The International Seismological Summary.

1935 July, August, September.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

There are 176 epicentres in this quarter of the Summary. Of these, 61 are new and 115 repetitions of old epicentres. The quality of the material is as follows :—

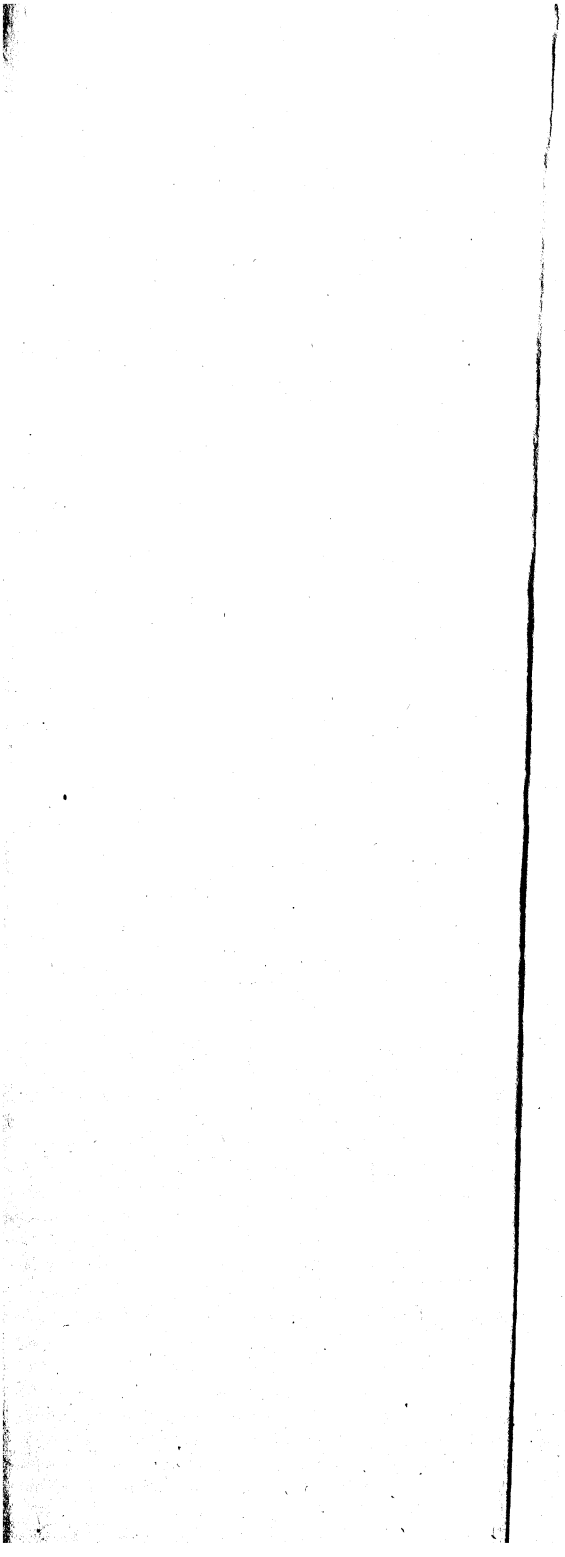
N.1=13	R.1=16	X.=72
N.2=13	R.2=12	
N.3=35	R.3=15	

Cases of abnormal focus are :—

	Date. d.	h.	m.	s.	Epicentre. °	°	Focal Depth. (Below Normal).
July	15	14	13	30	21·3S.	178·6W.	+0·075
	26	8	3	33	48·7N.	145·3E.	+0·050
	27	10	13	10	48·7N.	145·3E.	+0·050
	29	4	12	50	19·3N.	145·7E.	+0·020
	29	7	38	46	21·0S.	177·0W.	+0·060
Aug.	17	7	28	5	37·3N.	141·7E.	+0·005
Sept.	12	16	1	20	18·6S.	179·8E.	+0·015
	14	8	28	4	33·1N.	141·2E.	+0·010
	19	9	55	46	15·8S.	69·2W.	+0·030
	29	8	22	39	33·3N.	139·8E.	+0·015

UNIVERSITY OBSERVATORY,
OXFORD.

1945, December 5.



1935 JULY, AUGUST, SEPTEMBER.

July 1d. 7h. Readings for which no determination has been made :—

Andijan eP = 19m.26s., S_g = 20m.3s., M = 20m.21s.
Frunse eP = 20m.0s.
Tashkent eP = 20m.10s., iS = 21m.14s., L = 21m.24s., M = 22m.30s.
Samarkand eP = 20m.38s., e = 21m.30s.
Almata e = 20m.11s., eS_g = 21m.10s., M = 21m.17s.
Sverdlovsk e = 28m.31s., e = 29m.41s.

July 1d. Readings also at 0h. (Amboina), 2h. (Sverdlovsk and Tashkent), 3h. (Ksara), 4h. (Kobe and Sumoto), 11h. (Amboina), 12h. (Malabar), 14h. (Manila, Andijan, and Zurich), 15h. (Andijan, Ebingen (2), Ravensburg (2), Samarkand (2). Stuttgart (2), Strasbourg, Tashkent, and Zurich (3)), 16h. (Amboina), 17h. (Manila and Santiago), 18h. (Strasbourg and Oak Ridge), 19h. (Grozny and Piatigorsk).

July 2d. 15h. 24m. 53s. Epicentre 25°·5N. 55°·2E. N.3.

A = +·515, B = +·741, C = +·431 ; D = +·821, E = −·571 ;
G = +·246, H = +·354, K = −·903.

	△	Az.	P	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	15·5	345	—	—	e 6 54	+27	9·8	43·7
Tiflis	18·3	335	e 4 10	0	e 7 24	− 7	9·7	—
Ksara	18·7	300	i 4 44	− 1	i 7 38	− 2	10·0	—
Grozny	19·4	340	e 4 17	− 6	e 7 45	− 9	—	—
Tashkent	19·6	33	e 4 26	+ 1	7 57	− 1	e 9·6	12·8
Agra	20·5	81	—	—	e 8 40	SS	—	—
Helwan	21·5	289	e 5 35	?	8 35	− 1	12·6	14·7
Yalta	25·5	324	e 5 23	− 2	9 45	− 5	—	—
Simferopol	25·8	324	5 30	+ 3	—	—	—	—
Sebastopol	25·9	323	e 5 34	+ 6	—	—	—	—
Sverdlovsk	31·5	6	e 7 10	PP	e 11 23	− 5	15·1	17·8
Moscow	32·9	340	e 8 11	?	e 14 27	?	18·0	26·3
Pulkovo	38·3	340	e 7 56	+18	e 12 46	−25	20·1	24·8

Additional readings :—
Baku e = +8m.48s.
Tiflis e = +8m.14s.
Ksara PP = +4m.32s.
Grozny e = +5m.40s.
Long waves at Edinburgh, Bombay, Chiufeng, Nanking, and other European stations.

July 2d. Readings also at 2h. (De Bilt), 4h. (Almeria), 7h. (Hukuoka B and Nagsaki), 11h. (Prato and Santiago), 12h. (Santiago and Wellington), 15h. (Andijan and Moscow), 16h. (Erevan, Vienna, and Cape Town), 18h. (Andijan, Almata, Moscow, and Tashkent),19h. (Amboina and Nagoya), 20h. (Amboina), 23h. (Mizusawa).

July 3d. 0h. 16m. 42s. (I) } Epicentre 31°·6N. 130°·6E. X.
0h. 19m. 16s. (II) } (as on 1930 Sept. 29d.). X.

A = − ·554, B = + ·647, C = + ·524.

	△	Az.	P.	O − C.	S.	O − C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
I Nagasaki	1·3	332	0 20	+ 2	0 40	S_g	—
II	1·3	332	0 18	0	0 34	+ 1	—
I Hukuoka B	2·0	356	0 29	0	0 48	− 3	—
II	2·0	356	0 28	− 1	0 52	+ 1	—
I Hukuoka	2·0	356	0 26	− 3	0 49	− 2	—
II	2·0	356	0 26	− 3	0 49	− 2	—
I Sumoto	4·5	51	e 1 27	P_g	e 1 55	0	2·1
II	4·5	51	e 1 6	+ 2	e 1 53	− 2	2·1
I Kobe	4·9	50	e 1 23	P*	2 13	+ 8	3·7
II	4·9	50	—	—	e 2 7	+ 2	3·6
I Toyooka	5·3	41	e 1 58	P_g	2 11	− 4	—
II	5·3	41	e 2 18	S	(e 2 18)	+ 3	—

Additional readings :—
Hukuoka I i = +30s. = P* − 1s., II i = +29s.
Sumoto I eZ = +2m.5s., II eZ = +1m.51s.
Kobe I SZ = +2m.16s., SN = +2m.18s., SE = +2m.24s. = S* +0s., II eN = +2m.42s.
Toyooka I ePN = +2m.1s.

July 3d. 16h. 31m. 39s. Epicentre 42°·3N., 142°·4E. (as on 1932 Dec. 29d.). R.3.

A = − ·586, B = + ·451, C = + ·673.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	3·3	198	i 0 51	P*	i 1 31	S*	—	—
Vladivostok	7·8	280	i 2 12	P*	e 3 40	S*	4·2	5·3
Nagoya	8·3	213	2 2	+ 4	3 53	S*	—	—
Kobe	9·5	219	e 2 16	+ 2	e 4 28	S*	—	6·9
Chiufeng	19·8	272	e 4 31	+ 4	e 8 6	+ 4	—	12·6
Nanking	21·3	249	e 4 39	− 4	e 8 35	+ 3	11·5	—
Sverdlovsk	51·6	318	i 9 1	− 2	e 16 20	− 3	14·3	—
Tashkent	52·8	297	—	—	e 16 42	+ 3	e 28·5	33·3
Ksara	78·5	307	e 11 57	− 3	e 22 28	PS	—	48·9

Additional readings :—
Kobe eN = +2m.50s.
Tashkent e = +16m.51s.
Long waves recorded at Hong Kong.

July 3d. 20h. 16m. 18s. Epicentre 24°·8N., 120°·4E. (as on 1935 May 6d.). X.

A = − ·459, B = + ·783, C = + ·419.

	△	Az.	P.	O − C.	S.	O − C.
	°	°	m. s.	s.	m. s.	s.
Taityu	0·7	160	i 0 12	+ 2	0 20	+ 2
Taihoku	1·1	77	i 0 16	0	e 0 27	− 1
Arisan	1·3	166	i 0 24	P_g	0 39	S_g
Karenko	1·4	131	i 0 19	− 1	0 34	− 2
Tainan	1·8	186	e 0 40	S	(e 0 40)	− 6
Taito	2·1	164	i 0 40	P_g	1 6	S_g
Takao	2·1	180	0 40	P_g	—	—
Kosyun	2·8	182	e 0 53	P_g	1 32	S_g
Nanking	7·4	348	e 1 4	P*	i 4 2	S_g

Long waves at Hong Kong.

July 3d. 21h. 47m. 6s. Epicentre 8°·1S. 119°·6E. (as on 1931 Feb. 23d.). R.3.

A = −·489, B = +·861, C = −·141.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	12·8	278	i 3 4	+ 5	i 6 17	S*	—	—
Manila	22·7	3	5 4	+ 6	9 22	SS	—	—
Medan	23·9	299	e 5 27	PP	—	—	—	—
Chiufeng	48·3	357	e 8 38	0	e 15 38	+ 1	—	—
Frunse	65·4	325	e 10 30	−11	—	—	—	—
Andijan	65·4	322	e 10 47	+ 6	e 19 24	− 1	—	—
Tashkent	67·6	323	e 10 48	− 8	i 19 47	− 5	e 35·3	42·1
Samarkand	68·1	320	10 59	0	19 54	− 4	—	—
Baku	80·2	314	—	—	e 22 14	− 4	42·9	—
Sverdlovsk	80·7	332	e 12 7	− 5	e 22 10	−13	36·9	—
Tiflis	84·3	315	—	—	e 22 45	[− 9]	—	—
Ksara	89·3	304	e 12 58	+ 4	e 23 46	− 3	—	—
Santa Barbara	119·7	54	i 18 40	[− 5]	—	—	—	—
Haiwee	120·8	51	i 18 43	[− 4]	—	—	—	—
Pasadena	121·1	54	i 18 41k	[− 7]	—	—	—	—
Mount Wilson	121·1	53	i 18 43	[− 5]	—	—	—	—
Riverside	121·8	53	e 18 45	[− 5]	—	—	—	—
Oak Ridge	144·2	14	19 26	[− 6]	—	—	—	—

Additional readings :—
Batavia iE = +7m.55s.
Medan iPE = +5m.32s., e = +13m.13s.
Tiflis e = +24m.17s.
Long waves at De Bilt, Paris, Nanking, and Hong Kong.

July 3d. Readings also at 0h. (Scoresby Sund), 1h. (Apia, Mizusawa, and Nagoya) 3h. (Amboina), 4h. (Taityu and Taihoku), 5h. (Amboina (2), Branner, Berkeley, Haiwee, Lick, Pasadena, Tinemaha, and Ukiah), 6h. (Amboina), 7h. (Santiago, Samarkand, and Tiflis), 8h. (Wellington), 10h. (Wellington), 11h. (Apia), 13h. (Tananarive), 14h. (Apia), 15h. (Samarkand), 16h. (Chur, Triest, Zagreb, and Zurich), 18h. (Tucson, Oaxaca, Tacubaya, New Plymouth, and Wellington (2)), 19h. (Padova, Sofia, Stuttgart, Strasbourg, Triest, and Zurich), 21h. (Manila and Oak Ridge), 22h. (Scoresby Sund and Granada).

July 4d. 2h. Readings for which no determination has been made :—

Calcutta P = 49m.57s., P_g = 50m.18s., S = 50m.40s., M = 52m.35s.
Agra P = 51m.35s., eS = 52m.15s., S* = 52m.45s., S_g = 53m.20s.
Tashkent e = 53m.0s., iS = 56m.56s., eL = 59m.36s., M = 61m.0s.
Samarkand e = 53m.10s., e = 57m.25s.
Frunse e = 54m.10s.
Sverdlovsk iP = 55m.13s., L = 67m.
Andijan e = 56m.36s.
Bombay e = 57m.
Chiufeng (e)EN = 58m.35s., M = 62m.54s.

July 4d. Readings also at 0h. (Manila), 1h. (Santiago), 2h. (Andijan), 3h. (Pasadena, Mount Wilson, Santa Barbara, Arisan, and Taityu), 8h. (Baku, Ksara, Sverdlovsk, Sebastopol, Simferopol, Yalta, Tiflis, and Nagoya), 9h. (Semipalatinsk), 13h. (Amboina), 18h. (Mizusawa (2)), 20h. (Tashkent and Andijan (3)), 21h. (Nagoya), 22h. (Lick).

July 5d. 9h. Readings for which no determination has been made, Vladivostok suggests 34°·3N. 136°·7E. :—

Sumoto iP =12m.17s., SEN =13m.4s., M =13m.7s.
Kobe iP =12m.18s., iS =13m.3s., eZ =13m.50s., eZ =13m.58s., M =14m.46s.
Nagoya P =12m.20s., iS =13m.3s., M =13m.6s.
Nagasaki PE =12m.48s., PN =12m.55s., SEN =14m.10s.
Hukuoka eP =12m.48s., iS =14m.0s.
Hukuoka B. P =12m.51s., S =14m.2s.
Mizusawa iP =13m.1s., iS =14m.20s.
Husan iP =13m.4s., S =14m.26s.
Taikyu iP =13m.11s., iS =14m.40s.
Keizyo iP =13m.32s., iS =15m.18s.
Zinsen iP =13m.33s., iS =15m.22s.
Vladivostok iP =13m.48s., iS =15m.46s., L =16m.30s.
Nanking iPE =14m.30s., eSE =17m.12s., eSN =17m.24s.
Chiufeng iP =15m.7s.k, ipPE =15m.25s., iSEN =18m.13s.
Sverdlovsk eP =22m.31s., iS =27m.34s., L =39m.
Tinemaha iPZ =22m.54s.
Haiwee iPZ =22m.57s.
Pasadena iPZ =23m.1s.a.
Mount Wilson iPZ =23m.2s.a.
Riverside iPZ =23m.4s.a.
La Jolla iPZ =23m.6s.
Tiflis e =25m.49s.
Granada eP =26m.53s., e =34m.59s.
Pulkovo i =30m.22s.

July 5d. 17h. 53m. 4s. Epicentre 37°·7N. 67°·4E. N.1.

A = +·304, B = +·731, C = +·611 ; D = +·923, E = −·384 ;
G = +·235, H = +·564, K = −·791.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	2·0	347	i 0 29	0	—	—	—	—
Tashkent	3·9	21	i 0 54	− 2	—	—	—	—
Tchimkent	4·9	20	1 6	− 4	—	—	—	—
Andijan	5·0	52	i 1 12	+ 1	i 2 26	S*	—	4·2
Frunse	7·6	49	(1 56)	+ 8	(3 20)	+ 6	—	(4·3)
Almata	9·2	55	i 2 8	− 2	3 50	− 4	—	5·2
Dehra Dun	11·5	131	2 26	−16	—	—	5·3	7·9
Agra	13·8	134	e 3 14	+ 1	5 40	− 6	—	—
Baku	13·9	287	3 11	− 3	6 11	L	(6·2)	10·1
Semipalatinsk	15·7	30	i 3 31	− 7	6 38	+ 7	7·7	8·3
Grozny	17·4	295	3 58	− 1	—	—	—	—
Tiflis	17·8	291	i 4 1	− 3	i 7 27	+ 7	11·0	17·0
Erevan	18·0	286	4 8	+ 1	e 8 12	?	—	—
Bombay	19·3	163	4 27	+ 5	i 8 9	SS	9·6	13·6
Piatigorsk	19·4	298	4 18	− 5	e 8 49	?	10·9	—
Sverdlovsk	19·7	348	i 4 22	− 4	i 7 58	− 2	11·1R	—
Sotchi	21·7	295	4 50	+ 2	e 9 22	SS	—	—
Hyderabad	22·4	150	5 27	PP	9 37	SS	12·4	14·9
Calcutta	23·5	122	5 19	PP	9 34	SS	11·6	13·6
Ksara	25·7	270	i 5 29a	+ 3	i 10 16	+23	—	—
Yalta	25·8	296	i 5 26	− 1	10 3	+ 8	18·1	—
Simferopol	25·9	298	i 5 26	− 2	10 4	+ 7	19·0	—
Sebastopol	26·2	297	5 29	− 2	10 8	+ 6	—	—
Moscow	27·0	320	5 35	− 3	10 8	− 7	12·8	15·7
Kodaikanal	28·9	157	e 6 22	+27	e 11 21	+34	i 14·1	16·4
Helwan	30·8	267	6 10	− 2	11 18	+ 1	—	25·0
Bucharest	31·6	296	e 6 20	+ 1	e 11 36	+ 7	—	—
Pulkovo	32·3	325	i 6 22	− 3	e 11 30	−10	16·9	19·3
Colombo	32·8	155	14 10	?	—	—	—	20·9
Sofia	33·7	293	e 6 40	+ 2	e 12 3	+ 2	23·5	24·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade	35·5	297	e 6 52	− 1	e 12 29	0	e 21·6	—
Königsberg	35·8	314	i 7 3	+ 7	i 12 29	− 4	19·9	23·9
Budapest	36·3	302	7 2	+ 2	12 42	+ 1	24·9	26·9
Chiufeng	37·5	70	i 7 13a	+ 2	i 13 3	+ 4	—	25·8
Phu-Lien	37·8	103	e 7 16	+ 3	—	—	20·9	—
Vienna	38·1	303	e 7 15	− 1	e 13 4	− 4	—	27·9
Upsala	38·3	322	7 11	− 7	13 3	− 8	—	21·5
Zagreb	38·5	300	e 7 21	+ 2	e 13 30	+16	e 20·5	23·6
Graz	38·7	301	i 7 20	− 1	i 13 16	− 1	e 23·9	26·7
Prague	39·3	307	e 7 24	− 2	e 13 22	− 4	e 21·9	27·9
Triest	40·1	300	i 7 31a	− 2	i 13 40	+ 2	22·9	26·1
Copenhagen	40·5	314	7 34	− 2	13 41	− 3	—	—
Leipzig	40·5	308	i 7 32	− 4	i 13 52	+ 8	e 20·9	25·9
Cheb	40·5	306	e 7 34	− 2	e 16 48	SSS	—	28·7
Capodimonte	40·7	293	e 7 52	+14	e 13 56	+ 9	—	—
Jena	41·0	309	i 7 42	+ 2	e 14 6	+15	19·9	28·9
Padova	41·5	300	e 8 46	+62	14 17	+18	—	—
Hamburg	41·9	311	i 7 45a	− 3	e 14 6	+ 1	e 21·9	24·9
Göttingen	42·0	309	i 7 47a	− 2	e 13 56	−10	—	23·9
Nanking	42·0	80	7 46	− 3	i 14 5	− 1	i 19·5	27·5
Florence	42·2	297	7 45	− 5	14 9	0	24·9	27·9
Prato	42·2	299	i 7 53	+ 3	i 14 6	− 3	e 24·4	27·9
Stuttgart	42·8	304	i 7 54	− 1	i 14 18	0	e 23·7	28·9
Chur	42·8	301	e 7 53	− 2	—	—	—	—
Hong Kong	42·8	96	7 56	+ 1	14 23	+ 5	—	27·3
Piacenza	43·0	300	7 58	+ 1	14 24	+ 3	26·6	31·3
Karlsruhe	43·2	304	7 59	+ 1	—	—	—	—
Strasbourg	43·7	304	8 0k	− 2	14 31	0	e 22·9	31·7
Basle	44·0	303	e 7 53	−12	—	—	—	—
Bergen	44·4	322	e 8 42	+34	e 15 22	+41	—	—
Zi-ka-wei	44·4	80	i 8 10	+ 2	14 58	+17	28·2	29·5
Medan	44·5	131	8 29	+20	14 36	− 7	e 28·9	—
Neuchatel	44·5	304	e 8 7	− 2	—	—	—	—
De Bilt	44·9	310	8 11	− 1	14 47	− 2	e 22·9	25·8
Uccle	45·6	308	8 15	− 3	14 56	− 3	22·9	31·1
Zinsen	46·1	71	i 8 23	+ 2	e 15 2	− 4	e 25·5	—
Paris	47·1	305	i 8 29	0	15 20	0	—	28·9
Taikyu	48·2	71	8 36	− 2	e 15 36	0	29·8	—
Vladivostok	48·2	62	i 8 40	+ 2	e 15 48	+12	25·4	40·0
Kew	48·3	309	i 8 37a	− 1	e 15 35	− 2	24·4	32·2
Durham	48·6	314	—	—	15 34	− 7	—	34·9
Husan	48·7	71	8 42	+ 1	15 47	+ 4	30·6	—
Oxford	48·9	311	i 8 41	− 2	i 15 30	−15	23·2	32·8
Edinburgh	49·2	315	—	—	i 15 52	+ 2	26·9	34·4
Barcelona	49·3	297	8 54	+ 8	e 15 49	− 2	e 19·7	29·9
Bidston	49·6	312	i 8 44	− 4	e 15 55	0	24·2	30·9
Algiers	50·2	290	e 8 46	− 7	e 15 54	−10	e 23·9	—
Nagasaki	50·3	74	e 8 56	+ 2	—	—	—	—
Tortosa	50·6	294	e 9 15	+19	—	—	21·9	34·1
Kumamoto	50·9	75	9 1	+ 3	—	—	—	—
Kagosima	51·4	75	9 5	+ 3	—	—	—	—
Alicante	52·2	293	e 9 17	+ 9	e 16 51	+20	e 30·1	—
Manila	52·5	102	9 13a	+ 3	i 16 41	+ 6	25·6	29·9
Toyooka	53·0	69	9 15	+ 1	16 47	+ 5	—	—
Kobe	53·5	69	9 18	0	16 51	+ 2	e 31·3	34·3
Gihu	54·1	70	9 27	+ 5	—	—	—	—
Almeria	54·2	293	e 9 30	+ 7	e 16 54	− 4	e 31·9	—
Toledo	54·2	296	e 9 22	− 1	i 16 58	0	e 25·9R	—
Toyama	54·2	68	9 24	+ 1	—	—	—	—
Siomisaki	54·5	72	9 28	+ 3	17 9	+ 7	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kameyama		54·5	70	9 21	− 4	—	—	—	—
Scoresby Sund		54·6	338	9 26	0	17 6	+ 2	—	—
Nagoya		54·7	68	e 9 29	+ 3	—	—	—	—
Sapporo		54·7	58	9 28	+ 2	—	—	—	—
Hakodate		54·8	59	9 31	+ 4	—	—	—	—
Granada		54·9	293	i 9 27	− 1	i 17 16	+ 8	26·1	38·2
Nagano		55·0	66	9 31	+ 2	—	—	—	—
Oiwake		55·4	67	9 32	0	—	—	—	—
Kohu		55·6	68	9 35	+ 2	—	—	—	—
Malaga		55·7	293	9 37	+ 3	17 29	+10	31·3	—
Maebasi		55·7	66	9 33	− 1	—	—	—	—
Hunatu		55·9	66	9 37	+ 2	—	—	—	—
Mizusawa		56·1	62	e 9 36	− 1	e 17 25	+ 1	—	—
Hukusima		56·2	65	9 38	+ 1	17 24	− 1	—	—
Misima		56·2	67	9 38	+ 1	—	—	—	—
Tokyo		56·5	67	9 36	− 3	—	—	—	—
Kakioka		56·6	67	9 41	+ 1	—	—	—	—
San Fernando		57·2	294	i 9 51a	+ 6	i 17 40	+ 1	29·9	37·9
Batavia		57·2	131	—	—	e 18 1	PS	38·3	—
Sitka		83·3	12	e 12 24	− 1	e 21 56	−54	e 40·3	—
Cape Town	E.	84·9	219	38 51	?	48 25	?	61·0	—
Ottawa		90·6	335	—	—	e 23 26	[−10]	e 37·9	—
Oak Ridge		91·5	330	i 13 2	− 2	—	—	—	—
Toronto		93·3	335	—	—	e 23 34	[−18]	42·9	—
Philadelphia		95·2	331	i 23 55	S	(i 23 55)	[− 7]	e 42·6	—
Florissant		100·8	342	e 26 49	PS	—	—	e 48·4	59·3
St. Louis		101·0	341	—	—	e 24 40	[+ 9]	e 48·4	58·4
Tinemaha		105·1	6	e 18 7	[+ 5]	—	—	—	—
Pasadena		108·0	6	i 18 21	[+10]	—	—	e 60·5	—
Riverside		108·2	4	e 18 33	PP	—	—	—	—
La Paz		135·7	286	19 18	[+ 2]	—	—	74·1	85·0

Additional readings and notes :—
Andijan P* = +1m.22s., P_g = +1m.27s., PP = +1m.30s., iSS = +2m.0s.
Frunse i = (+2m.31s.) = P_g + 5(+3m.37s.) and (+4m.6s.); all readings have been *increased* by 2m.
Almata i = +2m.24s. and +3m.42s., iSZ = +4m.44s.
Agra SS = +6m.2s., S* = +6m.19s., S_g = +7m.11s.
Grozny i = +4m.58s., e = +5m.58s.
Tiflis PP = +4m.13s., PPP = +4m.23s., SS = +8m.8s.
Bombay SSEN = +8m.55s.
Sverdlovsk L_q = +10m.14s.
Ksara iSS = +11m.36s.
Kodaikanal SS = +12m.34s.
Helwan PP = +7m.38s.
Bucharest SSE = +13m.20s., S_cSE = +16m.16s.
Sofia iP = +6m.48s., e = +8m.8s.
Belgrade i = +7m.3s., e = +8m.26s. and +9m.47s.
Königsberg eE = +8m.14s. = PP + 3s. and +8m.20s., iZ = +8m.25s. and +8m.33s., iN = +8m.53s., eE = +9m.4s., and +9m.22s. = P_cP − 6s., iE = +12m.43s., iSSN = +14m.8s., eZ = +14m.26s., iE = +15m.20s., eN = +15m.39s., eZ = +16m.2s., iE = +16m.11s. and +16m.29s., eZ = +16m.50s.
Budapest PS = +12m.53s., SSS = +15m.2s.
Chiufeng iN = +15m.27s. = SS + 4s.
Vienna PPP = +8m.57s., SSS = +16m.8s.
Upsala PP = +8m.21s., PPP = +8m.40s. = PP − 1s.
Zagreb e = +7m.30s., ePP = +8m.50s., eP_cP = +9m.2s., e = +24m.39s., +28m.44s. and +29m.18s.
Prague ePP = +8m.46s., eSS = +15m.43s.
Triest i = +9m.20s. = PPP + 0s., +13m.51s., +16m.16s. = SS + 0s., and +16m.41s. = SSS − 6s.
Copenhagen +9m.7s. = PP + 2s. and +16m.46s.
Leipzig iE = +7m.41s. and +7m.55s., eZ = +8m.56s., iPPE = +9m.2s., iPPPE = +9m.20s., eN = +13m.32s., eE = +16m.10s., eZ = +16m.20s. = SS − 3s., iSSE = +16m.36s.
Cheb e = +9m.14s., +13m.37s. = S − 7s. and +18m.49s., eN = +23m.32s., e = +26m.56s.?
Jena iPZ = +7m.38s., iPPE = +9m.25s.
Hamburg ePP = +9m.24s., eSS = +16m.56s.
Göttingen ePPz = +9m.22s., ePPE = +9m.30s., eSSE = +17m.14s.
Nanking iSSS = +17m.20s., e = +23m.18s.

Stuttgart i = +8m.3s., ePP = +9m.36s., i = +9m.53s. = P_cP +2s., e = +10m.8s. and +10m.28s., eSS = +17m.10s.
Hong Kong PPPP = +10m.9s., SSS = +17m.51s.
Strasbourg i = +8m.8s., iPP = +9m.39s., i = +10m.0s. = P_cP +6s., iPS = +14m.46s., iSS = +17m.46s.
Bergen PPP = +10m.4s.
Zi-ka-wei iZ = +18m.28s. = SSS − 2s. and +22m.12s.
De Bilt PPZ = +9m.56s., eSS = +18m.2s. = S_cS − 9s., iZ = +18m.13s.
Uccle i = +10m.20s. and +18m.26s.
Paris PP = +10m.44s., SS = +19m.3s.
Kew ePP = +10m.28s., eSS = +19m.7s.
Durham ? = +19m.9s.
Oxford i = +18m.35s. = S_cS − 2s.
Edinburgh e = +10m.41s., i = +19m.20s. and +19m.31s.
Bidston eSS = +19m.32s.
Toyooka PN = +9m.17s.
Kobe eN = +11m.29s., eE = +11m.52s.
Toledo i = +9m.31s., eL_g = +21m.19s.
Scoresby Sund +20m.44s. = SS + 3s.
Granada i = +9m.36s., PP = +11m.31s., PPP = +12m.19s., PS = +17m.36s.
Malaga i = +10m.5s., PP = +11m.41s. and +12m.47s. = PPP + 6s., e = +17m.11s. = PS − 11s., +19m.7s. = S_cS − 15s., +23m.17s., +32m.17s., and +37m.57s.
Mizusawa eSN = +17m.1s.
Batavia eE = +14m.30s.
Sitka e = +20m.21s.
Cape Town PP = +41m.35s., PPP = +43m.20s., ? = +47m.1s., PS = +49m.5s., SSE = +52m.53s., SSN = +53m.35s., SSSE = +55m.27s., SSSN = +55m.31s.
Ottawa eN ? = +29m.56s. ? = SS + 7s., eE = +34m.8s.
Oak Ridge iZ = +13m.14s.
Toronto eN = +25m.28s. = PS − 2s., iN = +37m.26s.
Philadelphia iPS = +26m.11s., eSS = +30m.59s.
Florissant eSSN = +40m.56s.
St. Louis eE = +24m.21s., eSKKS = +25m.20s.
Pasadena eZ = +17m.14s. and +29m.34s.
La Paz PPZ = +22m.8s., PPN = +22m.52s. = PKS − 4s.
Long waves at Stonyhurst, Keizyo, Hukuoka B, and American stations.

July 5d. Readings also at oh. (Baku, Ksara, Tashkent, and Sverdlovsk), 2h. (Ebingen and Stuttgart), 3h. (Mizusawa, Nagoya, Vladivostok, Florissant, Honolulu, and Sitka), 5h. (Apia and Amboina), 6h. (Andijan), 14h. (Mizusawa), 16h. (Batavia and Hukuoka), 17h. (Sverdlovsk), 18h. (Andijan), 19h. (Branner), 20h. (Manila), 21h. (Manila), 22h. (Ksara and Wellington), 23h. (Tiflis).

July 6d. 3h. Readings for which no determination has been made :—

Sitka iPN = 32m.22s., iP* = 32m.27s., iSN = 32m.58s.
Tinemaha ePz = 37m.12s.
Haiwee iPZ = 37m.21s.
Mount Wilson ePZ = 37m.34s.
Pasadena ePZ = 37m.35s.
Riverside iPZ = 37m.38s.
La Jolla ePZ = 37m.48s.
Vladivostok e = 41m.14s.
Ottawa eE ? = 48m., eN = 50m.30s., eL = 52m.
St. Louis eE = 48m.18s., eE = 50m.16s., eN = 50m.43s., eE = 50m.54s., iE = 51m.58s.
Toronto eN = 50m., iN = 51m.21s.
Scoresby Sund 50m.
Ann Arbor e = 51m.0s., e = 51m.42s., eL ? E = 53m.12s.
Philadelphia e = 52m.9s., e = 54m.3s., iL = 54m.15s.
Ithaca iE = 52m.52s., eE = 53m.30s.
Oak Ridge i = 53m.56s., eZ = 54m.6s., eN = 54m.12s., iZ = 54m.20s. and 54m.30s., eZ = 54m.46s.
Tashkent e = 63m.0s., eL = 77m.18s., M = 86m.18s.
Long waves at Edinburgh, Kew, and other American and European stations.

July 6d. 5h. 20m. 26s. Epicentre 42°·5N. 80°·1E. N.3.

Given by Tashkent.

A = +·127, B = +·726, C = +·676; D = +·985, E = −·172;
G = +·116, H = +·666, K = −·737.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	2·4	288	i 1 37	S_g	—	—	—	—
Frunse	4·1	275	(1 9)	P*	(1 37)	− 8	—	—
Andijan	6·0	254	1 39	P*	2 24	− 9	—	3·0
Tchimkent	7·8	269	e 2 17	P*	e 3 26	+ 7	—	3·9
Tashkent	8·1	265	1 55	0	i 3 29	+ 3	i 3·7	3·9
Samarkand	10·3	257	—	—	e 4 27	SS	—	5·9
Sverdlovsk	18·8	326	e 4 25	+ 9	e 7 57	SS	10·9R	10·9
Grozny	25·0	286	e 3 40	?	—	—	13·4	—
Tiflis	26·0	280	e 7 13	?	e 11 58	?	e 18·3	—
Pulkovo	34·6	317	e 8 34	?	—	—	17·4	18·1

Additional readings and notes :—
Frunse iP_g = (+1m.13s.), iPP = (+1m.17s.); all readings have been *increased* by 1m.
Andijan iP_g = +1m.50s., iPP = +1m.54s., S_g = +2m.42s.
Tchimkent i = +2m.6s.
Samarkand e = +1m.52s.
Sverdlovsk L_q = +9m.28s.
Long waves at other European stations.

July 6d. Readings for which no determination has been made :—

6h.
Samarkand P_g = 48m.59s., S_g = 49m.21s., M = 49m.31s.
Tashkent eP = 49m.28s., e = 49m.31s., e = 49m.57s., i = 50m.21s., iL = 50m.10s., M = 50m.48s.
Tchimkent e = 49m.58s.
Frunse e = 50m.39s., eS_g = 51m.33s.
Andijan S_g = 50m.57s., M = 51m.27s.
Almata e = 53m.0s.
Grozny e = 55m.23s.
Copenhagen L = 42m.

6h.
Samarkand eP = 59m.9s., S_g = 59m.49s., M = 60m.14s.
Andijan eP = 59m.12s., e = 59m.27s., i = 59m.37s., M = 61m.6s.
Frunse e = 59m.24s., eS_g = 60m.8s.
Sverdlovsk L = 59m.

16h.
Samarkand P = 9m.58s., P_g = 10m.0s., iPP = 10m.3s., S_g = 10m.18s.
Tashkent e = 10m.29s., e = 10m.57s., eS = 11m.17s., i = 11m.23s., eL = 11m.24s., M = 11m.30s.
Andijan eP = 10m.52s., e = 11m.32s.
Frunse e = 11m.50s.
Sverdlovsk L = 20m.

July 6d. 21h. Readings for which no determination has been made :—

Manila P = 53m.10s., S = 58m.16s.
Vladivostok e = 56m.14s.
Sydney e = 60m.33s., L = 65m.18s., M = 66m.0s.
Riverview e? = 61m.36s., iEN = 65m.3s., eL = 65m.30s., M = 67m.55s.
Medan P = 61m.49s.
Melbourne e = 64m.0s., e = 64m.34s., i = 66m.24s., i = 66m.58s.
La Paz PN = 67m.26s.
Tashkent e = 70m.0s., eL = 85m.0s., M = 93m.6s.
Sverdlovsk S = 71m.3s., L = 86m.
Long waves at Kew and many European stations.

July 6d. Readings also at 0h. (Grozny and Samarkand), 1h. (Sofia (2), Tiflis, and Triest (2)), 2h. (Arisan and Taityu), 3h. (Wellington), 4h. (Lick and Manila), 5h. (Nagoya, Paris, and Strasbourg), 6h. (Andijan, Mizusawa, and Nagoya), 7h. (Amboina, Melbourne, Nagoya, Tokyo, and Ferndale), 8h. (Sofia), 9h. (Samarkand), 11h. (Mount Wilson, Pasadena, and Mizusawa), 17h. (Tananarive), 18h. (Algiers, Triest, Berkeley, Charlottesville, and Huancayo), 20h. (Tacubaya), 21h. (Adelaide, Chiufeng, and Ksara), 22h. (Hukuoka and Hukuoka B.), 23h. (Edinburgh, Kobe, and Mizusawa).

July 7d. 13h. 23m. 14s. Epicentre 17°·4N. 119°·0E. (as on 1934 Feb. 25d.). R.1.

A = −·463, B = +·835, C = +·299 ; D = +·875, E = +·485 ;
G = −·145, H = +·262, K = −·954.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	3·4	146	i 1 6a	P_g	2 0	?	—	4·9
Kosyun	4·9	20	e 1 5	− 5	—	—	—	—
Takao	5·4	13	e 1 1	−16	—	—	—	—
Taito	5·7	23	e 1 17	− 4	2 6	−19	—	—
Tainan	5·8	11	e 1 16	− 6	—	—	—	—
Hokoto	6·2	5	e 2 5	P_g	—	—	—	—
Arisan	6·3	13	i 1 27	− 3	2 26	−15	—	—
Hong Kong	6·7	319	1 36	+ 1	2 49	− 2	3·3	4·9
Taityu	6·9	13	e 1 35	− 3	2 35	−21	—	—
Karenko	7·1	20	e 1 40	− 1	2 47	−14	—	—
Taihoku	8·0	17	e 1 51	− 2	e 3 11	−13	—	—
Isigakizima	8·5	34	1 51	− 9	—	—	—	—
Phu-Lien	11·8	288	e 3 1	+15	e 5 18	+20	5·8	8·9
Zi-ka-wei	14·0	9	e 3 4	−11	—	—	6·7	8·4
Nake	14·6	40	3 26	+ 3	—	—	—	—
Nanking	14·7	359	i 3 8	−17	i 6 25	+15	7·5	8·9
Kagosima	17·7	35	4 9	+ 6	—	—	—	—
Palau	18·1	122	4 12	+ 4	—	—	—	—
Nagasaki	18·2	31	e 4 7	− 2	—	—	—	—
Miyazaki	18·4	36	4 6	− 5	7 21	−12	—	—
Kumamoto	18·7	32	4 12	− 3	—	—	—	—
Hukuoka B	19·2	30	e 4 19	− 2	7 54	+ 4	—	—
Husan	19·8	24	e 4 16	−11	7 58	− 4	11·2	—
Taikyu	20·4	23	e 3 55	−39	e 8 16	+ 2	—	—
Koti	20·8	36	4 35	− 3	8 23	+ 1	—	—
Zinsen	21·2	17	e 4 40	− 2	e 8 20	−10	—	—
Keizyo	21·4	18	4 40	− 4	i 8 30	− 4	11·4	—
Siomisaki	22·0	40	4 50	− 1	8 46	0	—	—
Sumoto	22·1	37	4 52	0	8 46	− 2	—	17·6
Wakayama	22·1	38	4 51	− 1	8 44	− 4	—	—
Heizyo	22·5	14	e 5 30	?	—	—	9·0	—
Kobe	22·5	37	4 57	+ 1	8 43	−12	e 14·8	19·0
Chiufeng	22·7	355	i 4 57k	− 1	i 9 3	+ 4	10·5	16·6
Osaka	22·7	37	4 57	− 1	8 56	− 3	—	—
Amboina	22·9	156	5 15	PP	e 9 10	+ 7	e 13·8	—
Kyoto	22·9	38	5 3	+ 3	—	—	—	—
Toyooka	23·0	37	5 1	0	9 1	− 4	—	17·6
Tu	23·3	37	5 5	+ 1	—	—	—	—
Kameyama	23·4	38	5 2	− 3	9 8	− 4	—	—
Hikone	23·5	37	5 6	+ 1	—	—	—	—
Gihu	23·9	38	5 7	− 2	9 16	− 5	—	—
Nagoya	23·9	39	i 5 10	+ 1	(9 19)	− 2	9·3	—
Omaesaki	24·1	42	5 17	+ 6	—	—	—	—
Medan	24·1	237	5 34	PP	10 54	?	—	—
Hamamatu	24·1	41	5 11	0	—	—	—	—
Hatidyozima	24·4	44	5 16	+ 2	9 31	+ 1	—	—
Matumoto	24·7	39	5 23	+ 6	—	—	—	—
Misima	25·0	42	5 19	− 1	9 41	0	—	—
Toyama	25·1	36	5 24	+ 3	9 40	− 3	—	—
Kohu	25·2	40	5 24	+ 2	9 59	+15	—	—

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Hunatu	25·2	38	5 25	+ 3	—	—	—	—
Wazima	25·4	37	5 24	0	—	—	—	—
Oiwake	25·6	39	5 28	+ 3	—	—	—	—
Nagano	25·7	37	5 28	+ 2	9 42	−11	—	—
Yokohama	25·7	39	5 35	+ 9	—	—	—	—
Tokyo	25·9	41	5 30	+ 2	10 19	+22	—	—
Takada	26·0	37	5 31	+ 2	—	—	—	—
Maebasi	26·0	39	5 29	0	10 10	+12	—	—
Batavia	26·4	208	i 5 51	+18	10 22	+17	—	—
Hukusima	27·7	38	5 43	− 1	10 23	− 4	—	—
Vladivostok	27·9	21	e 5 53	+ 7	10 29	− 1	15·1	52·6
Mizusawa	29·0	37	5 57	+ 1	—	—	—	—
Calcutta	29·2	285	e 6 2	+ 4	11 5	+14	15·9	25·6
Hyderabad	38·6	276	e 9 31	(− 6)	16 31	?	21·5	30·0
Agra	38·9	292	e 7 27	+ 4	13 32	+12	18·9	22·3
Dehra Dun	39·4	298	14 6	?	19 56	?	22·4	26·8
Kodaikanal	40·8	266	e 8 46?	?	—	—	—	—
Bombay	43·8	279	8 14	+11	14 49	+16	e 21·5	30·7
Almata	43·9	315	e 7 46	−18	—	—	—	—
Frunse	45·3	313	e 7 51	−24	—	—	e 24·8	—
Andijan	46·2	310	e 8 27	+ 5	—	—	e 25·7	—
Tchimkent	48·7	313	e 8 49	+ 8	—	—	—	—
Samarkand	50·0	307	e 8 56	+ 5	—	—	e 28·8	—
Sverdlovsk	58·4	327	i 9 58	+ 5	i 18 0	+ 5	35·5R	36·6
Melbourne	60·3	156	—	—	i 18 38	+18	—	—
Baku	63·1	308	e 10 34	+ 8	19 3	+ 7	—	—
Grozny	66·1	310	10 54	+ 8	e 19 19	−15	—	—
Tiflis	66·9	308	e 10 56	+ 5	19 54	+11	e 34·8	45·4
Moscow	70·9	324	11 16	0	20 35	+ 3	30·4	42·8
Simferopol	74·3	314	e 11 35	− 1	21 14	+ 2	37·3	—
Yalta	74·3	312	e 11 33	− 3	21 12	0	36·8	—
Pulkovo	74·4	329	11 37	0	21 10	− 3	39·8R	43·2
Ksara	74·8	300	i 11 44	+ 5	21 26	+ 8	—	—
Honolulu	77·6	71	—	—	e 21 41	− 8	45·8	—
Helwan	79·5	298	e 12 12	+ 7	i 22 16	+ 6	—	—
Sofia	82·4	313	e 12 28	+ 8	e 22 41	0	e 47·4	—
Sitka	83·6	31	e 12 26	0	i 24 46	− 7	e 43·2	—
Budapest	83·7	318	12 36	+ 9	e 23 16	PS	e 47·8	54·3
Copenhagen	84·6	327	12 42	+11	22 58	[+ 2]	42·8	—
Vienna	85·2	319	e 12 38	+ 4	—	—	e 48·8	—
Prague	85·7	322	e 12 52	+15	e 23 14	− 1	e 44·8	50·3
Graz	86·2	319	e 23 14	S	(e 23 14)	− 5	e 48·8	53·1
Zagreb	86·3	317	e 12 44	+ 4	e 23 20	0	—	46·8
Hamburg	86·8	326	e 12 46	+ 4	e 23 16	[+ 4]	e 44·8	53·8
Cheb	86·9	322	e 12 46?	+ 3	e 23 16	[+ 3]	e 45·8	54·3
Triest	87·8	318	e 12 58	+11	e 23 31	− 4	—	47·0
Scoresby Sund	88·0	348	12 53	+ 5	23 31	− 6	—	—
Stuttgart	89·4	322	e 12 51	− 4	e 23 26	[− 3]	e 48·8	55·8
De Bilt	90·0	326	e 13 2	+ 5	e 23 36	[+ 3]	e 43·8	51·7
Florence	90·2	317	e 10 46	−132	e 22 36	[−58]	49·8	52·8
Zurich	90·3	321	e 12 2	−57	e 22 26	[−68]	—	—
Strasbourg	90·3	322	i 13 2a	+ 3	e 23 37	[+ 3]	e 46·8	57·8
Piacenza	90·6	319	e 13 20	+20	e 23 40	[+ 4]	—	58·8
Uccle	91·1	325	—	—	e 23 40	[+ 1]	e 45·8	50·5
Durham	92·1	330	—	—	23 54	{+ 2}	—	52·8
Edinburgh	92·2	331	e 14 1	+53	e 23 55	{+ 2}	e 44·8	56·5
Stonyhurst	93·0	330	—	—	e 23 51	[+ 1]	48·8	59·5
Paris	93·2	324	e 13 18	+ 6	23 52	[+ 1]	47·8	62·8
Kew	93·3	327	e 13 11	− 2	e 23 52	[0]	46·8	59·8
Oxford	93·6	327	—	—	e 23 50	[− 3]	e 46·3	59·3

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bidston	93·6	330	e 13 11	− 3	e 23 59	[− 6]	47·1	59·7
Rathfarnham Castle	95·1	331	e 36 6	?	e 43 33	?	52·0	55·8
Toledo	102·0	318	—	—	e 24 20	[−15]	e 44·1	—
Granada	103·3	315	e 19 36	?	—	—	e 53·8	—
Malaga	104·1	315	—	—	e 24 12	[−33]	56·5	65·8
Pasadena	105·1	47	e 18 27	PP	—	—	—	—
Mount Wilson	105·2	47	e 18 28	PP	—	—	—	—
San Fernando	105·4	316	e 18 29	PP	e 24 57	[+ 5]	58·3	—
Ottawa	115·8	11	e 19 46?	PP	e 26 46?	{− 2}	e 50·8	—
Florissant	117·4	26	e 19 56	PP	e 29 36	PS	e 53·3	—
St. Louis	117·7	26	—	—	(e 25 59)	[+16]	e 52·3	—
Philadelphia	121·1	11	—	—	e 30 11	PS	e 53·6	—
Huancayo	165·2	71	e 22 32	?	—	—	e 74·8	—
La Paz	173·1	83	20 17	[+12]	32 18	{−10}	83·8	—

Additional readings and note :—
Manila S_g = +2m.13s.
Taihoku eS = +3m.6s.
Nanking eN = +4m.21s.
Kobe iZ = +5m.4s., iE = +5m.6s., eZ = +6m.25s., SE = +9m.2s., SZ = +9m.5s.
Osaka +8m.32s.
Medan eN = +16m.35s.
Mizusawa eSE = +6m.0s.
Agra SS = +15m.55s., SSS = +16m.30s.
Sverdlovsk L_q = +29m.28s.
Grozny e = +11m.4s. = P_cP − 13s.
Tiflis e = +24m.0s. = SS + 5s., SSS = +27m.59s.
Pulkovo L_q = +36m.46s.
Honolulu iS = +21m.53s.
Helwan e = +9m.16s.
Sitka eSS = +27m.46s.
Graz eS = +30m.34s.
Zagreb ePS = +24m.26s.
Cheb e = +24m.27s. = PS − 13s.
Triest e = +25m.5s.
Scoresby Sund +16m.28s. = PP + 19s. and +29m.16s. = SS + 5s.
Stuttgart ePP = +16m.21s., ePS = +24m.50s., eSS = +29m.46s.
De Bilt ePPZ = +16m.29s.
Strasbourg ePP = +16m.35s., eS = +23m.46s.?, iPS = +25m.5s.
Uccle (e) = +17m.4s., e = +25m.16s. = PS + 12s. and +30m.10s. = SS + 14s.
Paris PP = +16m.1s.
Rathfarnham Castle eSS = +47m.13s., eSSS = +48m.56s.
Granada PPP = +22m.29s., SS = +34m.32s.
Malaga e = +26m.32s.
Florissant eE = +27m.46s., eEN = +36m.1s. = SS + 3s. and +39m.36s., eE = +40m.46s.
St. Louis S has been *diminished* by 10m.
Philadelphia e = +32m.55s., eSS = +36m.22s., e = +47m.52s.
Huancayo e = +38m.19s. and +41m.56s., eSS = +45m.12s.
La Paz ePSE = +33m.26s., SSE = +46m.52s.
Long waves at Cape Town and other European stations.

July 7d. Readings also at 0h. (Amboina (3)), 7h. (Tiflis), 8h. (Batavia and Medan), 10h. (Amboina), 13h. (Mizusawa and Pasadena), 14h. (Tiflis), 19h. (Mizusawa (2)), 21h. (Batavia (2)), 22h. (Batavia).

July 8d. 8h. 30m. 20s. Epicentre 23°·6N. 122°·7E. N.3.

A = − ·495, B = + ·771, C = + ·400 ; D = + ·842, E = + ·540;
G = − ·216, H = + ·337, K = − ·916.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Karenko	1·1	292	e 0 15	− 1	0 26	− 2
Taito	1·6	235	e 0 26	P*	0 43	+ 2
Taihoku	1·8	325	e 0 26	0	0 48	+ 2
Taityu	1·9	287	0 33	P_g	0 54	S*
Kosyun	2·4	225	e 0 40	P_g	1 1	− 1
Takao	2·4	243	0 39	P*	—	—

July 8d. 12h. 57m. 45s. Epicentre 27°·9S. 71°·8W. N.3.

A = +·276, B = −·840, C = −·468; D = −·950, E = −·312;
G = −·146, H = +·444, K = −·884.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		5·6	170	1 38	P*	2 50	S*	—	—
La Paz		11·9	17	2 47	0	i 4 48	−12	6·0	6·6
La Plata	E.	13·8	124	3 15	+ 2	5 45	− 1	7·1	8·8
	N.	13·8	124	3 14	+ 1	i 5 55	SS	7·1	7·5
	Z.	13·8	124	3 15	+ 2	5 51	SS	7·1	7·3
Huancayo		16·1	348	i 3 40	− 3	e 6 39	− 2	e 7·5	—
San Juan		46·7	8	—	—	e 14 53	−21	—	—
Riverside		75·4	322	i 11 43	0	—	—	—	—
Pasadena		76·0	321	e 11 45	− 1	—	—	—	—
Tinemaha		78·3	323	e 11 57	− 2	—	—	—	—
Ksara		119·0	65	e 20 0	PP	—	—	—	71·1
Sverdlovsk		135·9	35	e 19 31	[+15]	e 39 52	SS	61·2	—

Additional readings:—
La Paz iSE? = +5m.22s.
La Plata N = +6m.15s., Z = +6m.51s.
San Juan eSS = +17m.38s.
Long waves at Edinburgh, Copenhagen, Granada, Paris, Strasbourg, and Stuttgart.

July 8d. 16h. Readings for which no determination has been made:—

Santiago P = 55m.25s., S = 56m.38s.
La Paz ePN = 56m.30s., iSN = 58m.57s., iSEZ = 59m.3s., L = 59m.42s., M = 60m.20s.
La Plata PZ = 56m.42s., PEN = 56m.48s., Z = 56m.58s., N = 58m.54s., SN = SN = 59m.12s., SE = 59m.18s., N = 59m.48s., L?E = 59m.59s., L?N = 60m.6s., N = 60m.30s., EZ = 60m.42s., ME = 60m.50s., MN = 60m.58s.
Oak Ridge eN = 64m.24s., i = 64m.34s., iN = 64m.45s.
Pasadena iPZ = 65m.11s.
Mount Wilson ePZ = 65m.12s.
Riverside ePZ = 65m.13s.
Long waves at Paris and Strasbourg.

July 8d. Readings also at 1h. (Montezuma), 3h. (Andijan, Hong Kong, Manila, and Nanking), 7h. (Edinburgh and Montezuma (2)), 8h. (Yalta), 9h. (Montezuma), 10h. (Moscow and Sverdlovsk), 12h. (Rathfarnham Castle and Granada), 13h. (Mount Wilson, Oak Ridge, Pasadena, and Tinemaha), 14h. (Alicante and Granada), 15h. (Alicante, Hong Kong, and Manila), 16h. (Mount Wilson, Riverside, Pasadena, Tinemaha, Sverdlovsk, Tashkent, Nanking, and La Paz), 17h. (Yalta, Sofia, and Simferopol), 18h. (Bucharest, La Paz, and Oak Ridge), 19h. (Nagoya), 20h. (Triest), 21h. (Pasadena, Oak Ridge (2), and Tinemaha), 22h. (Kobe, Nagoya, and Sumoto), 23h. (Samarkand).

July 9d. 0h. Readings for which no determination has been made:—

Manila ePEN = 49m.12s., SEN = 50m.14s., S_gN = 50m.36s.
Chiufeng ePNZ = 52m.51s., eSN = 57m.10s., MNZ = 65m.12s.
Nagoya e = 53m.3s.
Vladivostok e = 53m.45s.
Tashkent e = 54m.0s., eL = 61m.12s., M = 70m.18s.
Phu-Lien 55m.
Hong Kong M = 55m.2s.
Nanking eS = 56m.15s., eL = 58m.18s., M = 59m.28s.
Sverdlovsk iP = 57m.54s., e = 66m.9s., e = 68m.17s., L = 77m.
Long waves at Copenhagen, De Bilt, Pulkovo, Paris, Strasbourg, and Stuttgart.

July 9d. 2h. Readings for which no determination has been made :—

Tashkent iP = 6m.25s., e = 17m.0s., eL = 23m.0s., M = 33m.0s.
Manila ePEZ = 11m.50s., SEN = 12m.53s., S_gZ = 13m.15s.
Hong Kong P = 12m.51s., S? = 13m.43s., L = 14m.30s., MN = 17m.40s.
Nanking ePN = 15m.38s., SN = 19m.8s., eLN = 21m.0s., M = 22m.36s.
Chiufeng ePNZ = 15m.39s., iSN = 19m.55s., MNZ = 28m.12s.
Nagoya e = 15m.44s.
Vladivostok e = 16m.15s.
Phu-Lien e = 17m.
Sverdlovsk e = 20m.21s., e = 28m.49s., L = 40m.
Pulkovo e = 22m.38s., e = 32m.32s., L = 48m., M = 57m.48s.
Ksara eP = 22m.55s., eS = 32m.56s.
Triest e = 34m.6s., M = 61m.
Scoresby Sund 42m.
Long waves at Copenhagen, De Bilt, Paris, Stuttgart, Strasbourg, and Uccle.

July 9d. 4h. Readings for which no determination has been made :—

Tashkent e = 37m.18s., i = 43m.1s., e = 44m.54s., eL = 56m.24s., M = 66m.18s.
Manila PENZ = 40m.16s., S?EN = 44m.52s., LE = 48m.0s.
Chiufeng ePNZ = 46m.42s., eSN = 50m.58s., iZ = 52m.12s., MN = 56m.37s.
Nagoya e = 46m.45s.
Phu-Lien 48m.
Nanking e = 48m.14s., eS = 50m.26s., eL = 52m.0s., M = 53m.42s.
Ksara e = 58m.51s., e = 68m.1s.
Long waves at Baku, Copenhagen, De Bilt, Paris, Pulkovo, Moscow, Scoresby Sund, Strasbourg, Stattgart, Uccle, and Calcutta.

July 9d. 6h. 41m. 5s. Epicentre 27°·0S. 72°·0W. (as on 1921 Oct. 25d.). R.2.

A = +·275, B = −·847, C = −·454 ; D = −·951, E = −·309 ;
G = −·140, H = +·432, K = −·891.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		6·5	170	1 35	+ 3	2 47	+ 1	—	—
Sucre		10·1	39	e 2 50	P	*i 5 10	S_g	—	—
La Paz		11·1	19	i 2 37k	+ 1	i 5 15	S*	5·8	6·3
La Plata	E.	14·4	125	3 12	− 9	5 37	−24	6·5	7·9
	N.	14·4	125	3 5	−16	5 36	−25	6·7	7·6
	Z.	14·4	125	3 25	+ 4	5 43	−18	6·7	7·3
Huancayo		15·3	348	e 3 35	+ 3	i 6 43	SS	—	—
San Juan		45·7	8	e 8 16	− 2	14 50	−10	e 26·5	—
St. Louis		67·8	344	i 10 56	− 1	e 19 52	− 2	—	—
Florissant		68·0	343	i 10 57a	− 1	i 19 53	− 4	—	—
Oak Ridge		69·5	0	i 11 4	− 4	—	—	—	—
Ottawa		72·5	357	e 11 25	− 1	e 20 43	− 8	e 28·9	—
Riverside		74·6	322	i 11 39	+ 1	—	—	—	—
Mount Wilson		75·2	321	i 11 43	+ 2	—	—	—	—
Pasadena		75·2	322	i 11 42	+ 1	—	—	e 47·9	—
Haiwee		76·9	323	e 11 51	0	—	—	—	—
Tinemaha		77·4	323	i 11 56	+ 2	—	—	—	—
San Fernando		88·6	47	e 14 31	?	e 23 21	[− 3]	52·4	—
Granada		90·7	48	i 12 57	− 4	e 24 21	+18	45·9	54·9
Uccle		102·7	40	—	—	e 24 33	[− 6]	e 49·9	—
Scoresby Sund		103·7	14	—	—	27 25	PS	48·9	—
De Bilt		103·7	40	—	—	e 27 25	PS	e 55·9	—
Copenhagen		109·1	37	—	—	28 14	PS	54·9	—
Ksara		118·7	64	—	—	e 29 55	PS	—	69·9
Sverdlovsk		135·3	35	i 19 19	[+ 4]	—	—	59·9	—
Andijan		147·7	56	e 19 37	[− 1]	—	—	—	—

Additional readings :—
La Plata N = +3m.55s. and +4m.19s.
Huancayo iSS = +7m.28s.
San Juan e = +9m.3s., ePP = +10m.1s., eSS = +18m.11s.
St. Louis eE = +20m.48s.
Florissant eE = +20m.55s.
Oak Ridge iEN = +11m.6s., eEN = +11m.17s., iZ = +11m.42s.
Ksara ePP = +19m.55s., PPS = +31m.7s.
Sverdlovsk e = +21m.51s., i = +22m.48s.
Long waves at Kew, Cape Town, and other European and American stations.

July 9d. 12h. 13m. 33s. Epicentre 27°·9S. 71°·8W. (as on 8d. 12h.). X

A = +·276, B = −·840, C = −·468.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		5·6	170	1 37	P*	2 49	S*	—	—
Sucre		10·7	37	e 2 34	+ 3	i 5 16	S*	—	—
La Paz		11·9	17	2 59	PP	5 31	S*	i 6·2	6·9
La Plata	E.	13·8	124	—	—	5 39	− 7	6·9	7·9
	N.	13·8	124	3 33	+20	5 39	− 7	—	7·4
Oak Ridge		70·4	1	i 11 6	− 7	—	—	—	—
Riverside		75·4	322	e 11 36	− 7	—	—	—	—
Pasadena		76·0	321	e 11 47	+ 1	—	—	—	—
Mount Wilson		76·0	322	e 11 45	− 1	—	—	—	—
Tinemaha		78·3	323	e 11 59	0	—	—	—	—
Strasbourg		104·1	42	—	—	e 25 27?	{+ 3}	46·5	—
Pulkovo		119·8	35	—	—	e 28 5	?	—	—

Additional readings :—
La Plata N = +6m.33s., E = +6m.39s., LZ = +6m.57s., MZ = +7m.48s.
Oak Ridge = +11m.26s.
Long waves also at Tiflis and Baku.

July 9d. 12h. 21m. 29s. Epicentre 27°·9S. 71°·8W. (as at 12h. 13m.). R.2.

A = +·276, B = −·840, C = −·468.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		5·6	170	1 33	P*	2 45	S*	—	—
Sucre		10·7	37	e 2 36	+ 5	i 5 11	S*	—	—
La Paz		11·9	17	2 47	0	5 19	+19	5·4	7·7
La Plata	E.N.	13·8	124	—	—	5 43	− 3	6·5	7·3
	Z.	13·8	124	—	—	5 47	+ 1	6·7	7·3
Huancayo		16·1	348	i 3 46	+ 3	i 6 53	SS	—	—
San Juan		46·7	8	e 8 15	−11	e 14 44	−30	24·7	—
Philadelphia		67·9	358	e 10 51	− 7	e 19 43	−13	e 27·4	—
St. Louis		68·7	344	e 10 58	− 5	i 19 58	− 7	e 33·3	—
Florissant		69·0	343	e 10 58a	− 7	i 20 1	− 8	e 32·4	—
Tucson		70·7	325	e 11 31	(− 4)	e 20 16	−14	e 30·8	—
Ottawa		73·4	357	e 11 31?	0	e 20 47	−14	e 31·5	—
Cape Town		75·1	119	—	—	21 29	+ 8	38·0	39·7
Riverside		75·4	322	e 11 42	− 1	—	—	—	—
Pasadena		76·0	321	i 11 48	+ 2	i 21 31	− 1	e 36·6	—
Mount Wilson		76·0	322	e 11 43	− 3	—	—	—	—
Santa Barbara		77·1	321	e 11 56	+ 3	—	—	—	—
Tinemaha		78·3	323	e 12 1	+ 2	—	—	—	—
Ukiah		82·4	322	—	—	e 22 37	[− 2]	e 40·9	—
San Fernando		89·1	46	e 12 52	− 1	23 33	[+ 6]	44·5	—
Malaga		90·4	48	—	—	e 23 43	[+ 8]	48·2	—
Granada		91·2	48	—	—	e 24 2	− 5	—	—
Toledo		92·5	45	—	—	e 22 43?	?	—	49·9
Bidston		100·6	34	—	—	e 25 24	− 8	e 49·1	—
Kew		101·0	35	e 17 42	PP	e 24 26	[− 5]	49·5	—
Paris		101·2	40	e 14 31?	+42	—	—	48·5	60·5
Stonyhurst		101·2	33	—	—	e 26 31?	PS	51·5	58·5
Edinburgh		101·9	32	e 18 31?	?	e 24 41	[+ 6]	e 50·5	54·5
Piacenza		103·9	40	e 17 31	?	—	—	—	58·9
De Bilt		104·3	38	e 13 57	− 6	—	—	e 49·5	58·5
Scoresby Sund		104·5	15	18 31?	PP	27 31	PS	—	—
Stuttgart		105·1	42	e 14 1	− 6	e 24 47	[− 3]	e 49·5	66·9
Triest		106·7	42	e 18 42	PP	—	—	e 50·1	57·1
Cheb		107·5	38	e 22 31?	PPPP	—	—	e 55·5	62·0
Copenhagen		109·6	36	18 55	PP	25 7	[− 4]	50·5	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	119·0	65	i 20 4	PP	29 56	PS	56·5	—
Pulkovo	119·8	35	e 19 21	[+46]	—	—	53·5	64·3
Tiflis	127·3	56	e 21 2	PP	e 27 31	{−33}	e 68·0	76·5
Baku	131·0	60	e 21 23	PP	—	—	59·5	—
Sverdlovsk	135·9	35	e 19 20	[+ 4]	—	—	54·5	74·0
Tashkent	145·6	57	e 19 58	[+23]	—	—	—	50·7
Vladivostok	155·5	315	e 19 51	[+ 2]	—	—	—	—
Chiufeng	166·2	334	e 20 3	[+ 3]	—	—	—	46·5

Additional readings :—
Huancayo i = +4m.6s. and +6m.29s.
San Juan iPP = +10m.3s., iSS = +18m.19s.
Philadelphia eSS = +23m.45s.
St. Louis iE = +20m.59s. = S_cS +3s., eSSE = +24m.18s.
Florissant ePPZ = +13m.33s., iEN = +21m.1s. = S_cS +3s., eSSEN = +24m.16s.
Cape Town E = +19m.57s., +26m.19s. = SS+20s., and +30m.49s., N = +30m.54s.
Malaga e = +39m.27s.
Stuttgart ePP = +18m.19s., ePS = +27m.31s. ; T_o = 12h.21m.30s.
Triest e = +32m.4s.
Copenhagen +26m.13s. = SKKS +9s. and +28m.25s. = PS +1s.
Ksara PPP = +22m.38s.
Pulkovo e = +29m.59s. = PS −1s. and +31m.25s.
Baku e = +39m.37s.
Sverdlovsk e = +21m.52s. = PP −4s., i = +22m.49s. = PKS −8s., e = +39m.19s.
Tashkent e = +28m.43s. and +43m.10s.
Chiufeng eZ = +24m.55s. = PP +7s., iNZ = +34m.17s.
Long waves at Durham, Berkeley, Honolulu, Phu-Lien, Calcutta, Bombay, and other European stations.

July 9d. 21h. 8m. 27s. Epicentre 3°·5S. 129°·0E. (as on 1926 July 10d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	19·8	336	4 26	− 1	8 3	+ 1	—	—
Nanking	36·9	345	e 7 12	+ 6	12 26	−24	—	—
Melbourne	37·3	159	—	—	e 14 0	?	—	—
Chiufeng	45·1	344	e 8 1	−13	i 14 26	−26	—	—
Vladivostok	46·7	3	e 9 56	PP	—	—	—	—
Frunse	67·5	319	e 11 18	(− 5)	—	—	—	—
Andijan	68·2	316	e 10 52	− 7	—	—	—	—
Tashkent	70·2	316	i 11 12	0	i 20 28	+ 4	—	47·6
Sverdlovsk	81·3	329	12 14	− 1	22 18	−12	35·5	—
Baku	84·0	311	e 12 30	+ 2	23 2	+ 4	41·5	—
Tiflis	88·0	311	e 15 58	PP	e 23 18	[− 2]	62·5	—
Moscow	93·7	325	—	—	e 23 45	[− 9]	—	—
Pulkovo	97·4	330	—	—	e 48 33	?	57·5	68·1
Stuttgart	111·9	322	e 13 5	?	e 28 41	PS	e 67·5	—

Additional readings :—
Melbourne e = +10m.41s., i = +21m.13s.
Chiufeng iN = +17m.38s. = SS −14s.
Tiflis e = +13m.40s. and +23m.33s. = S −4s.
Stuttgart ePPP = +19m.14s. = PP +3s.
Long waves at Riverview, Sydney, Hong Kong, and other European stations.

July 9d. Readings also at oh. (Malaga), 3h. (Santiago), 4h. (Malaga), 5h. (Cheb, Granada, Malaga, Tiflis, and Hong Kong), 6h. (Branner, Lick, Tashkent, and Sverdlovsk), 7h. (Montezuma), 8h. (La Paz, Santiago, and Tacubaya), 9h. (Tiflis, Malabar, Tacubaya, and La Plata), 10h. (La Paz and Tacubaya), 11h. (Santiago, Sucre, Tinemaha, Pasadena, Mount Wilson, Riverside, La Plata, and La Paz), 12h. (Andijan, Frunse, Baku, Sverdlovsk, Tashkent, La Plata (2), Santiago, Hong Kong, Nagoya, Nanking, and Manila), 13h. (Santiago, Baku, Tiflis, Granada, Melbourne, Riverview, and Sydney), 14h. (La Plata, La Paz, Santiago, Sucre, Hong Kong, and Alicante), 15h. (Baku, Copenhagen, De Bilt, Erevan, Stuttgart, Tashkent, and Tiflis (2)), 16h. (Medan, La Paz, and Santiago (2)), 17h. (Hong Kong, Manila, Nanking, and Santiago), 18h. (Chiufeng, Nagoya, Phu-Lien, Baku, Copenhagen, De Bilt, Granada, Moscow, Paris, Pulkovo, Sverdlovsk, Strasbourg, Stuttgart, Tashkent, Tiflis, and Vladivostok), 19h. (Nagoya), 20h. (La Paz), 21h. (Apia, Sydney, and Samarkand), 22h. (Nagoya), 23h. (Tiflis).

July 10d. 9h. 41m. 21s. Epicentre 18°·2N. 105°·8W. (as on 1934 Nov. 30d.). X.

A = −·259, B = −·914, C = +·312; D = −·962, E = +·272
G = −·085, H = −·301, K = −·950.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Tacubaya	6·4	76	1 22?	− 9	—	—	—
Tucson	14·8	343	e 3 24	− 2	—	—	e 8·0
Riverside	18·8	329	e 4 16	0	—	—	—
Pasadena	19·4	328	i 4 22k	− 1	—	—	e 10·7
Mount Wilson	19·4	328	i 4 24	+ 1	—	—	—
Haiwee	21·0	331	e 4 39	− 1	—	—	—
Tinemaha	21·8	332	e 4 49	0	—	—	—
Berkeley	24·3	327	—	—	e 9 49	+21	—
St. Louis	24·5	30	i 5 16	+ 1	e 9 46	+14	i 13·0
Ottawa	36·9	37	—	—	e 13 3	+13	23·7

Additional readings :—
Berkeley iE = +14m.56s. and +16m.17s.
Ottawa e = +19m.57s.
Long waves at Ukiah, Baku, Scoresby Sund, and Sverdlovsk.

July 10d. 20h. 27m. 58s. Epicentre 3°·8S. 69°·1E. N.3.

A = +·356, B = +·932, C = −·066; D = +·934, E = −·357;
G = −·024, H = −·062, K = −·998.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo	15·1	45	5 37	?	—	—	—	8·4
Kodaikanal	16·3	28	i 3 45	0	e 6 35	−10	—	8·6
Bombay	23·0	8	—	—	i 9 13	+ 8	—	12·2
Hyderabad	23·2	22	5 7	+ 4	9 13	+ 5	10·7	14·9
Agra	32·1	15	—	—	i 12 48	+70	—	17·9
Calcutta	32·4	34	—	—	e 11 47	+ 6	—	—
Samarkand	43·5	357	e 8 0	− 1	—	—	—	—
Tashkent	45·1	0	i 8 12	− 2	14 45	− 7	e 21·0	28·9
Baku	47·5	339	7 2	?	e 15 28	+ 2	20·8	—
Ksara	49·0	322	e 9 20	+36	e 16 54	+57	—	—
Tiflis	50·6	337	e 11 32	?	20 3	?	26·0	—
Cape Town	55·8	231	22 12	?	31 18	?	—	—
Nanking	59·2	48	—	—	e 18 8	+ 3	—	35·0
Sverdlovsk	61·0	355	10 11	0	18 26	− 3	28·0	—
Chiufeng	61·4	39	e 10 12	− 2	e 18 29	− 5	—	—
Moscow	64·9	341	e 10 34	− 4	e 19 13	− 6	23·4	—
Pulkovo	70·5	340	11 16	+ 2	20 29	+ 2	32·0	—
Vladivostok	73·3	42	e 11 29	− 2	—	—	—	—
Copenhagen	75·2	331	—	—	21 27	+ 5	38·0	—
Tinemaha	145·0	10	i 19 42	[+ 8]	—	—	—	—
Mount Wilson	148·8	10	e 19 48	[+ 8]	—	—	—	—
Pasadena	148·8	12	i 19 46	[+ 6]	—	—	—	—
Riverside	149·2	11	i 19 48	[+ 7]	—	—	—	—

Additional readings :—
Bombay iN = +5m.47s.
Cape Town PP = +25m.6s., PPP = +26m.22s., N = +27m.28s., E = +29m.2s., PSE = +31m.54s.
Copenhagen +26m.2s. =SS +1s.
Long waves at De Bilt, Paris, Scoresby Sund, Strasbourg, and Hong-Kong.

July 10d. Readings also at 0h. (Andijan and Frunse), 4h. (Chur and Zurich), 7h. (Chur, Zurich, and Amboina), 8h. (Paris, Sverdlovsk, Tashkent, and Vladivostok), 9h. (Tacubaya), 15h. (Sofia), 16h. (Sofia), 17h. (Mizusawa, Nagoya, and Sverdlovsk), 18h. (Chur, Moscow, Sofia, Zurich, and Lick), 19h. (Tucson), 20h. (Berkeley), 23h. (Tiflis).

July 11d. 8h. 24m. 47s. Epicentre 34°·8N. 139°·0E. N.1.

A = −·620, B = +·539, C = +·571; D = +·656, E = +·755; G = −·431, H = +·374, K = −·821.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ito	0·2	32	0 17	+14	0 25	+20	—	—
Numadu	0·3	335	0 9	+ 5	0 14	+ 6	—	—
Misima	0·3	0	0 10	+ 6	0 16	+ 8	—	—
Omaesaki	0·7	250	0 10	0	0 17	− 1	—	—
Mera	0·7	80	0 22	+12	0 37	+19	—	—
Hunatu	0·7	342	0 12	+ 2	—	—	—	—
Yokohama	0·8	35	0 23	S	0 39	?	—	—
Yokosuka	0·8	42	0 15	+ 4	0 31	+10	—	—
Kohu	0·9	335	0 13	0	0 24	+ 1	—	—
Tokyo	1·1	35	0 25	S	0 43	?	—	0·8
Hamamatu	1·1	261	0 13	− 3	0 23	− 5	—	—
Kumagaya	1·4	12	0 26	+ 6	0 44	S_g	—	—
Iida	1·4	308	0 14	− 6	0 24	P_g	—	—
Oiwake	1·6	346	0 26	P_g	0 44	+ 3	—	—
Maebasi	1·6	2	0 28	P_g	0 50	S_g	—	—
Nagoya	1·7	283	i 0 24	0	0 40	− 4	—	1·1
Matumoto	1·7	330	0 28	P_g	0 46	+ 2	—	—
Kakioka	1·7	32	0 32	P_g	0 58	S_g	—	—
Tukubasan	1·7	29	0 31	P_g	0 54	S_g	—	—
Takayama	1·8	315	0 31	P_g	0 52	S*	—	—
Tyosi	1·8	59	0 36	P_g	1 2	S_g	—	—
Hatidyozima	1·9	160	0 37	P_g	1 4	S_g	—	—
Utunomiya	1·9	21	0 32	P_g	0 58	S_g	—	—
Nagano	1·9	341	0 31	P_g	0 55	S*	—	—
Gihu	1·9	289	0 27	− 1	0 46	− 3	—	—
Mito	2·0	37	0 37	P_g	1 4	S_g	—	—
Tu	2·1	269	0 30	0	0 49	− 5	—	—
Kameyama	2·1	271	0 30	0	0 53	− 1	—	—
Ibukisan	2·2	286	0 31	0	1 0	S*	—	—
Hikone	2·3	280	0 39	P_g	1 5	S*	—	—
Toyama	2·4	324	0 35	+ 1	1 4	+ 2	—	—
Takada	2·4	345	0 37	P*	1 4	+ 2	—	—
Husiki	2·5	320	0 34	− 2	1 9	+ 5	—	—
Hukui	2·6	300	0 34	− 3	1 7	0	—	—
Onahama	2·7	35	0 54	P_g	1 32	S_g	—	—
Kyoto	2·7	275	0 37	− 2	1 9	0	—	—
Osaka	2·8	266	0 42	+ 2	1 19	+ 7	—	—
Yagi	2·8	264	0 38	− 2	1 12	0	—	—
Siomisaki	3·0	243	0 37	− 6	1 10	− 7	—	—
Wazima	3·1	326	0 45	+ 1	1 28	S*	—	—
Hukusima	3·2	21	0 52	P*	1 39	S_g	—	—
Kobe	3·2	266	0 44	− 2	1 24	+ 2	—	3·7
Miyadu	3·2	282	0 44	− 2	1 28	+ 6	—	—
Wakayama	3·2	260	0 45	− 1	1 26	+ 4	—	—
Sumoto	3·4	262	i 0 49	0	1 32	+ 5	—	2·0
Toyooka	3·5	282	0 48	− 2	1 35	+ 5	—	1·9
Tokusima	3·7	259	0 52	− 1	1 41	+ 6	—	—
Sendai	3·8	25	1 1	P*	1 59	S_g	—	—
Mizusawa	4·6	21	i 1 14	P*	i 2 28	S_g	—	—
Koti	4·7	254	1 3	− 4	2 6	+ 6	—	—
Akita	5·0	10	2 14	S	(2 14)	+ 6	—	—
Morioka	5·2	20	1 21	P*	2 33	S*	—	—
Matuyama	5·2	259	1 12	− 2	2 23	+10	—	—
Hirosima	5·4	265	1 15	− 2	2 18	0	—	—
Miyako	5·4	26	1 29	P*	2 35	S*	—	—
Simidu	5·4	248	1 15	− 2	2 24	+ 6	—	—
Hamada	5·7	270	1 19	− 2	2 28	+ 3	—	—
Miyazaki	6·9	245	1 39	+ 1	3 6	+10	—	—
Hukuoka	7·2	260	e 1 40	− 2	3 16	+12	3·6	3·8
Hukuoka B	7·2	261	1 40	− 2	3 27	S*	—	3·9

Continued on next page

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kumamoto	7·2	254	1 42	0	3 7	+ 3	—	—
Unzendake	7·5	254	1 44	− 2	3 35	S*	—	—
Kagosima	7·7	245	1 51	+ 2	3 37	+21	—	—
Nagasaki	7·9	254	e 1 52	0	e 3 19	− 2	—	4·2
Titizima	8·2	162	2 16	S*	3 44	+15	—	—
Husan	8·2	271	1 51	− 5	3 24	− 5	3·9	4·6
Sapporo	8·5	12	2 7	+ 7	4 2	S*	—	—
Taikyu	8·6	276	i 1 50	−12	e 3 43	+ 4	4·4	—
Tomie	8·8	255	2 41	P*	4 24	S*	—	—
Nemuro	9·9	31	2 22	+ 3	4 14	+ 3	—	—
Keizyo	10·1	285	2 22	0	4 40	?	—	6·7
Zinsen	10·3	283	e 2 20	− 5	e 4 22	+ 1	e 5·7	6·7
Heizyo	11·4	293	2 43	+ 3	e 4 56	+ 8	6·9	—
Naha	13·0	235	4 12	?	6 57	?	—	—
Fengtien	14·0	300	3 16	+ 1	5 40	−11	—	—
Nanking	17·1	268	i 4 1	+ 6	7 13	+ 9	8·5	12·6
Taihoku	18·0	245	e 4 6	− 1	7 33	SS	—	—
Karenko	18·5	241	e 4 22	PP	—	—	—	—
Chiufeng	18·9	293	i 4 15a	− 2	i 7 49	+ 5	9·5	13·5
Taito	19·7	238	4 31	+ 5	8 15	SS	—	—
Kosyun	20·5	240	4 36	+ 1	8 22	+ 6	—	—
Hong Kong	25·0	248	5 23	+ 3	9 54	+13	—	15·2
Manila	25·9	223	i 5 33	+ 5	10 10	+13	13·6	—
Phu-Lien	31·7	253	e 6 21	+ 1	e 11 31	0	15·2	—
Medan	48·6	241	8 53	+12	15 44	+ 3	28·2	—
Batavia	51·0	223	i 8 59	0	e 14 20	?	—	—
Andijan	51·8	298	e 8 54	−11	e 16 27	+ 2	29·5	—
Agra	52·1	279	—	—	i 16 33	+ 3	—	33·2
Tashkent	53·8	299	i 9 20	0	i 16 54	+ 1	25·2	35·4
Sverdlovsk	55·4	320	i 9 32	0	i 17 13	− 2	23·2	33·7
Samarkand	56·0	299	e 9 33	− 3	—	—	34·2	—
Moscow	67·7	323	11 2	+ 6	19 47	− 6	34·8	42·7
Baku	67·7	305	10 57	+ 1	19 56	+ 3	33·2	43·2
Pulkovo	68·9	329	11 3	− 1	i 20 4	− 4	36·2R	40·7
Grozny	69·1	310	e 11 5	0	—	—	—	—
Piatigorsk	70·4	312	e 11 10	− 3	—	—	—	—
Tiflis	70·5	308	e 11 13	− 1	20 26	− 1	35·2	44·8
Erevan	71·4	306	e 11 19	0	—	—	—	—
Scoresby Sund	73·9	354	11 43	+ 9	21 8	+ 1	41·2	—
Upsala	73·9	334	e 11 40	+ 6	e 21 0	− 7	e 39·2	—
Ukiah	74·1	52	e 17 21	?	e 25 37	SS	—	—
Berkeley	75·3	53	e 11 53	+11	—	—	—	—
Simferopol	75·3	316	e 11 40	− 2	e 21 19	− 5	—	—
Yalta	75·5	315	e 11 44	+ 1	—	—	—	—
Tinemaha	78·5	52	i 12 10	+10	—	—	—	—
Copenhagen	78·8	332	i 12 2	+ 1	21 56	− 7	41·2	—
Santa Barbara	79·1	54	i 12 15	+12	—	—	—	—
Pasadena	80·3	55	i 12 13	+ 4	—	—	e 20·8	—
Mount Wilson	80·3	55	e 12 12	+ 3	—	—	—	—
Ksara	80·7	306	i 11 53a	−19	22 1	−22	—	—
Hamburg	81·3	334	e 12 13	− 2	—	—	—	45·2
La Jolla	81·7	56	i 12 26	+ 9	—	—	—	—
Prague	82·1	329	e 12 18	− 1	e 22 32	− 6	42·2	46·7
Vienna	82·5	327	i 12 23	+ 2	e 22 39	− 3	e 48·2	—
Jena	82·6	330	e 12 13	− 8	—	—	e 35·2	46·2
Graz	83·8	327	e 12 34	+ 7	e 19 54	?	e 47·2	54·7
De Bilt	84·2	335	12 30	+ 1	22 54	[+ 1]	40·2	46·9
Zagreb	84·4	326	e 12 30	0	e 22 48	[− 7]	e 43·2	46·1
Stuttgart	85·3	331	e 12 36	+ 1	e 22 51	[−10]	e 42·2	49·2
Uccle	85·5	334	e 12 36	0	e 23 5	[+ 2]	e 39·2	—
Triest	85·6	326	e 12 33	− 3	22 54	[− 9]	e 42·2	46·9
Strasbourg	86·1	332	12 40a	+ 1	e 23 17	− 1	e 40·2	—
Tucson	86·2	53	e 13 5	+26	—	—	—	—
Chur	86·6	330	e 12 42	+ 1	e 23 16	[+ 5]	—	—
Zurich	86·6	331	e 12 44	+ 3	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rathfarnham Castle	86·9	342	i 20 36	?	e 28 43	?	39·2	43·6
Basle	86·9	330	e 12 40$_a$	− 3	e 23 17	[+ 4]	—	—
Paris	87·9	334	e 12 57	+10	—	—	47·2	49·2
Ottawa	93·9	25	—	—	e 23 55	[0]	e 46·2	—
Philadelphia	98·9	26	—	—	e 28 37	?	e 47·7	—
Granada	100·1	332	22 39	?	—	—	e 56·7	—
San Fernando	101·8	333	—	—	e 27 22	PS	52·7	—
La Paz	149·6	60	19 57	[+16]	—	—	—	—

Additional readings and note :—
Kobe iP$_g$EZ = +50s., iN = +1m.13s., iE = +1m.19s., iSE = +1m.30s.
Toyooka iP$_g$E = +56s.
Akita S = +3m.26s.
Hukuoka iP = +1m.46s.
Nanking iSS = +7m.45s.
Taihoku ePN = +4m.13s. ; T_0 = 8h.24m.50s.
Medan e = +32m.31s.
Batavia iSE = +14m.57s.
Agra e = +20m.0s. = SS + 2s.
Pulkovo L_q = +33m.13s.
Tinemaha iZ = +12m.46s.
Pasadena iENZ = +12m.20s.a.
Mount Wilson iEZ = +12m.20s.
Ksara ePP = +15m.2s., PS = +22m.56s.
Zagreb eS$_c$SE = +23m.4s. = S + 2s., eZ = +52m.55s.
Tucson e = +17m.21s.
Rathfarnham Castle eSS = +32m.48s.
Ottawa e = +29m.37s.
Granada SS = +29m.15s.
San Fernando ePPP = +29m.13s., eS = +36m.26s., e? = +36m.33s., eSSS = +46m.36s.
Long waves at Bidston, Durham, Edinburgh, Kew, Stonyhurst, Bombay, Calcutta, Taityu, and other European stations.

July 11d. 13h. Readings for which no determination has been made. Adelaide suggests two shocks.

Apia e = 10m.36s., e? = 11m.12s.
Honolulu eP = 13m.33s., iS = 22m.18s., eL = 25m.15s.
Sydney eP = 15m.20s., eS = 19m.45s., L = 24m.25s., M = 26m.30s.
Riverview eE = 16m.6s., eN = 20m.6s., eL = 23m.6s., M = 26m.10s.
Arapuni e = 18m., e = 22m.
Wellington e = 19m., L = 23m., M = 25m.
Manila ePENZ = 19m.44s., SEN = 27m.44s., LN = 37m.10s., MEN = 41m.
La Jolla iPZ = 19m.45s.k.
Mount Wilson ePZ = 19m.45s.k.
Pasadena iPZ = 19m.45s.k, eL = 42m.
Haiwee ePZ = 19m.52s.
Tinemaha ePEZ = 19m.53s.k.
Chiufeng eP = 20m.12s., eS?E = 30m.34s., iN = 35m.34s., eLEZ = 47m.12s.
Nanking e = 20m.12s., S = 29m.40s., eL = 47m.24s.
Melbourne e = 21m.24s., L = 26m.30s., M = 30m.0s.
Adelaide e = 22m.10s., e = 25m.38s., i = 27m.28s., eL = 27m.44s., MN = 31m.6s., (e) = 34m.39s., i = 35m.14s., L = 36m.41s., MN = 39m.36s.
Vladivostok e = 22m.30s., M = 54m.36s.
Stuttgart ePKP = 27m.35s., eL = 87m.
Strasbourg eP = 27m.36s., eL = 60m.
Paris eP = 27m.41s., PKP = 27m.48s., L = 85m.
Sverdlovsk P = 28m.0s., eS = 36m.6s., L = 56m.
Granada e = 28m.8s., i = 28m.34s., i = 32m.17s., L = 90m.26s., M = 96m.5s.
Samarkand e = 28m.40s.
Pulkovo e = 29m.30s., L = 82m., M = 82m.6s.
Ksara ePP = 30m.12s., ePPS = 41m.54s., SS = 47m.40s.
Tiflis e = 30m.56s., e = 32m.33s.
Copenhagen 31m.12s., 48m.36s., L = 78m.
Sitka e = 36m.10s., e = 42m.15s., e = 43m.0s.
Berkeley eN = 42m.1s., iN = 43m.53s.
Tashkent e = 59m.7s., i = 68m.30s., e = 75m.1s., eL = 99m.0s., M = 108m.48s.
Philadelphia e = 60m.12s.
Long waves at Kew, Hong Kong, Baku, De Bilt, Scoresby Sund, and Ukiah.

July 11d. 23h. Readings for which no determination has been made :—

Batavia suggests 5°S 111°E. T_0 23h. 3m. 43s. km. 600.
5°S 111°E. T_0 23h. 11m. 35s. km. 600.

Batavia iPZ = 5m.3s., iP = 5m.6s., iZ = 5m.38s., iS = 6m.11s.
Malabar iP = 5m.4s., iS = 6m.9s.
Medan iP = 6m.48s., iS = 9m.19s.
Manila ePEN = 7m.54s., SN = 11m.6s.
Nanking iP = 10m.13s., pP = 11m.58s., iS = 15m.25s., sS = 18m.41s.
Chiufeng ePZ = 11m.6s., S = 17m.4s., iE = 19m.50s.
Andijan eP = 12m.28s., e = 21m.19s.
Hong Kong ? = 12m.49s., M = 18m.30s.
Malabar iP = 12m.55s., iS = 14m.0s.
Batavia iPZ = 12m.57s., iS = 14m.4s.
Tashkent iP = 13m.44s., e = 20m.21s., e = 21m.5s., i = 21m.32s., i = 22m.31s., eSS = 25m.6s., eSSS = 26m.48s.
Sverdlovsk i = 14m.12s., i = 16m.22s., e = 21m.3s., i = 22m.53s., i = 24m.25s., e = 26m.50s., e = 34m.44s.
Tiflis e = 14m.21s.
Grozny e = 14m.21s.
Ksara e = 16m.20s. and 22m.2s.
Vladivostok e = 16m.54s.
Medan iS = 17m.13s.
Tinemaha ePZ = 21m.31s.
Haiwee iPZ = 21m.33s.
Pasadena iPNZ = 21m.33s.
Mount Wilson iPZ = 21m.33s.
Riverside ePZ = 21m.34s.
Oak Ridge i = 22m.1s., 24m.40s., and 29m.53s.
Tiflis P = 23m.13s., e = 24m.27s., e = 27m.9s., e = 28m.21s., e = 32m.15s.
Yalta e = 24m.29s.
Simferopol e = 24m.38s.
Pulkovo e = 24m.58s., e = 25m.28s., i = 26m.42s., e = 29m.33s., e = 30m.36s., e = 33m.22s.
Copenhagen 32m.

July 11d. Readings also at 0h. (Andijan and La Paz), 1h. (Tashkent), 7h. (Chur and Wellington), 8h. (Berkeley, Branner, and Lick), 11h. (Alicante and Nagoya (2)), 12h.(Amboina, Mount Wilson, and Pasadena), 14h. (Nagoya), 16h. (Berkeley, Branner, Lick, and Nagoya), 17h. (Andijan, Frunse, Samarkand, Tashkent, and Oak Ridge), 18h. (Lick, Mount Wilson, Pasadena, Oaxaca, and Tacubaya), 19h. (Andijan, Santiago, and Nagoya), 20h. (Santiago and Tananarive), 21h. (Florence, Prato, Samarkand, Manila, and Oak Ridge), 22h. (Rathfarnham Castle), 23h. (Berkeley).

July 12d. 1h. 41m. 27s. Epicentre 44°·0N. 93°·0E. N.3.

A = −·038, B = +·718, C = +·695 ; D = +·999, E = +·052 ;
G = −·036, H = +·694, K = −·719.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Frunse	13·4	272	e 3 6	− 1	6 38	S*	—	—
Andijan	15·6	268	e 3 25	−11	e 6 44	SS	e 8·2	—
Tchimkent	17·1	275	e 3 57	+ 2	—	—	8·4	—
Chiufeng	17·5	92	e 3 59	− 1	7 15	+ 2	8·9	9·9
Tashkent	17·5	272	i 4 3	+ 3	i 7 15	+ 2	i 9·2	13·2
Samarkand	19·8	268	e 4 28	+ 1	e 8 9	+ 7	—	—
Agra	20·8	221	4 35	− 3	i 8 8	−14	9·6	11·5
Calcutta	21·8	192	—	—	e 8 44	+ 2	—	13·2
Nanking	23·4	112	5 10	+ 5	e 12 21	L	(e 12·4)	—
Sverdlovsk	23·9	315	i 5 11	+ 2	9 30	+ 9	11·6	17·2
Phu-Lien	25·9	148	—	—	9 33?	−24	—	—
Zinsen	26·1	93	e 10 30	S	e 13 26	L	(e 13·4)	—
Keizyo	26·3	92	i 10 44	SS	i 13 44	L	(i 13·7)	—
Hong Kong	27·8	133	10 42	S	14 29	L	(14·5)	17·1
Vladivostok	27·9	78	—	—	e 10 49	+19	15·0	17·1

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Husan	28·6	94	—	—	(e 10 51)	+ 9	10·9	—
Baku	31·8	280	—	—	e 12 33	SS	20·4	22·5
Grozny	33·7	287	e 6 38	0	—	—	—	—
Tiflis	34·9	285	e 6 52	+ 4	—	—	20·6	26·0
Piatigorsk	35·3	290	—	—	e 14 45	SS	—	—
Moscow	36·0	309	6 58	0	e 12 39	+ 3	—	22·9
Kodaikanal	36·4	209	—	—	e 14 33?	SS	—	—
Pulkovo	40·0	316	i 7 31	− 1	13 39	+ 3	22·6R	23·7
Simferopol	41·1	294	e 9 19	PP	—	—	e 23·1	—
Yalta	41·2	293	e 9 3	PP	—	—	e 23·3	—
Ksara	44·7	278	e 7 30	−40	e 13 53	−53	—	—
Copenhagen	50·2	315	—	—	16 9	+ 5	26·6	—
Batavia	51·8	162	e 11 8	PP	—	—	—	—
Leipzig	52·0	309	—	—	e 26 27	?	e 33·6	—
Hamburg	52·4	313	—	—	e 23 33?	?	—	28·6
Triest	53·8	302	e 16 55	S	(e 16 55)	+ 2	e 27·3	30·0
Stuttgart	55·0	308	—	—	e 25 3	?	e 29·7	—
Chur	55·7	307	e 9 33	− 1	—	—	e 30·4	—
Strasbourg	56·0	309	—	—	e 26 33	?	e 32·6	—
Scoresby Sund	56·4	339	—	—	17 33?	+ 5	30·6	—
Basle	56·5	307	e 9 39	0	—	—	e 29·9	—
Paris	58·8	311	—	—	e 24 33?	?	31·6	32·6

Additional readings :—
Frunse e = +5m.23s. and +6m.0s.
Chiufeng SEZ = +7m.20s.
Agra SS = +9m.2s.
Hong Kong SS = +15m.8s.
Baku e = +16m.40s. and +19m.3s.
Grozny e = +14m.25s. and +16m.58s.
Tiflis e = +7m.4s., +14m.25s. = SS +1s., +15m.0s., +16m.6s., and +17m.1s. = S_cS −11s.
Pulkovo L_q = +20m.33s.
Leipzig eE = +27m.18s., eZ = +28m.3s., eE = +28m.18s., eZ = +29m.51s., eE = +30m.3s.
Hamburg eZ = +28m.9s.
Triest eS = +21m.18s., SS = +22m.18s.
Stuttgart e = +26m.57s. and +28m.51s.
Chur e = +30m.23s.
Strasbourg i = +29m.57s.
Long waves at Bidston, Edinburgh, Kew, Stonyhurst, Bergen, Bombay, Hyderabad, and other European stations.

July 12d. 2h. Readings for which no determination has been made :—

Sofia iP_g = 31m.46s., iPP = 31m.50s., i = 31m.53s., iS_g = 31m.56s., i = 32m.6s., i = 32m.23s., i = 32m.28s., i = 32m.35s., i = 32m.42s.
Belgrade eP = 32m.30s., e = 32m.35s., e = 33m.0s., e = 33m.17s., e = 33m.23s., M = 33m.39s.
Bucharest ePN = 32m.41s., eP*N = 32m.45s., ePN? = 32m.47s., PPN = 32m.51s., PsSN = 33m.16s., SN = 33m.21s., S_gN? = 33m.32s.
Zagreb eP = 33m.17s., e = 34m.55s., eE = 35m.49s.
Triest eP = 33m.50s., e = 35m.31s., iSsS = 35m.44s., iSS = 35m.53s., iN = 36m.0s., iE = 36m.5s., iEN = 36m.10s.
Vienna eP = 35m.33s.

July 12d. 3h. 37m. 52s. Epicentre 46°·2N. 152°·4E. (as on 1933 Feb. 3d.). R.3.

A = −·613, B = +·321, C = +·722 ; D = +·463, E = +·886 ;
G = −·640, H = +·334, K = −·692.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	10·9	233	e 4 36	S	(e 4 36)	0	—	—
Vladivostok	14·8	266	e 3 47	+21	—	—	—	9·3
Nagoya	16·0	232	e 3 53	PP	7 29	?	—	—
Kobe	17·4	235	e 4 0	+ 1	7 51	?	—	8·0
Keizyo	20·6	255	4 59	PP	8 48	SS	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng	26·9	270	e 5 52	+15	10 22	+ 8	—	—
Nanking	29·3	253	e 6 19	+20	11 10	+17	—	—
Andijan	55·8	296	e 9 30	− 4	—	—	—	—
Tinemaha	63·8	63	e 10 32	+ 1	—	—	—	—
Pulkovo	64·0	332	e 10 30	− 2	(19 26)	PS	19·4	—
Haiwee	64·6	64	e 10 36	0	—	—	—	—
Pasadena	65·8	65	i 10 44	0	i 19 15	−15	—	—
Riverside	66·4	66	e 10 47	− 1	—	—	—	—
Grozny	69·5	312	e 11 11	+ 3	—	—	—	—
Tiflis	71·1	312	11 21	+ 4	e 21 11	PS	—	—
Copenhagen	72·7	338	i 11 25	− 2	—	—	—	—
Simferopol	73·9	321	e 11 35	+ 1	—	—	—	—
Yalta	74·1	320	e 11 38	+ 3	—	—	—	—
Leipzig	76·5	336	i 11 48	− 1	—	—	—	—
Jena	77·1	336	i 11 53	0	—	—	—	—
De Bilt	77·7	341	i 11 56	0	—	—	—	—
Vienna	78·0	332	i 11 58	+ 1	e 22 27	PS	—	—
Stuttgart	79·8	337	12 7	0	—	—	—	—
Zagreb	80·3	331	e 12 10	+ 1	—	—	—	—
Triest	81·2	332	i 12 13	− 1	—	—	—	—
Zurich	81·2	337	e 12 14	0	—	—	—	—
Basle	81·3	336	e 12 15	0	—	—	—	—
Chur	81·4	337	e 12 15	0	e 22 7	−24	—	—
Ksara	81·6	311	i 11 40a	−36	e 22 4	−29	—	—
Neuchatel	82·0	337	e 12 19	+ 1	—	—	—	—
Prato	83·5	333	e 12 30	+ 4	—	—	—	—

Additional readings :—
Mizusawa eSN = +5m.8s., iSE = +5m.13s.
Kobe eE = +4m.30s. and +6m.24s., eZ = +7m.59s.
Chiufeng iZ = +6m.23s., iN = +11m.31s.
Nanking e = +7m.55s.
Tinemaha eZ = +11m.8s. = P_cP +0s.
Pulkovo e = +14m.22s. and +15m.18s.
Pasadena iNZ = +11m.20s. = P_cP +4s.
Riverside iZ = +11m.23s. = P_cP +4s.
Tiflis e = +16m.53s. and +20m.21s.
Leipzig iE = +11m.54s.
Triest e = +11m.18s.
Ksara PS = +22m.44s.
Long waves at Sverdlovsk.

July 12d. 20h. Readings for which no determination has been made :—

Manila PENZ = 45m.16s., SEN = 52m.2s., LEN = 59m.
Hong Kong ? = 46m.15s., M = 53m.51s.
Nanking PN = 47m.34s., eS = 52m.18s., SN = 52m.46s., iLN = 54m.28s., M = 62m.19s.
Nagoya e = 48m.6s., e = 54m.13s.
Chiufeng PNZ = 49m.2s.k, S?N = 53m.20s., iN = 58m.10s., MNZ = 66m.12s.
Vladivostok eP = 49m.35s., M = 70m.0s.
Tashkent e = 52m.46s., e = 57m.58s., e = 64m.12s., e = 68m.38s., e = 69m.16s., eL = 70m.18s., M = 78m.54s.
Sverdlovsk e = 58m.56s., e = 62m.18s., L = 73m.
Ksara e = 60m.50s., e = 65m.42s., e = 71m.26s.
Pulkovo e = 61m.5s., e = 70m.46s., L = 85m., M = 93m.54s.
Long waves at Bombay, Baku, Copenhagen, De Bilt, Paris, Scoresby Sund, Strasbourg, Stuttgart, Tiflis, and Phu-Lien.

July 12d. 23h. Readings for which no determination has been made :—

Berkeley eP_gE = 51m.46s., SEN = 51m.52s.
Branner eP_gE = 51m.54s., iSEN = 52m.4s.
San Francisco eE = 51m.54s., iSE = 51m.59s.
Lick eP_gN = 51m.56s., eE = 51m.59s., eS_gE = 52m.7s.

July 12d. Readings also at 0h. (Malabar, Manila, Erevan, Grozny, Tiflis, Santiago, Ferndale, Berkeley, Branner, Lick, and Ukiah), 1h. (La Plata and Santiago), 3h. (Riverview and Oak Ridge), 5h. (Batavia and Prato), 7h. (Malabar), 11h. (Tiflis and Sumoto), 15h. (Santiago), 16h. (Santiago, La Plata, La Paz, Sucre, and Oak Ridge), 17h. (La Plata, La Paz, and Sucre), 18h. (Prato, Triest, and Berkeley), 19h. (Hong Kong and Manila), 20h. (Oak Ridge), 21h. (Medan, Andijan, Samarkand, Branner, Berkeley, Lick, and San Francisco), 22h. (Florence and Prato), 23h. (Platigorsk, Hong Kong, Nanking, and Manila).

July 13d. 0h. 3m. 48s. Epicentre 46°·2N. 26°·5E. N.2.

$A = +\cdot619$, $B = +\cdot309$, $C = +\cdot722$; $D = +\cdot446$, $E = -\cdot895$; $G = +\cdot646$, $H = +\cdot322$, $K = -\cdot692$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bucharest	1·9	211	i 0 24	− 4	0 42	− 7	—	—
Sofia	4·2	215	i 0 56	− 4	i 1 36	−12	—	1·7
Belgrade	4·5	254	e 1 13	P*	e 2 2	+ 7	—	1·8
Budapest	5·2	280	1 23	P*	2 36	S*	3·4	—
Sebastopol	5·2	105	i 1 11	− 3	i 2 7	− 6	—	—
Simferopol	5·4	101	i 1 15	− 2	i 2 14	− 4	—	—
Yalta	5·6	105	i 1 19	− 1	i 2 20	− 3	—	—
Vienna	7·2	283	e 1 46	+ 4	i 4 27	?	—	—
Zagreb	7·3	267	e 1 45	+ 1	e 3 7	+ 1	—	—
Graz	7·6	275	e 1 52	+ 4	e 3 12	− 2	—	4·8
Triest	8·9	266	i 2 8k	+ 2	i 3 49	+ 3	—	—
Prague	8·9	304	e 2 14	+ 8	—	—	e 4·7	5·7
Königsberg	9·2	340	i 2 17	+ 7	i 4 7	+13	—	7·2
Sotchi	9·7	101	e 3 26	?	e 4 58	S*	—	—
Leipzig	10·6	304	i 2 26	− 3	i 4 58	S*	—	—
Jena	10·9	302	e 2 12	−21	—	—	—	—
Florence	11·0	265	e 1 22	?	4 37	− 1	—	5·2
Prato	11·1	262	e 3 0	+24	4 54	+13	—	5·5
Chur	11·7	276	e 2 47	+ 3	—	—	—	—
Moscow	11·8	32	2 45	− 1	4 53	− 5	7·0	9·1
Stuttgart	12·0	291	2 50	+ 2	e 5 12	+ 9	7·3	—
Göttingen	12·0	304	e 2 48	PP	e 8 12?	?	—	—
Zurich	12·3	284	e 2 50	− 2	—	—	—	—
Hamburg	12·9	312	e 3 12	+11	—	—	—	7·2
Strasbourg	12·9	289	i 3 0k	− 1	e 5 34	+ 9	e 8·2	—
Copenhagen	12·9	322	3 0	− 1	5 44	+19	—	—
Basle	13·0	284	e 3 3	+ 1	e 5 47	+20	—	—
Pulkovo	13·7	9	i 3 11	0	i 5 36	− 8	6·5	6·7
Grozny	13·9	95	e 3 15	+ 1	e 6 45	S*	—	—
Tiflis	13·9	103	3 19	+ 5	6 2	+13	6·6	—
Ksara	14·3	147	i 3 12	− 7	5 58	0	—	—
Erevan	14·4	108	e 3 18	− 3	e 6 12	SS	—	—
Upsala	14·6	342	i 3 20	− 3	6 3	− 2	—	8·1
De Bilt	14·9	300	e 3 30	+ 3	6 37	SS	e 8·2	10·5
Uccle	15·3	298	i 3 36	+ 4	6 40	SS	—	—
Paris	16·3	288	—	—	e 6 57	SS	—	—
Baku	17·9	100	e 4 2	− 3	7 22	0	—	—
Stonyhurst	20·0	306	e 4 12?	−18	—	—	—	8·2
Edinburgh	20·8	308	—	—	i 8 32	+10	—	—
Alicante	21·4	260	—	—	e 8 23	−11	—	—
Toledo	23·1	266	e 4 52	−10	e 9 0	− 7	e 11·0	—
Sverdlovsk	23·4	50	i 5 3	− 2	9 6	− 6	12·0	—
Almeria	23·5	258	e 4 59	− 6	—	—	—	—
Granada	24·1	260	e 4 50	−21	e 8 48	−37	—	—
Samarkand	30·0	87	e 6 12	+ 6	—	—	—	—
Andijan	33·2	82	e 5 28	?	—	—	—	—
Scoresby Sund	33·6	333	8 12?	?	—	—	—	—
Almata	35·3	75	e 7 12	+20	—	—	—	—
Vladivostok	69·0	49	(11 13)	+ 8	—	—	—	—

For Notes see next page.

NOTES TO JULY 13d. 0h. 3m. 48s.

Additional readings and notes :—
Bucharest iPPEN = +30s.
Sofia i = +1m.2s.
Belgrade eP_g = +1m.21s., iPPsS = +1m.42s., PSsP = +1m.48s.
Budapest e = +2m.21s. = S +8s., S_g = +3m.6s.
Vienna eEN = +3m.0s. and +3m.37s. = S* +5s., eN = +4m.41s.
Zagreb eSS = +3m.13s., eE = +3m.30s. = S* −5s., e = +4m.9s.
Graz, all readings given as for 1h.
Triest i = +7m.7s.
Königsberg e?N = +2m.44s., eN = +3m.1s., iPPZ = +3m.9s., eE = +4m.4s., e?Z = +4m.23s., iN = +4m.38s. = S* +6s., eN = +4m.51s. = S_g −7s., iZ = +4m.56s., eSSZ = +5m.9s.
Grozny e = +7m.17s. = S_g.
Stonyhurst e = +7m.12s.?
Vladivostok reading has been *increased* by 6m.
Long waves at Piacenza and Tashkent.

July 13d. 0h. Readings for which no determination has been made :—

Manila PENZ = 34m.27s., SEN = 38m.26s.
Hong Kong ? = 35m.30s., MN = 42m.4s.
Nanking eP = 36m.35s., eSE = 41m.15s., iN = 42m.9s., LN = 43m.40s.
Nagoya e = 37m.35s.
Chiufeng ePNZ = 38m.12s., SN = 42m.33s., iN = 46m.53s., MN = 54m.5s.
Sverdlovsk P = 43m.12s., e = 51m.19s., L = 62m.
Ksara eP = 44m.58s., ePP = 48m.4s., eS = 55m.6s.
Tashkent e = 53m.0s., eL = 60m., M = 68m.6s.
Long waves at Bombay, Baku, Copenhagen, De Bilt, Moscow, Pulkovo, Stuttgart, Tiflis, Phu-Lien, and Vladivostok.

July 13d. 1h. Readings for which no determination has been made :—

Triest e = 21m.23s., e = 28m.55s., e = 35m.34s.
Sofia eN = 28m.
Erevan eP_g = 36m.14s., eS_g = 36m.28s.
Ksara iP = 46m.0s., eS = 50m.42s., M = 56m.
Baku e = 46m.58s., e = 51m.10s., L = 57m., M = 60m.12s.
Tiflis e = 48m.37s. (e) = 51m.43s., e = 53m.31s., L = 56m.48s., M = 63m.12s.
Tashkent e = 57m.24s., eL = 61m.0s., M = 62m.30s.
Long waves at Paris and Strasbourg.

July 13d. 13h. 3m. 34s. Epicentre 41°·2N. 43°·6E. (as on 1935 April 2d.). X

A = +·545, B = +·519, C = +·659.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	1·0	63	i 0 13	− 1	—	—	i 0·4	0·6
Erevan	1·4	144	e 0 21	+ 1	e 0 38	+ 2	—	0·7
Grozny	2·6	37	e 0 46	P_g	1 20	S_g	—	1·4
Piatigorsk	2·9	352	e 1 2	S	(e 1 2)	−12	—	—
Ksara	9·6	221	e 5 32	S_g	—	—	—	—

Additional readings :—
Grozny P_g = +51s., PP = +56s., S_g = +1m.24s.
Ksara e = +6m.32s. and +7m.2s.

July 13d. 15h. Readings for more than one shock for which no determinations have been made :—
Seattle e = 17m.35s., eL = 21m.51s.
Sitka i = 24m.23s., i = 25m.15s.
Tinemaha iPZ = 28m.54s.
Haiwee ePZ = 29m.3s.
Pasadena iPZ = 29m.16s.
Mount Wilson ePZ = 29m.17s.
Riverside iPZ = 29m.20s.
Sverdlovsk P = 33m.29s., e = 55m.44s., L = 56m.
Philadelphia e = 36m.2s., e = 48m.19s., e = 49m.8s.
Scoresby Sund 41m.
Toronto eN = 42m.14s., iN = 43m.53s., iN = 46m.15s.
Florissant ePZ = 42m.22s., eE = 43m.10s., eEN = 43m.36s., eENZ = 45m.56s.
Chicago e = 42m.25s., eL = 45m.5s.
Sitka i = 46m.35s., i = 46m.42s., i = 47m.35s., i = 47m.40s.
Tinemaha iPZ = 51m.12s.
Haiwee ePZ = 51m.20s.
Pasadena iPZ = 51m.35s.
Mount Wilson iPZ = 51m.35s.
Riverside iPZ = 51m.38s.
Tashkent e = 56m.0s., M = 72m.12s.
Long waves at Baku.

July 13d. 18h. Readings for which no determination has been made. Baku suggests 37°·3N. 69°·3E. and Frunse 38°·1N. 70°·5E.

Samarkand eP = 59m.14s., P_g = 59m.29s., S = 60m.1s., iS_g = 60m.10s., M = 60m.35s.
Andijan eP = 59m.14s., i = 59m.32s., M = 60m.40s.
Tashkent iP = 59m.18s., iL = 60m.0s., M = 60m.24s.
Frunse eP = 60m.1s., iS_g = 61m.11s.
Almata eS = 61m.32s.
Grozny eP = 62m.41s., eS = 66m.38s.
Tiflis e = 62m.43s., e = 63m.14s., e = 67m.29s.
Sverdlovsk iP = 62m.47s., eS = 66m.38s., L = 69m.
Baku e = 65m.18s.
Piatigorsk e = 67m.8s.

July 13d. Readings also at 0h. (Sofia, Medan, Manila (2), and Wellington (2)), 1h. (Tiflis), 2h. (Manila (2), Hong Kong, Nanking (2), Phu-Lien, San Fernando, Sofia, and Tashkent), 3h. (Sofia, Sverdlovsk, Tiflis, Hong Kong, Phu-Lien, Vladivostok, and Manila), 4h. (Copenhagen, Pulkovo, Sverdlovsk, Triest, and Nanking), 5h. (Baku, Ksara, Sverdlovsk, Tashkent, Tiflis, Mizusawa, and Nagoya), 6h. (Nagoya), 7h. (Mount Wilson, Pasadena, and Riverside), 8h. (Hong Kong and Manila), 10h. (Batavia, Berkeley, Branner, Lick, and Tucson), 14h. (Tiflis and Toledo), 15h. (Tiflis (2)), 17h. (Tiflis, Bozeman, Arisan, Taihoku, and Taityu), 18h. (Andijan, Samarkand, Tashkent, Tiflis, and Nanking), 20h. (Hong Kong and Manila), 21h. (Mizusawa), 22h. (Grozny, Tiflis, Chiufeng, Nagoya, and Vladivostok), 23h. (Baku, Sverlovsk, and Tashkent).

July 14d. 11h. 32m. 42s. Epicentre 39°·3N. 76°·1E. N.3.

A = +·186, B = +·751, C = +·633 ; D = +·971, E = −·240 ; G = +·152, H = +·615, K = −·774.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	3·2	294	e 0 47	+ 1	i 1 24	+ 2	—	1·6
Frunse	3·8	341	1 12	P_g	e 1 52	S*	—	2·0
Almata	4·0	10	1 13	P_g	i 2 12	S_g	—	2·4
Tashkent	5·5	290	e 1 15	− 3	i 2 56	S_g	i 3·0	4·6
Tchimkent	5·8	299	—	—	e 2 23	− 5	—	4·2
Samarkand	7·0	270	e 1 59	P*	e 2 55	− 4	—	3·9
Tiflis	23·8	286	e 5 11	+ 3	—	—	12·9	—

Additional readings :—
Andijan P* = +48s., P_g = +52s.
Frunse P* = +1m.13s., P_g = +1m.16s., S_g = +2m.2s.
Almata e = +2m.8s.
Tashkent i = +1m.34s. = P* +3s.
Tchimkent i = +2m.40s. and +3m.10s. = S_g +4s.
Long waves at Pulkovo and Sverdlovsk.

July 14d. Readings also at 0h. (Berkeley), 3h. (Medan), 6h. (Tiflis), 7h. (Wellington), 9h. (Erevan and Tiflis), 10h. (Andijan, Erevan, Frunse, Samarkand, and Tiflis), 11h. (Hastings), 12h. (Tiflis), 13h. (Erevan, Grozny, and Tiflis), 14h. (Baku, Ksara, Paris, Pulkovo, Scoresby Sund, Sverdlovsk, Tashkent, Tiflis, Honolulu, Chiufeng, Pasadena, and Tinemaha), 15h. (Erevan, Grozny, and Tiflis), 16h. (Tiflis (2)), 17h. (Almata), 18h. (Andijan and Frunse), 21h. (Nagoya).

July 15d. 5h. Readings for which no determination has been made :—

Samarkand $iP_g = 40m.26s.$, $iS_g = 40m.38s.$
Tashkent $iP = 40m.52s.$, $iS = 41m.37s.$, $iL = 41m.45s.$, $M = 43m.6s.$
Tchimkent $eP = 41m.19s.$, $e = 41m.54s.$, $M = 52m.56s.$
Andijan $eP = 41m.21s.$, $e = 41m.53s.$, $e = 42m.18s.$
Frunse $e = 41m.47s.$, $i = 42m.25s.$, $eS = 43m.59s.$
Sverdlovsk $e = 50m.14s.$, $L = 51m.6s.$
Pulkovo $e = 56m.56s.$, $eL = 59m.$; epicentre 37°39′N. 69°18′E.

July 15d. 11h. 59m. 29s. Epicentre 39°·5S. 176°·9E. (as on 1931 Sept. 11d.). X.

