The International Seismological Summary. 1930 April, May, June.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

There are 168 epicentres in this quarter, 55 are new and 113 are old epicentres. According to the new notation the quality of the material is as follows :—

N.1=14	R.1=10	X.=56
N.2=15	R.2=19	
N.3=26	R.3=28	

There are seven cases of abnormal focal depth :—

	d.	h.	m.	s.	Epicentre. °	°	Focal depth below normal.
April	9	23	46	45	36·5N.	140·5E.	+0·015
April	27	21	37	43	7·6S.	128·3E.	+0·020
May	18	0	2	18	7·0S.	147·0E.	+0·015
May	23	16	38	12	34·2N.	139·6E.	+0·015
May	30	12	56	45	0·0	125·0E.	+0·040
June	3	18	9	20	51·2N.	148·4E.	+0·065
June	4	9	50	35	6·5S.	128·5E.	+0·060

The following paper has been received : Determination from World records of the Zero Time and the Epicentre of the Pegu Earthquake of May 5th, 1930, by S. W. Visser.

University Observatory,
Oxford.

1934 July 30th.

1930 APRIL, MAY, JUNE.

April 1d. 14h. 4m. 36s. Epicentre 35°·0N. 139°·5E. (as on 1930 March 12d.). X.

A = −·623, B = +·532, C = +·574; D = +·649, E = +·760;
G = −·436, H = +·372, K = −·819.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·3	56	e 0 16	− 2	(0 38)	+ 5	0·6	0·7
Nagoya	2·1	274	i 0 22	− 8	0 45	− 9	—	0·8
Osaka	3·4	266	0 43	− 6	(1 27)	0	1·4	1·9
Kobe	3·6	266	e 1 7	+16	i 1 34	+ 2	1·9	2·7
Sumoto	3·8	261	e 0 53	− 1	1 35	− 2	—	1·7
Toyooka	3·8	279	i 0 54	0	(e 1 39)	+ 2	e 1·7	1·8
Mizusawa	4·3	17	1 13	+12	2 8	+18	—	—
Koti	5·2	255	—	—	e 2 11	− 2	e 2·9	—

Additional readings:—
Tyosi PZ = +23s.
Kobe P = +1m.19s.
Mizusawa SN = +2m.10s.

April 1d. Readings also at 0h. (Trenta), 3h. (near Nagoya and Tyosi), 4h. (Ksara), 5h. (near Amboina), 8h. (Ksara and near Manila), 9h. (Baku, Irkutsk, Ksara, near Manila, and near Tyosi (2)), 11h. (Baku, Irkutsk (2), Ekaterinburg, Hong Kong, Catania, Mineo, and near Batavia), 12h. (Florissant and Ksara), 13h. (near Amboina), 16h. (Andijan and Samarkand), 17h. (Amboina, Manila, and near Messina), 19h. (Zagreb), 20h. (near Santiago).

April 2d. 4h. 14m. 35s. Epicentre 4°·8N. 126°·0E. (as on 1928 June 29d.) R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		10·9	334	i 2 51	+18	i 4 58	+22	—	7·2
Hong Kong		21·0	328	4 31	− 9	8 36	+10	10·2	15·4
Batavia		22·1	240	i 4 36	−16	i 9 33	+45	—	—
Phu-Lien		24·7	312	4 25?	−52	—	—	—	—
Zi-ka-wei	z.	26·7	352	e 5 41	+ 6	10 27	+17	—	16·9
Medan		27·3	269	e 5 49	+ 8	—	—	i 12·4	—
Perth		38·0	194	e 13 25	S	(e 13 25)	+19	—	—
Vladivostok		38·6	6	7 20	0	—	—	—	—
Melbourne		46·1	160	—	—	e 14 47	−19	28·3	34·4
Irkutsk		50·7	345	8 58	+ 1	e 16 12	+ 1	26·4	31·6
Bombay		53·3	290	8 25?	−51	—	—	—	—
Almata		57·8	320	e 10 1	+12	—	—	—	—
Andijan		59·8	316	e 10 16	+13	—	—	—	—
Tashkent		62·2	316	10 18	− 2	i 18 47	+ 2	28·4	40·3
Samarkand		63·4	314	10 28	0	19 1	+ 1	—	—
Ekaterinburg		72·7	330	i 11 23	− 4	i 20 45	− 8	29·4	44·6
Baku		76·3	311	11 49	+ 1	21 34	− 1	38·9	57·3
Pulkovo		88·7	331	12 51	0	23 35	− 9	46·4	—

Additional readings:—
Batavia i = +6m.56s.
Melbourne i = +18m.25s. = SS +14s.
Pulkovo SKS = +23m.19s.
Long waves were also recorded at several European stations.

April 2d. 19h. 54m. 48s. Epicentre 4°·2N. 127°·0E. N.3.

A = −·600, B = +·796, C = +·073; D = +·799, E = +·602;
G = −·044, H = +·058, K = −·997.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		7·9	172	i 2 2	+10	3 13	− 8	—	—
Manila		12·0	331	e 2 50	+ 2	i 5 0	− 3	—	—
Taihoku	E.	21·5	346	e 4 55	+10	8 54	+18	—	—
Hong Kong		22·0	327	4 54	+ 3	8 50	+ 4	10·5	11·8
Batavia		22·7	243	5 5	+ 7	9 11	+12	i 10·8	—
Phu-Lien		25·9	312	e 5 49	+21	9 52	− 5	13·2	—
Zi-ka-wei		27·5	350	e 5 43	0	10 39	+15	15·8	30·1
Medan		28·2	271	(5 36)	−13	(i 12 30)	?	(25·0)	—
Vladivostok		39·1	5	i 7 25	+ 1	13 27	+ 5	19·5	—
Calcutta	E.	41·6	300	8 20	+35	(13 40)	−20	13·7	—
	N.	41·6	300	8 10	+25	(13 44)	−16	13·7	—
Riverview		44·3	151	—	—	e 15 18	+38	e 25·9	28·6
Melbourne		45·2	160	—	—	e 14 51	− 3	—	27·4
Colombo		47·0	276	3 45	?	—	—	—	15·8
Irkutsk		51·6	344	9 2	− 1	16 21	− 2	24·2	31·2
Bombay		54·8	291	e 10 55	PP	16 55	−11	24·2	—
Almata		58·9	319	e 10 8	+11	—	—	—	—
Andijan		61·0	315	e 10 9	− 2	—	—	—	—
Tashkent		63·4	315	e 10 12	−16	i 18 25	−35	e 33·2	39·8
Samarkand		64·5	312	e 10 31	− 4	—	—	—	—
Ekaterinburg		73·7	330	i 11 27	− 6	20 52	−13	34·2	44·3
Baku		77·5	313	e 11 50	− 5	i 21 46	− 2	39·8	52·4
Kucino		86·0	327	e 12 24	−14	22 54	−24	41·1	49·8
Ksara	N.	88·5	306	e 12 13	−37	e 23 21	−21	—	—
Pulkovo		89·7	331	12 56	0	e 23 44	− 9	42·2	55·8
Ottawa		126·5	20	—	—	e 35 12?	?	65·2	—

Additional readings and note:—
Manila i = +3m.2s.
Medan readings have been *diminished* by 42m.
Riverview e = +17m.54s. =SS+17s.
Tashkent e = +26m.12s.?
Pulkovo SKS = +23m.32s.
Long waves were also recorded at Wellington, Fordham, Florissant, and at other European stations.

April 2d. Readings also at 2h. (Andijan and Samarkand), 3h. (Catania, Messina, and Mineo), 7h. (Wellington and near Lick), 8h. (near Sumoto), 9h. (Florissant, St. Louis, and Wellington), 11h. (Irkutsk and Tashkent), 12h. (Baku and Ekaterinburg), 14h. (Baku, Tashkent, Ekaterinburg, Irkutsk, Bombay, Calcutta, Hong Kong, Manila, Phu-Lien, and Vladivostok), 15h. (Medan), 16h. (Andijan, Samarkand, Messina, and Mineo), 19h. (near Mizusawa and Tyosi), 21h. (near Sumoto).

April 3d. 6h. 32m. 58s. Epicentre 32°·5N. 47°·0E. N.3.

A = +·575, B = +·617, C = +·537; D = +·731, E = −·682;
G = +·366, H = +·393, K = −·843.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	8·2	16	e 1 53	− 3	3 6	−23	—	5·6
Ksara	9·4	281	e 2 13	0	i 4 41	+42	5·5	—
Sebastopol	16·0	323	e 3 39	− 2	—	—	—	—
Simferopol	16·0	325	e 3 2	−39	—	—	—	—
Tashkent	19·8	57	i 4 29	+ 2	i 8 19	+17	e 9·8	15·3
Ekaterinburg	26·1	17	e 5 31	+ 1	9 55	− 5	12·0	15·8
Bombay	26·8	114	—	—	e 11 2	SS	—	—
Pulkovo	29·4	343	i 5 47	−13	—	—	15·0	—
Irkutsk	45·3	46	—	—	e 18 2?	SS	27·0	29·3

Ksara gives also PPN = +2m.58s.

April 3d. 12h. 8m. 40s. Epicentre 32°·5N. 43°·7E. N.3.

A = +·610, B = +·583, C = +·537 ; D = +·691, E = −·723 ;
G = +·388, H = +·371, K = −·843.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	6·7	283	e 2 37	?S	(e 2 37)	−14	5·5	—
Baku		9·3	31	e 2 13	+ 2	3 32	−24	4·1	5·9
Samarkand		20·1	63	4 30	− 1	—	—	—	—
Tashkent		22·2	59	i 4 45	− 8	i 8 34	−16	e 10·6	15·1
Kucino		23·6	352	—	—	e 9 17	+ 1	11·9	13·2
Andijan		24·4	63	5 12	− 2	—	—	—	—
Ekaterinburg		27·0	21	i 5 36	− 2	10 13	− 2	15·3	16·2
Almata		28·2	58	5 51	+ 2	—	—	—	—
Pulkovo		28·7	346	e 6 4	+11	—	—	—	—
Irkutsk		47·3	47	—	—	e 18 20?	(− 7)	27·3	27·5

Additional reading :—
Ksara SE = +4m.45s.

April 3d. Readings also at 0h. (Florissant, La Paz, and Venice), 1h. (Wellington, near Granada, near Irkutsk, and near Port au Prince), 6h. (Almata, Andijan, Samarkand, Tashkent, Baku, Ekaterinburg, Irkutsk, Pulkovo, and Ksara (2)), 7h. (Baku, Ekaterinburg, and Ksara (2)), 10h. (Ksara and near Taihoku), 12h. (Ksara), 15h. (Yalta), 16h. (Andijan and Samarkand), 17h. (Ekaterinburg, near Pulkovo, and near Sumoto), 18h. (Toyooka, Kobe, near Matuyama, Koti, and Sumoto), 19h. (near Andijan), 22h. (Samarkand), 23h. (Mineo and Samarkand).

April 4d. 2h. 11m. 16s. Epicentre 37°·0S. 175°·0E. (as on 1923 Dec. 3d.). X.

A = −·795, B = +·070, C = −·602 ; D = +·087, E = +·996 ;
G = +·600, H = −·052, K = −·799.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington		4·3	182	0 49	−12	—	—	—	2·2
Christchurch		6·7	195	i 1 39	+ 4	i 2 57	+ 6	—	—
Riverview		19·6	272	i 4 34	+ 9	i 8 15	+17	e 10·9	13·3
Melbourne		23·8	259	e 5 59	+51	—	—	i 10·9	11·1
Adelaide		29·3	263	e 6 39	PP	e 12 39	SS	15·6?	17·5
Manila		72·4	306	e 11 9	−16	i 20 15	−35	—	—
Irkutsk		108·4	322	e 18 44?	PP	e 25 44?	[+38]	e 28·7	—
Tashkent		124·0	300	—	—	e 26 57	[+55]	—	37·8
Ekaterinburg		133·2	317	i 18 44	[−28]	—	—	—	—
Ksara	N.	146·8	276	e 19 15	[−22]	—	—	—	—
Pulkovo		148·0	327	i 19 16	[−23]	—	—	—	—
Theodosia		148·8	299	e 19 22	[−18]	—	—	—	—
Simferopol		149·7	298	e 18 44	[−57]	—	—	—	—
Yalta		149·7	298	e 19 25	[−16]	—	—	—	—
Sebastopol		150·2	297	e 19 19	[−23]	—	—	—	—
Granada		178·8	279	i 21 43	{−27}	—	—	—	—

Additional readings and note :—
Riverview i = +8m.21s.
Tashkent e = +29m.6s.
Ekaterinburg i = +21m.21s., +21m.44s., and +22m.16s., e = +38m.36s.
Pulkovo e = +20m.31s.
Granada i = +26m.39s. and +31m.49s.
Except for Wellington, Christchurch, and Riverview stations, readings have not been identified with certainty.

April 4d. 9h. 25m. 9s. Epicentre 9°·0S. 159°·5E. (as on 1926 May 17d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		26·0	196	i 5 11	−18	i 9 49	− 9	e 11·8	14·8
Sydney	E.	26·0	196	2 39	?	9 21	−37	14·2	15·0
Amboina		31·5	278	e 6 24	+ 6	11 36	+ 8	21·8	—
Melbourne		31·7	202	e 6 21	+ 1	i 11 23	− 8	e 13·8	16·8
Adelaide		32·2	215	i 6 32	+ 8	i 11 27	−11	i 13·5	18·7
Wellington		35·0	160	—	—	e 11 51?	−30	e 16·8	—
Manila		44·9	303	i 8 15	+ 3	i 12 21	?	i 14·7	19·8
Perth		46·4	235	e 15 3	S	(e 15 3)	− 7	23·9	25·8
Nagoya		49·0	336	e 8 46	+ 2	—	—	—	—
Osaka		49·2	334	8 48	+ 3	(15 57)	+ 7	15·9	16·9
Sumoto		49·2	334	e 8 45	0	—	—	—	—
Kobe		49·4	334	i 8 46	− 1	15 57	+ 5	—	—
Honolulu T.H.	N.	51·7	54	—	—	e 16 27	+ 3	e 21·4	—
Batavia		52·2	270	e 9 4	− 4	i 16 23	− 8	—	—
Hong Kong		54·3	307	9 53	+30	17 7	+ 8	—·	24·4
Vladivostok		57·8	338	i 9 39	−10	e 17 40	− 7	e 24·0	—
Phu-Lien		59·9	301	11 51?	PP	—	—	—	—
Medan		61·9	280	(e 10 3)	−15	(i 19 27)	+46	—	—
Irkutsk		77·2	330	e 11 46	− 7	e 21 35	−10	33·8	—
Hyderabad		84·3	289	22 19	?	—	—	—	—
Bombay		89·7	290	e 14 51?	?	—	—	—	—
Ekaterinburg		102·3	326	e 14 13	+19	i 24 55	[+18]	42·4	·60·6
Baku		110·7	310	e 19 28	PP	e 29 14	?	e 54·8	—
Florissant		111·3	52	—	—	e 26 21	{+ 5}	e 51·4	—
Chicago	E.	113·0	48	—	—	e 28 39	PS	e 53·6	—
Pulkovo		116·7	334	e 19 46	PP	e 31 15	?	54·8	74·2
Scoresby Sund		118·5	1	—	—	28 51?	?	—	—
Ottawa		120·4	40	—	—	e 29 51?	PS	62·8	—
Copenhagen		126·6	336	20 51?	PP	—	—	58·8	—

Additional readings and notes:—
Riverview ePE = +5m.14s., PP = +5m.54s., SS = +11m.13s., SSS = +11m.44s.
Amboina i = +7m.36s.
Perth i = +18m.32s., iS = +22m.11s.
Hong Kong e = +13m.1s.
Medan readings have been *diminished* by 24m.
Irkutsk e = +13m.10s. and +26m.31s. =SS +0s.
Ekaterinburg iPP = +18m.33s., iPS = +27m.37s., SS = +33m.33s.
Florissant iPPZ = +18m.51s., iPS = +28m.21s., eSSE = +34m.6s.
Long waves were also recorded at Fordham and a few other European stations.

April 4d. Readings also at 1h. (near Santiago), 4h. (Ksara and Taihoku), 5h. (Baku, Ekaterinburg, Pulkovo, Sebastopol, Simferopol, Theodosia, near Yalta, Nagoya, near Osaka, and Kobe), 6h. (Phu-Lien and near Ksara), 7h. (Ekaterinburg, Irkutsk, Pulkovo, and Tashkent), 8h. (Andijan and Samarkand), 9h. (Tucson), 14h. (La Paz and Andijan), 15h. (Taihoku), 16h. (Almata), 17h. (Ekaterinburg and Tashkent), 19h. (Baku, Ekaterinburg, Pulkovo, and Tashkent), 20h. (Adelaide, Melbourne, Amboina, Ekaterinburg, Tashkent, and near Lick), 21h. (Ksara), 22h. (Apia and near Lick), 23h. (Andijan).

April 5d. 11h. 24m. 57s. Epicentre 55°·2N. 165°·0E. (as on 1924 Oct. 20d.). R.2.

A = −·551, B = +·148, C = +·821; D = +·259, E = +·966;
G = −·793, H = +·213, K = −·571.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		22·6	235	4 54	− 3	8 56	− 1	—	—
Vladivostok		24·4	254	e 5 20	+ 6	—	—	12·2	—
Nagoya		27·8	236	e 5 49	+ 4	—	—	—	—
Irkutsk		34·9	290	e 6 44	− 4	e 12 3	−17	18·0	21·6
Ekaterinburg		52·4	320	i 9 9	0	e 16 26	− 8	27·0	33·4
Pulkovo		59·5	336	i 10 5	+ 4	18 15	+ 6	32·0	39·2
Tashkent		60·0	301	10 4	0	18 3	−13	i 32·2	37·2
Kucino		61·0	330	10 3	− 8	18 15	−14	28·2	39·0
Copenhagen		66·8	345	10 51	0	20 3?	+21	35·0	—
Baku		69·7	315	e 11 8	− 1	e 21 6	(+ 3)	36·0	44·2
De Bilt		71·4	348	i 11 26	+ 7	—	—	e 36·0	42·0
Feldberg	N.	72·8	348	—	—	e 20 45	− 9	—	44·4
Florence		78·6	342	—	—	e 25 3	?	37·0	45·0

Additional readings:—
Mizusawa SN = +8m.59s.
Baku e = +27m.45s.
Long waves were also recorded at Hong Kong, Phu-Lien, Bombay, Ottawa, Florissant, and several European stations.

April 5d. Readings also at 5h. (Baku and Tashkent), 13h. (Almata and near Andijan) 16h. (near Santiago), 19h. (near Lick), 20h. (Florissant, Nagoya, and near Tyosi), 22h. (Nagoya).

April 6d. Readings at 0h. (near La Paz), 2h. (Sebastopol, Simferopol, near Yalta, and Theodosia), 3h. (near Amboina), 4h. (Andijan, near Lick (2), and near Apia), 7h. (near Santiago), 8h. (Baku, Ekaterinburg, Irkutsk, Pulkovo, Samarkand, Florissant, and Wellington), 9h. (Kucino), 10h. (near Manila), 11h. (Andijan), 13h. (Andijan and near Bombay), 15h. (Andijan), 16h. (near Osaka, Nagoya (2), and Tyosi), 20h. (near Andijan and Samarkand), 22h. (Johannesburg, Almata, near Andijan, and Samarkand), 23h. (Andijan (2), and near Samarkand (2)).

April 7d. 17h. 17m. 18s. Epicentre 42°·8N. 12°·3E. (as on 1929 Jan. 22d.) X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Rome		0·9	172	i 0 10	− 3	i 0 24	+ 1	i 0·5	0·6
Rocca di Papa		1·1	164	i 0 11	− 5	0 28	0	—	0·6
Florence		1·2	322	e 0 42	+25	—	—	—	1·0
Casamicciola		2·3	150	0 34	+ 1	1 6	+ 7	—	1·4
Naples	E.	2·4	143	e 1 29	+55	e 2 4	+62	—	—
Padova		2·6	353	e 0 49	+12	i 1 36	+29	—	—
Venice		2·7	0	0 47	+ 8	1 42	+33	—	2·7
Piacenza		2·9	320	—	—	e 1 18	+ 4	—	2·2
Zagreb		4·0	40	e 0 58	+ 1	i 1 46	+ 4	i 1·9	2·1
Chur		4·5	334	e 1 8	+ 4	i 2 2	+ 7	—	—
Graz		4·9	26	i 1 6	− 4	i 2 32	+27	—	2·8
Messina		5·2	151	1 14	0	—	—	—	—
Zurich		5·2	332	e 1 16	+ 2	e 2 21	+ 8	—	—
Ravensburg		5·4	340	—	—	e 2 12	− 6	—	—
Neuchatel		5·7	320	e 1 24	+ 3	—	—	—	—
Stuttgart		6·4	341	—	—	e 2 42?	− 1	—	—
Strasbourg		6·6	333	—	—	e 3 2	+14	e 3·9	—
Budapest		6·7	43	—	—	e 3 22	+31	—	—
Hamburg		10·9	353	—	—	e 4 42?	+ 6	—	6·6

Zagreb gives also e = +1m.2s., eNW = +1m.7s., and +1m.10s., eNE = +1m.12s., e = +1m.16s., eNE = +1m.22s., eNW = +1m.25s., e = +1m.38s.

April 7d. Readings also at 1h. (Taihoku), 3h. (La Paz and Rocca di Papa), 7h. (Samarkand), 8h. (Feldberg), 9h. (near Samarkand), 10h. (Samarkand and Stuttgart), 12h. (Melbourne), 14h. (near Amboina), 15h. (Tucson), 16h. (Taihoku), 17h. (Messina and Stuttgart), 18h. (Port au Prince).

April 8d. Readings at 1h. (near La Paz), 3h. (Andijan and Hong Kong), 11h. (Zi-ka-wei, near Taihoku (2), and near Reykjavik), 12h. (Ekaterinburg, Irkutsk, Hong Kong, and near Manila), 14h. (Tyosi), 16h. (Andijan, Ravensburg, Samarkand, Sumoto, and near Tacubaya), 21h. (Piacenza).

April 9d. 5h. 7m. 46s. Epicentre 39°·7N. 34°·0E. (as on 1928 Oct. 4d.). X.

A = +·638, B = +·430, C = +·639; D = +·559, E = −·829;
G = +·530, H = +·357, K = −·769.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta		4·8	2	e 1 11	+ 3	—	—	—	—
Simferopol		5·2	1	1 24	+10	—	—	—	—
Theodosia		5·4	10	e 1 17	0	2 15	− 3	—	—
Ksara	E.	6·0	165	e 1 24	− 1	3 1	+28	3·6	—
Baku		12·2	82	—	—	e 5 8	0	e 5·2	—
Pulkovo		20·2	354	i 4 22	−10	e 8 8	− 2	—	—
Tashkent		26·7	75	—	—	e 9 32	−38	12·6	15·3

Long waves were also recorded at Ekaterinburg.

April 9d. 5h. 27m. 49s. Epicentre 39°·0N. 39°·5E. (as on 1929 Sept. 15d.). R.2.

A = +·600, B = +·494, C = +·629; D = +·636, E = −·772;
G = +·486, H = +·400, K = −·777.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta		6·8	326	e 1 28	− 9	e 2 36	−17	—	—
Theodosia		6·8	334	1 30	− 7	2 34	−19	2·8	—
Simferopol		7·1	328	1 37	− 4	2 43	−18	—	—
Sebastopol		7·2	323	e 1 40	− 2	—	—	—	—
Baku		8·2	77	i 2 11	+15	i 3 53	+24	4·7	6·8
Kucino		16·8	357	—	—	e 6 29	−28	e 9·6	—
Budapest		17·0	306	4 5	+11	7 5	+ 3	11·2	—
Zagreb		18·5	299	e 4 11	− 2	e 7 43	+ 7	—	—
Rocca di Papa		20·5	286	4 31	− 4	8 23	+ 7	e 11·6	14·7
Rome		20·6	287	e 4 31	− 5	—	—	—	—
Samarkand		21·2	80	e 4 53	+11	—	—	—	—
Pulkovo		21·6	347	i 4 41	− 5	i 8 25	−13	12·2	16·8
Florence		21·6	292	e 4 48	+ 2	8 42	+ 4	—	13·2
Cheb		22·1	309	—	—	e 8 11?	−37	—	—
Ekaterinburg		22·6	31	i 4 52	− 5	i 8 54	− 3	11·2	15·0
Potsdam		22·6	315	—	—	e 20 23	?	e 21·4	24·2
Piacenza		22·8	295	e 5 11?	+12	—	—	—	17·7
Tashkent		22·8	75	i 5 4	+ 5	i 9 19	+18	e 11·5	16·1
Helsingfors		23·0	341	e 4 51	−10	e 8 59	− 6	—	—
Stuttgart		23·7	304	—	—	e 9 16	− 2	e 13·7	—
Copenhagen		24·5	322	5 16	+ 1	9 27	− 5	15·2	—
Feldberg	N.	24·5	307	—	—	e 9 25	− 7	—	21·5
Strasbourg		24·6	303	—	—	(e 9 11?)	−23	e 9·2	—
Hamburg		24·8	316	e 5 22	+ 4	e 9 31	− 6	e 16·2	22·2
Neuchatel		24·9	299	e 5 16	− 3	—	—	—	—
Upsala		25·1	334	e 5 22	+ 1	e 9 40	− 3	—	—
Andijan		25·2	75	e 5 35	+13	—	—	—	—
De Bilt		27·0	310	—	—	e 10 41	+26	e 12·2	—
Uccle		27·2	307	—	—	(e 10 11?)	− 7	e 10·2	—
Almata		28·3	69	e 8 31	?	—	—	—	—
Kew		30·2	307	—	—	e 13 11?	?	—	—

Additional readings:—
Zagreb e = +7m.54s.
Long waves were recorded at Irkutsk.

April 9d. 23h. 46m. 45s. Epicentre 36°·5N. 140°·5E. (as on 1929 July 17d.). X.

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

The depth of focus 0·015 used on previous occasions with this epicentre is retained.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	s.	°	°	m. s.	s.	m. s.	s.	m.	m.
Tukuba	+0·3	0·5	225	0 7	− 4	—	—	—	—
Tyosi	+0·3	0·9	160	0 6	−11	(0 15)	−16	0·2	—
Tokyo	+0·3	1·1	216	0 13	− 7	—	—	—	—
Mizusawa	+0·2	2·6	10	0 39	− 1	1 10	− 2	—	—
Nagoya	+0·1	3·2	245	0 49	+ 2	1 27	+ 2	—	1·9
Osaka	0·0	4·5	248	1 7	+ 3	(2 13)	+18	2·2	2·6
Kobe	0·0	4·7	249	1 32	+25	e 2 14	+14	—	2·6
Toyooka	0·0	4·7	260	1 6	− 1	(2 5)	+ 5	2·1	2·4
Sumoto	0·0	5·1	246	e 1 49	+36	2 35	+25	—	2·7

Mizusawa gives also PN = +45s.

April 9d. Readings also at 0h. (Samarkand, near Almata, and Andijan), 4h. (Andijan, Samarkand, Kobe, near Sumoto (2), and Osaka), 5h. (Irkutsk), 6h. (Rocca di Papa and Rome), 8h. (Ekaterinburg, Irkutsk, near Mizusawa, and Tyosi), 9h. (Mizusawa), 10h. (Andijan and Samarkand), 11h. (Baku, Ekaterinburg, Ksara, and near Nagasaki), 17h. (Ottawa and Tucson), 21h. (near Berkeley and Lick), 22h. (Tucson, La Paz, and near Lick), 23h. (Tyosi).

April 10d. 14h. 24m. 10s. Epicentre 39°·5N. 76°·5E. (as on 1930 Feb. 8d.). R.3.

A = +·180, B = +·750, C = +·636; D = +·972, E = −·233;
G = +·148, H = +·618, K = −·772.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		3·4	283	0 49	0	—	—	1·8	2·9
Almata		3·8	4	0 51	− 3	1 31	− 6	1·8	2·0
Tashkent		5·8	291	1 21	− 1	i 2 20	− 8	i 3·0	4·2
Samarkand		7·3	274	1 46	+ 2	—	—	i 4·2	4·8
Dehra Dun		9·2	172	2 20	+10	3 50	− 4	5·8	5·8
Agra	N.	12·4	173	2 34	−20	e 6 39	+86	7·4	7·9
Calcutta	E.	19·7	145	e 4 25	− 1	8 1	+ 1	11·3	—
	N.	19·7	145	e 4 12	−14	7 53	− 7	11·4	—
Ekaterinburg		20·2	334	i 4 33	+ 1	i 8 9	− 1	9·8	10·5
Baku		20·3	281	e 4 36	+ 3	i 8 34	+22	11·3	13·8
Bombay		20·8	190	4 33	− 5	8 47	+25	11·6	14·1
Hyderabad		22·1	175	4 52	0	8 56	+ 8	11·3	14·0
Irkutsk		22·9	47	i 4 57	− 3	9 8	+ 5	11·8	21·3
Ksara	N.	32·8	274	—	—	e 9 50?	−118	20·0	—
Pulkovo		35·1	321	e 6 57	+ 7	e 12 38	+15	18·8	20·5
Hong Kong		36·2	107	12 40	S	(12 40)	+ 1	(20·8)	22·4
Zi-ka-wei	Z.	37·2	88	e 7 2	− 6	17 28	(+ 3)	—	26·9
Vladivostok		41·0	65	—	—	e 18 17	(+29)	e 22·1	23·3
Copenhagen		44·3	315	—	—	14 56	+16	20·8	—
Manila		46·1	110	e 8 22	+ 1	e 16 21	+75	e 26·6	31·1
Rocca di Papa		47·3	295	e 10 12	(+ 5)	27 42	L	(27·7)	31·9
Stuttgart		47·6	306	—	—	e 19 15	?	e 24·2	30·1
Feldberg	N.	47·7	307	—	—	e 18 44	(+14)	—	26·6
Florence		47·7	298	—	—	e 17 17	?	—	26·2
Piacenza		48·3	300	—	—	e 19 50	SSS	—	32·7
Strasbourg		48·6	305	e 6 4	?	e 14 14	?	e 27·0	—
De Bilt		49·2	310	—	—	e 18 50?	(+11)	e 24·8	27·8
Uccle		50·0	309	—	—	e 19 50	PP	e 24·8	—
Paris		51·8	308	—	—	e 21 50?	?	e 27·8	30·8
Dyce		51·9	319	—	—	e 20 51	?	e 27·2	31·3
Edinburgh		52·8	317	—	—	e 20 50?	?	i 30·1	—
Oxford		53·1	311	—	—	e 16 40	− 3	e 25·3	31·7
Scoresby Sund		55·8	337	—	—	18 26	?	29·8	—

For Notes see next page.

NOTES TO APRIL 10d. 14h. 24m. 10s.

Additional readings and notes:—
Tashkent i = +1m.47s. and +1m.51s.
Hong Kong e = +17m.5s. = ScS −14s.; S is given as P and L as S.
Rocca di Papa +12m.56s. and +19m.56s.
Strasbourg e = +19m.20s.
Long waves were also recorded at Kodaikanal and other stations in Europe and North America.

April 10d. Readings also at 0h. (near Taihoku), 4h. (Andijan, Samarkand, and Alicante), 5h. (Andijan and Samarkand), 7h. (Wellington), 8h. (Tyosi), 11h. and 12h. (Tananarive), 13h. (Ottawa), 14h. (near Tananarive), 16h. (Taihoku Tyosi, and near Ksara), 17h. (near Tyosi), 9h. (Almata, near Andijan, and Samarkand).

April 11d. Readings at 0h. (Baku, Ekaterinburg, Irkutsk, and Wellington), 1h. (Graz, near Budapest, Vienna, and Zagreb), 3h. (near Port au Prince), 5h. (near Almeria), 6h. (near Tyosi), 10h. (Tacubaya, Vera Cruz, and Tucson), 11h. (near Tyosi), 14h. (Hamburg), 17h. (Stuttgart), 18h. (Nagasaki), 19h. (Manila), 20h. (Samarkand), 21h. (Baku and Tashkent).

April 12d. Readings at 0h. (Trenta), 2h. (Rocca di Papa, Messina, Trenta, and Tashkent), 3h. (Ekaterinburg, Samarkand, and near Andijan), 9h. (near Medan), 12h. (Ksara, near Berkeley, and Lick), 13h. (Ottawa and Tucson), 15h. (Samarkand and Taihoku), 20h. (near Sumoto), 23h. (Apia and near Oaxaca).

April 13d. Readings at 0h. (Taihoku, Tucson, near Oaxaca, Puebla, Vera Cruz (2), and Tacubaya (2)), 1h. (Florissant, St. Louis, Fordham, Georgetown, Ottawa, and Tucson), 2h. (La Paz), 3h. (Ann Arbor, Fordham, Georgetown, Harvard, Ottawa, St. Louis, and Tucson), 4h. (Adelaide and Riverview), 5h. (Ekaterinburg, Irkutsk, and near Taihoku), 6h. (Florissant, near Mizusawa, and Tyosi), 7h. (Almata and Andijan), 8h. (Andijan, Samarkand, Zi-ka-wei, and near Taihoku), 10h. (Ksara), 12h. (near Tacubaya), 15h. (La Paz), 22h. (near Irkutsk), 23h. (Ekaterinburg).

April 14d. Readings at 5h. (Andijan and near Samarkand), 6h. (Almata, near Andijan and Samarkand), 7h. (near Oaxaca and Tacubaya), 8h. (La Paz), 9h. (Andijan and near La Paz), 11h. (near Almata, Andijan, and Samarkand) 13h. (Tashkent, Almata, Andijan, and Samarkand), 14h. (Ekaterinburg and Kucino), 17h. and 18h. (near Mizusawa), 21h. and 22h.(La Paz).

April 15d. 9h. 56m. 27s. Epicentre 28°·0N. 54°·0E. N.3.

A = +·519, B = +·714, C = +·469; D = +·809, E = −·588; G = +·276, H = +·380, K = −·883.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		12·8	346	e 2 59	0	i 5 27	+ 5	6·4	9·0
Samarkand		15·9	40	e 3 38	− 2	—	—	—	—
Ksara		16·6	295	3 53	+ 4	9 16	?	11·2	—
Tashkent		18·2	39	i 4 8	− 1	i 7 36	+ 7	e 9·4	11·6
Bombay		19·5	114	4 27	+ 3	8 15	+19	10·6	—
Andijan		19·8	45	e 4 33	+ 6	—	—	—	—
Helwan		19·9	281	4 27	− 2	8 13	+ 9	—	11·3
Simferopol		23·2	322	e 5 2	− 1	—	—	—	—
Almata		24·0	44	e 5 17	+ 7	—	—	—	—
Pulkovo		35·6	340	e 6 51	− 3	e 12 22	− 8	15·6	20·6
Helsingfors		37·7	338	—	—	e 12 53	− 9	—	—
Copenhagen		40·5	325	—	—	12 55	−49	21·6	—
Irkutsk		44·2	42	e 8 5	− 1	—	—	12·6	15·0
Paris		44·3	315	—	—	e 17 33?	SS	28·6	—
Hong Kong		54·2	83	—	—	(18 13)	?	—	18·2
Zi-ka-wei	z.	57·8	69	(9 54)	+ 5	9 54	P	—	57·3
Scoresby Sund		59·1	339	—	—	15 33?	?	—	—

Additional readings:—
Pulkovo e = +5m.41s.
Irkutsk e = 9h.58m.49s.
Long waves were also recorded at Florence, Hamburg, and Strasbourg.

April 15d. 10h. 32m. 2s. Epicentre 2°·7S. 131°·3E. N.2.

A = −·659, B = +·750, C = −·047; D = +·751, E = +·660;
G = +·031, H = −·035, K = −·999.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	3·2	252	0 43	− 3	i 1 43	+21	—	—
Manila	20·1	329	e 4 35	+ 4	i 8 39	+31	—	—
Batavia	24·6	261	i 5 16	0	i 9 29	− 5	15·1	—
Hong Kong	30·1	327	6 5	− 1	11 4	− 2	13·5	14·4
Perth	32·6	205	11 33	S	(11 33)	−12	—	—
Adelaide	33·0	169	—	—	11 8	−43	—	21·4
Riverview	36·2	151	e 12 13	S	(e 12 13)	−26	e 19·6	23·0
Melbourne	37·3	163	—	—	e 11 31	−85	—	25·3
Colombo	52·2	281	16 36	S	(16 36)	+ 5	—	36·5
Irkutsk	59·5	341	e 9 59	− 2	18 17	+ 8	31·0	39·7
Bombay	61·3	291	10 20	+ 6	18 40	+ 7	32·1	39·1
Almata	67·0	320	e 10 52	0	—	—	—	—
Andijan	68·9	317	e 11 1	− 3	—	—	—	—
Tashkent	71·3	317	11 14	− 5	i 20 36	− 1	e 32·0	46·4
Samarkand	72·3	315	e 11 21	− 4	—	—	—	—
Baku	85·2	313	e 12 37	+ 3	i 23 11	+ 1	43·0	48·4
Kucino	94·2	326	—	—	e 24 25	−10	e 45·9	56·0
Copenhagen	108·1	330	—	—	23 58	[−66]	58·0	—

Additional readings and notes:—
Batavia readings are given without phase.
Riverview e = +17m.7s. = S_cS − 12s.
Long waves were also recorded at Wellington, Phu-Lien, Pulkovo, Vladivostok, Kew, and the American stations.

April 15d. Readings also at 1h. (Tashkent and near Irkutsk), 2h. (Andijan and near Almata), 3h. (Batavia, Amboina, and Manila), 4h. (Ekaterinburg, Irkutsk, Tashkent, Medan, and Melbourne), 6h. (Trenta and near Algiers), 9h. (Mizusawa and Zi-ka-wei), 10h. (Vladivostok), 11h. (Sydney), 12h. (Kew), 14h. (Ottawa), 15h. (Budapest and Kew), 17h. (Baku, Ksara, Tashkent, and near Mizusawa), 20h. (Manila), 22h. (Adelaide, Riverview, Melbourne, Batavia, Manila, Amboina, Baku, Irkutsk, Hong Kong, Tashkent, and Kucino).

April 16d. 13h. 44m. 54s. Epicentre 56°·0N. 34°·5W. (as on 1927 Mar. 25d.). R.2.

A = +·461, B = −·317, C = +·829; D = −·566, E = −·824;
G = +·683, H = −·470, K = −·559.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Reykjavik	10·2	32	—	—	(e 3 58)	−20	e 4·0	5·9
Edinburgh	17·4	77	e 3 51	− 8	—	—	8·1	11·1
Oxford	19·8	88	4 29	+ 2	8 14	+12	e 9·1	12·4
Kew	20·5	88	e 4 37	+ 2	—	—	e 9·1	—
De Bilt	23·3	84	—	—	e 9 14	+ 4	e 10·6	14·0
Paris	23·4	92	e 5 7	+ 2	—	—	11·1	13·1
Hamburg	25·3	77	i 5 21	− 2	—	—	e 13·7	15·1
Copenhagen	25·8	71	5 24	− 3	9 52	− 3	12·1	—
Lund	26·3	70	—	—	10 0	− 3	13·1	—
Strasbourg	26·4	89	e 5 35	+ 2	—	—	e 14·1	—
Pulkovo	33·3	57	e 6 25	− 9	e 10 29	−86	13·6	19·0
Ekaterinburg	48·2	47	8 41	+ 3	e 15 32	− 4	22·1	—
Baku	54·7	69	—	—	e 17 7	+ 2	27·1	—
Tashkent	63·5	55	—	—	e 22 0	?	e 33·1	36·5

Additional readings:—
Ekaterinburg e = +19m.0s. = SS + 10s.
Tashkent e = +28m.48s.
Long waves were recorded also at Ivigtut, Scoresby Sund, Harvard, Fordham, Georgetown, and at other European stations.

April 16d. 14h. 30m. 44s. Epicentre 49°·5N. 130°·5W. N.2.

A = −·422, B = −·494, C = +·760; D = −·760, E = +·649; G = −·494, H = −·578, K = −·649.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	4·8	101	0 58	−10	(2 14)	+11	2·2	3·3
	N.	4·8	101	1 1	− 7	—	—	1·4	—
Sitka	N.	8·1	340	e 1 52	− 3	e 3 44	+18	4·6	—
Berkeley		13·0	150	e 3 5	+ 3	—	—	—	5·8
Lick		13·7	149	e 3 11	0	e 5 49	+ 5	e 8·2	8·3
Tucson		22·6	133	4 56	− 1	9 7	+10	e 11·1	—
Florissant		30·3	95	e 6 7	− 1	e 11 12	+ 3	—	—
St. Louis		30·5	95	i 6 9	0	i 11 11	− 1	e 15·9	—
Chicago		30·5	89	—	—	e 11 9	− 3	16·2	—
Ann Arbor		32·8	85	e 13 16	SS	e 16 10	?	e 17·2	19·7
Toronto		34·9	80	e 5 52	−56	e 10 0	?	e 12·4	—
Ottawa		36·5	75	—	—	e 12 46	+ 2	e 17·3	20·3
Charlottesville		38·4	87	—	—	e 15 52	SS	20·6	—
Georgetown	Z.	38·8	85	i 6 22	−60	—	—	e 21·7	24·4
Fordham		39·8	81	e 9 0	PP	e 13 36	+ 3	19·8	21·8
Scoresby Sund		49·7	25	—	—	16 5	+ 8	23·3	—
Irkutsk		68·1	327	e 11 2	+ 3	e 19 52	− 6	35·3	44·5
Pulkovo		69·7	10	e 11 9	0	e 20 23	+ 5	37·3	42·1
Copenhagen		70·3	21	—	—	20 34	+ 9	35·3	—
Ekaterinburg		73·3	355	i 11 44	+13	e 21 20	+20	34·3	46·2
Kucino		74·3	6	—	—	21 16	+ 4	37·0	44·1
Tashkent		87·6	346	i 18 20	?	—	—	e 44·3	52·6
Baku		90·1	0	—	—	e 23 42	{+ 6}	—	—
Manila		90·5	294	e 16 16?	PP	—	—	—	—

Additional readings:—
Berkeley eN = +3m.40s., eZ = +3m.47s., eN = +4m.5s.
Lick eE = +3m.24s.
Toronto eSE = +10m.6s.
Georgetown iZ = +8m.48s., eZ = +16m.8s., iZ = +17m.56s., +20m.15s., and +21m.3s.
Fordham eN = +10m.18s., e = +16m.20s. =SS +10s.
Kucino e = +26m.12s. and +30m.16s.
Long waves were also recorded at Honolulu T.H., Ivigtut, Riverview, and several other American and European stations.

April 16d. 21h. 25m. 42s. Epicentre 38°·0N. 43°·8E. N.3.

A = +·569, B = +·545, C = +·616; D = +·692, E = −·722; G = +·444, H = +·426, K = −·788.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	7·6	239	e 1 49	+ 1	3 16	+ 2	4·2	—
Theodosia	9·4	321	e 2 11	− 2	—	—	—	—
Yalta	9·7	315	e 2 14	− 3	—	—	—	—
Simferopol	10·0	317	e 2 25	+ 4	—	—	—	—
Ekaterinburg	21·9	25	e 4 51	+ 1	e 13 50	?	—	—

Baku records long waves.

April 16d. Readings also at 0h. (Sebastopol, Simferopol, near Theodosia, Yalta, and near Tucson), 4h. (Copenhagen, De Bilt, Paris, Kew, and Scoresby Sund) 5h. (Samarkand), 7h. (near Mizusawa), 10h. (Ottawa), 11h. (Ekaterinburg, Tashkent, near Andijan, and Samarkand), 14h. (De Bilt, Copenhagen, Reykjavik, and Samarkand), 22h. (Samarkand),

April 17d. 20h. 6m. 39s. Epicentre **37°·1N. 23°·2E.** N.1.

Probable error ±0°·3.

A = +·733, B = +·314, C = +·603; D = +·394, E = −·919; G = +·554, H = +·238, K = −·798.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta		5·8	295	e 1 26	+ 4	2 26	− 2	—	—
Messina		6·1	282	e 1 34	+ 7	—	—	—	—
Catania		6·4	277	e 1 41	+10	e 4 6	?	—	5·8
Mineo		6·8	274	0 56	−41	—	—	—	—
Naples	N.	7·9	302	e 2 3	+11	e 3 43	+22	—	5·4
Belgrade		8·0	346	e 1 48	− 5	e 3 13	−11	i 3·7	4·4
Casamicciola		8·0	301	1 49	− 4	3 37	+13	5·4	—
Benevento		8·0	304	e 2 6	+13	—	—	4·2	7·6
Rocca di Papa		9·3	304	i 1 52	−19	4 39	+43	5·2	6·3
Rome		9·5	304	2 18	+ 4	i 4 37	+36	e 5·3	7·9
Helwan		9·9	135	2 26	+ 7	4 24	+13	—	—
Zagreb		10·2	330	e 2 20	− 4	e 4 25	+ 7	—	6·6
Budapest		10·8	345	2 37	+ 5	4 25	− 8	5·7	7·3
Ksara		10·8	104	2 40	+ 8	4 46	+13	5·5	—
Sebastopol		10·8	43	2 32	0	—	—	—	—
Laibach		11·0	326	e 2 57	+22	e 5 45	+67	—	7·1
Yalta		11·1	45	e 2 35	− 1	—	—	—	—
Florence		11·2	311	e 2 45	+ 8	4 52	+ 9	—	5·6
Simferopol		11·3	43	2 39	0	—	—	—	—
Graz		11·5	333	i 2 42	0	e 4 54	+ 4	5·3	7·1
Venice		11·6	319	e 3 21?	+38	6 14	L	(6·2)	10·4
Livorno		11·7	309	4 34	S	(4 34)	−21	(6·4)	—
Padova		11·9	318	e 2 48	+ 1	i 5 47	+47	—	—
Treviso		11·9	319	e 3 2	+15	e 5 21	+21	—	7·3
Theodosia		12·1	46	2 50	0	—	—	—	—
Vienna		12·2	338	e 2 49	− 2	5 16	+ 8	i 6·6	8·3
Lemberg	E.	12·7	3	e 3 57	+59	—	—	e 6·0	8·3
	N.	12·7	3	e 4 3	+65	—	—	e 7·8	9·9
Piacenza		12·9	313	5 11	S	6 23	?	7·9	10·0
Innsbruck		13·4	323	e 3 15	+ 8	—	—	e 7·1	—
Chur		14·0	318	e 3 18	+ 3	e 5 55	+ 4	—	—
Ravensburg		14·6	321	e 3 30	+ 7	e 6 21	+16	i 7·5	8·8
Zurich		14·9	318	e 3 24	− 3	e 6 13	0	—	—
Cheb		15·1	332	e 3 36	+ 6	e 6 26	+ 9	e 7·3	9·6
Stuttgart		15·5	323	e 3 31	− 4	i 6 27	0	i 7·6	10·1
Neuchatel		15·6	314	e 3 34	− 2	i 6 35	+ 6	—	—
Algiers		16·0	275	3 46	+ 5	6 58	+20	8·8	14·2
Karlsruhe		16·0	322	3 48	+ 7	6 47	+ 9	8·3	10·7
Jena	N.	16·1	333	i 3 48	+ 5	e 6 41	0	e 8·3	10·3
Strasbourg		16·1	321	3 44	+ 1	i 6 45	+ 4	e 8·3	10·8
Besançon		16·2	314	3 42	− 2	e 6 49	+ 6	e 9·3	—
Feldberg	N.	16·8	325	i 4 48	+56	e 7 48	+51	—	12·3
Potsdam		16·8	338	i 3 47	− 5	i 6 49	− 8	e 9·3	10·7
Gottingen		17·2	331	e 3 55	− 2	i 7 9	+ 3	i 9·3	11·2
Konigsberg		17·8	355	(i 4 3)	− 1	i 7 12	− 8	e 9·7	12·0
Alicante		18·7	281	i 4 19	+ 4	e 7 55	+15	e 10·2	—
Hamburg		18·8	335	e 4 12	− 4	e 7 39	− 3	e 10·4	13·8
Paris		19·0	315	i 4 21	+ 2	i 7 50	+ 4	10·3	10·3
Uccle		19·2	321	4 19	− 2	7 47	− 3	9·3	12·6
De Bilt		19·6	325	4 29	+ 4	7 59	+ 1	e 9·3	11·8
Lund		19·8	343	4 27	0	7 55	− 7	10·3	—
Copenhagen		20·0	342	4 25	− 5	8 2	− 4	—	—
Almeria		20·4	277	i 4 38	+ 4	—	—	12·8	18·2
Baku		21·0	73	i 4 49	+ 9	i 8 42	+16	10·3	13·1
Kucino		21·1	24	i 4 15	−26	i 8 1	−27	9·6	13·3

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Granada		21·3	278	i 4 48	+ 5	8 40	+ 8	13·7	15·7
Toledo		21·4	286	e 4 47	+ 3	8 41	+ 7	e 9·8	14·6
Kew		21·9	318	i 4 52	+ 2	i 8 51	+ 7	9·5	12·3
Malaga		22·0	277	4 48	− 3	8 46	0	12·6	—
Oxford		22·6	318	4 55	− 2	8 54	− 3	e 12·3	14·9
Upsala	•	23·0	353	e 4 57	− 4	e 8 57	− 8	e 12·3	13·3
Helsingfors		23·1	2	e 4 57	− 5	e 8 54	−13	—	—
Pulkovo		23·1	9	i 4 59	− 3	i 9 3	− 4	11·3	14·6
San Fernando		23·5	277	—	—	8 52	−22	—	19·8
Stonyhurst		24·3	322	i 5 16	+ 3	i 9 30	+ 2	13·3	—
Bidston		24·4	320	e 4 17	−57	i 8 47	−43	e 12·0	14·9
Edinburgh		25·8	325	5 29	+ 2	9 57	+ 2	14·4	18·3
Dyce		26·2	328	i 5 31	0	9 54	− 8	e 12·9	15·8
Ekaterinburg		31·7	39	i 6 34	+14	11 40	+ 9	15·3	19·5
Samarkand		34·1	70	e 6 57	+16	—	—	—	—
Tashkent		35·5	68	i 7 0	+ 7	i 12 32	+ 3	—	25·4
Andijan		38·0	69	7 23	+ 8	—	—	—	—
Almata		40·8	64	7 48	+ 9	—	—	—	—
Scoresby Sund		40·9	339	7 42	+ 2	—	—	—	—
Bombay		46·9	97	8 33	+ 5	15 28	+11	24·5	31·4
Irkutsk		56·4	46	9 42	+ 3	e 17 28	0	32·3	32·3
Ottawa		70·0	314	—	—	e 20 19	− 2	e 31·8	—
Fordham		71·3	310	—	—	e 20 40	+ 3	e 35·1	43·3
Phu-Lien		72·5	77	18 21?	?	—	—	—	—
Georgetown	z.	74·4	309	i 31 22	?	—	—	e 43·8	54·3
Florissant		82·5	315	e 12 22	+ 1	i 22 38	− 4	e 38·8	—
Manila		85·5	74	e 12 21?	−15	23 46	+33	—	—

Additional readings and notes :—
Belgrade i = +2m.33s., iPS = +2m.36s.
Rocca di Papa e = +1m.46s., i = +2m.16s.
Zagreb eNW = +2m.38s., +4m.8s., +4m.30s., eNE = +2m.28s., +2m.36s., +2m.42s., and +3m.44s., e = +2m.58s., +4m.46s., eS = +4m.56s.
Ksara SE = +4m.49s.
Laibach e = +3m.29s., +4m.32s. = S − 6s., +4m.55s., and +5m.18s.
Livorno gives S as P and L as S.
Vienna iN = +2m.55s. = PP + 2s., and +6m.7s., PP = +3m.57s., iE = +4m.19s., +6m.0s., and +6m.18s., iEN = +4m.53s., PS_3 = +5m.28s.
Piacenza e = +3m.21s. = P + 20s.
Ravensburg e = +6m.4s.
Stuttgart iPP = +3m.40s., i = +3m.54s., iSS = +6m.47s.
Jena iSN = +6m.50s.
Potsdam iSN = +6m.54s.
Gottingen iPEZ = +3m.58s., iPPEZ = +4m.6s.
Konigsberg iPPPN = +4m.7s., iPSN = +7m.17s., iE = +7m.19s., iN = +7m.59s., and iE = +8m.32s. ; P is given as iPPN.
Almeria PP = +5m.34s.
Granada i = +5m.50s. and +7m.52s.
Kew eEN = +8m.44s. = P_cP − 2s.
Oxford i = +5m.29s. = PP + 11s.
Helsingfors iP = +4m.59s., ePPPN = +5m.29s., eSSSEN = +9m.49s.
San Fernando SN = +9m.22s.
Edinburgh i = +10m.4s.
Tashkent i = +8m.29s. = PP + 22s., e = +13m.3s.
Long waves were also recorded at Vladivostok, Bergen, Ivigtut, Tortosa, Barcelona, Dakar, and Cape Town.

April 17d. Readings also at 0h. (Phu-Lien), 1h. (Phu-Lien, Hyderabad, and Tashkent), 2h. (Irkutsk, Ekaterinburg, Pulkovo, Kucino, Baku, Copenhagen, De Bilt, Ksara, and Hong Kong), 10h. (Rocca di papa and Rome), 12h. (Manila and Port au Prince), 13h. (Theodosia, Simferopol, and Yalta), 15h. (Manila), 16h. (Simferopol, Theodosia, Pulkovo, Yalta, Sebastopol, Zagreb, and Manila).

April 18d. Readings at 0h. (Wellington), 2h. (Tokyo and Tukuba), 4h. (Baku, Ekaterinburg, Tashkent, and Mizusawa), 12h. (Baku, Ekaterinburg, La Paz, and Rio de Janeiro), 13h. (Kew, De Bilt, Paris, Strasbourg, Tashkent, and Copenhagen), 14h. (Alicante), 17h. (Almata and Andijan).

April 19d. Readings at 2h. (Strasbourg and Taihoku), 3h. (Taihoku), 4h. (Hukuoka and Nagasaki), 5h. (Hukuoka (2) and Nagasaki (2)), 6h. (Rocca di Papa and Rome), 8h. (Feldberg), 9h. (Andijan and Samarkand), 10h. (Manila and Andijan), 11h. (Sumoto), 12h. (Baku and Tashkent), 13h. (Ksara, Ekaterinburg, and Nagasaki), 14h. (Taihoku), 16h. (Taihoku), 17h. (La Paz), 18h. (Ekaterinburg, Baku, Tashkent, and Samarkand), 20h. (Andijan, Sumoto, and Manila), 21h. (Baku (2), Ekaterinburg (2), Tashkent (2), Irkutsk (2), Ksara, Kucino, Andijan, Almata, and Samarkand), 23h. (Tyosi and Nagoya (2)).

April 20d. 1h. 43m. 40s. Epicentre 22°·0S. 172°·0E. (as on 1926 Sept. 4d.). X.

A = −·918, B = +·129, C = −·375.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington	19·4	174	—	—	6 20?	−94	—	—
Riverview	21·8	233	i 4 46	− 3	i 8 35	− 7	e 11·3	13·4
Melbourne	28·1	229	i 6 40	PP	i 10 25	− 9	15·3	19·8
Manila	62·0	302	e 10 20?	+ 2	—	—	—	—
Tashkent	113·6	306	—	—	e 25 59	[+31]	—	—
Ekaterinburg	119·9	323	—	—	e 30 1	PS	46·3	—
Zurich	151·4	336	e 19 46	[+ 3]	—	—	—	—
Neuchatel	152·3	338	e 19 44	[− 1]	—	—	—	—

Additional readings :—
Riverview iPE = +4m.48s., iSE = +8m.41s.
Tashkent e = +26m.27s. =SKKS −5s.

April 20d. 10h. 20m. 38s. Epicentre 39°·0N. 39°·5E. (as on April 9d.). X.

A = +·600, B = +·494, C = +·629 ; D = +·636, E = −·772 ;
G = +·486, H = +·400, K = −·777.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	5·9	210	e 2 2	+38	3 39	+68	4·1	—
Theodosia	6·8	334	1 37	0	—	—	—	—
Yalta	6·8	326	1 34	− 3	—	—	—	—
Sebastopol	7·2	323	1 45	+ 3	—	—	2·9	—
Baku	8·2	77	e 2 15	+19	e 4 46	+77	5·9	7·3
Pulkovo	21·6	347	i 4 46	0	e 8 42	+ 4	14·4	—
Florence	21·6	292	—	—	e 8 54	+16	—	27·0
Ekaterinburg	22·6	31	e 4 58	+ 1	e 9 6	+ 9	11·4	—
Copenhagen	24·5	322	—	—	9 40	+ 8	15·4	—

Long waves were recorded at Kucino.

April 20d. 16h. 22m. 18s. Epicentre 14°·7S. 166°·0E. N.3.

A = −·939, B = +·234, C = −·254 ; D = +·242, E = +·970 ;
G = +·246, H = −·061, K = −·967.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		23·4	212	i 5 3	− 2	i 9 16	+ 4	e 11·7	15·5
Sydney	E.	23·4	212	5 0	− 5	—	—	10·0	11·2
Wellington		27·7	166	—	—	9 42?	−45	—	—
Melbourne		29·7	215	i 6 3	+ 1	e 10 57	− 2	14·0	17·1
Adelaide		31·9	227	e 6 47?	+25	i 11 40	+ 6	13·8	15·9
Perth		48·7	240	14 42	S	(14 42)	−61	—	—
Manila		53·3	302	i 9 18	+ 2	i 16 50	+ 4	i 25·5	—
Batavia		58·7	273	i 9 58	+ 3	i 18 3	+ 4	—	—
Zi-ka-wei	Z.	62·8	320	10 18	− 6	18 44	− 8	—	26·7
Phu-Lien		68·3	300	—	—	19 42?	−19	—	—
Medan		69·1	280	(e 11 8)	+ 3	(i 19 57)	−13	—	—
Irkutsk		85·5	328	e 12 30	− 6	e 22 38	−35	e 35·7	—
Colombo		88·1	278	13 7	+19	23 42	+ 4	—	—
Bombay		97·6	288	e 18 42?	?	—	—	—	—
Tashkent		104·6	310	i 18 23	PP	24 29	[−19]	—	51·8

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	110·6	325	e 18 49	PP	e 24 53	[−23]	42·7	—
Baku	119·2	309	e 20 11	PP	e 30 0	PS	46·4	—
Ottawa	120·1	44	—	—	e 29 42?	PS	e 51·7	—
Fordham	122·2	50	—	—	e 26 12	[+15]	e 47·2	56·2
Kucino	123·0	328	—	—	e 36 30	SS	e 51·2	60·6
Scoresby Sund	124·0	3	—	—	30 30	PS	55·7	—
Pulkovo	124·6	335	e 18 50	[− 6]	e 30 24	PS	57·7	—
Yalta	129·6	316	e 19 2	[− 4]	—	—	—	—
Ksara	131·2	303	21 22?	PP	—	—	—	—
Copenhagen	134·2	339	22 36	PKS	—	—	67·7	—
De Bilt	139·6	340	e 19 16	[− 5]	—	—	e 73·7	—
Uccle	141·0	340	e 22 42?	PP	—	—	—	67·7
Strasbourg	141·7	336	e 18 42?	[−42]	—	—	—	—
Zurich	142·3	334	e 19 20	[− 5]	—	—	—	—
Chur	142·4	334	e 19 22	[− 4]	—	—	—	—
Paris	143·3	342	i 19 23	[− 6]	—	—	—	—
Neuchatel	143·3	335	e 19 22	[− 7]	—	—	—	—
Piacenza	143·6	332	19 32	[+ 2]	—	—	—	—
Florence	143·8	328	i 19 26	[− 4]	—	—	—	—
Rocca di Papa	144·5	325	19 26	[− 7]	—	—	—	—
Rome	144·5	325	i 19 38	[+ 5]	20 6	?	—	—
Granada	155·7	339	e 19 44	[− 5]	—	—	e 92·7	101·7

Additional readings and note :—
Riverview S = +9m.24s., SS = +10m.6s., SSS = +10m.16s. ; T_o =16h.21m.51s.
Batavia i = +14m.7s.
Medan readings have been *diminished* by 2m.
Tashkent i = +28m.17s.
Ekaterinburg e = +18m.53s. =PS +20s., +30m.13s., and +34m.28s. =SS +1s.
Ottawa eN? = +43m.18s.
Kucino e = +41m.6s.
Granada e = +17m.28s.
Long waves were also recorded at Feldberg and Honolulu T.H..

April 20d. Readings also at 0h. (Granada), 1h. (Taihoku), 3h. (Tacubaya (2) and Wellington), 4h. (Samarkand), 6h. (Taihoku), 9h. (Taihoku (2)), 14h. (Ekaterinburg, Irkutsk, Tashkent, Medan, and Phu-Lien), 15h. (Florence and La Paz), 18h. (Tashkent, Samarkand, Baku, and Ksara), 23h. (Tashkent, Ekaterinburg, Manila, Tokyo, Mizusawa, and Tyosi (2)).

April 21d. 10h. 19m. 12s. Epicentre 45°·0N. 152°·1E. (as on 1921 Jan. 19d.). R.2.

A = −·625, B = +·331, C = +·707 ; D = +·468, E = +·884 ;
G = −·625, H = +·331, K = −·707.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		6·7	294	1 30	− 5	—	—	e 3·3	4·6
Mizusawa		10·0	238	2 19	− 2	3 57	−16	—	—
Tyosi		12·6	226	e 2 53	− 3	e 5 0	−17	—	—
Nagoya		15·1	235	e 2 40	−50	—	—	—	—
Osaka		16·4	237	3 53	+ 7	(6 14)	−34	6·2	7·9
Kobe		16·5	237	3 50	+ 2	—	—	—	—
Sumoto		16·9	237	e 3 55	+ 2	—	—	—	—
Koti		18·3	238	e 4 10	0	7 33	+ 2	e 9·7	—
Nagasaki		21·1	242	e 4 40	− 1	e 8 37	+ 9	—	—
Zi-ka-wei	z.	27·6	251	5 37	− 7	10 26	+ 1	14·6	17·0
Taihoku	e.	31·7	241	—	—	e 16 48?	(− 5)	—	—
Irkutsk		31·8	301	e 6 17	− 4	e 12 8	+36	16·8	20·4
Hong Kong		38·3	245	7 18	0	13 4	− 7	—	22·3
Manila		40·2	231	e 7 38	+ 4	i 15 7	?	i 24·1	28·5
Phu-Lien		44·4	254	7 48?	−20	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		51·9	297	e 9 6	0	—	—	—	—
Ekaterinburg		54·4	320	e 9 17	− 7	16 44	−17	25·8	34·4
Andijan		56·1	296	e 9 36	− 1	—	—	—	—
Samarkand		60·2	299	e 10 1	− 5	—	—	—	—
Scoresby Sund		64·5	358	i 10 34	− 1	19 12	− 2	28·8	—
Pulkovo		65·0	332	10 33	− 6	e 19 19	− 1	33·8	38·9
Kucino		65·1	326	—	—	e 19 0	−21	32·8	36·5
Helsingfors	E.	66·4	334	e 13 30	PP	—	—	—	—
Bombay		69·3	276	e 11 2	− 4	—	—	—	46·9
Baku		69·9	310	i 11 9	− 1	e 20 22	+ 2	e 35·8	44·9
Copenhagen		73·7	339	—	—	21 54	PS	34·8	—
Theodosia		74·0	320	i 11 33	− 2	—	—	—	—
Simferopol		74·6	320	i 11 36	− 2	—	—	—	—
Yalta		75·0	320	i 11 38	− 2	—	—	—	—
Hamburg		76·3	339	i 11 46	− 2	—	—	e 39·8	—
De Bilt		78·8	340	12 0	− 1	e 22 14	+11	e 42·8	—
Feldberg	N.	79·7	339	i 11 57	− 9	e 21 48	−24	—	47·8
Uccle		80·2	340	i 12 8	− 1	e 22 13	− 5	e 44·8	—
Kew		80·7	343	e 12 11	− 1	—	—	45·8	—
Zagreb		81·2	331	e 12 12	− 2	—	—	e 44·1	—
Strasbourg		81·4	337	i 12 13	− 2	—	—	40·8	—
Ksara	N.	82·3	313	e 12 20	0	e 22 20	−20	e 44·8	—
Zurich		82·3	336	e 12 19	− 1	e 22 39	− 1	—	—
Paris		82·5	340	i 12 21	0	—	—	46·8	48·8
Neuchatel		83·0	337	i 12 23	0	—	—	—	52·8
Piacenza		84·0	335	12 21	− 7	22 48	−10	—	53·8
Florence		84·6	332	i 12 11	−20	23 25	+21	48·8	52·8
Rome		86·0	331	e 12 38	0	e 23 0	−18	—	—
Rocca di Papa		86·0	331	i 12 39	+ 1	23 18	0	e 38·4	44·8

Additional readings :—
Manila PP = +9m.54s. = P_gP +12s., PS = +15m.20s., SSN = +19m.8s.
Pulkovo e = +23m.54s. = SS +28s.
Ksara eE = +21m.44s.
Rocca di Papa eS = +22m.5s.
Long waves were also recorded at Ottawa, Florissant, and several European stations.

