additional readings :—
Batavia i = +3m.0s.
Medan i = +2m.13s. and +4m.7s.
Hong Kong P? = +4m.29s.
Tashkent e = +22m.25s.
Pulkovo eSKS = +23m.1s.
Long waves were also recorded at Hyderabad, Adelaide, Riverview, Sydney, Lick, Scoresby Sund, and other European stations.

Sept. 28d. Readings also at 0h. (near La Paz), 6h. (Nagoya and Tyosi), 9h. (Adelaide, 13h. (near Triest), 15h. (Lick), 18h. (Mizusawa), 20h. (near San Juan), 22h. (near Hukuoka and Matuyama), 23h. (Irkutsk, Tashkent, Nagoya, Tyosi, and near Mizusawa (2)).

Sept. 29d. 5h. 14m. 37s. Epicentre 1°·5N. 126°·4E. N.2.

A = −·593, B = +·805, C = +·026 ; D = +·805, E = +·593 ;
G = −·016, H = +·021, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	5·5	161	1 27	+ 9	i 2 27	+ 7	—	—
Manila	14·2	338	3 22	+ 4	6 17	+21	8·9	—
Batavia	21·0	248	4 44	+ 4	i 8 42	+16	—	—
Kosyun	21·3	346	4 41	− 2	8 35	+ 3	—	—
Hong Kong	24·0	331	5 9	− 1	9 15	− 8	—	—
Naha	24·8	3	5 20	+ 2	9 38	+ 1	—	—
Phu-Lien	27·3	316	e 5 42	+ 1	—	—	—	—
Medan	27·7	275	i 6 35	PP	i 10 5	−22	—	—
Nagasaki	31·4	5	e 6 18	+ 1	e 7 29	?	—	—
Osaka	34·3	14	4 10	?	—	—	7·0	9·9
Perth	34·9	198	12 23	S	(12 23)	+ 3	—	—
Nagoya	35·1	15	(e 6 50)	0	e 6 50	P	—	—
Oiwake	36·7	18	7 2	− 2	12 44	− 3	—	—
Adelaide	38·2	165	—	—	i 13 6	− 3	—	—
Hukusima	38·5	19	7 18	− 1	13 13	− 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.
Mizusawa		40·0	19	7 34	+ 2	13 34	− 2	—	—
Riverview		42·3	149	—	—	e 13 53	−17	—	28·4
Calcutta		42·5	304	7 56	+ 3	13 58	−15	20·4	—
Melbourne		42·9	159	i 10 36?	?	i 14 26	+ 7	26·7	—
Colombo		46·7	278	7 14	−72	15 9	− 5	23·9	29·9
Hyderabad		49·7	292	8 45	− 4	15 42	−15	24·9	28·3
Irkutsk		54·0	345	10 21	+60	17 49	+53	e 26·4	—
Bombay		55·2	293	9 31	+ 1	17 1	−11	27·6	—
Andijan		62·5	317	e 10 23	+ 1	—	—	—	—
Tashkent		64·9	317	e 10 33	− 5	i 19 5	−14	e 29·8	42·2
Baku		78·8	312	e 11 54	− 7	i 21 53	−10	37·4	52·3
Ksara	E.	89·6	303	—	—	23 46	− 6	—	—
Theodosia		89·6	315	e 12 58	+ 2	e 23 21	[− 9]	—	—
Yalta		90·5	315	e 13 0	0	e 23 25	[−11]	—	—
Sebastopol		91·0	315	e 12 29	−33	e 23 7	[−32]	—	—
Pulkovo		91·8	330	13 5	− 1	e 23 56	[+13]	46·4	55·6
Copenhagen		102·0	329	—	—	24 29	[− 6]	51·4	—
Feldberg		106·3	323	—	—	(29 23?)	?	—	29·4?
Stuttgart		106·4	322	e 18 37	PP	e 24 47	[− 9]	e 56·4	—
Florence		106·7	316	17 23	?	24 23?	[−35]	—	58·4
De Bilt		107·3	325	e 18 53	PP	—	—	e 55·4	61·8
Strasbourg		107·3	322	(e 18 23?)	[+14]	—	—	e 18·4	—
Uccle		108·3	324	—	—	e 25 23?	[+18]	e 55·4	—
Paris		110·3	323	e 19 9	PP	e 28 25	PS	63·4	—
Granada		119·7	315	e 20 10	PP	i 30 5	PS	67·2	67·7
La Plata		146·4	174	i 19 41	[+ 5]	—	—	—	—
La Paz	Z.	159·3	137	i 20 2	[+ 9]	—	—	—	—

Additional readings :—
Hong Kong PP = +5m.29s.
Medan i = +9m.5s. = P_cP +2s.
Adelaide e = +17m.29s. = S_cS −2s.
Mizusawa SN = +13m.38s.
Riverview ? = +17m.29s. = S_cS −27s.
Melbourne i = +17m.5s. = SS −5s. and +19m.50s.
Hyderabad PP = +11m.0s.
Pulkovo SKS = +23m.35s.
Stuttgart e = +18m.59s. = PP +28s., eEN = +26m.5s., e = +27m.35s. = PS −17s.
Long waves were also recorded at Kew, Edinburgh, and Scoresby Sund.

Sept. 29d. 12h. 12m. 24s. Epicentre 43°·4N. 15°·2E. (as on 1931 July 28d.). X.