$A = -\cdot770$, $B = +\cdot042$, $C = -\cdot636$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hastings	0·1	185	0 1	0	0 13	?	—	—
Tuai	0·7	12	(0 1)	− 9	(0 13)	− 5	—	—
Arapuni	1·7	324	−0 19	?	−0 9	?	—	—
New Plymouth	2·2	181	0 31	0	0 52	− 5	—	—
Wellington	2·4	223	0 39	P*	1 11	S*	—	—
Glenmuick	4·4	220	1 23	P_g	2 21	S_g	—	—
Christchurch	5·1	217	1 35	P_g	2 42	S_g	—	—
Stratford	6·4	270	—	—	2 31?	−12	—	—
Riverview	21·3	277	e 4 39	− 4	i 8 50	SS	e 11·7	13·8
Sydney	21·3	277	e 4 39	− 4	e 8 26	− 6	11·0	13·1
Melbourne	24·9	264	e 5 24	+ 5	e 9 49	+10	11·2	—
Adelaide	30·6	269	—	—	i 13 11	?	e 15·8	19·6
Nanking	89·5	314	—	—	23 49	− 2	—	—
Tashkent	126·5	298	—	—	e 37 56	SS	e 60·5	86·3
Tiflis	144·0	291	e 19 31	[0]	—	—	—	—
Ksara	148·5	272	i 19 47	[+ 7]	—	—	—	—
Pulkovo	150·9	325	e 20 2	{− 1}	—	—	e 25·5	—
Copenhagen	160·8	333	24 31?	PP	—	—	—	—
De Bilt	164·2	338	e 24 31?	PP	e 30 57	{−44}	e 87·5	—
Stuttgart	167·2	321	e 24 56	PP	—	—	—	—
Granada	177·6	170	e 26 6	PP	e 32 30	{−21}	e 53·5	—

Additional readings and notes :—
Hastings $P_g? = +6s.$, $S_g? = +20s.$
Tuai readings have been *diminished* by 30s.
New Plymouth $P_g? = +36s.$, $S_g? = +1m.2s.$
Wellington $i = +48s. = P_g + 6s.$, $+56s.$, $+1m.3s. = S + 1s.$, $+1m.19s. = S_g + 6s.$, and $+1m.33s.$
Glenmuick $S_g? = +2m.26s.$
Christchurch $P_g? = +2m.5s. = S - 5s.$, $S_g? = +3m.15s.$
Riverview $iE = +8m.51s. = SS - 8s.$
Melbourne $i = +10m.2s.$, $i = +13m.22s.$
Adelaide $i = +8m.21s.$
Tashkent $e = +42m.33s. = SSS + 7s.$
Ksara $PP = +23m.28s.$
Long waves at Huancayo, Perth, Nanking, and Sitka.

July 15d. 14h. 13m. 30s. Epicentre 21°·3S. 178°·6W. (as on 1933 Sept. 6d.). X.

U.S. Coast and Geodetic Survey No. 600 give 21°S. 179°W., about 500kil. deep; $T_0 = 14h.13{\cdot}5m.$

$A = -{\cdot}931$, $B = -{\cdot}023$, $C = -{\cdot}363$; $D = -{\cdot}024$, $E = +1{\cdot}000$; $G = +{\cdot}363$, $H = +{\cdot}009$, $K = -{\cdot}932$.

A *depth* of focus 0·075 has been retained.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	−0·8	9·9	42	e 2 18	+ 9	i 4 0	+ 9	—	—
Wellington	−3·0	20·8	194	7 22	S	(7 22)	+ 2	—	—
Riverview	−4·6	29·5	238	i 5 28	+ 9	i 9 42	+ 3	—	19·3
Melbourne	−5·1	35·5	234	—	—	i 11 12	+ 2	—	—
Adelaide	−5·7	39·8	240	e 6 3	−38	i 12 13	+ 5	16·3	20·1
Honolulu	−6·4	47·2	27	—	—	i 13 48	0	—	—
Amboina	−7·1	54·6	281	i 8 34	+ 2	i 15 30	+ 4	—	—
Manila	−8·0	69·3	296	i 10 15k	+ 1	13 40	PPP	—	—
Nagoya	−8·1	70·5	323	e 10 22	+ 1	—	—	—	—
Sumoto	−8·2	71·1	321	i 10 24	− 1	—	—	—	—
Mizusawa	−8·2	71·2	328	(e 10 25)	0	e 10 25	P	—	—
Kobe	−8·2	71·2	321	e 10 24	− 1	e 18 57	+ 2	—	—
Batavia	−8·3	73·4	270	i 10 44	+ 5	19 24	+ 3	—	—
Hong Kong	−8·6	78·7	299	11 9	− 2	20 20	− 2	24·9	—
Santa Barbara	−8·7	78·9	46	e 11 8	− 4	e 20 23	− 1	—	—
Ukiah	−8·7	79·5	40	—	—	20 30	− 1	—	—
La Jolla	−8·7	79·7	48	i 11 15	− 2	—	—	—	—
Pasadena	−8·7	79·8	47	i 11 13a	− 4	i 20 32	− 2	—	—
Mount Wilson	−8·7	79·9	47	i 11 14a	− 4	e 20 33	− 2	—	—
Nanking	−8·7	80·2	310	11 17	− 3	i 20 37	− 2	—	—
Riverside	−8·7	80·3	47	e 11 15	− 5	i 20 36	− 4	—	—
Haiwee	−8·7	81·1	45	i 11 21	− 4	i 20 47	− 3	—	—
Tinemaha	−8·8	81·4	45	i 11 24	− 2	i 20 51	− 1	—	—
Phu-Lien	−8·9	84·3	294	—	—	20 30?	−55	—	—
Chiufeng	−9·0	86·3	316	11 46k	− 8	i 21 15	−31	—	—
Sitka	−9·0	86·3	22	—	—	i 21 30	−16	—	—
Bozeman	−9·2	90·6	40	—	—	i 22 17	[−79]	—	—
Huancayo	−9·3	97·7	106	—	—	i 22 26	−75	—	—
Huancayo	−9·3	97·7	106	—	—	i 22 26	−75	—	—
La Plata E.	—	100·5	134	—	—	21 42	?	—	—
N.	—	100·5	134	—	—	22 39	[−109]	—	—
Calcutta	—	100·6	290	—	—	e 22 38	[−111]	—	—
La Paz	—	102·1	113	17 14	PP	24 0	{−69}	—	—
Ottawa	—	113·8	48	—	—	e 23 30	[−119]	36·5	—
Frunse	—	116·4	308	e 18 55	?	—	—	—	—
San Juan	—	116·9	80	—	—	e 24 51	[−49]	—	—
Andijan	—	117·9	305	e 17 54	[−46]	e 23 50	[−113]	—	—
Tashkent	—	120·2	306	—	—	i 24 22	[−89]	i 28·5	—
Sverdlovsk	—	124·4	326	i 17 58	[−58]	i 25 47	{−119}	—	—
Scoresby Sund	—	128·9	10	—	—	36 48	?	—	—
Baku	—	134·9	307	e 18 23	[−52]	i 25 7	[−86]	—	—
Pulkovo	—	136·4	339	18 22	[−55]	—	—	37·5	42·7
Moscow	—	136·4	331	—	—	e 28 10	{−52}	—	—
Grozny	—	137·4	312	e 18 12	[−66]	—	—	—	—
Tiflis	—	138·3	309	e 18 21	[−58]	e 31 15	PS	e 37·2	—
Piatigorsk	—	138·8	314	e 21 8	PKS	—	—	—	—
Copenhagen	—	144·6	349	i 18 35	[−58]	—	—	—	—
Edinburgh	—	145·1	4	—	—	e 39 30?	?	—	—
Ksara	—	147·1	299	i 18 43	[−54]	24 56	?	—	—
Göttingen	—	149·0	350	i 18 49k	[−51]	—	—	—	—
De Bilt	—	149·0	355	i 18 50	[−50]	—	—	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Jena	—	149·2	346	e 18 48	[−53]	—	—	—	—
Prague	—	149·5	345	e 17 49	?	—	—	—	—
Kew	—	149·7	2	i 18 51	[−50]	—	—	—	—
Uccle	—	150·3	356	18 53	[−49]	—	—	e 40·5	—
Vienna	—	150·5	339	i 18 53	[−49]	e 23 24	PP	—	—
Stuttgart	—	151·8	349	e 18 48	[−56]	e 25 37	?	—	—
Sofia	—	151·9	324	e 18 58	[−46]	—	—	—	—
Strasbourg	—	152·2	351	i 18 55k	[−50]	—	—	e 35·5	—
Paris	—	152·4	358	(e 20 30?)	?	—	—	e 20·5	—
Basle	—	153·5	354	e 18 51	[−55]	—	—	—	—
Prato	—	156·0	343	e 19 3	[−46]	26 18	?	—	—
Granada	—	163·6	14	e 19 5	[−52]	—	—	—	—
Almata	—	164·1	11	e 18 56	[−62]	—	—	—	—

Additional readings :—
Apia iSZ = +4m.3s.
Wellington S_cS = +14m.20s., eS_cS = +18m.21s.
Riverview iE = +7m.1s., eN = +12m.40s., iE = +15m.1s.
Melbourne i = +14m.37s. and +15m.30s.
Amboina iE = +10m.25s. =PP +9s.
Manila iPEN = +10m.18s.
Sumoto eE = +9m.43s., eN = +9m.46s., eZ = +9m.56s.
Kobe eN = +11m.22s., PPE = +12m.31s., eSN = +19m.35s.
Batavia iN = +11m.25s.
Santa Barbara eZ = +13m.24s. =PP −16s.
La Jolla eZ = +13m.18s.
Pasadena iZ = +13m.15s.
Mount Wilson iZ = +13m.18s.
Nanking PP = +14m.28s., eN = +23m.41s., eE = +24m.20s., SS? = +25m.2s.
Riverside iZ = +13m.22s.
Haiwee iZ = +13m.25s.
Tinemaha iZ = +13m.18s.
Chiufeng pPN = +12m.38s., PPEZ = +13m.50s., PPPE = +15m.5s., PPPZ = +15m.10s., iEN = +21m.35s., sSEN = +22m.42s.
Sitka ePS = +25m.13s.
Bozeman eS = +25m.50s.
La Plata sS?E = +27m.54s., sSPN = +28m.48s., SSN = +30m.6s.
La Paz iE = +18m.41s.
Ottawa eN = +25m.36s. and +33m.48s.
San Juan ePP = +19m.59s., i = +23m.46s., PS = +28m.53s.
Tashkent i = +19m.10s., i = +19m.55s., +22m.0s., +23m.55s., and +25m.54s.
Sverdlovsk i = +19m.50s., e = +21m.43s. and +22m.32s., i = +24m.9s., e = +28m.13s.
Baku i = +20m.59s.
Pulkovo i = +21m.2s., +21m.54s. =PP −5s., +23m.8s., +24m.8s., +25m.4s., +27m.2s., and +27m.28s., e = +31m.9s.
Moscow e = +21m.4s. and +21m.54s. =PP −5s., i = +24m.2s., e = +25m.21s. and +27m.3s.
Grozny e = +21m.7s.
Tiflis i = +21m.9s., e = +21m.47s., +22m.57s., +23m.13s., and +26m.59s.
Copenhagen +21m.20s., e = +25m.0s., +27m.54s., +31m.24s., and +35m.42s.
Ksara ipP = +20m.56s., sPKP = +21m.52s., PP = +22m.34s., pPP = +24m.32s., sPP = +25m.37s., sPP = +34m.27s., PPS = +35m.28s., SS = +40m.34s.
Göttingen eZ = +21m.1s.
De Bilt iZ = +21m.3s., eZ = +22m.1s., eE = +40m.30s.?
Kew eZ = +21m.9s.
Uccle e = +21m.3s.
Vienna iZ = +19m.3s.
Stuttgart ePP = +20m.17s., ePKS = +22m.0s.
Sofia e = +28m.35s.
Strasbourg i = +19m.7s., ePP = +22m.22s., e = +22m.35s., ePPP = +25m.35s.
Granada i = +23m.43s.

July 15d. 18h. **Readings for which no determination has been made :—**

Sucre P = 8m.26s.
La Paz P = 8m.55s., iSE = 16m.9s., SN = 16m.27s., SSN = 21m.0s., LZ = 24m.0s., M = 30m.39s.
Ksara e = 12m.34s., eS = 22m.4s., L = 40m.30s., M = 49m.30s.
Stuttgart eZ? = 12m.42s., e = 28m.48s., eL = 43m.
Huancayo eP = 13m.6s., eS = 17m.55s., e = 24m.19s., L = 28m.8s.
San Juan e = 13m.46s., e = 14m.0s., e = 21m.0s. e = 24m.51s., e = 35m.30s.
Pulkovo e = 16m.22s., e = 24m.31s., e = 27m.7s., e = 32m.27s., L = 44m., M = 53m.0s.
Uccle e = 23m., eL = 35m.
Tiflis e = 23m.29s., e = 31m.15s., eL = 46m.
De Bilt e = 24m., e = 29m.30s., eL = 36m., M = 43m.33s.
Copenhagen 24m.42s., 30m.30s., L = 42m.
Ottawa e = 26m.12s., eL = 40m.
Sverdlovsk e = 28m.53s., e = 35m.2s., L = 49m.
Prague e = 29m.
Sofia e = 34m.22s.
Tashkent e = 37m.48s., eL = 48m., M = 56m.24s.
Edinburgh e = 38m.
Long waves at Kew, Bombay, Almeria, Alicante, Baku, Granada, Paris, San Fernando, Strasbourg, and La Plata.

July 15d. **Readings also at** 0h. (Tiflis), 4h. (La Paz, La Plata, Sucre, Taikyu, Sebastopol, Simferopol, and Yalta), 7h. (Sverdlovsk, Tashkent, Chiufeng, Hong Kong, Phu-Lien, Nanking, and Sumoto), 8h. (Chiufeng and Nanking), 9h. (Tashkent and Sverdlovsk), 11h. (Mount Wilson, Pasadena, and Riverside), 12h. (Hastings, Arapuni (2), and Wellington (2)), 13h. (Mizusawa), 14h. (Tiflis and Taikyu), 15h. (Berkeley), 16h. (Takao and Taito), 19h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 20h. (Copenhagen), 21h. (Wellington).

July 16d. 15h. 0m. 33s. Epicentre 34°·3N. 131°·4E. N.1.

Given by the Japanese stations.

A = −·546, B = +·620, C = +·563 ; D = +·750, E = +·661 ;
G = −·373, H = +·423, K = −·826.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Simonoseki	0·5	129	0 7	0	0 13	0	—	—
Hamada	0·8	40	0 13	+ 2	0 25	+ 4	—	—
Hirosima	0·9	95	0 15	+ 2	0 31	+ 8	—	—
Hukuoka	1·0	230	i 0 16	+ 2	i 0 30	S*	—	0·6
Hukuoka B	1·1	230	i 0 16	0	i 0 30	S*	—	0·5
Ooita	1·1	170	0 16	0	0 25	− 3	—	—
Matuyama	1·2	113	0 23	+ 6	0 44	+13	—	—
Saga	1·4	220	0 25	P_g	0 43	S_g	—	—
Kumamoto	1·6	200	0 27	P_g	0 50	S_g	—	—
Unzendake	1·8	211	0 33	P_g	0 57	S_g	—	—
Koti	1·9	112	0 34	P_g	1 4	S_g	—	—
Simidu	2·0	140	0 34	P_g	1 4	S_g	—	—
Nagasaki	2·0	216	i 0 33	P_g	i 1 0	S_g	—	1·1
Husan	2·1	294	i 0 24	− 6	0 47	− 7	i 0·8	1·0
Miyazaki	2·3	180	0 39	P_g	1 12	S_g	—	—
Taikyu	2·7	305	0 38	− 1	1 9	0	—	—
Tomie	2·8	232	0 41	+ 1	1 21	S*	—	—
Kagosima	2·8	195	0 46	P*	1 30	S_g	—	—
Sumoto	2·9	89	0 46	P*	1 30	S_g	—	1·7
Toyooka	3·1	66	0 46	+ 2	1 33	S*	—	1·8
Wakayama	3·1	91	0 49	P*	1 37	S_g	—	—
Kobe	3·2	83	0 50	P*	1 41	S_g	—	1·7
Osaka	3·4	85	0 53	P*	1 51	S_g	—	—
Siomisaki	3·7	104	0 57	+ 4	1 55	S_g	—	—
Kyoto	3·7	79	0 55	+ 2	1 53	S_g	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hikone	4·1	76	1 2	P*	2 6	S_g	—	—
Kameyama	4·2	81	1 4	P*	2 4	+ 1	—	—
Gihu	4·6	76	0 52	−14	2 24	S_g	—	—
Nagoya	4·7	80	1 11	+ 4	2 29	S_g	—	2·9
Keizyo	4·9	311	1 17	P*	i 2 13	+ 8	—	2·5
Zinsen	5·0	310	e 1 20	P*	e 2 18	S*	—	—
Hamamatu	5·2	86	1 18	+ 4	2 40	S_g	—	—
Wazima	5·4	55	1 22	+ 5	3 0	S_g	—	—
Kohu	6·0	77	1 30	+ 5	2 52	S*	—	—
Nagano	6·1	67	1 35	P*	3 3	S*	—	—
Misima	6·3	82	1 38	P*	3 23	S_g	—	—
Heizyo	6·5	315	e 2 10	P_g	—	—	2·3	—
Maebasi	6·6	72	1 39	+ 5	3 28	S_g	—	—
Kumagaya	6·8	74	2 1	P_g	3 33	S*	—	—
Tokyo	7·0	80	2 11	P_g	—	—	—	—
Mera	7·0	85	2 23	?	3 45	S_g	—	—
Utunomiya	7·3	69	2 6	P*	3 45	S_g	—	—
Nanking	10·7	262	e 2 33	+ 2	—	—	e 5·2	—

Additional readings :—
Koti +1m.6s.
Sumoto SZ = +1m.36s.
Toyooka PEN = +48s. = P* − 2s.
Kobe iP_gZ = +56s. = P_g − 2s.
Wazima +2m.29s.
Kumagaya +3m.36s. = S_g − 3s.
Long waves at Hong Kong, Chiufeng, Phu-Lien, Vladivostok, Pulkovo, Tashkent, and Sverdlovsk.

July 16d. 16h. 19m. 4s. Epicentre 24°·6N. 120°·9E. (as on 1935 May 20d.). R.2.

Given by the Japanese stations.

A = −·467, B = +·780, C = +·416; D = +·858, E = +·513;
G = −·214, H = +·357, K = −·909.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taityu	0·5	200	i 0 7	0	i 0 14	+ 1	—	—
Taihoku	0·7	55	i 0 9	− 1	0 21	+ 3	—	—
Karenko	0·9	131	i 0 14	+ 1	i 0 31	+ 8	—	—
Arisan	1·1	185	0 14	− 2	0 28	0	—	—
Tainan	1·7	200	e 0 24	0	0 47	+ 3	—	—
Hokoto	1·7	227	0 21	− 3	0 50	+ 6	—	—
Taito	1·8	173	i 0 27	+ 1	0 52	S*	—	—
Takao	2·0	195	0 29	0	0 58	S*	—	—
Kosyun	2·6	185	0 38	+ 1	1 18	S*	—	—
Naha	6·3	73	1 34	+ 4	3 1	S*	—	—
Hong Kong	6·6	250	1 32	− 2	2 55	+ 7	3·4	4·1
Nanking	7·7	345	i 1 46	− 3	3 23	+ 7	3·8	4·2
Nake	8·6	60	2 2	0	4 47	S_g	—	—
Manila	10·0	183	2 20k	− 1	4 6	− 7	—	11·3
Tomie	10·6	30	2 33	+ 4	4 54	?	—	—
Nagasaki	11·3	42	2 42	+ 3	e 5 5	?	6·3	8·7
Unzendake	11·6	40	2 52	+ 9	7 23	?	—	—
Miyazaki	11·8	45	2 50	+ 4	5 11	+13	—	—
Kumamoto	11·9	42	2 52	+ 5	6 24	S_g	—	—
Hukuoka	12·2	41	2 52	+ 1	(5 27)	+19	5·4	9·8
Hukuoka B	12·2	41	2 54	+ 3	6 43	S_g	8·8	9·7
Husan	12·6	32	2 58	+ 2	5 49	?	7·2	10·3
Taikyu	13·1	30	3 7	+ 4	5 49	+20	7·3	—
Simidu	13·4	47	3 48	!	6 45	S*	—	—
Phu-Lien	13·7	256	e 3 8	− 3	e 6 1	+17	6·6	8·8

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zinsen		13·8	18	i 3 13	0	e 5 58	SS	e 7·0	7·6
Matuyama		13·9	40	3 16	+ 2	5 55	+ 6	—	—
Keizyo		14·0	20	3 16	+ 1	5 53	+ 2	7·0	8·1
Hamada		14·1	40	4 21	?	7 8	?	—	—
Koti		14·2	48	3 18	0	—	—	—	—
Heizyo		15·0	13	3 31	+ 3	e 6 27	+12	8·0	8·4
Sumoto		15·6	46	3 36	0	6 49	+20	9·6	12·0
Siomisaki		15·7	51	3 30	− 8	—	—	—	—
Wakayama		15·7	47	3 34	− 4	7 9	+38	—	—
Kobe		15·9	49	e 3 40	0	7 8	+32	9·6	12·1
Chiufeng		16·0	346	i 3 40 a	− 1	6 59	+21	—	9·9
Yingkow		16·1	4	3 48	+ 5	7 1	+20	—	—
Toyooka		16·2	46	3 46	+ 2	7 8	+25	9·6	11·6
Osaka		16·2	47	3 26	−18	6 35	− 8	—	—
Kameyama		16·9	47	3 52	− 1	—	—	—	—
Fengtien		17·3	6	4 22	?	7 49	?	—	—
Ibukisan		17·4	45	3 58	− 1	9 17	L	(9·3)	—
Nagoya		17·5	48	4 3	+ 3	—	—	9·5	11·6
Hamamatu		17·7	50	4 1	− 2	8 1	?	—	—
Toyama		18·4	48	4 12	+ 1	10 11	?	—	—
Hatidyozima		18·6	54	4 10	− 4	8 19	?	—	—
Wazima		18·7	47	4 17	+ 2	7 51	+11	—	—
Kohu		18·8	50	4 19	+ 3	9 40	L	(9·7)	—
Misima		18·8	50	4 14	− 2	8 57	?	—	—
Nagano		19·1	49	4 25	+ 5	8 38	+50	—	—
Mera		19·3	50	4 29	+ 7	9 37	L	(9·6)	—
Yokohama		19·4	51	4 26	+ 3	8 32	+38	—	—
Maebasi		19·6	48	4 27	+ 2	8 51	?	—	—
Kumagaya		19·6	47	4 25	0	8 26	+28	—	—
Tokyo		19·6	50	4 41	PP	8 38	SS	—	—
Sinkyo		19·7	9	4 41	PP	7 20	−40	—	—
Kakioka		20·2	48	4 30	− 2	8 33	SS	—	—
Mito		20·5	48	4 40	+ 5	—	—	—	—
Vladivostok		20·6	22	i 4 39	+ 3	i 8 43	SS	10·3	16·1
Hukusima		21·2	45	4 43	+ 1	8 37	+ 7	—	—
Palau		21·6	141	4 53	+ 7	—	—	—	—
Mizusawa	E.	22·4	44	e 4 54	− 1	e 9 8	+15	e 11·8	—
	N.	22·4	44	e 4 53	− 2	e 9 4	+11	11·3	—
Amboina		29·1	164	5 57	0	—	—	—	—
Calcutta		29·8	273	6 7	+ 4	11 12	+11	14·7	20·6
Medan		30·0	231	i 6 8	+ 3	i 16 44	(0)	—	—
Batavia		33·7	207	i 6 39	+ 1	—	—	—	—
Dehra Dun		38·3	290	13 56	S	(13 56)	+45	21·6	21·9
Agra		38·5	284	7 13	− 6	e 13 13	− 1	18·6	25·1
Hyderabad		40·1	270	7 38	+ 5	13 53	+15	19·4	27·9
Almata		40·3	310	e 7 37	+ 2	—	—	e 20·4	—
Semipalatinsk		40·5	321	e 7 34	− 2	—	—	—	—
Frunse		42·0	307	e 7 45	− 4	e 14 21	+15	—	—
Colombo		43·1	254	13 7	?	—	—	—	26·5
Andijan		43·3	304	e 7 59	0	e 14 33	+ 8	e 23·9	—
Kodaikanal		43·7	261	i 8 3	+ 1	e 14 48	+17	21·4	32·3
Bombay		44·8	274	i 8 11	0	i 14 53	+ 6	22·9	30·5
Tchimkent		45·5	307	e 8 17	0	—	—	—	—
Tashkent		45·7	305	i 8 18	0	i 14 54	− 6	27·1	30·4
Sverdlovsk		53·5	324	i 9 15	− 3	i 16 51	+ 2	26·3	34·9
Perth		56·7	184	20 56	?	—	—	—	—
Baku		60·3	305	i 10 7	0	e 18 53	PS	—	42·2
Grozny		63·0	308	10 24	− 1	18 58	+ 3	—	—
Tiflis		63·9	307	10 29	− 2	i 19 10	+ 4	e 37·6	42·4
Erevan		64·4	305	e 10 43	+ 8	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sydney	65·1	153	—	—	e 32 41	?	37·0	43·4
Moscow	66·2	322	10 43	− 4	19 32	− 3	33·3	40·5
Sotchi	67·2	310	e 10 56	+ 4	—	—	—	—
Pulkovo	69·2	327	i 11 2	− 4	i 20 7	− 4	37·9R	43·4
Simferopol	70·7	311	11 14	− 1	e 20 34	+ 4	—	—
Yalta	70·8	309	i 11 13	− 3	20 31	0	e 35·9	—
Sebastopol	71·2	310	11 15	− 3	20 36	+ 1	—	—
Ksara	72·7	298	i 11 25a	− 2	21 2	PS	—	—
Upsala	75·3	329	11 38	− 4	21 17	− 7	e 38·9	47·8
Konigsberg	75·8	323	i 11 41	− 4	e 21 28	− 1	—	43·5
Bucharest	76·3	312	—	—	e 30 56	?	e 49·9	—
Sitka	76·6	32	i 11 48	− 1	e 21 21	−17	e 39·9	—
Helwan	77·7	297	i 11 54	− 2	i 21 46	− 5	—	—
Sofia	78·7	311	e 12 1	0	e 22 2	0	—	—
Copenhagen	79·5	327	12 4	− 1	22 9	− 1	—	—
Budapest	79·6	317	12 5	− 1	—	—	e 41·9	48·9
Belgrade	79·8	314	—	—	e 22 10	− 4	e 56·2	—
Vienna	80·9	318	i 12 12	− 1	e 22 23	− 2	e 43·9	51·9
Scoresby Sund	81·4	348	i 12 14	− 1	22 36	+ 5	—	—
Leipzig	81·7	323	i 12 14	− 3	e 22 26	− 8	e 41·9	—
Hamburg	81·8	326	i 12 15a	− 2	e 22 35	0	—	46·9
Graz	81·9	318	i 12 15	− 3	e 22 33	− 3	e 40·9	53·5
Zagreb	82·2	318	e 12 18	− 1	e 22 35	− 4	e 43·9	—
Cheb	82·3	323	e 12 18	− 2	(23 26)	PS	—	23·4
Jena	82·3	322	e 12 20	0	e 22 26	[−12]	e 38·9	44·9
Gottingen	83·5	324	i 12 22a	− 4	e 22 32	[−16]	e 44·9	52·2
Tananarive	83·6	245	—	—	e 23 11	PS	—	46·9
Triest	83·7	318	i 12 25a	− 2	i 22 50	[+ 1]	e 45·9	54·6
Stuttgart	84·8	321	i 12 32	0	e 23 50	PS	e 44·9	53·9
Padova	85·0	317	e 11 56?	−37	—	—	—	—
Karlsruhe	85·1	321	12 33	− 1	—	—	44·3	54·0
De Bilt	85·1	326	i 12 33a	− 1	e 23 6	− 3	e 41·9	47·5
Chur	85·5	319	e 12 34	− 2	e 23 10	− 3	—	—
Strasbourg	85·7	322	i 12 36a	− 1	e 23 12	− 3	e 41·9	51·4
Zurich	85·9	321	e 12 36a	− 2	e 23 8	[+ 2]	—	—
Florence	86·1	317	12 36	− 3	23 18	0	—	41·9
Prato	86·1	318	i 12 40	+ 1	i 23 11	[+ 4]	—	i 44·9
Uccle	86·2	325	i 12 38a	− 1	e 23 28	+ 9	e 44·9	48·5
Basle	86·3	322	e 12 39	− 1	—	—	e 44·4	—
Piacenza	86·4	322	13 46	+66	24 20	PS	44·9	56·7
Edinburgh	86·6	331	—	—	e 23 20	− 3	e 43·9	55·4
Durham	86·7	330	12 41	− 1	23 31	+ 7	—	56·8
Neuchatel	87·1	321	e 12 41	− 3	—	—	—	—
Kew	88·1	327	i 12 48a	0	e 23 37	− 1	44·9	52·5
Bidston	88·2	330	e 12 46	− 3	e 23 36	− 3	44·6	52·4
Paris	88·4	324	i 12 50	0	e 23 36	− 5	45·9	55·9
Oxford	88·5	328	12 53	+ 3	i 23 44	+ 2	e 40·9	58·9
Rathfarnham Castle	89·7	331	—	—	e 24 46	PS	e 45·9	50·2
Tinemaha	96·9	44	e 13 28	− 1	—	—	—	—
Toledo	97·7	321	e 4 44	?	—	—	e 52·1	58·4
Haiwee	97·7	43	e 13 33	0	—	—	—	—
Mount Wilson	98·8	45	e 13 36	− 2	—	—	—	—
Pasadena	98·8	45	i 13 34	− 4	—	—	—	—
Granada	99·1	320	e 13 10	−29	i 26 49	PS	55·7	65·7
Riverside	99·4	45	e 13 40	− 1	—	—	—	—
Ottawa	108·4	13	e 18 56?	PP	e 28 20	PS	e 40·9	—
Toronto	109·3	15	e 18 56?	PP	e 27 40	?	54·9	—
Florissant	110·1	26	e 14 28a	− 3	e 28 52	PS	e 55·8	62·1
St. Louis	110·4	27	e 19 3	PS	—	—	e 55·8	62·2
La Paz	168·3	47	i 20 4a	[+ 2]	i 29 38	?	85·9	—

For Notes see next page.

NOTES TO JULY 16d. 16h. 19m. 4s.

Additional readings :—
Taito +55s.
Nanking eN = +3m.16s., iENZ = +3m.33s.
Sumoto SZ = +7m.3s.
Kobe iE = +5m.24s., eN = +5m.39s., eZ = +6m.13s. and +8m.32s.
Chiufeng iPN = +3m.43s., iN = +6m.2s.
Toyooka eSZ = +7m.35s.
Medan i = +13m.6s., e = +13m.56s.?
Batavia iN = +8m.2s.
Agra PPP = +9m.1s., eSS = +15m.39s., SSS = +16m.15s.
Kodaikanal PP = +9m.36s., PPP = +10m.11s., SS = +17m.48s., SSS = +18m.49s.
Bombay PPE = +9m.58s., SSEN = +17m.56s., SSSEN = +19m.19s.
Baku SS = +23m.26s.
Tiflis PPP = +14m.15s., e = +20m.11s. = S_cS − 9s., eSS = +23m.27s., e = +32m.5s. and +35m.13s.
Pulkovo L_g = +33m.56s.
Ksara PP = +14m.13s., PS = +21m.38s., SS = +26m.58s.
Königsberg eN = +11m.44s., eSSE = +26m.38s., SSS = +30m.31s., eE = +31m.48s. and +34m.55s., eN = +35m.15s., iEN = +40m.2s., eN = +40m.53s
Bucharest eE = +36m.56s. and +37m.26s., eN = +40m.56s.?, eN = +41m.56s.?
Sitka ePP = +14m.30s.
Sofia PP = +14m.49s., eS = +22m.5s., e = +40m.56s.?
Copenhagen +31m.32s.
Belgrade e = +23m.2s. and +31m.12s.
Scoresby Sund +15m.20s. = PP +4s., +27m.56s.?
Zagreb ePSE = +23m.19s.
Cheb e = +15m.26s. = PP +3s.
Jena iPZ = +12m.17s.
Göttingen ePE = +12m.24s., eSE = +22m.41s.
Tananarive E = +28m.6s. = SS +0s.
Triest iPS = +23m.38s.
Stuttgart $ePcP$ = +13m.17s., ePP = +15m.32s., eSKS = +22m.59s., eSSSS = +35m.2s.
De Bilt ePPZ = +15m.51s.
Strasbourg e = +13m.59s., ePS = +24m.0s., eSS = +28m.56s., eSSS = +32m.56s.
Paris PP = +16m.20s.
Oxford iPP = +16m.22s.
Rathfarnham Castle e = +36m.32s.
Granada i = +13m.35s., PP = +16m.52s.
Florissant iPPENZ = +19m.2s.k, ePPPNZ = +21m.22s., ePSENZ = +28m.31s., ePPSENZ = +29m.41s., eSSN = +34m.44s.
La Paz ipPKP = +21m.12s., isPZ = +22m.16s., PPZ? = +23m.56s.
Long waves at Stonyhurst, Bergen, Cape Town, and other European and American stations.

July 16d. 20h. 0m. 44s. Epicentre 2°·5N. 126°·3E. N.1.

Given by Batavia.

A = −·591, B = +·805, C = +·044 ; D = +·806, E = +·592 ;
G = −·026, H = +·035, K = −·999.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	6·5	163	(i 1 29)	− 3	(i 2 39)	− 7	—	—
Palau	9·5	59	2 14	0	3 46	−15	—	—
Manila	13·2	337	i 3 13k	+ 8	4 46	−46	—	—
Kosyun	20·2	346	e 4 35	+ 3	8 15	+ 5	—	—
Takao	21·0	350	4 39	− 1	8 32	+ 6	—	—
Batavia	21·3	246	i 4 49	+ 6	i 8 47	SS	—	—
Isigakizima	21·9	358	4 51	+ 1	8 50	+ 6	—	—
Taityu	22·3	348	4 20	−34	—	—	—	—
Taihoku	23·0	351	e 4 55	− 6	9 6	+ 1	—	—
Hong Kong	23·0	331	5 6	+ 5	9 15	+10	—	—
Naha	23·7	5	5 12	+ 5	9 22	+ 4	—	—
Nake	26·0	7	5 29	0	9 53	− 5	—	—
Phu-Lien	26·5	316	e 5 39	+ 5	e 10 6	− 1	10·8	—
Medan	27·6	276	5 48	+ 4	—	—	—	—
Nanking	30·4	347	i 6 9	0	i 11 3	− 7	e 15·4	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	30·4	7	e 6 12	+ 3	—	—	—	—
Kumamoto	30·6	8	6 11	+ 1	—	—	—	—
Husan	32·7	5	—	—	(e 11 49)	+ 3	e 11·8	—
Wakayama	32·8	14	6 29	− 1	—	—	—	—
Kobe	33·2	15	e 6 21	−13	11 46	− 8	—	—
Kameyama	33·7	16	6 37	− 1	—	—	—	—
Hamamatu	33·9	15	6 36	− 3	—	—	—	—
Nagoya	34·1	17	6 42	+ 1	(11 58)	−10	12·0	—
Gihu	34·3	14	6 41	− 2	—	—	—	—
Kohu	35·0	17	6 47	− 2	12 14	− 7	—	—
Toyama	35·6	17	6 51	− 3	—	—	—	—
Oiwake	35·7	18	6 54	− 1	12 21	−11	—	—
Perth	35·8	196	11 16	?	—	—	—	—
Nagana	35·8	19	6 56	0	12 26	− 7	—	—
Hukusima	37·6	19	7 9	− 3	—	—	—	—
Chiufeng	38·7	346	i 7 20a	− 1	i 13 13	− 4	—	—
Mizusawa	39·0	18	e 7 18	− 6	e 13 14	− 7	—	—
Vladivostok	40·9	6	e 7 41	+ 1	14 10	+20	14·2	—
Agra	52·3	303	e 9 5	− 4	i 16 27	− 6	—	—
Almata	59·7	322	e 10 6	+ 4	18 20	+ 8	—	—
Frunse	61·1	319	e 10 9	− 3	—	—	—	—
Andijan	61·8	316	e 10 17	0	e 18 41	+ 2	—	—
Tashkent	64·0	315	i 10 29	− 3	i 18 59	− 8	e 29·3	42·6
Tchimkent	64·2	317	10 34	0	—	—	—	—
Samarkand	65·1	313	10 39	0	19 19	− 2	—	—
Sverdlovsk	74·7	329	i 11 35	− 4	i 21 5	−12	29·3	37·8
Baku	78·0	311	11 57	0	21 45	− 9	39·3	—
Grozny	81·4	314	12 15	0	22 20	−11	—	—
Tiflis	82·0	313	i 12 19	+ 1	i 22 29	− 8	44·3	—
Erevan	82·1	311	12 27	+ 8	22 33	− 5	—	—
Sotchi	85·7	315	e 12 38	+ 1	—	—	—	—
Moscow	87·2	325	e 12 41	− 3	22 58	[−17]	—	—
Ksara	88·9	303	i 12 52	0	i 23 42	− 4	—	—
Yalta	89·7	315	e 12 51	− 5	23 16	[−15]	—	—
Simferopol	89·7	316	e 12 52	− 4	23 18	[−13]	—	—
Sebastopol	90·2	315	e 12 54	− 4	e 23 21	[−13]	—	—
Pulkovo	90·8	330	e 12 59	− 2	23 40	[+ 3]	44·3	50·1
Sitka	92·4	33	—	—	e 23 28	[−19]	—	—
Sofia	97·7	314	—	—	e 24 1	[−14]	—	—
Copenhagen	101·0	329	—	—	24 18	[−13]	53·3	—
Zagreb	102·1	318	—	—	e 24 23	[−13]	—	—
Triest	103·6	319	e 12 31	?	i 24 29	[−14]	e 52·3	—
Scoresby Sund	104·0	350	—	—	24 16?	[−29]	—	—
Stuttgart	105·5	323	—	—	e 25 37	[+ 3]	e 54·3	—
De Bilt	106·4	327	—	—	e 24 44	[−12]	e 52·3	55·9
Strasbourg	106·4	323	e 18 41	PP	—	—	e 53·3	—
Uccle	107·4	326	—	—	e 24 48	[−13]	e 53·3	—
Paris	109·4	325	—	—	27 16?	?	—	—
Pasadena	109·4	52	e 18 16	[0]	—	—	—	—
Riverside	110·1	53	e 18 27	[+ 9]	—	—	—	—
Granada	118·9	317	e 20 11	PP	—	—	e 37·0	66·3
Mount Wilson	109·5	53	i 18 26	[+10]	—	—	—	—

Additional readings and note :—
Amboina readings have been *increased* by 2m.
Hong Kong? = +8m.56s. = P_gP +7s., SS? = +10m.1s.
Nanking ipPN = +6m.39s., SN = +11m.8s., sSN = +11m.38s., SS = +13m.13s.
Kobe ePZ = +6m.31s., ePPE = +8m.21s., ePPN = +8m.38s., eZ = +11m.55s., SSN = +12m.33s., eE = +13m.30s., iE = +16m.53s., eZ = +17m.50s., eN = +18m.45s.
Chiufeng pPNZ = +7m.51s., sPN = +8m.4s., sSN = +13m.44s.
Mizusawa eSN = +13m.17s.
Tiflis e = +13m.11s., +13m.30s., +14m.11s., and +22m.43s.
Moscow PPS = +24m.26s.
Ksara ipP = +13m.26s., PP = +16m.24s., sS = +24m.48s. = PS +9s.
Pulkovo PP = +17m.0s., SS = +29m.58s.
Triest e = +27m.12s. = PS −11s., eSS = +31m.45s., e = +38m.43s.
Stuttgart ePP = +18m.26s.
Granada i = +22m.53s., e = +32m.55s.

July 16d. Readings also at 1h. (Malabar, Hastings, New Plymouth, and Wellington), 2h. (Andijan and Oak Ridge), 4h. (New Plymouth), 5h. (Erevan, Ksara, and Tiflis (3)), 6h. (New Plymouth and Tiflis), 7h. (Amboina and Santiago), 11h. (Tortosa and Wellington), 12h. (Nagoya, Glenmuick, New Plymouth, and Wellington), 13h. (Glenmuick, New Plymouth, and Wellington), 15h. (Husan, Hukuoka, and La Paz), 16h. (Hukuoka and Taihoku), 17h. (Cheb, Karenko (3), Kosyun (3), Nanking, Phu-Lien, Sintiku, Tainan, Takao (3), Taityu (3), and Taihoku (4)), 18h. (Amboina, Taihoku, and Taityu), 19h. (Nagoya), 20h. (Amboina, Batavia, Taityu, and Oak Ridge (2)), 21h. (Taihoku).

July 17d. 0h. 4m. 19s. Epicentre 65°·9N. 7°·2E. N.3.

A = +·405, B = +·051, C = +·913 ; D = +·125, E = −·992 ; G = +·906, H = +·114, K = −·408.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Bergen	5·5	195	2 7	?	2 57	S_g	4·7	—
Upsala	7·7	126	e 2 4	P*	e 3 11	− 5	—	4·6
Copenhagen	10·6	159	—	—	4 25	− 3	5·7	—
Scoresby Sund	11·6	309	2 47	+ 4	—	—	5·7	—
Pulkovo	12·1	110	2 43	− 7	4 55	−10	8·2	8·1
Hamburg	12·4	172	—	—	e 5 41?	+28	—	9·7
Konigsberg	12·9	144	—	—	i 5 27	+ 2	—	8·5
Jena	15·1	169	—	—	e 6 41	+24	—	9·2
Uccle	15·2	188	—	—	e 5 41?	−39	—	—
Cheb	16·1	168	—	—	e 6 41	0	—	9·7
Stuttgart	17·2	175	e 3 57	0	e 7 41	?	—	14·0
Paris	17·3	189	—	—	e 13 41?	?	—	—
Strasbourg	17·4	176	e 3 41?	−18	e 7 41?	+30	e 11·7?	—
Moscow	17·7	111	4 2	− 1	7 5	−12	9·0	—
Basle	18·4	177	e 4 12	+ 1	—	—	—	—
Vienna	18·4	161	e 4 28	PP	e 9 21	?	e 10·4	—
Zurich	18·6	177	e 4 14	0	—	—	e 10·7	—
Chur	19·1	178	e 4 20	0	—	—	—	—
Triest	20·6	168	4 38	+ 2	e 8 58	SS	—	—
Zagreb	20·6	162	e 4 39	+ 3	—	—	e 11·4	—
Piacenza	20·9	174	—	—	7 41	−43	—	20·5
Simferopol	25·5	132	e 5 26	+ 1	e 10 11	+21	e 13·8	—
Sebastopol	25·6	133	e 5 56	PP	e 10 45	SS	e 14·3	—
Yalta	25·9	130	e 5 45	+17	e 10 19	+22	e 14·0	—
Sverdlovsk	26·2	83	5 27	− 4	—	—	16·6	17·5
Sotchi	28·5	123	6 21	PP	e 11 41	SS	—	—
Grozny	30·9	115	6 13	0	—	—	e 16·0	—
Tiflis	31·9	119	—	—	e 13 46	?	—	—
Baku	35·0	114	—	—	e 16 34	?	—	—
Ksara	36·3	136	e 8 33	PPP	e 15 21	SSS	—	—
Tashkent	41·8	93	—	—	e 14 11	+ 8	—	—
Frunse	42·6	87	e 9 23	PP	—	—	—	—
Almata	43·3	86	—	—	e 19 16	?	—	—
Andijan	43·5	91	e 9 3	?	—	—	—	—

Additional readings :—
Upsala eE = +2m.17s. = P_g −11s.
Copenhagen +4m.19s.
Königsberg i = +5m.18s. and +6m.1s., e = +6m.33s., eE = +6m.36s., i = +6m.58s. = S_g −2s., eE = +7m.5s.
Stuttgart eS = +10m.5s
Strasbourg e = +9m.41s.?
Triest i = +11m.32s., iSKS = +11m.42s., i = +11m.50s., iN = +12m.0s., e = +13m.51s. and +14m.29s., i = +15m.55s., PSKS = +17m.33s., i = +19m.35s., PPS = +19m.53s.
Sverdlovsk e = +10m.34s. and +13m.33s.
Tiflis e = +17m.22s., +19m.22s., and +20m.39s.
Baku e = +22m.23s.
Tashkent e = +16m.59s. = SS +11s., i = +21m.52s., e = +23m.27s., +24m.51s.
Long waves at Edinburgh, Kew, De Bilt, Bucharest, and Budapest.

July 17d. 0h. 22m. 40s. Epicentre 51°·8N. 174°·1W. (as on 1933 July 19d.). R.2.

A = −·615, B = −·064, C = +·786; D = −·103, E = +·995; G = −·782, H = −·081, K = −·618.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	22·8	63	i 4 57	− 2	i 9 5	+ 4	11·6	—
Seattle	33·0	76	—	—	e 11 53	+ 2	e 16·6	—
Vladivostok	36·6	277	i 7 7	+ 4	e 12 54	+ 9	15·9	28·0
Ukiah	37·0	89	—	—	e 12 48	− 3	e 20·3	—
Nagoya	38·2	264	e 7 23	+ 6	—	—	—	—
Berkeley	38·4	90	—	—	e 13 5	− 7	i 19·3	—
Tinemaha	41·3	88	i 7 56	+13	—	—	—	—
Haiwee	42·1	89	e 8 2	+13	—	—	—	—
Pasadena	43·3	91	e 7 59	0	—	—	e 23·0	—
Riverside	43·9	91	e 8 4	0	—	—	—	—
La Jolla	44·6	92	e 8 11	+ 1	—	—	—	—
Chiufeng	48·0	285	i 8 37	+ 1	e 15 39	+ 6	e 22·3	29·3
Tucson	49·0	87	e 8 45	+ 1	e 15 46	− 1	e 25·6	—
Nanking	51·6	275	e 10 6	+63	16 37	+14	e 27·8	33·3
Scoresby Sund	56·1	11	—	—	19 20?	(− 5)	—	—
Chicago	56·5	63	—	—	e 17 24	− 6	e 27·6	—
Florissant	56·9	68	e 9 37	− 5	i 17 31	− 4	30·0	—
St. Louis	57·2	68	e 9 39	− 6	i 17 32	− 7	e 30·8	—
Toronto	59·6	57	e 10 20?	+18	e 18 5	− 6	e 28·3	—
Ottawa	60·2	53	—	—	e 18 20?	+ 1	26·3	—
Sverdlovsk	62·5	330	i 10 22	0	—	—	41·7	42·8
Oak Ridge	64·4	53	e 10 30	− 5	—	—	—	—
Philadelphia	64·4	56	e 10 35	0	i 19 8	− 4	e 30·4	—
Pulkovo	66·7	347	e 10 58	+ 8	e 20 10	PS	38·1	46·1
Frunse	68·3	313	e 11 1	+ 1	—	—	—	—
Andijan	71·0	313	e 11 18	+ 1	—	—	—	—
Tashkent	71·9	315	—	—	e 20 52	PS	e 34·3	45·4
Copenhagen	72·4	356	—	—	21 32	PS	37·3	—
De Bilt	76·1	0	—	—	e 21 44	PS	e 44·3	52·6
Stuttgart	79·4	358	e 12 2	− 3	—	—	e 45·3	—
Simferopol	80·2	341	e 12 10	+ 1	—	—	—	—
Baku	80·2	328	i 12 10	+ 1	—	—	32·3	55·8
Yalta	80·4	341	e 12 12	+ 2	—	—	—	—
Sebastopol	80·6	342	e 11 57	−14	—	—	—	—
Basle	80·6	0	e 12 7	− 4	—	—	—	—
Tiflis	80·6	332	e 12 13	+ 2	—	—	44·3	57·3
Zurich	80·8	359	e 12 7	− 5	—	—	—	—
San Juan	86·1	64	—	—	i 23 9	− 9	e 41·7	—
Ksara	90·4	335	e 12 54	− 5	e 24 22	+22	—	59·3

Additional readings and note :—
Seattle e = +7m.55s. and +14m.34s.
Ukiah e = +15m.35s. and +17m.20s. = S_eS −4s.
Chiufeng iPPNZ = +10m.35s., iSSN = +18m.45s.
Tucson e = +21m.54s.
Florissant iEN = +9m.52s., eE = +17m.28s., iEN = +17m.46s., eEN = +19m.26s. and +23m.43s. all readings given as at 12h.
St. Louis eE = +19m.27s. = S_eS −5s. and +23m.39s.
Oak Ridge iZ = +10m.37s., eZ = +10m.44s.
Tashkent e = +25m.44s. and +29m.20s.
Copenhagen +18m.20s.
San Juan e = +28m.30s. = SS −13s. and +32m.45s.
Ksara ePP = +16m.46s., ePS = +25m.38s.
Long waves at Honolulu, Edinburgh, Kew, Hong Kong, Granada, Paris, Triest, Columbia, Charlottesville, Wellington, and La Paz.

July 17d. 4h. 31m. 41s. Epicentre 1°·7S. 15°·1W. (as on 1933 May 19d.). R.3.

$A = +\cdot965$, $B = -\cdot260$, $C = -\cdot030$; $D = -\cdot261$, $E = -\cdot965$; $G = -\cdot029$, $H = +\cdot008$, $K = -1\cdot000$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando	39·0	11	—	—	i 13 17	− 4	—	25·3
Malaga	39·7	12	e 7 4	−25	(e 13 30)	− 2	e 13·5	e 20·5
Almeria	40·3	14	e 8 38	+63	e 14 48	+67	e 20·3	—
Granada	40·4	13	i 7 34	− 1	i 13 34	− 8	20·1	23·3
Algiers	42·0	23	e 9 23	PP	e 17 3	SS	i 22·1	26·1
Alicante	42·3	17	e 8 1	+10	e 14 17	+ 7	e 21·2	—
Toledo	42·8	12	7 51	− 4	e 14 12	− 6	e 19·4	—
Cape Town	45·0	139	—	—	15 45	+55	22·0	—
Florence	51·2	25	9 14	+14	16 19	+ 1	20·3	28·3
Prato	51·3	25	e 9 15	+14	16 19	0	27·3	—
Piacenza	51·7	22	—	—	17 31	+67	—	36·5
Paris	52·8	15	e 9 17	+ 5	e 16 40	+ 1	24·3	28·3
Basle	53·1	18	e 9 13	− 2	—	—	e 29·7	—
Chur	53·2	20	e 9 14	− 1	—	—	—	—
Triest	53·8	25	9 19a	− 1	i 16 56	+ 3	—	29·4
Strasbourg	54·0	18	9 22k	+ 1	i 16 54	− 2	e 24·3	—
San Juan	54·1	294	e 11 29	PP	e 16 9	−48	e 23·5	—
La Paz	54·2	251	9 22	− 1	—	—	23·8	25·6
Helwan	54·3	51	e 9 40	+17	e 17 41	+42	29·8	32·7
Stuttgart	54·7	19	e 9 23	− 3	e 16 55	−10	e 27·3	32·6
Kew	54·7	12	e 9 19?	− 7	e 17 0	− 5	25·3	—
Zagreb	54·9	27	e 9 32	+ 4	e 17 18	+10	—	30·7
Uccle	55·1	14	e 9 24	− 6	17 6	− 5	23·3	—
Graz	55·7	26	e 1 55	?	—	—	e 35·0	—
De Bilt	56·5	15	—	—	17 25	− 5	e 24·3	27·7
Stonyhurst	56·6	9	—	—	e 17 19?	−12	e 23·6	37·0
Cheb	56·9	21	—	—	e 16 19?	−76	—	36·3
Budapest	57·5	27	—	—	e 18 19?	PS	e 31·3	32·8
Edinburgh	58·5	8	—	—	i 17 49	− 7	e 24·3	—
Hamburg	59·1	17	e 9 19?	−39	e 22 19?	SS	—	36·3
Ksara	59·6	50	e 10 17	+15	18 46	PS	—	33·8
Huancayo	60·6	257	—	—	17 45	−39	23·7	—
Copenhagen	61·6	17	—	—	18 37	0	—	—
Yalta	63·6	38	e 10 33	+ 4	—	—	e 25·3	—
Tiflis	69·2	43	e 11 36	(+ 6)	e 20 32	PS	e 34·3	40·9
Pulkovo	70·9	23	e 11 25	+ 9	20 25	− 7	34·3	39·7
Ottawa	71·2	320	—	—	e 19 49	−46	e 27·3	—
Moscow	71·5	28	11 16	− 4	—	—	42·3	—
Baku	72·4	46	e 11 23	− 2	21 17	PS	36·3	—
Scoresby Sund	72·4	357	—	—	20 31	−19	27·3	—
Sverdlovsk	83·7	32	—	—	e 24 45	PS	36·3	48·5
Tashkent	86·9	49	—	—	23 18	[+ 5]	25·3	57·6

Additional readings :—
Malaga e = +8m.24s., +11m.0s., and +12m.32s.
Granada P_cP = +9m.5s. = PP + 1s., SS = +16m.26s., S_cS = +16m.58s. = SSS + 3s.
Cape Town E = +18m.56s., N = +19m.6s., E = +26m.6s. and +37m.34s.
Piacenza e = +7m.19s.
Triest ePS? = +17m.38s., eSS = +20m.54s., i = +21m.33s.
Strasbourg PP = +11m.46s., eSS = +20m.29s., eSSS = +22m.49s.
San Juan eSS = +19m.44s.
Stuttgart ePP = +11m.31s., eSS = +20m.37s., eEZ = +23m.9s.
Zagreb eP_cP = +10m.7s., ePP = +11m.27s., eSS = +22m.43s. = SSS + 9s.
Uccle SS = +20m.58s.
Ksara PP = +12m.31s., SS = +22m.28s.
Copenhagen +21m.31s. and +23m.13s., SSS = +25m.25s.
Pulkovo eSS = +25m.7s., eSSS = +27m.37s.
Moscow e = +12m.41s.
Tashkent e = +10m.19s.?, +24m.21s. = PS + 7s., +28m.33s. = SS − 22s., +32m.51s., +36m.13s., and +36m.43s.
Long waves at Bidston, Durham, Agra, Bombay, Barcelona, Sofia, Tunis, Chiufeng, Nanking.

July 17d. 6h. 45m. 19s. (I) } Epicentre 24°·8N. 120°·4E. X.
6h. 55m. 4s. (II) } (as on 3d.). X.

A = −·459, B = +·783, C = +·419.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
II Sintiku	0·6	90	0 4	− 5	0 0	−15
I Taityu	0·7	160	e 0 9	− 1	0 16	− 2
II	0·7	160	i 0 11	+ 1	0 18	0
II Taihoku	1·1	77	0 15	− 1	0 26	− 2
II Arisan	1·3	166	0 19	+ 1	0 34	+ 1
I Karenko	1·4	131	e 0 21	+ 1	—	—
II	1·4	131	i 0 20	0	0 35	− 1
II Hokoto	1·5	211	e 0 25	P_g	—	—
II Tainan	1·8	186	e 0 32	P_g	—	—
I Taito	2·1	164	e 0 38	P_g	—	—
II	2·1	164	0 33	P*	1 1	S*
I Takao	2·1	180	e 0 55	S	(e 0 55)	+ 1
II	2·1	180	e 0 34	P*	—	—
II Kosyun	2·8	182	e 0 46	P*	1 19	S*
II Nanking	7·4	348	e 2 2	P*	e 3 59	S_g

II Long waves at Hong Kong, Chiufeng, and Phu-Lien.

July 17d. 10h. 46m. 11s. Epicentre 60°·0S. 22°·8W. N.3.

A = +·461, B = −·194, C = −·866; D = −·388, E = −·922;
G = −·798, H = +·336, K = −·500.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	E.	33·8	302	7 7	+28	11 48	−15	$14·4_q$	16·8
	N.	33·8	302	6 37	− 2	12 7	+ 4	$17·5_R$	35·7
Cape Town		37·3	65	7 13	+ 4	12 46	−10	18·6	22·2
Santiago		40·8	288	e 7 29	−10	—	—	—	—
Sucre		50·9	305	i 8 58	0	e 15 58	−15	—	—
La Paz		54·3	303	i 9 25	+ 2	i 16 55	− 4	24·8	31·0
Huancayo		61·4	297	i 10 14	0	i 18 30	− 4	28·8	—
Tananarive		63·9	82	10 38	+ 7	16 9	?	26·5	32·8
Wellington		77·6	194	11 58	+ 3	21 56	+ 7	39·8	42·8
Melbourne		81·7	169	—	—	i 22 36	+ 2	41·5	48·8
Perth		82·0	144	—	—	22 49	+12	—	47·8
Balboa Heights		82·2	303	11 49?	−30	—	—	—	—
Adelaide		83·8	164	i 12 32	+ 5	i 22 58	+ 3	37·1	47·8
San Juan		85·8	319	e 12 36	− 1	i 23 8	[+ 3]	e 34·5	—
Riverview		86·3	174	—	—	i 23 15	[+ 7]	e 47·0	50·5
San Fernando		97·4	14	—	—	24 13	[0]	43·8	53·3
Malaga		97·9	15	e 17 30	PP	—	—	e 36·5	—
Almeria		98·3	17	—	—	i 25 16	+ 4	e 48·1	—
Granada		98·4	19	i 13 38	+ 2	i 25 28	+16	$50·6_R$	54·4
Alicante		100·1	18	—	—	e 25 35	+ 8	e 50·3	—
Helwan		100·2	46	—	—	25 39	+11	—	62·8
Toledo		101·1	14	—	—	e 25 38	+ 2	$48·9_R$	—
Batavia		103·0	129	i 24 43	S	(i 24 43)	[+ 3]	—	—
Kodaikanal		104·0	94	e 24 41	S	(e 24 41)	[− 4]	—	—
Columbia		105·4	314	e 17 39	[−24]	e 24 13	[−39]	e 44·7	—
Ksara		105·5	48	e 14 13	+ 4	24 46	[− 6]	—	61·8
Prato		107·6	24	e 18 18	[+ 8]	27 49	PS	—	—
Piacenza		108·4	23	18 19	[+ 6]	28 33	PS	—	60·3
Philadelphia		108·8	322	e 17 17	[−57]	e 26 8	{+10}	e 50·4	—
Bombay		109·1	85	—	—	e 25 10	[+ 1]	—	62·4
Padova		109·2	25	e 15 49?	+82	—	—	—	—
Medan		109·2	116	25 37	S	25 37	[+27]	—	—
Sofia		109·4	35	e 18 56	PP	e 28 24	PS	—	63·8
Triest		109·8	27	e 15 14	+44	i 28 11	PS	e 51·3	59·2
Zagreb		110·5	27	e 14 34	+ 1	e 28 28	PS	e 54·8	60·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hyderabad	110·6	91	—	—	28 44	PS	50·2	59·7
Paris	110·8	17	e 14 36	+ 2	e 28 46	PS	52·8	59·8
Strasbourg	111·3	22	e 14 37	0	e 28 47	PS	e 53·8	62·4
Ithaca	111·4	321	—	—	e 25 13	[− 6]	—	—
Graz	111·5	28	e 18 56	PP	e 28 53	PS	e 57·8	62·5
Stuttgart	111·8	22	e 14 34	− 5	e 29 3	PS	e 54·8	61·8
Kew	112·9	15	e 19 19	PP	e 28 39	PS	51·8	60·8
Uccle	113·0	18	i 18 19	[− 8]	e 29 2	PS	e 49·8	—
St. Louis	113·0	309	—	—	e 25 22	[− 4]	49·8	55·8
Oxford	113·1	15	i 19 35	PP	i 29 6	PS	e 52·8	64·7
Florissant	113·2	309	e 14 39k	− 7	e 25 22	[− 5]	e 50·5	56·2
Toronto	113·5	320	e 18 21	[− 7]	i 25 17	[−11]	e 46·8	—
Cheb	113·7	22	e 21 12	PPP	—	—	e 60·8	62·8
Ottawa	113·9	323	e 18 25	[− 4]	e 25 19	[−11]	e 35·8	—
Prague	114·1	24	—	—	e 43 49?	?	e 57·8	62·3
Sebastopol	114·2	41	e 19 26	PP	—	—	—	—
De Bilt	114·3	18	e 14 52	0	e 29 15	PS	e 54·8	60·7
Yalta	114·4	42	e 19 10	PP	—	—	e 38·8	—
Bidston	114·5	13	—	—	e 28 9	?	51·8	59·8
Gottingen	114·6	22	e 19 20	PP	e 29 13	PS	e 58·8	64·9
Chicago	114·8	313	—	—	e 25 26	[− 7]	e 54·1	—
Simferopol	114·8	41	e 19 42	PP	—	—	—	—
Stonyhurst	115·1	14	—	—	e 29 19	PS	61·8	—
Tiflis	115·7	50	e 18 52	[+18]	i 29 32	PS	52·8	72·9
Durham	116·0	14	19 45	PP	29 31	PS	—	68·3
Baku	116·6	54	18 47	[+10]	29 53	PS	53·8	69·9
Tucson	116·6	291	—	—	e 25 39	[0]	e 55·3	—
Hamburg	116·6	21	e 19 49	PP	—	—	e 51·8	65·8
Grozny	117·5	49	e 20 15	?	—	—	—	—
Edinburgh	117·8	13	e 23 49?	PPPP	i 29 39	PS	56·8	68·8
Agra	118·6	85	e 20 6	PP	—	—	—	—
Copenhagen	119·0	22	—	—	25 34	[−13]	55·8	—
Calcutta	119·9	97	—	—	e 36 53	SS	—	62·3
La Jolla	120·1	286	i 18 50	[+ 4]	—	—	—	—
Riverside	121·1	287	e 18 47	[− 1]	—	—	—	—
Pasadena	121·6	286	i 18 52k	[+ 3]	e 29 33	SKSP	e 61·4	—
Santa Barbara	122·7	285	e 18 55	[+ 3]	—	—	—	—
Haiwee	123·2	288	i 19 1	[+ 8]	—	—	—	—
Tinemaha	124·0	288	e 18 57	[+ 2]	—	—	—	—
Moscow	125·2	37	19 0	[+ 3]	28 27	{+36}	63·8	79·6
Tashkent	125·8	68	18 49	[−10]	30 49	PS	—	78·1
Pulkovo	126·6	32	19 1	[+ 1]	26 9	[− 1]	e 58·8	67·7
Tchimkent	126·7	67	e 19 14	[+14]	—	—	—	—
Andijan	126·8	71	e 18 56	[− 5]	—	—	—	—
Bozeman	127·4	299	e 20 59	—	—	—	e 58·8	—
Manila	127·5	134	20 43	PP	25 53	[−19]	—	—
Ukiah	128·0	286	—	—	e 38 33	SS	e 62·8	—
Frunse	129·6	70	e 19 18	[+12]	—	—	—	—
Honolulu	130·1	241	e 21 24	PP	e 35 19	?	e 67·8	—
Scoresby Sund	130·5	1	i 19 9	[+ 1]	—	—	55·8	—
Almata	131·0	72	e 19 49	[+40]	—	—	—	—
Hong Kong	131·9	122	22 46	PKS	26 9	[−16]	—	40·4
Sverdlovsk	133·9	50	19 13	[0]	—	—	59·8	80·3
Seattle	134·1	294	e 21 57	PP	—	—	—	—
Victoria	135·1	294	e 19 19	[+ 4]	—	—	e 65·1	78·5
Nanking	142·4	121	19 30	[+ 5]	i 29 37	{− 1}	e 46·1	78·3
Sitka	146·2	295	i 19 35	[− 1]	—	—	e 63·1	—
Nagasaki	147·4	135	19 47	[+ 9]	—	—	—	—
Chiufeng	147·8	110	19 43k	[+ 4]	i 30 6	{− 4}	e 48·1	77·7
Sumoto	150·5	142	e 19 55	[+13]	—	—	—	—
Kobe	150·9	141	e 19 43	[0]	—	—	—	—
Nagoya	151·9	143	e 19 57	[+13]	—	—	—	—
Vladivostok	157·3	126	i 19 56	[+ 5]	—	—	—	92·2

For Notes see next page.

NOTES TO JULY 17d. 10h. 46m. 11s.

Additional readings and note :—

La Plata PPN = +7m.37s., PPPE = +7m.43s., SSSN = +14m.37s., N = +16m.25s.
Cape Town PP = +8m.41s., PPPE = +9m.4s., PPPN = +9m.7s., ?E = +9m.49s., SN = +13m.6s., ?E = +13m.20s., S? = +15m.41s., SSSN = +16m.20s., SSSE = +16m.26s.
La Paz iN = +9m.53s., PP = +11m.25s., iPSE = +17m.25s., iE = +19m.17s. = S_cS +4s., iSSE = +21m.3s., SSSE = +22m.17s.
Huancayo iP_cP = +11m.8s., e = +25m.40s.
Tananarive E = +19m.22s., SSE = +20m.32s. = S_cS +12s., E = +22m.7s.
Melbourne e = +23m.29s. = PS + 19s.
Perth S = +28m.19s., PS = +28m.39s., iP = +39m.24s.
Adelaide i = +16m.8s., e = +28m.38s. ; all readings have been *diminished* by 1h.
San Juan ePP = +15m.34s., eSKS = +22m.47s., ePS = +24m.29s., i = +25m.58s., eSS = +28m.17s., e = +30m.11s., eSSS = +32m.16s.
Riverview iN = +23m.24s. = S + 4s., eN = +29m.0s., eE = +35m.28s.
San Fernando PS = +25m.12s. = S + 8s.
Malaga e = +14m.0s. and +19m.25s. = PPP + 0s.
Almeria PP = +17m.26s.
Granada PP = +17m.35s., L_q = +46·0m.
Alicante PP = +17m.50s.
Toledo ePP = +17m.53s.
Helwan e = +14m.39s. and +16m.36s.
Batavia PZ = +24m.53s.
Columbia eSS = +33m.19s.
Ksara PP = +18m.35s., PS = +28m.11s., PPS = +29m.11s.
Philadelphia iPP = +18m.50s. = PP + 2s., e = +20m.39s., iSKS = +25m.2s., ePS = +28m.5s. = PS − 11s., eSS = +34m.14s., eSSS = +38m.14s.
Bombay iEN = +28m.34s. = PS + 12s., iN = +29m.2s.
Triest iPP = +18m.58s.k, e = +28m.33s., i = +28m.50s. and +29m.2s., PPS = +29m.36s., SS = +34m.25s.
Zagreb e = +18m.18s. = PKP − 1s., eP = +18m.45s., ePPE = +19m.4s.
Paris PP = +18m.59s.
Strasbourg i = +19m.7s. = PP + 0s., e = +29m.48s. and +32m.54s.
Stuttgart ePP = +19m.4s., ePPP = +21m.21s.
St. Louis ePP = +19m.9s., eSKKSN = +26m.19s., eSE = +26m.57s., ePSE = +28m.45s., eSS = +34m.51s.
Florissant ePPENZ = +19m.9s.a, eSKKSN = +26m.21s., eSEN = +26m.56s., iPSENZ = +28m.49s., iPPSN = +29m.59s., eSSE = +35m.4s.
Toronto e = +19m.7s.
Ottawa e = +19m.25s. = PP + 0s. and +28m.49s. = PS − 17s.
De Bilt eZ = +19m.24s. = PP − 4s.
Gottingen eN = +19m.33s. = PP + 2s.
Chicago ePS = +29m.5s.
Tiflis i = +19m.49s. = PP + 11s., e = +27m.49s., +33m.14s., +34m.56s., and +35m.58s. = SS + 23s.
Tucson ePP = +19m.33s., eSKKS = +26m.43s., ePS = +29m.4s., e = +34m.13s., eSS = +36m.21s., e = +44m.19s.
Copenhagen PP = +19m.49s., eE = +27m.55s., eN = +28m.49s., PPN = +29m.49s. = PS − 4s., eN = +32m.55s., SS = +35m.43s.
Pasadena iZ = +20m.19s. = PP − 1s. and +20m.39s., eZ = +30m.14s. = PS − 3s.
Moscow PP = +20m.37s., PS = +30m.53s., SKKS = +31m.44s.
Tashkent PP = +20m.48s., SS = +38m.31s.
Pulkovo PP = +20m.52s., PKS = +22m.39s., PPP = +34m.5s., SKKS = +27m.49s., SS = +37m.55s.
Tchimkent e = +22m.21s.
Ukiah ePP = +22m.29s.
Frunse e = +22m.28s. = PKS.
Scoresby Sund i = +21m.19s. = PP − 2s. and +22m.36s. = PKS + 0s., e = +24m.19s. = PPP + 18s., +32m.1s. = PS + 25s.
Sverdlovsk PP = +21m.43s., PKS = +22m.46s., SS = +39m.25s.
Seattle e = +20m.49s., ePKS = +23m.35s.
Nanking ePPN = +23m.10s. = PKS − 4s., ePPP = +24m.55s., iE = +32m.49s. = SKSP + 5s., SSN = +34m.19s., SSSN = +38m.5s.
Sitka ePP = +22m.44s., eSS = +43m.17s.
Chiufeng iZ = +20m.32s., PPN = +22m.51s., iN = +24m.0s.
Sumoto +19m.59s. = PKP_2 − 2s.
Kobe iPZ = +19m.54s., ePE = +19m.57s., iN = +20m.9s. = PKP_2 + 6s., eN = +21m.58s.
Vladivostok i = +24m.10s. = PP + 9s.
Long waves at Algiers, Barcelona, Jena, Upsala, Phu-Lien, and Sydney.

July 17d. 17h. 55m. 40s. 36°·3N. 140°·5E. (as on 1934 May 30d.). X.

Stations give 36°·1N. 140°·5E.

A = −·622, B = +·513, C = +·592.

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Tokyo	N.	0·9	224	0 12	− 1	0 21	− 2	0·4
Mizusawa		2·9	10	e 0 45	P*	i 1 27	S*	—
Nagoya		3·1	249	e 0 45	+ 1	1 22	+ 2	1·7
Kobe		4·6	252	e 1 14	P*	2 14	S*	3·5
Toyooka		4·6	262	1 19	P*	2 17	S*	2·4
Sumoto		5·0	248	1 36	P_g	2 14	+ 6	2·5

Additional readings :—
Mizusawa iP = +48s.
Nagoya P_g = +1m.0s.
Kobe eNZ = +1m.20s., iE = +1m.36s., iN = +1m.40s., eSN = +2m.7s.
Sumoto eZ = +1m.42s., SN = +2m.18s., SZ = +2m.20s.

July 17d. 22h. 11m. 0s. Epicentre 24°·6N. 120°·9E. (as on July 16d. 16h.). R.3.

A = −·467, B = +·780, C = +·416.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Sintiku	0·2	14	0 0?	− 3	0 4	− 1
Taityu	0·5	200	i 0 7	0	0 16	+ 3
Taihoku	0·7	55	0 8	− 2	0 18	0
Karenko	0·9	131	0 13	0	0 28	S*
Arisan	1·1	185	i 0 16	0	0 31	S*
Hokoto	1·7	227	e 0 36	S	(e 0 36)	− 8
Tainan	1·7	200	e 0 35	S	(e 0 35)	− 9
Taito	1·8	173	0 27	+ 1	0 56	S_g
Takao	2·0	195	e 0 45	S	(e 0 45)	− 6
Kosyun	2·6	185	0 42	S*	1 15	S*

Long waves at Chiufeng.

July 17d. Readings also at 0h. (Taihoku and Granada), 2h. (Manila and Hong Kong), 3h. (Florence, Prato, Triest, New Plymouth, Manila, Hong Kong, Nanking, Karenko, and Taityu), 4h. (Scoresby Sund and New Plymouth), 5h. (New Plymouth, Bucharest, Hong Kong, and Nagoya), 6h. (New Plymouth, Hastings, Wellington, and Sverdlovsk), 7h. (Vladivostok), 9h. (Karenko and Manila), 10h. (Karenko), 11h. (Phu-Lien), 14h. (Rathfarnham Castle, Erevan, Grozny, and Tiflis), 16h. (Agra, Andijan, Baku, Frunse, Ksara, Sverdlovsk, Tashkent, Tiflis, and Tchimkent), 17h. (Baku, Ksara, Tashkent, Sverdlovsk, Granada, Taityu, Karenko, and Taihoku), 18h. (Hong Kong, Nanking, Amboina, Batavia, Pasadena, Andijan, Frunse, Grozny, Sverdlovsk, Tashkent, Tiflis, Tchimkent, and Vladivostok), 19h. (Grozny), 20h. (Apia), 21h. (Granada and Ottawa), 22h. (Hong Kong and Nanking), 23h. (Taityu and Taihoku)

July 18d. Readings at 0h. (Berkeley), 1h. (Baku, Erevan, Grozny, Ksara, Samarkand, Sverdlovsk, and Tiflis), 2h. (Bombay), 4h. (Byoritu), 6h. (New Plymouth (2), Hastings, Wellington (2), and Christchurch (2)), 7h. (Arisan, Taityu, Taihoku, and La Paz), 8h. (Erevan, Medan, and Messina), 9h. (Wellington), 14h. (Alicante), 16h. (Barcelona), 19h. (Malabar and Byoritu), 20h. (Oak Ridge), 22h. (Berkeley).

July 19d. 0h. 49m. 50s. Epicentre 36°·7N. 141°·7E. (as on 1932 June 16d.). R.1.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama		0·7	290	0 9	− 1	0 15	− 3	—	—
Mito		1·0	252	0 14	0	0 24	− 2	—	—
Tyosi		1·2	215	0 15	− 2	0 34	S*	—	—
Kakioka		1·3	249	0 16	− 2	0 30	− 3	—	—
Tukubasan		1·4	249	0 17	− 3	0 27	− 9	—	—
Hukusima		1·4	318	0 21	+ 1	0 40	S*	—	—
Utunomiya		1·5	265	0 22	+ 1	0 42	S*	—	—
Sendai		1·7	338	0 24	0	0 45	+ 1	—	—
Yamagata		1·8	323	0 27	+ 1	0 52	S*	—	—
Tokyo		1·9	237	0 26	− 2	0 49	0	—	0·9
Kumagaya		2·0	254	0 26	− 3	0 49	− 2	—	—
Maebasi		2·1	262	0 29	− 1	0 55	+ 1	—	—
Yokohama		2·1	232	0 31	+ 1	0 58	S*	—	—
Yokosuka		2·2	230	0 34	P*	1 4	S*	—	—
Mera		2·4	220	0 34	0	1 2	0	—	—
Niigata		2·4	300	0 38	P*	1 25	?	—	—
Mizusawa	N.	2·4	349	e 0 35	+ 1	i 1 12	S_g	—	—
Oiwake		2·5	262	0 35	− 1	1 8	+ 4	—	—
Hunatu		2·7	242	0 38	− 1	1 16	S*	—	—
Misima		2·7	235	0 37	− 2	1 2	− 7	—	—
Kohu		2·8	247	0 39	− 1	1 8	− 4	—	—
Nagano		2·8	269	0 41	+ 1	1 20	S*	—	—
Numadu		2·8	235	0 42	+ 2	1 19	S*	—	—
Ito		2·8	230	0 40	0	1 14	+ 2	—	—
Takada		2·8	278	0 43	P*	1 22	S*	—	—
Miyako		2·9	4	0 48	P*	1 20	S*	—	—
Matumoto		3·0	260	0 43	0	1 24	S*	—	—
Morioka		3·0	352	0 48	P*	1 27	S*	—	—
Akita		3·2	338	0 53	P*	1 37	S_g	—	—
Iida		3·3	249	0 47	0	1 22	− 3	—	—
Omaesaki		3·5	232	0 59	P*	1 41	S*	—	—
Takayama		3·6	261	0 55	+ 4	1 44	S*	—	—
Toyama		3·6	270	1 58	S_g	3 5	?	—	—
Hamamatu		3·8	237	0 56	+ 2	1 45	S*	—	—
Hatidyozima		3·9	202	0 55	− 1	1 36	− 4	—	—
Nagoya	E.	4·1	250	1 0	+ 2	i 1 53	S*	—	3·3
	N.	4·1	250	e 1 1	+ 3	i 1 55	S*	—	3·1
Gihu		4·2	253	0 59	− 1	1 57	S*	—	—
Kameyama		4·6	246	1 5	− 1	2 5	+ 7	—	—
Hikone		4·7	254	1 6	− 1	2 5	+ 5	—	—
Kyoto		5·1	253	1 13	0	2 29	S*	—	—
Osaka		5·4	250	1 14	− 3	2 19	+ 1	—	—
Toyooka		5·6	261	e 1 21	+ 1	e 2 32	+ 9	—	3·2
Kobe		5·7	251	1 20	− 1	2 29	+ 4	e 2·9	3·9
Siomisaki		5·8	235	1 22	0	2 32	+ 4	—	—
Wakayama		5·8	245	1 22	0	2 43	S*	—	—
Sumoto		6·0	249	1 24	− 1	2 52	S*	—	3·2
Sapporo		6·4	357	1 35	+ 4	2 51	+ 8	—	—
Nemuro		7·2	25	1 41	− 1	3 4	0	—	—
Koti		7·3	247	1 42	− 2	3 2	− 4	—	—
Hirosima		7·6	252	1 49	+ 1	2 22	P_g	—	—
Matuyama		7·8	252	1 51	0	3 40	S*	—	—
Hamada		8·0	260	1 53	0	3 47	S*	—	—
Simidu		8·1	240	1 55	0	3 43	S*	—	—
Hukuoka		9·7	255	2 16	− 1	—	—	4·9	5·7
Miyazaki		9·7	244	2 16	− 1	4 13	+ 7	—	—
Titizima		9·7	174	2 12	− 5	3 53	−13	—	—
Vladivostok		9·8	317	i 2 21	+ 3	e 4 38	S*	—	5·7
Kumamoto		9·8	250	2 18	0	4 10	+ 2	—	—
Hukuoka B		9·8	255	2 19	+ 1	4 51	S*	—	5·7

Continued on next page.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Ootomari	10·0	5	2 16	− 5	5 51	?	—	—
Unzendake	10·2	251	2 19	− 5	5 2	S*	—	—
Husan	10·4	263	e 2 18	− 8	4 20	− 3	4·7	6·9
Taikyu	10·5	265	i 2 32	+ 4	4 32	SS	—	—
Nagasaki	10·5	252	e 2 22	− 6	5 4	S*	—	5·9
Kagosima	10·5	244	2 32	PP	5 2	S*	—	—
Tomie	11·4	253	2 40	0	5 7	+19	—	—
Keizyo	11·7	280	i 2 55	+11	6 6	S_g	—	—
Zinsen	12·0	280	e 2 49	+ 1	e 5 13	+10	e 6·0	6·8
Heizyo	12·8	288	3 3	PP	e 5 21	− 1	7·4	—
Nake	13·2	236	3 3	− 2	6 58	S_g	—	—
Yingkow	15·6	292	3 40	PP	8 1	?	—	—
Nanking	19·4	264	i 4 20	− 3	i 8 21	SS	9·9	11·8
Chiufeng	20·2	288	4 26a	− 6	i 8 7	− 3	10·0	13·4
Taihoku	20·8	243	e 4 36	− 2	8 45	SS	—	—
Karenko	21·4	239	e 4 50	+ 6	—	—	—	—
Taityu	22·0	241	5 6	PP	—	—	—	—
Taito	22·5	237	e 5 1	+ 5	9 13	SS	—	—
Takao	23·2	240	e 5 3	0	9 53	SS	—	—
Kosyun	23·3	237	e 5 2	− 2	9 10	0	—	—
Hong Kong	27·8	247	5 43	− 2	10 29	+ 1	13·5	16·0
Manila	28·8	225	6 1	+ 7	12 14	SSS	—	—
Palau	30·1	196	6 7	+ 1	11 5	− 1	—	—
Phu-Lien	34·4	254	e 6 42	− 2	12 10?	− 2	16·2	22·9
Semipalatinsk	45·2	309	e 7 38	−36	—	—	—	—
Calcutta	47·8	271	8 39	+ 4	15 52	+22	—	31·5
Almata	48·8	300	e 8 42	0	—	—	e 17·7	—
Frunse	50·6	300	e 8 26	−30	e 16 20	+11	e 28·2	—
Dehra Dun	52·5	283	(9 10)	0	(16 20)	−15	(21·9)	(23·2)
Andijan	52·8	299	e 9 13	+ 1	e 16 47	+ 8	e 29·2	—
Agra	53·9	281	9 18	− 3	i 16 53	− 1	25·7	34·1
Batavia	53·9	225	i 9 17	− 4	i 16 53	− 1	31·2	—
Tchimkent	54·2	301	9 27	+ 4	17 4	+ 6	e 29·2	—
Honolulu	54·2	88	e 9 26	+ 3	i 17 7	PS	e 22·1	—
Tashkent	54·8	300	i 9 24	− 3	i 17 8	+ 2	i 28·4	35·7
Sverdlovsk	55·3	320	i 9 27	− 4	i 17 12	− 1	26·7	30·2
Sitka	56·3	40	e 9 38	0	e 17 20	− 7	27·2	—
Samarkand	57·0	298	9 35	− 8	—	—	—	—
Hyderabad	58·4	270	9 45	− 8	17 45	−10	25·8	35·3
Bombay	62·1	275	i 10 24	+ 5	i 18 45	+ 2	e 29·2	38·7
Kodaikanal	63·3	263	e 10 27	0	i 19 0	+ 1	29·9	40·1
Colombo	63·4	260	10 27	− 1	18 59	− 1	—	40·5
Victoria	66·4	46	e 11 2	+14	i 19 34	− 3	e 42·2	48·5
Apia	66·9	129	—	—	e 19 42	− 1	—	—
Seattle	67·3	47	—	—	e 20 3	PS	e 27·3	—
Moscow	67·4	325	10 52	− 2	19 37	−13	e 36·2	43·5
Pulkovo	68·3	330	10 59	− 1	19 56	− 5	33·2R	42·4
Baku	68·4	307	e 10 58	− 3	e 20 29	PS	36·2	43·8
Grozny	69·5	310	11 5	− 3	e 20 15	0	—	—
Piatigorsk	70·8	313	10 45	−31	e 20 25	− 6	e 36·7	—
Tiflis	70·8	309	e 11 15	− 1	20 33	+ 2	35·7	43·5
Riverview	71·1	171	—	—	e 20 28	− 6	e 32·7	37·8
Ukiah	71·2	54	e 11 34	+16	i 20 42	+ 7	e 29·2	—
Adelaide	71·7	182	—	—	i 20 38	− 3	e 34·3	39·7
Erevan	72·0	307	e 11 26	+ 3	—	—	—	—
Scoresby Sund	72·2	355	i 11 24	0	20 46	− 1	—	—
Berkeley	72·6	55	e 11 25	− 1	—	—	—	—
Sotchi	73·0	311	e 11 32	+ 3	—	—	—	—
Upsala	73·1	335	11 29	0	20 53	− 5	e 35·2	49·3
Melbourne	74·6	176	—	—	21 11	− 4	36·7	37·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bozeman	74·8	43	—	—	e 21 16	− 2	31·7	—
Simferopol	75·5	316	e 11 43	0	e 21 23	− 3	e 37·7	—
Konigsberg	75·6	329	i 11 44	0	i 21 21	− 6	37·5	47·3
Tinemaha	75·6	54	e 11 44	0	e 21 31	+ 4	—	—
Yalta	75·7	317	e 11 43	− 1	e 21 23	− 5	e 34·2	—
Sebastopol	76·0	317	e 11 47	+ 1	—	—	e 40·2	—
Bergen	76·5	340	12 31	+42	i 22 18	PS	e 35·2	—
Mount Wilson	77·4	56	e 11 54	0	e 21 49	+ 2	—	—
Pasadena	77·4	56	i 11 51	− 3	i 21 50	+ 3	e 35·7	—
Riverside	78·0	56	e 11 54	− 3	e 21 48	− 6	—	—
Copenhagen	78·0	335	11 55	− 2	21 50	− 4	40·2	—
La Jolla	78·0	57	i 12 1	+ 4	i 22 5	+11	—	—
Bucharest	80·2	319	e 12 17	+ 8	22 19	+ 1	—	51·0
Hamburg	80·6	333	e 12 10	− 1	i 22 17	− 5	e 38·2	43·2
Budapest	81·2	325	12 17	+ 3	22 28	0	42·2	42·7
Ksara	81·3	308	i 12 13	− 2	22 29	− 1	39·2	—
Leipzig	81·4	330	e 12 15	0	e 22 26	− 5	e 41·2	49·4
Prague	81·6	329	e 12 19	+ 3	22 29	− 4	e 39·2	51·7
Jena	82·0	330	e 12 16	− 2	e 22 30	− 7	e 39·2	43·7
Gottingen	82·1	332	i 12 18	− 1	e 22 34	− 4	e 41·2	49·3
Vienna	82·1	328	e 12 18	− 1	e 22 35	− 3	e 40·2	50·2
Cheb	82·4	330	e 12 27	+ 7	e 22 38	− 3	e 42·2	50·2
Edinburgh	82·6	340	e 12 30	+ 9	i 22 44	+ 1	39·2	52·3
Belgrade	82·8	322	e 12 16	− 6	e 22 40	[− 2]	44·6	52·1
Sofia	83·1	321	e 12 23	− 1	e 22 45	[0]	39·9	45·1
Durham	83·3	339	12 37	+12	22 46	[0]	—	52·7
Graz	83·3	327	i 12 28	+ 3	i 22 45	[− 1]	e 40·2	43·8
De Bilt	83·4	336	e 12 24	− 1	22 51	0	e 39·2	45·3
Wellington	83·7	155	12 25	− 2	22 40	[− 9]	38·2	40·2
Stonyhurst	84·3	340	e 12 36	+ 6	i 23 11	+10	39·2	44·2
Zagreb	84·3	327	e 12 28	− 2	e 22 51	[− 3]	e 40·8	40·8
Stuttgart	84·7	332	e 12 30	− 2	e 23 17	+12	42·7	55·2
Karlsruhe	84·8	331	i 12 29	− 3	—	—	e 42·5	—
Uccle	84·8	336	e 12 31a	− 1	23 1	− 5	39·2	45·8
Bidston	85·0	340	e 12 32	− 1	i 23 7	− 1	39·2	55·2
Triest	85·3	328	e 12 32	− 3	23 5	[+ 4]	e 41·2	51·2
Strasbourg	85·4	333	12 33a	− 2	i 23 12	0	e 38·2	51·9
Kew	85·8	339	e 12 38	+ 1	e 23 16	0	38·2	45·2
Oxford	85·8	338	i 12 41	+ 4	23 4	[− 1]	e 37·2	53·2
Rathfarnham Castle	85·8	341	i 12 46	+ 9	i 23 19	+ 3	e 39·5	53·2
Zurich	86·1	331	e 12 36	− 3	e 23 3	[− 4]	—	—
Chur	86·1	330	e 12 36	− 3	e 23 2	[− 5]	—	—
Basle	86·3	331	e 12 38	− 2	e 24 8	PS	—	—
Helwan	86·8	305	e 12 41	− 1	23 12	[0]	—	55·3
Neuchatel	87·0	331	e 12 42	− 1	e 23 10	[− 3]	—	—
Paris	87·1	336	12 45	+ 1	i 23 13	[− 1]	44·2	47·2
Piacenza	87·5	330	12 48	+ 3	23 28	− 4	43·2	54·8
Prato	87·8	326	e 12 46	− 1	i 23 17	[− 2]	e 33·7	47·2
Florence	87·8	326	12 49	+ 2	22 52	[−27]	30·2	47·2
Chicago	89·4	35	—	—	e 23 26	[− 3]	e 34·3	—
Florissant	90·7	38	e 12 59	− 2	e 23 35	[− 2]	e 40·7	47·1
Ann Arbor	90·8	32	—	—	e 23 40	{− 1}	e 49·1	—
St. Louis	90·9	38	e 13 0	− 2	e 23 52	{+10}	e 40·8	47·2
Ottawa	91·2	26	e 13 10	+ 7	24 16	+ 9	e 44·2	—
Toronto	91·4	30	e 12 2	−62	i 22 32	[−69]	40·2	—
Vermont	92·8	25	e 13 18	+ 8	i 23 54	[+ 5]	49·8	—
Tortosa	94·7	332	e 13 10	− 9	—	—	—	—
Oak Ridge	95·2	25	e 13 21	0	—	—	—	—
Charlottesville	96·6	31	—	—	e 24 54	− 2	e 44·2	—
Philadelphia	96·9	27	e 13 31	+ 2	i 24 4	[− 6]	e 38·7	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers	97·1	329	e 18 10?	?	24 10	[− 2]	50·2	62·7
Alicante	97·2	333	—	—	e 26 48	PS	e 48·5	63·4
Toledo	97·2	335	—	—	e 24 54	− 8	e 45·7	62·7
Columbia	98·9	35	—	—	e 24 25	[+ 5]	e 44·9	—
Almeria	99·0	333	e 17 56	PP	—	—	e 51·7	—
Granada	99·4	335	e 13 27	−14	26 48	PS	49·7	65·1
Malaga	100·1	334	e 17 56	PP	—	—	58·9	—
San Fernando	101·0	336	—	—	e 23 46	[−45]	46·2	54·7
Tananarive	104·4	259	—	—	32 56	SS	49·9	57·9
San Juan	119·0	31	—	—	e 27 50	{+40}	e 56·7	—
Cape Town	135·3	258	22 52	PKS	39 42	SS	63·4	72·9
Huancayo	139·1	63	e 19 26	]+ 6]	—	—	e 57·9	—
La Paz	146·8	62	i 19 39	[+ 2]	—	—	69·9	82·0
Sucre	150·5	60	19 39	[− 3]	—	—	72·2	—

Additional readings and note :—
Tyosi +38s.
Mizusawa iPE = +37s. = P* − 1s.
Toyooka iSE = +2m.38s., S_gZ = +2m.53s.
Kobe iEN = +1m.28s., eZ = +2m.26s., S_gN = +2m.41s.
Husan S_eS? = +11m.50s.
Zinsen eSN = +5m.15s.
Nanking iEN = +4m.29s. = PP − 5s., PP = +4m.44s., PPPE = +4m.56s., iN = +8m.10s. = SS − 2s., SS = +9m.3s.
Chiufeng i(S)E = +8m.19s.
Hong Kong PP? = +6m.42s.
Dehra Dun readings have been *diminished* by 9m.
Agra e = +9m.25s., PP = +11m.19s., PS = +17m.33s., iSSE = +20m.26s., iSSSE = +22m.3s.
Sitka iS = +17m.34s. = PS + 3s., i = +19m.38s. = S_eS + 12s., e = +21m.35s. and +23m.46s.
Bombay PSE = +19m.10s., SSE = +22m.59s.
Kodaikanal PPP = +13m.52s., PS = +19m.30s., SS = +23m.17s., SSS = +25m.13s.
Seattle e = +27m.34s.
Pulkovo L_q = +30m.10s.
Baku SS = +25m.34s.
Tiflis iP = +11m.21s., PP = +14m.3s., ePPP = +15m.47s., ePS = +21m.20s., eSS = +25m.55s.
Ukiah eSS = +25m.0s.
Adelaide e = +20m.14s., i = +24m.50s. and +28m.40s.
Scoresby Sund +14m.11s. = PP + 14s., i = +20m.54s., SS = +35m.34s.
Berkeley iNZ = +11m.30s., iZ = +11m.40s.
Melbourne e = +21m.0s., i = +21m.53s., +25m.53s. = SS + 1s., +29m.19s., and +32m.27s.
Bozeman eSS = +25m.48s.
Königsberg eE = +11m.49s., PPP = +16m.8s., PS = +21m.46s., eE = +22m.46s., e = +24m.4s.
Copenhagen PP = +14m.55s., PPP = +16m.46s., +22m.7s. = PS − 16s., SS = +26m.40s., SSS = +30m.28s.
Hamburg ePP = +15m.16s., eE = +22m.39s., eSS = +27m.38s.
Bucharest eE = +14m.1s. and +15m.10s. = PP + 4s.
Budapest PP = +15m.29s., PS = +23m.21s., SS = +27m.51s., SSS = +31m.21s.
Ksara PP = +15m.27s., SS = +28m.5s.
Leipzig iE = +12m.20s., ePPE = +15m.0s., eE = +16m.38s., eSN = +22m.40s., eZ = +31m.40s., eE = +37m.10s.
Prague ePP = +15m.22s.
Jena eE = +13m.4s.
Göttingen ePPZ = +15m.16s., eSZ = +23m.10s.? = PS − 5s.
Vienna PP = +15m.49s.
Cheb ePP = +15m.30s.
Edinburgh i = +23m.2s. and +23m.54s.
Belgrade e = +15m.41s. = PP + 14s.
Graz iPS = +23m.9s.
De Bilt iZ = +12m.31s., ePPZ = +15m.44s.
Wellington PP = +15m.37s., SS = +27m.55s.
Stonyhurst PP = +15m.56s., iSKS = +23m.0s.
Zagreb eP_cP = +12m.35s., ePP = +15m.41s., ePPZ = +15m.50s., ePPE = +15m.53s., eSKKS = +23m.16s. = S + 15s., ePS = +23m.49s., eSS = +28m.52s.
Stuttgart i = +12m.38s., iP_cP = +12m.55s., e = +13m.48s., ePP = +15m.38s., ePPP = +17m.45s., eSKS = +22m.57s., e = +23m.40s. = PS − 8s., eSS = +28m.40s., eSSS = +32m.10s.
Ucole i = +12m.39s., PP = +15m.53s., SS = +29m.4s.

Continued on next page.

Bidston iP = +12m.39s., ePP? = +15m.57s., eSKS = +22m.58s., ePS = +24m.20s., eSS = +29m.42s.
Triest iP = +12m.40s.k, PP = +15m.59s., SKS = +22m.55s., iSKKS = +23m.15s. = S +4s., iPS = +24m.1s., iN = +24m.36s., iSS = +28m.54s., SSS = +32m.33s., eE = +39m.57s., eN = +40m.15s.
Strasbourg i = +12m.39s., PP = +16m.2s., iSKS = +23m.4s., ePS = +23m.53s., eSS = +28m.50s., eSSS = +32m.46s., eSSSS = +36m.5s.
Kew iP = +12m.44s., ePP = +16m.5s., eSKS = +23m.5s., iSN = +23m.19s., ePS = +24m.18s., eSS = +29m.28s.
Oxford ePP = +15m.58s.
Rathfarnham Castle ePP = +15m.59s., ePPP = +20m.4s., iSS = +29m.11s., iSSS = +32m.29s.
Helwan PP = +16m.9s., i = +23m.46s. = S +21s.
Paris PKP = +12m.51s., PP = +16m.13s., S = +23m.23s.
Chicago iS = +23m.44s., eSS = +29m.27s.
Florissant epPZ = +13m.40s., ePPZ = +16m.28s., iSE = +23m.52s., iEN = +23m.59s. = S −4s., esSKSN = +24m.42s., esSN = +25m.4s., eSSEN = +29m.58s.; T_o = 0h.49m.56s.
Ann Arbor eE = +24m.4s. = S +0s., eN = +30m.28s.
St. Louis epPE = +13m.41s., eSKSE = +23m.34s., iE = +23m.59s. = S −5s., esSKSE = +24m.41s., esSE = +25m.4s. = PS +2s., eSSE = +30m.3s.
Ottawa PP = +16m.40s., SKS = +23m.36s., SKKS = +24m.4s., PSN = +25m.10s., SS = +30m.10s., e = +37m.40s.
Toronto PSN = +23m.18s.; T_o = 0h.49m.20s.
Vermont ePP = +17m.14s., iS = +24m.19s., ePS = +25m.24s., eSS = +30m.33s.
Oak Ridge eN = +13m.31s.
Charlottesville eSS = +31m.30s.
Philadelphia ePP = +17m.21s., ePS = +24m.38s. = SKKS +9s., e = +30m.2s., eSS = +31m.10s., e = +37m.2s.
Alicante e = +19m.24s. = PPP +5s.
Toledo ePP = +17m.8s.
Columbia eS = +25m.10s., eSS = +31m.25s., e = +38m.53s.
Granada $ePcP$ = +13m.46s., iPP = +17m.53s., PPS = +27m.51s., SS = +32m.21s., SSS = +37m.35s.
Malaga i = +50m.24s. and +53m.59s., e = +55m.57s.
San Fernando ePPP = +18m.4s., ePS = +24m.33s., SS = +31m.51s., eSSS = +36m.0s.
Tananarive SS = +32m.17s., E = +47m.20s.
San Juan ePP = +20m.23s., ePS = +29m.24s., e = +35m.46s., eSS = +36m.22s., e = +40m.20s.
Cape Town E = +22m.46s. and +35m.19s., E = +39m.58s. = SS +13s.
Huancayo ePP = +22m.40s., eSS = +40m.32s., eSSS = +45m.22s.
La Paz $iPKP_2Z$ = +19m.54s., ipPKPZ = +20m.33s., ipPKP = +21m.7s., iZ = +21m.25s., sPKPE? = +22m.0s., iS = +22m.17s., PPZ = +23m.23s., SSZ = +43m.41s.
Long waves at Barcelona.

July 19d. 6h. 7m. 17s. (I) } Epicentre 21°·8N. 121°·5E. N.3.
6h. 17m. 0s. (II) } X.

A = −·485, B = +·792, C = +·371; D = +·853, E = +·522; G = −·194, H = +·317, K = −·928.

	Δ	Az.	P.	O−C.	S	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
I Kosyun	0·7	288	0 12	+ 2	0 21	S*	—
II	0·7	288	0 10	0	0 19	+ 1	—
I Taito	1·0	340	i 0 15	+ 1	0 24	− 2	—
II	1·0	340	e 0 15	+ 1	0 28	S*	—
I Takao	1·4	309	e 0 26	P_g	0 43	S_g	—
II	1·4	309	0 19	− 1	0 36	0	—
I Tainan	1·7	318	e 0 30	P_g	—	—	—
II	1·7	318	e 0 35	?	—	—	—
I Arisan	1·8	340	e 0 29	P_g	0 46	0	—
II	1·8	340	e 0 27	P*	0 46	0	—
II Karenko	2·1	1	e 0 35	P_g	0 57	+ 3	—
II Taityu	2·5	344	0 37	+ 1	—	—	—
I Taihoku	3·2	0	e 0 59	P_g	—	—	—
II	3·2	0	e 0 52	P*	—	—	—
II Nanking	10·6	346	e 2 40	+11	e 4 58	+32	—
II Sverdlovsk	56·1	325	e 9 39	+ 2	—	—	32·0

Additional readings:—
II Nanking eEN = +6m.0s.
Long wave for II at Chiufeng, Hong Kong, and Pulkovo.

July 19d. Readings also at 1h. (Berkeley, Branner, Lick, Chur, and Zurich), 2h. (Kobe, Mizusawa (2), Nagoya (2), Sumoto, Toyooka, and La Plata), 3h. (Bombay, Santiago, Kobe, Mizusawa, Nagoya, Sumoto, and Toyooka), 4h. (Erevan, Tiflis, and Santiago), 7h. (Andijan, Copenhagen, Karlsruhe, and Stuttgart), 14h. (Kobe, Nagoya, and Sumoto), 16h. (Arisan (2), Karenko (2), Taito (2), Taityu (2), and Taihoku (2)), 18h. (Ksara), 20h. (Oak Ridge), 22h. (Platigorsk, Hukuoka B, Mizusawa, and Nagoya).

July 20d. 3h. 41m. 37s. (I)
4h. 24m. 14s. (II)
8h. 24m. 10s. (III)
14h. 39m. 56s. (IV)
} Epicentre 24°·6N. 120°·9E. (as on 17d. 22h.). X. X. X. X.

A = −·467, B = +·780, C = +·416.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
I Taityu	0·5	200	e 0 6	− 1	—	—	—	—
II	0·5	200	0 7	0	—	—	—	—
III	0·5	200	0 7	0	0 15	+ 2	—	—
IV	0·5	200	i 0 7	0	0 12	− 1	—	—
I Taihoku	0·7	55	e 0 14	+ 4	0 26	+ 8	—	—
III	0·7	55	e 0 11	+ 1	0 20	+ 2	—	—
IV	0·7	55	i 0 18	S	0 30	+12	—	—
III Karenko	0·9	131	e 0 14	+ 1	—	—	—	—
IV	0·9	131	i 0 16	+ 3	0 29	S*	—	—
I Arisan	1·1	185	e 0 16	0	0 31	S*	—	—
III	1·1	185	0 16	0	0 31	S*	—	—
IV	1·1	185	i 0 16	0	0 31	S*	—	—
IV Tainan	1·7	200	e 0 29	P*	0 53	S_g	—	—
IV Hokoto	1·7	227	e 0 34	P_g	—	—	—	—
III Taito	1·8	173	0 29	P*	0 57	S_g	—	—
IV	1·8	173	e 0 32	P_g	0 57	S_g	—	—
IV Takao	2·0	195	e 0 40	P_g	1 9	S_g	—	—
IV Kosyun	2·6	185	e 0 38	+ 1	1 14	S*	—	—
IV Nanking	7·7	345	e 1 54	+ 5	e 3 22	+ 6	4·1	4·7
IV Chiufeng	16·0	346	—	—	e 7 14	?	e 8·8	12·6

Additional readings :—
Nanking iE = +4m.15s. = S_g +7s.
Long waves for IV at Hong Kong, Vladivostok, Copenhagen, Sverdlovsk, Stuttgart, and Tashkent.

July 20d. 10h. 22m. 48s. Epicentre 14°·8S. 73°·7W. N.3.

Given by La Plata.

A = +·271, B = −·928, C = −·255 ; D = −·960, E = −·281 ;
G = −·072, H = +·245, K = −·967.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Huancayo		3·1	334	i 0 54	P_g	i 1 23	+ 3	i 1·8	—
La Paz	N.	5·6	107	i 1 27	+ 7	i 2 29	+ 6	i 2·9	4·1
Sucre		9·1	122	2 32	+23	i 3 54	+ 3	—	—
La Plata	E.N.	24·6	147	5 18	+ 2	9 41	+ 7	—	—
San Juan		34·0	13	—	—	e 11 44	−22	e 18·6	—
Oak Ridge		57·3	3	i 9 41	− 4	—	—	—	—
Ottawa		60·2	358	e 10 0	− 6	e 18 6	−13	e 23·2	—
La Jolla		63·2	320	e 10 26	− 1	—	—	—	—
Riverside		64·0	320	e 10 27	− 5	—	—	—	—
Pasadena		64·6	320	i 10 34	− 2	—	—	—	—
Tinemaha		66·7	323	e 10 54	+ 4	—	—	—	—
San Fernando		81·6	47	—	—	e 22 21	−12	—	—
Malaga		83·0	48	e 12 21	− 2	—	—	—	—
Granada		83·8	49	e 12 24	− 3	e 22 46	[− 4]	e 47·2	—
Ksara		114·3	60	e 20 44	?	e 29 56	?	—	—
Sverdlovsk		125·7	28	—	—	e 37 11	SS	55·2	—
Tashkent		138·4	43	e 22 57	PKS	—	—	—	—

For Notes see next page.

NOTES TO JULY 20d. 10h. 22m. 48s.

Additional readings :—
La Paz iN = +2m.36s.
La Plata E = +5m.30s., N = +5m.36s., PP = +5m.41s., PPPN = +6m.18s.
San Juan ePP = +8m.19s., eSS = +13m.48s.
Oak Ridge eZ = +10m.5s.
Malaga e = +13m.3s.
Granada i = +12m.50s., e = +23m.26s. = PS −10s.
Sverdlovsk e = +40m.50s.

July 20d. Readings also at 2h. (Scoresby Sund), 3h. (Apia, Tiflis, and Wellington), 7h. (Andijan, Copenhagen, Tashkent, Bombay, and Hyderabad), 8h. (Sverdlovsk), 13h. (Stuttgart), 14h. (Port au Prince and Phu-Lien), 15h. (Samarkand), 16h. (La Paz), 18h. (Andijan and Samarkand), 23h. (La Paz, Kosyun, Takao, and Taito).

July 21d. Readings at 0h. (Mizusawa and Nagoya), 2h. (Berkeley (2), Branner, and Lick), 5h. (Tiflis), 6h. (Karlsruhe and Ksara), 10h. (Karlsruhe and Wellington), 12h. (Sumoto), 14h. (Baku, Ksara, Samarkand, and Sverdlovsk), 15h. (Florissant and Tucson), 16h. (Amboina and Paris), 18h. (Amboina), 19h. (Sumoto), 20h. (Andijan and Vienna), 22h. (Almata, Andijan, Frunse, Tchimkent, and Tashkent), 23h. (Granada, Graz, Tiflis, and Vienna).

July 22d. 6h. 55m. 16s. Epicentre 38°·3N. 72°·8E. (as on 1931 Dec. 16d.). X.

A = +·232, B = +·750, C = +·620.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	2·5	352	0 34	− 2	i 0 59	− 5	—	1·5
Tashkent	4·0	320	i 1 3	P*	—	—	i 2·1	2·5
Samarkand	4·7	289	1 25	P_g	i 2 31	S_g	—	3·3
Tchimkent	4·7	326	e 1 19	P*	i 2 32	S_g	—	2·6
Frunse	4·8	17	1 9	+ 1	i 2 1	− 2	—	—
Almata	5·9	31	e 1 25	+ 1	2 33	+ 2	—	2·7
Sverdlovsk	20·2	340	4 34	+ 2	e 8 25	SS	11·7R	—
Moscow	29·2	318	—	—	11 17	+26	e 15·5	17·5

Additional readings :—
Andijan PP = +40s. = P* +0s., i = +53s.
Samarkand iP* = +1m.33s., iPP = +1m.47s., i = +2m.15s. = S* −3s., S_g = +2m.43s.
Tchimkent i = +1m.24s. = P_g −4s., P_g = +1m.35s.
Frunse P* = +1m.14s., P_g = +1m.21s. = P* +2s., PP = +1m.27s. = P_g −3s., i = +1m.51s.
Almata P* = +1m.37s., P_g = +1m.43s.
Sverdlovsk L_q = +10m.26s.
Long waves at Copenhagen and Pulkovo.

July 22d. Readings also at 0h. (Mizusawa and Vienna), 3h. (Wellington), 9h. (Triest and Zurich), 10h. (Andijan), 11h. (Apia and Santiago), 13h. (Ksara), 14h. (Bucharest and Sofia), 15h. (Almata, Amboina, and Oak Ridge), 16h. (Oak Ridge), 17h. (Taityu), 18h. (Santiago), 19h. (Tashkent, Sverdlovsk, and Bombay), 20h. (Karlsruhe), 21h. (Tucson), 22h. (Andijan, Frunse, and Samarkand).

July 23d. 3h. 55m. 30s. Epicentre 1°·2S. 66°·0E. N.3.

A = +·407, B = +·913, C = −·021; D = +·914, E = −·407;
G = −·009, H = −·019, K = −1·000.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo	16·0	60	6 7	?	—	—	—	8·9
Kodaikanal	16·2	43	e 3 29	−15	i 6 22	−21	—	8·6
Bombay	21·2	18	i 4 38	− 4	i 8 30	0	e 10·5	11·7
Hyderabad	22·4	32	4 59	+ 4	8 57	+ 4	10·3	13·7
Calcutta	32·2	41	—	—	e 9 26	PcP	—	19·5
Medan	33·1	81	(e 6 45)	+12	(11 17)	−35	—	—
Samarkand	40·8	1	e 7 42	+ 3	—	—	—	—
Andijan	42·4	8	e 4 53	?	—	—	—	—
Tashkent	42·6	2	i 7 47	− 6	i 14 9	− 6	e 19·6	24·0
Baku	44·1	343	e 8 11	+ 5	e 14 46	+ 9	22·5	29·9
Frunse	44·8	9	e 8 10	− 1	—	—	—	—
Ksara	45·0	323	e 8 29	+16	—	—	—	—
Tiflis	47·4	337	e 8 30	− 2	e 15 30	+ 6	22·5	—
Hong Kong	52·5	59	16 20	S	(16 20)	−15	—	29·9
Chiufeng	61·5	41	—	—	i 18 20	−16	—	34·4
Moscow	61·5	341	10 11	− 4	18 34	− 2	34·5	36·6
Pulkovo	67·0	341	e 10 52	0	e 19 48	+ 3	e 31·5	40·2
Stuttgart	69·8	324	e 14 30?	?	e 19 30?	−49	e 35·5	—
Strasbourg	70·6	323	e 14 30?	?	—	—	e 28·5	—
Copenhagen	71·5	331	11 25	+ 5	20 44	+ 5	34·5	—
De Bilt	73·5	326	—	—	e 21 0	− 3	e 34·5	—
Uccle	73·5	324	—	—	e 21 11	+ 8	e 28·5	—
Scoresby Sund	90·5	341	—	—	23 35	[− 1]	46·5	—
Mount Wilson	146·7	6	e 19 43	[+ 6]	—	—	—	—
Pasadena	146·9	6	i 19 47	[+10]	—	—	—	—

Additional readings and note:—
Bombay SSEN = +9m.30s.
Medan readings have been *diminished* by 4m.
Tiflis eSS = +19m.9s.
Copenhagen +25m.6s. = SS +1s.
Long waves at Kew, Granada, Paris, Sverdlovsk, and Vladivostok.

July 23d. 18h. 0m. 52s. Epicentre 35°·5N. 134°·1E. N.1.

Given by the Japanese stations.

A = −·567, B = +·584, C = +·581; D = +·718, E = +·696;
G = −·404, H = +·417, K = −·814.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Toyooka	0·6	89	0 10	+ 1	0 19	S*	0·5
Sakai	0·8	275	0 8	− 3	0 18	− 3	—
Miyadu	0·8	81	0 14	+ 3	0 27	S*	—
Okayama	0·9	186	−0 9	?	0 2	?	—
Kobe	1·2	132	i 0 18	+ 1	0 34	S*	0·6
Tadotu	1·3	191	0 18	0	0 33	0	—
Sumoto	1·3	151	i 0 20	+ 2	0 36	S*	0·6
Osaka	1·4	127	0 24	P_g	0 44	S_g	—
Kyoto	1·4	111	0 23	P_g	0 42	S*	—
Wakayama	1·5	142	0 24	P_g	0 43	S*	—
Hikone	1·7	98	0 30	P_g	0 56	S_g	—
Hamada	1·8	249	0 25	− 1	0 48	+ 2	—
Hirosima	1·8	230	0 25	− 1	0 48	+ 2	—
Kure	1·9	225	0 13	−15	0 35	−14	—
Matuyama	2·0	212	0 28	− 1	0 52	+ 1	—
Kameyama	2·0	109	0 33	P_g	1 3	S_g	—
Gihu	2·2	93	0 34	P_g	1 6	S_g	—
Toyama	2·3	65	0 42	P_g	1 24	?	—
Nagoya	2·3	99	0 42	P_g	1 12	S_g	1·4
Siomisaki	2·5	147	0 29	− 7	0 59	− 5	—

Continued on next page.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	M. m.
Simidu	2·9	197	0 41	0	1 20	S*	—
Wazima	2·9	50	0 52	P_g	1 43	?	—
Hamamatu	3·0	106	0 50	P*	1 32	S_g	—
Matumoto	3·1	76	0 45	+ 1	1 24	+ 4	—
Nagano	3·4	71	1 1	P_g	1 56	S_g	—
Kohu	3·6	87	0 58	P*	1 52	S_g	—
Hukuoka	3·6	237	0 57	P*	1 44	S*	1·8
Hukuoka B	3·7	238	0 56	+ 3	1 45	S*	—
Nagasaki	3·7	230	e 1 8	P_g	i 2 12	?	—
Hunatu	3·7	90	1 2	P*	1 58	S_g	—
Misima	3·8	95	1 8	P_g	1 58	S_g	—
Numadu	3·9	96	1 9	P_g	2 2	S_g	—
Kumamoto	3·9	225	0 56	0	1 48	+ 8	—
Maebasi	4·1	78	1 5	P*	2 12	S_g	—
Miyazaki	4·2	210	1 5	P*	2 3	S*	—
Unzendake	4·2	229	1 7	P*	2 4	S*	—
Husan	4·2	264	1 12	P*	2 8	S*	—
Kumagaya	4·3	82	1 8	P*	2 17	S_g	—
Taikyu	4·5	274	e 1 17	P*	e 2 24	S_g	—
Tokyo	4·5	89	0 55	− 9	1 52	− 3	—
Yokohama	4·5	90	1 25	P_g	2 24	S_g	—
Utunomiya	4·7	77	1 21	P*	2 30	S_g	—
Mera	4·7	97	1 5	− 2	2 31	S_g	—
Mito	5·2	80	1 35	P_g	2 43	S_g	—
Tomie	5·3	238	1 30	P*	2 38	S*	—

Long waves at Chiufeng, Hong Kong, Nanking, Vladivostok, Sverdlovsk, and Tashkent.

July 23d. 18h. 2m. 31s. (I)
18h. 3m. 47s. (II)
18h. 4m. 1s. (III)
18h. 6m. 29s. (IV)
18h. 18m. 44s. (V)
18h. 20m. 11s. (VI)
19h. 36m. 38s. (VII)
20h. 53m. 13s. (VIII)
20h. 57m. 0s. (IX)
} Epicentre 35°·5N. 134°·1E. (as at 18h. 0m.) X. X. X. X. X. X. X. X. X.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	M. m.
I Toyooka	0·6	89	0 9	0	0 18	+ 3	0·4
III	0·6	89	e 0 7	− 2	0 16	+ 1	0·5
IV	0·6	89	0 9	0	0 17	+ 2	0·4
V	0·6	89	0 9	0	0 18	+ 3	0·4
VI	0·6	89	0 8	− 1	0 17	+ 2	0·3
VII	0·6	89	0 10	+ 1	0 18	+ 3	0·3
VIII	0·6	89	—	—	0 4	−11	0·1
IX	0·6	89	0 8	− 1	0 17	+ 2	0·3
I Kobe	1·2	132	0 17	0	0 32	+ 1	0·6
II	1·2	132	0 19	P_g	0 35	S*	0·6
III	1·2	132	0 17	0	0 32	+ 1	0·6
IV	1·2	132	0 16	− 1	0 31	0	0·6
V	1·2	132	0 17	0	0 33	S*	0·6
VI	1·2	132	0 17	0	0 32	+ 1	0·6
VII	1·2	132	0 17	0	0 33	S*	0·6
IX	1·2	132	0 16	− 1	0 33	S*	0·6
I Sumoto	1·3	151	0 18	0	0 34	+ 1	0·6
II	1·3	151	0 16	− 2	0 34	+ 1	0·6
III	1·3	151	0 21	P_g	0 33	0	0·7
IV	1·3	151	0 18	0	0 34	+ 1	0·6
V	1·3	151	0 17	− 1	0 36	S*	0·6
VI	1·3	151	0 18	0	0 34	+ 1	0·6
VII	1·3	151	0 18	0	0 35	S*	0·6
VIII	1·3	151	—	—	0 23	P_g	—
IX	1·3	151	0 19	+ 1	0 35	+ 2	0·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
v Nagoya	2·3	99	e 0 47	?	1 11	S_g	—
vi	2·3	99	—	—	1 11	S_g	—
vii	2·3	99	e 0 43	P_g	1 12	S_g	—
ix	2·3	99	0 40	P_g	1 10	S_g	—
i Hukuoka	3·6	237	e 0 56	P*	1 43	S*	1·8
iii	3·6	237	—	—	1 47	S*	1·9
i Hukuoka B	3·7	238	—	—	1 48	S*	—
iii	3·7	238	—	—	1 48	S*	—

Toyooka III eSZ = +20s., IV ePZ = +11s.

July 23d. Readings also at 1h. (Algiers and Santiago), 11h. (Almata, Frunse, and Samarkand), 12h. (Chicago and Santiago), 19h. (Andijan, Frunse, Tchimkent, and Tucson), 20h. (Andijan and Frunse), 21h. (Branner and Oak Ridge), 23h. (Zurich).

July 24d. 15h. 10m. 42s. Epicentre 22°·9N. 121°·5E. N.3.

A = −·481, B = +·785, C = +·389; D = +·853, E = +·522; G = −·203, H = +·332, K = −·921.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Taito	0·4	225	0 13	+ 7	0 21	+11
Arisan	0·9	315	e 0 13	0	0 24	+ 1
Kosyun	1·1	215	e 0 17	+ 1	0 31	S*
Tainan	1·2	278	e 0 16	− 1	—	—
Takao	1·2	253	e 1 26	?	—	—
Taityu	1·4	330	e 0 44	S_g	—	—
Taihoku	2·1	0	e 0 56	S	(e 0 56)	+ 2

July 24d. Readings also at 0h. (Tiflis and Lick), 2h. (Sverdlovsk and Tashkent), 3h. (Riverview, Wellington (2), De Bilt, Ksara, and Stuttgart), 4h. (Baku, Copenhagen, Frunse, Granada, Paris, Samarkand, Sverdlovsk, Tashkent, and Riverview), 5h. (Andijan, Granada, Tiflis, Mount Wilson, Riverside, and Tinemaha), 9h. (Mizusawa and Nagoya), 17h. (Sverdlovsk, Tashkent, Tiflis, La Jolla, Mount Wilson, Pasadena, Riverside, Chiufeng, and Sumoto), 18h. (Tacubaya), 22h. (Sumoto, Andijan, Jena, and Leipzig).

July 25d. Readings at 3h. (Amboina), 4h. (Branner and Lick), 5h. (Santiago), 8h. (Tiflis (2) and Nanking), 13h. (Erevan), 14h. (Wellington and Oak Ridge), 15h. (Santiago (2)), 19h. (La Paz (4), Sucre, Oak Ridge, Pasadena, Tinemaha, and Sumoto), 21h. (La Paz, Oak Ridge, Scoresby Sund, Kobe, Sumoto, and Toyooka), 23h. (Granada, Kobe, and Sumoto)

July 26d. 2h. Readings for which no determination has been made; epicentre suggested 35°N. 26°E.:—

Sofia eP = 54m.57s., eP_g = 55m.8s., i = 55m.42s., eS_g = 55m.57s., i = 56m.9s.
Bucharest ePN = 55m.18s., eP*N? = 55m.28s., ePP = 55m.44s., iSEN = 56m.8s., SSEN = 56m.32s., M = 57m.30s.
Sebastopol P = 56m.27s.
Yalta iP = 56m.32s.
Simferopol eP = 56m.34s.
Triest eP = 57m.24s., eS = 59m.15s., e = 59m.52s., iSS_g = 60m.11s., iSSS = 60m.16s., i = 60m.29s., i = 60m.35s., e = 62m.4s.
Belgrade e = 57m.31s., e = 57m.36s., e = 57m.55s., e = 58m.4s., e = 58m.37s.
Zagreb eP = 57m.39s., e = 59m.23s., eSS_g = 59m.44s., M = 59m.53s.
Pulkovo eP = 58m.26s., eS = 62m.46s., eL = 64m., M = 65m.36s.
Budapest e = 59m.10s.
Sverdlovsk eP = 59m.45s., eS = 65m.0s., L = 68m.
Ksara S = 59m.56s.
Tashkent e = 62m.48s., e = 66m.48s., M = 75m.25s.
Long waves at other European stations.