April 21d. 11h. 50m. 56s. Epicentre 56°·0S. 25°·0W. N.3.

A = +·507, B = −·236, C = −·829 ; D = −·423, E = −·906 ;
G = −·751, H = +·350, K = −·559.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata		30·8	299	6 9	− 3	11 11	− 6	—	—
Rio de Janeiro	E.	35·7	330	e 6 55	0	i 12 27	− 5	i 15·2	—
	N.	35·7	330	i 6 54	− 1	i 12 29	− 3	i 15·2	20·1
La Paz		51·2	304	i 9 2	+ 2	i 16 20	+ 2	25·4	39·9
Tananarive		64·7	86	—	—	19 11	− 5	30·7	35·1
Wellington		81·3	195	12 11	− 4	22 23	− 7	43·1	52·1
Melbourne		85·8	172	e 12 59	+22	i 23 4	−12	43·0	48·9
Adelaide		88·0	167	—	—	i 23 21	[+ 1]	43·0?	51·2
Sydney	E.	90·1	177	23 16	S	(23 16)	[−17]	50·9	53·1
Riverview		90·1	177	e 13 4	+ 6	i 23 43	[+10]	e 45·2	53·0
Malaga		94·4	17	13 20	+ 2	e 23 48	[−10]	e 31·1	54·6
Granada		94·9	17	i 13 22	+ 2	i 23 43	[−17]	43·6	49·5
Almeria		94·9	18	—	—	i 23 51	[− 9]	47·4	55·2
Algiers		95·8	24	—	—	24 51	+ 2	52·1	55·1
Alicante		96·6	20	—	—	e 24 6	[− 3]	e 47·5	—
Toledo		97·5	16	e 12 54	−38	e 24 5	[− 9]	e 31·7	55·8
Helwan		98·2	47	24 10	S	(24 10)	[− 7]	—	57·6
Tortosa		99·2	20	—	—	e 24 17	[− 5]	e 39·1	53·7
Rocca di Papa		102·8	29	—	—	i 24 34	[− 5]	e 52·1	73·4
Ksara		103·6	48	—	—	e 24 40	[− 3]	49·1	58·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo		104·0	95	e 17 58	PP	i 24 43	[− 2]	43·1	53·6
Charlottesville		104·4	319	—	—	e 24 4	[−43]	49·1	—
Florence		104·4	25	e 14 6	+ 2	27 36	PS	51·1	55·1
Piacenza		105·1	22	e 14 4	− 2	24 44	[− 6]	—	57·6
Kodaikanal		105·4	92	e 33 58	SS	—	—	e 54·9	70·9
Harvard		105·8	326	—	—	e 27 34	PS	e 51·6	—
Batavia		106·3	128	—	—	i 24 45	[−11]	e 58·1	—
Paris		107·3	17	e 14 4?	−14	—	—	44·1	61·1
Zagreb		107·5	28	e 18 22	[+12]	e 34 4?	SS	e 55·1	—
Strasbourg		108·0	20	e 14 4?	−17	(e 28 4)	PS	e 28·1	62·1
Stuttgart		108·5	20	e 19 24	PP	i 24 56	[−10]	—	62·5
Kew		109·4	15	e 14 4?	−24	e 25 4	[− 7]	56·1	61·2
Oxford		109·5	14	—	—	e 27 46	PS	e 53·6	63·1
Uccle		109·5	18	e 19 4?	PP	—	—	e 45·1	59·1
St. Louis	E.	109·5	311	—	—	e 28 9	PS	e 50·5	—
Toronto		109·7	321	e 18 16	[− 1]	i 28 44	PS	50·1	55·6
Feldberg	N.	109·8	20	e 19 10	PP	e 24 52	[−20]	—	64·9
Florissant		109·8	311	—	—	e 25 45	{−21}	50·1	55·6
Bombay		109·9	84	18 52	PP	28 29	PS	46·2	58·1
Ottawa		110·0	325	e 19 4	PP	e 28 28	PS	59·1	—
Cheb		110·5	24	—	—	e 27 4	?	e 55·1	61·1
De Bilt		110·9	19	e 14 34	− 1	e 28 42	PS	e 54·1	62·1
Medan		111·2	116	—	—	i 28 35	PS	55·1	—
Chicago		111·2	315	—	—	25 7	[−12]	e 45·7	—
Gottingen		111·3	21	—	—	e 28 4?	?	e 56·1	63·1
Stonyhurst		111·4	13	i 14 27	−10	26 58	?	57·1	64·9
Hyderabad		111·8	88	20 4	?	28 54	PS	45·2	62·9
Hamburg		113·3	20	—	—	e 28 4?	PS	e 56·1	64·1
Edinburgh		113·3	11	—	—	e 27 22	?	—	72·1
Dyce		114·7	11	—	—	e 25 38	[+ 5]	e 54·1	72·4
Baku		115·2	52	—	—	i 25 29	[− 5]	54·1	68·2
Copenhagen		115·8	21	—	—	25 27	[− 9]	51·1	—
Lund		115·9	21	—	—	27 4?	{+16}	57·1	—
Amboina		116·4	150	38 45	?	e 44 40	?	—	—
Bergen		118·8	15	—	—	e 30 15	PS	e 62·1	—
Agra	N.	119·4	83	e 18 34	[−10]	—	—	—	—
Calcutta	E.	121·5	94	e 24 58	?	—	—	60·2	—
Dehra Dun		121·8	81	25 24	S	(25 24)	[−32]	56·7	68·1
Helsingfors	Z.	122·7	26	—	—	e 42 40	?	—	—
Kucino		122·8	35	e 20 28	PP	25 22	[−37]	58·7	72·9
Pulkovo		123·7	29	—	—	e 26 7	[+ 6]	66·1	73·2
Scoresby Sund		126·5	1	18 50	[−10]	23 28	PPP	57·1	—
Phu-Lien		129·9	114	—	—	22 4?	?	—	—
Manila		131·1	132	e 19 14	[+ 5]	—	—	—	—
Ekaterinburg		132·1	45	19 5	[− 5]	28 22	{−13}	60·1	78·0
Victoria	E.	132·4	298	21 36	PP	—	—	68·0	77·1
Hong Kong		134·9	121	22 13	PP	—	—	e 63·7	84·1
Zi-ka-wei	Z.	145·9	122	i 19 28	[− 8]	—	—	73·5	78·6
Irkutsk		150·7	76	e 19 40	[− 3]	—	—	e 67·1	82·8

Additional readings :—
La Paz iE = +9m.37s. and +17m.52s., PPE = +11m.15s., PSZ = +16m.50s., SSE = +20m.12s.
Tananarive ePcP = +12m.14s., eN = +14m.11s., +20m.37s., eE = +15m.11s., +19m.15s., +19m.35s., and +27m.29s., ePSN = +19m.23s., eSSE = +23m.20s. and +25m.7s.
Melbourne i = +28m.48s. = SS + 9s., e = +35m.49s.
Adelaide e = +29m.4s. = SS + 7s. and +36m.4s.
Riverview e = +22m.58s., eN = +25m.28s., and +35m.34s., eE = +26m.34s., and +36m.22s.
Granada PP = +17m.15s.
Almeria PP = +16m.55s.
Colombo iP = +24m.43s. = SKS − 2s.
Charlottesville eSSE = +33m.4s.
Florence eP = +18m.6s. = PP − 10s.

Continued on next page.

Harvard e = +16m.34s. and +33m.4s.? =SS −17s.
Batavia i = +25m.37s. =SKKS −3s.
Zagreb e = +29m.14s.
Stuttgart i = +34m.28s.
St. Louis ePPE = +18m.49s., eSSE = +34m.19s.
Toronto eE = +17m.19s., iE = +34m.25s. =SS +10s.
Florissant iPPNZ = +18m.50s., ePSEN = +28m.9s., iEN = +28m.45s., iSSE = +34m.13s.
Ottawa eE = +34m.28s. =SS +29s.
De Bilt eZ = +19m.10s. =PP +6s., eN = +27m.1s.
Medan e = +21m.52s., i = +31m.19s.
Chicago ePPN = +18m.58s., S = +26m.3s. =SKKS −12s., PS = +28m.27s., SS = +34m.32s.
Baku ePP = +19m.49s., iPS = +29m.34s.
Stonyhurst PPPP? = +25m.50s., i = +26m.6s. =SKKS −11s., PS? = +30m.6s.
Copenhagen PP = +20m.10s., e = +26m.46s. = Σ −2s., PS = +29m.28s., SS = +35m.52s., SSS = +40m.10s.
Agra eE = +17m.56s.
Dehra Dun S = +36m.34s. =SS −22s.
Kucino SKSP = +30m.10s., SS = +36m.40s.
Pulkovo PP = +19m.2s. =PKP +8s., ePPS = +30m.34s.
Manila iE = +22m.31s., iN = +22m.54s.
Ekaterinburg PP = +21m.33s., iPKS = +22m.27s., eSS = +38m.58s.
Zi-ka-wei iZ = +19m.58s., +21m.26s., +33m.50s., and +35m.4s.
Irkutsk ePKS = +23m.40s., ePS = +36m.4s.?, SS = +44m.4s. ?
Long waves were also recorded at several European and American stations, and at Honolulu T.H.

April 21d. 21h. 56m. 57s. Epicentre 40°·5N. 160°·5E. (as on 1927 Aug. 27d.). X.

A = −·717, B = +·254, C = +·649; D = +·334, E = +·943; G = −·612, H = +·217, K = −·760.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	32·7	269	e 6 30	+ 1	11 48	+ 2	16·0	17·7
Irkutsk	39·4	309	e 8 13	+48	—	—	18·1	20·7
Manila	43·9	246	e 8 20	+16	—	—	29·5	—
Ekaterinburg	61·8	323	e 11 18	(+18)	e 21 51	?	28·0	—
Tashkent	65·4	306	i 10 40	− 1	e 20 45	(+14)	e 30·0	36·5
Pulkovo	71·8	337	—	—	e 20 51	+ 8	35·0	44·0
Kucino	72·2	330	—	—	e 19 21	?	e 33·2	37·1
Baku	77·5	315	i 11 54	− 1	e 21 48	0	36·7	45·7
Florence	91·2	340	e 28 6	?	i 28 36	?	e 48·9	54·6

Additional readings:—
Irkutsk e = +12m.11s. and +15m.51s. =SS −11s.
Long waves were also recorded at several European stations and Hong Kong.

April 21d. Readings also at 2h. (Baku, Ekaterinburg, and near Vera Cruz), 3h. (Medan), 8h. (Baku, Ekaterinburg, Tashkent, Batavia, and Malabar), 11h. (La Paz (2) and Tucson), 13h. (Taihoku, Florence, La Paz, Tananarive (2), and Perth), 14h. (Ekaterinburg, Irkutsk (2), Hamburg, Pulkovo, Granada, Cheb, Almeria, Ottawa, Hong Kong, Medan (4), and Phu-Lien), 15h. (Phu-Lien, Medan (2), and Hong Kong), 16h. (Tucson, Fordham, and Mizusawa), 17h. (Ekaterinburg, Baku, and Tashkent), 18h. (Ekaterinburg, Baku, Tashkent, and Irkutsk), 19h. (Ekaterinburg, Baku, Pulkovo, Strasbourg, De Bilt, Budapest, Stuttgart, Zagreb, Uccle, Feldberg, Copenhagen, Florence, and Tananarive), 20h. (Phu-Lien and La Paz), 21h. (Feldberg, Uccle, Strasbourg, Baku, Ekaterinburg, Tashkent (2), Irkutsk, Andijan, Samarkand, and Mizusawa), 22h. (Ekaterinburg, De Bilt, Stuttgart, Copenhagen, Hong Kong, and Mizusawa), 23h. (Granada), and near Kobe).

April 22d. Readings at 0h. (Simferopol, Yalta, Sebastopol, Theodosia, and Batavia) 2h. (Ksara), 3h. (Ekaterinburg and Baku), 9h. (Tananarive), 13h. (Victoria, Ottawa, Harvard, Fordham, Manila, La Paz, Amboina, and Apia), 14h. (Copenhagen, Uccle, De Bilt, Strasbourg, Feldberg, Tashkent, and Kew), 15h. (Ekaterinburg and Nagasaki), 17h. (Nagasaki), 18h. (near Florissant and St. Louis), 20h. (Manila and Tananarive), 21h. (Ottawa, Tucson, Tacubaya, and Tananarive).

April 23d. 18h. 27m. 22s. Epicentre 54°·0N. 160°·5W. (as on 1923 Aug. 3d.) R.2.
A = −·554, B = −·196, C = +·809; D = −·334, E = +·943;
G = −·763, H = −·270, K = −·588.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	14·5	68	6 26	S	(6 26)	+23	—	—
Victoria		23·7	88	5 17	+10	—	—	9·6	11·8
Chicago	E.	48·1	74	—	—	e 18 20	(−12)	26·8	—
Florissant		48·5	78	i 8 41	+ 1	i 15 41	+ 1	e 26·6	—
St. Louis	E.	48·7	78	i 8 36	− 5	i 15 50	+ 7	—	—
Scoresby Sund		52·0	17	—	—	16 32	+ 4	26·6	—
Ottawa		52·2	63	—	—	e 16 50	+19	e 24·6	—
Irkutsk		52·6	310	9 0	−11	e 16 34	− 3	26·6	—
Fordham		56·2	66	—	—	e 17 33	+ 8	e 28·6	33·1
Ekaterinburg		63·9	337	i 10 30	− 1	i 19 4	− 2	28·1	40·7
Pulkovo		65·9	354	e 10 46	+ 1	19 26	− 5	30·6	48·6
Kucino		69·2	350	—	—	i 19 22	−49	e 29·9	43·2
Copenhagen		70·1	4	—	—	20 20	− 2	32·6	—
Almata		71·0	320	e 11 4	−13	—	—	—	—
Manila		71·5	270	e 11 57?	+37	20 38	− 1	29·8	—
Andijan		74·9	322	e 11 48	+ 8	e 21 6	−13	—	—
Tashkent		75·6	324	i 11 44	0	i 21 19	− 8	e 36·6	48·0
Samarkand		77·9	325	e 12 16	+19	e 21 44	− 9	—	—
Theodosia		80·0	350	22 8	S	(22 8)	− 8	—	—
Sebastopol		80·6	350	22 14	S	(22 14)	− 8	—	—
Yalta		80·7	350	22 16	S	(22 16)	− 7	—	—
Baku		82·1	337	e 12 21	+ 2	i 22 35	− 3	39·6	53·5

Additional readings:—
Chicago eN = +21m.2s.
Ekaterinburg e = +26m.6s.
Long waves were also recorded at Kew, De Bilt, Paris, Feldberg, San Fernando.

April 23d. 21h. 48m. 58s. Epicentre **45°·5N. 151°·2E.** R1.
(as on 1929 June 13d.).

Probable error ±0°·3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		5·8	284	1 23	+ 1	(2 33)	+ 5	2·6	3·2
Sikka		6·6	307	(1 52)	+18	(3 22)	+34	(4·8)	(6·0)
Mizusawa		9·8	233	2 14	− 4	3 55	−13	—	—
Tyosi		12·5	222	e 2 57	+ 2	e 4 51	−24	e 5·7	—
Vladivostok		13·9	267	3 17	+ 3	e 6 35	+46	7·1	10·6
Nagoya		14·9	231	3 2?	−25	5 2?	−71	7·3	—
Toyooka		15·9	237	i 3 35	− 5	6 47	+11	8·6	11·9
Osaka		16·1	233	3 42	− 1	(6 29)	−12	6·5	7·9
Kobe	E.	16·3	234	3 48	+ 3	—	—	e 9·3	12·9
	N.	16·3	234	e 3 42	− 3	6 57	+12	e 7·7	12·1
Sumoto		16·7	234	3 49	− 1	7 4	+ 9	8·7	11·0
Koti		18·0	235	e 4 5	− 2	i 7 34	+ 9	8·5	11·4
Hukuoka		19·8	240	4 26	− 1	8 9	+ 7	—	14·2
Nagasaki		20·8	240	4 40	+ 2	8 32	+10	10·4	14·4
Irkutsk		31·0	300	6 15	+ 1	11 37	+17	16·0	20·4
Taihoku	E.	31·4	239	—	—	e 12 2?	+36	—	19·5
Hong Kong		37·9	244	7 13	− 1	13 2	− 3	17·5	20·7
Manila		40·0	230	i 7 32	0	i 15 35	SS	i 24·8	30·7
Phu-Lien		43·9	252	e 8 6	+ 2	—	—	21·0	26·1
Sitka	E.	45·0	48	i 15 2	S	(1 15 2)	+12	e 26·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu T.H.		48·0	103	—	—	e 15 32	− 1	e 22·0	—
Almata		51·1	297	e 8 52	− 8	—	—	26·0	—
Amboina		53·2	209	e 9 18	+ 3	i 16 49	+ 4	23·9	—
Ekaterinburg		53·6	318	i 9 18	0	i 16 47	− 3	26·0	32·6
Victoria		55·3	54	9 52	+21	17 22	+ 9	26·9	28·2
Calcutta	E.	55·3	269	8 57	+26	—	—	31·9	—
	N.	55·3	269	8 38	+ 7	—	—	32·1	—
Andijan		55·3	296	9 34	+ 3	—	—	—	—
Tashkent		57·0	299	i 9 42	− 1	e 17 28	− 8	e 28·0	36·4
Dehra Dun		57·6	283	8 32	−75	17 22	−22	29·4	32·0
Samarkand		59·4	299	i 10 0	0	e 18 12	+ 4	23·0	—
Agra		59·6	280	9 17	−45	17 22	−49	—	33·9
Medan		61·9	243	10 13	− 5	—	—	e 29·0	37·7
Scoresby Sund		63·9	358	10 32	+ 1	19 12	+ 6	29·0	—
Pulkovo		64·2	332	i 10 34	0	e 19 7	− 3	32·0	38·0
Kucino		64·3	325	9 54	−40	18 38	−33	30·3	36·0
Batavia		65·0	230	e 10 52	+13	i 19 45	+25	—	—
Hyderabad		65·6	274	10 42	0	19 28	+ 1	35·2	45·4
Helsingfors		65·6	335	e 10 41	− 1	e 19 41	+14	—	—
Upsala		68·0	337	—	—	e 20 56	(+ 6)	e 33·0	40·2
Bombay		68·6	275	11 6	+ 4	20 8	+ 4	35·4	47·3
Baku		69·0	308	i 11 5	0	i 20 20	+11	34·5	39·7
Bergen		70·5	344	11 27	+13	e 20 37	+10	e 36·0	40·0
Kodaikanal		71·3	268	e 25 56	SS	—	—	—	—
Colombo		72·0	265	20 43	S	(20 43)	− 2	—	46·6
Lund		72·8	338	11 28	0	21 38	PS	35·0	—
Copenhagen		73·0	338	11 28	− 1	20 59	+ 2	35·0	—
Theodosia		73·2	320	11 30	0	e 21 4	+ 5	38·0	—
Simferopol		73·8	320	11 33	0	—	—	41·0	—
Yalta		74·2	320	11 36	0	—	—	—	—
Sebastopol		74·3	320	11 30	− 6	—	—	47·0	—
Dyce		74·9	346	—	—	21 31	+12	e 41·0	45·7
Hamburg		75·6	338	e 11 42	− 2	—	—	e 35·0	42·0
Potsdam		75·8	335	e 11 44	− 1	21 42	+13	e 41·0	44·6
Gottingen		77·4	337	i 11 53	− 1	—	—	e 38·0	—
Jena		77·5	336	e 11 54	− 1	—	—	39·0	45·5
Budapest		78·0	330	12 2?	+ 5	21 47	− 7	39·8	43·5
De Bilt		78·1	340	12 0	+ 2	e 21 59	+ 4	e 36·0	44·4
Chicago	E.	78·2	41	—	—	e 21 50	− 6	e 35·0	—
Vienna		78·3	331	i 11 2	−57	22 4	+ 7	e 41·5	59·5
Feldberg	N.	79·0	339	e 11 56	− 7	e 21 56	− 9	—	47·7
Florissant		79·2	45	e 12 1	− 3	e 22 1	− 6	e 41·0	—
Riverview		79·3	180	e 12 5	+ 1	i 22 0	− 8	e 33·3	39·2
St. Louis		79·5	45	e 11 56	− 9	e 21 56	−14	e 41·5	—
Ann Arbor		79·5	38	e 12 14	+ 9	e 22 8	− 2	e 43·8	—
Graz		79·5	331	i 11 50	−15	e 22 6	− 4	e 31·0	44·0
Uccle		79·5	340	e 12 3	− 2	e 22 11	+ 1	37·0	45·5
Kew		80·0	343	e 12 9	+ 1	e 22 8	− 8	35·0	43·8
Stuttgart		80·1	335	i 12 10	+ 2	i 22 25	+ 8	e 39·0	45·1
Ottawa		80·1	30	—	—	i 22 8	− 9	41·0	—
Karlsruhe		80·1	337	e 12 2?	− 6	—	—	—	—
Toronto	E.	80·2	35	12 24	+15	i 22 10	− 8	44·1	—
Zagreb		80·5	330	e 12 0	−10	e 22 14	− 7	e 43·3	—
Innsbruck		80·7	334	e 12 14	+ 2	—	—	—	—
Strasbourg		80·7	337	e 12 7	− 5	—	—	41·0	—
Ksara	E.	81·5	312	12 16	0	22 36	+ 4	45·0	—
Zurich		81·5	335	i 12 15	− 1	e 22 31	− 1	—	—
Chur		81·7	336	i 12 19	+ 2	e 22 42	+ 8	—	—
Paris		81·8	341	i 12 19	+ 2	—	—	33·0	50·0
Treviso		81·9	332	e 12 21	+ 3	e 22 57	PS	44·0	50·0

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Venice	82·0	332	e 12 31	+13	—	—	—	—
Padova	82·3	332	e 11 48	−32	—	—	—	—
Neuchatel	82·3	338	e 12 16	− 4	e 22 28	−12	—	—
Besançon	82·4	337	e 12 21	+ 1	—	—	e 41·0	—
Piacenza	83·3	333	12 36	+11	22 44	− 6	34·0	54·5
Melbourne	83·4	185	—	—	i 22 41	−10	34·4	45·2
Florence	83·9	332	i 12 33	+ 5	22 33	−23	—	—
Fordham	84·7	34	e 12 36	+ 4	i 23 0	− 5	e 39·8	46·0
Rocca di Papa	85·2	330	e 12 30	− 4	e 22 59	[− 2]	e 44·1	57·9
Rome	85·2	330	e 12 35	+ 1	i 23 3	[+ 2]	—	—
Charlottesville	85·3	38	—	—	e 23 2	[+ 1]	e 46·0	—
Helwan	87·0	311	12 44	+ 1	23 10	[− 3]	—	56·4
Catania	88·0	327	e 12 35	−13	—	—	e 48·0	—
Wellington	89·3	164	—	—	23 22	[− 6]	43·0	—
Tortosa	89·8	339	e 14 3	?	23 55	+ 1	e 42·0	52·5
Algiers	92·9	335	—	—	e 24 14	− 9	e 50·0	56·0
Almeria	94·3	340	—	—	e 25 10	+34	45·5	53·2
Malaga	94·9	341	e 18 28	?	e 32 48	?	e 39·0	—
San Fernando	95·6	343	—	—	21 33	?	—	58·5
Tananarive	112·8	266	—	—	33 59	?	58·0	65·2
La Paz	136·3	60	e 19 20	[+ 3]	—	—	67·0	75·9

Additional readings and notes:—
Sikka readings have been increased by 3m.
Toyooka PEN = +3m.39s.
Koti iP = +4m.7s., iPP = +4m.24s.
Manila SSE = +20m.8s.
Sitka iSE = +18m.28s. = SeS +16s.
Victoria PE = +9m.57s.
Medan i = +12m.52s. = PP +25s.
Scoresby Sund +20m.33s. = ScS +13s.
Batavia i = +11m.21s. = PcP +17s.
Helsingfors iPZ = +10m.45s.
Copenhagen PN = +11m.30s., +25m.50s. = SS +22s., and +29m.2s.
Potsdam eN = +17m.2s. = PPPP −11s. +22m.48s., and +24m.44s., iN = +22m.20s.
Jena iPN = +11m.59s.
Budapest i = +12m.6s.
De Bilt eSS = +27m.35s.
Vienna SS = +28m.0s.
Florissant eZ = +14m.0s.
Riverview eSS = +27m.21s.
Ann Arbor eN = +22m.44s. = PS +1s. and +35m.44s., eE = +25m.2s.
Uccle SS = +27m.56s.
Kew ePPZ = +15m.20s., ePS = +23m.20s., eSSEN = +28m.2s.
Stuttgart eSSS = +31m.37s.
Toronto SSE = +27m.37s.
Zagreb e = +12m.23s., +12m.54s., and +13m.14s., eNE = +15m.2s. = PP −6s., +25m.5s., +28m.2s.?, and +31m.19s., EW = +40m.2s.
Strasbourg i = +12m.13s.
Besançon i = +12m.30s.
Rocca di Papa i = +12m.39s. and +23m.3s. = S −7s.
Charlottesville eN = +21m.2s. and +33m.56s., eE = +40m.26s.
Wellington PP = +16m.40s.
Almeria m = +26m.0s. = PS +18s. and +35m.25s.
San Fernando SN = +20m.33s.
La Paz PPE = +23m.7s.
Long waves were also recorded at Stonyhurst, Bidston, Edinburgh, Cheb, Konigsberg, Granada, Toledo, Alicante, and Rio de Janeiro.

April 23d. Readings also at 1h. (La Paz and Sumoto), 2h. (La Paz and Nagoya), 9h. (Samarkand, Andijan, Almata, and Ksara), 10h. (Belgrade), 11h. (Sumoto (2) and Tyosi), 13h. (Nagasaki), 19h. (St. Louis, Florissant, Perth, and Tananarive), 22h. (Andijan, Samarkand, and Mizusawa), 23h. (Hong Kong and Chur).

April 24d. 0h. 23m. 30s. Epicentre 44°·7N. 153°·0E. N.2.

A = −·633, B = +·323, C = +·703; D = +·454, E = +·891; G = −·627, H = +·319, K = −·711.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	10·4	242	2 24	− 2	4 5	−18	—	—
	N.	10·4	242	2 30	+ 4	4 30	+ 7	—	—
Tyosi		12·8	230	e 5 5	S	(e 5 5)	−17	e 5·9	—
Vladivostok		15·2	271	3 21	−10	6 39	+19	7·3	11·0
Osaka		16·7	239	3 55	+ 5	—	—	6·7	7·8
Kobe		16·9	240	4 9	+16	—	—	e 9·4	—
Koti		18·6	240	e 4 15	+ 1	7 39	+ 1	e 10·4	—
Nagasaki		21·5	244	e 4 51	+ 6	e 8 46	+10	—	—
Irkutsk		32·5	303	e 6 24	− 3	e 11 45	+ 2	16·5	20·4
Manila		40·5	234	e 7 42	+ 6	e 14 44	+60	—	—
Almata		52·6	299	e 9 0	−11	—	—	—	—
Ekaterinburg		55·0	320	i 9 25	− 4	e 19 9	(− 8)	26·5	32·8
Andijan		56·9	298	e 9 42	0	—	—	—	—
Tashkent		58·5	300	i 9 50	− 4	17 40	−16	e 30·5	35·8
Samarkand		60·8	300	i 10 8	− 2	—	—	30·5	—
Scoresby Sund		64·8	358	—	—	19 30?	+13	30·5	—
Pulkovo		65·5	333	e 10 44	+ 2	—	—	34·5	39·2
Kucino		65·6	327	e 10 42	0	—	—	e 33·2	36·5
Bombay		69·9	277	3 34	?	—	—	—	47·7
Baku		70·6	310	i 11 15	+ 1	e 20 35	+ 7	36·0	45·2
Copenhagen		74·2	339	11 38	+ 2	—	—	36·5	—
Simferopol		75·3	321	11 44	+ 2	—	—	—	—
Theodosia		75·3	321	11 40	− 2	—	—	—	—
Yalta		75·6	321	11 44	0	—	—	—	—
Florissant		78·9	45	—	—	e 22 0	− 4	e 41·5	—
Budapest		79·3	331	e 12 30?	+26	—	—	e 46·5	—
De Bilt		79·3	341	i 12 8	+ 4	—	—	e 43·5	—
Feldberg		80·2	340	i 12 6	− 3	—	—	—	47·5
Chur		82·9	336	e 12 21	− 2	—	—	—	—
Neuchatel		83·5	338	e 12 30	+ 4	—	—	—	—
Florence		85·2	333	e 12 29	− 5	—	—	e 32·5	42·5
Rome		86·5	332	e 13 4	+23	—	—	—	—
Rocca di Papa		86·5	332	e 12 39	− 2	—	—	46·5	58·0

Additional readings:—
Koti iPPZ = +4m.30s.
Ekaterinburg e = +21m.27s.
Tashkent e = +30m.6s.
Rocca di Papa P = +12m.45s.
Long waves were also recorded at Taihoku and Phu-Lien, Ottawa, Fordham, and several European stations.

April 24d. Readings also at 1h. (La Paz), 2h. (Ksara, Sebastopol, Theodosia, Simferopol, Baku, and Pulkovo), 3h. (Irkutsk), 4h. (Irkutsk and Tashkent), 13h. (Koti, Sumoto, and Matuyama), 15h. (La Paz and La Plata), 22h. (Ekaterinburg, Tashkent, Irkutsk, Phu-Lien, and Medan).

April 25d. 9h. 16m. 8s. Epicentre 33°·2N. 131°·0E. (as on 1928 Dec. 21d.). X.

A = −·549, B = +·632, C = +·548.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	0·6	308	0 9	0	0 21	+ 6	—	0·5
Nagasaki	1·1	243	0 20	+ 4	0 43	+15	—	—
Matuyama	1·6	66	i 0 19	− 4	i 0 37	− 4	—	i 0·6
Koti	2·2	79	e 0 28	− 3	0 52	− 5	e 1·0	—
Sumoto	3·4	69	0 54	+ 5	1 34	+ 7	—	1·8

Matuyama gives also P_g = +21s.
Koti P_g = +32s., S = +47s.

April 25d. 11h. 31m. 36s. Epicentre 55°·7S. 138°·5E. N.3.

A = − ·422, B = + ·373, C = − ·826; D = + ·663, E = + ·749;
G = + ·619, H = − ·547, K = − ·564.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne	18·4	17	—	—	1 7 8	−25	e 9·4	10·6
Adelaide	20·8	0	1 4 37	− 1	1 8 27	+ 5	9·2	9·9
Riverview	23·6	27	1 5 5	− 1	1 9 5	− 9	e 11·0	12·2
Christchurch	24·9	75	—	—	e 9 49	+10	1 11·2	—
Wellington	27·6	74	10 24	S	(10 24)	− 1	—	14·4
Manila	71·8	341	e 16 19	?	e 19 41	−62	—	—
Irkutsk	111·6	338	e 15 16	+38	—	—	—	—
Tashkent	113·3	310	—	—	e 25 24?	[− 3]	e 52·4	63·4

Additional readings:—
Wellington S = +11m.27s. = SS −5s.
Irkutsk e = +11m.24s.? and +13m.38s.?.

April 25d. 12h. 31m. 50s. (I) } Epicentre 33°·2N. 131°·0E. (as at 9h.). X.
12h. 58m. 0s. (II) } X.

A = − ·549, B = + ·632, C = + ·548.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Hukuoka	0·6	308	0 5	− 4	0 18	+ 3	—	0·4
II	N.	0·6	308	0 7	− 2	e 0 19	+ 4	—	—
I	Nagasaki	1·1	243	0 16	0	0 28	0	—	—
I	Matuyama	1·6	66	i 0 13	−10	—	—	i 0·6	i 0·6
II		1·6	66	e 0 28	+ 5	—	—	i 0·8	i 0·8
I	Koti	2·2	79	e 0 21	−10	0 43	−14	—	0·9
II		2·2	79	−0 16	−47	—	—	—	—
I	Sumoto	3·4	69	0 49	0	1 29	+ 2	—	1·5
I	Osaka	4·0	66	0 59	+ 2	—	—	1·9	2·1

Koti I gives also iPE = +25s.

April 25d. 15h. 4m. 44s. Epicentre 45°·5N. 151°·2E. (as on April 23d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		5·8	284	1 37	+15	2 49	+21	3·3	3·8
Mizusawa		9·8	233	2 12	− 6	3 56	−12	—	—
Koti		18·0	235	e 4 6	− 1	7 29	+ 4	9·3	—
Zi-ka-wei	z.	27·1	249	e 5 40	+ 1	10 46	+29	16·0	17·3
Irkutsk		31·0	300	6 14	0	e 10 57	−23	15·3	18·6
Manila		40·0	230	e 7 33	+ 1	13 33	− 3	19·8	—
Almata		51·1	297	e 9 6	+ 6	—	—	—	—
Ekaterinburg		53·6	318	i 9 14	− 4	e 16 44	− 6	27·3	34·4
Andijan		55·3	296	e 9 30	− 1	—	—	—	—
Tashkent		57·0	299	e 9 58	+15	e 17 46	+10	e 28·3	66·0
Samarkand		59·4	299	e 10 0	0	—	—	—	—
Scoresby Sund		63·9	358	—	—	19 16?	+10	31·3	—
Pulkovo		64·2	332	10 33	− 1	19 23	+13	33·3	38·0
Kucino		64·3	325	e 9 58	−36	e 18 36	−35	33·3	37·6
Helsingfors		65·6	335	10 50	+ 8	—	—	e 35·4	—
Theodosia		73·2	320	11 32	+ 2	—	—	—	—
Simferopol		73·8	320	11 33	0	—	—	—	—
Yalta		74·2	320	11 35	− 1	—	—	—	—
Hamburg		75·6	338	e 11 43	− 1	—	—	e 40·3	45·3
De Bilt		78·1	340	11 57	− 1	—	—	e 41·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
						—		—	47·5
Feldberg	N.	79·0	339	i 11 54	− 7				
Uccle		79·5	340	—	—	e 23 16?	+66	e 42·3	—
Kew	Z.	80·0	343	e 12 9	+ 1	—	—	50·3	—
Stuttgart		80·1	335	e 12 46?	+38	e 23 16?	+59	e 44·3	—
Zagreb		80·5	330	e 12 12	+ 2	—	—	e 44·3	—
Strasbourg		80·7	337	e 12 16	+ 4	—	—	43·3	—
Zurich		81·5	335	e 12 16	0	—	—	—	—
Chur		81·7	336	e 12 16	− 1	22 31	− 3	—	—
Paris		81·8	341	e 12 19	+ 2	—	—	45·3	57·3
Piacenza		83·3	333	e 14 56	?	—	—	—	41·3
Florence		83·9	332	e 12 40	+12	23 16	+20	—	54·3
Rocca di Papa		85·2	330	12 36	+ 2	—	—	—	53·9
Rome		85·2	330	e 12 33	− 1	—	—	—	—
Almeria		94·3	340	e 13 44	+87	—	—	50·4	54·3

Additional readings :—
Koti PP = +4m.20s.
Manila iE = +8m.9s.
Tashkent e = +22m.16s.
Stuttgart e = +34m.16s. ?
Strasbourg ePP = +15m.16s. ?
Long waves were also recorded at Bombay, Hong Kong, Phu-Lien, Florissant, Fordham, and many European stations.

April 25d. Readings also at 1h. (La Paz), 2h. (Baku), 3h. (Irkutsk, Ekaterinburg (2), Tashkent, Bombay, Medan, Phu-Lien, and Hong Kong), 4h. (Kucino), 5h. (Algiers), 7h. (Irkutsk, Ekaterinburg, and Mizusawa), 9h. (Florence), 11h. (Kew, Zagreb, Granada, Ekaterinburg, Strasbourg, De Bilt, Pulkovo, Stuttgart, Piacenza, Kucino, Uccle, Plaisance, Copenhagen, Feldberg, and Florence), 12h. (Irkutsk, Baku, Strasbourg, Kucino, Ekaterinburg, Uccle, Kucino, Feldberg, Alicante, and Bombay), 13h. (San Fernando, De Bilt, and Kew), 14h. (Irkutsk, Koti, Hukuoka, Matuyama), 15h. (Ekaterinburg), 16h. (San Fernando), 18h. (Florence), 20h. (Granada and Andijan), 21h. (Irkutsk, Ekaterinburg, Phu-Lien, La Paz), 23h. (Florissant).

April 26d. 16h. 18m. 18s. Epicentre 51°·7N. 179°·3E. R1.

(as on 1930 Feb. 2d.).

Probable error ±0°·3.

A = −·620, B = +·008, C = +·785 ; D = +·012, E = +1·000 ;
G = −·785, H = +·010, K = −·620.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		24·1	272	5 9	− 2	(9 27)	+ 2	9·4	10·6
Sitka	E.	26·4	60	—	—	e 10 12	+ 7	15·4	—
Mizusawa	E.	29·2	260	6 1	+ 3	12 45	?	—	—
Vladivostok		32·5	275	i 5 22	−65	10 46	−57	13·2	—
Toyooka		35·3	262	i 6 52	0	—	—	16·2	19·0
Honolulu T.H.	E.	35·3	141	—	—	i 12 18	− 8	e 14·7	—
Osaka		35·4	260	6 57	+ 4	(12 38)	+11	12·6	18·9
Kobe		35·7	260	1 6 58	+ 3	12 34	+ 2	e 17·7	—
Sumoto		36·1	260	e 6 43	−16	e 12 35	− 3	e 14·9	18·9
Victoria		36·1	71	6 58	− 1	12 38	0	16·8	17·3
Koti		37·4	260	e 7 10	0	e 11 50	− 7	e 15·7	—
Hukuoka		39·3	264	7 24	− 2	e 13 35	+ 9	e 17·5	—
Nagasaki		40·2	263	e 7 34	0	e 13 49	+10	e 19·5	—
Berkeley		42·4	85	e 7 50	− 2	e 14 11	0	e 17·3	e 19·6
Irkutsk		44·0	302	i 8 8	+ 3	14 39	+ 3	19·7	27·0
Zi-ka-wei	Z.	46·5	269	i 8 22	− 3	15 17	+ 5	23·0	26·7
Tucson		53·2	84	e 9 18	+ 3	16 43	− 2	23·0	—
Hong Kong		57·4	266	9 48	+ 2	17 40	− 2	28·0	31·9
Manila		59·2	255	i 9 55	− 4	i 17 55	−10	26·2	34·9
Chicago		60·2	60	e 10 8	+ 2	i 18 13	− 6	e 26·8	—

Continued on next page.

		Δ	Az.	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
		°	°						
Ekaterinburg		60·4	326	i 10 6	− 1	i 18 24	+ 3	24·7	35·3
Florissant		60·8	64	i 10 6	− 4	i 18 19	− 7	—	28·4
St. Louis		61·0	64	e 10 6	− 5	i 18 20	− 9	— e	28·4
Ann Arbor		61·8	56	e 10 18	+ 1	e 18 42	+ 3	e 29·3	33·4
Toronto		63·0	52	i 10 26	+ 1	i 18 49	− 6	29·9	35·2
Phu-Lien		63·2	271	e 10 27	0	—	—	29·7	—
Ottawa		63·5	49	e 10 24	− 5	i 18 57	− 4	e 29·2	34·7
Almata		63·8	308	10 33	+ 2	19 15	+10	31·7	—
Pulkovo		65·8	345	10 43	− 1	19 30	0	33·7	40·7
Apia		66·0	170	—	—	19 26	− 6	31·1	33·0
Helsingfors		66·3	347	e 10 45	− 2	i 19 35	− 1	e 27·7	—
Upsala		67·5	350	e 10 53	− 2	e 19 51	0	e 30·7	43·4
Charlottesville	N.	67·7	56	—	—	e 19 54	+ 1	e 28·8	—
Bergen		67·8	356	11 2	+ 5	20 1	PS	24·7	—
Fordham		67·8	52	e 10 56	− 1	i 19 48	− 6	e 31·2	40·9
Kucino		67·9	338	10 45	−13	19 45	−11	32·7	43·0
Andijan		67·9	309	11 0	+ 2	20 6	+10	27·7	—
Harvard		68·0	49	e 10 49	− 9	i 19 56	− 1	e 29·9	—
Tashkent		69·0	311	i 10 54	−11	i 19 54	−15	33·2	42·7
Tacubaya		69·7	85	11 11	+ 2	20 12	− 6	35·0	—
Dyce		71·1	1	11 17	0	i 20 35	+ 1	e 32·5	40·6
Samarkand		71·4	312	i 11 20	+ 1	i 20 40	+ 2	—	—
Konigsberg		72·0	348	i 11 26	+ 3	i 21 25	PS	e 26·0	42·8
Lund		72·1	353	11 27	+ 4	20 47	+ 1	—	—
Copenhagen		72·2	353	11 24	0	20 47	0	—	—
Edinburgh		72·4	2	e 11 45	+20	20 54	+ 4	33·7	48·5
Dehra Dun		73·0	298	11 42	+13	21 12	PS	37·3	43·7
Calcutta	E.	73·0	285	e 11 13	−16	—	—	40·4	—
Hamburg		74·4	354	i 11 38	+ 1	i 21 14	+ 1	e 31·2	47·7
Stonyhurst		74·4	0	11 43	+ 6	21 15	+ 2	38·7	—
Bidston		74·9	0	i 11 42	+ 2	i 21 14	− 5	e 28·5	44·9
Potsdam		75·3	351	e 12 12	+30	e 21 12	−12	e 30·7	41·7
Agra	E.	75·5	296	11 16	−27	20 46	−40	38·2	47·1
	N.	75·5	296	11 11	−32	20 43	−43	39·8	46·7
De Bilt		76·1	356	11 47	0	21 33	0	e 37·7	44·9
Gottingen		76·4	355	e 11 48	0	e 21 34	− 2	e 37·7	51·7
Oxford		76·6	0	e 11 49	0	e 21 35	− 3	e 35·3	54·7
Kew		76·8	359	i 11 51	+ 1	e 21 40	− 1	31·7	54·7
Jena	E.	76·9	353	e 11 54	+ 3	e 22 12	PS	e 39·7	49·2
	N.	76·9	353	e 11 50	− 1	e 22 4	PS	e 40·3	41·7
Uccle		77·4	357	11 53	− 1	e 21 46	− 1	e 36·7	42·9
Cheb		77·6	351	e 12 56	+61	e 21 52	+ 3	e 34·7	50·2
Feldberg	N.	77·8	355	i 11 48	− 9	—	—	—	51·7
Baku		78·0	324	i 11 59	+ 2	i 21 57	+ 3	39·2	—
Theodosia		78·4	335	e 12 0	+ 1	e 22 13	+15	e 39·7	—
Simferopol		78·8	335	12 3	+ 2	e 22 15	+12	40·7	—
Vienna		79·0	349	e 12 2	− 1	23 4	− 1	e 43·7	56·7
Karlsruhe		79·0	355	12 5	+ 2	—	—	e 46·7	—
Stuttgart		79·2	355	e 12 0	− 4	i 22 2	− 5	e 40·2	50·2
Yalta		79·2	335	12 7	+ 3	—	—	60·7	—
Budapest		79·4	347	12 5	0	22 23	+14	27·7	51·7
Paris		79·4	358	e 12 4	− 1	i 23 8	PS	27·7	56·7
Strasbourg		79·5	355	12 5	0	22 10	0	35·7	52·2
Graz		80·2	349	e 12 13	+ 4	e 22 45	PS	31·7	50·0
Innsbruck		80·5	352	e 12 12	+ 2	—	—	—	—
Zurich		80·6	355	e 12 11	0	e 22 22	0	—	—
Besançon		81·0	356	—	—	e 22 21	− 5	33·7	—
Chur		81·1	355	e 12 14	0	e 22 28	+ 1	—	—
Neuchatel		81·1	354	e 12 14	0	e 22 23	− 4	—	—
Medan		81·4	266	(i 12 2)	−13	(i 22 10)	−21	(39·7)	—
Zagreb		81·5	349	e 13 17	+61	e 22 24	− 8	e 41·4	45·5
Belgrade		81·8	345	e 12 18	+ 1	e 22 32	− 3	e 44·2	—
Treviso		82·0	350	i 12 20	+ 2	e 22 42	+ 5	50·7	—
Venice		82·2	350	e 12 19	0	e 22 42	+ 3	—	—
Padova		82·3	350	e 12 24	+ 4	i 22 45	+ 5	e 50·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hyderabad		82·9	290	12 20	− 3	22 8	−38	41·2	52·6
Piacenza		82·9	351	12 26	+ 3	22 45	− 1	31·7	53·0
Florence		84·0	351	i 12 27	− 1	22 54	− 4	—	43·7
Batavia		84·2	253	i 12 54	+25	i 23 16	+16	—	—
Bombay		84·9	295	12 34	+ 1	i 23 5	− 2	44·3	53·0
Rome		85·8	350	12 41	+ 4	e 23 12	− 4	e 53·6	54·6
Rocca di Papa		85·9	350	i 12 38	0	e 22 59	[− 7]	e 44·7	52·7
Naples		86·6	349	(e 15 0)	PP	(e 23 0)	[−11]	45·7	55·7
Barcelona		86·8	357	—	—	e 24 37	PS	—	33·5
Tortosa	N.	87·5	359	12 49	+ 4	24 43	PS	e 41·7	66·0
Toledo		88·4	3	e 12 37	−13	e 23 23	[0]	e 39·9	54·0
Ksara		88·6	330	12 54	+ 3	23 26	[+ 2]	42·7	—
Riverview		89·0	203	i 12 51	− 2	e 23 8	[−18]	e 40·2	44·7
Sydney	E.	89·0	203	14 12	?	23 54	+ 8	43·0	46·8
Kodaikanal		89·2	285	e 26 12	?	—	—	e 58·8	62·4
Catania		89·7	347	—	—	e 24 9	+16	e 47·7	59·6
Alicante		90·0	0	e 13 3	+ 6	e 25 15	PS	e 46·3	—
Colombo		90·4	282	23 31	S	(23 31)	[− 4]	—	57·2
Granada		91·1	3	i 13 3	0	e 24 8	+ 2	e 45·2	52·8
Algiers		91·4	357	—	—	23 55	−14	48·7	61·7
Almeria		91·5	3	e 13 13	+ 9	24 6	− 4	47·5	56·1
Malaga		91·5	3	13 10	+ 6	23 36	[− 5]	29·9	58·5
San Fernando		91·8	5	12 41	−25	24 11	− 2	47·7	63·7
Wellington		93·0	184	—	—	23 34	[−16]	43·7	47·7
Adelaide		93·6	210	—	—	i 24 7	{+ 3}	43·0?	49·5
Melbourne		94·4	206	—	—	i 24 23	{+13}	39·8	42·5
La Paz		116·8	84	e 19 3	[+26]	i 25 35	[− 5]	56·7	79·1
Tananarive		130·1	293	—	—	e 32 31	PS	70·6	75·5
Rio de Janeiro		136·6	66	e 22 2	PKS	—	—	e 52·4	81·7

Additional readings and notes :—
Ootomari S = +7m.55s.
Sitka eE = +6m.50s. and +11m.33s.
Toyooka iP = +6m.55s.
Honolulu T.H. ePPN = +7m.52s., iSN = +12m.15s., eSS = +13m.56s.
Kobe SN = +12m.31s., eN = +15m.22s.
Koti eSN = +12m.54s.
Berkeley eN = +7m.52s., eE = +7m.56s., +9m.33s. = PP + 8s., and +10m.53s.
Zi-ka-wei PPZ = +10m.10s., SSZ = +18m.52s.
Tucson eN = +19m.0s. = S_cS − 6s., eE = +20m.16s. = SS − 1s.
Manila PS = +18m.12s.
Chicago iSN = +18m.19s., eN = +24m.42s.
Florissant iEN = +19m.54s. = S_cS − 4s.
St. Louis iEN = +19m.55s. = S_cS − 4s.
Ann Arbor i = +20m.6s. = S_cS + 1s., eSS?N = +23m.36s., eSSS = +26m.6s. ; T_o = 16h.18m.12s.
Toronto iN? = +9m.49s., +10m.42s.?, and +20m.13s. = S_cS − 1s., eE = +10m.57s., iSN = +18m.56s., SSSE = +25m.45s., SSSN = +25m.53s. ; T_o = 16h.18m.18s.
Ottawa iN = +20m.12s. = S_cS − 6s., SSS = +26m.6s. ; T_o = 16h.18m.10s.
Helsingfors ePPPN = +14m.55s., ePPPE = +14m.57s., PSEN = +20m.8s., S_cSN = +20m.51s., iN = +24m.6s.
Upsala SSN = +25m.7s., SSS = +27m.38s.
Fordham iN = +19m.54s. = PS − 15s., and +20m.48s. = S_cS − 1s.
Harvard iN = +20m.42s. = S_cS − 8s., SSS = +27m.27s. ; T_o = 16h.18m.0s.
Dyce SS = +25m.36s.
Konigsberg iPPPN = +15m.55s., iN = +21m.42s.
Lund +15m.55s.
Copenhagen +25m.36s. = SS + 20s.
Hamburg ePPPZ = +16m.20s., eSS = +26m.32s.
Bidston iSS = +25m.50s.
De Bilt eSSN = +27m.2s.
Gottingen eSS = +26m.42s.?
Oxford i = +11m.54s., e = +27m.13s.
Kew PSN = +22m.38s., SSN = +27m.18s.
Jena iPZ = +11m.53s., iPN = +11m.54s., eN = +27m.0s.
Uccle PP = +16m.47s., SS = +27m.18s.
Vienna PPP = +18m.13s.

Continued on next page.

Stuttgart iPNZ = +12m.4s., iNZ = +12m.17s., ePPNZ = +15m.18s., ePPPNZ = +17m.51s., iPS = +22m.34s., ePPSNZ = +23m.2s., eSS = +27m.27s.
Strasbourg PP = +15m.13s., PS = +22m.50s., SS = +27m.58s.
Medan all readings have been *increased* by 2m.
Zagreb e = +22m.38s., eNW = +23m.18s. =PS +10s., ePSNE = +23m.38s., e = +28m.12s.
Belgrade e = +22m.37s.
Batavia i = +13m.30s.
Naples P and S have been *increased* by 6m.
Ksara PPE = +16m.32s., PPPE = +18m.52s., PPPPE = +20m.19s., PSN = +25m.5s., SSE = +29m.54s., SSSN = +34m.26s., SSSSN = +36m.40s.
Sydney S is given as L and PS is given as M., M = +24m.42s. =PS +2s.
Riverview iSKKS = +23m.37s., eSSN = +28m.54s., eSSSE = +32m.54s., eSSSSN = +35m.18s.
Granada PP = +16m.57s., G = +31m.18s.
Almeria PP = +16m.41s.
Wellington e = +31m.2s.
Adelaide eSS = +30m.22s., eSSS = +34m.42s., i = +37m.9s.
Melbourne e = +23m.45s. =SKS −13s., i = +31m.9s.
La Paz iPPZ = +19m.53s., iPSZ = +29m.30s., iZ = +30m.51s., iSSZ? = +36m.20s.
Tananarive eE = +34m.11s., eSS = +39m.13s., eN = +47m.11s.
Long waves were also recorded at Scoresby Sund, Cape Town, La Plata, Taihoku, and Tyosi.

April 26d. Readings also at 0h. (Andijan and Taihoku), 2h. (La Paz and Nagasaki), 3h. (Tortosa), 5h. (Simferopol, Theodosia, and Yalta), 6h. (Pulkovo, Rome, Rocca di Papa, Stuttgart, and Oxford), 7h. (Reykjavik (3), Copenhagen, Lund, Scoresby Sund, Kew, Bidston, Stonyhurst, Edinburgh, Dyce, Baku, Kucino, San Fernando, Granada, Zagreb, Strasbourg, Piacenza, Paris, Feldberg, Uccle, Cheb, De Bilt (3), Hamburg, Helsingfors, Florence, Ottawa, Harvard, Fordham, and Florissant), 8h. (Wellington), 10h. (Florence), 11h. (Copenhagen, Baku, Pulkovo, Stuttgart, Granada, Messina, Strasbourg, Paris, Feldberg, De Bilt, Uccle, Wellington, and Nagasaki), 12h. (Irkutsk and Messina), 13h. (Tacubaya and Messina), 14h. (Messina and Tacubaya), 15h. (Budapest, Zurich, Neuchatel, Naples, Scoresby Sund, Rocca di Papa, Rome, Mineo, Trenta (3), Zagreb, Florence, Tacubaya, and Ottawa), 16h. (Uccle, De Bilt, Feldberg, Strasbourg, Stuttgart, Copenhagen, and Mizusawa), 17h. (Scoresby Sund, Medan, Batavia, and La Paz), 19h. (Agra and Bombay), 21h. (La Paz).

April 27d. 1h. 46m. 44s. Epicentre 40°·0N. 12°·5E. (as on 1925 Sept. 24d.). X.

A = +·748, B = +·166, C = +·643.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Casamicciola	1·3	55	− 1 4	?	−0 54	?	—	−0·7
Naples	1·6	58	−e 0 5	?	−e 0 3	?	—	1·3
Rocca di Papa	1·7	3	i 0 22	− 2	i 0 40	− 4	e 0·8	1·1
Benevento	1·8	50	(i 0 46)	P_g	—	—	—	(0·9)
Rome	1·9	0	e 0 27	− 2	0 52	+ 3	1·0	1·7
Trenta	3·0	104	i 0 26	−17	1 1	−16	—	—
Messina	3·0	127	0 51	P*	—	—	—	—
Catania	3·2	141	e 1 9	P_g	—	—	—	—
Florence	3·9	346	—	—	e 1 51	S*	—	2·4
Padova	5·4	355	e 1 44	P_g	e 4 9	?	—	—
Zagreb	6·3	22	e 1 31	+ 1	e 2 45	+ 4	—	e 2·9
Zurich	7·9	340	—	—	e 3 16?	− 5	—	—

Notes:—
Casamicciola and Naples readings are anomalous.
Benevento readings have been *increased* by 1m.
Long waves were also recorded at De Bilt, Granada, and Stuttgart.

April 27d. 9h. 56m. 41s. Epicentre 7°·7S. 106°·5E. (as on 1927 Sept. 8d.). R.3.

A = −·281, B = +·950, C = −·134; D = +·959, E = +·284;
G = +·048, H = −·128, K = −·991.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		1·2	66	i 0 14	− 3	i 0 29	− 2	—	—
Batavia		1·5	12	i 0 27	+ 6	i 0 39	0	—	—
Medan		13·7	325	4 3	+52	i 7 13	?L	(i 7·2)	—
Manila		26·5	33	i 5 31	− 3	i 10 15	+ 8	—	—
Zi-ka-wei	z.	41·4	20	(e 9 47)	(+ 1)	(14 5)	+ 8	(14·5)	(16·4)
Bombay		42·5	310	7 43	−10	13 53	−20	20·7	24·6
Andijan		57·7	330	e 9 54	+ 6	—	—	—	—
Tashkent		59·7	328	—	—	i 18 25	+13	e 30·3	36·8
Samarkand		59·8	327	e 9 39	−24	—	—	—	—
Irkutsk		60·0	358	e 9 30	−34	e 17 46	−30	29·3	36·5
Baku		70·8	319	e 10 31	−45	i 20 2	−29	32·3	44·0
Kucino		84·7	328	—	—	e 22 44	−21	e 46·2	—

Additional readings and note:—
Medan i = +4m.35s.
Zi-ka-wei readings have been *diminished* by 12m.
Tashkent e = +8m.25s. and +16m.31s.
Long waves were also recorded at De Bilt, Stuttgart, Copenhagen, Scoresby Sund, Hong Kong, Phu-Lien, and Melbourne.

April 27d. 14h. 26m. 24s. Epicentre 33°·5S. 59°·0E. N:1.
Probable error ±0°·3.

A = +·430, B = +·715, C = −·552; D = +·857, E = −·515;
G = −·284, H = −·473, K = −·834.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive		17·8	322	4 6	+ 2	e 7 22	+ 2	e 7·9	9·3
Cape Town		33·5	260	—	—	e 11 44	−14	16·7	18·1
Colombo		45·0	30	15 5	S	(15 5)	+15	—	22·7
Kodaikanal		47·2	25	e 16 0	S	(e 16 0)	+39	e 25·7	33·1
Batavia		52·0	70	i 9 37	−29	17 6	+38	26·6	—
Medan		52·8	54	i 10 12	(−14)	i 17 44	?	26·6	—
Bombay		54·1	17	9 31	+ 9	17 1	+ 4	27·7	28·9
Hyderabad		54·2	23	9 27	+ 4	17 3	+ 5	26·0	32·2
Calcutta	E.	62·6	31	e 9 0	−82	18 42	− 8	32·0	—
Adelaide		64·0	116	e 10 59	+27	i 19 24	+17	30·2	34·3
Dehra Dun		66·4	19	3 16	?	16 16	?	33·1	34·6
Melbourne		67·4	121	e 10 56	+ 2	—	—	31·7	35·2
Helwan		68·6	335	11 2	0	e 20 12	+ 8	—	42·0
Ksara		70·8	340	11 17	+ 1	20 42	+11	33·6	—
Phu-Lien		70·8	47	e 11 20	+ 4	20 36?	+ 5	34·6	—
Samarkand		73·5	7	e 11 34	+ 2	—	—	—	—
Riverview		73·7	120	e 11 48	+15	e 21 6	+ 1	e 35·7	38·4
Sydney	E.	73·7	120	21 42	PS	—	—	37·4	39·9
Baku		74·4	354	i 11 38	+ 1	e 20 28	−45	23·6	41·3
Andijan		75·3	11	e 11 44	+ 2	—	—	—	—
Tashkent		75·4	9	i 11 41	− 2	i 21 23	− 2	e 36·6	43·9
Manila		76·1	61	i 11 49	+ 2	i 21 36	+ 3	35·0	41·5
Hong Kong		76·7	51	11 50	0	21 39	0	e 36·6	48·5
Almata		78·5	14	e 11 44	−16	—	—	—	—
Theodosia		81·4	345	12 15	0	—	—	—	—
Simferopol		81·6	345	12 15	− 1	—	—	—	—
Wellington		84·8	138	12 38	+ 6	22 53	[− 5]	40·6	43·6
Rocca di Papa		86·5	330	e 12 41	0	18 6	PPP	e 50·6	67·6
Rome		86·6	330	e 12 44	+ 3	—	—	—	—
Rio de Janeiro		87·0	245	e 23 4	S	(e 23 4)	[− 9]	e 40·0	—

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.	87·5	50	i 12 44	− 1	—	—	44·0	49·0
Zagreb		88·3	333	e 12 48	− 1	e 23 29	[+ 7]	—	53·6
Budapest		88·6	336	12 51	0	—	—	—	—
Florence		88·7	330	12 48	− 3	23 46	+ 2	—	52·6
Piacenza		90·4	331	13 3	+ 4	23 59	− 1	—	65·1
Alicante		90·6	320	—	—	e 24 0	− 2	e 50·5	—
Almeria		90·7	317	e 12 46	−15	(24 15)	+12	46·9	52·9
Kucino		91·0	350	13 7	+ 5	24 9	+ 4	40·8	51·1
Barcelona		91·4	323	e 12 47	−17	—	—	—	—
Granada		91·6	316	13 23	+18	23 54	{+ 6}	—	53·6
Malaga		91·8	316	13 4	− 2	24 8	− 5	32·6	56·6
Tortosa	N.	91·8	321	—	—	e 24 12	− 1	e 47·6	52·7
San Fernando		92·6	315	13 5	− 4	24 5	{+10}	52·6	59·1
Zurich		92·6	329	e 13 9	0	—	—	—	—
Stuttgart		93·4	331	13 11	− 2	e 24 24	− 4	—	60·6
Toledo		93·6	319	e 13 13	− 1	e 24 22	− 7	e 41·3	61·4
Strasbourg		93·9	330	13 14	− 1	24 38	+ 6	27·6	—
Irkutsk		94·4	26	13 18	0	23 36?	[−22]	44·6	51·9
Feldberg	N.	94·8	331	e 13 9	−11	—	—	—	—
Paris		96·4	328	e 13 28	+ 1	—	—	52·6	65·6
Hamburg		96·8	335	e 17 17	PP	—	—	e 56·6	63·6
Uccle		97·0	330	—	—	e 24 36?	{+ 6}	—	—
Copenhagen		97·6	338	16 48	PP	24 12	[− 2]	45·6	—
De Bilt		98·2	331	13 31	− 4	—	—	e 48·6	61·0
Kew		99·5	328	e 13 42	+ 1	—	—	e 54·6	—
Vladivostok		101·4	45	—	—	e 24 37	[+ 4]	e 58·6	—
Edinburgh		103·8	330	—	—	e 24 36?	[− 8]	e 56·6	—
La Paz	E.	109·0	235	—	—	1 28 26	PS	53·7	59·1
Scoresby Sund		118·4	339	20 6	PP	29 42	PS	—	—
Fordham		142·2	296	e 22 35	PP	e 41 15	SS	70·1	—
Ottawa		143·6	303	e 19 30	[0]	e 41 18	SS	76·6	—
Georgetown	Z.	144·3	292	i 19 32	[0]	i 22 50	PP	e 73·7	82·8
Florissant		154·8	291	i 19 44	[− 4]	—	—	e 75·6	—

Additional readings :—
Tananarive PP = +4m.16s., SS = +7m.50s.
Medan iE = +19m.8s. = S_cS +5s.
Riverview e = +12m.40s.
Manila iPE = +11m.51s., iPN = +11m.55s.
Rocca di Papa S? = +14m.54s.
Almeria iS = +25m.48s.
Strasbourg P? = +17m.6s. = PP +10s.
Irkutsk ePP = +16m.44s., iPPS = +26m.2s., eSS = +30m.36s.
Hamburg iZ = +17m.28s. = PP +10s.
De Bilt ePPZ = +17m.35s.
Vladivostok e = +26m.11s.
Florissant eZ = +22m.4s., iPPZ = +23m.45s., eZ = +25m.8s.
Long waves were also recorded at several European stations, also Chicago, Sitka, Tucson, and Victoria.

April 27d. 21h. 37m. 43s. Epicentre 7°·6S. 128°·3E. (as on 1926 June 24d.). R.3.

A = −·614, B = +·778, C = −·132 ; D = +·785, E = +·620 ; G = +·082, H = −·104, K = −·991.

A depth of focus 0·020 has been retained.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	−0·9	21·3	272	e 5 3	+29	—	—	i 10·3	—
Manila	−1·0	23·3	342	i 4 52	− 2	i 9 0	+ 8	—	—
Adelaide	−1·3	29·0	162	e 5 41	− 3	i 10 17	−10	12·0?	18·3
Medan	−1·4	31·6	290	6 43	+36	14 25	L	(14·4)	—
Hong Kong	−1·5	32·9	336	6 52	+35	—	—	—	14·9

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.
Riverview		−1·5	33·7	143	e 6 27	+ 3	i 11 29	− 9	—	17·9
Sydney	E.	−1·5	33·7	143	11 17	S	(11 17)	−21	18·0	22·1
Melbourne		−1·5	33·8	154	e 8 30	?	i 11 37	− 3	—	19·1
Phu-Lien		−1·6	35·5	324	6 17?	−22	—	—	—	—
Zi-ka-wei	Z.	−1·7	39·3	353	e 7 10	− 2	—	—	—	—
Vladivostok		−2·4	50·8	4	e 8 38	− 1	e 15 40	+ 2	—	—
Bombay		−2·4	60·7	299	e 6 0	?	12 12	?	19·0	—
Irkutsk		−2·5	63·3	344	10 10	0	e 18 28	+ 2	e 32·3	—
Tashkent		−2·6	72·8	319	i 11 13	+ 1	i 20 32	+ 8	e 34·3	38·7
Baku		−2·7	86·2	312	i 12 29	+ 3	22 46	[−22]	e 40·3	—
Kucino		−2·8	96·5	326	e 13 10	− 4	23 48	[−20]	29·4	50·4
Pulkovo		−2·9	100·6	330	e 17 39	PP	e 23 56	[−33]	41·3	—
Copenhagen		—	110·7	328	18 17?	[− 3]	28 11	PS	52·3	—
Hamburg		—	112·6	326	—	—	e 26 27?	{+ 2}	—	—
Scoresby Sund		—	114·3	350	18 17?	[−14]	—	—	—	—
Florence		—	114·6	316	e 18 17	[−15]	—	—	—	28·3
De Bilt		—	115·9	325	e 19 41	PP	e 29 41	PS	e 57·3	—
La Paz	E.	—	150·9	146	e 19 38	[− 5]	—	—	—	—

Additional readings :—
Manila iPEN = +4m.54s., iEN = +5m.30s., iP$_e$PN? = +8m.28s.
Adelaide i = +6m.7s., iPP = +6m.21s., i = +10m.51s., iSS = +11m.17s.
Kucino SS = +31m.5s.
Long waves were also recorded at Strasbourg and Rocca di Papa.