A = +·701, B = +·191, C = +·687 ; D = +·262, E = −·965 ;
G = +·663, H = +·180, K = −·727.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Collurania		1·3	236	0 39	S*	(0 39)	+ 6	—	—
Triest		2·5	336	e 0 37	+ 1	i 1 9	+ 5	i 1·3	—
Zagreb		2·5	13	e 0 35	− 1	i 1 1	− 3	—	1·1
Ravensburg		5·9	321	—	—	e 2 46	S*	—	—
Zurich		6·2	313	e 1 48	P*	—	—	—	—
Hohenheim	E.	6·8	325	—	—	e 3 11	+18	—	—
Stuttgart		6·8	325	—	—	e 3 31	S*	—	—

No additional readings.

Sept. 29d. Readings also at 2h. (Pasadena), 8h. (Suva and La Paz), 9h. (Apia, Christchurch, Wellington, Melbourne, Riverview, Sydney, Perth, Berkeley, Ottawa, Bombay, Kodaikanal, Ekaterinburg, Tashkent, Simferopol, Theodosia, De Bilt, Strasbourg, Granada, and near Manila), 10h. (Florence, Paris, Stuttgart, Uccle, Copenhagen, San Fernando, Scoresby Sund, Pulkovo, Kucino, and Baku), 11h. (Kodaikanal), 19h. (La Paz, Trenta, and near Andijan), 21h. (Pittsburgh), 23h. (Andijan, Calcutta, Ekaterinburg, and Irkutsk).

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Sept. 30d. 11h. 14m. 51s. Epicentre 28°·5N. 69°·0E. (as on 1931 Aug. 28d.). R.2.

A = +·315, B = +·821, C = +·477 ; D = +·934, E = −·358 ;
G = +·171, H = +·446, K = −·879.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		8·1	75	(1 59)	+ 4	(3 9)	−17	(4·2)	(8·2)
Agra	N.	8·1	97	2 32	P*	i 3 43	+17	e 4·2	—
Bombay		10·2	159	2 54	+30	5 33	+75	6·6	9·4
Andijan		12·6	12	e 2 57	+ 1	e 5 26	+ 9	e 6·4	—
Almata		16·1	21	e 3 38	− 5	e 6 38	− 3	—	—
Calcutta		18·4	105	4 29	+18	8 9	+36	10·3	—
Baku		19·7	312	i 4 22	− 4	i 7 47	−13	e 9·2	13·0
Colombo		23·9	153	3 39	−90	10 6	+45	17·0	20·2
Ksara		28·7	289	e 6 1	+ 8	—	—	—	—
Ekaterinburg		29·0	351	i 5 58	+ 2	10 46	− 2	13·2	18·4
Kucino		35·2	329	e 6 51	0	—	—	e 20·2	24·4
Irkutsk		35·3	37	—	—	e 12 9?	−17	20·2	—
Pulkovo		40·8	331	i 7 37	− 2	13 41	− 7	21·2	27·4
Hong Kong		41·0	88	17 41	ScS	(17 41)	(− 7)	—	25·6
Helsingfors	E.	43·3	329	e 8 46	+47	e 15 2	+37	e 21·4	—
	N.	43·3	329	e 8 44	+45	e 15 0	+35	e 21·4	—
Upsala		46·6	327	e 10 9	PP	—	—	e 23·2	31·4
Lund		47·8	321	8 36	+ 1	15 27	− 3	—	—
Florence		48·0	305	e 7 9	−87	e 14 39	−54	—	25·2
Copenhagen		48·2	321	8 37	− 1	15 35	− 1	27·2	—
Hamburg		49·3	319	—	—	e 20 9?	SSS	—	35·4
Stuttgart		49·5	314	e 8 47	0	e 19 57	?	—	32·6
Manila		49·9	95	8 46	− 5	13 32	?	16·8	—
Feldberg		50·0	315	—	—	e 20 45	SSS	—	36·6
Strasbourg		50·5	312	(e 9 9?)	+14	—	—	e 9·2	—
Neuchatel		51·0	310	e 8 58	− 1	—	—	—	—
De Bilt		52·1	316	9 8	+ 1	—	—	e 30·2	34·4
Uccle		52·6	315	e 9 10	− 1	—	—	e 30·2	—
Paris		53·9	313	(e 9 9?)	−12	—	—	e 9·2	37·2

Additional readings and note :—
Dehra Dun readings have been *diminished* by 4m.
Ksara eN = +12m.24s., eE = +12m.40s., eN = +15m.13s. and +17m.10s.
Kucino e = +14m.24s. =SS −7s. and +16m.27s.
Irkutsk e = +15m.9s. ?
Helsingfors ePPE = +10m.38s., ePPN = +10m.43s., eSSE = +17m.41s., eSSSEN = +18m.17s.
Long waves were also recorded at Edinburgh, Granada, and Scoresby Sund.

Sept. 30d. Readings also at 4h. (near Sumoto), 5h. (Haiwee, Tinemaha, Mount Wilson, Pasadena, Riverside, Sucre, and near La Paz), 6h. (Messina (2)), 8h. (La Paz and Nagoya), 9h. (near Ambojna and near Manila), 10h. (near Toyooka), 11h. (Almata), 12h. (Lick, Agra, Bombay, Baku, Nagasaki, Mizusawa, near Tyosi (2), and Kobe), 13h. (Ekaterinburg, Almata, Dehra Dun, Calcutta, Hastings, and near Wellington), 14h. (Lick), 15h. (Lick, La Jolla, Pasadena, and Tucson), 17h. (Almata and near Andijan (2)), 19h. (Tyosi), 21h. (Ekaterinburg and Tashkent), 22h. (La Paz and near Andijan), 23h. (La Paz).