July 26d. 4h. 43m. 36s. Epicentre 9°·0N. 82°·0W. N.2.

A = +·137, B = −·978, C = +·156 ; D = −·990, E = −·139 ; G = +·022, H = −·155, K = −·988.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	2·4	90	i 0 37	P*	i 1 22	S_g	—	1·6
Merida	14·0	330	3 12	− 3	—	—	—	—
San Juan	18·0	57	i 4 11	+ 4	i 7 44	SS	i 9·3	—
Tacubaya	19·6	304	4 24	− 1	—	—	—	—
Huancayo	22·1	162	i 4 34	−18	i 8 22	−26	9·7	—
Columbia	25·0	2	e 5 28	+ 8	e 9 58	−17	e 12·5	—
La Paz	28·9	152	e 6 10	+15	10 35	−12	14·4	19·6
Charlottesville	29·2	7	—	—	e 10 56	+ 5	e 13·5	—
St. Louis	30·6	348	e 6 13	+ 3	e 11 17	+ 3	—	—
Florissant	30·8	348	e 6 13	+ 1	i 11 20	+ 3	e 15·2	—
Philadelphia	31·5	11	e 6 22	+ 4	e 11 35	+ 7	14·4	—
Pennsylvania	32·0	6	(e 6 49)	+26	—	—	—	20·0
Chicago	33·3	350	—	—	11 55	0	e 14·4	—
Ann Arbor	33·4	359	—	—	e 12 6	+ 9	e 17·6	—
Toronto	34·7	2	e 6 47	+ 1	12 44	+27	17·7	—
Oak Ridge	34·8	14	e 6 49	+ 2	—	—	—	—
Tucson	35·4	318	e 6 52	− 1	e 12 34	+ 7	e 18·7	—
Vermont	36·3	12	e 7 3	+ 3	e 12 50	+ 9	15·8	—
Ottawa	36·8	7	e 7 6	+ 1	12 54	+ 6	e 16·4	—
La Jolla	40·3	313	i 7 36a	+ 1	—	—	—	—
Riverside	41·0	313	i 7 37	− 3	i 13 59	+ 8	—	—
Mount Wilson	41·6	313	i 7 43	− 2	—	—	—	—
Pasadena	41·6	312	i 7 44a	− 1	i 14 7	+ 7	—	—
Tinemaha	43·1	316	i 7 56	− 2	e 14 33	+11	—	—
Bozeman	44·0	331	—	—	e 14 46	+10	e 25·6	—
Berkeley	46·3	317	e 8 21	− 2	—	—	—	—
Ukiah	47·5	316	e 11 34	?	i 15 34	+ 8	e 22·1	—
Sitka	63·1	331	—	—	e 19 4	+ 8	—	—
Scoresby Sund	71·8	17	11 21	− 1	20 42	− 1	28·4	—
Rathfarnham Castle	74·3	37	i 22 17	?	28 32	SSS	e 33·9	37·9
Toledo	75·1	51	e 11 31	−10	e 21 5	−16	—	—
Granada	75·4	53	i 11 39	− 4	e 21 4	−21	35·5	39·6
Edinburgh	76·3	34	—	—	e 21 24?	−11	—	—
Kew	78·1	39	e 11·57	− 1	e 21 49	− 6	33·4	—
Paris	79·7	41	e 12 5	− 1	e 22 7	− 5	38·4	44·4
Uccle	80·7	39	e 12 7	− 5	e 22 21	− 2	e 37·4	—
De Bilt	81·2	38	e 12 14	0	e 22 26	− 2	e 34·4	38·6
Strasbourg	83·1	41	e 12 21	− 3	e 22 42	[− 3]	e 34·4	—
Stuttgart	84·0	41	e 12 27	− 1	e 22 38	[−14]	e 38·4	46·4
Piacenza	84·9	43	20 54	?	—	—	—	45·4
Copenhagen	85·1	34	12 36	+ 2	23 7	− 2	40·4	—
Triest	87·6	44	e 11 26	−80	i 23 11	[− 6]	—	48·2
Pulkovo	93·1	27	e 13 12	0	e 25 38	PS	e 41·4	50·7
Ksara	107·4	52	—	—	e 28 1	PS	—	59·9
Baku	113·7	38	—	—	e 29 25	PS	52·4	—
Tashkent	123·2	25	e 19 18	[+25]	e 26 12	[+12]	51·1	65·2
Chiufeng	128·1	343	e 22 23	?	—	—	e 59·8	80·5

Additional readings and note :—
San Juan iPP = +5m.34s.
Huancayo e = +4m.50s., ePP = +6m.4s., e = +8m.8s.
La Paz iSE = +11m.30s.
Charlottesville eSS = +12m.34s.
St. Louis esSE = +10m.51s., iSSE = +13m.13s., isSSE = +13m.46s.
Florissant epPN = +6m.35s., ePPN = +7m.8s., isSE = +11m.54s., iN = +12m.26s., iE = +12m.40s., iSSE = +13m.16s., isSSE = +13m.50s.
Philadelphia eSS = +13m.3s.
Pennsylvania P has been *increased* by 10m.
Chicago eSS = +13m.53s.
Ann Arbor e?N = +8m.48s., e?E = +9m.18s. = P_cP − 3s., eE = +15m.0s., eN = +16m.12s.
Toronto PP = +8m.3s. ; T_o = 4h.43m.9s.
Oak Ridge iZ = +7m.2s.
Tucson ePP = +8m.10s., eSS = +15m.14s.
Vermont e = +7m.53s., iPP = +8m.33s., e = +15m.50s.

Continued on next page.

Ottawa PP = +8m.38s. ; T_0 = 4h.43m.36s.
Bozeman eS_0S = +17m.47s. = SS + 15s.
Ukiah e = +18m.36s. = SS − 1s.
Sitka eSS = +22m.49s., e = +26m.36s.
Rathfarnham Castle SSS = +31m.44s.
Uccle SS = +27m.56s.
Strasbourg ePS = +23m.31s.
Stuttgart ePP = +15m.36s., ePS = +23m.43s. ; T_0 = 4h.43m.40s.
Copenhagen +22m.54s.
Triest i = +23m.31s. = S − 2s., e = +24m.32s. = PS + 9s.
Pulkovo e = +17m.1s. = PP + 11s., +20m.28s., and +30m.30s. = SS + 6s.
Ksara ePP = +18m.37s.
Tashkent e = +29m.30s., +32m.0s., and +36m.0s.
Long waves at Alicante, Cheb, Prague, San Fernando, Sverdlovsk, and Vladivostok.

July 26d. 8h. 3m. 33s. Epicentre 48°·7N. 145°·3E. N.1.
A = −·543, B = +·376, C = +·751 ; D = +·569, E = +·822 ;
G = −·618, H = +·428, K = −·660.

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.
Ootomari		+1·1	2·6	225	1 13	+20	2 5	+30	—	—
Haboro		+0·3	5·0	213	1 2	−13	2 1	−14	—	—
Asahigawa		+0·2	5·3	205	1 26	+ 8	2 34	+14	—	—
Nemuro		+0·2	5·4	177	1 25	+ 5	2 28	+ 5	—	—
Sapporo		0·0	6·2	210	1 34	+ 6	2 37	− 1	—	—
Urakawa		0·0	6·8	196	1 41	+ 4	2 56	+ 3	—	—
Muroran		−0·1	7·1	209	1 40	+ 1	3 0	+ 1	—	—
Aomori		−0·3	8·4	205	1 58	+ 3	3 27	+ 1	—	—
Morioka		−0·4	9·5	200	2 7	− 2	3 47	− 4	—	—
Akita		−0·4	9·7	204	2 11	0	3 59	+ 3	—	—
Mizusawa	N.	−0·5	10·0	199	e 2 13	− 1	i 3 53	− 8	—	—
Sendai		−0·6	10·9	199	2 24	− 1	4 13	− 8	—	—
Vladivostok		−0·7	11·0	245	i 2 29	+ 4	i 4 17	− 4	5·9	14·6
Hukusima		−0·8	11·5	199	2 26	− 5	4 28	− 3	—	—
Niigata		−0·8	11·7	206	2 36	+ 3	4 37	+ 1	—	—
Wazima		−1·0	12·8	210	2 48	+ 2	4 59	+ 1	—	—
Utunomiya		−1·0	12·8	200	2 43	− 3	4 50	− 8	—	—
Tukubasan		−1·1	13·0	199	2 47	0	4 56	− 4	—	—
Kakioka		−1·1	13·0	200	2 47	0	—	—	—	—
Nagano		−1·1	13·1	203	2 51	+ 3	5 5	+ 2	—	—
Maebasi		−1·1	13·1	203	2 49	+ 1	5 2	− 1	—	—
Tyosi		−1·1	13·4	196	2 52	0	5 4	− 6	—	—
Toyama		−1·1	13·4	208	2 52	0	5 10	0	—	—
Kumagaya		−1·1	13·6	202	2 51	− 4	5 5	−10	—	—
Tokyo		−1·1	13·6	198	2 52	− 3	5 12	− 3	—	—
Yokohama		−1·1	13·9	200	2 57	− 2	5 15	− 7	—	—
Misima		−1·2	14·4	201	3 4	− 1	5 28	− 4	—	—
Mera		−1·2	14·4	199	3 2	− 3	5 27	− 5	—	—
Numadu		−1·2	14·4	203	3 4	− 1	5 29	− 3	—	—
Gihu		−1·3	14·7	207	3 5	− 2	5 34	− 3	—	—
Nagoya		−1·3	14·8	207	3 8	− 1	5 35	− 4	—	5·7
Hikone		−1·4	15·0	210	3 6	− 4	5 37	− 4	—	—
Omaesaki		−1·4	15·0	202	3 11	+ 1	5 42	+ 1	—	—
Hamamatu		−1·4	15·1	210	3 10	− 1	5 40	− 4	—	—
Toyooka		−1·4	15·2	214	e 3 14	+ 1	5 47	+ 1	—	—
Kameyama		−1·4	15·3	208	3 13	− 1	5 46	− 3	—	—
Kobe		−1·4	15·9	211	3 20	− 2	5 55	− 8	—	6·0
Hatidyozima		−1·5	16·1	200	3 20	− 3	6 0	− 5	—	—
Wakayama		−1·5	16·3	209	3 23	− 3	6 4	− 6	—	—
Sumoto		−1·5	16·3	210	3 23	− 3	6 3	− 7	—	6·1
Siomisaki		−1·5	16·8	210	3 27	− 5	6 12	−10	—	—
Heizyo		−1·6	17·0	246	e 6 27	S	(e 6 27)	+ 3	—	—
Keizyo		−1·6	17·3	239	e 3 44	+ 6	6 29	− 2	—	—
Matuyama		−1·7	17·5	216	3 38	− 1	6 30	− 4	—	—
Koti		−1·7	17·5	216	3 37	− 2	6 27	− 7	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Taikyu	−1·7	17·7	228	3 40	− 1	6 39	+ 1	—	—
Yingkow	−1·8	18·1	252	3 48	+ 3	6 49	+ 4	—	—
Husan	−1·8	18·1	225	e 3 45	0	6 45	0	—	—
Hukuoka B	−1·8	18·8	223	e 3 52	− 2	e 6 50	−12	—	—
Kumamoto	−1·9	19·2	221	3 56	− 2	7 5	− 4	—	—
Nagasaki	−1·9	19·7	224	3 59	− 5	7 8	−12	—	—
Miyazaki	−1·9	19·8	218	4 1	− 4	7 7	−15	—	—
Chiufeng	−2·2	22·4	258	4 24k	− 8	6 49	?	9·5	10·3
Nanking	−2·6	25·9	242	e 4 56	− 8	i 8 49	−21	11·1	—
Hong Kong	−3·7	36·1	234	11 27	S	(11 27)	−14	—	—
Phu-Lien	−4·1	41·5	243	—	—	12 27?	−30	—	—
Sitka	−4·4	45·8	47	—	—	i 14 10	+13	e 20·0	—
Frunse	−4·6	47·8	292	e 8 7	+ 9	—	—	—	—
Sverdlovsk	−4·7	48·5	315	i 8 13	+10	i 14 43	+10	20·5	—
Andijan	−4·8	50·4	290	e 8 24	+ 6	e 15 5	+ 6	—	—
Tchimkent	−4·9	51·2	295	e 8 59	+36	e 16 0	+51	—	—
Tashkent	−5·0	52·0	293	i 7 11	−78	i 14 21	−58	—	34·6
Samarkand	−5·2	54·4	292	e 8 32	−13	—	—	—	—
Pulkovo	−5·5	59·4	328	9 29	+ 8	e 17 25	+31	20·5	24·6
Moscow	−5·5	59·5	322	9 28	+ 7	e 17 14	+18	e 27·9	35·8
Scoresby Sund	−5·5	60·4	357	i 9 38	+10	17 24	+16	—	—
Ukiah	−5·6	62·6	60	—	—	17 47	+11	—	—
Berkeley	−5·7	64·0	60	e 9 57	+ 5	—	—	—	—
Grozny	−5·7	64·2	308	e 10 2	+ 8	—	—	—	—
Batavia	−5·7	64·3	225	17 45	S	(17 45)	−12	—	—
Piatigorsk	−5·7	65·1	310	—	—	e 19 16	+68	—	—
Tiflis	−5·7	65·8	307	10 9	+ 4	i 18 24	+ 7	25·5	—
Tinemaha	−5·8	66·8	60	i 10 17	+ 6	e 18 38	+ 9	—	—
Erevan	−5·8	67·0	306	e 10 15	+ 2	—	—	—	—
Copenhagen	−5·8	68·4	335	10 27	+ 5	19 42	+52	—	—
Simferopol	−5·8	68·7	316	e 10 31	+ 6	—	—	—	—
Pasadena	−5·8	68·9	62	i 10 27a	+ 1	i 18 59	+ 3	—	—
Mount Wilson	−5·8	68·9	61	i 10 28	+ 2	i 19 0	+ 4	—	—
Yalta	−5·8	69·1	316	e 10 30	+ 3	—	—	—	—
Sebastopol	−5·8	69·3	316	e 10 32	+ 3	—	—	—	—
Riverside	−5·8	69·5	61	i 10 29	− 1	—	—	—	—
La Jolla	−5·9	70·4	62	i 10 36	+ 1	—	—	—	—
Hamburg	−5·9	71·0	335	e 10 41	+ 2	—	—	—	—
Jena	−5·9	72·8	332	i 10 52	+ 1	—	—	—	—
Vienna	−5·9	73·4	328	i 10 58	+ 3	—	—	—	—
De Bilt	−5·9	73·6	337	i 10 57	+ 1	—	—	e 35·5	—
Tucson	−6·0	74·5	58	e 10 59	− 2	e 20 5	+ 2	—	—
Uccle	−6·0	75·0	336	e 11 7	+ 2	e 21 30	?	—	—
Sofia	−6·0	75·3	321	e 11 9	+ 3	e 20 13	0	—	—
Stuttgart	−6·0	75·4	332	e 11 7	0	e 20 12	− 2	—	—
Zagreb	−6·0	75·6	327	e 11 10	+ 2	—	—	—	—
Strasbourg	−6·1	76·0	334	11 16k	+ 6	e 20 43	PS	e 31·5	—
Ksara	−6·1	76·4	307	i 11 10k	− 3	20 27	+ 2	—	—
Triest	−6·1	76·6	328	i 11 13	− 1	e 20 17	−10	—	—
Zurich	−6·1	76·8	333	e 11 16a	+ 1	—	—	—	—
Chur	−6·1	77·0	332	e 11 15	− 1	—	—	—	—
Basle	−6·1	77·0	333	e 11 16	0	—	—	—	—
Paris	−6·1	77·3	337	11 18	0	20 45	+10	33·5	—
Neuchatel	−6·1	77·6	333	e 11 20	0	—	—	—	—
Prato	−6·2	79·1	331	e 11 27	− 1	19 51	−65	—	—
Florence	−6·2	79·2	328	e 11 27	− 2	19 57	−60	—	—
Ottawa	−6·2	79·3	28	—	—	e 20 52	− 6	e 32·5	—
Florissant	−6·2	79·6	41	e 11 29	− 2	i 20 56	− 5	—	—
St. Louis	−6·2	79·8	41	e 11 30	− 2	i 20 58	− 6	—	—
Oak Ridge	−6·3	83·2	26	i 11 46	− 5	—	—	—	—
Philadelphia	−6·4	84·4	28	e 11 51	− 6	e 21 23	−31	—	—
Granada	−6·5	89·8	337	e 12 18	− 7	—	—	—	—
San Fernando	−6·5	91·2	339	—	—	22 14	−51	—	—

For Notes see next page.

NOTES TO JULY 26d. 8h. 3m. 33s.

Additional readings and notes :—
Mizusawa iSE = +3m.56s.
Nagoya PE = +3m.10s., S_cS = +14m.19s.
Toyooka PE = +3m.17s.
Kobe iZ = +3m.23s., SE = +5m.57s.
Nagasaki S = +7m.18s.
Chiufeng i = +4m.44s. = PP − 1s., iEZ = +6m.40s., iSE = +7m.54s., iSZ = +8m.9s.
Hong Kong S? = +16m.3s.
Sitka eSS = +16m.55s.
Tashkent i = +7m.31s., iSS = +16m.33s., e = +20m.57s., i = +27m.26s. and +28m.23s.
Pulkovo e = +11m.6s. = PP − 9s., +11m.49s., +13m.13s., and +15m.29s., i = +18m.29s.
Moscow e = +11m.12s. = PP − 4s., +18m.29s., and +24m.36s.
Scoresby Sund i = +11m.18s. = PP − 7s. and +18m.41s., e = +22m.3s.
Ukiah eSP = +18m.55s., esS = +20m.45s.
Tiflis pP = +11m.2s., ePPP = +14m.31s., sS = +19m.21s., e = +21m.31s.
Copenhagen +22m.21s.
Pasadena iZ = +12m.7s.
Riverside eEZ = +19m.1s.
Hamburg eE = +33m.27s.?
Jena iE = +10m.55s.
De Bilt eZ = +12m.41s., iZ = +13m.53s.
Tucson esS = +22m.59s.
Sofia e = +12m.56s.
Stuttgart epP = +12m.50s., esP = +13m.35s., ePP = +14m.8s., ePPP = +15m.33s., eS = +20m.30s., e = +31m.27s. ?
Strasbourg e = +13m.1s., ePP = +13m.50s., i = +14m.19s.
Ksara ipP = +12m.54s., PP = +14m.10s.
Triest i = +20m.39s., e = +23m.39s.
Paris PP = +13m.3s.
Ottawa e = +23m.55s.
Florissant eEN = +23m.57s.
Oak Ridge iZ = +11m.56s., +12m.3s., and +12m.8s., iE = +12m.11s., iEN = +12m.18s., iZ = +12m.24s., e = +12m.33s., iZ = +13m.35s., eZ = +13m.42s.
Philadelphia e = +21m.32s., esS = +24m.45s.
Granada PP = +16m.9s.
Long waves at Graz.

July 26d. 9h. 10m. 11s. Epicentre 33°·1N. 101°·0E. N.3.
(attributed to epicentre of larger shock at 10h.).

A = −·160, B = +·822, C = +·546 ; D = +·982, E = +·191 ;
G = −·104, H = +·536, K = −·838.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng	14·0	56	—	—	e 5 23	−28	i 7·1	7·8
Nanking	15·0	89	e 3 26	− 2	e 7 12	+57	i 8·2	10·0
Calcutta	15·4	232	e 6 36	S	(e 6 36)	+12	9·2	11·1
Agra	20·7	260	4 30	− 7	8 17	− 3	—	13·2
Frunse	22·9	302	e 5 5	+ 5	—	—	e 12·8	—
Andijan	24·1	297	e 5 4	+ 7	—	—	—	—
Vladivostok	26·1	57	—	—	e 9 20	−40	14·1	16·1
Tashkent	26·4	297	e 4 39	−54	e 9 5	−60	e 12·9	16·7
Samarkand	28·0	293	e 5 47	0	—	—	—	—
Bombay	28·9	247	—	—	e 10 49?	+ 2	e 14·8	—
Sverdlovsk	36·2	323	e 6 55	− 5	e 12 42	+ 3	17·8	—
Moscow	48·5	317	—	—	e 13 16	?	e 20·3	26·2
Pulkovo	52·3	323	e 9 18	+ 9	e 15 7	−86	e 22·8	28·6

Additional readings :—
Chiufeng iNZ = +6m.9s.
Nanking eE = +7m.39s., e = +9m.4s.
Calcutta S = +8m.28s.
Agra SS = +9m.4s.
Tashkent e = +9m.13s. and +9m.35s., i = +14m.9s.
Long waves also recorded at Dehra Dun, Medan, Hyderabad, Phu-Lien, Hong Kong, Tiflis, Scoresby Sund, and European stations.

July 26d. 10h. 32m. 26s. Epicentre 33°·1N. 101°·0E. (as at 9h.). R.1.

A = −·160, B = +·822, C = +·546; D = +·982, E = +·191; G = −·104, H = +·536, K = −·838.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	13·3	156	e 3 5	− 1	6 34?	S*	7·6	8·0
Chiufeng	14·0	56	e 3 3	−12	i 5 50	− 1	6·2	9·3
Nanking	15·0	89	i 3 26	− 2	6 22	+ 7	7·8	8·6
Calcutta	15·4	232	e 2 54	?	6 42	+18	8·4	11·0
Hong Kong	15·9	130	3 25	−15	6 50	+14	8·6	9·1
Taihoku	19·6	108	8 23	S	10 35	L	(10·6)	—
Dehra Dun	19·7	269	7 54	S	(7 54)	− 6	11·1	11·6
Arisan	19·9	114	e 4 32	+ 3	7 45	−19	—	—
Karenko	20·2	113	e 4 33	+ 1	11 16	L	(11·3)	—
Taito	20·5	117	e 4 44	+ 9	10 54	L	(10·9)	—
Kosyun	20·7	118	e 4 38	+ 1	10 36	L	(10·6)	—
Agra	20·7	260	i 4 28	− 9	i 8 20	0	—	13·8
Heizyo	20·8	65	4 36	− 2	8 27	+ 5	11·3	14·8
Almata	21·3	307	e 5 3	PP	—	—	12·6	—
Zinsen	21·3	70	e 4 40	− 3	e 8 42	+10	10·6	—
Keizyo	21·6	70	4 46	0	8 46	+ 8	11·1	—
Taikyu	22·9	76	5 1	+ 1	9 16	+13	13·5	—
Frunse	22·9	302	e 5 2	+ 2	e 9 14	+11	e 12·5	—
Husan	23·2	77	5 0	− 3	9 24	+16	—	—
Andijan	24·1	297	e 5 15	+ 4	e 13 14	L	(e 13·2)	—
Nagasaki	24·1	82	5 13	+ 2	9 29	+ 4	—	—
Hukuoka	24·4	80	—	—	e 9 43	+13	—	—
Hukuoka B	24·5	80	e 5 13	− 2	13 25	L	(13·4)	—
Kumamoto	24·8	83	5 20	+ 2	—	—	—	—
Miyazaki	25·6	86	5 28	+ 3	10 6	+15	—	—
Hyderabad	25·6	237	5 29	+ 4	9 53	+ 2	13·7	16·5
Hamada	25·7	77	5 27	+ 1	—	—	—	—
Vladivostok	26·1	57	e 5 29	− 1	i 10 23	+23	13·5	16·7
Tchimkent	26·3	300	e 5 35	+ 3	—	—	—	—
Tashkent	26·4	297	i 4 31	−62	i 9 20	−45	13·7	20·7
Samarkand	28·0	293	e 5 52	+ 5	10 52	+20	e 15·8	—
Sumoto	28·1	75	e 5 53	+ 5	—	—	17·3	19·0
Kobe	28·2	75	—	—	e 11 1	+26	e 15·0	20·0
Bombay	28·9	247	—	—	i 10 43	− 4	—	16·0
Kameyama	29·3	76	5 59	0	10 44	− 9	—	—
Gihu	29·5	75	5 57	− 4	10 47	− 9	—	—
Medan	29·6	185	i 6 1	0	e 10 55	− 3	—	—
Nagano	30·5	74	6 27	+18	—	—	—	—
Oiwake	30·8	74	6 20	+ 8	—	—	—	—
Kohu	30·9	73	6 17	+ 4	—	—	—	—
Macbasi	31·2	72	6 19	+ 3	—	—	—	—
Colombo	32·7	222	13 59	?	—	—	—	27·0
Sverdlovsk	36·2	323	i 6 59	− 1	12 38	− 1	18·7R	20·1
Batavia	39·7	171	7 28	− 1	13 35	+ 3	—	—
Baku	41·0	295	e 7 43	+ 3	e 14 33	+42	22·9	27·0
Grozny	43·8	301	e 8 6	+ 3	e 14 37	+ 4	—	—
Tiflis	44·8	299	e 8 8	− 3	e 14 46	− 1	18·1	—
Moscow	48·5	317	8 38	− 2	15 40	0	20·1	27·9
Simferopol	51·8	304	e 9 7	+ 2	e 16 29	+ 4	e 21·6	—
Yalta	51·8	304	e 9 5	0	—	—	e 26·6	—
Pulkovo	52·3	323	9 8	− 1	16 30	− 3	27·6R	30·8
Ksara	53·4	290	e 9 19	+ 2	e 16 51	+ 4	—	—
Königsberg	58·3	318	i 9 31	−21	e 21 47	SS	—	35·6
Sofia	59·9	304	—	—	e 18 14	− 1	e 33·3	—
Copenhagen	62·4	321	—	—	18 50	+ 3	33·6	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna	62·6	312	e 10 21	− 1	—	—	e 31·6	34·6
Prague	63·2	315	—	—	e 18 41	−16	—	19·2
Zagreb	63·7	309	e 10 34	+ 4	—	—	e 30·6	34·6
Leipzig	64·0	315	—	—	e 25 40	SSS	—	34·6
Cheb	64·4	315	—	—	e 25 34?	SSS	e 33·6	35·1
Hamburg	64·5	319	—	—	e 27 52	?	e 33·6	35·6
Triest	65·3	310	e 10 36	− 5	e 18 57	−27	e 31·6	35·8
Stuttgart	66·9	314	e 10 44	− 7	e 19 41	− 2	e 32·6	36·1
Chur	67·4	314	e 10 50	− 4	—	—	—	—
Florence	67·6	309	7 34	?	—	—	31·6	35·6
De Bilt	67·7	319	—	—	e 19 54	+ 1	e 31·6	37·0
Strasbourg	67·8	315	—	—	e 19 34?	−20	e 30·6	36·6
Zurich	67·8	314	e 12 34	?	—	—	—	—
Piacenza	68·1	312	17 54	?	—	—	36·1	43·7
Scoresby Sund	68·7	342	—	—	20 8	+ 3	33·6	—
Uccle	68·8	318	—	—	e 20 12	+ 5	32·6	37·6
Paris	70·8	316	—	—	28 34?	?	35·6	38·6
Stonyhurst	71·0	323	—	—	e 30 4	?	38·6	40·6
Kew	71·1	320	—	—	e 28 34?	?	33·6	—
Oxford	71·4	320	—	—	e 20 40	+ 2	e 34·6	45·0
Tananarive	72·9	233	—	—	25 57	SS	39·4	49·5
Sitka	78·1	27	—	—	e 31 4	?	e 36·1	—
Granada	80·7	309	e 13 52	?	—	—	43·5	53·7
San Fernando	83·3	309	—	—	e 28 0	SS	42·6	—
Philadelphia	106·9	357	—	—	e 27 52	PS	52·0	—

Additional readings :—
Phu-Lien ePP = +6m.0s.
Chiufeng iEN = +4m.10s.
Nanking PPE = +3m.52s., iE = +6m.36s., iZ = +7m.36s.
Calcutta PP = +3m.23s.
Hong Kong SS? = +7m.22s.
Agra PP = +4m.46s., SS = +9m.8s., S* = +10m.7s., S_g = +10m.58s.
Frunse e = +7m.4s.
Hukuoka eN = +13m.38s., eE = +15m.15s.
Sumoto ePN = +6m.3s., eN = +14m.54s., eZ = +15m.1s., eE = +15m.39s.
Kobe eN = +11m.14s., eE = +12m.35s., eN = +13m.16s.
Bombay eEN = +7m.34s.
Medan iN = +11m.33s., i = +16m.33s. = S_cS − 9s., iN = +17m.9s.
Sverdlovsk L_q = +17m.58s.
Batavia iE = +21m.45s., eN = +22m.52s.
Tiflis e = +8m.19s., ePPP = +10m.18s., e = +16m.12s.
Pulkovo L_q = +24m.4s.
Ksara PS = +17m.13s.
Königsberg eE = +10m.27s., eN = +10m.31s. = P_cP − 16s., +13m.30s., e = +13m.36s., eN = +22m.31s., eE = +22m.58s. and +26m.25s.
Copenhagen +26m.4s.
Prague e = +18m.57s.
Zagreb ePPP = +14m.21s.
Leipzig eZ = +29m.34s.?, +32m.16s., and +33m.34s.
Triest e = +19m.58s. and +21m.28s.
Stuttgart eSSS = +27m.40s.
Strasbourg e = +22m.34s.? and +27m.34s.?
Uccle e = +27m.47s.
Oxford e = +28m.29s.
Tananarive E = +37m.19s.
San Fernando eSSS = +39m.11s.
Philadelphia e = +33m.37s. = SS + 1s.
Long waves at Durham, Edinburgh, Rathfarnham Castle, Bergen, Hokoto, Taityu, Takao, Toyooka, and other European and American stations.

July 26d. Readings also at 0h. (Wellington), 2h. (Batavia and La Paz), 4h. (Kobe, Sumoto, Andijan, Frunse, Samarkand, Tashkent, and Tchimkent), 5h. (Almeria and Tacubaya), 6h. (Cheb and Hong Kong), 8h. (Nagoya and Scoresby Sund), 9h. (Tortosa), 10h. (Prague), 11h. (Perth, Mizusawa, and Tananarive), 12h. (Chiufeng (2)), 13h. (Chiufeng), 16h. (Chiufeng), 18h. (Alicante, Nagoya, and Sumoto), 19h. (Mizusawa, Nagoya, Tokyo, Ksara, La Plata, and Santiago), 21h. (Oak Ridge), 22h. (Erevan, Grozny, Tiflis, Sotchi, and Oak Ridge), 23h. (Erevan, Sverdlovsk, Tashkent, Hong Kong, Nanking, Chiufeng, Vladivostok, Berkeley, Branner, and Lick).

July 27d. 3h. 34m. 41s. Epicentre 12°·5N. 124°·5E. (as on 1923 July 19d.). X.

A = −·553, B = +·805, C = +·216; D = +·824, E = +·566; G = −·123, H = +·178, K = −·976.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	4·0	302	1 32	?	2 40	?	—	—
Nanking	20·3	346	e 4 33	0	e 8 55	+43	e 11·9	14·6
Chiufeng	28·6	347	—	—	e 10 43	+ 1	—	—
Vladivostok	31·3	11	e 6 29	+12	—	—	—	—
Tashkent	55·9	313	e 10 31	(− 7)	e 17 39	+18	e 28·4	33·4
Sverdlovsk	65·4	328	10 40	− 1	19 28	+ 3	—	—
Ksara	82·0	303	e 12 17	− 1	e 22 36	− 1	—	49·8

Additional readings :—
Tashkent e = +23m.49s.
Ksara ePP = +15m.27s.
Long waves at Hong Kong and other European stations.

July 27d. 10h. 13m. 10s. Epicentre 48°·7N. 145°·3E. (as on 26d. 8h.). X.

A = −·543, B = +·376, C = +·751.

A *depth* of focus 0·050 has been retained.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa N.	−0·5	10·0	199	i 2 16	+ 2	i 4 6	+ 5	—	—
Vladivostok	−0·7	11·0	245	e 2 33	+ 8	i 4 35	+14	—	9·9
Nagoya	−1·3	14·8	207	3 10	+ 1	i 5 46	+ 7	—	5·9
Keizyo	−1·6	17·3	239	i 3 41	+ 3	i 6 44	+13	—	—
Husan	−1·8	18·1	225	i 3 46	+ 1	6 52	+ 7	—	—
Nagasaki	−1·9	19·7	224	i 4 2	− 2	7 17	− 3	—	—
Chiufeng	−2·2	22·4	258	i 4 29k	− 3	8 4	− 6	—	10·6
Nanking	−2·6	25·9	242	4 58	− 6	—	—	—	—
Almata	−4·5	46·2	288	e 7 59	+13	—	—	—	—
Frunse	−4·6	47·8	292	e 8 0	+ 2	e 14 30	+ 6	—	—
Sverdlovsk	−4·7	48·5	315	i 8 10	+ 7	i 14 40	+ 7	25·8	—
Andijan	−4·8	50·4	290	e 8 5	−13	—	—	—	—
Tashkent	−5·0	52·0	293	e 8 36	+ 7	i 15 24	+ 5	e 24·4	30·8
Samarkand	−5·2	54·4	292	e 8 53	+ 8	e 15 58	+ 8	—	—
Pulkovo	−5·5	59·4	328	9 26	+ 5	i 16 58	+ 4	24·3	—
Moscow	−5·5	59·5	322	—	—	i 16 53	− 3	—	—
Tiflis	−5·7	65·8	307	10 7	+ 2	i 18 19	+ 2	—	—
Tinemaha	−5·8	66·8	60	i 10 5a	− 6	—	—	—	—
Erevan	−5·8	67·0	306	9 50	−23	—	—	—	—
Simferopol	−5·8	68·7	316	e 19 24	?	—	—	—	—
Mount Wilson	−5·8	68·9	61	i 10 17a	− 9	—	—	—	—
Pasadena	−5·8	68·9	62	i 10 16a	−10	—	—	—	—
Yalta	−5·8	69·1	316	e 10 24	− 3	e 18 54	− 5	—	—
La Jolla	−5·9	70·4	62	i 10 25a	−10	—	—	—	—
Ksara	−6·1	76·4	307	e 11 8	− 5	20 31	+ 6	—	—
Oak Ridge	−6·3	83·2	26	i 11 37	−14	—	—	—	—

Additional readings :—
Mizusawa iPE = +2m.18s.
Nagasaki SN = +7m.24s.
Nanking e? = +11m.50s'?
Tashkent i = +17m.28s., e = +22m.8s.
Moscow e = +18m.48s.
Tiflis e = +19m.15s. and +27m.55s.
Tinemaha iEZ = +11m.48s.
La Jolla iZ = +12m.9s.
Ksara epP = +12m.0s.

July 27d. 17h. 1m. 27s. (I) Epicentre 34°·8N. 140°·2E. X.
19h. 24m. 53s. (II) (as on 1928 May 17d.). X.

Tokyo gives for I 34°·9N. 140°·2E.
II 34°·9N. 140°·1E.

A = −·631, B = +·526, C = +·571.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
I Tokyo	0·9	336	0 13	0	0 25	+ 2	1·1
II	0·9	336	0 12	− 1	0 25	+ 2	0·6
I Nagoya	2·7	278	0 42	P*	1 22	S_g	1·7
II	2·7	278	e 0 39	0	e 1 21	S*	1·9
I Kobe	4·1	270	e 1 56	S_g	—	—	—
II	4·1	270	—	—	e 1 54	S_g	—
I Mizusawa E.	4·4	9	e 1 3	0	i 2 7	S*	—
I N.	4·4	9	e 1 5	+ 2	e 2 5	S*	—
II	4·4	9	e 1 10	P*	i 2 13	S_g	—
I Sumoto	4·4	265	e 1 54	S	(e 1 54)	+ 1	—
II	4·4	265	e 1 46	?	—	—	—

Additional readings :—
Kobe I ePN = +1m.53s., eZ = +2m.0s. = S* +0s., eN = +2m.6s., eE = +3m.19s.
Sumoto I ePN = +1m.56s., eN = +4m.13s., eE = +4m.44s., II ePN = +1m.50s., eN = +3m.12s.
Long waves at Chiufeng I, Nanking I.

July 27d. Readings also at 0h. (Chiufeng (2)), 1h. (Mizusawa, Nagoya, and Wellington), 2h. (Almata, Andijan, Frunse, Samarkand, and Tchimkent), 3h. (Florence, Tacubaya, Pasadena, and Mount Wilson), 4h. (Wellington), 5h. (Chiufeng and Medan), 7h. (Chiufeng), 8h. (Sverdlovsk (2), Tashkent, and Vladivostok), 10h. (Mizusawa and La Paz), 12h. (Agra, Bombay, Hyderabad, Kodaikanal, Baku, Ksara, Pulkovo, Sverdlovsk, Tashkent, and Tiflis), 13h. (Medan), 14h. (Kobe, Nagoya, Sumoto, and La Paz), 16h. (Andijan, Sverdlovsk, Tashkent, Chiufeng, Hong Kong, Nanking, and Vladivostok), 17h. (Andijan, Copenhagen, Pulkovo, Samarkand, Stuttgart, Sverdlovsk, and Tashkent), 19h. (Sverdlovsk, Tashkent, and Vladivostok), 21h. (Malabar), 23h. (Amboina).

July 28d. 5h. 23m. 53s. Epicentre 36°·0N. 71°·0E. (as on 1931 Aug. 15d.). R.2.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	4·8	320	1 10	+ 2	i 2 12	+ 9	—	2·7
Andijan	4·9	13	1 12	+ 2	i 1 54	−11	—	2·5
Tchimkent	6·4	350	1 28	− 3	2 28	−15	—	3·3
Frunse	7·4	22	1 40	− 5	2 54	−15	—	3·9
Dehra Dun	8·1	135	1 57	+ 2	3 27	+ 1	—	6·1
Agra	10·7	143	2 32	+ 1	4 27	− 4	—	—
Baku	17·1	291	3 58	+ 3	7 14	+10	9·3	—
Bombay	17·2	174	i 4 6	PP	i 7 23	SS	—	—
Hyderabad	19·7	158	4 24	− 2	8 10	+10	9·6	12·4
Calcutta	20·2	127	4 34	+ 2	8 16	+ 6	9·9	—
Grozny	20·7	299	i 4 38	+ 1	e 8 30	+10	—	—
Tiflis	21·1	293	i 4 44	+ 3	i 8 36	+ 8	13·3	—
Erevan	21·2	289	e 4 37	− 5	e 8 34	+ 4	—	—
Sverdlovsk	21·9	345	i 4 47	− 3	8 37	− 7	13·1	—
Piatigorsk	22·7	299	e 4 59	+ 1	—	—	—	—
Kodaikanal	26·4	166	—	—	i 10 57	SS	12·7	14·5
Ksara	28·7	275	i 5 57a	+ 4	10 50	+ 7	—	—
Yalta	29·1	298	e 5 56	− 1	e 11 40	+50	—	—
Simferopol	29·2	299	e 5 58	0	e 11 44	+53	—	—
Moscow	30·0	320	6 1	− 4	e 10 52	−12	e 12·8	17·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo	35·3	325	6 48	− 4	12 14	−10	17·1	19·1
Chiufeng	35·4	67	e 7 12	+19	e 12 12	−15	—	21·1
Sofia	37·0	295	e 7 9	+ 3	—	—	—	—
Königsberg	39·0	315	—	—	e 16 15	?	e 24·6	—
Nanking	39·4	80	e 7 7	−20	i 13 0	−27	—	—
Hong Kong	39·7	97	—	—	13 27	− 5	—	17·0
Triest	43·0	301	i 7 58	+ 1	i 14 24	+ 3	—	25·1
Copenhagen	43·7	317	i 7 59	− 3	14 23	− 8	—	—
Cheb	43·8	308	e 8 7?	+ 4	—	—	—	—
Leipzig	43·8	309	e 7 57	− 6	—	—	—	—
Jena	44·0	308	e 8 7	+ 2	—	—	—	—
Hamburg	45·1	313	i 8 11a	− 3	e 18 19	(+ 6)	—	23·7
Prato	45·6	300	e 8 18	0	14 49	−10	—	—
Stuttgart	46·1	309	8 19	− 2	e 14 57	− 9	—	—
Strasbourg	47·1	308	e 8 47	+18	e 15 23	+ 3	e 27·1	—
De Bilt	48·2	312	i 9 10	+32	i 15 31	− 5	—	—
Uccle	48·8	309	e 8 40	− 2	e 15 39	− 5	—	—
Paris	50·4	307	e 8 50	− 4	—	—	31·1	—
Scoresby Sund	57·3	338	10 31	(−12)	17 43	+ 3	—	—
Granada	58·2	297	e 10 29	(−18)	—	—	—	—

Additional readings :—
Samarkand iP* = +1m.16s., iP_g = +1m.23s., PP = +1m.28s., i = +1m.38s. and +1m.51s.
Andijan P* = +1m.16s., iP_g = +1m.24s., i = +1m.36s., PsS = +1m.46s., S* = +1m.57s., S_g = +2m.11s.
Tchimkent iP* = +1m.38s., iP_g = +1m.49s., iPP = +1m.58s., i = +2m.10s., eS_g = +2m.46s.
Frunse i = +1m.50s., iPP = +2m.10s., i = +2m.34s.
Agra P_g = +3m.25s.
Tiflis e = +5m.11s., +5m.58s., and +9m.22s.
Sverdlovsk L_q = +11m.25s.
Kodaikanal e = +7m.2s.
Ksara ipP = +6m.30s., sP = +6m.52s., PP = +7m.7s., P_cP = +8m.31s., sS = +11m.54s., P_cS = +12m.22s.
Chiufeng iN = +12m.53s.
Sofia e = +9m.6s.
Triest PP = +9m.41s., SS = +18m.35s.
Copenhagen +9m.48s. = P_cP − 5s., +10m.17s., SS = +17m.43s.
Leipzig iE = +8m.5s., eE = +8m.9s., iE = +8m.22s., eE = +9m.38s. = PP − 1s., iE = +10m.23s.
Stuttgart epP = +8m.52s., ePP = +10m.9s., e = +12m.28s., eSS = +18m.29s.
Strasbourg ePP = +10m.24s.
De Bilt e = +19m.7s.?
Granada e = +8m.18s.
Long waves at Vladivostok and Phu-Lien.

July 28d. 14h. 7m. 9s. Epicentre 46°·5N. 6°·5E. (as on 1929 March 1d.). X.

A = +·684, B = +·078, C = +·725.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	0·6	31	e 0 7	− 2	e 0 16	+ 1
Basle	1·3	37	e 0 19	+ 1	e 0 37	S*
Zurich	1·7	59	e 0 24	0	e 0 44	0
Chur	2·1	80	—	—	e 0 55	+ 1

Long waves at Granada.

July 28d. Readings also at 1h. (Andijan), 3h. (Apia), 4h. (Riverview), 5h. (Basle, Chur, Neuchatel, and Zurich), 6h. (Baku, Ksara, Sverdlovsk, Tiflis, Vladivostok, Chiufeng, Hong Kong, Berkeley, Branner, Lick, and Manila), 7h. (Copenhagen, Moscow, Pulkovo, Stuttgart, and Amboina), 8h. (Sverdlovsk, Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, Santa Barbara, Tinemaha, Mizusawa, and Nagoya), 10h. (Andijan, Frunse, and Tchimkent), 12h. (Hukuoka B), 14h. (Husan and Taikyu), 15h. (Hastings), 17h. (Sofia, Mizusawa, and Nagoya), 18h. (Bucharest, Triest, and Zagreb), 19h. (De Bilt, Granada, Graz, Moscow, Ksara, Paris, Pulkovo, Stuttgart, Strasbourg, and Sverdlovsk), 21h. (Nagasaki), 22h. (Andijan, Frunse, Tchimkent, Tiflis, Tashkent ; suggested epicentre 41°·8N. 72°·6E.), 23h. (Algiers).

July 29d. 4h. 12m. 50s. Epicentre 19°·3N. 145°·7E. (as on 1934 Aug. 30d.). R.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 retained as on 1931 Sept. 9d.

	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°	3 3	+65	4 38	+67	—	—
Hatidyozima	−0·4	14·7	341	3 25	+ 6	5 11	−47	—	—
Mera	−0·6	16·4	343	3 43	+ 4	6 46	+12	—	—
Ito	−0·6	16·7	344	3 48	+ 5	6 53	+12	—	—
Omaesaki	−0·6	16·7	343	3 46	+ 3	6 51	+10	—	—
Siomisaki	−0·6	16·7	332	3 40	− 3	6 47	+ 6	—	—
Misima	−0·6	16·9	341	3 47	+ 2	6 57	+12	—	—
Numadu	−0·6	16·9	344	3 47	+ 2	6 56	+11	—	—
Hamamatu	−0·6	17·0	333	3 48	+ 2	6 57	+ 9	—	—
Yokohama	−0·6	17·0	344	3 49	+ 3	6 57	+ 9	—	—
Tokyo	−0·6	17·2	346	3 50	+ 1	7 1	+ 9	—	—
Hunatu	−0·6	17·3	341	3 48	− 2	—	—	—	—
Kameyama	−0·6	17·5	337	3 55	+ 2	7 9	+10	—	—
Kohu	−0·6	17·5	342	3 54	+ 1	7 11	+12	—	—
Wakayama	−0·6	17·6	330	3 50	− 4	7 5	+ 3	—	—
Kakioka	−0·6	17·6	347	3 55	+ 1	7 9	+ 7	—	—
Tukubasan	−0·6	17·6	346	3 54	0	7 5	+ 3	—	—
Nagoya	−0·6	17·6	336	3 55	+ 1	7 11	+ 9	—	7·4
Tokusima	−0·6	17·6	329	3 59	+ 5	—	—	—	—
Mito	−0·6	17·7	347	3 57	+ 2	7 12	+ 8	—	—
Simidu	−0·6	17·7	322	—	—	7 12	+ 8	—	—
Kumagaya	−0·6	17·7	345	3 55	0	7 14	+10	—	—
Osaka	−0·6	17·8	332	3 56	− 1	7 3	− 3	—	—
Sumoto	−0·6	17·8	330	3 57	0	7 12	+ 6	—	7·2
Gihu	−0·6	17·9	339	3 59	+ 1	7 14	+ 5	—	—
Koti	−0·6	17·9	325	3 57	− 1	7 13	+ 4	—	—
Kobe	−0·7	18·0	331	e 3 14	−44	e 7 12	+ 3	—	—
Miyazaki	−0·7	18·0	318	3 58	0	7 16	+ 7	—	—
Maebasi	−0·7	18·0	343	3 59	+ 1	7 17	+ 8	—	—
Hikone	−0·7	18·0	335	4 3	+ 5	—	—	—	—
Utunomiya	−0·7	18·0	345	3 57	− 1	7 16	+ 7	—	—
Ibukisan	−0·7	18·1	335	4 3	+ 4	7 16	+ 5	—	—
Oiwake	−0·7	18·2	342	4 2	+ 2	7 19	+ 6	—	—
Matuyama	−0·7	18·5	324	4 6	+ 2	—	—	—	—
Nagano	−0·7	18·5	341	4 5	+ 1	7 28	+ 8	—	—
Ooita	−0·7	18·7	323	4 11	+ 4	—	—	—	—
Takada	−0·7	18·9	340	4 16	+ 7	7 37	+ 8	—	—
Toyama	−0·7	18·9	337	4 10	+ 1	7 37	+ 8	—	—
Husiki	−0·8	19·0	340	4 13	+ 4	—	—	—	—
Kumamoto	−0·8	19·0	321	4 10	+ 1	—	—	—	—
Hukusima	−0·8	19·0	348	4 11	+ 2	7 40	+11	—	—
Sendai	−0·8	19·4	349	4 14	0	7 47	+ 9	—	—
Yamagata	−0·8	19·5	350	4 10	− 5	7 41	+ 1	—	—
Niigata	−0·8	19·5	348	4 22	+ 7	—	—	—	—
Wazima	−0·8	19·6	343	4 18	+ 2	7 50	+ 8	—	—
Hukuoka	−0·8	19·7	319	e 4 48	+31	e 7 46	+ 2	—	—
Hukuoka B	−0·8	19·7	319	4 51	+34	—	—	—	—
Mizusawa	−0·8	20·2	350	i 4 22	− 1	i 8 5	+11	—	—
Akita	−0·9	21·0	351	4 32	+ 1	8 19	+11	—	—
Husan	−0·9	21·6	324	e 5 7	+30	8 19	− 1	—	—
Aomori	−0·9	21·9	352	4 42	+ 2	8 32	+ 6	—	—
Taikyu	−0·9	22·4	324	5 19	+34	8 36	0	—	—
Hakodate	−0·9	22·9	353	4 51	0	—	—	—	—
Muroran	−1·0	23·3	354	4 51	− 3	—	—	—	—
Nemuro	−1·0	24·0	1	5 0	− 1	9 3	− 2	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sapporo	−1·0	24·1	354	4 59	− 3	—	—	—	—
Keizyo	−1·0	24·5	324	5 2	− 3	10 0	+46	—	—
Vladivostok	−1·2	26·5	337	i 5 57	PP	i 9 35	−11	11·5	20·7
Hong Kong	−1·4	29·6	282	6 30	PP	10 21	−14	12·3	13·8
Chiufeng	−1·5	32·8	315	6 55a	+38	11 11	−13	—	13·9
Phu-Lien	−1·6	36·7	279	—	—	12 10?	−13	—	—
Batavia	−1·9	46·0	241	i 8 14	+ 8	i 15 35	+58	—	—
Medan	−2·0	48·5	259	e 8 10	−15	i 15 3	− 9	—	—
Almata	−2·4	61·6	310	e 10 49	(−11)	—	—	—	—
Frunse	−2·5	63·4	310	e 10 40	+29	—	—	—	—
Andijan	−2·5	65·1	309	e 10 5	−17	e 18 47	− 3	—	—
Tashkent	−2·5	67·4	308	i 11 30	(+ 7)	i 19 10	− 9	—	37·9
Bombay	−2·6	68·3	283	—	—	i 19 25	− 4	—	—
Sverdlovsk	−2·6	71·2	325	i 11 48	+46	i 20 1	0	30·2	36·7
Baku	−2·7	81·9	311	i 12 47	+43	i 21 55	−12	34·2	44·6
Santa Barbara	−2·7	82·8	55	e 12 2	− 6	—	—	—	—
Tinemaha	−2·7	83·1	53	i 12 3	− 7	e 22 7	−13	—	—
Moscow	−2·7	83·8	328	12 51	+37	22 0	−27	—	—
Grozny	−2·7	83·8	315	12 7	− 7	e 21 54	−33	—	—
Pasadena	−2·7	84·2	56	i 12 8a	− 8	i 22 9	−23	—	—
Mount Wilson	−2·7	84·2	56	i 12 9	− 7	e 22 9	−23	—	—
Riverside	−2·7	84·8	56	i 12 11a	− 8	e 22 12	−26	—	—
Tiflis	−2·7	85·1	314	e 12 51	+31	22 13	−28	e 43·7	—
Pulkovo	−2·7	85·3	333	—	—	i 22 13	−30	35·2	44·9
La Jolla	−2·7	85·3	57	i 12 13	− 8	e 22 17	−26	—	—
Scoresby Sund	−2·8	89·8	356	13 25	+42	22 45	−42	—	—
Tucson	−2·8	90·5	55	—	—	e 22 54	−40	—	—
Simferopol	−2·8	90·7	319	—	—	e 22 50	−46	—	—
Yalta	−2·8	90·9	319	—	—	e 22 49	−49	—	—
Ksara	−2·8	94·6	309	e 13 38	+22	24 46	PS	—	54·2
Copenhagen	—	95·2	335	—	—	25 10?	PS	47·2	—
De Bilt	—	100·8	336	—	—	e 23 42	[−48]	e 48·2	52·4
Stuttgart	—	101·6	333	—	—	e 26 24	PS	51·2	—
Uccle	—	102·1	336	—	—	e 23 10?	[−86]	48·2	—
Strasbourg	—	102·4	333	—	—	e 24 10?	[−27]	e 32·2	—
Paris	—	104·4	336	e 26 52	PS	—	—	57·2	—
Ottawa	—	105·1	28	—	—	e 24 0	[−50]	32·2	—
Philadelphia	—	109·6	32	—	—	e 27 43	PS	—	—
La Paz	—	147·7	89	i 19 19a	[−19]	—	—	—	—

Additional readings :—
Tokyo eS = +6m.51s.
Nagoya PP = +5m.2s., S_cS = +15m.13s.
Kobe iPNZ = +6m.54s.
Chiufeng iSEN = +11m.15s.
Medan PE = +8m.21s.
Bombay iEN = +20m.18s. and +20m.50s.
Tinemaha iZ = +12m.54s.
Moscow e = +14m.42s.
Pasadena iZ = +12m.57s.
Mount Wilson iZ = +12m.59s. and +13m.56s.
Tiflis e = +13m.1s. and +40m.12s.
Pulkovo e = +13m.9s. and +23m.23s.
La Jolla iZ = +13m.3s.
Ksara PP = +17m.29s.
De Bilt iNZ = +26m.16s.
Stuttgart e = +18m.25s. and +32m.4s.
Strasbourg e = +18m.10s.?
La Paz iZ = +20m.12s.
Long waves at Copenhagen.

July 29d. 7h. 38m. 46s. Epicentre 21°·0S. 177°·0W. N.1.

$A = -\cdot 932$, $B = -\cdot 049$, $C = -\cdot 358$; $D = -\cdot 052$, $E = +\cdot 999$; $G = +\cdot 358$, $H = +\cdot 019$, $K = -\cdot 934$.

A *depth* of focus 0·060 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	−0·4	8·7	34	i 2 21	+23	e 3 50	+19	—	—
Arapuni	−2·1	18·2	200	3 44	+ 1	6 18	−23	—	—
Hastings	−2·4	19·4	194	4 14	+20	7 19	+17	—	—
New Plymouth	−2·4	19·7	201	3 42	−16	6 44	−25	—	—
Wellington	−2·6	21·3	198	4 14	− 1	7 31	− 9	—	—
Chatham Ils.	−2·9	22·9	180	4 20	−10	8 2	− 4	—	—
Glenmuick	−2·9	23·2	200	e 5 14?	+41	e 8 57	+45	—	—
Christchurch	−3·0	24·2	199	4 46	+ 4	8 30	0	—	—
Sydney	−3·7	30·8	239	i 3 19	?	i 6 8	?	10·6	11·6
Riverview	−3·7	30·9	238	i 5 37	− 3	i 9 58	−20	—	—
Melbourne	−3·9	36·8	234	e 6 27	− 4	i 11 28	−21	16·2	—
Adelaide	−4·8	41·2	241	e 7 5	+ 4	i 12 33	− 9	17·9	25·5
Honolulu	−5·2	46·2	25	i 7 54	+14	i 14 10	+19	e 19·1	—
Amboina	−5·9	55·9	280	i 8 50	− 1	i 15 53	− 8	—	—
Perth	−6·2	60·2	245	i 9 14	− 7	16 54	− 2	22·9	34·2
Titizima	−6·3	62·2	318	9 59	+24	17 23	+ 2	—	—
Hatidyozima	−6·7	67·9	321	10 14	+ 1	18 35	+ 3	—	—
Mera	−6·7	69·3	323	10 25	+ 3	—	—	—	—
Misima	−6·7	69·4	322	10 27	+ 4	18 59	+ 8	—	—
Tyosi	−6·7	69·4	324	10 30	+ 7	18 50	− 1	—	—
Yokohama	−6·7	69·8	324	10 28	+ 2	18 59	+ 3	—	—
Tokyo	−6·8	69·9	323	10 27	+ 1	19 3	+ 7	—	—
Omaesaki	−6·8	70·0	321	10 26	− 1	—	—	—	—
Numadu	−6·8	70·0	323	10 29	+ 2	19 4	+ 7	—	—
Mito	−6·8	70·0	323	10 27	0	19 0	+ 3	—	—
Kakioka	−6·8	70·1	323	10 27	0	—	—	—	—
Tukubasan	−6·8	70·1	323	10 26	− 1	18 57	− 2	—	—
Hamamatu	−6·8	70·4	322	10 25	− 4	18 58	− 4	—	—
Manila	−6·8	70·5	295	i 10 30	0	i 19 0	− 4	30·5	—
Kumagaya	−6·8	70·5	323	10 29	− 1	19 8	+ 4	—	—
Utunomiya	−6·8	70·5	324	10 27	− 3	18 58	− 6	—	—
Siomisaki	−6·8	70·6	319	10 26	− 5	19 3	− 2	—	—
Kohu	−6·8	70·6	323	10 31	0	19 8	+ 3	—	—
Iida	−6·8	70·8	323	10 27	− 5	—	—	—	—
Maebasi	−6·8	70·8	324	10 32	0	18 53	−14	—	—
Hukusima	−6·8	71·0	326	10 36	+ 2	19 11	+ 1	—	—
Nagoya	−6·8	71·1	322	10 35	+ 1	19 12	+ 1	22·9	19·3
Oiwake	−6·8	71·1	322	10 32	− 2	19 7	− 4	—	—
Sendai	−6·8	71·2	326	10 34	− 1	18 51	−21	—	—
Kameyama	−6·8	71·2	320	10 35	0	19 11	− 1	—	—
Gihu	−6·8	71·3	322	10 38	+ 3	19 16	+ 2	—	—
Nagano	−6·8	71·5	322	10 36	− 1	19 18	+ 2	—	—
Osaka	−6·8	71·6	320	10 37	0	18 59	−18	—	—
Wakayama	−6·8	71·6	321	10 30	− 7	19 16	− 1	—	—
Hikone	−6·8	71·6	322	10 37	0	19 13	− 4	—	—
Ibukisan	−6·8	71·6	322	10 37	0	19 17	0	—	—
Mizusawa E.	−6·8	71·7	327	e 10 38	0	i 19 19	0	e 26·7	—
Mizusawa N.	−6·8	71·7	327	e 10 40	+ 2	e 19 5	−14	27·0	—
Sumoto	−6·8	71·8	319	e 10 37	− 2	e 19 16	− 4	—	—
Kobe	−6·8	71·9	320	e 10 35	− 4	19 18	− 3	e 26·9	36·7
Simidu	−6·8	71·9	318	10 40	+ 1	19 20	− 1	—	—
Toyama	−6·8	72·0	321	10 40	0	19 28	+ 6	—	—
Koti	−6·8	72·1	319	10 38	− 3	19 21	− 3	—	—
Husiki	−6·8	72·2	322	10 42	+ 1	19 25	0	—	—
Miyazaki	−6·8	72·3	317	10 41	− 1	19 25	− 1	—	—

Continued on next page

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Miyadu	−6·8	72·4	320	10 40	− 2	19 27	0	—	—
Toyooka	−6·8	72·6	320	10 44	0	19 27	− 3	e 21·1	24·8
Kosyun	−6·8	72·6	302	10 55	+11	19 46	+16	—	—
Wazima	−6·8	72·7	320	10 46	+ 1	19 31	0	—	—
Matuyama	−6·9	72·8	317	10 46	+ 1	—	—	—	—
Kumamoto	−6·9	73·4	316	10 47	− 2	—	—	—	—
Nemuro	−6·9	73·5	332	10 43	− 6	19 37	− 3	—	—
Malabar	−6·9	73·8	268	10 49	− 2	i 19 43	0	—	—
Nagasaki	−6·9	73·9	315	10 47	− 5	19 41	− 4	—	—
Saga	−6·9	73·9	317	10 52	0	19 45	0	—	—
Hukuoka	−6·9	74·1	317	e 10 54	+ 1	e 19 42	− 5	—	—
Hukuoka B	−6·9	74·1	317	10 33	−20	19 45	− 2	—	—
Sapporo	−6·9	74·6	331	10 54	− 2	19 54	+ 1	—	—
Batavia	−7·0	74·9	270	i 10 51	− 7	i 19 44	−12	30·2	—
Arisan	−7·0	75·1	302	10 52	− 7	—	—	—	—
Taihoku	−7·0	75·4	305	i 11 1	0	i 19 54	− 8	e 24·2	—
Husan	−7·0	75·9	318	11 2	− 2	20 4	− 4	—	—
Taikyu	−7·1	76·6	318	11 9	+ 1	20 16	+ 1	24·9	—
Santa Barbara	−7·1	77·6	45	e 11 18	+ 4	e 20 45	+18	—	—
Ukiah	−7·1	77·7	39	i 11 24	+10	i 20 47	+19	e 51·0	—
Branner	−7·1	77·9	41	e 11 22	+ 6	—	—	—	—
San Francisco	−7·1	77·9	42	(e 11 24)	+ 8	(e 20 46)	+15	—	—
Berkeley	−7·1	78·1	41	e 11 20	+ 3	e 20 43	+10	—	—
Lick	−7·1	78·2	42	e 11 20	+ 3	e 20 45	+11	—	—
La Jolla	−7·1	78·4	47	i 11 21k	+ 2	i 20 50	+13	—	—
Pasadena	−7·1	78·5	46	i 11 22k	+ 3	i 20 51	+13	—	—
Sikka	−7·1	78·6	335	11 18	− 2	20 20	−19	—	—
Keizyo	−7·1	78·7	318	11 16	− 4	e 16 19	?	—	—
Mount Wilson	−7·1	78·7	46	i 11 23k	+ 3	e 20 49	+ 9	—	—
Riverside	−7·2	79·0	45	i 11 24k	+ 2	i 20 50	+ 7	—	—
Zinsen	−7·2	79·0	318	i 11 17	− 5	20 38	− 5	—	—
Vladivostok	−7·2	79·4	325	11 27	+ 3	20 49	+ 2	27·0	35·5
Haiwee	−7·2	79·8	44	e 11 30	+ 4	i 21 4	+12	—	—
Hong Kong	−7·2	79·9	298	11 23	− 4	20 44	− 9	—	—
Tinemaha	−7·2	80·1	44	i 11 30	+ 2	e 21 9	+13	—	—
Nanking	−7·2	81·2	310	i 11 29	− 6	i 20 58	−10	e 27·2	33·0
Tucson	−7·3	82·6	51	i 11 48	+ 6	i 21 27	+ 3	—	—
Victoria	−7·4	84·3	33	i 11 51	0	i 21 18	−24	e 34·2	—
Seattle	−7·4	84·4	33	e 11 39	−13	i 21 30	−13	—	—
Sitka	−7·4	85·4	21	i 11 56	− 1	i 21 38	−16	—	—
Phu-Lien	−7·4	85·5	294	i 11 52	− 6	i 21 33	−22	34·2	—
Medan	−7·4	86·0	276	11 54	− 6	i 21 29	−31	51·2	—
Tacubaya	−7·4	86·1	68	12 2	+ 1	—	—	—	—
Chiufeng	−7·4	87·0	315	11 57	− 9	i 21 37	−34	—	—
Bozeman	−7·5	89·4	40	12 20	+ 2	i 22 32	− 4	—	—
Santiago	−7·5	91·2	128	—	—	e 22 9	−45	—	—
Huancayo	−7·7	95·3	107	e 12 55	+ 9	i 23 34	+ 1	—	—
La Plata E.	−7·8	99·6	135	—	—	22 50	[−93]	—	—
N.	−7·8	99·6	135	—	—	23 32	[−51]	—	—
Florissant	—	100·4	53	i 13 9	−36	i 23 9	[−79]	—	—
St. Louis	—	100·5	53	e 13 10	−36	i 22 59	[−89]	—	—
La Paz	—	100·8	114	13 17	−30	i 23 5	[−85]	i 42·4	57·5
Calcutta	—	102·0	291	e 12 34	−79	23 4	[−91]	—	—
Sucre	—	102·1	117	e 13 22	−31	i 24 16	[−20]	42·2	—
Chicago	—	103·4	50	e 13 21	−38	i 24 37	{−42}	—	—
Colombo	—	104·7	273	e 13 0	−65	23 55	[−53]	—	52·2
Columbia	—	106·3	59	e 13 42	−31	e 25 6	{−34}	—	—
Ann Arbor	—	106·3	51	e 18 32	PP	e 24 32	{−68}	63·6	—
Kodaikanal	—	108·1	276	e 13 31	−51	22 54	PPPP	52·7	62·2
Charlottesville	—	109·2	56	—	—	e 25 22	{−39}	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Hyderabad	—	109·3	283	e 13 26	−62	25 9	{−53}	45·9	62·6
Toronto	—	109·6	50	e 13 50	−39	i 25 31	{−33}	—	—
Pennsylvania	—	110·3	53	e 17 29	[−50]	e 27 53	PS	—	39·0
Ithaca	—	111·5	52	—	—	i 25 49	{−29}	—	—
Ottawa	—	111·6	48	e 14 2	−36	i 25 58	{−20}	64·2	—
Philadelphia	—	112·1	54	e 14 0	−41	e 25 33	{−49}	—	—
Agra	—	112·6	294	13 53	−50	23 30	PPPP	53·7	63·0
Dehra Dun	—	112·9	296	19 4	PP	(26 14)	{−13}	26·2	37·2
Vermont	—	113·2	53	e 14 19	−27	i 26 12	{−18}	—	—
Bombay	—	114·9	283	e 14 13	−42	24 4	[−89]	—	71·0
Oak Ridge	—	115·2	51	i 17 56	[−37]	—	—	—	—
San Juan	—	115·4	80	e 14 24	−33	e 26 4	{−41}	—	—
Almata	—	116·1	310	e 18 59	PP	—	—	—	—
Frunse	—	117·5	310	e 17 56	[−43]	—	—	—	—
Andijan	—	119·0	307	e 18 2	[−41]	e 24 15	[−92]	—	—
Tananarive	—	120·9	231	—	—	26 47	{−35}	—	61·0
Tchimkent	—	121·1	309	e 18 12	[−36]	—	—	e 30·4	—
Tashkent	—	121·2	308	14 29	?	—	—	—	54·0
Samarkand	—	123·0	306	e 18 12	[−41]	—	—	—	—
Cape Town	—	123·1	195	20 9	PP	26 46	{−51}	—	—
Sverdlovsk	—	125·0	327	i 18 13	[−44]	27 29	{−20}	39·2	47·9
Scoresby Sund	—	128·3	10	e 18 21	[−43]	e 25 32	[−42]	—	—
Baku	—	135·9	308	18 25	[−51]	—	—	—	—
Pulkovo	—	136·7	341	e 18 22	[−55]	e 27 25	?	—	44·7
Moscow	—	136·8	332	18 28	[−49]	—	—	—	47·5
Grozny	—	138·1	313	e 18 29	[−50]	e 24 12	?	—	—
Tiflis	—	139·3	311	i 18 32	[−49]	e 31 10	?	51·2	—
Piatigorsk	—	139·7	316	e 18 33	[−48]	—	—	—	—
Upsala	—	139·8	349	18 33	[−48]	—	—	e 62·2	65·6
Erevan	—	140·0	308	e 18 24	[−57]	—	—	—	—
Bergen	—	140·6	359	23 14	?	e 25 51	SKS	—	—
Konigsberg	—	143·7	342	e 18 43	[−47]	e 31 21	SKSP	e 63·2	75·2
Copenhagen	—	144·6	351	18 47	[−43]	29 8	{−43}	—	—
Edinburgh	—	144·8	6	i 19 0	[−33]	—	—	—	—
Simferopol	—	145·0	321	e 18 48	[−46]	—	—	—	—
Yalta	—	145·2	320	e 18 49	[−45]	—	—	e 37·2	—
Durham	—	146·1	5	i 18 55	[−41]	—	—	—	—
Stonyhurst	—	146·8	6	i 19 5	[−32]	—	—	—	—
Rathfarnham Castle	—	146·9	10	e 19 4	[−33]	e 28 49	{−76}	79·1	87·7
Hamburg	—	147·0	352	i 18 55k	[−42]	—	—	—	71·2
Bidston	—	147·2	6	i 18 53	[−45]	—	—	—	—
Ksara	—	148·3	301	i 18 54k	[−45]	32 42	SKSP	—	—
Leipzig	—	148·8	348	e 19 0	[−40]	e 32 56	SKSP	—	—
De Bilt	—	148·9	357	e 18 56	[−44]	i 32 56	SKSP	—	—
Gottingen	—	149·0	352	i 18 55a	[−45]	i 25 14	SKS	—	—
Oxford	—	149·2	6	i 19 0	[−41]	—	—	—	—
Jena	—	149·3	349	i 19 4	[−37]	e 25 14	SKS	31·2	47·3
Kew	—	149·4	4	i 18 58	[−43]	e 32 14	SKSP	—	—
Prague	—	149·6	344	i 19 5	[−36]	i 32 14	SKSP	e 51·2	74·2
Bucharest	—	149·8	326	e 19 9	[−32]	20 51	?	—	—
Cheb	—	150·0	348	e 19 8	[−34]	e 32 21	SKSP	—	55·2
Uccle	—	150·2	0	e 18 53	[−49]	i 33 2	SKSP	—	52·8
Budapest	—	150·5	337	19 3	[−39]	32 48	SKSP	e 47·2	75·7
Vienna	—	150·7	342	i 19 1	[−42]	e 32 17	SKSP	—	—
Stuttgart	—	151·8	351	e 18 59	[−45]	e 32 20	SKSP	e 59·2	—
Graz	—	152·0	341	e 19 5	[−39]	e 30 13	{−21}	e 51·2	80·6
Paris	—	152·2	0	i 19 3k	[−42]	32 25	SKSP	42·2	46·2
Strasbourg	—	152·2	352	i 18 59	[−46]	i 26 14	SKS	e 56·2	63·5
Belgrade	—	152·2	331	e 19 2	[−43]	i 32 31	SKSP	e 60·5	—
Sofia	—	152·4	326	e 19 5	[−40]	—	—	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb	—	153·0	339	e 19 4	[−42]	i 23 2	PKS	e 57·7	—
Helwan	—	153·0	295	19 3	[−43]	i 32 26	SKSP	—	60·1
Basle	—	153·2	352	e 19 3	[−43]	—	—	—	—
Zurich	—	153·2	351	e 19 5	[−41]	—	—	—	—
Chur	—	153·6	350	e 19 1	[−45]	—	—	—	—
Besançon	—	153·7	352	e 19 4	[−42]	e 19 28	?	32·7	—
Triest	—	153·8	354	e 19 3	[−44]	i 33 14	SKSP	—	—
Neuchatel	—	153·8	352	e 19 7	[−40]	—	—	—	—
Padova	—	154·5	344	(19 16)	[−31]	19 16	P	—	—
Piacenza	—	155·3	348	i 19 8a	[−40]	30 14	{−38}	—	51·2
Prato	—	156·1	345	i 19 9	[−40]	—	—	—	32·7
Florence	—	156·2	342	19 12	[−37]	—	—	41·2	45·2
Capodimonte	—	157·9	342	e 18 38	[−73]	e 26 28	?	41·2	—
Barcelona	—	159·5	3	e 19 15	[−38]	—	—	e 57·8	—
Messina	—	159·7	333	19 21	[−32]	—	—	—	—
Tortosa	—	160·0	0	18 36	[−78]	—	—	—	—
Toledo	—	160·2	17	i 19 12	[−42]	—	—	—	—
Alicante	—	162·3	9	i 19 20	[−36]	—	—	—	—
San Fernando	—	162·6	22	i 19 15	[−41]	—	—	e 43·8	—
Granada	—	162·8	14	i 19 15	[−42]	i 31 0	{−34}	—	49·2
									76·4
Tunis	—	163·0	342	e 19 14	[−43]	—	—	51·2	—
Malaga	—	163·0	18	e 19 16	[−41]	e 30 48	{−73}	—	—
Almeria	—	163·5	12	i 19 13	[−44]	—	—	e 43·5	—
Algiers	—	164·2	0	i 19 17	[−41]	i 24 6	PP	26·2	45·2

Additional readings and note :—
Apia iS = +4m.8s., +6m.59s., +7m.54s., +9m.24s., +10m.24s., +13m.4s., and +17m.59s.
Arapuni PP? = +5m.50s., i = +6m.50s.
Hastings i = +7m.14s., +7m.35s., and +7m.40s.
New Plymouth i = +5m.52s.
Wellington i = +6m.21s. and +6m.44s., P_cP = +8m.26s., i = +9m.18s., S_cS = +14m.42s., sS_cS? = +18m.14s.
Chatham Ils i = +6m.38s., P_cP? = +8m.50s., i = +9m.14s.?
Glenmuick e = +8m.35s. and +8m.43s.
Riverview iENZ = +5m.40s., iEN = +7m.4s., iE = +12m.41m. and +12m.50s., iN = +12m.54s.
Melbourne iP = +6m.31s., i = +7m.55s., +8m.56s., +10m.6s., and +14m.16s.
Adelaide i = +8m.1s., +8m.33s., +9m.0s., +9m.25s., +11m.2s., +13m.30s., +14m.18s., +15m.16s., and +16m.14s.
Honolulu i = +8m.0s., iPP = +10m.14s., iSP = +14m.17s., ipS = +16m.57s.
Amboina iN = +11m.15s., iE = +12m.25s.
Perth P_cP = +11m.9s. = PP − 7s., PP = +12m.29s.?, PPP = +13m.14s., PPPP +13m.21s., SP = +17m.4s., i? = +18m.24s., SS = +19m.44s., SSS = +20m.24s., SSSS = +21m.44s.
Hong Kong PP = +14m.2s., SKS = +21m.24s. = SS +4s., SS = +25m.24s., SSS = +27m.56s., SSSS = +29m.49s.
Nagoya PP = +13m.6s.
Sumoto ePN = +10m.40s., eEN = +13m.17s., eSZ = +19m.19s., iZ = +38m.28s.
Kobe ePNZ = +10m.33s., PEN = +10m.38s., eE = +13m.26s., iSEN = +19m.22s., iE = +19m.59s., eN = +21m.39s., eZ = +22m.24s., eEN = +22m.28s., eZ = +25m.58s.
Toyooka PZ = +10m.42s., PE = +10m.46s., eSZ = +19m.29s.
Hukuoka e = +22m.48s.
Nagasaki PN = +10m.51s., E = +13m.30s.
Batavia iP = +10m.55s., ipPZ = +11m.2s.
Husan e = +13m.50s.
Ukiah ePP = +13m.54s., isS = +23m.58s., e = +31m.52s.
Branner iEN = +11m.26s. and +11m.35s.
San Francisco eE = (+21m.2s.); all readings have been *increased* by 3m.
Berkeley PEZ = +11m.24s., iZ = +11m.28s., iPPN = +14m.36s., eSN = +20m.45s., iE = +23m.51s., +43m.42s., +48m.58s., and +50m.45s.
Lick iEN = +11m.25s., eE = +20m.47s.
Pasadena ipPZ = +13m.16s., isPZ = +14m.5s., iE(SP?) = +21m.16s., eN(PS) = +21m.51s., isSN = +24m.36s., iPKPPKPZ = +38m.23s., iSKPPKPZ = +40m.15s.
Riverside iPKP,PKPZ = +38m.17s., iSKPPKPZ = +40m.15s.
Zinsen ePPZ = +13m.6s., ePPPZ = +13m.59s., eSS = +23m.43s.
Vladivostok pP = +13m.47s., SP = +21m.40s.
Tinemaha ipPZ = +13m.27s., ePKP,PKPZ = +38m.21s.
Nanking iPZ = +11m.33s., PP = +14m.12s., PPP = +16m.3s., SSE = +24m.11s., SSN = +24m.29s., eE = +25m.15s., SSS? = +26m.21s.

Continued on next page.

Tucson epP = +13m.39s., e = +19m.2s., esS = +24m.26s., e = +33m.39s.
Seattle epP = +14m.7s., esP = +14m.47s., ePP = +17m.32s., e = +24m.7s., esS = +24m.37s.
Sitka isP = +14m.41s., eS = +21m.22s., eSP = +22m.34s., isS = +24m.59s., i = +25m.44s., e = +33m.19s.
Phu-Lien ePP = +14m.33s.
Chiufeng iPEN = +12m.0s., PPEN = +14m.41s., iN = +23m.38s.
Bozeman epP = +14m.24s., e = +15m.44s. and +24m.41s., esS = +25m.27s., e = +27m.39s. = SS + 0s., eSS = +28m.31s.
Huancayo ipP = +14m.44s., e = +19m.14s., i = +22m.44s., iPS = +25m.8s., i = +28m.14s., iSS = +30m.19s., i = +40m.26s. and +47m.14s.
La Plata pPPN = +18m.56s., SPPE = +19m.56s., SKSN = +22m.57s., SKKSZ = +23m.8s., SN = +24m.2s., SP?E = +25m.20s., SPN = +25m.32s., SPZ = +25m.38s., SPPEN = +26m.26s., sSPE = +28m.26s., sSPN = +28m.38s., SSN = +31m.2s., SS?E = +31m.14s., SSS?E = +34m.28s., SSSN = +35m.20s.
Florissant ipP = +14m.59s., isP = +15m.54s., eENZ = +16m.32s., ePKP?Z = +16m.2s., iPP = +17m.26s., ipPKP?Z = +18m.40s., esPKP = +19m.34s., iEZ = +19m.53s., eEN = +22m.56s., iSKKSE = +23m.52s., iSEN = +24m.14s. = SKKS − 42s., isSKSEN = +26m.28s., isS = +27m.30s., iE = +28m.46s., iSS = +31m.21s., iEN = +33m.32s., iE = +34m.44s., iSSSE = +35m.32s., iN = +36m.18s., iE = +37m.26s., eN = +41m.58s., iN = +44m.23s. and +50m.9s., iE = +51m.46s.; T_o = 7h.38m.47s.
St. Louis epPE = +14m.57s., ePPE = +17m.19s., ePPPE = +19m.52s., iSKKSE = +23m.40s., iSN = +24m.12s., iSP?E = +25m.53s., isSKSE = +26m.25s., esSN = +27m.25s., eSS = +30m.49s., eSSSEN = +35m.5s.
La Paz iPZ = +13m.21s., ipPZ = +15m.5s., sPZ = +15m.55s., iPPZ = +17m.34s., iPPP = +19m.56s., iSKKS = +23m.49s., iSN = +24m.26s., iPSE = +25m.57s., iPPSE = +26m.45s., iSSE = +31m.37s.
Calcutta PP = +17m.11s., PPP = +19m.41s., PS = +25m.39s., PPS = +26m.41s.
Chicago epP = +15m.8s., ePP = +17m.48s., ePPP = +20m.14s., iSP = +26m.25s., e = +27m.44s., i = +29m.8s., iSS = +32m.0s., esSS = +34m.35s., eSSS = +35m.51s., e = +39m.8s.
Colombo iP = +17m.35s., SS = +24m.25s., SSS = +26m.45s., SSSS = +31m.40s.
Columbia ePP = +17m.20s., e = +23m.26s., esP = +26m.52s., e = +29m.16s., eSS = +32m.28s., e = +37m.1s.
Ann Arbor e?N = +20m.50s., eN = +22m.44s., iN = +25m.8s., iE = +26m.56s., e = +30m.2s., iN = +32m.44s., e = +37m.2s.
Kodaikanal PP = +14m.45s., eSKP = +16m.20s., PPP = +17m.28s., SKS = +20m.21s., SKKS = +21m.57s., PS = +24m.57s., PPS = +26m.10s., SS = +31m.42s., SSS = +36m.9s.
Charlottesville ePP = +18m.34s., epPP = +20m.54s., e = +27m.4s.
Toronto iE = +15m.35s. and +18m.31s., iEN = +27m.49s., iEN = +28m.12s., iN = +33m.17s.
Pennsylvania e = +16m.42s., e = +22m.33s., i = +27m.23s., e = +32m.40s.
Ithaca ePPE = +18m.44s., eSKSE = +23m.56s., e?SPN = +27m.32s., ePSEN = +28m.38s., iE = +30m.44s., eN = +30m.50s., eSS?N = +33m.32s., esSSN = +37m.26s.; T_o = 7h.38m.47s.
Ottawa eE = +15m.56s., i = +18m.54s., eE = +21m.20s. and +27m.46s., e = +28m.44s., i = +29m.19s., e = +30m.50s., +33m.56s., and +37m.8s.
Agra SKP = +16m.31s., PPP = +18m.10s., SKS = +20m.50s., SKKS = +22m.22s., PS = +25m.31s., PPS = +27m.10s., SS = +32m.5s., SSS = +36m.56s.
Vermont ePP = +19m.4s., iPS = +28m.14s., i = +31m.9s., eSS = +34m.19s., eSSS = +37m.32s., T_o = 7h.38m.47s.
Bombay SKS = +21m.13s., SKKS = +22m.36s., PSEN = +25m.58s., PPSEN = +27m.32s.
Oak Ridge iZ = +18m.1s. and +18m.25s., eZ = +19m.7s., eE = +20m.41s., iZ = +20m.57s.
San Juan epP = +16m.24s., ePP = +19m.2s., i = +24m.2s. and +26m.24s., eSP = +27m.57s., i = +30m.41s., e = +33m.29s., iSS = +34m.45s., e = +42m.24s., +44m.24s., and +47m.31s.
Philadelphia iPP = +18m.51s., iPPP = +21m.20s., e = +23m.39s., iS = +25m.51s., esP = +27m.12s., ePS = +28m.24s., e = +30m.36s., iSS = +33m.47s., esSS = +36m.45s., e = +39m.14s.
Tananarive PPEN = +19m.38s., PPPE = +21m.16s., PSE = +28m.36s., E = +33m.17s.
Tashkent i = +14m.57s., pP = +17m.9s., e = +17m.51s., i = +17m.58s., PP = +19m.18s., sPP = +22m.14s., PPP = +22m.26s., SP = +27m.53s., sS = +30m.56s.
Cape Town N = +21m.24s., E = +21m.30s., N = +22m.29s., E = +23m.30s., N = +24m.22s. and +25m.48s., E = +25m.54s., +26m.46s., and +27m.52s., N = +28m.32s., E = +28m.46s., +29m.58s., and +31m.25s., N = +32m.10s., E = +34m.18s. and +35m.11s.
Sverdlovsk eP = +14m.56s., pP = +17m.36s., i = +18m.22s., PP = +20m.9s., pPP = +21m.34s., i = +21m.56s. and +22m.13s., sPP = +22m.42s., i = +24m.23s. and +25m.17s., SP = +29m.26s., i = +29m.46s., sS = +31m.33s.

Continued on next page.

Scoresby Sund eP = +15m.14s., iPKP = +18m.26s., iZ = +20m.17s., i = +20m.31s., iZ = +21m.12s., iPKS = +21m.50s., e = +23m.8s., eE = +24m.17s., eEN = +24m.31s., eN = +30m.14s., eZ = +31m.32s., eNE = +32m.38s., eN = +34m.44s., eEN = +37m.2s.
Baku PP = +21m.18s.
Pulkovo i = +18m.35s. and +20m.26s., PP = +21m.16s., i = +22m.6s., isPP = +23m.56s., iPPP = +24m.52s., iSP = +30m.56s., PS = +32m.42s., sS = +32m.56s.
Moscow PP = +21m.24s., SPP = +23m.56s., PPP = +24m.54s., SP = +30m.58s., sS = +33m.58s.
Tiflis e = +18m.46s., +20m.46s., +21m.36s., +24m.12s., +27m.50s., +34m.16s., and +41m.44s.
Upsala PPN = +21m.41s., iSKP = +22m.19s.
Erevan e = +21m.22s.
Bergen SKP = +23m.56s.
Königsberg i = +18m.48s. and +18m.53s., iE = +19m.13s., iN = +20m.1s., iSKPE = +22m.32s., iSKPN = +22m.36s., iN = +22m.56s., PPP?N = +25m.15s., eN = +31m.41s., iE = +38m.0s., SSE = +40m.8s., SSS = +44m.50s., SS >180° = +52m.50s.
Copenhagen eZ = +20m.46s., and +21m.37s., eNZ = +22m.11s., eN = +24m.20s., eZ = +24m.44s., e = +27m.56s., +31m.38s., +34m.2s., and +35m.2s.
Stonyhurst iPP = +22m.10s., i = +43m.55s.
Edinburgh i = +19m.35s., +43m.35s., and +60m.46s.
Rathfarnham Castle iPKP = +19m.15s., $iPKP_2$ = +19m.53s., i = +20m.42s., +22m.28s., and +22m.51s., e = +23m.22s., +25m.8s., eSKPKPKS = +30m.1s., e = +30m.48s., i = +32m.46s., ePSKPKS = +34m.36s., i = +34m.43s., e = +35m.11s., i = +37m.41s., e = +41m.49s., iSS = +44m.3s., e = +44m.24s., +45m.48s., +49m.14s., and +49m.55s., eSSS = +50m.49s., i = +53m.27s. and +60m.6s., e = +67m.14s.
Hamburg eZ = +20m.52s., +21m.43s., and +41m.14s.
Bidston i = +20m.47s., +22m.32s., and +25m.1s.
Ksara pPKP = +20m.54s., sPKP = +21m.38s., PP = +23m.14s., SKKS = +28m.20s., SPP = +35m.10s., PPS = +36m.10s.
Leipzig iE = +19m.2s., i = +19m.6s., iE = +20m.49s., iZ = +20m.56s., eE = +22m.0s., e = +22m.38s., eE = +23m.38s., eZ = +23m.44s., +24m.10s., and +25m.14s., eE = +25m.54s., eZ = +27m.14s., +28m.44s., +32m.14s., +35m.26s., +36m.14s., and +40m.14s.
De Bilt iZ = +19m.3s., iN = +19m.9s., iZ = +20m.55s. and +21m.49s., e = +32m.19s.
Göttingen iZ = +19m.1s.k, iPKP = +19m.5s.k, ipP = +20m.52s., ePP = +22m.26s., iPP = +22m.34s.
Oxford iN = +19m.12s.
Jena epZ = +18m.55s., epEN = +19m.2s., iPPZ = +21m.3s., iPPN = +21m.7s.
Kew iZ = +19m.3s., $iPKP_2E$ = +19m.10s., $ipPKP_2Z$ = +20m.56s., $eSPKP_2$ = +21m.52s., iPPZ = +22m.43s.
Prague e = +22m.3s. and +25m.14s., i = +35m.33s.
Cheb eS? = +28m.32s., e = +35m.38s.
Uccle e = +18m.57s., $iPKP_2$ = +19m.9s., i = +20m.21s. and +21m.5s., iSKP = +21m.55s., iPP = +22m.33s., i = +23m.34s. and +24m.32s., iSKS = +25m.24s., iPPP = +26m.6s., iSKKS = +28m.46s., i = +31m.55s., +35m.19s., +37m.35s., +39m.43s., and +45m.29s.
Budapest PPP = +25m.12s., PS = +32m.18s., PSS = +37m.48s., SSS = +42m.16s.
Vienna PPP = +21m.6s., S = +25m.15s., SS = +28m.17s.
Stuttgart iP = +19m.2s., epP = +20m.48s., e = +21m.26s., +22m.36s., +23m.34s., +25m.28s., +33m.14s., and +35m.50s.
Graz iP = +19m.39s., iPS = +32m.27s., iPPS = +33m.11s., iSS = +35m.48s., eSSS = +42m.40s.
Paris i = +21m.0s., PP = +22m.56s., PS = +33m.17s.
Strasbourg i = +19m.29s. and +21m.1s., iSKP = +22m.5s., iPP = +22m.54s., PPP = +25m.30s., iPPPP = +32m.24s., iPSKS = +32m.51s., iPPS = +35m.54s., iPPPS = +37m.39s., ePPPPP = +38m.28s., eSS = +42m.16s.
Belgrade i = +21m.8s., e = +22m.54s. and +25m.35s.
Sofia iP = +19m.12s., e = +21m.1s., +25m.14s.? and +32m.14s.?
Zagreb i = +19m.17s., ipP = +21m.2s., ePPP = +25m.35s., ePSKSE = +32m.33s., ePPS = +25m.48s., ePPPP = +38m.4s., eSSZ = +40m.44s., eSSS = +45m.37s., eSSSS = +51m.4s.
Helwan i = +25m.37s.
Triest i = +19m.25s., +24m.40s., +25m.44s., +29m.12s., +30m.53s., +32m.36s., +35m.50s., +38m.8s., +50m.45s., and +52m.7s.
Padova +9m.49s.
Toledo iPKP = +20m.0s., i = +20m.15s., PP = +23m.48s., SKKS = +29m.51s., PPS = +36m.36s., SS = +41m.59s., SSS = +51m.0s.
Alicante iPP = +24m.1s., iSS = +34m.17s.
San Fernando i = +19m.55s., iPP = +24m.2s., iPPS = +37m.46s.
Granada i = +19m.23s., $iPKP_2$ = +19m.39s., i = +20m.14s., pP = +21m.14s., sS = +22m.14s., iPP = +24m.2s., PKS = +26m.36s., SS = +44m.16s.
Malaga i = +19m.22s., $ePKP_2$ = +20m.8s., i = +20m.13s., pPKP = +21m.12s., iPP = +23m.58s., ipPP = +25m.56s., e = +27m.58s. and +44m.13s.
Almeria iPPP = +23m.39s., SS = +34m.35s.
Algiers iPPP = +20m.17s.

July 29d. 23h. 16m. 41s. Epicentre 39°·6N. 73°·8E. N.3.

Given by the Russian stations.

$A = +·215$, $B = +·740$, $C = +·637$; $D = +·960$, $E = -·279$; $G = +·178$, $H = +·612$, $K = -·770$.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Andijan	1·6	314	0 23	0	i 0 44	S*	—	1·0
Frunse	3·4	9	1 1	P_g	i 1 32	+ 5	—	2·1
Tashkent	3·8	295	i 0 49	− 5	—	—	e 1·7	2·5
Tchimkent	4·2	308	0 58	− 2	—	—	—	—
Almata	4·4	35	e 1 9	P*	i 2 19	S_g	—	2·7
Dehra Dun	9·8	158	4 29	S	(4 29)	+11	5·6	8·3
Semipalatinsk	11·8	21	e 3 13	+27	—	—	—	—
Agra	13·0	162	3 0	− 2	e 5 16	−11	—	—
Baku	18·3	282	e 4 12	+ 2	7 26	− 5	9·1	10·6
Sverdlovsk	19·3	338	e 4 25	+ 3	i 8 1	SS	i 10·0	10·8
Bombay	20·7	182	e 4 59	PP	e 8 33	+13	e 10·0	11·6
Calcutta	21·1	138	e 4 45	+ 4	8 42	+14	10·5	—
Grozny	21·3	290	4 41	− 2	e 8 38	+ 6	—	—
Tiflis	22·0	287	4 47	− 4	8 45	− 1	12·5	—
Erevan	22·5	284	e 4 47	− 9	—	—	—	—
Hyderabad	22·5	168	e 5 33	−23	9 10	SS	12·3	13·1
Piatigorsk	23·2	293	e 4 53	−10	—	—	—	—
Sotchi	25·6	292	e 6 34	?	—	—	—	—
Moscow	28·8	316	5 54	0	10 49	+ 4	e 14·8	17·6
Simferopol	29·5	295	e 6 1	0	—	—	—	—
Yalta	29·5	293	e 6 2	+ 1	—	—	—	—
Kodaikanal	29·5	173	—	—	e 11 3	+ 7	—	16·9
Ksara	30·7	271	e 6 35	+24	e 11 35	+19	—	—
Chiufeng	32·2	74	—	—	e 15 19	?	—	21·5
Pulkovo	33·7	323	6 41	+ 3	e 12 5	+ 4	15·7	20·7
Sofia	37·6	292	e 7 14	+ 2	—	—	—	—
Konigsberg	38·2	312	3 19?	?	—	—	—	22·3
Budapest	39·6	301	e 6 51	−38	—	—	e 22·3	25·3
Zagreb	42·0	300	e 7 47	− 2	e 9 27	PP	—	—
Prague	42·2	307	—	—	e 17 49	(− 6)	—	24·3
Cheb	42·2	306	—	—	e 17 19?	SS	—	25·3
Copenhagen	42·7	315	—	—	14 32	+16	19·3	—
Vladivostok	42·9	66	—	—	e 22 0	?	26·0	37·5
Triest	43·6	300	e 9 42	PP	e 14 31	+ 1	—	25·7
Hamburg	44·4	312	e 9 19?	?	e 18 19?	(+11)	—	27·3
Stuttgart	45·8	306	e 8 20	+ 1	e 15 7	+ 5	e 25·3	—
Strasbourg	46·8	305	e 8 19?	− 8	e 15 19?	+ 3	e 18·3	—
Paris	50·0	306	—	—	e 16 19?	+18	28·3	33·3
Rathfarnham Castle	53·8	314	—	—	e 17 19?	+26	—	33·3
Scoresby Sund	54·9	336	—	—	17 13	+ 5	27·3	—

Additional readings :—
Andijan $P_g = +25s.$, $i = +28s.$, $iPP = +30s.$, $i = +32s.$, $+35s.$, and $+42s.$
Frunse $iP^* = +1m.4s.$, $P_g = +1m.10s.$, $iPP = +1m.14s.$, $i = +1m.51s.$, $i = +1m.53s.$, $S_g = +1m.58s.$
Tchimkent $i = +1m.7s.$
Almata $P_g = +1m.24s.$, $i = +1m.34s.$, $S_g = +2m.34s.$
Agra $S^* = +6m.4s.$, $S_g = +6m.40s.$
Calcutta $SS = +9m.29s.$
Tiflis $e = +4m.53s.$, $PP = +5m.7s.$, $e = +5m.43s.$, $SS = +9m.45s.$, $L_q = +11·4m.$
Chiufeng $iN = +17m.40s.$, $iE = +18m.8s.$
Sofia $e = +8m.52s.$ and $+25m.19s.$?
Triest $e = +14m.24s.$ and $+20m.13s.$
Stuttgart $e = +22m.25s.$
Scoresby Sund $+21m.55s.$
Long waves at Edinburgh, Kew, Stonyhurst, Hong Kong, Nanking, and other European stations.

July 29d. Readings also at 0h. (Sverdlovsk, Tashkent, Tiflis, La Jolla, Mount Wilson, Pasadena, and Tinemaha), 1h. (Mizusawa, Nagoya, and Wellington), 4h. (Andijan, Almata, and Frunse), 6h. (Sotchi), 7h. (Andijan, Almata, and Frunse), 10h. (Almata, La Paz, and Mizusawa), 13h. (Almata), 14h. (La Paz), 17h. (Nagoya), 19h. (Mizusawa and Nagoya), 21h. (Wellington), 22h. (Wellington, La Paz, Florence, Sofia, Berkeley, Branner, and Lick).

July 30d. 5h. 44m. 50s. Epicentre 9°·0S. 119°·8E. N.3.

A = −·491, B = +·857, C = −·156; D = +·868, E = +·497; G = +·077, H = −·136, K = −·988.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	9·9	58	2 12	− 7	—	—	4·3	5·4
Malabar	12·2	277	e 2 49	− 2	i 5 13	+ 5	7·6	—
Batavia	13·1	282	e 3 3	0	i 5 45	SS	e 7·2	—
Perth	23·2	186	5 30	PP	i 9 20	+12	13·2	16·6
Manila	23·6	2	5 9k	+ 3	i 9 30	+14	13·2	—
Medan	24·5	300	e 5 19	+ 4	i 9 46	+14	e 13·2	—
Adelaide	31·1	147	—	—	e 11 25	+ 4	—	22·2
Hong Kong	31·8	350	—	—	11 30	− 2	—	16·4
Phu-Lien	32·4	337	—	—	e 11 48	+ 7	20·2	—
Melbourne	36·6	144	—	—	e 12 49	+ 4	18·2	23·0
Riverview	38·0	134	—	—	e 13 4	− 2	e 20·2	24·0
Sydney	38·1	134	—	—	e 10 15	?	22·8	24·2
Nanking	41·1	357	i 7 54	+13	13 59	+ 6	e 23·5	—
Colombo	42·9	290	18 10	S	18 10	(+11)	—	27·7
Calcutta	44·0	316	e 11 55	?	18 15	(+ 9)	e 24·4	—
Kodaikanal	46·3	293	e 10 40	PPP	—	—	23·8	27·7
Nagoya	47·0	21	e 8 49	+20	—	—	—	—
Hyderabad	48·7	302	—	—	16 23	+40	22·8	27·3
Chiufeng	49·2	356	e 8 46	+ 1	15 50	0	e 24·3	30·9
Vladivostok	53·3	12	e 11 46	PP	—	—	—	46·8
Bombay	54·0	301	e 10 10?	(−21)	—	—	—	29·9
Andijan	66·2	322	e 10 46	− 1	—	—	—	—
Tashkent	68·3	320	i 10 57	− 3	i 19 50	−11	e 33·4	42·1
Samarkand	68·9	318	e 11 3	− 1	—	—	—	—
Baku	80·9	312	e 12 24	+11	e 22 43	+18	39·2	50·7
Sverdlovsk	81·6	331	12 18	+ 2	22 25	− 8	39·2	45·3
Grozny	84·8	314	e 12 35	+ 3	—	—	—	—
Tiflis	85·0	313	e 12 28	− 5	e 22 54	[− 5]	e 45·7	—
Ksara	90·0	302	e 13 1	+ 4	e 24 4	+ 8	—	50·7
Moscow	93·1	325	—	—	e 26 10	?	e 45·8	56·9
Cape Town	95·0	234	—	—	23 50	[−11]	—	52·7
Pulkovo	97·5	330	—	—	e 24 13	[− 1]	54·2R	61·3
Copenhagen	107·1	326	—	—	24 58	[− 2]	51·2	—
Stuttgart	110·3	319	e 15 40	?	—	—	e 60·2	—
Uccle	112·9	322	—	—	e 33 10?	?	e 56·2	—
Scoresby Sund	114·0	347	19 10?	PP	—	—	57·2	—
Edinburgh	115·5	328	—	—	e 27 10?	{+24}	60·2	—
Rathfarnham Castle	118·2	327	e 31 0	?	e 40 24	SSS	55·9	60·8
Tinemaha	120·7	52	18 53	[+ 6]	—	—	—	—
Pasadena	121·4	55	i 18 50	[+ 1]	—	—	—	—
Mount Wilson	121·5	55	e 18 46	[− 3]	—	—	—	—
Riverside	121·8	55	i 18 53	[+ 3]	—	—	—	—
La Jolla	122·4	57	i 18 56	[+ 5]	—	—	—	—
Oak Ridge	145·0	13	i 19 26	[− 8]	—	—	—	—
La Paz	153·3	163	e 20 10	{− 4}	—	—	82·0	95·4

For Notes see next page.

NOTES TO JULY 30d. 5h. 44m. 50s.

Additional readings :—
Amboina iN = +2m.28s.
Batavia iN = +5m.55s., eZ = +7m.43s., iE = +9m.0s. ; T_0 = 5h.44m.35s.
Medan iN = +8m.56s. = P_cP +3s., i = +13m.42s.
Adelaide i = +14m.50s., e = +16m.37s.
Nanking eSS = +17m.21s. = SSSS +0s.
Calcutta PP = +13m.25s., PPP = +13m.59s.
Chiufeng PP = +10m.31s., iN = +19m.38s.
Grozny e = +13m.26s.
Tiflis e = +25m.20s.
Ksara PS = +25m.4s., SS = +30m.26s.
Moscow e = +20m.38s., +32m.45s., +35m.31s., and +41m.5s.
Cape Town E = +33m.10s. and +44m.10s.
Pulkovo e = +19m.11s. = PPP −10s., +27m.20s., +30m.32s., and +31m.40s. = SS +13s., L_g = +45·2m.
Copenhagen +27m.22s.
Stuttgart ePP = +20m.10s.
Uccle e = +38m.10s.?
Rathfarnham Castle ePPP = +35m.21s., eSS = +45m.36s.
Mount Wilson iPZ = +18m.53s.
Oak Ridge iN = +19m.29s., +19m.36s., and +19m.59s., eN = +20m.7s.
La Paz ePKPZ = +20m.25s.
Long waves at Wellington, Kew, Stonyhurst, and other European stations.

July 30d. Readings also at 0h. (Chiufeng (2), Bombay, Granada, and Samarkand), 1h. (Nagoya), 3h. (Paris), 4h. (Wellington), 5h. (Wellington), 6h. (Nagoya), 7h. (Andijan, San Juan, and Oak Ridge), 8h. (Moscow, Sverdlovsk, Pasadena, Oak Ridge, and Riverside), 9h. (Tacubaya, Taihoku, and Tucson), 10h. (La Paz), 11h. (Apia, Granada, Ksara, Strasbourg, Stuttgart, Sydney, Wellington, and Riverside), 12h. (Granada and Paris), 14h. (Graz, Grozny, Piatigorsk, Sotchi, and Tiflis), 16h. (Tchimkent and Samarkand), 19h. (La Paz and Sucre), 23h. (Tashkent).

July 31d. 8h. 12m. 34s. Epicentre 36°·3N. 140°·1E. N.3.

A = −·618, B = +·517, C = +·592 ; D = +·641, E = +·767 ;
G = −·454, H = +·380, K = −·806.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		0·7	200	0 8	− 2	0 18	0	—	0·4
Nagoya		2·8	245	0 40	0	1 20	S*	—	1·6
Mizusawa	N.	2·9	17	e 0 41	0	i 1 24	S*	—	—
Toyooka	E.	4·3	260	e 1 1	0	e 2 12	S_g	—	2·4
	N.	4·3	260	e 1 11	P*	2 3	S*	—	2·2
	Z.	4·3	260	e 1 5	+ 4	2 2	S*	—	2·2
Kobe	E.	4·3	248	e 1 8	P*	2 9	S*	—	2·5
	N.	4·3	248	e 1 4	+ 3	2 3	S*	—	—
Sumoto		4·7	245	1 13	P*	2 13	S*	—	2·4
Vladivostok		9·3	320	e 2 22	+11	e 4 14	+18	5·0	—

Additional readings :—
Nagoya P_g = +57s.
Kobe eE = +1m.21s. = P_g +1s., eN = +1m.25s., eZ = +1m.56s., SN = +2m.3s.

July 31d. 9h. 58m. 32s. Epicentre 39°·6N. 73°·8E. (as on 29d. 23h.). X.

A = +·215, B = +·740, C = +·637.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·6	314	i 0 24	P*	0 45	S*	—	2·0
Tashkent	3·8	295	i 0 51	− 3	(i 1 42)	+ 5	i 1·7	2·4
Tchimkent	4·2	308	e 1 7	P*	e 1 58	S*	—	2·4
Samarkand	5·2	271	e 1 11	− 3	i 2 29	S*	—	—
Baku	18·3	282	4 31	PP	e 7 30	− 1	9·5	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sverdlovsk	19·3	338	i 4 28	+ 6	8 4	SS	10·4	12·4
Bombay	20·7	182	—	—	e 8 28?	+ 8	—	31·5
Grozny	21·3	290	e 4 46	+ 3	e 8 31	− 1	—	—
Tiflis	22·0	287	e 5 4	PP	e 8 52	+ 6	e 12·5	—
Moscow	28·3	316	—	—	e 9 51	?	—	21·9
Ksara	30·7	271	e 6 12	+ 1	e 11 28	+12	—	19·0
Chiufeng	32·2	74	—	—	e 15 6	?	—	20·5
Pulkovo	33·7	323	e 6 34	− 4	e 12 4	+ 3	14·5	20·0
Vladivostok	42·9	66	—	—	e 20 41	?	24·2	27·9
Hamburg	44·4	312	—	—	e 20 28?	?	27·3	—
Stuttgart	45·8	306	—	—	e 18 46	SSS	e 25·5	—
Paris	50·0	306	—	—	e 15 28?	?	27·5	33·5

Additional readings :—
Andijan $iP_g = +28$s.
Samarkand $i = +1$m.21s. $= P^* - 5$s. and $+2$m.1s.
Moscow $e = +12$m.2s. and $+15$m.28s.
Chiufeng $iN = +18$m.7s.
Stuttgart $e = +21$m.28s.?
Long waves at Kew, Edinburgh, Scoresby Sund, Hyderabad, Hong Kong, Nanking, and other European stations.

July 31d. 11h. Readings for which no determination has been made :—

Graz $eP = 19$m.48s., $iM = 20$m.16s.
Triest $iP_g = 19$m.53s., $iS_g = 20$m.0s.
Zurich $eP = 20$m.11s., $eS_g = 20$m.55s.
Ravensburg $eS_g = 20$m.47s.
Stuttgart $e = 21$m.5s., $eS_g = 21$m.7s.
Jena $e = 21$m.30s.

July 31d. Readings also at 0h. (Florence and La Paz), 5h. (Wellington), 6h. (Taityu), 9h. (Christchurch, New Plymouth, Wellington, Bucharest, and Sofia), 10h. (Adelaide, Christchurch, Wellington, Sverdlovsk, Tashkent, Tiflis, Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, Santa Barbara, Sitka, and Tinemaha), 12h. (Alicante and Wellington), 13h. (Wellington), 14h. (Oak Ridge), 15h. (Alicante), 18h. (Apia, Adelaide, Riverview, and Wellington), 19h. (Medan, Baku, Ksara, Sverdlovsk, Tashkent, and Honolulu).

Aug. 1d. 5h. Readings for two shocks for which no determination has been made :—

Andijan $eP_g = 8$m.40s., $iS_g = 9$m.3s., $M = 9$m.10s.
Samarkand $eP = 9$m.5s., $iS_g = 9$m.53s., $M = 10$m.1s.
Ksara $e = 9$m.6s., $e = 12$m.21s.
Tchimkent $e = 9$m.40s.
Tashkent $e = 9$m.49s., $iS = 10$m.29s., $eL = 10$m.30s., $M = 11$m.0s.
Long waves at Sverdlovsk.

Sofia $i = 22$m.0s., $e = 22$m.14s.
Belgrade $e = 23$m.12s., $e = 23$m.35s., $e = 24$m.0s.
Triest $eP = 23$m.41s, $P_g = 23$m.51s., $iS_g = 24$m.33s., $iSS = 24$m.41s.
Stuttgart $e = 26$m.30s.
Tashkent $e = 31$m.14s., $eL = 32$m.48s., $M = 33$m.36s.
Long waves at Chiufeng, Copenhagen, Strasbourg, and Sverdlovsk.

Aug. 1d. 14h. 6m. 43s. Epicentre 12°·2N. 125°·6E. (as on 1935 June 18d.). R.1.

A = − ·569, B = + ·795, C = + ·211 ; D = + ·813, E = + ·582 ;
G = − ·123, H = + ·172, K = − ·978.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Manila	5·1	299	i 1 16	+ 3	2 20	+10	—	—
Palau	10·0	118	2 14	− 7	3 55	−18	—	—
Kosyun	10·9	339	e 2 34	+ 1	5 38	S*	—	—
Taito	11·4	337	e 2 44	+ 4	5 44	S*	—	—
Takao	11·6	335	e 3 15	?	6 1	S_g	—	—
Karenko	12·5	340	e 3 1	+ 6	—	—	—	—
Taihoku	13·4	345	i 3 11	+ 4	e 5 45	SS	—	—
Hong Kong	14·8	316	3 26	0	6 38	+28	7·5	9·2
Amboina	16·1	170	e 3 45	+ 2	—	—	—	—
Nake	16·6	12	3 54	+ 5	7 7	SS	—	—
Phu-Lien	20·1	298	e 4 31	0	e 8 17	+ 9	9·3	—
Miyazaki	20·5	16	4 35	0	8 27	+11	—	—
Nanking	20·8	343	i 4 42	+ 4	8 42	SS	10·3	11·8
Nagasaki	20·9	11	4 41	+ 2	8 33	+ 9	—	—
Kumamoto	21·2	13	4 42	0	8 27	− 3	—	—
Titizima	21·5	44	5 1	PP	—	—	—	—
Hukuoka	21·8	12	e 4 50	+ 1	8 49	+ 7	—	—
Hukuoka B	21·8	12	5 10	PP	8 50	+ 8	—	—
Koti	22·6	18	4 57	0	9 5	+ 8	—	—
Matuyama	22·6	17	4 59	+ 2	9 9	+12	—	—
Husan	23·1	8	e 5 1	− 1	9 16	+ 9	—	—
Siomisaki	23·2	23	5 3	0	9 12	+ 4	—	—
Sumoto	23·7	22	5 7	0	9 26	+ 8	—	9·5
Wakayama	23·7	22	4 50	−17	—	—	—	—
Taikyu	23·8	7	5 9	+ 1	9 25	+ 6	—	—
Kobe	24·1	21	e 5 12	+ 1	e 9 35	+10	—	13·2
Osaka	24·2	21	5 19	+ 7	—	—	—	—
Hatidyozima	24·6	29	5 30	+14	9 51	+17	—	—
Kameyama	24·7	24	5 19	+ 2	9 45	+ 9	—	—
Toyooka E.	24·8	18	5 26	+ 8	9 37	0	—	—
N.	24·8	18	5 21	+ 3	9 44	+ 7	—	—
Nagoya	25·2	24	5 25	+ 3	—	—	13·7	—
Gihu	25·3	24	5 27	+ 4	10 2	+16	—	—
Zinsen	25·3	2	e 5 11	−12	e 9 24	−22	—	—
Keizyo	25·4	3	e 5 24	0	9 55	+ 7	12·5	—
Batavia	26·2	226	i 5 27	− 4	e 9 59	− 3	—	—
Malabar	26·4	225	5 36	+ 3	—	—	—	—
Oiwake	26·9	24	5 44	+ 7	—	—	—	—
Kumagaya	27·0	26	5 46	+ 8	10 10	− 5	—	—
Medan	28·0	257	6 41	PP	i 10 19	−13	e 16·3	—
Chiufeng	29·1	345	i 5 55a	− 2	i 10 48	− 2	13·8	16·4
Calcutta	36·9	291	e 7 1	− 5	13 5	+15	—	—
Hyderabad	45·8	283	—	—	14 57	− 5	—	31·9
Agra	47·0	296	e 8 19	−10	15 20	+ 1	—	30·9
Kodaikanal	47·2	273	—	—	e 20 41	?	—	—
Bombay	50·5	285	e 5 17?	?	i 16 30	+22	—	33·6
Riverview	52·1	153	e 9 5	− 2	e 16 17	−13	e 26·5	33·8
Frunse	53·5	315	e 9 17	− 1	e 17 1	PS	28·8	—
Andijan	54·5	312	e 9 24	− 1	—	—	—	—
Tchimkent	56·6	313	e 9 42	+ 2	—	—	—	—
Samarkand	58·2	309	e 9 52	0	17 52	0	25·3	—
Sverdlovsk	66·3	328	i 10 50	+ 3	i 19 38	+ 2	35·3	37·7
Wellington	70·1	143	—	—	e 19 17?	−65	—	—
Baku	71·3	310	11 19	0	i 20 43	+ 6	36·1	45·3
Honolulu	73·3	70	e 11 33	+ 2	e 20 52	− 8	e 33·8	—
Grozny	74·3	312	11 36	0	e 20 33	−39	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	75·1	311	i 11 39	− 2	i 21 25	+ 4	e 40·3	51·6
Moscow	78·9	326	i 11 57	− 5	21 53	−11	38·3	49·6
Pulkovo	82·2	329	i 12 16	− 3	i 22 30	[− 7]	45·3R	50·3
Simferopol	82·5	315	e 12 17	− 4	e 22 36	[− 4]	—	—
Yalta	82·5	314	e 12 16	− 5	—	—	—	—
Sebastopol	82·9	314	e 12 0	−23	—	—	—	—
Ksara	83·0	303	i 12 22a	− 1	22 34	[−10]	—	—
Tananarive	83·0	249	—	—	37 6	?	44·6	50·1
Sitka	84·6	33	e 12 29	− 2	e 22 54	[− 2]	e 35·3	—
Helwan	87·6	300	12 45	− 1	23 32	− 1	—	—
Bucharest	88·2	316	e 12 20	−29	—	—	23·2	23·8
Upsala	88·2	332	—	—	e 23 39	0	e 48·3	52·0
Sofia	90·6	314	e 13 0	0	e 23 30	[− 6]	—	—
Budapest	91·9	320	e 12 47	−19	e 24 17?	+ 3	e 55·8	59·8
Copenhagen	92·4	329	13 5	− 4	24 5	−13	47·3	—
Vienna	93·3	320	i 13 12	− 1	e 23 42	[−10]	e 53·3	—
Bergen	93·5	334	—	—	e 24 12	−16	e 51·3	—
Prague	93·8	323	—	—	e 24 35	+ 4	e 49·3	53·3
Zagreb	94·4	318	e 13 14	− 4	e 23 47	[−11]	—	52·7
Scoresby Sund	94·5	349	13 16	− 2	—	—	—	—
Hamburg	94·7	327	e 13 18	− 1	e 23 50	[− 9]	e 49·3	60·3
Cheb	94·9	325	e 13 17?	− 3	e 26 17?	PS	e 49·3	60·3
Triest	95·9	317	e 13 27	+ 2	i 23 53	[−12]	—	53·8
Stuttgart	96·6	323	e 13 28	0	e 24 49	− 7	e 51·3	59·3
De Bilt	97·9	327	e 13 19	−15	e 24 8	[− 8]	e 47·3	59·8
Florence	98·3	318	13 42	+ 6	24 12	[− 5]	—	26·3
Strasbourg	98·3	323	e 13 32	− 4	e 25 5	− 7	e 36·3	—
Prato	98·4	318	e 13 40	+ 4	24 9	[− 9]	—	—
Zurich	98·4	322	—	—	e 23 33	[−45]	—	—
Piacenza	98·7	318	e 13 53	+15	24 25	[+ 6]	—	67·1
Basle	98·9	322	e 13 36	− 2	—	—	—	—
Uccle	99·0	326	e 13 35	− 4	e 24 16	[− 5]	—	53·3
Edinburgh	99·6	333	—	—	e 24 17?	[− 6]	50·3	62·3
Paris	101·1	325	e 13 41	− 8	—	—	27·3	62·3
Kew	101·1	329	e 13 45	− 4	e 26 54	PS	53·3	—
Bidston	101·2	331	—	—	e 24 27	[− 5]	—	—
Oxford	101·4	329	—	—	e 23 54	[−39]	49·6	65·4
Rathfarnham Castle	102·7	332	e 13 37	−19	e 23 35	[−64]	—	59·8
Toledo	110·2	320	e 19 2	PP	e 28 35	PS	—	—
Granada	111·4	317	17 58	[−24]	25 32	[+13]	54·0	—
Malaga	112·2	318	e 19 14	PP	e 28 18	PS	62·0	68·0
San Fernando	113·6	318	—	—	e 28 33	PS	59·3	—
Florissant	118·9	31	e 20 10	PP	e 27 3	{− 6}	33·7	36·0
Ottawa	119·3	17	e 20 17?	PP	—	—	e 30·3	—
Huancayo	159·6	91	—	—	e 31 2	{−14}	e 73·6	—

Additional readings :—
Amboina i = +8m.4s. and +15m.42s.
Kobe ePN = +5m.23s., eSZ = +9m:39s.
Batavia iN = +11m.46s.
Medan i = +13m.47s.
Chiufeng iSZ = +10m.55s.
Calcutta PPP = +8m.41s., SS = +15m.23s., SSS = +15m.59s.
Agra ePP = +10m.7s., PPP = +10m.52s., SS = +18m.39s., SSS = +19m.47s.
Riverview eN = +19m.59s. =SS +1s.
Tiflis P_cP = +11m.50s., ePP = +14m.42s., e = +14m.54s., ePPP = +16m.41s., e = +17m.27s. and +21m.14s., ePS = +22m.27s., SSS = +30m.17s. ?
Pulkovo L_q = +41m.17s.
Ksara iPP = +15m.34s., PS = +23m.24s., SS = +27m.58s.
Bucharest eE = +15m.44s.
Sofia e = +16m.35s. =PP +5s.
Copenhagen +16m.46s. =PP +1s., +23m.37s. =SKS −10s., PS = +25m.23s.
Prague e = +34m.41s.
Zagreb eE = +13m.44s. and +17m.2s. =PP +2s., e = +25m.48s. =PS +5s. and +27m.42s.
Scoresby Sund +17m.11s. =PP +10s.

Continued on next page.

Triest PPP = +19m.23s., iPS = +24m.39s.
Stuttgart ePP = +17m.22s., eSKS = +24m.1s., ePS = +26m.17s.
De Bilt ePPZ = +17m.23s.
Strasbourg ePP = +17m.33s., ePS = +26m.14s.
Uccle e = +17m.43s. =PP +8s., +21m.45s., and +26m.46s. =PS +11s.
Paris PP = +17m.58s.
Kew ePP = +17m.57s.
Rathfarnham Castle e = +17m.49s. =PP −14s.
Granada e = +19m.17s. =PP +10s., PPP = +21m.42s., PS = +28m.36s.
Malaga e = +51m.58s.
San Fernando ePP = +19m.27s., ePS = +29m.25s.
Florissant eENZ = +29m.55s. =PS +3s.
Huancayo eSKSP = +34m.27s., eSS = +44m.27s., eSSS = +50m.27s.
Long waves at Durham, Stonyhurst, Pasadena, La Paz, Perth, and other European stations.

Aug. 1d. 16h. 8m. 23s. Epicentre 10°·5N. 85°·5W. N.2.