April 27d. Readings also at 3h. (Rocca di Papa and Tyosi), 4h. (La Paz), 8h. (Florence and Manila), 13h. (Fordham, Perth, and Wellington), 16h. (Copenhagen), 17h. (Amboina and Sumoto), 20h. (Perth).

April 28d. 12h. 59m. 27s. Epicentre 32°·0N. 100°·0E. (as on 1919 Aug. 25d.). X.

A = −·148, B = +·835, C = +·530 ; D = +·985, E = +·174 ;
G = −·092, H = +·522, K = −·848.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	20·5	8	4 33	− 2	e 7 53	−23	10·0	—
Tashkent	26·2	300	5 28	− 3	i 10 4	+ 2	e 18·0	19·4
Vladivostok	27·4	57	e 5 41	− 1	—	—	—	—
Pulkovo	52·7	325	e 9 14	+ 2	e 16 33	− 5	27·6	35·0
Zagreb	63·8	310	e 11 14	(+ 6)	—	—	—	43·6
Rocca di Papa	67·5	307	—	—	e 25 25	?	—	26·6
De Bilt	67·6	319	11 1	+ 5	—	—	e 36·6	—

Additional readings :—
Rocca di Papa i = +25m.33s.
Long waves were also recorded at Hong Kong, Phu-Lien, Hyderabad, Bombay, and several of the European, Russian, and American stations.

April 28d. 18h. 34m. 41s. Epicentre **25°·5N. 98°·0E.** R.1.
(as on 1930 Feb. 28d. 22h.).

Probable error ±0°·25.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		9·2	119	e 2 6	− 4	e 4 26	+32	4·7	5·7
Calcutta	E.	9·3	254	1 47	−24	3 37	−19	5·0	6·9
	N.	9·3	254	1 56	−15	3 46	−10	5·4	7·4
Hong Kong		15·1	99	3 19	−11	i 6 24	+ 7	i 7·8	8·1
Agra	E.	17·9	280	3 22	−43	6 57	−25	9·4	11·3
	N.	17·9	280	e 3 32	−33	6 42	−40	8·9	9·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		18·3	290	4 49	+39	8 19	+48	10·5	11·3
Hyderabad		19·9	250	4 33	+ 4	8 13	+ 9	10·3	13·4
Taihoku	E.	21·3	86	e 4 39	− 4	8 45	+13	10·8	13·0
Zi-ka-wei		21·3	69	e 4 41	− 2	8 35	+ 3	11·3	12·1
Medan		21·9	178	i 4 17	−33	i 8 37	− 7	(i 11·5)	—
Manila		24·1	112	i 5 11	0	i 9 27	+ 2	i 11·9	14·1
Bombay		24·2	259	5 22	+10	9 51	+24	13·1	13·6
Almata		24·7	321	i 5 22	+ 5	9 46	+10	—	—
Colombo		25·5	226	5 30	+ 5	10 0	+10	15·6	17·1
Andijan		26·2	311	5 34	+ 3	10 9	+ 7	—	—
Irkutsk		27·2	8	e 5 37	− 3	10 16	− 2	14·3	15·0
Nagasaki		28·6	68	e 5 30	−23	e 11 29	SS	e 13·8	14·6
Hukuoka		29·2	66	—	—	e 11 21	+30	e 14·7	16·5
Samarkand		29·5	306	6 1	0	10 57	+ 1	16·3	—
Koti		31·8	67	—	—	e 12 55	SS	e 15·6	17·2
Vladivostok		32·7	49	e 6 25	− 4	i 11 44	− 2	16·8	18·7
Batavia		32·9	165	6 51	+20	i 17 18	(−14)	—	—
Sumoto		33·0	66	—	—	e 17 36	(+36)	—	18·4
Osaka		33·5	65	12 15	S	(12 15)	+17	18·0	19·0
Ootomari		41·1	46	e 13 47	S	(e 13 47)	− 6	e 21·9	23·4
Baku		42·5	305	7 56	+ 3	14 25	+12	21·3	26·0
Kucino		52·5	321	9 11	+ 1	16 36	+ 1	26·1	29·8
Theodosia		53·3	310	9 18	+ 2	16 52	+ 6	29·3	—
Ksara		53·8	295	9 26	+ 6	17 1	+ 8	—	—
Yalta		54·1	309	9 22	0	—	—	—	—
Simferopol		54·2	309	9 22	− 1	—	—	—	—
Sebastopol		54·6	309	9 21	− 5	—	—	—	—
Pulkovo		57·0	326	i 9 41	− 2	i 17 39	+ 3	28·3	34·3
Helwan		58·4	291	e 9 51	− 2	17 59	+ 4	—	39·8
Helsingfors		59·7	326	i 10 1	− 1	18 13	+ 1	e 28·3	—
Perth		59·9	163	18 19	S	(18 19)	+ 4	—	—
Konigsberg		62·3	320	—	—	e 18 44	− 2	i 34·7	—
Upsala		63·4	327	e 10 30	+ 2	e 18 57	− 3	e 32·3	35·6
Budapest		64·3	314	10 33	− 1	19 12	+ 1	32·0	41·8
Tananarive		66·2	233	—	—	e 19 30	− 5	33·5	45·7
Lund		66·3	323	10 49	+ 2	19 34	− 2	36·3	—
Zagreb		66·7	312	e 10 50	0	e 19 41	0	—	e 37·0
Copenhagen		66·8	323	10 49	− 2	19 42	0	33·0	36·9
Potsdam		67·1	320	—	—	i 19 42	− 4	e 36·3	38·8
Cheb		68·0	319	i 20 0	S	(i 20 0)	+ 3	—	39·3
Hamburg		68·6	321	e 11 0	− 2	i 20 6	+ 2	36·3	38·3
Bergen		69·3	330	—	—	i 20 12	− 1	i 28·1	43·3
Rome		70·2	308	11 13	+ 1	—	—	—	—
Stuttgart		70·4	317	e 11 12	− 1	i 20 22	− 4	e 38·3	—
Florence		70·5	310	11 17	+ 3	20 49	+22	—	40·3
Chur		70·7	315	e 11 16	+ 1	e 20 26	− 4	—	—
Karlsruhe		70·8	317	—	—	i 20 34	+ 3	e 40·3	—
Piacenza		71·2	313	11 19	+ 1	i 21 37	+62	35·3	55·6
Zurich		71·2	315	e 11 19	+ 1	—	—	—	—
Strasbourg		71·4	316	11 18	− 1	i 20 35	− 3	33·3	41·8
Adelaide		71·7	145	—	—	e 15 29	?	e 31·9?	42·7
De Bilt		71·8	320	11 22	0	20 42	− 1	e 37·3	40·3
Neuchatel		72·4	316	e 11 24	− 1	e 20 42	− 8	—	—
Uccle		72·7	319	i 11 27	0	e 20 53	0	e 38·3	40·8
Paris		74·5	319	e 11 37	0	e 21 12	− 2	38·3	39·3
Edinburgh		75·0	325	e 11 39	− 1	21 19?	− 1	39·3	51·3
Kew		75·2	321	i 11 42	+ 1	i 21 22	0	37·3	41·8
Scoresby Sund		75·3	344	11 41	− 1	i 21 22	− 2	43·3	—
Oxford		75·7	321	11 45	+ 1	i 21 27	− 1	e 37·0	49·8
Bidston		76·0	323	12 39	+53	21 29	− 3	30·3	45·3
Melbourne		77·2	144	—	—	e 21 44	− 1	41·8	48·9
Riverview		77·9	137	e 15 19	PP	e 18 37	?	e 37·3	49·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tortosa	N.	78·9	310	—	—	e 21 49	−15	e 36·3	47·8
Alicante		80·3	310	—	—	e 22 22	+ 3	—	—
Toledo		82·5	311	—	—	e 22 38	− 4	e 42·4	48·7
Malaga		84·2	308	e 10 8	−141	e 22 30	[−23]	e 33·5	—
Ottawa		108·8	355	—	—	e 25 7	[− 1]	e 53·3	—
Toronto		110·8	358	—	—	e 25 19?	[+ 2]	55·8	64·3
Fordham		113·2	354	—	—	e 29 19?	PS	49·3	66·8
La Paz	E.	164·3	302	e 19 56	[− 2]	—	—	82·6	105·2

Additional readings and notes:—
Medan i = +8m.25s., +10m.30s.; true L is given as iS.
Manila iPEN = +5m.14s., iE = +9m.37s., iN = +10m.11s. =SS +3s.
Batavia i = +18m.29s. and +20m.42s.
Sumoto e = +12m.47s.
Ootomari eS = +19m.33s.
Helsingfors PPE = +12m.43s., iPPPE = +13m.41s., PSE = +18m.44s., S_cSN = +19m.53s., iE = +22m.13s., and +22m.36s., SSE = +22m.43s.
Tananarive eE = +19m.40s. =PS −7s., and +25m.18s., eSSE = +24m.12s., eN = +24m.59s.
Lund +23m.55s. =SS +9s.
Copenhagen +14m.56s., +24m.2s.
Potsdam eN = +27m.19s.? and +33m.19s. ?
Cheb eS = +27m.35s.
Stuttgart ePPE = +13m.51s., eSSE = +24m.45s., eSSS = +28m.9s.
Strasbourg SS = +25m.19s., SSS = +28m.41s.
De Bilt ePPZ = +14m.4s., eSS = +25m.22s.
Uccle eSS = +25m.32s., eSSS = +29m.12s.
Kew eSSS = +30m.1s.
Scoresby Sund +26m.25s., +29m.7s.
Oxford i = +30m.10s.
Bidston PS = +22m.9s.
Ottawa eE = +34m.19s. ?
Long waves were also recorded at Kodaikanal, Wellington, and several European, American, and Japanese stations.

April 28d. Readings also at 0h. (Wellington), 4h. (Andijan), 5h. (Tananarive), 7h. (La Paz and Rio de Janeiro), 10h. (Florence), 13h. (La Paz, Koti, Zi-ka-wei, and near Manila), 14h. (Copenhagen, De Bilt, Messina (2), and Georgetown), 16h. (Tyosi and La Paz), 17h. (Florence), 19h. (Tananarive), 23h. (La Paz, Manila, and Yalta).

April 29d. 11h. 33m. 50s. Epicentre 34°·7S. 68°·0W. (as on 1929 May 30d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago	2·5	299	0 38	+ 2	1 11	+ 7	1·3	—
La Plata	8·3	94	1 49	− 9	—	—	4·3?	—
La Paz	18·2	359	4 15	+ 6	1 7 41	+12	9·8	11·2

Long waves were also recorded at Rio de Janeiro.

April 29d. Readings also at 0h. (Phu-Lien and near Tacubaya), 3h. (Phu-Lien), 5h. (near Tortosa (2)), 7h. (near Manila), 8h. (Baku, Pulkovo, Irkutsk, Scoresby Sund, Florissant, and Ottawa), 9h. (Copenhagen, De Bilt, Strasbourg, Kucino, Fordham, and Harvard), 10h. (near Kobe, Sumoto, and Toyooka), 11h. (near Mizusawa, Tukuba, Tokyo, and Tyosi), 14h. (near Manila), 17h. (San Fernando and near Nagasaki), 18h. (near Sumoto), 19h. (Jena and near Zagreb), 20h. (near Lick).

April 30d. 16h. 6m. 4s. Epicentre 19°·0S. 177°·0W. (as on 1929 Feb. 20d.). R.3.

A = −·944, B = −·049, C = −·326; D = −·052, E = +·999;
G = +·325, H = +·017, K = −·946.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		7·3	45	1 45	+ 1	2 45	−21	—	2·9
Wellington		23·3	196	5 0	− 4	8 50	−20	i 15·8	—
Riverview		31·9	236	e 6 27	+ 5	i 11 34	0	e 14·1	17·9
Sydney	E.	31·9	236	5 56	−26	—	—	14·4	16·5
Melbourne		38·5	232	i 7 18	− 1	i 17 16	(−17)	21·6?	28·6
Adelaide		42·2	238	—	—	i 14 3	− 6	20·4	21·9
Honolulu T.H.	N.	44·5	26	—	—	(e 13 50)	−53	e 13·8	—
Perth		60·7	243	3 56	?	—	—	—	—
Manila		69·7	294	i 11 8	− 1	i 16 30	?	21·1	—
Sumoto		70·2	320	e 10 46	−26	—	—	—	—
Kobe		70·3	320	e 10 51	−22	—	—	—	—
Nagasaki		72·5	315	11 23	− 3	13 56	PP	—	—
Batavia		74·9	269	i 12 1	+21	i 21 57	+38	—	—
Vladivostok		77·8	324	i 11 52	− 5	i 21 41	−11	—	—
Hong Kong		78·9	299	11 59	− 3	e 21 59	− 5	—	—
Tucson		81·4	51	12 34	+19	22 6	−25	32·1	—
Phu-Lien		84·7	294	11 56?	−36	—	—	—	—
Medan		85·8	276	i 11 22	−15	—	—	—	—
Irkutsk		98·3	322	e 13 29	− 7	23 56	[−21]	e 47·9	—
Florissant		99·3	52	i 13 59	+19	—	—	e 48·9	65·9
La Paz	E.	101·6	112	e 14 12	+21	i 24 1	[−32]	44·4	49·2
Chicago	E.	102·3	50	—	—	i 24 0	[−37]	—	—
Toronto	N.	108·4	49	—	—	e 25 56?	{ 0}	48·7	—
Hyderabad		108·9	283	19 0	PP	24 48	[−20]	29·4	35·1
Georgetown	Z.	109·4	54	—	—	i 27 59	PS	e 52·7	57·5
Ottawa	E.	111·0	48	—	—	e 24 44	[−34]	56·9	—
Fordham		112·1	52	—	—	e 24 44	[−39]	49·1	52·4
Almata		114·4	310	e 19 21	PP	—	—	—	—
Bombay		114·4	283	e 19 32	PP	25 9	[−22]	30·3	—
Andijan		117·7	306	e 18 33	[− 7]	—	—	—	—
Tashkent		120·0	308	e 15 8	−11	e 26 39	{−37}	55·9	58·9
Samarkand		121·8	306	e 18 44	[− 6]	—	—	—	—
Ekaterinburg		123·3	326	i 18 42	[−12]	i 25 34	[−26]	51·9	—
Scoresby Sund		126·4	10	18 50	[−10]	28 40	{+42}	—	—
Baku		134·7	309	e 19 7	[− 7]	—	—	e 49·9	—
Pulkovo		134·8	340	i 19 5	[−10]	—	—	39·9	—
Kucino		134·9	333	—	—	e 29 32	?	e 45·9	49·9
Helsingfors	E.	136·0	345	e 23 20	PKS	—	—	—	—
Upsala		137·8	350	i 22 45	PKS	e 23 27	?	—	—
Bergen		138·6	359	—	—	(e 35 56?)	?	e 35·9	—
Lund		142·5	350	17 56?	?	—	—	—	—
Copenhagen		142·6	350	19 15	[−11]	—	—	59·9	—
Theodosia		142·6	321	19 21	[− 5]	—	—	—	—
Edinburgh		143·0	6	e 19 56?	[+28]	—	—	—	—
Simferopol		143·4	321	19 32	[+ 3]	—	—	—	—
Yalta		143·6	312	19 25	[− 5]	—	—	—	—
Sebastopol		144·0	321	19 26	[− 5]	—	—	—	—
Hamburg	Z.	145·0	352	i 19 25	[− 9]	—	—	—	—
De Bilt	Z.	146·9	358	e 19 28	[− 9]	—	—	—	—
Oxford		147·1	4	i 19 34	[− 3]	—	—	—	—
Ksara		147·2	305	19 34	[− 3]	23 4	PKS	—	—
Kew		147·5	4	e 19 29	[− 9]	—	—	—	—
Uccle		148·2	358	i 19 30	[− 9]	—	—	—	—
Feldberg	N.	148·5	355	e 19 23	[−17]	—	—	—	—
Budapest		148·7	339	19 32	[− 8]	—	—	—	—
Karlsruhe		149·7	353	19 39	[− 2]	—	—	—	—
Stuttgart	Z.	149·9	352	i 19 29	[−13]	—	—	—	—
Strasbourg		150·2	352	i 19 33	[− 9]	e 29 56?	{−27}	33·9	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Paris	150·3	1	e 18 14	[−88]	—	—	40·9	42·9
Zagreb	151·1	341	e 19 38	[− 5]	—	—	—	—
Zurich	151·4	352	e 19 36	[− 7]	—	—	—	—
Chur	151·7	350	e 18 59	[−45]	—	—	—	—
Neuchatel	151·9	354	e 19 36	[− 8]	—	—	—	—
Florence	154·3	346	(19 41)	[− 6]	19 41	[P]	—	—
Granada	161·0	16	i 19 47	[− 8]	—	—	—	—

Additional readings :—
Riverview iE = +7m.48s., iN = +8m.29s., iE = +8m.42s.
Adelaide i = +17m.40s. =S_gS −15s. and +18m.46s.
Honolulu T.H. eLE = +14m.14s. =S −29s.
Manila PPEN = +12m.14s., PPPPEN = +12m.47s., SSSE = +19m.38s.
Batavia iN = +12m.45s., iE = +23m.19s.
Tucson SN = +21m.54s.
Medan i = +11m.46s., +21m.35s., and +22m.11s.
Irkutsk eSS = +31m.56s. ?
La Paz iE = +18m.13s. =PP +18s., PSE = +25m.9s. =SKKS +4s.
Chicago i = +24m.59s. =SKKS −12s.
Toronto iN = +33m.26s.
Georgetown iZ = +28m.19s. =PS −3s.
Ottawa eN = +26m.26s. =SKKS +12s.
Fordham eN = +26m.30s. =SKKS +8s., eE = +28m.12s., e = +32m.16s. and +37m.44s.
Tashkent PS = +30m.6s.
Ekaterinburg iSKKS = +27m.13s.
Scoresby Sund +20m.38s. and +37m.34s. =SS −21s.
Baku iPP = +21m.49s., iPKS = +22m.47s.
Pulkovo iPP = +21m.42s., iPKS = +22m.38s.
Kucino PP = +21m.41s., PKS = +22m.36s., e = +39m.26s. =SS −15s.
De Bilt iZ = +19m.31s. and +20m.10s.
Kew iZ = +19m.33s., eZ = +20m.7s.
Uccle i = +20m.17s.
Feldberg iN = +19m.29s.
Stuttgart iZ = +20m.20s., iNZ = +23m.9s. =PP −11s., eNZ = +27m.20s.
Granada 1 = +20m.43s. =PKP_3 −6s., +21m.48s., and +32m.15s.
Long waves were also recorded at Stonyhurst.

April 30d. 23h. 21m. 20s. Epicentre 42°·5N. 15°·5E. (as on 1924 April 11d.). X.

A = +·710, B = +·197, C = +·676 ; D = +·267, E = −·964 ;
G = +·651, H = +·181, K = −·737.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Casamicciola	2·1	214	(0 23)	− 7	(0 53)	− 1	—	—
Rocca di Papa	2·2	250	e 0 33	P*	1 2	S*	—	1·8
Rome	2·3	255	e 0 29	− 4	—	—	—	—
Trenta	3·3	169	e 1 10	P_g	—	—	—	—
Zagreb	3·3	6	e 0 48	+ 1	e 1 28	S*	—	1·6
Venice	3·7	323	e 1 15	P_g	3 5	?	—	—
Padova	3·9	319	e 2 25	?	—	—	—	—
Vienna	5·7	6	e 2 27	S	(e 2 27)	S*	—	—
Chur	6·0	317	e 1 22	− 3	—	—	—	—
Zurich	6·9	317	e 1 46	+ 8	—	—	—	—

Additional reading and note :—
Rocca di Papa e =23h.21m.30s.
Casamicciola readings have been *diminished* by 2m.

April 30d. Readings also at 2h. (Andijan, Samarkand, and near Tacubaya), 3h. (Taihoku), 4h. (La Paz and Taihoku), 8h. (Andijan), 10h. (Cheb), 11h. (Andijan and near Samarkand), 16h. (Tucson, near Victoria, and near Taihoku), 18h. (San Fernando), 20h. (Andijan and Samarkand), 22h. (near Batavia and Malabar), 23h. (Rocca di Papa, Rome, and Zagreb).

May 1d. 0h. 57m. 47s. (I) } Epicentre 35°·0N. 142°·0E. R.1.
1h. 15m. 48s. (II) } (as on 1928 Dec. 21d.). R.2.
4h. 20m. 25s. (III) } R.2.

Probable error of epicentre for Shock I ±0°·3.

A = −·646, B = +·504, C = +·574; D = +·616, E = +·788;
G = −·454, H = +·353, K = −·819.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Tyosi	1·2	308	0 17	0	—	—	0·4	0·5
II		1·2	308	0 8	− 9	—	—	0·2	0·3
III		1·2	308	0 10	− 7	—	—	0·3	0·3
I	Kiyosumi	1·5	276	0 21	0	—	—	—	—
I	Tukuba	1·9	308	0 23	− 6	—	—	—	—
II		1·9	308	0 16	−13	—	—	—	—
III		1·9	308	0 20	− 9	—	—	—	—
I	Tokyo	2·0	291	0 25	− 4	—	—	—	—
II		2·0	291	0 17	−12	—	—	—	—
III		2·0	291	0 19	−10	—	—	—	—
I	Nagoya	4·2	274	1 13	+13	1 53	+ 5	—	2·2
II		4·2	274	e 0 58	− 2	—	—	—	—
III		4·2	274	0 55	− 5	1 44	− 4	—	2·3
I	Mizusawa	4·2	351	1 6	+ 6	1 44	− 4	—	—
II		4·2	351	0 54	− 6	1 38	−10	—	—
III		4·2	351	0 57	− 3	1 49	+ 1	—	—
I	Osaka	5·4	268	1 17	0	—	—	2·4	3·1
II		5·4	268	1 20	+ 3	—	—	2·5	2·7
III		5·4	268	1 10	− 7	—	—	2·3	2·8
I	Kobe	5·7	268	1 22	+ 1	2 25	0	2·6	3·0
III		5·7	268	e 1 21	0	2 20	− 5	e 2·5	2·6
I	Sumoto	5·9	265	1 24	0	2 37	+ 6	—	3·0
III		5·9	265	1 33	+ 9	2 43	+12	—	2·8
I	Toyooka	5·9	283	i 1 23	− 1	—	—	2·5	2·9
II		5·9	283	1 35	+11	—	—	—	—
III		5·9	283	1 27	+ 3	i 2 19	−12	2·6	2·7
I	Koti	7·2	261	e 1 43	+ 1	e 2 59	− 5	4·0	4·3
III		7·2	261	e 1 39?	− 3	e 2 58?	− 6	—	—
I	Matuyama	7·7	262	e 1 52	+ 3	e 3 9	− 7	i 4·1	—
I	Hukuoka	9·7	265	2 18	+ 1	—	—	4·5	5·3
I	Nagasaki	10·4	261	e 2 27	+ 1	4 27	+ 4	—	5·5
III		10·4	261	—	—	e 3 44	−39	—	—
III	Zi-ka-wei	17·7	264	e 3 52	−11	—	—	—	9·1
I	Taihoku E.	20·3	246	e 4 30	− 3	—	—	8·6	—
I	Hong Kong	27·4	250	5 43	+ 1	10 50	+28	14·8	15·4
I	Manila	27·9	228	i 5 49	+ 3	i 11 30	+60	16·2	19·2
I	Phu-Lien	34·2	258	e 6 43	+ 1	—	—	—	—
I	Calcutta E.	48·1	272	8 29	− 8	16 28	+54	28·6	—
I	N.	48·1	272	8 36	− 1	16 18	+44	28·6	—
III	Almata	49·8	301	8 47	− 3	—	—	—	—
I	Medan	50·9	243	8 13	−45	—	—	27·2	—
I	Batavia	52·9	228	e 9 19	+ 6	i 17 0	+19	—	—
I	Dehra Dun	53·2	284	8 13?	−62	16 43?	− 2	27·2	29·2
I	Andijan	53·8	299	9 28	+ 8	—	—	—	—
III		53·8	299	9 16	− 4	—	—	—	—
I	Agra	54·5	283	e 8 23	−62	15 53	−69	—	33·6
I	Tashkent	55·9	301	i 9 35	0	i 17 14	− 7	e 26·2	33·7
III		55·9	301	e 9 26	− 9	—	—	30·3	33·5
I	Ekaterinburg	56·8	320	i 9 40	− 2	i 17 23	−11	25·2	35·3
III		56·8	320	i 9 33	− 9	17 15	−19	26·1	—
I	Samarkand	58·1	300	9 55	+ 4	17 49	− 2	28·2	—
III		58·1	300	9 51	0	—	—	—	—
I	Hyderabad	58·7	273	10 0	+ 5	17 54	− 5	30·2	36·7
I	Bombay	62·5	276	9 55	−27	18 45	− 3	33·6	40·3
II	Kodaikanal	63·4	267	—	—	18 6	−54	—	—
I	Victoria	67·4	47	11 21	(− 2)	20 1	PS	33·7	34·4
I	Kucino	68·8	325	11 4	+ 1	19 57	−10	31·3	43·8
III		68·8	325	—	—	e 19 49	−18	e 32·2	37·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Riverview	69·4	173	—	—	i 20 25	+11	e 32·5	—
I	Baku	69·6	308	i 11 8	0	e 20 30	+14	35·9	43·7
III		69·6	308	e 11 4	− 4	e 20 18	+ 2	e 35·3	43·5
I	Pulkovo	70·0	331	i 11 12	+ 1	i 20 12	− 9	34·2	43·7
III		70·0	331	11 3	− 8	20 10	−11	36·6	—
I	Adelaide	70·1	184	—	—	i 20 27	+ 5	30·2?	41·7
I	Helsingfors	71·8	333	i 11 25	+ 3	i 20 35	− 8	35·2	—
II	E.	71·8	333	e 11 21	− 1	—	—	—	—
I	Melbourne	72·9	178	—	—	i 21 0	+ 4	32·6	—
I	Scoresby Sund	73·9	356	i 11 39	+ 5	i 21 7	0	38·2	—
I	Upsala	74·8	336	e 11 40	+ 1	e 21 5	−13	e 37·2	43·6
I	Theodosia	76·1	318	e 11 48	+ 1	—	—	—	—
I	Yalta	77·2	318	e 11 56	+ 3	—	—	—	—
I	Sebastopol	77·4	318	e 11 53	− 1	—	—	—	—
I	Bergen	78·3	340	12 58	+59	22 53	+56	e 33·3	—
I	Lund	79·4	335	12 7	+ 2	21 59	−10	38·2	—
I	Copenhagen	79·7	335	12 9	+ 3	22 1	−11	38·2	—
I	Hamburg	82·2	335	e 12 23	+ 4	e 22 28	−11	e 40·2	44·2
I	Ksara	82·5	308	12 20	− 1	e 22 31	−11	33·2	—
I	Budapest	83·1	326	12 27	+ 3	22 37	−11	42·7	—
I	Vienna	83·7	329	e 12 32	+ 5	22 48	− 6	e 34·2	49·2
I	Cheb	84·0	330	—	—	e 22 50	− 8	e 42·2	50·7
I	Tucson	84·1	55	e 12 49	+20	e 23 6	+ 7	e 35·5	—
I	Edinburgh	84·4	343	e 12 43	+13	22 55	[0]	41·2	—
I	De Bilt	85·2	335	12 39	+ 5	23 1	[0]	e 40·2	45·1
I	Feldberg	85·4	333	e 12 33	− 2	e 22 55	[− 7]	—	50·4
I	Zagreb	85·6	326	e 12 38	+ 2	e 23 0	[− 3]	e 43·2	47·0
II		85·6	326	e 15 56	PP	—	—	—	—
I	Stonyhurst	86·0	340	—	—	23 13	[+ 7]	43·2	—
I	Stuttgart	86·3	332	i 12 44	+ 4	e 23 12	[+ 4]	e 42·2	51·0
I	Uccle	86·4	336	i 12 45	+ 5	23 14	[+ 5]	42·2	—
I	Strasbourg	87·1	332	i 12 48	+ 4	23 18	[+ 4]	42·2	—
I	Kew	87·4	339	i 12 50	+ 5	e 23 24	[+ 8]	38·2	48·4
I	Oxford	87·5	339	12 53	+ 8	i 23 23	[+ 6]	e 41·2	51·9
I	Venice	87·6	328	23 35	S	(23 35)	+ 2	—	—
I	Zurich	87·7	330	e 12 46	0	—	—	—	—
I	Chur	87·8	330	e 12 49	+ 2	—	—	—	—
I	Neuchatel	88·6	331	e 12 54	+ 3	—	—	—	47·2
I	Paris	88·8	336	i 12 55	+ 3	e 22 37	[−48]	40·2	51·2
I	Piacenza	89·1	330	23 45	S	(23 45)	− 2	—	56·0
I	Florence	89·4	327	12 53	− 2	16 28	PP	46·2	55·7
I	Rocca di Papa	90·4	325	e 11 35	−84	22 21	−79	47·7	50·1
I	Chicago	90·8	36	—	—	i 24 4	0	e 48·2	—
I	Florissant	91·7	40	e 13 15	+10	e 23 43	[0]	e 45·2	—
I	Ann Arbor	92·1	33	—	—	e 23 49	[+ 4]	—	—
I	Ottawa	92·7	26	—	—	e 23 43	[− 5]	e 50·2	—
I	Toronto	92·8	29	—	—	i 23 45	[− 4]	48·1	—
I	Harvard	96·8	25	—	—	e 24 13	[+ 3]	e 47·2	—
I	Fordham	97·2	28	e 24 16	S	(e 24 16)	[+ 4]	e 45·2	51·7
I	Almeria	100·9	333	e 16 40	?	—	—	51·4	54·7
I	Granada	101·1	334	(i 14 26)	+37	—	—	52·2	58·2
I	Malaga	101·8	334	e 18 1	PP	e 28 19	?	e 35·2	—
I	La Paz	147·3	63	20 3	[+25]	—	—	70·7	74·5
III		147·3	63	20 10	[+32]	—	—	—	—

Additional readings and notes :—
Mizusawa I SN = +1m.49s.
Kobe I P_gE = +1m.42s., iN = +1m.47s., III iP_gE = +1m.35s.
Toyooka III ePE = +1m.13s., iPZ = +1m.15s.
Koti I iN = +3m.14s.
Hong Kong I iPP = +6m.29s.
Manila I ePE = +5m.52s., iPN = +5m.54s.
Agra I SE = +15m.58s.
Tashkent III i = +27m.14s.

Continued on next page.

Adelaide I i = +20m.45s.
Helsingfors I iPPE = +14m.20s., iPS = +21m.15s., iEN = +21m.22s., SKKS = +21m.54s., eE = +25m.15s., SSSE = +28m.35s.
Melbourne I i = +21m.48s.
Scoresby Sund I +14m.25s. =PP +13s. and +21m.30s. =PS +0s.
Copenhagen I +15m.9s. =PP +8s.
Vienna I PP = +15m.47s., PS = +23m.14s., i = +26m.11s.
Tucson I eSE = +23m.21s.
De Bilt I PPZ = +15m.55s.
Zagreb I ePP = +15m.59s.
Stuttgart I ePPZ = +16m.4s., ePPPZ = +17m.43s., eEN = +23m.33s.
Florence I i = +24m.13s.
Florissant I eNZ =0h.55m.2s., eNZ = +16m.45s. =PP +6s.
Ann Arbor I e = +24m.19s., eN = +25m.13s.
Toronto I e = +30m.42s. =SS +22s.
Granada P is given as PP.
La Paz I iE = +20m.11s.
Long waves were also recorded for I at Gottingen, Toledo, Graz, and Alicante, for III at Uccle, Florence, San Fernando, Copenhagen, Strasbourg, Stuttgart, De Bilt, Scoresby Sund, Phu-Lien, and Hukuoka.

May 1d. The following are the times of P for a number of local shocks recorded at Tyosi.

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

May 1d. Readings also at 0h. (Santiago, La Plata, Copiapo, La Paz, and St. Louis), 2h. (San Fernando), 3h. (La Paz), 5h. (Medan), 7h. (Sumoto and Nagasaki), 8h. (San Fernando), 9h. (Manila), 10h. (Paris, Uccle, Copenhagen, Stuttgart, Strasbourg, De Bilt, Rocca di Papa, Irkutsk (2), Ekaterinburg, Pulkovo, Scoresby Sund, Kucino, Florissant, Fordham, Riverview, Manila, Melbourne, Adelaide, Hong Kong, and La Paz), 11h. (Granada, Tashkent, Kew, and Sumoto), 13h. (Nagasaki), 17h. (Irkutsk, Ekaterinburg, Tashkent, Phu-Lien, and Mizusawa), 18h. (Mizusawa and Medan), 23h. (Andijan and Samarkand).

May 2d. 1h. 41m. 30s. Epicentre 11°·5S. 168°·0E. N.3.

A = −·958, B = +·204, C = −·199; D = +·208, E = +·978; G = +·195, H = −·041, K = −·980.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·2	212	5 22	−18	i 9 43	−35	e 11·6	12·9
Sydney	E.	27·2	212	e 5 54	+14	e 10 0	−18	12·5	13·0
Wellington		30·4	170	—	—	10 30?	−40	13·5	—
Melbourne		33·4	215	6 51	+16	11 20	−37	13·1	20·0
Adelaide		35·5	225	i 6 39	−14	i 11 50	−39	14·2	17·3
Manila		53·4	300	i 9 18	+ 1	i 16 51	+ 4	25·9	—
Batavia		60·6	271	i 10 15	+ 6	—	—	—	—
Zi-ka-wei	Z.	61·8	317	e 10 16	− 1	19 32	+53	29·3	39·2
Hong Kong		62·6	305	10 26	+ 4	(18 50)	0	18·8	31·8
Vladivostok		63·7	333	10 40	+10	19 24	+20	29·0	—
Phu-Lien		68·4	299	10 30?	−31	—	—	—	—
Medan		70·5	279	—	—	e 20 42	+15	53·5	—
Tucson		88·8	57	13 15	+23	23 53	+ 8	e 41·7	—
Bombay		98·5	289	e 16 30?	?	—	—	—	—
Tashkent		104·1	312	13 17	−45	i 24 55	[+10]	e 44·5	60·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florissant		106·2	51	e 19 2	[+56]	i 28 25	PS	e 50·5	53·5
St. Louis	E.	106·5	51	—	—	e 25 13	[+16]	e 50·2	—
Ekaterinburg		109·1	327	—	—	26 39	SKKS	45·5	67·5
Ottawa		116·5	43	—	—	e 25 48	[+ 9]	e 53·5	—
La Paz	E.	117·9	115	e 19 30	PP	30 13	PS	56·8	60·7
Baku		118·7	310	20 13	PP	—	—	e 51·2	—
Fordham		118·7	48	—	—	e 30 31	PS	e 54·0	62·5
Harvard		120·4	45	—	—	e 30 0	PS	e 56·0	—
Scoresby Sund		120·7	3	20 36	PP	30 30	PS	66·5	—
Kucino		121·3	330	—	—	28 28	?	e 41·0	62·0
Pulkovo		122·8	336	i 19 1	[+10]	—	—	67·5	77·2
Lund		131·6	341	22 54	PKS	—	—	—	—
Copenhagen		131·9	341	22 30?	PKS	—	—	60·5	—
Hamburg		134·4	341	e 21 30?	PP	—	—	—	—
Edinburgh		135·1	353	e 23 30?	PKS	—	—	—	—
De Bilt		137·1	345	e 19 30	[+12]	e 22 20	PP	e 66·5	—
Bidston		137·5	351	e 22 15	PP	e 22 50	PKS	—	—
Uccle		138·5	345	e 19 29	[+ 9]	i 22 27	PP	—	—
Stuttgart		138·8	339	e 22 30?	PP	—	—	—	—
Oxford		138·8	350	i 23 7	PKS	—	—	—	—
Kew		138·9	350	e 19 34	[+14]	e 41 0	SS	72·5	—
Strasbourg		139·4	340	e 19 31	[+11]	—	—	e 33·5	—
Paris		140·8	345	e 19 27	[+ 4]	—	—	74·5	—
Florence		142·0	332	19 30	[+ 6]	e 23 0	PKS	—	63·5
Rocca di Papa		142·8	329	19 37	[+10]	—	—	—	—
Almeria		153·2	343	e 26 12	?	—	—	—	77·7
Granada		153·2	345	i 20 1	[+15]	i 24 15	PP	74·5	89·5

Additional readings :—
Riverview PP = +6m. 5s. ; T_0 = 1h. 41m. 13s.
Medan i = +29m. 42s.
Tashkent iSKS = +23m.45s., PS = +26m.33s.
Florissant eE = +34m.2s. and +38m.0s.
St. Louis eE = +28m.15s. and +34m.13s.
Ekaterinburg PP = +18m.44s., SKS = +25m.12s., PS = +28m.25s.
Ottawa eE = +30m.6s., eN = +34m.18s.
Baku PS = +29m.57s., SS = +37m.24s.
Kucino PP = +20m.30s., SKS = +27m.34s., PPS = +32m.8s.
Pulkovo PP = +20m.47s., PS = +30m.29s., SS = +37m.36s.
Rocca di Papa e = +18m.48s.
Long waves were also recorded at Apia, Honolulu T.H., Kodaikanal, and Stuttgart.

May 2d. 6h. 1m. 40s. Epicentre 13°·0S. 170°·0E. N.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		17·7	95	e 4 20?	+17	—	—	—	—
Riverview		27·0	216	i 5 27	−11	i 9 48	−27	—	14·7
Sydney		27·0	216	e 3 50	−108	i 9 56	−19	13·6	14·3
Wellington		28·6	172	5 46	− 7	10 20	−22	12·3	16·3
Christchurch		30·6	176	—	—	e 11 21	+ 7	i 14·9	18·7
Melbourne		33·4	218	6 23	−12	11 42	−15	16·7	17·7
Adelaide		35·9	227	e 6 20?	−37	i 12 40?	+ 5	—	17·7
Perth		52·9	240	40 20	?	—	—	i 53·3	—
Manila		55·9	299	i 9 35	0	i 17 20	− 1	i 26·6	—
Batavia		62·5	271	i 10 37	+15	i 18 52	+ 4	—	—
Zi-ka-wei	N.	64·2	315	e 10 36	+ 1	—	—	—	—
Hong Kong		65·1	302	10 38	− 1	—	—	—	23·8
Vladivostok		66·0	330	10 52	+ 7	19 43	+11	—	—
Phu-Lien		70·9	298	e 11 17	+ 1	—	—	20·3	—
Medan		72·7	278	—	—	i 20 29	−24	51·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	85·0	38	12 50	+17	24 45	PS	41·0	48·6
Tucson		88·0	56	13 5	+17	24 3	PS	41·0	—
Bombay		100·8	287	e 9 38	?	—	—	—	70·8
Almata		101·1	312	e 15 7?	?	—	—	—	—
Andijan		104·1	309	17 56?	PP	—	—	—	—
Florissant		105·8	51	i 18 52	PP	e 33 52	SS	—	e 51·8
St. Louis	E.	105·8	51	e 18 52	PP	e 33 58	SS	—	e 52·1
Tashkent		106·5	310	i 17 43	[−23]	32 4	?	e 47·3	60·6
Samarkand		108·2	309	e 17 56	[−16]	—	—	—	—
Ekaterinburg		111·4	326	14 37	0	25 20	[+ 1]	41·8	66·9
La Paz		115·4	115	e 19 52	PP	i 29 52	PS	55·3	62·7
Ottawa		116·1	45	e 20 14	PP	e 29 56	PS	49·3	—
Fordham		118·1	49	e 20 22	PP	e 30 4	PS	56·8	72·8
Harvard		119·9	47	e 20 20?	PP	e 30 20?	PS	e 58·3	—
Baku		121·2	310	e 20 31	PP	e 30 5	PS	54·3	60·9
Scoresby Sund		122·0	5	20 42	PP	30 38	PS	64·3	—
Kucino		123·6	330	e 20 38	PP	e 27 40	{− 1}	—	60·7
Pulkovo		124·7	337	i 18 57	[+ 1]	—	—	63·3	79·5
Helsingfors	E.	126·3	340	i 19 36	[+36]	—	—	—	—
Upsala		128·9	343	e 22 32	?	—	—	—	—
Ksara	E.	133·5	305	e 19 4	[− 8]	22 47	PKS	—	—
Lund		133·7	342	22 2	PP	—	—	64·3	—
Copenhagen		133·9	342	19 24	[+11]	—	—	58·3	—
Hamburg		136·4	342	e 19 30	[+13]	—	—	e 68·3	—
Edinburgh		136·8	355	e 22 20?	PP	—	—	—	—
Budapest		137·8	330	e 19 20?	[+ 1]	22 20?	PP	—	—
Vienna		138·5	334	e 19 16	[− 4]	22 28	PP	—	—
De Bilt		139·1	345	e 19 23	[+ 3]	22 29	PP	e 68·3	—
Bidston		139·2	354	e 19 40	[+20]	e 23 10	PP	—	—
Uccle		140·4	346	e 19 29	[+ 7]	i 22 31	PP	e 46·3	—
Zagreb		140·5	330	e 19 37	[+15]	—	—	—	—
Oxford		140·6	353	e 19 37	[+15]	—	—	—	—
Kew		140·7	351	e 19 32	[+10]	—	—	68·3	—
Stuttgart		140·9	340	e 19 30	[+ 7]	i 22 40	PP	e 70·3	—
Strasbourg		141·5	341	i 19 38	[+15]	i 22 41	PP	28·3	—
Zurich		142·3	339	e 19 31	[+ 6]	—	—	—	—
Chur		142·4	339	e 19 35	[+10]	—	—	—	—
Paris		142·7	347	i 19 39	[+13]	—	—	74·3	76·3
Neuchatel		143·2	339	e 19 35	[+ 6]	—	—	—	—
Besançon		143·3	341	e 19 38	[+ 9]	—	—	—	—
Florence		144·2	333	i 19 39	[+ 7]	24 20	?	79·3	86·3
Trenta		144·9	322	e 19 35	[+ 1]	—	—	—	—
Naples	E.	145·0	326	e 19 5	[−29]	—	—	—	—
Rome		145·1	330	i 19 45	[+11]	—	—	—	—
Rocca di Papa		145·1	330	i 19 42	[+ 8]	—	—	—	—
Casamicciola		145·2	326	18 33	[−61]	18 39	?	—	—
Catania		146·8	320	e 19 45	[+ 8]	—	—	—	—
Barcelona		149·6	342	e 19 51	[+10]	—	—	—	—
Tortosa	N.	150·7	344	20 0	[+17]	23 33	PP	—	—
Alicante		153·3	343	e 20 0	[+14]	—	—	—	—
Almeria		155·2	346	i 19 58	[+10]	—	—	—	61·1
Granada		155·2	348	i 19 57	[+ 9]	—	—	e 87·3	94·8
Malaga		155·8	349	e 20 0	[+11]	e 24 12	PP	e 26·3	—

Additional readings :—
Riverview PP = +5m.58s., PPP = +6m.6s., SS = +11m.4s. ; T_o = 6h.1m.28s.
Batavia i = +19m.33s.
Medan i = +29m.37s.
Victoria PN = +12m.53s.
Florissant e = +10m.7s., eE = +28m.16s.
St. Louis eE = +28m.10s.
Ekaterinburg PP = +19m.1s., PS = +28m.49s., PPS = +29m.59s.
La Paz iE = +36m.34s.
Ottawa e = +36m.38s.
Fordham eN = +36m.14s. = SS +7s.

Continued on next page.

Harvard e = +37m.35s.
Baku e = +41m.49s. and +45m.51s.
Pulkovo iPP = +20m.53s.
Helsingfors iE = +20m.13s., iEN = +21m.6s.
Lund +23m.13s.
Copenhagen +22m.56s.
Hamburg eZ = +22m.6s. = PP +7s.
De Bilt iZ = +19m.35s.
Zagreb e = +21m.59s. and +23m.14s. = PKS +4s.
Oxford i = +23m.13s. = PKS +3s.
Kew ePZ = +22m.44s. = PP +18s.
Paris iN = +22m.55s.
Neuchatel ePP = +22m.54s.
Almeria PP = +24m.6s.
Granada i = +20m.29s. = PKP_a +7s. and +27m.39s., PP = +24m.7s.
Long waves were also recorded at Tananarive, Honolulu T.H., and Sitka.

May 2d. Readings also at 0h. (Chicago and Taihoku), 5h. (Feldberg), 7h. (Tyosi and Copiapo), 9h. (La Paz), 10h. (Florissant), 15h. (Rocca di Papa and Rome), 16h. (La Paz and Taihoku), 17h. (Manila and Tyosi), 18h. (Theodosia, Simferopol, Sebastopol, Yalta, and Sumoto), 19h. (Andijan and Samarkand), 20h. (Andijan (2), Samarkand, Tashkent, Sumoto, Osaka, and Kobe).

May 3d. 12h. 23m. 32s. (I) } Epicentre 13°·0S. 170°·0E. R.3.
15h. 22m. 58s. (II) } (as on 2d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Riverview	27·0	216	e 5 25	−13	i 9 52	−23	e 12·0	13·5
II		27·0	216	i 5 34	− 4	i 10 4	−11	e 12·3	14·1
I	Wellington	28·6	172	6 9	+16	12 13	SS	16·5	20·5
II		28·6	172	7 2?	?	15 26	?	17·5	20·0
I	Melbourne	33·4	218	—	—	i 11 33	−24	15·5	20·1
II		33·4	218	—	—	i 11 39	−18	14·9	18·9
I	Adelaide	35·9	227	—	—	e 11 54	−41	e 15·0?	19·6
II		35·9	227	—	—	i 12 8	−27	e 15·7	21·7
II	Perth	52·9	240	e 20 2	SS	—	—	26·5	—
I	Manila	55·9	299	i 9 28	− 7	16 28?	−53	—	—
II		55·9	299	e 9 30	− 5	—	—	i 17·2	—
I	Vladivostok	66·0	330	i 10 49	+ 4	—	—	—	—
II		66·0	330	i 10 56	+11	—	—	—	—
I	Irkutsk	86·2	325	e 12 42	+ 3	e 22 34	−45	—	—
II		86·2	325	e 12 50	+11	e 23 2?	−17	45·0	—
I	St. Louis E.	105·8	51	—	—	e 28 27	?	55·2	—
II	E.	105·8	51	—	—	e 34 47	SS	e 51·3	—
I	Ekaterinburg	111·4	326	—	—	e 28 32	PS	58·5	—
II		111·4	326	—	—	(28 32)	PS	28·5	—
I	Florence	144·2	333	e 19 46	[+14]	(23 28)	PKS	—	23·5
II		144·2	333	e 19 46	[+14]	—	—	—	—

Additional readings:—
Riverview I iN = +6m.38s. = PP +21s.
Melbourne I i = +13m.53s. = SS +4s.
Irkutsk II e = +28m.2s. ?
Long waves were also recorded at De Bilt, Pulkovo, Copenhagen, Kucino, Fordham, Florissant, Chicago, Tucson, Phu-Lien, and Sydney.

May 3d. Readings also at 0h. (La Paz and Nagoya), 2h. (Alicante), 4h. (Andijan and Samarkand), 8h. (La Paz), 10h. (Samarkand), 11h. (Taihoku), 14h. (Ottawa, Tyosi (2), and Nagoya), 15h. (Barcelona and Tortosa).

May 4d. Readings at 1h. (Tyosi), 2h. (near Santiago), 3h. (La Paz), 5h. (Taihoku), 7h. (near Tacubaya), 8h. (Adelaide and near Tacubaya), 11h. (near Tacubaya), 12h. (Nagoya, near Mizusawa and Tyosi), 14h. (near Tyosi), 15h. (Ekaterinburg, Irkutsk, Tashkent, Samarkand, near Almata, and Andijan), 16h. (Kobe, near Nagoya, Tokyo, Tukuba, Tyosi (2), and Mizusawa), 18h. (Baku, Ekaterinburg, Tashkent, and Bombay), 21h. (Tyosi), 22h. (Andijan and Samarkand), 23h. (near Lick).

May 5d. 13h. 45m. 58s. Epicentre 17°·3N. 96°·5E. N.1.

A = −·108, B = +·949, C = +·297; D = +·994, E = +·113;
G = −·034, H = +·295, K = −·955.

(Determination by Visser gives 17°·2N. 96°·7E. See Geol. Survey of India, Vol. LXV, Pt. 2).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	9·3	306	2 51	+40	—	—	6·1	—
	N.	9·3	306	2 53	+42	4 51	+55	6·1	8·2
Phu-Lien		10·2	67	2 22	− 2	5 4	+46	5·5	—
Medan		13·8	170	i 4 7	+54	i 5 31	−15	—	—
Hyderabad	N.	17·2	274	4 0	+ 3	—	—	—	—
Hong Kong		17·4	70	3 56	− 3	7 14	+ 3	8·8	12·0
Colombo		19·3	239	4 22	0	—	—	—	—
Agra	E	19·7	304	(i 4 28)	+ 2	(i 8 11)	+11	(i 14·7)	—
Dehra Dun		21·4	311	4 52	+ 8	9 22	SS	13·2	22·0
Hokoto		22·4	70	4 56	+ 1	11 44	L	(11·7)	—
Bombay		22·5	278	4 56	0	8 50	− 5	11·3	—
Manila		23·7	93	i 5 11	+ 4	i 9 15	− 3	11·5	—
Taihoku	E.	24·6	67	5 17	+ 1	9 45	+11	12·6	14·0
Batavia		25·6	155	i 5 45	+20	i 10 47	SS	—	—
Zi-ka-wei		26·6	54	i 5 28	− 7	10 4	− 5	—	20·2
Malabar		26·9	155	6 13	PP	10 57	SS	i 15·2	—
Almata		30·8	332	i 6 10	− 2	11 11	− 6	16·4	—
Andijan		31·3	323	6 15	− 2	11 43	+19	—	—
Nagasaki		33·8	56	4 56	?	e 12 6	+ 3	—	20·0
Hukuoka		34·5	55	e 6 2	−43	12 12	− 2	18·6	23·0
Irkutsk		35·5	8	6 49	− 4	12 23	− 6	17·0	23·2
Koti		37·0	58	6 56	−10	e 12 49	− 2	17·7	21·1
Amboina		37·7	121	e 6 51	−21	13 6	+ 4	—	—
Kobe		38·3	55	7 18	0	13 18	+ 7	e 19·2	21·8
Sumoto		38·3	55	e 7 16	− 2	13 14	+ 3	e 20·0	21·7
Toyooka	E.	38·6	54	7 20	0	13 21	+ 6	20·8	24·4
	N.	38·6	54	e 7 18	− 2	13 17	+ 2	20·5	21·8
Osaka		38·9	55	7 27	+ 4	13 26	+ 6	21·0	24·1
Vladivostok		39·6	41	i 7 24	− 5	i 13 34	+ 4	20·2	25·3
Nagoya		40·1	55	7 47	+14	13 41	+ 3	21·6	25·3
Tyosi		43·4	55	e 14 37	S	(e 14 37)	+10	24·4	27·3
Mizusawa	E.	44·4	50	8 2	− 6	14 41	0	26·1	—
	N.	44·4	50	7 32	−36	14 36	− 5	24·9	—
Baku		46·2	311	i 8 23	+ 1	15 4	− 3	—	—
Ekaterinburg		47·8	335	i 8 26	− 9	i 15 14	−16	—	—
Ootomari		48·0	42	8 36	0	e 15 31	− 2	e 21·6	32·1
Perth		52·6	160	9 46?	+35	16 57	+20	22·4	—
Ksara		56·3	300	9 41	+ 3	17 30	+ 3	27·3	—
Theodosia		57·6	315	9 46	− 1	17 41	− 3	23·0	37·2
Kucino		58·3	326	i 9 50	− 2	i 17 44	− 9	29·4	34·4
Yalta		58·4	314	9 52	− 1	17 50	− 5	34·0	—
Simferopol		58·4	314	9 52	− 1	17 50	− 5	32·0	—
Sebastopol		58·8	314	9 58	+ 2	18 2	+ 2	36·0	—
Tananarive		60·2	235	e 10 11	+ 5	e 18 20	+ 1	29·1	35·5
Helwan		60·3	296	10 6	− 1	18 25	+ 5	—	42·1
Pulkovo		63·2	330	e 10 21	− 6	e 18 49	− 8	29·0	45·0
Lemberg	E.	65·6	318	e 10 38	− 4	e 19 14	−13	e 36·0	44·6
	N.	65·6	318	e 11 20	(+ 5)	e 19 26	− 1	e 32·1	43·7
Adelaide		65·8	143	i 10 42	− 2	19 37	+ 7	i 30·7	33·2
Helsingfors		65·9	330	i 10 39	− 6	i 19 19	−12	e 29·1	—
Konigsberg		67·9	324	e 10 54	− 4	i 19 50	− 6	e 38·7	40·0
Belgrade		68·1	314	e 10 52	− 7	i 19 57	− 1	e 33·0	45·5
Budapest		69·0	316	10 56	− 9	19 52	−17	24·5	41·5
Upsala		69·6	330	e 11 1?	− 7	e 20 1?	−15	e 37·0	48·9
Vienna		70·7	318	e 11 13	− 2	20 7	−23	e 36·0	43·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taranto		70·8	309	11 14	− 2	20 19	−12	33·0	—
Zagreb		71·2	315	e 11 17	− 1	e 20 21	−14	e 40·2	44·2
Graz		71·4	317	i 11 19	0	i 20 25	−13	37·0	50·0
Melbourne		71·5	142	11 25	+ 5	20 49	+10	32·9	45·5
Trenta		71·7	308	i 11 32	+11	e 20 42	+ 1	—	44·0
Lund		72·1	325	11 21	− 2	20 38	− 8	—	—
Laibach		72·2	316	e 11 17	− 7	e 20 39	− 8	e 42·1	54·2
Potsdam		72·4	320	11 14	−11	i 20 41	− 9	e 34·0	44·0
Messina		72·4	307	11 25	0	20 30	−20	—	—
Copenhagen		72·5	325	11 24	− 2	20 51	0	—	45·0
Catania	"	72·9	306	11 30	+ 2	20 48	− 8	e 43·4	55·1
Naples	E.	73·0	310	i 11 36	+ 7	e 20 26	−31	42·0	64·0
Riverview		73·0	136	e 11 31	+ 2	i 21 8	+11	34·1	41·9
Sydney		73·0	136	e 11 38	+ 9	i 21 14	PS	40·4	50·0
Cheb		73·1	320	e 11 29	0	e 20 54	− 4	40·0	43·3
Jena		73·5	320	e 11 32	0	e 20 59	− 4	e 36·0	47·3
Venice		73·7	315	i 11 39	+ 6	21 10	+ 5	33·2	34·2
Treviso		73·9	315	i 11 32	− 2	i 21 2	− 5	45·0	—
Rocca di Papa		74·1	311	e 11 38	+ 3	e 21 0	−10	e 39·5	45·5
Padova		74·1	315	e 11 38	+ 3	i 21 10	0	44·0	54·0
Hamburg		74·2	323	i 11 35	− 1	e 21 5	− 6	e 40·0	43·0
Rome		74·2	311	e 11 35	− 1	i 21 29	+18	e 44·3	53·0
Innsbruck		74·2	317	e 11 32	− 4	21 38	PS	42·1	—
Gottingen		74·4	320	e 11 35	− 2	e 20 58	−15	e 38·0	48·6
Florence		74·8	312	i 11 39	0	21 9	− 9	—	—
Stuttgart		75·4	317	i 11 42	− 1	i 21 14	−11	e 41·0	54·5
Chur		75·5	316	e 11 42	− 1	e 21 15	−11	—	—
Livorno		75·5	312	11 30	−13	22 0	+34	—	—
Bergen		75·6	330	11 45	+ 1	21 23	− 4	39·5	48·0
Feldberg	N.	75·6	319	e 11 35	− 9	e 21 14	−13	e 44·1	55·6
Piacenza		75·7	315	11 32	−12	21 24	− 4	32·5	61·1
Karlsruhe		75·8	319	i 11 47	+ 2	21 24	− 5	e 43·0	44·8
Zurich		76·0	316	e 11 45	− 1	e 21 23	− 9	—	—
Strasbourg		76·4	318	i 11 45	− 3	i 21 22	−14	34·0	55·0
Neuchatel		77·2	317	e 11 49	− 4	e 21 38	− 7	—	—
De Bilt		77·4	321	11 53	− 1	21 41	− 6	e 40·0	45·1
Besançon		77·8	317	11 50	− 7	e 21 20	−32	33·0	—
Carloforte		77·9	309	e 12 6	+ 9	i 21 42	−11	—	—
Uccle		78·0	321	i 11 57	0	i 21 45	− 9	e 40·0	47·1
Grenoble		78·4	315	e 11 59	0	e 21 50	− 8	34·0	—
Marseilles		79·1	314	e 10 59	−64	e 21 38	−28	29·0	—
Paris		79·7	319	i 12 6	0	i 22 4	− 8	42·0	54·0
Dyce		80·1	328	i 12 8	0	i 22 6	−11	e 38·7	49·0
Kew		80·7	322	i 12 13	+ 1	i 22 17	− 6	38·0	48·5
Edinburgh		81·0	326	12 12	− 1	22 19	− 7	40·0	56·8
Oxford	E.	81·2	322	12 8	− 6	i 22 12	−16	e 35·0	47·0
	N.	81·2	322	12 21	+ 7	22 13	−15	e 39·0	47·0
Barcelona		81·8	312	e 12 3	−14	e 22 28	− 7	e 41·3	49·5
Bagnères		82·7	314	e 13 33	+71	—	—	30·0	—
Scoresby Sund		82·7	343	i 12 22	0	i 22 41	[0]	44·0	—
Tortosa		84·0	312	12 28	0	22 42	[−10]	e 36·0	50·1
Alicante		84·7	310	e 12 36	+ 4	i 23 1	− 4	e 36·7	59·7
Reykjavik		86·1	339	12 35	− 4	23 18	0	43·0	60·0
Almeria		86·5	309	i 12 42	+ 1	23 7	[− 3]	50·4	63·0
Toledo		86·8	311	e 12 42	0	23 12	[0]	e 39·4	52·6
Granada		87·4	309	i 12 45	0	i 23 29	− 2	42·7	51·4
Malaga		88·2	309	12 4	−45	22 34	−65	29·8	60·6
San Fernando		89·6	309	13 30	+34	23 28	[− 2]	44·0	67·0
Cape Town		90·1	236	e 12 52	− 6	e 23 32	[− 1]	38·7	53·7
Christchurch		92·2	135	13 20	+12	24 38	+21	45·1	—
Wellington		92·9	133	—	—	24 7	−16	45·0	59·0
Sitka	E.	94·1	26	—	—	24 29	− 5	49·2	—
Apia		95·7	102	—	—	25 33	PS	53·3	69·0

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu T.H.	97·6	65	—	—	e 24 27	[+13]	e 41·2	—
Azores P.D.	102·7	318	—	—	23 50	[−49]	—	65·0
Victoria	105·3	27	18 30	PP	24 57	[+ 6]	34·2	56·7
Dakar	107·4	292	e 21 50	?	—	—	48·0	72·4
Berkeley	113·9	32	e 29 23	PS	e 36 11	?	e 53·0	e 63·0
Ottawa	116·9	354	e 19 50	PP	e 27 38	{+43}	54·0	75·0
Toronto	119·0	357	e 19 27	[+44]	e 27 49	{+39}	58·0	—
Ann Arbor	120·4	0	—	—	e 30 2	SKSP	55·4	68·3
Chicago	121·0	4	—	—	36 46	SS	61·0	—
Fordham	121·2	351	i 20 26	PP	25 55	[+ 1]	57·5	71·5
Florissant	123·5	5	e 18 59	[+ 5]	i 26 13	[+12]	e 70·0	79·6
Georgetown	123·5	354	—	—	30 27	PS	—	—
St. Louis	123·8	5	—	—	e 25 55	[− 7]	e 57·7	71·0
Charlottesville	124·5	355	—	—	e 30 2	PS	e.66·0	—
Rio de Janeiro	141·8	256	e 20 25	[+61]	e 32 11	?	54·2	76·7
Port au Prince	142·5	340	e 20 49	[+83]	—	—	e 86·0	—
La Plata	151·2	227	19 56	[+13]	—	—	70·0	—
La Paz	165·3	271	e 20 6	[+ 7]	i 31 30	{−17}	78·5	89·0

Additional readings and notes :—
Medan i = +4m.25s.
Agra readings have been *increased* by 2m.
Manila eN = +5m.34s.
Batavia iS = +10m.50s.
Zi-ka-wei PPZ = +6m.8s., PPPZ = +6m.24s., PPPPZ = +6m.35s., SSE = +11m.37s., SSSE = +11m.54s., SSSSE = +12m.16s.
Malabar i = +7m.23s.
Nagasaki PS? = +12m.39s., SS = +16m.21s., SSS = +17m.14s.
Koti eE = +13m.38s.
Amboina i = +8m.48s. = PP +14s.
Sumoto SE = +13m.20s.
Tananarive eN = +14m.15s., PSN = +18m.37s., N = +20m.45s., S_cPE = +21m.1s., E = +22m.34s., SSN = +22m.56s., SSSN = +24m.46s., SSSSN = +25m.59s., E = +26m.7s.
Adelaide iPP = +15m.23s., i = +23m.41s. = SS +3s., +26m.33s. = SSS +19s.
Helsingfors P_cPEN = +11m.23s., PPN = +13m.27s., iPSN = +19m.52s., iS_cSN = +20m.39s., SKSN = +20m.57s., SKKSN = +21m.10s., eN = +23m.23s., SS = +23m.59s., iN = +25m.49s., i = +26m.20s., eSSSN = +26m.32s.
Konigsberg eN = +11m.1s., +20m.5s. = PS −5s., eS_cSN = +21m.16s.
Belgrade eP = +10m.55s., e = +10m.59s., +13m.18s. = PP −3s., +14m.44s. = PPP −9s., +15m.29s. = PPPP −9s., +21m.38s.
Vienna iPZ = +11m.15s., PcP = +12m.5s., PP = +14m.5s., PPP = +15m.26s., PS = +20m.23s., S_cS = +21m.16s., SS = +25m.16s., SSS = +27m.36s.
Zagreb e = +11m.31s., iNW = +12m.24s., eNE = +12m.37s., e = +12m.50s., ePPNE = +13m.43s., ePPNW = +13m.47s., eNW = +14m.27s., iNW = +20m.49s., eNW = +21m.29s., iNE = +21m.44s., e = +22m.1s., iSSNW = +22m.51s., iSSNE = +22m.53s., eNW = +23m.20s., eNE = +23m.29s., eNW = +23m.56s., eSSS = +26m.28s., e = +29m.41s. and +30m.27s., eNE = +31m.19s., eNW = +31m.29s., e = +32m.14s.
Graz iPS = +20m.59s.
Melbourne PPP = +16m.16s., PS = +21m.38s., SS = +25m.57s.
Lund SNE = +20m.43s., eNE = +20m.55s., eNW = +21m.24s., eNE = +22m.15s., eNW = +22m.26s., eNE = +23m.14s., eNW = +23m.38s. and +24m.40s., eNE = +24m.56s., e = +27m.38s.
Laibach e = +11m.35s.
Copenhagen PPE = +14m.2s., PPPE = +15m.56s., SN = +20m.41s. and +21m.31s., eE = +22m.14s., +26m.44s., eN = +22m.38s., +23m.14s., +24m.44s., +27m.14s., e21m.31s.
Riverview P_cP = +11m.58s., PS = +21m.39s., S_cS = +22m.2s., eSS = +26m.14s. : T_o = 13h.45m.44s.
Sydney SS = +28m.50s., SSS = +33m.14s.
Cheb ePP = +14m.34s., ePPP = +16m.8s., e = +31m.36s.
Jena iPZ = +11m.31s., iE = +16m.1s., eNZ = +16m.2s., eNZ = +22m.49s., eE = +25m.32s.
Rocca di Papa e = +11m.30s.
Hamburg ePPZ = +14m.28s., ePPPZ = +16m.17s.
Gottingen ePPEZ = +14m.18s., ePPPEZ = +16m.16s., eSN = +21m.9s., ePPSN = +22m.36s., eSSEN = +25m.56s., eSSSE = +29m.44s., eSSSN = +30m.20s.
Stuttgart iN = +11m.51s., iPPEZ = +14m.30s., iPPPEZ = +16m.14s., iEZ = +16m.40s.
Bergen PP = +14m.30s.

Continued on next page.

Feldberg eE = +21m.8s.
Strasbourg PP = +14m.52s., PS = +21m.57s., SS = +26m.32s., SSS = +29m.41s.
De Bilt iPPZ = +14m.55s.
Uccle PS = +22m.23s.
Kew ePP = +15m.20s., e = +23m.42s., SSEN = +28m.26s., SSSEN = +31m.44s.
Edinburgh PPP = +17m.53s., i = +19m.6s., +22m.34s., and +22m.59s., SS = +28m.40s., i = +30m.35s., SSS = +33m.6s.
Oxford SKS = +21m.52s.
Reykjavik PS = +24m.15s.
Almeria PP = +16m.13s.
Granada iP = +12m.47s., i = +15m.5s., +23m.7s. = [S] − 9s., and +23m.56s.
San Fernando PPZ = +19m.32s., SS = +24m.42s., SSS = +32m.2s.
Wellington i = +20m.24s., SS = +29m.42s., SSS = +34m.29s.
Sitka SSE = +30m.58s.
Apia e = +35m.57s.
Honolulu T.H. eN = +24m.46s. = Σ + 11s., PS = +27m.1s.
Berkeley eE = +43m.11s.
Ottawa eE = +36m.2s. = SS + 11s.
Toronto iSSE = +36m.21s.
Ann Arbor ePPN = +20m.8s., ePPPN = +23m.2s., e = +32m.8s., eSSN = +36m.8s., eSSSN = +41m.8s., eN = +43m.56s.: T_0 = 13h.46m.12s.
Chicago e = +47m.46s.
Fordham ePP = +25m.17s., eN = +28m.49s., iPPPP = +30m.19s., iPPPPP = +31m.0s., iN = +32m.45s., PS = +34m.57s., PPS = +35m.59s., iE = +37m.0s., SS = +41m.35s., iEN = +44m.32s., and +48m.17s., iE = +51m.50s.
Florissant eZ = +15m.29s., iPPZ = +20m.34s., iPPPZ = +23m.33s., iPSN = +30m.42s., eSSN = +36m.52s., eSSSN = +42m.10s.
Georgetown PP = +20m.34s., PPP = +23m.12s., i = +28m.27s., PS = +30m.28s., iPPS = +31m.22s.
St. Louis ePPN = +20m.30s., ePPPN = +22m.24s., eN = +32m.17s.
Charlottesville PPN = +20m.33s., eSSN = +38m.2s.
La Paz iZ = +20m.36s., +36m.36s., +42m.36s., and +48m.30s., PKSZ = +23m.54s., PPZ = +24m.26s., SKSZ = +27m.14s., PPPZ = +28m.54s., SSZ = +44m.27s.
Long waves were also recorded at Matuyama, Kodaikanal, Denver, Tashkent, and Balboa Heights.

May 5d. Readings also at 0h. (Lick), 1h. (Ekaterinburg, Tashkent, Almata, Samarkand (2), Andijan (2), and Ann Arbor): 6h. (Apia and Lick), 8h. (La Paz), 9h. (Irkutsk), 10h. (Ekaterinburg, Tashkent, Andijan, Simferopol, Pulkovo, Samarkand, Scoresby Sund, and Florissant), 13h. (Tokyo, Tukuba, and Tyosi), 14h. (Matuyama), 17h. (Samarkand, Andijan, and Phu-Lien), 19h. (Tyosi and Nagoya), 21h. (Amboina), 22h. (Tyosi and Nagoya).

May 6d. 7h. 3m. 22s. Epicentre 37°·0N. 44°·0E. (See 6d. 22h.). N.3.

A = +·574, B = +·555, C = +·602; D = +·696, E = −·719; G = +·433, H = +·418, K = −·799.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	5·7	51	i 1 13	− 8	i 2 3	−22	2·3	4·9
Ksara	7·3	247	2 5	+21	4 26	+80	5·1	—
Theodosia	10·3	323	e 2 32	+ 7	—	—	—	—
Yalta	10·6	318	e 3 14	+45	—	—	—	—
Simferopol	10·9	320	e 2 35	+ 2	—	—	—	—
Sebastopol	11·0	317	e 2 36	+ 1	—	—	—	—
Samarkand	18·1	74	e 4 3	− 5	—	—	—	—
Kucino	19·2	350	e 4 16	− 5	7 40	−10	7·9	9·8
Tashkent	20·0	67	i 4 25	− 5	i 8 5	− 1	—	15·1
Andijan	22·3	71	4 55	+ 1	—	—	—	—
Zagreb	22·6	302	e 5 7	+10	e 9 13	+16	—	13·2
Ekaterinburg	22·7	24	i 4 47	−11	i 8 43	−16	10·6	15·4
Catania	22·9	280	—	—	e 8 46	−17	e 14·0	—
Pulkovo	24·4	343	i 5 13	− 1	9 25	− 5	13·1	15·3
Rocca di Papa	24·5	291	e 4 55	−20	—	—	e 11·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Rome		24·7	291	e 5 24	+ 7	—	—	—	—
Florence		25·7	296	5 23	− 3	10 23	+30	—	15·1
Almata		25·8	66	5 26	− 1	—	—	—	—
Helsingfors		26·1	338	i 5 39	+ 9	i 9 58	− 2	i 13·2	—
Cheb		26·1	310	e 10 34	S	(e 10 34)	+34	e 15·6	17·6
Piacenza		26·9	298	e 5 38	+ 1	—	—	—	22·7
Lund		27·9	322	5 38?	− 8	—	—	15·6	—
Copenhagen		28·3	321	6 38?	PP	—	—	14·6	—
Upsala		28·4	332	e 6 37	PP	—	—	e 14·6	—
Hamburg		28·7	316	e 6 38?	PP	e 11 20	+37	—	17·6
De Bilt		31·0	313	—	—	e 11 48	+28	e 16·6	20·8
Bombay		31·0	118	e 6 38?	+24	—	—	—	—
Irkutsk		44·1	49	e 8 2	− 4	e 14 30	− 7	26·6	—
Scoresby Sund		47·5	335	—	—	15 38?	+12	—	—
Taihoku	E.	65·7	77	—	—	e 21 3	?	—	—

Additional readings :—
Baku i = +1m.37s.
Zagreb eNW = +7m.59s.
Rocca di Papa e = +4m.40s.
Helsingfors iSSSN = +11m.4s.
Long waves were recorded at Hyderabad and several European stations.

May 6d. 22h. 34m. 27s. Epicentre 37°·0N. 44°·0E. R.1.

Probable error ±0°·35 (as at 7h.).

A = +·574, B = +·555, C = +·602; D = +·695, E = −·719;
G = +·433, H = +·418, K = −·799.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		5·7	51	i 1 7	−14	—	—	—	—
Ksara		7·3	247	2 0	+16	—	—	—	—
Theodosia		10·3	323	i 2 20	− 5	4 19	− 2	5·6	10·4
Yalta		10·6	318	i 2 35	+ 6	4 39	+11	6·1	15·1
Sebastopol		11·0	317	i 2 32	− 3	—	—	—	—
Helwan		12·8	240	i 3 14	+15	i 6 5	L	(i 6·1)	13·2
Samarkand		18·1	74	i 3 57	−11	7 21	− 6	9·5	15·3
Kucino		19·2	350	i 4 9	−12	i 7 28	−22	7·8	21·6
Lemberg	N.	19·2	318	e 4 21	0	e 7 49	− 1	—	11·8
Belgrade		19·4	301	e 4 21	− 2	i 8 2	+ 8	9·7	11·1
Tashkent		20·0	67	i 4 20	−10	—	—	—	37·8
Taranto		21·1	288	4 42	+ 1	9 4	+36	12·0	13·6
Budapest		21·1	308	i 4 41	0	8 37	+ 9	12·6	13·1
Trenta		21·8	285	i 4 48	− 1	i 9 3	+21	11·9	13·7
Andijan		22·3	71	4 46	− 8	8 54	+ 2	11·5	16·9
Messina		22·5	282	4 5	−51	8 10	−45	—	—
Zagreb		22·6	302	e 4 59	+ 2	i 9 9	+12	i 11·5	14·8
Ekaterinburg		22·7	24	i 4 43	−15	i 8 30	−29	—	—
Catania		22·9	280	5 2	+ 2	9 26	+23	13·9	20·0
Vienna		23·0	308	e 5 0	− 1	9 7	+ 2	i 11·3	16·0
Mineo		23·3	280	5 8	+ 4	—	—	—	—
Graz		23·3	305	i 5 4	0	e 9 28	+18	11·6	14·1
Benevento		23·3	290	i 4 33	−31	—	—	11·1	13·1
Naples	E.	23·4	289	e 5 14	+ 9	e 8 59	−13	17·6	19·6
Casamicciola		23·6	289	5 11	+ 5	9 9	− 7	12·8	—
Laibach		23·7	302	5 15	+ 8	e 9 51	+33	e 12·3	15·6
Konigsberg		23·9	325	i 5 5	− 4	i 9 32	+11	e 12·4	—
Pulkovo		24·4	343	i 5 9	− 5	i 9 20	−10	12·6	21·9
Rocca di Papa		24·5	291	i 5 15	0	e 10 0	SS	e 15·0	17·5
Rome		24·7	291	i 5 21	+ 4	i 10 41	+65	e 12·4	15·6
Venice		25·1	300	i 5 24	+ 3	i 10 7	+24	12·7	16·6
Treviso		25·3	300	i 5 24	+ 1	i 9 58	+12	e 14·6	15·0
Padova		25·4	299	e 5 32	+ 8	i 10 2	+14	e 14·6	—
Florence		25·7	296	i 5 31	+ 5	10 6	+13	—	—
Almata		25·8	66	5 24	− 3	e 9 50	− 5	—	22·2

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Cheb		26·1	310	e 5 32	+ 2	e 10 21	+21	e 12·2	17·6
Helsingfors		26·1	338	i 5 24	− 6	i 9 50	−10	e 13·3	—
Innsbruck		26·1	304	5 31	+ 1	10 17	+17	12·2	15·4
Livorno.		26·3	295	5 34	+ 2	9 49	−14	—	—
Potsdam		26·5	315	i 5 31	− 3	i 10 2	− 5	e 12·8	16·6
Jena		26·8	312	e 5 32	− 4	e 10 22	+10	13·6	16·8
Piacenza		26·9	298	e 5 43	+ 6	i 10 33	+19	i 12·0	17·2
Chur		27·2	302	e 5 39	− 1	e 10 45	+27	—	—
Stuttgart		27·8	306	i 5 44	− 1	i 10 38	+10	15·0	18·6
Lund		27·9	322	i 5 44	− 2	10 29	− 1	e 13·3	15·4
Carloforte		28·0	285	e 5 50	+ 3	e 10 28	− 4	—	16·0
Gottingen		28·0	312	i 5 46	− 1	e 10 37	+ 5	12·8	17·8
Zurich		28·0	303	e 5 46	− 1	e 10 51	+19	—	—
Copenhagen		28·3	321	i 5 47	− 3	10 33	− 4	13·2	15·6
Karlsruhe		28·3	307	i 5 54	+ 4	10 50	+13	e 15·5	19·0
Upsala		28·4	332	e 5 45	− 6	i 10 37	− 1	e 12·5	15·6
Feldberg		28·6	309	i 5 45	− 8	—	—	16·6	19·9
Hamburg		28·7	316	i 5 52	− 1	e 10 47	+ 4	e 15·8	16·4
Strasbourg		28·7	305	i 5 52	− 1	10 58	+15	12·5	17·0
Dehra Dun		28·9	93	6 3	+ 8	10 43	− 4	15·2	20·5
Neuchatel		29·0	302	e 5 55	− 1	e 10 49	+ 1	—	—
Besançon		29·6	302	6 1	0	i 11 7	+ 9	13·5	16·5
Grenoble		29·7	298	e 6 3	+ 1	e 11 18	+19	12·5	—
Marseilles		30·0	294	i 6 9	+ 4	e 11 20	+16	12·5	—
Agra		30·3	99	(i 5 48)	−20	(i 10 58)	−11	(i 15·5)	—
Bombay		31·0	118	6 17	+ 3	11 51	+31	16·8	18·1
De Bilt		31·0	313	6 14	0	11 17	− 3	e 15·5	18·8
Uccle		31·2	310	i 6 16	0	i 11 25	+ 2	13·6	18·4
Puy de Dôme		31·7	302	i 6 21	+ 1	i 11 40	+ 9	14·6	—
Paris		32·1	308	e 6 24	0	e 11 47	+10	13·6	20·6
Barcelona		32·4	291	6 32	+ 6	11 52	+11	13·7	19·8
Algiers		32·5	283	6 35	+ 8	11 53	+10	14·0	16·6
Bagnères		33·6	295	e 6 39	+ 2	e 12 19	+19	14·6	—
Tortosa	E.	33·7	290	6 47	+ 9	12 13	+12	14·6	24·4
	N.	33·7	290	6 47	+ 9	12 17	+16	14·1	19·4
Bergen		33·8	328	6 33?	− 6	12 3	0	15·6	20·6
Kew		34·2	311	i 6 42	0	e 12 15	+ 6	15·1	18·1
Alicante		34·9	289	i 6 53	+ 5	i 12 37	+17	e 15·9	19·2
Oxford	E.	34·9	311	6 47	− 1	12 21	+ 1	15·8	21·9
	N.	34·9	311	6 56	+ 8	12 13	− 7	15·2	21·9
Stonyhurst		35·9	314	i 6 56	− 1	12 31	− 4	i 21·1	23·0
Hyderabad		36·0	115	7 0	+ 2	12 42	+ 6	—	22·6
Bidston		36·2	314	i 7 4	+ 4	i 12 33	− 6	e 16·6	22·6
Dyce		36·3	320	7 5	+ 5	i 12 25	−16	e 14·0	22·9
Edinburgh		36·6	318	7 3	0	12 47	+ 2	13·0	24·4
Almeria		36·7	286	7 10	+ 6	i 12 57	+10	15·9	17·9
Toledo		37·3	291	7 11	+ 2	i 12 55	− 1	i 15·7	20·1
Granada		37·6	286	i 7 14	+ 2	i 13 15	+15	i 17·4	20·0
Malaga		38·3	285	7 17	− 1	i 13 21	+10	15·6	22·3
San Fernando		39·8	286	7 34	+ 4	13 42	+ 9	17·6	28·0
Kodaikanal		40·3	125	8 27	+52	—	—	13·4	29·8
Calcutta	E.	40·6	99	7 38	+ 1	13 43	− 2	21·3	—
	N.	40·6	99	7 42	+ 5	13 50	+ 5	20·9	—
Irkutsk		44·1	49	i 7 58	− 8	14 21	−16	22·6	28·2
Colombo		44·3	126	8 8	+ 1	14 38	− 2	25·4	33·3
Reykjavik		46·9	328	e 8 31	+ 3	e 15 25	+ 8	24·6	—
Scoresby Sund		47·5	335	8 29	− 3	15 24	− 2	—	—
Azores P.D.		54·0	295	10 33	+72	17 33	+37	30·2	—
Tananarive		56·0	177	9 43	+ 7	17 40	+17	27·6	33·1
Phu-Lien		56·1	89	9 35	− 2	17 22	− 2	28·6	34·5
Dakar		58·6	268	i 10 1	+ 6	i 18 13	+16	28·6	39·3
Medan		60·1	110	9 0	−65	i 17 52	−25	18·6	—
Hong Kong		61·3	84	10 11	− 3	18 13	−20	28·1	38·6
Zi-ka-wei		62·5	70	10 11	−11	18 39	− 9	35·4	40·5
Vladivostok		64·4	54	i 10 29	− 6	e 19 2	−10	31·7	41·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	E.	65·7	77	10 41	− 2	23 59	SS	33·1	44·4
Hukuoka		67·9	64	e 10 55	− 3	19 54	− 2	30·3	40·8
Nagasaki		68·0	65	e 10 54	− 4	19 52	− 5	e 28·6	43·1
Ootomari		69·2	46	10 46	−20	e 19 54	−17	e 28·6	44·4
Toyooka		70·1	60	e 11 6	− 5	20 15	− 7	36·8	46·6
Koti		70·2	62	11 7	− 5	e 20 14	−10	e 29·6	41·4
Kobe		70·7	60	e 10 59	−16	20 18	−12	e 36·6	46·0
Sumoto		70·8	61	e 11 6	−10	20 22	− 9	—	47·0
Manila		71·0	86	i 11 12	− 5	i 20 27	− 6	—	—
Ośaka		71·0	60	10 58	−19	20 6	−27	35·8	47·0
Nagoya		71·7	60	11 22	+ 1	20 32	− 9	e 36·3	—
Mizusawa	E.	72·3	54	11 28	+ 3	21 7	PS	37·3	—
	N.	72·3	54	11 33	+ 8	21 29	PS	37·6	—
Batavia		72·7	113	11 39	+12	20 59	+ 6	31·6	42·2
Malabar		73·9	113	i 11 43	+ 9	i 21 0	− 7	32·6	—
Tyosi		74·1	58	e 16 54	PPPP	—	—	—	—
Cape Town		74·8	202	11 47	+ 8	21 25	+ 7	39·4	—
Halifax		75·5	317	e 11 43	0	i 21 27	+ 1	e 37·1	41·0
Ottawa		81·4	322	e 12 15	0	i 22 31	0	e 38·2	49·6
Toronto		84·4	323	e 12 40	+10	i 23 0	− 2	39·9	50·3
Sitka		85·9	0	—	—	e 25 27	?	49·2	—
Amboina		87·5	96	12 47	+ 2	23 12	[− 5]	35·6	54·5
Ann Arbor		87·5	325	e 12 45	0	e 23 15	[− 2]	e 39·0	53·6
Charlottesville		88·1	320	—	—	e 24 26	PS	e 41·0	—
Chicago		89·7	326	—	—	23 52	− 1	e 39·6	—
Florissant		93·3	327	i 13 13	0	i 23 46	[− 6]	—	53·6
St. Louis	E.	93·4	327	e 13 6	− 7	e 23 34	[−18]	e 40·1	49·6
Victoria		93·8	352	13 43	+28	23 53	[− 1]	41·0	59·0
Perth		96·1	126	e 17 33	PP	(23 58)	[− 8]	i 45·6	—
Rio de Janeiro		101·4	250	e 14 54	+64	e 24 37	[+ 4]	—	58·3
Berkeley		104·2	350	e 17 53	PP	e 24 43	[− 3]	—	—
Lick	N.	105·1	350	—	—	40 33?	SSSS	54·6	—
Tucson		106·8	340	e 18 41	PP	26 19	?	e 43·8	—
Adelaide		113·4	117	—	—	i 27 5	?	i 46·0	69·0
Tacubaya		113·8	323	19 28	PP	30 54?	?	50·3	—
La Paz		117·4	271	e 18 50	[+11]	25 43	[+ 1]	51·7	77·5
Honolulu T.H.		118·2	24	—	—	e 29 43	PS	e 53·6	—
La Plata		118·7	247	19 39	PP	—	—	52·6	—
Melbourne		119·2	118	20 5	PP	27 51	{+40}	51·6	60·0
Riverview		122·0	110	e 20 30	PP	30 26	PS	64·6	76·7
Christchurch		140·9	117	e 21 41	PP	—	—	—	89·2
Wellington		142·1	112	—	—	44 33?	?	68·6	85·6

Additional readings and notes :—
Lemberg ePE = +3m.47s.
Belgrade i = +4m.31s. and +4m.55s., e = +5m.12s., i = +6m.15s., +6m.19s., +6m.35s., +7m.15s., +8m.11s., +8m.49s., and +9m.40s.
Zagreb i = +5m.6s. and +5m.20s., iNW = +5m.43s., iNE = +5m.47s., iNW = +5m.51s., i = +6m.11s., iNW = +6m.25s. and +6m.43s., iNE = +6m.51s., iNW = +6m.59s. and +7m.11s., iNE = +7m.19s., iNW = +7m.27s., +9m.18s. and +9m.46s., iNE = +9m.49s., i = +10m.11s., iNE = +10m.15s., i = +10m.50s.
Vienna iP = +5m.3s., PP = +5m.31s., PPP = +5m.34s., P_cP = +8m.47s., PS = +9m.18s., SS = +9m.59s.
Graz PP = +5m.57s.
Laibach e = +5m.23s. and +6m.47s.
Konigsberg iE = +5m.12s., iZ = +5m.19s., iPPZ = +5m.32s., iPPPE = +5m.44s., iSPSZ = +10m.45s.
Cheb ePP = +6m.15s., ePPP = +6m.41s., ePS? = +9m.9s., e = +11m.9s., eSS = +11m.57s.
Rocca di Papa S = +10m.57s.
Helsingfors iPP = +5m.47s., PPP = +6m.5s., i = +6m.12s., e = +7m.9s., i = +7m.41s., iP_cP = +8m.59s., iSNZ = +9m.53s., SSNZ = +10m.49s., iSSSN = +11m.9s., P_cS = +12m.33s.
Innsbruck iPP = +6m.4s., iPPP = +6m.6s., i = +6m.27s.
Potsdam iN = +6m.36s., +7m.1s., +7m.21s., +7m.33s., +8m.13s., +9m.9s., +9m.50s., and +11m.49s.

Continued on next page.

Jena ePN = +5m.39s., ePEZ = +5m.41s., eZ = +7m.45s., eNE = +8m.2s., ePSN = +11m.3s., iPSE = +11m.11s., PPE = +14m.21s.
Stuttgart i = +5m.51s. and +7m.43s., iN = +8m.12s., iPP = +6m.28s., iPPPEZ = +6m.38s., iSS = +11m.49s.
Lund eNW = +6m.14s., eNE = +6m.33s., and +12m.9s.
Gottingen ePPE = +6m.34s.
Copenhagen i = +5m.53s., +6m.14s., + 6m.34s., eE = +7m.45s., iNZ = +10m.56s., iE = +12m.9s.
Upsala PP = +6m.33s., SS = +11m.55s.
Hamburg iSN = +11m.20s.
Marseilles iPP = +7m.2s.
Agra readings have been *increased* by 2m.
De Bilt eE = +10m.56s.
Uccle i = +7m.10s. = PP − 2s.
Tortosa PZ = +6m.43s.
Bergen PP = +7m.38s., SS = +13m.33s.
Kew ePSZ = +13m.3s.
Stonyhurst PP = +8m.13s.
Edinburgh i = +7m.9s., +8m.18s., +9m.10s., and +12m.51s.
Almeria PP = +8m.3s., iS = +13m.3s.
Granada i = +16m.2s.
Reykjavik e = +9m.2s., +11m.45s., +13m.2s., and +16m.7s., PP = +10m.24s., PS = +15m.34s., SS = +19m.0s.
Scoresby Sund eE = +10m.21s. and +11m.5s., eZ = +10m.49s., iS = +15m.31s., SS = +19m.3s.
Tananarive PP = +12m.4s., PPP = +13m.13s., PS = +17m.58s., S_eP = +19m.44s., N = +21m.10s., SS = +22m.4s., SSS = +24m.5s., SSSS = +25m.1s.
Phu-Lien eSS = +21m.0s.
Medan i = +9m.10s.
Hong Kong PP = +12m.53s., i = +22m.20s. = SS − 9s.
Zi-ka-wei PPZ = +12m.37s., PPPZ = +14m.7s., PPPPZ = +15m.12s., iZ = +19m.24s., SSE? = +22m.47s., SSZ? = +23m.23s., SSSZ? = +24m.57s., SSSSZ = +27m.5s.
Taihoku PPE = +19m.30s. = S +1s., SSE = +27m.8s.
Toyooka eP = +11m.9s., SN = +20m.13s.
Koti ePSN = +21m.13s., SS = +25m.3s.
Manila ePEN = +11m.14s.
Batavia PZ = +11m.41s., i = +13m.28s., +21m.45s., and +22m.29s.
Malabar i = +15m.50s.
Ottawa SS = +28m.23s.: T_0 = 22h.34m.24s.
Toronto iPS = +23m.45s., iE = +24m.45s., SS = +28m.58s.: T_0 = 22h.34m.49s.
Sitka ePPN = +16m.23s., eSSN = +31m.15s.
Ann Arbor ePPE = +16m.15s., ePS = +24m.27s., eSSE = +29m.57s., eSSS = +33m.15s., eE = +36m.33s.: T_0 = 22h.34m.36s.
Charlottesville iSKS = +23m.20s.
Chicago iSKS = +23m.28s., iPS = +24m.51s., eSS = +30m.3s., eSSS = +33m.39s.
Florissant iZ = +13m.23s., iPPZ = +17m.4s., iPPPZ = +19m.55s., iPS = +25m.33s.
St. Louis ePPE = +17m.3s., iE = +18m.42s., iPSE = +25m.37s., eSSE = +30m.58s., eSSSE = +33m.57s.
Victoria PN = +13m.23s.
Perth S = +28m.23s., SS = +34m.3s.
Berkeley eE = +18m.33s. and +32m.57s., eN = +41m.49s., eEN = +28m.59s., eSSN = +33m.53s., eSSSE = +38m.49s., eSSSN = +38m.57s., eSSSSE = +42m.5s.
Lick eN = +49m.33s. ?
Tucson PPE = +18m.54s., SKS = +24m.56s., SN = +26m.8s., iPSN = +28m.1s., SS = +33m.33s.
Adelaide i = +34m.33s. and +38m.37s.
La Paz PPZ = +19m.48s., PSE = +30m.17s., PPSZ = +32m.5s., SSE = +27m.5s., SSSZ = +42m.59s.
Honolulu T.H. ePP = +20m.39s., eSS = +36m.3s.
Melbourne i = +36m.20s. and +40m.28s.
Riverview PPS? = +32m.16s,
Wellington PP = +21m.43s.
Long waves were also recorded at Denver, Sydney, and Apia.

May 6d. Readings also at 0h. (La Paz and near Melbourne), 2h. (Andijan and Samarkand), 4h. (Granada), 6h. (Paris), 9h. (Messina), 10h. (Honolulu T.H.), 12h. (Messina (2)), 14h. (Zurich), 15h. (Andijan and Samarkand), 16h. (Messina), 19h. (Taihoku), 20h. (La Paz, Strasbourg, Stuttgart, Pulkovo, Samarkand, Granada, Malaga (3), Zagreb, Florence, Naples, Rocca di Papa, Rome, Catania (2), Messina (2), Trenta (2), Taranto, Casamicciola, and Mineo (2)), 21h. (Ekaterinburg, Nagoya, Naples, Florence, Rocca di Papa, Rome, Messina, Casamicciola, Catania, Trenta, and Taranto: these readings and those for 20h. appertain to local shocks from an origin in Italy: no determination is possible), 22h. (La Plata, near Santiago, and near Nagoya), 23h. (Samarkand and Tyosi).

May 7d. 4h. 47m. 46s. (I)
4h. 58m. 40s. (II)
5h. 24m. 24s. (III)
5h. 42m. 30s. (IV)
9h. 29m. 30s. (V)
10h. 58m. 25s. (VI)
11h. 31m. 42s. (VII)
} Epicentre 37°·0N. 44°·0E. (as at 6d. 22h.) X. X. X. X. X. X. X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Baku		5·7	51	1 21	0	—	—	i 2·3	2·5
II		5·7	51	e 1 20	− 1	—	—	e 2·1	3·1
III		5·7	51	e 1 13	− 8	—	—	e 2·2	3·2
IV		5·7	51	e 1 28	+ 7	—	—	e 2·4	3·5
V		5·7	51	e 1 22	+ 1	—	—	i 2·4	4·4
VI		5·7	51	e 1 43	+22	—	—	i 2·7	3·5
VII		5·7	51	e 1 30	+ 9	—	—	e 2·5	3·4
I Ksara	E.	7·3	247	e 2 14?	+30	e 3 45	+39	4·9	—
II	E.	7·3	247	e 1 44	0	3 30	+24	4·0	—
III	E.	7·3	247	e 1 52	+ 8	4 26	+80	4·9	—
IV		7·3	247	e 2 0	+16	4 11	+65	5·1	—
V		7·3	247	2 31	+47	4 49	+103	5·7	—
VI		7·3	247	e 2 14	+30	4 25	+79	5·4	—
VII	E.	7·3	247	e 2 1	+17	3 57	+51	4·5	—
V Kucino		19·2	350	—	—	e 7 43	− 7	—	10·1
V Tashkent		20·0	67	i 4 33	+ 3	8 3	− 3	e 11·0	14·6
IV Ekaterinburg		22·7	24	e 4 44	−14	e 8 44	−15	11·5	—
V		22·7	24	i 4 56	− 2	i 8 51	− 8	11·0	15·5
VI		22·7	24	i 4 48	−10	e 9 8	+ 9	11·1	—
VII		22·7	24	i 4 41	−17	e 8 38	−21	10·8	—
II Pulkovo		24·4	343	e 4 33	−41	e 8 49	(− 4)	11·3	—
IV		24·4	343	e 5 6	− 8	e 9 24	− 6	13·5	—
V		24·4	343	5 24	+10	—	—	12·5	45·1
VII		24·4	343	e 5 6	− 8	—	—	13·3	—

Long waves were also recorded as follows: II Tashkent, IV Copenhagen, V Copenhagen, Strasbourg, Stuttgart, and De Bilt.

May 7d. 13h. 47m. 48s. Epicentre 37°·5N. 45°·5E. (as on 1929 Nov. 5d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	e 1 10	+ 6	—	—	e 2·1	4·1
Ksara	E.	8·6	248	2 13	+11	4 26	+47	5·4	—
Theodosia		10·7	318	e 2 36	+ 5	—	—	—	—
Kucino		19·0	347	e 4 0	−19	7 18	−28	e 8·8	11·0
Ekaterinburg		21·8	22	i 4 45	− 4	8 40	− 2	10·2	14·9
Pulkovo		24·3	341	5 10	− 3	e 9 26	− 2	12·4	14·1
Florence		26·5	294	5 37	+ 3	—	—	—	15·2
Cheb		26·7	309	—	—	e 10 12?	+ 2	—	—
Stuttgart		28·5	305	—	—	e 11 12?	+32	e 17·2	—
Hamburg		29·2	315	—	—	e 11 12?	+21	—	17·2
Strasbourg		29·4	304	—	—	(e 11 12?)	+17	e 11·2	—

Long waves were also recorded at Irkutsk, Scoresby Sund, and several European stations.

May 7d. 20h. 27m. 57s. (I)
20h. 41m. 9s. (II) } Epicentre 34°·0N. 139°·5E. (as on 1930 Mar. 8d.) X. X.
22h. 42m. 43s. (III) X.

$A = -·630$, $B = +·538$, $C = +·559$; $D = +·649$, $E = +·760$; $G = -·425$, $H = +·363$, $K = -·829$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Tyosi	2·1	33	e 0 29	− 1	(0 45)	− 9	0·8	—
II	2·1	33	e 0 24	− 6	(0 39)	−15	0·6	—
III	2·1	33	e 0 32	+ 2	(0 48)	− 6	0·8	—
I Nagoya	2·4	299	0 33	− 1	0 56	− 6	—	—
II	2·4	299	0 35	+ 1	0 58	− 4	—	—
III	2·4	299	0 29	− 5	0 53	− 9	—	—
I Osaka	3·4	278	1 3	+14	—	—	1·8	2·2
II	3·4	278	0 52	+ 3	—	—	1·6	1·9
III	3·4	278	0 53	+ 4	—	—	1·6	1·9
II Kobe	3·7	282	—	—	e 1 36	+ 1	—	1·9
II Sumoto	3·8	276	e 1 51	S	(e 1 51)	+14	—	—

May 7d. Readings also at 1h. (Stuttgart and Graz), 2h. (Baku), 3h. (Almeria, Rocca di Papa, Rome, and Adelaide), 5h. (Manila), 11h. (Ekaterinburg, Baku), 12h. (Ekaterinburg, Baku, and La Paz), 13h. (Batavia, Strasbourg, and Lick), 14h. (Baku, Pulkovo, Ekaterinburg, Kucino, Uccle, Irkutsk, Simferopol, Sebastopol, Ksara, Yalta, Theodosia, Paris, Florence, Granada, Vienna, De Bilt, Zagreb, Hamburg, Stuttgart, Copenhagen, Scoresby Sund, Lund, and Manila), 15h. (Ksara (2)), 16h. (Cheb), 18h. (Ekaterinburg and Baku), 19h. (La Paz), 20h. (Nagoya), 21h. (Nagoya), 22h. (Irkutsk, Ekaterinburg, and Nagoya), 23h. (Baku and Tyosi).

May 8d. 5h. 29m. 30s. Epicentre 37°·5N. 45°·5E. (as on 7d.) R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	4·5	48	i 1 8	+ 4	2 12	+17	—	5·3
Ksara	8·6	248	e 2 11	+ 9	4 20	+41	5·3	—
Theodosia	10·7	318	e 2 30	− 1	—	—	—	—
Yalta	11·0	313	e 2 28	− 7	—	—	—	—
Simferopol	11·3	314	e 2 30	− 9	—	—	—	—
Kucino	19·0	347	e 4 24	+ 5	7 50	+ 4	e 8·3	10·2
Ekaterinburg	21·8	22	i 4 43	− 6	8 36	− 6	11·0	15·5
Graz	24·0	303	5 7	− 3	—	—	—	6·9
Pulkovo	24·3	341	5 9	− 4	9 25	− 3	13·0	14·2
Helsingfors	26·1	337	—	—	e 9 56	− 4	—	—
Cheb	26·7	309	—	—	e 10 30?	+20	—	—
Stuttgart	28·5	305	—	—	e 10 30?	−10	e 18·5	—
Copenhagen	28·7	320	—	—	10 35	− 8	15·5	—
Hamburg	29·2	315	—	—	e 10 30?	−21	e 17·3	20·5
Strasbourg	29·4	304	(e 5 30?)	−30	—	—	e 5·5	—
De Bilt	31·6	310	—	—	e 11 48	+19	e 17·5	—
Uccle	31·9	308	—	—	(e 11 30?)	− 4	e 11·5	—
Irkutsk	42·8	50	e 7 52	− 3	—	—	22·4	—

Additional readings:—
Irkutsk eSS = +17m.17s.
Long waves were also recorded at Scoresby Sund and several other European stations.

May 8d. 12h. 47m. 18s. Epicentre 8°·0S. 117°·2E. N.2.

A = −·453, B = +·881, C = −·139; D = +·889, E = +·457;
G = +·064, H = −·124, K = −·990.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar	9·6	274	e 2 12	− 4	i 3 50	−13	—	—
Batavia	10·4	280	2 31	+ 5	i 5 0	L	(5·0)	—
Amboina	11·8	69	i 3 22	+36	i 4 55	− 3	—	—
Manila	22·9	9	i 5 1	+ 1	i 8 42	−21	—	—
Hong Kong	30·5	354	6 10	+ 1	11 2	−10	—	19·0
Phu-Lien	30·6	340	e 6 8	− 2	—	—	11·7	—
Adelaide	33·4	146	e 7 54?	PP	e 14 6?	SSS	18·2	21·8
Melbourne	39·0	144	i 6 42?	−42	i 12 42?	−39	i 23·1	24·0
Zi-ka-wei	39·4	5	7 25	− 2	13 25	− 2	—	32·1
Colombo	40·1	291	7 33	0	13 21	−17	19·5	29·0
Riverview	40·6	135	—	—	e 13 53	+ 8	e 22·6	29·7
Sydney	40·6	135	e 9 12	PP	—	—	22·3	24·7
Kobe	45·9	20	e 14 33	S	(e 14 33)	−30	—	—
Osaka	46·0	20	8 28	+ 7	15 12	+ 8	—	—
Bombay	51·3	302	e 7 55	−66	16 15	− 4	30·2	39·1
Vladivostok	52·8	13	e 9 17	+ 5	i 16 47	+ 8	—	—
Irkutsk	61·3	351	e 10 10	− 4	18 28	− 5	33·7	39·5
Tashkent	66·0	324	e 10 25	−20	19 16	−16	e 31·7	43·0
Baku	78·4	316	e 11 55	− 4	e 20 44	−75	e 34·7	54·2
Ekaterinburg	79·5	333	i 11 56	− 9	21 50	−20	36·7	46·6
Kucino	90·6	327	—	—	e 22 56	?	e 45·0	—
Pulkovo	95·3	330	13 14	− 8	23 46	[−16]	46·7	60·8
Copenhagen	104·9	326	18 42?	PP	24 36	[−13]	54·7	—
Scoresby Sund	112·4	347	19 18	PP	21 48	PPP	60·7	—
Georgetown	146·5	20	i 19 37	[0]	e 22 48	PP	—	—

Additional readings :—
Manila iN = +5m.39s., iE = +5m.54s.
Melbourne i = +8m.42s.?, +16m.14s., and +21m.30s., e = +17m.52s. = S_cS +16s.
Zi-ka-wei PPZ = +9m.8s., SSSZ = +16m.58s.
Riverview e = +16m.55s.
Kucino e = +33m.20s. = SSS − 2s.
Pulkovo PP = +17m.13s.
Long waves were recorded by Ann Arbor, De Bilt, Kodaikanal, and Wellington.

May 8d. 13h. 35m. 0s. Epicentre 22°·0S. 174°·0E. (as on 1929 Mar. 24d.). R.3.

A = −·922, B = +·097, C = −·375; D = +·104, E = +·994;
G = +·373, H = −·039, K = −·927.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	15·8	61	3 34	− 4	7 37	+63	9·5	10·8
Wellington	19·9	178	4 30	+ 1	8 11	+ 7	—	9·0
Christchurch	21·6	183	4 54	+ 8	9 3	SS	10·6	—
Riverview	23·2	235	e 4 54	− 9	i 9 23	+15	e 10·9	12·0
Sydney	23·2	235	e 4 6	−57	i 9 30	+22	12·4	13·5
Melbourne	29·5	231	6 8	+ 7	10 58	+ 2	13·7	17·3
Adelaide	33·5	239	e 7 20	PP	i 12 0	+ 2	i 14·3	20·6
Amboina	48·0	285	i 8 48	+12	—	—	—	—
Honolulu T.H.	51·3	35	—	—	e 16 7	−12	e 20·7	—
Manila	63·6	300	i 10 23	− 6	i 18 48	−14	32·0	—
Batavia	66·5	272	e 13 8	PP	i 19 54	PS	—	—
Hong Kong	73·2	305	—	—	20 40	−19	—	31·4
Zi-ka-wei	73·3	315	e 11 42	+11	—	—	36·1	38·9
Vladivostok	75·7	330	e 11 38	− 6	e 21 25	− 3	35·0	—
Phu-Lien	78·5	299	12 0?	0	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	89·7	25	—	—	e 20 0	PPPP	—	—
Victoria	E.	89·9	36	24 41	PS	—	—	37·0	49·2
Irkutsk		95·7	325	e 13 36	+12	e 24 27	−21	44·0	57·7
Colombo		96·4	275	39 21	?	—	—	—	60·6
Bombay		107·0	285	e 20 26	PPP	—	—	—	70·3
Florissant		107·8	54	e 18 30	PP	e 28 0	PS	—	52·0
St. Louis		107·9	54	—	—	e 24 50	[−14]	e 49·8	—
La Paz		108·0	117	19 10	PP	—	—	—	—
Tashkent		115·1	307	e 19 0	[+27]	e 29 18	PS	e 50·5	56·5
Toronto		116·8	50	—	—	e 30 34	?	e 51·5	—
Ottawa		119·5	48	—	—	e 30 0?	PS	e 56·0	—
Ekaterinburg		121·0	324	e 18 56	[+ 8]	e 22 28	PPP	50·0	—
Baku		129·7	306	e 21 36	PP	—	—	—	—
Scoresby Sund		130·6	7	23 8	?	—	—	55·0	—
Pulkovo		134·4	335	i 22 48	PKS	—	—	—	—
Helsingfors	E.	136·1	339	i 23 34	PP	—	—	—	—
Ksara		141·4	299	e 20 0?	[+37]	e 23 0?	PKS	—	—
Copenhagen		143·6	342	24 0	?	—	—	61·0	—
Hamburg		146·2	344	e 19 36	[0]	—	—	e 76·0	80·0
Budapest		147·5	328	e 19 0?	[−38]	—	—	—	—
Vienna	Z.	148·2	330	e 19 48	[+ 9]	—	—	—	—
De Bilt		148·7	347	e 20 7	[+27]	—	—	e 71·0	76·9
Uccle		150·2	347	e 19 57	[+15]	—	—	e 71·0	—
Kew		150·2	353	e 20 6	[+24]	—	—	e 74·0	—
Stuttgart		150·7	339	e 19 45	[+ 2]	—	—	e 78·0	83·0
Strasbourg		151·3	341	e 19 59	[+16]	—	—	e 70·0	—
Zurich		152·1	336	e 19 47	[+ 3]	—	—	—	—
Paris		152·3	348	e 19 52	[+ 7]	—	—	74·0	85·0
Neuchatel		153·0	340	e 19 48	[+ 2]	—	—	—	—
Florence		154·0	331	e 19 0	[−47]	i 20 45	PKP_2	81·0	87·0
Granada		164·7	353	e 20 42	[+43]	—	—	e 79·0	85·8
Almeria		164·8	349	e 21 8	PKP_2	—	—	83·3	87·4

Additional readings :—
Riverview iP = +5m.3s. and +5m.11s., iPP = +5m.29s., iPPP = +5m.43s.
Melbourne PP = +6m.57s.
Irkutsk e = +22m.1s.
St. Louis eE = +28m.0s. =PS −7s. and +33m.5s.
Tashkent i = +19m.49s. =PP +15s., e = +19m.56s. and +35m.13s. =SS −14s.
Ekaterinburg e = +19m.7s., +36m.33s. =SS −12s. and +41m.10s. =SSS +7s.
Helsingfors eE = +15m.13s., eN = +23m.46s.
Ksara eN = +34m.31s.
Granada i = +21m.25s., +26m.20s., and +27m.43s.
Long waves were also recorded at Edinburgh, Cheb, Upsala, Lund, Tucson, Harvard, Berkeley, Ann Arbor, Tananarive, and Rio de Janeiro.

May 8d. 14h. 23m. 32s. Epicentre 37°·5N. 45°·5E. (as at 5h.). **X.**

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	4·5	48	e 1 30	+26	—	—	2·4	4·9
Ksara	8·6	248	e 2 29	+27	4 42	+63	5·5	—
Tashkent	18·7	71	i 4 32	+17	—	—	—	—
Kucino	19·0	347	3 58	−21	7 20	−26	e 10·5	22·5
Ekaterinburg	21·8	22	i 4 49	0	8 42	0	—	18·5
Pulkovo	24·3	341	5 17	+ 4	e 9 38	+10	16·5	25·9

Additional reading :—
Tashkent i = +18m.4s.
Long waves were also recorded at Upsala.

May 8d. 15h. 5m. 21s. Epicentre 37°·5N. 45°·5E. (as at 14h.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	e 1 17	+13	i 2 17	+22	—	3·6
Ksara	N.	8·6	248	e 2 10	+ 8	4 30	+51	5·4	—
Theodosia		10·7	318	e 2 39	+ 8	—	—	—	—
Yalta		11·0	313	e 2 41	+ 6	—	—	—	—
Simferopol		11·3	314	e 1 39	−60	—	—	—	—
Tashkent		18·7	71	i 4 28	+13	i 8 3	+23	11·6	15·0
Kucino		19·0	347	i 3 49	−30	7 8	−38	8·6	—
Ekaterinburg		21·8	22	4 45	− 4	i 8 41	− 1	11·6	15·6
Pulkovo		24·3	341	5 11	− 2	9 29	+ 1	12·6	14·6
Helsingfors		26·1	337	i 5 32	+ 2	i 10 5	+ 5	—	—
Zurich		28·7	302	e 6 50	+57	—	—	—	—
Hamburg		29·2	315	—	—	e 9 39?	−72	—	20·6
Neuchatel		29·7	301	e 5 45	−17	—	—	—	—

Additional readings :—
Helsingfors iN = +10m.11s., iZ = +10m.22s.
Long waves were also recorded at Scoresby Sund, St. Louis, and other European stations.

May 8d. 15h. 35m. 24s. Epicentre **37°·3N. 44°·8E.** N.1.

Probable error ±0°·4.

A = +·564, B = +·561, C = +·606; D = +·705, E = −·710;
G = +·430, H = +·427, K = −·795.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	N.	8·1	247	2 13	+18	4 2	+36	4·7	—
Theodosia		10·5	320	2 27	− 1	e 4 36	+10	6·6	—
Yalta		10·8	315	2 32	0	—	—	—	—
Simferopol		11·1	317	e 2 36	0	—	—	—	—
Helwan		13·5	240	i 3 17	+ 8	6 2	+23	—	9·6
Samarkand		17·5	75	i 4 0	0	e 7 20	+ 7	—	—
Kucino		19·0	348	i 3 46	−33	i 7 9	−37	8·5	9·4
Tashkent		19·3	71	i 4 17	− 5	i 7 56	+ 4	11·6	15·1
Lemberg		19·5	317	e 4 24	0	e 8 0	+ 4	—	15·9
Belgrade		19·8	300	e 4 27	0	e 8 12	+10	e 11·9	12·7
Budapest		21·4	306	4 48	+ 4	8 50	+16	13·6	15·6
Andijan		21·6	72	4 50	+ 4	9 1	SS	9·7	—
Taranto		21·6	287	4 54	+ 8	8 54	+16	—	15·1
Ekaterinburg		22·2	24	i 4 46	− 7	i 8 41	− 9	10·1	15·1
Trenta		22·4	284	i 5 6	+11	i 9 11	+18	—	13·1
Zagreb		23·0	301	e 5 10	+ 9	e 9 16	+11	e 13·4	14·4
Messina		23·1	281	5 7	+ 5	9 12	+ 5	16·0	—
Vienna		23·4	307	e 5 6	+ 1	9 7	− 5	—	11·1
Catania		23·5	279	5 0	− 5	9 19	+ 5	14·4	16·9
Graz		23·6	304	i 5 11	+ 5	i 9 28	+12	13·6	16·9
Benevento		23·9	289	i 4 6	−63	—	—	13·1	15·1
Naples	E.	23·9	288	e 3 33	−96	e 8 52	(+ 1)	20·6	—
Konigsberg		24·1	325	i 5 13	+ 2	i 9 22	− 3	—	—
Laibach		24·1	301	e 4 12	−59	e 8 34	−51	e 15·0	—
Pulkovo		24·3	342	i 5 10	− 3	i 9 20	− 8	12·1	13·8
Rocca di Papa		25·0	290	i 5 24	+ 4	e 9 48	+ 7	e 13·0	15·1
Almata		25·0	66	5 27	+ 7	9 57	+16	—	—
Rome		25·2	291	i 5 28	+ 6	e 9 46	+ 2	e 15·0	17·4
Venice		25·5	299	e 5 32	+ 7	i 10 4	+14	—	—
Treviso		25·7	299	i 5 32	+ 6	i 10 1	+ 8	14·6	—
Padova		25·9	298	e 5 31	+ 3	i 9 59	+ 2	—	—
Florence		26·1	295	5 34	+ 4	10 18	+18	16·0	17·3
Helsingfors		26·1	337	i 5 28	− 2	i 9 49	−11	e 12·1	—
Innsbruck		26·4	303	e 5 36?	+ 3	—	—	—	—
Cheb		26·4	309	e 5 38	+ 5	e 10 18	+13	e 16·6	18·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Potsdam	E.	26·8	314	e 5 34	− 2	e 10 0	−12	e 15·0	18·6
	N.	26·8	314	e 5 41	+ 5	e 10 11	− 1	e 15·0	19·2
Jena		27·1	311	e 5 36	− 3	i 10 36	+19	e 15·6	19·2
Piacenza		27·3	298	5 48	+ 7	i 10 31	+11	16·6	21·1
Chur		27·6	302	e 5 45	+ 1	e 10 42	+17	—	—
Lund		28·1	321	5 50	+ 2	i 10 29	− 5	—	—
Stuttgart		28·2	305	e 5 47	− 2	i 10 31	− 4	e 15·1	18·9
Dehra Dun		28·3	94	5 36	−14	10 26	−11	15·9	21·6
Gottingen		28·3	311	i 5 52	+ 2	i 10 34	− 3	e 15·6	19·6
Zurich		28·3	302	e 5 49	− 1	e 10 33	− 4	—	—
Upsala		28·5	331	e 5 44	− 8	e 10 25	−15	e 14·6	17·8
Copenhagen		28·5	321	5 52	0	i 10 36	− 4	—	—
Karlsruhe		28·7	306	5 55	+ 2	11 37	− 6	e 17·6	—
Hamburg		28·9	315	i 5 57	+ 2	e 10 57	+10	e 16·6	20·6
Strasbourg		29·1	305	i 6 0	+ 3	(e 10 36?)	−14	e 10·6	19·6
Neuchatel		29·4	301	i 6 2	+ 2	e 10 48	− 7	—	—
Agra	E.	29·7	100	—	—	8 49	(−20)	11·6	18·6
Besançon		30·1	302	e 6 10	+ 4	11 7	+ 1	17·6	—
Bombay		30·6	118	6 21	+11	11 33	+19	15·9	22·4
De Bilt		31·3	313	i 6 23	+ 6	e 11 26	+ 2	e 16·6	22·2
Uccle		31·6	310	e 6 19	0	i 11 28	− 1	—	19·5
Paris		32·5	308	e 6 30	+ 3	e 11 36	− 7	13·6	20·6
Barcelona		32·9	291	e 5 47	−44	—	—	e 17·1	22·4
Algiers		33·1	283	e 6 42	+ 9	—	—	14·6	21·6
Bergen		33·9	328	6 36?	− 3	11 58	− 6	15·1	19·6
Kew		34·5	311	i 6 48	+ 3	e 12 12	− 2	14·0	20·3
Oxford		35·2	311	6 51	0	i 12 21	− 3	i 15·0	27·2
Hyderabad		35·5	115	7 5	+12	12 47	+18	18·6	25·2
Alicante		35·5	289	e 7 9	+16	e 12 36	+ 7	e 15·2	—
Dyce		36·5	320	—	—	12 34	−10	17·2	25·0
Edinburgh		36·9	318	7 13	+ 7	12 49	− 1	i 21·7	25·6
Almeria		37·2	286	7 19	+11	13 4	+10	15·7	23·3
Toledo		37·8	291	e 7 17	+ 4	e 13 4	+ 1	e 16·6	19·9
Granada		38·1	286	i 7 21	+ 5	13 27	+19	17·4	25·0
Malaga		38·9	285	7 29	+ 6	13 25	+ 5	17·2	28·0
Kodaikanal		39·9	125	14 18	S	(14 18)	+43	—	—
Calcutta	E.	40·1	99	7 30	− 3	13 42	+ 4	19·8	—
	N.	40·1	99	7 16	−17	13 26	−12	19·5	—
San Fernando		40·3	286	13 26	S	(13 26)	−15	21·3	28·1
Irkutsk		43·4	49	e 8 2	+ 2	14 26	− 1	22·6	28·3
Colombo		44·0	126	8 17	+12	14 57	+21	30·4	34·4
Scoresby Sund		47·6	335	8 32	− 1	15 24	− 3	24·6	—
Phu-Lien		55·5	89	e 9 36	+ 4	—	—	20·6	—
Tananarive		56·3	177	e 9 50	+12	17 49	+22	27·8	36·6
Dakar		59·3	265	e 10 4	+ 4	e 18 5	− 2	26·6	42·6
Hong Kong		60·8	84	10 14	+ 4	18 32	+ 6	—	38·4
Zi-ka-wei	Z.	61·9	70	10 16	− 2	17 42	−59	—	42·4
Vladivostok		63·7	54	i 10 35	+ 5	e 19 3	− 1	26·1	40·5
Koti		69·5	62	e 12 10	+62	—	—	—	—
Kobe		70·1	60	20 21	S	(20 21)	− 1	e 43·0	—
Manila		70·3	86	11 16	+ 3	i 20 42	PS	34·3	42·1
Batavia		72·2	113	e 11 47	+23	i 20 47	0	—	—
Cape Town		75·4	202	—	—	e 22 21	+56	39·6	48·4
Harvard		81·4	319	—	—	e 22 20	−11	39·6	—
Ottawa		81·6	322	—	—	e 22 31	− 2	44·6	—
Toronto		84·6	323	—	—	i 22 51	[− 5]	44·6	—
Sitka	E.	85·6	0	—	—	e 23 6	[+ 3]	e 50·6	—
Georgetown		86·9	320	i 12 45	+ 2	e 23 25	− 1	—	—
St. Louis		93·6	327	—	—	i 23 51	[− 2]	e 51·4	—
Victoria	E.	93·6	353	23 56	SKS	(23 56)	[+ 3]	43·8	59·5
La Paz		118·0	271	20 5	PP	—	—	69·6	79·4

For Notes see next page.

NOTES TO MAY 8d. 15h. 35m. 24s.

Additional readings :—
Lemberg ePN = +4m.30s.
Belgrade e = +5m.23s. and +9m.58s.
Zagreb e = +5m.15s., i = +5m.53s., e = +6m.25s. and +7m.17s., eNW = +10m.16s. and +11m.16s., e = +12m.18s.
Vienna PP = +5m.32s., PPP = +6m.0s., SS = +9m.53s.
Konigsberg iE = +5m.29s. and +9m.54s., iPPN = +5m.39s., iPSN = +9m.27s.
Rocca di Papa iS = +9m.57s.
Helsingfors iPPEN = +5m.55s., iSSEN = +10m.41s., iE = +10m.55s., iSSSN = +11m.9s.
Jena iSN = +11m.24s. =SS +4s., iE = +12m.15s.
Lund +10m.53s.
Stuttgart iPPEZ = +6m.32s., iEZ = +7m.0s., i = +10m.56s., iSS = +12m.1s.
Upsala PP = +6m.36s. ?
Copenhagen = +6m.35s. =PP −2s., +12m.6s. =SS +12s.
Hamburg eSE = +11m.9s., eZ = +11m.14s.
De Bilt iEZ = +7m.27s.
Uccle i = +7m.27s.
Bergen PP = +7m.46s.
Granada PP = +9m.1s., i = +9m.30s. =P_cP −6s.
San Fernando S = +18m.46s.
Scoresby Sund +10m.26s. =PP+9s., +19m.17s., eEN =+17m.0s., eE =+21m.0s.
Tananarive ePPN = +12m.20s., PPP = +13m.14s., PS = +18m.11s., S_cP = +19m.57s., SS = +22m.32s.
Zi-ka-wei PPPZ? = +14m.18s.
Batavia i = +21m.58s.
Ottawa eE = +33m.54s.
Sitka eE = +37m.18s.
Ann Arbor (Δ =87°·6) e?E = +26m.6s. and +40m.24s., e?N = +29m.24s. and +32m.6s.
St. Louis iE = +25m.35s. =PS +1s.
Long waves were also recorded at Stonyhurst, Adelaide, Melbourne, Riverview, and Tucson.

May 8d. 22h. 45m. 2s. Epicentre 17°·0N. 112°·0W. (as on 1924 March 26d.). X.

A = −·358, B = −·887, C = +·292 ; D = −·927, E = +·375 ; G = −·110, H = −·271, K = −·956.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tacubaya	12·3	77	2 43	− 9	(5 26)	+16	5·4	7·2
Tucson	15·3	5	i 3 29	− 3	e 6 12	−10	e 6·8	—
Florissant	28·9	37	5 28	−27	e 10 18	−29	—	13·6
Chicago	32·4	36	e 5 28	−58	—	—	e 13·2	—
Victoria	32·8	347	12 8	?S	(12 8)	+20	15·3	20·2
Toronto	38·3	40	—	—	e 13 28	+17	20·0	—
Ottawa	41·4	40	—	—	e 13 34	−23	e 20·0	—
Harvard	43·0	45	—	—	e 16 5	+104	e 21·3	—

Additional readings :—
Toronto i = +18m.35s.
Ottawa e = +16m.10s.
Long waves were also recorded at Honolulu T.H., Ann Arbor, St. Louis, Scoresby Sund, De Bilt, Uccle, Pulkovo, Copenhagen, and Kucino.

May 8d. 23h. 36m. 22s. Epicentre 37°·3N. 44°·8E. (as at 15h.). R.3.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		5·0	51	e 1 14	+ 3	e 2 14	+ 6	—	4·2
Ksara	N.	8·1	247	2 54	+59	4 58	+92	5·9	—
Theodosia		10·5	320	e 2 29	+ 1	—	—	—	—
Yalta		10·8	315	e 2 52	+20	—	—	—	—
Simferopol		11·1	317	e 2 38	+ 2	—	—	—	—
Kucino		19·0	348	e 4 12	− 7	i 7 47	+ 1	8·9	12·1
Tashkent		19·3	71	i 4 28	+ 6	e 7 55	+ 3	13·1	13·2
Ekaterinburg		22·2	24	4 46	− 7	i 8 42	− 8	—	16·1
Pulkovo		24·3	342	5 12	− 1	e 9 33	+ 5	14·1	14·5
Stuttgart		28·2	305	—	—	e 10 38?	+ 3	e 18·6	—
Copenhagen		28·5	321	6 38?	PP	—	—	15·6	—
Granada		38·1	286	(8 38?)	PP	—	—	8·6	—

Long waves were also recorded at Florence De Bilt, Hamburg, and Scoresby Sund.

May 8d. Readings also at 0h. (Wellington, near Nagoya and Tyosi), 2h. (Baku, Ekaterinburg, Pulkovo, Tashkent, and Ksara), 3h. (Samarkand, Wellington, Ksara (2), and near Nagoya), 4h. (Zagreb, Kobe, near Nagoya (3), Osaka, and Tyosi), 5h. (Nagoya, near Mizusawa, and near Taihoku), 9h. (Manila, Taihoku, and La Paz) 10h. (Ekaterinburg and Tashkent), 14h. (La Paz and Ksara), 15h. (Kobe, Sumoto, near Nagoya (2), Osaka, and Tyosi), 16h. (Baku (2), Ekaterinburg (2), Ksara (2), near Manila, near Sumoto, Osaka (2), Nagoya, Tyosi, and Kobe (2)), 17h. (Baku and Ksara), 18h. (Baku, Ksara, De Bilt, Kucino, and Scoresby Sund), 19h. (Baku, Ksara, near Tyosi (4), Osaka and Nagoya (4)), 20h. (Taihoku and Vienna), 21h. (Baku, Ksara, Ekaterinburg, near Sumoto, Kobe, and Osaka), 22h. (near Manila).

May 9d. 1h. 43m. 0s. Epicentre 37°·0N. 44°·0E. (as on 7d.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		5·7	51	e 1 39	+18	i 2 40	+15	—	4·7
Ksara	N.	7·3	247	e 2 36	+52	4 36	+90	5·4	—
Kucino		19·2	350	—	—	e 8 39	?	e 10·0	—
Tashkent		20·0	67	e 4 29	− 1	i 8 10	+ 4	e 12·5	14·6
Ekaterinburg		22·7	24	4 52	− 6	e 8 46	−13	11·0	15·5
Pulkovo		24·4	343	5 17	+ 3	e 9 40	+10	13·0	—

Long waves were also recorded at Copenhagen and Stuttgart.

May 9d. 2h. 52m. 36s. Epicentre 34°·3N. 139°·7E. N.3.

A = −·630, B = +·534, C = +·564; D = +·647, E = +·763;
G = −·430, H = +·364, K = −·826.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·7	33	e 0 25	+ 1	(e 0 43)	− 1	e 0·7	—
Nagoya	2·4	291	i 0 31	− 3	1 0	− 2	—	1·3
Osaka	3·5	277	0 45	− 5	(1 34)	+ 4	1·6	2·1
Kobe	3·8	277	e 0 55	+ 1	1 30	− 7	e 1·7	1·8
Sumoto	4·0	272	e 1 2	+ 5	1 47	+ 5	—	1·9
Toyooka	4·2	288	1 4	+ 4	(1 49)	+ 1	1·8	2·0
Koti	5·2	264	—	—	e 2 24	+11	—	—

Kobe PN = +58s.

May 9d. 7h. 7m. 21s. Epicentre **34°·1N. 32°·2E.** **N.1.**

Probable error ±0°·2.

A = +·701, B = +·441, C = +·561; D = +·533, E = −·846;
G = +·474, H = +·299, K = −·828.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	N.	3·1	95	i 0 50	+ 6	i 1 24	+ 4	—	—
Helwan		4·3	190	i 1 12	+11	i 2 6	+16	—	2·2
Yalta		10·5	8	2 32	+ 4	—	—	—	—
Sebastopol		10·6	5	2 25	− 4	—	—	—	—
Simferopol		10·9	7	2 30	− 3	—	—	—	—
Theodosia		11·2	11	2 34	− 3	4 35	− 8	6·6	—
Trenta		13·7	296	e 3 19	+ 8	i 6 9	+25	—	—
Belgrade		14·0	323	(e 3 11)	− 4	(e 7 8)	+77	e 8·3	9·5
Catania		14·2	289	e 0 7	?	—	—	—	13·9
Mineo		14·5	288	3 42	+20	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	15·4	61	i 3 35	+ 1	i 6 37	+13	8·3	12·4
Budapest	16·6	328	3 52	+ 3	7 5	+13	10·1	14·1
Zagreb	17·0	318	e 3 56	+ 2	e 7 9	+ 7	e 9·6	—
Rocca di Papa	17·1	302	e 3 53	− 2	i 7 11	+ 7	e 10·9	12·0
Graz	18·0	321	3 48	−19	e 8 8	+43	10·8	13·4
Vienna	18·4	325	4 13	+ 2	7 41	+ 8	—	13·1
Florence	18·8	307	i 4 18	+ 2	7 51	+ 9	—	12·6
Venice	18·9	313	i 4 24	+ 7	i 7 58	+14	—	—
Treviso	19·1	313	i 4 19	− 1	7 57	+ 9	—	—
Padova	19·2	312	e 4 29	+ 8	e 9 12	L	(e 9·2)	—
Innsbruck	20·4	316	e 4 39?	+ 5	—	—	—	—
Piacenza	20·4	309	4 39	+ 5	8 23	+ 9	12·6	15·4
Chur	21·3	313	e 4 43	0	e 8 45	+13	—	—
Cheb	21·5	324	e 4 50	+ 5	e 8 37	+ 1	e 12·3	17·1
Kucino	22·0	9	4 59	+ 8	8 53	+ 7	e 9·8	15·7
Zurich	22·1	314	e 4 50	− 2	e 8 52	+ 4	—	—
Konigsberg	22·2	342	—	—	e 8 47	− 3	e 15·6	—
Jena	22·5	325	e 4 51	− 5	e 8 54	− 1	e 12·6	14·6
Stuttgart	22·5	318	i 4 54	− 2	i 8 54	− 1	e 12·9	—
Karlsruhe	23·0	317	4 57	− 4	—	—	—	—
Neuchatel	23·0	312	e 4 59	− 2	e 9 15	+10	—	—
Strasbourg	23·2	316	i 5 3	0	i 9 1	− 7	13·6	—
Besançon	23·6	312	5 7	+ 1	—	—	14·6	—
Gottingen	23·6	324	i 5 6	0	i 9 17	+ 1	e 13·6	—
Algiers	23·8	285	e 3 59	−69	e 8 33	−46	—	21·6
Hamburg	25·0	328	e 5 18	− 2	e 9 37	− 4	e 14·9	18·2
Lund	25·2	334	5 20	− 2	9 41	− 3	15·6	—
Copenhagen	25·5	334	5 22	− 3	9 45	− 5	15·6	—
Pulkovo	25·7	358	i 5 23	− 3	9 39	−14	15·6	17·5
Uccle	26·2	318	5 32	+ 1	i 10 16	+14	e 13·6	—
De Bilt	26·4	321	5 34	+ 1	10 2	− 3	e 13·6	16·3
Paris	26·4	313	e 5 38	+ 5	—	—	11·6	15·6
Helsingfors	26·5	352	i 5 31	− 3	i 10 7	0	e 15·5	—
Upsala	27·4	344	e 5 54	+12	e 10 18	− 4	—	22·0
Almeria	28·1	286	i 5 58	+10	—	—	—	12·1
Samarkand	28·2	68	4 47	−62	—	—	5·8	6·1
Granada	29·1	286	e 7 1	PP	i 11 51	+61	12·6	14·3
Kew	29·1	316	e 5 51	− 6	e 10 27	−23	13·6	—
Ekaterinburg	29·8	32	i 6 0	− 3	11 3	+ 2	14·1	22·1
Tashkent	30·0	65	i 6 6	+ 1	i 11 11	+ 7	—	20·8
Bergen	31·5	337	e 5 9	−69	—	—	17·6	—
Andijan	32·4	67	6 29	+ 3	—	—	—	—
Edinburgh	32·5	323	—	—	e 11 45	+ 2	—	24·1
Dyce	32·7	326	—	—	e 11 21	−25	e 14·6	22·7
Almata	35·7	62	7 14	+19	—	—	—	—
Bombay	39·1	101	e 1 3	?	—	—	—	28·0
Scoresby Sund	46·3	339	8 22	− 1	—	—	22·6	—
Irkutsk	53·2	46	9 15	0	e 16 41	− 4	26·6	—
Harvard	76·3	312	—	—	e 21 54	+19	46·6	—
Ottawa	77·3	318	—	—	e 21 39?	− 7	e 37·6	—
Manila	80·3	79	e 12 11	+ 2	22 9	−10	—	—
Florissant	89·7	320	—	—	e 23 24	[− 7]	47·1	—
St. Louis E.	89·8	320	—	—	e 23 29	[− 2]	—	—

Additional readings and notes :—
Belgrade P and S readings have been *increased* by 4m.
Zagreb e = +4m.16s., +5m.1s., +6m.7s., +7m.21s., and +8m.23s.
Rocca di Papa e? = +3m.15s., i = +4m.4s., =PP +2s.
Jena eSN = +8m.56s., eSZ = +9m.3s., eE = +9m.51s.
Stuttgart iPP = +5m.21s., e = +6m.40s., iSS = +10m.4s., iEN = +11m.34s.
Copenhagen +10m.45s. =SS +3s.
Helsingfors PPN = +6m.12s., PPPN = +6m.21s.
Scoresby Sund +10m.9s. =PP +6s. and +13m.57s.
Long waves only were recorded at Bidston, Stonyhurst, and Tyosi.