A = +·077, B = −·980, C = +·182; D = −·997, E = −·077; G = +·014, H = −·182, K = −·983.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	6·0	96	e 1 24	− 1	e 2 41	+ 8	3·2	3·4
Merida	11·2	340	2 37	0	—	—	—	—
Port au Prince	15·1	57	i 3 25	− 5	i 6 20	+ 3	e 7·6	8·8
Ixtapalapa	15·8	304	3 43	+ 4	—	—	—	—
Tacubaya	15·9	305	3 43	+ 3	—	—	—	—
San Juan	20·3	64	e 4 33	0	e 7 55	−17	11·1	—
Columbia	23·8	8	e 5 8	0	i 9 32	+13	12·2	—
Huancayo	24·7	155	i 5 19	+ 2	i 9 42	+ 6	i 12·4	—
Charlottesville	28·2	11	e 5 53	+ 4	e 10 29	− 6	e 12·2	—
St. Louis	28·4	352	e 5 47	− 4	e 10 37	− 1	e 13·8	16·3
Florissant	28·7	352	e 5 53	0	e 10 42	− 1	—	—
Philadelphia	30·8	15	i 6 10	− 2	i 11 21	+ 4	e 14·1	—
Pennsylvania	31·0	10	i 6 16	+ 2	i 11 9	−11	e 14·0	17·4
Chicago	31·5	357	e 6 15	− 3	i 11 19	− 9	i 17·2	—
Ann Arbor	31·9	2	e 6 25	+ 3	e 11 37	+ 3	e 15·9	21·2
La Paz	32·0	148	6 30	+ 7	i 11 41	+ 6	16·1	19·8
Ithaca	32·9	12	e 7 37	PP	e 11 43	− 6	—	17·6
Toronto	33·6	7	e 6 19	−18	i 11 52	− 8	16·1	19·2
Oak Ridge	34·3	18	i 6 37	− 6	—	—	—	—
Sucre	35·6	145	6 58	+ 4	i 12 32	+ 2	17·7	—
Vermont	35·6	15	e 6 47	− 7	e 12 32	+ 2	17·0	—
Ottawa	35·9	12	e 6 53	− 4	e 12 29	− 6	e 16·6	—
La Jolla	36·8	313	e 7 5	0	—	—	—	—
Riverside	37·4	315	i 7 9	− 1	—	—	—	—
Pasadena	38·0	315	i 7 15	0	—	—	—	—
Mount Wilson	38·0	315	i 7 15	0	—	—	e 18·6	—
Santa Barbara	39·3	313	e 7 32	+ 6	—	—	—	—
Tinemaha	39·7	317	e 7 28	− 1	e 14 12	+40	—	—
Bozeman	41·4	333	—	—	e 14 2	+ 5	e 22·4	—
Lick	42·1	316	e 7 50	+ 1	—	—	—	—
Berkeley	42·8	316	e 9 6	+71	e 15 8	+49	i 23·9	i 27·1
Seattle	48·3	328	—	—	e 18 7	(−26)	e 27·9	—
Victoria	49·3	329	e 10 37	PP	—	—	e 28·9	30·5
La Plata E.	52·4	151	9 13	+ 4	16 43	+ 9	$23·9_a$	31·0
Sitka	60·2	332	—	—	e 18 22	+ 3	e 29·8	—
Honolulu	69·9	290	e 10 27	−43	—	—	e 30·8	—
Scoresby Sund	71·5	19	11 20	0	20 34	− 5	27·6	—
Rathfarnham Castle	75·2	37	—	—	i 21 18	− 4	34·6	45·6
San Fernando	75·2	55	e 11 56	+15	e 21 15	− 7	32·6	—
Malaga	76·6	54	e 11 38	−11	e 21 18	−20	e 30·3	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Toledo	76·8	51	e 11 52	+ 2	e 21 46	+ 5	e 37·1	—
Edinburgh	77·0	35	—	—	e 22 17	PS	e 35·6	—
Bidston	77·1	37	—	—	e 21 52	+ 8	31·6	—
Stonyhurst	77·1	37	—	—	e 22 2	PS	36·6	40·2
Granada	77·3	54	e 11 37	−17	e 21 23	−23	37·5	—
Durham	78·0	36	—	—	21 53	− 1	—	50·1
Oxford	78·2	39	—	—	21 50	− 6	e 34·6	44·9
Kew	78·8	39	e 12 2	+ 1	e 21 57	− 6	33·6	45·6
Alicante	79·6	52	e 12 31	+25	—	—	34·5	—
Paris	80·8	42	e 12 12	0	—	—	38·6	43·6
Bergen	81·3	30	—	—	21 29	−61	36·6	—
Uccle	81·8	40	—	—	e 23 17	PS	e 34·6	—
De Bilt	82·2	38	e 12 21	+ 2	e 22 30	[− 7]	e 34·6	38·0
Strasbourg	84·3	41	e 12 22	− 8	e 23 47	PS	e 35·6	—
Hamburg	84·8	36	e 15 49	PP	e 23 0	− 6	e 39·6	50·6
Stuttgart	85·2	41	e 12 25	− 9	e 22 55	[− 6]	e 36·6	48·6
Copenhagen	85·8	34	12 43	+ 6	23 5	[0]	39·6	—
Piacenza	86·2	45	e 14 7	?	23 37	+18	—	49·6
Cheb	87·0	39	e 13 37?	+54	e 23 37?	+10	e 41·6	45·6
Prague	88·3	39	—	—	e 23 12	[−10]	e 37·6	47·1
Triest	88·8	44	e 13 27	+35	i 23 42	− 3	—	57·6
Zagreb	90·3	43	e 13 9	+10	e 23 12	[−22]	—	41·1
Pulkovo	93·3	27	e 13 26	+13	23 44	[− 8]	43·6R	47·6
Moscow	98·7	29	—	—	e 24 14	[− 5]	—	54·8
Sverdlovsk	107·1	18	e 18 45	PP	e 25 4	[+ 4]	44·6	62·8
Ksara	108·9	49	e 18 46	PP	28 18	PS	—	60·6
Tiflis	110·7	37	e 18 43	PP	e 28 28	PS	e 42·6	67·5
Baku	114·6	36	—	—	e 29 37	PS	41·6	67·1
Tashkent	123·3	22	—	—	e 27 9	{−29}	e 57·4	67·6

Additional readings :—
Balboa Heights eS = +2m.45s.
Port au Prince SS = +6m.45s., iN = +10m.0s. and +11m.10s.
San Juan iP = +4m.37s., iPP = +4m.45s. and +5m.0s., i = +6m.43s., iS = +8m.18s., iSS = +8m.52s., i = +10m.0s. and +10m.52s.
Columbia eSS = +11m.9s.
Huancayo iPP = +6m.8s., iSS = +10m.42s.
St. Louis iE = +11m.10s. and +11m.20s., iSSE = +12m.4s. ; T_0 = 16h.8m.17s.
Florissant iE = +11m.22s. and +12m.23s. ; T_0 = 16h.8m.17s.
Philadelphia i = +6m.16s., eS = +11m.9s., eSS = +12m.50s.
Chicago iSS = +13m.13s., i = +13m.37s.
Ann Arbor e = +13m.43s.
La Paz iPZ = +6m.34s., isSE = +13m.41s., iZ = +14m.27s.
Ithaca eE = +14m.7s. ; T_0 = 16h.8m.17s.
Toronto PP = +7m.50s., SS = +13m.56s. ; T_0 = 16h.7m.55s.
Oak Ridge i = +7m.27s. and +7m.39s.
Vermont ePP = +8m.17s., eSS = +14m.37s.
Ottawa SSN = +14m.45s., SSSE = +15m.7s. ; T_0 = 16h.8m.24s.
Bozeman ePP = +9m.22s., eSS = +17m.7s. = SSS − 12s.
Seattle eSS = +18m.55s.
La Plata E = +9m.31s. and +13m.25s.
Sitka ePPP = +14m.2s., e = +22m.7s. = SS − 4s. and +24m.57s. = SSSS − 7s.
Scoresby Sund +14m.1s.
Malaga e = +20m.58s., +21m.42s., +27m.16s., and +32m.18s.
Granada PP = +14m.41s., PS = +21m.50s.
Uccle e = +27m.54s. = SS + 15s.
De Bilt eSS = +27m.39s.
Copenhagen +24m.6s. = PS + 5s.
Prague e = +30m.37s.
Triest e = +16m.35s., i = +24m.36s. = PS − 1s.
Zagreb e = +16m.37s.? = PP + 9s.
Pulkovo L_q = +39m.37s.
Moscow e = +31m.31s. = SS − 13s.
Sverdlovsk e = +28m.0s. = PS + 1s.
Tiflis e = +16m.25s. and +29m.25s.
Tashkent e = +21m.41s., +22m.5s., and +37m.49s.
Long waves at Cape Town, Tananarive, Agra, Bombay, Chiufeng, Hong Kong, Nanking, Phu-Lien, and other European stations.

Aug. 1d. 22h. 51m. 49s. Epicentre 36°·3N. 70°·0E. N.3.

$A = +\cdot276$, $B = +\cdot757$, $C = +\cdot592$; $D = +\cdot940$, $E = -\cdot342$; $G = +\cdot202$, $H = +\cdot556$, $K = -\cdot806$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	4·1	326	1 6	P*	e 1 46	+ 1	—	2·2
Andijan	4·8	22	e 1 7	− 1	i 1 58	− 5	—	2·1
Tashkent	5·0	354	i 1 12	+ 1	—	—	i 2·1	2·3
Frunse	7·5	27	e 1 37	− 9	e 2 53	−18	—	—
Grozny	19·8	299	e 4 30	+ 3	e 8 16	SS	—	—
Sverdlovsk	21·4	346	—	—	e 8 33	− 1	—	—

Additional readings :—
Samarkand $iS_g = +1$m.56s. $= S^* + 4$s.
Tashkent $e = +1$m.25s. $= P^* + 3$s.

Aug. 1d. Readings also at 3h. (Oaxaca and Tacubaya), 4h. (Andijan, Mizusawa, and Nagoya), 7h. (Zagreb), 11h. (Mount Wilson, Pasadena, and Tinemaha), 14h. (Alicante), 16h. (La Paz), 17h. (Kosyun (2), Taito (2), and Manila), 18h. (Edinburgh, Alicante, Granada, and Scoresby Sund), 19h. (Amboina) 22h. (Sucre, La Paz, and Oak Ridge), 23h. (Baku, Ksara, Tiflis, and Tashkent).

Aug. 2d. 10h. Readings for which no determination has been made :—

Manila eP = 10m.26s., S = 12m.4s.
Chiufeng eNZ = 15m.11s., e = 19m.54s., MN = 31m.14s.
Vladivostok e = 21m.17s., M = 33m.42s.
Tashkent P = 22m.54s., S = 30m.58s., eL = 32m.12s., M = 44m.24s.
Ksara eP = 25m.41s., e = 36m.58s., M = 68m.
Sverdlovsk e = 28m.42s., e = 32m.52s., L = 43m.
Sebastopol e = 29m.41s.
Yalta e = 31m.17s.
Pulkovo e = 31m.36s., e = 35m.44s., L = 50m.
Long waves at Hong Kong, Copenhagen, De Bilt, Paris, Strasbourg, and Stuttgart.

Aug. 2d. Readings also at 1h. (Perth, Andijan, Tashkent, and Sverdlovsk), 6h. (Alicante), 8h. (Chiufeng, Santiago, Sverdlovsk, and Tashkent), 10h. (Amboina), 11h. (Tananarive), 12h. (Chiufeng), 14h. (Andijan, Frunse, and Samarkand), 17h. (Oak Ridge), 18h. (Granada, Malaga, and San Fernando), 19h. (Nagoya), 20h. (Mizusawa, Nagoya, Vladivostok, Tashkent, and Sverdlovsk), 21h. (Copenhagen, Sverdlovsk, Tashkent, and Hong Kong), 22h. (Hong Kong, Sverdlovsk, and Tashkent), 23h. (La Paz).

Aug. 3d. 1h. 10m. 9s. Epicentre 5°·1N. 96°·2E. N.1.

$A = -\cdot107$, $B = +\cdot990$, $C = +\cdot089$; $D = +\cdot994$, $E = +\cdot108$; $G = -\cdot010$, $H = +\cdot088$, $K = -\cdot996$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Medan	2·9	121	i 0 29	−12	—	—	—	—
Batavia	15·6	137	i 3 22	−14	i 6 44	+15	—	—
Colombo	16·3	275	3 44	− 1	7 9	SS	10·6	12·4
Malabar	16·8	137	3 46	− 6	i 7 40	?	—	—
Phu-Lien	18·7	33	i 4 17	+ 2	e 7 51	SS	8·3	—
Calcutta	19·0	337	4 26	PP	8 14	SS	10·0	—
Kodaikanal	19·2	286	i 4 27	+ 6	i 8 12	SS	9·9	11·6
Hyderabad	21·3	306	4 49	+ 6	8 45	+13	10·1	14·1
Hong Kong	24·5	43	5 11	− 4	9 42	+10	—	16·1
Manila	26·2	68	5 32a	+ 1	i 10 9	+ 7	—	16·7
Bombay	26·6	303	i 5 40	+ 5	10 20	+11	13·1	17·2
Agra	28·0	324	5 47	0	i 10 36	+ 4	13·5	16·5
Takao	29·1	50	e 6 19	+22	10 44	− 6	—	—
Kosyun	29·2	51	6 2	+ 4	10 46	− 5	—	—
Taito	29·9	50	6 10	+ 6	11 8	+ 5	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arisan		30·0	49	e 6 10	+ 5	—	—	—	—
Taityu		30·3	47	6 15	+ 7	17 57	?	—	—
Dehra Dun		30·5	328	6 31	+22	11 31	+19	15·5	22·8
Karenko		30·9	49	e 6 20	+ 7	11 25	+ 7	—	—
Taihoku		31·4	48	i 6 19	+ 2	e 11 27	+ 1	—	—
Isigakizima		33·1	51	6 32	− 1	—	—	—	—
Amboina		33·2	104	i 6 19	−15	i 11 21	−33	e 12·9	—
Nanking		34·3	35	i 6 46	+ 3	i 12 12	+ 1	15·7	22·1
Naha		37·1	51	7 16	+ 9	13 3	+10	—	—
Palau		38·1	84	7 11	− 5	—	—	—	—
Nake		39·2	49	7 26	+ 1	13 24	0	—	—
Chiufeng		39·3	23	7 27a	+ 1	i 13 34	+ 8	i 18·7	26·2
Andijan		41·6	332	e 6 57	−48	e 12 22	−98	e 21·9	—
Nagasaki		41·8	44	7 48	+ 1	13 54	− 9	17·5	28·5
Saga		42·4	44	7 56	+ 4	—	—	—	—
Frunse		42·4	336	e 7 52	0	e 13 50	−21	22·1	—
Miyazaki		42·5	46	7 49	− 4	14 11	− 2	—	—
Kumamoto		42·5	44	7 51	− 2	14 1	−12	—	—
Yingkow		42·6	30	7 54	+ 1	—	—	—	—
Hukuoka		42·6	44	e 7 34	−19	e 14 6	− 9	e 20·7	25·1
Hukuoka B		42·6	44	e 7 55	+ 2	17 49	(− 8)	—	28·5
Husan		42·6	41	7 55	+ 2	14 31	+16	19·6	e 25·9
Zinsen		42·7	36	7 55	+ 1	14 20	+ 4	e 19·6	29·1
Taikyu		42·8	40	7 58	+ 3	14 29	+11	19·2	—
Keizyo		42·9	36	7 56	0	14 22	+ 3	18·7	29·4
Samarkand		43·0	328	e 8 4	+ 7	e 14 24	+ 3	e 23·4	—
Heizyo		43·2	33	8 1	+ 3	14 30	+ 6	21·4	26·2
Tashkent		43·5	330	i 8 1	0	i 14 40	+12	—	27·1
Simidu		44·0	47	8 4	− 1	—	—	—	—
Tchimkent		44·1	331	e 8 9	+ 3	e 14 47	+10	21·4	—
Matuyama		44·5	45	8 1	− 8	—	—	—	—
Koti		44·9	46	8 8	− 4	14 42	− 7	—	—
Sumoto		46·2	46	8 22	0	15 10	+ 3	18·9	27·9
Wakayama		46·4	46	8 23	− 1	14 55	−15	—	—
Kobe		46·6	46	e 8 24	− 1	e 15 23	+10	e 20·8	28·5
Toyooka	E.	46·8	45	8 31	+ 4	e 15 30	+14	21·5	30·8
Kyoto		47·2	46	8 28	− 2	—	—	—	—
Semipalatinsk		47·3	347	e 8 32	+ 1	e 15 30	+ 7	e 26·9	—
Kameyama		47·6	46	8 30	− 3	15 23	− 4	—	—
Tu		47·6	46	8 38	+ 5	15 50	+23	—	—
Ibukisan		47·8	45	8 32	− 3	15 30	0	—	—
Gihu		48·1	45	8 33	− 4	15 33	− 1	—	—
Nagoya		48·2	46	8 38	0	—	—	19·5	33·2
Hamamatu		48·5	48	8 30	−10	14 51?	−49	—	—
Toyama		49·0	43	8 46	+ 2	15 51	+ 4	—	—
Wazima		49·1	42	8 46	+ 2	16 0	+12	—	—
Vladivostok		49·4	34	i 8 46	− 1	i 15 58	+ 6	21·1	32·9
Misima		49·5	46	8 47	0	16 0	+ 6	—	—
Kohu		49·5	46	8 47	0	16 10	+16	—	—
Nagano		49·7	45	8 54	+ 5	16 13	+16	—	—
Oiwake		49·8	45	8 46	− 4	16 9	+11	—	—
Yokohama		50·2	47	8 52	− 1	—	—	—	—
Tokyo		50·3	47	8 51	− 3	—	—	—	—
Tukubasan		50·8	46	8 56	− 1	16 11	− 1	—	—
Tyosi		51·2	47	9 6	+ 6	16 19	+ 1	—	—
Mito		51·2	46	9 2	+ 2	—	—	—	—
Hukusima		51·8	45	9 9	+ 4	16 28	+ 3	—	—
Sendai		52·3	44	9 11	+ 2	16 35	+ 2	—	—
Mizusawa	E.	52·9	44	e 9 15	+ 2	e 16 32	− 9	e 21·1	—
	N.	52·9	44	e 9 12	− 1	e 16 38	− 3	21·2	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Morioka		53·2	42	9 16	+ 1	16 54	+ 9	—	—
Tananarive	E.	53·6	242	9 11	− 7	16 50	0	25·3	e 28·9
	N.	53·6	242	9 17	− 1	16 53	+ 3	22·2	25·3
Sapporo		55·0	38	9 30	+ 1	17 17	+ 8	—	—
Adelaide		56·4	138	e 10 34	(− 6)	i 17 4	−24	e 23·2	33·8
Erevan		58·0	315	e 10 13	+23	—	—	—	—
Grozny		58·5	318	9 57	+ 3	e 17 58	+ 2	e 23·4	—
Tiflis		58·8	316	e 9 55	− 1	17 59	− 1	e 28·0	39·4
Sverdlovsk		58·8	338	i 10 3	+ 7	i 18 8	+ 8	i 29·1	—
Melbourne		62·4	138	e 10 14	− 7	18 41	− 6	28·0	34·7
Ksara		62·6	304	i 10 25a	+ 3	19 6	+16	—	—
Riverview		64·9	131	e 11 3	(−10)	i 19 7	−12	e 27·9	36·6
Sydney		64·9	131	i 23 16	?	i 30 51	?	41·4	44·1
Helwan		65·7	300	i 10 39	− 4	i 19 32	+ 3	31·2	39·4
Yalta		66·6	316	10 48	− 1	i 19 42	+ 2	25·6	—
Simferopol		66·9	317	10 49	− 2	19 43	0	26·1	—
Sebastopol		67·1	316	10 52	0	19 47	+ 1	—	—
Moscow		68·5	326	i 10 59	− 2	20 0	− 3	32·1	43·6
Bucharest		72·3	315	e 11 22	− 3	20 50	+ 2	29·9	42·4
Pulkovo		73·6	331	i 11 31	− 1	i 20 58	− 6	39·4R	41·4
Sofia		73·9	313	e 11 34	0	e 21 6	− 1	e 34·9	—
Belgrade		76·3	315	e 11 44	− 4	i 21 20	−15	38·0	—
Budapest		77·5	317	i 11 55	0	22 59	+71	e 35·4	41·4
Königsberg		77·6	325	e 11 53	− 2	i 21 43	− 6	e 40·4	40·9
Messina		79·4	307	11 59	− 6	—	—	—	—
Vienna		79·4	318	e 12 3	− 2	e 22 5	− 4	e 43·9	51·9
Zagreb		79·5	315	e 12 5	0	e 22 7	− 3	e 34·4	50·1
Upsala		79·9	330	12 5	− 2	22 6	− 9	e 38·9	52·1
Graz		79·9	316	i 12 6	− 1	i 22 10	− 5	e 49·9	59·9
Laibach		80·5	316	e 12 13	+ 3	e 22 23	+ 2	55·2	—
Capodimonte		80·6	310	11 7	−64	e 26 1	?	44·9	—
Prague		80·8	320	12 12	0	22 20	− 4	e 34·9	53·4
Triest		81·1	315	i 12 12k	− 2	i 22 21	− 6	e 38·9	46·7
Cheb		82·1	320	e 12 20	+ 1	e 22 34	− 4	e 45·9	55·4
Leipzig		82·1	321	e 12 17	− 2	e 22 31	− 7	e 41·9	42·9
Copenhagen		82·3	326	12 19	− 1	22 38	[0]	—	—
Padova		82·4	315	e 12 20	0	i 22 41	0	—	58·9
Jena		82·6	320	e 12 19	− 2	e 22 35	[− 6]	40·9	55·7
Cape Town		82·8	235	12 24	+ 2	22 32	[−10]	38·9	45·9
Florence		82·8	313	12 22	0	22 32	[−10]	32·9	36·9
Prato		82·9	313	i 12 24	+ 1	i 22 42	[− 1]	37·1	50·9
Göttingen		83·6	332	12 27	+ 1	22 42	[− 6]	e 41·4	—
Hamburg		83·6	323	e 12 25k	− 1	i 22 47	[− 1]	e 42·9	55·9
Tunis		83·7	306	e 12 25	− 2	23 1	+ 7	39·9	—
Chur		83·8	317	e 12 24	− 3	e 22 50	[0]	—	—
Piacenza		83·9	314	12 30	+ 2	i 22 51	[0]	34·9	55·1
New Plymouth		83·9	130	e 19 51?	?	—	—	39·9	—
Stuttgart		84·2	318	e 12 28	− 1	e 23 32	PS	e 39·9	56·5
Zurich		84·6	317	e 12 30	− 1	e 22 54	[− 2]	—	—
Karlsruhe		84·7	318	12 31	− 1	i 22 51?	[− 6]	e 46·9	57·0
Arapuni		84·9	129	—	—	22 51	[− 7]	43·9	48·9
Wellington		84·9	132	e 12 28	− 5	22 41	[−17]	43·9R	47·9
Strasbourg		85·2	318	i 12 30a	− 4	i 23 7	[+ 6]	e 34·9	50·9
Basle		85·3	317	e 12 35	0	e 22 59	[− 2]	—	—
Neuchatel		85·7	317	e 12 34	− 3	23 1	[− 3]	—	—
Bergen		85·9	330	12 36	− 2	i 23 2	[− 4]	e 40·1	56·8
Besançon		86·4	316	—	—	e 22 57	[−12]	—	—
De Bilt		86·5	322	12 40	− 1	e 23 8	[− 2]	e 41·9	45·7
Uccle		87·2	320	e 12 43	− 1	23 10	[− 5]	39·9	49·1
Paris		88·6	318	i 12 52	+ 1	i 23 20	[− 4]	38·9	54·9

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers	89·4	306	e 12 46	− 9	23 50	0	e 39·9	46·9
Barcelona	89·6	311	e 12 59	+ 3	e 23 26	[− 4]	e 37·0	54·3
Kew	90·0	322	e 12 59	+ 2	e 23 44	[+11]	41·9	58·6
Durham	90·3	325	13 15	+16	24 33	+34	—	55·4
Oxford	90·7	322	i 13 0	− 1	i 23 30	[− 7]	e 40·9	59·6
Edinburgh	90·9	325	e 13 3	+ 1	i 23 33	[− 5]	46·9	63·2
Stonyhurst	90·9	323	13 3	+ 1	i 24 1	− 3	48·4	59·4
Bidston	91·4	323	e 13 7	+ 3	e 24 1	− 8	41·9	48·5
Chatham Ils.	91·6	133	—	—	24 33	+22	34·9	—
Alicante	92·0	309	e 13 14	+ 7	23 43	[− 1]	43·5	63·8
Rathfarnham Castle	93·2	324	e 13 22	+10	e 24 22	− 4	44·1	50·9
Apia	93·2	104	—	—	i 24 22	− 4	e 44·4	—
Almeria	93·8	307	—	—	e 23 49	[− 5]	e 58·0	—
Scoresby Sund	94·2	343	13 15	− 2	24 30	− 5	—	—
Toledo	94·5	310	e 13 20	+ 2	i 24 38	0	e 40·1R	62·4
Granada	94·6	308	e 13 21	+ 2	i 24 47	+ 9	e 44·8	61·9
Malaga	95·4	307	13 19	− 3	i 24 58	+12	49·7	—
San Fernando	96·8	307	e 13 30	+ 1	24 11	[+ 1]	42·4	68·9
Serra do Pilar	97·6	312	—	—	e 24 5	[− 9]	—	—
Honolulu	102·9	67	—	—	e 24 29	[−11]	e 42·6	—
Sitka	105·2	26	—	—	e 24 56	[+ 5]	e 43·8	—
Victoria	116·3	28	e 19 26	PP	e 30 51	?	e 50·9	71·0
Seattle	117·4	29	—	—	e 29 25	PS	e 56·5	—
Bozeman	123·4	22	—	—	e 31 26	?	e 59·2	—
Berkeley	124·2	37	—	—	e 23 23	PPP	i 70·4	—
Tinemaha	127·0	34	e 18 57	[− 4]	—	—	—	—
Santa Barbara	127·9	38	e 19 5	[+ 2]	—	—	—	—
Ottawa	129·0	352	e 22 27	PKS	e 29 33	?	62·9	—
Pasadena	129·1	36	e 18 59	[− 6]	—	—	54·2	—
Mount Wilson	129·1	36	e 18 59	[− 6]	—	—	—	—
Vermont	129·5	350	e 22 23	PKS	—	—	e 53·9	—
Riverside	129·7	36	e 19 3	[− 3]	—	—	—	—
Toronto	131·1	36	—	—	i 29 31	?	e 62·5	—
Oak Ridge	131·1	348	i 19 8	[− 1]	e 29 34	?	—	—
La Jolla	131·5	37	e 19 8	[− 1]	—	—	—	—
Ithaca	132·0	352	i 22 41	PKS	—	—	—	—
Ann Arbor	132·6	359	e 21 57	PP	—	—	69·7	83·4
Chicago	132·9	4	—	—	e 32 23	PS	e 54·9	—
Philadelphia	134·3	348	i 22 46	PKS	e 28 1	{−48}	e 55·4	—
Florissant	135·7	7	i 19 18	[+ 2]	e 26 21	SKS	e 60·9	70·9
St. Louis	135·9	7	e 19 25	[+ 9]	e 26 41	SKS	e 60·1	71·1
Charlottesville	136·6	353	—	—	e 30 51	?	e 57·0	—
La Plata	141·8	216	22 45	PP	—	—	56·9q	68·7
San Juan	150·8	323	e 19 44	[+ 1]	—	—	62·9	—
Tacubaya	151·2	31	e 19 47	[+ 4]	—	—	—	—
Sucre	157·2	231	e 20 16	{−15}	27 4	PPP	73·9	—
La Paz	160·9	232	i 19 58	[+ 4]	31 51	{+28}	77·4R	89·3
Huancayo	169·1	230	e 20 38	[+35]	e 32 23	{+16}	73·4	—

Additional readings :—
Batavia PZ = +3m.13s., iN = +4m.27s.
Kodaikanal SS = +8m.57s.
Hong Kong PP = +6m.9s.
Bombay PPEN = +6m.16s., SSEN = +11m.33s.
Agra PP = +6m.24s., SSE = +11m.53s.
Amboina i = +7m.11s.
Nanking ePEN = +5m.16s., PP = +7m.39s., PPP = +8m.11s., iN = +12m.59s. SS = +14m.2s., eSSS = +14m.33s.
Chiufeng iE = +9m.14s., iN = +9m.21s., iSS?E = +16m.18s.
Hukuoka SS = +17m.44s. =SSS −4s.
Sumoto PN = +8m.27s., eSZ = +15m.19s.
Kobe P_ePN = +9m.56s., PPEN = +10m.20s., eSNZ = +15m.21s., eSSE = +18m.48s., iSSN = +19m.3s.
Toyooka PZ = +8m.29s., PN = +8m.35s., SSN = +19m.6s.
Tananarive PP = +11m.17s., PSE = +17m.23s.

Continued on next page.

Adelaide i = +10m.42s. = P_cP +2s., +13m.35s., and +15m.30s.
Grozny i = +10m.27s.
Tiflis P_cP = +10m.43s., PP = +12m.31s., e(PPP) = +13m.35s., SKS = +19m.49s. e = +24m.57s.
Melbourne iP = +10m.22s., i = +10m.45s. = P_cP −18s., +14m.20s. = PPPP −4s. and +23m.54s.
Ksara PP = +12m.42s., PS = +19m.37s., SS = +23m.29s.
Riverview SSN = +23m.6s.
Bucharest PPE = +14m.22s., PPPE = +16m.14s.
Pulkovo L_q = +35m.21s.
Belgrade eP = +11m.47s., e = +12m.16s. and +15m.50s.
Budapest P_cP = +12m.10s., S_cS = +21m.49s. = S +1s., PS = +23m.44s., PPS = +23m.57s., SSS = +32m.55s.
Königsberg iPZ = +11m.58s., iZ = +12m.4s. and +12m.9s., iP_cPZ = +12m.11s., iE = +12m.49s. and +19m.51s., iSN = +21m.47s., iPSN = +22m.22s., iPPS = +22m.59s., iN = +23m.43s., eN = +26m.7s., eSSS = +28m.39s., e = +32m.39s.
Vienna P_cP = +12m.25s., PP = +15m.24s., PPP = +17m.16s., PS = +22m.46s.
Zagreb iP_cP = +12m.20s., i = +12m.30s., eZ = +12m.54s., ePPPPZ = +18m.41s., e = +21m.51s., eSKS = +22m.19s., eS_cSE = +22m.35s. = PS − 8s., eSKKS = +22m.55s., ePS = +23m.17s., e = +24m.43s., eSSS = +31m.34s.
Graz iPS = +22m.47s.
Laibach e = +15m.0s. = PP − 8s.
Prague ePS = +22m.54s.
Triest iPS = +23m.15s.
Cheb e = +13m.24s.
Leipzig iPE = +12m.19s., eZ = +12m.32s., iE = +12m.39s. and +12m.45s., iPP = +15m.12s., eE = +23m.3s. = PS −12s., +24m.15s., and +26m.3s.
Copenhagen +13m.21s., +23m.36s. = PS +18s., +24m.51s., SS = +27m.57s.?
Jena e = +23m.31s. = PS +9s.
Cape Town PP = +15m.24s., SN = +22m.36s., PSN = +23m.4s., SSE = +27m.36s., SSSE = +31m.20s.
Göttingen PN = +12m.39s., PP = +15m.39s., PS = +23m.43s., E = +24m.39s.
Hamburg iZ = +12m.27s., iPS = +23m.38s.
Chur eSKS = +22m.54s.
Stuttgart eP_cP = +12m.44s., e = +13m.11s., ePP = +15m.44s., eSKS = +22m.51s.
Zurich PS = +23m.39s.
Arapuni SS = +28m.51s.?
Wellington S_cS = +23m.11s. = S +4s., SS = +28m.5s., L_q = +35m.11s.
Strasbourg i = +13m.24s., iSKS = +22m.55s., iPS = +23m.56s., i = +25m.4s., SS = +28m.33s.
Bergen PS = +23m.47s.
De Bilt iZ = +13m.35s., eN = +23m.20s. = S − 2s.
Uccle e = +16m.55s., ePPPN = +18m.20s., i = +23m.21s. = S − 8s. and +23m.28s., SS = +29m.24s.
Algiers SKS = +23m.24s., PS = +24m.42s., PPS = +25m.29s.
Kew iSKS = +23m.28s., iS_cS = +23m.54s. = S − 2s., ePS = +24m.28s.
Durham ? = +23m.22s. = SKS −12s., SKS = +23m.55s. = S − 4s.
Oxford i = +24m.0s. = S − 3s.
Edinburgh i = +24m.2s. = S − 2s.
Stonyhurst iSKS = +23m.31s., iPS = +25m.1s., SS = +30m.20s.
Bidston SKS = +23m.38s., SS = +30m.24s., SSS = +32m.51s.
Alicante PPP = +18m.29s.
Rathfarnham Castle iSKS = +24m.4s. = SKKS +3s., iPS = +24m.49s., iPPS = +25m.54s., e = +26m.24s., and +27m.4s., eSS = +30m.24s., e = +33m.4s., +36m.29s., and +37m.52s.
Apia ePP = +16m.55s., ePPPE = +19m.0s., iSKSEN = +23m.44s., PPSE = +25m.52s., SSE = +30m.22s., SSSE = +34m.19s.
Scoresby Sund iPP = +17m.25s., eZ = +21m.0s., SKS = +23m.53s., eN = +24m.38s., PS = +25m.39s., SS = +31m.9s.
Toledo SKS = +23m.50s., SKKS = +24m.29s., eL_q = +38·2m.
Granada PP = +17m.17s., PPP = +19m.53s., PKS = +23m.53s., i = +25m.56s. = PS +11s.
Malaga e = +14m.25s., SKS = +23m.48s., SKKS = +24m.35s., PS = +25m.58s., PPS = +27m.3s., SS = +31m.30s.
San Fernando PP = +17m.24s., PPP = +19m.14s., iPS = +25m.9s. = S +11s.
Honolulu ePP = +18m.11s., ePS = +27m.11s.
Sitka ePP = +19m.14s., eSKS = +24m.58s., ePS = +28m.17s., e = +31m.1s., eSS = +32m.36s.
Seattle e = +27m.53s., eSS = +35m.43s., e = +48m.59s.
Bozeman e = +20m.36s. = PP +3s., ePP = +21m.1s., eSS = +37m.31s., eSSS = +43m.6s., e = +46m.51s. and +51m.51s.
Tinemaha eN = +22m.3s.
Ottawa eN = +21m.15s. = PP +4s., e = +39m.3s., +43m.51s.?, and +56m.51s.?
Pasadena ePPZ = +21m.2s., iZ = +22m.24s. = PKS, ePKSZ = +23m.12s., eZ = +31m.45s.

Continued on next page.

Mount Wilson iZ = +22m.20s. =PKS.
Vermont ePP = +21m.13s., eSS = +38m.43s., eSSS = +43m.48s.
Toronto ePPN = +21m.24s., i = +22m.26s. =PKS −12s. and +24m.24s., e = +39m.2s., i = +44m.23s.
Oak Ridge eN = +21m.20s. =PPP −5s., PP = +21m.32s., iPKS = +22m.27s e = +22m.33s., i = +22m.37s.
La Jolla eEZ = +22m.29s. =PKS −11s.
Ann Arbor eN = +22m.9s., e = +39m.45s., eN = +42m.21s.
Chicago ePP = +21m.56s., e = +23m.11s. and +37m.10s., eSS = +39m.33s., e = +52m.23s.
Philadelphia ePP = +21m.50s., ePS = +32m.16s., eSS = +39m.34s.
Florissant ePPZ = +21m.55s., eNZ = +22m.15s., iSKPENZ = +22m.48s., iENZ = +23m.53s., ePPPZ = +24m.59s., ePSKSN = +32m.28s., iE = +35m.11s., iZ = +35m.25s., eSSEN = +40m.3s., eSSSE = +45m.9s., iN = +77m.3s. and +80m.38s. ; T_0 =1h.10m.9s.
St. Louis eE = +22m.22s., e(SKP)EN = +22m.48s., eN = +24m.17s., e = +30m.19s., e(PSKS)E = +32m.39s., E = +33m.38s., eSSE = +40m.5s.
Charlottesville ePP = +22m.31s., eSS = +40m.11s., eSSS = +45m.27s.
La Plata PPS = +41m.51s.
San Juan ePKP = +19m.58s., e = +20m.29s. =PKP_2 +27s. and +22m.23s., ePP = +23m.51s., e = +37m.42s., eSS = +42m.0s., eSSS = +48m.42s.
La Paz iPKP$_2$Z = +20m.13s., iZ = +20m.43s. =PKP_2 −5s., SKPZ = +23m.17s., iPPZ = +24m.17s., SKSZ = +26m.24s., SKKS = +29m.33s., iSSN = +44m.41s., iSSE = +45m.34s., iSSSE = +50m.29s., L_g = +73m.41s.
Huancayo iP = +22m.11s., iPP = +25m.35s., e = +31m.16s. =PPPP −7s., eSKSP = +35m.55s., eSS = +45m.58s., e = +62m.7s. and +67m.27s.
Long waves at Denver.

Aug. 3d. 5h. 32m. 58s. Epicentre 36°·0N. 19°·0E. N.2.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Messina	3·5	309	0 52	+ 2	—	—	—	—
Capodimonte	6·1	325	e 0 18	−69	e 1 18	−78	4·0	—
Tunis	7·1	278	e 2 42	?	e 3 59	S_g	—	—
Sofia	7·5	26	e 1 50	+ 4	e 3 12	+ 1	e 3·9	—
Belgrade	8·9	7	e 2 6	0	e 3 43	− 3	5·1	—
Florence	9·8	325	2 19	+ 1	4 32	+24	—	7·5
Prato	9·9	325	e 2 18	− 1	5 39	S_g	—	10·0
Bucharest	10·0	31	e 2 32	+11	—	—	6·0	—
Zagreb	10·0	348	e 2 22	+ 1	e 4 5	− 8	e 9·4	—
Triest	10·4	339	e 2 23	− 3	i 4 15	− 8	—	—
Padova	10·9	332	0 2	?	—	—	—	—
Budapest	11·4	0	—	—	e 4 32	−16	e 7·0	9·0
Graz	11·4	348	i 2 35	− 5	e 5 21	S*	e 6·0	10·0
Piacenza	11·5	325	e 2 42	0	—	—	—	13·3
Vienna	12·4	352	e 2 57	+ 3	e 7 56	?	—	—
Ksara	14·0	94	e 3 14	− 1	e 5 51	0	—	—
Sebastopol	14·1	48	3 16	− 1	—	—	—	—
Yalta	14·3	49	3 18	− 1	—	—	—	—
Prague	14·4	348	—	—	i 6 23	+22	—	12·0
Stuttgart	14·6	334	e 3 21	− 2	e 5 50	−15	e 8·5	11·6
Simferopol	14·6	48	3 21	− 2	—	—	—	—
Cheb	14·8	343	e 6 30	S	(e 6 30)	+20	—	16·0
Strasbourg	15·0	330	e 3 15	−13	—	—	e 8·0	—
Jena	15·8	343	e 3 21	−37	—	—	—	—
Leipzig	16·0	345	e 3 42	+ 1	e 6 43	+ 5	—	11·0
Paris	17·6	322	e 3 58	− 4	—	—	—	—
Granada	18·1	280	—	—	e 7 22	− 5	—	—
Uccle	18·1	329	e 4 4	− 4	e 7 26	− 1	e 10·0	—
Hamburg	18·7	343	e 4 15	0	e 7 48	+ 8	—	15·0
De Bilt	18·8	333	4 17	+ 1	e 7 45	+ 3	e 10·0	12·9

Continued on next page.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Malaga	18·8	279	e 4 12	− 4	i 7 36	− 6	—	—
Copenhagen	20·1	350	4 42	PP	8 15	+ 7	—	—
San Fernando	20·2	278	e 4 31	− 1	e 7 55	−15	12·5	—
Kew	20·7	325	—	—	e 7 24	+ 4	12·4	—
Tiflis	20·8	66	4 44	+ 6	8 36	+14	12·0	—
Oxford	21·3	324	—	—	e 8 30	− 2	e 11·3	18·1
Grozny	21·7	62	e 4 58	+10	e 9 5	SS	—	—
Bidston	23·3	325	—	—	e 9 2	− 8	—	—
Stonyhurst	23·3	328	—	—	e 9 2?	− 8	—	—
Moscow	23·5	26	i 5 3	− 2	i 9 19	+ 5	12·2	20·1
Upsala	23·8	358	e 5 11	+ 3	e 9 25	+ 6	e 16·0	—
Rathfarnham Castle	24·7	323	—	—	i 9 52	+16	e 28·0	40·2
Pulkovo	24·9	15	i 5 17	− 2	e 9 42	+ 3	12·0	17·5
Edinburgh	25·0	330	—	—	e 9 42	+ 1	—	—
Bergen	25·9	346	—	—	e 10 2?	+ 5	—	—
Sverdlovsk	34·7	40	6 50	+ 4	i 12 23	+ 6	16·0	20·4
Tashkent	39·1	66	7 22	− 2	e 13 21	− 1	e 22·2	31·0
Scoresby Sund	40·7	341	10 2	(+18)	14 8	+21	18·0	—
Andijan	41·5	67	e 7 45	+ 1	—	—	—	—
Frunse	42·7	63	e 8 0	+ 6	—	—	—	—

Additional readings :—
Belgrade e = +3m.8s., +3m.38s., and +4m.24s. =S* +1s.
Zagreb e = +2m.54s., +3m.57s., and +4m.25s.
Triest e = +6m.15s. and = +7m.42s., i = +10m.10s.
Prague e = +8m.56s.
Cheb eS? = +9m.51s.
Leipzig eE = +3m.52s., +3m.57s., +4m.6s., +4m.19s., +4m.54s., and +6m.28s.
eS = +6m.52s., iSE = +6m.57s., eE = +8m.38s. and +10m.8s.
Granada e = +8m.2s.
Malaga e = +6m.4s., +8m.20s., and +9m.40s.
Copenhagen +4m.46s.
Tiflis PP = +5m.0s.
Long waves at Alicante and Algiers.

Aug. 3d. 11h. 45m. 32s. Epicentre 12°·2N. 125°·6E. (as on 1d. 14h.). R.2.

A = −·569, B = +·795, C = +·211.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Manila		5·1	299	i 1 20	P*	2 53	S_g	—	4·1
Palau		10·0	118	2 8	−13	3 47	−26	—	—
Hong Kong		14·8	316	3 28	+ 2	6 28	+18	—	9·6
Amboina		16·1	170	e 3 47	+ 4	6 25	−16	—	—
Nanking		20·8	343	4 35	− 3	8 37	SS	11·2	—
Nagasaki		20·9	11	4 41	+ 2	8 35	+11	—	—
Matuyama		22·6	17	4 42	−15	9 9	+12	—	—
Sumoto		23·7	22	5 8	+ 1	10 3	+45	—	—
Taikyu		23·8	7	e 5 11	+ 3	9 37	+18	—	—
Kobe	E.	24·1	21	e 5 21	+10	e 9 27	+ 2	—	—
	N.	24·1	21	e 5 15	+ 4	e 9 42	+17	—	—
	Z.	24·1	21	e 5 30	PP	e 10 4	SS	—	—
Zinsen		25·3	2	e 6 58	?	—	—	—	—
Batavia		26·2	226	i 5 24	− 7	i 10 0	− 2	—	—
Chiufeng		29·1	345	5 56	− 1	i 10 49	− 1	13·7	19·6
Vladivostok		31·4	8	e 6 16	− 1	e 11 36	+10	15·6	21·0
Calcutta		36·9	291	8 55	?	15 55	?	23·3	—
Agra		47·0	296	8 26	− 3	15 18	− 1	22·4	—
Frunse		53·5	315	e 9 17	− 1	—	—	—	—
Andijan		54·5	312	e 9 17	− 8	—	—	—	—
Tashkent		56·9	313	i 9 41	− 1	i 17 40	+ 5	e 29·7	33·7
Sverdlovsk		66·3	328	e 10 50	+ 3	19 42	PS	32·5	38·1
Grozny		74·3	312	e 11 50	+14	—	—	—	—
Tiflis		75·1	311	11 38	− 3	21 18	− 3	43·0	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Moscow	78·9	326	i 11 58	− 4	e 21 55	− 9	e 32·8	45·4
Pulkovo	82·2	329	e 12 16	− 3	22 31	− 8	e 42·5	51·1
Yalta	82·5	314	e 22 36	S	(e 22 36)	[− 4]	—	—
Ksara	83·0	303	i 12 24a	+ 1	i 22 54	+ 7	—	—
Copenhagen	92·4	329	13 8	− 1	23 39	[− 8]	50·5	—
Zagreb	94·4	318	—	—	e 23 40	[−18]	—	—
Scoresby Sund	94·5	349	13 22	+ 4	—	—	—	—
Hamburg	94·7	327	—	—	e 23 55	[− 4]	e 52·5	60·5
Triest	95·9	317	—	—	e 23 57	[− 8]	—	59·4
Stuttgart	96·6	323	e 13 29	+ 1	e 24 2	[− 7]	e 52·5	—
De Bilt	97·9	327	e 13 28	− 6	e 24 9	[− 7]	e 52·5	60·2
Strasbourg	98·3	323	e 13 33	− 3	e 25 3	− 9	e 39·5	—
Edinburgh	99·6	333	—	—	e 25 18	− 5	e 54·5	—
Bidston	101·2	331	—	—	e 24 23	[− 9]	e 55·5	—
La Paz	166·0	109	e 20 5	[+ 5]	—	—	—	—

Additional readings :—
Hong Kong SS? = +6m.40s.
Sumoto SN = +10m.0s.
Batavia iZ = +7m.13s.
Chiufeng iN = +12m.37s.
Agra ePP = +10m.11s., PPP = +10m.50s., SS = +18m.21s., SSS = +19m.30s.
Tiflis ePP = +12m.4s.
Pulkovo PP = +15m.30s.
Ksara iPP = +15m.41s., PS = +23m.47s.
Copenhagen PP = +16m.52s., +24m.14s. =S − 4s.
Stuttgart ePP = +17m.28s., ePS = +26m.13s.
De Bilt ePPZ = +17m.34s.
Strasbourg ePS = +26m.31s.
Bidston e = +32m.35s. =SS+17s.
Long waves at Durham, Kew, Stonyhurst, Bombay, Hyderabad, and other European stations.

Aug. 3d. 13h. Readings for which no determination has been made :—

Nanking ePE =22m.20s., eSN =26m.49s., ME =29m.36s.
Chiufeng eNZ =23m.6s., L =25m.54s., MN =26m.38s.
Agra eP =23m.31s., iS =27m.16s., M =32m.16s.
Andijan eP =23m.50s.
Frunse eP =24m.1s., e =31m.41s.
Tashkent e =24m.27s., e =24m.41s., e =25m.31s., iS =29m.12s., eL =32m.12s., M =33m.48s.
Calcutta P =25m.34s., S =27m.26s., L =28m.10s., M =30m.10s.
Taikyu eP =28m.4s.
Hyderabad PEN =29m.0s., SEN =32m.30s., LN =33m.30s., MN =38m.30s.
Vladivostok e =29m.17s., L =32m.42s., M =35m.6s.
Bombay eE =30m., iN =34m.47s.
Zinsen e =30m.
Semipalatinsk e =31m.9s.
Stuttgart e =33m., eL =54s.
Moscow e =42m.5s., eL =45m.6s., M =48m.30s.
Strasbourg e =51m., eL =54s.
Hamburg e =51m.
Long waves at Bidston, Edinburgh, Kew, Hong Kong, and other European stations.

Aug. 3d. Readings also at 0h. (Wellington), 1h. (Phu-Lien), 2h. (Toyooka), 3h. (Amboina and New Plymouth), 4h. (Erevan), 7h. (Calcutta, Sverdlovsk, Tashkent, Batavia, and Hong Kong), 8h. (Nagoya), 9h. (Chiufeng and Wellington), 10h. (Oxford, Sverdlovsk, Tashkent, and Hong Kong), 11h. (Apia), 12h. (San Juan), 13h. (Tiflis (2) and Husan), 14h. (Hong Kong, Chiufeng, Nanking, Vladivostok, Agra, Calcutta, Sverdlovsk, and Tashkent), 15h. (Hong Kong), 16h. (Batavia, Malabar, and Chiufeng (3)), 17h. (Chiufeng, Hong Kong, Manila, Ksara, Sverdlovsk, and Tashkent), 18h. (Copenhagen, De Bilt, Pulkovo, Stuttgart, and Vladivostok), 19h. (Hong Kong).

Aug. 4d. 2h. 24m. 7s. Epicentre 14°·3N. 97°·5W. (as on 1933 June 13d.). X.

A = −·126, B = −·961, C = +·247; D = −·991, E = +·131;
G = −·032, H = −·245, K = −·969.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	2·8	15	0 37	− 3	—	—	—	—
Puebla	4·8	352	0 58	−10	—	—	—	—
Ixtapalapa	5·3	344	1 3	−12	—	—	—	—
Tacubaya	5·3	342	1 4	−11	—	—	—	—
St. Louis	25·2	13	e 5 17	− 5	e 9 33	−11	—	15·9
Florissant	25·3	13	e 5 18	− 5	e 9 33	−13	—	e 13·6
La Jolla	25·8	319	i 5 27	0	—	—	—	—
Riverside	26·7	321	i 5 35	0	—	—	—	—
Pasadena	27·2	320	e 5 40	0	—	—	e 13·9	—
Mount Wilson	27·2	321	e 5 41	+ 1	—	—	—	—
Santa Barbara	28·4	319	e 5 53	+ 2	—	—	—	—
Haiwee	28·5	324	e 5 52	0	—	—	—	—
Tinemaha	29·3	325	e 5 58	− 1	—	—	—	—
San Juan	30·3	77	e 6 25	?	e 11 24	+15	—	—
Berkeley	32·2	322	—	—	e 15 29	?	i 20·0	—
Philadelphia	32·2	33	e 6 25	+ 1	e 11 34	− 4	e 17·0	—
Bozeman	33·4	343	—	—	e 12 23	+26	e 16·1	—
Huancayo	34·3	138	—	—	e 12 53	+42	18·2	—
Oak Ridge	36·0	34	i 7 0	+ 2	—	—	e 21·4	—
Ottawa	36·1	27	e 6 53	− 6	e 12 41	+ 4	e 17·9	—
Scoresby Sund	71·8	19	11 21	− 1	20 47	+ 4	36·9	—
Edinburgh	80·6	35	—	—	e 21 53?	−29	—	—
Kew	83·3	39	—	—	e 23 0	+10	45·9	—
De Bilt	86·3	37	e 12 51	+11	e 23 47	+27	e 44·9	—
Copenhagen	89·0	32	—	—	23 41	− 5	41·9	—
Stuttgart	89·8	40	e 13 5	+ 9	—	—	e 48·9	—
Pulkovo	94·9	23	e 17 9	PP	e 24 1	[+ 1]	e 40·9	53·7
Sverdlovsk	106·6	12	—	—	e 25 3	[+ 6]	44·9	—
Ksara	114·5	42	—	—	e 29 53	PS	—	71·9
Tashkent	123·1	12	—	—	e 38 47	?	e 60·9	79·1

Additional readings :—
St. Louis eEN = +9m.45s., eSSE = +10m.4s.
Florissant ePPENZ = +5m.46s.
San Juan e = +14m.28s. and +16m.5s.
Bozeman e = +14m.58s.
Huancayo e = +15m.41s.
Oak Ridge i = +7m.9s. and +7m.18s.
Scoresby Sund e = +22m.46s.
De Bilt ePPZ = +16m.17s.
Stuttgart ePP = +16m.29s.; T_0 = 2h.24m.6s.
Ksara e = +16m.53s.
Long waves also at Guadalajara, Merida, Sitka, Seattle, La Paz, Bidston, and other European stations.

Aug. 4d. 9h. Readings for which no determination has been found :—

Sitka e = 38m.29s., e = 40m.25s., L = 41m.10s.
Tinemaha ePZ = 42m.46s., iZ = 42m.58s., eN = 47m.36s.
Haiwee ePN = 42m.54s.
Santa Barbara iPZ = 43m.1s., iZ = 43m.13s.
Mount Wilson iPZ = 43m.8s., iZ = 43m.20s., iZ = 46m.3s.
Pasadena iPZ = 43m.8s., iNZ = 43m.20s.
Riverside iPZ = 43m.11s., iENZ = 43m.23s., iZ = 46m.2s.
La Jolla iPZ = 43m.21s.
Grozny eP = 44m.23s.
St. Louis ePN = 44m.37s., M = 59m.30s.
Florissant iPENZ = 44m.43s., eS?N = 50m.54s., eME = 59m.15s.
Scoresby Sund P = 45m.0s., 46m.36s., S = 51m.18s., 54m.54s., L = 60m.
Oak Ridge i = 45m.16s., e = 45m.27s., i = 47m.28s., eL = 59m.42s.
Bozeman e = 46m.20s., eL = 50m.33s.
Pulkovo eP = 46m.51s., eS = 54m.52s., eL = 65m., M = 69m.12s.

Continued on next page.

Stuttgart eP =48m.0s., eS =57m.12s., eL =75m.
Tiflis e =48m.11s., e =58m.15s., eL =79m.
Yalta eP =48m.14s., S =57m.45s.
Simferopol eP =48m.25s.
Ksara e =50m.26s., e =61m.21s.
Ottawa e =51m.18s., e =54m.36s., eL =57m.
Philadelphia e =52m.18s., e =56m.15s., e =58m.51s., L =60m.54s.
Edinburgh e =55m.
Sverdlovsk S =55m.3s., L =63m.30s.
Moscow i =55m.42s.
Tashkent e =57m.2s., e =66m.12s., e =73m.12s., eL =77m.12s., M =81m.18s.
Chiufeng eEZ =67m.30s.
Long waves at Ithaca and other European stations.

Aug. 4d. 16h. 36m. 19s. Epicentre 5°·1S. 102°·7E. (as on 1931 Oct. 5d.). X.

A = −·219, B = +·972, C = −·089 ; D = +·976, E = +·220 ;
G = +·020, H = −·087, K = −·996.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	4·3	104	i 1 4a	+ 3	i 1 52	+ 2	—	—
Malabar	5·3	114	i 1 17	+ 2	i 2 15	0	—	—
Chiufeng	46·9	14	15 15	S	(15 15)	− 2	22·1	30·7
Andijan	53·6	331	e 9 14	− 4	e 16 51	+ 1	—	—
Frunse	54·4	334	e 9 30	+ 6	e 17 50	PS	—	—
Tashkent	55·5	330	i 9 31	− 1	17 8	− 8	e 30·0	32·0
Tiflis	70·4	317	—	—	e 20 21	− 5	e 70·2	—
Grozny	70·5	320	e 11 11	− 3	e 20 19	− 8	—	—
Sverdlovsk	70·7	338	—	—	20 30	0	32·7	—
Ksara	74·0	309	e 21 38	S	(e 21 38)	PS	—	45·7
Pulkovo	85·7	331	e 15 54	PP	—	—	e 20·7	23·5
Santa Barbara	131·0	47	e 22 31	PKS	—	—	—	—
La Jolla	133·6	47	e 22 37	PKS	—	—	—	—
Pasadena	132·4	46	e 22 42	PKS	—	—	—	—
Mount Wilson	132·4	46	i 22 43	PKS	—	—	—	—

Additional readings :—
Tiflis e = +13m.45s. =PP +3s. and +21m.14s.
Sverdlovsk e = +20m.59s. =PS +12s.
Ksara eS = +30m.12s.
La Jolla iZ = +22m.50s. =PKS +1s.
Long waves at Hong Kong.

Aug. 4d. 18h. Readings for which no determination has been made :—

Semipalatinsk e =7m.50s., e =9m.22s., eS =10m.2s.
Frunse e =8m.29s., e =9m.5s., e =10m.27s.
Andijan e =8m.52s., e =10m.0s., iS =11m.34s.
Tashkent e =9m.18s., i =10m.27s., e =11m.19s., e =11m.39s., e =12m.5s., iS = 12m.45s., iL =13m.0s., M =13m.18s.
Samarkand e =9m.45s., e =11m.20s.
Tchimkent e =9m.55s., iS =12m.29s.
Sverdlovsk P =11m.27s., L_a =17m.42s., LR =19m.18s.
Grozny eP =12m.28s.
Pulkovo e =19m.16s., e =23m.45s., L =25m., M =28m.30s.
Baku e =20m.17s.
Moscow e =21m.45s., e =24m.13s., eL =25m.30s., M =26m.24s.
Uccle e =33m.
Pasadena iPZ =35m.47s.
Mount Wilson iPZ =35m.48s.
Tinemaha ePZ =35m.49s.
Riverside iPZ =35m.49s.
Long waves at Edinburgh, Copenhagen, De Bilt, Hamburg, Paris, Strasbourg, and Stuttgart.

Aug. 4d. Readings also at 4h. (Sebastopol, Simferopol, and Yalta), 5h. (Yalta, Arisan, Karenko, Nanking, Taihoku, and Taityu), 6h. (Hong Kong and Samarkand), 8h. (Tiflis and Mizusawa), 10h. (Wellington), 12h. (Tacubaya), 17h. (Andijan), 18h. (near Chiufeng), 21h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 22h. (Zagreb).

Aug. 5d. 23h. 50m. 16s. Epicentre 35°·2S. 72°·2W. N.3.

A = +·250, B = −·778, C = −·576; D = −·952, E = −·306; G = −·176, H = +·549, K = −·817.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		2·1	36	0 26	− 4	0 57	+ 3	—	—
La Plata	E.	11·6	93	2 44	+ 1	4 44	− 9	5·5	8·0
	N.	11·6	93	2 57	PP	5 14	+21	5·5	6·8
Sucre		17·3	23	3 56	− 2	i 7 11	+ 2	9·1	—
La Paz		19·0	12	i 4 17a	− 2	i 7 53	+ 7	i 8·2	12·0
Huancayo		23·3	352	e 5 10	+ 6	e 9 4	− 6	e 11·8	—
San Juan		53·9	7	—	—	e 16 44	−10	e 28·7	—
St. Louis		75·6	346	e 11 48	+ 4	e 21 11	−16	—	—
Florissant		75·9	346	e 11 54	+ 9	e 21 19	−11	e 34·9	—
La Jolla		80·1	323	e 12 27	+19	—	—	—	—
Riverside		81·0	324	e 12 12	− 1	—	—	—	—
Pasadena		81·5	324	i 12 31	+15	—	—	e 39·7	—
Mount Wilson		81·6	324	e 12 11	− 5	—	—	—	—
Tinemaha		84·0	325	e 12 28	0	—	—	—	—
Rathfarnham Castle		105·3	34	e 15 44	?	e 42 49	?	54·4	66·1
Oxford		106·7	37	—	—	e 27 59	PS	e 53·7	63·7
Uccle		109·0	40	—	—	e 28 27	PS	e 50·7	—
De Bilt		110·2	39	—	—	e 28 35	PS	e 56·7	61·6
Stuttgart		110·7	44	—	—	e 28 44	PS	e 56·7	—
Scoresby Sund		111·6	15	—	—	28 50	PS	51·7	—
Copenhagen		115·7	38	—	—	29 27	PS	51·7	—
Ksara		122·1	69	e 20 47	PP	e 30 27	PS	62·7	72·7
Pulkovo		125·9	37	—	—	e 32 34	?	e 56·7	64·0
Tiflis		131·3	62	e 19 22	[+13]	e 31 53	PS	74·7	—
Baku		134·7	65	e 22 0	PP	e 33 30	?	59·7	81·4
Sverdlovsk		141·9	40	—	—	e 32 54	SKSP	61·2	88·3
Samarkand		147·6	70	e 19 48	[+10]	—	—	—	—
Tashkent		149·3	66	e 19 40	[− 1]	—	—	e 87·0	93·6
Andijan		151·7	68	e 19 48	[+ 4]	—	—	—	—
Frunse		153·2	63	e 20 4	{− 9}	—	—	—	—

Additional readings :—
La Plata E = +2m.51s., +2m.55s., and +5m.8s.
La Paz iSN = +7m.57s.
Huancayo i = +9m.20s. and +9m.56s. =SSS +2s.
San Juan ePPP = +12m.15s., e = +21m.14s.
Florissant eSSEN = +26m.0s.
La Jolla iZ = +13m.54s.
Riverside iZ = +12m.28s.
Pasadena iZ = +13m.36s.
Mount Wilson iZ = +12m.31s.
Tinemaha eZ = +12m.43s., iZ = +13m.38s.
Tiflis e = +22m.40s. =PKS +1s.
Sverdlovsk e = +41m.20s. =SS +15s.
Tashkent e = +20m.19s., i = +21m.5s. and +23m.24s. =PKS −2s.
Long waves at Bidston, Edinburgh, Kew, Stonyhurst, Chiufeng, Cape Town, Wellington, Paris, San Fernando, Strasbourg, and Triest.

Aug. 5d. Readings also at 0h. (Lick), 4h. (Mount Wilson, Pasadena, and Tinemaha), 5h. (Tiflis), 8h. (Andijan and Frunse), 9h. (Sumoto), 12h. (Triest), 13h. (Apia, Wellington, Sebastopol, Simferopol, Yalta, La Jolla, Mount Wilson, Pasadena, Riverside, and Tinemaha), 14h. (Andijan, Baku, Frunse, Ksara, Scoresby Sund, Sverlovsk, Tashkent, Tiflis, La Paz, and Malabar), 15h. (Copenhagen, De Bilt, Paris, Ksara, and Stuttgart), 16h. (Nagoya), 18h. (Santiago), 19h. (Mount Wilson, Pasadena, Tinemaha, Merida, and Tacubaya), 20h. (Grozny, Tiflis, Mount Wilson, Pasadena, San Juan, and Tinemaha), 21h. (Erevan, Scoresby Sund, Sverdlovsk, Tashkent, Mount Wilson, Pasadena, Riverside, Tinemaha, and Merida).

Aug. 6d. 7h. 10m. 51s. Epicentre 45°·4N. 7°·5E. N.3.

A = +·696, B = +·092, C = +·712; D = +·131, E = −·992; G = +·706, H = +·093, K = −·702.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	1·6	347	e 0 28	P_g	e 0 43	+ 2
Chur	2·0	44	e 0 30	+ 1	e 0 55	+ 4
Zurich	2·1	21	e 0 31	+ 1	e 0 52	− 2
Basle	2·2	2	e 0 54	S	(e 0 54)	− 3

Chur gives also i = +33s.
Long waves at Baku, Scoresby Sund, Sverdlovsk, and Tashkent.

Aug. 6d. 20h. 45m. 0s. Epicentre 22°·0N. 122°·0E. (as on 1931 Oct. 31d.). X.

A = −·491, B = +·786, C = +·375;

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Taito	1·1	314	e 0 23	+ 7	0 40	+12	—
Kosyun	1·2	270	i 0 29	S	0 48	?	—
Takao	1·7	291	e−2 4	?	−1 56	?	—
Arisan	1·8	324	i 0 28	+ 2	i 0 50	S*	—
Tainan	1·9	301	e 0 26	− 2	0 49	0	—
Karenko	2·0	350	e 0 31	+ 2	0 59	S*	—
Taityu	2·4	331	0 35	+ 1	1 3	+ 1	—
Hokoto	2·7	304	e 0 43	S*	1 1	− 8	—
Taihoku	3·0	352	i 0 43	0	1 12	− 5	—
Nanking	10·5	345	2 20	− 8	e 4 27	+ 1	5·8
Nagoya	18·5	41	e 4 6	− 7	—	—	—

Aug. 6d. Readings also at 1h. (Cape Town and Bombay), 2h. (Wellington), 3h. (Chiufeng, Phu-Lien, Sverdlovsk, and Tashkent), 6h. (Santiago (2)), 7h. (Santiago, Scoresby Sund, Sverdlovsk, and Tashkent), 8h. (La Paz and Baku) 10h. (Medan), 11h. (Taihoku), 13h. (Melbourne, Wellington, Cape Town, Nagoya, and Mizusawa), 14h. (Edinburgh, Copenhagen, De Bilt, Granada, Ksara, Paris, Scoresby Sund, Strasbourg, San Fernando, and Stuttgart), 16h. (Oak Ridge, Wellington, Melbourne, Basle, Neuchatel, and Zurich), 17h. (La Jolla, Mount Wilson, Pasadena, Riverside, Budapest, Copenhagen, Granada, Paris, and San Fernando), 19h. (Branner and Triest), 20h. (Wellington), 21h. (Florissant, Huancayo, Mount Wilson, Pasadena, Riverside, San Juan, St. Louis, and Tinemaha).

Aug. 7d. 9h. 2m. 17s. Epicentre 0°·8N. 77°·8W. N.3.

A = +·211, B = −·977, C = +·014; D = −·977, E = −·211; G = +·003, H = −·013, K = −1·000.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		8·3	348	2 2	+ 4	—	—	—	—
Huancayo		13·1	169	i 3 0	− 3	i 5 25	− 4	e 6·7	—
Port au Prince		18·5	16	i 4 8	− 5	—	—	—	—
La Paz		19·8	151	e 4 25	− 2	i 8 10	+ 8	9·3	10·3
San Juan		21·0	31	i 4 35	− 5	e 8 27	+ 1	i 11·0	—
Sucre		23·4	150	i 5 4	− 1	i 9 16	+ 4	11·9	—
Philadelphia		39·2	3	e 7 22	− 3	e 13 3	−21	e 18·7	—
St. Louis		39·5	344	e 7 24	− 4	i 13 27	− 2	—	—
Florissant		39·6	344	e 7 25	− 4	i 13 27	− 3	—	—
La Plata	E.	40·2	206	7 37	+ 3	13 43	+ 4	22·0R	23·7

Continued on next page.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Ithaca		41·7	1	—	—	e 14 1	− 1	—	—
Oak Ridge		42·1	7	i 7 47	− 2	e 14 5	− 3	e 24·2	—
Toronto		42·9	358	e 7 46	−10	i 14 1	−18	e 19·7	—
Ottawa		44·2	2	e 8 7	+ 1	e 14 25	−14	e 18·7	—
La Jolla		49·1	316	e 8 48	+ 4	—	—	—	—
Riverside		49·7	316	i 8 52	+ 3	—	—	—	—
Pasadena		50·3	316	i 8 55	+ 1	—	—	—	—
Mount Wilson		50·3	316	e 8 57	+ 3	—	—	—	—
Haiwee		51·3	318	e 9 10	+ 9	—	—	—	—
Tinemaha		52·0	319	i 9 10	+ 4	—	—	—	—
Lick	N.	54·4	318	e 9 25	+ 1	—	—	—	—
Berkeley		55·1	318	e 9 43?	+13	—	—	—	—
San Fernando		74·8	52	—	—	e 21 12	− 6	39·7	—
Malaga		76·3	52	e 11 51	+ 3	e 21 55	PS	—	—
Granada		77·0	52	11 51	− 1	e 21 46	+ 3	36·7	50·4
Toledo		77·2	49	e 11 55	+ 2	e 21 41	− 4	—	—
Scoresby Sund		78·5	17	11 57	− 3	21 52	− 7	33·7	—
Bidston		80·3	36	—	—	e 22 6	−13	—	—
Edinburgh		80·6	34	—	—	e 20 43?	?	—	—
Oxford		81·1	38	—	—	i 22 16	−11	e 29·5	47·7
Uccle		84·5	39	e 12 31	0	—	—	—	—
De Bilt		85·2	38	12 37	+ 3	e 22 59	[− 2]	e 36·7	37·9
Strasbourg		86·5	42	e 12 43	+ 2	e 23 11	[+ 1]	e 34·7	—
Stuttgart		87·4	42	e 12 47	+ 2	—	—	e 37·7	—
Hamburg		88·1	36	e 12 51	+ 3	e 23 19	[− 2]	e 42·7	—
Copenhagen		89·6	34	—	—	e 23 26	[− 4]	39·7	—
Triest		90·5	44	—	—	e 23 54	− 7	—	45·0
Pulkovo		98·3	29	—	—	e 25 1	−11	e 40·7	50·7
Sverdlovsk		113·5	23	—	—	e 24 43?	[−45]	42·7	—

Additional readings :—
Huancayo i = +3m.35s. and +4m.13s.
Port au Prince PP = +4m.23s., PPP = +4m.29s.
La Paz iS?Z = +8m.52s.
San Juan ePP = +4m.47s., i = +5m.16s., iS = +8m.3s., iSS = +8m.55s.
Philadelphia iPP = +8m.55s., eS_cS = +17m.12s.
St. Louis epPN = +7m.44s., ePPN = +8m.58s., epPPE = +9m.18s., isSE = +14m.2s., eSS = +16m.23s.
Florissant epP = +7m.45s., ePPNZ = +8m.58s., esSE = +14m.3s., iEN = +16m.23s. ; T_o = 9h.2m.18s.
La Plata SN = +14m.1s., S_cSE = +17m.43s., L_q? = +19m.37s., LRN = +22m.7s.
Oak Ridge i = +7m.53s., P_cP = +9m.36s. = PP +15s., ePPP = +9m.49s. = P_cP +0s., i = +10m.8s., SSS = +17m.55s. = S_cS +1s.
Lick eE = +9m.29s.
Malaga e = +12m.28s., +15m.19s., +17m.33s., and +18m.59s.
Pulkovo e = +30m.5s.
Long waves were also recorded at Paris, Alicante, Kew, Stonyhurst, Cape Town, Baku, Chiufeng, and Sitka.

Aug. 7d. Readings also at 2h. (Wellington (2), 3h. (Karlsruhe), 4h. (near Lick), 5h. (Huancayo, La Paz, and San Juan), 7h. (Tashkent and Sverdlovsk), 8h. (La Jolla, Pasadena, Mount Wilson, Riverside, Tinemaha, Ksara, Prague, Strasbourg, Stuttgart, and near Apia), 9h. (near Medan), 12h. (Karlsruhe), 15h. (Tiflis and near Andijan), 16h. (Apia and Granada), 18h. (near Oak Ridge), 19h. (Santiago and near Mizusawa), 20h. (San Juan), 23h. (near Santiago).

Aug. 8d. Readings at 0h. (near Neuchatel), 2h. (Taityu, near Karenko, and near Mizusawa), 3h. (Bucharest and near Sofia), 7h. (Kobe, near Sumoto, and near Lick), 14h. (Mount Wilson, Pasadena, Tashkent, Pulkovo, Vladivostok, Copenhagen, Sverdlovsk, Semipalatinsk, Frunse, Tchimkent, Chiufeng, and Keizyo), 15h. (near Medan), 17h. (Sumoto and near Medan (2)), 21h. (near Apia).

Aug. 9d. 1h. 30m. 37s. Epicentre 38°·7N. 70°·5E. (as on 1935 Jan. 31d.). X.

A = +·261, B = +·736, C = +·625.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Andijan	2·5	35	e 0 32	− 4	e 1 3	− 1	—	2·1
Tashkent	2·8	342	i 0 40	0	i 1 13	+ 1	i 1·3	1·7
Samarkand	2·9	289	0 45	+ 4	1 32	+18	—	2·5
Frunse	5·2	36	e 1 13	− 1	e 2 11	− 2	—	—

Samarkand gives also P = +48s.
Long waves recorded at Sverdlovsk.

Aug. 9d. 16h. 48m. 59s. Epicentre 22°·7N. 120°·3E. (as on 1935 June 22d.). R.3.

A = −·465, B = +·796, C = +·386; D = +·863, E = +·505;
G = −·195, H = +·333, K = −·923.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Takao	0·1	218	−0 7	− 8	0 5	+ 2	—	—
Tainan	0·3	359	i 0 10	+ 6	0 19	+11	—	—
Kosyun	0·8	160	i 0 11	0	0 21	0	—	—
Taito	0·8	86	i 0 9	− 2	0 16	− 5	—	—
Arisan	0·9	22	i 0 13	0	i 0 25	+ 2	—	—
Hokoto	1·1	320	e 0 27	S	(e 0 27)	− 1	—	—
Taityu	1·5	12	0 21	0	0 37	− 2	—	—
Karenko	1·8	43	e 0 27	+ 1	0 49	+ 3	—	—
Taihoku	2·6	22	e 0 42	P*	e 1 12	+ 5	—	—
Nanking	9·4	352	e 1 16	+ 3	e 3 37	−22	e 4·0	4·5
Chiufeng	17·7	349	e 3 46	−17	—	—	—	—
Sverdlovsk	54·6	325	9 36	+10	—	—	27·5	—

Additional readings:—
Taihoku eS = +1m.15s. = S* − 1s.
Long waves at Hong Kong.

Aug. 9d. Readings also at 3h. (near Granada), 4h. (near Santiago), 5h. (Stratford), 6h. (Amboina), 8h. (Medan and Tiflis), 9h. (near Apia), 10h. (near Mizusawa), 13h. (Tiflis, near Nagoya, and near Santiago), 14h. (Florence and Prato), 16h. (Medan), 17h. (Granada, near Santiago, near Branner, and Lick), 19h. (Granada), 20h. (Granada), 23h. (Andijan, Frunse, Samarkand, Tashkent, Tchimkent, Oaxaca, and Tacubaya).

Aug. 10d. 17h. 31m. 58s. Epicentre 63°·5S. 23°·0W. N.3.

A = +·411, B = −·174, C = −·895; D = −·391, E = −·921;
G = −·824, H = +·350, K = −·446;

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
La Plata	E.	35·7	307	7 56	PP	15 26	?	20·1	25·1
	N.	35·7	307	7 50	PP	15 32	?	20·1	26·1
Cape Town		39·0	61	8 28	PP	—	—	—	—
Sucre		52·8	308	9 13	+ 1	i 16 33	− 6	24·0	—
La Paz		56·2	306	i 9 37a	0	i 17 27	+ 2	27·1	32·7
Huancayo		63·0	300	i 10 26	+ 1	i 18 59	+ 4	25·8	—
Wellington		74·3	194	—	—	e 19 2?	?	35·0	—
Melbourne		78·2	171	—	—	e 22 15	PS	40·0	41·7
Adelaide		80·5	165	—	—	e 22 7	−14	e 42·0	45·8
Riverview		82·6	175	—	—	e 34 50	?	e 42·3	43·6
San Juan		88·5	320	e 13 22	?	e 23 12	[−11]	e 40·6	—
Granada		101·9	16	e 14 44	?	—	—	e 41·5	53·8
Ksara		107·8	49	e 18 21	[+10]	e 29 31	?	51·0	58·0
Philadelphia		111·4	320	—	—	e 24 58	[−21]	e 50·9	—
Paris		114·1	18	e 29 38	PS	—	—	58·0	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg		114·7	23	e 20 2?	?	e 28 2?	?	e 48·0	—
Stuttgart		115·1	24	e 19 20	PP	—	—	e 51·0	61·0
St. Louis		115·1	307	e 19 33	PP	e 28 58	PS	e 56·5	—
Florissant		115·3	307	e 19 27	PP	e 26 32	{−12}	—	60·0
Uccle		116·3	19	—	—	e 29 2	PS	e 47·0	—
Ottawa		116·6	321	—	—	e 26 2?	{−51}	e 49·0	—
De Bilt		117·7	20	e 20 32	?	e 29 14	PS	e 48·5	50·8
Bidston		117·9	13	—	—	e 29 12	PS	e 55·0	—
Tiflis		118·0	52	—	—	e 27 32	{+29}	49·0	—
Baku		118·7	56	e 18 44	[+ 2]	e 29 40	PS	52·0	57·7
Edinburgh		120·4	13	—	—	e 36 2?	SS	e 49·0	—
Riverside	z.	121·7	283	e 18 51	[+ 2]	—	—	—	—
Copenhagen		122·3	23	—	—	29 8	?	52·0	—
Mount Wilson	z.	122·4	283	e 18 54	[+ 3]	—	—	—	—
Pasadena	z.	122·4	283	i 18 53	[+ 2]	—	—	—	—
Tashkent		127·2	71	i 20 43	PP	e 28 21	{+16}	e 50·3	70·8
Pulkovo		129·7	32	e 21 31	PP	e 29 3	?	e 56·0	72·6
Scoresby Sund		134·0	0	21 26	PP	e 26 32	[+ 1]	52·0	—
Sverdlovsk		136·2	52	e 19 37	[+20]	—	—	57·0	79·6
Chiufeng		146·5	114	e 19 33	[− 3]	—	—	—	—
Vladivostok		155·0	134	e 21 19	?	—	—	e 88·0	—

Additional readings :—
Cape Town N = +8m.34s., E = +9m.48s. = P_cP +9s., +12m.40s., and +15m.0s., N = +15m.20s., and +16m.38s.
La Paz pP = +10m.33s., sPZ? = +10m.48s., PPZ = +11m.59s., PSZ = +17m.55s., sSE = +18m.38s., sSZ = +19m.4s., SSZ = +22m.7s.
Huancayo e = +9m.56s., e = +23m.35s. and +25m.37s.
Melbourne i = +27m.46s., e = +32m.49s.
Adelaide i = +28m.0s., e = +34m.12s.
San Juan e = +16m.10s. = PP − 3s. and +28m.49s.
Ksara SKS = +28m.35s.
Philadelphia e = +28m.23s. = PS − 19s. and +34m.14s. = SS − 24s.
Strasbourg e = +34m.2s.?
Stuttgart ePS = +28m.50s., eSS = +34m.56s.
St. Louis eE = +35m.17s., eSSE = +39m.11s.
Florissant eN = +21m.0s., eSKKSEN = +29m.0s., e = +29m.8s. = PS − 11s., eEN = +29m.59s., eSEN = +30m.20s., ePPSN = +34m.42s., eN = +35m.22s. = SS − 8s., eSSE = +39m.32s. = SSS − 6s., eSSN = +39m.44s.
Uccle e = +35m.18s.
Ottawa e = +29m.2s.? and +35m.2s. ?
Copenhagen +36m.20s.
Pasadena iZ = +20m.51s.
Tashkent e = +38m.21s. = SS + 16s.
Pulkovo e = +34m.1s., +37m.57s., and +42m.36s. = SSS + 0s.
Scoresby Sund i = +22m.57s. = PKS + 7s., e = +23m.33s.
Sverdlovsk e = +22m.6s. = PP + 8s., +23m.46s., +35m.6s., and +39m.24s.
Long waves were recorded at Tananarive, Hong Kong, Kew, and at other European stations.

Aug. 10d. Readings also at 5h. (Berkeley, near New Plymouth, and Wellington), 11h. (near Batavia and Malabar), 14h. (near Branner), 17h. (near Triest), 19h. (near Oak Ridge), 20h. (near Andijan, Frunse, and Tashkent), 21h. (near Medan), 22h. (Edinburgh and near Ferndale), 23h. (Christchurch, near New Plymouth, and Wellington).

Aug. 11d. 17h. 44m. 51s. Epicentre 35°·5N. 140°·0E. (as on 1935 Jan. 3d,). X.

Tokyo gives epicentre 35°·4N. 139°·9E.

A = −·624, B = +·523, C = +·581.

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Tokyo		0·3	312	0 5	+ 1	0 12	+ 4	0·2
Nagoya		2·5	262	0 35	− 1	1 4	0	1·6
Mizusawa	E.	3·7	14	e 0 52	− 1	e 1 36	+ 1	—

Aug. 11d. 19h. 33m. 11s. Epicentre 18°·3N. 146°·8E. (as on 1934 Dec. 25d.). X.

A = −·794, B = +·520, C = +·314 ; D = +·548, E = +·837 ;
G = −·263, H = +·172, K = −·949.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	19·0	335	0 57	?	7 54	+ 8	—	8·2
Manila	25·0	265	5 25	+ 5	9 50	+ 9	—	—
Chiufeng	34·2	318	e 6 39	− 3	12 2	− 7	e 17·6	20·7
Sverdlovsk	72·6	326	i 11 35	+ 9	e 20 58	+ 6	34·8	40·7
Baku	83·3	311	e 12 25	0	e 23 11	PS	41·8	54·6
Mount Wilson z.	83·9	55	e 12 24	− 4	—	—	—	—
Pasadena z.	83·9	55	e 12 22	− 6	—	—	—	—
Moscow	85·2	329	—	—	e 22 52	[− 9]	e 43·7	50·3
Tiflis	86·4	313	—	—	e 23 5	[− 4]	e 51·8	—
Pulkovo	86·7	334	—	—	e 23 10	[− 1]	47·8	59·0
Copenhagen	96·6	336	—	—	31 13	SS	46·8	—

Moscow gives also i = +24m.5s. =PS +11s.
Long waves were also recorded at Hong Kong, Ksara, and European stations.

Aug. 11d. Readings also at 0h. (Nagoya, near Sumoto, and near Wellington), 2h. (Lick), 4h. (Hong Kong, Phu-Lien, and Nanking), 5h. (Samarkand and near Andijan), 7h. (La Paz, Honolulu, San Juan, Huancayo, Tacubaya, Philadelphia, Ottawa, St. Louis, Florissant, Pasadena, Ksara, and Scoresby Sund), 8h. (Sydney, Vladivostok, Chiufeng (2), Pulkovo, Baku, Sverdlovsk, Tashkent, Copenhagen, Stuttgart, Paris, Strasbourg, De Bilt, Edinburgh, and Oak Ridge), 9h. (Hong Kong, Nanking, Bombay, Calcutta, Tashkent, Tiflis, Erevan, Grozny, Sverdlovsk, Ksara, Copenhagen, Edinburgh, Strasbourg, Stuttgart, De Bilt, and Uccle), 13h. (near Karenko, Taihoku, and Taityu), 15h. (near Tiflis), 16h. (Chiufeng, Tiflis, and near Manila), 18h. (Wellington and near Mizusawa), 19h. (Vladivostok), 20h. (near Tiflis), 22h. (Grozny and near Santiago).

Aug. 12d. Readings at 1h. (Andijan, Baku, Chiufeng, Sverdlovsk, Nagoya, Hong Kong, Manila, and Amboina), 2h. (Oak Ridge and Pulkovo), 3h. (Stuttgart, Hong Kong, Wellington, and near Apia), 4h. (Granada, Wellington, Nagoya, and near Sumoto (2)), 11h. (near Sumoto), 14h. (near Samarkand), 16h. (Granada), 18h. (near Ksara), 19h. (Tiflis), 20h. (near Berkeley), 23h. (near Andijan).

Aug. 13d. Readings at 0h. (Karlsruhe, Christchurch, Chatham Ils., and near Wellington), 1h. (Erevan, near Tiflis, and Grozny), 4h. (Chiufeng), 8h. (Amboina and Manila), 15h. (New Plymouth, near Christchurch, Stratford, Wellington (2), and near Santiago), 16h. (Prague), 17h. (Taihoku, near Karenko (2), and near Mizusawa), 19h. (Tashkent), 20h. (Sverdlovsk), 23h. (Ksara, Tashkent, and Tiflis).

Aug. 14d. 12h. 53m. 16s. Epicentre 45°·8N. 3°·4E. N.3.

A = +·696, B = +·041, C = +·717 ; D = +·059, E = −·998 ;
G = +·716, H = +·043, K = −·697.

	△	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Besançon	2·3	51	e 0 29	− 4	i 1 1	+ 2	—
Neuchatel	2·7	64	e 0 38	− 1	e 1 13	+ 4	—
Basle	3·4	59	e 0 50	+ 1	e 1 37	S*	—
Zurich	3·9	65	e 1 1	+ 5	e 1 55	S*	—
Strasbourg	4·1	45	e 1 19	P_g	2 25	S_g	—
Ravensburg	4·7	62	—	—	e 2 14	S*	—
Stuttgart	4·9	51	—	—	e 2 28	S*	e 3·0
Uccle	5·0	7	—	—	e 2 26	S*	—

Strasbourg gives also P_g = +1m.28s., iPPS = +2m.0s.

Aug. 14d. Readings also at 0h. (Pasadena, Mount Wilson, Tinemaha, Sverdlovsk, and near Andijan), 1h. (near Mizusawa and Nagoya), 5h. (near Tiflis), 11h. (Oak Ridge and near La Paz), 14h. (Florence and Paris), 15h. (Zagreb), 19h. (Santiago), 21h. (Oak Ridge), 23h. (near Karenko and near Mizusawa).

Aug. 15d. Readings at 2h. (Sumoto), 4h. (La Jolla, Haiwee, Mount Wilson, Pasadena, Tinemaha, and Sitka), 5h. (Oak Ridge and near Tiflis), 8h. (Medan (2)), 12h. (Andijan), 14h. (Alicante, Scoresby Sund, Bozeman, Oak Ridge, Seattle, Sitka, Philadelphia, Honolulu, Santiago, Huancayo, La Paz, near Sucre, and near Nagoya and Sumoto), 15h. (Bozeman, Philadelphia, Sitka, Mount Wilson (2), Pasadena, Tinemaha (2), Haiwee (2), La Jolla, Seattle, Honolulu, Tiflis, Florissant, St. Louis, De Bilt, and Stuttgart), 18h. (Rathfarnham Castle), 19h. (Tiflis).

Aug. 16d. 19h. 21m. 26s. Epicentre 23°·2N. 121°·5E. (as on 1934 Aug. 7d.). X.

A = −·480, B = +·784, C = +·394; D = +·853, E = +·523;
G = −·206, H = +·336, K = −·919.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taito	0·5	215	i 0 13	+ 6	0 27	+14	—	—
Arisan	0·7	300	i 0 8	− 2	0 14	− 4	—	—
Karenko	0·8	10	e 0 8	− 3	0 19	− 2	—	—
Tainan	1·2	259	e 0 21	+ 4	0 39	+ 8	—	—
Taityu	1·2	322	0 17	0	0 31	0	—	—
Takao	1·3	245	0 11	− 7	0 28	− 5	—	—
Kosyun	1·4	210	0 29	+ 9	0 50	+14	—	—
Taihoku	1·8	2	i 0 28	+ 2	0 48	+ 2	—	—
Manila	8·6	183	2 17	+15	6 42	?	—	10·2
Nanking	9·2	346	e 2 9	− 1	e 4 5	+11	i 5·0	6·6
Chiufeng	17·5	345	e 4 3	+ 3	e 7 17	+ 4	—	—
Vladivostok	21·7	21	—	—	e 12 14	?	14·1	—

Long waves were recorded at Hong Kong, Tashkent, and Stuttgart.

Aug. 16d. Readings also at 0h. (near La Paz), 1h. (near Apia and near Manila), 3h. (Samarkand), 6h. (Tiflis), 14h. (Oak Ridge), 15h. (Chatham Ils., Christchurch, Wellington, Pulkovo, Simferopol, Sebastopol, Yalta, Ksara, Tiflis, Granada, Mount Wilson, Pasadena, La Jolla, Haiwee, and Tinemaha), 16h. (Chiufeng, Nanking, Tashkent, and Stuttgart), 17h. (Andijan, Frunse, and Tashkent), 19h. (near Medan, near Kobe, Nagoya, and Sumoto).

Aug. 17d. 1h. 44m. 37s. Epicentre 21°·4S. 171°·6E. N.1.

A = −·921, B = +·136, C = −·365; D = +·146, E = +·989;
G = +·361, H = −·053, K = −·931.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni	17·1	169	3 53	− 2	7 11	+ 7	8·1	—
Apia	17·6	67	e 4 11	+ 9	i 8 3	L	(i 8·1)	—
New Plymouth	17·8	174	4 23	+19	—	—	8·3R	—
Wellington	20·1	174	4 23	− 8	8 13	+ 5	10·4R	11·4
Riverview	21·9	232	e 4 48k	− 2	i 8 40	− 4	10·0	11·2
Sydney	21·9	232	e 4 48	− 2	i 7 53	−51	8·8	9·6
Christchurch	22·1	178	i 4 23?	−29	—	—	12·4	—
Chatham Ils.	24·6	160	4 53	−23	9 23	−11	12·4	13·9
Melbourne	28·2	229	e 5 46	− 3	10 33	− 2	12·7	13·7
Adelaide	31·9	238	e 6 28	+ 6	i 11 24	−10	i 13·4	15·1
Amboina	45·7	287	i 8 18	0	i 16 5	+65	e 21·4	—
Palau	46·4	304	8 28	+ 4	15 42	+32	—	—
Honolulu	52·1	37	e 9 8	+ 1	i 16 37	+ 7	21·5	—
Titizima	56·2	329	9 38	+ 1	17 37	+12	—	—
Manila	61·3	302	10 15a	+ 1	i 19 7	PS	31·4	36·4
Malabar	63·2	273	10 32	+ 5	i 18 57	0	e 28·4	—
Batavia	64·3	274	i 10 31a	− 3	i 19 5	− 6	e 29·4	—
Nake	64·3	320	10 37	+ 3	—	—	—	—
Misima	64·4	331	10 35	0	—	—	—	—
Omaesaki	64·4	330	10 38	+ 3	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yokohama		64·4	331	10 33	− 2	19 17	+ 5	—	—
Siomisaki		64·6	327	10 30	− 6	19 22	+ 7	—	—
Tokyo		64·6	331	10 26	−10	19 28	+13	—	—
Hamamatu		64·7	329	10 37	0	—	—	—	—
Hunatu		64·8	331	10 39	+ 2	—	—	—	—
Tukubasan		64·9	332	10 36	− 2	19 20	+ 1	—	—
Kohu		65·0	331	10 39	0	19 31	+11	—	—
Kumagaya		65·1	331	10 43	+ 4	19 31	+10	—	—
Tu		65·3	329	10 41	0	—	—	—	—
Kameyama		65·4	329	10 42	+ 1	19 34	+ 9	—	—
Nagoya		65·4	329	10 42	+ 1	19 35	+10	26·9	—
Maebasi		65·5	332	10 42	0	19 31	+ 5	—	—
Wakayama		65·5	328	10 43	+ 1	19 32	+ 6	—	—
Oiwake		65·6	331	10 39	− 3	19 37	+10	—	—
Simidu		65·6	325	10 44	+ 2	—	—	—	—
Miyazaki		65·7	322	10 44	+ 1	19 31	+ 2	—	—
Osaka		65·7	328	10 41	− 2	19 41	+12	—	—
Koti		65·8	325	10 45	+ 1	19 39	+ 9	—	—
Sumoto	E.	65·8	328	10 43	− 1	19 36	+ 6	24·5	35·6
	N.	65·8	328	10 46	+ 2	19 38	+ 8	23·2	36·3
Hikone		65·9	329	10 44	− 1	—	—	—	—
Ibukisan		65·9	329	10 44	− 1	19 39	+ 8	—	—
Kobe		65·9	328	e 10 46	+ 1	e 19 42	PS	e 27·7	37·6
Kosyun		65·9	308	e 10 44	− 1	19 37	+ 6	—	—
Kyoto		65·9	328	10 46	+ 1	—	—	—	—
Hukusima		66·0	333	10 46	+ 1	19 42	PS	—	—
Nagano		66·1	331	10 47	+ 1	19 44	PS	—	—
Taito		66·1	309	e 10 49	+ 3	15 23	?	—	—
Karenko		66·5	311	e 10 47	− 2	—	—	—	—
Matuyama		66·5	325	10 48	− 1	19 41	+ 2	—	—
Toyama		66·5	330	10 49	0	19 29	−10	—	—
Takao		66·6	308	e 10 8	−41	18 37	−63	—	—
Toyooka		66·7	328	10 53	+ 3	19 54	PS	e 29·2	32·6
Mizusawa	E.	66·9	335	i 10 51	0	i 19 47	+ 4	e 28·0	—
	N.	66·9	335	e 10 53	+ 2	e 19 46	+ 3	e 27·8	—
Nagasaki		67·2	322	10 53	0	19 48	+ 1	e 24·5	33·2
Taihoku		67·2	311	e 10 52	− 1	i 19 54	+ 7	—	—
Wazima		67·2	331	10 54	+ 1	19 59	+12	—	—
Taityu		67·3	309	11 8	+14	—	—	—	—
Morioka		67·4	335	10 55	+ 1	20 0	PS	—	—
Hukuoka		67·6	324	11 3	+ 7	19 57	+ 5	—	—
Hukuoka B		67·6	324	10 56	0	20 1	PS	—	34·3
Akita		67·8	335	10 58	+ 1	19 58	+ 4	—	—
Tomie		67·8	322	10 58	+ 1	19 54	0	—	—
Nemuro		69·0	340	11 4	− 1	—	—	—	—
Husan		69·4	324	e 11 7	0	e 20 24	PS	28·4	—
Sapporo		70·2	337	11 14	+ 2	20 34	+10	—	—
Taikyu		70·2	324	11 14	+ 2	18 40	?	24·4	—
Hong Kong		71·0	305	11 14	− 3	20 35	+ 2	34·4	—
Zi-ka-wei		71·3	316	e 11 17	− 2	—	—	35·1	40·9
Keizyo		72·4	324	14 24	?	17 6	?	20·7	—
Zinsen		72·5	323	i 11 25	− 1	i 20 57	+ 6	—	—
Nanking		73·5	315	i 11 32	0	e 20 25	−38	32·6	41·5
Vladivostok		74·1	331	—	—	i 21 7	− 3	26·4	41·2
Medan		75·8	280	11 45	+ 1	i 21 24	− 3	e 32·4	—
Phu-Lien		76·2	299	e 11 42	− 5	e 21 7	−27	34·4	—
Chiufeng		80·3	320	i 12 8$_s$	− 1	i 22 17	− 2	37·3	40·7
Branner		85·6	47	e 12 40	+ 4	—	—	—	—
Berkeley		85·8	47	e 13 23?	+46	—	—	—	—
Santa Barbara		85·8	51	e 12 39	+ 2	—	—	—	—
Ukiah		85·8	45	e 12 38	+ 1	i 23 23	+ 7	—	—
Lick		85·9	47	e 12 40	+ 2	e 22 54	[−12]	e 40·5	—
La Jolla		86·7	53	e 12 43	+ 1	e 23 13	[+ 2]	—	—
Pasadena		86·8	51	i 12 42	0	e 23 12	[0]	e 40·4	—
Mount Wilson		86·9	51	i 12 43	0	—	—	—	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Haiwee		87·9	49	e 12 47	0	e 23 20	[+ 1]	—	—
Tinemaha		88·2	49	i 12 49	0	e 23 23	[+ 2]	—	—
Sitka		90·1	26	i 13 3	+ 5	i 23 13	[−20]	e 37·5	—
Victoria		90·7	37	e 13 2	+ 1	e 23 32	[− 5]	i 42·4	43·9
Seattle		90·9	38	e 12 59	− 3	e 23 24	[−14]	e 41·5	—
Calcutta		92·2	293	13 19	+11	23 44	[− 2]	—	48·0
Colombo		94·1	279	13 23	+ 7	23 45	[−11]	51·1	52·8
Bozeman		96·8	43	—	—	e 24 13	[+ 3]	e 41·4	—
Kodaikanal		97·5	279	e 13 35	+ 3	23 59	[−15]	—	44·4
Hyderabad		99·1	285	13 13	−26	24 17	[− 4]	41·4	56·0
Santiago		99·2	131	e 16 56	?	e 24 15	[− 7]	—	—
Agra		102·6	295	14 1	+ 6	i 24 34	[− 4]	48·9	—
Dehra Dun		103·5	298	14 13	+13	20 23	PPP	27·4	27·4
Bombay		104·6	285	e 13 52	−13	24 35	[−13]	48·4	62·0
Huancayo		106·3	111	e 14 38	+25	e 24 45	[−11]	50·1	—
La Plata	E.	106·7	140	—	—	24 47	[−11]	44·8$_Q$	50·4
	N.	106·7	140	18 11	[+ 4]	24 41	[−17]	44·4$_Q$	50·6
Semipalatinsk		107·2	318	e 16 29	?	—	—	—	—
Florissant		109·3	55	e 14 34	+ 6	i 25 7	[− 3]	e 52·2	57·2
St. Louis		109·3	55	—	—	e 25 8	[− 2]	e 52·1	60·1
Frunse		109·4	309	e 14 38	+10	—	—	e 45·4	—
La Paz		110·3	118	e 14 57	+25	i 25 37	[+22]	50·6	60·7
Andijan		110·6	307	e 14 48	+15	e 25 14	[− 2]	43·4	—
Sucre		111·2	122	e 15 30	+54	25 45	[+26]	50·4	—
Chicago		111·9	52	—	—	e 25 10	[−12]	e 55·1	—
Tananarive		112·0	238	—	—	27 0	{+39}	51·7	60·4
Tchimkent		112·9	308	e 20 25	?	e 23 22	PPPP	—	—
Tashkent		113·0	307	i 14 45	0	28 45	PS	54·4	61·0
Samarkand		114·4	305	e 18 59	[+28]	—	—	—	—
Ann Arbor		114·8	52	—	—	e 29 23	PS	58·0	—
Toronto		118·1	51	e 15 21	+10	i 28 0	?	57·1	—
Charlottesville		118·3	58	—	—	e 26 13	[+28]	e 48·4	—
Cape Town		119·0	206	—	—	26 0	[+13]	55·2	64·5
Ottawa		120·8	49	e 19 23?	[+36]	e 25 51	[− 2]	e 51·4	—
Philadelphia		121·0	55	e 19 51	[+63]	e 25 51	[− 2]	e 49·3	—
Vermont		122·6	50	—	—	e 30 58	PS	51·4	—
Oak Ridge		123·8	52	e 15 37	0	e 28 27	?	e 60·4	—
San Juan		125·9	82	e 19 38	[+39]	e 31 23	PS	e 53·0	—
Baku		127·5	305	e 19 4	[+ 2]	33 12	?	67·4	82·9
Scoresby Sund		130·3	6	16 5	− 2	28 23	{− 1}	51·4	—
Grozny		130·3	309	i 19 11	[+ 4]	—	—	—	—
Tiflis		131·2	307	19 12	[+ 3]	28 42	{+13}	e 57·9	—
Erevan		131·7	305	e 20 0	[+50]	—	—	—	—
Moscow		131·8	326	16 15	− 1	26 20	[− 4]	57·4	79·4
Pulkovo		132·9	334	e 16 17	− 5	28 35	{− 5}	58·4R	66·0
Upsala		137·4	342	e 19 22	[+ 4]	—	—	e 56·4	68·8
Simferopol		138·0	314	e 19 26	[+ 7]	e 40 23	SS	—	—
Yalta		138·2	313	e 19 24	[+ 5]	—	—	—	—
Sebastopol		138·5	314	e 19 27	[+ 7]	—	—	—	—
Ksara		139·2	296	19 17$_a$	[− 3]	—	—	—	—
Königsberg		140·1	334	i 19 34	[+12]	e 26 23	SKS	62·1	65·4
Copenhagen		142·4	341	19 28	[+ 3]	29 35	{− 3}	59·4	—
Helwan		143·4	291	e 19 26	[− 3]	42 34	?	—	—
Bucharest		143·5	317	e 19 31	[+ 2]	e 26 27	SKS	62·4	86·4
Hamburg		144·9	341	i 19 32$_a$	[− 1]	—	—	e 60·4	64·4
Edinburgh		145·3	355	e 19 45	[+11]	—	—	62·4	83·4
Budapest		145·8	326	19 36	[+ 1]	29 53	{− 5}	e 42·4	85·9
Leipzig		146·0	337	e 19 36	[0]	e 29 35	{−24}	e 60·4	70·4
Prague		146·2	334	e 19 29	[− 7]	e 25 47	?	e 50·4	73·4
Durham		146·2	353	19 37	[+ 1]	33 24	SKSP	—	73·4
Gottingen		146·6	340	i 19 36$_a$	[− 1]	—	—	—	73·4
Jena		146·6	336	e 19 39	[+ 2]	e 33 23	SKSP	e 55·4	69·4
Belgrade		146·7	321	e 19 36	[− 1]	e 29 48	{−15}	64·6	—
Vienna		146·8	330	e 19 35	[− 2]	29 37	{−27}	e 58·4	82·4
Cheb		147·0	335	e 19 50	[+13]	e 33 23	SKSP	e 61·4	74·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Stonyhurst	147·2	354	e 19 53	[+15]	—	—	70·4	83·0
De Bilt	147·6	345	e 19 43	[+ 5]	—	—	e 63·4	64·5
Bidston	147·7	355	e 19 45	[+ 7]	33 48	SKSP	e 63·4	—
Graz	147·9	328	e 19 43	[+ 4]	—	—	e 63·4	80·7
Rathfarnham Castle	148·1	358	e 20 12	[+33]	e 30 45	{+34}	e 70·6	81·8
Zagreb	148·5	326	e 19 42	[+ 2]	—	—	e 76·3R	85·4
Uccle	148·9	345	e 19 41	[+ 1]	i 30 12	{− 4}	63·4	75·3
Laibach	149·1	328	i 19 48	[+ 8]	e 30 11	{− 6}	e 73·9	—
Oxford	149·1	352	e 19 48	[+ 8]	i 33 41	SKSP	e 71·8	86·5
Stuttgart	149·2	336	e 19 39	[− 2]	e 26 19	SKS	e 64·4	78·4
Karlsruhe	149·3	339	19 47	[+ 6]	30 4	{−14}	—	—
Kew	149·3	351	e 19 46	[+ 5]	e 33 46	SKSP	63·4	85·1
Triest	149·7	328	e 19 39a	[− 2]	i 30 16	{− 5}	e 62·4	73·6
Strasbourg	149·9	339	i 19 40a	[− 2]	i 26 56	SKS	e 69·4	74·2
Zurich	150·6	336	e 20 1	{ 0}	—	—	—	—
Padova	150·8	329	e 20 3	{+ 1}	—	—	—	—
Basle	150·9	338	e 19 42	[− 1]	—	—	—	—
Paris	151·2	345	i 19 44	[+ 1]	—	—	50·4	76·4
Neuchatel	151·6	338	e 19 42	[− 2]	e 30 27	{− 5}	—	—
Besançon	151·7	339	e 19 57	[+13]	—	—	—	—
Piacenza	152·1	333	e 19 47	[+ 2]	30 23	{−11}	64·4	85·4
Florence	152·3	328	19 50	[+ 5]	i 30 33	{− 2}	—	—
Prato	152·3	328	e 19 49	[+ 4]	i 30 31	{− 4}	66·2	—
Capodimonte	152·7	320	e 19 45	[0]	e 26 33	SKS	43·4	—
Tunis	157·7	317	e 20 1	[+10]	i 30 45	{−21}	65·4	—
Tortosa	159·2	341	19 34	[−19]	—	—	—	85·0
Serra do Pilar	160·3	1	e 19 58	[+ 4]	—	—	—	—
Toledo	161·2	350	e 20 7	[+12]	31 12	{−13}	e 75·4	83·7
Algiers	161·7	330	i 20 6	[+11]	31 19	{− 9}	e 60·4	79·4
Alicante	161·7	340	e 20 8	[+13]	31 59	{+31}	e 76·1	94·5
Almeria	163·7	343	e 20 2	[+ 4]	32 22	{+44}	e 70·4	—
Granada	163·7	346	i 19 55	[− 3]	—	—	70·9	84·6
Malaga	164·7	345	20 3	[+ 4]	31 20	{−24}	—	—
San Fernando	164·8	353	20 4a	[+ 5]	—	—	69·4	97·9

Additional readings :—

Wellington pP? = +4m.37s., PP? = +4m.52s., i = +5m.6s., sS = +8m.33s., P_cP = +8m.44s., L_g = +9m.23s.
Riverview iZ = +4m.56s., iPPE = +5m.14s., iE = +8m.46s. = P_cP +0s.
Chatham Ils. PP = +5m.44s., SS = +10m.41s.
Melbourne iP = +5m.53s., i = +9m.55s.
Adelaide i = +6m.42s., +7m.33s., +7m.42s., +8m.36s., +9m.31s., +10m.2s., and +12m.44s.
Amboina iP = +8m.32s., i = +10m.49s.
Honolulu iP = +9m.19s., i = +9m.41s. and +10m.25s. = P_cP +1s., e = +13m.7s. and +16m.3s., eS_cS = +19m.13s., eSS = +20m.31s.
Malabar i = +13m.4s., +19m.7s. = PS +1s. and +20m.15s. = S_cS +0s.
Batavia iPZ = +10m.42s., iN = +11m.22s. = P_cP +12s.
Sumoto eN = +17m.41s., eE = +18m.22s.
Kobe PZ = +10m.44s., iPZ = +10m.55s., eSZ = +19m.25s., eSN = +19m.31s., iEZ = +20m.53s., iN = +21m.11s., iE = +21m.15s., eN = +23m.33s. = SS − 7s., eZ = +24m.19s., iZ = PKPPKP? = +39m.27s.
Toyooka PZ = +10m.50s., iZ = +11m.2s., iE = +20m.58s.
Nagasaki SN = +19m.51s.
Taihoku iZ = +11m.4s.
Hong Kong ? = +11m.27s., PP? = +14m.7s., PPP? = +15m.5s., ? = +19m.20s., SKS = +21m.22s.
Zi-ka-wei iZ = +11m.26s., +11m.37s., +11m.49s., and +12m.11s., iE = +14m.8s., iZ = +21m.29s., +29m.35s., and +31m.25s.
Zinsen iP_cPNZ = +11m.36s.
Nanking i = +11m.43s., P_cP = +12m.13s., PPN = +13m.48s., eEN = +14m.26s., PPPN = +15m.32s., PPPP = +17m.35s., iPS = +21m.9s., iS_cSN = +21m.49s., iN = +24m.26s., SS = +25m.1s., PKSSP = +26m.2s., SSS = +27m.30s., SSSS = +28m.55s.
Medan iP = +11m.53s., i = +12m.12s., +12m.32s., +13m.17s., and +15m.23s.
Chiufeng PPEZ = +15m.9s., PPPZ = +16m.57s., iE = +19m.29s., SSE = +27m.34s.
Branner iE = +13m.7s. and +13m.16s.
Ukiah i = +23m.51s. = PS −10s. and +24m.21s.
Lick eN = +23m.25s. = S +8s.

Continued on next page.

La Jolla iSN = +23m.33s.
Pasadena iPPN = +16m.37s., iSE = +23m.31s., iN = +36m.26s.
Haiwee iSN = +23m.31s.
Tinemaha iSN = +23m.36s.
Sitka iPP = +16m.45s., i = +17m.5s., iS = +23m.37s. =SKKS +1s., ePS = +25m.35s., e = +30m.1s.
Seattle ePP = +16m.54s., ePPP = +19m.31s., eSS = +29m.29s., e = +36m.47s.
Calcutta PP = +16m.59s., PS = +25m.35s.
Bozeman ePP = +17m.41s., eS = +24m.33s. =SKKS +4s., ePS = +26m.43s., eSS = +31m.3s.
Kodaikanal ePP = +17m.30s., iPPP = +19m.36s., SKKS = +24m.39s., PS = +26m.23s., iSS = +31m.43s.
Hyderabad PPN = +17m.43s.
Agra iPP = +18m.6s., iPPP = +20m.27s., SKKS = +25m.20s., S = +25m.52s., PSE = +27m.6s., ePSN = +27m.11s., PPS = +27m.49s., SS = +32m.43s., SSSE = +37m.2s.
Bombay PPN = +18m.18s., SKKS = +25m.30s., PSEN = +27m.41s., SSEN = +33m.18s.
Huancayo e = +17m.26s., ePP = +19m.2s., iS = +25m.50s. =SKKS +10s., iPS = +28m.23s., eSS = +33m.3s., i = +44m.36s.
La Plata PPE = +18m.47s., PPPE = +18m.53s., sPPN = +19m.41s., sPPE = +20m.11s., E = +22m.47s., SN = +25m.35s. =SKKS −8s., SE = +25m.41s., pS? = +26m.23s., PSE = +27m.53s., SPPEN = +28m.23s., SSE = +33m.29s., SSN = +33m.35s., SSSEN = +37m.41s.
Florissant iZ = +14m.39s., epPZ = +15m.4s., ePPZ = +18m.53s., iZ = +19m.12s., iSN = +26m.34s., isSN = +27m.29s., iZ = +28m.42s., iPPSEZ = +29m.14s., iE = +30m.4s., iSSN = +34m.29s., iSSSN = +38m.35s.
St. Louis eE = +16m.36s., ePPE = +18m.59s., eE = +19m.45s., eSN = +26m.34s., eSEN = +26m.43s., ePPSE = +29m.3s., eSSEN = +34m.21s., iSSSE = +38m.32s. ; T_o = 1h.44m.57s.
Frunse e = +17m.43s.
La Paz iPPZ = +19m.28s., PPP = +21m.28s., iSN = +27m.3s., iSE = +27m.7s., PSZ = +28m.54s., PSE = +29m.0s., iE = +31m.0s., SSN = +34m.36s., SSE = +34m.44s.
Andijan e = +19m.14s. =PP +12s.
Sucre S = +27m.10s.
Chicago ePP = +19m.46s., iSKKS = +27m.2s., iPS = +29m.19s., eSS = +34m.45s., eSS = +35m.25s., eSSS = +39m.5s., e = +46m.3s.
Tananarive PPE = +19m.32s., E = +24m.9s., PSE = +28m.46s., PSN = +28m.55s., N = +30m.26s., E = +30m.36s., SSN = +34m.47s., SSSE = +38m.23s.?
Tashkent PKP = +18m.31s., PP = +19m.25s., PPP = +21m.47s., PPS = +30m.21s., SS = +35m.1s.
Samarkand e = +20m.5s.
Ann Arbor eN = +27m.47s., e = +29m.53s. and +36m.23s., eN = +39m.41s. = SSS +10s. and +50m.41s., e = +52m.47s.
Toronto ePKPE = +18m.56s., ePPE = +20m.14s., iE = +27m.36s. =SKKS + 33s., iN = +28m.41s., iPSE = +30m.2s., SSE = +36m.42s., T_o = 1h.44m.41s.
Charlottesville ePP = +20m.23s., eS = +27m.59s., ePS = +29m.53s., eSS = +36m.15s.
Cape Town PP = +20m.14s., PPP = +22m.40s., SKKS = +26m.58s., S = +28m.20s., PS = +29m.50s., PPS = +30m.44s., SS = +35m.56s., SSS = +40m.36s.
Ottawa eEZ = +20m.30s. =PP +15s., eN = +28m.23s., eE = +30m.29s. = PS +20s., eN = +37m.3s., eE = +37m.41s.
Philadelphia ePP = +20m.51s., eSKKS = +28m.18s., eSKSP = +29m.52s., ePS = +30m.52s., eSS = +37m.0s., e = +37m.50s., +39m.51s., and +44m.18s.
Vermont ePP = +20m.36s., eSS = +37m.16s., e = +61m.23s.
Oak Ridge ePKP = +18m.55s., ipP = +19m.43s., iPP = +20m.55s., eSKP = +21m.31s., ePPP = +22m.32s., eN = +23m.11s., e = +24m.57s., eN = +28m.57s., ePS = +30m.53s., iPPS = +31m.57s.
San Juan e = +20m.56s. =PP +6s., ePP = +21m.19s., e = +29m.9s., eSS = +37m.23s., e = +38m.49s. and +41m.20s.
Baku PP = +21m.10s.
Scoresby Sund PKP = +19m.5s., ePP = +21m.19s., i = +21m.34s., iPKS = +22m.44s., PS = +31m.47s., PPS = +33m.29s., SS = +38m.53s.
Tiflis e = +19m.19s. and +19m.36s., PP = +21m.42s., iPKS = +22m.39s., SKSP = +31m.50s. =PS +8s., PPS = +33m.36s., PSS = +39m.42s.
Moscow PKP = +19m.6s., PP = +21m.39s., PKS = +22m.36s., SKKS = +28m.28s., PPS = +33m.42s., SS = +39m.17s., SSS = +43m.59s.
Pulkovo PKP = +19m.9s., PP = +21m.45s., PKS = +22m.45s., PPP = +24m.41s., PPS = +33m.43s., SS = +39m.23s., L_q = +56m.23s.
Upsala PP = +22m.17s.
Yalta e = +32m.28s. =SKSP +13s. and +35m.23s.
Sebastopol e = +32m.31s. =SKSP +14s.
Ksara ipP = +19m.47s., sPKP = +19m.59s., PP = +22m.23s., PS = +32m.40s., PPS = +34m.46s., SS = +40m.23s.

Continued on next page.

Königsberg eE = +18m.43s., ePP = +22m.20s., iPKS = +23m.5s., EN = +23m.30s., iE = +24m.33s., E = +29m.21s., iSKKS = +29m.24s., eN = +31m.4s., iSKSP = +32m.31s., E = +32m.40s., iPPSE = +34m.52s., iSSN = +40m.44s., iE = +41m.41s., eN = +50m.1s. ; T_0 = 1h.44m.42s.
Copenhagen i = +19m.36s., PP = +22m.51s., eN = +23m.59s., SKSP = +33m.0s., PPS = +35m.27s., SS = +42m.5s., SSS = +46m.47s.
Helwan iPP = +22m.56s.
Bucharest iEN = +22m.52s. = PP +9s., iE = +30m.32s.
Hamburg eN = +21m.29s., iE = +25m.34s. = PPP −21s., eZ = +42m.23s.?
Edinburgh i = +23m.32s. = PKS +12s., +42m.23s.?, +47m.35s., and +61m.38s.
Budapest P_cP = +19m.47s., PP = +22m.38s., PPP = +24m.33s., SKKS = +37m.23s.
Leipzig iE = +19m.41s., i = +19m.47s., iE = +19m.52s., iPP = +23m.15s., iE = +23m.18s. = PKS −3s., eE = +24m.52s., e = +25m.13s., eE = +26m.41s., ePPP = +26m.59s., eE = +29m.32s., and +29m.52s., e = +33m.11s. = SKSP +0s., ePPS = +35m.53s., e = +38m.5s., eSS = +42m.59s., eSSS = +48m.11s.
Prague ePP = +19m.48s., ePPP = +23m.15s. = PKS −6s., ePS = +29m.53s. = SKKS −7s., eSS = +35m.47s.
Durham ? = +23m.8s. = PP +9s.
Göttingen eE = +19m.39s., eN = +19m.43s., $iPKP_2$ = +19m.47s.a iPP = +23m.18s.a = PKS −4s.
Jena epZ = +19m.35s., epE = +19m.41s., iPEZ = +19m.47s., iPN = +19m.51s., iPE = +19m.54s., eEN = +26m.23s. = PPP +15s. and +35m.53s.
Belgrade i = +19m.51s., iPP = +20m.30s., iPPP = +24m.18s., e = +26m.56s., +33m.32s. = SKSP +16s. and +35m.34s.
Vienna PP = +22m.46s., ePKS = +23m.18s.
Cheb e = +27m.8s. and +42m.53s.
Stonyhurst PPPP = +26m.28s. = PPP +15s., SS = +42m.19s., ? = +62m.23s.?
De Bilt eE = +23m.21s. = PP +14s., eN = +23m.25s. = PKS +1s., e = +33m.36s. = SKSP +14s.
Bidston PP = +23m.33s. = PKS +9s.
Graz iP = +19m.47s., ePPP = +33m.28s. = SKSP +4s., e = +37m.44s.
Rathfarnham Castle e = +20m.21s., i = +20m.27s., e = +21m.46s., ePP = +23m.46s., eSKPKP = +23m.54s., ePPP = +27m.5s., eSKPKPKS = +33m.55s., i = +34m.21s., ePPS = +36m.50s., e = +37m.39s., +39m.42s., and +41m.51s., iSS = +42m.44s., e = +44m.17s., iSSS = +48m.27s., e = +53m.55s., +62m.59s., and +67m.55s.
Zagreb i = +19m.56s., iEZ = +20m.17s., eZ = +20m.43s., ePPPP = +33m.30s. = SKSP +2s., SKSP = +36m.6s., PSKS = +42m.44s., ePPPPPE = +43m.12s., L_g = +62·7m.
Uccle i = +19m.49s., iN = +19m.55s., ipPKP = +20m.1s., i = +20m.51s. and +21m.57s., iPP = +23m.31s., eN = +26m.48s., iSKKS = +30m.14s., iPSKS = +33m.45s., iN = +36m.29s. and +38m.47s., iSS = +42m.47s., iSSS = +49m.4s.
Laibach i = +19m.56s.
Oxford i = +23m.16s. = PP +1s., iE = +34m.1s., iSSE = +42m.42s., iN = +43m.33s.
Stuttgart PKP = +19m.46s. and +19m.55s., epP = +20m.27s., e = +21m.35s., ePP = +23m.30s., eE = +29m.15s., eSKKS = +29m.36s., eEZ = +32m.46s., eSKSP = +33m.48s., ePPS = +36m.28s., eSS = +43m.23s.
Kew ePP = +23m.30s., iPPP = +26m.57s., eSSE = +42m.49s., eSSSE = +48m.38s.
Triest e = +19m.44s., iZ = +19m.49s., $iPKP_2$ = +19m.57s.a, i = +27m.53s., iPSKS = +33m.54s., iPPS = +36m.19s., iSS = +43m.36s.
Strasbourg iPP = +23m.32s., i = +23m.46s., PSKS = +33m.52s., PPS = +36m.37s., i = +39m.44s., SS = +43m.43s., SSS = +49m.23s.
Basle e = +23m.32s. = PP +6s. and +36m.50s.
Paris e = +23m.0s., PS = +34m.0s.
Besançon i = +20m.11s. = PKP_2 +5s.
Piacenza P = +20m.5s. = PKP_2 −3s., PP = +24m.23s.
Prato i = +20m.0s. = PKP_2 −9s.
Tunis i = +20m.27s. = PKP_2 −7s., PP = +23m.25s. = PKS −9s., i = +24m.13s. = PP +10s.
Toledo $ePKP_2$ = +20m.50s., PP = +24m.35s., PSKS = +35m.23s.?, SS = +45m.5s.
Algiers PP = +24m.36s., ePPS = +37m.37s., SSS = +45m.23s.?, e? = +52m.23s.?
Alicante $ePKP_2$ = +20m.58s., PP = +24m.23s., PSKS = +37m.51s., SS = +44m.59s.
Almeria PP = +24m.54s., PSKS = +38m.26s.
Granada i = +24m.40s. = PP +5s.
Malaga i = +20m.11s., PP = +24m.40s., pPP = +25m.18s., PPP = +28m.24s., pPPP = +29m.8s., pSKKS = +31m.54s., i = +32m.30s., +33m.26s., and +35m.17s. = SKSP +6s., e = +37m.46s. and +38m.16s., SS = +45m.0s., sSS = +46m.6s., i = +46m.56s. and +47m.20s., e = +47m.29s., SSS = +51m.12s., sSSS = +52m.36s.
San Fernando i = +20m.13s., PP = +24m.14s., PPS = +35m.57s., SS = +42m.8s., SSS = +48m.35s.