May 9d. 23h. 46m. 0s. Epicentre 8°·5S. 117°·5E. N.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		9·9	277	e 2 26	+ 7	4 12	+ 1	—	—
Batavia		10·9	282	e 2 29	− 4	i 4 47	+11	i 6·2	—
Medan		22·3	302	4 47	− 7	8 37	−15	—	—
Manila		23·4	8	i 5 7	+ 2	i 9 26	+14	—	—
Hong Kong		31·0	354	6 10	− 4	11 28	+ 8	—	22·3
Phu-Lien		31·2	340	6 0?	−16	—	—	—	—
Irkutsk		61·8	350	e 10 15	− 2	18 33	− 6	e 34·0	41·5
Tashkent		66·6	324	e 11 0?	+11	e 19 24	−16	e 37·0	43·0
Baku		79·0	316	—	—	e 18 51	?	39·8	—
Ekaterinburg		80·1	332	e 11 53	−15	21 57	−20	38·5	—
Ksara	E.	87·9	305	—	—	e 20 27	?	—	—
Kucino		91·3	327	—	—	e 23 36	[− 4]	e 46·1	50·7
Pulkovo		96·0	330	e 17 20	PP	—	—	56·0	—

Manila gives also ePEN = +5m.11s., PPN = +5m.41s., PPPN = +5m.48s., iE = +6m.3s., SSSSN = +11m.2s.; T_o = 23h.45m.39s.
Long waves were also recorded at Adelaide, Copenhagen, and Scoresby Sund.

May 9d. Readings also at 0h. (Ksara and near Tyosi), 1h. (Baku, Sumoto, and near Ksara), 2h. (Baku, Ekaterinburg, and Ksara), 3h. (Baku, Ekaterinburg (2), Ksara, near Nagoya (2), and Tyosi (2)), 5h. (near Nagoya), 7h. (near Manila and near Nagoya), 8h. (Baku, Ekaterinburg, Ksara, Kucino, Pulkovo, Copenhagen, Scoresby Sund, Nagoya, near Osaka and Tyosi), 9h. (Florissant, St. Louis, Tucson, and Ksara), 10h. (Ksara, Nagoya (2), and near Tyosi), 11h. (Ksara (2)), 12h. (Ekaterinburg, Ksara (2), Baku, and near Tananarive), 13h. (Amboina, Taihoku, and Vera Cruz), 14h. (Ann Arbor, Charlottesville, Chicago, Florissant, St. Louis, Ottawa, Toronto, Sitka, Tucson, Victoria, Honolulu T.H., Chihuahua, Tacubaya, Scoresby Sund, Strasbourg, Granada, Kew, De Bilt, Edinburgh, Stuttgart, Ekaterinburg, Tashkent, Pulkovo, Irkutsk, Copenhagen, and Kucino), 15h. (Baku and Paris), 16h. (Alicante, Baku, Ekaterinburg, Ksara, and Taihoku), 18h. (near Nagoya (2), Osaka, Tyosi (2), and near Santiago), 19h. (Tyosi, near Nagoya, Osaka, and near Almeria (2)), 20h. (St. Louis), 21h. (Baku, Ekaterinburg, Ksara (2), Pulkovo, Copenhagen, Kucino, and Tashkent), 22h. (Belgrade), 23h. (Tyosi and near Nagoya).

May 10d. 12h. 4m. 5s. Epicentre 33°·7N. 135°·2E. (as on 1929 Sept. 2d.). R.3.

A = −·590, B = +·586, C = +·555.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·7	338	1 48	?	2 37	?	—	2·7
Kobe	1·0	359	1 0 16	+ 2	i 0 40	+14	e 1·8	2·0
Osaka	1·0	12	0 14	0	—	—	2·7	4·3
Koti	1·4	264	e 0 30	+10	1 1	+25	e 1·4	—
Toyooka	1·9	350	e 0 29	0	—	—	1·0	1·1
Nagoya	2·0	45	0 27	− 2	0 51	0	—	—

Additional readings:—
Kobe iZ = +41s., iN = +48s.
Koti P_g = +34s.
Toyooka P = +33s.

May 10d. 21h. 43m. 22s. Epicentre 37°·0N. 44°·0E. (as on 9d.). R.3.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		5·7	51	e 1 17	− 4	e 2 16	− 9	i 2·8	—
Ksara	E.	7·3	247	e 2 12	+28	4 28	+82	5·4	—
Theodosia		10·3	323	e 2 33	+ 8	—	—	—	—
Yalta		10·6	318	e 2 47	+18	—	—	—	—
Simferopol		10·9	320	1 44	−49	—	—	—	—
Sebastopol		11·0	317	2 36	+ 1	—	—	—	—
Samarkand		18·1	74	e 4 10	+ 2	—	—	—	—
Kucino		19·2	350	4 56	+35	i 8 29	+39	e 9·2	10·6
Tashkent		20·0	67	i 4 30	0	i 8 7	+ 1	—	17·4
Budapest		21·1	308	e 4 38?	− 3	—	—	—	—
Andijan		22·3	71	5 0	+ 6	9 4	+12	—	—
Ekaterinburg		22·7	24	i 4 55	− 3	i 8 53	− 6	13·1	15·5
Pulkovo		24·4	343	5 18	+ 4	9 31	+ 1	13·1	14·2
Rocca di Papa		24·5	291	4 50	−25	—	—	e 14·9	17·3
Florence		25·7	296	e 6 2	+36	10 41	+48	—	17·6
Almata		25·8	66	5 35	+ 8	—	—	—	—
Helsingfors		26·1	338	—	—	e 10 3	+ 3	—	—
Stuttgart		27·8	306	—	—	e 10 38?	+10	e 18·3	—
Copenhagen		28·3	321	—	—	10 44	+ 7	15·6	—
Hamburg		28·7	316	—	—	e 11 38?	SS	—	—
Irkutsk		44·1	49	—	—	e 17 38?	SS	e 23·6	—

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

May 10d. 22h. 11m. 8s. Epicentre 23°·0N. 107°·0W. N.3.

A = −·269, B = −·880, C = +·391 ; D = −·956, E = +·292 ;
G = −·114, H = −·374, K = −·921.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chihuahua		5·7	7	(1 35)	+14	—	—	(2·8)	(5·0)
Tacubaya		8·1	115	2 3	+ 8	4 49	+83	5·0	5·7
Lick	E.	19·1	322	—	—	e 8 46	+58	—	—
Florissant		21·2	38	e 4 37	− 5	i 8 33	+ 3	—	11·3
St. Louis		21·2	38	e 4 38	− 4	e 8 33	+ 3	e 10·0	11·5
Chicago		24·8	36	—	—	9 44	+ 7	13·0	—
Victoria	E.	28·5	337	10 42	?S	(10 42)	+ 2	14·4	16·1
Toronto		30·7	41	—	—	i 11 20	+ 4	16·2	—
Ottawa		33·8	41	—	—	e 11 52	−11	e 15·9	20·9
Harvard	N.	35·5	48	—	—	e 12 34	+ 5	e 17·9	—

Additional readings and notes :—
Chihuahua readings have been *increased* by 3m.
Chicago e = +12m.14s.
Toronto i = +13m.59s.
Ottawa eN = +14m.28s.
Harvard eN = +14m.52s.
Long waves were recorded at Honolulu T.H., Charlottesville, Ann Arbor, Georgetown, and Sitka.

May 10d. 23h. 59m. 20s. Epicentre 37°·0N. 44°·0E. (as at 21h.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	5·7	51	1 55	+34	—	—	3·0	3·7
Ksara	7·3	247	e 2 16	+32	4 32	+86	5·3	—
Tashkent	20·0	67	—	—	i 8 18	+12	—	—
Ekaterinburg	22·7	24	4 55	− 3	e 8 56	− 3	11·7	—
Pulkovo	24·4	343	5 15	+ 1	e 9 41	+11	13·7	—

Long waves were also recorded at Copenhagen.

May 10d. Readings also at 0h. (near Tyosi), 1h. (Ekaterinburg, Ksara (2), Pulkovo, near Baku, and near La Paz), 3h. (Ksara and near Tyosi), 4h. (near Tyosi), 5h. (Tucson, Ekaterinburg, near Ksara, and near Tacubaya (2)), 6h. (Baku, near Nagoya and Tyosi), 7h. (Kodaikanal), 8h. (Tyosi, near Manila, and near Reykjavik), 9h. (Reykjavik (3)), 10h. (Ksara (2)), 11h. (Baku, Ekaterinburg, Tashkent, Ksara (2), Pulkovo, Tyosi (3), near Nagoya (2), and Osaka), 12h. (Adelaide, Riverview, Melbourne, Ekaterinburg (2), Baku, Tashkent, Ksara, La Paz, Manila, Kobe, near Toyooka, Nagoya, and Tyosi), 13h. (Baku (2), Ekaterinburg, Ksara (2), Taihoku, near Nagoya and Tyosi (2)), 14h. (Cheb), 15h. (near Osaka, Nagoya, Tyosi, and near Malabar), 17h. (Ekaterinburg, Irkutsk, Tashkent, Manila, La Paz, Nagoya, and near Osaka), 18h. (Baku, Ekaterinburg, Ksara, Tashkent, Tyosi (2), and near Nagoya (2)), 19h. (Taihoku), 20h. (Florissant), 21h. (Vera Cruz), 22h. (Ekaterinburg, Irkutsk, Kucino, Copenhagen, Ksara, Scoresby Sund, Stuttgart, Hamburg, De Bilt, Kew, Stonyhurst, Edinburgh, Paris, Granada, Rocca di Papa, Sitka, and Tyosi), 23h. (Baku, Tashkent, Cheb, San Fernando).

May 11d. 11h. 30m. 36s. Epicentre 31°·7N. 77°·0E. (as on 1929 Jan. 14d.). R.3.

A = +·191, B = +·829, C = +·525; D = +·974, E = −·225;
G = +·118, H = +·512, K = −·851.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	E.	4·6	168	(e 0 57)	− 9	(1 37)	−21	(2·0)	—
Andijan		9·8	339	2 26	+ 8	e 3 54	−14	—	5·6
Samarkand		11·4	317	2 36	− 4	4 33	−15	4·8	6·4
Almata		11·6	0	e 2 46	+ 3	—	—	—	—
Bombay		13·3	197	4 59	?S	(4 59)	−35	8·4	8·6
Hyderabad		14·3	174	5 0	?S	(5 0)	−58	9·1	9·3
Baku		23·5	299	—	—	e 9 24	+10	—	—
Ekaterinburg		27·6	340	i 5 45	+ 1	10 30	+ 5	14·4	—
Irkutsk		28·6	36	e 5 59	+ 6	e 11 19	+37	17·4	18·4
Pulkovo		41·6	328	i 7 55	+10	—	—	22·4	24·7

Additional readings and note:—
Agra readings have been *increased* by 2m.
Bombay S = +7m.17s.
Hyderabad S = +7m.53s.
Irkutsk e = +13m.21s.
Long waves were also recorded at Calcutta, Tashkent, Ksara, Kucino, and Copenhagen.

May 11d. 22h. 35m. 50s. Epicentre **27°·5N. 55°·0E.** R.1.

Probable error ±0°·2. (as on 1929 Nov. 20d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		13·5	343	i 3 12	+ 3	i 5 39	0	7·4	13·3
Samarkand		15·7	36	3 32	− 6	—	—	e 7·6	—
Ksara		17·6	297	i 4 5	+ 3	i 7 31	+16	9·2	—
Tashkent		18·1	37	4 11	+ 3	i 7 40	+13	10·0	13·2
Bombay		18·5	114	4 14	+ 1	8 0	+24	10·1	17·2
Andijan		19·5	43	e 4 18	− 6	—	—	e 9·5	—
Agra	E.	20·5	85	i 1 55	?	5 50	?	8·8	10·9
Helwan		20·9	282	i 4 41	+ 2	i 8 38	+14	—	14·6
Theodosia		23·5	323	5 7	+ 2	9 19	+ 5	14·2	—
Almata		23·7	43	5 12	+ 5	—	—	10·0	—
Yalta		23·8	321	5 8	0	9 25	+ 6	—	—
Hyderabad		23·8	110	5 12	+ 4	9 33	+14	12·6	15·5
Simferopol		24·1	322	5 14	+ 3	9 34	+ 9	—	—
Sebastopol		24·2	321	5 15	+ 3	9 35	+ 8	—	—
Kodaikanal		27·3	125	10 40	S	(10 40)	+20	—	—
Ekaterinburg		29·6	6	i 6 0	− 1	11 13	+15	15·2	19·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	30·6	90	e 6 0	−10	—	—	12·2	—
	N.	30·6	90	e 6 5	− 5	—	—	12·3	—
Kucino		30·8	341	i 6 55	+43	i 12 14	+57	e 16·3	21·9
Colombo		31·3	128	11 25	S	(11 25)	+ 1	—	20·2
Trenta		34·1	301₆	i 6 55	+14	—	—	—	—
Budapest		34·3	316	e 6 50	+ 7	—	—	e 15·2	24·2
Catania		34·8	299	e 6 23	−24	—	—	—	—
Zagreb		35·8	311	e 6 58	+ 2	e 11 38	−55	—	—
Naples	E.	35·9	304	e 7 0	+ 3	e 13 25	+50	28·2	—
Vienna		36·3	317	e 7 1	+ 1	12 44	+ 3	i 18·5	27·2
Pulkovo		36·4	340	7 1	0	e 12 39	− 3	20·2	27·1
Konigsberg		37·0	327	i 7 8	+ 2	e 11 30	−81	e 17·2	—
Rocca di Papa		37·2	304	i 7 10	+ 2	12 52	− 2	e 21·6	26·2
Rome		37·4	304	e 7 14	+ 4	—	—	—	—
Venice		38·1	310	e 7 10?	− 6	i 14 10	+62	—	—
Padova		38·5	310	e 6 46	−33	e 13 20	+ 6	—	—
Helsingfors		38·5	336	i 7 18	− 1	i 13 10?	− 4	e 20·7	—
Florence		38·6	306	i 7 21	+ 1	12 10	−65	—	19·2
Innsbruck		39·2	313	7 34	+ 9	—	—	—	—
Cheb		39·4	317	e 7 29	+ 2	e 13 34	+ 7	e 22·2	27·7
Potsdam		39·8	320	i 6 30	−60	i 13 40	+ 8	e 26·6	—
Piacenza		39·9	310	7 33	+ 2	13 46	+11	23·2	30·2
Jena		40·1	318	e 7 32	− 1	e 13 42	+ 4	e 21·2	24·7
Chur		40·4	311	e 7 34	− 1	e 13 38	− 4	—	—
Lund		41·0	326	7 40	0	13 54	+ 3	18·2	—
Stuttgart		41·0	314	7 39	− 1	e 13 50	− 1	e 25·2	28·7
Zurich		41·1	311	e 7 40	− 1	e 13 50	− 3	—	—
Upsala		41·1	333	e 7 37	− 4	e 13 48	− 5	—	31·7
Gottingen		41·3	318	i 7 43	0	e 13 57	+ 1	e 23·2	—
Copenhagen		41·5	326	7 44	0	14 2	+ 3	18·9	—
Feldberg	N.	41·8	316	i 7 40	− 7	i 14 1	− 2	—	28·2
Strasbourg		41·9	313	i 7 45	− 3	e 13 59	− 6	e 24·2	—
Hamburg		42·0	321	i 7 49	0	e 14 29	+23	e 24·2	27·2
Neuchatel		42·1	312	e 7 49	0	e 14 5	− 3	—	—
Besançon		42·8	310	7 56	+ 1	—	—	27·2	—
Irkutsk		44·0	41	i 8 3	− 2	e 14 23	−13	24·2	28·3
De Bilt		44·3	318	8 8	+ 1	14 46	+ 6	e 23·2	29·2
Algiers		44·4	296	8 10	+ 2	14 37	− 4	23·2	34·7
Uccle		44·7	316	8 9	− 1	14 46	0	e 24·2	—
Barcelona		45·0	303	e 7 37	−36	(e 14 56)	+ 6	14·9	32·2
Paris		45·3	313	i 8 16	+ 1	e 15 10?	+15	25·2	27·2
Tortosa	E.	46·2	302	8 24	+ 2	15 9	+ 2	—	—
Bergen		46·8	330	8 28	+ 1	15 23	+ 7	—	34·2
Tananarive		47·0	190	—	—	e 15 25	+ 6	—	25·5
Alicante		47·1	299	e 8 34	+ 5	e 15 32	+12	e 21·7	—
Phu-Lien		47·2	87	8 10?	−20	—	—	—	—
Kew		47·5	318	i 8 34	+ 2	e 15 30	+ 4	19·2	28·1
Oxford		48·2	316	8 36	− 2	i 15 36	0	e 23·2	34·2
Almeria		48·7	296	8 42	+ 1	i 15 48	+ 5	25·0	36·8
Stonyhurst		49·1	319	8 48	+ 4	15 58	+10	—	33·3
Dyce		49·6	324	—	—	16 2	+ 7	e 25·2	30·8
Granada		49·7	296	i 8 50	+ 1	15 59	+ 2	28·7	36·1
Toledo		49·8	300	8 51	+ 1	16 1	+ 3	—	33·3
Edinburgh		49·9	321	e 10 10?	(− 6)	—	—	—	—
Malaga		50·4	296	8 56	+ 2	16 5	− 1	19·9	—
San Fernando		51·9	296	—	—	11 30	?	—	33·2
Hong Kong		53·4	82	9 18	+ 1	16 49	+ 2	e 30·8	34·6
Zi-ka-wei	Z.	57·1	68	9 39	− 5	—	—	—	37·9
Scoresby Sund		59·9	339	10 4	0	18 28	+13	25·2	—
Manila		62·3	86	e 9 50	−30	i 18 47	+ 1	i 31·2	—
Vladivostok		62·5	52	e 10 18	− 4	—	—	34·9	39·9
Ottawa		94·4	328	—	—	e 25 58	PS	e 47·2	—
Florissant		106·2	333	—	—	e 27 55	PS	e 62·2	—
St. Louis	E.	106·3	333	—	—	e 27 48	PS	e 62·1	—
La Paz		126·6	269	19 10	[+10]	26 8	[− 2]	69·7	77·8

For Notes see next page.

NOTES TO MAY 11d. 22h. 35m. 50s.

Additional readings :—
Vienna PPP = +8m.40s.
Konigsberg eSSSN = +12m.51s.
Helsingfors iPPP = +8m.48s., iP_cP = +9m.24s., P_cS = +13m.18s.
Potsdam iSE = +12m.29s.
Stuttgart iPPEZ = +9m.20s.
Upsala PP = +9m.11s.
Copenhagen +9m.28s. =PP+13s., +14m.21s., eE = +17m.46s. =S_cS −5s.
Feldberg i = +17m.57s.
Strasbourg PP = +9m.32s.
De Bilt PP = +9m.57s.
Tortosa PN = +8m.28s.
Tananarive eSSE = +19m.3s., e = +19m.46s., eE = +20m.1s. and +21m.31s.
Kew ePP = +10m.34s., SS = +18m.52s.
Oxford iSN = +15m.42s.
Granada +8m.52s., PP = +10m.56s., i = +16m.8s.
Scoresby Sund +12m.16s. =PP+7s.
Manila SZ = +18m.50s.
Vladivostok e = +31m.33s.
Ottawa eE = +31m.10s.
La Paz PPZ = +23m.6s.
Long waves were recorded at Harvard, Dakar, and Rio de Janeiro.

May 11d. Readings also at 1h. (near Amboina, near Barcelona, near Nagoya, and Tyosi), 2h. and 5h. (Ksara), 7h. (Manila, Melbourne, near Amboina, Ekaterinburg (2), Tashkent, near Almata, Andijan, and Samarkand), 9h. (Ksara), 10h. (Manila and Ekaterinburg), 11h. (Sebastopol, Simferopol, Theodosia, and near Yalta), 14h. (Ksara), 15h. (Ksara, Nagoya, Irkutsk, Pulkovo, Ekaterinburg, Andijan, and near Almata), 17h. (Ksara), 21h. (near Mizusawa), 22h. (Denver, Dakar, Samarkand, and Andijan).

May 12d. 0h. 21m. 15s. Epicentre 27°·5N. 55°·0E. (as on 11d.). R.1.

Probable error ±0°·3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		13·5	343	i 3 12	+ 3	i 5 38	− 1	8·2	10·2
Samarkand		15·7	36	3 18	−20	—	—	6·6	7·8
Ksara		17·6	297	3 51	−11	7 19	+ 4	9·3	—
Tashkent		18·1	37	4 45	+37	i 8 15	+48	9·8	12·7
Bombay		18·5	114	3 57	−16	7 45	+ 9	9·9	17·3
Andijan		19·5	43	4 24	0	(8 9)	+13	8·2	—
Helwan		20·9	282	e 4 35	− 4	8 25	+ 1	—	14·4
Theodosia		23·5	323	5 7	+ 2	e 9 19	+ 5	13·7	—
Almata		23·7	43	5 7	0	(9 39)	+21	9·6	—
Hyderabad		23·8	110	5 13	+ 5	9 29	+10	13·2	15·5
Yalta		23·8	321	i 5 10	+ 2	9 26	+ 7	—	—
Simferopol		24·1	322	5 1	−10	—	—	—	—
Sebastopol		24·2	321	5 2	−10	—	—	—	—
Kodaikanal		27·3	125	12 33?	?	—	—	—	—
Ekaterinburg		29·6	6	i 6 1	0	i 11 18	+20	14·7	19·1
Calcutta		30·6	90	e 10 53	S	(e 10 53)	−21	17·8	—
Kucino		30·8	341	6 56	+44	12 13	+56	e 16·4	21·9
Belgrade		32·5	314	—	—	e 12 23	+40	e 20·1	—
Trenta		34·1	301	e 7 0	+19	—	—	—	—
Budapest		34·3	316	e 6 40	− 3	—	—	e 20·3	—
Catania		34·8	299	e 6 53	+ 6	—	—	—	—
Zagreb		35·8	311	e 6 58	+ 2	e 12 38	+ 5	e 19·8	—
Vienna		36·3	317	i 7 0	0	—	—	16·4	25·8
Pulkovo		36·4	340	i 7 2	+ 1	12 38	− 4	20·8	27·6
Konigsberg	E.	37·0	327	e 6 53	−13	e 12 53	+ 2	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Rocca di Papa		37·2	304	e 6 54	−14	e 12 27	−27	e 21·2	26·7
Rome		37·4	304	e 7 1	− 9	—	—	—	—
Venice		38·1	310	e 6 58	−18	—	—	—	—
Helsingfors		38·5	336	i 7 20	+ 1	i 13 10	− 4	e 21·3	—
Florence		38·6	306	7 19	− 1	8 57	PP	—	24·7
Cheb		39·4	317	e 7 29	+ 2	e 13 43	+16	e 21·8	27·2
Potsdam	E.	39·8	320	i 7 31	+ 1	e 13 31	− 2	—	—
	N.	39·8	320	e 7 25	− 5	e 13 33	0	—	22·8
Piacenza		39·9	310	7 23	− 8	13 37	+ 2	—	29·8
Jena	E.	40·1	318	e 8 33	+60	—	—	—	—
Chur		40·4	311	e 7 21	−14	e 13 44	+ 2	—	—
Lund		41·0	326	7 40	0	13 53	+ 2	—	—
Stuttgart		41·0	314	e 7 39	− 1	—	—	e 23·8	28·6
Zurich		41·1	311	e 7 27	−14	e 13 51	− 2	—	—
Upsala		41·1	333	e 7 38	− 3	e 13 42	−11	—	32·6
Copenhagen		41·5	326	7 44	0	13 51	− 8	20·8	—
Strasbourg		41·9	313	e 7 45?	− 3	—	—	—	—
Hamburg		42·0	321	e 7 34	−15	—	—	e 24·8	—
Neuchatel		42·1	312	e 7 34	−15	—	—	—	—
Besançon		42·8	310	e 7 55	0	—	—	—	—
Irkutsk		44·0	41	i 8 4	− 1	e 14 24	−12	24·8	28·6
De Bilt		44·3	318	8 7	0	14 44?	+ 4	e 23·8	29·2
Algiers		44·4	296	8 11	+ 3	14 45	+ 4	29·2	34·8
Uccle		44·7	316	8 9	− 1	e 14 43	− 3	—	26·8
Paris		45·3	313	i 8 15	0	e 14 53	− 2	27·8	28·8
Bergen		46·8	330	e 8 46	+19	e 15 15	− 1	—	—
Phu-Lien		47·2	87	8 45?	+15	—	—	—	—
Kew		47·5	318	i 8 34	+ 2	e 15 33	+ 7	26·8	—
Oxford		48·2	316	—	—	15 39	+ 3	e 27·2	—
Almeria		48·7	296	8 38	− 3	15 43	0	—	47·9
Granada		49·7	296	i 8 50	+ 1	i 16 4	+ 7	28·8	31·8
Malaga		50·4	296	8 56	+ 2	16 4	− 2	19·0	—
Zi-ka-wei	Z.	57·1	68	9 41	− 3	—	—	—	37·9
Scoresby Sund		59·9	339	10 5	+ 1	18 45	+30	32·8	—
Manila		62·3	86	i 10 20	0	i 12 26	PP	—	—
Nagoya		68·4	60	e 11 0	− 1	—	—	—	—
La Paz	E.	126·6	269	e 20 19	PP	—	—	73·2	79·6

Additional readings :—
Belgrade e = +13m.3s. =SS −26s. and = +23m.38s.
Zagreb e = +7m.26s. and +14m.33s. =SS −12s., i = +8m.29s.
Vienna i = +10m.33s.
Konigsberg eN = +11m.48s., eE = +12m.3s.
Rocca di Papa i = +6m.57s.
Rome i = +7m.14s.
Helsingfors iE = +8m.42s. =PP −1s., i = +8m.48s.
Upsala PP = +9m.16s., eSN = +13m.46s.
Hamburg iZ = +7m.48s.
De Bilt PP = +9m.56s.
Granada PP = +10m.54s.
Scoresby Sund +25m.15s.
Long waves were recorded at Vladivostok, Feldberg, San Fernando, Hong Kong, Florissant, Stonyhurst, and Edinburgh.

May 12d. 2h. 37m. 20s. Epicentre 20°·6S. 168°·8E. (as on 1929 Aug. 22d.). R.2.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	20·5	226	i 4 37	+ 2	i 8 33	+17	e 10·6	13·2
Wellington	21·3	168	i 4 40	− 3	i 8 15	−17	—	—
Melbourne	26·8	225	e 6 0	+24	i 11 18	SS	14·8	16·8
Manila	58·7	304	9 58	+ 3	18 0	+ 1	—	—
Vladivostok	72·1	333	—	—	e 20 39	− 7	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	91·8	326	—	—	e 23 24	[−19]	e 29·7	—
Tashkent	110·4	308	—	—	e 17 4	?	e 18·3	19·6
Samarkand	111·8	307	e 25 2	S	(25 2)	[−19]	—	—
Ekaterinburg	117·0	324	i 18 36	[− 2]	i 25 19	[−22]	55·7	—
Kucino	129·5	328	—	—	e 28 41	{+22}	e 33·6	—
Scoresby Sund	129·7	5	23 40?	PPP	—	—	70·7	—
Pulkovo	131·1	334	i 19 3	[− 6]	e 26 3	[−19]	—	—
Budapest	143·7	325	19 30	[0]	—	—	—	—
De Bilt	146·1	340	i 19 34	[− 2]	—	—	e 73·7	—
Zagreb	146·4	325	e 19 34	[− 2]	—	—	—	—
Uccle	147·4	341	19 35	[− 3]	—	—	—	—
Stuttgart	147·5	335	i 19 35	[− 3]	—	—	—	—
Strasbourg	148·2	334	i 19 35	[− 4]	—	—	—	—
Zurich	148·8	334	e 19 35	[− 5]	—	—	—	—
Chur	148·8	334	e 19 35	[− 5]	—	—	—	—
Neuchatel	149·8	334	e 19 36	[− 6]	—	—	—	—

Additional readings :—
Melbourne i = +8m.45s. = P_cP −15s.
Ekaterinburg e = +21m.58s., +26m.28s. = Σ −28s., and +29m.30s. = PS −5s., i = +36m.28s.
Kucino e = +22m.51s.
Pulkovo i = +22m.19s. = PKS −19s.
De Bilt iZ = +20m.0s.
Zurich i = +19m.40s.
Chur i = +19m.40s.
Neuchatel i = +19m.42s.
Long waves were recorded at Baku and Adelaide.

May 12d. 12h. 26m. 50s. Epicentre 35°·0N. 139°·5E. (as on 1930 April 1d.). R.3.

A = −·623, B = +·532, C = +·574 ; D = +·649, E = +·760 ;
G = −·436, H = +·372, K = −·819.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·3	56	e 0 22	+ 4	(0 41)	+ 8	0·7	—
Nagoya	2·1	274	i 0 27	− 3	0 50	− 4	—	1·2
Osaka	3·4	266	0 41	− 8	(1 26)	− 1	1·4	2·0
Kobe	3·6	266	0 45	− 6	1 25	− 7	—	1·8
Sumoto	3·8	261	e 0 58	+ 4	1 42	+ 5	—	2·0
Toyooka	3·8	279	e 0 59	+ 5	(1 42)	+ 5	1·7	1·8
Mizusawa	4·3	17	1 1	0	1 52	+ 2	—	—
Koti	5·2	255	1 15	+ 1	2 11	− 2	—	—
Ekaterinburg	55·5	320	e 9 31	− 1	—	—	29·2	—

Kobe gives also P_gE = +1m.0s., S_gN? = +1m.39s.
Long waves were also recorded at Irkutsk, Baku, Tashkent, Ksara, and Copenhagen.

May 12d. Readings also at 0h. (Ekaterinburg and Pulkovo), 1h. (near Mizusawa), 2h. (Andijan and Edinburgh), 3h. (La Paz), 7h. (Ekaterinburg, Nagoya, and Florissant), 8h. (Irkutsk, Tashkent, and Harvard), 11h. (Ekaterinburg), 12h. (Tyosi and Vladivostok), 13h. (Ekaterinburg), 14h. (near Manila), 15h. (Andijan and Samarkand), 18h. (Baku, near Tacubaya, and Tucson), 19h. (Ekaterinburg), 20h. (Ksara, Baku, Ekaterinburg (2), La Paz, and La Plata), 21h. (Baku and Tashkent), 22h. (Baku, Ekaterinburg, Irkutsk, Kucino, Pulkovo, Tashkent, Vladivostok, Copenhagen, Scoresby Sund, Ottawa, Florissant, and St. Louis), 23h. (Andijan, Samarkand, De Bilt, Strasbourg, Graz, Granada, and La Paz).

May 13d. 20h. 14m. 14s. Epicentre 27°·5N, 55°·0E. (as on 12d.). R.2.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		13·5	343	e 3 8	− 1	e 5 42	+ 3	8·5	11·1
Samarkand		15·7	36	3 35	− 3	—	—	—	—
Ksara	E.	17·6	297	e 4 4	+ 2	—	—	—	—
Tashkent		18·1	37	e 3 59	− 9	7 34	+ 7	11·8	13·2
Andijan		19·5	43	4 26	+ 2	—	—	—	—
Almata		23·7	43	5 18	+11	—	—	—	—
Yalta		23·8	321	—	—	e 9 23	+ 4	—	—
Simferopol		24·1	322	e 5 10	− 1	—	—	—	—
Sebastopol		24·2	321	e 5 15	+ 3	—	—	—	—
Ekaterinburg		29·6	6	e 5 58	− 3	e 10 51	− 7	17·8	19·1
Kucino		30·8	341	e 9 58	?	e 13 22	?	e 19·9	—
Pulkovo		36·4	340	6 57	− 4	e 12 36	− 6	20·8	43·8
Irkutsk		44·0	41	e 7 46?	−19	—	—	19·8	28·0

Additional readings :—
Ekaterinburg i = 20h.14m.42s., e = +9m.40s.
Irkutsk e = +3m.46s.? and +11m.46s.?
Long waves were also recorded at Copenhagen, Neuchatel, and Scoresby Sund.

May 13d. 23h. 56m. 32s. Epicentre 36°·0N. 139°·0E. (as on 1927 Dec. 31d.). X.

A = −·611, B = +·531, C = +·588 ; D = +·656, E = +·755 ;
G = −·444, H = +·386, K = −·809.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·6	120	e 0 20	− 3	(0 39)	− 2	0·7	—
Nagoya	1·9	243	0 26	− 3	0 49	0	—	1·2
Osaka	3·2	248	0 47	+ 1	(1 32)	+10	1·5	2·0
Kobe	3·4	248	—	—	1 35	+ 8	e 1·7	1·8
Toyooka	3·4	264	e 1 4	+15	—	—	1·8	1·9
Mizusawa	3·5	28	0 48	− 2	2 0	+30	—	—
Sumoto	3·7	244	e 1 26	?S	(e 1 26)	− 9	(1·8)	1·9
Koti	5·1	242	—	—	e 2 22	+12	—	—

Additional readings and note :—
Kobe i = +1m.24s., SNW = +1m.40s.
Toyooka PZ = +1m.8s.
Sumoto gives S as P and L as S.

May 13d. Readings also at 0h. (Baku (2), Ekaterinburg (3), Irkutsk (2), Florence, La Paz, near Malabar, and near Osaka), 1h. (Ekaterinburg (2), Irkutsk, Kucino, Pulkovo, Tashkent (2), Copenhagen, Florissant, Paris, and Scoresby Sund (2)), 2h. (Kucino and near Nagoya), 3h. (Nagoya (2)), 4h. (near Ksara and Tyosi), 5h. (Baku, Manila, Irkutsk, Ekaterinburg, Kucino, Tashkent, Ksara, Scoresby Sund, and Florissant), 6h. (Baku, Manila, Ekaterinburg, Irkutsk, Scoresby Sund, and Florissant), 7h. (near Nagoya), 8h. (Andijan, Copenhagen, Scoresby Sund, Stuttgart, Baku, Ekaterinburg, Hong Kong, Irkutsk, Kucino, Pulkovo, Tashkent, Vladivostok, Honolulu T.H., Chicago, Ottawa, Florissant, St. Louis, and Sitka), 9h. (De Bilt, Edinburgh, Granada, Paris, Strasbourg, Stuttgart, Uccle, and Manila), 10h. (Baku, Ekaterinburg, Hong Kong, Irkutsk, Tashkent, and near Lick and Berkeley), 11h. (near Tyosi), 12h. (Irkutsk and Ekaterinburg), 13h. (near La Paz), 15h. (La Paz (2) and near Tyosi), 16h. (Scoresby Sund), 17h. (Manila, Trenta, and Stuttgart), 18h. (Baku, Ekaterinburg, Irkutsk, Kucino, Tashkent (2), Hong Kong, Phu-Lien, Bombay, Copenhagen, Scoresby Sund, Ottawa, Florissant, St. Louis, Sitka, and near Tyosi), 19h. (Irkutsk, Ekaterinburg, Medan, near Nagoya, Tyosi, and Osaka), 20h. (Nagoya (2), Hong Kong, Phu-Lien, Manila, and Ksara), 21h. (near La Paz), 22h. (Baku, Ekaterinburg, Irkutsk, Pulkovo, Ksara, Manila, Phu-Lien, Tashkent, Sebastopol, Simferopol, Theodosia, Yalta, Lund, Uccle, De Bilt, Neuchatel, Zurich, Hamburg, and Strasbourg), 23h. (Ekaterinburg, Tashkent, Phu-Lien, Hong Kong, Manila, Taihoku, Tyosi (2), near Nagoya, and Osaka).

May 14d. 0h. 1m. 19s. Epicentre 46°·8N. 12°·3E. N.1.

$A = +·669$, $B = +·146$, $C = +·729$; $D = +·213$, $E = -·977$; $G = +·712$, $H = +·155$, $K = -·685$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Innsbruck		0·8	307	e 0 11	0	—	—	i 0·4	0·4
Treviso		1·1	184	i 0 13	− 3	i 0 26	− 2	—	0·5
Venice		1·4	179	i 0 18	− 2	i 0 35	− 1	—	—
Padova		1·4	192	i 0 18	− 2	i 0 36	0	—	—
Laibach		1·7	116	(e 0 17)	− 7	(i 0 37)	− 7	—	—
Chur		1·9	272	e 0 28	− 1	e 0 58	+ 9	—	—
Ravensburg		2·1	299	i 0 33	+ 3	i 0 58	+ 4	i 1·0	—
Graz		2·2	83	i 0 31	0	i 0 57	0	—	1·1
Piacenza		2·5	226	0 45	+ 9	1 13	+ 9	—	1·9
Zurich	N.	2·6	283	e 0 38	+ 1	e 1 12	+ 5	—	—
Zagreb		2·7	111	e 0 37	− 2	i 1 12	+ 3	1·3	1·4
Stuttgart		2·9	313	i 0 45	+ 4	i 1 28	+14	—	—
Vienna		3·1	62	e 0 44	0	1 27	+ 7	—	1·7
Florence		3·1	194	e 0 41	− 3	—	—	—	1·8
Cheb		3·3	1	e 0 41	− 6	e 1 39	+14	—	1·7
Karlsruhe		3·4	313	0 55	+ 6	1 28	+ 1	1·5	2·3
Strasbourg		3·6	302	e 0 50	− 1	1 32	0	—	—
Neuchatel		3·7	275	e 0 52	− 1	e 1 34	− 1	—	—
Jena	E.	4·1	354	e 0 56	− 2	1 37	− 8	e 2·1	2·3
Besançon		4·3	278	1 14	+13	—	—	—	—
Feldberg	N.	4·3	325	—	—	e 1 58	+ 8	—	2·6
Rome		4·9	178	e 1 26	+16	2 12	+ 7	—	3·8
Gottingen		5·0	343	i 1 11	0	e 1 59	− 9	e 2·6	—
Rocca di Papa		5·1	176	e 1 2	−11	2 42	+32	e 3·3	—
Potsdam		5·6	5	—	—	e 2 17	− 6	e 3·5	—
Uccle		6·6	311	—	—	e 2 11	−37	e 3·4	—
Paris		6·9	291	—	—	e 2 55	− 1	3·7	—
De Bilt		7·0	321	—	—	e 3 17	+18	—	—
Hamburg		7·0	349	—	—	e 3 17	+18	—	4·7

Additional readings :—
Laibach i = (+20s.), (+23s.), and (+27s.); all readings have been *diminished* by 2m.
Ravensburg $iP_gE = +37$s., i = +42s., iN = +46s., iSE = +52s.
Zurich $eP_g = +44$s.
Zagreb iNW = +39s., e = +49s., i = +1m.0s.
Stuttgart iP* = +48s., iP = +53s., iEN = +1m.14s., i = +1m.19s., iZ = +1m.33s., and +1m.53s., iE = +1m.43s.
Vienna P* = +47s. and +49s., $P_g = +53$s., iEZ = +58s., iEN = +1m.0s., S* = +1m.22s., and +1m.26s., $S_g = +1$m.30s.
Cheb i = +55s.
Strasbourg $P_g = +1$m.7s., $S_g = +1$m.52s., SS = +2m.0s., SSS = +2m.10s.
Neuchatel $eP_g = +1$m.1s., $eS_g = +1$m.50s.
Jena eE = +1m.9s., iE = +1m.34s.
Gottingen iN = +1m.17s., $eP_g = +1$m.29s., $eS_g = +2$m.30s.
Potsdam eE = +2m.41s., iN = +2m.52s., +2m.59s., and +3m.11s., iE = +2m.54s., iEN = +3m.4s., +3m.9s., +3m.17s., and +3m.32s.
Long waves were recorded at Kew, Pulkovo, Helsingfors, Lund, and Copenhagen.

May 14d. 8h. 35m. 15s. Epicentre 33°·6N. 138°·4E. (as on 1927 Aug. 20d.). X.

$A = -·623$, $B = +·553$, $C = +·553$; $D = +·664$, $E = +·748$; $G = -·414$, $H = +·367$, $K = -·833$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	2·0	323	e 0 36	+ 7	e 1 10	+19	—	1·2
Osaka	2·7	293	0 44	+ 5	(1 12)	+ 3	1·2	1·6
Kobe	2·9	292	0 37	− 4	1 11	− 3	—	1·2
Sumoto	3·0	284	0 38	− 5	1 15	− 2	—	1·3
Tyosi	3·0	43	e 0 56	+13	—	—	e 1·8	—
Toyooka	3·5	305	0 40	−10	(1 18)	−12	1·3	1·3
Kotl	4·1	271	i 0 48	−10	1 33	−12	—	—
Mizusawa	6·0	18	1 22	− 3	2 23	−10	—	—

May 14d. 19h. 32m. 9s. Epicentre 51°·6N. 179°·0W. (as on 1929 Aug. 3d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	25·5	60	10 45	S	(10 45)	+55	17·3	—
Vladivostok		33·6	275	e 6 35	− 2	e 11 54	− 6	14·7	32·3
Victoria	E.	35·0	75	12 21	S	(12 21)	0	16·2	—
Irkutsk		45·0	304	e 7 51?	−22	e 13 51?	−59	21·9	27·7
Tucson	E.	52·1	85	9 7	0	16 33	+ 3	26·9	—
	N.	52·1	85	9 12	+ 5	16 29	− 1	23·5	—
Scoresby Sund		56·8	10	—	—	17 39	+ 5	21·9	—
Florissant		59·8	65	e 10 3	0	e 17 51	−22	e 27·9	35·3
St. Louis		60·0	65	e 9 51	−13	—	—	e 27·7	33·8
Manila	N.	60·2	257	i 10 29	+23	—	—	—	—
Ekaterinburg		61·0	328	e 9 9	−62	e 18 24	− 5	22·9	—
Toronto		62·2	54	—	—	i 19 0	+15	e 34·9	—
Ottawa		62·8	50	—	—	e 19 51	(−21)	e 31·9	—
Pulkovo		66·2	346	—	—	19 31	− 4	31·9	42·8
Kucino		68·4	340	—	—	e 19 3	−59	e 32·1	39·4
Tashkent		69·9	313	—	—	e 20 15	− 5	e 34·0	36·4
Copenhagen		72·2	354	—	—	20 50	+ 3	33·9	—
De Bilt		76·2	357	—	—	e 21 36	+ 2	e 44·9	47·2
Cheb		77·9	354	—	—	e 31 51	SSSS	e 43·9	47·9
Ksara		89·2	332	e 11 6	−108	—	—	38·9	—

Additional readings and notes:—
Sitka eS = +15m.15s.
Irkutsk e = +17m.54s. = SS + 3s.
Tashkent i = +20m.27s. = PS − 10s. and +24m.51s. = SS + 11s.
Long waves were recorded at the European stations and Honolulu T.H.

May 14d. 19h. 48m. 22s. Epicentre 25°·0N. 100°·5E. (as on 1925 Mar. 16d.). R.3.

A = −·165, B = +·891, C = +·423; D = +·983, E = +·182; G = −·077, H = +·416, K = −·906.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		7·0	126	e 1 45	+ 6	e 3 32	+33	3·6	4·1
Hong Kong		12·8	98	1 48	−71	4 45	−37	i 6·0	6·2
Zi-ka-wei		19·4	67	e 3 57	−26	7 44	−10	—	—
Agra	E.	20·2	281	(4 36)	+ 4	(8 6)	− 4	—	(13·8)
	N.	20·2	281	(4 33)	+ 1	(7 53)	−17	(9·7)	(12·1)
Dehra Dun		20·5	290	6 38?	?	10 28?	L	14·0	14·6
Manila		21·9	115	i 4 45	− 5	i 8 47	+ 3	i 11·1	13·4
Hyderabad		21·9	254	4 53	+ 3	13 6	L	(13·1)	34·6
Bombay		26·3	260	6 59	PP	15 47	(−36)	30·4	31·8
Irkutsk		27·4	5	e 5 32	−10	e 10 8	−14	—	15·3
Koti		29·9	66	—	—	e 10 32	−31	e 14·8	—
Ekaterinburg		42·7	330	i 7 58	+ 4	i 14 23	+ 7	21·6	—
Baku		44·6	305	e 8 23	+13	—	—	27·6	34·9
Kucino		54·2	323	—	—	e 10 24	P_cP	—	—
Pulkovo		58·7	327	9 59	+ 4	—	—	—	—
Helsingfors		61·3	327	—	—	e 17 56	−37	e 22·9	—
Rocca di Papa		72·1	310	—	—	e 24 49	SS	e 34·5	45·0

Additional reading and notes:—
Agra readings have been *increased* by 2m.
Manila iPZ = +4m.44s.
Long waves were recorded at Calcutta and a few European stations.

May 14d. Readings also at 0h. (Irkutsk), 1h. (Baku, Ekaterinburg, Irkutsk, and Tashkent), 2h. (Nagoya and Tyosi (2)), 3h. (Baku, Ekaterinburg, Ksara, Tashkent, Zagreb, Nagoya (2), near Tyosi (2), near Rocca di Papa and Rome), 4h. (Ksara and Nagoya), 5h. (Ksara, near Nagoya, Tyosi, and Sumoto), 6h. (Ksara), 7h. (Ksara and Sitka), 8h. (Baku, Bombay, Ekaterinburg, Irkutsk, Florissant, and La Paz (2), 9h. (Tyosi), 12h. (Baku, Ekaterinburg, Irkutsk, Copenhagen, Pulkovo, near Almata, Andijan, Samarkand, and Tashkent), 13h. (La Paz, Baku, Ksara, Ekaterinburg, Manila, and near Nagoya), 14h. (Baku, Ekaterinburg, and Irkutsk), 15h. (Wellington), 16h. (near Tyosi (2), Koti, Nagoya, Osaka, Kobe, Toyooka (2), Sumoto, near Andijan, Samarkand, and Tashkent), 18h. (Irkutsk and Baku), 19h. (Taihoku (2), Almata, Andijan, and Samarkand), 21h. (Chicago and Charlottesville), 22h. (near La Paz).

May 15d. 6h. 58m. 6s. (I)
7h. 43m. 32s. (II)
10h. 13m. 15s. (III)
10h. 25m. 55s. (IV)
12h. 49m. 18s. (V)
14h. 30m. 42s. (VI)

Epicentre 36°·0N. 139°·0E. (as on 13d.).

X. X. X. X. X. X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Tyosi	1·6	120	e 0 27	+ 4	(0 41)	0	0·7	—
II	1·6	120	e 0 32	+ 9	(0 36)	− 5	0·6	—
III	1·6	120	e 0 20	− 3	(e 0 37)	− 4	e 0·6	—
IV	1·6	120	e 0 23	0	—	—	0·8	—
V	1·6	120	e 0 22	− 1	(0 34)	− 7	0·6	—
VI	1·6	120	e 0 23	0	(0 40)	− 1	0·7	—
I Nagoya	1·9	243	0 29	0	0 55	+ 6	—	—
II	1·9	243	0 22	− 7	0 46	− 3	—	—
III	1·9	243	0 23	− 6	0 49	0	—	—
IV	1·9	243	0 29	0	0 53	+ 4	—	—
V	1·9	243	0 22	− 7	0 46	− 3	—	—
VI	1·9	243	0 28	− 1	0 50	+ 1	—	—
I Osaka	3·2	248	0 45	− 1	—	—	1·6	3·1
II	3·2	248	0 46	0	—	—	1·5	2·0
III	3·2	248	0 56	+10	—	—	1·7	2·3
IV	3·2	248	0 46	0	—	—	1·6	1·9
V	3·2	248	0 53	+ 7	—	—	1·7	2·1
I Kobe	3·4	248	—	—	e 1 28	+ 1	e 1·9	—
II	3·4	248	e 1 19	?S	(e 1 19)	− 8	—	—
III	3·4	248	—	—	e 1 34	+ 7	—	—
IV	3·4	248	—	—	e 1 27	0	—	—
I Toyooka	3·4	264	e 1 12	+23	—	—	1·8	2·0
II	3·4	264	—	—	—	—	e 1·7	—
III	3·4	264	1 21	+32	—	—	—	—
IV	3·4	264	1 2	+13	—	—	1·8	—
V	3·4	264	e 0 48	− 1	—	—	1·7	—
I Sumoto	3·7	244	e 1 30	?S	(e 1 30)	− 5	(e 2·0)	2·0
III	3·7	244	e 1 30	?S	(e 1 30)	− 5	—	—
IV	3·7	244	e 1 32	?S	(e 1 32)	− 3	—	—

Toyooka IV gives also PN = +1m.12s.

May 15d. 19h. 38m. 59s. Epicentre 35°·0N. 142°·0E. (as on 1d.).

X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·2	308	0 5	−12	—	—	0·2	0·2
Tukuba	1·9	308	0 15	−14	—	—	—	—
Tokyo	2·0	291	0 20	− 9	—	—	—	—
Nagoya	4·2	274	0 58	− 2	1 56	+ 8	—	—
Mizusawa	4·2	351	1 10	+10	2 6	+18	—	—
Osaka	5·4	268	1 35	+18	—	—	2·7	3·6
Kobe	5·7	268	—	—	e 2 24	− 1	e 2·8	—
Sumoto	5·9	265	e 2 35	S	(e 2 35)	+ 4	—	—
Toyooka	5·9	283	e 1 32	+ 8	(2 15)	−16	2·2	2·9

May 15d. Readings also at 0h. (La Paz), 4h. (Manila), 6h. (Sumoto, Osaka, and Kobe), 8h. (Ksara), 9h. (Baku, Tashkent, Almata, Andijan, Samarkand, and Taihoku), 10h. (Ekaterinburg and Nagoya), 11h. (Samarkand and Taihoku), 13h. and 15h. (near Amboina), 17h. (Baku (2), Ekaterinburg (2), Irkutsk (2), Ksara, Phu-Lien, Tashkent (2), Manila, and Medan), 18h. (Ekaterinburg (2), Baku (2), Ksara (3), Sebastopol, Theodosia, and Yalta), 19h. (Ekaterinburg, Trenta, and Tashkent), 21h. (Tyosi), 22h. (Ksara, Chur, Zurich, and near Tacubaya).

May 16d. 1h. 43m. 24s. Epicentre 38°·6N. 15°·8E. (as on 1928 March 7d.). X.

A = +·752, B = +·213, C = +·624; D = +·272, E = −·962; G = +·600, H = +·170, K = −·782.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Messina	0·5	206	−0 13	−20	—	—	—	—
Trenta	0·8	31	i 0 6	− 5	0 11	−10	—	—
Mineo	1·6	212	0 19	− 4	—	—	—	—
Naples	2·6	332	e 1 23	S	(e 1 23)	+16	—	—
Rocca di Papa	3·9	324	1 46	S	(1 46)	+ 6	(2·6)	2·8
Florence	6·2	328	e 1 36	+ 8	4 6	L	(4·1)	—

Rocca di Papa gives S as P and L as S.
Long waves were also recorded at Catania, Rome, and Zagreb.

May 16d. 2h. 16m. 0s. Epicentre 20°·0N. 101°·5E. (as on 1926 Mar. 29d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	32·4	3	e 7 0?	+34	—	—	17·0	21·0
Vladivostok	34·4	40	e 5 55	−49	e 8 57	?	11·7	—
Ekaterinburg	47·5	332	e 8 42	+10	e 15 56	+30	26·5	—
Baku	48·2	309	—	—	e 15 34	− 2	36·0	—
Kucino	58·8	325	—	—	e 17 54	− 6	33·0	38·0
Pulkovo	63·4	330	e 9 21	−67	—	—	33·0	69·1

Additional readings:—
Baku e = +25m.37s.
Kucino e = +23m.12s.
Long waves were recorded at Uccle, Copenhagen, Scoresby Sund, Honolulu T.H., and Tashkent.

May 16d. 2h. 41m. 21s. Epicentre 51°·6N. 179°·0W. (as on 14d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	25·5	60	10 19	S	(10 19)	+29	(e 14·8)	—
Vladivostok		33·6	275	e 6 37	0	—	—	14·3	—
Irkutsk		45·0	304	e 9 39?	+86	e 17 39?	SS	22·6	28·6
Scoresby Sund		56·8	10	—	—	17 33	− 1	24·6	—
Florissant		59·8	65	e 10 2	− 1	—	—	e 27·6	—
Manila		60·2	257	—	—	(20 2)	(+ 9)	20·0	—
Ekaterinburg		61·0	328	10 12	+ 1	18 35	+ 6	24·6	38·2
Ottawa		62·8	50	—	—	e 16 39?	?	e 29·6	—
Fordham	N.	67·0	53	—	—	e 17 39	?	e 35·6	—
Kucino		68·4	340	—	—	e 19 57	− 5	33·5	38·0
Tashkent		69·9	313	e 12 28	?	e 20 51	(−13)	e 36·6	40·5
De Bilt		76·2	357	—	—	e 21 39?	+ 5	e 38·6	47·1
Paris		79·6	0	e 26 39	SS	—	—	47·6	48·6
Florence		84·2	353	13 4	+35	24 39	?	—	55·6
Granada		91·1	5	—	—	e 35 39	?	48·6	51·6

For Notes see next page.

NOTES TO MAY 16d. 2h. 41m. 21s.

Additional readings and note :—
Sitka gives S as P and L as S.
Florissant eZ = +13m.26s. =PPP −1s.
Tashkent i = +12m.51s.
Long waves were recorded at Hong Kong, Baku, the American and European stations.

May 16d. 13h. 34m. 38s. Epicentre 33°·6N. 138°·4E. (as on 14d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	2·0	323	0 26	− 3	0 55	+ 4	—	—
Osaka	2·7	293	0 50	+11	—	—	1·6	1·9
Kobe	2·9	292	e 1 26	S	(e 1 26)	+12	—	—
Tyosi	3·0	43	e 0 27	−16	—	—	e 0·7	—
Toyooka	3·5	305	1 0	+10	(1 24)	− 6	e 1·8	—

Toyooka gives S as PN.

May 16d. 20h. 14m. 13s. Epicentre 34°·9N. 139°·2E. N.1.
(given by Tokyo in Geophys. Mag., Vol. VI, No. 4.).

Probable error of epicentre ±0°·2.

A = −·621, B = +·536, C = +·572 ; D = +·653, E = +·757 ;
G = −·433, H = +·374, K = −·820.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		1·6	58	0 21	− 2	(0 40)	− 1	0·7	1·3
Nagoya		1·9	278	i 0 26	− 3	0 50	+ 1	—	0·9
Osaka		3·0	265	0 44	+ 1	—	—	1·6	2·1
Kobe		3·3	267	0 46	− 1	i 1 27	+ 2	—	3·6
Sumoto		3·6	262	0 49	− 2	1 43	+11	—	1·9
Toyooka		3·6	282	e 0 53	+ 2	—	—	1·7	1·8
Mizusawa		4·5	19	1 3	− 1	2 9	+14	—	—
Koti		4·9	256	1 9	− 1	e 2 10	+ 5	—	3·1
Hukuoka		7·4	262	1 53	+ 8	3 46	L	(3·8)	4·4
Nagasaki		8·1	257	3 54	S	8 12	?	—	—
Vladivostok		9·9	327	i 2 24	+ 5	e 4 18	+ 7	4·8	5·3
Zi-ka-wei	E.	15·3	261	e 3 35	+ 3	8 25	L	(8·4)	—
Hong Kong		25·2	247	—	—	9 57	+13	13·3	15·6
Manila		26·1	224	i 6 6	PP	i 10 27	+27	—	—
Irkutsk		30·2	317	e 6 35	+28	e 11 5	− 2	15·8	19·1
Andijan		51·8	298	9 6	+ 1	—	—	—	—
Tashkent		53·9	300	i 9 22	+ 1	e 16 50	− 4	e 25·8	33·0
Ekaterinburg		55·4	320	i 9 28	− 4	17 15	0	26·8	64·3
Samarkand		56·1	299	9 34	− 3	—	—	—	—
Bombay		60·2	275	—	—	e 21 47?	SS	—	—
Kucino		67·5	324	—	—	e 19 36	−15	33·8	36·4
Baku		67·8	305	e 11 27	(+ 3)	e 20 1	+ 7	29·8	—
Pulkovo		68·9	330	e 11 0	− 4	e 20 6	− 2	35·8	47·3
Helsingfors	N.	70·8	331	—	—	i 27 29	SSS	—	—
La Paz		149·4	60	e 19 44	[+ 3]	—	—	—	—

Additional readings :—
Kobe P_gE = +54s., iN = +59s., iS_gN = +1m.37s.
Toyooka ePE = +57s., iPEZ = +1m.0s., PN = +59s.
Koti eZ = +1m.19s., iEN = eZ = +1m.32s., eZ = +2m.17s., and +2m.32s., iN = +2m.19s., eE = +2m.34s., eEN = +2m.58s.
Kucino e = +24m.15s.
Baku e = +25m.4s.
Long waves were recorded at Kew, Granada, Florence, Paris, Scoresby Sund, Cheb, Stuttgart, Strasbourg, De Bilt, Uccle, Lund, Copenhagen, and Phu-Lien.

May 16d. Readings also at 2h. (Manila), 3h. (Rome, Piacenza, and Ksara), 4h. (Bombay and near Sumoto), 6h. (Samarkand), 8h. (near Manila), 9h. (Rocca di Papa and Zagreb), 10h. (St. Louis), 11h. (near Tyosi), 13h. (Nagoya, Tyosi, Catania, Messina, Mineo, Trenta, and near Amboina), 15h. (Alicante and Tyosi), 16h. (near La Paz and near Tyosi), 19h. (Taihoku, Nagoya, near Tyosi, and near Tananarive), 20h. (near Nagoya (3) and Tyosi (3)), 23h. (Andijan and near Samarkand).

May 17d. 17h. 11m. 10s. Epicentre 36°·0N. 78°·0E. N.3.

$A = +·168$, $B = +·791$, $C = +·588$; $D = +·978$, $E = -·208$; $G = +·122$, $H = +·575$, $K = -·809$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun	5·7	180	1 30?	+ 9	—	—	2·5	2·8
Andijan	6·7	319	e 1 38	+ 3	e 2 54	+ 3	e 3·2	3·6
Almata	7·3	354	1 45	+ 1	—	—	3·8	4·2
Tashkent	8·6	311	2 0	− 2	—	—	i 3·4	4·8
Samarkand	9·4	296	—	—	(3 52)	− 7	3·9	3·9
Bombay	17·7	196	e 3 23	−40	—	—	—	10·3
Hyderabad	18·6	178	7 30	S	(7 30)	− 8	10·2	11·7
Baku	22·4	290	—	—	e 8 48	− 5	12·5	—
Ekaterinburg	23·8	336	i 5 3	− 5	e 9 18	− 1	11·3	—
Irkutsk	24·6	41	e 5 17	+ 1	e 12 57	+23	15·8	—

Hyderabad S = +9m.36s.

May 17d. Readings also at 0h. (Taihoku), 1h. (Ksara), 2h. (Baku, Ekaterinburg, Tashkent, and near Ksara), 3h. (near Tyosi (2)), 4h. (Cheb), 13h. (near Manila), 16h. (near Malabar), 17h. (Taihoku), 18h. (Kucino and Taihoku), 23h. (Taihoku, Tucson, and Tyosi).

May 18d. 0h. 2m. 18s. Epicentre 7°·0S. 147°·0E. (as on 1928 Aug. 28d.). R.2.

$A = -·833$, $B = +·541$, $C = -·122$; $D = +·545$, $E = +·839$; $G = +·102$, $H = -·066$, $K = -·993$.

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

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	−0·9	27·1	172	e 5 28	− 3	i 10 12	+10	e 14·1	14·9
Sydney	−0·9	27·1	172	e 8 48	(−13)	e 12 36	?	15·0	15·7
Adelaide	−1·0	29·0	194	e 5 28?	−19	i 10 42	+10	i 14·2	19·4
Melbourne	−1·0	30·9	183	e 8 18	?	10 42	−21	14·7	20·5
Manila	−1·1	33·7	312	i 7 59	PP	i 13 11	SS	i 17·3	—
Batavia	−1·3	39·9	270	e 8 12	+52	—	—	—	—
Wellington	−1·3	42·3	149	e 9 57	(+ 8)	17 24	(−32)	24·7	—
Koti	−1·3	42·6	345	7 57	+14	13 56	0	—	—
Sumoto	−1·3	42·9	346	—	—	e 13 25	−35	—	—
Christchurch	−1·3	42·9	152	—	—	14 0	0	22·4	26·8
Osaka	−1·4	43·1	346	8 9	+23	(13 51)	−11	13·9	15·3
Kobe	−1·4	43·2	346	e 10 19	(+27)	—	—	—	—
Hong Kong	−1·4	43·5	314	e 8 19	+30	(14 12)	+ 4	14·2	18·2
Phu-Lien	−1·4	48·5	308	8 42?	+13	—	—	—	—
Medan	−1·4	49·4	281	e 8 28	− 8	e 15 39	+ 6	—	—
Vladivostok	−1·5	51·9	348	e 8 52	− 2	e 16 13	+ 7	26·6	—
Irkutsk	−1·9	69·5	335	e 10 53	− 3	19 58	+ 6	e 30·7	—
Hyderabad	−2·0	72·0	291	11 14	+ 3	20 32	+11	—	—
Bombay	−2·0	77·5	291	11 50	+ 7	21 36	+10	40·5	—
Andijan	−2·1	83·2	313	12 16	+ 2	22 29	+ 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.
Tashkent		−2·1	85·6	314	i 12 26	0	i 22 40	−12	e 37·7	48·2
Samarkand		−2·1	86·9	311	e 12 31	− 1	—	—	—	—
Ekaterinburg		−2·1	93·8	328	e 13 2	− 3	i 24 3	− 9	38·7	50·4
Baku		−2·2	99·9	311	e 14 1	+28	e 24 8	[−17]	42·7	65·0
Pulkovo		—	109·2	332	—	—	e 24 46	[−24]	54·7	65·7
Scoresby Sund		—	116·1	355	—	—	25 18	[−20]	57·7	—
Copenhagen		—	119·5	332	—	—	33 42?	?	57·7	—
Florissant		—	119·5	49	e 19 42	PP	e 29 42	PS	e 55·7	—
St. Louis	E.	—	119·7	49	—	—	e 25 45	[− 4]	e 49·7	—
Feldberg	N.	—	124·7	329	—	—	e 30 48	PS	—	58·7
Ottawa		—	126·8	35	e 22 0	?	e 37 42	SS	e 51·7	—
Paris		—	128·5	331	—	—	e 42 42	SSS	66·7	—
Fordham		—	130·3	40	e 22 18	PKS	—	—	e 57·7	69·2
La Paz		—	138·0	124	i 19 12	[− 7]	—	—	—	—

Additional readings :—
Riverview iN = +5m.48s., SS? = +11m.32s.
Adelaide iPPP = +6m.35s., i = +12m.0s. =SS +18s.
Wellington PP = +13m.47s. =S −4s.
Christchurch e = +11m.45s., i = +25m.18s.
Tashkent iPS = +23m.29s., SS = +28m.42s.
Ekaterinburg iSKS = +23m.32s., SS = +30m.30s.
Baku SS = +32m.36s.
Scoresby Sund +26m.27s.
St. Louis eE = +29m.45s. =PS −14s.
La Paz iE = +22m.47s.
Long waves were recorded at Tucson and other European stations.

May 18d. 4h. 13m. 55s. Epicentre 48°·6N. 13°·4E. N.2.

A = +·643, B = +·153, C = +·750 ; D = +·232, E = −·973 ;
G = +·730, H = +·174, K = −·661.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Innsbruck		1·9	225	e 0 29	+ 1	(i 0 47)	− 2	i 0·8	—
Vienna		2·0	100	0 33	+ 4	0 56	+ 5	1·1	1·4
Graz		2·1	138	e 0 30	0	e 0 50	− 4	—	2·0
Jena	E.	2·5	333	e 0 11	−25	i 0 50	−14	i 0·9	0·9
Ravensburg		2·6	252	—	—	i 1 17	+10	—	—
Hohenheim		2·7	272	e 0 49	+10	e 1 22	+13	1·7	—
Stuttgart		2·8	273	e 1 0	+20	i 1 37	+25	—	—
Chur	N.	3·2	236	e 0 43	− 3	e 1 21	− 1	—	—
Zagreb		3·3	148	(e 0 59)	+12	(i 1 19)	− 6	—	—
Padova		3·4	199	e 0 43	− 6	i 1 16	−11	—	—
Zurich	N.	3·5	250	i 0 48	− 2	i 1 24	− 6	—	—
Neuchatel	N.	4·6	251	i 1 4	− 2	i 1 51	− 7	—	—
Rome		6·8	186	—	—	e 3 15	+22	—	4·1
Rocca di Papa		6·9	184	4 45	?	—	—	—	5·2

Additional readings and note :—
Vienna $P^* = +35s.$, $P_g = +37s.$, iEZ = +40s., iNZ = +41s., iEN = +44s., $S^* = +59s.$, $S_g = +1m.6s.$
Jena eE = +33s.
Ravensburg e = +1m.5s.?, iN = +1m.20s., iE = +1m.22s.
Hohenheim i = +1m.32s.
Stuttgart eN = +1m.33s.
Chur $iP_g = +48s.$
Zagreb i = (+1m.26s.) ; all readings have been *increased* by 1m.
Zurich $iP_g = +58s.$
Neuchatel $eP_g = +1m.19s.$

May 18d. Readings also at 0h. (Samarkand, near Almata, and Andijan), 1h. (near Andijan and Samarkand), 6h. (Osaka, Kobe, Nagoya, and Tyosi (2)), 7h. (Tyosi, Irkutsk, Baku, and near Mizusawa), 8h. (Baku, Ekaterinburg, Irkutsk, Tashkent, and Vladivostok), 9h. (near Amboina (2) and Toyooka), 10h. (near Amboina), 12h. (near Wellington), 14h. (Ksara and Taihoku), 15h. and 16h. (Taihoku), 17h. (Samarkand (2)), 22h. (Taihoku), 23h. (Granada, Strasbourg, Scoresby Sund, and Taihoku).

May 19d. 3h. 11m. 58s. Epicentre 57°·6S. 27°·0W. (as given by La Paz). N.3.

A = +·477, B = −·243, C = −·844; D = −·454, E = −·891;
G = −·752, H = +·383, K = −·536.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata		30·7	305	6 10	− 1	11 14	− 2	13·3	—
Rio de Janeiro		36·6	334	—	—	i 12 43	− 2	15·3	—
Cape Town		38·5	70	—	—	i 12 59	−15	16·6	18·7
La Paz		51·2	306	9 2	+ 2	i 16 20	+ 2	22·0	28·0
Tananarive	E.	65·9	87	—	—	e 19 35	+ 4	e 30·1	e 33·4
	N.	65·9	87	—	—	e 20 53	+82	e 30·6	33·1
Wellington		79·4	197	—	—	18 2?	?	—	—
San Fernando		95·7	17	24 3	S	(24 3)	[− 1]	40·0	53·5
Granada		96·8	19	—	—	i 24 50	− 8	39·0	52·7
Fordham		106·0	324	e 18 34	PP	e 24 37	[−18]	e 51·0	—
Florence		106·4	27	30 42	?	e 41 17	?	53·0	56·0
Harvard		106·6	327	e 18 23	PP	e 24 52	[− 5]	e 53·0	—
Paris		109·2	19	—	—	e 29 2?	?	52·0	60·0
Florissant		110·1	311	e 19 2	PP	e 28 32	PS	e 40·7	—
Ottawa		110·7	325	e 19 2	PP	28 20	PS	58·0	—
Kew		111·2	15	—	—	e 28 50	PS	50·0	62·2
Uccle		111·5	20	—	—	e 27 2?	?	e 45·0	—
Cheb		112·5	24	—	—	e 32 2?	?	e 57·0	62·3
De Bilt		112·8	20	—	—	e 29 2	PS	e 45·0	62·1
Copenhagen		117·7	22	—	—	24 2	PPPP	54·0	—
Baku		118·0	55	e 19 49	PP	—	—	46·0	68·2
Kucino		124·8	37	—	—	e 26 8	—	e 61·6	71·4
Pulkovo		125·7	30	e 19 29	[+31]	e 37 43	SS	62·0	70·2
Scoresby Sund		128·1	2	24 2	PPP	26 8	[− 6]	60·0	—
Ekaterinburg		134·0	48	e 19 9	[− 4]	—	—	54·0	80·4
Irkutsk		152·2	80	e 19 47	[+ 3]	e 30 2?	{−33}	63·0	63·7

Additional readings and note:—
La Paz iPPPE = +11m.28s.
San Fernando S = +32m.3s., true S is given as P.
Fordham eN = +27m.30s. =PS −18s. and +33m.24s. =SS +0s.
Harvard eN = +21m.18s., +27m.32s. =PS −22s. and +33m.29s. =SS −3s.
Ottawa e = +34m.32s. =SS +4s.
De Bilt eEN = +35m.2s. =SS +8s. and +39m.2s. =SSS +1s.
Kucino e = +29m.2s., +36m.50s., and +41m.50s. =SSS −10s.
Pulkovo e = +51m.33s.
Ekaterinburg ePKS = +22m.39s., iPS = +32m.12s., SS = +39m.14s.
Long waves were recorded at Vladivostok, Algiers, Bombay, Dakar, Hong Kong, Phu-Lien, the Australian and European stations.

May 19d. 3h. 56m. 13s. Epicentre 35°·5N. 126°·0E. N.3.

A = −·479, B = +·659, C = +·581; D = +·809, E = +·588;
G = −·341, H = +·470, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	4·1	117	—	—	e 2 36	+51	—	—
Nagasaki	4·2	130	1 0	0	1 47	− 1	—	—
Koti	6·5	105	e 1 33	+ 1	2 52	+ 6	—	—
Sumoto	7·4	96	e 3 30	?S	(e 3 30)	+21	—	—
Kobe	7·5	94	—	—	e 3 10	− 1	(e 4·9)	—
Osaka	7·8	93	1 51	0	—	—	3·8	4·9

Kobe gives S as e and L as S.

May 19d. 15h. 3m. 54s. Epicentre 22°·0N. 120°·5E. (as on 1928 April 7d.). R.2.

A = −·471, B = +·799, C = +·375 ; D = +·862, E = +·508 ;
G = −·190, H = +·323, K = −·927.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hokoto		1·7	330	1 6	+42	1 37	+53	—	—
Taihoku		3·2	18	1 1	+15	1 23	+ 1	1·7	2·1
Hong Kong		5·9	274	i 1 44	+20	i 3 3	+32	3·4	3·7
Manila		7·4	176	i 1 40	− 5	i 2 54	−15	—	4·6
Zi-ka-wei		9·2	5	2 21	+11	4 3	+ 9	—	15·8
Phu-Lien		13·0	267	i 3 21	+19	6 4	+37	7·1	10·2
Nagasaki		13·5	36	3 10	+ 1	5 42	+ 3	—	—
Hukuoka		14·5	35	3 22	0	6 4	+ 1	—	6·4
Koti		16·3	42	e 3 38	− 7	6 41	− 4	—	—
Sumoto		17·6	43	i 3 57	− 5	7 15	0	—	7·4
Kobe		18·0	42	i 4 4	− 3	i 7 24	− 1	—	7·5
Osaka		18·2	43	4 7	− 2	—	—	7·6	8·2
Toyooka		18·4	40	4 7	− 4	7 31	− 2	10·6	—
Nagoya		19·5	44	i 3 19	−65	6 51	−65	—	7·0
Tyosi		22·4	48	e 4 43	−12	—	—	e 9·0	9·1
Vladivostok		23·1	22	i 5 1	− 1	i 9 13	+ 6	11·8	14·1
Mizusawa		24·5	41	5 8	− 7	9 16	−16	—	—
Amboina		26·8	163	i 5 20	−16	9 55	−17	—	—
Medan		28·1	232	e 4 38	−70	1 9 23	−71	—	—
Calcutta	E.	29·8	277	e 6 5	+ 2	—	—	12·7	—
	N.	29·8	277	e 6 8	+ 5	—	—	12·6	—
Batavia		31·2	209	i 6 24	+ 8	11 22	− 1	—	—
Malabar		31·9	207	i 6 18	− 4	i 11 14	−20	—	—
Irkutsk		32·7	342	e 6 33	+ 4	11 37	− 9	14·1	16·2
Agra	N.	38·8	289	e 10 46	?	—	—	—	26·3
Dehra Dun		38·8	294	9 16?	(−22)	13 16?	− 2	16·3	22·1
Hyderabad		39·8	273	7 55	+25	13 40	+ 7	19·9	23·4
Almata		41·7	313	8 55	PP	14 12	+10	—	—
Colombo		42·0	256	7 55	+ 6	14 15	+ 9	21·9	27·1
Kodaikanal		42·9	262	11 6	?	—	—	—	—
Andijan		44·5	307	—	—	14 50	+ 7	—	—
Bombay		44·6	274	9 16	+66	14 49	+ 5	19·5	25·6
Tashkent		46·9	310	i 8 34	+ 6	i 15 23	+ 6	—	32·7
Ekaterinburg		55·4	325	i 9 33	+ 1	17 14	− 1	26·1	35·0
Adelaide		59·5	163	—	—	i 17 38	−31	—	—
Baku		61·5	307	e 10 20	+ 5	i 18 43	+ 7	36·1	78·3
Riverview		63·0	151	i 10 5	−20	18 3	−52	e 30·1	31·4
Melbourne		64·1	160	—	—	i 18 34	−35	—	32·3
Kucino		67·9	323	—	—	19 31	−25	35·8	40·0
Pulkovo		71·2	329	11 15	− 3	20 25	−10	39·1	46·8
Theodosia		71·3	314	e 11 20	+ 1	e 20 34	− 3	—	—
Simferopol		72·2	314	e 11 24	0	20 42	− 5	—	—
Yalta		72·2	314	11 22	− 2	20 42	− 5	—	—
Sebastopol		72·7	314	e 11 31	+ 4	—	—	—	—
Ksara		73·7	301	e 11 33	0	e 21 3	− 2	26·6	—
Helsingfors		73·7	330	i 11 32	− 1	i 20 55	−10	e 39·1	—
Upsala		77·3	330	i 21 31	S	(i 21 31)	−15	—	43·7
Sitka	E.	78·9	33	21 39	S	(21 39)	−25	22·6	—
Lund		81·1	328	12 54	+40	22 12	−15	44·1	—
Copenhagen		81·5	328	12 13	− 3	22 18	−14	44·1	—
Vienna		82·6	320	i 12 20	− 1	i 23 45	+62	—	—
Hamburg		83·8	326	—	—	e 22 42	−13	i 46·7	55·3
Cheb		84·1	322	e 19 27	?	i 23 40	PS	e 48·1	50·1
Trenta		86·5	312	i 23 6	S	(i 23 6)	[− 4]	—	—
Stuttgart		86·6	324	e 12 37	− 4	i 23 7	[− 4]	e 41·0	55·6
De Bilt		87·0	326	i 12 43	0	e 23 14	[+ 1]	e 47·1	51·7
Naples	E.	87·2	314	e 24 34	S	(e 24 34)	PS	27·6	—
Chur		87·4	320	e 22 53	S	(e 22 53)	[−23]	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dyce		87·5	334	—	—	e 23 21	−11	e 43·1	49·3
Strasbourg		87·6	322	e 12 44	− 2	e 23 19	[+ 2]	46·1	—
Zurich		87·7	320	e 22 43	S	(e 22 43)	[−35]	—	—
Florence		87·8	317	15 16	?	23 26	− 9	—	51·1
Catania		88·2	310	e 23 16	S	(e 23 16)	[− 5]	—	—
Piacenza		88·2	319	23 6	S	(23 6)	[−15]	—	59·1
Uccle		88·2	325	—	—	e 23 22	[+ 1]	e 46·1	—
Edinburgh		88·8	331	—	—	e 23 30	[+ 5]	e 49·1	—
Kew		90·2	327	—	—	e 24 49	PS	47·1	59·3
Paris		90·3	324	e 17 6?	?	e 24 6?	+ 7	37·1	56·1
Almeria		100·2	318	25 58	S	(25 58)	+30	e 51·0	58·7
Granada		100·8	318	—	—	e 28 6	?	46·1	60·1
Ottawa		111·0	12	—	—	e 25 54	{−20}	e 45·1	—
Florissant	N.Z.	112·6	26	i 19 15	PP	i 28 34	PS	e 68·1	—
Fordham		115·7	12	e 19 36	PP	e 25 6?	[−30]	e 53·1	—
La Paz		170·1	58	e 20 28	[+24]	i 31 32	{−40}	—	—

Additional readings :—
Zi-ka-wei iN = +5m.34s. and +7m.53s., iE = +6m.11s. and +7m.23s.
Koti iP = +3m.44s., eSN = +6m.26s., SSEZ = +6m.57s.
Kobe iSZ = +7m.30s.
Nagoya PP = +3m.54s., PPP = +4m.21s.
Batavia iP = +6m.28s., iZ = +7m.40s.
Agra eE = +10m.54s.
Riverview i = +18m.18s.
Helsingfors iPSEN = +21m.40s.
Lund +15m.18s. = PP +5s.
Copenhagen +23m.3s. = PS −5s.
Stuttgart eZ = +16m.17s. = PP +19s., e = +23m.56s. = PS −15s., eE = +34m.6s.?.
De Bilt eZ = +24m.10s. = PS −6s.
Strasbourg e = +24m.19s. = PS −4s.
Fordham e = +29m.6s.? = PS −17s.
Long waves were recorded at other European stations.

May 19d. Readings also at 0h. (near Malaga), 2h. (near Nagasaki), 3h. (Taihoku) 4h. (La Paz (2) and near Sumoto), 7h. (Ksara and Samarkand), 8h. (Harvard) 10h. (near Mizusawa, Nagoya, Osaka, and Tyosi), 11h. (Baku, Ekaterinburg, Tyosi, and near Batavia), 12h. (Port au Prince), 13h. (Cheb and Taihoku), 14h. (Scoresby Sund), 16h. (La Plata and near La Paz), 17h. (Tyosi and Rio de Janeiro), 18h. (near Tyosi), 19h. (Copiapo, La Paz, La Plata, and near Santiago), 20h. (La Paz), 21h. (Baku, Ekaterinburg, and Scoresby Sund), 22h. (Santiago, Samarkand, La Paz, and near Medan).

May 20d. 7h. 43m. 1s. Epicentre 3°·5S. 146°·5E. (as on 1929 April 27d.). R.3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		30·6	172	e 10 11	(+59)	—	—	e 17·9	22·4
Sydney		30·6	172	e 6 29	+19	e 12 11	+57	17·1	17·7
Manila		31·2	308	i 6 14	− 2	i 10 29	−54	13·3	—
Adelaide		32·3	191	e 6 27	+ 2	i 10 48	+ 8	e 14·7	20·8
Melbourne		34·3	181	—	—	i 12 19	+ 8	17·6	23·6
Taihoku	E.	37·6	322	—	—	e 11 20	−100	—	—
Osaka		39·6	347	7 23	− 6	—	—	13·4	—
Batavia		39·6	265	e 7 51	+22	—	—	—	—
Hong Kong		40·8	311	7 41	+ 2	14 3	+15	—	20·8
Wellington		45·5	150	—	—	e 17 39	SS	25·0	—
Phu-Lien		46·0	304	7 59?	−22	—	—	—	—
Vladivostok		48·4	347	—	—	(16 59?)	+81	17·0	—
Irkutsk		66·2	334	e 10 52	+ 5	e 19 29	− 6	31·0	37·1
Tashkent		82·8	312	i 12 27	+ 5	22 46	+ 1	e 42·0	48·0
Ekaterinburg		90·6	326	13 5	+ 5	e 24 12	+10	40·0	53·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	92·7	41	24 16	S	(24 16)	− 5	42·9	48·2
Baku		97·3	311	e 17 41	PP	e 27 19	?	e 54·0	—
Kucino		103·2	326	—	—	e 25 50	− 5	48·6	50·9
Pulkovo		106·0	333	e 19 11	[+66]	e 28 13	PS	52·0	63·5
Scoresby Sund		112·6	355	—	—	34 59?	SS	65·0	—
Copenhagen		116·2	332	—	—	26 59?	{+ 9}	53·0	—
Florissant		117·6	47	—	—	e 30 29	PS	e 55·5	—
Strasbourg		122·8	328	—	—	e 25 59?	[0]	e 63·0	—
Toronto		123·0	38	—	—	e 37 27	SS	e 58·0	—
Ottawa		124·2	34	—	—	e 37 47	SS	e 55·0	—

Additional readings :—
Riverview eE = +14m.9s. and +14m.59s., eN = +16m.6s.
Melbourne i = +15m.27s.
Batavia i = +10m.58s.
Hong Kong e = +9m.38s. = P_cP −6s.
Irkutsk e = +26m.43s.
Tashkent e = +11m.48s., i = +15m.41s. = PP +14s., and +19m.23s.
Ekaterinburg PP = +16m.42s., SKS = +23m.38s., PS = +25m.30s.
Long waves were recorded at Honolulu T.H., Fordham, St. Louis, and European stations.

May 20d. 11h. 15m. 3s. Epicentre **51°·7N. 179°·3E.** R.1.

Probable error of epicentre ±0°·3 (as on April 26d.).

A = −·620, B = +·008, C = +·785 ; D = +·012, E = +1·000 ;
G = −·785, H = +·010, K = −·620.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	E.	26·4	60	10 10	S	(10 10)	+ 5	(14·6)	—
Mizusawa	E.	29·2	260	6 13	+15	10 57	+ 6	—	—
	N.	29·2	260	6 9	+11	10 52	+ 1	—	—
Vladivostok		32·5	275	e 6 28	+ 1	i 12 2	+19	—	18·6
Nagoya		34·2	260	e 6 44	+ 2	—	—	—	—
Honolulu T.H.		35·3	141	—	—	i 12 19	− 7	e 14·5	—
Toyooka		35·3	262	e 6 50	− 2	—	—	15·9	—
Osaka		35·4	260	6 46	− 7	—	—	12·5	13·1
Kobe		35·7	260	6 51	− 4	12 32	0	e 15·5	20·8
Sumoto		36·1	260	6 56	− 3	—	—	e 15·1	18·8
Victoria	E.	36·1	71	6 44	−15	12 35	− 3	16·7	17·4
	N.	36·1	71	6 54	− 5	12 42	+ 4	—	—
Koti		37·4	260	e 7 8	− 2	12 58	+ 1	e 16·0	—
Nagasaki		40·2	263	7 32	− 2	13 42	+ 3	19·5	—
Irkutsk		44·0	302	8 5	0	14 38	+ 2	19·9	26·9
Zi-ka-wei		46·5	269	8 19	− 6	15 25	+13	23·5	30·3
Taihoku	E.	50·8	264	—	—	e 16 8	− 4	—	—
Scoresby Sund		56·9	9	9 45	+ 3	17 42	+ 7	—	—
Hong Kong		57·4	266	9 43	− 3	17 37	− 5	23·9	37·0
Manila		59·2	255	i 9 57	− 2	i 18 4	− 1	i 28·4	33·3
Chicago		60·2	60	10 7	+ 1	i 18 13	− 6	e 26·9	—
Ekaterinburg		60·4	326	i 10 6	− 1	i 18 20	− 1	26·9	38·9
Florissant		60·8	64	e 10 8	− 2	i 18 22	− 4	e 27·9	34·0
St. Louis	E.	61·0	64	e 10 8	− 3	e 18 21	− 8	e 27·9	—
Ann Arbor	N.	61·8	56	e 10 51	(− 9)	e 20 3	(− 2)	e 29·1	—
Toronto		63·0	52	e 10 27	+ 2	i 18 57?	+ 2	29·1	35·2
Phu-Lien		63·2	271	9 57?	−30	—	—	—	—
Ottawa		63·5	49	e 10 26	− 3	e 18 59	− 2	e 27·9	38·5
Almata		63·8	308	11 17	(+ 9)	20 38	(−18)	—	—
Pulkovo		65·8	345	10 42	− 2	e 19 32	+ 2	32·9	39·6
Apia		66·0	170	—	—	e 19 41	+ 9	33·4	—
Helsingfors		66·3	347	10 46	− 1	e 19 40	+ 4	e 31·9	—
Upsala		67·5	350	e 10 52	− 3	e 19 39	−12	e 33·9	41·3
Charlottesville		67·7	56	—	—	19 57	+ 4	e 33·9	—
Bergen		67·8	356	—	—	e 20 5	+11	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Fordham		67·8	52	e 10 58	+ 1	e 19 50	− 4	31·9	42·5
Andijan		67·9	309	10 59	+ 1	e 20 5	+ 9	—	—
Kucino		67·9	338	10 29	−29	19 28	−28	32·5	43·9
Harvard		68·0	49	e 10 52	− 6	e 20 0	+ 3	e 29·4	—
Tashkent		69·0	311	i 11 3	− 2	i 20 10	+ 1	32·9	43·7
Konigsberg		72·0	348	e 16 8	?	e 22 6	?	e 33·9	—
Lund		72·1	353	11 33	+10	20 45	− 1	32·9	—
Copenhagen		72·2	353	11 22	− 2	20 35	−12	32·9	—
Edinburgh		72·4	2	—	—	e 21 5	PS	36·9	56·9
Hamburg		74·4	354	e 11 36	− 1	e 21 14	+ 1	e 34·9	52·0
Stonyhurst		74·4	0	—	—	(e 19 57?)	?	e 19·9	—
Bidston		74·9	0	i 11 37	− 3	i 21 57	PS	34·9	—
Agra	E.	75·5	296	e 12 10	+27	e 22 29	PS	40·8	46·0
De Bilt		76·1	356	11 48	+ 1	21 30	− 3	e 36·9	47·2
Gottingen		76·4	354	e 11 48	0	e 21 27	− 9	e 26·4	51·9
Oxford		76·6	0	11 50	+ 1	21 37	− 1	e 34·6	58·1
Kew		76·8	359	e 11 52	+ 2	e 21 41	0	40·0	53·7
Uccle		77·4	357	11 55	+ 1	e 21 49	+ 2	e 34·9	—
Cheb		77·6	351	—	—	e 21 57?	+ 8	e 34·9	46·9
Feldberg	N.	77·8	355	i 11 50	− 7	i 22 2	+10	—	39·9
Baku		78·0	324	e 11 57	0	i 22 53	PS	39·9	50·5
Theodosia		78·4	335	12 1	+ 2	—	—	e 30·9	—
Simferopol		78·8	335	e 12 0	− 1	—	—	44·9	—
Sebastopol		79·2	335	e 12 4	0	—	—	—	—
Stuttgart		79·2	355	e 12 3	− 1	e 22 7	0	e 39·9	58·3
Yalta		79·2	335	e 12 1	− 3	—	—	41·9	—
Budapest		79·4	347	e 12 7	+ 2	—	—	27·4	51·4
Paris		79·4	358	e 12 6	+ 1	e 22 8	− 1	27·9	53·9
Strasbourg		79·5	355	i 12 6	+ 1	e 22 1	− 9	34·9	—
Zurich		80·6	355	e 12 8	− 3	e 22 31	+ 9	—	—
Chur		81·1	355	e 12 12	− 2	e 22 23	− 4	—	—
Neuchatel		81·1	354	i 12 11	− 3	e 22 40	+13	—	—
Zagreb		81·5	349	—	—	e 33 57?	?	e 45·6	47·7
Padova		82·3	350	e 12 22	+ 2	e 22 37	− 3	e 49·4	—
Hyderabad		82·9	290	12 23	0	22 39	− 7	42·7	52·4
Piacenza		82·9	351	12 23	0	22 37	− 9	—	52·1
Florence		84·0	351	i 12 27	− 1	23 22	+24	43·9	51·9
Bombay		84·9	295	12 34	+ 1	23 0	− 7	43·9	53·4
Rome		85·8	350	12 42	+ 5	—	—	—	—
Rocca di Papa		85·9	350	12 41	+ 3	i 24 31	PS	e 32·3	51·8
Barcelona		86·8	357	—	—	e 23 19	− 6	—	52·2
Toledo		88·4	3	—	—	23 21	[− 2]	—	53·5
Ksara		88·6	330	e 12 24	−27	23 24	[0]	31·4	—
Riverview		89·0	203	—	—	e 23 15	[−11]	e 39·9	52·0
Kodaikanal		89·2	285	22 51	SKS	(22 51)	[−37]	53·2	67·3
Catania		89·7	347	e 12 39	−17	—	—	e 51·8	61·4
Alicante		90·0	0	—	—	(e 25 22)	PS	e 25·4	—
Colombo		90·4	282	14 10	+71	23 45	−15	38·1	62·2
Granada		91·1	3	e 13 1	− 2	i 25 36	PS	36·9	55·5
Algiers		91·4	357	—	—	e 25 37	PS	48·9	56·0
Almeria		91·5	3	e 16 43	PP	e 23 30	[−11]	41·9	62·2
Malaga		91·5	3	—	—	(e 25 3)	PS	e 25·1	—
San Fernando		91·8	5	—	—	24 27	+14	50·4	70·4
Wellington		93·0	184	—	—	23 36	[−14]	43·9	49·0
Adelaide		93·6	210	—	—	i 24 18	−11	e 43·4	56·9
Melbourne		94·4	206	—	—	i 24 22	−15	39·7	42·5
La Paz		116·8	84	e 21 7	?	i 29 43	PS	57·2	79·5
Tananarive		130·1	293	—	—	e 41 12	?	69·9	75·5

Additional readings and note:
Sitka gives S as P and L as S.
Vladivostok i = +7m.44s.
Toyooka PZ = +6m.53s., PN = +6m.54s.

Continued on next page.

Zi-ka-wei iZ = +8m.46s., +10m.14s. =PP +8s., and +15m.44s.
Scoresby Sund +12m.15s. and +21m.51s.
Manila iEN = +18m.32s., i = +21m.57s. =SS +2s., +24m.41s., and +26m.23s.
Florissant iPNZ = +10m.11s.
Ann Arbor eN = +19m.27s.
Toronto SSS = +26m.6s., T_0 =11h.15m.2s.
Ottawa SSS = +26m.12s.; T_0 =11h.14m.57s.
Apia e = +29m.31s.
Helsingfors iPPPN = +15m.5s., iPS = +20m.12s., SSN = +24m.37s., SSSN = +27m.22s.
Upsala SSN = +24m.38s.
Bergen e = +24m.57s.?
Copenhagen +25m.33s. =SS +17s.
Hamburg SS = +26m.39s., SSS = +30m.27s.
Bidston SS = +26m.47s.
De Bilt eSSN = +27m.1s.
Kew e = +27m.12s.
Uccle SS = +27m.21s.
Feldberg eN = +22m.46s. and +27m.16s.
Baku iPPP = +18m.17s.
Stuttgart ePPNZ = +14m.49s., ePPPNZ = +16m.55s., ePSEZ = +22m.37s., iPPSEZ = +23m.12s., iSS = +27m.42s., eSSSE = +31m.27s.
Strasbourg ePS = +22m.46s., SS = +27m.57s.
Rome e = +12m.28s.
Riverview iE = +23m.35s., e = +28m.55s. and +29m.24s. =SS −2s.
Granada PP = +17m.3s.
Adelaide iSS = +30m.36s.
Melbourne i = +31m.7s.
Tananarive PPS = +35m.57s.? PPPS = +38m.15s., e = +65m.12s.
Long waves were recorded at Cape Town, Tyosi, Tortosa, Potsdam, Jena, Karlsruhe, and Vienna.

May 20d. 22h. 11m. 23s. Epicentre 35°·6N. 140°·8E. (given by Tokyo). N.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·2	17	0 3	0	(0 7)	+ 2	0·1	0·2
Tukuba		0·8	316	0 7	− 4	—	—	—	—
Tokyo		0·9	276	0 10	− 3	—	—	—	—
Nagoya		3·2	262	e 0 46	0	1 11	−11	—	—
Mizusawa	E.	3·5	4	—	—	1 32	+ 2	—	—
Osaka		4·4	259	e 1 2	− 1	(2 2)	+ 9	2·0	2·6
Kobe		4·7	260	1 14	+ 7	—	—	e 2·3	2·6
Toyooka		4·8	271	e 1 49	+41	—	—	—	—
Sumoto		5·0	257	e 1 42	+31	e 2 14	+ 6	—	2·7

Kobe gives also e = +1m.27s.

May 20d. Readings also at 1h. (Santiago), 2h. (Taihoku), 4h. (Wellington and near Sumoto), 6h. (Perth), 7h. (Phu-Lien, Zurich, near Chur, and near Medan), 8h. (near Amboina (2)), 9h. (Ksara), 11h. (Tyosi, Ootomari, and Wellington), 13h. (near Honolulu T.H.), 14h. (Almata and Ksara), 15h. (Baku, Ekaterinburg, Kucino, Pulkovo, and Tashkent), 16h. (Baku, Ekaterinburg, and Kucino), 17h. (Ksara), 20h. (Ksara and Santiago), 22h. (Sebastopol, Simferopol, Yalta, and near Manila).

May 21d. 8h. 8m. 59s. Epicentre 42°·8N. 12°·3E. (as on April 7d.). R.3.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rome	0·9	172	i 0 12	− 1	i 0 26	+ 3	i 0·5	0·9
Rocca di Papa	1·1	164	i 0 14	− 2	i 0 31	+ 3	—	0·6
Florence	1·2	322	—	—	e 0 31	0	—	0·9
Benevento	2·2	138	1 26	+55	—	—	—	—
Casamicciola	2·3	150	0 39	+ 6	1 38	+39	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Naples	2·4	143	e 0 37	+ 3	e 1 17	+15	4·0	—
Padova	2·6	353	e 0 55	+18	1 33	+26	—	—
Piacenza	2·9	320	—	—	e 1 15	+ 1	(1·8)	2·3
Zagreb	4·0	40	e 0 54	− 3	e 1 47	+ 5	—	2·2
Chur	4·5	334	e 1 1	− 3	e 1 59	+ 4	—	—
Zurich	5·2	332	e 1 15	+ 1	—	—	—	—
Ravensburg	5·4	340	—	—	e 2 1?	−17	—	—
Neuchatel	5·7	320	e 1 22	+ 1	e 2 29	+ 4	—	—
Stuttgart	6·4	341	—		e 2 31?	−12	—	—

Additional reading and note :—
Rocca di Papa i = +22s.
Piacenza gives S as e and L as S.

May 21d. 13h. 50m. 51s. Epicentre 37°·0N. 44°·0E. (as on 10d. 23h.). R.3.

A = +·574, B = +·555, C = +·602 ; D = +·695, E = −·719 ;
G = +·433, H = +·418, K = −·799.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	5·7	51	e 1 44	+23	e 2 38	+13	—	5·7
Ksara	7·3	247	e 2 25	+41	4 19	+73	4·9	—
Samarkand	18·1	74	4 5	− 3	—	—	—	—
Tashkent	20·0	67	e 5 30	+60	i 9 22	+76	—	18·6
Andijan	22·3	71	4 56	+ 2	—	—	—	—
Ekaterinburg	22·7	24	4 52	− 6	e 9 1	+ 2	12·1	15·1
Pulkovo	24·4	343	5 19	+ 5	9 38	+ 8	13·1	14·7

May 21d. 17h. 37m. 11s. Epicentre 34°·0N. 139°·5E. (as on 7d.). X.

A = −·630, B = +·538, C = +·559 ; D = +·649, E = +·760 ;
G = −·425, H = +·363, K = −·829.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	1·7	7	0 13	−11	—	—	—	—
Tyosi	2·1	33	e 0 26	− 4	—	—	e 0·7	—
Tukuba	2·2	14	0 22	− 9	—	—	—	—
Nagoya	2·4	299	0 31	− 3	0 55	− 7	—	—
Osaka	3·4	278	0 49	− 0	—	—	1·6	2·1
Kobe	3·7	282	e 0 58	+ 5	1 31	− 4	e 1·7	1·8
Sumoto	3·8	276	—	—	e 1 32	− 5	—	2·0
Toyooka	4·1	291	e 1 8	+ 9	—	—	1·9	2·0

May 21d. 22h. 9m. 7s. Epicentre 41°·5N. 30°·5W. (as on 1924 Aug. 28d.). R.1.

Probable error of epicentre ±0°·3.

A = +·645, B = −·380, C = +·663 ; D = −·508, E = −·862 ;
G = +·571, H = −·336, K = −·748.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando	19·5	97	4 35	+11	8 53	− 3	9·3	11·9
Toledo	20·1	86	e 4 30	− 1	e 8 12	+ 4	e 9·1	—
Malaga	20·7	95	i 4 44	+ 7	8 33	+13	10·1	—
Granada	21·2	93	i 4 48	+ 6	i 8 45	+15	9·9	12·6
Almeria	22·2	93	i 4 57	+ 4	i 9 1	+11	10·7	12·2
Oxford	22·3	53	4 53	− 1	8 50	− 2	10·1	12·2
Stonyhurst	22·3	47	i 4 51	− 3	—	—	—	11·4
Kew	22·8	54	e 4 57	− 2	9 6	+ 5	10·3	11·6
Edinburgh	22·8	42	e 4 59	0	9 5	+ 4	i 11·6	12·0
Alicante	23·1	88	e 5 8	+ 6	e 9 22	+15	e 10·9	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tortosa	N.	23·2	81	5 3	0	9 21	+13	11·2	12·2
Paris		24·2	61	i 5 12	0	i 9 27	0	10·9	11·9
Barcelona		24·3	79	5 14	+ 1	e 9 34	+ 6	e 11·8	13·4
Uccle		25·6	57	i 5 25	0	i 9 53	+ 2	e 11·9	—
De Bilt		26·2	54	5 32	+ 1	10 2	0	e 11·9	14·5
Besançon		26·5	65	e 5 33	− 1	—	—	12·9	—
Neuchatel		27·1	66	e 5 43	+ 4	—	—	—	—
Strasbourg		27·6	62	5 41	− 3	e 10 5	−20	11·9	—
Feldberg	N.	28·1	59	e 7 53	?	—	—	—	14·9
Zurich		28·2	65	e 5 49	0	—	—	—	—
Stuttgart		28·5	62	e 5 52	0	e 10 27	−13	e 13·4	16·1
Chur		28·9	66	e 5 43	−12	—	—	—	—
Piacenza		29·2	69	5 9	−49	—	—	—	16·9
Scoresby Sund		29·3	8	—	—	10 41	−12	11·9	—
Hamburg		29·4	52	e 5 57	− 3	—	—	e 14·9	16·9
Florence		30·5	71	6 12	+ 3	e 11 18	+ 6	14·9	18·5
Cheb		30·6	58	e 6 11	+ 1	e 11 12	− 2	e 14·4	16·9
Copenhagen		31·0	46	6 13	− 1	11 17	− 3	14·9	—
Lund		31·5	46	6 11	− 7	11 21	− 7	14·9	—
Rome		31·8	75	e 6 25	+ 4	—	—	—	—
Rocca di Papa		31·9	75	e 6 26	+ 4	e 11 9	−25	15·4	18·7
Fordham		32·3	283	—	—	e 12 5	+25	e 16·5	—
Ottawa		32·6	291	e 7 23	PP	e 12 8	+23	e 15·9	—
Zagreb		33·4	66	e 6 36	+ 1	—	—	e 17·2	—
Upsala		34·5	40	e 6 36	− 9	e 12 3	−11	—	—
Catania		35·0	80	e 6 48	− 1	—	—	e 19·2	—
Budapest		35·2	61	e 6 53?	+ 2	—	—	17·9	—
Helsingfors		38·2	40	i 7 13	− 4	13 4	− 5	—	—
Pulkovo		40·8	42	7 37	− 2	13 43	− 5	18·9	22·2
Florissant		44·9	288	i 8 27	+15	e 15 8	+19	21·9	25·9
St. Louis	E.	44·9	288	e 8 24	+12	i 15 8	+19	—	25·9
Kucino		45·3	47	8 15	0	14 47	− 8	20·8	23·8
Ekaterinburg		56·9	41	i 9 43	+ 1	e 17 32	− 3	23·9	33·5
Baku		58·4	61	i 9 57	+ 4	i 17 56	− 1	28·9	34·5
La Paz		67·7	220	e 11 19	(− 5)	—	—	—	—
Tashkent		70·0	52	i 11 12	+ 1	i 20 23	+ 2	e 34·9	43·4
Irkutsk		78·4	26	i 12 1	+ 2	e 21 55	− 3	36·9	50·6

Additional readings :—
Toledo iP = +4m.32s.
Kew iN = +5m.5s., i = +5m.19s. = PP − 1s.
Edinburgh i = +9m.15s.
Tortosa PE = +5m.9s.
De Bilt iZ = +6m.21s.
Stuttgart iE = +6m.3s., iPPE = +6m.28s., eN = +10m.54s., eSSN = +11m.56s.
Rocca di Papa e = +6m.23s., i = +11m.25s.
Helsingfors PPE = +8m.25s.
Florissant eE = +10m.11s. = P_cP +13s., and +18m.25s. = S_cS +14s.
Long waves were recorded at Bergen, Andijan, Belgrade, Gottingen, Konigsberg, Harvard, and Ann Arbor.

May 21d. Readings also at 2h. (Ekaterinburg), 3h. (Irkutsk), 5h. (Honolulu T.H.), 10h. (Ksara, Phu-Lien, Ekaterinburg, Irkutsk, and Tashkent), 11h. (Baku, Ekaterinburg, Irkutsk, Tashkent, Kucino, De Bilt, Feldberg, Florissant, Rio de Janeiro, and La Paz), 12h. (Baku, Ekaterinburg, Pulkovo, Samarkand, Copenhagen, Stuttgart, Kew, Florence, Paris, Uccle, Strasbourg, Granada, Trenta, Scoresby Sund, Ottawa, Adelaide, near Ksara, and near Tyosi), 13h. (Zagreb, Zurich, Kucino, and near Manila), 14h. (Copenhagen, La Paz, and near Santiago), 15h. (Nagoya, Tokyo (2), Tukuba (2) and Tyosi (2)), 17h. (Tokyo and Tukuba), 18h. (near Manila), 19h. (near Kobe and Sumoto), 20h. (Bombay, Hong Kong, Ekaterinburg, Irkutsk, Tashkent, Phu-Lien, and near Sumoto (2)), 21h. (Kucino, Copenhagen, Taihoku, Almata, and near Tyosi), 22h. (Georgetown and La Paz).

May 22d. Readings also at 0h. (Granada, Nagoya, and near La Paz), 2h. (Nagoya), 3h. (Samarkand and near Tyosi), 4h. (Chur, Tyosi, and near Zurich), 5h. (Scoresby Sund, Nagoya, and Tyosi), 6h. (De Bilt, Strasbourg, and Scoresby Sund), 10h. (Manila), 14h. (La Paz), 15h. (near Tokyo (2)), 16h. (Florissant and near Berkeley), 17h. (Ottawa and near Amboina (2)), 18h. (Nagasaki), 19h. (Ekaterinburg, Tashkent, Chur, Neuchatel, and near Zurich), 20h. (La Paz and near Tacubaya), 23h. (Florissant, La Paz, and Rio de Janeiro).

May 23d. 9h. 48m. 20s. Epicentre 37°·5N. 45°·5E. (as on 8d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	e 1 8	+ 4	i 1 44	−11	2·9	4·5
Ksara	E.	8·6	248	2 7	+ 5	i 4 28	+49	5·4	—
Theodosia		10·7	318	e 2 28	− 3	—	—	—	—
Yalta		11·0	313	e 2 34	− 1	—	—	—	—
Simferopol		11·3	314	e 2 40	+ 1	—	—	—	—
Sebastopol		11·5	312	e 2 37	− 5	—	—	—	—
Tashkent		18·7	71	i 5 10	+55	i 8 28	+48	11·7	16·9
Kucino		19·0	347	4 3	−16	7 29	−17	9·0	11·1
Belgrade		20·1	299	e 5 10	+39	e 8 14	+ 6	—	12·6
Andijan		21·0	73	4 51	+11	8 53	SS	—	—
Budapest		21·7	306	e 4 48	0	—	—	8·8	15·7
Ekaterinburg		21·8	22	i 4 46	− 3	i 8 50	+ 8	10·7	14·2
Zagreb		23·4	300	e 5 1	− 4	e 9 28	+16	—	14·0
Pulkovo		24·3	341	5 9	− 4	9 27	− 1	12·7	14·1
Almata		24·5	67	e 6 0	PP	—	—	—	—
Helsingfors		26·1	337	e 5 41	+11	i 10 4	+ 4	e 14·5	—
Florence		26·5	294	5 38	+ 4	e 10 35	+28	—	17·3
Cheb		26·7	309	—	—	e 10 40?	+30	—	18·7
Piacenza		27·7	297	e 6 48	+64	10 50	+23	—	19·1
Lund		28·2	320	6 34	+45	11 22	+47	15·7	—
Upsala		28·5	331	—	—	e 10 40?	0	e 14·7	—
Stuttgart		28·5	305	e 6 25	PP	e 10 56	+16	e 17·7	—
Copenhagen		28·7	320	6 40?	PP	—	—	15·7	—
Feldberg		29·2	308	—	—	e 10 39	−12	—	16·9
Hamburg		29·2	315	—	—	e 12 40?	?	—	—
Strasbourg		29·4	304	(e 9 40)	(+32)	—	—	e 9·7	18·7
Neuchatel		29·8	301	e 5 59	− 4	—	—	—	—
Bombay		30·2	120	—	—	e 11 20	+13	—	21·7
De Bilt		31·6	310	—	—	e 12 40	SS	e 16·7	24·5
Paris		32·8	304	e 8 40?	(−39)	—	—	19·7	24·7
Almeria		37·7	285	9 27	(− 7)	e 13 16	+14	—	22·6
Granada		38·6	285	—	—	(e 11 40?)	?	e 11·7	22·2
Irkutsk		42·8	50	e 8 22	+27	e 17 33	SS	27·7	29·0

Additional readings :—
Baku i = +1m.22s.
Zagreb eNE = +4m.25s., e = +5m.57s., eNW = +9m.15s.
Helsingfors iSSN = +10m.43s., iSSSE = +10m.58s.
Stuttgart e = +6m.51s.
Irkutsk e = +20m.40s.? and +23m.40s.?
Long waves were recorded at Scoresby Sund and several European stations.

May 23d. 16h. 38m. 12s. Epicentre 34°·2N. 139°·6E. N.1.
(as given by Tokyo in Geophy. Mag. Vol. IV, No. 4).

A = −·630, B = +·536, C = +·562; D = +·648, E = +·762;
G = −·428, H = +·364, K = −·827.

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

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo		+0·3	1·5	5	0 26	0	—	—	—	—
Tyosi		+0·2	1·9	34	0 28	− 2	—	—	0·9	1·0
Tukuba		+0·2	2·0	13	0 30	− 1	—	—	—	—
Nagoya		+0·2	2·4	294	i 0 38	+ 1	1 5	− 2	—	1·2
Osaka		+0·1	3·4	279	0 52	+ 2	—	—	1·6	2·7
Kobe		+0·1	3·7	279	i 0 54	0	i 1 39	+ 2	—	3·6
Sumoto		+0·1	3·9	273	i 0 58	+ 1	1 42	0	—	1·9
Toyooka		+0·1	4·1	291	i 1 0	0	i 1 51	+ 3	—	2·2
Mizusawa		0·0	5·1	14	1 9	− 4	2 6	− 4	—	—
Koti		0·0	5·1	264	i 1 13	0	i 2 11	+ 1	—	2·5
Matuyama		0·0	5·7	268	i 1 25	+ 4	i 2 48	+23	i 2·9	3·1
Hukuoka		−0·1	7·6	268	1 46	0	e 3 17	+ 6	3·6	3·7
Nagasaki		−0·1	8·3	263	i 1 53	− 3	3 30	+ 1	—	—
Ootomari		−0·3	12·7	10	3 2	+ 8	5 15	+ 2	6·2	—
Zi-ka-wei	E.	−0·4	15·6	264	3 30	− 1	6 30	+10	—	—
Taihoku	Z.	−0·5	18·1	244	e 4 3	+ 1	—	—	—	—
Hong Kong		−0·8	25·2	249	5 8	− 6	9 18	−12	—	16·1
Manila		−0·8	25·8	225	e 5 10	−10	i 9 19	−22	i 11·7	12·7
Irkutsk		−1·0	31·0	317	i 6 5	0	i 11 4	0	15·8	19·5
Phu-Lien		−1·0	32·0	255	—	—	e 11 13	− 7	14·8	—
Almata		−1·4	48·5	300	8 32	+ 3	15 45	+25	—	—
Medan		−1·4	48·8	240	—	—	i 12 40	?	—	—
Batavia		−1·5	50·9	225	e 9 13	+26	e 14 54	−58	—	—
Andijan		−1·6	52·4	298	9 2	+ 5	16 20	+ 8	—	—
Tashkent		−1·6	54·6	300	i 9 15	+ 1	i 16 46	+ 4	e 29·8	35·0
Ekaterinburg		−1·7	56·1	320	i 9 26	+ 2	i 17 0	− 1	24·8	35·9
Bombay		−1·8	60·6	275	9 56	0	17 57	− 3	30·7	40·3
Kucino		−1·9	68·2	324	e 10 37	−10	19 31	− 5	33·1	36·3
Baku		−1·9	68·4	305	i 10 48	− 1	i 19 43	+ 4	34·3	41·0
Pulkovo		−1·9	69·7	330	10 59	+ 2	i 19 54	0	35·8	45·1
Helsingfors		−2·0	71·6	331	e 11 7	− 1	i 20 19	+ 3	—	—
Scoresby Sund		−2·0	74·5	355	11 27	+ 1	i 20 53	+ 2	—	—
Upsala		−2·0	74·6	334	e 11 36	+10	i 20 49	− 3	—	—
Theodosia		−2·0	75·3	315	11 1	−30	21 0	0	—	—
Simferopol		−2·0	76·1	315	11 33	− 2	21 6	− 4	—	—
Yalta		−2·0	76·3	315	11 33	− 3	21 10	− 2	—	—
Sebastopol		−2·0	76·6	315	11 38	0	21 13	− 2	—	—
Lund		−2·0	79·2	333	11 54	+ 1	21 36	− 9	39·8	—
Copenhagen		−2·0	79·4	333	11 52	− 2	21 43	− 4	39·8	—
Ksara		−2·1	81·4	305	12 3	− 1	22 4	− 4	40·8	—
Hamburg		−2·1	82·0	333	e 12 6	− 1	e 22 7	− 8	e 42·8	53·8
Budapest		−2·1	82·6	325	e 11 48?	−22	22 14	− 7	—	—
Gottingen		−2·1	83·6	331	i 12 13	− 3	i 22 23	− 9	e 45·8	—
Cheb		−2·1	83·7	329	e 22 24	S	(e 22 24)	− 9	—	52·8
Edinburgh		−2·1	84·5	340	—	—	i 22 36	− 5	—	—
Graz		−2·1	84·5	325	—	—	(i 22 31)	−10	i 22·5	—
De Bilt		−2·1	85·0	333	e 12 51	+28	i 22 33	−13	e 41·8	57·9
Feldberg	N.	−2·1	85·2	332	—	—	e 22 23	−25	—	51·3
Zagreb		−2·1	85·2	325	e 12 27	+ 3	e 22 33	−15	e 44·3	—
Uccle		−2·1	86·3	333	e 12 26	− 3	e 22 41	−19	e 43·8	—
Stuttgart		−2·1	86·4	330	e 12 25	− 5	i 22 38	−23	e 46·8	57·4
Strasbourg		−2·1	86·8	330	e 12 57	+25	i 22 42	−23	35·8	—
Chur		−2·1	87·4	329	e 12 32	− 3	i 21 54	?	—	—
Zurich		−2·1	87·4	329	e 12 46	+11	—	—	—	—
Kew		−2·1	87·4	336	e 13 5	+30	e 22 46	−25	49·8	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Oxford	−2·1	87·5	337	—	—	i 22 45	−27	—	—
Piacenza	−2·1	88·7	327	e 12 48	+ 7	23 16	− 7	—	55·9
Paris	−2·1	88·9	334	e 12 48?	+ 6	i 23 15	−10	46·8	47·8
Florence	−2·1	89·0	325	13 18	+35	23 13	−13	—	51·8
Rocca di Papa	−2·1	89·8	323	i 23 0	SKS	(i 23 0)	[−31]	e 45·7	58·3
Ottawa	—	94·2	23	—	—	e 23 24	[−32]	55·8	—
Almeria	—	100·6	330	—	—	e 23 55	[−34]	—	59·9
Granada	—	100·9	330	i 19 38	PPP	i 23 51	[−39]	—	—
La Paz z.	—	149·5	61	i 19 30	[−11]	—	—	—	—

Additional readings :—
Koti iSZ = +2m.13s.
Hong Kong SS = +10m.23s.
Manila PPE = +5m.40s., PPPE = +5m.49s., SSEN = +10m.21s.
Helsingfors P_cP = +11m.46s., PPP = +15m.43s., PSN = +20m.55s., SKKS = +21m.39s., iPKKPE = +31m.11s.
Lund +21m.40s. and +21m.54s.
Copenhagen +21m.55s. and +26m.48s.?
Hamburg ePPZ = +15m.10s., iSN = +22m.10s., ePSZ = +22m.52s.
Gottingen ePP = +15m.18s.
Cheb eS = +28m.4s.
De Bilt iZ = +23m.31s.
Feldberg eN = +15m.24s.
Zagreb ePS = +23m.35s.
Uccle i = +23m.48s.
Stuttgart iZ = +12m.56s., +15m.48s., +22m.53s., iNZ = +23m.41s., eNZ = +24m.50s.
Strasbourg iPS = +23m.47s.
Kew e = +23m.3s. and +24m.4s.
Oxford i = +23m.2s., +23m.11s., and +23m.28s.
Ottawa i = +24m.6s.
Granada i = +21m.38s.
Long waves were also recorded at Toledo and Honolulu T.H.

May 23d. 21h. 33m. 33s. Epicentre 37°·5N. 145°·0E. N.3.

A = −·650, B = +·455, C = +·609; D = +·574, E = +·819; G = −·499, H = +·349, K = −·793.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Mizusawa	3·4	299	0 50	+ 1	1 31	+ 4	—
Tyosi	3·7	242	e 0 52	− 1	(e 1 34)	− 1	e 1·6
Nagoya	6·9	253	e 1 41	+ 3	2 55	− 1	—
Osaka	8·2	252	1 58	+ 2	(3 14)	−15	3·2
Ekaterinburg	56·4	319	e 9 57	+18	—	—	32·0

Additional readings :—
Mizusawa SE = +1m.38s.
Long waves were also recorded at the other Russian stations.

May 23d. Readings also at 0h. (Baku, Ekaterinburg, Irkutsk, Kucino, Copenhagen, Pulkovo, Tashkent, Cheb, Uccle, De Bilt, Feldberg, Stuttgart, Strasbourg, Paris, Kew, Florence, Almeria, Scoresby Sund, Ottawa, Florissant, and Adelaide), 6h. (Phu-Lien), 7h. (Baku, Ekaterinburg, and Ksara), 8h. (near Amboina), 11h. (Tyosi, Ksara, Baku, and Ekaterinburg), 12h. (Ekaterinburg, Kucino, Pulkovo, Ksara, and near Hukuoka), 13h. (near Hukuoka), 15h. (Ksara, Almata, and near Andijan), 20h. (Tyosi and near Nagoya), 21h. (La Paz and Tyosi), 23h. (St. Louis).

May 24d. 9h. 25m. 5s. Epicentre 37°·0N. 72°·0E. (as on 1925 June 20d.). X.

A = +·247, B = +·760, C = +·602; D = +·951, E = −·309; G = +·186, H = +·572, K = −·799.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	3·8	4	1 1	+ 7	(e 1 31)	− 6	e 1·5	2·4
Samarkand	4·7	306	1 3	− 4	i 1 43	−17	—	2·5
Almata	7·3	30	1 47	+ 3	—	—	—	—
Baku	17·5	288	e 3 52	− 8	e 7 8	− 5	—	—
Ekaterinburg	21·2	343	i 4 38	− 4	8 26	− 4	9·9	—

No additional readings.

May 24d. 22h. 2m. 5s. Epicentre 44°·6N. 10°·6E. (as on 1929 Oct. 29d.). R.2.

A = +·700, B = +·131, C = +·702; D = +·184, E = −·983; G = +·690, H = +·129, K = −·712.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Piacenza		0·8	304	0 14	+ 3	—	—	0·5	0·7
Florence		0·9	150	i 0 6	− 7	—	—	—	—
Padova		1·2	48	e 0 16	− 1	e 0 34	+ 3	—	—
Venice		1·5	55	i 0 28	P_g	i 1 5	?	—	1·4
Treviso		1·5	46	i 0 21	0	i 0 41	+ 2	—	1·4
Chur		2·3	342	e 0 37	+ 4	i 1 8	S_g	—	—
Innsbruck		2·7	12	0 39	0	—	—	i 1·3	1·5
Rome		3·0	153	0 43	0	1 14	− 3	1·6	2·7
Zurich	N.	3·1	334	e 0 46	+ 2	i 1 28	S_g	—	—
Laibach		3·1	62	e 0 42	− 2	i 1 55	L	(i 1·9)	2·1
Rocca di Papa		3·2	150	e 0 39	− 7	i 1 17	− 5	i 1·5	1·8
Ravensburg		3·3	348	e 0 56	P_g	i 1 29	+ 4	—	—
Neuchatel	N.	3·5	314	e 0 49	− 1	e 1 38	S_g	—	—
Marseilles		4·0	253	e 0 50	− 7	e 1 30	−12	—	—
Zagreb		4·0	70	e 0 52	− 5	i 2 5	S_g	—	2·3
Besançon		4·1	311	i 0 58	0	1 49	+ 4	—	—
Graz		4·2	52	e 0 56	− 4	e 1 47	− 1	—	2·8
Stuttgart		4·3	348	e 1 5	+ 4	i 1 47	− 3	—	—
Benevento		4·4	140	—	—	e 1 55?	+ 2	2·8	3·4
Strasbourg		4·4	335	1 3	0	2 0	+ 7	—	—
Karlsruhe		4·7	342	1 32	P_g	2 30	S_g	2·6	2·9
Vienna		5·4	45	1 13	− 4	2 31	+13	i 2·9	3·4
Cheb		5·6	12	e 1 49	P_g	2 51	S_g	e 3·0	3·4
Feldberg		5·8	346	i 0 45	−37	—	—	—	3·2
Jena		6·3	6	e 1 55	+25	i 2 43	+ 2	—	3·8
Budapest		6·5	61	2 4	+32	3 15	+29	3·4	—
Belgrade		7·0	85	—	—	3 38	+39	3·9	—
Paris		7·0	310	e 1 46	+ 7	—	—	3·9	4·9
Uccle		7·5	328	e 2 7	+21	e 3 10	− 1	i 3·9	—
Catania		7·9	153	0 31	?	(e 3 16)	− 5	e 3·3	4·7
Potsdam		7·9	11	e 3 7	S	(e 3 7)	−14	e 5·0	—
Hamburg		9·0	358	e 2 55?	+48	e 4 25	+36	—	6·1
Kew		10·0	317	e 4 19	S	(e 4 19)	+ 6	5·9	—
Toledo		11·8	251	e 2 41	− 5	—	—	e 6·0	—
Helsingfors		17·8	24	—	—	e 7 32	+12	e 11·8	—
Pulkovo		19·2	31	e 4 19	− 2	e 7 51	+ 1	12·4	12·6
Ekaterinburg		33·1	50	e 6 40	+ 7	—	—	15·9	—

Additional readings :—
Innsbruck P_g = +46s.
Zurich eP_g = +55s.
Laibach e = +59s., i = +1m.14s., +1m.20s., and +1m.41s.
Ravensburg iP_gN = +1m.7s., iN = +1m.20s., and +1m.59s., iE = +1m.41s., iS_g = +1m.45s.
Neuchatel eP_g = +1m.3s.
Zagreb i = +1m.2s., eNW = +1m.12s., eNE = +1m.14s., and +1m.18s., eNW = +1m.24s., eNE = +1m.26s., i = +1m.39s., eNE = +1m.46s., iNE = +1m.49s. and +1m.59s.
Stuttgart eP_gE = iP_gNZ = +1m.19s., iN = +1m.27s., iE = +1m.31s., +1m.55s., and +2m.5s., iS_g = +2m.9s., iEZ = +2m.19s., iE = +2m.25s. and +3m.5s.
Strasbourg S_g = +2m.25s., SS = +2m.30s., SSS = +2m.42s.
Vienna P* = +1m.25s., P_g = +1m.38s., S* = +2m.17s., and +2m.43s.
Cheb i = +2m.40s.
Jena iN = +2m.54s.
Belgrade e = +4m.13s.
Uccle e = +3m.21s.
Potsdam iEN = +4m.31s.
Long waves were recorded at Scoresby Sund, Baku, Kucino, and several other European stations.

May 24d. Readings also at 0h. (near Nagoya), 2h. (near Manila), 5h. (Baku, Ekaterinburg, and Ksara), 7h. (Manila), 11h. (Phu-Lien), 12h. (Ksara, Ekaterinburg, and Baku), 15h. (near Chur, Neuchatel, and Zurich), 16h. (near Baku), 18h. (Baku, Ekaterinburg, and Ksara), 19h. (near Medan), 20h. (Stonyhurst and near Tyosi), 23h. (Florissant and St. Louis).

May 25d. Readings at 1h. (near Sumoto), 2h. (Phu-Lien and near Lick), 4h. (Baku, Ekaterinburg, De Bilt, Strasbourg, Stuttgart, Granada, Dakar, and La Paz), 5h. (Sebastopol, Simferopol, Theodosia, and Yalta), 9h. (Samarkand), 10h. (Amboina), 12h. (Ekaterinburg and Ksara), 13h. (Baku), 14h. (near Hukuoka), 16h. (Taihoku and Victoria), 19h. (near La Paz), 20h. (Samarkand), 23h. (Ekaterinburg, Medan, Manila, Hong Kong, and Phu-Lien).

May 26d. Readings at 0h. (Kucino), 1h. (near Neuchatel and Zurich), 2h. (near La Paz), 3h. (near Wellington), 5h. (Wellington), 6h. (La Paz, near Honolulu T.H., and near Toyooka), 9h. (Nagoya, Kobe, Toyooka, near Osaka, and Tyosi), 10h. (Nagoya and Tyosi), 11h. (Tananarive), 12h. (Sumoto), 13h. (Ekaterinburg and Irkutsk), 15h. (Batavia, Bombay, Ekaterinburg, Hong Kong, Phu-Lien, Manila, Calcutta, and near Medan), 16h. (Baku, Irkutsk, Kucino, Pulkovo, Copenhagen, De Bilt, and Florissant), 17h. (Andijan and near Samarkand), 18h. (Ekaterinburg, Tashkent, Nagoya, near Mizusawa, and Tyosi), 22h. (Ekaterinburg, Copenhagen, De Bilt, Florissant, and Ottawa), 23h. (Baku, Pulkovo, Uccle, Stuttgart, Kew, La Paz, and Apia).

May 27d. 12h. 20m. 0s. Epicentre 37°·5N. 140°·0E. (as on 1928 May 20d.). X.

A = − ·608, B = + ·510, C = + ·609.

		Δ	Az.	P.	O − C.	S.	O − C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Tukuba		1·3	175	0 15	− 3	—	—	—
Mizusawa	E.	1·9	28	0 30	+ 2	0 53	+ 4	—
Tyosi		1·9	159	0 24	− 4	(0 40)	− 9	0·7
Tokyo		1·9	186	0 24	− 4	—	—	—
Nagoya		3·4	227	e 0 59	+10	—	—	—

Additional readings :—
Mizusawa SN = +57s.
Tyosi P_g = +29s.
Long waves were also recorded at Hong Kong, Phu-Lien, Irkutsk, Ekaterinburg, Pulkovo, Copenhagen, and De Bilt.

May 27d. Readings also at 0h. (Andijan and Samarkand), 1h. (Wellington), 6h. (Ottawa, Florissant, Theodosia, Sebastopol, Simferopol, and Yalta), 7h. (Sebastopol, Simferopol, near Yalta, and near Medan), 8h. (Baku and Ksara), 9h. (Ekaterinburg), 11h. (Apia), 12h. (near Manila), 13h. (Simferopol, Yalta, and near Manila), 14h. (near Mizusawa and near Santiago), 15h. (Taihoku), 16h. (Bombay, Ekaterinburg, Irkutsk, Kucino, Hong Kong, and Phu-Lien), 17h. (Copenhagen, De Bilt, Samarkand, and near Tyosi), 18h. and 20h. (Taihoku), 22h. (Samarkand, near Andijan, and near La Paz).

May 28d. 19h. 31m. 55s. Epicentre 36°·5N. 140°·5E. (as on 1930 April 9d.). X.

A = − ·620, B = + ·511, C = + ·595.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mito	0·1	193	0 5	+ 4	—	—	—	—
Tukuba	0·4	219	0 4	− 2	—	—	—	—
Tyosi	0·9	160	0 10	− 3	(0 18)	− 5	0·3	0·3
Tokyo	1·1	216	0 16	0	—	—	—	—
Mizusawa	2·6	10	0 35	− 2	1 10	+ 3	—	—
Nagoya	3·2	245	0 50	+ 4	1 31	+ 9	—	—
Osaka	4·5	248	1 19	+15	—	—	2·3	2·9
Kobe	4·7	249	1 21	+14	—	—	—	—
Sumoto	5·1	246	e 2 9	?S	(e 2 9)	− 1	(e 2·6)	—

Sumoto gives S as P and L as S_t.

May 28d. Readings also at 0h. (Ksara, Wellington, and Apia), 1h. (Ksara, Melbourne, Riverview, and near Lick), 4h. (Taihoku), 5h. (Phu-Lien and Tashkent), 6h. (Ekaterinburg), 8h. (Andijan, Samarkand, and near Manila), 9h. (Andijan), 11h. (Baku and Ksara), 12h. (near Samarkand and Mizusawa), 13h. (near Lick (2)), 16h. (La Paz), 17h. (Rocca di Papa, Wellington, Phu-Lien, Sumoto, and near Kobe), 19h. (Nagoya, near Mizusawa, and Tyosi), 21h. (Andijan and Samarkand), 23h. (Tucson).

May 29d. 8h. 30m. 39s. Epicentre 7°·0N. 73°·0W. N.3.

$A = +\cdot290$, $B = -\cdot949$, $C = +\cdot122$; $D = -\cdot956$, $E = -\cdot292$; $G = +\cdot036$, $H = -\cdot117$, $K = -\cdot993$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		24·0	168	i 5 11	+ 1	i 9 12	−11	10·3	14·0
Fordham	N.	33·9	358	—	—	e 11 51	−13	—	—
St. Louis	E.	35·2	337	i 6 49	− 2	e 11 59	−25	e 16·8	—
Harvard		35·4	2	7 27	+34	i 12 15	−12	e 19·3	—
Florissant		35·5	337	i 6 53	0	i 12 15	−14	i 18·2	—
Chicago		37·1	341	e 9 39	(+ 7)	e 12 41	−12	15·6	—
Ottawa		38·4	357	e 8 51	PP	i 13 4	− 8	e 15·9	—
Rio de Janeiro		41·8	137	e 7 50	+ 3	i 13 46	−17	e 18·6	—
Scoresby Sund		71·2	16	—	—	20 20	−15	—	—
De Bilt		77·2	39	e 11 52	− 1	e 21 24	−21	e 38·3	—
Ekaterinburg		105·8	25	—	—	e 24 29	[−25]	41·3	—

Additional readings :—
La Paz iZ = +5m.48s. and +6m.7s., iSZ = +9m.9s.
Florissant iE = +13m.23s. and +16m.53s., eE = +15m.16s.
Harvard iE = +16m.50s.
Scoresby Sund +21m.33s.
De Bilt eN = +22m.38s. = PS +25s.
Ekaterinburg e = +25m.50s. = Σ +14s., +27m.6s., +33m.19s., and +34m.22s.
Long waves were recorded at Irkutsk, Strasbourg, and La Plata.

May 29d. 17h. 14m. 55s. Epicentre 37°·5N. 45°·5E. (as on 23d.). R.2.