Aug. 17d. 7h. 23m. 5s. Epicentre 37°·3N. 141°·7E. (as on 1935 April 4d.). R.1.

$A = -\cdot624$, $B = +\cdot493$, $C = +\cdot606$; $D = +\cdot620$, $E = +\cdot785$; $G = -\cdot476$, $H = +\cdot376$, $K = -\cdot795$.

A *depth* of focus 0·005 has been assumed. Compare large shock from this origin with depth 0·010 on 1934, April 6d.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama		+0·1	0·7	240	0 21	+10	0 30	+ 9	—	—
Hukusima		+0·1	1·1	294	0 15	− 2	0 28	− 3	—	—
Sendai		+0·1	1·2	326	0 16	− 2	0 30	− 3	—	—
Aidu		+0·1	1·3	282	0 24	+ 4	0 39	+ 3	—	—
Mito		+0·1	1·3	227	0 9	−11	0 22	−14	—	—
Yamagata		+0·1	1·4	312	0 20	− 1	0 38	− 1	—	—
Kakioka		+0·1	1·6	229	0 23	− 1	0 41	− 3	—	—
Utunomiya		+0·1	1·6	243	0 26	+ 2	0 47	+ 3	—	—
Tukubasan		+0·1	1·7	229	0 23	− 3	0 41	− 5	—	—
Tyosi		+0·1	1·7	204	0 29	+ 3	0 44	− 2	—	—
Mizusawa		+0·1	1·9	346	i 0 27	− 2	i 0 48	− 3	—	—
Kumagaya		+0·1	2·2	238	0 28	− 5	1 2	+ 3	—	—
Niigata		+0·1	2·2	287	0 33	0	1 1	+ 2	—	—
Maebasi		+0·1	2·3	247	0 32	− 2	1 0	− 2	—	—
Miyako		+0·1	2·3	5	0 32	− 2	1 3	+ 1	—	—
Tokyo		+0·1	2·3	224	0 40	+ 6	0 56	− 6	—	—
Morioka		+0·1	2·4	350	0 34	− 2	1 3	− 1	—	—
Yokohama		+0·1	2·5	222	0 37	0	1 7	0	—	—
Oiwake		+0·1	2·7	249	0 39	− 1	1 5	− 7	—	—
Takada		+0·1	2·7	266	0 45	+ 5	1 25	+13	—	—
Mera		+0·1	2·8	212	0 45	+ 4	1 17	+ 3	—	—
Nagano		+0·1	2·8	257	0 42	+ 1	1 27	+13	—	—
Hunatu		+0·1	3·0	233	0 46	+ 2	1 28	+ 8	—	—
Kohu		+0·1	3·0	236	0 43	− 1	1 24	+ 4	—	—
Misima		+0·1	3·1	225	0 47	+ 1	1 21	− 1	—	—
Numadu		+0·1	3·2	242	0 46	− 1	1 24	− 1	—	—
Toyama		0·0	3·7	261	0 51	− 2	1 39	+ 4	—	—
Wazima		0·0	3·8	272	0 55	+ 1	1 44	+ 7	—	—
Omaesaki		0·0	3·9	227	1 6	+10	1 57	+17	—	—
Hamamatu		0·0	4·1	232	1 5	+ 7	1 47	+ 2	—	—
Nagoya		0·0	4·4	242	1 5	+ 2	1 56	+ 3	—	2·5
Hakodate		0·0	4·5	353	1 19	+15	2 19	+24	—	—
Hatidyozima		0·0	4·5	200	1 6	+ 2	1 51	− 4	—	—
Hikone		0·0	4·9	246	1 11	+ 1	2 9	+ 4	—	—
Kameyama		0·0	4·9	241	1 10	0	2 5	0	—	—
Muroran		0·0	5·0	353	1 13	+ 2	2 17	+ 9	—	—
Osaka		0·0	5·6	243	1 18	− 2	2 37	+14	—	—
Obihiro		0·0	5·8	11	1 28	+ 6	2 48	+20	—	—
Sapporo		0·0	5·8	357	1 27	+ 5	2 31	+ 3	—	—
Kobe	E.	0·0	5·9	245	e 1 17	− 7	e 2 27	− 4	—	6·2
Wakayama		0·0	6·1	242	1 26	− 1	2 51	+15	—	—
Sumoto		0·0	6·3	243	e 0 40	−50	2 10	−31	—	2·7
Nemuro		0·0	6·7	25	1 29	− 6	2 49	− 2	—	—
Vladivostok		0·0	9·4	311	e 2 6	− 7	e 3 53	− 6	i 4·5	12·9
Nanking		−0·2	19·5	261	4 18	− 4	e 8 9	SS	e 10·7	—
Chiufeng		−0·2	20·1	286	e 4 6	−23	e 7 24	−40	—	14·8
Tashkent		−0·6	54·5	298	e 9 45	+24	e 17 17	+23	e 26·9	29·6
Tiflis		−0·6	70·6	309	e 11 13	+ 2	—	—	—	—
Haiwee		−0·7	76·0	56	e 11 43	+ 1	—	—	—	—
Pasadena		−0·7	77·1	57	e 11 45	− 3	—	—	—	—
Mount Wilson		−0·7	77·1	57	e 11 48	0	—	—	—	—
Ksara		−0·7	80·9	305	e 12 9	0	e 22 57	+39	50·9	—

For Notes see next page.

NOTES TO AUGUST 17d. 7h. 23m. 5s.

Additional readings :—
Nagoya PP = +1m.30s.
Kobe eZ = +1m.27s., eE = +1m.52s., eN = +2m.4s., eSZ = +2m.31s.
Haiwee iZ = +11m.55s.
Pasadena eZ = +11m.11s.
Long waves at Copenhagen, Pulkovo, and Stuttgart.

Aug. 17d. 13h. 8m. 23s. Epicentre 42°·1N. 72°·4E. N.3.

(Given by the stations).

A = +·224, B = +·707, C = +·670 ; D = +·953, E = −·302 ;
G = +·203, H = +·639, K = −·742.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		1·3	180	e 0 17	− 1	i 0 35	+ 2	—	0·7
Frunse		1·8	64	0 27	+ 1	i 0 51	S*	—	—
Tchimkent		2·1	275	e 0 39	P_g	i 1 0	S*	—	1·3
Tashkent		2·5	252	e 0 44	P_g	i 1 11	S*	i 1·2	1·6
Samarkand		4·8	241	e 1 30	P_g	e 1 59	− 4	—	2·3

Additional readings :—
Andijan e = +19s. = P* +0s., +25s., and +30s.
Frunse iP_g = +30s., PP = +32s., and +35s.
Tchimkent eP_g = +41s., iS_g = +1m.7s.
Tashkent e = +55s.
Samarkand eS_g = +2m.8s.
Long waves recorded at Pulkovo.

Aug. 17d. 20h. 26m. 27s. Epicentre 18°·5N. 119°·5E. (as on 1932 June 13d.). X.

A = −·467, B = +·825, C = +·317 ; D = +·870, E = +·492 ;
G = −·156, H = +·276, K = −·948.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		4·1	160	1 5a	P*	1 59	S*	—	—
Nanking		13·6	357	3 3	− 7	5 57	+16	8·2	8·9
Chiufeng		21·8	353	i 4 45a	− 4	i 8 43	+ 1	10·4	14·6
Nagoya		22·8	40	e 4 58	− 1	—	—	—	—
Vladivostok		26·7	21	e 5 35	0	—	—	—	17·8
Calcutta	E.	29·4	283	—	—	e 12 3	SS	—	—
Tashkent		48·3	309	e 8 45	+ 7	i 15 40	+ 3	e 25·4	28·8
Tiflis		66·6	309	e 11 7	(−12)	e 19 33	− 7	44·8	—
Moscow		70·3	323	e 11 12	− 1	e 20 18	− 7	e 40·4	43·0
Pulkovo		73·7	328	e 11 27	− 6	e 20 55	−10	23·6	44·8
Ksara		74·7	301	e 11 53	+14	e 21 53	PS	—	48·6
Copenhagen		84·0	327	—	—	22 45	[− 7]	45·6	—
Scoresby Sund		87·1	348	—	—	23 6	[− 8]	51·6	—
Stuttgart		88·7	322	e 12 51	0	e 23 33?	[+ 9]	e 50·6	—

Long waves also recorded at Rathfarnham Castle, Edinburgh, Kew, Hong Kong, Phu-Lien, Baku, and other European stations.

Aug. 17d. 23h. 24m. 48s. Epicentre 31°·4N. 131°·1E. (as on 1935 Jan. 22d.). X.

A = −·561, B = +·643, C = +·521.

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Nagasaki		1·7	322	e 0 24	0	1 0	+16	—
Hukuoka		2·3	345	e 0 34	+ 1	0 57	− 2	—
Sumoto		4·3	46	e 1 8	P*	1 39	−11	—
Kobe	N.	4·7	45	e 1 27	P_g	—	—	—
Toyooka	E.	5·2	36	e 1 17	+ 3	1 52	−21	2·0
	N.	5·2	36	e 1 9	− 5	1 48	−25	—
Nagoya		6·2	51	e 1 20	− 8	—	—	—

Additional readings and note :—
Sumoto eEN = +3m.9s.
Kobe eE = +1m.33s., eZ = +1m.36s., eE = +4m.8s.
Nagoya gives reading as for 18d.

Aug. 17d. Readings also at 2h. (Wellington), 7h. (Mount Wilson, Pasadena, and Tinemaha), 8h. (Mount Wilson, Pasadena, and Tinemaha), 10h. (Chiufeng, Oak Ridge, and Sitka), 13h. (Oak Ridge, Calcutta, Hong Kong, Chiufeng and Nanking), 14h. (near Tiflis), 16h. (near Malabar), 19h. (near Medan), 20h (Des Moines), 22h. (near Sumoto).

Aug. 18d. 9h. 0m. 10s. Epicentre 39°·6N. 43°·1E. (as on 1935 May 1d.). X.

A = +·563, B = +·526, C = +·637.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Erevan	1·2	60	i 0 44	?	i 1 8	?	—	1·2
Grozny	4·2	26	e 0 57	− 3	e 1 52	+ 4	—	—
Baku	5·3	81	e 1 13	− 2	e 2 21	+ 6	3·0	—
Ksara	8·1	225	e 2 0	+ 5	3 48	+22	—	—
Tashkent	20·0	77	e 6 55	?	—	—	i 10·9	15·4

Grozny gives also $eS_g = +2m.10s.$
Long waves were recorded at Strasbourg.

Aug. 18d. Readings also at 0h. (near Manila), 1h. (near Florence, Prato, Triest, near Karenko, Taihoku, and Taityu), 3h. (near Amboina), 4h. (Taikyu), 5h. (La Paz), 6h. (Samarkand), 7h. (Taityu), 8h. (Paris), 9h. (Granada, Stuttgart, De Bilt, Uccle, Oak Ridge, San Juan, and near Apia), 10h. (Copenhagen), 12h. (Strasbourg), 16h. (Stuttgart, Triest, and near Sofia), 17h. (Basle), 18h. (Karenko, Taihoku (2), and near Taityu), 19h. (near Apia and near Tiflis), 21h. (near Nagasaki), 22h. (Haiwee, Mount Wilson, Pasadena, Tinemaha, Tacubaya, Oaxaca, and near Apia).

Aug. 19d. 18h. 31m. 36s. Epicentre 46°·5N. 1°·5E. N.3.

A = +·688, B = +·018, C = +·725; D = +·026, E = −1·000;
G = +·725, H = +·019, K = −·688.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Paris	2·4	15	e 0 31	− 3	—	—
Neuchatel	3·8	82	e 0 52	− 2	e 1 59	S_g
Basle	4·3	74	e 1 8	P*	—	—
Strasbourg	4·7	62	—	—	e 2 37	S_g
Uccle	4·7	23	—	—	e 2 18	S*
Zurich	4·9	77	e 1 35	P_g	e 2 44	S_g
Stuttgart	5·6	64	—	—	e 2 54	S_g
Granada	10·0	204	—	—	e 4 45	S*

Granada gives also $e = +5m.44s. = S_g + 20s.$

Aug. 19d. 23h. 59m. 42s. (I) } Epicentre 15°·1N. 99°·5W. N.3.
24h. 1m. 15s. (II) } (as given by the Mexican stations). X.

A = −·159, B = −·952, C = +·260; D = −·986, E = +·165;
G = −·043, H = −·257, K = −·965.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
I	Oaxaca	3·2	54	1 31	S*	—	—	—
I	Puebla	4·1	17	1 43	S	(1 43)	− 2	—
I	Tacubaya	4·3	3	1 44	S	(1 44)	− 6	—
I	Guadalajara	6·8	326	2 18	P_g	—	—	—
I	La Jolla Z.	24·0	322	e 5 24	−14	—	—	—
I	St. Louis	24·9	17	e 5 17	− 2	e 9 34	− 5	—
II		24·9	17	e 5 16	− 3	e 9 39	0	—
I	Florissant	25·0	17	i 5 17	− 3	e 9 38	− 3	—
II		25·0	17	i 5 17	− 3	e 9 37	− 4	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
I Mount Wilson	z.	25·4	323	e 5 30	+ 6	—	—	—
II	z.	25·4	323	i 5 39	+15	—	—	—
I Pasadena		25·4	323	e 5 20	− 4	—	—	e 15·8
II		25·4	323	e 5 46	PP	—	—	—
I Haiwee	z.	26·7	326	e 5 41	+ 6	—	—	—
I Tinemaha		27·6	326	e 5 49	+ 5	—	—	—
II	z.	27·6	326	i 5 57	+13	—	—	—
I Philadelphia		32·7	36	e 11 43	+14	—	—	—
II		32·7	36	e 11 39	+10	—	—	—
I Ottawa		36·3	29	—	—	e 12 42	+ 1	e 21·3
II		36·3	29	—	—	e 12 45	+ 4	—
I Oak Ridge		36·4	35	i 7 1	0	—	—	24·3
II		36·4	35	i 7 1	0	—	—	—
II Granada		85·5	53	e 12 41	+ 5	—	—	—

Additional readings :—
St. Louis I eN = +5m.23s., eE = +5m.34s.
Haiwee II eZ = +19m.44s.
Tinemaha I iZ = +5m.59s.
Philadelphia I e = +22m.29s. and +26m.18s.
Long waves were also recorded at Bozeman, Sitka, Seattle, Baku, and Tashkent.

Aug. 19. Readings also at 2h. (Scoresby Sund), 6h. (Kobe and Simferopol), 7h. (Merida, Oak Ridge, Haiwee (2), Mount Wilson (2), Pasadena (2), Tinemaha (2), and near Nagoya), 9h. (near Medan), 10h. (Arisan, Taihoku, Taityu Baku, Tashkent, and Scoresby Sund), 12h. (Wellington and near Sumoto), 13h. (Wellington), 14h. (Arapuni), 15h. (Amboina and Tiflis), 16h. (Tiflis, Ksara, Copenhagen, De Bilt, Stuttgart, and Granada), 17h. (Manila and Oak Ridge), 20h. (near Amboina), 23h. (Oak Ridge).

Aug. 20d. 8h. 53m. 45s. Epicentre 34°·6N. 26°·9E. N.2.

A = +·734, B = +·372, C = +·568 ; D = +·452, E = −·892 ;
G = +·506, H = +·257, K = −·823.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan		6·1	140	i 2 40	S	(i 2 40)	+ 4	—	—
Ksara		7·5	93	e 1 48	+ 2	3 36	S*	—	—
Sofia		8·5	342	e 2 4	+ 4	e 3 38	+ 2	e 4·7	5·0
Bucharest		9·8	357	e 3 25	?	e 4 13	+ 5	5·4	—
Yalta		11·4	27	e 2 34	− 6	—	—	—	—
Simferopol		11·7	26	e 2 42	− 2	—	—	—	—
Zagreb		13·9	327	e 3 33	+19	e 5 46	− 3	—	—
Triest		14·9	322	e 3 34	+ 7	6 19	+ 6	e 7·2	11·2
Florence		15·1	312	3 35	+ 5	8 5	?	—	9·2
Prato		15·3	312	e 3 33	+ 1	8 15	?	—	10·3
Vienna	N.	15·7	333	e 3 42	+ 4	—	—	—	—
Tiflis		15·7	58	3 40	+ 2	e 6 47	SS	e 8·8	11·4
Grozny		17·0	54	e 3 59	+ 5	—	—	—	—
Prague		17·9	333	—	—	e 7 27	+ 5	—	12·2
Zurich		18·7	319	e 4 12	− 3	—	—	—	—
Baku		19·1	66	e 4 23	+ 3	e 8 7	+19	e 11·0	14·2
Stuttgart		19·3	323	e 4 17	− 5	e 7 53	+ 1	e 10·2	13·0
Basle		19·4	318	e 4 22	− 1	—	—	—	—
Neuchatel		19·4	316	e 4 19	− 4	e 7 56	+ 2	—	—
Strasbourg		19·9	320	e 4 33	+ 4	e 8 5	+ 1	e 10·8	13·5
Moscow		22·4	15	e 4 55	0	e 8 49	− 4	e 12·6	16·2
Hamburg		22·4	333	—	—	e 8 15?	−38	—	17·2
Paris		22·9	315	e 5 6	+ 6	e 9 10	+ 7	16·2	17·2
Uccle		23·0	321	—	—	9 8	+ 3	—	—
Copenhagen		23·3	339	—	—	9 5	− 5	11·2	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt	23·4	326	e 5 15?	+10	9 16	+ 4	e 12·6	13·2
Granada	24·7	285	e 5 17	0	e 9 47	+11	14·9	20·3
Pulkovo	25·3	4	e 5 25	+ 2	e 9 43	− 3	12·2	14·8
Kew	25·8	319	—	—	e 10 8	+13	13·8	—
Bidston	28·2	321	—	—	e 10 25	−10	—	—
Rathfarnham Castle	29·9	320	—	—	(10 50)	−13	10·8	18·2
Tashkent	33·8	66	—	—	e 14 53	?	e 22·8	27·0
Scoresby Sund	44·3	339	12 15?	?	—	—	—	—

Additional readings :—
Helwan 1 ≒ +6m.34s.
Zagreb eNE = +6m.2s. and +6m.46s. = S* −6s., eNW = +7m.40s.
Triest e = +4m.13s.
Rathfarnham Castle e = 8h.53m.24s.
Tashkent e = +16m.39s. and +17m.27s.
Long waves also recorded at Budapest and Edinburgh.

Aug. 20d. Readings also at 0h. (Nagoya and near Mizusawa), 1h. (near Triest), 2h. (Samarkand), 5h. (near Berkeley), 8h. (Edinburgh), 12h. (Tiflis, Simferopol, Yalta, Mount Wilson, Pasadena, and Tinemaha), 13h. (near Batavia and Malabar), 14h. (near Medan (2) and near Mizusawa), 16h. (Amboina and Manila), 17h. (Melbourne, Tashkent, Pulkovo, Stuttgart, Copenhagen, De Bilt, and Oak Ridge), 20h. (Samarkand and Simferopol), 22h. (Andijan, Frunse, Samarkand, Tashkent, and near Ferndale), 23h. (Nagoya, Mount Wilson, Pasadena, and Tinemaha).

Aug. 21d. 6h. 31m. 47s. Epicentre 24°·8N. 120°·4E. (as on 1935 July 17d.). X.

A = −·459, B = +·783, C = +·419.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Taityu	0·7	160	i 0 9	− 1	0 17	− 1	—
Taihoku	1·1	77	i 0 12	− 4	i 0 22	− 6	—
Arisan	1·3	166	e 0 19	+ 1	0 37	+ 4	—
Karenko	1·4	131	e 0 18	− 2	—	—	—
Tainan	1·8	186	0 36	P_g	0 55	S_g	—
Taito	2·1	164	e 0 35	P*	1 0	S*	—
Takao	2·1	180	0 44	P_g	—	—	—
Nanking	7·4	348	e 1 50	+5	(e 3 31)	S*	e 3·5

Nanking gives also eN? = +1m.30s.
Long waves recorded at Hong Kong.

Aug. 21d. 13h. 48m. 42s. Epicentre 14°·0S. 174°·5W. N.2.

A = −·966, B = −·093, C = −·242; D = −·096, E = +·995;
G = +·241, H = +·023, K = −·970.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	2·6	86	i 0 39	+ 2	i 1 5	− 2	—	—
Riverview	36·9	231	e 7 0	− 6	—	—	15·5	18·9
Sydney	36·9	231	e 6 48	−18	—	—	16·6	20·6
Honolulu	38·9	26	i 7 31	+ 8	e 13 29	+ 9	e 16·7	—
Melbourne	43·0	229	i 7 51	− 6	i 17 48	(−12)	23·0	—
Adelaide	47·0	235	—	—	i 15 51	+32	e 18·7	25·0
Amboina	57·4	275	i 9 47	+ 1	17 32	−10	—	—
Perth	65·5	241	24 18	?	—	—	—	—
Manila	69·9	292	11 20	+10	20 30	+10	—	—
Santa Barbara	71·1	46	i 11 18	+ 1	—	—	—	—
Branner	71·1	41	e 11 19	+ 2	—	—	—	—
Berkeley	71·4	41	i 11 19	0	—	—	—	—
Lick	71·4	41	e 11 20	+ 1	—	—	—	—
La Jolla	72·0	48	i 11 21k	− 2	—	—	—	—
Pasadena	72·0	46	i 11 21k	− 2	e 21 3	PS	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mount Wilson	72·1	46	i 11 22k	− 1	—	—	—	—
Haiwee	73·2	45	i 11 29	− 1	—	—	—	—
Tinemaha	73·5	44	i 11 31k	− 1	—	—	—	—
Vladivostok	75·2	323	—	—	e 22 20	PS	—	—
Batavia	77·5	267	i 12 23	+28	21 29	−19	—	—
Sitka	78·1	21	e 12 0	+ 2	e 21 53	− 2	e 33·3	—
Nanking	78·7	307	e 10 28	−93	22 18	+16	—	—
Hong Kong	78·7	296	—	—	22 7	+ 5	—	34·8
Chiufeng	84·0	314	e 12 36	+ 8	22 50	[− 2]	—	—
Florissant	94·3	51	i 13 15	− 2	e 23 46	[−11]	e 44·3	—
Huancayo	95·8	103	—	—	e 23 38	[−27]	—	—
Ottawa	106·0	45	—	—	e 24 42	[−13]	e 44·3	—
Philadelphia	106·0	51	—	—	e 24 44	[−11]	e 45·3	—
Tashkent	118·8	309	—	—	e 26 0	[+14]	e 53·7	63·4
Pulkovo	130·7	343	e 19 10	[+ 2]	—	—	—	—
Moscow	131·5	337	e 19 11	[+ 2]	e 26 11	[−12]	—	44·7
Baku	133·2	313	e 22 42	PKS	e 38 58	SS	59·3	—
Tiflis	136·2	317	e 19 31	[+14]	—	—	—	—
Edinburgh	137·5	6	—	—	e 40 18?	SS	—	—
Copenhagen	137·9	355	19 17	[− 2]	—	—	65·3	—
De Bilt	141·9	0	i 19 26	[+ 3]	e 33 0	SKSP	—	—
Kew	142·2	5	e 19 25	[+ 1]	—	—	75·3	—
Uccle	143·2	2	i 19 30	[+ 2]	e 33 1	SKSP	—	—
Vienna	144·6	347	e 19 36	[+ 3]	—	—	—	—
Paris	145·1	3	i 19 37	[+ 3]	—	—	—	—
Stuttgart	145·1	355	e 19 35	[+ 1]	—	—	e 56·3	—
Strasbourg	145·4	356	i 19 37k	[+ 3]	e 26 37	SKS	e 51·3	—
Ksara	146·1	310	19 38	[+ 2]	—	—	—	—
Basle	146·4	356	e 19 38	[+ 2]	—	—	—	—
Zurich	146·5	355	e 19 37	[+ 1]	—	—	—	—
Zagreb	147·0	345	e 19 38	[+ 1]	—	—	—	—
Chur	147·0	355	e 19 38	[+ 1]	—	—	—	—
Neuchatel	147·0	357	e 19 38	[+ 1]	—	—	—	—
Sofia	147·4	334	e 19 47	[+ 9]	—	—	—	—
Triest	147·6	349	i 19 43	[+ 5]	—	—	—	—
Toledo	152·8	16	e 19 47	[+ 2]	—	—	—	—
Granada	155·4	18	e 19 50	[+ 2]	—	—	72·2	81·7
Malaga	155·6	20	e 19 50	[+ 1]	—	—	—	—

Additional readings and note :—
Riverview eE = +8m.30s. = PP + 6s.
Honolulu ePP = +9m.18s.
Melbourne i = +9m.54s. = P_cP + 2s.
Adelaide e = +11m.8s., i = +16m.41s.
Amboina i = +10m.15s.
Branner iN = +11m.50s.
Mount Wilson iZ = +12m.20s.
Nanking PP? = +15m.38s.
Chiufeng iNZ = +23m.3s. = S + 5s. ; all readings given for 15h.
Florissant eZ = +16m.57s. = PP − 2s.
Huancayo eS = +24m.33s.
Ottawa eE = +18m.36s. = PP + 8s. and +25m.24s. = SKKS − 14s., e = +27m.54s. + PS + 6s.
Philadelphia eS = +25m.18s. = SKKS − 20s., ePS = +27m.39s., eSS = +32m.56s.
Tashkent e = +23m.42s., S = +29m.39s. = SKSP − 6s., e = +32m.1s.
Pulkovo i = +22m.36s. = PKS + 0s., e = +24m.10s. = PPP + 6s.
Moscow e = +21m.35s. = PP + 8s., +22m.38s. = PKS − 2s., and +23m.19s.
Tiflis e = +22m.48s. = PKS − 10s.
Copenhagen +22m.18s. = PP + 10s., +22m.59s. = PKS − 4s., and +40m.24s. = SS + 7s.
De Bilt iZ = +22m.45s. = PP + 12s., eE = +41m.24s. = SS + 19s.
Uccle e = +22m.51s. = PP + 10s. and +41m.36s. = SS + 16s.
Paris e = +22m.32s. = PP − 20s.
Stuttgart +19m.38s.
Strasbourg e = +23m.10s. = PKS − 10s.
Ksara pP = +20m.6s., PP = +23m.9s. = PKS − 12s.

Continued on next page.

Basle i = +19m.42s.
Zurich i = +19m.41s.
Zagreb e = +20m.16s.
Chur i = +19m.42s.
Neuchatel i = +19m.42s.
Triest i = +20m.15s.
Toledo i = +20m.9s.
Granada $iPKP_2$ = +20m.20s., PP = +24m.3s., i = +33m.19s.
Malaga e = +20m.22s. = PKP_2 − 2s., +24m.2s., +27m.53s., and +28m.18s.
Long waves at Bidston and Oak Ridge.

Aug. 21d. Readings also at 0h. (Oak Ridge, Mount Wilson, Pasadena, Tinemaha, and Sitka), 1h. (La Paz and Sucre), 2h. (Simferopol and Yalta), 4h. (near Amboina), 5h. (Amboina and Manila), 6h. (Frunse, Samarkand, Tchimkent, near Andijan, near Hastings, and Wellington), 9h. (Honolulu, Pasadena, Mount Wilson, Tinemaha, Sitka, Ottawa, and Zagreb), 10h. (Oak Ridge, Philadelphia, and near Tiflis), 11h. (near Mizusawa and near Sumoto), 14h. (Karenko, Takao, Taityu, Tainan, Kosyun, Taito, and near Alicante), 16h. (Tacubaya, Tashkent, and Pulkovo), 17h. (Hong Kong, Phu-Lien, and Nanking), 19h. (La Paz), 20h. (near Mizusawa (2) and near Tiflis), 21h. (near Berkeley), 22h. (near Hukuoka B (2)).

Aug. 22d. 17h. 51m. 34s. Epicentre 24°·8N. 120°·4E. (as on 21d.). X.

	△	Az.	P.	O − C.	S.	O − C.
	°	°	m. s.	s.	m. s.	s.
Taityu	0·7	160	0 11	+ 1	0 17	− 1
Taihoku	1·1	77	i 0 17	+ 1	i 0 29	+ 1
Karenko	1·4	131	e 0 19	− 1	—	—
Tainan	1·8	186	e 0 33	P_g	—	—
Takao	2·1	180	1 26?	?	—	—

Additional reading :—
Sintiku (△ = 0°·6) gives P = 51m.23s., S = 51m.27s. ; this suggests a systematic error of 20s.
Long waves were recorded at Nanking.

Aug. 22d. 20h. 31m. 0s. Epicentre 73°·3N. 70°·7W. (as on 1934 Aug. 31d.). R.1.

A = +·095, B = −·271, C = +·958 ; D = −·944, E = −·331 ;
G = +·317, H = −·904, K = −·287.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund	15·0	77	3 18	−10	5 48	−27	6·5	—
Saskatoon	26·0	238	e 5 28	− 1	e 10 6	+ 8	—	—
Ottawa	28·0	187	e 5 46	− 1	e 10 30	− 2	e 14·0	—
Vermont	28·8	182	e 6 32	PP	i 10 48	+ 3	e 14·2	—
Sitka	29·5	272	e 6 3	+ 2	e 11 0	+ 4	i 14·7	—
Toronto	30·0	193	e 5 31	−34	e 10 41	−23	14·3	17·0
Oak Ridge	30·8	180	i 6 11	− 1	e 11 17	0	15·3	—
Ann Arbor	31·6	198	e 9 12	(− 3)	e 13 18	SS	i 16·9	18·7
Chicago	32·4	204	—	—	e 12 41	+60	—	—
Rathfarnham Castle	32·6	92	e 9 56	?	e 15 28	?	e 19·4	26·5
Pennsylvania	32·7	189	—	—	e 11 0?	−46	—	15·0
Durham	32·7	86	i 7 59	PP	—	—	—	22·0
Bozeman	33·1	236	—	—	e 12 0	+ 8	i 19·8	—
Philadelphia	33·4	185	—	—	e 11 56	− 1	e 16·9	—
Des Moines	33·5	211	—	—	e 13 50	SS	i 17·1	—
Victoria	33·7	252	e 7 31	PP	—	—	e 17·6	20·6
Oxford	35·4	88	—	—	12 15	−12	e 16·0	22·2
Charlottesville	35·5	190	e 7 24	+31	—	—	18·1	—
Copenhagen	35·8	73	6 56	0	12 37	+ 4	16·0	—
Florissant	35·8	207	i 6 54	− 2	e 12 48	+15	i 17·9	i 21·0
St. Louis	36·0	207	i 6 54	− 4	e 12 45	+ 9	18·3	21·2
Pulkovo	36·8	55	i 7 7	+ 2	i 12 50	+ 2	18·0	21·0
Hamburg	37·0	76	e 7 10	+ 4	—	—	—	26·0
De Bilt	37·0	81	i 7 6a	0	12 53	+ 2	e 18·0	22·2
Denver	37·4	225	e 7 8	− 2	e 13 12	+15	e 18·5	19·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle	37·8	84	e 7 13	0	i 13 5	+ 2	e 16·0	—
Königsberg	38·8	66	e 7 26	+ 4	i 13 11	− 7	e 17·6	25·1
Göttingen	38·8	78	i 7 22	0	—	—	e 23·0	29·0
Paris	39·1	86	e 11 0?	?	e 21 19	?	24·0	24·0
Leipzig	39·7	76	—	—	e 13 36	+ 4	—	—
Strasbourg	40·8	81	e 7 39	0	e 13 54	+ 6	e 19·0	—
Cheb	40·8	76	—	—	e 14 0?	+12	—	29·0
Stuttgart	41·1	80	e 7 41	0	e 13 49	− 4	e 20·5	27·0
Prague	41·4	75	e 7 44	0	e 13 59	+ 2	e 21·0	27·0
Basle	41·7	83	e 7 46	0	—	—	—	—
Neuchatel	42·1	83	e 7 48	− 1	—	—	—	—
Moscow	42·2	54	7 53	+ 3	14 9	0	e 21·9	26·3
Zurich	42·2	82	e 7 49	− 1	—	—	—	—
Ukiah	42·3	246	e 7 50	− 1	e 14 14	+ 4	—	—
Tinemaha	42·9	239	i 7 56	0	—	—	—	—
Chur	42·9	82	e 7 56	0	—	—	—	—
Berkeley	43·2	244	e 7 58	0	—	—	26·3	—
Lick	43·5	244	e 8 2	+ 1	—	—	—	—
Branner	43·6	244	e 8 5	+ 3	—	—	—	—
Vienna	43·6	74	e 8 29	+27	e 15 28	?	e 28·0	—
Haiwee	43·8	238	i 8 3	0	—	—	—	—
Triest	45·2	78	8 15k	+ 1	15 5	+11	e 22·0	27·1
Toledo	45·5	98	e 8 15	− 2	e 15 10	+13	e 25·2	—
Mount Wilson	45·6	237	i 8 17	− 1	—	—	—	—
Pasadena	45·7	237	i 8 18a	0	e 14 48	−12	e 23·9	—
Tortosa	45·8	93	8 21	+ 2	15 8	+ 6	—	29·9
Santa Barbara	45·8	239	i 8 20	+ 1	—	—	—	—
Prato	46·1	81	e 8 26	+ 5	11 49	?	—	—
Florence	46·2	81	e 7 30	−52	—	—	—	9·7
La Jolla	46·7	236	i 8 26	0	—	—	—	—
Alicante	47·9	96	e 8 39	+ 4	e 15 42	+11	e 27·7	—
San Fernando	48·0	102	e 8 36	0	15 36	+ 3	22·5	—
Granada	48·1	99	i 8 36	− 1	i 15 42	+ 8	25·6R	32·9
Malaga	48·3	100	e 8 36	− 2	15 36	− 1	—	—
Almeria	48·7	99	e 8 34	− 7	e 15 38	− 5	e 31·2	—
Simferopol	51·3	61	e 9 3	+ 2	e 16 24	+ 5	—	—
Sebastopol	51·5	62	e 9 5	+ 2	—	—	—	—
Yalta	51·8	61	9 4	− 1	—	—	—	—
San Juan	54·9	176	e 9 24	− 4	e 17 5	− 3	e 26·0	—
Grozny	55·7	52	9 35	+ 1	e 17 32	+13	—	—
Tiflis	57·0	53	9 44	+ 1	e 17 30	− 6	30·0	—
Baku	59·4	49	e 10 3	+ 3	e 18 17	+ 9	31·0	37·8
Tchimkent	61·2	32	e 10 25	+12	—	—	—	—
Frunse	61·3	29	e 10 14	0	e 18 38	+ 5	—	—
Tashkent	62·2	33	i 10 22	+ 2	18 49	+ 4	29·4	41·1
Ksara	62·3	64	i 10 19a	− 1	18 52	+ 6	31·5	37·5
Vladivostok	62·6	341	i 10 23	+ 1	—	—	—	42·9
Samarkand	63·4	36	e 10 26	− 2	—	—	—	—
Chiufeng	66·5	354	10 47	− 2	19 42	+ 3	—	44·9
Huancayo	85·4	185	—	—	e 23 4	[+ 2]	—	—
La Paz	89·8	177	e 12 50	− 6	—	—	—	—

Additional readings :—
Scoresby Sund +6m.0s. and +6m.31s.
Sitka eSS = +13m.15s.
Toronto ePPN = +6m.16s. ; T_g = 20h.30m.31s.
Oak Ridge i = +6m.49s., ePPN = +7m.0s,. iPP = +7m.8s., ePPP = +7m.35s., iP_cP = +9m.7s., i = +12m.3s., iE = +12m.24s., eN = +12m.59s.
Ann Arbor eN = +7m.54s., e = +12m.36s. and +15m.0s., i = +16m.0s.
Chicago e = +15m.17s. and +16m.10s., i = +16m.46s. = S_cS −11s.
Bozeman eSS = +13m.40s., e = +15m.40s., iS_cS = +17m.0s., i = +17m.36s.
Philadelphia eSS = +14m.12s., eS_cS = +16m.34s.
Des Moines e = +15m.10s.
Charlottesville eSS = +15m.10s., e = +17m.0s. = S_cS −15s. and +20m.2s.
Copenhagen +8m.16s. = PP +5s., +13m.16s.

Continued on next page.

Florissant iPP = +8m.14s., ePPP = +8m.37s., iP_cPZ = +9m.18s., eNZ = +12m.31s., eSSN = +14m.54s., eSSSN = +15m.21s.; T_0 = 20h.30m.49s.
St. Louis ePPN = +8m.2s., ePPPN = +8m.17s., eN = +10m.10s. and +12m.10s., eSSN = +14m.57s., iS_cSN = +17m.18s.
Königsberg eN = +9m.31s. = P_cP − 7s. and +12m.27s., iPSZ = +13m.37s.
Stuttgart e = +10m.30s.
Prague ePP = +9m.26s.
Berkeley eE = +8m.1s., eEN = +21m.45s., eE = +22m.32s., eN = +22m.36s., eE = +24m.14s.
Lick iN = +8m.4s., eN = +13m.51s. and +21m.43s., eE = +22m.39s., eN = +22m.44s.
Triest SS = +18m.12s. = S_cS − 1s.
San Fernando PS = +16m.29s.
Granada i = +8m.48s., P_cP = +10m.6s., iPP = +10m.28s., SS = +19m.32s.
Malaga e = +10m.20s. = PP − 4s. and +11m.0s. = PPP − 8s., SS = +19m.16s.
San Juan e = +12m.30s. = PPP − 1s.
Tiflis P_cP = +10m.40s., ePPP = +13m.15s., eSS = +21m.26s.
Baku e = +21m.57s. = SS − 2s. and +25m.13s.
Chiufeng S_cSN = +20m.43s., SS?N = +24m.12s.
Huancayo ePS = +25m.20s.
Long waves at Edinburgh, Kew, Stonyhurst, Piacenza, Honolulu, Ferndale, and Hong Kong.

Aug. 22d. Readings also at 0h. (Samarkand and near Batavia), 6h. (Baku, Tiflis, Scoresby Sund, Moscow, Samarkand, Tchimkent, Frunse, near Andijan, Tashkent, and near Wellington), 7h. (Pulkovo and Copenhagen), 8h. (Tananarive), 9h. (Alicante and Nagasaki), 12h. (Tiflis and near Samarkand), 13h. (Manila), 14h. (near Berkeley), 15h. (Tacubaya), 17h. (Grozny), 18h. (near Batavia and Malabar), 19h. (Port au Prince), 22h. (Frunse and near Samarkand), 23h. (Wellington and Yalta).

Aug. 23d. 10h. 18m. 17s. Epicentre 7°·0S. 155°·0E. (as on 1933 Nov. 18d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·1	187	e 5 49	+10	e 10 52	+35	e 14·8	19·0
Sydney		27·1	187	e 9 35	S	(e 9 35)	−42	15·7	16·9
Adelaide		31·8	206	e 6 20	− 1	e 11 22	−10	e 15·8	27·8
Melbourne		32·1	195	—	—	i 11 1	−36	18·6	21·1
Perth		44·1	230	17 13	SS	—	—	i 24·2	—
Hong Kong		49·6	309	—	—	15 18	−37	—	21·9
Nanking		52·2	320	—	—	e 15 55	−36	e 22·3	26·7
Vladivostok		54·3	340	e 9 23	0	—	—	—	—
Chiufeng		59·2	326	e 9 27	−32	i 17 43	−22	—	33·1
Sitka		85·1	31	—	—	e 22 56	[− 4]	e 35·3	—
Tashkent		91·4	313	e 13 31	+27	i 23 19	[−22]	e 42·7	54·3
Pasadena	z.	91·4	56	e 13 4	0	—	—	—	—
Mount Wilson	z.	91·5	56	e 13 3	− 1	—	—	—	—
Tinemaha		91·6	53	e 13 6	+ 1	—	—	—	—
La Jolla	z.	92·0	58	e 13 9	+ 2	—	—	—	—
Baku		106·0	310	—	—	e 39 47	?	49·7	—
Pulkovo		113·0	333	e 45 58	?	—	—	e 63·7	—
Ksara		117·9	303	19 31	PP	e 35 3	SS	—	71·2
Oak Ridge		125·8	41	e 13 25	?	—	—	—	—

Additional readings:—
Adelaide e = +13m.49s.
Melbourne i = +13m.57s. and +16m.37s. = S_cS − 19s.
Chiufeng ePN = +9m.29s., eS?N = +17m.18s., eSS?N = +20m.52s.
Tashkent e = +24m.30s. = S + 21s., +32m.7s., and +33m.7s.
Pulkovo e = +55m.43s.
Oak Ridge e = +15m.27s.
Long waves were also recorded at Honolulu, Wellington, Tiflis, Scoresby Sund, and some European stations.

Aug. 23d. 13h. 57m. 47s. Epicentre 4°·6S. 101°·6E. (as on 1922 April 8d.). R.1.

A = −·200, B = +·976, C = −·080; D = +·980, E = +·201; G = +·016, H = −·079, K = −·997.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		5·5	107	i 1 18	0	i 2 46	S*	—	—
Malabar		6·5	113	i 1 34	+ 2	i 3 11	S*	—	—
Medan		8·7	341	2 13	+10	e 4 9	S*	—	—
Colombo		24·5	298	5 18	+ 3	9 40	+ 8	17·0	17·4
Phu-Lien		25·9	11	e 5 33	+ 5	e 10 9	+12	22·2	25·8
Amboina		26·8	90	5 44	+ 8	10 42	+30	e 14·2	—
Manila		27·1	45	5 37a	− 2	10 59	+42	15·2	18·2
Kodaikanal		28·2	302	i 5 58	+ 9	i 10 46	+11	14·1	15·5
Hong Kong		29·6	24	6 3	+ 2	11 3	+ 5	14·2	18·2
Calcutta		30·0	335	6 12	+ 7	11 7	+ 3	e 14·4	28·2
Perth		30·4	155	7 13	+64	11 38	+28	14·0	26·2
Hyderabad		31·8	315	6 25	+ 4	11 31	− 1	13·6	20·5
Palau		34·9	71	6 48	0	—	—	—	—
Bombay		36·8	310	e 7 11	+ 6	12 54	+ 6	18·2	22·9
Agra		39·1	326	7 26	+ 2	i 13 22	0	18·1	24·4
Nanking		40·1	23	i 7 37	+ 4	i 13 39	+ 1	18·8	25·5
Zi-ka-wei		40·5	27	e 7 35	− 1	—	—	24·4	32·1
Dehra Dun		41·6	329	8 3	+18	14 23	+23	—	16·5
Adelaide		45·7	136	e 9 48	PP	i 14 54	− 6	20·9	26·0
Nagasaki		46·0	35	8 19	− 2	—	—	e 25·2	—
Miyazaki		46·2	37	8 19	− 3	—	—	—	—
Unzendake		46·2	35	8 24	+ 2	—	—	—	—
Kumamoto		46·5	35	8 28	+ 3	—	—	—	—
Chiufeng		46·6	15	8 23a	− 2	i 15 13	0	22·3	31·2
Hukuoka B		46·9	34	—	—	15 33	+16	26·2	—
Husan		47·3	31	e 8 32	+ 1	—	—	24·0	—
Taikyu		47·7	30	—	—	e 15 41	+12	26·5	—
Zinsen		48·1	27	e 8 33	− 4	e 15 45	+11	e 29·0	—
Keizyo		48·3	28	—	—	e 15 44	+ 7	26·4	29·3
Koti		48·7	36	8 40	− 1	15 49	+ 6	—	—
Siomisaki		49·9	38	8 46	− 5	—	—	—	—
Sumoto		50·0	37	8 46	− 5	16 12	+11	e 20·5	33·1
Wakayama		50·1	37	8 51	− 1	—	—	—	—
Kobe	E.	50·4	37	e 8 51	− 3	e 16 15	+ 9	27·2	33·9
Toyooka		50·8	36	—	—	e 20 28	?	e 30·7	32·9
Kameyama		51·3	37	9 1	0	—	—	—	—
Melbourne		51·6	136	e 9 13	+10	16 21	− 2	26·1	32·6
Nagoya		51·8	38	e 8 46	−19	—	—	—	—
Andijan		52·7	332	e 9 13	+ 1	16 39	+ 1	30·2	—
Misima		53·0	38	9 12	− 2	16 53	+11	—	—
Toyama		53·0	37	9 15	+ 1	16 58	+16	—	—
Kohu		53·1	38	9 14	− 1	—	—	—	—
Frunse		53·4	335	e 9 16	− 1	e 16 49	+ 2	31·2	—
Nagano		53·6	37	9 17	− 1	17 5	+15	—	—
Tokyo		53·9	39	9 20	− 1	—	—	—	—
Riverview		54·4	130	e 9 25	+ 1	i 17 2	+ 1	e 25·5	31·1
Sydney		54·4	130	—	—	e 16 59	− 2	34·1	37·2
Tananarive		54·6	250	e 9 40	+14	17 13	+ 9	25·7	28·2
Tashkent		54·6	331	9 19	− 7	e 18 55	(−19)	e 27·6	33·2
Mito		54·7	38	9 23	− 3	—	—	—	—
Tchimkent		55·2	332	e 9 30	0	—	—	—	—
Mizusawa		56·9	36	e 9 39	− 3	e 17 39	+ 4	—	—
Sapporo		59·7	32	9 59	− 3	—	—	—	—
Tiflis		69·3	318	11 4	− 2	i 20 12	− 1	28·4	45·5
Grozny		69·4	320	12 12	+65	20 12	− 2	24·2	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	72·8	307	i 11 30k	+ 2	20 59	+ 5	—	42·7
Wellington	74·3	132	—	—	e 30 13?	SSSS	e 37·2	41·2
Helwan	75·4	303	11 41	− 2	17 47	?	—	43·3
Yalta	77·5	318	e 11 49	− 6	21 37	−11	—	—
Sebastopol	78·0	318	e 11 44	−13	—	—	—	—
Moscow	79·7	329	12 9	+ 3	22 6	− 6	39·1	48·3
Cape Town	81·7	237	—	—	22 31	− 3	—	40·6
Bucharest	83·0	316	e 12 44	+21	e 22 44	[0]	—	—
Sofia	84·6	314	e 12 33	+ 2	e 22 55	[− 1]	41·2	—
Pulkovo	84·8	332	e 12 31	− 1	i 22 55	[− 3]	48·2R	52·4
Belgrade	87·0	315	e 13 5	+22	e 23 27	0	e 54·8	—
Budapest	88·4	318	e 12 43	− 7	i 23 37	− 4	e 49·7	—
Zagreb	90·3	316	e 13 1	+ 2	e 23 54	− 5	—	58·2
Graz	90·8	317	e 13 0	− 1	e 24 0	− 4	e 40·2	60·8
Prague	91·7	320	—	—	e 23 43	[0]	e 51·2	56·2
Triest	91·8	316	e 13 32a	+26	25 1	PS	—	63·6
Cheb	93·0	320	—	—	e 24 13?	−11	e 57·2	—
Leipzig	93·1	320	—	—	e 23 49	[− 2]	e 56·2	63·2
Copenhagen	93·3	325	13 15	+ 2	24 19	− 8	44·2	—
Prato	93·6	313	e 12 38	−36	24 13	{+ 9}	—	—
Piacenza	94·6	315	e 19 13	PPP	—	—	—	62·7
Hamburg	94·7	323	e 13 20	+ 1	e 23 49	[−10]	e 51·2	—
Chur	94·8	317	e 14 22	+62	e 24 10	{− 3}	—	—
Stuttgart	95·0	318	e 13 18	− 2	e 24 31	−11	e 50·2	59·2
Strasbourg	96·0	319	e 13 48	+23	e 26 8	PS	e 52·2	—
De Bilt	97·6	321	e 13 43	+11	e 24 13	[− 1]	e 46·2	66·2
Uccle	98·1	320	—	—	e 24 14	[− 2]	e 46·2	—
Scoresby Sund	105·1	343	18 37	PP	24 43	[− 7]	44·2	—
Sitka	111·3	28	—	—	e 25 5	[−14]	e 60·1	—
Tinemaha	131·2	42	e 19 9	[0]	—	—	—	—
Pasadena	132·8	45	i 19 12	[0]	—	—	e 68·9	—
Mount Wilson	132·8	45	e 19 12	[0]	—	—	—	—
Ottawa	139·1	356	22 19	PP	29 13	{− 5}	e 59·2	—
Toronto	140·9	1	i 22 20	PP	e 29 13?	{−16}	—	—
Oak Ridge	141·6	351	e 19 20	[− 3]	—	—	e 82·3	—
Chicago	141·9	11	—	—	e 29 26	{− 9}	70·4	—
Florissant	144·1	16	i 19 32	[0]	—	—	—	—
St. Louis	144·3	16	e 19 28	[− 4]	—	—	—	—
Sucre	153·0	208	e 19 57	[+11]	—	—	78·2	—
La Paz	156·6	205	e 20 15	{−14}	i 30 51	{− 9}	77·2	87·9
San Juan	161·8	320	—	—	e 42 53	?	e 82·7	—
Huancayo	163·1	190	—	—	e 31 6	{−29}	e 77·2	—

Additional readings :—
Batavia iP = +1m.21s., iN = +1m.43s. = P_g − 1s. and +2m.13s. = S − 7s., iSZ = +2m.55s. = S_g − 1s.
Malabar i = +2m.42s. = S − 4s.
Medan iP = +2m.25s., i = +4m.28s.
Kodaikanal iSS = +12m.4s.
Hong Kong PPP = +7m.2s., ? = +7m.46s., SS = +12m.13s.
Calcutta PP = +6m.55s.
Perth i = +10m.48s., SS = +12m.33s., SSS = +12m.43s.
Bombay PPPEN = +8m.50s., SSSEN = +15m.34s.
Agra PPE = +8m.37s., PPP = +8m.58s., SS = +15m.22s.
Nanking iN = +7m.53s., ePPP = +9m.17s., iE = +14m.7s., iN = +14m.34s., SSN = +16m.17s., eSSS = +16m.45s.
Zi-ka-wei iZ = +7m.59s., +9m.51s. = P_cP +8s., +16m.13s. = SS − 10s. and +19m.48s.
Adelaide iSS? = +18m.11s. = S_cS − 6s.
Chiufeng PE = +8m.26s., iPPNZ = +10m.18s., iPPPEZ = +11m.4s., iN = +11m.13s., iSZ = +15m.33s., iEZ = +17m.21s., iN = +19m.28s.
Sumoto SE = +16m.15s.
Kobe PE = +8m.56s., eSN = +16m.20s., SZ = +16m.29s., eEN = +20m.19s., eZ = +20m.27s.

Continued on next page.

Melbourne e = +20m.0s. and +23m.9s.
Riverview iE = +17m.5s.
Tananarive SSSN = +22m.13s.?
Tashkent e = +21m.37s., +23m.49s., and +26m.1s.
Mizusawa eSE = +17m.46s.
Tiflis ePP = +13m.56s., ePS = +20m.40s.
Ksara PP = +13m.41s., PS = +21m.41s., SS = +26m.7s.
Cape Town +21m.41s., +24m.13s., and +27m.21s. =SS −17s.
Pulkovo PP = +15m.51s., PPP = +17m.53s., SS = +28m.31s., SSS = +32m.31s., L_q = +42m.13s.
Belgrade e = +17m.0s. and +23m.43s.
Zagreb eSKKS = +24m.7s.
Triest P = +13m.57s., SKS = +24m.1s. =S −12s., SKKS = +24m.42s., PPS = +26m.41s.
Copenhagen PP = +17m.7s., +23m.48s. =SKS −4s., +25m.37s. =PS +7s., SS = +30m.37s.
Stuttgart ePP = +17m.13s., eSS = +30m.43s.
Strasbourg ePP = +17m.56s., iSKS = +24m.41s. =S −10s., ePPS = +27m.19s., eSS = +31m.42s., eSSSS = +41m.18s., e = +50m.1s.
De Bilt eE = +25m.1s. =S −4s.
Uccle iN = +25m.4s. =S −6s., eE = +26m.37s. =PS +12s., eN = +28m.32s.
Scoresby Sund SS = +33m.25s.
Sitka ePP = +19m.23s., ePS = +28m.48s. and +29m.1s., e = +55m.29s.
Tinemaha iPKSZ = +22m.32s., iZ = +22m.48s.
Pasadena ePPZ = +21m.38s., iPKSENZ = +22m.40s.
Mount Wilson ePKSNZ = +22m.38s.
Ottawa PPSN = +34m.43s., SS = +40m.37s. ; T_0 =14h.1m.18s.
Toronto eN = +40m.44s. =SS −9s.
Oak Ridge e = +22m.15s. =PP −16s.
Chicago e = +22m.22s. =PP −11s. and +50m.19s.
Florissant iZ = +22m.47s. =PP +1s.
St. Louis eN = +19m.41s., eE = +22m.43s. =PP −5s., eEN = +23m.11s. = PKS −7s.
La Paz SSN = +45m.1s., SSS = +49m.55s.
San Juan e = +44m.47s. =SS −3s.
Huancayo ePPP = +30m.9s., e = +34m.3s., +37m.53s., +43m.1s., and +51m.18s. =SSS +16s., eSSS = +52m.28s., e = +61m.13s.
Long waves recorded at Durham, Edinburgh, Kew, Stonyhurst, La Plata, and other European and American stations.

Aug. 23d. Readings also at 0h. (Agra, Bombay, and near Toyooka), 3h. (Ksara), 10h. (Haiwee, La Jolla, Mount Wilson, Pasadena, Tinemaha, Florissant, Sitka, Scoresby Sund, near Frunse, Samarkand, and Tchimkent), 11h. (Mount Wilson (2), Pasadena (2), Tinemaha, Scoresby Sund, and Tiflis), 12h. (Bozeman, Tacubaya, Oaxaca, Oak Ridge, Mount Wilson, Pasadena, Florissant, Sitka, Chiufeng, Hong Kong, Medan, and near Batavia), 13h. (Medan), 18h. (Agra and Calcutta), 19h. (near Mizusawa and Nagoya), 20h. (Apia and near Tiflis), 22h. (near Branner), 23h. (Agra, near Berkeley, Branner, and Lick).

Aug. 24d. Readings at 1h. (Ksara, Erevan, and near Tiflis), 2h. (near Mizusawa), 4h. (Nagasaki), 8h. (Granada, Strasbourg, near Zurich, Chur, Basle, and Neuchatel), 9h. (Sofia, Tinemaha, Mount Wilson, La Jolla, Pasadena, and near Apia), 10h. (Hong Kong, Manila, Mount Wilson, La Jolla, and Pasadena), 11h. (La Jolla and Pasadena), 13h. (Mount Wilson, Pasadena, and near San Juan), 14h. (Stuttgart, Jena, near Chur, Zurich, Basle, and Neuchatel), 15h. (Rathfarnham Castle), 19h. (Baku, Grozny, Moscow, Pulkovo, Tashkent, Ksara, near Erevan, near Tiflis, and near Santiago), 21h. and 23h. (Oak Ridge).

Aug. 25d. 5h. 7m. 55s. Epicentre 78°·5N. 5°·5E. N.2.

A = +·198, B = +·019, C = +·980 ; D = +·096, E = −·995 ;
G = +·975, H = +·094, K = −·199.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund	10·7	236	2 29	− 2	4 28	− 3	—	—
Bergen	18·4	180	i 4 16	+ 5	i 7 20	−13	i 8·9	—
Upsala	19·0	161	4 13	− 6	7 56	+10	e 9·1	—
Pulkovo	20·3	143	i 4 29	− 4	i 8 21	+ 9	i 9·6	14·3
Edinburgh	22·8	192	e 5 5?	+ 6	i 9 27	SS	—	18·4
Copenhagen	22·9	169	4 57	− 3	9 12	+ 9	11·1	—
Durham	23·9	189	5 23	+14	9 35	+14	—	19·6
Königsberg	24·2	158	e 5 14	+ 2	e 9 29	+ 2	11·2	15·1
Stonyhurst	24·8	191	—	—	9 46	+ 9	12·1	—
Hamburg	25·0	174	e 4 53	−27	—	—	—	19·1
Moscow	25·2	136	e 5 19	− 3	e 9 54	+10	e 11·9	18·6
Bidston	25·3	193	e 5 5?	−18	—	—	e 10·0	—
De Bilt	26·4	180	e 5 31	− 2	e 10 11	+ 6	e 13·0	13·4
Kew	27·1	187	e 6 5	PP	—	—	12·1	—
Leipzig	27·3	170	e 5 41	0	—	—	e 10·3	15·9
Uccle	27·7	182	e 5 42	− 2	10 29	+ 2	e 11·1	—
Cheb	28·5	171	—	—	e 11 5?	+25	—	22·1
Prague	28·6	168	e 5 45	− 8	(e 10 35)	− 7	e 10·6	16·1
Paris	29·7	184	e 6 21	+19	e 11 6	+ 7	14·1	18·1
Stuttgart	29·8	174	e 6 3	0	e 11 1	0	e 12·6	19·9
Strasbourg	29·9	176	e 6 12	+ 8	i 11 10	+ 7	e 14·1	—
Budapest	31·4	161	—	—	e 12 5?	?	—	25·1
Neuchatel	31·5	177	e 6 16	− 2	—	—	—	—
Graz	31·6	166	e 6 37	+18	e 9 49	?	e 18·1	27·4
Chur	31·7	175	e 6 22	+ 2	—	—	—	—
Zagreb	32·9	166	e 4 35	?	—	—	e 18·8	—
Triest	33·0	169	e 6 31	− 1	11 53	+ 2	e 15·8	19·6
Prato	34·7	172	e 6 49	+ 3	11 5	−72	—	—
Bucharest	35·0	153	e 8 5	PP	—	—	—	—
Sebastopol	35·5	145	e 7 13	+20	—	—	—	—
Yalta	35·8	144	e 6 57	+ 1	—	—	—	—
Sofia	36·5	157	e 7 4	+ 2	—	—	—	—
Grozny	38·5	130	e 7 26	+ 7	—	—	—	—
Toledo	38·8	191	e 7 54	+32	—	—	e 18·9R	—
Tiflis	39·9	133	e 7 33	+ 2	e 13 45	+10	e 18·6	—
Alicante	40·2	187	e 7 57	+23	e 13 45	+ 6	e 20·3	—
Granada	41·5	191	i 8 0	+16	e 14 30	+31	19·3	25·9
Almeria	41·8	189	e 8 20	+33	—	—	e 27·6	—
Malaga	42·0	191	7 35	−14	14 0	− 6	20·3	—
Baku	42·0	127	e 8 11	+22	e 14 15	+ 9	21·3	25·8
Sitka	42·4	329	e 7 57	+ 5	e 14 15	+ 4	22·1	—
Tchimkent	43·6	105	8 22	+20	—	—	—	—
Frunse	44·0	100	8 5	0	—	—	e 22·1	—
Ottawa	44·0	273	e 8 19	+14	e 14 40	+ 4	e 20·1	—
Vermont	44·4	269	e 8 9	+ 1	14 38	− 3	e 21·1	—
Tashkent	44·5	106	8 3	− 6	14 43	0	e 16·9	30·1
Andijan	45·7	103	e 8 26	+ 8	e 17 56	SS	25·6	—
Samarkand	45·7	109	8 24	+ 6	—	—	28·1	—
Oak Ridge	46·0	267	e 8 19	− 2	e 15 11	+ 7	e 25·8	—
Toronto	46·4	276	e 8 11	−13	e 14 34	−36	e 20·6	—
Ksara	46·5	144	e 8 24	− 1	15 34	+22	—	—
Ann Arbor	48·6	279	—	—	e 15 53	+12	26·5	29·5
Philadelphia	49·1	270	e 8 44	0	e 15 35	−13	e 23·6	—
Victoria	49·5	317	e 8 44	− 3	i 15 54	0	e 23·4	—
Chicago	49·7	284	—	—	i 16 7	+10	e 23·5	—
Seattle	50·1	316	—	—	e 15 36	−26	e 23·3	—
Bozeman	50·3	306	e 9 10	+16	e 16 10	+ 5	e 24·8	—
Charlottesville	51·7	273	—	—	e 15 57	−27	e 24·3	—
Florissant	53·3	285	e 9 14	− 2	e 16 44	− 2	e 25·6	29·1
St. Louis	53·4	285	e 9 25	+ 8	16 45	− 2	25·8	30·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok	54·3	47	e 9 39	+16	e 17 5	+ 6	e 21·7	33·0
Chiufeng	54·8	61	e 9 29	+ 2	e 17 19	+13	e 27·2	35·7
Keizyo	59·0	52	—	—	e 28 21	?	e 31·1	33·3
Zinsen	59·0	53	—	—	e 22 5?	SS	—	—
Tinemaha	59·8	309	i 10 4	+ 1	—	—	—	—
Agra	60·0	101	e 11 27	?	e 18 20	+ 4	—	—
Husan	61·8	51	—	—	e 25 35	?	e 30·9	—
Santa Barbara	62·6	310	e 10 40	+18	—	—	—	—
Mount Wilson	62·6	309	e 10 21	− 1	—	—	—	—
Pasadena	62·7	309	i 10 19	− 4	—	—	e 34·3	—
Nanking	63·0	61	e 10 39	+14	e 23 9.	SS	i 31·1	35·7
La Jolla	63·8	307	e 10 30	− 1	—	—	—	—
Nagasaki	64·2	50	e 24 11	?	—	—	e 36·6	—
Calcutta	66·5	92	13 38	?	21 38	?	31·4	39·9
Bombay	67·0	108	e 10 5?	−47	—	—	—	47·3
San Juan	68·4	255	e 11 12	+11	e 19 58	− 4	e 30·9	—
Honolulu	79·7	344	—	—	e 22 10	− 2	e 37·6	—
La Paz	103·3	250	e 34 24	?	—	—	50·9	64·4

Additional readings :—
Edinburgh i = +11m.23s. and +12m.32s.
Copenhagen +5m.20s. =PP − 2s., +9m.59s.
Königsberg i = +5m.22s., +5m.30s. =PP − 9s., +5m.42s. =PPP − 1s., and +5m.47s., ePP = +5m.51s., ePPPN = +6m.0s., eZ = +6m.4s., +6m.16s., and +6m.24s., eN = +7m.11s., eZ = +7m.40s., eN = +9m.46s., PSN = +10m.0s., SSE = +10m.41s.
Hamburg eZ = +5m.20s., eE = +10m.33s. =SS + 3s.
De Bilt eE = +10m.25s.
Prague e = +6m.43s. =PPP − 1s.
Stuttgart ePP = +7m.5s.
Strasbourg ePP = +7m.6s., eSS = +12m.35s.
Triest ePZ = +6m.25s., e = +6m.46s., iPP = +7m.25s.
Sebastopol e = +20m.51s.
Yalta e = +20m.37s.
Toledo eL_Q = +16m.5s.
Tiflis eSS = +16m.29s.
Malaga e = +9m.40s. =PPP − 6s., +10m.9s., +14m.19s., +15m.55s., and +16m.45s. =SS − 8s.
Sitka ePP = +9m.39s., eSS = +16m.12s., iS_0S = +17m.25s.
Ottawa PP = +9m.47s., SSE = +17m.47s. ; T_0 = 5h.8m.30s.
Vermont ePP = +10m.5s., eSS = +17m.35s.
Oak Ridge eN = +8m.54s. and +18m.35s., e = +18m.59s. and +21m.59s.
Toronto ePN = +8m.21s., eSN = +14m.42s. ; T_0 = 5h.8m.32s.
Ksara SS = +18m.54s.
Ann Arbor eN = +19m.41s., eE = +20m.11s., and +22m.11s., eN = +23m.59s.
Philadelphia ePP = +10m.35s., ePPP = +11m.22s., eSS = +19m.25s., e = +21m.58s.
Victoria ePN = +8m.47s., iSN = +15m.59s ; T_0 = 5h.7m.53s.
Chicago ePP = +10m.46s., eSS = +19m.23s.
Seattle eSS = +18m.52s. = S_0S + 7s., e = +19m.7s.
Bozeman eSS = +19m.35s., e = +20m.25s.
Charlottesville eSS = +19m.57s.
Florissant iPPNZ = +11m.24s., eSSN = +20m.18s. ; T_0 = 5h.7m.59s.
Chiufeng iNZ = +21m.40s.
Agra eSS = +21m.27s.
Nanking e = +14m.36s. =PPPP + 3s., eSSS = +27m.19s.
La Jolla eENZ = +10m.39s.
San Juan e = +17m.55s., eSS = +24m.31s., eSSS = +27m.35s.
Honolulu e = +33m.13s.
Long waves also at Oxford, San Fernando, Hong Kong, Phu-Lien, Zi-ka-wei, Toyooka, Hyderabad, and Kodaikanal.

Aug. 25d. Readings also at 1h. (Taikyu), 2h. (near Apia and near Nagoya), 6h. (Medan (2)), 7h. (Bozeman), 8h. (Kobe and Nagoya), 9h. (near Samarkand) 14h. (near Tiflis), 16h. (Strasbourg), 17h. (Triest and near Sofia), 20h. (Copenhagen, Ksara, Tashkent, Pasadena, Tinemaha, Huancayo, San Juan, Wellington, La Paz, and La Plata), 21h. (Baku, Pulkovo, De Bilt, Uccle, Strasbourg, Stuttgart, Kew, and Granada), 23h. (near Santiago).

Aug. 26d. 12h. 21m. 4s. Epicentre 3°·0S. 154°·5E. N.3.

A = − ·901, B = + ·430, C = − ·052 ; D = + ·431, E = + ·903 ;
G = + ·047, H = − ·023, K = − ·999.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	26·3	268	i 5 30	− 2	9 56	− 7	—	—
Riverview	31·0	186	—	—	e 10 44	−36	e 14·8	15·5
Adelaide	35·2	203	e 6 51	0	i 11 30	−54	e 14·8	17·8
Melbourne	35·9	193	—	—	e 12 1	−34	14·5	19·3
Wellington	42·4	157	—	—	e 12 56?	?	—	—
Perth	46·4	227	—	—	e 14 26	−44	24·4	—
Hong Kong	46·8	304	15 32	S	(15 32)	+16	—	25·5
Batavia	47·6	264	—	—	15 43	+16	—	—
Honolulu	52·6	60	—	—	e 16 46	+ 9	e 25·4	—
Medan	56·2	277	—	—	e 17 52	+27	—	—
Sitka	81·9	31	—	—	e 28 43	?	e 38·4	—
Andijan	86·0	311	e 13 11	+33	e 23 21	+ 3	—	—
Santa Barbara	88·2	56	e 12 50	+ 1	—	—	—	—
Tashkent	88·4	311	i 12 48	− 2	i 23 37	− 4	e 40·9	49·2
Pasadena	89·5	56	e 12 55$_a$	0	—	—	—	—
Tinemaha	89·6	53	e 12 58	+ 2	—	—	—	—
Mount Wilson	89·6	56	i 12 56$_a$	0	—	—	—	—
Samarkand	90·0	309	e 13 11	+14	e 24 11	+15	—	—
Baku	103·0	311	—	—	e 34 18	?	e 51·9	—
Ksara	115·2	306	e 19 18	PP	e 29 56	PS	—	72·4

Additional readings :—
Adelaide i = + 7m.22s.
Batavia e = + 12m.59s.
Sitka e = + 35m.22s.
Tashkent e = + 13m.4s. and + 24m.8s., eSS = + 33m.44s., eSSS = + 36m.56s.
Ksara iPP = + 19m.48s., e = + 35m.58s.
Long waves at Philadelphia, Oak Ridge, and other European stations.

Aug. 26d. 16h. 31m. 33s. Epicentre 24°·5N. 126°·5E. (as on 1920 Nov. 16d.). R.3.

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

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	4·5	265	1 1	− 3	1 56	+ 1	—	—
Taihoku	4·6	280	e 1 2	− 4	e 1 39	−19	—	—
Taito	5·2	252	e 1 15	+ 1	2 14	+ 1	—	—
Taityu	5·3	267	(1 15)	0	2 1	−14	—	—
Arisan	5·3	261	e 1 15	0	—	—	—	—
Tainan	6·0	257	e 1 25	0	—	—	—	—
Zi-ka-wei	8·0	330	e 1 40	−13	3 6	−18	4·5	6·1
Nagasaki	8·7	19	2 11	+ 8	5 12	?	—	—
Hukuoka B	9·7	20	2 46	+29	5 26	S_g	—	—
Nanking	10·2	320	e 2 9	−15	e 3 43	−35	4·1	7·1
Husan	10·8	11	e 5 43	S_g	8 41	?	8·9	—
Taikyu	11·5	9	e 2 50	+ 8	6 0	S*	9·1	—
Keizyo	13·0	2	e 5 18	S	(e 5 18)	− 9	9·1	—
Zinsen	13·0	1	e 5 35	S	(e 5 35)	+ 8	e 8·6	
Heizyo	14·5	355	e 6 58	S*	—	—	—	—
Chiufeng	17·8	333	e 3 55$_a$	− 9	7 3	−17	8·0	11·6
Vladivostok	19·1	12	i 4 26	+ 6	i 7 58	+10	i 9·2	17·4
Calcutta	34·9	274	—	—	15 5	?	—	—
Andijan	47·5	303	e 8 8	−24	—	—	—	—
Tashkent	49·9	305	e 7 51	−60	e 15 21	−38	22·6	32·3
Samarkand	51·7	302	e 8 2	−62	—	—	—	—
Tiflis	68·0	307	e 11 6	+ 8	e 20 0	+ 3	e 31·7	—
Pulkovo	72·0	328	e 11 23	0	—	—	29·4	45·0
Ksara	77·1	301	—	—	e 20 47	−57	—	49·9
Strasbourg	88·7	324	e 16 55	?	—	—	e 47·4	—
Uccle	89·1	328	e 14 27?	?	—	—	e 44·4	—

For Notes see next page.

NOTES TO AUGUST 26d. 16h. 31m. 33s.

Additional readings and note :—
Taityu readings have been *diminished* by 1m.
Zi-ka-wei iE = +3m.43s., iN = +3m.45s., +3m.54s. =S* −2s., and +4m.9s. = S_g −9s.
Nanking i = +4m.55s. =S* −6s.
Keizyo S = +7m.5s. =S_g +2s.
Zinsen eSE? = +6m.46s.
Chiufeng iN = +7m.31s. =SS −1s.
Andijan e = +30m.27s.
Tashkent e = +18m.21s.
Ksara e = +17m.9s., +27m.39s., and +30m.25s.
Strasbourg ePP = +15m.27s.?, ePPP = +18m.6s., ePPPP = +20m.4s.
Long waves at Kew, Bidston, Edinburgh, Hong Kong, Hyderabad, Bombay, Phu-Lien, Oak Ridge, and other European stations.

Aug. 26d. Readings also at 2h. (near La Paz), 3h. (near Apia), 4h. (Rathfarnham Castle), 6h. (Andijan, Frunse, and Samarkand), 9h. (Tiflis and near Ferndale), 10h. (near Karenko), 11h. (near Santiago), 12h. (Bombay), 14h. (Rathfarnham Castle), 16h. (Moscow, Pulkovo, Baku, Copenhagen, Scoresby Sund, Stuttgart, De Bilt, Uccle, and near Alicante), 19h. and 21h. (Oak Ridge), 23h. (near Santiago).

Aug. 27d. 5h. 21m. 41s. Epicentre 24°·5N. 126°·5E. (as at 26d. 16h.) X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	4·5	265	i 1 4	0	2 6	S*	—	—
Taihoku	4·6	280	e 1 3	− 3	e 1 40	−18	—	—
Taityu	5·3	267	1 43	P_g	—	—	—	—
Zi-ka-wei	8·0	330	e 2 1	+ 8	3 15	− 9	4·3	6·5
Nagasaki	8·7	19	e 2 8	+ 5	e 5 3	?	—	—
Nanking	10·2	320	e 2 15	− 9	4 16	− 2	6·2	8·2
Husan	10·8	11	e 5 36	S*	—	—	8·2	—
Taikyu	11·5	9	e 2 42	0	6 0	S_g	—	—
Keizyo	13·0	2	e 4 26	?	e 6 55	S_g	8·9	—
Chiufeng	17·8	333	e 3 57	− 7	7 6	−14	8·1	11·5
Vladivostok	19·1	12	i 4 26	+ 6	i 7 55	+ 7	i 9·4	15·8
Calcutta	34·9	274	—	—	e 15 9	?	—	—
Tashkent	49·9	305	—	—	e 19 27	SS	28·5	32·5
Moscow	69·3	323	—	—	e 27 40	SSS	—	41·9

Additional readings :—
Nanking i = +2m.56s., iSS = +4m.56s. =S* −5s.
Tashkent e = +15m.39s. and +26m.49s.
Moscow e = +35m.6s.
Long waves also at Bidston, Edinburgh, Kew, Bombay, Hyderabad, Hong Kong, Heizyo, Phu-Lien, Andijan, Ksara, Samarkand, and other European stations.

Aug. 27d. 14h. 30m. 27s. Epicentre 40°·5N. 142°·5E. (as on 1931 March 9d.). X.

A = −·603, B = +·463, C = +·649 ; D = +·609, E = +·793 ;
G = −·515, H = +·395, K = −·760.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	1·7	218	i 0 18	− 6	i 0 46	+ 2	—	—
Nagoya	6·8	221	1 38	+ 1	2 57	+ 4	—	3·6
Vladivostok	8·3	292	(e 2 10)	+12	e 2 10	P	4·2	6·3
Keizyo	12·4	261	e 2 53	− 1	—	—	—	—
Chiufeng	20·0	278	e 4 32	+ 2	e 8 27	SS	—	12·9
Frunse	49·3	297	e 9 2	+16	—	—	—	—
Andijan	51·7	298	e 9 1	− 3	—	—	—	—
Tashkent	53·6	297	—	—	e 17 3	+13	e 29·0	34·0
Baku	66·8	305	—	—	e 25 48	?	36·6	43·2
Tiflis	69·1	308	e 11 26	(− 4)	—	—	41·8	—
Ksara	79·5	307	e 12 12	+ 7	—	—	—	52·0

Additional readings :—
Tashkent e = +27m.31s.
Long waves were also recorded at Hong Kong and some European stations.

Aug. 27d. Readings also at 0h. (near Tiflis), 1h. (Wellington), 3h. (La Paz, Nagoya, and near Wellington), 4h., 5h., and 6h. (2) (Nagoya), 7h. (Tinemaha, La Jolla, Mount Wilson, Pasadena, Granada, Medan, Tashkent, Nanking, Taihoku, Hong Kong, Vladivostok, Chiufeng, and near Mizusawa), 8h. (2), 9h., and 11h. (Nagoya), 12h. (Andijan and Nagoya), 13h. (La Jolla, Pasadena, Mount Wilson, Tinemaha, Taityu, Taihoku, and Nagoya (2)), 14h. (Tashkent, Nanking, and near Nagoya), 15h. (La Paz), 16h. (near Nagoya), 17h. (near Oak Ridge), 18h. (Amboina), 19h. (near Apia), 20h. (near Amboina), 22h. (near Grozny).

Aug. 28d. Readings at 0h. (Granada), 1h. (Branner, Lick, and Granada), 2h. (Apia, Mount Wilson, Pasadena, Tinemaha, Ksara, Baku, Tashkent, near Grozny, and Tiflis), 3h. (Granada and Nagóya (2)), 4h. (near Wellington), 5h. (Tashkent, Andijan, Frunse, Tchimkent, near Samarkand, and near Mizusawa), 6h. (Amboina (2) and near Mizusawa), 7h. (Santiago and Taito), 9h. (near Santiago), 10h. (Nagoya and near Ksara), 11h. (near Nagoya, near Grozny, and Tiflis), 12h. (Grozny, Nagoya, and near Apia), 13h. (Malabar), 14h. (near Mizusawa (2), near Tokyo, and near Nagoya), 15h. (near Apia), 16h. (near Nagoya), 20h. (near Apia), 21h. (near Grozny), 22h. (Nagoya), 23h. (Andijan and Frunse).

Aug. 29d. Readings at 2h. (Mount Wilson, Pasadena, Tinemaha, and near Apia), 4h. (near Nagoya), 5h. (Baku, Tashkent, Vladivostok, and near Sumoto), 7h. (Taihoku), 8h. (Strasbourg), 10h. (Strasbourg and Tacubaya), 11h. (Wellington, De Bilt, Stuttgart, Kew, Edinburgh, Paris, Copenhagen, Scoresby Sund, Oak Ridge, and San Juan), 13h. (Edinburgh, Strasbourg, and Nagoya), 14h. (near Oak Ridge (5) and near Apia), 16h. (Strasbourg), 17h. (Nagoya), 18h. (Nagoya, San Juan, Andijan, near Samarkand, and near Oak Ridge), 22h. (Santiago, Nagoya, and near Tiflis).

Aug. 30d. Readings at 0h. (Mount Wilson, Pasadena, Riverside, Tinemaha, and Chiufeng), 2h. (near Hastings), 3h. (La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Santa Barbara, Tiflis, Moscow, Chur, Pulkovo, Stuttgart, Baku, Tashkent, Sebastopol, Simferopol, Yalta, Wellington, and near Ksara), 4h. (Nagoya (2) and Wellington), 5h. (Kobe, Sumoto, near Nagoya, and near Batavia), 6h. (near Nagasaki), 7h. (Andijan and near Samarkand), 8h. (Nagoya and near Tiflis), 9h. (near Mizusawa and near Nagoya), 10h. (Tacubaya), 11h. (Santiago and Tacubaya), 12h. (Bucharest, Sofia, Triest, Stuttgart and Ksara), 15h. (Nagoya and near Sumoto), 16h. (near Amboina and near Oak Ridge), 17h. (Batavia, Nagoya, Manila, and Tashkent), 18h. (Nanking, Vladivostok, Tashkent, and Wellington), 19h. (Baku), 22h. (near Berkeley).

Aug. 31d. 0h. 18m. 57s. Epicentre 44°·6N. 149°·5E. X.
(as on 1929 May 2 ; but see the following Shock at 17h.).

A = −·614, B = +·361, C = +·702.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	8·4	231	e 1 55	− 4	e 3 21	−13	—	—
Nagoya	13·5	230	e 3 24	+15	—	—	—	—
Nanking	27·0	254	5 41	+ 3	10 33	+18	15·1	17·8
Andijan	54·7	296	e 9 23	− 3	—	—	—	—
Tashkent	56·4	299	1 9 39	0	1 16 45	−43	e 29·2	34·6
Samarkand	58·7	298	e 9 24	−31	e 16 59	−60	—	—
Tiflis	70·6	311	e 11 14	0	—	—	38·1	—
Ksara	81·2	310	e 12 3	−11	—	—	46·0	54·0
Triest	81·6	332	—	—	e 23 17	PS	e 42·0	—

Long waves were also recorded at Hong Kong, Wellington, Moscow, Baku, Scoresby Sund, and other European stations.

Aug. 31d. 13h. 9m. 42s. Epicentre 35°·3N. 138°·6E. N.3.

(epicentre given by Japanese stations).

A = −·612, B = +·540, C = +·578; D = +·661, E = +·750; G = −·433, H = +·382, K = −·816.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	1·0	68	0 20	+ 6	0 36	+10	0·6
Nagoya	1·2	264	0 16	− 1	i 0 32	+ 1	0·6
Kobe	2·9	258	e 0 40	− 1	i 1 19	+ 5	1·4
Toyooka	3·0	274	0 49	+ 6	1 25	S*	1·5
Sumoto	3·2	253	0 37	− 9	1 30	S*	1·6

Additional readings :—
Kobe iNE = +15s. = P* −1s., eE = +1m.10s., eN = +1m.13s.
Toyooka ePN = +52s. = P_g −2s.
Sumoto eZ = +52s. = P* +0s.

Aug. 31d. 17h. 16m. 26s. Epicentre 11°·5N. 126°·2E. (as on 1929 Sept. 21d.). R.3.

A = −·579, B = +·791, C = +·199; D = +·807, E = +·591; G = −·118, H = +·161, K = −·980.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		6·0	302	i 1 25a	0	i 2 43	+10	—	—
Hong Kong		15·8	315	3 43	+ 4	6 54	+20	—	9·6
Zi-ka-wei	z.	20·2	348	e 4 54	PP	—	—	—	—
Phu-Lien		21·0	299	e 4 34	− 6	8 40	+14	—	—
Nanking		21·7	342	4 49	+ 1	8 47	+ 7	11·4	—
Chiufeng		30·0	344	6 1a	− 4	—	—	—	20·2
Vladivostok		32·0	8	—	—	e 11 11	−24	16·0	21·4
Calcutta		37·7	292	—	—	e 14 51	?	i 27·1	—
Frunse		54·5	315	e 9 35	+10	—	—	—	—
Andijan		55·3	311	e 9 36	+ 5	—	—	—	—
Tashkent		57·8	312	e 10 8	+19	e 17 58	+11	e 29·8	—
Samarkand		59·1	309	e 9 38	−20	—	—	—	—
Tiflis		76·0	310	e 11 44	− 2	e 21 26	− 6	—	—
Moscow		79·8	325	—	—	e 20 0	?	—	—
Pulkovo		83·0	330	e 12 20	− 3	e 22 35	−12	—	—
Ksara		83·9	303	e 12 28	0	—	—	—	—

Additional readings :—
Nanking ePP = +5m.10s.
Tashkent e = +10m.54s. = P_cP +9s., +21m.10s. and +23m.28s.
Pulkovo PPS = +24m.27s.
Ksara e = +14m.20s., ePP = +15m.45s.
Long waves were also recorded at Bombay and Oak Ridge.

Aug. 31d. 17h. 40m. 3s. Epicentre 44°·6N. 149°·5E. (as on Aug. 31d. 0h.). R.1.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	8·4	231	e 1 55	− 4	i 3 22	−12	—	—
Vladivostok	12·8	269	e 3 2	+ 3	—	—	7·0	13·2
Toyooka	14·4	236	3 13	− 8	6 18	+17	e 8·4	10·2
Kobe	14·9	233	e 3 8	−19	e 6 27	+14	—	10·0
Sumoto	15·2	232	e 3 42	+11	e 6 58	+38	8·9	10·1
Taikyu	18·1	248	4 7	− 1	7 54	SS	—	—
Husan	18·3	246	4 10	0	7 41	+10	10·2	—
Keizyo	18·3	255	e 4 10	0	e 7 55	SS	e 10·0	—
Zinsen	18·6	255	e 4 12	− 2	e 7 50	SS	—	—
Nagasaki	19·4	239	4 23	0	7 57	+ 3	e 10·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng		24·9	273	i 5 19	0	i 9 53	+14	12·3	17·0
Zi-ka-wei		25·8	248	e 5 32	+ 5	10 28	SS	15·4	17·2
Nanking		27·0	254	e 5 48	+10	i 10 31	+16	14·1	16·0
Hong Kong		36·5	244	12 59	S	(12 59)	+15	—	21·5
Sitka		46·5	47	e 8 33	+ 8	15 17	+ 5	e 27·2	—
Honolulu		48·9	101	—	—	e 15 34	−21	e 20·4	—
Frunse		52·2	297	e 9 0	− 8	e 16 34	+ 3	—	—
Andijan		54·7	296	e 9 28	+ 2	e 17 12	+ 7	e 27·8	—
Tchimkent		55·6	299	e 9 42	+ 9	—	—	—	—
Tashkent		56·4	299	i 9 39	0	i 17 29	+ 1	28·6	35·6
Agra		58·6	279	i 9 54	− 1	i 18 10	+13	—	41·6
Samarkand		58·7	298	e 9 57	+ 2	e 17 57	− 2	e 23·0	—
Pulkovo		64·4	331	e 10 34	− 1	e 19 14	+ 2	e 31·9	35·8
Moscow		64·5	325	(i 10 34)	− 1	(19 14)	0	(27·2)	(39·0)
Scoresby Sund		64·8	357	10 39	+ 2	19 23	+ 6	30·0	—
Tinemaha	z.	66·4	61	e 10 48	0	—	—	—	—
Mount Wilson	z.	68·3	63	e 10 57	− 3	—	—	—	—
Pasadena	z.	68·3	63	e 10 56	− 4	—	—	—	—
Riverside	z.	68·8	63	e 11 2	− 1	—	—	—	—
Tiflis		70·6	311	i 11 15	+ 1	e 20 33	+ 5	41·0	47·8
Königsberg		71·6	332	e 11 13	− 7	e 21 27	PS	e 38·0	—
Copenhagen		73·4	336	i 11 30	− 1	20 59	− 2	38·0	—
Simferopol		73·8	319	e 11 33	0	—	—	e 46·0	—
Yalta		74·1	319	e 11 34	− 1	—	—	—	—
Sebastopol		74·3	319	e 11 34	− 2	—	—	—	—
Hamburg		75·9	337	e 11 45a	0	e 21 48	+18	e 40·0	48·0
Edinburgh		76·9	345	—	—	e 21 57?	PS	e 44·0	—
Durham		77·7	344	—	—	21 49	− 2	—	48·0
Göttingen		77·8	336	i 11 56	− 1	—	—	—	50·0
Budapest		78·2	328	12 1	+ 3	20 50	−66	e 46·0	50·0
Vienna		78·5	330	e 12 4	+ 4	e 21 55	− 4	e 32·0	—
De Bilt		78·6	339	i 12 0	0	e 22 8	+ 8	e 38·0	50·5
Bidston		79·2	345	—	—	e 21 57?	−10	e 43·0	—
Uccle		80·0	340	12 8	0	—	—	e 38·0	—
Oxford		80·4	342	—	—	22 16	− 4	—	54·0
Stuttgart		80·4	336	i 12 9	− 1	e 22 14	− 6	e 42·0	55·0
Sofia		80·4	323	e 12 12	+ 2	e 22 19	− 1	—	44·9
Florissant		80·7	44	e 12 16	+ 4	i 22 16	− 7	e 38·0	45·0
St. Louis	E.	80·9	44	—	—	e 22 19	− 6	e 37·9	45·0
Strasbourg		81·0	336	i 12 11a	− 2	e 22 24	− 2	e 51·0	—
Ksara		81·2	310	i 12 14a	0	22 44	+16	—	—
Ottawa		81·5	30	—	—	e 22 21	−11	e 37·0	—
Triest		81·6	332	e 12 14	− 2	22 45	+12	e 43·6	50·4
Paris		82·3	340	i 12 20	0	e 22 52	+12	34·0	54·0
Piacenza		83·5	333	12 25	− 1	22 49	− 3	—	48·0
Prato		84·1	332	e 12 29	0	22 57	− 2	—	44·0

Additional readings and note :—
Kobe ePN = +3m.18s., ePZ = +3m.24s.
Chiufeng iSZ = +10m.4s.
Nanking PP = +6m.26s., SSN = +12m.14s.
Sitka eSS = +18m.17s., e = +22m.37s.
Moscow readings have been *increased* by 2m.
Tiflis PPP = +16m.28s., ePS = +20m.47s.
Königsberg eE = +21m.42s.
Copenhagen +28m.15s.
Stuttgart ePS = +23m.7s., eSS = +27m.57s.
Florissant eZ = +12m.47s., eN = +22m.33s.
Strasbourg ePS = +23m.11s., eSS = +27m.38s., eSSS = +31m.11s.
Ksara PP = +15m.28s., PS = +23m.38s.
Ottawa eE = +27m.57s.
Triest SKS = +22m.27s., i = +22m.37s.
Long waves were also recorded at Philadelphia, Chicago, San Juan, Huancayo, Phu-Lien, Bombay, Calcutta, Hyderabad, Kew, Rathfarnham Castle, Stonyhurst, and at other European stations.

Aug. 31d. Readings also at 0h. (Nagoya, near Mizusawa, and near Sumoto), 4h. (Medan), 5h. (Tananarive, Nagoya (2), and near Mizusawa), 6h. (Nagoya, Malaga, near Almeria, Granada, near New Plymouth, and Wellington), 7h. (Nagoya, near Apia, and near Mizusawa), 8h. (Tacubaya, near Manila, Hukuoka B, and near Nagasaki), 11h. (Baku, Tashkent, Vladivostok, Nagoya, and near Mizusawa (2)), 12h. (Malaga and near Almeria), 13h. (Paris and Tacubaya), 14h. (Nagoya), 15h. (Vladivostok and Wellington), 16h. (Baku), 19h. (Cape Town), 20h. (Tashkent and Vladivostok), 21h. (Tacubaya), 22h. (Medan, Kobe, and near Sumoto).

Sept. 1d. 0h. 48m. 47s. Epicentre 13°·1N. 87°·3W. (as on 1932 May 21d.). R.3.

$A = +\cdot046$, $B = -\cdot973$, $C = +\cdot227$; $D = -\cdot999$, $E = -\cdot047$; $G = +\cdot011$, $H = -\cdot226$, $K = -\cdot974$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		21·0	73	e 4 45	+ 5	e 8 47	+21	e 11·9	—
Florissant		25·8	355	e 5 43	+16	e 10 2	+ 7	—	14·2
Huancayo		27·8	154	e 5 42	− 3	e 10 18	−10	—	—
Tucson		28·8	316	e 6 23	+29	e 11 38	+53	e 16·3	—
Philadelphia		28·9	19	e 5 43	−12	e 10 49	+ 2	e 16·4	—
Toronto		31·3	11	—	—	e 11 59	+35	e 16·0	—
Oak Ridge		32·4	22	e 6 23	− 3	—	—	e 17·2	—
La Jolla	Z.	33·7	311	e 6 56	+18	—	—	—	—
Ottawa		33·7	15	e 8 13	?	e 12 7	+ 6	e 17·2	—
Riverside	Z.	34·3	313	e 6 43	0	—	—	—	—
Mount Wilson	Z.	34·9	313	e 6 49	+ 1	—	—	—	—
Pasadena	Z.	35·0	313	i 6 48	− 1	—	—	—	—
La Paz		35·2	146	6 53	+ 2	—	—	17·2	21·4
Tinemaha	E.	36·6	317	e 7 4	+ 1	—	—	—	—

Additional readings :—
San Juan ePP = +5m.3s., e = +6m.3s.
Florissant iSS = +10m.45s.
Tucson eSS = +12m.28s.
Oak Ridge iZ = +6m.31s., e = +6m.45s.
La Jolla eZ = +8m.16s.
Riverside iZ = +9m.18s. = P_cP − 5s.
Mount Wilson iZ = +9m.18s. = P_cP − 7s.
Pasadena iZ = +9m.19s. = P_cP − 7s. and +9m.33s.
Long waves were also recorded at Scoresby Sund, Ksara, Baku, Tashkent, and the European Stations.

Sept. 1d. Readings also at 0h. (Hong Kong, Nanking, and Manila), 1h. (Nagoya, Baku, De Bilt, Pulkovo, and Triest), 3h. (Wellington, Kobe, near Nagoya, and Sumoto), 4h. (near Medan), 6h. (Tananarive and near Medan), 10h. (near Christchurch (2), New Plymouth (2), Wellington (2), and near Triest), 11h. (near Amboina and near Nagoya), 13h. (Frunse, Medan, near Andijan, and Samarkand), 14h. (Kobe, Sumoto, and Nagoya), 18h. (Graz and near Amboina), 20h. (near Batavia and Malabar), 21h. (near Berkeley and Branner).

Sept. 2d. 7h. 15m. 27s. Epicentre 5°·8S. 146°·0E. (as on 1935 May 21d.). R.2.

$A = -\cdot825$, $B = +\cdot556$, $C = -\cdot101$; $D = +\cdot559$, $E = +\cdot829$; $G = +\cdot084$, $H = -\cdot057$, $K = -\cdot995$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	17·5	319	4 4	+ 4	7 42	+29	—	—
Amboina	17·9	276	i 4 13	PP	i 7 33	SS	e 12·5	—
Riverview	28·4	170	—	—	e 11 9	+31	e 16·5	18·6
Sydney	28·4	170	e 12 53	?	—	—	16·5	18·7
Adelaide	30·0	192	—	—	i 11 2	− 2	e 17·2	20·4
Melbourne	32·0	180	—	—	i 14 48	?	20·2	—
Perth	38·4	223	i 13 13	S	(i 13 13)	+ 1	—	25·5
Batavia	39·0	268	7 25	+ 1	i 13 18	− 3	—	—
Kumamoto	41·3	340	7 43	0	—	—	—	—
Misima	41·4	351	7 41	− 3	13 50	− 7	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	41·5	348	i 7 43	− 1	i 13 51	− 8	—	—
Osaka	41·7	347	7 46	0	—	—	—	—
Kobe	41·8	347	e 7 45	− 2	e 13 57	− 6	—	—
Kohu	42·0	351	7 48	− 1	14 7	+ 1	—	—
Hong Kong	42·0	312	10 13	?	14 4	− 2	—	18·1
Gihu	42·1	350	7 49	0	—	—	—	—
Oiwake	42·7	351	7 53	− 1	14 9	− 7	—	—
Nagano	43·1	351	7 58	0	14 15	− 7	—	—
Hukusima	43·8	353	8 4	+ 1	—	—	—	—
Wazima	44·0	350	8 4	− 1	—	—	—	—
Sendai	44·3	355	8 6	− 1	14 50	+10	—	—
Nanking	45·9	326	9 18	+58	14 58	− 5	—	—
Medan	48·2	280	8 42	+ 4	15 54	+18	—	—
Sapporo	49·0	356	8 44	0	15 42	− 5	—	—
Vladivostok	50·6	347	i 8 56	0	i 16 4	− 5	22·5	33·6
Chiufeng	53·5	331	i 9 17a	− 1	16 44	− 5	25·2	31·1
Frunse	80·6	315	e 12 8	− 3	—	—	—	—
Andijan	81·6	312	e 12 14	− 2	—	—	—	—
Tashkent	84·0	313	—	—	e 22 13	−45	—	31·8
Samarkand	85·3	310	e 12 43	+ 8	—	—	—	—
Pasadena	98·0	56	i 13 34	0	—	—	—	—
Tiflis	102·2	311	e 18 4	PP	—	—	—	—
Pulkovo	107·8	331	e 18 44	PP	e 28 18	PS	e 44·5	61·8
Yalta	109·5	315	e 19 2	PP	—	—	—	—
Simferopol	109·5	316	e 18 59	PP	—	—	—	—
Ksara	109·9	303	e 19 4	PP	e 30 4	?	—	64·5
Sebastopol	110·0	316	e 18 57	PP	—	—	—	—
Scoresby Sund	114·8	355	19 39	PP	29 21	PS	56·5	—
Copenhagen	118·0	332	20 2	PP	29 33	PS	56·5	—
Stuttgart	123·7	327	e 20 38	PP	e 42 33?	?	e 64·5	—
Strasbourg	124·5	327	e 20 45	PP	—	—	e 55·5	—
Stonyhurst	125·5	338	—	—	e 38 33	?	—	—
Paris	127·0	330	—	—	e 31 33?	PS	70·5	—
Philadelphia	129·7	38	e 22 27	PKS	e 33 27	?	e 73·4	—
Granada	138·2	323	e 18 33?	[−46]	25 12	PPP	e 75·6	87·0
San Juan	146·2	65	e 19 38	[+ 2]	—	—	—	—

Additional readings :—
Adelaide i = +12m.6s. and +12m.23s. =SS −7s.
Batavia iN = +10m.52s.
Kobe eN = +13m.59s., eZ = +14m.48s., eE = +14m.58s., eN = +15m.6s.
Hong Kong SS? = +14m.35s.
Nanking iE = +18m.56s. =SSS −10s.
Tashkent i − +22m.49s. =SKS −3s., e = +23m.22s. −PS −17s., +24m.17s., +32m.9s., and +37m.9s.
Pasadena eZ = +17m.38s. =PP +10s.
Strasbourg ePPP = +23m.21s.
Granada i = +22m.14s. =PP +4s., e = +35m.3s.
Long waves also at Cape Town, Wellington, Uccle, De Bilt, Kew, and Edinburgh.

Sept. 2d. 16h. 34m. 57s. Epicentre 35°·1N. 137°·7E. (as on 1931 Aug. 10d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Nagoya		0·6	276	i 0 10	+ 1	i 0 18	S*	0·3
Kobe		2·1	259	e 0 32	+ 2	e 0 47	− 7	1·1
	Z.	2·1	259	0 30	0	e 0 46	− 8	—
Toyooka	E.	2·3	280	0 32	− 1	e 1 14	S_g	—
	N.	2·3	280	e 0 39	P_g	1 5	S*	—
Sumoto		2·4	252	e 0 33	− 1	e 1 2	0	1·2

Additional readings :—
Toyooka iE = +51s.
Sumoto ePE = +40s. =P* +2s., eZ = +46s. =P_g +4s.

Sept. 2d. Readings also at 1h. (Andijan), 2h. (Bozeman, Mizusawa, and Vladivostok), 3h. (Copenhagen and Tashkent), 4h. (Andijan, Frunse, Moscow, Wellington, and Vladivostok), 5h. (near Sumoto), 6h. (Andijan and Samarkand), 7h. (near Mizusawa), 8h. (Tiflis and Mizusawa), 9h. (Tiflis and near Mizusawa), 10h. (La Paz and Scoresby Sund), 11h. (near Mizusawa), 14h. (near Tananarive), 15h. (Baku, Samarkand, Vladivostok, Mizusawa, Tashkent (2), Frunse, and near Andijan), 16h. (Copenhagen), 18h. (near Branner), 19h. (Mizusawa, Nagoya, and near Tiflis), 23h. (Capetown).

Sept. 3d. 10h. 56m. 38s. Epicentre 24°·5N. 126°·5E. (as on 1935 Aug. 27d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko		4·5	265	e 0 59	− 5	2 20	S_g	—	—
Taihoku		4·6	280	e 0 59	− 7	1 29	P_g	—	—
Taito		5·2	252	e 1 12	− 2	3 36	?	—	—
Arisan		5·3	261	e 1 11	− 4	—	—	—	—
Taityu		5·3	267	3 12	?	—	—	—	—
Kosyun		5·9	246	e 1 23	− 1	2 26	− 5	—	—
Tainan		6·0	257	1 26	+ 1	—	—	—	—
Zi-ka-wei	z.	8·0	330	e 2 2	+ 9	3 18	− 6	4·8	6·6
Nagasaki		8·7	19	e 2 11	+ 8	—	—	e 5·1	—
Nanking		10·2	320	2 26	+ 2	4 24	+ 6	5·1	8·5
Manila		11·3	205	4 51	S	(4 51)	+ 6	—	—
Keizyo		13·0	2	e 5 45	?	7 4	S_g	8·8	—
Chiufeng		17·8	333	e 3 52	−12	e 7 3	−17	e 8·2	11·6
Vladivostok		19·1	12	e 4 22	+ 2	i 7 53	+ 5	e 9·0	19·3
Tashkent		49·9	305	—	—	e 15 54	− 5	28·3	31·9
Ksara		77·1	301	—	—	e 15 50	?	44·9	50·9
Scoresby Sund		82·4	349	—	—	23 37	PS	39·4	—
Tinemaha		93·4	46	i 16 40	PP	—	—	—	—
Mount Wilson	z.	95·1	48	i 16 35	PP	—	—	—	—
Pasadena		95·1	48	i 16 35	PP	—	—	—	—
Malaga		103·3	321	—	—	e 36 36	SSS	e 58·6	—

Additional readings:—
Taihoku ePN = +1m.7s., also +1m.37s.
Zi-ka-wei iE = +3m.43s., iN = +3m.46s. and +3m.54s. = S* −2s., iE = +3m.59s., and +4m.5s.
Manila S?EN = +6m.36s.
Tashkent e = +17m.40s., eS = +27m.2s.
Pasadena iZ = +17m.13s. = PP +8s.
Malaga e = +45m.48s.
Long waves were also recorded at Taikyu, Zinsen, Husan, Hong Kong, Phu-Lien, Agra, Tiflis, Moscow, Pulkovo, and some European stations.

Sept. 3d. 17h. 35m. 24s. Epicentre 38°·0N. 20°·5E. (as on 1933 March 26d.). R.2.

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.
Messina	3·9	273	1 16	P_g	—	—	—	—
Sofia	5·1	24	e 1 10	− 3	i 2 14	+ 4	—	—
Belgrade	6·8	0	e 1 28	− 9	e 2 46	− 7	—	3·7
Bucharest	7·7	32	e 1 47	− 2	e 3 54	S*	—	—
Zagreb	8·5	338	e 1 53	− 7	e 4 25	S_g	—	5·0
Florence	9·0	313	e 2 13	+ 6	3 49	0	—	5·6
Triest	9·1	329	e 2 2k	− 7	i 3 33	−18	—	—
Prato	9·2	312	e 2 12	+ 2	i 3 51	− 3	—	4·9
Laibach	9·2	333	e 2 40	+30	e 3 54	0	—	—
Budapest	9·5	355	2 32	+18	5 29	?	—	8·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Padova	9·8	322	e 2 24	+ 6	5 33	?	—	—
Graz	9·8	340	e 2 15	− 3	e 4 43	S*	i 5·5	8·9
Vienna	10·6	345	e 2 55	+26	e 5 34	S_g	—	7·6
Piacenza	10·7	314	e 2 12	−19	4 16	−15	7·2	10·7
Sebastopol	11·8	52	e 2 55	+ 9	e 6 2	?	—	—
Yalta	12·1	54	e 2 48	− 2	e 5 52	S*	—	—
Simferopol	12·3	52	e 2 57	+ 5	e 6 4	S*	—	—
Zurich	12·8	321	e 3 6	+ 7	—	—	—	—
Prague	12·8	342	e 2 52	− 7	e 6 3	?	6·6	7·6
Ksara	13·1	104	i 3 22a	+19	—	—	e 7·6	9·1
Cheb	13·4	337	—	—	e 6 5	?	—	7·6
Neuchatel	13·4	316	e 3 8	+ 1	—	—	—	—
Basle	13·4	320	e 3 7	0	—	—	—	—
Stuttgart	13·5	327	e 3 3	− 6	e 5 31	− 8	e 7·1	9·1
Karlsruhe	14·0	325	4 45	?	7 57	?	9·8	—
Strasbourg	14·0	323	e 3 14	− 1	—	—	8·6	—
Leipzig	14·5	340	3 24	+ 2	e 7 32	?	—	8·6
Göttingen	15·4	335	i 3 31	− 3	e 6 36	+12	—	—
Alicante	16·5	278	e 3 59	+11	e 7 16	SS	e 9·7	—
Königsberg	16·8	0	—	—	e 8 56	?	—	—
Paris	16·9	316	i 3 58	+ 5	i 7 7	SS	9·6	10·6
Hamburg	17·2	339	e 3 50	− 7	—	—	e 8·7	11·6
Uccle	17·2	323	e 3 56	− 1	e 7 8	+ 2	9·5	—
De Bilt	17·7	328	4 2	− 1	7 21	+ 4	e 8·6	11·8
Almeria	18·1	274	e 4 27	+19	e 7 55	+28	—	—
Copenhagen	18·5	346	4 10	− 2	7 28	− 8	9·6	—
Erevan	18·7	76	e 4 25	+10	—	—	—	—
Tiflis	18·9	71	e 4 21	+ 4	e 7 57	+13	10·6	13·0
Toledo	19·1	283	e 4 27	+ 7	e 8 5	SS	—	—
Granada	19·1	275	i 4 30	+10	e 8 8	SS	10·8	14·4
Kew	19·8	319	e 4 28	+ 1	e 8 12	+10	e 11·6	—
Grozny	19·8	66	e 4 36	+ 9	e 8 35	SS	—	—
Oxford	20·5	319	e 4 22	−13	e 8 15	− 1	—	—
Moscow	21·1	27	i 4 38	− 3	8 25	− 3	e 11·1	15·6
San Fernando	21·3	274	e 4 53	+10	e 9 31	?	14·6	—
Durham	22·5	326	—	—	8 59	+ 4	—	—
Pulkovo	22·6	13	4 53	− 4	8 45	−12	10·6	14·4
Baku	22·8	75	5 6	+ 7	e 9 16	+15	e 13·1	—
Tashkent	37·6	69	7 39	+27	e 16 21	?	—	28·9
Frunse	40·7	65	e 7 36	− 2	—	—	—	—
Almata	42·3	64	e 7 40	−11	—	—	—	—

Additional readings and note :—
Sofia iNW = +1m.14s., +1m.25s. = P* +1s., +1m.56s., +2m.25s. = S* −5s., and +2m.30s.
Belgrade e = +1m.47s. = P* −6s., and +2m.3s. = P_g −7s.
Bucharest eEN = +3m.36s.
Zagreb ePP = +1m.55s., ePPP = +2m.7s., ePPPP = +2m.20s., eE = +2m.54s., and +3m.7s., eZ = +3m.23s., e = +3m.55s., iSS = +4m.31s. = S_g −4s.
Triest i = +2m.11s., iSS = +4m.17s., i = +5m.9s., +5m.20s., +5m.54s., +6m.48s., and +8m.53s.
Laibach e = +4m.10s., +4m.57s. = S_g −1s., and +6m.13s.
Budapest i = +5m.44s. and +7m.11s.
Piacenza S = +6m.0s. ; true S is given as P.
Cheb e = +6m.34s. = S* −3s., and +7m.4s. = S_g.
Stuttgart eSS = +5m.54s. : T_o = 17h.35m.12s.
Strasbourg i = +3m.24s. = PP +5s., +4m.50s., and +6m.21s., e = +6m.40s., i = +7m.41s.
Leipzig eE = +4m.48s. and +7m.4s., iE = +7m.39s., eE = +7m.42s., +7m.58s., +8m.14s., and +9m.38s.
Göttingen eEN = +8m.4s., eZ = +8m.24s., iE = +8m.30s., iN = +8m.35s., eNZ = +9m.6s., and +10m.6s.
Königsberg eE = +9m.24s., eN = +9m.44s., and +10m.5s., eE = +10m.8s., eEN = +11m.6s., eE = +12m.18s., eN = +14m.18s.
Tiflis P = +4m.25s., i = +8m.11s., e = +8m.57s.
Granada L_q = +9·9m.
Oxford i = +8m.42s. = SS +3s.
Long waves at Bidston, Edinburgh, Stonyhurst, Scoresby Sund, Upsala, and Jena.

Sept. 3d. Readings also at 0h. (Karenko and near Taihoku), 1h. (near Tiflis), 2h. (near Sofia), 3h. (Nagoya and near Santiago), 5h. (Frunse (2), Samarkand (2), near Andijan (2), and near La Paz), 6h. (Lick and Sofia), 7h. (Nagoya), 8h. (Nagoya, Mizusawa, Vladivostok, Taityu, Tainan, near Karenko, Arisan, and Taito), 9h. (Baku and Tiflis), 11h. (Port au Prince, Philadelphia, and San Juan), 13h. (La Paz and Nagoya (2)), 14h. (Granada, near Nagoya, Kobe, and Sumoto), 16h. (Guadalajara, Oaxaca, Tacubaya, Tucson, La Jolla, Mount Wilson, Pasadena, Tinemaha, Granada, and Nagoya (2)), 17h. (near Batavia, Malabar, near New Plymouth, and Wellington), 18h. (Frunse, Samarkand, and near Andijan), 19h. (Erevan, near Grozny, and Tiflis), 23h. (Copenhagen, Scoresby Sund, Mizusawa, and Vladivostok).

Sept. 4d. 1h. 27m. 45s. Epicentre 63°·8N. 153°·4W. N.1.

A = −·395, B = −·198, C = +·897 ; D = −·448, E = +·894 ;
G = −·802, H = −·402, K = −·442.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		11·1	119	e 2 29	− 7	i 4 48	+ 7	i 5·4	—
Seattle		23·4	118	e 4 58	− 7	e 8 55	−17	12·1	—
Saskatoon		26·6	93	e 5 12	−23	e 9 33	−36	—	—
Ferndale	E.	28·8	129	e 6 15?	+21	—	—	—	—
Bozeman		29·6	106	—	—	i 10 57	− 1	i 15·7	—
Ukiah		30·4	128	—	—	e 11 15	+ 5	i 15·5	—
Berkeley		31·9	128	e 6 24	+ 2	—	—	—	—
Lick		32·5	128	e 6 31	+ 4	—	—	e 19·0	—
Tinemaha		34·0	124	i 6 42	+ 2	e 12 10	+ 4	—	—
Haiwee		35·0	124	i 6 47	− 2	—	—	—	—
Santa Barbara		35·8	127	i 6 58	+ 2	—	—	—	—
Mount Wilson		36·6	125	i 7 4	+ 1	e 12 48	+ 3	—	—
Pasadena		36·7	125	i 7 4	0	i 12 50	+ 3	e 21·1	—
Denver		37·0	106	e 7 9	+ 3	e 12 56	+ 5	e 19·1	20·2
La Jolla		38·2	125	i 7 16	− 1	e 13 12	+ 3	—	—
Des Moines		40·3	93	—	—	e 13 51	+10	e 18·2	—
Tucson		41·1	118	e 7 47	+ 6	e 13 57	+ 4	e 19·2	—
Scoresby Sund		41·6	22	7 44	− 1	13 57	− 3	20·2	—
Honolulu		42·6	185	—	—	e 17 3	SS	18·7	—
Chicago		42·8	88	—	—	i 14 18	0	e 20·6	—
Florissant		44·1	92	i 8 5a	− 1	i 14 37	0	e 20·8	23·8
Ann Arbor		44·2	83	—	—	e 14 45	+ 6	i 23·7	24·2
St. Louis		44·3	92	e 8 5	− 2	e 14 38	− 2	e 20·7	23·3
Toronto		45·0	79	e 8 10	− 3	i 14 52	+ 2	21·8	—
Ottawa		45·2	74	e 8 15	+ 1	e 14 53	− 1	e 22·2	—
Vermont		47·0	73	e 8 33	+ 4	e 15 23	+ 4	e 22·2	—
Pennsylvania		47·9	80	i 8 34	− 1	i 15 31	0	—	27·4
Oak Ridge	E.	49·3	73	i 8 47	+ 1	e 15 51	0	e 23·4	25·4
Philadelphia		49·8	79	e 8 49	− 1	16 1	+ 3	25·4	—
Charlottesville		49·9	82	—	—	e 16 0	+ 1	e 25·9	—
Columbia		52·2	87	—	—	e 16 31	0	e 27·3	—
Bergen		54·8	13	12 15?	PPP	—	—	—	—
Chiufeng		54·9	291	e 9 31	+ 3	—	—	—	—
Upsala		56·2	6	—	—	e 17 26	+ 1	—	—
Pulkovo		56·4	357	e 9 40	+ 1	17 32	+ 4	e 24·2	—
Edinburgh		58·1	19	—	—	e 17 55	+ 4	—	—
Copenhagen		60·0	10	10 3	− 1	18 21	+ 5	26·2	—
Rathfarnham Castle		60·1	22	e 10 3	− 2	e 18 20	+ 3	29·3	33·9
Stonyhurst		60·2	19	—	—	e 18 20	+ 1	—	—
Moscow		60·2	353	10 14	+ 8	18 4	−15	—	—
Hamburg		61·9	12	e 10 21	+ 3	—	—	—	—
Oxford		62·4	19	—	—	i 18 51	+ 4	—	—
De Bilt		62·9	14	10 28	+ 3	18 59	+ 5	—	—
Kew		62·9	18	e 10 25	0	e 18 57	+ 3	—	—
Göttingen	Z.	63·9	11	10 38	+ 7	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle	64·1	16	e 10 32	− 1	e 19 11	+ 2	—	—
Stuttgart	66·6	12	e 10 48	− 1	e 19 43	+ 3	—	—
Strasbourg	66·6	13	e 10 50	+ 1	e 19 48	PS	—	—
Frunse	66·8	323	e 10 48	− 3	—	—	—	—
Basle	67·7	13	e 10 54	− 2	—	—	—	—
Vienna	67·7	8	e 11 12	(−12)	e 19 50	− 3	—	—
Zurich	67·9	13	e 10 57	− 1	—	—	—	—
Neuchatel	68·1	14	e 10 56	− 3	—	—	—	—
Andijan	69·4	325	e 11 6	− 1	—	—	—	—
Triest	70·1	10	e 11 13	+ 2	20 24	+ 2	—	—
Zagreb	70·1	8	e 11 10	− 1	e 20 15?	− 7	—	—
Piacenza	70·3	14	e 10 47	−26	e 21 15	S_cS	—	—
Simferopol	71·1	355	11 27	+10	e 20 50	PS	—	—
Sebastopol	71·4	355	11 17	− 2	—	—	—	—
Yalta	71·5	354	e 11 19	− 1	e 20 43	+ 4	—	—
Prato	71·6	12	e 11 15	− 5	—	—	—	—
Florence	71·7	12	e 11 15	− 6	—	—	—	—
Samarkand	71·7	328	e 11 20	− 1	—	—	—	—
Grozny	71·8	346	e 11 23	+ 1	—	—	—	—
San Juan	72·4	84	e 14 40	PP	i 20 43	− 7	e 40·5	—
Toledo	73·5	25	e 11 30	− 2	21 5	+ 2	—	—
Tiflis	73·5	346	e 11 28	− 4	e 21 3	0	—	—
Erevan	75·1	346	e 11 38	− 3	—	—	—	—
Granada	76·2	25	i 11 48	+ 1	—	—	—	—
San Fernando	76·4	27	e 12 28	+40	e 21 33	− 3	—	—
Malaga	76·5	25	e 11 39	−10	21 40	+ 3	—	—
Algiers	77·7	19	—	—	e 21 46	− 5	—	—
Apia	78·9	197	e 11 18	−44	21 4	−60	—	—

Additional readings and note :—
Sitka eP* = +3m.2s., e = +3m.27s., i = +5m.35s. = S* +7s. and +5m.51s.
Seattle eSS = +10m.13s.
Bozeman e = +10m.22s., eSSS = +12m.45s., e = +13m.38s.
Ukiah e = +11m.50s.
Berkeley iPZ = +6m.28s., iZ = +7m.48s., and +20m.7s., eE = +32m.35s.
Lick eE = +21m.36s.
Denver ePPE = +8m.15s., eSS = +15m.22s. ; T_0 = 1h.27m.51s.
Tucson ePPP = +9m.47s. = P_cP +2s.
Scoresby Sund +9m.25s. = PP +9s. and +17m.3s.
Chicago eSS = +17m.8s., e = +19m.21s., i = +23m.6s.
Florissant eZ = +8m.45s., iPPENZ = +9m.48s., eP_cP = +10m.1s., eSSEN = +17m.48s., iSSSEN = +18m.27s. ; T_0 = 1h.27m.51s.
Ann Arbor e = +19m.33s. and +20m.57s., iN = +23m.21s.
St. Louis eE = +8m.51s., +9m.55s., and +17m.4s., eSSE = +17m.57s.
Toronto PP = +9m.48s., SS = +17m.56s. ; T_0 = 1h.27m.43s.
Ottawa PP = +9m.57s., SS = +18m.21s. = S_cS +8s. ; T_0 = 1h.27m.54s.
Vermont eSS = +18m.51s.
Pennsylvania i = +9m.21s., e? = +19m.21s., e = +23m.40s. and +24m.56s., i = +25m.5s. and +25m.20s.
Oak Ridge iPN = +8m.35s., ePP = +10m.43s., eSZ = +15m.56s., eE = +17m.29s., eE = +19m.29s., eZ = +20m.1s. = SSS −25s.
Philadelphia eSS = +19m.51s.
Charlottesville eSS = +19m.34s., e = +23m.0s. and +23m.30s.
Columbia eSS = +20m.13s., e = +23m.40s.
Rathfarnham Castle eP = +9m.27s., eS = +17m.52s.
Stuttgart eS_cS = +20m.41s. ; T_0 = 1h.27m.40s.
Triest ePS = +21m.6s. = S_cS +1s., i = +21m.12s.
Florence i = +14m.15s.
San Juan ePPP = +15m.45s., e = +22m.29s., eSS = +24m.37s.
Tiflis eP_cP = +11m.37s., PP = +14m.12s.
Granada PP = +14m.43s.
San Fernando S is given as ePKP for the next shock.
Malaga e = +12m.11s., i = +12m.58s., PP? = +14m.30s.
Apia eSS = +26m.31s., e = +30m.43s.
Long waves at Arapuni.

Sept. 4d. 1h. 37m. 46s. Epicentre 22°·3N. 121°·3E. N.1.