$A = +\cdot556$, $B = +\cdot566$, $C = +\cdot609$; $D = +\cdot713$, $E = -\cdot701$; $G = +\cdot427$, $H = +\cdot434$, $K = -\cdot793$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	1 13	+ 9	—	—	i 2·1	—
Ksara	E.	8·6	248	2 4	+ 2	4 16	+37	5·2	—
Theodosia		10·7	318	e 2 34	+ 3	—	—	—	—
Yalta		11·0	313	e 2 30	− 5	—	—	—	—
Simferopol		11·3	314	e 2 32	− 7	—	—	—	—
Sebastopol		11·5	312	e 2 36	− 6	—	—	—	—
Helwan		14·0	242	3 18	+ 3	5 57	+ 6	—	10·2
Samarkand		16·9	76	4 6	+13	—	—	—	—
Tashkent		18·7	71	i 4 27	+12	i 8 7	+27	—	16·7
Kucino		19·0	347	5 8	+49	8 39	+53	9·8	—
Belgrade		20·1	299	e 4 39	+ 8	e 8 6	− 2	e 11·8	—
Andijan		21·0	73	4 56	PP	e 9 2	SS	—	—
Budapest		21·7	306	4 39	− 9	8 39	− 1	12·6	15·1
Ekaterinburg		21·8	22	4 50	+ 1	i 8 41	− 1	11·1	13·0
Zagreb		23·4	300	e 5 19	+14	—	—	e 13·1	—
Catania		24·0	279	e 8 48	S	(e 8 48)	−35	e 14·0	15·7
Pulkovo		24·3	341	5 10	− 3	9 21	− 7	13·1	14·5
Naples	E.	24·3	288	e 8 55	S	(e 8 55)	−33	—	—
Almata		24·5	67	5 58	PP	—	—	—	—
Rocca di Papa		25·5	290	e 5 18	− 7	i 9 48	− 2	e 13·1	15·2
Rome		25·6	290	e 5 24	− 1	—	—	—	—
Helsingfors		26·1	337	e 5 37	+ 7	e 10 1	+ 1	e 14·0	—
Florence		26·5	294	e 5 33	− 1	10 5	− 2	—	15·6
Cheb		26·7	309	e 6 5?	PP	e 10 12	+ 2	e 15·1	18·1
Piacenza		27·7	297	e 5 29	−15	10 47	+20	15·6	18·2

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun	27·8	95	e 6 25?	PP	11 15?	SS	15·2	20·1
Chur	28·0	301	e 5 42	− 5	—	—	—	—
Stuttgart	28·5	305	—	—	e 10 29	−11	e 16·1	18·5
Hamburg	29·2	315	—	—	e 11 47	+56	e 16·7	19·1
Strasbourg	29·4	304	e 6 5?	+ 5	(e 11 5?)	+10	e 11·1	—
Neuchatel	29·8	301	i 5 51	−12	e 12 21	SS	—	—
Bombay	30·2	120	e 5 29	−38	—	—	—	20·9
Paris	32·8	304	e 7 5?	+35	—	—	18·1	19·1
Almeria	37·7	285	—	—	e 15 54	SSSS	—	18·6
Irkutsk	42·8	50	e 7 33	−22	e 14 12	− 6	23·1	30·1
Colombo	43·7	128	17 24	SS	—	—	—	27 2
Scoresby Sund	47·5	335	—	—	17 5?	?	26·1	—

Additional readings :—
Rocca di Papa P = +5m.23s.
Helsingfors iPPEN = +6m.9s.
Stuttgart eEN = +10m.51s.
Long waves were recorded at Hyderabad, Ottawa, Florissant, and many European stations.

May 29d. Readings also at 0h. (Tucson and near Belgrade), 2h. (Baku, Ekaterinburg, Tashkent, San Fernando, Cape Town, and La Paz), 3h. (De Bilt, Uccle, Paris, Strasbourg, Copenhagen, Irkutsk, Manila, and Kobe), 4h. (Manila), 5h. (3), 7h., and 8h. (near Lick), 9h. (near Lick (2) and near Tyosi), 10h. (2) and 13h. (near Lick), 14h. (Taihoku and near Lick), 15h. (Port au Prince), 18h. (Belgrade and Ksara), 21h. (Apia).

May 30d. 12h. 56m. 45s. Epicentre 0°·0 125°·0E. (as on 1929 Dec. 27d.). R.3.

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

A depth of focus 0·040 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	+0·1	4·8	139	1 52	+42	i 3 4	+59	—	—
Manila	−1·0	15·1	345	i 3 17	0	i 5 55	+ 2	—	9·0
Malabar	−1·5	18·8	247	—	—	e 6 45	−24	—	—
Batavia	−1·5	19·2	251	4 22	+19	i 7 7	−10	—	—
Hong Kong	−2·0	24·7	335	4 52	− 6	(i 8 45)	−14	i 8·9	9·7
Medan	−2·2	26·6	278	5 1	−13	i 8 57	−33	—	—
Phu-Lien	−2·3	27·5	320	4 15?	−67	—	—	—	—
Irkutsk	−4·4	55·1	345	e 9 0	+ 3	e 16 14	+ 3	e 21·3	—
Almata	−4·6	60·9	323	9 42	+ 4	—	—	—	—
Andijan	−4·6	62·6	318	9 51	+ 1	—	—	—	—
Tashkent	−4·7	65·0	318	e 10 16	+ 9	18 33	+13	21·2	38·5
Samarkand	−4·7	65·9	317	10 10	− 3	18 20	−12	—	—
Ekaterinburg	−5·0	76·3	330	i 11 14	− 5	20 22	−15	26·3	—
La Paz	—	159·0	142	19 37	[−15]	—	—	—	—

Additional readings :—
Manila iEN = +6m.2s.
Malabar i = +6m.57s.
Irkutsk e = +10m.36s.

May 30d. Readings also at 0h. (near Lick), 2h. (Ksara and near Lick), 3h. (Nagoya, Tyosi, and near Mizusawa), 6h. (Taranto and near Lick), 7h. (near Ksara), 8h. (2) and 9h. (near La Paz), 14h. (Almata and Samarkand), 15h. (De Bilt, Scoresby Sund, La Paz, and near Reykjavik), 17h. (Strasbourg), 18h. (Ksara), 19h. (St. Louis and near Almeria), 20h. and 21h. (Tyosi).

May 31d. 10h. 22m. 0s. Epicentre 49°·0N. 129°·0W. N.3.

A = −·413, B = −·510, C = +·755; D = −·777, E = +·629;
G = −·475, H = −·587, K = −·656.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria		3·8	97	0 53	− 1	—	—	2·2	2·2
Sitka	E.	8·9	337	—	—	e 4 3	+17	i 4·5	—
Berkeley		12·1	154	5 23	S	(e 5 23)	+18	—	—
Lick		12·8	153	e 2 54	− 5	e 5 26	+ 4	—	—
Tucson	E.	21·5	134	3 32	−73	7 34	−62	10·0	—
St. Louis	E.	29·5	96	e 5 55	− 6	e 10 56	0	—	18·0
Ann Arbor		31·9	85	—	—	e 11 36	+ 2	e 17·4	19·5
Toronto		34·0	80	—	—	e 12 23	+17	14·0	—
Ottawa		35·6	75	—	—	e 12 36	+ 6	e 16·0	—
Georgetown		37·9	86	i 7 14	0	—	—	—	—
Fordham		39·0	81	e 8 48	PP	e 18 30	(+54)	e 20·5	24·0
Scoresby Sund		49·7	25	—	—	20 0?	?	24·0	—
Irkutsk		69·1	330	e 11 7	+ 2	e 19 59	−11	36·0	—
Pulkovo		69·9	11	e 11 42	(+ 9)	20 21	+ 1	33·0	41·8
Copenhagen		70·5	22	—	—	20 0?	−27	38·0	—
De Bilt		71·6	28	—	—	20 43	+ 3	e 29·0	38·4
Paris		73·7	31	—	—	e 27 0	?	38·0	41·0
Ekaterinburg		73·9	355	e 11 29	− 5	21 3	− 4	33·0	38·4
Florence		80·9	28	—	—	e 23 0	+35	45·0	46·7
Rome		83·0	28	e 12 25	+ 2	—	—	—	—
Rocca di Papa		83·2	28	e 12 3	−21	—	—	—	—
Tashkent		88·3	347	—	—	e 23 6	[−16]	—	53·4
Baku		90·6	1	—	—	e 24 0	− 2	42·7	—

Additional readings:—
Berkeley eN = +6m.59s., eE = +7m.29s., eN = +7m.46s., eS = +8m.21s., eN = +9m.11s. and +10m.14s., eE = +10m.14s., eN = +12m.21s.
Lick eE = +2m.3s., eN = +3m.19s., and +3m.39s., eE = +7m.42s., eN = +7m.55s., and +9m.17s., eE = +10m.7s., and +12m.54s.
Ann Arbor e?E = +10m.36s., e?N = +11m.0s., eN = +15m.42s., and +16m.48s.
Rome e? = +11m.48s.
Tashkent e = +24m.42s. and +27m.13s.
Long waves were recorded at Honolulu T.H., Tyosi, Kucino, and other European and American stations.

May 31d. 17h. 58m. 24s. Epicentre **36°·5N. 140°·5E.** R.1.
(as on 28d.).

Probable error of epicentre ± 0°·3.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mito		0·1	193	0 7	+ 6	—	—	—	—
Tukuba		0·4	219	0 7	+ 1	—	—	—	—
Utunomiya		0·5	278	0 11	+ 4	—	—	—	—
Tyosi		0·9	160	0 12	− 1	(0 23)	0	0·4	0·6
Kumagaya		1·0	249	0 17	+ 3	—	—	—	—
Tokyo		1·1	216	0 19	+ 3	—	—	—	—
Mizusawa		2·6	10	0 44	P_g	1 22	S_g	—	—
Nagoya		3·2	245	i 0 50	+ 4	1 41	S_g	—	1·9
Osaka		4·5	248	1 8	+ 4	—	—	2·3	2·9
Kobe		4·7	249	1 10	+ 3	2 9	S*	2·4	3·5
Toyooka	E.	4·7	260	i 1 11	+ 4	2 12	S*	2·6	2·9
	N.	4·7	260	1 13	+ 6	2 16	S*	—	2·7
Sumoto		5·1	246	1 11	− 2	2 11	+ 1	2·3	2·5
Koti		6·4	245	e 1 33	+ 2	2 52	+ 9	—	3·7
Matuyama		6·8	250	i 2 14	+37	—	—	4·1	4·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka		8·8	254	2 8	+ 3	e 4 7	+23	4·5	4·9
Nagasaki		9·6	250	i 2 17	+ 1	4 14	+11	—	5·5
Zi-ka-wei		16·7	257	e 3 49	− 1	7 14	+19	—	—
Taihoku	E.	19·9	240	e 4 29	0	—	—	—	—
Hong Kong		26·8	245	5 36	0	10 0	−12	—	15·2
Manila		28·0	224	i 5 48	+ 1	—	—	—	—
Irkutsk		29·8	313	6 1	− 2	10 57	− 4	15·6	19·3
Phu-Lien		33·4	251	6 34	− 1	11 45	−12	16·6	—
Almata		48·0	300	8 40	+ 4	—	—	—	—
Medan		50·6	240	8 20	−36	—	—	27·6	—
Andijan		52·0	297	9 7	+ 1	16 29	+11	—	—
Batavia		53·1	225	i 9 25	+10	i 17 8	+25	—	—
Tashkent		54·1	299	i 9 22	0	16 54	− 3	—	33·5
Ekaterinburg		54·8	320	i 9 25	− 2	i 16 58	− 8	23·6	33·6
Samarkand		56·3	299	9 37	− 1	e 17 28	+ 1	—	—
Hyderabad		57·5	270	9 46	− 1	17 33	−10	28·1	35·8
Bombay		61·2	275	10 8	− 5	18 25	− 7	31·6	38·5
Colombo		62·4	260	18 41	S	(18 41)	− 6	—	39·7
Kucino		66·8	325	i 10 49	− 2	19 36	− 6	31·6	42·6
Pulkovo		67·7	330	e 10 54	− 2	19 49	− 4	34·6	43·5
Baku		67·7	306	i 10 56	0	i 19 51	− 2	34·6	43·2
Helsingfors		69·9	332	i 11 7	− 3	e 20 10	−10	e 35·2	—
Riverview		71·1	171	—	—	i 20 18	−16	e 38·0	42·2
Scoresby Sund		72·3	355	11 22	− 3	20 47	− 1	37·6	—
Upsala		72·8	335	e 11 23	− 5	e 20 40	−14	e 39·6	—
Theodosia		74·1	317	11 34	− 1	—	—	—	—
Simferopol		74·9	317	11 36?	− 4	—	—	—	—
Yalta		75·1	317	11 38	− 3	—	—	—	—
Sebastopol		75·4	317	11 41	− 2	—	—	—	—
Lund		77·5	334	11 51	− 4	21 41	− 7	37·6	—
Copenhagen		77·7	334	11 54	− 2	21 42	− 9	37·6	—
Hamburg		80·3	333	e 12 8	− 1	e 22 11	− 8	e 41·6	—
Ksara	N.	80·6	307	12 11	0	22 29	+ 7	41·6	—
Budapest		81·0	325	e 12 10	− 3	—	—	51·6	—
Gottingen	Z.	81·9	333	i 12 15	− 3	—	—	—	—
De Bilt		83·2	334	12 22	− 2	e 22 39	−10	e 39·6	49·8
Zagreb		83·7	325	e 12 26	− 1	e 23 10	PS	—	53·1
Stuttgart		84·4	331	i 12 29	− 1	e 22 56	[+ 1]	e 43·6	—
Uccle		84·5	335	i 12 29	− 2	e 23 9	+ 6	e 41·6	—
Strasbourg		85·1	331	i 12 31	− 3	e 23 21	+12	34·6	—
Kew		85·5	339	e 12 40	+ 4	e 23 30	+17	39·6	45·5
Chur		85·7	330	e 12 42	+ 5	e 23 20	+ 5	—	—
Zurich		85·8	330	e 12 35	− 2	—	—	—	—
Neuchatel		86·6	331	e 12 39	− 2	—	—	—	—
Paris		86·8	335	i 12 42	0	—	—	45·6	52·6
Piacenza		87·2	329	e 12 48	+ 4	23 32	+ 3	—	49·5
Florence		87·4	327	12 40	− 5	23 34	+ 3	48·6	56·6
Rocca di Papa		88·4	324	12 47	− 3	23 52	+11	e 46 6	56·9
Rome		88·4	324	12 49	− 1	—	—	—	—
Ottawa		91·8	25	—	—	e 23 36?	[− 7]	e 46·6	—
La Paz		147·7	59	e 19 36	[− 2]	—	—	—	—

Additional readings :—
Tyosi P_g = +14s.
Nagoya P_g = +59s.
Kobe iE = +1m.20s., iN = +1m.35s.
Toyooka iPZ = +1m.10s.
Koti iPEZ = +1m.37s., eEZ = +2m.11s., eSZ = +2m.52s., eS*N? = +3m.1s., iS_gZ = +3m.18s., iS_gN = +3m.24s.
Manila iN = +6m.28s.
Scoresby Sund +14m.6s. = PP +8s.
Copenhagen +26m.36s. = SS −2s.
Zagreb eNE = +13m.23s.
Stuttgart iZ = +12m.49s., iS = +23m.10s.
Rocca di Papa eS = +15m.59s.
Rome e? = +12m.42s.
Long waves were recorded at Bidston, Oxford, Cheb, Konigsberg, Granada, San Fernando, and Fordham.

May 31d. Readings also at 0h. (near Tyosi), 2h. (La Paz), 3h. (Padova, Hohenheim, Ravensburg, Strasbourg, Stuttgart, Zurich, and La Paz), 4h. (La Paz), 5h. (Catania and Rocca di Papa), 6h. (Tucson (2)), 9h. (Casamicciola, Rocca di Papa, and Rome), 11h. (Manila), 13h. (near Kobe and Sumoto), 15h. (near Chur, Neuchatel, and Zurich), 16h. (Florissant), 18h. (Tyosi (2)), 19h. (Ksara), 20h. (near Medan), 22h. (Christchurch and Wellington).

June 1d. 13h. 4m. 35s. Epicentre 19·0S. 179°·0E. (as on 1927 April 27d.). X.

A = −·945, B = +·017, C = −·326; D = +·017, E = +1·000; G = +·325, H = −·006, K = −·946.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		10·3	61	e 2 25	0	e 4 33	+12	e 11·4	15·9
Wellington		22·6	188	5 46	+49	10 7	+70	12·2	24·4
Christchurch		25·1	191	e 5 40	+19	e 10 25	+42	12·9	24·1
Riverview		28·8	234	e 9 49	(+43)	12 49	SS	e 15·6	16·9
Sydney		28·8	234	i 7 25	?	i 15 39	?	26·2	27·6
Melbourne		35·0	231	e 8 47	?	e 13 7	+46	20·7	21·7
Adelaide		39·0	239	9 36	(− 3)	i 17 28	(− 8)	25·6	34·6
Honolulu T.H.		46·3	31	—	—	17 53	SS	i 28·1	—
Manila		66·3	297	i 10 48	+ 1	i 18 47	−49	30·8	36·3
Batavia		71·1	271	i 12 2	+45	i 21 23	+49	51·4	—
Hong Kong		75·6	299	22 3	PS	32 4	L	43·2	49·1
Phu-Lien		81·3	295	—	—	22 25?	− 5	—	—
Medan		82·0	276	e 12 50	+32	i 23 50	PS	47·4	—
Victoria		84·7	34	22 15	S	(22 15)	−50	47·6	51·8
Irkutsk		96·0	324	—	—	e 23 25?	[−41]	48·4	63·6
Colombo		100·9	273	19 16	PPP	—	—	62·7	75·9
Florissant		102·3	51	—	—	e 24 30	[− 7]	e 55·9	63·9
St. Louis	E.	102·4	51	—	—	e 23 57	[−40]	e 49·9	58·9
La Paz		105·1	115	e 16 26	?	i 27 56	PS	49·8	70·9
Toronto	N.	111·3	49	—	—	e 33 25?	?	e 49·9	—
Georgetown	Z.	112·5	55	—	—	i 38 41	SSS	e 50·8	62·4
Ottawa		114·0	47	—	—	e 26 25?	{−10}	e 54·4	—
Tashkent		117·0	307	e 19 24	PP	e 29 11	PS	e 54·8	82·1
Harvard		117·2	50	—	—	25 25?	[−16]	—	—
Ekaterinburg		121·2	326	e 18 38	[−10]	e 27 18	{− 6}	48·4	78·6
Rio de Janeiro	E.	121·3	135	—	—	e 37 36	?	—	—
Scoresby Sund		127·0	8	19 25?	[+24]	30 25?	SKSP	61·4	—
Baku		131·7	308	e 20 53	PP	—	—	e 82·4	88·9
Kucino		133·1	330	e 22 1	PP	e 31 45	SKSP	e 67·4	81·6
Pulkovo		133·5	339	e 20 48	?	e 32 53	PS	70·4	85·4
Helsingfors		134·9	340	—	—	i 31 22	SKSP	e 70·9	—
Theodosia		140·2	321	—	—	e 29 55	{+30}	—	—
Simferopol		141·0	320	—	—	e 29 25	{− 5}	—	—
Yalta		141·2	320	—	—	e 29 7	{−24}	—	—
Lund		141·8	346	—	—	32 25	SKSP	79·4	—
Copenhagen		142·0	346	24 19	?	33 13	SKSP	73·4	—
Edinburgh		143·1	2	—	—	e 51 13	?	83·4	—
Ksara		144·0	300	19 51	[+20]	(29 59)	{+11}	51·4	—
Hamburg		144·1	348	e 19 15	[−16]	e 29 27	{−21}	e 79·4	91·4
Gottingen		146·4	350	e 19 22	[−14]	i 29 33	{−29}	e 77·4	96·4
De Bilt		146·6	351	e 19 20	[−17]	i 29 35	{−28}	e 70·4	94·0
Cheb		147·2	343	e 30 13	SKKS	e 30 13	{+ 7}	e 80·4	91·4
Oxford	N.	147·3	0	e 19 28	[−10]	i 29 25	{−42}	e 73·4	99·5
Vienna		147·6	339	e 19 25	[−13]	30 3	{− 6}	e 75·4	91·4
Kew		147·6	0	—	—	e 29 49	{−20}	e 70·4	97·2
Feldberg	N.	147·9	351	e 19 43	[+ 4]	e 29 31	{−39}	—	89·3
Uccle		147·9	352	e 19 24	[−15]	—	—	—	—
Graz		148·9	338	—	—	e 30 6	{−10}	82·4	93·8
Stuttgart		149·2	348	e 19 25	[−15]	e 29 33	{−45}	e 72·4	—
Strasbourg		149·6	349	e 19 28	[−13]	e 29 38	{−42}	45·4	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb	149·8	336	e 19 32	[−10]	e 29 49	{−32}	e 83·4	—
Paris	150·1	356	e 19 25?	[−17]	—	—	78·4	96·4
Zurich	150·6	347	e 19 31	[−12]	e 29 38	{−48}	—	—
Neuchatel	151·3	349	e 19 25?	[−18]	e 29 41	{−49}	—	—
Piacenza	152·5	344	e 20 25	{+15}	30 20	{−16}	47·4	102·9
Florence	153·2	340	e 19 55	[+ 9]	29 55	{−45}	73·4	87·4
Rocca di Papa	154·5	336	e 20 2	{−17}	e 29 56	{−52}	e 79·4	116·2
Catania	156·8	326	31 0	SKKS	(31 0)	{ − 1}	e 90·2	101·7
Granada	161·7	7	e 19 47	[− 9]	30 42	{−46}	75·4	81·8
Algiers	161·9	350	—	—	e 39 46	?	97·4	110·4
Almeria	162·1	4	e 20 11	[+15]	31 1	{−29}	70·9	93·0
Malaga	162·1	9	e 20 45	{ − 9}	34 43	SKSP	45·4	—

Additional readings and notes :—
Christchurch i = +10m.35s.
Melbourne i = +16m.7s.
Adelaide i = +22m.37s.
Manila iE = +24m.32s.
Batavia i = +22m.41s. and +31m.37s.
Victoria S = +32m.25s.?
Irkutsk e = +15m.48s., +27m.25s.?, +36m.40s., and +40m.32s.
Florissant eZ = +15m.25s., iE = +34m.8s., eE = +41m.30s., and +49m.50s.
St. Louis eE = +32m.57s. =SS +22s.
Georgetown eZ = +32m.31s.
Ottawa e = +37m.25s.? eE = +44m.25s.?
Tashkent e = +37m.49s., i = +45m.48s.
Ekaterinburg e = +20m.26s. =PP +9s., +22m.37s. =PPP −9s., +28m.52s., +30m.15s. =PS +2s., and +30m.49s.
Baku e = +33m.53s., +43m.23s. =SSS −19s., +49m.1s., +54m.32s., and +64m.21s.
Kucino e = +40m.43s., +42m.23s., and +47m.7s.
Pulkovo e = +22m.54s. and +39m.52s. =SS +29s.
Helsingfors iN = +44m.30s.
Ksara SSSE = +39m.45s., SSSN = +42m.57s.; the reading entered as S is given as PPSN.
Cheb eS = +40m.4s., e = +53m.25s.?
Oxford iN = +20m.41s., iE = +29m.38s.
Vienna PP = +22m.22s., PS = +31m.29s., i = +33m.37s. =SKSP +15s., SS = +36m.11s., SSS = +40m.18s.
Kew eE = +52m.1s.
Feldberg eN = +28m.43s., +31m.55s., +33m.51s. =SKSP +26s., +43m.17s., and +58m.1s.
Stuttgart eEN = +52m.25s.?, eN = +58m.13s.
Neuchatel eS = +38m.30s.
Strasbourg PS = +35m.56s., e = +40m.42s.
Rocca di Papa i = +30m.8s.
Catania eS? = +43m.0s.
Granada e = +20m.23s., i = +22m.36m. and +24m.1s.
Algiers e = +41m.48s.
Almeria SS = +33m.33s.
Long waves are recorded at Hyderabad, La Plata, some European and American stations.

June 1d. Readings also at 2h. (Ekaterinburg, Irkutsk, Florissant, Wellington, and near Malabar), 3h. (Apia, Wellington, Harvard, Scoresby Sund, Granada, De Bilt, Strasbourg, Paris, Rocca di Papa, Copenhagen, Pulkovo, Ekaterinburg and Irkutsk), 4h. (Baku, Samarkand, Ksara, Ekaterinburg, Irkutsk, Manila, Batavia, De Bilt, Strasbourg, Rocca di Papa, Scoresby Sund, and Tucson), 6h. (Irkutsk and Taihoku), 8h. (near Algiers, near La Paz, and Sucre), 9h. (Nagoya (2), near Mizusawa (2), and Tyosi (2)), 12h. (Perth and near Koti), 13h. (Melbourne, Ksara, and Tucson), 18h. (Ksara), 19h. (Toledo), 21h. (Baku, Ekaterinburg, Pulkovo, Copenhagen, Ksara, Kucino, Sebastopol, near Simferopol, Theodosia, and Yalta), 23h. (near Nagasaki).

June 2d. 1h. 52m. 9s. Epicentre 41°·4N. 0°·3E. N.3.

A = +·750, B = +·004, C = +·661; D = +·005, E = −1·000; G = +·661, H = +·003, K = −·750.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tortosa	0·6	166	i 0 8	− 1	0 14	− 1	—	—
Barcelona	1·4	89	0 20	0	i 0 38	+ 2	0·8	—
Alicante	3·1	191	e 1 28	S	(e 1 28)	+ 8	(e 1·8)	—
Toledo	3·6	246	e 1 15	P_g	e 2 1	S_g	—	—
Almeria	5·0	205	—	—	e 2 4	− 4	(2·6)	2·9
Malaga	5·9	218	e 4 7	?	—	—	—	—
Besançon	7·1	33	—	—	e 3 51?	S_g	—	—
Neuchatel	7·3	39	e 2 0	P*	—	—	—	—
Paris	7·6	11	—	—	e 4 21	S_g	—	—
Strasbourg	8·9	34	—	—	e 5 1	S_g	—	—
Stuttgart	9·6	38	—	—	e 5 18	S_g	—	—
Uccle	9·8	16	—	—	e 4 51?	S*	—	—
De Bilt	11·2	16	—	—	e 6 27	S_g	—	—

Additional reading and note :—
Barcelona iP = +23s.
Alicante gives S as P and L as S.

June 2d. Readings also at 0h. (Andijan and Samarkand), 1h. (Almeria and Tortosa), 2h. (Rocca di Papa and Tortosa (2)), 3h. (Tortosa), 5h. (Tyosi), 6h. (Andijan (3) and Samarkand), 7h. (Granada), 8h. (Andijan (2) and Samarkand), 10h. (Andijan and Samarkand), 18h. (near Algiers), 19h. (Mizusawa), 20h. (La Paz, Tyosi, and near Mizusawa), 21h. (Taihoku), 22h. (Taihoku), 23h. (Baku and Ekaterinburg).

June 3d. 18h. 9m. 30s. Epicentre 51°·2N. 148°·4E. N.2.

A = −·534, B = +·328, C = +·779; D = +·524, E = +·852; G = −·664, H = +·408, K = −·627.

A depth of focus +0·065 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sikka	+1·2	3·9	242	2 2	+49	(2 4)	− 6	2·1	2·1
Mizusawa	−1·3	13·1	206	2 44	− 2	4 53	− 5	—	—
Tyosi	−2·3	16·4	202	—	—	(5 52)	− 1	5·9	—
Nagoya	−2·4	18·0	212	3 32	− 4	6 22	− 7	—	—
Osaka	−2·5	19·0	214	e 3 58	+10	(6 15)	−35	6·3	6·6
Irkutsk	−3·6	26·9	290	5 2	− 2	9 5	− 5	11·7	—
Manila	−5·3	42·8	221	i 9 0	PP	i 12 42	−17	14·5	16·1
Phu-Lien	−5·4	44·5	243	—	—	15 40?	SS	—	—
Almata	−5·6	47·2	290	6 52	−53	—	—	—	—
Ekaterinburg	−5·7	48·3	313	i 7 58	+ 5	14 22	+ 7	—	—
Andijan	−6·0	51·4	290	8 19	+ 3	15 3	+ 7	—	—
Tashkent	−6·1	52·9	292	i 8 31	+ 4	i 15 19	+ 3	—	29·9
Samarkand	−6·3	55·3	292	8 46	+ 2	15 51	+ 4	—	—
Scoresby Sund	−6·5	58·1	356	8 40?	−23	—	—	—	—
Pulkovo	−6·5	58·4	329	i 9 10	+ 4	16 33	+ 6	22·7	23·1
Helsingfors	−6·6	59·7	331	e 9 17	+ 2	e 16 47	+ 4	e 23·1	—
Baku	−6·8	64·3	304	9 47	0	i 17 48	+ 5	e 25·7	—
Copenhagen	−7·1	67·0	335	10 4	0	—	—	26·7	—
Theodosia	−7·1	67·8	315	e 10 9	0	—	—	—	—
Simferopol	−7·1	68·4	315	e 10 12	− 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.
Yalta	−7·1	68·7	315	e 10 14	− 2	—	—	—	—
Sebastopol	−7·2	68·9	315	e 10 13	− 3	—	—	—	—
De Bilt	−7·4	72·2	338	i 10 35	− 2	—	—	e 28·7	—
Uccle	−7·4	73·5	338	i 10 42	− 4	—	—	—	—
Stuttgart	−7·5	74·2	334	i 10 46	− 4	e 20 14	+33	—	—
Strasbourg	−7·5	74·8	335	i 10 52	− 2	—	—	e 29·7	—
Zurich	−7·5	75·6	333	i 10 53	− 6	—	—	—	—
Chur	−7·5	75·7	333	i 10 55	− 4	—	—	—	—
Paris	−7·5	75·8	339	i 10 54	− 6	—	—	—	—
Neuchatel	−7·6	76·4	335	i 10 58	− 5	—	—	—	—
St. Louis	−7·6	76·6	43	i 11 4	− 1	i 20 6	− 3	—	—
Rome	−7·7	79·3	329	e 11 15	− 5	—	—	—	—
Rocca di Papa	−7·7	79·4	329	i 11 14	− 7	—	—	—	—
Granada	−8·0	88·3	339	e 12 0	− 9	—	—	—	—

Additional readings :—
Mizusawa PN = +2m.40s.
Stuttgart e = +13m.46s.
Strasbourg iPP? = +13m.52s.
Granada 1 = +15m.47s.

June 3d. 19h. 55m. 42s. Epicentre 28°·5N. 141°·5E. (as on 1928 Jan. 26d.). X.

A = −·688, B = +·547, C = +·477 ; D = +·622, E = +·783 ;
G = −·373, H = +·297, K = −·879.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	7·2	356	e 1 56	+14	(e 3 24)	+20	e 3·4	—
Nagoya	7·7	331	1 52	+ 3	3 21	+ 5	—	—
Osaka	8·1	321	1 50	− 5	(3 21)	− 5	3·3	3·8
Sumoto	8·1	318	e 2 21	+26	3 21	− 5	—	3·4
Kobe	8·2	320	e 2 50	+54	—	—	—	4·1
Mizusawa	10·6	358	2 30	+ 1	4 32	+ 4	—	—

Additional reading :—
Mizusawa SN = +4m.42s.

June 3d. Readings also at 4h. (near Lick), 5h. (Algiers, Tunis, Granada, Samarkand, and near Andijan), 6h. (Andijan, Samarkand, and Sumoto), 8h. (Tucson), 10h. (near Medan), 11h. (Simferopol, near Sebastopol, and Yalta), 16h. (Ksara, Ottawa, Florissant, Lick, and near Victoria), 18h. (Wellington), 19h. (near Medan), 23h. (Sumoto and near Tortosa), 23h. (near Batavia and Medan).

June 4d. 7h. 28m. 10s. Epicentre 37°·9N. 45°·1E. N.2.

A = +·557, B = +·559, C = +·614 ; D = +·708, E = −·706 ;
G = +·434, H = +·435, K = −·789.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	4·5	55	e 1 4	0	—	—	2·0	4·6
Ksara	8·5	244	2 7	+ 7	4 40	+64	5·5	—
Theodosia	10·2	317	2 25	+ 1	4 39	+21	5·8	—
Yalta	10·5	312	e 2 28	0	—	—	—	—
Simferopol	10·8	314	e 2 33	+ 1	—	—	—	—
Sebastopol	11·0	311	e 2 37	+ 2	—	—	—	—
Helwan	14·0	239	3 15	0	7 10	L	(7·2)	—
Samarkand	17·1	77	3 54	− 1	—	—	—	—
Belgrade	19·7	298	e 4 4	−22	e 8 8	+ 8	e 11·7	14·0
Andijan	21·5	74	4 47	+ 2	9 54	+78	12·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg		21·6	24	4 42	− 4	i 8 32	− 6	10·8	16·0
Trenta		22·4	282	e 4 25	−30	—	—	—	—
Zagreb		22·9	299	e 4 58	− 2	e 9 8	+ 5	—	e 13·5
Graz		23·5	302	i 5 7	+ 2	e 9 26	+12	13·8	16·7
Catania		23·6	278	e 5 12	+ 6	—	—	—	17·2
Konigsberg		23·7	323	i 5 7	0	i 9 23	+ 5	e 14·3	—
Pulkovo		23·8	342	i 5 6	− 2	9 16	− 3	12·8	14·6
Naples	E.	23·9	287	e 5 26	PP	e 10 1	SS	—	—
Almata		24·6	67	5 18	+ 2	—	—	—	—
Rocca di Papa		25·0	289	i 5 19	− 1	i 10 32	SS	i 13·4	15·3
Rome		25·2	290	i 5 21	− 1	e 10 3	+19	—	—
Helsingfors		25·6	337	e 5 24	− 1	i 9 56	+ 5	e 13·7	—
Treviso		25·6	298	5 22	− 3	14 50	L	(14·8)	—
Florence		26·1	294	i 5 36	+ 6	10 30	+30	—	16·8
Cheb		26·2	308	e 5 30	− 1	e 10 24	+22	e 15·8	20·8
Piacenza		27·3	297	e 4 28	−73	11 0	SS	15·5	21·2
Chur		27·5	300	e 5 41	− 2	—	—	—	—
Lund		27·7	320	5 38	− 6	10 26	− 1	—	—
Stuttgart		28·0	305	e 5 45	− 2	e 11 0	+28	16·8	—
Upsala		28·0	330	e 5 43	− 4	—	—	—	17·3
Dehra Dun		28·1	96	10 40	S	(10 40)	+ 6	20·7	21·8
Gottingen		28·1	310	—	—	(e 11 50?)	SS	e 11·8	—
Copenhagen		28·2	320	5 48	− 1	10 30	− 5	—	—
Zurich		28·2	302	e 5 48	− 1	—	—	—	—
Feldberg	N.	28·7	307	i 5 44	− 9	—	—	—	20·0
Hamburg		28·7	315	e 5 56	+ 3	e 11 14	+31	—	20·8
Strasbourg		28·9	304	e 5 50	− 5	e 10 50?	+ 3	e 16·8	—
Neuchatel		29·3	300	e 5 57	− 2	—	—	—	—
Agra	N.	29·6	101	(e 6 38)	+37	(e 10 38)	−20	(e 13·3)	(16·8)
Bombay		30·7	120	6 13	+ 2	11 18	+ 2	15·3	22·2
De Bilt		31·1	311	6 14	− 1	—	—	e 18·8	21·6
Uccle		31·4	309	6 17	0	—	—	—	—
Paris		32·3	305	e 6 25	0	—	—	13·8	22·8
Bergen		33·5	326	—	—	e 10 53	−65	—	—
Kew		34·3	310	e 6 48	+ 5	e 12 11	0	e 17·8	—
Oxford		35·0	310	—	—	12 11	−10	e 14·8	—
Stonyhurst		35·9	312	—	—	e 11 50?	−45	—	25·8
Edinburgh		36·6	316	—	—	e 12 50?	+ 5	—	—
Almeria		37·3	285	7 10	+ 1	—	—	e 18·2	26·4
Calcutta	N.	40·0	100	e 1 37	?	—	—	9·6	—
Irkutsk		42·9	50	e 7 55	− 1	e 14 18	− 1	23·8	29·3
Scoresby Sund		47·0	336	8 29	0	15 2	−17	19·8	—

Additional readings and notes :—
Belgrade e = +4m.44s. and +5m.34s.
Zagreb eNW = +9m.23s. =SS −15s.
Konigsberg iPS = +9m.35s.
Rocca di Papa i = +11m.1s.
Helsingfors PPN = +5m.59s., PPE = +6m.2s., SSN = +11m.5s., SSSN = +11m.14s.
Florence PP = +5m.56s.
Stuttgart eN = +12m.35s. and +13m.57s.
Dehra Dun S = +16m.40s.
Hamburg e = +11m.20s.
Agra eE = (+6m.21s.); readings have been *increased* by 2m.
Oxford SN = +12m.16s.
Scoresby Sund +10m.8s.
Long waves were also recorded at Vladivostok, Granada, and Hyderabad.

June 4d. 9h. 50m. 35s. Epicentre 6°·5S. 128°·5E. N.1.

A = − ·618, B = + ·778, C = − ·113 ; D = + ·783, E = + ·623 ;
G = + ·070, H = − ·089, K = − ·994.

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.
Malabar		−2·5	20·7	267	4 9	0	i 7 26	− 3	—	—
Batavia		−2·6	21·5	270	4 28	+11	—	—	—	—
Manila		−2·7	22·4	341	i 4 20	− 6	i 6 43	?	—	—
Perth		−3·4	28·0	203	e 6 25	+ 9	—	—	—	—
Adelaide		−3·7	30·0	163	i 5 31	− 1	i 12 4	?	17·1?	20·8
Medan		−3·8	31·4	289	i 5 56	+12	11 2	SS	15·0	—
Hong Kong		−3·9	32·0	335	i 5 45	− 3	i 10 25?	− 9	12·7	13·7
Taihoku	E.	−3·9	32·2	349	e 5 49	− 1	—	—	—	—
Riverview		−4·1	34·5	145	e 5 51	−18	i 11 13	+ 3	—	19·7
Sydney		−4·1	34·5	145	e 7 13	PP	i 11 19	+ 9	14·2	14·7
Phu-Lien		−4·1	34·7	322	6 10	0	11 9	− 5	13·4	—
Melbourne		−4·1	34·7	156	i 6 15	+ 5	i 11 17	+ 3	16·9?	23·6
Zi-ka-wei	N.	−4·5	38·3	352	6 39	0	—	—	—	—
Nagasaki		−4·6	39·3	1	6 49	+ 3	e 12 19	+ 2	—	—
Hukuoka		−4·7	40·1	2	7 0	+ 7	e 12 32	+ 5	—	—
Koti		−4·7	40·4	6	e 6 58	+ 3	e 12 36	+ 4	e 15·9	—
Sumoto		−4·8	41·3	8	7 6	+ 4	12 50	+ 6	—	—
Kobe		−4·8	41·6	8	7 8	+ 3	12 53	+ 5	—	—
Osaka		−4·8	41·7	8	7 4	− 2	(12 1)	−49	12·0	16·9
Nagoya		−4·9	42·4	10	7 17	+ 6	(13 8)	+ 9	13·1	—
Tyosi		−5·0	43·8	15	(e 7 27)	+ 5	—	—	e 7·5	—
Mizusawa		−5·3	47·1	15	7 52	+ 5	14 16	+13	—	—
Calcutta		−5·3	48·8	309	9 12	+71	15 48	+80	24·4	—
Vladivostok		−5·5	49·7	2	e 8 12	+ 6	i 14 49	+10	28·8	—
Colombo		−5·5	50·3	284	8 14	+ 3	11 24	?	17·7	21·5
Kodaikanal		−5·7	53·5	289	17 43	SS	—	—	—	—
Wellington		−5·8	53·8	138	—	—	e 18 25?	SS	28·4	—
Hyderabad		−5·9	54·9	297	8 55	+11	16 1	+14	26·6	32·1
Agra	E.	−6·2	59·2	309	(e 9 0)	−14	(16 50)	+ 8	—	—
	N.	−6·2	59·2	309	(e 9 2)	−12	(16 33)	− 9	(e 26·5)	(31·4)
Bombay		−6·2	60·4	297	9 28	+ 5	17 3	+ 5	28·1	32·6
Dehra Dun		−6·2	60·7	311	9 25	0	17 15	+13	24·7	32·4
Irkutsk		−6·3	62·3	344	9 38	+ 2	17 32	+ 9	30·4	33·8
Almata		−6·7	68·1	322	e 10 14	0	18 46	+12	—	—
Andijan		−6·8	69·7	319	10 28	+ 3	19 4	+10	—	—
Samarkand		−6·9	72·9	316	10 45	0	19 35	+ 3	—	—
Honolulu T.H.	N.	−7·1	77·4	67	—	—	(i 20 38)	+13	i 20·6	—
Ekaterinburg		−7·3	83·6	330	i 11 40	− 8	i 21 19	−16	37·4	49·6
Baku		−7·4	85·6	312	i 11 53	− 5	21 49	− 7	34·9	—
Kucino		−7·6	95·6	325	—	—	e 23 26	−11	46·1	50·8
Ksara		−7·6	95·7	304	e 14 44	?	e 22 41	?	—	—
Theodosia		−7·6	96·8	315	—	—	e 22 45	?	—	—
Simferopol		−7·7	97·7	315	—	—	e 22 48	?	—	—
Sebastopol		−7·7	98·1	314	—	—	e 22 52	?	—	—
Pulkovo		−7·7	99·7	330	12 53	−14	i 22 55	?	48·4	51·3
Helsingfors		—	102·4	330	—	—	e 26 48	PS	e 49·8	—
Konigsberg		—	105·6	325	e 19 12	?	e 23 26	?	—	—
Upsala		—	106·0	331	e 23 23	?	e 28 56	?	e 53·4	—
Budapest		—	107·8	318	e 17 55	[−16]	23 28	?	—	—
Lund		—	109·4	327	18 25	PP	e 26 25	?	51·4	—
Copenhagen		—	109·8	327	18 13	[− 4]	23 42	?	57·4	—
Zagreb		—	110·2	315	e 18 3	[−15]	—	—	—	—
Cheb		—	111·5	321	e 18 25?	PP	—	—	—	—
Bergen		—	111·5	334	e 19 25?	PP	—	—	—	—
Hamburg		—	111·8	325	e 18 39	PP	e 24 45	[−36]	e 54·4	56·4

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.
Catania		—	112·4	308	e 18 30	PP	—	—	—	—
Gottingen		—	112·5	324	e 18 31	PP	—	—	e 57·4	—
Naples	E.	—	112·5	311	e 18 16	PP	—	—	—	—
Treviso		—	112·9	316	18 37	PP	—	—	—	—
Scoresby Sund		—	113·3	349	18 49	PP	25 8	[−19]	57·4	—
Rocca di Papa		—	113·4	312	e 18 37	PP	(29 19)	PS	—	29·3
Rome		—	113·5	312	e 19 0	PP	—	—	—	—
Stuttgart		—	113·9	322	e 18 39	PP	i 25 57	{−37}	e 65·9	—
Feldberg	N.	—	113·9	323	e 17 31	[−58]	e 25 44	{−50}	—	58·9
Florence		—	114·0	314	17 56	[−34]	20 56	?	—	27·4
Piacenza		—	114·7	317	e 17 32	[−60]	24 3	?	—	30·9
Zurich		—	114·7	319	e 19 5	PP	e 24 5	?	—	—
Strasbourg		—	114·9	321	e 18 47	PP	i 27 58	PS	e 39·4	—
De Bilt		—	115·1	325	i 19 5	PP	e 25 21	{−82}	e 55·4	59·6
Neuchatel		—	115·9	320	i 19 2	PP	e 27 58	?	—	—
Uccle		—	116·1	324	19 7	PP	e 28 7	?	e 35·4	—
Edinburgh		—	117·6	331	—	—	e 24 25?	[−78]	—	—
Paris		—	118·0	322	e 19 14	PP	e 28 20	?	39·4	69·4
Kew		—	118·4	326	e 19 24	PP	e 28 25	?	56·4	60·5
Oxford		—	118·8	327	i 19 24	PP	28 28	?	e 58·8	74·0
Granada		—	126·8	312	e 19 15	PP	i 21 40	?	64·4	74·9
Florissant		—	132·4	40	e 20 45	PP	i 27 3	{−94}	—	—
St. Louis	E.	—	132·6	40	i 21 7	PP	e 27 9	{−89}	—	—
Ottawa		—	135·8	22	e 21 25?	PP	—	—	e 46·4	—
Harvard		—	140·2	21	e 21 40	PP	e 39 40	SS	—	—
La Paz	E.	—	151·8	144	e 19 16	[−28]	—	—	—	—

Additional readings and notes :—
Malabar i = +4m.17s. and +7m.49s.
Batavia i = +5m.21s.
Perth i = +10m.42s. and +11m.0s.
Adelaide i = +6m.38s. and +10m.0s. =S −3s., iSS = +15m.16s.
Medan i = +12m.34s.
Hong Kong i? = +7m.6s.
Riverview iP = +6m.14s., iPP = +7m.23s., iPPP = +7m.40s., iPPPP = +7m.46s. iSSE = +13m.58s., iSSN = +14m.1s., iSSS = +14m.33s., iSSSS = +14m.44s.
Melbourne i = +13m.25s.
Koti iNZ = +6m.59s., iPNZ = +7m.1s., eN = iZ = +12m.6s.
Sumoto SZ = +12m.13s, SN = +12m.52s.
Kobe SNW = +12m.55s., SSE = +16m.20s.
Wellington e = +21m.25s. ?
Agra readings have been *increased* by 5m.
Baku i = +13m.58s. and +17m.1s.
Kucino e = +14m.43s., +18m.54s., +22m.36s., +25m.50s. =PS −7s. and +30m.4s.
Pulkovo i = +17m.4s., PPS = +25m.23s.
Helsingfors iE = +17m.28s., eN = +18m.9s. =PP +8s. and +22m.22s., eE = +23m.8s., iN = +23m.9s.
Lund +23m.43s.
Zagreb e = +19m.45s.
Scoresby Sund +20m.49s., +23m.59s., +27m.43s., and +28m.31s.
Rocca di Papa e = +16m.55s., i = +18m.48s.
Stuttgart iEZ = +18m.54s., +20m.11s., +20m.50s. and +21m.20s., eZ = +27m.25s., iEZ = +27m.49s., iEN = +28m.35s., iZ = +28m.58s., eZ = +30m.25s., i = +31m.38s., eNZ = +47m.55s.
Feldberg iN = +28m.27s.
Florence e = +15m.56s.
De Bilt iEZ = +27m.58s.
Uccle e = +20m.27s.
Kew PPEZ = +21m.19s.
Oxford i = +21m.26s., PPPP = +24m.20s., PS = +29m.31s.
Florissant iEZ = +21m.18s., eEN = +23m.31s.
St. Louis iE = +21m.26s. =PP −9s., eE = +22m.1s. and +24m.4s. =PPP −15s.
Harvard eE = +23m.51s., eEN = +24m.25s. ?

June 4d. Readings also at 1h. (Nagoya, near Mizusawa, and Tyosi), 9h. (Ksara), 13h. (La Paz), 15h. (Taihoku), 16h. (Budapest), 19h. (near Trenta), 21h. (near Samarkand).

June 5d. 11h. 42m. 48s. Epicentre 16°·5S. 174°·0E. N.2.

A = − ·954, B = + ·100, C = − ·284 ; D = + ·105, E = + ·995 ;
G = + ·282, H = − ·030, K = − ·959.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		14·0	81	3 12	− 3	5 57	+ 6	7·2	9·0
Wellington		24·8	178	5 12	− 6	9 28	− 9	—	11·2
Riverview		26·9	226	i 5 36	− 1	i 10 17	+ 3	e 13·2	17·7
Sydney		26·9	226	e 5 36	− 1	i 10 30	+16	13·0	13·7
Christchurch		27·1	182	e 5 42	+ 3	10 2	−15	12·1	14·4
Melbourne		33·3	225	6 31	− 3	11 52	− 3	16·2	19·6
Adelaide		36·6	234	e 7 9	+ 6	i 12 44	− 1	16·8	22·0
Honolulu, T.H.		46·8	37	—	—	i 15 22	+ 6	18·9	—
Amboina		46·8	280	i 9 31	+64	—	—	i 20·0	—
Manila		60·9	299	10 6	− 5	i 18 38	+10	30·0	36·4
Tyosi		60·9	330	—	—	(e 23 12?)	?	e 23·2	—
Kobe		63·1	325	i 10 25	− 1	e 19 20	+24	—	—
Koti		63·3	324	e 10 29	+ 2	e 19 0	+ 1	—	—
Batavia		66·4	272	e 11 5	+17	i 19 54	+17	36·2	—
Ootomari		69·1	338	e 11 25	+20	(e 20 33)	+23	e 20·6	—
Hong Kong		70·3	302	11 12	− 1	20 31	+ 6	—	40·4
Vladivostok		71·0	330	11 20	+ 3	20 50	+17	33·7	—
Phu-Lien		75·9	298	e 11 50	+ 5	(21 12)	−18	21·2	—
Medan		77·1	278	e 11 38	−15	—	—	—	—
Sitka	E.	84·7	25	—	—	e 23 6	+ 1	34·8	—
Victoria		85·4	36	12 45	+10	23 8	− 4	35·2	40·7
Irkutsk		91·3	325	13 5	+ 2	e 24 13	+ 5	42·2	47·2
Colombo		95·9	276	e 18 29	?	i 24 1	[− 4]	42·2	58·6
Hyderabad		100·0	285	—	—	23 42	?	36·2	54·4
Florissant		104·5	52	e 14 7	+ 3	e 24 43	[− 4]	e 49·2	—
St. Louis	E.	104·6	52	e 14 21	+16	e 24 46	[− 2]	e 48·9	—
Bombay		105·5	286	18 48	PP	26 11	?	36·3	37·7
Chicago		107·0	49	—	—	e 26 24	?	e 53·2	—
La Paz		110·4	115	e 15 8	?	i 26 3	{− 7}	52·2	59·9
Tashkent		111·7	310	19 12	PP	28 58	PS	—	62·0
Toronto	E.	113·2	47	e 19 25	PP	e 28 51	PS	53·2	—
Georgetown	Z.	114·8	53	i 19 35	PP	i 29 42	PS	53·2	—
Ottawa	E.	115·8	45	e 19 39	PP	e 29 23	PS	e 54·2	—
Ekaterinburg		116·5	326	18 50	[+13]	25 39	[0]	47·2	64·8
Scoresby Sund		125·1	6	20 42	PP	37 54	SS	—	—
Baku		126·4	310	19 10	[+10]	—	—	e 63·2	72·1
Rio de Janeiro		126·4	135	—	—	(e 38 22)	SS	e 38·4	—
Kucino		128·5	331	21 15	PP	31 10	PS	56·2	74·2
Pulkovo		129·4	338	20 29	?	—	—	57·2	71·9
Helsingfors		131·0	340	i 22 36	PKS	—	—	e 57·5	—
Upsala		133·4	345	e 22 44	PKS	—	—	59·2	72·1
Konigsberg		136·6	339	e 22 2	PP	—	—	—	—
Lund		138·2	345	22 30	PP	—	—	59·2	—
Copenhagen		138·3	345	23 12	PKS	—	—	59·2	—
Ksara	N.	138·7	304	e 21 35	PP	—	—	56·2	—
Hamburg		140·9	346	e 19 18	[− 5]	—	—	e 67·2	76·2
Gottingen		142·7	345	e 19 30	[+ 4]	—	—	e 62·2	—
Budapest		142·8	332	e 19 42	[+15]	—	—	e 67·2	—
Cheb		143·3	340	e 20 12?	[+43]	—	—	e 68·2	—
Vienna		143·3	336	e 19 50	[+21]	27 25	?	e 69·2	81·2
Oxford		144·5	357	e 19 44	[+11]	—	—	e 68·2	83·3
Kew		144·7	355	i 19 36	[+ 3]	—	—	68·2	83·2
Uccle		144·7	350	e 19 34	[+ 1]	—	—	e 60·2	—
Karlsruhe		145·4	344	19 41	[+ 6]	—	—	—	—
Zagreb		145·4	332	e 19 36	[+ 1]	—	—	e 70·2	—
Stuttgart		145·4	343	i 19 39	[+ 4]	—	—	e 62·2	84·7
Strasbourg		146·0	344	i 19 40	[+ 4]	—	—	e 47·2	—
Paris		146·9	350	i 19 46	[+ 9]	—	—	69·2	81·2
Zurich		146·9	340	e 19 42	[+ 5]	—	—	—	—
Chur		147·1	340	e 19 41	[+ 4]	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Treviso		147·1	337	19 42	[+ 5]	—	—	59·2	—
Neuchatel		147·7	343	i 19 38	[0]	—	—	—	—
Piacenza		148·6	339	19 48	[+ 8]	—	—	—	84·2
Florence		149·0	335	e 19 48	[+ 8]	—	—	70·2	76·2
Rome		150·0	332	e 19 50	[+ 8]	—	—	—	—
Rocca di Papa		150·1	332	e 19 49	[+ 7]	26 45	PPP	e 71·1	88·2
Catania		151·9	323	e 20 53	[+ 9]	—	—	—	—
Tortosa	N.	155·0	348	—	—	(40 47)	?	—	40·8
Alicante		157·6	349	—	—	e 33 50	?	e 98·6	—
Granada		159·2	355	i 20 40	{ 0}	—	—	e 78·2	88·6
Almeria		159·4	352	i 20 37	{− 4}	—	—	e 76·2	81·7
Malaga		159·7	356	e 20 41	{− 2}	e 30 57	{−20}	40·2	—
Dakar		168·8	98	(20 12?)	[+ 9]	—	—	20·2	38·1

Additional readings :—
Riverview PP = +6m.19s. ; T_0 = 11h.42m.15s.
Melbourne PP = +7m.47s.
Adelaide iPP = +8m.26s.
Honolulu T.H. iSE = +15m.28s.
Manila iN = +11m.16s. = P_cP +19s., PPE = +12m.48s., PPPNZ = +14m.0s.
Victoria PN = +12m.50s.
Irkutsk ePP = +16m.50s., eSKS = +23m.41s.
Florissant iZ = +28m.43s., iEN = +33m.7s.
St. Louis eE = +25m.41s. = Σ +13s., eE = +28m.51s.
Chicago PPE = +18m.19s., SKSE = +25m.0s., iPSE = +27m.57s., SSN = +33m.48s.
La Paz iE = +22m.4s.
Georgetown eZ = +28m.48s. = PS − 26s.
Ottawa e = +27m.44s., eE = +35m.48s. = SS +12.
Ekaterinburg iPP = +19m.45s., PS = +29m.34s., SS = +36m.24s.
Baku PP = +20m.58s., SS = +38m.42s.
Kucino iPKS = +22m.25s., PPS = +32m.49s., SS = +38m.24s.
Pulkovo iPP = +22m.30s., PS = +33m.3s.
Helsingfors iPPN = +22m.40s., iEN = +22m.50s.
Vienna eP = +18m.34s., SKP = +23m.25s., PP = +24m.8s., PPP = +32m.14s.
Uccle i = +19m.37s. = [P] +4s.
Stuttgart eZ = +37m.30s., eEN = +42m.32s. and +47m.27s.
Strasbourg eSS? = +42m.12s. ?
Rocca di Papa i = +19m.55s., S? = +23m.14s. = SS − 7s.
Granada i = +24m.16s. = PP +5s. and +26m.14s.
Long waves were also recorded at Stonyhurst, Edinburgh, Ivigtut, San Fernando, Ann Arbor, Charlottesville, and La Plata.

June 5d. 16h. 27m. 4s. Epicentre 25°·5N. 98°·0E. (as on 1930 April 28d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		9·2	119	2 6	− 4	—	—	4·7	—
Calcutta	E.	9·3	254	3 50	S	(3 50)	− 6	7·4	—
	N.	9·3	254	3 53	S	(3 53)	− 3	7·6	—
Hong Kong		15·1	99	6 26	S	(6 26)	+ 9	8·1	8·4
Manila		24·1	112	e 5 9	− 2	i 9 41	+16	i 12·6	14·9
Bombay		24·2	259	9 38	S	(9 38)	+11	15·4	16·9
Almata		24·7	321	e 5 23	+ 6	e 9 49	+13	—	—
Andijan		26·2	311	e 5 45	+14	—	—	—	—
Irkutsk		27·2	8	e 5 37	− 3	e 10 15	− 3	14·3	15·7
Tashkent		28·5	311	e 5 56	+ 4	i 10 45	+ 5	e 15·9	19·7
Samarkand		29·5	306	e 6 2	+ 1	—	—	—	—
Batavia		32·9	165	i 6 46	+15	—	—	i 20·2	—
Ekaterinburg		41·1	330	7 40	− 1	e 13 47	− 6	19·9	—
Kucino		52·5	321	—	—	e 20 58	SS	e 28·2	29·8
Pulkovo		57·0	326	9 43	0	e 17 42	+ 7	29·9	33·0
Helsingfors	N.	59·7	326	e 8 56?	?	e 18 14	+ 2	—	—

Additional readings :—
Hong Kong S = +7m.50s.
Manila iZ = +5m.23s., iN = +5m.42s., iE = +5m.43s.
Bombay S = +13m.18s.
Long waves were also recorded at Baku, Vladivostok, Copenhagen, De Bilt, Strasbourg, and Scoresby Sund.

June 5d. 21h. 58m. 25s. Epicentre 35°·8N. 30°·3E. (given by Russian stations). N.2.

A = +·700, B = +·409, C = +·585; D = +·505, E = −·863;
G = +·505, H = +·295, K = −·811.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	5·0	111	1 46	+35	3 35	+87	3·9	—
Sebastopol		9·2	14	e 2 9	− 1	—	—	—	—
Yalta		9·2	18	e 2 17	+ 7	—	—	—	—
Simferopol		9·6	16	e 1 35?	−41	—	—	—	—
Theodosia		10·0	21	e 2 35	+14	—	—	—	—
Belgrade		11·7	323	—	—	5 36	+41	e 6·6	—
Catania		12·3	282	e 3 34	+42	—	—	—	—
Rocca di Papa		14·9	299	e 3 33	+ 6	7 29	L	(7·5)	22·2
Rome		15·1	259	e 3 35	+ 5	—	—	—	—
Baku		16·1	68	e 4 1	+18	—	—	e 10·5	—
Florence		16·6	304	—	—	e 6 52	0	(9·2)	9·8
Treviso		16·8	311	3 25	−27	10 5	?	—	—
Cheb		19·2	323	e 1 35?	?	e 3 35?	?	—	—
Konigsberg		20·2	343	—	—	e 10 40	?	e 11·7	—
Stuttgart		20·2	316	e 4 27	− 5	e 8 15	+ 5	e 11·7	12·7
Kucino		20·6	12	e 4 41	+ 5	—	—	e 11·6	19·3
Strasbourg		20·9	315	e 4 37	− 2	e 8 22	− 2	e 14·6	—
Copenhagen		23·3	334	4 59	− 5	9 11	+ 1	12·6	—
Pulkovo		23·9	0	5 5	− 4	9 23	+ 2	12·6	14·7
Uccle		23·9	317	e 5 11	+ 2	—	—	e 12·6	—
De Bilt		24·1	320	e 5 14	+ 3	—	—	e 12·6	15·3
Paris		24·1	312	e 5 11	0	—	—	12·6	14·6
Helsingfors		24·6	354	e 5 13	− 3	e 9 36	+ 2	—	—
Kew		26·8	315	—	—	e 10 35?	+23	—	—
Granada		27·1	283	e 8 35?	(−26)	—	—	—	—
Samarkand		29·1	71	e 6 15	+18	—	—	—	—

Additional readings:—
Belgrade e = +5m.55s.
Rocca di Papa i = +3m.38s.
Strasbourg e = +11m.39s. and +12m.37s.
Long waves were also recorded at Vienna, Zagreb, Hamburg, Irkutsk, Scoresby Sund, and Lund.

June 5d. Readings also at 0h. (Tashkent, Baku, Ksara, and Ekaterinburg), 1h. (Ekaterinburg, Vladivostok, Irkutsk, Malabar, and Batavia), 6h. (Perth), 7h. (Tyosi), 10h. (Wellington), 12h. (Tyosi, Chur, and Zurich), 13h. (Tyosi), 15h. (Almata, Andijan, Samarkand, and Port au Prince), 18h. (Sumoto and Gottingen), 19h. (Toledo), 20h. (La Plata), 23h. (Tortosa, Batavia, and Malabar).

June 6d. Readings at 0h. (La Paz), 1h. (Sebastopol, Simferopol, and Theodosia), 6h. (Samarkand), 7h. (near Batavia and Malabar), 8h. (Baku, Ekaterinburg, Andijan, Samarkand, Tashkent, Irkutsk, Vladivostok, Pulkovo, Kucino, Ottawa, Honolulu T.H., Sitka, Florissant, Scoresby Sund, Strasbourg, Stuttgart, and Granada), 9h. (Paris, San Fernando, La Paz, and near Taihoku), 10h. (La Paz), 12h. (Phu-Lien and near Taihoku), 18h. (Almata, near Andijan, and Samarkand), 19h. (Phu-Lien), 20h. (near Ksara), 22h. (Andijan and near Samarkand).

June 7d. Readings at 6h. (La Paz and near Manila), 10h. (Baku, Ekaterinburg, De Bilt, Strasbourg, Kew, Granada, Andijan, near Tananarive, and near Ksara), 11h. (Irkutsk), 13h. (Phu-Lien, near Almata, Andijan, and Samarkand), 16h. (near Manila), 19h. (near Nagasaki).

June 8d. 15h. 45m. 26s. Epicentre 38°·5N. 144°·5E. (as on 1929 March 31d.). X.

A = −·637, B = +·455, C = +·623; D = +·581, E = +·814;
G = −·507, H = +·361, K = −·783.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	2·7	283	0 39	0	1 9	0	—	—
Tyosi	4·0	228	e 0 54	− 3	(e 1 26)	−16	1·4	—
Nagoya	6·9	243	e 1 42	+ 4	—	—	—	—
Osaka	8·2	245	2 34	+38	(3 36)	+ 7	3·6	4·3
Kobe	8·4	246	e 3 41	S	(e 3 41)	+ 7	—	—
Sumoto	8·8	245	e 3 8	+63	e 4 1	+17	—	—

Long waves were also recorded at Baku, Vladivostok, and Tashkent.

June 8d. 17h. 44m. 57s. Epicentre 8°·4S. 155°·8E. (as on 1925 July 4d.). X.

A = −·902, B = +·406, C = −·146; D = +·410, E = +·912;
G = +·133, H = −·060, K = −·989.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	25·8	189	e 5 33	+ 6	e 10 4	+ 9	e 13·7	16·1
Adelaide	30·9	208	—	—	12 28?	SS	14·5?	16·9?
Melbourne	31·0	197	—	—	e 11 24	+ 4	15·0	18·7
Wellington	37·0	157	—	—	e 13 3?	+12	16·1	—
Manila	41·5	303	7 38	− 6	i 13 53	− 6	19·8	—
Vladivostok	55·9	340	—	—	e 17 15	− 6	—	—
Tashkent	92·9	313	—	—	i 22 8	?	—	45·9
Ekaterinburg	99·8	326	—	—	e 36 8	?	46·1	—

Additional readings:—
Riverview e? = +4m.9s., S = +10m.14s.
Tashkent e = +15m.25s., i = +21m.34s., e = +28m.33s.
Long waves were also recorded at Honolulu T.H.

June 8d. Readings also at 1h. (Samarkand), 4h. (Tucson and near Taihoku), 7h. (near Medan, near Batavia, and Malabar), 8h. (near Andijan and Samarkand), 10h. (Andijan (2) and Samarkand), 12h. (Alicante), 13h. (Strasbourg and La Paz), 14h. (Baku, Tashkent, Kew, Paris, Granada, Perth, and La Paz), 18h. (near Toyooka), 21h. (near La Paz and Zagreb), 22h. (near Zagreb).

June 9d. 4h. 41m. 36s. Epicentre 43°·5N. 16°·5E. (as on 1923 April 30d.). R.2.