A = −·481, B = +·791, C = +·379; D = +·854, E = +·520; G = −·197, H = +·324, K = −·925.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taito	0·5	343	i 0 5	− 2	—	—	—	—
Kosyun	0·6	240	0 9	0	0 16	+ 1	—	—
Takao	1·0	288	0 12	− 2	—	—	—	—
Tainan	1·3	305	i 0 23	P_g	e 0 42	?	—	—
Arisan	1·3	339	i 0 20	+ 2	0 39	S*	—	—
Karenko	1·8	9	i 0 26	0	0 46	0	—	—
Taityu	2·0	343	i 0 30	+ 1	0 49	− 2	—	—
Hokoto	2·1	307	i 0 29	− 1	1 10	S_g	—	—
Taihoku	2·8	4	0 40	0	1 10	− 2	—	1·6
Isigakizima	3·4	52	0 45	− 4	1 32	+ 5	—	—
Hong Kong	6·6	271	1 34a	0	3 14	S*	—	5·2
Naha	7·0	54	1 36	− 3	2 48	−11	—	—
Manila	7·7	183	i 1 51a	+ 2	i 3 32	+16	—	—
Zi-ka-wei	8·9	0	i 2 4k	− 2	4 10	S*	—	—
Nake	9·6	49	2 9	− 7	4 46	S*	—	—
Nanking	10·0	348	i 2 35	+14	e 4 35	+22	5·1	5·8
Tomie	12·3	31	3 26	+34	—	—	—	—
Kagosima	12·4	40	2 50	− 4	—	—	—	—
Nagasaki	12·9	34	2 59	− 2	5 19	− 6	7·6	10·4
Unzendake	13·1	35	3 20	+17	—	—	—	—
Kumamoto	13·4	36	3 7	0	5 36	− 1	—	—
Phu-Lien	13·7	266	e 3 11	0	e 5 51	SS	6·2	—
Hukuoka	13·9	33	3 13	− 1	e 6 4	L	(6·1)	9·8
Hukuoka B	13·9	33	3 16	+ 2	6 10	L	(6·2)	11·2
Husan	14·5	26	i 3 21k	− 1	6 2	− 1	7·2	11·9
Taikyu	15·1	24	i 3 29	− 1	i 6 21	+ 4	—	—
Matuyama	15·4	39	3 31	− 3	6 33	SS	—	—
Hamada	15·8	34	3 45	PP	6 44	SS	—	—
Zinsen	15·9	15	i 3 40a	0	i 6 37	+ 1	e 8·2	10·5
Keizyo	16·1	17	3 42	− 1	6 41	0	8·1	10·7
Dairen	16·6	1	3 52	+ 3	8 13	L	(8·2)	—
Siomisaki	17·0	46	3 56	+ 2	7 17	SS	—	—
Sumoto	17·0	42	3 56	+ 2	7 16	SS	e 11·5	13·6
Wakayama	17·1	42	3 58	+ 3	7 17	SS	—	—
Heizyo	17·2	12	3 59	+ 2	7 12	+ 6	9·5	10·3
Kobe	17·4	41	4 2	+ 3	7 24	SS	—	11·7
Osaka	17·6	42	4 3	+ 1	7 40	?	—	—
Toyooka	17·8	39	4 6	+ 2	7 33	SS	—	13·4
Kyoto	17·9	42	4 1	− 4	7 37	SS	—	—
Kameyama	18·3	43	4 11	+ 1	7 45	SS	—	—
Yingkow	18·4	2	4 13	+ 2	7 50	SS	—	—
Hikone	18·4	42	4 14	+ 3	7 47	SS	—	—
Chiufeng	18·4	347	i 4 7k	− 4	i 7 39	+ 6	9·1	12·0
Gihu	18·8	42	4 15	− 1	7 56	SS	—	—
Nagoya	18·8	43	4 17	+ 1	7 57	SS	—	8·3
Hamamatu	19·0	45	4 20	+ 1	7 58	SS	—	—
Omaesaki	19·2	47	4 25	+ 4	8 7	SS	—	—
Titizima	19·5	72	4 25	+ 1	8 13	SS	—	—
Palau	19·6	138	4 25	0	8 6	+ 8	—	—
Fengtien	19·6	5	4 30	+ 5	7 58	0	—	—
Hatidyozima	19·6	52	4 26	+ 1	7 32	−26	—	—
Toyama	19·9	40	4 32	+ 3	8 16	+12	—	—
Misima	20·0	46	4 31	+ 1	8 19	+13	—	—
Numadu	20·0	46	5 31	+61	9 21	+75	—	—
Hunatu	20·1	45	4 10	−21	8 19	+11	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kohu	20·1	45	4 34	+ 3	8 21	+13	—	—
Wazima	20·2	38	4 34	+ 2	8 19	+ 9	—	—
Mera	20·5	47	4 44	+ 9	8 21	+ 5	—	—
Nagano	20·5	42	4 36	+ 1	8 28	+12	—	—
Yokohama	20·7	46	4 39	+ 2	8 39	SS	—	—
Tokyo	20·9	46	4 40	+ 1	8 43	SS	—	—
Kumagaya	20·9	43	5 24	+45	8 28	+ 4	—	—
Maebasi	20·9	43	4 42	+ 3	8 33	+ 9	—	—
Tukubasan	21·4	43	4 40	− 4	8 36	+ 2	—	—
Utunomiya	21·5	43	4 39	− 6	8 35	− 1	—	—
Kakioka	21·5	43	4 42	− 3	8 35	− 1	—	—
Tyosi	21·7	47	4 48	0	8 41	+ 1	—	—
Mito	21·8	43	4 49	0	8 43	+ 1	—	—
Hukusima	22·6	43	4 44	−13	8 55	− 2	—	—
Vladivostok	22·7	20	e 4 58	0	i 9 3	+ 4	i 10·8	14·0
Akita	23·6	39	5 12	+ 6	9 30	+14	—	—
Mizusawa	23·9	40	i 5 8	− 1	i 9 19	− 2	—	—
Morioka	24·2	39	5 13	+ 1	9 32	+ 5	—	—
Sapporo	26·6	32	5 36	+ 1	10 18	+ 9	—	—
Amboina	26·8	164	6 33	+57	e 11 14	+62	—	—
Medan	28·8	234	i 5 57	+ 3	i 10 45	0	—	—
Calcutta	30·3	276	6 14	+ 6	11 15	+ 6	14·4	19·0
Batavia	31·8	208	i 6 22a	+ 1	—	—	e 22·2	—
Malabar	32·4	207	6 25	− 1	—	—	e 16·2	—
Dehra Dun	39·3	290	8 14	+48	13 44	+18	21·9	23·2
Agra	39·4	285	i 7 27	0	13 28	+ 1	18·9	—
Hyderabad	40·5	270	7 26	−10	13 29	−15	17·1	27·8
Semipatalinsk	42·6	322	i 7 54	+ 1	14 12	− 3	—	—
Colombo	42·7	255	7 54	0	14 22	+ 6	24·1	29·8
Kodaikanal	43·6	262	i 8 4	+ 2	i 14 29	− 1	20·7	31·3
Frunse	43·7	309	e 8 11	+ 9	e 14 35	+ 4	—	—
Andijan	44·9	305	e 8 24	+12	e 14 52	+ 3	e 23·5	—
Bombay	45·3	274	i 8 14	− 1	i 14 56	+ 1	21·5	30·2
Tchimkent	47·2	307	e 8 32	+ 2	—	—	—	—
Samarkand	48·9	303	e 8 49	+ 6	e 15 39	− 6	25·5	—
Perth	54·5	185	14 14?	?	—	—	—	—
Adelaide	59·5	164	e 12 31	PP	e 19 54	(+ 5)	24·2	35·6
Riverview	62·9	152	e 10 26	+ 1	e 18 50	− 4	e 28·8	36·6
Sydney	62·9	152	e 21 24	?	e 28 41	?	37·4	40·1
Melbourne	64·1	158	e 9 56	−37	i 19 7	− 2	—	—
Grozny	64·6	309	i 10 41	+ 5	i 19 18	+ 3	e 22·2	—
Tiflis	65·6	307	10 44	+ 2	i 19 29	+ 2	36·2	43·8
Erevan	66·1	305	e 10 47	+ 1	19 37	+ 3	—	—
Moscow	68·2	322	10 59	0	19 53	− 6	32·6	40·8
Sotchi	68·9	310	e 11 8	+ 4	e 20 8	0	—	—
Pulkovo	71·3	328	i 11 21	+ 2	20 29	− 8	36·2R	43·4
Yalta	72·6	311	e 11 26	0	20 49	− 3	—	—
Honolulu	74·1	72	e 14 11	PP	—	—	—	—
Ksara	74·2	300	i 11 35a	− 1	i 21 11	0	—	—
Upsala	77·4	330	11 54	0	i 21 37	−10	e 34·2	43·5
Lemberg	77·6	318	e 11 58	+ 3	e 21 36	−13	e 39·0	51·9
Königsberg	77·9	324	i 11 55	− 2	i 21 43	−10	e 38·0	41·2
Bucharest	78·1	313	e 11 58	0	i 21 53	− 2	47·2	—
Helwan	79·1	298	12 2	− 1	21 59	− 7	42·6	52·4
Wellington	80·6	142	12 0	−11	21 24	−58	33·2	—
Sofia	80·6	312	e 12 12	+ 1	e 22 19	− 3	—	—
Budapest	81·5	318	12 18	+ 2	—	—	e 42·7	52·2
Copenhagen	81·7	327	12 16	− 1	i 22 26	− 8	37·2	—
Vienna	82·9	319	e 12 23	0	e 22 42	[− 1]	—	45·2
Tananarive	83·0	246	i 12 23	0	22 28	[−16]	41·5	47·3

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Prague	83·2	322	e 12 23	− 1	e 22 41	[− 4]	e 38·2	46·2
Hamburg	83·7	326	i 12 26	− 1	e 22 39	[−10]	e 43·2	45·2
Scoresby Sund	83·7	349	i 12 24	− 3	——	——	40·2	—
Leipzig	83·7	323	e 12 23	− 4	e 22 42	[− 7]	e 40·2	54·7
Graz	83·9	318	e 12 26	− 2	e 22 41	[−10]	e 42·2	46·0
Zagreb	84·2	317	e 12 28a	− 1	e 22 47	[− 6]	e 36·9	45·2
Cheb	84·4	322	e 12 26	− 4	e 22 50	[− 5]	e 43·2	55·2
Jena	84·4	323	e 12 28	− 2	i 22 49	[− 6]	e 41·2	53·0
Göttingen	85·0	324	i 12 31a	− 2	e 22 56	[− 6]	e 41·2	46·3
Triest	85·6	318	i 12 35a	− 1	22 54	[− 9]	e 41·9	48·1
Stuttgart	86·8	322	i 12 42a	0	e 24 14	PS	e 43·2	56·9
Karlsruhe	87·1	323	i 11 20	−84	i 22 8	[−66]	43·1	—
De Bilt	87·2	326	i 12 42a	− 2	e 23 2	[−13]	e 40·2	48·8
Strasbourg	87·7	323	i 12 45a	− 1	e 23 9	[− 9]	e 42·2	49·7
Padova	87·7	318	e 12 45k	− 1	23 7	[−11]	e 47·2	—
Zurich	87·9	321	e 12 46a	− 1	e 23 27	[+ 8]	—	—
Prato	88·1	317	i 12 47	− 1	i 23 14	[− 7]	34·9	48·6
Florence	88·1	317	12 17	−31	23 22	[+ 1]	46·2	48·2
Uccle	88·3	326	e 12 46	− 3	23 13	[− 9]	e 40·2	48·5
Basle	88·4	321	e 12 48	− 2	e 23 31	−10	—	—
Piacenza	88·4	318	13 6	+16	i 23 34	− 7	43·2	56·4
Durham	88·8	331	12 54	+ 2	23 17	[− 8]	—	50·7
Edinburgh	88·8	332	e 12 50	− 2	i 23 16	[− 9]	42·2	57·0
Neuchatel	89·0	321	e 12 51	− 2	e 23 34	[+ 8]	—	—
Stonyhurst	89·8	331	e 13 2	+ 6	i 23 46	− 8	44·2	51·6
Kew	90·3	328	e 12 56	− 3	i 23 48	−11	42·2	58·5
Bidston	90·4	331	i 12 58	− 1	i 23 48	[+13]	42·2	58·7
Paris	90·5	324	i 12 59	− 1	i 23 25	[−11]	46·2	48·2
Oxford	90·6	329	12 50	−10	i 23 24	[−12]	e 40·5	58·7
Rathfarnham Castle	91·9	331	e 13 5	− 1	i 24 3	−11	44·2	59·6
Algiers	97·1	314	e 13 27	− 3	i 24 2	[−10]	e 52·2	64·7
Alicante	98·4	318	e 13 48	+12	e 24 10	[− 8]	49·9	66·8
Toledo	99·6	320	e 13 41	− 1	25 12	−11	36·9	58·8
Almeria	100·6	317	e 13 44	− 2	i 24 16	[−13]	e 53·4	—
Granada	101·1	318	13 47	− 2	24 46	[+15]	57·0	67·1
Serra do Pilar	101·4	324	—	—	e 23 8	?	—	—
Malaga	101·9	318	—	—	24 21	[−14]	49·3	—
San Fernando	103·1	319	—	—	24 36	[− 5]	51·2	58·7
Ann Arbor	111·4	19	—	—	e 41 8	?	e 56·7	—
Cape Town	112·5	241	21 36	PPP	28 59	PS	53·1	57·6
Columbia	119·8	21	e 15 25	+ 7	—	—	—	—
San Juan	138·7	10	i 22 55	PKS	e 27 4	PPPP	—	—
La Paz	169·4	59	i 20 5a	[+ 2]	i 26 40	SKS	91·2	109·2
Sucre	173·1	63	19 31	[−34]	31 20	{−68}	85·2	—

Additional readings :—
Zi-ka-wei iN = +3m.5s., +4m.14s., +4m.22s., +4m.46s., and +4m.53s., iE = +5m.5s., +5m.28s., +6m.26s., +7m.2s., +7m.36s., and +8m.42s., iN = +8m.52s., iE = +10m.1s., iN = +10m.8s., iE = +12m.37s. and +13m.10s.
Nanking iE = +3m.0s., i = +4m.48s. = S* − 7s.
Zinsen iE = +5m.16s., iN = +5m.20s., iSN = +6m.44s. = SS − 1s.
Sumoto SZ = +3m.58s., SEZ = +7m.19s.
Kobe SNZ = +7m.27s., iE = +7m.41s.
Toyooka PZ = +4m.10s.
Chiufeng iPE = +4m.10s.
Mizusawa iSE = +9m.24s.
Medan iE = +6m.57s. = PP + 16s., i = +8m.55s., iE = +13m.47s., iN = +16m.13s.
Calcutta PPP = +7m.22s., SS = +12m.35s.
Batavia iN = +7m.41s., iE = +13m.25s. = PP + 5s., e = +18m.14s.
Agra PP = +8m.52s., PPP = +9m.10s., SS = +15m.47s.
Kodaikanal PP = +9m.34s., iPPP = +10m.1s. = P_cP + 7s., SS = +17m.16s., SSS = +18m.2s. = S_cS − 2s.
Frunse e = +9m.57s. = P_cP + 3s.

Continued on next page.

Bombay iPPEN = +10m.17s.
Sydney SS = +32m.59s.SSS = +34m.29s.
Melbourne i = +19m.36s. =PS +18s., +27m.16s., +30m.21s., and +33m.3s.
Tiflis e = +13m.9s. =PP +10s.
Erevan e = +27m.14s.?
Pulkovo L_q = +33m.44s.
Konigsberg iE = +12m.7s., eP_cP = +12m.18s., eN = +12m.27s., eE = +13m.7s. and +14m.3s., iSN = +21m.47s., iN = +21m.51s., iE = +21m.55s., iN = +21m.57s., iE = +23m.7s., eSSSE = +30m.40s., eN = +30m.47s., +31m.12s., +32m.2s., and +32m.46s.
Bucharest iP_cPNE = +12m.21s., iE = +22m.14s. =PS −11s., iPPSEN = +22m.46s.
Helwan PP = +15m.13s., PPP = +17m.10s., S = +22m.57s. =PS +20s.
Budapest i = +12m.27s.
Copenhagen +27m.50s. =SS +12s.
Vienna P_cP = +12m.34s., PP = +15m.50s., PPP = +17m.51s., PS = +23m.22s., SS = +28m.10s.
Tananarive SN = +22m.43s., SSE = +28m.4s.
Scoresby Sund +34m.38s.
Leipzig iE = +13m.4s., eE = +13m.35s., ePPE = +15m.23s., ePPZ = +15m.33s. eE = +15m.37s., +15m.48s., and +22m.21s., eZ = +25m.14s., iE = +29m.7s.
Zagreb eP = +12m.36s., eP_cP = +12m.46s. and +12m.57s., eNE = +13m.54s., eNW = +14m.47s., eE = +15m.6s., ePPE = +15m.49s., e = +22m.15s., eSKSE = +22m.53s. =SKS +0s., eS_cS = +23m.1s. =S +1s., eSKKS = +23m.12s., ePSZ = +23m.40s., ePS = +23m.54s., eNE = +26m.32s., eSS = +27m.56s., eSSS = +32m.56s.
Jena ePN = +12m.32s., iPE = +12m.35s., ePPZ = +15m.50s., eE = +23m.32s. = PS −12s.
Gottingen iPE = +12m.34s., PENZ = +12m.44s., ePPZ = +15m.50s., iPPZ = +17m.44s., eSKS = +22m.14s.?
Triest PP = +16m.0s., iSKKS = +23m.3s. =SKS +0s., i = +23m.26s., iPS = +23m.53s., i = +23m.59s., SS = +28m.44s., e = +25m.52s.
Stuttgart iP_cP = +12m.52s., e = +13m.30s., ePP = +16m.10s., ePPP = +18m.4s., eSKS = +22m.52s., i = +23m.14s. =SKS +5s., eSSS = +35m.14s
De Bilt iPPZ = +16m.13s.
Strasbourg i = +13m.5s., iPP = +16m.17s., ePPP = +18m.14s., eSKKS = +23m.24s. =S −10s., iS = +23m.41s., iPS = +24m.25s., ePPS = +25m.8s.
Zurich ePP = +16m.14s., eSKS = +23m.6s.
Uccle iPP = +16m.21s., iSKKS = +23m.31s. =S −9s., iPS = +24m.35s.
Durham S = +23m.37s.
Edinburgh i = +16m.28s. =PP +12s., +23m.34s. =S −11s. and +24m.35s. = PS −2s.
Stonyhurst iPP = +16m.26s.
Kew iP = +12m.58s., iPP = +16m.36s., iSKS = +23m.23s., iPS = +24m.53s.
Bidston iPP = +16m.36s., iSKS = +23m.23s., iPS = +24m.55s.
Paris PP = +16m.39s.
Oxford i = +16m.36s. =PP +6s.
Rathfarnham Castle ePP = +16m.47s., e = +23m.31s. =SKS −13s., iSKS = +23m.35s.
Algiers PPP = +17m.34s. =PP +13s., PPS = +26m.34s. =PS +20s., SS = +31m.14s.?
Alicante ePP = +17m.54s.
Toledo i = +17m.49s. =PP +9s., PP = +19m.14s.?, SKKS = +24m.14s.? = SKS −9s.
Almeria ePP = +18m.0s.
Granada PKP = +17m.6s., iPP = +18m.1s., PPP = +20m.4s., PKS = +23m.32s., SS = +32m.14s., SSS = +47m.30s., L_q = +51·2m.
Malaga PP = +18m.15s., e = +25m.5s. =SKKS −3s., +26m.9s., and +28m.9s., SS = +33m.33s., SSS = +37m.25s.
San Fernando PP = +18m.10s., PPP = +20m.39s., iSS = +27m.31s. =PS +13s.
Ann Arbor eN = +47m.20s., eE = +55m.38s.
Cape Town SSSN = +33m.4s., eSSSE = +33m.36s., N = +34m.55s. =SS +3s., E = +42m.33s. =SSSS +17s.
La Paz ipPZ = +21m.10s., iPPZ = +25m.7s., SKSN = +26m.53s., iPPPN? = +29m.20s., SKKS = +31m.3s., iE = +32m.14s., iSKSP = +35m.36s., PPS = +38m.44s., SSN = +46m.6s., SSE = +46m.28s., SSS = +51m.30s., L_qE = +82m.14s.
Long waves at Pennsylvania and La Plata.

Sept. 4d. 1h. 54m. 30s. (I) } Epicentre 22°·3N. 121°·3E. X.
2h. 50m. 13s. (II) } (as at 1h. 37m.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Taito	0·5	343	−i 0 13	−20	—	—	—	—
II	0·5	343	i 0 0	− 7	0 13	0	—	—
I Kosyun	0·6	240	−0 4	−13	0 11	− 4	—	—
II	0·6	240	e 0 7	− 2	0 14	− 1	—	—
I Takao	1·0	288	0 13	− 1	0 33	+ 7	—	—
II	1·0	288	e 0 18	+ 4	0 39	+13	—	—
I Tainan	1·3	305	e 0 2	−16	e 0 23	−10	—	—
II	1·3	305	e 0 24	P_g	—	—	—	—
I Arisan	1·3	339	e 0 15	− 3	e 0 33	0	—	—
II	1·3	339	e 0 19	+ 1	—	—	—	—
I Karenko	1·8	9	e 0 28	P*	0 48	+ 2	—	—
II	1·8	9	e 0 23	− 3	0 43	− 3	—	—
I Taityu	2·0	343	0 28	− 1	1 5	S_g	—	—
II	2·0	343	1 34	+65	1 50	+59	—	—
I Hokoto	2·1	307	0 31	+ 1	e 1 10	S_g	—	—
I Taihoku	2·8	4	0 43	P*	1 15	+ 3	—	2·0
II	2·8	4	e 0 47	P*	—	—	—	—
I Zi-ka-wei	8·9	0	e 2 14	+ 8	i 4 38	S*	—	—
I Nanking	10·0	348	2 33	+12	e 4 36	+23	5·0	—
I Nagano	18·8	43	e 4 4	−12	7 59	+17	11·5	—
I Mizusawa	23·9	40	i 5 9	0	i 9 28	+ 7	—	—
I Amboina	26·8	164	6 38	+62	—	—	—	—
I Zagreb	84·2	317	e 12 28	− 1	—	—	—	—
I Prato	88·1	317	e 12 53	+ 5	—	—	—	—
I Basle	88·4	321	e 12 47	− 3	—	—	—	—

Additional readings :—
Zi-ka-wei I i = +3m.3s., +4m.58s., +5m.22s., and +5m.48s.

Sept. 4d. 3h. 28m. 8s. Epicentre 22°·3N. 121°·3E. (as above). R.1.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taito	0·5	343	i 0 1	− 6	—	—	—	—
Kosyun	0·6	240	i 0 6	− 3	i 0 16	+ 1	—	—
Takao	1·0	288	0 11	− 3	—	—	—	—
Tainan	1·3	305	i 0 19	+ 1	0 27	− 6	—	—
Arisan	1·3	339	e 0 14	− 4	—	—	—	—
Karenko	1·8	9	i 0 22	− 4	0 46	0	—	—
Taityu	2·0	343	0 26	− 3	0 49	− 2	—	—
Hokoto	2·1	307	0 35	P_g	1 13	S_g	—	—
Taihoku	2·8	4	i 0 39	− 1	1 8	− 4	—	1·7
Hong Kong	6·6	271	1 45	P*	3 12	S*	4·2	4·2
Manila	7·7	183	2 1	P*	3 43	S*	—	—
Zi-ka-wei	8·9	0	—	—	e 3 44	− 2	—	—
Nanking	10·0	348	e 2 15	− 6	4 38	+25	5·3	6·6
Phu-Lien	13·7	266	e 3 9	− 2	6 22	?	7·9	11·8
Hukuoka	13·9	33	e 3 14	0	e 6 4	+15	—	—
Hukuoka B	13·9	33	—	—	e 5 55	+ 6	9·1	11·1
Husan	14·5	26	i 3·17	− 5	e 6 2	− 1	7·9	—
Taikyu	15·1	24	3 24	− 6	6 24	+ 7	8·7	—
Zinsen	15·9	15	e 3 32	− 8	e 6 32	− 4	e 8·4	—
Keizyo E.	16·1	17	e 3 38	− 5	e 6 38	− 3	e 8·2	—
Sumoto E.	17·0	42	3 53	− 1	e 7 16	+14	—	12·9
N.	17·0	42	3 57	+ 3	7 19	+17	—	14·8
Kobe	17·4	41	e 3 58	− 1	e 7 15	+ 4	—	18·6
Toyooka E.	17·8	39	e 4 8	+ 4	—	—	—	—
Chiufeng	18·4	347	i 4 10a	− 1	7 31	− 2	9·0	12·3

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s	s.	m. s.	s.	m.	m.
Nagoya		18·8	43	4 17	+ 1	e 7 57	SS	12·4	—
Vladivostok		22·7	20	i 4 59	+ 1	i 9 4	+ 5	i 10·4	15·4
Mizusawa	E.	23·9	40	e 5 8	− 1	e 9 23	+ 2	—	—
	N.	23·9	40	e 5 10	+ 1	e 9 21	0	—	—
Amboina		26·8	164	e 6 38	+62	11 4	+52	—	—
Medan		28·8	234	6 4	+10	—	—	e 14·9	—
Calcutta		30·3	276	e 7 28	PP	—	—	—	19·8
Batavia		31·8	208	6 19	− 2	11 38	+ 6	—	—
Colombo		42·7	255	14 33	S	(14 33)	+17	—	27·8
Kodaikanal		43·6	262	e 8 0	− 2	—	—	—	—
Frunse		43·7	309	e 7 39	−23	—	—	e 24·1	—
Andijan		44·9	305	8 14	+ 2	e 15 11	+22	24·9	—
Bombay		45·3	274	i 8 28	+13	e 14 52	− 3	—	26·9
Samarkand		48·9	303	e 8 27	−16	16 2	+17	24·9	—
Grozny		64·6	309	e 10 42	+ 6	e 19 50	+35	—	—
Tiflis		65·6	307	e 10 48	+ 6	19 49	+22	e 36·9	—
Erevan		66·1	305	e 10 42	− 4	—	—	—	—
Moscow		68·2	322	11 7	+ 8	e 19 28	−31	34·6	43·8
Pulkovo		71·3	328	11 23	+ 4	20 31	− 6	34·9	39·4
Simferopol		72·6	312	e 11 30	+ 4	—	—	—	—
Yalta		72·6	311	e 11 27	+ 1	—	—	—	—
Ksara		74·2	300	e 10 56	−40	21 31	PS	—	—
Upsala		77·4	330	—	—	e 21 48	+ 1	e 40·9	43·3
Copenhagen		81·7	327	12 16	− 1	22 42	+ 8	41·9	—
Vienna		82·9	319	e 12 24	+ 1	—	—	e 42·9	—
Scoresby Sund		83·7	349	12 22	− 5	22 42	−12	—	—
Hamburg		83·7	326	e 12 28	+ 1	e 22 52?	− 2	e 42·9	—
Zagreb		84·2	317	e 12 27	− 2	e 22 34	[−19]	44·9	—
Triest		85·6	318	e 12 38	+ 2	23 6	[+ 3]	—	43·9
Stuttgart		86·8	322	e 12 44	+ 2	e 23 20	− 5	e 44·9	56·7
De Bilt		87·2	326	i 12 51	+ 7	—	—	e 43·9	48·4
Strasbourg		87·7	323	e 12 50	+ 4	e 23 42	+ 8	e 42·9	—
Zurich		87·9	321	e 12 53	+ 6	—	—	—	—
Prato		88·1	317	e 12 55	+ 7	23 32	− 6	—	—
Uccle		88·3	326	e 12 54	+ 5	23 40	0	e 43·9	—
Basle		88·4	321	e 12 51	+ 1	—	—	—	—
Piacenza		88·4	318	e 12 52	+ 2	23 52	+11	—	53·4
Algiers		97·1	314	e 12 52?	−38	—	—	51·9	64·9
Alicante		98·4	318	—	—	e 31 32	PS	e 53·3	—

Additional readings :—
Taihoku +1m.13s.
Zi-ka-wei iE = +4m.35s., +4m.56s., +5m.1s., +5m.13s., iN = +5m.20s., +5m.54s., and +6m.37s.
Kobe ePZ = +4m.6s.
Chiufeng iSN = +7m.43s., SZ = +7m.52s.
Tiflis PS = +20m.5s., e = +26m.10s. = SSS +0s.
Triest ePP = +16m.2s., eSKKS = +23m.16s. = S + 2s.
Strasbourg ePP = +16m.18s.
Uccle ePP = +16m.20s.
Algiers e = +17m.28s. = PP + 7s. and +39m.52s?
Long waves were also at Hyderabad, La Paz, and other European stations.

Sept. 4d. 10h. 38m. 1s. Epicentre 22°·3N. 121°·3E. (as at 3h.28m.). R.2.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Taito	0·5	343	i 0 5	− 2	0 11	− 2
Kosyun	0·6	240	i 0 9	0	0 18	+ 3
Tainan	1·3	305	e 0 18	0	—	—
Arisan	1·3	339	e 0 23	P_g	—	—
Karenko	1·8	9	e 0 26	0	e 0 47	+ 1
Taityu	2·0	343	0 29	0	0 52	+ 1
Taihoku	2·8	4	e 0 40	0	—	—
Nanking	10·0	348	—	—	e 4 35	+22

Long waves at Hong Kong.

Sept. 4d. Readings also at 0h. (Santiago), 1h. (Nagoya (2) and Serra do Pilar), 2h. (near Apia, Arisan (3), Karenko, Kosyun (5), Takao (2), and Taito (2)), 5h. (Erevan), 9h. (Oaxaca and Tacubaya), 10h. (Medan and near Batavia), 14h. (Tacubaya and Tiflis), 17h. (Nagoya), 18h. (Nanking, Nagoya, Hong Kong, and Taihoku), 22h. (Andijan, Frunse, Samarkand, and near Algiers).

Sept. 5d. 22h. 38m. 38s. Epicentre 41°·5N. 47°·9E. (as on 1931 May 17d.). X.

A = +·502, B = +·556, C = +·663 ; D = +·742, E = −·670 ;
G = +·444, H = +·492, K = −·749.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	1·9	107	e 0 30	+ 2	i 0 54	S*	1·3	1·5
Grozny	2·4	322	e 0 38	P*	1 22	S_g	—	1·5
Tiflis	2·4	275	0 31	− 3	(i 1 8)	S*	i 1·1	—
Erevan	2·9	243	e 0 38	− 3	1 23	S*	—	—
Piatigorsk	4·4	307	e 1 18	P_g	—	—	—	—
Samarkand	14·6	91	e 4 47	?	—	—	—	—
Tashkent	16·0	84	—	—	e 6 5	−33	e 8·7	10·0
Andijan	18·4	84	e 4 27	PP	—	—	e 9·3	—

Additional readings :—
Grozny P* = +41s. = P_g − 1s., P_g = +45s., e = +1m.5s. = S + 3s.
Tiflis e = +41s. = P_g − 1s., +53s., and +1m.3s. = S + 1s.

Sept. 5d. Readings also at 1h. (La Jolla, Mount Wilson, and Pasadena), 2h. (Mizusawa, Andijan, Frunse, Samarkand, near Nagoya (3), and near Sumoto), 4h. (near Santiago), 10h. (Grozny, Ksara, near Erevan, and Tiflis), 12h. (Agra, Bombay, Calcutta, Hyderabad, Andijan, Frunse, Samarkand, and near Tiflis), 13h. (Mount Wilson and Pasadena), 14h. (Andijan, Frunse, Samarkand, Granada, and Triest), 17h. (near Oak Ridge), 18h. and 19h. (Tiflis), 20h. (Grozny), 22h. (near Zagreb), 23h. (Tiflis and near Berkeley).

Sept. 6d. 21h. 14m. 5s. Epicentre 44°·7N. 150°·2E. (as on 1933 July 9d.). R.3.

A = −·617, B = +·353, C = +·703 ; D = +·497, E = +·868 ;
G = −·610, H = +·350, K = −·711.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	8·8	231	e 2 9	+ 4	i 3 20	−24	—	—
Vladivostok	13·2	270	e 3 6	+ 1	e 5 28	− 4	i 7·5	10·0
Chiufeng	25·4	271	e 5 21	− 3	9 56	+ 8	—	16·3
Andijan	55·1	295	e 9 30	0	—	—	—	—
Tashkent	56·8	298	i 9 41	− 1	e 17 36	+ 2	e 29·9	35·9
Samarkand	59·1	297	e 9 50	− 8	—	—	—	—
Scoresby Sund	64·7	358	11 55?	?	—	—	33·9	—
Baku	69·0	307	—	—	e 20 54	[− 4]	e 40·6	44·7
Tiflis	71·0	311	e 11 19	+ 2	—	—	43·9	—
Ksara	81·5	310	e 12 16	0	e 22 30	− 2	—	54·2

Long waves were also recorded at Moscow, Pulkovo, and a few European stations.

Sept. 6d. Readings also at 0h. (near Tiflis), 1h. (Scoresby Sund), 2h. (near Triest and Zagreb), 3h. (near Sumoto), 4h. (Mizusawa and near La Paz), 5h. (Scoresby Sund (3) and Ksara), 7h. (Mizusawa and Nagoya (2)), 8h. (Mount Wilson and Pasadena), 9h. (Wellington), 10h. (Santiago and Scoresby Sund), 13h. (near Reykjavik), 16h. (Apia), 18h. (Scoresby Sund, Tashkent, and Vladivostok), 19h. (Oak Ridge, Baku, Copenhagen, Pulkovo, and near Graz), 20h. (Santiago and San Fernando), 21h. (near Kobe), 22h. (Mizusawa, near Granada, and Malaga).

Sept. 7d. Readings at 0h. (near Sumoto), 1h. (near Grozny and near Santiago), 2h. and 3h. (near Tiflis), 8h. (Bombay), 9h. (Mizusawa), 11h. (Frunse, Samarkand, Tashkent, and near Andijan), 14h. (Mizusawa), 15h. (near Mizusawa (2) and near Reykjavik), 16h. (Oak Ridge), 17h. (Nagoya, Sumoto, near Hukuoka B, and Nagasaki), 18h. (Chiufeng, Baku, Tashkent, Vladivostok, Pulkovo, Copenhagen, Paris, Strasbourg, and Stuttgart), 19h. (Oak Ridge and near Nagoya), 20h. (Sofia), 22h. and 23h. (near Tiflis).

Sept. 8d. 1h. 16m. 12s. Epicentre 37°·3N. 54°·4E. N.3.

A = +·463, B = +·647, C = +·606 ; D = +·813, E = −·582 ;
G = +·353, H = +·493, K = −·795.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	4·7	313	i 1 6	− 1	2 3	+ 3	3·4	7·1
Tiflis	8·6	303	e 1 57	− 5	e 3 32	− 7	—	—
Samarkand	10·1	73	e 3 7	+45	e 4 17	+ 1	—	—
Piatigorsk	10·9	311	i 3 55	+82	—	—	—	—
Tashkent	12·2	66	2 52	+ 1	i 5 13	+ 5	e 5·5	8·3
Tchimkent	12·7	62	e 3 30	+32	—	—	—	—
Ksara	15·4	262	i 3 35	+ 1	6 41	+17	—	—
Frunse	16·4	64	e 3 47	+ 1	—	—	e 8·0	—
Yalta	16·8	302	e 3 54	+ 2	e 7 7	SS	—	—
Simferopol	17·0	303	e 3 54	0	e 7 5	+ 3	—	—
Moscow	21·7	334	e 4 42	− 6	e 8 32	− 8	e 12·4	14·9
Pulkovo	27·2	333	e 5 45	+ 5	10 31	+13	14·8	18·0
Copenhagen	33·5	317	—	—	11 54	− 4	19·8	—

Additional readings :—
Baku i = +1m.15s. = P* − 2s.
Tiflis e = +2m.8s., +2m.21s., and +3m.38s. = S − 1s., i = +4m.8s., e = +4m.22s.
Tchimkent e = +5m.57s.
Long waves were also recorded at Scoresby Sund and Stuttgart.

Sept. 8d. Readings also at 1h. (Sofia and Tiflis (2)), 2h. (Nagoya and Tiflis), 3h. (near Nagoya), 5h. (Columbia), 6h. (Tiflis), 7h. (near Nagoya), 9h. (Ksara, Tashkent, Tiflis, Hong Kong, Phu-Lien, Vladivostok, Chiufeng, Grozny, Baku, and near Medan), 10h. (near Reykavik), 11h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 14h. (Lick), 16h. (near Tashkent), 17h. (Lick, Vladivostok, Chiufeng, Baku, Hong Kong, Tashkent, Manila, Pulkovo, and Copenhagen), 19h. (near Amboina), 20h. (Santiago and near Bucharest).

Sept. 9d. 5h. 13m. 28s. Epicentre 32°·4N. 130°·2E. N.3.

Given by Japanese stations.

A = −·545, B = +·645, C = +·536 ; D = +·764, E = +·645 ;
G = −·346, H = +·409, K = −·844.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		0·4	321	i 0 3	− 3	0 13	+ 3	—	0·4
Hukuoka		1·2	9	i 0 18$_a$	+ 1	0 35	S*	—	0·7
Hukuoka B		1·2	9	0 17	0	0 36	S_g	—	0·7
Husan		2·9	340	e 0 48	P*	1 15	+ 1	1·4	1·5
Taikyu		3·7	340	1 8	P_g	2 22	?	—	—
Sumoto		4·4	63	1 0	− 3	2 15	S_g	—	2·4
Kobe		4·7	60	e 1 32	P_g	2 28	S_g	—	2·7
Toyooka	E.N.	5·0	50	1 27	P*	2 38	S_g	—	2·8
	Z.	5·0	50	1 25	P*	2 34	S_g	—	2·8
Zinsen		5·9	331	e 1 40	P*	e 3 2	S_g	—	—
Nagoya		6·3	62	e 1 28	− 2	3 19	S_g	—	3·9
Nanking		9·7	271	e 2 17	0	—	—	5·0	—

Kobe gives also SZ = +2m.31s.
Long waves were also recorded at Vladivostok, Chiufeng, Hong Kong, and Tashkent.

Sept. 9d. 6h. 11m. 47s. Epicentre 6°·1N. 140°·7E. (see 6h. 17m.). N.2.

A = −·769, B = +·630, C = +·106; D = +·633, E = +·774; G = −·082, H = +·067, K = +·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		15·8	233	3 41	+ 2	i 6 53	+19	—	—
Titizima		21·0	4	4 39	− 1	—	—	—	—
Manila		21·1	295	i 4 46k	+ 5	i 8 50	SS	—	—
Isigakizima		24·2	321	5 19	+ 7	—	—	—	—
Nake		24·7	336	5 18	+ 1	—	—	—	—
Kosyun		25·0	311	e 5 27	+ 7	10 56	+75	—	—
Taito		25·2	313	e 5 34	+12	—	—	—	—
Karenko		25·6	317	e 5 31	+ 6	11 9	+78	—	—
Tainan		26·0	313	e 6 0	PP	—	—	—	—
Taihoku		26·4	319	5 40	+ 7	—	—	—	—
Siomisaki		27·7	349	5 37	− 7	—	—	—	—
Koti		28·2	347	5 46	− 3	—	—	—	—
Wakayama		28·6	350	5 47	− 6	—	—	—	—
Sumoto		28·8	350	e 5 42	−12	—	—	—	—
Kobe		29·0	351	5 40	−16	—	—	—	—
Kameyama		29·0	353	5 48	− 8	—	—	—	—
Nagoya		29·3	355	5 58	− 1	—	—	—	13·0
Yokohama		29·3	358	5 58	− 1	—	—	—	—
Hikone		29·4	353	5 54	− 6	—	—	—	—
Gihu		29·5	35	6 2	+ 1	—	—	—	—
Kohu		29·6	358	5 58	− 3	—	—	—	—
Tyosi		29·6	0	6 1	0	—	—	—	—
Tokyo		29·6	359	5 58	− 3	—	—	—	—
Oiwake		30·3	357	6 4	− 4	—	—	—	—
Hong Kong		30·3	305	6 22	+14	11 13	+ 4	—	—
Maebasi		30·3	357	5 59	− 9	—	—	—	—
Nagano		30·6	356	6 9	− 1	—	—	—	—
Toyama		30·7	356	6 9	− 2	—	—	—	—
Hukusima		31·6	0	6 14	− 5	—	—	—	—
Nanking		33·0	324	6 34	+ 2	12 41	+50	i 17·8	22·3
Hakodate		35·7	0	6 50	− 5	—	—	—	—
Batavia		36·0	251	i 7 1	+ 3	—	—	—	—
Vladivostok		37·8	350	7 14	+ 1	—	—	—	—
Chiufeng		40·5	331	7 34k	− 2	13 31	−13	i 19·6	22·9
Adelaide		41·1	183	—	—	i 13 48	− 5	—	—
Medan		41·9	269	7 59	+11	—	—	—	—
Melbourne		44·1	175	—	—	i 14 47	+10	—	—
Semipalatinsk		66·8	323	e 11 53	+62	—	—	—	—
Andijan		69·7	311	e 11 2	− 7	—	—	—	—
Tchimkent		72·0	313	e 11 27	+ 4	—	—	—	—
Tashkent		72·0	312	11 24	+ 1	—	—	—	—
Samarkand		73·6	309	e 11 32	0	—	—	—	—
Baku		86·7	310	e 12 46	+ 4	—	—	—	—
Erevan		90·8	310	13 5	+ 4	—	—	—	—
Berkeley		91·8	52	e 12 3	−63	—	—	—	—
Moscow		92·3	326	e 13 6	− 2	23 47	[+ 1]	—	—
Lick		92·3	52	e 13 19	+11	—	—	—	—
Santa Barbara	z.	94·4	55	e 13 20	+ 2	—	—	—	—
Pulkovo		94·7	322	13 23	+ 4	25 59	PS	—	—
Tananarive		95·0	251	—	—	23 55	[− 6]	—	—
Tinemaha		95·0	52	e 13 19	− 1	—	—	—	—
Haiwee	z.	95·5	53	e 13 20	− 3	—	—	—	—
Pasadena	z.	95·7	55	i 13 21	− 3	—	—	—	—
Mount Wilson	z.	95·8	55	i 13 22	− 2	—	—	—	—
Riverside		96·4	55	e 13 23	− 4	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Jolla	Z.	96·7	56	i 13 26	− 2	—	—	—	—
Ksara		98·7	305	e 14 13	+35	—	—	—	—
Königsberg		101·6	329	e 17 10	PP	—	—	e 51·2	—
Tucson		102·1	55	—	—	e 25 8	{− 1}	e 47·7	—
Helwan		103·5	302	e 15 59	?	24 41	[− 2]	—	—
Sofia	N.W.	105·3	317	—	—	33 13?	SS	e 55·2	62·2
Zagreb		108·6	322	e 18 55	PP	e 28 47	PS	e 57·8	—
Triest		110·0	323	—	—	e 24 58	[−15]	—	—
De Bilt		110·6	332	e 18 19	[− 1]	—	—	e 51·2	61·6
Stuttgart		110·8	327	e 14 33	− 1	e 28 1	PS	e 53·2	63·2
Strasbourg		111·6	328	e 14 23	−15	—	—	—	—
Zurich		111·9	327	—	—	e 28 25	PS	—	—
Stonyhurst		112·6	337	—	—	i 25 39	[+14]	57·2	63·2
Piacenza		112·7	324	—	—	e 25 13	[−12]	54·2	64·2
Rathfarnham Castle		114·4	339	—	—	e 25 28	[− 3]	55·7	62·2
Ann Arbor		117·0	35	—	—	e 29 43	PS	e 54·2	—
Toronto		118·5	32	—	—	e 26 44	{−22}	55·2	—
Ottawa		119·1	28	—	—	e 25 43	[− 4]	e 55·2	—
Cape Town		120·0	234	—	—	25 57	[+ 7]	60·1	69·9
Charlottesville		122·6	36	—	—	e 27 36	{+ 2}	e 56·8	—
Alicante		122·8	324	—	—	27 1	{−34}	60·2	—
Toledo		123·7	327	—	—	25 40	[−21]	—	—
Columbia		123·8	41	—	—	e 31 6	PS	59·1	—
Granada		125·4	325	e 19 17	[+19]	—	—	—	—
San Fernando		127·4	326	e 21 31	PP	e 35 3	?	62·2	70·7
San Juan		144·0	46	e 19 41	[+10]	—	—	—	—
Huancayo		144·0	102	e 23 33	PKS	—	—	—	—
La Paz		149·9	112	i 19 48k	[+ 6]	—	—	—	—

Additional readings and note :—
Amboina iP = +3m.52s.
Kobe e?Z = +5m.34s., iE = +6m.55s., iN = +7m.0s., iZ = +7m.14s. and +7m.41s., iEN = +7m.58s.
Hong Kong PP? = +7m.23s.
Nanking iN = +14m.16s. =SSSS +16s.
Batavia i = +9m.49s. =P_cP +20s.
Chiufeng PPE = +8m.51s., iN = +15m.10s., iE = +15m.13s.
Adelaide i = +16m.52s. =SS +17s.
Medan iE = +8m.43s. and +9m.36s. =PP +17s.
Melbourne i = +17m.32s. =SS − 2s. and +18m.7s. =S_cS +0s.
Tashkent e = +12m.31s., +13m.35s., and +15m.51s.
Moscow e = +14m.10s., PP = +16m.53s.
Pulkovo PP = +17m.9s.
Tananarive PPP = +20m.29s. =PPPP − 3s.
Pasadena iZ = +19m.22s. =PPP +16s.
Sofia e = +23m.13s.?
Triest i = +34m.29s. =SS +10s., e = +38m.25s. =SSS +6s.
Stuttgart eP = +19m.17s. =PP +14s., e = +21m.55s. =PPP +38s.
Strasbourg e = +19m.21s. =PP +12s.
Stonyhurst i = +26m.50s. =SKKS +25s.
Rathfarnham Castle e = +23m.37s. =PPPP +7s., e = +26m.20s. =SKKS −18s., eSS = +33m.35s.
Cape Town PPP = +29m.58s. =PS −4s., E = +36m.24s. =SS −8s., SKS is given as SKP.
Charlottesville ePS = +35m.46s., e = +40m.58s.
Toledo PP = +26m.55s.
Granada i = +21m.26s.
La Paz ipPKPN = +26m.53s. =PPP +20s., iPPZ = +28m.45s. =PPP +3s.
Long waves at Chicago and Philadelphia.

Sept. 9d. 6h. 17m. 40s. Epicentre 6°·1N. 140°·7E. (as at 6h. 11m.). R.1.

A = −·769, B = +·630, C = +·106; D = +·633, E = +·774; G = −·082, H = +·067, K = −·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		6·3	282	1 30	0	2 43	+ 2	—	—
Amboina		15·8	233	3 36	− 3	i 6 46	SS	—	—
Titizima		21·0	4	4 36	− 4	—	—	—	—
Manila	Z.	21·1	295	i 4 15k	−26	8 20	− 8	—	—
Naha		23·6	330	5 13	+ 7	—	—	—	—
Isigakizima		24·2	321	5 18	+ 6	—	—	—	—
Nake		24·7	336	5 18	+ 1	—	—	—	—
Taito		25·2	313	4 20	−62	—	—	—	—
Takao		25·7	313	e 4 31	−55	7 24	?	—	—
Arisan		25·9	315	e 5 36	+ 8	—	—	—	—
Taityu		26·4	315	5 42	+ 9	11 18	SS	—	—
Taihoku		26·4	319	5 38	+ 5	—	—	11·3	12·5
Kagosima		27·2	340	5 42	+ 2	—	—	—	—
Miyazaki		27·2	341	5 39	− 1	—	—	—	—
Simidu		27·6	345	5 43	− 1	—	—	—	—
Siomisaki		27·7	349	5 43	− 1	—	—	—	—
Koti		28·2	347	—	—	10 29	− 6	—	—
Uwazima		28·2	345	5 49	0	—	—	—	—
Kumamoto		28·3	342	5 53	+ 3	—	—	—	—
Unzendake		28·4	340	5 48	− 3	—	—	—	—
Nagasaki		28·5	340	e 5 50	− 2	—	—	9·5	13·7
Wakayama		28·6	350	5 44	− 9	—	—	—	—
Sumoto		28·8	350	5 52	− 2	10 42	− 3	—	12·2
Kobe	E.	29·0	351	5 49	− 7	10 49	+ 1	e 11·9	12·5
	N.	29·0	351	e 5 56	0	10 47	− 1	—	14·8
	Z.	29·0	351	5 55	− 1	e 11 21	+33	—	14·2
Misima		29·0	357	5 46	−10	10 38	−10	—	—
Kameyama		29·0	353	5 55	− 1	—	—	—	—
Hukuoka		29·1	342	5 48	− 9	—	—	11·9	—
Hukuoka B		29·1	342	5 57	0	12 2	SS	—	16·8
Nagoya		29·3	355	5 56	− 3	—	—	12·4	13·5
Yokohama		29·3	358	5 54	− 5	—	—	—	—
Kyoto		29·3	353	5 58	− 1	—	—	—	—
Hirosima		29·3	346	5 58	− 1	—	—	—	—
Hikone		29·4	353	5 57	− 3	10 46	− 9	—	—
Ibukisan		29·6	354	6 2	+ 1	—	—	—	—
Kohu		29·6	358	6 1	0	—	—	—	—
Tokyo		29·6	359	5 57	− 4	—	—	—	—
Miyadu		29·9	354	5 59	− 5	—	—	—	—
Toyooka	E.	29·9	354	6 6	+ 2	11 1	− 2	—	—
	N.	29·9	354	6 0	− 4	10 57	− 6	—	—
Kakioka		30·1	359	5 58	− 8	—	—	—	—
Matumoto		30·2	356	6 7	0	—	—	—	—
Oiwake		30·3	357	6 4	− 4	10 56	−13	—	—
Hong Kong		30·3	305	7 40	?	11 12	+ 3	12·8	13·4
Maebasi		30·3	357	6 5	− 3	—	—	—	—
Nagano		30·6	356	6 7	− 3	—	—	—	—
Toyama		30·7	356	6 5	− 6	—	—	—	—
Zi-ka-wei		30·9	327	e 6 13	0	11 18	0	13·5	18·6
Husan		30·9	341	e 6 16	+ 3	11 2	−16	12·6	—
Taikyu		31·8	342	6 22	+ 1	e 11 26	− 6	e 17·1	—
Sendai		32·2	1	6 20	− 4	11 30	− 8	—	—
Nanking		33·0	324	6 34	+ 2	—	—	—	—
Mizusawa		33·0	1	e 6 27	− 5	e 11 12	−39	e 14·6	—
Morioka		33·6	1	6 30	− 7	11 52	− 8	—	—
Zinsen	N.	33·9	339	e 6 38	− 1	e 11 36	−28	e 14·6	—

Continued on page next.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Heizyo		35·6	339	e 6 53	− 1	e 12 20	−10	e 15·2	—
Batavia		36·0	251	6 46	−12	—	—	—	—
Phu-Lien		36·1	297	e 6 54	− 5	12 46	+ 8	15·3	16·4
Sapporo		37·0	1	7 2	− 4	12 50	− 1	—	—
Vladivostok		37·8	350	7 13	0	—	—	—	27·9
Adelaide		41·1	183	i 7 37	− 4	i 13 52	− 1	18·5	24·8
Riverview		41·2	167	i 7 37a	− 5	13 48	− 6	18·7	26·7
Sydney		41·2	167	e 6 36	−66	i 12 57	−57	18·3	21·8
Medan		41·9	269	7 52	+ 4	13 58	− 7	—	—
Melbourne		44·1	175	e 8 14	+ 8	14 38	+ 1	20·2	24·7
Perth		44·8	210	8 20	+ 9	15 0	+13	22·7	27·8
Apia		51·2	113	8 55	− 5	16 15	− 3	24·5	27·7
Calcutta		53·0	294	9 16	+ 2	16 53	+11	25·8	29·7
Arapuni		54·8	146	—	—	17 20?	PS	24·3	26·3
Wellington		56·7	150	9 35	− 6	17 23	− 9	28·3R	—
Colombo		60·4	274	9 41	−26	18 32	PS	29·5	38·3
Honolulu		61·2	68	i 10 23	+10	18 24	− 8	i 27·6	—
Hyderabad		61·7	287	10 7	− 9	18 42	+ 4	27·6	43·1
Kodaikanal		62·6	279	e 10 28	+ 6	i 18 56	+ 6	29·8	34·7
Agra		63·0	297	10 21	− 4	i 18 53	− 2	29·6	—
Chatham Ils.		63·2	146	12 13?	PP	—	—	—	—
Dehra Dun		63·4	301	10 20	− 8	19 0	0	26·2	33·3
Bombay		67·1	288	10 50	− 2	i 19 48	+ 2	—	40·3
Frunse		68·4	314	e 11 13	+12	20 1	− 1	—	—
Andijan		69·7	311	e 11 16	+ 7	e 20 22	+ 4	e 33·6	—
Tashkent		72·0	312	11 25	+ 2	20 44	− 1	34·0	40·2
Samarkand		73·6	309	e 11 44	+12	e 20 59	− 5	e 30·3	—
Sitka		81·6	33	i 12 10	− 6	i 22 14	−19	e 33·1	—
Baku		86·7	310	12 47	+ 5	23 24	0	40·3	49·0
Victoria		89·4	42	e 13 4	+ 9	i 23 19	[−10]	i 36·3	—
Seattle		90·2	42	e 13 1	+ 3	e 23 32	[− 2]	e 36·2	—
Ukiah		90·9	51	e 13 3	+ 1	i 23 48	{+ 6}	e 36·7	—
Piatigorsk		91·2	315	e 12 45	−18	—	—	22·8	—
Berkeley		91·8	52	(i 12 7)	−59	—	—	—	—
Branner		91·9	52	e 13 8	+ 2	—	—	—	—
Moscow		92·3	326	13 8	0	24 2	{+ 9}	—	58·0
Lick	N.	92·3	52	e 13 16	+ 8	e 23 41	[− 5]	—	—
Santa Barbara		94·4	55	i 13 12	− 6	—	—	—	—
Pulkovo		94·7	322	13 18	− 1	23 54	[− 5]	42·3	52·7
Tananarive		95·0	251	—	—	24 37	− 5	44·3	59·3
Tinemaha	Z.	95·0	52	i 13 15	− 5	—	—	—	—
Haiwee	Z.	95·5	53	i 13 17	− 6	—	—	—	—
Pasadena		95·7	55	i 13 18	− 6	i 24 38	−10	e 38·7	—
Mount Wilson	Z.	95·8	55	i 13 18	− 6	—	—	—	—
Riverside	Z.	96·4	55	i 13 20	− 7	—	—	—	—
La Jolla		96·7	56	i 13 22	− 6	—	—	—	—
Simferopol		97·2	317	13 34	+ 3	—	—	—	—
Yalta		97·3	316	e 13 38	+ 7	—	—	—	—
Sebastopol		97·7	317	e 13 36	+ 3	—	—	—	—
Bozeman		98·1	42	e 17 30	PP	e 24 8	[− 8]	e 40·9	—
Ksara		98·7	305	13 57	+19	27 11	?	49·7	57·7
Upsala		100·4	334	—	—	e 24 20?	[− 8]	e 46·3	53·6
Königsberg		101·6	329	e 17 42	PS	e 24 36	[+ 3]	—	—
Tucson		102·1	55	e 18 5	PP	e 24 36	[+ 1]	—	—
Scoresby Sund		102·5	354	—	—	24 50	[+12]	48·3	—
Bucharest		102·8	318	17 20?	PP	—	—	51·3	57·3
Helwan		103·5	302	14 36	+36	24 40	[− 3]	55·5	62·9
Copenhagen		105·0	332	14 14	+ 8	24 50	[0]	43·3	—
Budapest		105·9	323	17 45	[−20]	i 28 8	PS	e 49·3	66·3
Belgrade		106·3	320	e 18 47	PP	e 25 11	[+15]	54·5	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna		107·1	324	e 18 42	PP	—	—	—	55·3
Prague		107·2	327	—	—	34 20?	?	e 45·3	54·3
Leipzig		107·6	328	e 18 56	PP	e 27 53	PS	e 43·3	49·3
Jena		108·2	328	—	—	i 32 20	?	e 45·3	56·2
Graz		108·2	323	e 19 23	PP	e 29 57	?	e 47·3	55·0
Cheb		108·3	328	e 17 38	[−34]	e 29 59	?	47·3	55·3
Zagreb		108·6	322	e 17 42	[−31]	—	—	—	—
Göttingen		108·7	330	e 14 20?	− 5	—	—	e 47·3	58·3
Triest		110·0	323	e 14 16	−15	e 25 19	[+ 6]	e 46·7	57·3
De Bilt		110·6	332	e 19 4	PP	—	—	—	—
Stuttgart		110·8	327	—	—	e 25 20	[+ 3]	52·3	68·8
Edinburgh		111·2	339	—	—	i 28 52	PS	49·3	58·4
Padova		111·2	324	—	—	e 26 20?	—	—	—
Strasbourg		111·6	328	i 19 12	PP	e 28 42	PS	e 42·3	57·3
Chur		111·7	327	e 18 37	[+14]	—	—	—	—
Zurich		111·9	327	e 18 52	[+28]	—	—	—	—
Uccle		111·9	332	—	—	e 25 18	[− 4]	47·3	59·3
Basle		112·4	327	e 19 14	PP	—	—	—	—
Prato		112·5	322	e 19 20	PP	30 20	?	47·9	—
Florence		112·5	322	e 15 5	+22	—	—	50·3	53·3
Stonyhurst		112·6	337	—	—	25 38	[+13]	—	—
Piacenza		112·7	324	—	—	29 24	PS	—	—
Neuchatel		113·0	327	e 19 20	PP	—	—	—	—
Bidston		113·1	337	i 19 32	PP	e 35 8	SS	47·3	56·6
Kew		113·5	334	i 19 30	PP	46 33	?	49·3	60·6
Oxford		113·6	335	—	—	i 29 11	PS	e 49·7	59·3
Paris		114·1	330	e 19 39	PP	e 29 24	PS	51·3	60·3
Rathfarnham Castle		114·4	339	e 14 46	− 6	e 25 8	[−23]	—	—
Florissant		114·9	42	i 19 34	PP	e 27 12	{+31}	—	—
Chicago		114·9	38	—	—	e 27 22	{+41}	e 56·4	—
St. Louis		115·0	42	e 19 33	PP	e 29 12	PS	—	—
Ann Arbor		117·0	35	—	—	e 29 33	PS	70·3	—
Toronto		118·5	32	—	—	27 55	{+49}	—	—
Ottawa		119·1	28	—	—	e 29 32	PS	—	—
Cape Town		120·0	234	18 24	[−22]	25 46	[− 4]	54·2	70·8
Vermont		121·0	27	—	—	e 27 32	{+ 9}	e 58·0	—
Charlottesville		122·6	36	—	—	e 27 20	{−14}	—	—
Alicante		122·8	324	—	—	37 17	SS	—	—
Oak Ridge		123·2	28	18 51	[− 2]	e 29 50	PS	69·3	—
Philadelphia		123·3	34	—	—	e 29 56	PS	69·3	—
Toledo		123·7	327	e 18 59	[+ 5]	—	—	—	—
Columbia		123·8	41	e 20 41	PP	e 25 56	[− 6]	—	—
Almeria		125·0	324	e 19 12	[+15]	—	—	e 61·4	—
Granada		125·4	325	e 19 4	[+ 6]	—	—	60·3	72·2
Malaga		126·2	325	21 1	PP	25 48	[−20]	54·2	64·4
San Fernando		127·4	326	e 21 3	PP	e 26 45	[+33]	—	—
San Juan		144·0	46	e 19 30	[− 1]	—	—	e 58·6	—
Huancayo		144·0	102	e 19 33	[+ 2]	e 32 40	SKSP	e 59·1	—
La Plata	E.	146·5	151	19 32	[− 4]	—	—	76·3R	95·8
	N.	146·5	151	19 38	[+ 2]	—	—	81·3R	84·7
La Paz		149·9	112	i 19 39k	[− 3]	29 54	{−28}	71·9	74·2

Additional readings and note :—
Amboina iP = +3m.51s., iSE = +7m.0s.
Nagasaki ePE = +5m.33s.
Sumoto SE = +10m.51s.
Kobe iN = +7m.0s., iE = +7m.39s., iS_cSE = +17m.2s.
Nanking i = +7m.39s. = PP +3s., SSE = +9m.17s. = P_cP −2s., i = +14m.5s. = SSSS +5s.
Batavia iPZ = +6m.59s., iP = +7m.5s.
Phu-Lien PP = +8m.20s.?
Vladivostok i = +10m.14s.
Adelaide i = +9m.16s. = PP +5s., +14m.32s., +16m.56s. = SS +21s., and +17m.34s. = S_cS −14s.
Riverview iNZ = +9m.17s. = PP +5s.

Continued on next page.

Medan iP = +7m.58s.
Melbourne i = +15m.11s., SS = +18m.2s. = S_cS − 5s.
Perth P_cP = +9m.20s., PP = +9m.55s. = P_cP − 3s., PPP = +10m.45s., PPPP = +11m.20s., P_cS = +13m.30s., PS = +15m.10s., SS = +18m.10s. = S_cS − 1s., SSS = +19m.25s., SSSS = +20m.20s.
Apia PP = +10m.43s., S_cSN = +17m.49s., iSS = +19m.42s., iSSS = +21m.2s.
Wellington S_cS = +19m.18s., SS = +20m.50s., L_q = +23m.54s.
Honolulu ePP = +12m.38s., e = +14m.2s., eSS = +21m.33s., e = +24m.20s.
Kodaikanal PS = +19m.27s., SS = +23m.3s., SSS = +25m.12s.
Agra PPE = +12m.41s., PPPE = +13m.48s., PSE = +19m.23s., SS = +23m.1s., SSSE = +25m.12s., iSSS? = +26m.3s.
Bombay PSEN = +20m.8s., SSEN = +24m.0s.
Tashkent PP = +14m.44s., SS = +25m.2s.
Sitka i = +12m.50s., e = +15m.15s. = PP − 2s., +16m.33s., and +19m.20s., i = +22m.51s. = PS − 18s., e = +25m.31s., i = +27m.28s. = SS − 8s.
Baku PP = +16m.22s.
Victoria iSN = +23m.26s.
Seattle e = +14m.5s., eSKS = +23m.12s., eSS = +28m.5s.
Ukiah ePP = +16m.24s., e = +17m.30s., iSKS = +23m.33s., ePS = +25m.8s., e = +29m.4s., eSS = +31m.4s.
Berkeley P is given as S. to the earlier shock.
Moscow PP = +16m.42s., PS = +25m.7s.
Lick eN = +24m.9s. = S − 8s.
Pulkovo PP = +16m.34s., PPS = +26m.3s., SS = +30m.56s., SSS = +35m.20s.
Tananarive SE = +23m.38s. = SKS − 23s., E = +26m.11s. = PS + 21s., +30m.56s. = SS + 5s., N = +31m.6s. = SS + 15s., EN = +39m.55s.
Pasadena iPPZ = +16m.53s., iZ = +17m.16s. = PP + 6s., iSKSE = +23m.58s.
Bozeman ePS = +26m.15s., e = +27m.53s. and +29m.5s.
Ksara PP = +17m.53s.
Konigsberg eE = +22m.31s., +30m.16s., and +31m.23s., eN = +32m.44s.
Tucson ePS = +27m.4s., eSS = +32m.50s., eSSS = +36m.32s.
Scoresby Sund PP = +18m.4s., PS = +27m.5s., SS = +32m.56s., eN = +34m.44s.
Helwan S = +27m.30s. = PS + 8s.
Copenhagen PP = +17m.20s.?, +27m.32s. = PS − 6s., SS = +31m.20s.
Budapest i = +21m.8s.
Belgrade e = +36m.42s.
Leipzig e = +22m.44s.
Jena eEN = +38m.20s.
Zagreb ePP = +18m.55s.
Gottingen eN = +23m.20s.?
Triest iSKS = +24m.35s., i = +28m.22s. = PS − 6s., eSS = +34m.21s., i = +34m.53s.
De Bilt e = +35m.7s.
Stuttgart ePP = +19m.1s., eS = +26m.50s., ePS = +28m.44s., ePPS = +29m.47s., e = +45m.30s.
Edinburgh e = +21m.20s.? = PPP − 1s.
Strasbourg eSS = +34m.50s., eSSS = +38m.50s.
Uccle ePP = +19m.16s., PS = +28m.50s., SS = +35m.15s., SSS = +38m.53s.
Stonyhurst e = +35m.20s. ?
Rathfarnham Castle e = +18m.52s. = PKP + 21s. and +21m.12s., eS = +27m.3s. = SKKS + 25s., e = +35m.30s. = SS + 12s.
Florissant ipPP = +20m.10s., iPSE = +29m.10s., iPPSE = +30m.16s., iSSN = +35m.16s.; T_o = 6h.17m.40s.
Chicago ePS = +28m.53s., e = +30m.23s., eSS = +35m.35s.
St. Louis epPPE = +20m.9s., ePPSE = +30m.15s.; T_o = 6h.17m.40s.
Ann Arbor eN = +30m.8s. and +53m.44s., eE = +54m.32s.
Toronto e = +24m.44s. = PPPP + 37s., i = +29m.10s. = PS − 38s. and +31m.33s.
Ottawa eE = +24m.20s. = PPPP + 8s.
Cape Town SKSN = +28m.24s., N = +30m.0s. = SKSP + 6s., E = +30m.10s. = PS + 8s., SSE = +35m.54s., N = +36m.46s. = SS + 14s., E = +37m.10s., SSSN = +39m.32s., SSSE = +40m.25s.
Vermont ePS = +30m.14s., e = +49m.38s.
Charlottesville e = +47m.20s.
Oak Ridge PPZ = +20m.37s., eL = +30m.8s. = PS − 23s.
Philadelphia eSS = +36m.56s.
Columbia e = +28m.36s.
Granada PP = +21m.12s., pPKP = +19m.46s.
Malaga e = +23m.47s. = PPP + 20s., S = +28m.23s. = SKKS + 26s., e = +38m.1s. = SS + 9s. and +42m.53s.
San Fernando ePS = +30m.32s. = SKSP − 20s., eSSS = +38m.19s. = SS + 12s.
San Juan ePP = +22m.58s., e = +25m.38s. = PPP − 11s. and +29m.1s., eSS = +41m.18s., eSSS = +48m.18s.
Huancayo iPPP = +26m.10s., iSS = +42m.10s., e = +46m.3s.
La Plata pPKPE = +20m.20s., pPKPN = +20m.26s., sPE = +20m.32s., sPN = +20m.44s.; T_o = 6h.17m.43s.
La Paz isPE = +21m.43s., isPZ = +22m.4s., SKS?Z = +26m.4s., SS = +44m.4s.
Long waves at Durham.

Sept. 9d. 9h. Shock near Apia. The only recorded observations apart from those of Apia are P recorded in California, and PKP recorded in Europe.

Apia P = 1m.41s., P* = 1m.48s., P_g = 1m.53s., S = 2m.3s., S* = 2m.14s., S_g = 2m.24s.
Santa Barbara iPZ = 12m.12s.
La Jolla iP = 12m.14s.
Berkeley iPZ = 12m.16s.
Pasadena iP = 12m.16s.
Mount Wilson iP = 12m.18s.
Riverside iP = 12m.18s.
Haiwee iPZ = 12m.25s.
Tinemaha eP = 12m.27s.
Triest e = 20m.8s., i = 20m.56s.
De Bilt iZ = 20m.29s. and 20m.57s.
Stuttgart ePKP = 20m.32s.
Uccle i = 20m.32s. and 20m.43s.
Strasbourg ePKP = 20m.36s., e = 20m.58s., i = 21m.7s.
Vienna eP = 20m.37s.
Ksara iP = 20m.39s., i = 21m.35s.
Zagreb e = 20m.39s.
Basle eP = 20m.42s.
Zurich eP = 20m.42s.
Chur eP = 20m.44s.

Sept. 9d. Readings also at 0h. (Tiflis), 3h. (La Paz and San Fernando), 4h. (near Berkeley, Branner, and Lick), 5h. (Samarkand and La Paz), 9h. (Nagasaki), 10h. (Nagoya), 13h. (Mount Wilson, Pasadena, and Riverside), 14h. (La Paz), 15h. (Haiwee, Mount Wilson, Pasadena, Riverside, Tinemaha, La Plata, near Santiago, and near Sumoto), 16h. (Andijan, Frunse, and Samarkand), 17h. (Andijan and Nanking), 19h. (Wellington), 21h. (Medan and Mizusawa).

Sept. 10d. 6h. 30m. 16s. (I)
7h. 5m. 28s. (II)
7h. 34m. 56s. (III)
} Epicentre 18°·0N. 107°·0W. (as on 1935 April 1d.) X. X. X.

A = −·278, B = −·909, C = +·309; D = −·956, E = +·292; G = −·090, H = −·296, K = −·951.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Manzanillo	E.	2·7	67	2 8	?	—	—	—	—
I Tucson		14·7	347	e 3 22	− 3	e 6 16	+ 8	e 7·2	—
II		14·7	347	e 3 24	− 1	e 5 46	−22	e 7·3	—
III		14·7	347	e 3 36	+11	—	—	e 7·2	—
I La Jolla	N.	17·5	330	e 4 3	+ 3	—	—	—	—
II	N.	17·5	330	e 4 1	+ 1	—	—	—	—
I Riverside	Z.	18·5	332	i 4 14	+ 1	—	—	—	—
II		18·5	332	i 4 13	0	—	—	—	—
III		18·5	332	i 4 13	0	—	—	—	—
I Pasadena		18·9	330	e 4 20	+ 3	e 7 31	−13	i 9·2	—
II		18·9	330	i 4 21	+ 4	e 8 8	SS	e 9·2	—
III		18·9	330	e 4 20	+ 3	—	—	e 9·1	—
I Mount Wilson		18·9	331	i 4 20	+ 3	—	—	—	—
II		18·9	331	i 4 19	+ 2	—	—	—	—
	Z.	18·9	331	e 4 19	+ 2	—	—	—	—
I Haiwee	Z.	20·6	335	e 4 41	+ 5	—	—	—	—
I Tinemaha		21·5	335	e 4 47	+ 2	—	—	—	—
II		21·5	335	e 4 46	+ 1	—	—	—	—
III		21·5	335	e 4 48	+ 3	—	—	—	—
I Florissant		25·3	31	i 5 21a	− 2	e 9 50	+ 4	e 12·8	14·0
II		25·3	31	e 5 21	− 2	e 9 50	+ 4	e 12·8	13·5
III		25·3	31	e 5 21	− 2	e 9 50	+ 4	e 12·8	13·4
I St. Louis		25·3	32	e 5 20	− 3	e 9 47	+ 1	e 13·4	—
II		25·3	32	e 5 19	− 4	e 9 50	+ 4	13·2	—
III		25·3	32	e 5 17	− 6	e 9 49	+ 3	e 13·7	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Ukiah	25·4	330	—	—	e 10 58	SS	e 13·0	—
II	25·4	330	—	—	e 10 8	+20	e 13·1	—
II Bozeman	27·8	354	—	—	e 10 37	+ 9	e 14·4	—
I Ann Arbor	31·3	34	—	—	e 12 44	SS	e 17·5	—
II	31·3	34	—	—	e 14 2	?	e 16·7	—
III	31·3	34	—	—	e 13 10	SS	e 16·9	—
I Toronto	34·6	36	—	—	e 13 3	+48	18·2	—
I Huancayo	43·4	131	e 9 59	(+ 6)	e 14 44	+17	e 21·6	—
II	43·4	131	—	—	e 14 42	+15	e 20·4	—
I Sitka	44·4	338	—	—	e 14 47	+ 6	e 23·1	—
II	44·4	338	—	—	e 14 43	+ 2	e 24·7	—

Additional readings :—
Tucson I e = +3m.56s.
St. Louis I ePPN = +5m.35s.
Ann Arbor I eE = +14m.2s., eN = +14m.56s., II e?E = +16m.38s.
Toronto I e = +15m.17s.
Huancayo I eSS = +18m.29s., II e = +16m.6s., eSS = +17m.47s., eSSS = +18m.25s., e = +19m.46s.
Long waves for one or other of the three shocks were also recorded at Chicago, Columbia, Bozeman, Oak Ridge, Honolulu, Philadelphia, La Paz, Scoresby Sund, Pulkovo, and Tashkent.

Sept. 10d. Readings also at 0h. (Nagoya), 1h. (Sumoto, near Hukuoka B, and Nagasaki), 2h. (Andijan), 3h. (near Nagoya (3)), 4h. (Nagoya), 5h. (near Andijan), 6h. (Berkeley (2)), 7h. (Apia), 11h. (Apia, Mount Wilson, Pasadena, Riverside, Tinemaha, Sydney, and Wellington), 12h. (Ksara (2) and near Nagoya), 14h. (Manila, Nanking, Vladivostok, Hukuoka B, Hong Kong, and near Sumoto (2)), 15h. (Tashkent, Tainan, near Kosyun, near San Javier, and near Santiago), 16h. (Apia and Oak Ridge), 17h. (La Jolla, Mount Wilson, Pasadena, Riverside, and Tinemaha), 19h. (Wellington), 23h. (Sumoto, near Lick, and Berkeley).

Sept. 11d. 11h. 45m. 37s. Epicentre 29°·0S. 178°·0W. (as on 1935 Mar. 29d.) R.3.

A = −·874, B = −·030, C = −·485 ; D = −·035, E = +·999 ;
G = +·485, H = +·017, K = −·875.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		10·5	209	2 44?	+16	4 11	−15	i 5·8	—
Wellington		13·6	205	4 48	?	6 31	S*	7·4	—
Chatham Ils.		15·0	176	e 3 29	+ 1	i 6 11	− 4	—	—
Apia		16·3	22	e 3 54	PP	e 7 14	+29	—	—
Riverview		26·6	252	e 5 36	+ 1	i 10 11	+ 2	e 13·6	16·4
Sydney		26·6	252	e 2 11	?	—	—	13·4	16·6
Melbourne		31·9	244	e 6 15	− 7	i 11 46	+12	15·9	18·2
Adelaide		37·0	250	e 10 25	?	e 12 42	− 9	18·8	22·2
Honolulu		54·0	23	—	—	e 17 3	+ 7	e 23·4	—
Manila		73·3	298	i 11 26a	− 5	i 21 6	+ 6	35·4	41·7
Hong Kong		83·0	300	12 33	+10	22 53	+ 6	—	43·7
La Jolla	z.	84·6	47	i 12 31	0	—	—	—	—
Berkeley		84·7	41	i 11 31	−61	(e 23 13)	[+16]	e 38·5	—
Pasadena		84·7	46	i 12 29	− 3	—	—	e 35·9	—
Mount Wilson	z.	84·9	46	i 12 30	− 3	—	—	—	—
Ukiah		85·1	39	—	—	e 22 59	[− 1]	e 35·8	—
Vladivostok		85·4	325	e 12 25	−10	—	—	—	51·9
Nanking		85·6	310	e 12 49	+13	23 5	[+ 2]	—	—
Haiwee	z.	86·2	44	e 12 37	− 2	—	—	—	—
Tinemaha		86·6	43	e 12 39	− 2	e 23 27	+ 4	—	—
Tucson		88·4	51	—	—	e 23 23	[0]	e 42·7	—
Chiufeng		92·2	315	e 13 6	− 2	23 41	[− 5]	—	—
Huancayo		95·0	106	e 13 36	+16	i 23 43	[−18]	e 43·2	—
La Paz		98·5	114	—	—	i 24 5	[−13]	48·9	53·1
Colombo		104·0	270	24 29	SKS	(24 29)	[−16]	—	66·0

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Agra	114·1	288	—	—	e 25 18	[−12]	—	—
Cape Town	115·2	195	34 25	SS	—	—	61·2	—
San Juan	117·5	82	19 53	PP	e 25 23	[−19]	e 55·9	—
Ottawa	118·5	51	—	—	e 27 59	?	e 61·4	—
Vermont	120·0	53	—	—	(e 36 35)	SS	e 43·7	—
Tashkent	125·0	301	e 18 47	[−10]	e 26 4	[− 1]	e 55·6	83·0
Baku	139·5	299	e 19 18	[− 3]	e 26 22	SKS	56·4	—
Grozny	142·4	304	19 30	[+ 5]	—	—	—	—
Tiflis	143·3	302	i 19 24	[− 5]	—	—	78·4	97·6
Erevan	143·7	299	20 8	[+38]	—	—	—	—
Pulkovo	143·8	336	i 19 28	[− 3]	—	—	78·4	81·3
Sotchi	146·6	307	19 43	[+ 6]	—	—	—	—
Simferopol	150·1	312	e 19 42	[0]	—	—	—	—
Yalta	150·2	309	e 19 46	[+ 4]	—	—	—	—
Ksara	150·8	288	e 19 29	[−14]	—	—	73·6	114·4
Copenhagen	152·3	348	19 57	[+12]	—	—	74·4	—
De Bilt	156·8	355	e 23 53	PP	e 44 11	SS	e 86·4	118·0
Stuttgart	159·5	346	e 20 23	[+30]	e 31 29	{+13}	e 91·4	109·4
Granada	170·6	29	—	—.	e 33 53	{+98}	89·2	102·5

Additional readings and note :—
Wellington PP = +5m.44s. = S + 3s., P_cP = +9m.42s., i = +10m.28s., P_cS? = +13m.17s., S_cS? = +17m.4s.
Melbourne i = +7m.32s.
Adelaide iS? = +15m.35s., i = +17m.17s. = S_cS − 7s.
Hong Kong PP? = +15m.38s.
Berkeley S and L are given as ePN and eN of a subsequent shock.
Ukiah eS = +23m.15s., eSS = +28m.50s.
Tucson e = +36m.23s.
Chiufeng iS = +24m.30s.
Huancayo ePP = +18m.6s., eS = +24m.23s. = SKKS + 8s., ePS = +25m.13s., e = +26m.58s., eSS = +30m.47s., e ≒ +37m.31s.
La Paz iE = +26m.13s. = PS − 16s.
San Juan ePPP = +23m.49s., e = +33m.23s. and +44m.23s.
Ottawa eE = +36m.23s.
Tashkent e = +20m.39s. = PP − 5s., +22m.9s., +27m.43s. = SKKS − 6s., +37m.41s. = SS + 4s., +39m.11s., and +50m.17s.
Baku i = +23m.8s. = PKS + 0s., e = +29m.12s. = SKKS − 9s. and +41m.28s.
Ksara i = +19m.59s. = PKP_2 − 3s., iPP = +23m.23s., PSKS = +33m.53s.
Stuttgart eSKSPZ = +35m.41s. ; T_0 = 11h.45m.18s.
Granada e = +50m.34s.
Long waves were also recorded at Perth, Christchurch, Kodaikanal, Bombay, Tananarive, Scoresby Sund, Algiers, Charlottesville, Philadelphia, and at other European stations.

Sept. 11d. 13h. 24m. 11s. Epicentre 24°·0N. 123°·0E. (as on 1933 Dec. 30d.). X.

A = −·498, B = +·766, C = +·407 ; D = +·839, E = +·545 ;
G = −·224, H = +·341, K = −·913.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	M. m.
Karenko	1·3	269	i 0 18	0	0 45	+12	—
Taiboku	1·7	308	0 26	+ 2	0 43	− 1	0·8
Arisan	2·1	256	0 37	P_g	—	—	—
Taito	2·1	234	0 28	− 2	0 54	0	—
Taityu	2·1	274	0 30	0	0 50	− 4	—
Tainan	2·8	249	e 0 46	P*	—	—	—
Kosyun	2·9	226	e 0 44	+ 3	1 1	−13	—
Nanking	8·9	336	—	—	e 4 31	S_g	—

Sept. 11d. 14h. 4m. 6s. Epicentre 43°·6N. 146°·0E. (as on 1931 April 9d.). R.1.

Residuals suggest a more accurate determination using epicentre 43°·6N. 146°·6E., $T_0 = 14h.4m.2s.$

$A = -·600$, $B = +·405$, $C = +·690$; $D = +·559$, $E = +·829$; $G = -·572$, $H = +·386$, $K = -·724$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nemuro	0·4	227	0 15	+ 9	0 26	+16	—	—
Kusiro	1·3	242	0 7	−11	0 16	−17	—	—
Obihiro	2·2	251	0 37	P_g	—	—	—	—
Asahigawa	2·6	275	0 53	+16	1 25	+18	—	—
Urakawa	2·8	238	0 43	+ 3	1 16	+ 4	—	—
Haboro	3·2	284	0 25	−21	—	—	—	—
Sapporo	3·4	262	0 59	P_g	1 41	S*	—	—
Muroran	3·9	252	1 3	P*	1 51	S*	—	—
Tanabe	4·2	238	1 0	0	1 42	− 6	—	—
Hakodate	4·3	246	1 6	+ 5	1 45	− 5	—	—
Aomori	4·8	237	1 11	+ 3	2 6	+ 3	—	—
Miyako	5·0	218	1 24	P*	2 15	+ 7	—	—
Morioka	5·3	225	1 17	+ 2	2 15	0	—	—
Mizusawa	5·8	221	i 1 24	+ 2	i 2 23	− 5	—	—
Akita	5·9	231	1 28	+ 4	3 6	S_g	—	—
Sikka	6·0	341	1 29	+ 4	2 32	− 1	—	—
Isinomaki	6·2	216	1 28	0	2 31	− 7	—	—
Sendai	6·6	218	1 32	− 2	2 43	− 5	—	—
Hukusima	7·2	217	1 40	− 2	2 58	− 6	—	—
Mito	8·4	212	1 57	− 2	3 22	−12	—	—
Utunomiya	8·5	216	1 56	− 4	3 28	− 8	—	—
Kakioka	8·6	213	1 57	− 5	3 30	− 9	—	—
Tukubasan	8·7	214	1 59	− 4	3 30	−11	—	—
Tyosi	8·8	208	2 4	− 1	3 36	− 8	—	—
Maebasi	9·0	218	2 7	0	3 47	− 2	—	—
Nagano	9·2	223	2 12	+ 2	3 59	+ 5	—	—
Wazima	9·3	231	2 13	+ 2	3 53	− 3	—	—
Tokyo	9·3	213	2 8	− 3	3 46	−10	—	6·3
Yokohama	9·5	213	2 13	− 1	3 51	−10	—	—
Toyama	9·7	227	2 20	+ 3	3 52	−14	—	—
Hunatu	9·8	217	2 21	+ 3	4 9	+ 1	—	—
Kohu	9·8	218	2 19	+ 1	3 59	− 9	—	—
Mera	9·9	211	2 20	+ 1	4 2	− 9	—	—
Numadu	10·1	215	2 24	+ 2	—	—	—	—
Misima	10·1	215	2 25	+ 3	4 8	− 8	—	—
Vladivostok	10·2	272	i 2 20	− 4	e 4 19	+ 1	e 7·2	19·2
Omaesaki	10·8	216	2 38	+ 6	4 31	− 2	—	—
Gihu	10·8	224	2 33	+ 1	4 23	−10	—	—
Hamamatu	10·9	219	2 35	+ 2	4 20	−16	—	—
Nagoya	10·9	223	2 36	+ 3	4 48	+12	—	5·6
Hikone	11·3	225	2 39	0	4 48	+ 3	—	—
Kameyama	11·4	223	2 40	0	4 36	−12	—	—
Hatidyozima	11·5	207	2 45	+ 3	4 38	−12	—	—
Kyoto	11·7	226	2 45	+ 1	5 5	+10	—	—
Toyooka	11·8	231	e 2 47k	+ 1	4 54	− 4	5·9	7·2
Osaka	12·0	226	2 49	+ 1	5 3	0	—	—
Kobe	12·2	227	2 52	+ 1	5 12	+ 4	6·3	7·1
Wakayama	12·6	226	2 55	− 1	5 24	+ 7	—	—
Sumoto	12·7	227	2 58k	0	5 25	+ 5	6·8	7·9
Siomisaki	12·9	221	2 57	− 4	5 57	+32	—	—
Hamada	13·8	235	3 14	+ 1	5 50	+ 4	—	—
Hirosima	14·0	233	3 15	0	6 48	S*	—	—
Matuyama	14·2	231	3 15	− 3	6 18	+22	—	—
Sinkyo	14·9	278	3 55	+28	6 43	+30	—	—
Taikyu	15·4	246	3 33	− 1	6 30	+ 6	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Husan		15·6	243	i 3 38k	+ 2	6 59	+30	e 8·0	—
Hukuoka		15·7	236	3 39	+ 1	6 51	+20	—	9·0
Hukuoka B		15·7	236	3 38	0	6 56	+25	—	8·9
Heizyo		15·8	260	i 3 43	+ 4	i 6 55	+21	—	—
Zinsen		15·9	254	i 3 42a	+ 2	i 6 52	+16	e 7·8	10·8
Kumamoto		16·1	233	3 44	+ 1	6 52	+11	—	—
Fengtien		16·7	271	4 7	+17	8 4	+69	—	—
Nagasaki		16·7	235	e 3 50	0	7 5	+10	—	8·7
Titizima		16·8	192	3 49	− 3	6 32	−26	—	—
Kagosima		17·1	230	3 57	+ 2	6 59	− 5	—	—
Tomie		17·4	237	3 59	0	7 24	+13	—	—
Yingkow		17·8	269	4 10	+ 6	7 30	+10	—	—
Dairen		18·9	264	4 23	+ 6	7 53	+ 9	—	—
Nake		20·1	226	4 32	+ 1	8 15	+ 7	—	—
Chiufeng		22·4	271	i 4 59	+ 4	i 9 4	+11	10·7	—
Naha		22·9	227	5 11	+11	9 18	+15	—	—
Zi-ka-wei		23·0	246	i 5 4a	+ 3	9 13	+ 8	12·5	25·5
Nanking		24·2	251	i 5 16	+ 4	i 9 32	+ 5	12·5	14·3
Isigakizima		26·3	230	5 27	− 5	10 18	+15	—	—
Taihoku		27·3	235	5 49	+ 8	i 10 36	+16	15·2	16·9
Karenko		28·0	234	e 5 56	+ 9	10 45	+13	—	—
Taityu		28·4	235	e 6 19	+28	11 13	+35	—	—
Arisan		28·8	235	6 6	+12	—	—	—	—
Taito		29·2	234	e 6 2	+ 4	10 50	− 1	—	—
Tainan		29·5	235	6 2	+ 1	—	—	—	—
Takao		29·8	235	(e 6 6)	+ 3	(11 9)	+ 8	—	—
Kosyun		30·0	234	e 6 5	0	10 29	−35	—	—
Hong Kong		33·8	240	6 39k	0	12 4	+ 1	15·8	19·4
Manila		36·0	225	i 6 57a	− 1	i 12 32	− 4	17·4	—
Palau		37·6	199	7 6	− 6	12 55	− 5	—	—
Phu-Lien		39·8	249	7 32	+ 2	e 13 28	− 5	16·9	27·0
Semipalatinsk		43·8	303	i 8 6	+ 3	e 14 37	+ 4	—	—
Sitka		49·0	45	i 8 43	− 1	i 15 48	+ 1	i 22·9	—
Amboina		49·9	202	8 49	− 2	15 59	0	e 22·9	—
Frunse		50·3	295	8 55	+ 1	i 16 9	+ 4	e 30·9	—
Honolulu		51·3	96	e 8 54a	− 7	i 16 12	− 7	22·4	—
Calcutta		51·5	267	9 5	+ 2	16 27	+ 5	24·7	33·9
Andijan		52·7	295	9 16	+ 4	i 16 45	+ 7	25·9	—
Tchimkent		53·8	297	9 23	+ 3	16 58	+ 5	—	—
Dehra Dun		54·3	280	9 24	+ 1	17 14	+15	—	36·9
Agra		56·2	277	9 38	+ 1	i 17 25	0	e 26·8	—
Samarkand		56·9	295	9 45	+ 3	17 36	+ 1	—	—
Medan		57·8	241	9 50	+ 1	e 17 21	−26	e 25·9	—
Victoria		59·3	50	i 9 52	− 8	i 18 1	− 6	i 24·7	25·5
Seattle		60·3	50	e 10 33	+26	i 18 29	+ 9	e 29·4	—
Batavia		61·1	226	10 5	− 7	18 25	− 5	e 30·9	—
Hyderabad		61·9	270	10 9	− 9	18 39	− 2	28·6	36·1
Ferndale	E.	63·2	59	e 10 27	0	—	—	—	—
Moscow		63·8	323	i 10 29	− 2	19 0	− 5	23·0	38·0
Pulkovo		64·0	330	i 10 32	0	i 19 7	0	28·9	36·4
Ukiah		64·7	59	i 10 32	− 5	i 19 12	− 4	26·3	—
Bombay		65·0	275	i 10 36	− 3	i 19 19	− 1	31·9	42·2
Scoresby Sund		65·6	356	i 10 41	− 1	i 19 26	− 1	—	—
Saskatoon		65·7	40	i 10 20	−23	e 19 0	−29	—	—
Berkeley		66·0	60	e 10 41	− 4	i 19 30	− 2	—	—
Branner	N.	66·4	60	e 10 52	+ 4	—	—	—	—
Lick	N.	66·8	60	e 10 46	− 5	e 19 37	− 5	—	—
Baku		67·2	305	i 10 54	+ 1	i 19 53	+ 6	—	—
Kodaikanal		67·5	263	i 10 52	− 3	i 19 48	− 3	31·6	46·9
Bozeman		67·7	47	i 10 52a	− 4	i 19 45	− 8	e 26·1	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Grozny		67·7	309	10 58	+ 2	i 19 55	+ 2	—	—
Colombo		68·1	260	10 55	− 4	19 51	− 7	29·8	49·7
Upsala		68·2	335	i 10 58	− 1	i 19 55	− 4	e 31·9	46·3
Piatigorsk		68·7	311	10 58	− 5	20 4	− 1	e 27·8	—
Tinemaha		69·0	58	i 11 0	− 5	i 19 59	−10	—	—
Apia		69·1	135	10 55	−10	19 49	−21	—	—
Tiflis		69·3	308	i 11 7	+ 1	i 20 13	0	31·5	48·6
Santa Barbara		69·8	60	i 11 4	− 5	e 20 12	− 7	—	—
Haiwee	z.	69·8	59	i 11 4	− 5	e 20 30	+11	—	—
Erevan		70·5	307	11 16	+ 2	20 32	+ 5	e 34·4	—
Sotchi		70·8	313	11 23	+ 7	20 38	+ 7	—	—
Mount Wilson		71·0	60	i 11 11	− 6	i 20 23	−10	—	—
Pasadena		71·0	60	i 11 10	− 7	i 20 22	−11	i 32·5	—
Königsberg		71·2	330	i 11 18	0	i 20 32	− 3	e 33·2	36·1
Bergen		71·2	341	i 11 15	− 3	i 20 35	0	e 38·9	—
Riverside		71·6	60	i 11 14	− 6	i 20 30	−10	—	—
Reykjavik		71·8	355	11 22	0	20 42	− 1	—	—
La Jolla		72·4	61	e 11 17	− 8	i 20 35	−15	—	—
Simferopol		72·7	317	i 11 26	− 1	i 20 51	− 2	e 49·4	—
Yalta		73·0	317	i 11 28	− 1	20 56	− 1	45·9	—
Copenhagen		73·2	334	i 11 29	− 1	20 57	− 2	30·9	—
Sebastopol		73·3	317	i 11 31	0	20 59	− 1	—	—
Lemberg		73·8	325	e 11 41	+ 8	e 21 11	+ 5	e 33·9	47·9
Denver		75·0	49	e 11 34	− 6	i 21 4	−16	—	e 41·6
Hamburg		75·8	335	i 11 45a	0	i 21 28	− 1	e 33·9	47·9
Tucson		76·8	57	i 11 46	− 4	i 21 32	− 9	e 35·4	—
Leipzig		76·9	332	i 11 51	0	i 21 33	− 9	e 33·9	39·4
Edinburgh		77·2	343	i 11 52	− 1	i 21 41	− 4	33·9	50·1
Prague		77·3	330	i 11 53	− 1	i 21 41	− 5	e 33·9	48·9
Jena		77·5	332	e 11 54	− 1	i 21 42	− 6	e 35·9	55·4
Göttingen		77·5	334	i 11 52a	− 3	i 21 53	+ 5	e 31·9	50·4
Riverview		77·6	175	e 11 48	− 7	e 21 30	−19	e 32·6	40·2
Sydney		77·6	175	e 13 32	?	i 21 30	−19	32·4	41·9
Budapest		77·6	326	i 12 3	+ 8	i 21 52	+ 3	e 31·4	48·9
Durham		77·8	341	i 11 55	− 2	i 21 49	− 3	—	42·9
Hof		78·0	331	e 11 54	− 3	e 21 48	− 6	e 35·4	38·9
Vienna		78·0	329	i 11 58a	+ 1	i 21 51	− 3	e 33·1	48·9
Cheb		78·0	330	e 11 56	− 1	i 21 49	− 5	e 33·9	49·9
De Bilt		78·5	337	i 11 59a	− 1	i 21 56	− 3	e 35·9	41·6
Stonyhurst		78·8	340	i 12 2	+ 1	i 22 1	− 2	34·9	42·4
Adelaide		78·9	186	e 11 56	− 6	i 21 45	−19	i 35·2	42·4
Belgrade		79·2	324	i 12 3	− 1	22 2	− 5	44·8	50·5
Bidston		79·4	341	i 12 5	0	i 22 7	− 2	e 37·9	52·9
Des Moines		79·4	41	e 11 54	−11	i 21 53	−16	—	—
Graz		79·4	328	i 11 54	−11	i 22 4	− 5	e 38·9	49·1
Sofia		79·6	321	i 12 6	0	i 22 9	− 2	43·2	49·9
Ksara		79·8	309	i 12 6a	− 1	i 22 12	− 2	36·9	—
Uccle		79·9	337	i 12 6a	− 1	i 22 8	− 7	e 35·9	51·2
Stuttgart		80·2	332	i 12 8a	− 1	i 22 13	− 5	e 36·9	49·5
Zagreb		80·2	326	e 12 8a	− 1	e 22 13	− 5	e 37·9	50·0
Rathfarnham Castle		80·2	343	i 12 8	− 1	i 22 13	− 5	—	45·9
Karlsruhe		80·2	333	i 12 8	− 1	i 22 15	− 3	43·2	51·5
Lille		80·4	337	i 12 10	0	i 22 14	− 6	29·9	—
Kew		80·5	340	i 12 10a	0	i 22 18	− 3	36·0	46·5
Oxford		80·5	341	i 12 10	0	i 22 19	− 2	e 35·9	45·7
Strasbourg		80·8	333	i 12 14k	+ 2	i 22 20	− 4	e 34·9	53·6
Triest		81·2	328	i 12 12a	− 2	i 22 20	− 8	e 35·4	49·4
Melbourne		81·4	181	e 12 11	− 4	i 22 41	+10	36·9	47·2
Zurich		81·6	332	e 12 15a	− 1	e 22 29	− 4	—	—
Chur		81·7	332	e 12 17	0	e 22 29	− 5	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Basle	81·8	332	e 12 17	0	e 22 29	− 6	—	—
Chicago	81·9	38	i 12 17a	− 1	i 22 27	− 9	37·9	—
Padova	82·1	329	i 12 20	+ 1	i 22 32	− 6	—	55·4
Paris	82·2	337	i 12 18	− 1	i 22 32	− 7	37·9	52·9
Neuchatel	82·4	334	e 12 20	0	e 22 35	[− 4]	—	—
Florissant	83·1	40	i 12 20a	− 4	—	—	i 37·9	44·1
Piacenza	83·2	330	12 22a	− 2	i 22 44	[− 1]	38·6	52·2
Ann Arbor	83·2	35	i 12 30	+ 6	i 22 48	− 1	e 39·9	53·8
St. Louis	83·3	40	i 12 21	− 4	i 22 38	[− 8]	37·9	43·3
Ottawa	83·6	27	i 12 22	− 4	i 22 40	[− 8]	e 36·9	—
Prato	83·7	329	i 12 26	− 1	i 22 46	[− 3]	e 32·1	42·9
Florence	83·7	329	12 27	0	i 22 48	[− 1]	31·9	38·9
Toronto	83·8	31	i 12 24	− 3	i 22 39	[−11]	39·6	—
Vermont	85·2	27	i 12 33	− 1	i 23 0	[− 1]	39·8	—
Helwan	85·4	308	i 12 31	− 4	i 23 4	[+ 2]	41·3	56·7
Arapuni	86·0	157	—	—	23 15	− 3	40·9	44·9
Messina	86·7	323	11 41	−61	22 11	[−60]	—	—
Pennsylvania	86·8	32	i 12 38	− 4	i 23 4	[− 8]	e 41·7	55·9
Oak Ridge	87·5	27	i 12 43	− 2	e 23 6	[−11]	41·7	—
Philadelphia	88·6	30	i 12 47	− 4	i 23 11	[−13]	38·9	—
Wellington	88·8	159	12 53	+ 1	23 2	[−23]	40·9	44·9
Charlottesville	89·0	33	i 12 50k	− 3	i 22 54	[−32]	e 38·2	—
Tortosa	90·0	334	i 12 55	− 2	23 22	[−11]	40·2	60·6
Tunis	90·2	325	i 13 6	+ 8	i 23 48	−10	40·9	—
Columbia	91·4	37	e 13 1	− 3	e 23 21	[−20]	e 39·7	—
Serra do Pilar	92·2	341	13 7	− 1	i 24 2	−15	41·5	—
Toledo	92·3	337	i 13 7	− 1	i 24 11	− 6	43·4	55·4
Alicante	92·6	335	i 13 9	0	e 23 43	[− 5]	e 42·4	59·2
Algiers	92·8	331	e 13 6	− 4	i 23 52	{− 5}	43·9	49·9
Chatham Ils.	93·7	155	—	—	22 54	[−60]	45·9	—
Almeria	94·6	335	i 13 25	+ 6	i 23 57	[− 2]	e 45·6	63·0
Granada	94·6	336	i 13 8k	−11	23 36	[−23]	45·9	55·8
Malaga	95·3	337	13 23	+ 1	23 49	[−13]	44·8	—
San Fernando	96·0	337	13 22a	− 3	24 4	[− 2]	50·4	—
Port au Prince	108·6	38	e 18 44	PP	e 28 9	PS	—	—
Tananarive	108·9	262	—	—	25 4	[− 4]	56·9	63·9
San Juan	111·3	33	e 14 27	−10	—	—	e 45·6	—
Huancayo	132·5	61	i 19 12	[+ 1]	i 28 11	{−26}	54·6	—
Cape Town	138·7	266	20 24	[+64]	26 28	[+ 2]	65·9	83·2
La Paz	140·4	58	i 19 17k	[− 5]	i 26 10	SKS	67·8	80·5
Sucre	144·1	57	19 29	[− 3]	26 29	SKS	68·9	—
Santiago	149·9	83	e 19 45	[+ 3]	—	—	—	—
La Plata E.	159·6	72	20 13	[+20]	30 42	{−34}	74·2R	76·0
N.	159·6	72	19 48	[− 5]	31 18	{+ 2}	56·9q	59·7
Z.	159·6	72	19 51	[− 2]	—	—	69·9R	91·9

Additional readings note :—
Nagoya PP = +2m.54s. and +3m.31s.
Toyooka SZ = +4m.57s.
Kobe iE = +3m.2s., iN = +3m.9s., iE = +3m.25s., iN = +3m.29s., iZ = +5m.28s.
Sumoto SE = +5m.30s., SZ = +5m.36s.
Husan PP = +3m.57s., S_0S = +15m.47s.
Hukuoka iE = +3m.48s.
Zinsen i = +3m.53s.
Nagasaki iP = +3m.59s.
Chiufeng pPE = +5m.37s., iN = +6m.8s.
Zi-ka-wei iZ = +5m.8s., iE = +5m.18s., PPE = +5m.33s., PPPE = +5m.44s., PPPPE = +5m.49s., iE = +6m.16s., iZ = +7m.17s., PSZ = +9m.24s., iN = +9m.50s., SSZ = +10m.19s., SSSZ = +10m.41s.
Nanking pP = +5m.40s. =PP +1, sSN = +9m.52s., isSE = +10m.0s.
Takao readings have been *increased* by 2m.
Hong Kong ? = +7m.0s., PP = +7m.34s., ? = +8m.13s.
Sitka i = +8m.54s., iP_0P = +9m.40s., i = +10m.25s. =PP − 5s., +10m.34s., +13m.6s. and +13m.54s., iSS = +18m.26s. =S_0S −12s.
Honolulu iP = +8m.58s., i = +9m.13s., e = +10m.37s., iPP = +11m.18s., i = +13m.22s., iS = +15m.54s., eS_0S = +18m.24s., eSS = +19m.54s.

Continued on next page.

Agra PPPE = +12m.43s., PSN = +17m.59s., SSE = +21m.16s., SSSE = +23m.1s.
Seattle eP_cP = +11m.5s., e = +20m.28s., eSSS = +25m.5s.
Ukiah iPP = +13m.9s., e = +15m.2s., i = +19m.32s. = PS + 6s., eSS = +23m.2s.
Bombay PSEN = +19m.51s., SSEN = +23m.36s., SSSE = +25m.51s.
Scoresby Sund +12m.54s., PPP = +15m.11s., eSEZ = +19m.26s., +24m.0s., SSS = +27m.36s.
Berkeley iPEN = +10m.43s., iZ = +10m.55s. and +13m.11s. = PP + 8s., eEN = +19m.27s., eZ = +19m.33s., eE = +29m.13s., eZ = +39m.11s.
Branner iN = +10m.54s.
Lick iPN = +10m.49s., eN = +27m.48s.
Kodaikanal PP = +13m.17s., PPP = +14m.35s., PS = +20m.16s., SS = +24m.15s., SSS = +26m.39s.
Bozeman ePP = +13m.14s., i = +20m.14s. = PS + 7s., eSS = +24m.4s.
Piatigorsk i = +11m.24s. = P_cP − 4s.
Tinemaha ePKP, PKPZ = +39m.7s.
Tiflis P_cP = +11m.41s., PPP = +15m.29s., SS = +25m.7s., SSS = +28m.15s.
Haiwee ePKP, PKPZ = +39m.8s.
Mount Wilson iPKP, PKPZ = +38m.57s.
Pasadena iE = +20m.50s. = PS − 2s., eN = +28m.24s., iPKP, PKPZ = +39m.0s.
Königsberg i = +11m.33s., iP_cP = +11m.45s., iPP = +13m.53s., iPPP = +15m.25s., iPS = +21m.4s., i = +21m.16s. and +21m.40s., e = +22m.28s., eSSN = +25m.20s., eE = +26m.18s., iN = +26m.23s., eN = +26m.56s., SSSE = +27m.41s., eE = +29m.36s.
Riverside ePKP, PKPZ = +38m.52s.
La Jolla ePKP, PKPE = +38m.55s.
Copenhagen iZ = +11m.42s., PP = +14m.10s., PPP = +15m.56s., PPPP = +17m.2s., eN = +24m.24s., e = +26m.54s.?
Denver epPEN = +11m.48s., ePPE = +14m.19s., isSEN = +21m.34s., iSSE = +25m.59s., eSSN = +26m.3s., eSSSE = +28m.47s., eSSSN = +28m.55s., eSSSSE = +30m.3s. ; T_0 = 14h.4m.12s.
Hamburg iPSE = +21m.58s., eSSS = +30m.18s.
Tucson i = +12m.6s., e = +31m.54s.
Leipzig iN = +12m.46s., eN = +14m.0s., +15m.26s., and +16m.26s. = PPP + 9s., iPS = +21m.54s., eN = +27m.24s.
Edinburgh i = +14m.37s. = PP − 3s., +15m.48s., +19m.6s., +22m.4s. = PS − 9s., and +31m.45s. = SSSS + 13s.
Prague ePP = +14m.52s., e = +17m.44s., ePS = +22m.6s., e = +27m.54s.
Jena iPZ = +11m.57s., eSE = +21m.39s., iE = +22m.4s.
Göttingen iP_cP = +12m.15s., ePP = +14m.54s., e = +17m.54s., eSSN = +27m.54s.
Riverview PEN = +11m.55s., iN = +21m.57s., PSEN = +22m.9s.
Budapest P_cP = +12m.37s., PPP = +17m.3s., PS = +22m.10s., PPS = +22m.34s., SS = +26m.48s.
Hof eNE = +21m.54s.
Vienna P_cP = +12m.13s., PP = +15m.24s., PPP = +17m.17s., PS = +22m.56s. and +27m.29s., PKKP = +30m.32s., SSS = +31m.10s.
Stonyhurst i = +22m.27s. = PS − 7s.
Adelaide i = +12m.3s., iPP = +14m.54s., i = +22m.5s. = S + 1s., iSS = +26m.43s., iSSS = +29m.46s., i = +30m.54s.
Belgrade i = +18m.13s.
Bidston PP = +15m.8s., PPP = +16m.44s., eSS? = +28m.17s. ; T_0 = 14h.4m.10s.
Des Moines ePP = +15m.6s., e = +22m.17s. = S + 8s.
Graz iP_cP = +12m.2s., iPS = +22m.29s.
Sofia eNE = +31m.24s. and +38m.55s.
Ksara iPP = +15m.10s., PS = +23m.0s.
Uccle iPS = +22m.48s.
Stuttgart iPP = +15m.10s., e = +18m.24s.
Zagreb e = +12m.14s., eZ = +12m.18s., i = +12m.23s., eNE = +12m.35s., e = +12m.44s., ePPP = +17m.14s., ePPPPE = +18m.48s., eNW = +20m.18s., eSKSE = +22m.19s., eS_cS = +22m.30s., eSKKSE = +22m.45s., iPSNE = +23m.10s., e = +23m.22s., eZ = +23m.31s., e = +24m.38s., eNE = +29m.10s., ePKKP = +31m.18s., eSSSEZ = +31m.52s., eSSSS = +33m.10s.
Rathfarnham Castle pP = +12m.22s., iPP = +15m.12s., iSS = +22m.36s.
Kew iPPEN = +15m.16s., ePPPN = +17m.38s., iZ = +23m.7s., eSSN = +28m.42s.
Oxford eN = +27m.59s.
Strasbourg PP = +15m.19s., PPP = +17m.21s., i = +18m.58s., iPS = +23m.8s., SS = +27m.16s.
Triest i = +19m.1s. and +22m.43s., iPSN = +23m.0s., i = +23m.46s., iSS = +27m.46s., SL = +28m.50s., iSSS = +31m.5s., iS = +32m.0s.
Melbourne e = +15m.58s. and +22m.5s., i = +22m.17s., +27m.11s., and +30m.59s. = SSS + 6s., e = +33m.19s.
Chicago i = +15m.17s. = PP − 3s., iPP = +15m.27s., i = +27m.23s., iSS = +27m.57s., iSSS = +31m.27s., e = +33m.50s.
Paris PP = +16m.27s.

Continued on next page.

Florissant ipPENZ = +12m.36s., iPPENZ = +15m.34s., ipPPZ = +15m.50s., iSSN = +28m.8s. ; T_o14h.4m.12s.
Piacenza PPE = +14m.2s., PPN = +19m.54s.
Ann Arbor iPP = +15m.42s., iSS = +28m.18s., iSSS = +31m.48s.
St. Louis ipPEN = +12m.37s., eEN = +13m.7s. and +13m.12s., iPPEN = +15m.37s., iSSEN = +28m.10s.
Ottawa PPE = +15m.42s. ; T_o = 14h.4m.6s.
Florence PP = +15m.54s., PS = +23m.42s., SS = +27m.54s.
Toronto iPP = +15m.39s., iSS = +28m.9s. ; T_o = 14h.4m.13s.
Vermont i = +13m.1s., iS = +23m.25s., e = +37m.13s.
Arapuni SS = +28m.54s., L_q = +34m.54s.
Pennsylvania i = +13m.12s., iPP = +16m.4s., e = +23m.42s. = S +17s.
Oak Ridge iE = +12m.36s., iP_cP = +13m.1s., ipP = +13m.6s., ePP = +16m.14s., eS = +23m.22s., iPS = +24m.20s., eN = +24m.30s., SSE = +29m.12s., SSSZ = +36m.8s. ; T_o = 14h.4m.0s.
Philadelphia PP = +16m.7s., iS = +23m.29s., i = +23m.52s. = S +9s., SS = +29m.36s.
Wellington i = +12m.58s., S_cS = +23m.27s., P_cPP_cS = +23m.59s., i = +25m.39s., SS = +29m.23s., i = +31m.9s., SSS = +33m.0s., L_q = +35m.54s.
Charlottesville iPP = +16m.16s., iS = +23m.35s., eSS = +29m.52s., eSSS = +33m.44s.
Tunis iPP = +16m.54s.?, PPP = +17m.54s.?, iPS = +24m.54s., iPPS = +25m.15s.
Columbia ePP = +16m.39s., e = +18m.34s. = PPP +7s., iS = +23m.54s., eSS = +30m.24s., e = +37m.8s.
Toledo PP = +16m.33s., PPP = +18m.24s., SKS = +23m.39s., i = +24m.0s., PS = +25m.15s., PPS = +25m.51s., eL_q = +38·4m.
Alicante PP = +16m.47s., PS = +25m.35s.
Algiers PP = +16m.54s., PPP = +17m.54s., SS = +28m.47s.
Almeria ePP = +17m.12s., SSS = +33m.9s.
Granada P_cP = +13m.17s., iPP = +17m.9s., PPP = +19m.6s., SKKS = +24m.24s., iS = +24m.32s., PS = +25m.51s.
Malaga e = +15m.13s., PP = +17m.11s., PPP = +19m.9s., e = +21m.49s., S = +24m.12s. = SKKS − 5s., i = +24m.50s. = S +5s., PS = +25m.13s., i = +25m.49s. = PS − 5s., PPS = +25m.59s., e = +34m.16s., i = +40m.51s.
San Fernando PP = +17m.20s., PS = +26m.11s., SS = +31m.30s.
Tananarive PP = +18m.51s., PSE = +28m.18s., SS = +34m.12s.
San Juan ePKP = +18m.31s., i = +19m.3s. = PP − 4s. and +19m.12s., iPP = +19m.34s., i = +19m.49s., e = +21m.14s. = PPP − 8s., i = +34m.43s. = SS +7s., iSS = +34m.55s., i = +38m.55s.
Huancayo iPP = +21m.33s., i = +22m.38s. = PKS − 6s., e = +33m.14s., iSS = +39m.7s., e = +41m.54s., and +50m.54s.
Cape Town PPN = +22m.11s., PPE = +22m.14s., E = +22m.35s., SKP = +23m.0s., +28m.30s., SN = +30m.26s., SE = +30m.36s., E = +32m.25s. = SKSP +7s., N = +32m.36s. = PS − 12s., PPSN = +34m.16s., PPSE = +34m.26s., SSE = +40m.29s., SSN = +40m.40s., E = +43m.50s., SSSE = +44m.35s., SSSN = +45m.27s., E = +49m.40s.
La Paz iPPZ = +22m.23s., iSKP = +23m.4s., iSKS = +26m.14s., SKKS = +28m.12s., SKSP = +32m.16s., PPS = +34m.40s., iSSN = +40m.46s., iSSS = +45m.40s., L_q = +60m.24s.
La Plata E = +21m.30s., PPE = +24m.6s., PPZ = +24m.12s., PPN = +24m.18s., PPPE = +28m.0s., PPE > 180° = +32m.6s., N = +36m.12s., E = +37m.6s., PPSN = +38m.6s., SSE = +43m.30s., SSN = +44m.18s., PSSE = +45m.12s. E = +47m.6s., SSSE = +49m.54s.?, SSSN = +50m.18s., L_qE = +57·9m.
Long waves at Tashkent.

Sept. 11d. Readings also at 0h. (near Triest), 1h. (Kobe and near Sumoto), 2h. (near Berkeley), 3h. (Andijan and Nagoya), 7h. (near Santiago), 9h. (Frunse, Samarkand, Tashkent, and near Andijan), 10h. (near Malaga), 11h. (near Berkeley and near Nagoya), 13h. (near Nagoya), 14h. (Batavia, Medan, Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Ferndale, Oaxaca, Puebla, and Tacubaya), 16h. (Oak Ridge, Stuttgart, near Mizusawa, near Batavia, and Malabar), 18h. (Stuttgart and near Nagoya), 20h. (near Santiago), 21h. (near Nagoya), 22h. (Haiwee, Mount Wilson, Pasadena, and Tinemaha), 23h. (Tiflis, Frunse, near Andijan and Tashkent).

Sept. 12d. 16h. 1m. 20s. Epicentre 8°·6S. 179°·8E. N.3.

A = −·989, B = +·003, C = −·150; D = +·003, E = +1·000; G = +·150, H = −·001, K = −·989.

A *depth* of focus 0·015 has been assumed.

		Corr. for Focus	Δ	Az.	P.		O−C.	S.		O−C.	M.
		°	°	°	m.	s.	s.	m.	s.	s.	m.
Apia		−0·2	9·8	123	i 2	15	− 1	i 3	49	−14	—
Manila		−1·9	62·8	291	13	8	PPP	18	16	−12	—
Nanking		−2·0	71·0	308	e 11	6	+ 1	e 20	13	+ 4	—
Branner		−2·0	71·1	46	e 11	8	+ 3	—		—	—
Berkeley	z.	−2·0	71·2	45	i 11	9	+ 3	—		—	—
Hong Kong		−2·0	71·3	297	19	56	S	(19	56)	−17	—
Lick		−2·0	71·4	46	e 11	10	+ 3	—		—	—
Santa Barbara	z.	−2·0	71·5	50	i 11	8	0	—		—	—
Batavia		−2·0	72·4	266	19	16	?	—		—	—
Pasadena		−2·0	72·5	50	i 11	12	− 2	e 20	23	− 4	—
Mount Wilson		−2·0	72·7	50	i 11	13	− 2	—		—	—
La Jolla		−2·0	72·8	52	i 11	13	− 3	—		—	—
Riverside	z.	−2·0	73·1	50	i 11	14	− 3	—		—	—
Tinemaha		−2·0	73·7	48	i 11	20	− 1	i 20	40	− 1	—
Chiufeng		−2·0	76·2	315	i 11	36a	0	e 21	6	− 5	—
Tucson		−2·1	77·6	54	—		—	e 21	7	−19	—
De Bilt	z.	—	136·3	355	i 18	47	[−30]	—		—	—
Jena		—	136·6	348	e 18	40	[−37]	—		—	—
Uccle		—	137·6	355	e 18	47	[−31]	e 21	5	?	—
Ksara		—	138·3	312	i 18	43a	[−36]	—		—	92·6
Stuttgart		—	139·1	350	18	54a	[−26]	21	9	?	—
Strasbourg		—	139·5	351	i 18	51k	[−30]	i 21	3	?	—
Paris		—	139·7	357	i 18	55	[−26]	—		—	—
Chur		—	140·8	350	e 18	52	[−30]	—		—	—
Granada		—	151·3	6	e 23	37	PP	e 32	40	?	—

Additional readings:—
Pasadena eZ = +13m.17s., iZ = +14m.19s.
Riverside eZ = +13m.21s.
Chiufeng iSN = +21m.15s.
Ksara pPKP = +21m.5s., sPKP = +22m.3s. = PP − 8s., pPP = +25m.13s., SS = +42m.31s.
Chur i = +18m.58s.

Sept. 12d. Readings also at 0h. (near Samarkand), 2h. (near Santiago), 3h. (Haiwee, Mount Wilson, Pasadena, Riverside, Tinemaha, Karenko, and near Taityu), 8h. (near Nagoya), 9h. (Wellington), 10h. (Ksara), 11h. (Mount Wilson, Pasadena, near Hukuoka, Hukuoka B, Nagasaki, and near Mizusawa), 13h. (Huancayo, Kobe, near Nagoya, and Sumoto), 14h. (Perth), 17h. (Bombay, Colombo, Kodaikanal, Baku, Tashkent, Tananarive, and Oak Ridge), 18h. (Nagoya and near Manila), 20h. (Tiflis, Batavia, near Malabar (2), and near Amboina), 21h. (Amboina (2), near Tiflis (3), Florence, and near Triest), 23h. (near Lick).

Sept. 13d. 9h. 26m. 54s. Epicentre 36°·5N. 140°·5E. (as on 1933 April 2d.). X.

A = −·620, B = +·511, C = +·595.

	Δ	Az.	P.		O−C.	S.		O−C.	M.
	°	°	m.	s.	s.	m.	s.	s.	m.
Tokyo	1·1	216	0	14	− 2	0	28	0	0·5
Mizusawa	2·6	10	e 0	44	P_g	i 1	6	− 1	—
Nagoya	3·2	245	0	48	+ 2	1	32	S*	1·9

Sept. 13d. Readings also at 0h. (near Manila), 1h. (near Nagoya), 2h. (near Malabar), 3h. (Granada and near Oak Ridge), 5h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 7h. (near Mizusawa), 10h. (Tashkent), 14h. (near Amboina), 15h. (near Amboina (2), and near Mizusawa), 16h. (near Amboina (2)), 19h. (Amboina and near Malabar), 20h. (Oak Ridge and near Nagoya).

Sept. 14d. 8h. 28m. 4s. Epicentre 33°·1N. 141°·2E. (as on 1934 Feb. 12d.). X.

A = −·653, B = +·525, C = +·546; D = +·627, E = +·779; G = −·426, H = +·342, K = −·838.

A *depth* of focus 0·010 has been assumed. Compare shock of 1933 Sept. 15d., when a depth 0·015 was associated with this origin.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.
Nagoya		+0·1	4·1	302	(1 5)	+ 5	1 5	P	1·4
Kobe		0·0	5·2	290	i 1 16	+ 2	e 2 4	− 9	2·6
Sumoto		0·0	5·4	285	i 1 16k	− 1	2 21	+ 3	2·4
Toyooka		0·0	5·8	297	1 27	+ 5	—	—	—
Mizusawa		0·0	6·0	359	e 1 39	+14	e 2 55	+22	—
Nagasaki		−0·1	9·5	271	(2 7)	− 6	2 7	P	—
Husan		−0·1	10·3	285	(2 21)	− 3	2 21	P	—
Nanking		−0·4	18·9	273	e 4 8	− 5	—	—	—
Chiufeng		−0·4	21·2	296	e 4 57	PP	e 8 56	SS	—
Tiflis		−1·3	72·9	309	e 11 19	− 1	—	—	—
Tinemaha	z.	−1·3	78·1	54	i 11 52	+ 2	—	—	—
Santa Barbara	z.	−1·3	78·5	56	i 11 54	+ 1	—	—	—
Haiwee	z.	−1·3	78·8	54	i 11 56	+ 1	—	—	—
Mount Wilson	z.	−1·3	79·8	56	i 12 0	0	—	—	—
Pasadena	z.	−1·3	79·8	56	i 12 0	0	—	—	—
Riverside	z.	−1·3	80·3	56	i 12 2	− 1	—	—	—
La Jolla	z.	−1·3	81·1	56	i 12 6	− 1	—	—	—

Additional readings:—
Nagoya eP? = 8h.23m.35s.
Kobe i = +1m.28s., eSN = +2m.8s., eSZ = +2m.14s.
Nagasaki eP = +50s.
Tinemaha iZ = +12m.17s.
Pasadena iZ = +12m.25s. and +12m.47s.
Riverside iZ = +12m.27s.
La Jolla eZ = +12m.31s.

Sept. 14d. 14h. 19m. 36s. Epicentre 36°·5N. 141°·7E. (as on 1933 March 21d.). X.

Near the position 36°·7N. 141°·4E. given by the Japanese stations.

A = −·631, B = +·498, C = +·596; D = +·620, E = +·786; G = −·467, H = +·369, K = −·804.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		1·8	243	e 0 28	+ 2	0 47	+ 1	—	1·1
Mizusawa	E.	2·7	350	i 0 39	0	i 1 9	0	—	—
	N.	2·7	350	i 0 34	− 5	i 1 5	− 4	—	—
Nagoya		4·1	252	e 1 3	+ 5	1 50	+ 5	—	2·2
Kobe		5·6	253	e 1 51	P_g	e 2 41	S*	—	4·0
Toyooka		5·6	262	1 28	+ 8	2 43	S*	—	3·4
Sumoto	E.	6·0	251	e 2 1	P_g	e 3 1	S*	—	3·4
	N.	6·0	251	e 2 8	P_g	e 2 56	S*	—	3·2
Vladivostok		10·0	314	e 1 40	?	e 3 30	?	i 4·0	7·3
Nagasaki		10·5	253	e 4 40	S	(e 4 40)	+14	—	—
Nanking		19·4	264	e 4 21	− 2	—	—	e 11·2	—
Chiufeng		20·3	288	e 4 26	− 7	e 8 8	− 4	—	13·1
Tiflis		71·2	309	e 11 19	+ 1	—	—	e 43·4	—
Mount Wilson	z.	77·5	58	e 11 55	0	—	—	—	—
Pasadena	z.	77·5	58	i 11 54	− 1	—	—	—	—

Additional readings:—
Kobe eE = +2m.10s., eN = +2m.27s. = S + 4s., eSN = +2m.44s.
Mount Wilson eZ = +7m.24s.
Pasadena iZ = +7m.24s.
Long waves were also recorded at Hong Kong, Tashkent, Pulkovo, Ksara, Copenhagen, and De Bilt.

Sept. 14d. Readings also at 0h. and 1h. (Nagoya), 2h. (Amboina and near Andijan), 3h. (Tashkent), 7h. (Malaga, Perth, Nagasaki, near Hukuoka B, and near Amboina), 8h. (Malaga), 12h. (near Nagoya), 14h. (Nagoya (2), Hukuoka B, Frunse, Samarkand, and near Andijan), 19h. (Wellington (2)), 20h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Tucson, Columbia, Oak Ridge, Philadelphia, San Juan, Huancayo, La Paz, and near Nagoya), 21h. (Kew, Baku, Tashkent, Ksara, Strasbourg, Stuttgart, Paris, Uccle, and De Bilt), 23h. (Pasadena, Tinemaha, Oak Ridge, Sitka, Vermont, Frunse, near Andijan, Samarkand, and Tashkent).

Sept. 15d. 4h. 1m. 34s. Epicentre 19°·2N. 64°·2W. N.3.

$A = +\cdot411$, $B = -\cdot850$, $C = +\cdot329$; $D = -\cdot900$, $E = -\cdot435$; $G = +\cdot143$, $H = -\cdot296$, $K = -\cdot944$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		2·0	246	i 0 31	P*	i 0 58	S*	—	—
Port au Prince		7·7	266	(e 2 23)	P_g	(i 4 5)	S_g	(i 4·7)	(5·3)
Columbia		21·1	318	—	—	e 8 26	− 2	e 10·1	—
Charlottesville		22·6	329	—	—	e 8 58	+ 1	—	—
Philadelphia		22·8	338	e 5 0	+ 1	i 9 6	+ 5	e 12·0	—
Oak Ridge		24·1	347	e 5 18	+ 7	e 9 22	− 3	e 14·2	—
Pennsylvania		24·6	334	—	—	i 9 52	+18	—	—
Vermont		26·4	346	—	—	e 10 7	+ 2	e 16·8	—
Chicago		30·2	324	—	—	e 11 6	− 1	—	—
Huancayo		33·1	201	e 6 16	−17	e 11 21	−31	e 15·3	—
La Paz		35·9	186	i 6 57k	0	14 56	SSS	21·9	28·3
Tucson		43·6	297	e 8 2	0	—	—	e 22·9	—
La Jolla	z.	49·1	297	e 8 45	+ 1	—	—	—	—
Riverside	z.	49·2	299	e 8 46	+ 1	—	—	—	—
Mount Wilson	z.	49·8	299	e 8 51	+ 1	—	—	—	—
Pasadena		49·9	299	e 8 51	0	—	—	e 26·2	—
Tinemaha		50·2	303	e 8 54	+ 1	—	—	—	—
Granada		55·4	57	—	—	e 26 26?	?	30·4	—
Ksara		87·4	56	e 12 55	+10	e 25 46	?	—	57·4

Additional readings and note :—
Port au Prince readings have been *diminished* by 2m.
Philadelphia $ePcP = +8$m.57s.
Oak Ridge $i = +5$m.32s. $= PP - 6$s., $eZ = +9$m.18s., $e = +9$m.34s.
Chicago $eSS = +13$m.11s.
Huancayo $e = +6$m.52s. and $+7$m.38s. $= PP + 1$s., $eSS = +13$m.18s., $eScS = +16$m.38s.
La Paz $PPE = +8$m.50s., $iSE = +15$m.8s., $iSN = +15$m.24s.
Tucson $eSS = +17$m.56s.
Long waves were also recorded at Bozeman, Sitka, Baku, Tashkent, Amboina, and other European stations.

Sept. 15d. 11h. 15m. 29s. Epicentre 4°·6S. 151°·3E. (as on 1933 Sept. 27d.). R.2.

$A = -\cdot874$, $B = +\cdot479$, $C = -\cdot080$; $D = +\cdot480$, $E = +\cdot877$; $G = +\cdot070$, $H = -\cdot038$, $K = -\cdot997$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	20·6	304	4 41	+ 5	8 36	SS	—	—
Amboina	23·1	271	e 4 50	−12	10 16	+69	e 13·5	—
Riverview	29·2	180	e 5 49	− 9	—	—	10·4	16·7
Sydney	29·2	180	e 6 11	+13	i 10 31	−20	15·1	17·6
Adelaide	32·5	200	—	—	e 11 16	−27	—	19·3
Melbourne	33·7	189	e 6 45	+ 7	i 11 36	−25	13·7	19·2
Apia	37·5	106	—	—	e 12 35	−24	e 15·6	—
Arapuni	40·2	149	—	—	14 31?	+52	16·5	—
Miyazaki	41·1	334	7 44	+ 3	14 20	+27	—	—
Kagosima	41·2	332	7 45	+ 3	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Misima		41·4	345	7 52	+ 8	—	—	—	—
Wakayama		41·7	340	7 50	+ 4	—	—	—	—
Sumoto	E.	41·9	340	e 7 34	−15	e 14 36	+31	—	23·7
	N.	41·9	340	e 7 24	−25	e 13 31	−34	—	23·5
Nagoya		42·0	344	e 7 20	−29	—	—	—	—
Kobe	E.	42·1	341	e 6 46	−63	e 14 8	0	e 18·3	23·9
	N.	42·1	341	e 8 23	+34	e 13 59	− 9	16·5	21·9
	Z.	42·1	341	e 8 51	+62	e 14 1	− 7	—	21·8
Kumagaya		42·2	342	7 51	+ 1	—	—	—	—
Wellington		42·3	154	8 22	+31	13 47	−23	20·5	22·5
Nagasaki		42·5	333	e 7 53	0	(e 13 26)	−47	e 13·4	—
Oiwake		42·6	345	8 0	+ 7	—	—	—	—
Nagano		43·0	345	8 3	+ 6	—	—	—	—
Toyooka	N.	43·0	342	e 5 37	?	e 15 36	+75	e 22·1	24·7
Batavia		44·2	266	8 1	− 5	—	—	e 23·5	—
Mizusawa	E.	44·7	349	8 18	+ 8	16 21	?	—	—
	N.	44·7	349	7 55	−15	16 15	?	—	—
Husan		44·9	334	e 8 14	+ 2	e 15 4	+15	—	—
Hong Kong		45·2	308	8 21	+ 7	15 1	+ 7	21·7	23·8
Zi-ka-wei		45·7	324	e 8 19	+ 1	15 11	+11	22·8	24·7
Zinsen		47·9	333	e 8 37a	+ 2	e 15 40	+ 9	—	—
Nanking		47·9	322	8 43	+ 8	e 15 58	+27	22·4	26·5
Vladivostok		50·8	342	e 8 51	− 6	i 16 27	+15	17·8	28·5
Chiufeng		55·1	328	i 9 30a	0	i 17 17	+ 6	25·4	30·1
Honolulu		56·2	60	e 9 39	+ 2	e 17 6	−19	e 24·0	—
Calcutta		67·1	297	e 12 45	PP	i 20 28	(−16)	—	—
Colombo		72·2	279	11 12	−12	—	—	—	—
Kodaikanal		75·0	282	—	—	e 21 44	+24	—	—
Agra		77·4	299	11 46	− 8	21 48	+ 1	—	—
Bombay		80·7	290	e 12 9	− 3	e 22 17	− 6	—	48·8
Frunse		83·5	314	e 12 28	+ 2	—	—	e 44·5	—
Sitka		85·0	32	i 12 36	+ 3	—	—	e 38·9	—
Tashkent		87·1	312	12 47	+ 3	i 23 10	[− 4]	39·6	50·3
Ukiah		89·4	51	—	—	e 23 35	[+ 6]	40·9	—
Berkeley		90·0	53	e 12 57	0	e 23 45	−11	—	—
Victoria		90·4	42	e 23 42	S	(e 23 42)	[+ 7]	e 37·9	—
Seattle		91·0	43	—	—	e 24 11	+ 6	e 42·8	—
Santa Barbara	Z.	91·8	56	i 13 4	− 2	—	—	—	—
Pasadena		93·0	56	i 13 10	− 1	e 23 59	[+ 9]	e 43·0	—
Mount Wilson		93·1	56	i 13 10	− 2	—	—	—	—
Tinemaha		93·1	53	i 13 11	− 1	e 23 47	[− 4]	—	—
Haiwee	Z.	93·3	54	i 13 11	− 2	—	—	—	—
La Jolla		93·7	57	i 13 12	− 2	—	—	—	—
Riverside		93·7	56	i 13 12	− 2	—	—	—	—
Bozeman		98·6	44	—	—	e 24 15	[− 4]	e 45·8	—
Tucson		99·1	58	e 17 42	PP	e 24 19	[− 2]	e 41·2	—
Baku		101·7	310	e 18 11	PP	—	—	50·5	60·7
Moscow		107·0	327	e 18 39	PP	24 11	[−48]	e 51·4	65·8
Pulkovo		109·1	332	19 1	PP	25 1	[− 8]	57·5	65·3
Simferopol		112·3	317	e 19 17	PP	e 26 35	{+12}	—	—
Yalta		112·4	316	e 18 51	PP	e 25 31	[+ 7]	64·5	—
Sebastopol		112·8	317	e 18 57	PP	—	—	—	—
Ksara		113·6	304	e 18 8	[−20]	29 25	PS	58·5	65·5
Scoresby Sund		114·0	358	19 37	PP	—	—	56·5	—
Florissant		114·8	49	i 19 33	PP	e 26 53	{+12}	e 53·5	60·5
St. Louis	E.	114·9	49	e 19 26	PP	e 26 53	{+12}	54·1	61·1
Chicago		115·9	45	—	—	e 27 1	{+13}	e 54·5	—
Copenhagen		119·3	335	—	—	29 55	PS	56·5	—
Cape Town		121·1	225	—	—	25 43	[−11]	59·5	66·5
Ottawa		122·3	37	—	—	e 27 31?	{− 1}	e 51·5	—

Continued on next page.

	Δ	Az	P.	O−C.	S.	O−C.	L.	M.
		°	m. s.	s.	m. s.	s.	m.	m.
Cheb	122·9	329	—	—	e 39 31?	?	e 54·5	70·5
Zagreb	123·5	324	e 18 56	[+ 2]	—	—	e 62·5	—
Vermont	124·3	36	e 20 47	PP	—	—	e 58·9	—
Triest	124·8	325	e 18 53	[− 3]	e 30 47	PS	e 57·5	69·6
De Bilt	124·9	335	e 20 47	PP	—	—	e 58·5	70·2
Philadelphia	125·3	42	e 20 47	PP	e 30 41	PS	e 52·3	—
Stuttgart	125·4	330	e 18 56	[− 2]	e 30 49	PS	e 63·5	73·5
Strasbourg	126·2	331	e 20 41	PP	e 31 7	PS	e 64·5	—
Uccle	126·2	334	—	—	e 38 55	?	e 58·5	—
Piacenza	127·5	326	e 20 31	PP	—	—	—	75·0
Huancayo	130·8	110	e 21 15	PP	e 31 31	PS	e 52·6	—
La Paz	135·7	119	e 19 16k	[0]	e 26 15	[−19]	72·5	102·6
San Juan	140·9	65	e 19 11	[−12]	—	—	e 66·3	—

Additional readings :—
Amboina i = +6m.14s.
Adelaide i = +15m.31s. and +17m.2s.
Misima PP = +9m.24s.
Sumoto ePZ = +7m.49s.
Kobe eZ = +9m.14s. =PP −8s.
Wellington PP = +9m.15s., SS = +17m.9s.
Batavia iE = +13m.27s., iN = +18m.32s.
Hong Kong PP = +10m.20s., +15m.31s.
Zi-ka-wei iZ = +8m.25s., +8m.43s., and +15m.49s.
Chiufeng iN = +17m.32s.
Honolulu e = +19m.51s.
Agra PS = +22m.26s., SS = +27m.6s.
Sitka SP = +23m.1s. =SKS +2s., esS = +23m.56s. =PS +5s., eSS = +28m.31s., e = +33m.18s., and +34m.47s.
Tashkent iPPP = +18m.16s., SKS = +18m.20s., PS = +24m.13s., SS = +29m.19s., eSSS = +32m.25s.
Ukiah ePS = +24m.51s., eSS = +29m.47s., e = +37m.19s.
Berkeley eE = +13m.0s., eN = +23m.28s. =SKS −5s.
Victoria ePN = +23m.55s. =S −5s.
Bozeman ePS = +26m.36s., eSS = +32m.14s., eSSS = +35m.44s.
Tucson esP = +25m.25s. =S +6s., esS = +26m.40s. =PS +4s.
Baku e = +27m.27s. and +33m.23s.
Moscow e = +19m.7s., +26m.56s., and +28m.2s. =PS +4s.
Pulkovo PPP = +21m.31s., PPS = +29m.43s., SS = +35m.1s.
Ksara PP = +19m.32s., PPS = +29m.32s., SS = +35m.21s.
Scoresby Sund +29m.19s. =PS +12s., e = +36m.13s.
Florissant ePS = +29m.11s., iE = +29m.17s., ePPSE = +30m.14s., iSSN = +35m.33s., eSSSN = +39m.53s. ; T_0 =11h.15m.30s.
St. Louis ePPE = +19m.32s., eE = +25m.22s. =SKS −11s. and +26m.36s., ePSE = +29m.16s.
Chicago e = +29m.21s. =PS −3s., ePS = +30m.46s., eSS = +36m.0s., e = +40m.21s.
Copenhagen +20m.5s. =PP +1s., PPS = +31m.25s., SS = +36m.55s.
Cape Town +30m.1s. =PS −11s., +37m.7s., +41m.13s. =SSS +8s., and +51m.1s.
Ottawa e = +37m.1s. =SS −1s.
Vermont e = +22m.10s., eSS = +32m.31s., eSSS = +36m.35s., e = +37m.35s. = SS +7s.
De Bilt e = +22m.14s., eZ = +23m.39s. =PPP +22s.
Philadelphia eSS = +37m.14s., e = +49m.32s.
Stuttgart ePP = +20m.49s., ePKS = +22m.11s., ePPP = +23m.37s., ePPS = +32m.25s., e = +33m.31s.
Strasbourg ePPP = +23m.37s., ePPS = +32m.31s.
Huancayo e = +22m.25s. =PKS −12s. and +33m.25s., eSS = +39m.7s., e = +43m.43s.
La Paz iPKPZ = +19m.19s., iPPE = +22m.52s. =PKS −4s., L_g = +66·5m.
San Juan ePP = +22m.11s., e = +23m.1s. =PKS −10s., and +59m.41s.
Long waves were also recorded at Taikyu, Phu-Lien, Hyderabad, Algiers, and other American and European stations.

Sept. 15d. 14h. 9m. 8s. Epicentre 26°·0S. 114°·0W. N.2.

A = −·366, B = −·821, C = −·438; D = −·914, E = +·407; G = +·178, H = +·400, K = −·899.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Santiago		38·1	111	e 7 17	+ 1	e 17 22	(− 8)	—	—
Huancayo		38·9	76	i 7 19$_a$	− 4	i 13 14	− 6	i 16·5	—
La Paz		43·6	87	8 1	− 1	i 14 32	+ 2	21·1	26·2
Sucre		45·3	91	e 8 23	+ 8	i 15 0	+ 5	19·9	—
La Plata	E.	48·5	114	8 21	−19	15 28	−12	21·9$_q$	25·8
	N.	48·5	114	8 22	−18	15 40	0	21·9$_q$	24·5
Apia		55·3	270	e 9 40	+ 9	17 29	+16	—	—
Tucson		58·3	3	—	—	e 18 13	+20	e 28·4	—
La Jolla	Z.	58·9	356	i 9 58	+ 1	e 18 26	+25	—	—
Arapuni		59·4	239	—	—	18 22	+14	27·4	27·9
Wellington		59·6	235	10 2	0	18 21	+10	26·9	28·9
Riverside		60·1	356	i 10 4	− 1	e 18 27	+10	—	—
Pasadena		60·3	356	i 10 5	− 2	e 18 14	− 6	e 25·9	—
Mount Wilson		60·4	356	e 10 6	− 1	—	—	—	—
Santa Barbara	Z.	60·7	354	e 10 11	+ 2	—	—	—	—
Haiwee	Z.	62·2	356	i 10 19	− 1	—	—	—	—
Tinemaha		63·2	356	i 10 26	− 1	—	—	—	—
Honolulu		63·6	314	e 10 37	+ 8	e 19 17	+15	i 29·5	—
Lick		63·7	353	e 10 31	+ 1	—	—	—	—
Branner	N.	63·9	352	e 10 25	− 6	—	—	—	—
Berkeley		64·3	353	e 10 35	+ 1	e 19 22	PS	e 30·0	—
San Juan		64·3	51	e 10 32	− 2	i 19 5	− 6	e 30·4	—
Ukiah		65·7	353	e 10 48	+ 5	e 19 45	PS	e 27·5	—
Columbia		67·7	28	—	—	e 19 52	− 1	e 27·5	—
St. Louis	E.	68·4	18	e 10 59	− 2	e 20 5	+ 3	—	—
Florissant		68·5	18	e 11 28	(+ 1)	e 20 6	+ 3	e 31·8	—
Bozeman		71·7	2	e 11 22	+ 1	e 20 42	+ 1	e 30·9	—
Chicago		72·1	20	—	—	i 20 52	+ 6	e 31·2	—
Charlottesville		72·2	29	e 13 22	PP	e 22 42	?	e 30·3	—
Ann Arbor		73·8	23	—	—	e 21 10	+ 4	e 36·4	—
Seattle		74·0	354	e 11 57	+22	e 21 7	− 1	e 35·7	—
Pennsylvania		74·7	28	i 12 5	+26	e 14 53	PP	—	—
Victoria	E.	74·9	353	e 11 46	+ 6	e 21 27	+ 8	e 36·6	—
Philadelphia		75·2	30	i 11 43	+ 2	e 21 14	− 8	e 31·5	—
Toronto		76·6	25	11 39	−10	i 21 24	−14	36·9	—
Oak Ridge		78·9	31	i 12 0	− 2	e 22 7	+ 3	24·9	—
Ottawa		79·4	26	e 12 5	0	e 22 16	+ 7	e 38·9	—
Riverview		79·6	236	e 12 8	+ 2	e 22 11	0	e 36·5	39·0
Sydney		79·6	236	—	—	e 19 42	?	43·4	50·0
Vermont		79·7	29	i 12 10	+ 4	e 22 1	−11	e 33·4	—
Melbourne		82·4	231	e 20 4	?	e 22 37	− 4	37·8	40·2
Sitka		85·0	348	e 12 32	− 1	i 23 7	− 1	e 39·7	—
Adelaide		88·3	232	i 21 40	?	i 23 43	+ 3	—	44·5
Amboina		113·0	253	e 20 13	?	e 31 7	?	e 53·9	—
Scoresby Sund		115·1	21	—	—	27 34	{+51}	46·9	—
Granada		121·0	60	20 22	PP	—	—	59·4	70·7
Vladivostok		124·6	306	20 39	PP	25 44	[−20]	56·8	75·4
Uccle		127·6	45	—	—	e 30 52?	SKSP	e 53·9	—
De Bilt		129·0	43	e 22 58	?	—	—	e 58·9	61·2
Batavia		129·0	237	22 30	?	e 34 40	?	e 63·9	—
Strasbourg		129·9	47	e 22 30	?	e 27 17	[+58]	e 61·9	—
Hamburg		130·6	41	e 21 28	PP	—	—	73·9	—
Stuttgart		130·9	47	e 19 22	[+14]	—	—	e 61·9	84·5
Chur		131·3	50	(e 19 22)	[+13]	—	—	—	—
Piacenza		131·5	51	e 21 52	PP	—	—	—	92·5
Copenhagen		131·5	37	19 4	[− 5]	26 12	[−11]	54·9	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	z.	131·5	290	e 21 34	PP	—	—	62·2	66·2
Leipzig		132·5	43	e 19 4	[− 7]	—	—	e 48·9	60·9
Cheb		132·7	45	e 20 52?	?	e 30 52?	?	e 60·9	63·9
Upsala		132·8	31	—	—	e 24 52?	PPP	e 73·9	—
Nanking		133·9	291	e 21 52	PP	e 32 36	PS	64·8	74·9
Triest		134·3	50	e 18 15	[−59]	e 28 10	{−39}	e 63·9	76·7
Zagreb		135·8	50	19 29	[+13]	—	—	—	—
Hong Kong		136·1	276	22 57	PKS	34 39	?	—	56·4
Chiufeng		136·3	303	19 23	[+ 6]	26 43	[+ 8]	55·4	70·6
Budapest		137·5	47	e 20 52?	?	—	—	e 80·9	—
Pulkovo		138·3	26	19 30	[+11]	—	—	67·9	78·4
Medan		141·5	240	e 23 10	PKS	—	—	e 68·9	—
Phu-Lien		142·5	271	19 52?	[+26]	—	—	—	—
Moscow		143·8	27	19 29	[− 2]	—	—	—	83·1
Sebastopol		148·0	.47	e 19 45	[+ 6]	—	—	—	—
Simferopol		148·2	46	e 19 43	[+ 4]	e 23 41	PKS	—	—
Yalta		148·4	47	e 19 47	[+ 7]	e 24 47	?	—	—
Ksara		152·9	68	19 49	[+ 4]	—	—	72·9	83·4
Grozny		156·1	39	e 19 57	[+ 8]	—	—	—	—
Tiflis		156·5	44	19 55	[+ 5]	e 27 9	PPP	74·9	98·8
Colombo		156·8	216	11 46	?	—	—	72·3	87·8
Calcutta		159·3	265	20 59	{+18}	—	—	—	85·4
Baku		160·4	39	20 4	{+10}	30 52	{−29}	50·9	—
Kodaikanal		160·9	217	—	—	e 44 43	SS	73·4	90·4
Frunse		161·7	340	e 19 53	[− 2]	—	—	80·9	—
Andijan		164·3	342	e 20 5	[+ 7]	—	—	81·9	—
Tashkent		164·4	351	e 22 52	PKS	31 34	{− 8}	69·7	88·8
Agra		169·2	279	20 10	[+ 7]	—	—	—	—
Bombay		170·5	223	e 19 52?	[−12]	—	—	—	91·3

Additional readings and note :—
Huancayo i = +7m.31s., iPP = +9m.2s. = PPP − 2s.
La Paz iPZ = +8m.6s., SNZ = +14m.38s., SS = +17m.56s. = S_cS − 8s., iE = +19m.2s., i = +19m.40s.
La Plata PE = +8m.37s., pPN = +8m.40s., P_cPE = +9m.52s., E = +14m.22s., sSN = +16m.4s., SSN = +18m.34s., LRZ = +24·9m. ; T_o = 14h.9m.10s.
Tucson e = +24m.52s.
Wellington i = +20m.7s., SS = +22m.12s., SSS = +23m.52s.
Honolulu e = +22m.52s. and +26m.44s.
Lick eE = +10m.34s. and +28m.45s., eN = +28m.4s. and +29m.56s.
Berkeley iPZ = +10m.37s., eN = +19m.33s. = PS +12s., eE = +29m.14s.
Ukiah ePP = +14m.3s., e = +16m.12s.
Columbia eSS = +24m.12s.
St. Louis pPE = +11m.27s., eE = +12m.27s., esSE = +20m.56s., eSS = +24m.30s., eSSSE = +27m.47s.
Florissant esSE = +20m.59s., eEN = +24m.44s., eE = +28m.18s.
Bozeman e = +12m.12s., eSS = +25m.32s., eSSS = +28m.55s.
Chicago eSS = +25m.24s.
Philadelphia eP = +12m.1s., iS = +21m.25s., e = +23m.34s., eSS = +26m.7s., e = +31m.35s.
Oak Ridge iZ = +12m.56s. and +14m.2s., ePPN = +15m.4s., eZ = +17m.50s. = PPPP +3s., iE = +22m.10s.
Ottawa e = +27m.22s. = SS +19s. and +33m.22s. ; T_o = 14h.9m.0s.
Riverview e = +23m.20s., +27m.27s. = SS + 20s., and +27m.39s.
Sydney L = +23m.16s.
Vermont ePS = +24m.6s., eSS = +27m.31s.
Melbourne i = +28m.2s. and +34m.31s.
Sitka e = +14m.26s., iPS = +24m.11s., eSS = +28m.52s., eSSS = +32m.22s., e = +35m.22s.
Adelaide i = +33m.1s. and +36m.19s.
Vladivostok PS = +30m.5s.
De Bilt e = +38m.40s. = SS +13s., eN = +53m.10s.
Strasbourg ePS = +32m.13s., eSS = +38m.29s.
Stuttgart ePP = +21m.28s., ePKS = +22m.34s., ePPPE = +25m.34s., eSS = +38m.52s. ; T_o = 14h.9m.10s.
Chur P has been *increased* by 10m.
Copenhagen PKS = +22m.44s., eE = +23m.39s., PPP = +24m.34s., SS = +38m.52s., SSS = +44m.10s.
Leipzig eE = +22m.46s. = PKS + 2s., +23m.10s., +23m.32s., +33m.22s., and +34m.22s.

Continued on next page.

Upsala eN = +39m.23s. =SS +8s.
Nanking eE = +23m.16s.
Triest e = +22m.9s. and +39m.41s. =SS +8s.
Zagreb ePPNW = +21m.50s., eSKP = +23m.13s., ePPP = +25m.13s., e = +29m.25s.
Hong Kong SS? = +40m.12s.
Chiufeng PPEZ = +22m.5s., iPKSEN = +22m.56s., iPPP = +25m.7s., SKKS?N = +28m.53s., SKKSE = +29m.8s., iEN = +31m.4s., SKSPN = +32m.7s., iE = +36m.0s., iSSN = +40m.13s.
Pulkovo PKP = +23m.2s., PPP = +25m.17s., PS = +33m.21s., SS = +40m.34s.
Moscow e = +21m.46s., +24m.3s., +27m.15s., +31m.47s., +39m.32s., and +45m.12s.
Ksara PP = +23m.29s., PPS = +36m.49s., SS = +41m.51s.
Tiflis ePP = +23m.56s.
Calcutta PP = +24m.48s., PPP = +28m.15s., PPS = +38m.9s., SSS = +50m.16s.
Baku PS = +39m.24s.
Tashkent PP = +24m.58s., SKSP = +35m.40s., PPS = +39m.28s.
Agra PKP_2 = +21m.20s., PP = +25m.10s., SS = +47m.8s.
Long waves were also recorded at Christchurch, New Plymouth, Husan, Perth, Hyderabad, Cape Town, and other European stations.

Sept. 15d. Readings also at 0h. (near Wellington), 1h. (Oak Ridge, San Juan, Tainan, near Taihoku, and Taityu), 2h. (Nagoya, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Oak Ridge, near San Juan, and near Tiflis), 3h. (Nagoya and near Tiflis), 6h. (Apia, Melbourne, Wellington (2), Ksara, Mount Wilson, Pasadena, Riverside, and Tinemaha), 7h. (near Nagoya), 8h. (near La Paz (2)), 13h. (near Mizusawa and near Nagoya (2)), 14h. (Medan, Haiwee, Mount Wilson (2), La Jolla (2), Pasadena (2), Riverside (2), Tinemaha (2), and near Padova), 15h. (Hukuoka B, Mount Wilson, and Pasadena), 16h. (Granada), 17h. (Christchurch and Wellington), 18h. (Vladivostok), 19h. (Stuttgart and near Bombay), 21h. (near Nagoya), 22h. (near Andijan and Frunse), 23h. (Leipzig, Frunse, Samarkand, and near Andijan).

Sept. 16d. 20h. 51m. 54s. Epicentre 36°·3N. 140°·5E. (as on 1935 July 17d.). R.3.

A = −·622, B = +·513, C = +·592; D = +·636, E = +·772; G = −·457, H = +·377, K = −·806.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		0·9	224	0 11	− 2	0 22	− 1	—	0·4
Mizusawa		2·9	10	e 0 52	P_g	i 1 32	S_g	—	—
Nagoya		3·1	249	i 0 46	+ 2	1 33	S*	—	1·9
Kobe		4·6	252	e 1 6	0	i 2 14	S*	—	2·5
Toyooka		4·6	262	1 8	+ 2	2 18	S*	—	2·5
	z.	4·6	262	1 6	0	2 21	S_g	—	—
Sumoto		5·0	248	e 1 14	+ 3	2 28	S*	—	2·7
Vladivostok		9·5	323	i 2 9	− 5	e 4 8	+ 7	4·8	—

Additional readings :—
Mizusawa iSN = +1m.36s.
Kobe iE = +1m.14s. =P* −2s., i = +1m.24s. =S_g −2s.
Sumoto eSZ = +2m.31s.

Sept. 16d. Readings also at 0h. (near Andijan and near Tiflis), 1h. (Leipzig), 5h. (Ksara, Huancayo, La Paz, Mount Wilson, Pasadena, Riverside, Tinemaha, and La Jolla), 6h. (Mount Wilson, Pasadena, Baku, Tashkent, Tananarive, near Medan, and near Nagoya), 11h. (near Andijan, Frunse, and Samarkand), 12h. (Pasadena, Mount Wilson, Frunse, Semipalatinsk, Andijan, near Erevan, near Nagoya, and near Santiago), 13h. (Nagoya), 14h. (Chiufeng, Vladivostok, Kobe, Sumoto, near Mizusawa, near Nagoya (2), and near Hukuoka B), 15h. (Taikyu, Ksara, Tashkent, Copenhagen, Pulkovo, Moscow, Strasbourg, Stuttgart, Granada, Nagoya, and near Mizusawa), 17h. (La Paz), 18h. (near Amboina), 20h. (Taikyu, Nagasaki, and near Hukuoka B).

Sept. 17d. Readings at 4h. (near Nagoya (2)), 6h. (Granada, Mount Wilson (2), Pasadena (2), Riverside (2), Tinemaha (2), Apia, and near Nagoya), 7h. (La Paz), 11h. (near Taito), 13h. (Malabar, Mount Wilson, Pasadena, Riverside, and Tinemaha), 14h. (Taityu and near Arisan), 17h. (Alicante, near Batavia, Malabar, near Kobe, Nagoya, and Sumoto), 20h. (Oak Ridge), 23h. (Bucharest and Sofia).

Sept. 18d. 4h. 57m. 57s. Epicentre 5°·1N. 75°·9W. N.2.

A = +·243, B = −·966, C = +·089; D = −·970, E = −·244; G = +·022, H = −·086, K = −·996.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		5·3	317	e 1 19	+ 4	i 2 32	S*	2·8	2·9
Port au Prince		13·9	14	i 4 26	+72	i 6 56	+67	—	—
San Juan		16·3	35	i 3 48k	+ 3	i 6 49	+ 4	i 8·5	—
Huancayo		17·2	178	i 4 0a	+ 3	i 7 9	+ 3	i 8·5	—
La Paz		22·9	158	i 5 1	+ 1	i 9 16	+13	i 11·2	13·0
Sucre		26·3	155	5 30	− 2	10 12	+ 9	13·2	—
Charlottesville		33·0	356	e 6 27	− 5	e 11 51	0	e 16·1	—
Philadelphia		34·9	3	i 6 45	− 3	e 12 12	− 8	e 16·7	—
Pennsylvania		35·7	357	e 6 58	+ 3	e 17 48	L	(e 17·8)	22·7
St. Louis	E.	36·0	341	i 6 55	− 3	i 12 29	− 7	—	—
Florissant		36·2	341	i 6 57k	− 3	i 12 30	− 9	—	20·6
Oak Ridge		37·6	6	i 7 12	0	i 13 2	+ 2	e 19·4	—
Ann Arbor		37·8	351	—	—	e 15 33	SS	e 22·9	—
Chicago		38·3	345	e 8 47	PP	e 12 50	−21	e 19·5	—
Toronto		38·7	356	i 7 14	− 7	i 13 16	− 1	18·1	—
Vermont		39·5	4	e 7 28	0	e 13 31	+ 2	e 21·6	—
Ottawa		40·3	1	e 7 33	− 2	e 13 41	0	e 18·1	—
Tucson		42·4	314	e 7 54	+ 2	e 14 13	+ 2	e 21·2	—
La Plata		43·4	157	7 57	− 3	14 27	0	23·4R	28·8
La Jolla		47·5	311	i 8 31	− 1	—	—	—	—
Riverside	Z.	48·1	312	i 8 34	− 3	—	—	—	—
Mount Wilson	Z.	48·7	312	i 8 39	− 2	—	—	—	—
Pasadena		48·7	312	i 8 39	− 2	i 15 43	0	26·1	—
Tinemaha		50·2	315	i 8 52	− 1	e 16 10	+ 6	—	—
Bozeman		50·7	329	—	—	e 16 13	+ 2	e 25·6	—
Lick		52·7	315	e 9 14	+ 2	—	—	—	—
Ukiah		54·6	315	e 9 23	− 3	e 17 6	+ 2	e 25·7	—
Sitka		69·5	330	e 11 11	+ 3	e 20 7	− 8	29·5	—
Malaga		72·1	53	e 11 16	− 7	—	—	—	—
Granada		72·8	53	i 11 28k	0	e 21 7	PS	36·8	39·8
Toledo		72·8	50	e 11 26	− 2	e 20 54	0	—	—
Scoresby Sund		73·8	16	—	—	21 3?	− 3	38·1	—
Bidston		75·7	36	—	—	e 21 40	PS	—	—
Edinburgh		76·1	33	—	—	e 22 3?	PS	—	—
Kew		77·1	38	i 11 37	−16	e 21 48	+ 4	38·1	—
Uccle		79·9	39	e 12 6	− 1	22 17	+ 2	—	—
De Bilt		80·5	37	e 12 13	+ 3	e 22 25	+ 4	34·1	43·2
Neuchatel		81·4	43	e 12 23	+ 8	—	—	—	—
Strasbourg		82·0	41	i 12 19k	+ 1	—	—	e 38·1	—
Zurich		82·5	42	e 12 19	− 2	—	—	—	—
Stuttgart		82·9	41	e 12 23	0	e 22 45	− 1	e 36·1	—
Prato		84·3	46	e 12 3	−27	—	—	—	—
Copenhagen		84·9	34	12 33	0	23 1	[+ 3]	38·1	—
Cheb		85·0	40	—	—	e 19 3?	?	—	—
Leipzig		85·0	39	e 12 33	0	e 21 33	?	—	22·1
Triest		86·1	44	e 12 38	− 1	23 13	− 5	—	—
Vienna		87·7	42	e 13 1	+15	e 22 42	[−36]	—	—
Pulkovo		93·6	28	—	—	e 34 3?	SSS	42·0	—
Ksara		104·9	54	e 19 3?	?	e 25 3?	[+14]	—	63·1
Tiflis		108·7	43	e 18 51	PP	25 51	{− 7}	54·1	—
Baku		112·7	42	e 19 22	PP	e 28 54	PS	e 40·1	—
Tashkent		123·7	31	e 19 17	[+23]	e 26 43	[+42]	—	68·8
Chiufeng		133·5	347	e 19 15	[+ 2]	—	—	76·3	—
Batavia		177·1	248	i 20 7	[0]	25 46	PP	—	—

For Notes see next page.

NOTES TO SEPT. 18d. 4h. 57m. 57s.

Additional readings :—
San Juan e = +5m.33s.
Huancayo i = +4m.47s.
Charlottesville eP_cP = +9m.11s.
Philadelphia eSS = +14m.48s.
St. Louis eE = +12m.21s., eE = +17m.15s. = S_cS − 3s.
Florissant iPPPN = +8m.20s. = PP +4s., iSSN = +14m.17s., eSSSE = +15m.20s.
Oak Ridge i = +7m.38s., eN = +13m.8s., iE = +15m.44s., eZ = +15m.52s.
Chicago eSS = +15m.35s., eS_cS = +16m.50s.
Vermont SS = +16m.23s.
Ottawa eE = +16m.39s. = SS +19s. ; T_e = 4h.58m.0s.
Tucson ePP = +9m.41s., eSS = +17m.17s.
La Plata PPN = +9m.39s., PPPN = +10m.27s., P_cSN = +13m.15s., +15m.33s., SSN = +17m.39s. ; T_e = 4h.57m.52s.
La Jolla iP_cPZ = +10m.3s., eP_cS = +13m.56s.
Riverside iP_cPZ = +10m.9s.
Pasadena iP_cPZ = +10m.7s., iP_cSZ = +14m.2s.
Tinemaha eP_cSZ = +14m.10s.
Ukiah e = +12m.48s.
Sitka eSS = +24m.58s.
Malaga i = +11m.20s., e = +11m.48s., i = +11m.54s., e = +12m.38s.
Granada PP = +14m.52s., SS = +25m.48s.
Strasbourg eSS = +28m.3s.
Triest i = +23m.23s., iE = +23m.54s., iN = +24m.3s. = PS − 2s.
Tiflis e(PKKP) = +28m.25s. = PS +10s.
Tashkent e = +30m.0s., +35m.39s., +40m.39s., and +53m.57s.
Chiufeng iEN = +22m.45s. = PKS − 3s.
Batavia eE = +27m.1s., and +30m.21s.
Long waves also at Vladivostok, Cape Town, Stonyhurst, and other European stations.

Sept. 18d. 8h. 23m. 57s. Epicentre 42°·3N. 142°·4E. (as on July 3d.). R.1.

A = −·586, B = +·451, C = +·673 ; D = +·610, E = +·792 ; G = −·533, H = +·410, K = −·740.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Urakawa		0·3	118	0 6	+ 2	—	—	—	—
Obihiro		0·8	44	0 16	+ 5	0 28	+ 7	—	—
Muroran		1·1	272	0 21	+ 5	0 38	+10	—	—
Sapporo		1·2	312	0 24	+ 7	0 45	+14	—	—
Tanabe		1·4	221	0 32	+12	0 48	+12	—	—
Hakodate		1·4	248	0 33	+13	—	—	—	—
Asahigawa		1·5	359	0 30	+ 9	0 52	+13	—	—
Kusiro		1·6	65	0 13	−10	0 33	− 8	—	—
Aomori		1·9	219	0 32	P_g	0 59	S_g	—	—
Nemuro		2·5	66	0 32	− 4	1 1	− 3	—	—
Miyako		2·7	187	0 35	− 4	1 6	− 3	—	—
Morioka		2·8	202	0 41	+ 1	1 16	+ 4	—	—
Akita		3·1	214	0 58	P_g	1 38	S_g	—	—
Mizusawa	E.N.	3·3	198	i 0 48	+ 1	i 1 22	− 3	—	—
Isinomaki		4·0	194	0 55	− 2	1 36	− 6	—	—
Sendai		4·2	198	1 1	+ 1	1 59	S*	—	—
Yamagata		4·4	202	1 0	− 3	1 50	− 3	—	—
Hukusima		4·8	199	1 8	0	2 15	S*	—	—
Utunomiya		6·1	200	1 24	− 3	—	—	—	—
Mito		6·1	195	1 26	− 1	2 44	+ 8	—	—
Tukubasan		6·4	197	1 28	− 3	2 51	+ 8	—	—
Kakioka		6·4	196	1 26	− 5	2 36	− 7	—	—
Maebasi		6·4	205	1 31	0	2 44	+ 1	—	—
Wazima		6·5	223	1 36	+ 4	2 50	+ 4	—	—
Nagano		6·5	211	1 36	+ 4	2 49	+ 3	—	—
Kumagaya		6·6	202	1 33	− 1	2 53	+ 5	—	—
Tyosi		6·6	191	1 33	− 1	2 46	− 2	—	—
Tokyo		6·9	199	1 35	− 3	3 15	S*	—	—
Toyama		6·9	218	1 41	+ 3	2 52	− 4	—	—
Sikka		6·9	4	1 24	−14	2 41	−15	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yokohama		7·2	198	1 42	0	3 2	− 2	—	—
Kohu		7·3	205	1 45	+ 1	3 25	S*	—	—
Hunatu		7·4	204	1 46	+ 1	3 18	+ 9	—	—
Misima		7·7	202	1 48	− 1	3 27	+11	—	—
Numadu		7·7	203	1 47	− 2	3 37	+21	—	—
Mera		7·7	196	1 47	− 2	3 23	+ 7	—	—
Vladivostok		7·8	280	e 1 51	0	e 3 31	+12	i 4·9	10·1
Gihu		8·2	214	1 58	+ 2	3 25	− 4	—	—
Nagoya		8·3	213	2 1	+ 3	3 54	S*	—	4·9
Hamamatu		8·4	208	2 2	+ 3	3 32	− 2	—	—
Omaesaki		8·4	204	2 0	+ 1	3 42	+ 8	—	—
Hikone		8·5	216	2 4	+ 4	3 30	− 6	—	—
Kameyama		8·8	214	2 6	+ 1	4 13	S*	—	—
Toyooka		9·0	224	e 2 11	+ 4	e 4 47	S_g	—	—
Osaka		9·3	218	2 7	− 4	5 0	S_g	—	—
Hatidyozima		9·4	193	2 12	− 1	3 46	−13	—	—
Kobe		9·5	219	e 2 16	+ 2	4 16	+15	—	5·5
Wakayama		9·8	218	2 19	+ 1	4 15	+ 7	—	—
Sumoto		9·9	219	2 19	0	4 51	S*	—	5·3
Siomisaki		10·3	213	2 18	− 7	—	—	—	—
Hamada		11·0	231	2 39	+ 4	4 41	+ 3	—	—
Matuyama		11·4	225	2 46	+ 6	5 14	+26	—	—
Taikyu		12·5	244	i 6 28a	?	i 8 11	?	10·2	—
Husan		12·7	240	3 1	+ 3	6 34	S*	—	—
Keizyo		12·7	254	3 3	+ 5	5 33	+13	6·8	—
Hukuoka		12·8	231	e 2 57	− 2	e 5 18	− 4	—	—
Hukuoka B		12·8	231	3 7	+ 8	5 32	+10	—	—
Heizyo		13·0	261	3 11	+ 9	—	—	—	—
Zinsen		13·1	254	e 3 6	+ 3	e 5 23	− 6	e 7·1	—
Kumamoto		13·2	228	3 10	+ 5	6 9	+37	—	—
Miyazaki		13·5	224	3 7	− 2	5 49	+10	—	—
Nagasaki		13·8	230	i 3 19a	+ 6	7 7	?	9·9	—
Kagosima		14·3	225	3 21	+ 2	—	—	—	—
Nake		17·4	221	3 57	− 2	7 17	+ 6	—	—
Chiufeng		19·8	272	4 27a	0	8 8	+ 6	9·8	11·4
Zi-ka-wei		20·1	243	4 42	+11	8 14	+ 6	11·4	13·0
Nanking		21·3	249	4 46	+ 3	7 41	−51	11·6	—
Hong Kong		30·9	239	—	—	11 13	− 5	—	17·1
Semipalatinsk		42·4	304	e 7 53	+ 1	e 14 12	+ 1	—	—
Frunse		48·5	295	e 8 36	− 4	15 37	− 3	—	—
Calcutta	E.	48·8	266	—	—	e 15 49	+ 5	—	—
Andijan		50·9	295	e 9 0	+ 2	16 17	+ 4	—	—
Sitka		51·7	43	i 9 3	− 1	i 16 31	+ 7	e 25·4	—
Tashkent		52·8	297	i 9 12	0	i 16 40	+ 1	24·9	33·1
Agra		53·8	278	9 16	− 4	16 50	− 3	25·6	29·9
Honolulu		53·8	94	—	—	e 16 53	0	—	—
Samarkand		55·1	296	9 31	+ 1	17 11	0	25·5	—
Batavia		58·3	225	i 9 48	− 4	17 48	− 5	—	—
Hyderabad		59·2	269	10 5	+ 6	17 50	−15	24·1	38·1
Bombay		62·4	273	e 10 3?	−18	—	—	—	39·9
Moscow		63·3	323	10 25	− 2	e 18 55	− 4	28·1	40·7
Pulkovo		63·8	330	i 10 30	− 1	19 1	− 4	32·1	48·9
Kodaikanal		64·7	263	e 10 33	− 4	—	—	—	—
Baku		65·7	305	i 10 17	−26	19 52	PS	35·1	43·4
Grozny		66·5	309	e 10 49	0	19 38	− 1	—	—
Scoresby Sund		66·6	355	—	—	19 45	+ 5	36·1	—
Platigorsk		67·5	311	e 10 36	−19	e 19 16	−35	—	—
Ukiah		67·6	58	—	—	e 19 50	− 2	e 34·5	—
Erevan		69·1	306	e 11 6	+ 1	—	—	—	—
Bozeman		70·5	46	e 11 23	+ 9	e 20 21	− 6	e 32·5	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simferopol		71·9	316	11 21	− 1	20 41	− 3	42·6	—
Tinemaha		71·9	57	e 11 20	− 2	e 20 38	− 6	—	—
Yalta		72·1	316	11 22	− 1	e 20 45	− 1	—	—
Santa Barbara		72·7	59	i 11 24	− 3	—	—	—	—
Copenhagen		73·3	334	—	—	20 55	− 5	36·1	—
Mount Wilson		73·9	59	i 11 30	− 4	e 21 3	− 4	—	—
Pasadena		73·9	59	i 11 30	− 4	i 20 59	− 8	e 34·1	—
Riverside	z.	74·4	59	i 11 32	− 5	—	—	—	—
La Jolla		75·3	59	i 11 39	− 3	21 16	− 8	—	—
Prague		77·1	329	—	—	e 21 15	−29	e 43·1	50·1
Jena		77·5	331	e 11 51	− 4	—	—	—	—
Vienna		77·7	327	e 11 52	− 4	—	—	e 45·1	—
Ksara		78·5	307	i 12 0a	0	i 21 58	− 1	43·2	49·7
De Bilt		78·6	335	—	—	e 21 57	− 3	e 41·1	43·2
Sofia		78·9	319	e 12 3	+ 1	e 22 2	− 2	—	51·0
Tucson		79·6	56	e 12 3	− 3	e 22 3	− 8	e 35·4	—
Zagreb		79·8	326	e 12 6	− 1	e 22 6	− 8	—	—
Stuttgart		80·1	331	e 12 5	− 3	e 22 11	− 6	42·1	51·5
Strasbourg		80·8	332	e 11 54	−18	e 22 10	−14	e 40·1	—
Triest		80·9	327	e 12 9	− 4	e 22 16	− 9	—	104·5
Chur		81·5	332	e 12 14	− 2	—	—	—	—
Zurich		81·5	332	e 12 14a	− 2	—	—	—	—
Paris		82·3	335	e 11 18	−62	—	—	43·1	49·1
Piacenza		82·9	328	22 43	S	(22 43)	− 3	—	54·4
Florissant		85·8	39	i 12 36a	− 1	i 23 6	[+ 1]	—	46·3
St. Louis		86·0	40	e 12 36	− 2	e 23 9	[+ 3]	—	44·7
Ottawa		86·0	25	—	—	e 22 57	[− 9]	e 39·1	—
Toronto		86·2	30	—	—	i 22 58	[−10]	e 41·1	—
Vermont		87·5	25	—	—	e 23 10	[− 7]	48·1	—
Oak Ridge	z.	89·7	25	i 12 56	0	—	—	—	—
Philadelphia		91·0	28	—	—	e 23 45	{+ 2}	e 36·5	—
Toledo		92·4	336	e 13 7	− 2	—	—	—	—
Granada		94·7	335	i 13 19	0	e 25 48	PS	57·4R	60·6
San Juan		113·8	30	—	—	e 29 17	PS	e 56·3	—
La Paz		143·3	55	i 19 31a	[+ 2]	—	—	71·1	86·9
Sucre		147·0	54	19 39	[+ 2]	—	—	—	—

Additional readings :—
Kumagaya +2m.59s.
Toyooka SZ = +4m.17s., eSN = +4m.34s. =S* +8s.
Kobe iPENZ = +2m.20s., SE = +4m.23s.
Sumoto PZ = +2m.22s.
Husan PP = +3m.23s., PPP = +3m.35s.
Chiufeng PPE = +4m.48s., iEZ = +9m.0s.
Zi-ka-wei iZ = +5m.42s. and +8m.32s.
Sitka ePP = +11m.13s., e = +14m.11s., eS_0S = +18m.53s.
Agra PS = +17m.25s., SS = +20m.28s., SSS = +21m.58s.
Batavia ipPZ = +10m.8s.
Ukiah e = +27m.38s.
Prague e = +21m.35s.
Vienna eEN = +19m.55s.
Ksara PP = +15m.0s., PS = +22m.37s.
Zagreb eNE = +12m.29s.
Stuttgart e = +12m.22s.
Strasbourg i = +12m.4s., ePPP = +17m.37s.
Triest i = +22m.36s., +22m.42s., and +23m.24s.
Florissant iZ = +12m.51s., iPPNZ = +16m.11s., eSKSN = +22m.51s., iPSN = +24m.4s., eSSN = +28m.45s. ; T_0 = 8h.23m.54s.
St. Louis eE = +17m.20s., eSKSE = +22m.56s.
Oak Ridge iZ = +13m.15s.
Philadelphia ePS = +25m.3s., eSS = +31m.17s.
Granada iPKP = +17m.8s., PP = +17m.50s., PPP = +20m.34s., L_q = 49m.58s.
San Juan eSS = +35m.17s.
La Paz iPKPz = +19m.47s., iZ = +22m.41s., iPPN = +23m.21s.
Long waves at Edinburgh, Kew, Stonyhurst, Huancayo, and other European stations.

Sept. 18d. 8h. 50m. 13s. Epicentre 42°·3N. 142°·4E. (as at 8h. 23m.). R.1.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Urakawa		0·3	118	0 7	+ 3	0 14	+ 6	—	—
Obihiro		0·8	44	0 14	+ 3	0 27	+ 6	—	—
Muroran		1·1	272	0 19	+ 3	0 35	S*	—	—
Sapporo		1·2	312	0 30	+13	0 51	+20	—	—
Asahigawa		1·5	359	0 30	P_g	0 49	S_g	—	—
Kusiro		1·6	65	0 2	−21	0 21	−20	—	—
Aomori		1·9	219	0 29	+ 1	0 56	S*	—	—
Nemuro		2·5	66	0 31	− 5	1 0	− 4	—	—
Miyako		2·7	187	0 46	P_g	1 16	S*	—	—
Morioka		2·8	202	0 39	− 1	1 12	0	—	—
Akita		3·1	214	0 46	+ 2	1 25	+ 5	—	—
Mizusawa		3·3	198	i 0 47	0	i 1 27	+ 2	—	—
Isinomaki		4·0	194	0 55	− 2	1 31	−11	—	—
Sendai		4·2	198	0 57	− 3	1 55	+ 7	—	—
Hukusima		4·8	199	1 5	− 3	2 10	+ 7	—	—
Utunomiya		6·1	200	1 21	− 6	2 56	S*	—	—
Mito		6·1	195	1 23	− 4	2 19	−17	—	—
Tukubasan		6·4	197	1 25	− 6	2 51	+ 8	—	—
Kakioka		6·4	196	1 25	− 6	2 32	−11	—	—
Maebasi		6·4	205	1 31	0	2 55	+12	—	—
Wazima		6·5	223	1 33	+ 1	2 47	+ 1	—	—
Nagano		6·5	211	1 34	+ 2	2 50	+ 4	—	—
Kumagaya		6·6	202	1 30	− 4	2 51	+ 3	—	—
Tyosi		6·6	191	1 29	− 5	2 42	− 6	—	—
Tokyo		6·9	199	1 31	− 7	3 11	+15	—	—
Sikka		6·9	4	1 42	+ 4	3 13	+17	—	—
Yokohama		7·2	198	1 38	− 4	2 59	− 5	—	—
Kohu		7·3	205	1 44	0	3 22	+16	—	—
Hunatu		7·4	204	1 42	− 3	3 13	+ 4	—	—
Misima		7·7	202	1 44	− 5	3 28	+12	—	—
Numadu		7·7	203	1 51	+ 2	3 45	S*	—	—
Mera		7·7	196	1 44	− 5	3 53	S*	—	—
Gihu		8·2	214	1 56	0	3 59	S*	—	—
Nagoya		8·3	213	i 2 2	+ 4	4 9	S*	—	4·8
Hamamatu		8·4	208	2 1	+ 2	—	—	—	—
Omaesaki		8·4	204	2 9	+10	3 56	S*	—	—
Hikone		8·5	216	2 2	+ 2	3 36	0	—	—
Kameyama		8·8	214	2 2	− 3	4 16	S*	—	—
Toyooka		9·0	224	2 8	+ 1	—	—	—	—
Osaka		9·3	218	2 4	− 7	5 2	S_g	—	—
Hatidyozima		9·4	193	2 18	+ 5	4 43	S*	—	—
Kobe	E.	9·5	219	e 2 11	− 3	e 4 0	− 1	—	5·1
	N.	9·5	219	i 2 18	+ 4	e 4 15	+14	—	—
Wakayama		9·8	218	2 17	− 1	4 36	+28	—	—
Sumoto	E.N.	9·9	219	2 20	+ 1	e 4 46	S*	—	6·0
Siomisaki		10·3	213	2 26	+ 1	—	—	—	—
Matuyama		11·4	225	2 42	+ 2	—	—	—	—
Taikyu		12·5	244	6 28	S*	—	—	—	—
Husan		12·7	240	2 58	0	5 58	+38	—	—
Keizyo	E.	12·7	254	e 3 0	+ 2	e 5 46	+26	e 6·8	—
Hukuoka-B		12·8	231	3 3	+ 4	—	—	—	—
Zinsen		13·1	254	e 3 3	0	e 5 27	− 2	—	—
Miyazaki		13·5	224	3 13	+ 4	5 28	−11	—	—
Chiufeng		19·8	272	i 4 28k	+ 1	i 8 4	+ 2	—	12·3
Nanking	E.	21·3	249	e 4 41	− 2	—	—	e 12·5	—
Tinemaha		71·9	57	i 11 17	− 5	—	—	—	—
Santa Barbara		72·7	59	i 11 21	− 6	—	—	—	—
Mount Wilson		73·9	59	i 11 28	− 6	—	—	—	—
Pasadena		73·9	59	i 11 28	− 6	—	—	—	—
Riverside	Z.	74·4	59	i 11 30	− 7	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Jolla		75·3	59	i 11 36	− 6	—	—	—	—
Hamburg		75·8	334	e 11 47?	+ 2	—	—	—	—
Leipzig		76·8	331	e 14 7	PP	—	—	—	—
Oak Ridge	z.	89·7	25	i 12 53	− 3	—	—	—	—

Additional readings :—
Kumagaya +2m.57s.
Kobe eSZ = +4m.12s.
Sumoto eSZ = +4m.51s. =S* −2s.
Husan PP = +3m.13s.
Hukuoka B S? = +3m.35s.
Oak Ridge eZ = +13m.7s. and +13m.12s.

Sept. 18d. 20h. 9m. 24s. Epicentre 41°·0N. 142°·5E. (as on 1934 Nov. 4d.). X.

Nagoya gives 41°·1N. 142°·8E., to which the above is the nearest previous epicentre.

A = −·599, B = +·459, C = +·656 ; D = +·609, E = +·793 ;
G = −·521, H = +·399, K = −·755.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		2·2	209	i 0 32	+ 1	i 1 2	S*	—	—
Nagoya		7·3	219	1 49	+ 5	3 45	S*	—	4·0
Vladivostok		8·1	289	i 1 37	−18	i 3 26	0	i 4·0	12·7
Kobe	E.	8·6	225	e 2 24	P*	e 3 42	+ 3	—	6·4
	N.	8·6	225	e 2 26	P*	e 3 43	+ 4	—	4·8
	z.	8·6	225	e 2 14	+12	e 3 41	+ 2	—	4·2
Sumoto	E.	9·0	224	e 2 32	+25	e 4 14	+25	—	5·8
	N.	9·0	224	e 2 29	+22	e 4 11	+22	—	5·0
Husan		12·2	245	e 2 49	− 2	e 5 22	+14	—	—
Chiufeng		20·0	276	4 26a	− 4	e 8 10	+ 4	—	12·7
Nanking	E.	21·0	252	e 4 38	− 2	—	—	e 11·8	—
Frunse		49·1	296	e 8 36	− 8	—	—	—	—
Andijan		51·5	294	e 9 9	+ 6	—	—	—	—
Tashkent		53·3	296	e 8 50	−26	i 16 42	− 4	e 25·9	33·5
Grozny		67·3	309	e 10 53	− 1	—	—	—	—
Tiflis		68·8	308	e 10 57	− 6	e 20 20	PS	e 40·6	—
Tinemaha		72·6	55	i 11 28	+ 2	—	—	—	—
Santa Barbara	z.	73·3	59	e 11 33	+ 2	—	—	—	—
Mount Wilson	z.	74·5	58	e 11 34	− 3	—	—	—	—
Pasadena	z.	74·5	58	e 11 36	− 1	—	—	—	—
Riverside	z.	75·1	58	e 11 40	− 1	—	—	—	—
Ksara		79·3	305	12 1	− 3	13 11	?	—	50·6

Additional readings :—
Kobe eN = +2m.37s.
Sumoto ePZ = +2m.37s.
Tashkent e = +20m.53s. and +22m.30s.
Long waves were also recorded at Baku, Moscow, Pulkovo, and the European stations.

Sept. 18d. Readings also at 1h. (Oak Ridge, San Juan, and near Port au Prince), 3h. (Frunse, Samarkand, and near Andijan), 4h. (Oak Ridge and Tashkent), 7h. (La Plata, La Paz, and Vladivostok), 12h. (San Juan, Wellington, and near Christchurch), 15h. (Frunse, Andijan, near Ksara, near Christchurch, and Wellington), 16h. (near Malaga), 18h. (Frunse), 20h. (Wellington), 21h. (near Mizusawa (2)), 22h. (near Granada and Malaga), 23h. (Nagoya and near Mizusawa)

Sept. 19d. 2h. 26m. 19s. Epicentre 6°·5S. 151°·0E. N.3.

A = −·869, B = +·482, C = −·113; D = +·485, E = +·875;
G = +·099, H = −·055, K = −·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		22·9	276	e 5 1	+ 1	—	—	e 10·7	—
Riverview		27·3	180	e 6 47	+66	—	—	e 10·5	16·6
Sydney		27·3	180	e 7 35	?	e 10 51	+31	13·9	17·2
Adelaide		30·6	200	—	—	e 11 11	− 3	—	18·2
Melbourne		31·8	189	—	—	e 11 41	+ 9	14·4	17·6
Apia		37·3	104	e 6 29	−40	e 11 47	−69	e 15·9	—
Wellington		40·7	153	—	—	e 13 41?	− 6	16·7	—
Perth		42·7	228	—	—	i 14 16	0	e 19·7	23·7
Sumoto		43·6	341	—	—	e 14 21	− 9	e 21·1	—
Kobe		43·8	341	e 9 37	PP	e 14 38	+ 5	—	23·7
Batavia		43·9	268	8 13	+ 9	—	—	e 21·7	—
Nagasaki		44·1	334	e 14 47	S	(e 14 47)	+10	e 19·7	22·0
Hukuoka B		44·6	336	—	—	(14 45)	+ 1	14·8	—
Hong Kong		46·1	310	8 31	+10	15 11	+ 5	—	24·4
Zi-ka-wei	Z.	47·1	325	e 8 25	− 4	15 33	+13	23·0	24·1
Nanking		49·3	323	e 8 45	− 1	e 16 5	+14	—	27·6
Keizyo	E.	49·4	335	e 11 42	PPP	—	—	—	—
Phu-Lien		51·4	303	—	—	(16 41?)	+21	16·7	—
Vladivostok		52·6	343	e 9 12	+ 1	e 16 52	+15	—	28·7
Chiufeng		56·6	329	9 41k	+ 1	e 17 31	0	e 26·1	36·1
Honolulu		57·3	60	—	—	i 17 47	+ 5	26·7	—
Agra		78·0	300	11 57	0	e 21 56	+ 2	—	—
Frunse		84·6	314	e 12 41	+10	—	—	—	—
Andijan		85·7	312	e 12 37	0	e 23 0	[− 4]	—	—
Sitka		86·7	32	—	—	e 23 9	[− 2]	e 39·2	—
Tashkent		88·1	312	e 11 54	−54	(e 24 17)	PS	e 24·3	52·3
Ukiah		90·8	51	—	—	e 23 45	{+ 4}	e 39·1	—
Victoria		92·0	42	e 24 9	S	(e 24 9)	− 6	e 42·5	45·5
Pasadena		94·3	57	i 13 14	− 3	—	—	e 44·5	—
Mount Wilson		94·4	57	13 16	− 2	—	—	—	—
Tinemaha		94·5	54	i 13 16	− 2	—	—	—	—
Haiwee	Z.	94·7	54	e 13 24	+ 5	—	—	—	—
La Jolla	Z.	95·0	58	e 13 20	0	—	—	—	—
Riverside	Z.	95·0	47	i 13 18	− 2	—	—	—	—
Bozeman		100·2	46	e 11 11	?	e 17 51	PP	e 28·0	—
Tucson		100·4	58	—	—	e 24 16	[−12]	e 41·5	—
Baku		102·7	310	e 17 53	PP	e 27 41	PS	46·7	64·8
Tiflis		106·4	312	e 18 41	PP	e 28 5	PS	e 52·7	—
Moscow		108·4	327	e 18 55	PP	e 28 11	PS	e 34·1	63·4
Pulkovo		110·7	333	19 6	PP	28 32	PS	57·7	64·2
Ksara		114·4	304	19 38	PP	—	—	58·7	65·7
Scoresby Sund		115·9	358	—	—	29 33	PS	57·7	—
Florissant		116·2	50	i 19 43	PP	—	—	e 54·7	57·7
Copenhagen		120·9	335	20 17	PP	30 5	PS	—	—
Ottawa		124·0	39	e 20 41?	PP	e 29 41?	?	e 51·7	—
Laibach		125·5	324	—	—	e 41 25	?	e 79·2	—
Vermont		126·0	39	—	—	e 27 44	{−12}	e 58·7	—
Triest		126·2	324	—	—	e 43 32	?	e 66·5	74·0
Philadelphia		126·9	44	e 22 24	?	e 32 38	?	e 53·2	—
Stuttgart		126·9	330	e 19 21	[+20]	—	—	e 63·7	73·7
Huancayo		130·3	112	e 22 38	PKS	e 31 48	PS	e 63·2	—
La Paz		135·0	121	e 19 31	[+16]	—	—	80·2	107·5
Granada		141·6	327	e 22 25	PP	e 34 53	?	—	52·1
San Juan		142·0	68	e 19 28	[+ 4]	—	—	e 64·3	—
Malaga		142·4	327	19 22	[− 3]	—	—	—	—

For Notes see next page.

NOTES TO SEPT. 19d. 2h. 26m. 19s.

Additional readings :—
Adelaide i = 2h.17m.21s. and 2h.22m.30s.
Perth i = +17m.6s. = SS + 0s.
Sumoto eN = +11m.26s., eLEN = +17m.36s.
Kobe ePE = +9m.47s. = P_cP − 7s., eE = +18m.31s.
Vladivostok e = +11m.40s.
Chiufeng SN = +17m.39s.
Agra iPS? = +22m.30s., iSS? = +27m.14s.
Sitka e = +28m.41s. = SS − 11s. and +35m.1s.
Tashkent e = +22m.35s. and +22m.53s.
Ukiah e = +30m.7s.
Tucson e = +26m.46s. = PS − 4s. and +32m.17s. = SS + 11s.
Ksara PPS = +30m.42s., SS = +35m.34s.
Scoresby Sund +30m.47s., e = +36m.23s.
Florissant ePS = +29m.23s., eSSNZ = +35m.47s., eN = +36m.53s., eSSSN = +40m.13s. ; T_g = 2h.26m.30s.
Copenhagen SS = +36m.41s.?
Ottawa e = +37m.23s. = SS − 1s.
Laibach e = +48m.30s. and +50m.29s.
Vermont e = +32m.41s.
Philadelphia e = +38m.8s. = SS + 7s. and +43m.38s.
Stuttgart ePP = +20m.53s., ePPP = +23m.41s., ePS = +30m.41s., ePPS = +32m.23s.
Huancayo e = +39m.1s., +43m.51s., +53m.29s., and +59m.21s.
La Paz PPN = +23m.5s., SSE = +44m.25s., eE = +66m.59s.
San Juan e = +20m.6s., +22m.38s. = PP + 4s., +41m.28s. = SS + 22s., +46m.46s. +55m.46s., and +63m.11s.
Malaga e = +19m.36s. and +19m.45s., L? = +33m.36s.
Long waves were also recorded at Arapuni, Bombay, Cape Town, Grozny, and other European and American stations.

Sept. 19d. 3h. Mediterranean shock.

Tunis iP = 13m.8s., iP_g = 13m.17s., PP = 13m.24s., PS = 13m.38s., iS = 14m.0s.? SS = 14m.30s.
Algiers PN = 13m.15s., P_g = 13m.28s., PP = 13m.47s., SN = 14m.13s., S_g = 14m.24s., SS = 14m.54s.
Tortosa ePN = 13m.39s., SN = 15m.39s., LN = 17m.8s., M = 17m.49s.
Alicante eP? = 13m.50s., eS = 16m.5s.
Florence eP = 14m.0s.
Granada e = 14m.20s. and 17m.5s.
Prato eP = 14m.31s., S? = 15m.24s.
Malaga e = 14m.42s., i = 15m.0s., 15m.2s., and 15m.32s., L = 17m.52s
Toledo P = 14m.39s., S? = 17m.35s., eL = 18m.34s.
Zurich eP = 14m.48s.
Laibach e = 14m.49s., 16m.48s.
Zagreb eP = 15m.17s., e = 19m.53s.
Piacenza e = 17m.0s., PP = 18m.0s.
Yalta eP = 17m.15s.
Simferopol eP = 17m.18s.
Triest e = 17m.22s., i = 18m.48s.
Ksara iP = 17m.37s., i = 19m.13s.
Strasbourg e = 19m.8s., 20m.18s., and 21m.3s., eL = 27m.
Prague e = 20m.0s. and 21m.48s., eL = 32m.0s., M = 38m.0s.
San Fernando iS = 20m.29s., L = 47m.
Paris e = 20m.35s., L = 35m., M = 46m.
Cheb e = 21m.0s., eL = 32m.0s., M = 37m.0s.
Jena e = 21m.54s., eL = 30m.0s., M = 39m.30s.
Hamburg eE = 23m.36s., eLE = 31m.
Long waves also at Almeria, Stuttgart, and De Bilt.

Sept. 19d. 9h. 55m. 46s. Epicentre 15°·8S. 69°·2W. N.2.

Given by La Plata.

$A = +\cdot342$, $B = -\cdot900$, $C = -\cdot272$; $D = -\cdot935$, $E = -\cdot355$; $G = -\cdot097$, $H = +\cdot255$, $K = -\cdot962$.

A *depth* of focus 0·030 has been assumed.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		+0·8	1·2	124	i 0 44	+15	i 0 50	− 1	1·2	1·7
Sucre		0·0	5·0	130	i 1 20	+ 9	i 2 14	+ 6	—	—
Huancayo		−0·2	7·0	302	i 1 44	+ 7	(i 2 54)	+ 1	i 2·9	—
Santiago		−1·0	17·7	184	—	—	6 18	?	—	—
La Plata	E.	−1·3	21·6	153	4 32k	− 1	8 14	+ 2	—	—
	N.	−1·3	21·6	153	i 4 34k	+ 1	8 18	+ 6	—	—
	Z.	−1·3	21·6	153	4 34k	+ 1	8 19	+ 7	—	—
San Juan		−2·2	34·3	6	e 6 24	0	i 11 23	−14	—	—
Oak Ridge	Z.	−3·5	58·4	359	i 9 27	− 1	—	—	—	—
La Jolla		−3·7	66·9	318	i 10 28	+ 1	e 19 55	PS	—	—
Riverside		−3·8	67·7	318	i 10 31	0	—	—	—	—
Mount Wilson		−3·8	68·3	318	i 10 35	0	—	—	—	—
Pasadena		−3·8	68·3	318	i 10 35	0	i 19 17	+ 3	—	—
Haiwee	Z.	−3·8	69·4	320	i 10 44	+ 2	—	—	—	—
Santa Barbara		−3·8	69·5	318	i 10 42	− 1	—	—	—	—
Tinemaha		−3·8	70·2	320	i 10 47	− 1	e 19 38	+ 1	—	—
Lick		−3·8	72·5	319	e 11 3	0	—	—	—	—

Additional readings and notes :—
Huancayo i = +2m.13s., e = +2m.32s.
La Plata Z = +4m.45s., pP? = +5m.2s., N = +8m.2s., P_cP?N = +8m.50s.; T_0 = 9h.55m.48s., depth of focus 290 km.
San Juan e = +6m.59s., +7m.46s., +9m.7s., +11m.55s., +12m.54s., and +13m.49s.
Oak Ridge iZ = +9m.35s. and +9m.38s., iN = +9m.44s.
Riverside eE = +22m.4s.
Pasadena iSE? = +22m.8s.
Tinemaha iZ = +11m.49s.
Lick iN = +11m.7s.

Sept. 19d. Readings also at 1h. (Sitka), 2h. (Mizusawa), 4h. (Belgrade), 6h. (Frunse and near Andijan), 7h. (Nagoya (3)), 9h. (Oaxaca, Tacubaya, and Sydney), 12h. (near Lick), 13h. (near Taito), 15h. (near Huhuoka B and Nagasaki), 16h. (Nagoya), 17h. (near Hukuoka (2), Hukuoka B (5), and Nagasaki (7)), 18h. (near Nagasaki), 20h. (Nagoya (2) and Sumoto), 21h. (Oak Ridge).

Sept. 20d. 1h. 46m. 39s. Epicentre 4°·0S. 142°·4E. N.1.

$A = -\cdot790$, $B = +\cdot609$, $C = -\cdot070$; $D = +\cdot610$, $E = +\cdot792$; $G = +\cdot055$, $H = -\cdot043$, $K = -\cdot998$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	13·8	325	i 3 10	− 3	6 12	+26	—	—
Amboina	14·1	271	3 18	+ 1	i 6 18	+25	e 8·4	—
Manila	28·2	312	5 46a	− 3	10 19	−16	12·6	—
Riverview	30·9	166	6 19	+ 6	i 11 34	+16	13·8	16·7
Sydney	30·9	166	i 6 9	− 4	i 11 39	+21	15·8	19·4
Adelaide	31·1	187	e 6 11	− 4	i 11 21	0	14·4	23·2
Naha	33·4	335	6 41	+ 6	12 3	+ 6	—	—
Isigakizima	33·4	330	6 36	+ 1	—	—	—	—
Kosyun	33·5	322	e 6 32	− 4	11 20	−38	—	—
Taito	33·9	323	e 6 57	+18	11 53	−11	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		33·9	177	e 6 51	+12	12 11	+ 7	14·5	—
Takao		34·3	322	e 12 21?	S	(e 12 21?)	+10	—	—
Karenko		34·5	325	e 6 43	− 2	e 12 5	− 9	—	—
Arisan		34·6	324	e 6 51	+ 5	—	—	—	—
Tainan		34·6	322	e 7 1	+15	12 36?	+21	—	—
Nake		34·7	340	6 50	+ 4	12 13	− 4	—	—
Malabar		34·7	263	e 6 57	+11	(e 11 21?)	−56	e 11·3	—
Taityu		35·2	325	7 6	+15	15 33	?	—	—
Taihoku		35·4	326	6 50	− 3	i 12 17	−10	—	16·1
Batavia		35·5	266	i 6 49	− 4	—	—	19·4	—
Kagosima		37·3	343	7 14	+ 5	13 6	+10	—	—
Miyazaki		37·4	345	7 7	− 3	13 11	+14	—	—
Perth		37·4	219	7 11	+ 1	—	—	—	—
Simidu		37·9	348	7 17	+ 3	12 59	− 6	—	—
Siomisaki		38·0	352	7 12	− 3	13 11	+ 5	—	—
Hong Kong		38·1	315	7 12k	− 4	13 17	+ 9	—	18·2
Koti		38·5	348	7 19	0	—	—	—	—
Kumamoto		38·5	345	7 22	+ 3	—	—	—	—
Nagasaki		38·6	344	e 7 14	− 6	13 0	−15	e 14·7	21·3
Omaesaki		38·8	356	7 20	− 2	13 15	− 3	—	—
Tomie		38·8	342	7 24	+ 2	13 29	+11	—	—
Wakayama		38·8	351	7 19	− 3	—	—	—	—
Mera		39·0	357	7 21	− 3	13 28	+ 7	—	—
Hamamatu		39·0	356	7 26	+ 2	13 36	+15	—	—
Yagi		39·0	351	7 22	− 2	—	—	—	—
Sumoto		39·0	351	7 22	− 2	13 5	−16	—	16·8
Saga		39·0	345	7 26	+ 2	13 30	+ 9	—	—
Kamayama		39·2	353	7 23	− 2	13 12	−12	—	—
Misima		39·2	356	7 28	+ 3	13 25	+ 1	—	—
Hukuoka		39·2	345	7 25	0	13 40	+16	—	26·4
Hukuoka B		39·2	345	7 25	0	13 38	+14	—	24·1
Kobe		39·3	352	e 7 20	− 6	13 30	+ 4	16·4	21·6
Hirosima		39·5	348	7 28	0	13 42	+13	—	—
Yokohama		39·5	357	7 26	− 2	13 35	+ 6	—	—
Nagoya		39·5	354	7 28	0	—	—	16·5	17·0
Ibukisan		39·8	354	7 29	− 1	13 35	+ 2	—	—
Tokyo		39·8	357	7 25	− 5	13 26	− 7	—	—
Gihu		39·8	354	7 29	− 1	13 33	0	—	—
Miyadu		40·1	352	7 32	− 1	13 39	+ 1	—	—
Hamada		40·1	347	7 34	+ 1	13 35	− 3	—	—
Kumagaya		40·2	356	7 32	− 2	13 38	− 1	—	—
Toyooka		40·2	347	7 34	0	13 46	+ 7	17·1	21·4
Tukubasan		40·3	354	7 29	− 6	13 29	−12	—	—
Matumoto		40·4	357	7 22	−13	—	—	—	—
Zi-ka-wei		40·5	333	e 7 24	−12	13 24	−20	16·6	22·8
Oiwake		40·5	355	7 36	0	—	—	—	—
Kanazawa		40·9	355	7 41	+ 1	13 48	− 2	—	—
Nagano		40·9	355	7 40	0	13 42	− 8	—	—
Onahama		41·0	359	7 40	0	13 51	0	—	—
Toyama		41·0	355	7 42	+ 2	—	—	—	—
Husiki		41·1	355	7 43	+ 2	13 53	0	—	—
Husan		41·1	344	e 7 22	−19	e 13 56	+ 3	e 16·5	18·4
Aidu		41·6	358	7 46	+ 1	14 5	+ 5	—	—
Hukusima		41·8	358	7 46	− 1	14 7	+ 4	—	—
Taikyu		41·9	343	7 48	0	11 33	?	16·8	—
Sendai		42·3	359	7 50	− 1	14 2	− 8	—	—
Nanking		42·5	329	i 7 48	− 5	i 14 5	− 8	e 20·0	24·4
Phu-Lien		43·0	307	e 7 49	− 8	e 13 37	−44	17·4	23·7
Mizusawa	E.	43·2	359	i 8 2	+ 4	i 14 18	− 6	i 17·8	—
	N.	43·2	359	i 8 0	+ 2	i 14 20	− 4	i 18·0	—

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Morioka	43·7	359	8 2	0	14 26	− 5	—	—
Akita	43·8	358	8 3	0	14 41	+ 8	—	—
Keizyo	44·0	342	e 8 2	− 3	14 28	− 8	—	31·2
Zinsen	44·0	341	e 8 1a	− 4	e 14 28	− 8	—	24·5
Medan	44·3	280	8 7	0	—	—	—	—
Aomori	44·8	359	8 20	+ 9	14 54	+ 7	—	—
New Plymouth	45·3	145	8 21?	+ 6	15 6	+11	23·4R	—
Arapuni	45·6	144	8 51	+33	15 39	+40	21·9	29·4
Heizyo	45·7	342	e 8 17	− 1	14 59	− 1	18·4	21·1
Hakodate	45·8	358	8 23	+ 4	—	—	—	—
Apia	46·2	106	8 28	+ 6	i 15 34	+27	—	—
Sapporo	47·1	359	8 29	0	15 34	+14	—	—
Wellington	47·2	147	e 8 36	+ 6	15 37	+16	23·3	25·4
Nemuro	47·4	4	8 31	− 1	15 34	+10	—	—
Christchurch	47·7	151	i 8 21?	−13	—	—	24·4	—
Vladivostok	48·1	350	i 7 51	−46	i 14 15	−79	17·4	—
Chiufeng	50·2	334	i 8 50a	− 3	16 11	+ 7	—	29·3
Chatham Ils.	53·9	145	6 51?	?	—	—	24·4	—
Calcutta	59·0	299	9 55	− 2	18 11	+ 8	29·3	32·8
Colombo	63·4	281	10 25	− 3	19 2	+ 2	33·0	33·8
Honolulu	63·7	64	i 10 35	+ 5	i 19 14	+10	i 26·0	—
Kodaikanal	66·2	283	i 10 39	− 8	19 24	−11	34·7	40·2
Hyderabad	66·6	291	11 4	(−15)	19 36	− 4	31·0	43·3
Agra	69·4	301	i 11 0	− 7	20 8	− 6	—	—
Dehra Dun	70·3	304	11 1	−12	20 1	−24	28·5	—
Bombay	72·1	292	11 23	0	20 44	− 2	34·4	45·9
Semipalatinsk	75·9	325	11 45	0	21 15	−15	—	—
Frunse	76·8	316	e 11 43	− 7	e 21 28	−13	35·4	—
Andijan	77·7	313	11 51	− 5	21 50	− 1	32·4	—
Tashkent	80·1	313	i 12 6	− 2	i 22 6	−11	38·4	47·2
Samarkand	81·4	311	12 17	+ 2	22 17	[−14]	31·4	—
Tananarive	93·3	251	13 30	+17	23 24	[−28]	45·9	55·9
Baku	94·5	310	e 13 16	− 2	—	—	—	—
Victoria	95·8	42	i 13 32	+ 8	i 23 59	[− 6]	i 43·5	46·8
Ukiah	95·9	51	e 13 33	+ 8	i 24 17	[+12]	43·4	—
Seattle	96·5	43	e 13 48	+21	i 24 20	[+12]	e 43·7	—
Berkeley	96·7	53	e 13 28	0	e 26 28	PS	e 43·8	—
Branner	96·7	53	e 13 39	+11	—	—	e 43·4	—
Lick	97·2	53	e 13 40	+ 9	e 24 15	[+ 3]	e 44·0	—
Grozny	97·6	313	e 12 31	−61	(24 21?)	[+ 7]	24·4	—
Tiflis	98·3	311	e 12 39	−57	e 25 10	− 2	43·4	—
Erevan	98·6	310	e 18 14	?	—	—	—	—
Santa Barbara	98·8	57	e 13 45	+ 7	e 24 39	{− 5}	—	—
Piatigorsk	99·5	314	e 13 39	− 2	—	—	e 38·4	—
Tinemaha	99·9	54	e 13 45	+ 2	e 24 23	[− 2]	—	—
Mount Wilson	100·1	56	e 13 42	− 2	i 24 23	[− 3]	—	—
Haiwee Z.	100·1	54	e 13 51	+ 7	—	—	—	—
Pasadena	100·1	56	e 13 43	− 1	e 24 21	[− 5]	i 41·3	—
Riverside E.	100·7	56	e 13 49	+ 2	e 24 25	[− 4]	—	—
La Jolla	100·9	58	e 13 48	0	i 24 26	[− 4]	—	—
Moscow	101·6	326	e 13 45	− 6	e 25 38	− 3	e 44·8	61·4
Bozeman	104·4	44	e 14 25	+21	i 24 44	[− 3]	e 43·1	—
Pulkovo	104·4	331	14 4	0	25 9	[+22]	43·4	50·2
Simferopol	105·7	315	e 14 6	− 4	25 16	{−20}	—	—
Yalta	105·8	315	e 14 5	− 5	25 14	{−22}	51·7	—
Ksara	105·9	303	14 9	− 2	24 45	[− 9]	—	—
Sebastopol	106·2	315	e 14 14	+ 2	25 26	{−13}	—	—
Tucson	106·3	58	e 14 33	+20	i 24 55	[− 1]	—	—
Denver	109·9	50	—	—	e 24 26	[−47]	e 47·0	53·0
Helwan	110·2	300	e 14 37	+ 5	i 25 19	[+ 5]	—	69·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Upsala		110·3	334	—	—	i 26 47	{+38}	e 46·4	60·9
Lemberg		111·0	322	e 19 15	PP	e 29 15	PS	e 35·5	67·4
Königsberg		111·1	328	—	—	i 25 39	[+21]	e 45·9	51·4
Bucharest		111·4	316	19 31	PP	(25 23)	[+ 4]	43·4	60·4
Scoresby Sund		112·8	354	14 57	+13	25 33	[+ 8]	—	—
Sofia		113·8	315	e 15 0	+11	e 26 15	{−19}	55·8	63·9
Copenhagen		114·8	332	14 57	+ 3	e 26 51	{+10}	46·9	—
Bergen		114·9	338	13 21?	−94	—	—	—	—
Cape Town	N.	115·0	229	14 55	0	25 19	[−15]	54·0	68·5
Budapest		115·0	321	19 32	PP	29 48	PS	e 39·4	62·9
Belgrade		115·1	318	e 18 44	[+11]	e 30 38	?	55·6	—
Vienna		116·3	323	17 41	[−55]	27 38	{+47}	—	65·4
Prague		116·6	325	e 19 27	PP	27 44	{+51}	e 48·4	63·9
Hamburg		117·1	331	i 19 51k	PP	e 29 51	PS	e 54·4	59·4
Leipzig		117·1	327	e 18 53	[+15]	e 25 45	[+ 4]	e 47·4	57·4
Graz		117·4	322	i 19 38	PP	i 27 53	{+54}	e 54·4	68·0
Des Moines		117·6	44	e 20 21	PP	e 36 51	SS	e 50·5	—
Zagreb		117·6	321	e 15 22	+15	e 25 17	[−26]	e 58·2	71·4
Jena		117·7	327	e 19 9	[+30]	i 27 57	{+56}	49·9	62·9
Cheb		117·7	326	e 16 45	?	e 27 59	{+58}	e 49·4	54·4
Hof		117·9	326	—	—	e 29 21	SKSP	e 48·4	55·6
Tacubaya	N.	118·1	70	—	—	29 9	SKSP	—	—
Göttingen		118·2	329	e 19 57	PP	i 28 1	{+57}	e 49·4	58·4
Triest		119·0	321	e 18 48	[+ 5]	i 26 8	[+21]	e 52·4	63·8
Stuttgart		120·2	326	e 15 21	+ 1	e 25 57	[+ 6]	e 51·4	64·9
De Bilt		120·3	331	i 20 24	PP	e 26 15	[+24]	e 50·2	60·7
Padova		120·3	322	e 18 21?	[−25]	—	—	—	—
Karlsruhe		120·5	327	20 50	PP	35 59	SS	49·3	68·8
Florissant		120·9	47	e 15 24	0	i 26 0	[+ 7]	e 52·4	60·7
Messina		120·9	312	20 32	PP	28 27	{+65}	—	—
Chur		121·0	324	e 18 58	[+10]	e 28 26	{+63}	—	—
Strasbourg		121·1	326	e 15 38	+14	e 25 53	[− 1]	e 51·4	69·9
St. Louis		121·1	47	e 18 57	[+ 9]	e 25 53	[− 1]	51·1	58·8
Zurich		121·3	325	e 18 48	[− 1]	—	—	—	—
Edinburgh		121·3	338	—	—	i 28 28	{+63}	48·4	63·4
Prato		121·5	320	e 18 59	[+10]	i 28 28	{+62}	38·5	58·4
Florence		121·5	320	e 18 57	[+ 8]	i 28 21	{+55}	53·4	61·4
Durham		121·5	336	20 31	PP	—	—	—	68·4
Uccle		121·5	330	e 18 54	[+ 5]	i 28 30	{+64}	51·4	61·0
Chicago		121·6	43	i 20 30	PP	e 26 7	[+12]	i 50·7	—
Basle		121·7	326	e 18 52	[+ 3]	—	—	—	—
Piacenza		121·8	322	e 19 41	[+51]	i 28 21	{+53}	i 37·4	70·4
Lille		122·3	330	—	—	e 25 50	[− 7]	35·4	—
Neuchatel		122·4	325	e 18 41	[−10]	e 28 29	{+57}	—	—
Stonyhurst		122·5	336	—	—	i 28 38	{+65}	51·4	67·4
Bidston		123·1	336	—	—	28 3	{+26}	—	83·4
Kew		123·3	333	e 19 15	[+22]	i 27 54	{+16}	52·9	63·5
Oxford		123·5	334	20 57	PP	e 37 41	SS	e 47·4	76·4
Paris		123·7	329	e 15 49	+11	e 28 54	{+73}	52·4	63·4
Ann Arbor		124·0	41	e 20 45	PP	i 28 9	{+26}	i 51·9	82·2
Grenoble		124·1	324	e 21 56	?	e 30 21	SKSP	e 58·1	68·4
Rathfarnham Castle		124·4	338	e 19 41	[+45]	i 26 21	[+18]	58·4	65·4
Tunis		125·4	313	15 20	−25	e 27 21	{−31}	53·4	—
Toronto		125·9	37	—	—	i 26 13	[+ 5]	59·0	—
Ottawa		126·9	33	e 19 11	[+10]	e 32 45	?	e 58·4	—
Pennsylvania		128·5	39	—	—	e 26 21	[+ 6]	e 57·9	66·6
Vermont		128·9	32	e 19 28	[+23]	i 27 51	{−24}	i 54·0	—
Charlottesville		129·5	43	e 21 21	PP	e 26 33	[+15]	e 53·8	—
Tortosa		129·8	322	19 0	[− 6]	e 38 21?	SS	e 54·4	67·4
Colombia		129·8	48	e 21 21	PP	e 28 21	{+ 1}	e 54·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers		130·4	316	e 18 5	[−62]	e 27 41	{−43}	53·4	73·4
Philadelphia		130·6	38	e 19 34	[+26]	—	—	i 59·3	—
Oak Ridge		131·1	33	e 16 15	+ 2	—	—	61·1	—
Santiago		131·3	142	e 18 44	[−25]	—	—	—	86·4
Weston		131·3	33	i 22 43	PKS	31 56	PS	—	—
Alicante		131·9	321	e 19 11	[+ 1]	—	—	e 59·3	69·9
Toledo		133·1	324	e 19 13	[+ 1]	e 30 13	?	63·4	70·6
Almeria		134·0	320	i 19 22	[+ 9]	—	—	e 54·9	78·8
Granada		134·5	321	i 19 20k	[+ 6]	31 50	SKSP	70·2R	72·2
Serra do Pilar		134·7	329	e 19 36	[+22]	24 58	PPP	30·1	—
Malaga		135·3	321	19 18	[+ 3]	31 58	SKSP	63·8	—
La Plata	E.	136·6	155	19 57	[+40]	26 27	[+ 4]	54·4q	59·3
	N.	136·6	155	19 45	[+28]	26 9	[−14]	57·9q	77·5
	Z.	136·6	155	19 27	[+10]	—	—	67·4	77·2
San Fernando		136·6	322	19 33	[+16]	—	—	63·4	68·4
Huancayo		139·2	113	e 19 32	[+12]	i 29 49	{+30}	i 59·4	—
Port au Prince		143·1	64	e 20 51	[+83]	26 28	[− 4]	e 68·8	—
La Paz		143·5	125	i 19 35a	[+ 6]	26 24	[− 8]	68·9R	94·9
Sucre		144·3	132	i 19 34	[+ 2]	i 26 27	[− 7]	61·9	—
San Juan		148·6	61	e 19 41	[+ 1]	—	—	i 67·4	—
Dakar		157·5	299	20 17	{−16}	28 5	SKS	67·4	105·4

Additional readings and notes :—
Amboina i = +4m.9s.
Riverview i = +6m.38s. and +7m.44s., iN = +11m.40s.
Sydney PP = +7m.36s.
Adelaide iP = +6m.39s., iPP = +7m.19s., i = +9m.30s. = P_cP +17s., iS = +11m.42s.
Melbourne iP = +7m.6s., i = +9m.38s. = P_cP +16s.
Taihoku PN = +6m.55s.
Batavia iE = +7m.10s., iN = +7m.36s., iZ = +8m.29s., iNS = +8m.51s., iE = +13m.5s. and +13m.18s.
Perth P? = +7m.36s., PP = +9m.21s. = P_cP −12s., PPP = +10m.1s., PPPP = +10m.21s., P_cS = +13m.41s.
Hong Kong SS? = +15m.51s.
Nagasaki iP = +7m.22s., ?E = +7m.40s., ?N = +7m.42s., PPN = +8m.26s., ?E = +8m.51s. = PP +6s., ?N = +8m.53s., PPPE = +9m.12s.
Sumoto iZ = +9m.52s. = P_cP +13s., iN = +10m.1s., eE = +11m.49s., eZ = +11m.53s.
Hukuoka iE = +16m.22s. = SSS −4s.
Kobe iP = +7m.28s., i = +7m.48s., PPE = +8m.41s., PPPE = +9m.8s., PPPN = +9m.14s., iNZ = +10m.22s., iE = +10m.32s., SN = +13m.22s., eSZ = +13m.35s., iN = +13m.39s., iZ = +18m.37s.
Nagoya iP = +7m.43s., PP = +9m.23s. = P_cP −17s.
Tokyo pP = +7m.52s., P_cP = +9m.39s.
Toyooka PE = +7m.38s., iEN = +9m.47s. = P_cP +5s., iE = +17m.37s. = S_cS −6s.
Zi-ka-wei iN = +9m.28s. = PPP +2s., iE = +13m.53s., +21m.28s., and +22m.2s.
Nanking iN = +8m.18s., iSSSE = +17m.32s., iSSSN = +17m.38s.
Zinsen ePP = +9m.36s., SSSE = +18m.6s. = S_cS +0s.
Medan i = +8m.21s., +8m.34s., +12m.3s., and +16m.3s.
Arapuni SS = +19m.21s.?
Apia i = +8m.55s. and +10m.30s. = PPP −11s., iPSE = +16m.11s., iSSE = +18m.50s., iSSS = +20m.7s. ; T_0 = 1h.46m.18s.
Wellington i = +8m.46s. and +8m.56s., PP? = +11m.41s., i = +17m.29s., SS? = +18m.51s.
Chiufeng iN = +14m.46s.
Chatham Ils. PP = +9m.16s., PPP = +10m.16s. = P_cP −14s., SS = +18m.51s., SSS = +20m.21s. = SS −8s.
Honolulu iP_cP = +10m.51s., iPP = +13m.50s., ePPP = +14m.46s., i = +17m.30s.
Kodaikanal PP = +13m.6s., PS = +20m.5s., SS = +23m.54s.
Agra PP = +13m.38s., PS = +20m.41s., SS = +24m.46s.
Bombay SSEN = +25m.22s., SSSEN = +28m.23s.
Tananarive ePPPE = +17m.6s., N = +17m.18s., PPPE = +19m.21s., N = +22m.2s., SKKSE = +24m.22s. = S −5s., SEN = +24m.54s., iPSE = +25m.54s., iPSN = +25m.57s., SSN = +31m.23s., E = +31m.27s., SSSN = +34m.31s.
Baku PP = +23m.5s., i = +26m.18s., +26m.21s., and +33m.4s.
Victoria ePZ = +14m.9s.
Ukiah e = +14m.49s. and +16m.56s. = PP −15s., ePP = +17m.27s., iPS = +26m.21s., iSS = +31m.37s., eSSS = +35m.57s., e = +37m.47s.
Seattle ePP = +16m.45s., e = +21m.40s. and +28m.20s., eSS = +31m.4s.

Continued on next page.

Berkeley eN = +13m.32s., iZ = +13m.59s., eEZ = +17m.29s. =PP +11s., eEN = +24m.6s. =SKS −3s., eE = +28m.44s., eN = +40m.29s.
Branner eN = +17m.29s. =PP +11s., +17m.45s., and +17m.59s.
Lick eN = +13m.42s. and +14m.6s., eE = +17m.43s., +17m.50s., and +34m.7s., eN = +38m.54s. and +43m.36s.
Grozny e = +16m.21s.?
Tiflis e = +18m.8s. ; all readings given as 10h.
Piatigorsk e = +16m.57s.
Pasadena eZ = +16m.33s., ePPZ = +17m.51s., iSKSE = +24m.34s., iPSE = +27m.3s., ePKKPZ = +29m.29s., eSS = +32m.39s., iPKPPKPZ = +38m.50s.
Moscow PP = +16m.56s., e = +20m.55s., +23m.43s., and +28m.43s.
Bozeman ePP = +18m.28s., ePPP = +21m.50s., iPS = +27m.47s., iSS = +33m.36s., e = +36m.11s., i = +37m.1s.
Pulkovo PP = +18m.19s., PPP = +20m.46s., PPS = +27m.42s., SS = +32m.39s.
Simferopol PP = +18m.43s.
Ksara PP = +18m.29s., PS = +27m.45s., SS = +33m.47s.
Sebastopol PP = +18m.13s.
Tucson iPP = +18m.34s., iPS = +27m.47s., iSS = +33m.35s., iSSS = +37m.21s.
Denver ePPE = +21m.17s., ePSE = +26m.54s., ePPSE = +27m.21s., ePPPSE = +28m.30s. =PS +3s., ePKKPEN = +30m.20s., iE = +30m.57s., iSSE = +32m.41s., iSSSEN = +37m.2s., eEN = +40m.36s. ; T_0 = 1h.46m.34s
Helwan PP = +19m.18s., i = +28m.43s.
Upsala PP = +19m.12s., iPSE = +28m.39s., iN = +34m.40s., i = +45m.37s.
Königsberg iPP = +19m.30s., eN = +21m.51s., ePPPZ = +22m.15s., eN = +23m.22s., eZ = +24m.3s., iE = +25m.28s., iSKKS = +26m.49s., iSE = +27m.21s., iPS = +28m.54s., iE = +29m.20s., ePPS = +29m.44s., eN = +31m.3s., eE = +31m.9s., eN = +34m.38s. =SS +5s., eSSE = +34m.45s., eE = +39m.20s., eSSSE = +39m.54s.
Bucharest PPEN = +21m.51s., PKSE = +22m.55s., SKKSEN = +28m.51s. = PS +9s. ; true SKS is given as PPP.
Scoresby Sund PKP = +18m.57s., iPP = +19m.25s., PPPN = +21m.33s., e = +22m.45s., +23m.16s. =PPPP +0s., +24m.15s., +26m.33s. =SKKS +6s., +26m.48s., +27m.15s., and +27m.46s., iPPS = +29m.11s., SSN = +33m.45s., eEN = +34m.51s. =SS −5s., eN = +35m.45s., SSSE = +38m.45s., iN = +39m.21s., e = +46m.21s.?
Sofia ePP = +19m.35s., e = +29m.3s. =PS −2s., eSS = +35m.41s., e = +41m.45s.
Copenhagen PP = +19m.27s., e = +19m.53s., e = +20m.51s., PPP = +22m.15s., e = +24m.45s., +27m.21s., PS = +29m.25s., PPS = +30m.32s., SS = +35m.45s., eN = +38m.9s., eE = +38m.57s.
Cape Town PPN = +19m.38s., +19m.55s., SKP = +21m.10s., PPP = +22m.25s., SKKS = +26m.50s., S = +27m.41s., PS = +29m.28s., SS = +35m.59s., SSSZ = +40m.17s., +48m.12s.
Budapest PPP = +26m.36s. =SKKS −6s., SKKS = +31m.25s., PS = +34m.51s., PPS = +36m.33s.
Belgrade e = +19m.50s. =PP +16s., ePPP = +27m.41s., ePS = +35m.32s. = SS +5s., e = +39m.53s. =SSS +18s.
Vienna iEN = +19m.6s., PP = +21m.36s.
Prague ePP = +20m.3s., ePS = +29m.27s., ePPS = +30m.33s., eSS = +35m.21s., eSSS = +39m.39s.
Hamburg iZ = +25m.6s., eE = +30m.51s., +35m.12s. and +40m.41s., iZ = +43m.52s. and +49m.39s.
Leipzig iE = +19m.2s. and +19m.21s., e = +19m.51s. =PP +3s., iPP = +20m.11s., ePPPE = +22m.33s., eE = +23m.9s., eSKS = +27m.45s., eE = +27m.51s. and +29m.57s., ePSN = +30m.3s., e = +34m.51s., eSS = +36m.7s., eN = +38m.53s., eSSS? = +39m.39s.
Des Moines eSSS = +40m.51s., e = +43m.51s.
Zagreb ePKP = +18m.46s., e = +20m.0s. =PP +8s., ePPZ = +20m.48s., eSKPZ = +22m.14s. =PPP −2s., e = +22m.45s., ePPP = +24m.15s., ePPPP = +25m.56s., ePPPPPE = +27m.51s., eNE = +29m.55s. =PS +15s., eZ = +30m.50s., eNE = +31m.51s., ePPS = +32m.20s., ePPPNE = +36m.17s. =SS +17s., eSSP = +39m.7s., ePPPP = +39m.57s. =SSS −16s., eSSSS = +46m.13s., e = +52m.15s.
Jena epN = +19m.21s., iP = +19m.57s. =PP +5s., eN = +25m.7s., e = +31m.15s. i = +36m.21s. =SS +19s.
Cheb ePP? = +19m.53s., eE = +31m.21s., eN = +36m.23s. =SS +21s.
Hof eNW = +28m.57s., e = +37m.21s.
Göttingen eN = +36m.27s. =SS +19s., iE = +36m.33s., eEN = +39m.57s. and +47m.39s.
Triest iPP = +20m.1s. and +20m.23s., iPPP = +23m.6s., i = +24m.19s. = PPPP +8s. and +26m.32s., iSKKS = +27m.17s., iS = +28m.8s., iPS = +30m.4s., iPPS = +31m.8s., i = +31m.36s. and +32m.31s., iSS = +36m.47s., iSSS = +41m.38s.
Stuttgart ePKP = +18m.57s., ePP = +20m.1s., eS = +28m.15s., ePS = +30m.21s., e = +33m.42s., eSS = +36m.47s.
De Bilt i = +20m.33s. =PP +22s., e = +28m.19s.

Continued on next page.

Florissant eZ = +17m.15s., iPKPZ = +18m.59s., iZ = +19m.10s. and +19m.36s., iPPENZ = +20m.24s., iSKKSEN = +27m.31s., eSEN = +28m.26s., iPSEZ = +30m.24s., iPPSEZ = +31m.54s., iE = +35m.51s., iSSN = +37m.8s., iSSEZ = +37m.24s., iE = +40m.54s. =SSS −8s., iSSSEN = +41m.37s., iSSSSN = +45m.38s. ; T_0 =1h.46m.34s.
Strasbourg e = +20m.10s. =PP −7s., ePP = +20m.21s., i = +20m.47s., iS = +28m.11s., PS = +30m.31s., eSS = +36m.13s., eSSS = +40m.6s.
St. Louis eN = +20m.21s. =PP +4s., ePPEN = +20m.26s., eSKKSE = +27m.30s., eSN = +28m.29s., eN = +30m.8s. =SKSP +5s., ePSN = +30m.27s., eEN = +30m.35s., eSSEN = +37m.9s., eEN = +37m.30s., eN = +37m.41s., eSSSS = +41m.21s. =SS +16s.
Zurich e = +31m.21s. and +37m.0s.
Edinburgh e = +23m.21s.?, i = +37m.18s.
Prato i = +20m.21s. =PP +2s.
Florence PS = +30m.51s., SS = +37m.21s.
Uccle ePP = +20m.22s., i = +20m.42s., PS = +30m.15s., SS = +37m.3s., i = +40m.26s.
Chicago e = +21m.57s., iPS = +30m.27s., iSS = +37m.14s., iSSS = +41m.47s.
Piacenza P = +20m.23s. =PP +1s., SS = +30m.21s. =PS +2s.
Stonyhurst iPP = +20m.48s., iPS = +30m.43s., iSS = +37m.33s.
Bidston ePP = +20m.56s., iPS = +30m.59s.
Kew ePPNZ = +20m.56s., iPPE = +21m.3s., iZ = +21m.34s., ePKKPEN = +28m.50s., iPSENZ = +30m.50s., ePKKSEN = +32m.37s., iSS = +37m.45s., eE = +47m.10s., eEN = +50m.27s.
Paris i = +19m.14s. =PKP +20s., iPP = +20m.46s.
Ann Arbor e = +26m.21s. =SKS +19s., iPS = +32m.33s., iSS = +38m.21s., iSSS = +42m.45s. ; T_0 =1h.48m.24s.
Rathfarnham Castle e = +20m.42s. =PP +3s. and +23m.18s. =PPP +6s., i = +24m.8s., +33m.23s., +39m.31s., and +44m.8s.
Tunis ePP = +20m.0s., ePPP = +21m.39s.
Toronto ePPN = +20m.44s., iN = +28m.17s. =SKKS +22s., iPPS = +32m.19s., iSS = +38m.3s.
Ottawa e = +20m.58s. =PP +1s., i = +38m.27s.
Pennsylvania e? = +22m.32s., +34m.23s., +39m.29s., and +43m.24s.
Vermont iPP = +21m.13s., e = +22m.31s., iPPP = +24m.21s., iPS = +33m.11s., iSS = +39m.21s., e = +46m.46s. =SSSS +11s.
Charlottesville i = +22m.38s. =PKS, eSKKS = +28m.13s. =SKKS −6s., ePS = +31m.41s., e = +34m.21s., iSS = +38m.37s., e = +42m.46s., and +48m.11s.
Columbia e = +22m.39s. =PKS and +34m.11s., eSS = +38m.57s., eSSS = +43m.1s.
Algiers iPP = +19m.17s. =PKP +10s., e = +21m.45s., SKS = +24m.42s., SS = +34m.21s.?, SSS = +38m.21s.?
Philadelphia e = +20m.23s., iPP = +21m.26s., i = +22m.40s. =PKS +4s., +23m.39s., +33m.52s., +35m.18s., and +38m.11s., iSS = +40m.19s., i = +53m.13s. and +55m.15s.
Oak Ridge iPKP = +19m.8s., iZ = +19m.12s. and +19m.17s., e = +19m.21s., eE = +19m.26s., iZ = +19m.30s. and +19m.33s., iN = +19m.36s., e = +19m.43s., eZ = +20m.49s., e = +21m.32s. =PP +7s. and +22m.5s., iSKPZ = +22m.34s., iSKPN = +22m.42s., iE = +23m.17s., eN = +23m.42s., iE = +34m.41s., eZ = +34m.56s., iN = +39m.1s. =SS +7s., i = +41m.0s., e = +43m.43s. =SSS +9s., i = +45m.5s.
Santiago e = +22m.6s. and +38m.25s.
Alicante ePKP = +21m.45s. =PP +15s., PP = +22m.55s. =PKS +13s.
Toledo PP = +21m.55s., PPP = +24m.54s., SS = +39m.34s., SSS = +44m.43s., L_g = +56·8m.
Almería ePP = +22m.42s. =PKS −8s., SS = +39m.31s.
Granada i = +19m.30s., SKP = +22m.36s., i = +23m.10s., PPP = +24m.33s., PPS = +32m.54s., L_g = +60·9m.
Malaga i = +19m.44s., +19m.52s., +19m.56s., and +20m.2s., PKP = +22m.46s. =PKS −9s., i = +22m.53s., e = +24m.55s., i = +25m.40s., e = +26m.22s., PS = +33m.38s., SS = +40m.3s.
La Plata Z = +19m.45s., PKPN = +20m.9s., PKSZ = +22m.57s., PKSEN = +23m.9s., SKKSN = +28m.39s., PSN = +32m.57s., PPS?Z = +34m.57s., SSN = +39m.57s., SSE = +40m.21s., PSS?N = +42m.3s., E = +42m.15s., SSSE = +44m.51s., SSSN = +45m.45s.
San Fernando iPKP = +23m.12s. =PKS +13s., iSS = +40m.26s.
Huancayo iPP = +22m.46s., iSS = +40m.16s.
Port au Prince SKP = +22m.23s. =PP −17s., PPP = +22m.51s.
La Paz iPPE = +22m.50s., iSKP = +23m.27s., iSKKS = +28m.56s., iE = +30m.38s., iSKSP = +31m.58s., PPS = +34m.51s., SS = +41m.56s., SSS = +47m.28s., SSSS = +50m.50s., L_gN = +61m.24s., L_gE = +62m.21s.
Sucre PP = +22m.59s., iSS = +43m.17s.
San Juan i = +19m.59s. and +21m.31s., iSS = +42m.36s., iSSS = +48m.56s., i = +61m.21s.
Dakar PP = +24m.54s., SS = +44m.20s.
Long waves at Montezuma.

Sept. 20d. 5h. 23m. 8s. Epicentre 3°·6S. 142°·8E. N.1.

A = −·795, B = +·603, C = −·063; D = +·605, E = +·797; G = +·050, H = −·038, K = −·998.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	13·8	325	3 14	+ 1	—	—	—	—
Amboina	14·6	269	3 27	+ 4	6 22	+17	—	—
Manila	28·2	312	i 5 49a	0	i 10 22	−13	13·3	—
Titizima	30·7	358	6 18	+ 7	10 48	−28	—	—
Riverview	31·2	166	6 17	+ 1	i 11 22	− 1	15·9	19·7
Sydney	31·2	166	i 7 22	PP	i 13 10	SS	16·4	19·4
Adelaide	31·6	187	i 6 22	+ 3	i 11 19	− 8	i 14·5	20·3
Naha	33·2	335	6 34	0	12 6	+12	—	—
Isigakizima	33·3	330	6 32	− 2	—	—	—	—
Kosyun	33·5	332	e 6 22	−14	—	—	—	—
Taito	33·8	323	e 6 54	+15	13 54	SS	—	—
Melbourne	34·3	177	i 8 10?	PP	—	—	14·2	—
Nake	34·4	340	6 48	+ 4	12 23	+11	—	—
Karenko	34·5	325	e 6 41	− 4	12 13	− 1	—	—
Tainan	34·5	322	e 6 50	+ 5	—	—	—	—
Taityu	35·1	325	6 55	+ 5	15 5	?	—	—
Malabar	35·2	263	e 6 55	+ 4	—	—	—	—
Taihoku	35·3	326	i 6 56	+ 4	12 28	+ 2	—	19·8
Batavia	35·9	266	i 6 57	0	—	—	e 17·9	—
Miyazaki	37·1	345	7 7	•0	12 41	−12	—	—
Simidu	37·6	348	7 13	+ 1	13 3	+ 3	—	—
Siomisaki	37·6	352	7 10	− 2	—	—	—	—
Perth	38·0	219	7 12	− 3	12 52	−14	—	—
Hong Kong	38·1	315	7 17k	+ 1	13 11	+ 3	15·9	17·3
Uwazima	38·1	345	7 16	0	13 3	− 5	—	—
Koti	38·2	348	7 14	− 3	—	—	—	—
Kumamoto	38·2	345	7 18	+ 1	13 8	− 1	—	—
Nagasaki	38·3	344	i 7 18k	0	12 56	−15	e 14·9	18·8
Wakayama	38·5	351	7 17	− 2	13 13	− 1	—	—
Matuyama	38·6	345	7 19	− 1	13 10	− 5	—	—
Hamamatu	38·6	356	7 18	− 2	13 25	+10	—	—
Sumoto	38·7	356	7 20	− 1	13 20	+ 3	—	29·8
Osaka	38·8	352	7 19	− 3	13 22	+ 4	—	—
Kobe	38·9	352	e 7 19	− 4	13 24	+ 4	16·5	21·4
Kameyama	38·9	353	7 24	+ 1	13 22	+ 2	—	—
Misima	38·9	356	7 22	− 1	13 18	− 2	—	—
Hukuoka	39·0	345	6 58	−26	13 16	− 5	—	—
Hukuoka B	39·0	345	7 23	− 1	13 23	+ 2	—	16·3
Nagoya	39·1	354	i 7 27	+ 3	—	—	16·4	16·7
Yokohama	39·1	357	7 23	− 1	13 21	− 1	—	—
Okayama	39·2	348	7 25	0	13 20	− 4	—	—
Hikone	39·3	353	7 18	− 8	13 21	− 5	—	—
Ibukisan	39·4	354	7 25	− 2	—	—	—	—
Tokyo	39·4	357	7 24	− 3	13 23	− 4	—	—
Toyooka	39·8	347	7 32	+ 2	13 32	− 1	16·6	21·3
Hamada	39·8	347	7 29	− 1	13 39	+ 6	—	—
Kumagaya	39·9	356	7 28	− 3	13 24	−11	—	—
Tukubasan	39·9	354	7 27	− 4	13 18	−17	—	—
Oiwake	40·1	355	7 33	0	13 40	+ 2	—	—
Zi-ka-wei	40·3	333	e 7 47	+12	—	—	16·6	19·7
Kanazawa	40·5	355	7 34	− 2	13 47	+ 3	—	—
Nagano	40·5	355	7 37	+ 1	13 43	− 1	—	—
Husan	40·8	344	7 40	+ 1	13 48	0	17·1	—
Wazima	41·4	353	7 43	− 1	13 53	− 4	—	—
Taikyu	41·6	343	7 47	+ 2	14 3	+ 3	—	—
Sendai	41·9	359	7 45	− 3	14 9	+ 4	—	—
Nanking	42·3	329	i 7 52	+ 1	i 14 13	+ 3	19·1	21·9
Mizusawa	42·8	359	e 7 53	− 2	i 14 11	− 7	e 17·6	—
Phu-Lien	43·0	307	i 7 56	− 1	14 24	+ 3	19·9	—
Morioka	43·3	359	7 58	− 1	14 31	+ 6	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Akita		43·4	358	8 1	+ 1	14 34	+ 7	—	—
Keizyo		43·7	342	e 7 52	−10	14 40	+ 9	—	14·8
Zinsen		43·8	341	i 8 0a	− 3	e 14 33	0	—	14·8
Aomori		44·5	359	8 10	+ 1	14 49	+ 6	—	—
Medan		44·7	280	8 12	+ 2	14 28	−19	—	—
Heizyo		45·4	342	e 8 19	+ 3	e 15 4	+ 8	18·7	—
New Plymouth		45·4	145	e 10 52?	PPP	—	—	25·9R	—
Arapuni		45·7	144	—	—	15 16	+16	22·7	24·9
Urakawa		45·8	359	8 21	+ 2	15 13	+11	—	—
Apia		45·9	106	8 21	+ 1	15 14	+11	—	—
Sapporo		46·7	359	8 28	+ 2	15 4	−10	—	—
Dairen		46·8	336	8 36	+ 9	15 35	+19	—	—
Wellington		47·3	147	e 8 32	+ 1	15 22	− 1	e 25·4R	26·9
Vladivostok		47·7	350	i 6 34	?	i 12 14	?	13·2	31·3
Chiufeng		50·1	334	i 8 50a	− 2	e 16 7	+ 5	—	—
Chatham Ils.		54·0	145	5 42?	?	13 52	?	25·4	—
Calcutta		59·2	299	9 58	− 1	18 16	+11	28·8	—
Honolulu		63·2	64	e 10 27	0	e 19 2	+ 5	28·5	—
Colombo		63·7	281	10 27	− 3	19 6	+ 2	32·7	34·9
Kodaikanal		66·5	285	i 10 47	− 2	i 19 37	− 2	31·4	41·1
Hyderabad		66·8	291	10 57	+ 6	19 43	+ 1	31·7	46·5
Agra		69·5	301	11 9	+ 1	i 20 19	+ 4	33·2	38·8
Bombay		72·4	292	i 11 24	− 1	i 20 47	− 3	34·9	44·5
Frunse		76·8	316	e 11 52	+ 2	e 21 33	− 8	38·9	—
Andijan		77·7	313	e 11 57	+ 1	e 21 54	+ 3	35·9	—
Samarkand		81·5	311	e 12 16	0	e 22 25	− 7	38·4	—
Sitka		88·6	33	e 12 59	+ 8	i 23 41	− 2	i 39·3	—
Tananarive		93·8	251	18 2	?	25 40	PS	44·6	56·9
Victoria	E.	95·3	42	i 13 27	+ 5	i 25 52	PS	i 43·4	44·9
Ukiah		95·4	51	e 17 16	PP	i 24 52	+ 6	42·7	—
Seattle		96·0	43	e 14 11	+46	e 25 11	+20	e 43·7	—
Berkeley		96·1	53	e 13 27	+ 1	—	—	e 43·2	—
Lick		96·6	53	e 13 36	+ 8	—	—	43·8	—
Grozny		97·6	313	e 13 40	+ 8	e 25 31	+26	—	—
Santa Barbara	Z.	98·2	57	e 13 37	+ 2	—	—	—	—
Tiflis		98·4	311	e 18 58	?	e 27 28	?	e 49·9	—
Erevan		98·7	310	e 13 34	− 4	—	—	—	—
Tinemaha	Z.	99·3	54	e 13 40	0	—	—	—	—
Pasadena		99·5	56	e 13 42	+ 1	e 24 .4	[−19]	e 44·8	—
Mount Wilson	Z.	99·6	56	e 13 33	− 9	—	—	—	—
Haiwee	Z.	99·6	54	e 13 42	0	—	—	—	—
Riverside		100·2	56	e 13 41	− 3	—	—	—	—
La Jolla		100·3	58	e 13 45	0	—	—	—	—
Moscow		101·5	326	e 13 44	− 6	25 29	−11	e 49·6	68·4
Bozeman		103·8	44	e 18 12	PP	e 25 42	−18	e 47·6	—
Pulkovo		104·3	331	14 2	− 1	25 58	− 6	50·9	62·5
Simferopol		105·7	315	e 17 28	[−36]	e 24 50	[− 3]	—	—
Tucson		105·7	58	e 18 32	PP	i 27 52	PS	e 48·1	—
Yalta		105·8	315	e 18 32	PP	e 24 52	[− 2]	—	—
Ksara		106·0	303	e 14 16	+ 5	27 52	PS	—	—
Sebastopol		106·2	315	e 19 18	?	e 25 50	{+11}	—	—
Denver		109·3	50	—	—	e 27 24	?	—	e 53·3
Upsala		110·1	334	e 19 4	PP	i 28 25	PS	e 52·9	60·2
Helwan		110·4	300	e 18 54	PP	i 28 36	PS	—	70·9
Königsberg		111·0	328	e 18 55	PP	i 25 20	[+ 2]	e 53·9	57·9
Bucharest		111·4	316	19 12	PP	28 56	PS	—	72·9
Scoresby Sund		112·4	354	—	—	25 24	[0]	—	—
Sofia		113·8	315	e 19 33	PP	—	—	e 59·4	63·5
Copenhagen		114·6	332	—	—	25 26	[− 6]	54·9	—
Budapest		114·9	321	e 18 52?	[+20]	i 27 28	{+47}	59·9	62·9
Cape Town		115·6	229	19 19	PP	22 58	?	53·9	62·0
Vienna		116·2	323	e 17 57	[−39]	—	—	—	—
Prague		116·5	325	—	—	26 46	{− 6}	e 55·9	60·9
Hamburg		117·0	331	e 19 46	PP	i 25 46	[+ 5]	e 55·9	58·9
Leipzig		117·0	327	e 19 46	PP	e 25 36	[− 5]	e 53·9	66·9

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Graz		117·3	322	e 18· 1	[−38]	i 25 41	[− 1]	e 48·9	63·2
Zagreb		117·5	321	e 18 45	[+ 6]	e 25 41	[− 1]	—	—
Jena		117·6	327	—	—	e 25 32	[−11]	—	75·4
Cheb		117·6	326	e 20 0	PP	e 29 59	PS	e 55·9	73·9
Göttingen		118·1	329	i 20 2a	PP	i 25 42	[− 2]	54·9	60·9
Triest		119·0	321	e 18 47	[+ 4]	i 25 44	[− 3]	—	58·1
Stuttgart		120·1	326	e 18 52	[+ 6]	e 27 0	{−17}	e 56·9	73·9
De Bilt		120·2	331	i 20 18	PP	e 30 9	PS	e 59·9	63·5
Florissant		120·4	47	15 3a	−17	i 25 49	[− 3]	i 59·8	—
St. Louis		120·6	47	e 20 13	PP	e 25 51	[− 1]	e 58·3	61·5
Chur		120·9	324	e 18 49	[+ 1]	—	—	—	—
Chicago		121·0	43	i 20 20	PP	e 28 23	{+60}	e 57·6	—
Strasbourg		121·0	326	i 20 22k	PP	—	—	e 53·9	60·2
Zurich		121·2	325	e 18 51	[+ 3]	—	—	—	—
Uccle		121·4	330	e 20 22	PP	e 30 19	PS	e 58·9	—
Florence		121·4	320	e 19 22	[+33]	25 52	[− 3]	—	—
Prato		121·5	320	e 18 52	[+ 3]	i 25 54	[− 1]	59·3	—
Basle		121·6	326	e 18 54	[+ 5]	—	—	—	—
Piacenza		121·8	322	20 40	PP	28 24	{+56}	—	67·5
Stonyhurst		122·3	336	—	—	i 30 29	PS	55·9	76·6
Neuchatel		122·3	325	e 18 53	[+ 2]	—	—	—	—
Kew		123·1	333	—	—	e 27 36	{− 1}	54·2	68·3
Ann Arbor		123·4	41	e 20 40	PP	e 27 34	{− 5}	57·9	65·4
Paris		123·5	329	20 39	PP	e 30 40	PS	58·9	61·9
Rathfarnham Castle		124·2	338	e 23 2	PPP	e 29 43	?	58·1	81·0
Toronto		125·3	37	—	—	i 30 52?	PS	58·9	—
Ottawa		126·4	33	e 20 52	PP	e 31 4	PS	e 58·9	—
Vermont		128·3	32	e 21 2	PP	e 28 2	{− 9}	e 53·9	—
Charlottesville		129·0	43	e 20 14	?	e 31 20	PS	e 50·7	—
Columbia		129·2	48	e 21 12	PP	e 26 12	[− 5]	e 59·1	—
Philadelphia		130·0	38	i 21 21	PP	i 31 15	PS	e 55·4	—
Algiers		130·4	316	—	—	i 22 36	PKS	—	—
Oak Ridge		130·5	33	e 19 3	[− 5]	28 24	{− 1}	e 64·9	—
Weston		130·7	33	e 22 43	PKS	—	—	—	66·9
Alicante		131·8	321	e 19 20	[+10]	—	—	e 67·1	—
Toledo		133·0	324	e 19 15	[+ 3]	—	—	—	—
Almeria		133·9	320	e 19 27	[+14]	—	—	e 68·2	—
Granada		134·4	321	—	—	26 29	[− 3]	66·9	73·5
Serra do Pilar		134·5	329	16 52?	+22	—	—	—	—
Malaga		135·2	321	21 48	PP	—	—	63·7	—
San Fernando		136·5	322	22 57	PKS	33 8	SKSP	66·9	71·4
La Plata	E.	136·8	155	—	—	32 58	PS	65·9R	72·4
	N.	136·8	155	19 28	[+11]	34 16	?	65·9R	71·8
Huancayo		139·0	113	i 19 28	[+ 8]	e 32 7	SKSP	—	—
La Paz		143·4	125	i 19 32a	[+ 3]	i 26 25	[− 8]	69·9R	84·9
Sucre		144·3	132	e 19 31	[− 1]	29 1	{−48}	72·9	—
San Juan		148·1	61	i 19 46	[+ 7]	e 32 52	SKSP	66·9	—

Additional readings :—

Riverview iEN = +7m.32s., iN = +12m.8s. and +12m.24s., iE = +13m.2s. = SS +4s. and +13m.22s.
Sydney PS = +11m.22s. = S −1s.
Adelaide i = +7m.41s., +8m.46s., +10m.39s., +11m.51s., +13m.51s., and +17m.48s.
Batavia iZ = +8m.26s. = PPP +2s., iE = +8m.30s. = PPPP +2s., iN = +8m.33s., eE = +14m.4s., iN = +15m.23s.
Hong Kong PP = +8m.42s.
Nagasaki PPN = +8m.46s.
Sumoto PZ = +7m.18s., eN = +11m.22s., eZ = +11m.45s.
Kobe P = +7m.25s., eZ = +8m.59s. = PPP −5s., iN = +13m.27s., L_qE = +16·2m. iE = +18m.39s.
Hukuoka iE = +16m.19s. = SSS −2s.
Nagoya PP = +9m.1s. = PPP −6s.
Toyooka iZ = +8m.10s., SZ = +13m.39s.
Taikyu e = +10m.25s.
Nanking eN = +9m.37s., iSS = +17m.33s.
Phu-Lien ePP = +9m.31s., SS = +17m.52s.?

Continued on next page.

Keizyo e = +11m.56s.
Wellington SS = +19m.52s. =SSSS +1s., L_g = +19m.52s.
Honolulu iPS = +10m.31s., ePPP = +14m.20s., iS = +19m.10s. =PS +4s.
Kodaikanal PP = +13m.9s., PPP = +14m.34s., PS = +20m.7s., SS = +24m.10s., SSS = +26m.25s.
Agra PP = +13m.48s., PPP = +15m.12s., PS = +20m.49s., SS = +25m.0s., SSS = +27m.35s.
Bombay PPEN = +14m.6s., SSSEN = +28m.29s.
i = +28m.2s., e = +32m.12s., iSSS = +33m.41s., e = +35m.58s.
Sitka iP = +13m.32s., ePP = +17m.28s., iSKS = +23m.12s., ePS = +25m.15s., i = +28m.2s., e = +32m.12s., iSSS = +33m.41s., e = +35m.58s.
Tananarive SKS = +23m.49s., N = +26m.26s., SSE = +30m.52s. ?, N = +38m.52s. ?
Ukiah e = +21m.40s., eSKS = +24m.10s., iPS = +26m.0s., eSS = +31m.12s., e = +39m.36s.
Seattle ePP = +17m.21s., e = +22m.59s., ePS = +26m.1s.
Berkeley eN = +13m.31s., eE = +17m.20s. =PP +7s.
Lick eN = +40m.9s.
Grozny ePP = +17m.28s.
Tinemaha e = +13m.46s.
Pasadena iPPEZ = +17m.57s.
Riverside iPPEZ = +18m.2s.
Moscow PP = +18m.0s., SKS = +24m.29s., PS = +26m.58s.
Bozeman eSKS = +24m.42s., ePS = +26m.45s., e = +31m.2s., eSS = +33m.25s., e = +36m.17s. and +47m.52s.
Pulkovo PP = +18m.22s., SKS = +24m.42s., PS = +27m.27s., SS = +33m.4s.
Tucson eSS = +33m.25s., e = +43m.46s.
Ksara PP = +18m.40s.
Denver ePPE = +21m.18s. =PPP +13s., eSSE = +32m.24s., eSSSE = +36m.49s., eE = +38m.12s. =SSS +3s. and +40m.33s. ; T_0 =5h.22m.52s.
Helwan e = +19m.15s. =PP +15s., i = +31m.57s and +40m.2s.
Königsberg eE = +20m.10s., iE = +23m.20s. =PPPP +20s., eE = +23m.42s., eEN = +28m.22s. =PS −16s., eN = +35m.51s., iE = +36m.20s.
Bucharest PPE = +21m.40s., PPPE = +25m.18s. =SKS −1s.
Scoresby Sund PP = +19m.10s., eZ = +20m.45s., PPP = +21m.46s., eE = +22m.16s., S = +26m.16s. =SKKS −8s., eE = +27m.30s., PS = +28m.58s. SS = +34m.34s.
Copenhagen PP = +19m.35s., eE = +21m.33s., PPPZ = +22m.4s., SKKS = +26m.40s., PS = +29m.6s., SS = +35m.40s.
Budapest i = +22m.10s.
Cape Town PPP = +20m.13s., SKKS = +24m.19s., PS = +27m.47s., SS = +32m.12s., SSS = +36m.12s.
Vienna PP = +19m.40s.
Prague ePP = +19m.52s., ePS = +28m.52s., eSS = +34m.47s.
Hamburg eN = +47m.16s.
Leipzig e = +27m.46s., eN = +28m.10s., e = +29m.40s. =PS +5s., eN = +30m.46s. and +36m.4s. =SS +10s.
Zagreb eNE = +20m.8s., e = +22m.17s. =PPP +2s., eNE = +29m.35s. =PS −4s. and +31m.36s.
Jena e = +19m.52s. =PP +0s., eE = +25m.40s., and +29m.52s. =PS +12s.
Cheb ePP = +25m.41s. =SKS −2s.
Göttingen eEN = +29m.52s. =PS +7s.
Triest i = +28m.4s. and +29m.45s. =PS −8s.
Stuttgart ePP = +20m.15s., eS = +28m.4s., ePS = +29m.58s.
Florissant iPP = +20m.13s., iSKKSN = +27m.20s., iSN = +28m.15s., iPSEN = +29m.57s., iPSN = +30m.1s., iPPSE = +31m.47s., iSSN = +36m.45s., iSSSN = +41m.23s. ; T_0 =5h.22m.52s.
St. Louis eN = +23m.58s., eSKKSN = +27n .20s., eSN = +28m.7s., ePSN = +29m.52s., eN = +29m.59s. and +30m.14s., eSSN = +36m.13s.;
Chicago ePS = +29m.58s., iSS = +36m.56s., iSSS = +41m.28s., e = +50m.48s.
Strasbourg ePPP = +22m.52s.
Stonyhurst iPP = +20m.36s., i = +38m.7s.
Kew ePP = +20m.39s., ePPP = +23m.15s., iPS = +30m.34s., eE = +30m.39s., ePKKS = +32m.20s., eSS = +37m.23s., eSSSE = +43m.10s. , eEN = +50m.59s.
Ann Arbor e?N = +21m.40s., e = +30m.28s. =PS −5s., eSS = +37m.52s., e = +42m.16s.
Rathfarnham Castle e = +31m.52s. ? and +38m.17s.
Toronto iN = +21m.2s., i = +37m.58s. =SS +17s.
Ottawa e = +32m.52s. and +37m.58s. =SS +3s.
Vermont i = +22m.30s., e = +25m.52s., eSS = +38m.22s.
Charlottesville ePP = +21m.24s., ePPP = +24m.57s., e = +29m.24s., e = +33m.12s., eSS = +38m.38s., e = +40m.52s.
Columbia i = +22m.28s., ePS = +31m.21s., eSS = +38m.22s.
Philadelphia iPKS = +22m.29s., e = +33m.5s., eSS = +38m.40s.
Algiers i = +21m.28s. and +31m.33s. =PS −2s.

Continued on next page.

Oak Ridge iPKP = +19m.39s., ePP = +21m.13s., iSKP = +22m.35s., eN = +26m.8s. = SKS −13s., ePS = +31m.24s., e = +33m.36s. and +34m.34s., iSS = +37m.42s.
Alicante ePKP = +21m.36s. = PP + 7s., ePP = +24m.25s. = PPP + 12s.
La Plata PKSN = +22m.58s.
Toledo PP = +21m.47s., i = +22m.44s. = PKS − 2s.
Almeria PP = +22m.54s. = PKS + 4s.
Granada PP = +21m.40s., SKP = +22m.39s., PPP = +24m.50s., SKKS = +28m.22s.
Malaga PKP = +25m.3s., SS = +43m.40s.
San Fernando PP = +27m.46s., iSS = +43m.16s.
Huancayo e = +20m.44s., ePP = +22m.12s., ePPP = +26m.55s.
La Paz iPP = +22m.49s., SKP = +23m.19s., iSKP = +24m.10s., SKKS = +29m.39s., SS = +42m.16s., SSS = +48m.29s.
Sucre SS = +41m.40s.
San Juan i = +20m.22s., iPP = +23m.32s., e = +36m.37s. and +42m.2s. = SS −16s., eSS = +42m.52s., iSSS = +48m.32s.
Long waves at Edinburgh, Durham, Christchurch, Pennsylvania, Grenoble, and Karlsruhe.

Sept. 20d. 20h. **Readings for which no determination has been made :—**

Amboina P = 10m.53s.
Vladivostok e = 12m.32s., e = 14m.33s., e = 15m.34s., eS = 19m.35s.
Nagasaki P = 13m.28s.
Nanking iP = 14m.16s., eS? = 21m.5s.
Chiufeng P = 15m.5s., SE = 22m.35s.
Andijan eP = 18m.0s.
Frunse eP = 18m.2s.
Tashkent P = 18m.17s., S = 28m.28s., eL = 44m.54s., M = 50m.0s.
Pasadena iP = 18m.35s., iZ = 19m.7s., iEZ = 19m.31s.
Tinemaha iP = 18m.36s.
Mount Wilson iP = 18m.36s., iZ = 19m.18s., iZ = 19m.31s.
Riverside iP = 18m.38s.
Haiwee ePZ = 18m.38s.
La Jolla iPZ = 18m.40s., eZ = 19m.24s.
Melbourne i = 18m.42s., L = 22m.50s., M = 24·4m.
Sverdlovsk P = 18m.52s., S = 29m.12s., L = 36m.12s.
Riverview e = 19m.6s.
Oak Ridge eZ = 24m.30s.
La Paz PE = 24m.59s., PZ = 28m.11s.

Sept. 20d. 21h. 4m. 10s. **Epicentre 4°·0S. 142°·4E. (as at 1h. 46m.).** X.

A = −·790, B = +·609, C = −·070.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		14·1	271	0 55	?	3 39	?	—	—
Manila		28·2	312	5 53	+ 4	12 34	?	—	—
Riverview		30·9	166	e 9 2	(−11)	—	—	e 18·0	18·9
Sydney		30·9	166	(e 7 8)	PP	(i 11 8)	−10	(18·3)	(14·2)
Adelaide		31·1	187	e 6 17	+ 2	i 11 25	+ 4	—	19·9
Melbourne		33·9	177	e 9 9	(−13)	i 12 15	+11	15·4	20·0
Batavia		35·5	266	e 5 51	−62	e 8 28	PPP	—	—
Perth		37·4	219	(7 15)	+ 5	(i 13 11)	+14	(16·5)	(18·8)
Hong Kong		38·1	315	7 12	− 4	—	—	14·4	17·5
Nagasaki		38·6	344	e 7 50	+30	—	—	—	—
Husan		41·1	344	e 11 11	?	—	—	—	—
Taikyu		41·9	343	e 6 40	−68	—	—	—	—
Nanking	E.	42·5	329	7 53	0	14 29	+16	17·5	—
Phu-Lien		43·0	307	7 50?	− 7	—	—	—	—
Wellington		47·2	147	e 7 50?	−40	—	—	26·8	—
Vladivostok		48·1	350	e 6 38	?	—	—	13·2	22·5
Chiufeng		50·2	334	i 8 52a	− 1	i 16 21	+17	—	24·7
Calcutta		59·0	299	10 4	+ 7	18 28	PS	29·2	—
Agra		69·4	301	11 4	− 3	20 22	+ 8	—	—
Bombay		72·1	292	i 11 24	+ 1	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Frunse		76·8	316	e 10 57	−53	—	—	—	—
Andijan		77·7	313	e 9 37	?	—	—	—	—
Tashkent		80·1	313	(i 12 30)	+22	(i 22 37)	+20	(e 41·7)	(56·5)
Sverdlovsk		88·8	328	i 12 54	+2	i 23 42	−3	35·8	48·6
Sitka		89·1	33	e 20 50	?	e 23 45	−2	e 35·8	—
Baku		94·5	310	e 13 19	+1	e 26 13	PS	e 50·8	—
Ukiah		95·9	51	e 17 26	PP	e 26 2	PS	e 43·0	—
Tinemaha	z.	99·9	54	e 13 43	0	—	—	—	—
Pasadena		100·1	56	e 13 39	−5	—	—	—	—
Mount Wilson	z.	100·1	56	i 13 40	−4	—	—	—	—
Riverside	z.	100·7	56	e 13 45	−2	—	—	—	—
Moscow		101·6	326	—	—	e 24 28	[−5]	e 48·4	60·2
Pulkovo		104·4	331	e 18 26	PP	e 24 38	[−9]	50·8	56·8
Simferopol		105·7	315	e 17 39	[−25]	—	—	—	—
Yalta		105·8	315	e 16 48	?	—	—	—	—
Ksara		105·9	303	e 14 13	+3	27 58	PS	—	—
Tucson		106·3	58	—	—	e 27 44	PS	e 48·1	—
Scoresby Sund		112·8	354	19 50?	PP	28 56	PS	—	—
Stuttgart		120·2	326	20 17	PP	e 30 14	PS	e 58·8	—
De Bilt		120·3	331	e 20 23	PP	e 30 5	PS	e 58·8	60·6
Florissant		120·9	47	e 17 47	[−61]	e 30 3	PS	e 55·9	61·7
St. Louis		121·1	47	e 9 33	?	—	—	e 56·3	61·5
Strasbourg		121·1	326	—	—	e 30 13	PS	e 55·8	—
Uccle		121·5	330	—	—	e 30 20	PS	e 59·8	—
Kew		123·3	333	—	—	e 30 32	PS	61·8	—
Paris		123·7	329	e 20 41	PP	—	—	64·8	—
Ottawa		126·9	33	e 21 20	PP	e 38 14	SS	e 56·8	—
Philadelphia		130·6	38	e 22 30	PKS	e 31 25	PS	e 58·4	—
Oak Ridge		131·1	33	e 22 34	PKS	—	—	65·8	—
Alicante		131·9	321	e 21 40	PP	—	—	80·8	—
Granada		134·5	321	22 57	PKS	26 53	[+21]	77·0	89·5
Huancayo		139·2	113	e 21 0	?	e 40 30	SS	e 63·4	—
La Paz		143·5	125	i 19 29k	[0]	—	—	69·8	78·8
San Juan		148·6	61	e 19 46	[+6]	e 33 10	SKSP	e 68·7	—

Additional readings and notes :—
Amboina i = +6m.31s.
Sydney PP = (+8m.58s.); all readings *diminished* by 5m.
Adelaide e = +8m.47s., i = +13m.55s., e = +15m.39s., i = +17m.2s.
Melbourne i = +9m.40s., +13m.43s. = SS −18s. and +14m.45s.
Perth PP = (+8m.15s.), PPP = (+8m.26s.), P_cP = (+10m.2s.), iS = (+12m.10s.), SS = (+14m.20s.), SSS = (+14m.50s.), SSSS = (+15m.5s.); all readings have been *diminished* by 6m.
Hong Kong PP? = +4m.1s., S? = +8m.40s. = PP +1s.
Nanking iE = +11m.45s.
Vladivostok e = +11m.0s. = PPP −5s., SS = +11m.50s. ?
Chiufeng iEN = +11m.44s. = PPPP +1s., S?N = +15m.48s.
Agra PS = +20m.53s. = S_cS −8s.
Tashkent all readings *increased* by 3m.
Sverdlovsk e = +10m.20s., i = +16m.17s. = PP +1s. and +21m.6s., e = +24m.35s. = PS −2s. and +25m.34s.
Sitka e = +24m.8s.
Baku e = +17m.10s. = PP +9s.
Ukiah e = +21m.20s. and +31m.10s. = SS +6s.
Tinemaha eZ = +17m.50s. = PP +8s.
Pasadena eE = +17m.52s. = PP +9s.
Riverside eZ = +17m.54s. = PP +6s.
Moscow e = +27m.2s. = PS +0s., +28m.38s., +33m.57s., and +41m.32s.
Pulkovo e = +28m.14s.
Ksara iPP = +18m.37s., PPP = +20m.54s., SS = +34m.7s.
Tucson e = +33m.50s. = SS +22s.
Stuttgart ePPP = +23m.20s., e = +43m.56s.
Florissant eNZ = +6m.35s., iZ = +20m.11s. = PP −4s.
St. Louis eE = +12m.38s.
Ottawa e = +32m.38s.
Philadelphia e = +33m.11s. and +38m.51s. = SS +4s.
Oak Ridge i = +20m.0s., +21m.24s. = PP −1s. and +22m.42s. = PKS +4s., e = +53m.32s.
Granada PP = +21m.53s., PS = +32m.52s., PPS = +33m.47s., SS = +40m.15s.
Huancayo e = +22m.5s. = PP −11s., +41m.5s. and +57m.50s.
San Juan e = +20m.46s., +39m.38s., and +43m.4s.
Long waves at Stonyhurst, Apia, Cape Town, Columbia, Copenhagen, San Fernando, and Upsala.

Sept. 20d. 21h. Readings for which no determination has been made :—

Amboina eP = 38m.30s., i = 41m.49s., eL = 44m.0s.
Batavia ePZ = 43m.32s., iN = 44m.49s.
Triest e = 45m.7s., eL = 64m.40s.
Pasadena eE = 48m.44s., eE = 52m.57s.
Mount Wilson eZ = 48m.48s., eZ = 52m.46s.
Riverside eZ = 48m.51s., eZ = 52m.57s.
Taikyu eP = 49m.2s.
Melbourne e = 51m.40s., i = 54m.2s., i = 55m.28s., i = 57m.0s., i = 58m.0s.
Sydney eS = 51m.50s., L = 54m.30s., M = 57m.0s.
Adelaide e = 52m.5s., MN = 56·0m.
Riverview eL = 53m.18s., M = 56m.1s.

Sept. 20d. Readings also at 2h. (Andijan), 3h. (Tananarive), 4h. (Adelaide, Riverview, Perth, Oak Ridge, Pasadena, Mount Wilson, Santiago, Amboina, Batavia, and Andijan), 5h. (Santiago, Algiers, Tortosa, Haiwee, La Jolla (2), Tinemaha (2), Mount Wilson (2), Pasadena (2), Riverside, and Santa Barbara), 7h. (Tananarive), 8h. (Apia, Mount Wilson, Pasadena, Riverside, San Juan, and Tinemaha), 13h. (Riverview (2), Sydney, Melbourne, Pasadena, and Riverside), 14h. (Hong Kong, Phu-Lien, Kosyun, Taito, Takao, Tainan, and Taityu), 15h. (Riverview, Sydney, and Amboina), 16h. (La Paz), 17h. (Manila), 18h. (Amboina), 19h. (Santiago), 20h. (Nagoya (2) and Amboina), 22h. (Amboina).

Sept. 21d. Readings at 0h. (near Malabar), 1h. (Andijan, Frunse, Samarkand, Tashkent, and Sverdlovsk), 2h. (Andijan (2), Frunse, Tashkent, and near Santiago), 5h. (near Malaga), 7h. (near Tananarive), 8h. (Andijan), 9h. (Pasadena and Tinemaha), 11h. (near Florence, Prato, and Triest), 12h. (Tashkent, Sverdlovsk, Melbourne, Kobe, Sumoto, Husan, near Hukuoka B, and Nagasaki), 13h. (Oak Ridge, Pasadena, Riverside, La Paz, Melbourne, and near Mi·usawa), 14h. (La Paz), 17h. (near Oak Ridge), 21h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Amboina, Ksara, Sverdlovsk, and Tashkent), 22h. (Copenhagen), 23h. (near Malabar).

Sept. 22d. 1h. 40m. 23s. Epicentre 29°·0N. 61°·0E. N.3.

A = +·424, B = +·765, C = +·485 ; D = +·875, E = −·485 ;
G = +·235, H = +·424, K = −·875.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	14·0	27	3 16	+ 1	6 43	S*	e 10·6	13·0
Andijan	15·0	35	—	—	e 6 16	+ 1	e 12·8	—
Grozny	18·8	324	e 4 20	+ 4	e 7 45	+ 3	—	—
Ksara	21·9	287	e 4 43	− 7	i 8 39	− 5	—	—
Yalta	26·3	312	5 36	+ 4	9 24	?	—	—
Simferopol	26·6	314	e 5 34	− 1	9 22	?	—	—
Sverdlovsk	27·8	0	e 7 57	?	e 12 1	?	14·6	17·6

Ksara records SS at +9m.27s.
Long waves were also recorded at European stations.

Sept. 22d. 4h. 27m. 31s. Epicentre 33°·6N. 134°·5E. (as on 1934 Sept. 25d.). X.

A = −·584, B = +·594, C = +·553 ; D = +·713, E = +·702 ;
G = −·388, H = +·394, K = −·833.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sumoto	0·8	23	0 10	− 1	0 21	0	0·4
Kobe	1·2	28	0 16	− 1	i 0 36	S_g	0·7
Toyooka	2·0	8	0 29	0	0 58	S*	1·2
Nagoya	2·6	52	e 0 39	+ 2	1 5	− 2	—

Additional readings :—
Kobe iPENZ = +18s. = P_g +0s., iZ = +22s., eEN = +32s. = S +1s.
Toyooka ePE = +32s. = P* +1s.

Sept. 22d. 14h. 39m. 57s. Epicentre 36°·2N. 139°·6E. (as on 1935 Jan. 18d.). X.

A = −·615, B = +·523, C = +·591.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Tokyo		0·6	166	0 16	+ 7	0 31	?	0·5
Nagoya		2·4	244	0 35	+ 1	1 2	0	1·1
Mizusawa		3·1	23	i 0 48	P*	i 1 28	S*	—
Toyooka		3·9	261	0 55	− 1	e 1 38	− 2	—
Kobe	N.	4·0	249	0 56	− 1	1 33	− 9	2·0
	Z.	4·0	249	0 54	− 3	1 28	−14	2·0
Sumoto		4·3	246	e 1 2	+ 1	1 45	− 5	2·0

Sept. 22d. Readings also at 4h. (Andijan and Frunse), 7h. (Samarkand and near Mizusawa), 8h. (La Paz, Santiago, Sucre, Taihoku, and Taityu), 9h. (Haiwee. Mount Wilson, Pasadena, Riverside, Tinemaha, Tacubaya, and La Plata), 10h. (near Erevan and near Mizusawa), 11h. (near Lick), 12h. (La Paz and near Medan), 13h. (Amboina), 16h. (Ksara, Baku, Tashkent, Sverdlovsk, Vladivostok, Tinemaha, Pasadena, Riverside, and Mizusawa), 18h. (near Andijan), 19h. (La Jolla, Mount Wilson, Pasadena, Riverside, and Tinemaha), 23h. (near Batavia, Malabar, and near Nagasaki).

Sept. 23d. 9h. 2m. 16s. Epicentre 3°·6S. 142°·8E. (as on Sept. 20d. 5h.). X.

A = −·795, B = +·603, C = −·063.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		14·6	269	3 23	0	6 8	+ 3	e 8·7	—
Manila		28·2	312	e 6 48	+59	11 39	+64	15·3	17·6
Riverview		31·2	166	—	—	i 10 56	−27	e 16·8	21·0
Sydney		31·2	166	e 9 34	?	i 18 14	?	—	—
Adelaide		31·6	187	—	—	i 11 8	−21	i 18·2	20·5
Melbourne		34·3	177	e 6 44	+ 1	e 12 14	+ 3	i 17·3	—
Batavia	Z.	35·9	266	8 27	PP	—	—	—	—
Perth		38·0	219	13 14	S	(13 14)	+ 8	29·2	31·7
Hong Kong		38·1	315	8 46	PP	13 24	+16	—	17·2
Nanking	E.	42·3	329	—	—	e 14 29	+19	—	—
Vladivostok		47·7	350	e 8 32	− 2	—	—	23·0	—
Chiufeng		50·1	334	e 8 53	+ 1	e 16 4	+ 2	—	—
Colombo		63·7	281	e 19 8	S	(e 19 8)	+ 4	—	—
Dehra Dun		70·4	304	19 24	S	(19 24)	−62	36·1	—
Bombay		72·4	292	e 11 44?	+19	—	—	—	—
Tashkent		80·2	313	12 4	− 5	i 22 14	− 4	—	—
Sverdlovsk		88·8	327	e 13 7	+15	e 23 48	+ 3	—	—
Baku		94·5	310	e 17 10	PP	—	—	—	—
Victoria	E.	95·3	42	e 25 21	S	(e 25 21)	PS	e 59·2	61·0
Tinemaha	Z.	99·3	54	e 13 43	+ 3	—	—	—	—
Pasadena		99·5	56	i 13 40	− 1	—	—	—	—
Piatigorsk		99·5	314	—	—	e 26 26	PS	—	—
Mount Wilson	Z.	99·6	56	e 13 41	− 1	—	—	—	—
Riverside	Z.	100·2	56	e 13 40	− 4	—	—	—	—
La Jolla	Z.	100·3	58	e 13 47	+ 2	—	—	—	—
Pulkovo		104·3	331	e 18 28	PP	e 24 56	[+10]	—	—
Ksara		106·0	303	e 18 15	PP	e 22 0	?	—	—
Scoresby Sund		112·4	354	—	—	(28 44?)	PS	28·7	—
Columbia		129·2	48	e 20 34	PP	—	—	—	—
Granada		134·4	321	e 19 26	[+12]	e 21 53	PP	—	—
La Paz	N.	143·4	125	19 39	[+10]	—	—	—	—

Additional readings :—
Riverview eN = +12m.2s.
Adelaide i = +14m.39s.
Melbourne e = +14m.34s., i = +16m.43s.
Perth P_cS = +18m.9s., iS = +20m.34s., PS = +20m.54s., iSS = +23m.44s., SSS = +26m.14s.
Dehra Dun S = +27m.24s.
Tashkent e = +14m.9s., i = +22m.38s., and +22m.55s. = PS +4s., e = +24m.35s.
Sverdlovsk e = +16m.29s. = PP +13s.
Long waves at Charlottesville and Belgrade.

Sept. 23d. 9h. 18m. 19s. Epicentre 3°·6S. 142°·8E. (as at 9h. 2m.) **R.1.**

A = −·795, B = +·603, C = −·063; D = +·605, E = +·797; G = +·050, H = −·038, K = −·998.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		13·8	325	3 15	+ 2	—	—	—	—
Amboina		14·6	269	3 18	− 5	i 6 19	+14	e 9·7	—
Manila		28·2	312	i 5 51a	+ 2	12 0	SSSS	—	—
Riverview		31·2	166	e 6 20	+ 4	i 11 23	0	i 13·3	18·6
Adelaide		31·6	187	—	—	i 11 4	−25	14·8	23·2
Melbourne		34·3	177	i 9 24	(+ 1)	i 12 14	+ 3	15·1	21·0
Karenko		34·5	325	6 46	+ 1	—	—	—	—
Batavia		35·9	266	e 6 56	− 1	—	—	e 17·7	—
Miyazaki		37·1	345	7 2	− 5	—	—	—	—
Hong Kong		38·1	315	7 17	+ 1	13 11	+ 3	—	19·6
Koti		38·2	348	7 13	− 4	—	—	—	—
Nagasaki		38·3	344	e 7 9	− 9	—	—	—	—
Wakayama		38·5	351	7 19	0	13 11	− 3	—	—
Sumoto		38·7	356	e 7 19	− 2	13 16	− 1	16·3	16·6
Kobe	E.	38·9	352	e 7 48	+25	e 13 29	+ 9	e 16·4	—
	N.	38·9	352	e 7 24	+ 1	e 13 22	+ 2	e 16·6	22·6
	Z.	38·9	352	e 7 21	− 2	e 13 23	+ 3	e 17·0	22·7
Misima		38·9	356	7 24	+ 1	—	—	—	—
Hukuoka B		39·0	345	(7 31)	+ 7	7 31	P	—	—
Nagoya		39·1	354	e 7 24	0	9 0	PP	—	—
Ibukisan		39·4	354	7 27	0	—	—	—	—
Tokyo		39·4	357	7 23	− 4	—	—	—	—
Kohu		39·5	355	7 24	− 4	—	—	—	—
Hamada		39·8	347	7 30	0	13 32	− 1	—	—
Toyooka		39·8	352	7 29	− 1	e 13 46	+13	16·6	—
Kumagaya		39·9	356	7 30	− 1	13 35	0	—	—
Tukubasan		39·9	354	7 29	− 2	—	—	—	—
Oiwake		40·1	355	7 33	0	13 52	+14	—	—
Zi-ka-wei		40·3	333	i 7 41	+ 6	—	—	17·0	33·7
Nagano		40·5	355	7 36	0	13 50	+ 6	—	—
Toyama		40·6	354	7 39	+ 2	—	—	—	—
Husan		40·8	344	e 9 10	PP	—	—	17·1	—
Hukusima		41·4	358	7 47	+ 3	14 6	+ 9	—	—
Taikyu		41·6	343	e 7 46	+ 1	e 13 5	−55	—	—
Nanking		42·3	329	7 52	+ 1	14 19	+ 9	20·3	22·4
Mizusawa		42·8	359	e 7 56	+ 1	e 14 18	0	e 17·7	—
Phu-Lien		43·0	307	7 58	+ 1	e 14 19	− 2	18·7	—
Morioka		43·3	359	7 58	− 1	14 28	+ 3	—	—
Keizyo	E.	43·7	342	e 8 2	0	e 14 30	− 1	—	—
Zinsen	N.	43·8	341	e 8 0a	− 3	e 14 40	+ 7	—	—
Medan		44·7	280	8 12	+ 2	i 14 44	− 2	—	—
New Plymouth		45·4	145	—	—	e 10 41?	?	26·7	—
Arapuni		45·7	144	9 41?	PP	15 17	+17	21·2	25·7
Urakawa		45·8	359	8 22	+ 3	15 16	+14	—	—
Apia		45·9	106	e 8 21	+ 1	e 15 27	+24	—	—
Sapporo		46·7	359	7 27	−59	—	—	—	—
Wellington		47·3	147	8 31	0	15 17	− 6	25·4	31·7
Vladivostok		47·7	350	i 8 35	+ 1	e 15 38	+ 9	e 18·1	28·5
Christchurch		47·8	151	i 7 41?	−54	—	—	25·7	—
Chiufeng		50·1	334	i 8 52	0	i 16 3	+ 1	23·5	29·5
Calcutta		59·2	299	10 0	+ 1	18 15	+10	28·6	—
Honolulu		63·2	64	i 10 30	+ 3	19 3	+ 6	26·4	—
Colombo		63·7	281	i 10 30	0	19 0	− 4	34·4	40·4
Kodaikanal		66·5	285	i 10 48	− 1	i 19 41	+ 2	—	40·4
Hyderabad		66·8	291	10 46	− 5	19 46	+ 4	29·8	48·3
Agra		69·5	301	i 11 4	− 4	i 20 14	− 1	33·2	38·3
Bombay		72·4	292	i 11 28	+ 3	i 20 51	+ 1	34·7	—
Frunse		76·8	316	e 11 49	− 1	e 21 37	− 4	e 41·7	—
Tashkent		80·2	313	12 34	+25	i 22 12	− 6	33·2	52·8

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		81·5	311	e 12 16	0	e 22 41	+ 9	—	—
Sitka		88·6	33	i 12 46	− 5	i 23 24	[0]	e 35·7	—
Sverdlovsk		88·8	327	i 12 56	+ 4	i 23 34	[+ 9]	37·1	44·3
Tananarive	E.	93·8	251	—	—	e 23 51	[− 3]	45·4	51·6
Baku		94·5	310	13 19	+ 1	—	—	54·7	77·6
Ukiah		95·4	51	e 17 13	PP	e 23 56	[− 7]	43·0	—
Seattle		96·0	43	e 12 52	−33	—	—	e 40·4	—
Berkeley		96·1	53	i 13 24	− 2	24 5	[− 1]	e 43·5	—
Lick		96·6	53	e 13 39	+11	e 29 10	?	—	—
Grozny		97·6	313	e 13 36	+ 4	e 24 9	[− 5]	—	—
Tiflis		98·4	311	i 13 33	− 3	i 24 14	[− 4]	e 49·7	66·2
Erevan		98·7	310	e 13 34	− 4	—	—	—	—
Tinemaha		99·3	54	e 13 38	− 2	—	—	—	—
Pasadena		99·5	56	e 13 39	− 2	i 24 20	[− 3]	e 45·0	—
Piatigorsk		99·5	314	e 13 37	− 4	(e 26 40)	PS	e 26·7	—
Haiwee	Z.	99·6	54	e 13 41	− 1	—	—	—	—
Mount Wilson		99·6	56	e 13 38	− 4	e 24 20	[− 3]	—	—
Riverside		100·2	56	e 13 40	− 4	e 24 17	[−10]	—	—
La Jolla		100·3	58	e 13 44	− 1	—	—	—	—
Moscow		101·5	326	13 48	− 2	24 28	[− 5]	e 48·7	54·5
Bozeman		103·8	44	e 18 21	PP	i 24 44	[0]	e 42·9	—
Pulkovo		104·3	331	14 0	− 3	24 42	[− 4]	49·7	56·3
Tucson		105·7	58	e 18 28	PP	e 24 49	[− 4]	e 47·9	—
Simferopol		105·7	315	i 18 16	PP	e 24 50	[− 3]	—	—
Yalta		105·8	315	e 18 37	PP	e 24 46	[− 8]	—	—
Ksara		106·0	303	14 14	+ 3	—	—	—	
Sebastopol		106·2	315	e 20 40	PPP	—	—	—	—
Denver	E.	109·3	50	e 18 10	[− 5]	—	—	e 49·2	55·5
Upsala		110·1	334	e 19 6	PP	i 28 25	PS	e 48·7	58·8
Helwan		110·4	300	e 17 50	[−29]	i 28 29	PS	—	—
Königsberg		111·0	328	—	—	e 25 15	[− 3]	e 53·7	—
Bucharest		111·4	316	—	—	e 25 21	[+ 2]	—	73·7
Scoresby Sund		112·4	354	19 19	PP	28 50	PS	45·7	—
So a		113·8	315	e 19 37	PP	—	—	63·7	—
Copenhagen		114·6	332	19 39	PP	25 31	[− 1]	47·7	—
Budapest		114·9	321	e 19 41?	PP	—	—	e 59·7	62·7
Belgrade		115·0	318	—	—	e 25 32	[− 2]	e 71·1	—
Cape Town		115·6	229	19 32	PP	26 44	{− 2}	53·7	62·2
Vienna		116·2	323	e 18 53	[+17]	25 35	[− 3]	—	—
Prague		116·5	325	e 18 3	[−34]	i 25 35	[− 4]	e 53·7	63·7
Hamburg		117·0	331	i 19 55a	PP	i 25 42	[+ 1]	e 56·7	59·7
Leipzig		117·0	327	i 18 48	[+10]	e 25 35	[− 6]	e 49·7	57·2
Graz		117·3	322	—	—	e 28 48	?	e 59·7	77·4
Zagreb		117·5	321	18 52	[+13]	e 29 28	PS	e 50·6	—
Cheb		117·6	326	e 19 56	PP	e 29 57	PS	e 56·7	60·7
Jena		117·6	327	e 19 57	PP	—	—	e 54·7	62·7
Göttingen		118·1	329	e 19 53	PP	—	—	e 52·7	61·7
Triest		119·0	321	e 18 55	[+12]	i 25 44	[− 3]	e 54·7	65·2
Stuttgart		120·1	326	e 18 49	[+ 3]	e 25 46	[− 5]	e 55·7	63·7
De Bilt		120·2	331	e 20 20	PP	e 25 51	[0]	e 49·7	60·4
Padova		120·3	321	e 15 41?	?	—	—	—	—
Florissant		120·4	47	i 18 49k	[+ 2]	i 25 51	[− 1]	e 56·7	59·8
St. Louis		120·6	47	e 19 6	[+19]	e 25 51	[− 1]	e 55·8	59·9
Chur		120·9	324	e 18 51	[+ 3]	—	—	—	—
Edinburgh		121·0	337	e 20 31	PP	i 25 56	[+ 3]	e 50·7	79·7
Strasbourg		121·0	326	e 15 16	PP	e 26 11	{+18}	e 51·7	60·2
Chicago		121·0	43	i 20 18	PP	e 25 57	[+ 4]	e 50·9	—
Zurich		121·2	325	e 18 51	[+ 3]	—	—	—	—
Durham		121·3	336	20 13	PP	30 17	PS	—	—
Uccle		121·4	330	20 24	PP	25 55	[0]	49·7	61·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	121·4	320	18 53	[+ 4]	20 36	PP	—	—
Prato	121·5	320	e 18 56	[+ 7]	25 53	[− 2]	—	—
Basle	121·6	326	e 18 52	[+ 3]	—	—	—	—
Piacenza	121·8	322	e 19 0	[+10]	25 27	[−29]	51·7	74·2
Neuchatel	122·3	325	e 18 53	[+ 2]	—	—	—	—
Kew	123·1	333	e 18 55	[+ 2]	27 35	{− 2}	53·7	75·1
Oxford	123·3	334	e 20 31	PP	—	—	e 50·7	69·0
Ann Arbor	123·4	41	—	—	e 28 41	{+62}	e 57·8	75·6
Paris	123·5	329	e 18 57	[+ 3]	—	—	49·7	62·7
Toronto	125·3	37	i 20 46	PP	—	—	59·4	—
Ottawa	126·4	33	e 20 47	PP	e 26 7	[− 2]	e 58·7	—
Ithaca	127·8	36	—	—	e 27 41?	{−27}	e 57·7	—
Vermont	128·3	32	e 15 8	P	e 28 8	{− 3}	e 51·2	—
Charlottesville	129·0	43	e 21 5	PP	e 29 5	{+50}	—	—
Columbia	129·2	48	e 22 27	P_cP	—	—	e 60·8	—
Philadelphia	130·0	38	e 17 52	[−75]	—	—	58·4	—
Oak Ridge	130·5	33	i 19 7	[− 1]	—	—	—	—
Alicante	131·8	321	e 19 19	[+ 9]	e 22 41	P_cP	e 66·1	—
Toledo	133·0	324	e 19 14	[+ 2]	—	—	—	—
Almeria	133·9	320	i 18 43	[−30]	e 22 39	P_cP	e 72·8	—
Granada	134·4	321	i 19 16	[+ 2]	—	—	65·7	90·1
Malaga	135·2	321	19 20	[+ 5]	—	—	69·7	—
San Fernando	136·5	322	19 23	[+ 6]	e 33 52	?	e 66·7	118·7
La Plata	136·8	155	19 29	[+12]	—	—	66·7	72·4
Huancayo	139·0	113	e 19 23	[+ 3]	—	—	e 66·8	—
La Paz	143·4	125	i 19 32k	[+ 3]	i 29 26	{−18}	68·7	74·0
Sucre	144·3	132	i 19 35	[+ 3]	—	—	71·7	—
San Juan	148·1	61	i 19 45	[+ 6]	—	—	e 61·7	—

Additional readings :—
Adelaide i = +12m.54s. =SS −13s.
Melbourne i = +14m.38s.
Batavia i = +8m.25s. =PPP +1s.
Hong Kong PP = +8m.40s., SS? = +16m.5s.
Sumoto SE = +13m.20s.
Kobe ePPNZ = +9m.8s., ePPPE = +9m.25s., ePPPZ = +9m.29s.
Toyooka PEN = +7m.32s.
Nanking iSS = +17m.44s. =SSS +4s.
Wellington PP = +10m.26s., PPP = +11m.13s., i = +16m.43s., SS = +19m.15s., L_q = +21·8m.
Chiufeng S_cSN = +18m.46s.
Calcutta PP = +12m.17s., SSS = +24m.23s.
Honolulu e = +10m.45s. =P_cP −5s., ePP = +13m.1s., e = +21m.38s., eSS = +23m.31s.
Kodaikanal PP = +13m.17s., PPP = +14m.36s., PS = +20m.14s., SS = +24m.11s., SSS = +26m.31s.
Agra PP = +13m.42s., PPP = +15m.12s., PS = +20m.46s., SS = +24m.46s., SSS = +27m.33s.
Bombay PPE = +13m.56s., PSEN = +21m.26s.
Tashkent e = +15m.16s. =PP +10s.
Sitka i = +12m.51s., ePPP = +18m.17s., i = +23m.41s. =S −2s., e = +27m.51s., and +33m.58s.
Sverdlovsk iPP = +16m.22s., iSKS = +23m.18s.
Tananarive SE = +21m.54s., PSE = +25m.41s., PSN = +27m.6s., SSE = +31m.3s.
Baku PP = +17m.12s., PS = +26m.1s.
Ukiah iPS = +26m.1s., eSS = +31m.1s., e = +38m.18s.
Seattle e = +14m.10s., ePP = +17m.4s., ePS = +24m.52s. =S +1s., eSS = +30m.22s.
Berkeley eEN = +13m.29s., eE = +15m.26s., iPPEZ = +17m.19s., eN = +18m.29s., iE = +25m.8s. =S +16s. and +31m.22s. =SS +15s., eZ = +43m.23s.
Grozny e = +17m.34s. =PP +9s.
Tiflis e = +15m.6s. and +16m.26s., PP = +17m.36s., SKKS = +24m.42s., e = +25m.56s., PS = +26m.24s.
Pasadena iPPZ = +17m.40s., iPSE = +26m.44s., iSSE = +32m.12s.
Moscow e = +16m.43s., PP = +17m.59s., e = +21m.11s., PS = +26m.57s., PPS = +28m.1s.

Continued on next page.

Bozeman e = +26m.6s. =S −6s., +27m.29s. =PS +4s. and +28m.21s., eSS = +33m.11s., eSSS = +36m.54s.
Pulkovo PP = +18m.21s., PS = +27m.26s., SS = +33m.17s., SSS = +38m.23s.
Tucson eS = +25m.33s. =SKKS −3s., ePS = +27m.41s., e = +28m.41s., eSS = +33m.45s., e = +36m.49s. and +43m.21s.
Ksara iPP = +18m.39s., PS = +28m.4s., PPS = +29m.2s.
Denver ePPE = +18m.55s., ePPPE = +21m.11s., ePPSE = +27m.34s.
Helwan i = +22m.56s. =PPPP +2s.
Königsberg eE = +25m.19s., eEN = +28m.38s. =PS +0s.
Bucharest eEN = +26m.18s. =SKKS +1s., eE = +29m.5s.
Scoresby Sund SS = +35m.10s.
Copenhagen PPP = +22m.2s., e = +27m.3s., PS = +28m.5s., +29m.11s., e = +31m.53s., and +33m.29s., SS = +35m.41s.
Capetown PPPN = +23m.44s., PPPE = +24m.6s., PPPN = +25m.3s., SKKSN = +28m.7s., SKKSE = +28m.18s., SN = +28m.59s., SE = +29m.31s. = PS +9s., SSN = +35m.47s., SSE = +35m.58s., SSN = +38m.32s., SSSE = +40m.55s., SSSN = +41m.6s.
Vienna PP = +20m.41s.
Prague e = +19m.51s. =PP +7s.
Hamburg eE = +29m.37s. =PS +2s.
Leipzig e = +19m.53s. =PP +5s., eN = +24m.59s., eE = +29m.29s. =SKSP −2s., e = +29m.41s. =PS +6s., and +35m.53s. =SS +1s.
Zagreb ePcP = +20m.7s., eP = +22m.28s. =PPP +13s., ePPP = +25m.40s. = SKS −2s., e = +25m.50s.
Cheb ePP? = +25m.41s. =SKS −2s.
Triest eP = +15m.49s., e = +19m.56s. =PP −6s., iPP = +20m.8s., i = +22m.44s., i = +26m.6s., iS = +28m.1s., iPS = +30m.1s., i = +31m.32s.
Stuttgart eP = +15m.11s., PP = +20m.17s., ePPP = +22m.41s., ePS = +30m.18s.
De Bilt e = +30m.8s. =PS +4s.
Florissant eP?Z = +15m.16s., iPPEZ = +20m.12s., iSKKSEN = +27m.14s., iSN = +28m.14s., iPSE = +30m.0s., iPSZ = +30m.14s., iSSEN = +36m.40s., iSSE = +37m.7s., iSSSEN = +41m.22s. ; T_0 =9h.18m.4s.
St. Louis ePE = +15m.23s., eEN = +15m.47s., e = +20m.11s. =PP −2s., iPPEN = +20m.14s., eN = +20m.35s., eSKKSE = +27m.15s., SEN = +28m.5s., iPSE = +30m.7s., eN = +36m.22s., eSSN = +36m.41s.
Edinburgh i = +30m.17s. =PS +6s.
Strasbourg iPP = +20m.25s., ePPP = +22m.48s., eS = +28m.31s., ePS = +30m.10s., ePPS = +31m.47s., iSS = +36m.56s.
Chicago eSKKS = +27m.34s., ePS = +30m.4s., iSS = +36m.54s., eSSS = +40m.49s.
Uccle SKKS = +27m.24s., PS = +30m.15s.
Piacenza P = +20m.33s.
Kew eP = +15m.33s., PPZ = +20m.37s., PPPZ = +23m.13s., ePS = +30m.33s., eZ = +31m.55s., eEN = +51m.7s.
Oxford iE = +23m.12s. =PPP +8s., iN = +23m.16s., e = +30m.41s. =PS +9s.
Ann Arbor eN = +37m.23s. =SS −16s., eE = +37m.41s.
Paris e = +15m.37s. =P +2s., +20m.42s. =PP +9s., and +23m.15s. =PP +10s.
Toronto iPS = +30m.39s., e = +37m.48s. =SS +7s.
Ottawa eN = +32m.41s.?, e = +38m.7s. =SS +12s.
Vermont eP = +21m.3s. =PP −3s., ePP = +22m.18s., ePS = +30m.53s. = SKSP −6s., eSS = +38m.18s.
Charlottesville e = +22m.25s. =PKS, ePS = +31m.31s., e = +33m.1s., eSS = +38m.36s.
Columbia iPP = +22m.31s. =PKS, ePS = +31m.17s., eSS = +37m.31s., eSSS = +47m.1s., e = +57m.56s.
Philadelphia e = +18m.14s., iPP = +21m.22s., i = +22m.33s. =PKS +0s., ePS = +31m.5s. =SKSP −7s., e = +33m.0s., iSS = +39m.8s., e = +47m.32s.
Oak Ridge iZ = +19m.10s., PP = +21m.17s., iSKP = +22m.33s., iZ = +22m.59s., eZ = +23m.21s., iN = +23m.33s., ePS = +31m.23s., eE = +34m.5s., iZ = +34m.11s., SS = +39m.35s., eSSS = +44m.9s., e = +49m.41s.?
Toledo i = +21m.41s. =PP +4s. and +22m.43s. =PKS −3s.
Granada iPP = +21m.53s., iSKP = +22m.45s., PPP = +24m.47s.
Malaga i = +19m.30s., +19m.43s., and +21m.58s. =PP +7s., iSKP = +22m.49s., i = +23m.45s. and +25m.19s., e = +33m.11s. and +46m.3s.
San Fernando iPKP = +22m.55s. =PKS −4s., ePP = +25m.4s., eSKS = +30m.2s.
Huancayo iPKP = +19m.34s., iPP = +23m.1s. =PKS −5s., e = +36m.9s., eSS = +40m.41s., e = +56m.21s., and +58m.11s.
La Paz iE = +21m.50s., iPP = +22m.56s., iSKP = +23m.26s., iSKS = +26m.20s. and +26m.26s., SKSP = +32m.36s., iSS = +42m.20s. and +43m.6s., iSSS = +48m.6s., iSSS = +52m.2s., L_gN = +61·2m.
Sucre PP = +22m.57s., SS = +42m.7s.
San Juan i = +20m.33s. and +21m.12s., ePS = +33m.27s. =SKSP +1s., eSS = +41m.31s., eSSS = +48m.21s.
Long waves were also recorded at Sydney, Stonyhurst, and Karlsruhe.

Sept. 23d. Readings also at 0h. (Oak Ridge), 2h. (Tashkent, Sverdlovsk, Mount Wilson, Tinemaha, and near Andijan), 3h. (Tashkent), 5h. (Philadelphia, Samarkand, near Andijan, and near Amboina), 6h. (Frunse), 8h. (La Paz), 9h. (Columbia and Tortosa), 10h. and 12h. (Malaga), 13h. (Riverview and Malaga), 14h. (Sebastopol), 15h. (Sofia), 16h. (near Karenko and near Lick), 17h. (Mizusawa, Nagoya, and near Tokyo), 18h. (Sofia and near Santiago), 22h. (near Nagasaki).

Sept. 24d. 5h. 1m. 5s. Epicentre 4°·0S. 142°·5E. (as on Sept. 20d. 21h.). R.2.

A = −·790, B = +·609, C = −·070.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		14·1	271	i 3 11	− 6	5 40	−13	—	—
Manila		28·2	312	5 50	+ 1	10 58	+23	—	—
Riverview		30·9	166	e 6 19	+ 6	e 13 6	?	i 16·6	—
Sydney		30·9	166	—	—	i 13 25	?	16·9	20·6
Melbourne		33·9	177	—	—	e 12 6	+ 2	18·1	18·5
Batavia	z.	35·5	266	6 49	− 4	—	—	—	—
Perth		37·4	219	8 20	PP	12 55	− 2	16·5	19·6
Nanking		42·5	329	i 7 55	+ 2	i 14 14	+ 1	e 24·0	—
Phu-Lien		43·0	307	7 55?	− 2	9 25	PP	—	—
Mizusawa	E.	43·2	359	(e 8 0)	+ 2	e 8 0	P	—	—
Medan		44·3	280	e 8 5	− 2	e 15 25	+45	—	—
Wellington		47·2	147	—	—	i 15 15	− 6	e 20·9	—
Vladivostok		48·1	350	e 8 34	− 3	i 15 34	0	e 22·6	—
Chiufeng		50·2	334	8 52a	− 1	i 16 0	− 4	23·2	—
Calcutta		59·0	299	9 59	+ 2	18 4	+ 1	—	—
Agra		69·4	301	11 2	− 5	20 4	−10	—	—
Bombay	E.	72·1	292	i 11 23	0	—	—	—	—
Frunse		76·8	316	e 11 52	+ 2	21 32	− 9	—	—
Andijan		77·7	313	e 11 54	− 2	21 43	− 8	—	—
Tashkent		80·1	313	i 12 7	− 1	i 22 7	−10	e 35·9	53·9
Samarkand		81·4	311	e 12 9	− 6	e 22 20	−11	—	—
Sverdlovsk		88·8	328	e 16 11	PP	23 41	− 4	39·4	47·4
Sitka		89·1	33	—	—	i 23 25	[− 2]	e 40·8	—
Baku		94·5	310	e 16 13	?	e 26 31	?	48·4	—
Tinemaha	z.	99·9	54	e 17 57	PP	e 30 40	?	—	—
Mount Wilson	z.	100·1	56	e 13 47	+ 3	—	—	—	—
Pasadena		100·1	56	e 13 46	+ 2	i 24 22	[+ 4]	e 47·9	—
Moscow		101·6	326	—	—	e 25 18	{+13}	e 49·6	56·1
Ksara		105·9	303	e 17 35	[−30]	—	—	—	58·9
Scoresby Sund		112·8	354	19 33	PP	e 27 5	{+38}	54·9	—
Copenhagen		114·8	332	—	—	35 31	SS	52·9	—
Stuttgart		120·2	326	e 20 13	PP	—	—	e 61·9	—
Florissant		120·9	47	i 20 20	PP	i 25 48	[− 5]	—	60·8
St. Louis	E.	121·1	47	—	—	e 25 46	[− 8]	—	59·9
Uccle		121·5	330	—	—	e 36 57	SS	e 55·9	—
Paris		123·7	329	e 20 40	PP	—	—	67·9	—
Ottawa		126·9	33	e 20 55?	PP	e 37 55?	SS	e 58·9	—
Vermont		128·9	32	e 21 27	PP	—	—	e 62·0	—
Oak Ridge		131·1	33	e 21 23	PP	—	—	64·9	—
Granada		134·5	321	e 22 11	PP	—	—	71·4	83·4
Huancayo		139·2	113	—	—	e 28 25	{−54}	e 68·4	—
La Paz		143·5	125	i 19 37a	[+ 8]	—	—	77·9	102·5
Sucre		144·3	132	e 19 36	[+ 4]	—	—	—	—
San Juan		148·6	61	e 20 4	[+24]	e 30 5	{− 9}	e 69·9	—

Additional readings and note :—
Sydney readings given as for 4h.
Melbourne i = +12m.26s., +14m.35s., +15m.29s., and +16m.38s.
Batavia iE = +8m.31s., i = +9m.51s., iE = +14m.9s., iN = +14m.57s.
Perth PP = +8m.55s., PPP = +9m.5s., SS = +14m.32s., SSS = +14m.55s., SSSS = +15m.30s.
Nanking i = +17m.26s.
Agra PP = +13m.30s., PS = +20m.38s.
Sverdlovsk e = +23m.20s. = SKS − 5s., i = +24m.0s., e = +29m.27s. = SS + 4s. and +36m.9s.

Continued on next page.

Pasadena iPPZ = +17m.58s.
Moscow e = +32m.24s. =SS +0s. and +36m.26s. =SSS +14s.
Ksara PS = +26m.57s., PPS = +27m.47s. =PS +0s.
Scoresby Sund +29m.57s. and +35m.5s.
Stuttgart ePS = +30m.13s., eSS = +36m.19s.
Florissant iPSE = +30m.12s., ePPSE = +31m.38s., eSSE = +41m.16s.
St. Louis e = +25m.15s., eE = +27m.8s. =SKKS −16s., ePSE = +30m.9s.
Vermont e = +22m.28s. and +23m.11s., ePS = +31m.23s.
Oak Ridge iZ = +22m.33s. =PKS −5s., eN = +31m.43s. =PS +2s.
Huancayo eSS = +40m.55s.
La Paz iPKPZ = +20m.49s., SKP = +23m.5s., PP = +24m.21s., iE = +42m.9s., iSS = +43m.34s.
Sucre PP = +23m.20s.
Long waves were also recorded at Hong Kong, Tucson, Pulkovo, and other European stations.

Sept. 24d. 16h. Shock for which no determination has been made :—

Nagasaki eP = 38m.33s.
Kobe ePE = 38m.50s., ePN = 38m.54s., eZ = 39m.7s., eN = 39m.13s., SE = 39m.45s., eSZ = 39m.48s., eSN = 39m.52s., M = 41m.21s.
Nagoya P = 38m.51s., S = 39m.43s., M = 39m.55s.
Sumoto P = 39m.13s., SN = 39m.58s., eSE = 40m.0s., eL = 40m.58s.
Toyooka PZ = 39m.21s., PEN = 39m.25s., SNZ = 40m.22s., M = 40m.47s.
Mizusawa eP = 40m.3s., eSE = 40m.48s., eSN = 40m.51s.
Vladivostok e = 41m.1s., L = 43m.30s., M = 53m.0s.
Nanking P = 42m.22s., eL = 49m.3s.
Chiufeng eP?EN = 42m.50s., SN = 46m.30s., LN = 48m.9s., MN = 51m.22s.
Zinsen eS? = 44m.25s.
Sverdlovsk e = 56m.15s., L = 68m.
Long waves were also recorded at Tiflis, Tashkent, Scoresby Sund, Ksara, Hong Kong, and some European stations.

Sept. 24d. 16h. 54m. 38s. Epicentre 33°·7N. 139°·0E. (as on 1933 Feb. 28d.). X.

A = −·628, B = +·546, C = +·555 ; D = +·656, E = +·755 ;
G = −·419, H = +·364, K = −·832.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		2·3	311	e 0 7	−26	e 0 56	− 3	—	1·4
Kobe	E.N.	3·3	289	e 0 29	−18	1 26	+ 1	—	2·8
	Z.	3·3	289	e 0 50	+ 3	e 1 24	− 1	—	2·5
Sumoto	E.N.	3·5	281	e 0 47	− 3	1 28	− 2	—	1·6
	Z.	3·5	281	e 0 51	+ 1	e 1 30	0	—	1·6
Toyooka	E.N.	3·9	300	0 57	+ 1	1 54	S*	—	2·4
	Z.	3·9	300	0 55	− 1	2 0	S_g	—	2·4
Mizusawa		5·7	17	e 1 17	− 4	i 2 14	−11	—	—
Vladivostok		10·9	332	e 2 27	− 6	—	—	e 3·8	15·3
Nanking		17·0	270	e 3 57	+ 3	—	—	e 11·4	—
Chiufeng		19·3	296	e 4 27	+ 5	e 7 46	− 6	9·5	13·0
Moscow		68·5	323	—	—	e 20 19	PS	—	27·3

Additional readings :—
Kobe iEN = +1m.33s. =S* −4s., iN = +1m.45s. =S_g +2s.
Moscow e = +25m.35s.
Long waves also at Baku, De Bilt, Pulkovo, Tashkent, Tiflis, and Sverdlovsk.

Sept. 24d. 22h. 12m. 25s. Epicentre 49°·3N. 129°·2W. (as on 1933 May 5d.). R.1.

A = −·412, B = −·505, C = +·758 ; D = −·775, E = +·632 ;
G = −·479, H = −·588, K = −·652.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	4·0	101	i 0 55	− 2	2 23	?	—	3·1
Seattle	4·9	108	e 1 8	− 2	e 2 23	S*	i 2·6	—
Sitka	8·6	337	e 1 45	−17	i 2 58	−41	i 4·3	—
	8·6	337	e 1 52	−10	i 3 27	−12	i 4·1	—
Ukiah	11·0	155	e 2 40	+ 5	i 5 1	?	i 6·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley		12·5	154	e 3 0	+ 5	5 34	+19	—	—
Bozeman		12·8	99	e 3 0	+ 1	e 5 25	+ 3	6·8	—
Branner	E.	12·9	154	e 3 8	+ 7	—	—	—	—
Lick		13·1	153	e 3 10	+ 7	e 5 50	+21	e 7·3	—
Tinemaha		14·6	143	i 3 28	+ 5	i 6 46	+41	i 7·6	—
Santa Barbara	N.	16·4	151	e 3 51	+ 5	—	—	—	—
Mount Wilson		17·2	147	e 4 1	+ 4	—	—	—	—
Pasadena		17·2	148	i 4 0	+ 3	i 7 25	+19	e 7·6	—
Riverside		17·6	146	e 4 4	+ 2	—	—	—	—
La Jolla		18·7	147	i 4 18	+ 3	e 8 1	+21	—	—
Tucson		21·9	134	i 4 53	+ 3	i 9 7	SS	i 12·5	—
Des Moines		25·8	94	e 5 35	+ 8	e 10 8	+13	e 13·2	—
Florissant		29·4	96	e 6 1	+ 1	e 10 54	− 1	e 14·2	18·0
Chicago		29·6	88	—	—	i 11 6	+ 8	i 15·0	—
St. Louis		29·6	96	e 6 2	+ 1	e 11 3	+ 5	e 14·4	18·2
Ann Arbor		32·0	85	e 6 35	+12	e 13 17	SS	i 16·4	18·0
Toronto		34·1	80	e 6 36	− 5	e 12 9	+ 1	17·1	
Ottawa		35·7	75	e 6 55	0	e 12 38	+ 6	e 17·6	—
Pennsylvania		36·5	84	e 11 6	?	e 13 11	+27	e 19·1	22·5
Ithaca		36·6	80	e 7 5	+ 2	e 12 47	+ 2	e 17·1	19·6
Charlottesville		37·6	88	e 7 41	+29	e 13 10	+10	e 18·6	—
Vermont		37·7	75	e 7 21	+ 9	e 13 3	+ 1	i 19·2	—
Columbia		38·3	95	e 8 35	PP	e 13 15	+ 4	e 19·3	—
Philadelphia		38·7	82	e 7 20	− 1	13 20	+ 3	i 19·4	—
Oak Ridge		39·7	77	i 7 29	0	e 13 39	+ 7	e 18·8	—
Scoresby Sund		49·5	25	8 44	− 3	15 57	+ 3	23·6	—
San Juan		58·7	98	e 9 58	+ 3	18 3	+ 4	28·9	—
Vladivostok		63·6	306	e 10 20	− 9	i 18 58	− 4	30·6	—
Edinburgh		66·2	30	e 10 35?	−12	i 19 37	+ 2	e 34·6	39·0
Rathfarnham Castle		66·7	33	e 10 41	− 9	e 19 44	+ 3	31·2	41·7
Durham		67·1	30	—	—	19 48	+ 2	—	43·6
Stonyhurst		67·5	31	e 13 35?	PP	e 19 54	+ 3	34·6	42·6
Upsala		67·6	18	e 10 59	+ 3	e 19 49	− 3	e 33·6	42·5
Bidston		67·7	32	—	—	i 19 57	+ 4	32·6	42·6
Oxford		69·7	32	—	—	i 20 16	− 2	32·6	44·5
Pulkovo		69·7	11	11 11	+ 2	e 20 14	− 4	35·6	40·9
Kew		70·2	32	e 11 16k	+ 4	e 20 25	+ 1	32·6	42·6
Copenhagen		70·3	22	11 15	+ 2	20 22	− 3	35·6	—
Hamburg		71·5	25	e 11 21	+ 1	i 20 41	+ 2	e 38·6	42·6
De Bilt		71·5	27	e 11 14	− 6	e 20 42	+ 3	e 32·6	41·8
Uccle		72·3	30	e 11 27	+ 2	i 20 51	+ 3	e 34·6	—
Königsberg		72·8	18	—	—	e 20 53	− 1	—	39·6
Göttingen		73·3	26	—	—	e 20 59	− 1	—	44·6
Paris		73·5	32	e 11 9	−23	e 21 5	+ 2	36·6	42·6
Sverdlovsk		73·5	354	e 11 38	+ 6	i 21 3	0	42·9	49·9
Chiufeng		73·8	314	11 27k	− 6	20 59	− 7	—	44·1
Leipzig		74·2	25	—	—	e 21 13	+ 2	e 37·6	45·1
Moscow		74·4	8	e 11 37	0	21 13	0	37·6	45·1
Cheb		75·3	25	—	—	e 21 24	0	e 41·6	49·6
Strasbourg		75·3	28	e 11 10	−32	i 21 20	− 4	e 34·6	—
Stuttgart		75·6	27	e 11 39	− 5	21 29	+ 2	e 36·6	45·8
Prague		75·9	24	—	—	e 21 25	− 5	e 37·6	49·1
Basle		76·2	28	e 11 49	+ 2	—	—	—	—
Neuchatel		76·5	29	e 11 48	− 1	—	—	—	—
Zurich		76·7	28	e 11 44	− 6	e 21 44	+ 5	—	—
Chur		77·4	28	e 11 50	− 4	e 21 49	+ 2	—	—
Huancayo		77·4	126	—	—	e 21 45	− 2	e 35·9	—
Vienna		78·0	23	e 12 4	+ 7	e 21 54	0	e 47·6	—
Toledo		78·6	41	e 12 0	0	e 22 0	0	e 43·1	—
Nanking		78·7	307	—	—	i 21 52	−10	41·6	51·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Piacenza		79·1	28	13 13	+7.0	22 11	+ 5	37·6	51·4
Budapest		79·4	22	—	—	e 22 12	+ 3	e 43·6	51·6
Tortosa	N.	79·6	37	(12 9)	+ 3	12 9	P	e 35·6	48·6
Triest		79·7	26	e 12 3	− 3	i 22 11	− 1	—	43·4
Zagreb		80·2	25	e 12 17	+ 8	e 22 17	− 1	e 39·6	45·6
San Fernando		80·5	44	e 12 9	− 1	22 20	− 1	39·6	44·6
Prato		80·6	29	e 12 9	− 2	i 22 19	− 3	39·6	45·6
Florence		80·7	29	12 8	− 4	22 24	+ 1	42·6	—
Granada		81·0	42	i 12 8	− 5	i 22 29	+ 3	38·6	45·8
Malaga		81·1	42	12 13	− 1	22 28	+ 1	39·6	43·6
Alicante		81·3	39	—	—	e 22 32	+ 2	e 43·3	—
Almeria		81·8	41	—	—	e 22 32	− 3	e 42·8	—
Algiers		84·1	37	e 12 35?	+ 6	i 23 35?	PS	47·6	—
Simferopol		84·6	12	—	—	e 23 1	− 3	45·6	—
Sofia		84·9	20	—	—	e 23 42	PS	49·6	—
Sebastopol		84·9	13	—	—	e 23 1	− 6	—	—
La Paz		85·0	122	e 7 48	?	i 23 3	− 5	42·9	53·2
Yalta		85·1	12	—	—	e 23 3	− 6	45·6	—
Frunse		85·5	343	e 12 56	+20	—	—	—	—
Grozny		87·3	4	e 12 34	−11	e 21 55	?	—	—
Andijan		88·0	344	e 12 57	+ 9	e 23 30	− 7	—	—
Tashkent		88·0	347	12 40	− 8	i 23 13	[− 7]	e 38·6	59·2
Tiflis		88·8	5	e 12 52	0	23 44	− 1	e 37·2	54·9
Hong Kong		89·0	304	23 25	SKS	(23 25)	[− 1]	—	54·3
Baku		90·3	1	e 13 4	+ 5	23 59	0	45·6	56·9
Ksara		95·8	13	e 13 32	+ 8	24 59	+10	46·6	53·1
Calcutta		100·8	325	24 27	SKS	(24 27)	[− 3]	e 42·5	—
Bombay		109·0	338	e 18 35?	PP	—	—	—	63·5

Additional readings :—
Ukiah e = +3m.51s., +4m.49s., and +5m.35s.
Berkeley iS = +5m.37s., eN = +5m.53s., eE = +7m.13s.
Bozeman i = +6m.35s.
Branner eN = +3m.11s. and +3m.36s., eE = +3m.42s. and +3m.55s.
Lick eE = +3m.13s., iPN = +3m.19s.
Tucson e = +6m.28s., i = +11m.9s.
Des Moines ePP = +6m.19s.
Florissant iPP = +6m.46s., iSEN = +10m.59s., iSSEN = +12m.30s.
St. Louis eEN = +6m.5s., ePPEN = +6m.53s.; T_o = 22h.12m.21s.
Ann Arbor e = +7m.35s. = PPP +4s., eE = +8m.41s., eN = +10m.11s.
Toronto SS = +14m.0s.
Ottawa e = +15m.3s.; T_o = 22h.12m.24s.
Pennsylvania e = +16m.26s.
Ithaca eSE = +12m.53s., eSS = +15m.23s.
Charlottesville eSS = +15m.35s., e = +16m.53s. and +18m.15s.
Vermont e = +15m.21s., eSS = +15m.51s., e = +17m.51s.
Columbia eSS = +15m.55s., eS_cS = +17m.27s.
Philadelphia iPP = +8m.52s., e = +14m.10s., iSS = +15m.50s.
Oak Ridge iZ = +7m.47s., eZ = +8m.1s., iPPE = +9m.2s. = PPP −13s., eSSEN = +16m.27s., eSSSZ = +16m.34s.; T_o = 22h.12m.24s.
Scoresby Sund +10m.40s. = PP +5s. and +19m.35s.
San Juan e = +14m.30s., +19m.11s., and +24m.21s.
Rathfarnham Castle e = +19m.12s.
Upsala eSE = +19m.52s.
Oxford i = +21m.14s. = S_cS +11s.
Copenhagen +21m.23s. = S_cS and +25m.5s., SSS = +28m.29s.
Paris e = +15m.58s. = PPP +13s. and +29m.35s.
Sverdlovsk L_g = +35m.59s.
Strasbourg ePS = +22m.1s., eSS = +26m.14s.
Stuttgart eSS = +26m.17s., eSSS = +30m.35s.
Prague e = +30m.29s.
Triest e = +23m.12s.
San Fernando i = +33m.34s.
Granada P_cP = +12m.11s.
Malaga i = +12m.18s., e = +26m.59s.
Tashkent eSS = +29m.23s.
Tiflis P = +12m.56s., PP = +16m.22s., iPS = +24m.43s., PPS = +25m.6s.
Ksara ePP = +17m.23s., PS = +26m.5s., PPS = +26m.47s.
Calcutta S = +32m.30s. = SS +17s.
Long waves were also recorded at Belgrade, Graz, Jena, Karlsruhe, Phu-Lien, Wellington, Hyderabad, Kodaikanal, Honolulu, and Cape Town.

Sept. 24d. Readings also at 0h. (near Triest), 1h. (La Paz), 4h. (Riverview, Wellington, Nagoya, Sverdlovsk, and Moscow), 5h. (Erevan, Piatigorsk, near Grozny, and Tiflis, also near Santiago), 7h. (Riverview and Sydney), 8h. (Melbourne, Perth, Wellington, Hong Kong, Mount Wilson, Pasadena, Tinemaha, Pulkovo, Sverdlovsk, Tashkent, and La Paz), 9h. (Paris, Stuttgart, Zurich, Scoresby Sund, near Berkeley, Branner, Lick, and near Apia), 10h. (La Paz (2), Pasadena, Tinemaha, Philadelphia, Baku, Sverdlovsk, Piatigorsk, near Erevan (3), Grozny (3), and Tiflis (7), also near Sumoto), 11h. (Tiflis (3)), 13h. (La Paz, Philadelphia, and near Amboina), 14h. (Scoresby Sund, Ottawa, Bozeman, Seattle, Tucson, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Oaxaca, Puebla, Tacubaya, and Vera Cruz), 15h. (Sitka, Sverdlovsk, Tashkent, and Scoresby Sund), 16h. (Tiflis), 18h. (La Paz, Frunse, and near Andijan), 20h. (near Manila), 21h. (Grozny and near Tiflis).

Sept. 25d. 10h. 19m. 40s. Epicentre 3°·6S. 142°·8E. (as on Sept. 23d.). R.2.

A = −·795, B = +·603, C = −·063.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		14·6	269	e 3 16	− 7	i 7 19	S*	e 9·3	—
Manila		28·2	312	5 49a	0	10 40	+ 5	14·0	—
Riverview		31·2	166	e 7 32	?	e 11 27	+ 4	17·6	21·2
Sydney		31·2	166	e 5 53	−23	e 11 47	+24	17·2	19·3
Adelaide		31·6	187	e 6 28	+ 9	i 11 38	+ 9	—	21·1
Taito		33·8	323	6 41	+ 2	—	—	—	—
Melbourne		34·3	177	e 12 32	S	(e 12 32)	+21	18·3	22·3
Karenko		34·5	325	6 45	0	—	—	—	—
Batavia		35·9	266	8 22	PPP	14 59	SSS	—	—
Miyazaki		37·1	345	6 56	−11	—	—	—	—
Perth		38·0	219	—	—	12 50	−16	20·2	25·8
Hong Kong		38·1	315	7 12	− 4	13 0	− 8	17·2	19·9
Nagasaki	E.	38·3	344	e 7 1	−17	—	—	—	—
Wakayama		38·5	351	7 4	−15	13 1	−13	—	—
Mera		38·6	356	7 7	−13	—	—	—	—
Sumoto		38·7	356	7 18	− 3	e 13 9	− 8	e 16·4	—
Kobe	E.	38·9	352	e 7 9	−14	e 12 44	−36	e 15·9	—
	N.	38·9	352	e 7 14	− 9	e 12 41	−39	—	19·0
	Z.	38·9	352	e 7 10	−13	e 13 17	− 3	—	18·7
Tokyo		39·4	357	7 21	− 6	—	—	—	—
Kohu		39·5	355	7 25	− 3	—	—	—	—
Oiwake		40·1	355	7 31	− 2	—	—	—	—
Zi-ka-wei	Z.	40·3	333	i 7 35a	0	13 45	+ 4	17·1	20·8
Nagano		40·5	355	7 36	0	—	—	—	—
Hukusima		41·4	358	7 44	0	—	—	—	—
Taikyu		41·6	343	e 7 45	0	e 14 7	+ 7	—	—
Nanking		42·3	329	i 7 49	− 4	i 14 2	− 8	19·6	23·0
Mizusawa	E.	42·8	359	(e 7 58)	+ 3	e 7 58	P	—	—
Phu-Lien		43·0	307	e 7 57	0	14 20?	− 1	17·3	—
Keizyo	N.	43·7	342	e 7 55	− 7	e 14 25	− 6	—	—
Zinsen	N.	43·8	341	i 8 2a	− 1	e 14 30	− 3	—	—
Medan		44·7	280	8 2	− 8	e 14 38	− 8	—	—
Arapuni		45·7	144	—	—	e 14 20?	−40	25·3	27·3
Wellington		47·3	147	i 10 5	(− 2)	i 15 39	+16	26·3	—
Chiufeng		50·1	334	i 8 49k	− 3	i 15 54	− 8	22·9	28·9
Calcutta		59·2	299	10 3	+ 4	18 8	+ 3	e 28·4	—
Honolulu		63·2	64	e 10 55	(−11)	e 18 50	− 7	e 31·2	—
Kodaikanal		66·5	285	e 10 53	+ 4	—	—	—	—
Hyderabad		66·8	291	10 54	+ 3	19 39	− 3	28·4	41·6
Agra		69·5	301	i 11 7	− 1	i 20 14	− 1	—	—
Bombay		72·4	292	11 28	+ 3	i 20 44	− 6	—	44·7
Frunse		76·8	316	e 11 49	− 1	e 21 33	− 8	—	—
Andijan		77·7	313	e 11 57	+ 1	e 21 57	+ 6	—	—
Tashkent		80·2	313	i 12 9	0	i 22 10	− 8	40·4	44·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		81·5	311	12 20	+ 4	22 25	− 7	—	—
Sitka		88·6	33	e 12 53	+ 2	i 23 26	[+ 2]	e 36·1	—
Sverdlovsk		88·8	327	i 12 58	+ 6	23 39	− 6	45·0	52·7
Ukiah		95·4	51	—	—	e 25 54	PS	—	—
Erevan		98·7	310	e 15 18	?	e 18 39	?	—	—
Tinemaha	z.	99·3	54	e 13 47	+ 7	e 17 47	PP	—	—
Pasadena	z.	99·5	56	i 13 45	+ 4	e 17 36	PP	e 48·3	—
Mount Wilson	z.	99·6	56	e 13 45	+ 3	—	—	—	—
Riverside	z.	100·2	56	e 13 48	+ 4	e 17 52	PP	—	—
La Jolla	z.	100·3	58	e 13 50	+ 5	—	—	—	—
Moscow		101·5	326	13 33	−17	—	—	e 48·3	59·5
Pulkovo		104·3	331	14 4	+ 1	24 51	[+ 5]	51·3	62·2
Tucson		105·7	58	—	—	e 25 2	[+ 9]	e 50·5	—
Simferopol		105·7	315	e 17 32	[−32]	—	—	—	—
Yalta		105·8	315	e 18 4	[0]	—	—	—	—
Ksara		106·0	303	e 14 14	+ 3	—	—	—	61·3
Sebastopol		106·2	315	e 20 11	?	—	—	—	—
Upsala		110·1	334	—	—	e 28 24	PS	e 57·3	65·8
Scoresby Sund		112·4	354	19 20	PP	28 50	PS	52·3	—
Copenhagen		114·6	332	19 36	PP	i 29 11	PS	55·3	—
Cape Town		115·6	229	—	—	27 41	?	60·8	69·5
Hamburg		117·0	331	e 19 54	PP	e 29 31	PS	e 57·3	61·3
Zagreb		117·5	321	e 20 2	PP	—	—	e 62·3	68·3
Triest		119·0	321	e 20 6	PP	i 27 46	{+36}	e 58·2	63·5
Stuttgart		120·1	326	e 20 12	PP	—	—	e 62·3	73·3
De Bilt		120·2	331	e 20 20	PP	e 30 14	PS	e 58·3	64·3
Strasbourg		121·0	326	i 20 17a	PP	e 30 11	PS	e 60·3	—
Edinburgh		121·0	337	—	—	e 29 20?	?	e 61·3	—
Prato		121·5	320	e 20 8	PP	29 23	?	—	—
Piacenza		121·8	322	e 18 20	[−30]	29 20	?	—	74·9
Stonyhurst		122·3	336	—	—	e 26 3	[+ 6]	67·3	—
Bidston		122·9	336	—	—	e 30 15	SKSP	e 60·3	—
Kew		123·1	333	e 20 40	PP	—	—	59·3	74·3
Paris		123·5	329	i 20 40	PP	e 32 55	?	62·3	73·3
Rathfarnham Castle		124·2	338	e 21 13	PP	e 26 12	[+ 9]	e 61·3	75·6
Ottawa		126·4	33	e 22 20?	?	—	—	e 51·3	—
Oak Ridge	z.	130·5	33	i 19 14	[+ 6]	—	—	—	—
Alicante		131·8	321	e 19 36	[+26]	—	—	e 69·1	—
Toledo		133·0	324	e 11 36	?	—	—	—	—
Granada		134·4	321	e 19 20	[+ 6]	—	—	72·0	82·9
San Fernando		136·5	322	e 19 49	[+32]	e 22 26	PP	71·3	—
Huancayo		139·0	113	e 38 10	?	—	—	e 69·6	—
La Paz		143·4	125	i 19 42a	[+13]	—	—	76·0	—
San Juan		148·1	61	i 19 50	[+11]	—	—	e 68·3	—

Additional readings :—
Riverview eEN = +7m.43s., eE = +13m.22s., iN = +15m.26s.
Adelaide i = +7m.44s., +12m.10s., +15m.15s., and +18m.18s.
Melbourne i = +14m.14s. =SS+4s., S = +17m.10s. =S_cS+2s.
Perth e = +13m.30s., i = +14m.55s. and +16m.10s., S = +17m.30s. =S_cS+0s., e = +17m.55s., SS = +18m.35s., SSS = +18m.45s.
Hong Kong PP = +8m.40s.
Nagasaki ePN = +7m.17s.
Sumoto eSN = +13m.13s.
Kobe iZ = +7m.20s.
Tokyo S_cS = +17m.21s.
Nanking iE = +17m.17s. =SS+18s.
Wellington i = +19m.40s. =SSS+1s.
Chiufeng PPEZ = +10m.37s., S_cSEN = +18m.38s.
Honolulu eSS = +24m.8s.
Agra PP = +13m.32s.
Bombay PSEN = +21m.14s.
Sitka eS = +23m.37s., eSSS = +32m.29s.

Continued on next page.

Sverdlovsk PS = +24m.37s.
Moscow PP = +17m.32s., e = +20m.50s., +26m.42s. = PS −19s. and +33m.19s.
Pulkovo PP = +18m.20s., PPP = +20m.39s., SS = +32m.56s.
Tucson ePS = +27m.52s.
Ksara iPP = +18m.39s., PS = +27m.59s., PPS = +28m.57s.
Scoresby Sund e = +29m.58s., SS = +35m.2s.
Copenhagen SS = +35m.26s.
Cape Town E = +29m.33s. = PS +1s., +30m.1s., +30m.58s., and +33m.40s., N = +33m.56s. and +39m.10s., E = +39m.43s. = SSS +0s., +41m.1s., and +43m.21s. = SSSS +15s.
Triest i = +30m.6s. = PS +13s.
Stuttgart iZ = +20m.18s. = PP +8s., ePPP = +22m.54s.
Strasbourg e = +21m.35s., ePPP = +22m.47s., eSS = +36m.56s.
Kew ePPP = +23m.16s.
Rathfarnham Castle e = +22m.20s. and +29m.44s.
Granada PP = +21m.54s., SKP = +22m.48s., PPP = +24m.49s., SSS = +44m.36s.
San Fernando e? = +14m.40s., ePP = +22m.59s. = PKS +0s., ePPP = +26m.4s., eSS = +40m.36s.
Huancayo eSS = +41m.0s., e = +47m.20s. and +59m.13s.
La Paz iZ = +20m.7s., ipPKPZ = +20m.58s., SSN = +43m.20s.
San Juan e = +20m.40s. and +30m.48s.
Long waves were recorded at other European stations.

Sept. 25d. 12h. 30m. 32s. Epicentre 3°·6S. 142°·8E. (as at 10h.). X.

A = −·795, B = +·603, C = −·063.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		14·6	269	e 3 18	− 5	6 45	S*	e 8·5	—
Manila		28·2	312	6 3	+14	11 43	SS	—	—
Riverview		31·2	166	—	—	e 13 52	?	e 18·0	21·6
Sydney		31·2	166	—	—	e 13 43	?	18·0	22·1
Adelaide		31·6	187	e 3 36	?	e 11 33	+ 4	e 15·3	23·0
Melbourne		34·3	177	—	—	i 12 28	+17	18·6	22·9
Perth		38·0	219	13 18	S	(13 18)	+12	20·4	27·5
Nanking		42·3	329	e 7 49	− 2	i 14 11	+ 1	e 20·0	—
Chiufeng		50·1	334	8 54k	+ 2	—	—	—	—
Tashkent		80·2	313	(e 11 58)	−11	(e 22 13)	− 5	(44·5)	(47·0)
Pasadena	z.	99·5	56	e 13 48	+ 7	—	—	—	—
Stuttgart		120·1	326	—	—	26 40	{−37}	e 70·5	—
La Paz	z.	143·4	125	i 19 44k	[+15]	—	—	—	—

Additional readings and notes :—
Manila readings have been *diminished* by 1h.
Sydney readings have been *increased* by 1h.
Adelaide i = +13m.41s.
Melbourne i = +16m.52s., +17m.17s. = S_cS +9s. and +18m.22s.
Perth PP = +13m.48s., P_cP = +16m.28s., S = +17m.35s. = S_cS +5s., SS = +18m.48s., SSS = +19m.8s.
Tashkent e = (+15m.40s.); readings have been *increased* by 1h.
Long waves were also recorded at Hong Kong, Wellington, Copenhagen, Edinburgh, Paris, Pulkovo, and Strasbourg.

Sept. 25d. Readings also at 0h. (Copenhagen, Paris, Tortosa, Strasbourg, and Stuttgart), 1h. (Scoresby Sund and Tiflis), 2h. (near Medan), 4h. (Hong Kong, Nanking, and Phu-Lien), 6h. (Andijan), 9h. (Erevan and Grozny), 12h. (Stuttgart), 11h. (Apia), 14h. and 16h. (near Mizusawa), 19h. (Oak Ridge).

Sept. 26d. 22h. Pacific earthquake for which no epicentre can be determined :—
Wellington P = 23m.45s., S = 27m.35s., SS = 28m.55s., L = 29m.28s., M = 34m.0s.
Chatham Islands S = 26m.21s., i = 28m.30s., L = 29m.12s.
La Paz iPZ = 27m.22s.a, S?N = 30m.20s., L = 49m.0s., M = 53m.30s.
Pasadena iPNZ = 29m.32s., eL = 59m.12s.
Tinemaha ePZ = 29m.47s.
Melbourne i = 32m.33s., eL = 37m.43s., M = 40·5m.
Adelaide e = 33m.42s., eL = 40m.30s., MN = 44m.30s.
Apia 36m.
Granada e = 36m.6s., i = 39m.37s., L = 88m.56s., M = 117m.55s.
Huancayo e = 36m.13s., 40m.40s., 43m.40s., 44m.33s., 48m.10s., 48m.43s.
Baku e = 36m.19s. and = 46m.41s., L = 93m., M = 124m.12s.
Tashkent e = 36m.20s., 37m.56s., and 43m.53s., i = 48m.33s. and 50m.45s., e = 60m.39s. and 73m.6s., eL = 80m.6s., M = 103m.36s.
Chiufeng eZ = 36m.45s., eL = 79m.36s.
Ksara eP = 36m.46s., PP = 40m.20s., PSKS = 50m.34s., L = 92m., M = 99m.20s.
Tiflis e = 37m.17s. and 43m.21s., eL = 97m.18s., M = 129m.6s.
Sverdlovsk e = 37m.37s. and 62m.9s., L_q = 84m., M = 105m.6s.
Stuttgart e = 38m., eL = 111m.
Tucson e = 40m.28s., eL = 54m.12s.
Strasbourg e = 40m.30s., eL = 60m.
Moscow e = 42m.33s., 49m.5s., 57m.22s., 58m.6s., and M = 123m.42s.
Pulkovo e = 47m.54s. and 50m.59s., L = 98m., M = 108m.6s.
Ukiah e = 48m.5s., eL = 56m.56s.
Perth P = 49m.0s.
Honolulu e = 49m.44s.
Hong Kong ? = 52m.15s., M = 73m.30s.
Nanking e = 53m.20s., LE = 67m.6s., ME = 77m.
Copenhagen 54m., L = 96m.
Berkeley eE = 56m.27s., eZ = 60m.16s., eN = 60m.17s., eE = 62m.23s.
Uccle e = 60m.0s., eL = 83m.
Triest e = 79m.40s., eL = 94m.50s., M = 106m.
Long waves were also recorded at Bombay, Arapuni, Riverview, Sydney, Scoresby Sund, Sitka, and other European stations.

Sept. 26d. Readings also at 0h. (Ferndale), 2h. (Berkeley, Haiwee, Mount Wilson, Pasadena (2), Tinemaha (2), Seattle, Tucson, and Ukiah (2)), 3h. (Florissant, Mount Wilson, Pasadena, Tinemaha, Ukiah, and Paris), 5h. (near Medan), 7h. (Graz and near Santiago), 13h. (Frunse and near Andijan), 14h. (near Nagoya), 15h. (near Erevan), 17h. (Tacubaya), 18h. (Taityu, Taihoku, Tainan, near Kosyun, Takao, Taito, and Karenko), 22h. (Christchurch, Kosyun, Takao, Tainan, near Karenko, Taito, Taihoku, and Taityu), 23h. (Nagoya and New Plymouth).

Sept. 27d. 3h. 25m. 53s. Epicentre 1°·0S. 129°·0E. (as on 1932 Sept. 9d.). X.

A = −·629, B = +·777, C = −·017 ; D = +·777, E = +·629 ;
G = +·011, H = −·014, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	2·8	198	i 0 35	− 5	i 1 2	−10	—	—
Manila	17·5	333	4 6	+ 6	7 29	SS	9·7	—
Batavia	22·7	256	i 4 54	− 4	8 53	− 6	—	—
Medan	30·6	280	e 6 7	− 3	e 11 12	− 2	—	—
Nanking	34·4	344	—	—	e 12 7?	− 5	—	17·6
Melbourne	39·6	161	—	—	i 13 33	+ 3	24·1	—
Chiufeng	42·7	346	e 7 57	+ 3	—	—	—	—
Vladivostok	44·1	3	—	—	e 15 7	+30	—	—
Andijan	66·0	316	e 10 44	− 1	e 19 32	0	—	—
Tashkent	68·4	316	11 0	− 1	20 1	− 1	—	43·5
Samarkand	69·5	313	e 11 11	+ 3	—	—	—	—
Sverdlovsk	79·2	330	i 12 11	+ 7	e 22 17	+10	40·1	—
Grozny	85·8	313	e 12 39	+ 2	—	—	—	—
Tiflis	86·3	312	i 12 40	0	—	—	—	—
Ksara	93·1	302	e 13 15	+ 3	—	—	—	—
Granada	123·3	315	—	—	e 32 6	?	—	—

Additional readings :—
Amboina i = +43s. = P* − 2s.
Vladivostok e = +18m.12s. = S_eS + 5s.
Ksara ePP = +17m.1s., ePS = +25m.41s.
Long waves were also recorded at Hong Kong, Wellington, and Copenhagen.

Sept. 27d. Readings also at 2h. (near Malaga and near Nagoya), 3h. (Nagoya), 4h. (Oak Ridge), 5h. (Christchurch and Wellington), 6h. (Tainan, Taityu, near Karenko, Kosyun, and Taito), 7h. (Oaxaca, Tacubaya, and Vera Cruz), 12h. (Tacubaya), 13h. (Bozeman, Sitka, Seattle, Tucson, Ukiah, Mount Wilson, Pasadena, Riverside, Tinemaha, Grozny, and Manila), 14h. (Copenhagen, Honolulu, Philadelphia, Pulkovo, and Sverdlovsk), 17h. (Chiufeng, Hong Kong, Nagasaki, Vladivostok, Andijan, Frunse, Samarkand, Tashkent, Ksara, Sverdlovsk, Pulkovo, near Manila (2), and near Santiago), 18h. (Mizusawa, Wellington, Riverview, Copenhagen, Tashkent, Sverdlovsk (2), Mount Wilson (2), Pasadena (2), Riverside, Tinemaha (2), near Manila, and near Nagoya), 19h. (Pulkovo), 21h. (Tucson, Oaxaca, Tacubaya, and Vera Cruz), 22h. (near Kobe, Sumoto, Toyooka, and Nagoya).

Sept. 28d. 4h. 0m. 30s. Epicentre 23°·3S. 68°·5W. (as on 1928 May 26d.). **X.**

A = +·337, B = −·855, C = −·396; D = −·930, E = −·367; G = −·145, H = +·368, K = −·918.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Montezuma		0·8	336	i 0 33	?	—	—	—	—
Sucre		5·2	36	i 1 6	− 8	2 0	−13	2·6	—
La Paz		6·8	2	i 1 43	+ 6	i 3 26	S*	3·9	4·4
Santiago		10·3	191	—	—	4 47	+26	—	—
Huancayo		13·0	329	e 3 4	+ 2	i 5 49	+22	—	—
La Plata	E.	14·8	144	3 30	+ 4	6 18	+ 8	6·9	8·2
	N.	14·8	144	3 36	PP	6 24	+14	7·0	7·1
La Jolla		73·0	319	i 11 24	− 5	—	—	—	—
Riverside		73·8	319	i 11 29	− 4	—	—	—	—
Pasadena		74·3	319	i 11 33	− 3	—	—	—	—
Mount Wilson		74·4	319	i 11 33	− 4	—	—	—	—
Santa Barbara	Z.	75·6	318	i 12 3	+19	—	—	—	—
Haiwee	N.	75·7	321	e 11 41	− 3	—	—	—	—
Tinemaha		76·5	321	i 11 45	− 4	—	—	—	—

Additional readings:—
Montezuma i = +45s.
La Paz iZ = +2m.30s.
Huancayo e = +3m.44s.
Riverside iZ = +11m.55s. and +12m.7s.
Pasadena iZ = +11m.58s. and +12m.11s.
Tinemaha iZ = +12m.12s. and +12m.49s.

Sept. 28d. 8h. 19m. 22s. Epicentre 39°·3N. 71°·0E. (given by Frunse). **N.S.**

A = +·252, B = +·732, C = +·633; D = +·946, E = −·326; G = +·206, H = +·599, K = −·774.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·8	36	e 0 27	+ 1	i 0 54	S*	—	1·2
Samarkand	3·1	277	e 1 2	P_g	e 1 42	S_g	—	3·1
Frunse	4·5	36	0 58	− 6	e 2 19	S_g	—	—
Agra	13·5	152	e 2 41	−28	i 4 49	−50	—	—
Sverdlovsk	18·8	342	4 22	+ 6	e 8 7	+25	e 10·3	—
Grozny	19·3	290	e 4 40	+18	—	—	—	—
Ksara	28·5	270	e 10 39	S	(e 10 39)	− 1	e 15·7	—

Additional readings:—
Samarkand S_g = +1m.57s.
Frunse eP_g = +1m.14s. = P* + 0s., ePP = +1m.34s., P_gS = +1m.55s. = S + 0s.
Grozny e = +5m.55s.
Long waves were also recorded at Pulkovo.

Sept. 28d. 16h. 18m. 3s. Epicentre 45°·8N. 0°·0. N.2.

Epicentre given by Central Bureau, Strasbourg, as 45°48′50″N. 0°2′40″E.

A = +·697, B = 000, C = +·717; D = 000, E = −1·000;
G = +·717, H = 000, K = −·697.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bagneres		2·8	175	0 41	+ 1	i 1 20	S*	—	—
Paris		3·6	29	e 1 5	P_g	i 1 46	S*	1·8	—
Drome		3·7	110	0 57	+ 4	e 1 45	S*	—	—
Grenoble		4·0	97	1 28	?	1 54	S*	—	—
Marseilles		4·6	121	—	—	e 2 3	+ 5	—	—
Neuchatel		5·0	74	e 1 11	0	e 2 31	S*	—	—
Tortosa	N.	5·0	175	1 40	P_g	2 45	S_g	3·7	—
Basle		5·5	69	e 1 15	− 3	e 2 51	S_g	—	—
Kew		5·6	358	i 1 50	P_g	i 2 57	S_g	—	—
Uccle		5·8	28	e 1 46	P_g	e 2 51	S*	—	—
Strasbourg		5·9	59	e 1 50	P_g	e 2 21	−10	—	—
Oxford		6·0	353	—	—	e 2 34	+ 1	—	3·3
Zurich		6·1	72	e 1 26	− 1	e 3 7	S*	—	—
Karlsruhe		6·5	57	2 36	S	(2 36)	−10	3·4	—
Ebingen		6·5	66	—	—	e 3 17	S*	—	—
Toledo		6·6	208	e 1 29	− 5	i 3 1	+13	—	—
Stuttgart		6·8	61	e 2 5	P_g	e 3 35	S_g	e 4·2	—
Ravensburg		6·8	69	e 2 15	P_g	e 3 42	S_g	—	—
Piacenza		6·8	93	3 36	S_g	4 1	?	—	4·7
De Bilt		7·1	27	—	—	i 3 31	S*	4·0	4·3
Alicante		7·4	183	e 1 42	− 3	e 4 28	?	—	—
Prato		8·1	100	e 3 25	S	4 23	S_g	—	—
Stonyhurst		8·2	350	—	—	i 4 30	S_g	—	4·8
Padova		8·3	89	—	—	5 0	?	—	—
Göttingen	E.	8·8	45	2 11	+ 6	4 41	S_g	—	5·1
	N.	8·8	45	2 3	− 2	4 39	S_g	—	5·0
Granada		9·0	199	—	—	4 50	S_g	5·2	6·2
Almeria		9·2	192	—	—	e 4 55	S_g	—	—
Jena		9·2	52	2 57	?	—	—	e 4·9	5·3
Malaga		9·7	202	2 45	?	e 4 4	− 2	6·1	—
Leipzig		9·9	52	i 2 24	+ 5	i 4 14	+ 3	—	5·6
Hamburg		10·1	36	—	—	e 4 45	S*	—	5·9
Zagreb		11·1	84	—	—	e 4 24	−17	e 6·3	—
Vienna		11·4	72	e 6 7	S_g	—	—	—	—

Additional readings :—

Bagneres iP_g = +45s. = P* +0s., iP_gS_g = +1m.11s. = S −1s., S_gS = +1m.27s. = S_g +1s., SS_gS = +1m.37s., iSSSS = +1m.42s., SS_gS = +1m.49s.
Paris iPP = +1m.28s. = S −4s.
Grenoble S_g = +2m.13s.
Marseilles eS_g = +2m.13s. = S* −2s.
Kew iP_g = +2m.21s. = S −2s., iS* = +3m.21s.
Uccle e = +1m.51s. = P_g +1s., +2m.0s., and +2m.8s., i = +3m.1s., and +3m.8s. = S_g +2s.
Strasbourg e = +2m.[illegible]s. and +2m.48s. = S* −6s., eS_g = +3m.10s., eSS_g = +3m.17s., e = +3m.23s., SS_g = +3m.29s., e = +3m.43s., and +3m.52s.
Oxford e = +2m.52s. = S* −5s.
Toledo i = +2m.44s. = P* −6s., SS_g = +3m.30s.
Piacenza e = +3m.7s.
De Bilt e = +3m.45s. = S_g −3s. and +3m.54s.
Göttingen eN = +2m.47s. = P_g, eE = +3m.2s.
Malaga e = +4m.51s. = S* +4s., +5m.12s. = S_g −2s., +5m.21s., and +5m.31s., i = +5m.38s., iSS_g = +5m.51s.
Leipzig iE = +2m.33s., +2m.39s., +2m.53s., +3m.2s., +3m.8s., +3m.13s., +3m.16s., +3m.26s., +3m.42s., +4m.24s., +4m.59s. = S* +6s., +5m.12s. and +5m.23s. = S_g +2s.
Zagreb e = +4m.56s. and +5m.54s. = S_g +7s.
Long waves at Copenhagen and Cheb.

Sept. 28d. Readings also at 1h. (Tashkent and near Andijan), 3h. (near Mizusawa), 6h. (near Nagoya), 7h. (Grozny), 13h. (Leipzig), 14h. (Alicante), 15h. (Andijan and Frunse), 17h. (Tashkent, Sverdlovsk, Ksara, and Nanking), 18h. (near Zagreb), 19h. (near Wellington), 21h. (Wellington, Pasadena, and near Sumoto), 22h. (Tiflis and near Oak Ridge).

Sept. 29d. 6h. 35m. 54s. Epicentre 39°·5N. 79°·0E. (as on 1928 March 18d.). X.

A = +·147, B = +·757, C = +·636; D = +·982, E = −·191; G = +·121, H = +·634, K = −·773.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Frunse	4·8	318	e 1 2	− 6	i 1 50	−13	—	1·9
Andijan	5·2	287	1 14	0	i 2 16	+ 3	—	2·6
Tashkent	7·6	287	i 1 43	− 5	i 3 16	+ 2	i 3·5	4·3
Tchimkent	7·6	295	1 45	− 3	i 3 27	+13	—	3·9
Samarkand	9·2	275	2 11	+ 1	—	—	—	—
Dehra Dun	9·2	185	5 26	?	—	—	7·8	8·1
Agra	12·4	184	e 3 7	+13	e 5 27	+14	i 7·2	—
Calcutta	18·5	152	8 29	?	12 4	?	13·5	15·6
Sverdlovsk	21·0	332	i 4 42	+ 2	8 29	+ 3	11·8	12·0
Bombay	21·3	196	e 5 6?	+23	i 9 8	+36	—	14·4
Hyderabad	22·1	181	e 4 56	+ 4	9 6	SS	—	14·6
Grozny	25·1	290	e 5 21	0	e 9 56	+13	—	—
Erevan	26·4	282	e 5 43	+10	—	—	—	—
Chiufeng	28·3	77	—	—	e 11 16	+39	i 16·1	—
Kodaikanal	29·3	183	—	—	e 12 25	SS	—	—
Moscow	31·6	315	—	—	e 11 8	−21	e 16·5	17·9
Ksara	34·7	275	—	—	e 11 45	−32	e 18·2	23·1
Pulkovo	36·3	321	7 1	+ 1	e 14 38	SS	19·1	20·9
Sumoto	44·3	79	—	—	15 11	+31	—	—

Additional readings :—
Frunse iP_g = +1m.8s. = P +0s., iPP = +1m.12s. = P* −7s., P_gS = +1m.32s. = P_g +2s.
Andijan eP_g = +1m.26s. = P* +0s., iPP = +1m.30s. = P_g −8s., i = +1m.44s., P_gS = +1m.54s., i = +2m.8s.
Tchimkent ePP = +2m.11s. = P* +4s.
Samarkand e = +2m.51s.
Sverdlovsk L_q = +10·3m.
Grozny e = +6m.4s.
Moscow e = +13m.53s. and +15m.57s.
Pulkovo L_q = +17·1m.
Long waves were also recorded at Vladivostok and other European stations.

Sept. 29d. 8h. 22m. 39s. Epicentre 33°·3N. 139°·8E. (as on 1934 April 19d.). X.

A = −·638, B = +·539, C = +·549.

A *depth* of focus 0·015 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.
Nagoya	+0·2	3·0	308	e 0 47	+ 1	1 22	0	1·5
Kobe	+0·1	4·1	291	1 0	0	1 45	− 3	—
Sumoto	+0·1	4·2	286	1 0	− 1	1 46	− 4	1·8
Mizusawa	0·0	5·9	10	—	—	i 2 32	+ 1	—
Tinemaba	−2·1	78·9	53	i 11 51	+ 1	—	—	—
Mount Wilson	−2·1	80·6	55	e 11 57	− 3	—	—	—
Pasadena	−2·1	80·6	55	i 11 56	− 4	—	—	—

Sept. 29d. Readings also at 1h. (near Nagoya), 4h. (Agra, Sverdlovsk, Tashkent, and near Santiago), 5h. (Nanking), 6h. (Basle, Neuchatel, Zurich, Strasbourg (2), and near Nagasaki), 8h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 10h. (Tacubaya, near Kobe, Sumoto, Nagoya, and Toyooka), 11h. (La Jolla, Mount Wilson, Pasadena, Riverside, Santa Barbara, Tinemaha, Mizusawa, and Nagoya), 12h. (Ksara, Andijan, Frunse, Samarkand, Tchimkent, Tashkent, Sverdlovsk, Vladivostok, Keizyo, and near Chiufeng), 13h. (Copenhagen, Pulkovo, Strasbourg, Stuttgart, De Bilt, and Paris), 14h. (near Sumoto), 16h. (Basle, Neuchatel, Zurich, Strasbourg, and La Paz), 19h. (Oak Ridge).

Sept. 30d. 0h. 6m. 47s. Epicentre 34°·0N. 141°·5E. (as on 1934 Nov. 29d.). R.3.

A = −·649, B = +·516, C = +·559; D = +·623, E = +·783; G = −·438, H = +·348, K = −·829.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		2·2	320	0 19	−12	0 27	−33	—	2·6
Nagoya		4·0	288	0 57	0	1 46	+ 4	—	2·1
Mizusawa		5·1	357	1 11	− 2	1 59	−11	—	—
Kobe	E.	5·3	279	e 1 19	+ 4	i 2 25	+10	—	3·7
	N.	5·3	279	e 1 12	− 3	e 2 20	+ 5	—	2·7
	Z.	5·3	279	e 1 8	− 7	e 2 19	+ 4	—	2·7
Sumoto		5·5	275	e 1 18	0	2 39	S*	—	2·9
Toyooka	E.	5·7	288	1 33	P*	e 2 37	+12	—	2·8
	N.	5·7	288	e 1 36	P*	2 25	0	—	2·7
	Z.	5·7	288	e 1 34	P*	2 34	+ 9	—	2·8
Hukuoka		9·2	270	e 2 44	?	4 48	S_g	—	—
Hukuoka B		9·2	270	e 4 24	S*	4 55	S_g	—	—
Nagasaki		9·8	266	e 4 41	S*	—	—	—	—
Husan		10·4	280	e 4 9	S	(e 4 9)	−14	—	—
Taikyu		10·7	284	6 44	?	—	—	e 11·4	—
Vladivostok		11·8	323	i 2 37	− 9	i 4 38	−20	e 5·2	12·9
Keizyo	E.	12·3	291	e 2 48	− 4	e 5 28	+18	—	—
Zi-ka-wei	Z.	17·1	266	e 4 2	+ 7	—	—	—	10·8
Nanking		19·1	271	4 20	0	7 57	+ 9	—	12·3
Chiufeng		21·1	294	e 4 36	− 5	e 8 8	−20	—	12·6
Andijan		53·9	299	e 9 14	− 7	e 17 5	+11	—	—
Sverdlovsk		57·3	321	i 9 46	+ 1	17 38	− 2	27·2	35·8
Tinemaha		77·3	54	e 12 2	+ 8	—	—	—	—
Pasadena	Z.	79·0	57	i 12 11	+ 8	—	—	—	—
Mount Wilson	Z.	79·1	57	i 12 12	+ 9	—	—	—	—
Riverside	Z.	79·6	57	e 12 14	+ 8	—	—	—	—
Ksara		82·8	307	e 12 51	+29	e 23 49	PS	—	51·2

Additional readings and notes:—
Kobe eZ = +1m.26s. −P* +2s., eN = +1m.29s., eE = +1m.40s. = P_g +0s. and +1m.51s., eN = +1m.53s., eE = +2m.16s.
Sumoto ePZ = +1m.21s.
Nagasaki iP = +5m.5s., S = +6m.59s.
Husan S = +6m.46s.
Chiufeng iN = +5m.17s., iEN = +8m.59s. = SS +5s.
Long waves were also recorded at Hong Kong, Tashkent, Pulkovo, Moscow, and some European stations.

Sept. 30d. 19h. 0m. 50s. Epicentre 84°·0N. 5°·0W. N.2.

A = +·104, B = −·009, C = +·995; D = −·087, E = −·996; G = +·991, H = −·087, K = −·105.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		13·9	204	3 17	+ 3	6 4	+15	7·2	—
Upsala	N.	24·7	153	5 17	0	9 37	+ 1	—	—
Pulkovo		25·6	137	i 5 24	− 1	9 53	+ 2	12·2	16·1
Edinburgh		28·1	177	—	—	e 10 10?	−24	—	—
Copenhagen		28·7	159	5 55	+ 2	10 45	+ 2	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Königsberg	E.	29·9	150	e 6 4	0	e 11 52	?	e 15·7	—
	N.	29·9	150	e 6 2	− 2	e 11 40	?	e 15·6	—
Moscow		30·1	130	6 3	− 3	e 11 1	− 5	16·1	21·0
Hamburg		30·7	163	e 6 14k	+ 3	e 11 21	+ 5	e 15·2	19·2
Sverdlovsk		31·1	105	i 6 15	0	i 11 21	0	16·3	24·3
De Bilt		32·8	168	e 6 26	− 4	e 11 40	− 8	e 15·2	21·9
Leipzig		33·0	160	e 6 34	+ 2	e 11 50	− 1	e 15·7	19·2
Uccle		33·3	170	e 6 56	+22	e 12 0	+ 5	e 15·2	—
Cheb		34·2	160	e 7 10?	+28	—	—	—	—
Prague		34·3	158	e 6 43?	0	e 12 10	− 1	e 15·2	19·2
Paris		35·3	171	e 6 51	− 1	e 12 33	+ 7	18·2	—
Stuttgart		35·4	164	e 6 52	− 1	e 12 27	0	e 16·2	22·2
Strasbourg		35·6	165	i 6 56a	+ 2	e 12 38	+ 8	e 16·2	—
Vienna		36·2	155	e 7 53	?	—	—	—	—
Basle		36·6	166	e 7 3	0	—	—	—	—
Zurich		36·8	165	e 7 5	0	—	—	—	—
Neuchatel		37·1	166	e 7 8	+ 1	—	—	—	—
Budapest		37·1	153	7 2	− 5	i 12 55	+ 2	e 20·2	—
Sitka		37·1	317	e 8 32	PP	e 13 0	+ 7	e 21·3	—
Chur		37·4	165	e 7 9	−71	—	—	—	—
Zagreb		38·6	156	e 7 21	+ 1	e 13 22	+ 7	e 26·6	—
Triest		38·7	159	i 7 19k	− 2	i 13 24	+ 7	20·9	22·7
Piacenza		39·2	162	e 6 26	−59	9 14	?	—	20·2
Prato		40·4	161	e 7 42	+ 7	13 43	+ 1	—	—
Simferopol		40·5	137	e 7 36	0	e 13 48	+ 4	e 24·2	—
Yalta		41·0	136	e 7 37	− 3	—	—	e 24·2	—
Ottawa		42·9	257	e 9 50	(− 1)	e 14 30	+11	e 21·2	—
Tiflis		44·6	126	i 8 8	− 2	e 14 53	+ 9	25·2	59·2
Victoria		44·7	304	e 8 9	− 1	—	—	e 23·9	28·6
Bozeman		46·3	292	e 10 32	PPP	e 15 22	+13	e 22·6	—
Frunse		46·3	95	e 8 19	− 4	—	—	—	—
Granada		46·8	179	i 8 29k	+ 2	—	—	24·7	34·6
Malaga		47·3	179	i 8 32	+ 1	e 15 34	+11	—	—
Algiers		47·3	171	(8 28)	− 3	10 25	PP	e 15·2	—
Tashkent		47·3	100	i 8 29	− 2	e 15 6	−17	e 23·2	30·1
Andijan		48·2	98	e 8 39	+ 1	e 20 11	?	—	—
Philadelphia		48·3	255	—	—	e 15 46	+ 9	e 22·8	—
Vladivostok		51·4	40	8 58	− 4	—	—	e 24·7	—
Ksara		51·8	136	i 9 4a	− 1	16 32	+ 7	25·2	28·7
Chiufeng		53·2	56	i 9 13k	− 2	16 48	+ 3	—	34·1
Ukiah		53·9	303	—	—	e 20 42	?	e 28·4	—
Tinemaha	Z.	55·5	298	e 9 34	+ 2	e 11 41	PP	—	—
Haiwee	N.	56·4	297	e 9 43	+ 4	—	—	—	—
Santa Barbara	Z.	58·2	299	e 9 56	+ 4	—	—	—	—
Mount Wilson	Z.	58·3	297	e 9 54	+ 2	—	—	—	—
Pasadena		58·4	297	e 9 53	0	e 12 10	PP	e 30·9	—
Riverside		58·5	297	e 9 55	+ 1	—	—	—	—
La Jolla	Z.	59·6	296	e 10 3	+ 1	—	—	—	—
Agra		62·3	94	—	—	e 18 41	− 5	e 33·0	37·0
Hyderabad		72·0	95	—	—	20 37	− 8	—	47·3

Additional readings and notes :—
Leipzig e = +13m.52s. =SSS − 2s.
Prague e = +7m.56s. =PP + 4s.
Paris e = +15m.11s.
Stuttgart ePP = +8m.10s.
Strasbourg i = +7m.8s., iPP = +8m.23s.
Sitka e = +16m.42s.
Zagreb ePP = +8m.54s., eSSE = +16m.13s.
Triest iPP = +8m.49s., i = +9m.16s. and +13m.6s., e = +16m.1s., i = +16m.36s.
Ottawa eE = +17m.40s.
Tiflis i = +9m.48s. =PP + 1s. and +11m.10s.
Bozeman e = +18m.45s.
Granada i = +9m.40s. and +10m.14s. =PP + 5s.
Malaga i = +8m.38s., e = +10m.14s. =PP + 0s. and +16m.0s.
Algiers P is given as PP.
Philadelphia e = +18m.43s. =SS − 9s. and +19m.25s.
Ksara PP = +11m.0s.
Long waves were also recorded at Bombay, Hong Kong, Tucson, Seattle, Sebastopol, and Stonyhurst.

Sept. 30d. 23h. 48m. 21s. Epicentre 3°·0N. 125°·0E. (as on 1927 Aug. 25d.). R.3.

A = − ·573, B = + ·818, C = + ·052 ; D = + ·819, E = + ·574;
G = − ·030, H = + ·043, K = − ·999.

		△	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		7·4	155	e 1 35	−10	i 3 4	− 5	—	—
Manila		12·3	341	i 2 54k	+ 2	i 5 49	?	—	9·4
Batavia		20·3	243	4 32	− 1	i 8 41	SS	—	—
Hong Kong		22·0	332	4 54	+ 3	8 53	+ 7	—	14·2
Phu-Lien		25·3	316	e 5 26	+ 3	—	—	—	—
Medan		26·3	273	e 5 39	+ 7	i 10 12	+ 9	—	—
Nanking	E.	29·7	349	—	—	e 10 4	−55	e 13·0	—
Perth		36·0	193	12 39	S	(12 39)	+ 3	—	—
Chiufeng		38·0	349	e 7 16	+ 1	e 13 2	− 4	—	23·6
Vladivostok		40·6	9	i 7 35	− 2	e 13 46	+ 1	—	—
Agra		51·0	304	9 0	+ 1	e 16 2	−13	23·3	—
Tashkent		62·8	316	i 10 20	− 4	18 51	− 1	31·8	37·2
Sverdlovsk		73·7	330	11 31	− 2	21 3	− 2	35·6	43·6
Ksara		87·6	304	e 12 48	+ 2	—	—	45·6	—

Additional readings :—
Batavia S = +9m.46s.
Medan SE = +11m.2s. =SS +1s.
Agra SS = +19m.6s., SSS = +20m.18s.
Ksara iPP = +16m.20s., ePS = +25m.4s.
Long waves were also recorded at Bombay, Copenhagen, De Bilt, Paris, Strasbourg, and Stuttgart.

Sept. 30d. Readings also at 2h. (Manila), 3h. (Melbourne and Perth), 5h. (Ksara, Tashkent, Sverdlovsk, and near Sumoto), 7h. (Mount Wilson, Pasadena, and Tinemaha), 10h. (Nagoya), 13h. (Kobe, Sumoto, Toyooka, Mizusawa, Nagoya, and near Tokyo), 14h. (Port au Prince, near Batavia, and Malabar), 15h. (Ksara and near Mizusawa), 17h. (Belgrade), 19h. (Taityu), 20h. (Taihoku and near Taityu), 21h. (near Nagoya).

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.

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.