A = +·696, B = +·206, C = +·688; D = +·284, E = −·959;
G = +·660, H = +·195, K = −·725.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb		2·4	351	e 0 31	− 3	i 1 5	+ 3	—	1·4
Benevento		2·8	215	1 4	+24	(1 4)	− 8	—	—
Laibach		2·9	331	e 1 44	+63	i 2 21	+67	12·7	—
Belgrade		3·1	65	e 0 44	0	e 1 40	+20	—	—
Naples	E.	3·1	212	(e 0 59)	+15	(e 1 34)	+14	—	—
Rocca di Papa		3·3	238	e 0 46	− 1	—	—	e 1·7	2·0
Rome		3·3	241	e 0 59	+12	1 23	− 2	1·8	2·0
Graz		3·7	349	i 0 50	− 3	i 1 26	− 9	—	1·9
Florence		3·8	277	e 1 14	P_g	—	—	—	2·2
Treviso		3·8	306	0 58	+ 4	1 44	+ 7	—	1·9
Padova		3·8	301	e 1 16	P_g	e 3 24	?	—	—
Trenta		4·2	181	e 0 34	−26	2 14	S*	—	—
Budapest		4·4	27	e 0 54	− 9	—	—	2·1	—
Vienna		4·8	359	e 1 7	− 1	2 2	− 1	12·4	3·0
Piacenza		5·1	290	—	—	e 2 5	− 5	—	4·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chur	N.	5·9	306	e 1 20	− 4	e 2 32	+ 1	—	—
Ravensburg		6·5	314	—	—	e 2 44	− 2	i 3·4	—
Zurich	N.	6·8	307	e 1 29	− 8	—	—	—	—
Cheb		7·2	339	—	—	e 3 24?	?	—	—
Stuttgart		7·3	319	e 2 49	?	i 3 46	S*	—	—
Neuchatel	N.	7·6	300	e 1 40	− 8	e 3 2	−12	—	—
Strasbourg		7·9	313	e 1 24?	−28	i 4 21	S_g	—	—
Jena	E.	8·1	338	—	—	e 3 24	− 2	—	4·2
Feldberg	N.	8·7	323	—	—	e 4 10	S_g	—	4·7
Potsdam		9·2	347	—	—	e 4 24	S*	—	—
Gottingen	N.	9·2	334	e 2 5	− 5	e 3 49	− 5	—	—
Helsingfors		17·4	14	e 3 38	−21	—	—	—	—

Additional readings :—
Zagreb iPNW = +33s., iPP = +36s., iPPPNE = +46s., iPPPSNE = +51s., i? = +1m.0s.
Laibach e = +2m.8s.
Belgrade eP* = +54s., eP_g = +1m.8s., ePS = +1m.35s., e = +2m.9s.
Naples readings have been *increased* by 1m.
Rocca di Papa eP = +51s., i = +58s.
Vienna P* = +1m.10s. and +1m.19s., P_g = +1m.26s., P_gS = +1m.56s., S* = +2m.20s.
Piacenza S = +2m.41s. =S*.
Ravensburg i = +3m.29s.
Stuttgart i = +3m.51s. and +4m.4s.
Strasbourg i = +4m.9s.
Potsdam iEN = +4m.42s., iN = +4m.51s., iEN = +4m.58s., iN = +5m.5s., iEN = +5m.42s. and +5m.54s.
Helsingfors eN = +54s.
Long waves were also recorded at several other European stations.

June 9d. Readings also at 2h. (Andijan and near Samarkand), 3h. (Andijan), 4h. (Andijan and Samarkand), 5h. (Baku and Zagreb), 6h. (Baku, Samarkand, and Irkutsk (2)), 9h. (Lick), 10h. (Baku and Ekaterinburg), 11h. (near Medan), 16h. (Besançon, Strasbourg, near Neuchatel, and Zurich), 18h. (Apia), 22h. (near Tortosa), 23h. (Ekaterinburg, Irkutsk, Hong Kong, and Taihoku).

June 10d. Readings at 0h. (Bergen), 1h. (Berkeley), 2h. (Phu-Lien and Samarkand), 3h. (La Paz and Sucre), 4h. (La Paz), 5h. (La Paz, Sucre, Taihoku, Samarkand (2), near Andijan, and Tashkent), 8h. (Baku, Tashkent, and Ksara), 13h. (Yalta), 14h. (Ekaterinburg and Vladivostok), 15h. (Vladivostok, Tashkent (2), Manila, and Riverview), 16h. (Ekaterinburg), 17h. (Florissant), 19h. (Sumoto), 20h. (La Plata), 22h. (Phu-Lien), 23h. (Tyosi, Andijan, and near Samarkand).

June 11d. 0h. 49m. 40s. Epicentre 5°·5S. 150°·0E. N.1.

Probable error of epicentre ±0°·35.

A = −·862, B = +·498, C = −·096 ; D = +·500, E = +·866 ;
G = +·083, H = −·048, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		21·8	274	i 7 46	?	12 26	L	(12·4)	—
Riverview		28·4	178	i 5 51	0	i 10 26	−12	13·3	16·8
Sydney		28·4	178	e 5 50	− 1	—	—	15·6	17·3
Adelaide		31·3	198	i 6 14	− 3	i 11 10	−14	i 14·2	18·2
Melbourne		32·6	187	6 42	+14	11 35	−10	13·9	17·8
Manila		35·1	306	i 6 46	− 4	i 12 12	−11	—	—
Apia		38·6	105	7 32	+12	13 45	+30	19·0	20·3
Taihoku	E.	41·2	320	7 56	+14	13 59	+ 5	19·9	—
Perth		41·4	226	e 7 45	+ 1	13 40	−17	18·7	—
Nagoya		41·9	345	e 7 56	+ 8	e 14 29	+24	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Koti		42·1	340	e 7 46	− 3	e 14 16	+ 8	e 19·9	23·8
Wellington		42·1	151	7 47	− 2	14 8	0	17·3	—
Tyosi		42·1	350	e 7 51	+ 2	—	—	e 17·5	23·9
Malabar		42·2	267	i 7 51	+ 1	i 14 25	+16	i 17·8	—
Sumoto		42·3	341	7 50	− 1	14 22	+12	19·2	24·1
Osaka		42·4	341	7 52	0	(14 35)	+24	14·6	18·6
Kobe		42·6	341	e 7 52	− 1	i 14 24	+ 9	19·3	24·7
Nagasaki		42·8	334	e 7 51	− 4	e 14 45	+27	e 18·1	21·6
Batavia		42·9	269	i 8 11	+15	—	—	21·3	—
Christchurch		43·0	155	7 57	0	i 14 30	+ 9	21·3	24·6
Hukuoka		43·3	336	i 8 6	+ 7	14 29	+ 4	—	22·5
Toyooka	E.	43·4	343	e 8 2	+ 2	e 15 4	+37	e 29·2	—
	N.	43·4	343	e 7 59	− 1	e 14 15	−12	—	—
	Z.	43·4	343	7 58	− 2	14 39	+12	20·8	25·2
Hong Kong		44·7	310	8 10	0	i 14 41	− 5	19·5	27·2
Mizusawa	E.	45·4	351	8 19	+ 3	15 23	+27	21·9	—
	N.	45·4	351	8 17	+ 1	15 8	+12	22·0	—
Phu-Lien		50·1	304	e 8 42	−10	—	—	21·3	—
Vladivostok		51·3	345	8 58	− 3	16 38	+19	19·1	27·1
Medan		52·0	279	i 9 13	+ 7	i 16 20	− 8	e 27·3	—
Ootomari		52·6	354	—	—	e 21 16	?	e 26·2	30·2
Honolulu T.H.		58·7	60	e 9 8	−47	18 1	+ 2	e 24·3	—
Irkutsk		69·5	332	10 53	−15	20 19	+ 4	34·1	39·2
Kodaikanal		74·0	283	11 38	+ 3	—	—	—	—
Hyderabad		74·2	290	11 47	+11	21 26	+15	36·3	47·4
Agra	E.	76·7	300	e 11 3	−47	21 3	−36	—	—
Dehra Dun		77·4	303	12 40	+46	21 30	−17	30·5	37·3
Bombay		79·7	290	12 12	+ 6	22 17	+ 5	41·8	47·6
Andijan		84·3	312	e 12 28	− 2	22 40	−21	42·0	—
Sitka		86·4	31	—	—	23 11	[+ 2]	46·5	—
Samarkand		88·2	310	e 12 49	0	23 11	[−10]	35·3	—
Victoria		92·0	41	13 29	+22	23 52	{+ 1}	43·3	44·8
Ekaterinburg		94·2	327	i 13 24	+ 7	24 46	+11	37·3	53·6
Tananarive		99·9	250	—	—	(e 24 29)	[+ 4]	41·6	48·1
Tucson	E.	100·7	57	—	—	24 35	[+ 6]	i 47·0	—
Baku		101·2	311	i 13 57	+ 8	24 28	[− 4]	46·8	58·6
Pulkovo		109·3	333	14 36	+ 8	25 8	[− 2]	53·3	57·4
Theodosia		111·2	316	e 19 21	PP	28 46	PS	56·3	—
Helsingfors		111·6	334	14 43	+ 5	e 25 22	[+ 2]	e 53·8	—
Yalta		112·1	316	e 19 36	PP	—	—	58·3	—
Simferopol		112·1	316	e 19 31	PP	—	—	—	—
Sebastopol		112·5	316	e 19 40	PP	—	—	—	—
Ksara		113·0	305	e 19 44	PP	—	—	53·3	—
Scoresby Sund		114·8	357	19 53	PP	29 32	PS	—	—
Upsala		114·8	336	e 19 37	PP	e 29 26	PS	e 47·3	66·0
Florissant		116·3	49	e 14 50	−12	e 25 33	[− 5]	e 49·3	59·3
Konigsberg		116·3	330	—	—	e 29 31	PS	—	69·5
St. Louis	E.	116·5	49	e 19 59	PP	e 25 29	[−10]	e 71·0	85·7
Helwan		117·5	301	20 0	PP	29 42	PS	—	65·9
Chicago		117·5	45	—	—	e 29 50	PS	e 54·3	—
Bergen		118·9	340	—	—	e 30 8	PS	41·8	64·3
Lund		119·2	334	20 18	PP	29 56	PS	52·3	—
Copenhagen		119·6	334	—	—	29 59	PS	52·3	70·3
Ann Arbor		120·0	42	—	—	e 30 38	PS	e 53·5	62·7
Potsdam		121·3	331	e 19 50	PP	e 29 2	PS	e 56·3	66·8
Vienna		121·9	326	e 19 26	[+36]	30 30	PS	41·3	69·3
Hamburg		122·0	333	e 19 8	[+18]	e 30 26	PS	61·3	71·3
Toronto	N.	122·4	40	e 19 4	[+13]	e 25 57	[− 1]	i 51·7	—
Ivigtut		122·7	10	19 38	[+46]	—	—	—	—
Jena	E.	122·9	331	e 20 40	PP	e 30 33	PS	e 46·3	73·8
	N.	122·9	331	e 20 47	PP	e 30 38	PS	e 48·3	72·8
Graz		123·0	325	e 19 16	[+23]	e 30 30	PS	e 55·3	70·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Cheb		123·0	330	e 20 20?	PP	—	—	e 38·3	75·8
Gottingen	Z.	123·3	332	e 20 44	PP	—	—	e 64·3	73·3
Zagreb		123·4	323	e 18 50	[− 4]	e 27 40	{+ 1}	e 37·3	—
Ottawa		123·8	36	e 20 56	PP	—	—	e 52·3	72·3
Feldberg	N.	124·9	332	e 20 40	PP	e 30 44	PS	—	70·3
De Bilt		125·2	334	e 15 49	+ 4	e 30 56	PS	60·3	75·5
Edinburgh		125·3	341	—	—	i 31 12	PS	58·3	69·5
Charlottesville		125·4	45	—	—	e 30 50	PS	e 51·3	—
Stuttgart		125·5	330	e 15 48	+ 2	i 25 46	[−21]	e 60·3	78·1
Karlsruhe		125·7	330	e 20 4	PP	—	—	e 64·3	—
Georgetown	Z.	126·0	44	i 19 2	[+ 3]	—	—	—	—
Padova		126·1	325	e 20 20	PP	e 30 50	PS	e 47·3	—
Strasbourg		126·3	330	e 19 9	[+ 9]	—	—	e 57·3	74·8
Uccle		126·4	334	e 19 2	[+ 2]	e 28 1	{+ 3}	e 59·3	68·2
Chur		126·5	328	e 19 3	[+ 3]	—	—	—	—
Zurich		126·7	328	i 19 4	[+ 4]	—	—	—	—
Stonyhurst		126·7	340	e 21 16	PP	31 11	PS	57·3	67·6
Bidston		127·3	340	e 21 5	PP	e 31 10	PS	e 39·3	75·2
Fordham		127·3	41	e 22 33	?	e 33 55	?	e 53·8	—
Florence		127·3	323	e 19 18	[+16]	30 50	SKSP	60·3	69·3
Piacenza		127·5	326	20 58	PP	31 30	PS	38·5	73·3
Rocca di Papa		127·6	321	e 19 12	[+10]	31 20	PS	i 69·8	79·9
Rome		127·6	321	e 19 18	[+16]	32 14	?	—	—
Kew		127·9	337	e 19 14	[+11]	e 28 20	{+12}	39·3	74·0
Catania		128·0	315	e 19 19	[+16]	—	—	63·9	79·3
Oxford		128·0	338	e 21 22	PP	—	—	e 50·8	69·0
Harvard		128·2	37	e 21 33	PP	—	—	e 53·8	—
Paris		128·6	334	e 19 14	[+10]	—	—	38·3	65·3
Barcelona		134·0	326	—	—	e 39 30	SS	e 62·0	76·2
Tortosa	N.	135·3	328	e 20 51	?	e 34 1	?	e 48·3	78·7
La Paz		136·3	120	i 19 22	[+ 5]	i 23 12	PKS	65·3	98·7
Algiers		136·5	321	—	—	e 34 20	?	e 58·3	76·3
Sucre		137·5	125	19 7	[−11]	—	—	—	—
Alicante		137·7	325	e 22 23	PP	e 34 41	?	e 61·8	—
Toledo		138·4	330	e 22 31	PP	e 34 50	?	e 41·8	82·0
Almeria		139·7	326	e 19 29	[+ 8]	—	—	58·9	78·4
Granada		140·2	327	i 19 24	[+ 3]	—	—	e 69·6	83·8
Malaga		141·0	327	e 19 42	[+19]	30 28	?	35·0	87·3
San Fernando		142·2	329	19 35	[+10]	35 15	?	67·3	91·8
Rio de Janeiro		148·8	155	e 20 10	[+30]	—	—	e 42·5	85·4
Dakar		164·6	308	e 32 24	?	e 38 41	?	43·3	98·4

Additional readings :—
Amboina i = +7m.56s.
Riverview iNZ = +6m.7s., SSE = +11m.44s., SSSE = +12m.6s., SSSSE = +12m.24s. ; T_o = 0h.49m.34s.
Adelaide i = +6m.31s., iPP = +7m.3s., iS = +11m.28s., i = +11m.36s., iSSS = +13m.1s.
Melbourne i = +7m.37s. = PP + 7s.
Apia +17m.17s. = S_cS − 16s., T_o = 0h.49m.17s.
Perth S = +14m.5s.
Koti e = +7m.51s., +8m.5s., eEN = +14m.32s.
Kobe ePE = +7m.57s., i = +8m.13s., PPN = +9m.5s., eSZ = +13m.41s., SS = +18m.1s.
Nagasaki ePP = +9m.54s.
Batavia iE = +10m.4s. = P_cP + 12s.
Christchurch iSS = +17m.40s.
Hong Kong +10m.41s., i = +17m.18s.
Agra ePN = +10m.50s.
Sitka SS = +31m.2s.
Victoria SN = +25m.9s.
Ekaterinburg iSKS = +23m.50s., iPS = +26m.4s.
Tananarive eE = +26m.41s. = PS − 3s., SKKSE = +27m.26s., E = +31m.50s. = SS − 12s., N = +31m.59s. = SS − 1s., SSS = +35m.20s.? SKS is given as PS.
Tucson eSSE = +32m.26s.
Baku PP = +18m.10s., PS = +27m.16s.
Pulkovo PP = +19m.0s., PS = +28m.31s., SS = +34m.44s.

Continued on next page.

Helsingfors ePP = +19m.22s., ePSE = +28m.48s., iPSN = +28m.54s., ePPSE = +30m.9s., SSEN = +35m.28s.
Ksara PPSN? = +34m.20s.?
Scoresby Sund +30m.50s., +36m.26s.
Upsala e = +36m.26s.
Florissant eZ = +18m.28s. = [P] − 8s. and +19m.48s. = PP + 5s., eE = +26m.59s. = SKKKS + 9s., iEZ = +29m.56s., eEZ = +35m.50s. = SS + 7s., eEN = +40m.50s.
Konigsberg eN = +29m.53s., eE = +36m.40s., eN = +36m.54s.
St. Louis eE = +26m.59s. = SKKS + 7s., +29m.49s., +35m.59s. = SS + 14s., and +40m.59s.
Chicago PPE = +20m.14s., SS = +36m.38s., SSSE = +40m.44s.
Bergen e = +36m.43s.
Lund PPP = +22m.56s., SS = +37m.20s.
Copenhagen PP = +20m.23s., PPP = +22m.50s., e = +30m.5s., +31m.38s., SS = +37m.29s.
Ann Arbor eE = +32m.8s., e?N = +32m.20s.
Potsdam eN = +20m.32s., +37m.2s. = SS + 13s., and +51m.2s., eEN = +42m.2s. and +49m.32s.
Vienna PP = +23m.10s., PPP = +26m.7s., iE = +37m.59s.
Hamburg iZ = +20m.37s. = PP + 14s.
Toronto iN = +20m.42s. = PP + 18s. and +33m.5s., eE = +30m.42s.
Jena eN = +32m.32s. and +42m.32s., eE = +32m.38s., and +42m.20s., eEN = +37m.50s.
Zagreb e = +20m.50s. = PP + 17s. and +30m.40s. = PP + 7s.
Ottawa e = +30m.8s., +33m.32s., and +37m.56s. = SS + 35s.
Feldberg iN = +20s.56s.
De Bilt ePP = +21m.0s., ePPP = +23m.41s., eZ = +32m.28s.
Charlottesville SSN = +36m.44s., SSE = +38m.20s.
Stuttgart ePKPZ = +19m.11s., iPPZ = +20m.55s., iPPEN = +20m.59s., iPKSEN = +22m.20s., iPPP = +23m.39s., eSEN? = +28m.0s., iPSEN = +30m.55s., ePPS = +32m.30s., e = +33m.29s., iPPP$_2$Z = +36m.8s. eSSEN = +37m.50s., eSSSEN = +42m.40s., eSSSS = +46m.50s.
Georgetown PKSZ = +22m.42s., SKKSZ = +32m.20s.
Strasbourg eP = +19m.44s., PP = +21m.4s., PPP = +23m.42s., PS = +31m.4s., PPS = +32m.37s.
Uccle e = +21m.9s., i = +32m.51s.
Fordham iPZ = +22m.52s.
Florence i = +21m.15s. and +24m.5s.
Rocca di Papa e = +18m.50s.
Kew iZ = +21m.17s., iEN = +22m.33s.
Oxford i = +22m.32s.
Harvard eE = +22m.37s., eN = +22m.21s., and +36m.20s.?, e = +34m.5s., iN = +39m.26s.
Paris e = +21m.22s. = PP + 14s., L = +38m.20s.? = SS − 2s.
Algiers PP = +22m.58s.
Almeria PP = +22m.23s.
Granada i = +19m.30s., PP = +22m.33s., PPP = +23m.34s., PPP′ = +26m.15s. PS = +31m.58s., i = +34m.58s., and +43m.5s.
Long waves were recorded at Innsbruck, Belgrade, Besançon, Bagnères, Lick, Cape Town, and Zi-kai-wei.

June 11d. 10h. 24m. 0s. Epicentre 8°·0N. 128°·5E. (as on 1929 Sept. 19d.). R.3.

A = −·616, B = +·775, C = +·139; D = +·783, E = +·623; G = −·087, H = +·109, K = −·990.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	9·9	312	i 2 12	− 7	i 4 14	+ 3	—	—
Hong Kong	19·9	318	4 20	− 9	—	—	9·2	10·5
Phu-Lien	24·7	303	5 0?	−17	—	—	13·0	—
Batavia	25·8	237	e 5 56	+29	i 10 45	+50	—	—
Vladivostok	35·2	4	e 7 3	+12	—	—	—	—
Irkutsk	48·5	340	e 8 40	0	e 15 43	+ 3	e 26·0	—
Ekaterinburg	71·3	329	i 11 20	+ 1	i 20 34	− 3	30·0	39·7
Baku	76·1	311	e 11 48	+ 1	e 21 31	− 2	37·0	43·2

Long waves were also recorded at a few European stations.

June 11d. 13h. 45m. 3s. Epicentre 23°·0N. 121°·7E, (as on 1928 Aug. 31d.). R.3.

A = −·484, B = +·783, C = +·391 ; D = +·851, E = +·526 ;
G = −·205, H = +·332, K = −·921.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	E.	1·9	359	e 0 27	− 1	0 36	−13	0·7	1·1
Hong Kong		7·0	266	1 38	− 1	i 3 8	+ 9	e 4·1	4·4
Zi-ka-wei	E.	8·2	358	e 2 39	+43	—	—	—	—
Manila		8·4	185	i 2 2	+ 3	i 4 28	+54	—	—
Phu-Lien		14·2	264	—	—	5 57?	+ 1	—	—
Vladivostok		21·8	21	e 5 1	+12	e 8 50	+ 8	14·0	—
Tashkent		47·2	308	e 14 30	S	(e 14 30)	−51	23·0	30·0
Ekaterinburg		55·2	326	9 27	− 3	e 17 6	− 6	25·0	—

Additional readings :—
Tashkent e = +17m.57s. ? and +23m.57s.?
Long waves were also recorded at Baku and several European stations.

June 11d. Readings also at 0h. (La Paz and Tyosi), 1h. (Tyosi, near Batavia, and Malabar), 2h. (near Merida), 4h. (Tyosi and near Mizusawa), 5h. (near Santiago), 6h. (near Manila), 8h. (Baku, Ekaterinburg, Irkutsk, Hong Kong, Manila, Adelaide, and Riverview), 10h. (Ootomari), 12h. (La Paz), 14h. (Lick), 16h. (Samarkand), 17h. (near Tacubaya), 18h. (Tyosi), 19h. (Neuchatel and near Tucson), 20h. (Florence, Stuttgart, Zagreb, near Andijan, and Samarkand), 21h. (Cheb), 22h. (near Batavia).

June 12d. 9h. 46m. 44s. Epicentre 42°·6N. 111°·0W. (as given by De Bilt). N.3.

A = −·264, B = −·687, C = +·677 ; D = −·934, E = +·358 ;
G = −·243, H = −·632, K = −·736.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Lick	E.	9·7	241	e 4 12	S	(e 4 12)	+ 6	e 5·8	—
Berkeley		9·8	245	e 5 3	S	(e 5 3)	+55	—	6·4
Tucson		10·3	179	3 13	+48	—	—	e 5·4	—
Victoria	E.	10·4	308	4 48	S	(4 48)	+25	5·6	5·9
Florissant		16·1	97	e 3 43	0	e 6 50	+ 9	—	8·2
St. Louis		16·2	97	e 3 40	− 4	e 6 47	+ 4	—	8·3
Chicago		17·3	85	e 3 58	0	—	—	e 8·5	—
Ann Arbor		20·1	82	—	—	e 8 28	SS	e 12·0	—
Toronto	E.	23·0	77	e 4 58	− 3	i 9 9	+ 4	11·6	13·9
Ottawa		25·3	72	e 5 16?	− 7	e 9 50	+ 4	12·8	—
Harvard		29·1	77	e 6 46	PP	e 10 39	−11	e 14·3	—

Additional readings :—
Lick eEN = +4m.55s., eE = +5m.7s., iSE = +5m.9s.
Berkeley eN = +5m.16s., eS = +5m.45s., eZ = +6m.0s., eS_s = +6m.3s.
Tucson ePE = +3m.18s., eE = +5m.13s.
Florissant eSE = +6m.53s.
St. Louis iSN = +6m.51s.
Ann Arbor eN = +8m.58s. and +9m.58s., iE = +10m.28s., iN = +10m.46s.
Harvard eN = +11m.54s.
Long waves were also recorded at Sitka, Charlottesville, Ivigtut, Scoresby Sund, De Bilt, Stuttgart, Baku, and Ekaterinburg.

June 12. Readings also at 1h. (Almata, near Andijan, Samarkand, and near Hukuoka), 3h. (near La Paz, Sucre, and near Tacubaya), 6h. (Taihoku), 9h. (Tucson, Florissant, St. Louis, Ottawa, and Harvard), 10h. (Tucson, St. Louis (2), Florissant (2), Chicago, Ottawa, and Harvard), 13h. (Andijan, near Kobe, and Sumoto), 14h. (Apia), 15h. (Riverview), 19h. (Tacubaya), 20h. (near Manila), 21h. (2) and 22h. (Denver).

June 13d. 0h. 53m. 56s. Epicentre 50°·5N. 170°·2W. N.1.

Probable error of epicentre ±0°·3.

A = −·627, B = −·108, C = +·772; D = −·170, E = +·985; G = −·760, H = −·131, K = −·636.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		21·3	59	—	—	e 8 47	+15	13·3	—
Victoria		30·1	76	6 41	PP	11 13	+ 7	—	24·2
Honolulu T.H.		30·8	156	—	—	e 11 46	+29	e 14·8	—
Mizusawa		35·6	271	6 36	−18	7 10	?	—	—
Berkeley	N.	35·9	92	—	—	e 15 56	?	e 17·8	—
Lick	E.	36·6	92	—	—	e 17 52	(+30)	e 19·8	—
Vladivostok		39·2	284	7 21	− 4	13 20	− 4	20·7	23·3
Osaka		41·9	271	7 54	+ 6	(14 16)	+11	14·3	15·0
Kobe		42·1	271	7 50	+ 1	e 14 11	+ 2	—	—
Tucson		46·7	89	8 41	+15	e 15 30	+16	21·5	—
Irkutsk		50·1	309	8 51	− 1	16 11	+ 9	26·1	34·9
Chicago		54·9	65	—	—	i 17 12	+ 4	e 27·4	—
Florissant		55·2	70	e 9 35	+ 5	i 17 16	+ 4	e 31·1	—
St. Louis		55·4	70	e 9 31	− 1	i 17 14	− 1	—	—
Ann Arbor		56·8	62	e 10 4	+20	e 21 28	SS	e 28·3	—
Scoresby Sund		56·9	12	9 40	− 2	17 34	− 1	30·1	—
Toronto		58·3	59	e 9 52	0	i 17 54	+ 1	28·8	32·1
Ottawa		59·1	55	e 9 57	− 1	e 18 2	− 2	e 29·1	33·1
Charlottesville		62·6	62	—	—	e 18 48	− 2	30·8	—
Georgetown	Z.	62·8	61	i 10 15	− 9	e 18 40	−12	e 31·1	40·1
Fordham		63·1	58	e 11 29	(+24)	i 19 0	+ 4	30·6	—
Harvard		63·5	55	e 10 15	−14	e 18 39	−22	e 32·6	—
Hong Kong		64·0	275	e 10 33	+ 1	19 10	+ 3	32·1	41·6
Ekaterinburg		64·8	333	i 10 35	− 2	19 16	− 1	30·1	43·1
Manila		65·4	265	i 10 45	+ 4	i 19 30	+ 5	—	—
Pulkovo		68·5	350	10 57	− 4	e 19 59	− 4	36·1	42·1
Helsingfors		68·7	352	e 11 7	+ 4	20 17	+12	e 36·1	—
Almata		69·5	315	e 10 17	−51	—	—	—	—
Upsala	N.	69·5	356	e 11 3	− 5	e 20 5	−10	e 28·1	44·0
Phu-Lien		69·9	280	—	—	20 4?	−16	—	—
Kucino		71·2	345	10 58	−20	20 24	−11	32·7	46·2
Edinburgh		73·1	7	—	—	e 21 34	PS	45·1	—
Andijan		73·6	316	e 11 31	− 1	—	—	—	—
Copenhagen		73·7	358	11 31	− 2	21 4	− 1	36·1	—
Lund		73·8	358	—	—	21 10	+ 4	42·1	—
Tashkent		74·6	320	i 11 36	− 2	21 11	− 4	e 36·1	45·9
Stonyhurst		75·1	7	—	—	e 21 4?	−17	37·1	—
Bidston		75·5	7	—	—	e 21 24	− 2	e 40·1	—
Samarkand		76·9	320	e 11 53	+ 2	—	—	—	—
Oxford	E.	77·4	7	—	—	i 21 39	− 8	—	58·6
	N.	77·4	7	—	—	i 21 52	+ 5	e 41·1	51·7
De Bilt		77·4	2	i 11 53	− 1	21 47	0	e 39·1	50·7
Kew		77·7	6	e 11 54	− 2	e 21 55	+ 4	42·1	52·7
Uccle		78·6	3	i 11 58	− 2	22 3	+ 3	e 31·1	—
Feldberg	N.	79·3	1	e 11 56	− 8	e 22 6	− 2	31·2	53·6
Cheb		79·4	358	e 22 6	S	(e 22 6)	− 3	e 47·1	54·1
Paris		80·5	5	e 12 10	0	—	—	37·1	55·1
Stuttgart		80·7	0	i 12 11	− 1	i 22 27	+ 4	e 49·1	—
Strasbourg		80·9	1	i 12 12	− 1	e 22 23	− 2	e 32·1	—
Budapest		81·7	354	11 36	−41	e 22 4?	−30	—	52·1
Theodosia		81·9	343	12 19	+ 1	22 35	− 1	—	—
Simferopol		82·2	343	12 20	+ 1	—	—	—	—
Zurich		82·2	1	e 12 20	+ 1	e 22 37	− 2	—	—
Neuchatel		82·5	2	e 12 4	−17	—	—	—	—
Sebastopol		82·6	343	12 23	+ 2	—	—	—	—
Chur		82·6	0	e 12 22	+ 1	e 22 39	− 4	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta		82·7	343	12 24	+ 2	—	—	—	—
Zagreb		83·5	355	e 12 28	+ 2	e 22 41	−11	—	—
Treviso		83·8	358	12 29	+ 2	23 4	+ 9	51·1	—
Piacenza		84·5	0	12 34	+ 3	22 52	[− 3]	—	57·1
Florence		85·7	359	i 12 36	− 1	i 22 57	[− 7]	—	54·1
Rome		87·6	358	12 47	+ 1	—	—	—	—
Rocca di Papa		87·8	358	e 12 45	− 2	e 23 11	[− 8]	e 53·3	59·4
Tortosa	N.	88·3	7	—	—	e 23 46	+ 6	e 53·1	59·1
Toledo		88·8	10	—	—	e 25 3	PS	e 38·0	59·7
Hyderabad		89·4	298	23 37	S	(23 37)	[+ 8]	—	60·9
Bombay		91·3	303	—	—	e 23 42	[+ 2]	—	57·4
Granada		91·6	10	i 13 4	− 1	e 24 6	− 5	e 46·6	52·3
Malaga		91·8	11	e 13 11	+ 5	e 23 39	[− 4]	31·2	—
Catania		91·8	355	e 13 8	+ 2	—	—	e 63·1	—
San Fernando		91·9	13	12 59	− 7	23 44	[0]	—	62·1
Almeria		92·0	10	—	—	e 23 42	[− 2]	47·5	60·7
Ksara	N.	92·6	340	e 13 36	+27	—	—	63·1	—
La Paz		110·3	93	e 16 8	?	—	—	60·9	—

Additional readings :—
Osaka S = +11m.5s.
Kobe iE = +8m.6s.
Tucson ePN = +8m.46s., PP = +10m.38s., eE = +15m.22s.
Chicago eN = +22m.10s.
Scoresby Sund +12m.58s. and +21m.22s. =SS +3s., SKS? = +19m.33s. = S_cS +3s.
Harvard eE = +25m.34s. ; T_o = 0h.53m.49s.
Manila iE = +20m.43s. = S_cS +12s.
Helsingfors S_cSN = +21m.10s.
Feldberg iN = +12m.3s., eN = +22m.32s.
Cheb eS? = +33m.34s.
Stuttgart iZ = +12m.36s., eN = +31m.44s.
Rocca di Papa e? = +12m.36s., i = +23m.32s. =S −3s.
San Fernando SN = +23m.24s.
Almeria PP = +16m.13s.
Long waves were recorded at Ivigtut, Apia, Wellington, and other European stations.

June 13d. Readings also at 0h. (near Sumoto and near Taihoku), 10h. (Manila), 12h. (Ekaterinburg and near Ksara), 17h. (near Tacubaya), 19h. (near Santiago), 20h. (De Bilt, La Paz, La Plata, Apia, Riverview, and near Tacubaya), 21h. (Baku, Ekaterinburg, and Kew).

June 14d. Readings at 3h. (Phu-Lien), 4h. (Ekaterinburg and Tashkent), 5h. (near Malabar), 7h. (Wellington), 8h. (Taihoku), 9h. (Andijan, Hukuoka, and near Nagasaki), 10h. (Honolulu T.H.), 12h. (near Sumoto), 13h. (near Manila), 14h. (Rocca di Papa and Strasbourg), 15h. (Ekaterinburg, Tashkent, Stuttgart, and Granada), 17h. (Wellington), 18h. (near Granada and Malaga), 19h. (Almeria and near Ksara).

June 15d. 7h. 33m. 3s. Epicentre 13°·0S. 162°·8W. N.3.

A = −·931, B = −·288, C = −·225 ; D = −·296, E = +·955 ; G = +·215, H = +·067, K = −·974.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		8·8	263	2 5	0	3 44	0	—	6·4
Riverview		46·6	235	e 8 27	+ 2	—	—	e 19·3	24·6
Sydney		46·6	235	2 45	?	—	—	22·0	25·0
Melbourne		52·5	233	—	—	e 16 32	− 3	22·6	27·4
Adelaide		57·0	237	—	—	e 17 39	+ 3	e 24·6	27·4
Vladivostok		81·7	320	—	—	e 25 3	?	40·8	—
St. Louis	E.	85·0	48	—	—	e 33 43	?	e 46·7	—
Irkutsk		102·0	322	e 15 57?	?	e 26 57?	PS	e 46·0	—
Scoresby Sund		117·6	13	—	—	39 45	?	62·9	—
Ekaterinburg		125·1	333	e 22 50	PPP	—	—	56·9	70·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo		132·2	350	e 23 57	PPP	—	—	67·9	76·7
De Bilt	Z.	139·7	10	e 22 17	PP	—	—	e 82·9	—
Uccle		140·8	13	e 22 15	PP	—	—	—	—
Paris		142·2	16	e 21 57?	PP	—	—	80·9	—
Stuttgart		143·6	10	e 22 21	PP	—	—	e 90·9	—
Strasbourg		143·6	11	22 23	PP	—	—	e 68·9	—
Zagreb		147·2	2	e 21 57?	?	—	—	—	—
Florence		148·8	7	e 22 41	PP	—	—	—	—

Additional readings :—
Irkutsk e = +18m.57s.?
Long waves were also recorded at some European and American stations, Wellington, and Honolulu T.H.

June 15d. 21h. 8m. 11s. Epicentre 44°·0S. 118°·0W. N.2.

A = −·338, B = −·635, C = −·695; D = −·883, E = +·469; G = +·326, H = +·613, K = −·719.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata		46·3	100	—	—	(17 49?)	(−32)	17·8	—
Wellington		48·1	250	—	—	e 15 36	+ 2	22·6	—
La Paz		50·1	72	e 8 53	+ 1	e 16 3	+ 1	23·5	28·6
Sucre		50·4	77	8 47	− 7	—	—	—	—
Rio de Janeiro		63·7	96	i 18 20	S	(i 18 20)	−44	e 25·1	—
Riverview		67·8	245	e 9 1	−116	e 20 19	+25	e 31·2	34·1
Sydney		67·8	245	e 19 49	S	(e 19 49)	− 5	34·1	36·3
Melbourne		69·1	237	—	—	e 19 56	−14	31·6	38·0
Adelaide		74·8	236	—	—	e 21 7?	−11	31·6?	37·3
St. Louis	E.	86·3	21	e 13 35	+55	e 23 50	PS	e 29·7	49·6
Florissant		86·5	21	e 12 49	+ 8	i 23 59	PS	41·8	47·3
Chicago		90·0	22	—	—	e 24 19	+23	e 48·9	—
Victoria	N.	92·5	356	—	—	24 18	− 1	46·5	46·5
Ottawa		96·9	28	—	—	e 25 25	+26	e 41·8	—
Sitka	E.	102·1	350	—	—	e 28 1	?	50·3	—
Manila		122·2	259	20 26	PP	—	—	—	—
Vladivostok		130·9	295	e 23 41	PPP	—	—	72·4	—
Granada		131·1	74	e 21 5	PP	i 23 28	?	e 49·8	71·1
Almeria		131·8	74	e 21 57	PP	—	—	e 68·1	73·6
Scoresby Sund		132·8	26	22 49?	PKS	—	—	63·8	—
Edinburgh		138·1	49	—	—	e 40 19	SS	e 68·8	—
Kew		138·8	55	e 22 13	PP	—	—	66·8	69·7
Paris		139·8	60	e 17 49?	?	—	—	67·8	75·8
Uccle		141·4	57	e 22 49?	PP	——	—	e 62·8	—
De Bilt		142·2	55	e 19 55	[+30]	e 41 17	SS	e 69·8	74·6
Strasbourg		143·0	62	e 18 49?	[−39]	—	—	46·8	—
Piacenza		143·4	70	e 19 49	[+20]	—	—	—	76·8
Stuttgart		144·0	60	e 19 26	[− 5]	e 41 24	SS	e 72·8	78·8
Florence		144·1	72	e 19 38	[+ 7]	31 19	?	—	76·8
Rocca di Papa		144·4	75	17 12	?	—	—	e 77·9	79·9
Treviso		145·2	68	19 30	[− 4]	—	—	—	—
Hamburg		145·3	53	e 19 31	[− 4]	—	—	e 71·8	77·8
Cheb		146·3	60	e 27 49?	?	—	—	e 71·8	76·8
Copenhagen		146·8	49	19 31	[− 6]	42 19	SS	63·8	—
Zagreb		147·8	70	e 19 37	[− 2]	—	—	—	—
Irkutsk		151·0	302	e 19 52	[+ 9]	—	—	73·8	85·7
Pulkovo		155·3	39	e 19 55	[+ 7]	e 43 49	SS	75·8	90·7
Kucino		160·7	44	e 24 37	PP	e 35 5	SKSP	e 70·2	87·8
Ekaterinburg		167·2	3	—	—	e 32 3	{+ 7}	66·8	93·2
Tashkent		174·0	245	20 4	[− 2]	e 32 1	{−32}	e 72·8	101·7

For Notes see next page.

NOTES TO JUNE 15d. 21h. 8m. 11s.

Additional readings :—
La Paz iPE = +8m.59s., PPE = +11m.29s., iSE = +16m.8s.
Sydney iS = +24m.55s.
Melbourne e = +24m.37s. =SS +8s.
Florissant eZ = +16m.59s.
Chicago eE = +42m.53s.
Ottawa e = +32m.13s.
Sitka eE = +34m.25s.
De Bilt eZ = +22m.37s. =PP +2s.
Strasbourg e = +22m.49s.? =PP +9s.
Treviso SS = +33m.34s.
Irkutsk e = +22m.8s. and +44m.4s.
Kucino e = +37m.15s., +45m.5s., and +50m.7s.
Ekaterinburg e = +29m.40s., +32m.42s., +46m.32s., +47m.32s., +53m.18s., and +56m.18s.
Tashkent i = +25m.3s.
Long waves were also recorded at several European stations, Charlottesville, Tucson, Ivigtut, Bombay, Honolulu T.H., Perth, and Tananarive.

June 15d. Readings also at 4h. (Ekaterinburg, Kucino, and Tashkent (2)), 5h. (near Batavia and Malabar), 6h. (Ekaterinburg, Irkutsk, Tashkent, Pulkovo, Samarkand, near Almata, and Andijan (2)), 7h. (near Sumoto), 8h. (Andijan and Samarkand), 11h. (Adelaide, Melbourne, Riverview, and Tyosi), 14h. (near La Paz), 17h. (Andijan and Samarkand), 19h. (Toledo), 22h. (La Paz (2) and Ksara), 23h. (Wellington).

June 16d. 17h. 58m. 36s. Epicentre 39°·8N. 13°·3E. N.2.

A = +·748, B = +·177, C = +·640 ; D = +·230, E = −·973 ; G = +·623, H = +·147, K = −·768.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Casamicciola		1·1	25	0 14	− 2	0 24	− 4	—	0·9
Naples	E.	1·3	35	e 0 19	+ 1	e 0 31	− 2	—	—
Benevento		1·5	30	i 0 20	− 1	—	—	—	0·4
Rocca di Papa		2·0	347	e 0 23	− 6	0 32	−19	0·8	1·4
Rome		2·2	344	0 31	0	0 51	− 6	—	1·5
Trenta		2·4	102	e 0 54	+20	1 44	+42	—	—
Padova		5·7	349	e 1 33	+12	e 2 58	+33	—	—
Treviso		5·9	352	1 24	0	2 54	+23	—	—
Zagreb		6·3	17	e 1 9	−21	—	—	—	2·6
Innsbruck		7·6	350	2 24?	+36	—	—	—	—
Vienna		8·7	14	—	—	e 3 17	−24	—	—
Stuttgart		9·4	343	—	—	e 3 54	− 5	—	—

Additional readings :—
Rocca di Papa i = +26s.
Zagreb e = +1m.16s., eNE = +1m.45s., eNW = +1m.52s., iNE = +2m.2s., iNW = +2m.8s.
Long waves were also recorded at De Bilt and Strasbourg.

June 16d. Readings also at 6h. (La Paz), 8h. (La Paz and near Medan), 9h. (Manila), 10h. (La Paz), 13h. (Colombo and Ekaterinburg), 14h. (Graz), 16h. (Andijan (2) and Samarkand (2)), 19h. (Naples), 20h. (Stuttgart), 21h. (Apia and near Lick), 23h. (near Malabar).

June 17d. 2h. 59m. 2s. Epicentre 37°·0N. 141°·0E. (as on 1927 Dec. 7d.). R.3.

A = −·621, B = +·503, C = +·602.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·3	185	e 0 17	− 1	(0 28)	− 5	0·5	—
Mizusawa	2·1	2	0 28	− 2	0 54	0	—	—
Nagoya	3·8	242	1 6	+12	2 0	+23	—	2·3
Osaka	5·1	245	1 32	+19	—	—	2·7	3·5
Kobe	5·3	246	e 2 14	?S	(e 2 14)	− 1	—	—
Sumoto	5·6	244	e 2 24	?S	(e 2 24)	+ 1	(e 3·1)	3·4

Additional reading and note :—
Mizusawa SN = +59s.
Sumoto gives S as P and L as S.
Long waves were also recorded at Irkutsk and Ekaterinburg.

June 17d. 17h. 2m. 48s. Epicentre 2°·0N. 126°·0E. (as on 1930 March 15d.). X.

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

	Δ	Az.	P.	O − C.	S.	O − C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Manila	13·5	339	i 3 18	+ 9	—	—	—
Batavia	20·8	247	4 37	− 1	8 17	− 5	—
Tashkent	64·2	317	—	—	e 19 12	+ 2	e 35·2
Ekaterinburg	75·1	329	i 11 28	−13	e 21 6	−15	33·2

Additional readings :—
Manila iEZ = +3m.38s.
Ekaterinburg e = +22m.54s.
Long waves were also recorded at Hong Kong.

June 17d. 20h. 7m. 22s. Epicentre 42°·5N. 103°·0E. (given by the Russian stations). N.2.

A = − ·166, B = + ·718, C = + ·676 ; D = + ·974, E = + ·225 ;
G = − ·152, H = + ·658, K = − ·737.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	9·8	4	e 2 11	− 7	4 5	− 3	i 4·6	—
Almata	19·0	281	e 4 33	+14	—	—	—	—
Phu-Lien	21·9	171	—	—	8 38?	− 6	—	—
Andijan	22·8	276	e 5 3	+ 4	—	—	—	—
Tashkent	25·0	279	i 5 22	+ 2	i 9 44	+ 3	12·9	13·9
Samarkand	27·1	276	e 5 40	+ 1	—	—	—	—
Ekaterinburg	30·3	313	i 6 5	− 3	11 8	− 1	i 16·4	—
Pulkovo	46·0	318	8 18	− 3	e 15 9	+ 5	21·6	31·8
Helsingfors	48·5	319	e 8 18	−22	e 15 12	−28	—	—
La Paz	152·9	341	19 55	[+ 9]	—	—	—	—

Long waves were also recorded at Bombay, Manila, Hong Kong, Scoresby Sund, and other European stations.

June 17d. Readings also at 10h. (Andijan and Samarkand), 14h. (Apia), 17h. (Andijan and near Samarkand), 20h. (near La Paz and Sucre), 23h. (near Manila).

June 18d. 12h. 12m. 2s. Epicentre 37°·3N. 141°·7E. (as on 1929 May 7d.). R.3.

A = − ·624, B = + ·493, C = + ·606.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	1·7	204	e 0 20	− 4	(e 0 35)	− 9	e 0·6	—
Mizusawa	1·9	346	0 29	+ 1	0 52	+ 3	—	—
Nagoya	4·4	242	1 4	+ 1	2 1	+ 8	—	2·5
Osaka	5·6	243	1 25	+ 5	(2 36)	+13	2·6	3·3
Kobe	5·9	245	e 2 45	?S	(e 2 45)	+14	—	—
Sumoto	6·3	243	e 3 23	S	(e 3 23)	+42	(e 4·3)	4·4
Irkutsk	30·0	312	—	—	(9 58?)	?	10·0	—
Ekaterinburg	54·9	319	9 25	− 3	—	—	28·0	—

Additional readings and note :—
Tyosi ePEN = +23s.
Sumoto gives S as P and L as S.

June 18d. 15h. 49m. 40s. Epicentre 43°·6N. 128°·0W. N.3.

A = −·446, B = −·571, C = +·690; D = −·788, E = +·616;
G = −·427, H = −·543, K = −·724.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria		5·8	34	2 19	S	(2 19)	− 9	3·7	4·3
Lick	N.	7·9	140	e 1 49	− 3	e 1 54	PP	—	—
Tucson		17·6	125	4 4	+ 2	—	—	—	—
Florissant		28·5	86	—	—	e 10 40	0	e 15·8	—
St. Louis	E.	28·6	87	—	—	e 11 2	+20	—	—
Toronto	N.	34·7	73	—	—	e 10 55	?	e 18·2	—
Ottawa		36·7	68	—	—	e 12 56	+ 9	e 21·8	—
Ekaterinburg		79·4	355	12 5	0	e 22 6	− 3	32·3	—

Additional readings:—
Lick eN = +2m.13s. and +2m.40s.
Ottawa e = +18m.20s.
Long waves were also recorded at Irkutsk, Honolulu T.H., Ann Arbor, Chicago, and several European stations.

June 18d. 20h. 45m. 42s. Epicentre 31°·0N. 131°·8E. N.3.

A = −·571, B = +·639, C = +·515; D = +·745, E = +·667;
G = −·343, H = +·384, K = −·857.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		2·4	316	e 0 37	+ 3	1 7	+ 5	—	—
Hukuoka		2·8	334	e 0 36	− 4	1 9	− 3	—	1·3
Matuyama		2·9	16	e 0 38	− 3	(1 8)	− 6	1·1	1·2
Koti		3·0	30	e 0 44	+ 1	—	—	—	1·3
Sumoto		4·2	37	(1 37)	+37	(2 6)	+18	—	(2·3)
Kobe		4·6	37	2 1	S	(2 1)	+ 3	(e 2·3)	2·4
Osaka		4·9	39	1 7	− 3	(2 0)	− 5	2·0	2·7
Toyooka	N.	5·2	28	e 1 36	+22	—	—	—	—

Additional readings and notes:—
Koti ePN = +46s., e = +49s., i = +1m.11s., iN = +1m.15s.
Sumoto readings have been *increased* by 2m.
Kobe gives S as P and L as S.
Toyooka ePE = +1m.38s.

June 18d. 20h. 56m. 32s. Epicentre 8°·0N. 128°·5E. (as on 11d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	9·9	312	i 2 32	+13	i 5 7	+56	i 6·4	—
Andijan	59·4	314	e 9 55	− 5	—	—	—	—
Tashkent	61·8	315	—	—	e 18 34	− 5	e 32·5	36·3
Samarkand	63·1	312	e 10 22	− 4	—	—	—	—
Ekaterinburg	71·3	329	i 11 18	− 1	i 20 34	− 3	32·5	—
Pulkovo	87·2	330	i 12 46	+ 2	i 23 20	− 9	—	—

Additional readings:
Tashkent e = +21m.16s.
Pulkovo e = +17m.0s. and +23m.4s. = SKS −11s.

June 18d. Readings also at 1h. (La Paz), 6h. (Ekaterinburg and Irkutsk), 9h. (La Paz), 10h. (Tyosi), 11h. (De Bilt, Feldberg, Ekaterinburg, Tashkent, Irkutsk, Tyosi, and near Mizusawa), 12h. (Vladivostok), 13h. (near Manila (2)), 14h. (near La Paz), 17h. (near La Paz and near Mizusawa), 19h. (Ekaterinburg, Irkutsk, and Tashkent), 22h. (Andijan and Samarkand).

June 19d. 13h. 7m. 27s. Epicentre 5°·6S. 105°·3E. N.2.

A = −·263, B = +·960, C = −·098; D = +·965, E = +·264; G = +·026, H = −·094, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		1·6	111	i 0 42	+19	i 0 58	+17	—	—
Malabar		2·8	125	i 0 36	− 4	1 15	+ 3	—	—
Medan		11·3	325	(i 2 0)	−39	(i 4 43)	− 2	(i 6·1)	—
Manila		25·5	37	5 26	+ 1	i 9 52	+ 2	—	—
Phu-Lien		26·4	3	e 5 39	+ 6	—	—	13·5	15·8
Perth		28·1	161	10 33?	S	(10 33?)	− 1	—	—
Colombo		28·3	296	e 5 53	+ 3	(i 10 43)	+ 6	—	—
Hong Kong		29·3	17	6 0	+ 1	11 6	+13	12·7	17·9
Kodaikanal		32·0	300	e 13 15	SS	—	—	—	—
Calcutta	E.	32·7	330	14 21	?	22 53	?	—	—
	N.	32·7	330	14 24	?	23 3	?	—	—
Taihoku	Z.	34·5	27	—	—	e 13 17	+63	—	—
Hyderabad		35·2	313	—	—	20 30	?	34·5	40·5
Zi-ka-wei	Z.	39·9	22	e 7 30	− 1	17 24	(−17)	23·8	28·1
Bombay		40·3	309	9 16	PP	17 31	(−12)	30·8	44·1
Agra	N.	42·1	324	e 9 14	PP	e 16 26	SS	—	30·5
Adelaide		42·4	138	e 10 28	(+38)	e 17 14	SS	i 21·9	25·1
Dehra Dun		44·5	326	15 3	S	(15 3)	+20	(24·1)	—
Melbourne		48·3	138	—	—	15 13	−24	24·2	27·2
Kobe		49·1	33	e 8 49	+ 5	—	—	—	—
Riverview		50·9	130	e 8 58	0	—	—	e 26·9	29·7
Sydney		50·9	130	—	—	i 15 15	−58	27·4	35·5
Andijan		55·7	330	e 10 5	+31	—	—	—	—
Samarkand		57·4	326	e 9 44	− 2	—	—	—	—
Irkutsk		57·9	359	e 9 46	− 4	17 49	+ 1	27·5	34·8
Ekaterinburg		72·2	336	i 11 17	− 7	20 38	− 9	33·6	44·8
Ksara	N.	76·4	308	11 34	−14	21 32	− 4	43·5	48·5
Helwan		79·1	302	e 12 1	− 2	e 21 55	−11	—	64·9
Theodosia		80·1	319	e 12 9	+ 1	—	—	—	—
Yalta		80·8	318	e 12 8	− 4	—	—	—	—
Sebastopol		81·2	318	e 12 12	− 2	—	—	—	—
Pulkovo		87·4	331	12 41	− 4	23 29	− 2	—	—
Budapest		91·6	319	—	—	e 22 33?	?	—	—
Zagreb		93·5	316	—	—	e 23 44	[− 9]	—	—
Catania		93·5	308	e 23 9	SKS	(e 23 9)	[−44]	—	—
Rocca di Papa		95·7	312	22 56	SKS	(22 56)	[−68]	e 58·4	96·4
Copenhagen		96·3	325	—	—	24 3	[− 5]	52·5	—
Florence		96·8	314	e 13 21	− 8	e 25 33	+35	—	72·5
Piacenza		97·9	315	24 5	SKS	(24 5)	[−11]	—	83·4
Stuttgart		98·3	320	—	—	e 24 7	[−10]	e 54·5	—
Strasbourg		99·2	319	—	—	e 21 33?	PPPP	53·6	—
De Bilt		100·7	322	—	—	e 24 44	[+15]	e 54·5	83·7
Uccle		101·3	321	—	—	e 21 33?	PPPP	e 47·5	—
Paris		102·6	319	—	—	e 26 33?	PS	59·5	84·5
Scoresby Sund		107·1	345	—	—	24 57	[− 3]	52·5	—
Florissant	Z.	143·9	20	e 19 27	[− 4]	45 4	SS	e 83·1	—
La Paz		157·0	196	e 20 0	[+10]	—	—	79·5	90·9

Additional readings and notes:—
Batavia i = +38s.
Medan i = (+2m.34s.) = P − 5s.; all readings have been *increased* by 1m.
Manila PE = +5m.29s.
Colombo S = +15m.3s., true S is given as iP.
Pulkovo SKS = +23m.5s.
Florissant eZ = +18m.49s.
Long waves were also recorded at Ivigtut, St. Louis, Wellington, Dakar, and several European stations.

June 19d. 13h. 27m. 18s. Epicentre 5°·6S. 105°·3E. (as at 13h. 7m.). X.

A = − ·263, B = + ·960, C = − ·098 ; D = + ·965, E = + ·264 ;
G = + ·026, H = − ·094, K = − ·995.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia	1·6	111	i 0 37	+14	i 1 3	+22	—	—
Malabar	2·8	125	i 0 38	− 2	i 1 26	+14	—	—
Medan	11·3	325	0 52	?	i 4 45	0	i 5·6	—
Manila	25·5	37	i 5 27	+ 2	i 10 15	+25	i 13·4	—
Adelaide	42·4	138	—	—	i 17 42	(−14)	i 21·4	22·4
Irkutsk	57·9	359	e 9 43	− 7	—	—	27·7	36·0
Ekaterinburg	72·2	336	11 21	− 3	—	—	31·7	44·8
Pulkovo	87·4	331	12 38	− 7	23 12	[− 4]	32·7	54·4
Zagreb	93·5	316	—	—	e 23 43	[−10]	—	—
Ottawa	140·7	1	—	—	e 21 42?	PP	75·7	—
Florissant	143·9	20	e 25 13	?	—	—	—	—
La Paz	157·0	196	e 16 30	?	—	—	—	—

Additional readings :—
Malabar e = +35s.
Manila iP? = +5m.35s.
Long waves were also recorded at San Fernando, Vienna, Kodaikanal, Calcutta, Dehra Dun, Hong Kong, Zi-ka-wei, Phu-Lien, Colombo, Kobe, Scoresby Sund, Melbourne, and Riverview.

June 19d. Readings also at 1h. (Dehra Dun), 3h. (near Manila), 5h. (La Paz), 6h. (Ksara, Ekaterinburg, and Samarkand), 11h. (Ksara, Sebastopol (2), Theodosia (2), and Yalta (2)), 13h. (near Batavia), 15h. (Chicago), 16h. (Andijan, Samarkand, and near Batavia), 17h. (Batavia (2)), 18h. (De Bilt, Ekaterinburg, Pulkovo, Tashkent, and Scoresby Sund), 19h. (Andijan, near Samarkand, and near Manila), 20h. (Batavia), 22h. (Batavia, Florissant, near Chihuahua, and near Tucson), 23h. (near La Paz).

June 20d. Readings at 6h. (Tyosi and near Batavia), 7h. (Samarkand, Andijan, and near Batavia), 8h. (near Batavia), 9h. (La Paz), 10h. (La Paz, Irkutsk, Vladivostok (2), Hong Kong, Phu-Lien (2), and near Taihoku (3)), 11h. (Irkutsk and Tashkent), 13h. (near La Paz and near Taihoku), 14h. (Hong Kong, Manila, and Phu-Lien), 17h. (La Paz and Taihoku), 21h. (2) and 22h. (Taihoku), 23h. (Pulkovo and near Ksara).

June 21d. 9h. 47m. 29s. Epicentre 31°·0N. 131°·8E. (as on 18d.). R.3.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki	2·4	316	0 32	− 2	1 2	0	—	1·2
Hukuoka	2·8	334	e 0 34	− 6	i 1 5	− 7	—	1·2
Matuyama	2·9	16	e 0 28	−13	i 0 50	−24	i 1·1	1·2
Koti	3·0	30	e 0 38	− 5	e 1 3	−14	—	1·2
Sumoto	4·2	37	e 0 50	−10	1 54	+ 6	—	1·9
Kobe	4·6	37	e 1 22	+16	—	—	i 2·2	—
Osaka	4·9	39	1 14	+ 4	(2 10)	+ 5	2·2	3·1
Toyooka	5·2	28	i 1 30	+16	i 2 12	− 1	—	2·4
Nagoya	6·0	44	e 1 26	+ 1	2 14	−19	—	—
Manila	19·2	214	e 8 25	S	(e 8 25)	+35	(1 9·7)	—

Additional readings and note :—
Hukuoka P_g = +38s.
Koti e = +45s.
Manila gives S as P and L as S_1

June 21d. Readings also at 1h. (near Apia), 5h. (La Paz, Sucre, and near Lick), 6h. (Nagoya, Sebastopol, Simferopol, Theodosia, and near Yalta), 7h. (Harvard, Ottawa, and near Victoria), 9h. (Neuchatel), 12h. (Manila and Paris), 13h. (Nagoya and near Tyosi), 14h. (near Sumoto), 15h. (near La Paz and Sucre), 17h. (La Paz), 18h. (Andijan and Reykjavik), 20h. (Adelaide, Melbourne, Riverview, and Wellington), 21h. (De Bilt, Paris, Uccle, Kew, Granada, San Fernando, and Andijan), 22h. (Copenhagen and Apia).

June 22d. 18h. 24m. 40s. Epicentre 45°·5S. 80°·5W. N.3.

A = +·116, B = −·691, C = −·713; D = −·986, E = −·165; G = −·118, H = +·703, K = −·701.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata		20·1	66	4 30	− 1	8 11	+ 3	9·7	—
Sucre		29·3	30	5 57	− 2	—	—	—	—
La Paz		30·8	24	6 12	0	e 11 17	0	14·9	18·6
Rio de Janeiro	N.	37·7	66	e 7 11	− 1	e 13 0	− 2	e 18·0	—
Florissant		84·8	352	e 12 25	− 7	e 22 10	−56	e 34·3	—
Ottawa		91·0	4	—	—	e 23 20	[−19]	49·3	—
Paris		118·7	48	e 19 20?	PP	—	—	e 59·3	—
Strasbourg		121·3	50	—	—	(e 28 20?)	?	e 28·3	—
De Bilt		122·0	45	(e 20 21)	PP	—	—	e 60·3	65·3
Feldberg	N.	122·7	46	—	—	e 30 26	PS	e 52·9	82·5
Copenhagen		127·5	43	32 38	?	37 56	SS	53·3	—
Pulkovo		137·8	43	e 22 47	PKS	—	—	61·3	79·2
Baku		144·0	80	—	—	e 41 41	SS	58·3	81·8
Ekaterinburg		153·6	50	e 20 5	[+18]	e 43 18	SS	60·3	80·7
Tashkent		157·8	90	e 19 21	[−30]	e 43 56	SS	e 69·3	85·2
Irkutsk		172·6	337	e 19 20?	[−45]	e 46 20?	SS	e 73·3	—

Additional readings:—
Rio de Janeiro eSE = +12m.56s.
Ottawa eN = +29m.56s. =SS +1s.
Feldberg eN = +37m.30s. and +43m.8s.
Pulkovo e = +25m.5s. and +33m.27s.
Ekaterinburg e = +49m.27s.
Tashkent e = +24m.37s.
Long waves were also recorded at Scoresby Sund and other European stations.

June 22nd. Readings also at 1h. (Taihoku), 2h. (Irkutsk, Kucino, Scoresby Sund, Harvard, Ottawa, Florissant, La Paz, near Tacubaya, and Vera Cruz), 3h. (La Paz), 5h. (Tucson), 7h. (La Paz), 8h. (Tyosi), 10h. (Apia and Messina), 12h. (Andijan), 15h. (Ksara), 17h. (La Paz), 20h. (La Paz and Sucre).

June 23d. 6h. 14m. 10s. Epicentre 35°·5N. 140°·0E. (as on 1930 March 1d.). X.

A = −·624, B = +·523, C = +·581.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·3	312	0 3	− 1	0 11	+ 3	—	0·2
Tyosi	0·7	72	0 5	− 5	(0 16)	− 2	0·3	0·3
Tukuba	0·7	11	0 0	−10	—	—	—	—
Nagoya	2·5	262	0 39	+ 3	1 8	+ 4	—	—
Mizusawa	3·7	14	0 56	+ 3	1 27	− 8	—	—
Osaka	3·8	259	1 3	+ 9	—	—	2·0	2·6

No additional readings.

June 23d. 19h. 34m. 35s. Epicentre 5°·5S. 147°·0E. (as on 1929 Dec. 31d.). R.3.

A = −·835, B = +·542, C = −·096; D = +·545, E = +·839; G = +·080, H = −·052, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		28·6	173	e 5 43	−10	e 10 14	−28	e 14·1	15·7
Sydney		28·6	173	(e 5 55)	+ 2	(i 10 55)	+13	(13·7)	(15·1)
Adelaide		30·4	194	e 6 2	− 7	i 11 9	− 1	i 13·6	19·5
Melbourne		32·2	184	—	—	i 11 43	+ 5	16·1	18·7
Manila		32·7	310	i 6 42	+13	i 11 54	+ 8	15·7	19·7
Taihoku	E.	39·3	323	e 7 34	+ 8	e 13 55	+29	—	—
Sumoto		41·4	346	e 7 37	− 7	—	—	—	—
Kobe		41·7	346	e 8 33	+47	—	—	—	—
Hong Kong		42·5	313	8 1	+ 8	—	—	—	22·9
Wellington		43·5	149	e 8 25?	+24	13 51	−37	19·4	21·4
Phu-Lien		47·6	306	8 25?	− 8	—	—	—	—
Vladivostok		50·9	348	e 8 58	0	—	—	22·5	—
Honolulu T.H.		60·2	61	—	—	i 17 42	−37	e 26·4	—
Irkutsk		68·2	334	10 51	− 8	e 20 1	+ 2	32·4	38·3
Tashkent		84·6	312	i 12 29	− 2	22 45	[−11]	39·4	48·6
Ekaterinburg		92·6	327	12 59	−10	23 53	[+ 5]	40·4	52·1
Victoria	E.	93·9	42	12 44	−31	24 34	+ 2	42·2	44·4
Baku		99·0	311	—	—	27 20	?	48·0	60·3
Kucino		105·2	327	—	—	24 58	[+ 7]	53·6	62·0
Pulkovo		108·0	333	—	—	25 4	[0]	47·4	64·9
Scoresby Sund		114·6	355	19 25	PP	26 37	{− 2}	55·4	—
Copenhagen		118·2	332	19 55	PP	30 1	PS	55·4	—
Florissant		118·6	46	e 19 21	PP	e 26 45	{−22}	e 58·8	—
St. Louis	E.	118·7	46	—	—	e 29 5	?	—	58·9
Feldberg	N.	123·5	330	—	—	e 27 35	{− 5}	—	72·6
De Bilt		123·8	332	e 20 36	PP	—	—	e 65·4	69·9
Stuttgart	E.	124·0	327	e 20 25?	PP	e 30 55	PS	e 63·4	73·9
Strasbourg		124·8	327	e 18 40	[−17]	i 31 7	PS	52·4	—
Uccle		125·1	331	e 20 43	PP	30 25?	SKSP	e 54·4	—
Ottawa	N.	125·6	35	—	—	e 28 25?	{+32}	e 51·4	—
Rocca di Papa		125·6	319	e 19 1	[+ 3]	—	—	e 33·0	43·4
Rome		125·7	319	e 19 27	[+29]	—	—	—	—
Placenza		125·8	324	21 53	?	—	—	—	74·4
Catania		125·8	312	e 19 7	[+ 9]	—	—	—	—
Kew		126·7	335	—	—	e 30 25?	SKSP	e 65·4	—
Paris		127·3	331	e 18 25?	?	—	—	67·4	77·4
La Plata		133·3	150	(22 19)	PP	—	—	22·3	—
Granada		138·5	324	8 55	?	—	—	e 69·4	77·4
La Paz		138·9	122	e 22 57	PKS	—	—	—	—

Additional readings and note :—
Riverview e = +10m.32s.
Sydney readings have been *diminished* by 2m.
Manila PPPPEN = +8m.6s.
Kobe iNE = +10m.21s., iNW = +10m.35s.
Wellington e = +17m.7s. = SS −15s.
Vladivostok e = +13m.0s.
Tashkent PP = +16m.5s., SS = +29m.7s.
Ekaterinburg PP = +16m.53s., SKS = +23m.17s.
Baku PP = +18m.11s., SS = +33m.7s.
Kucino PP = +18m.30s., PS = +27m.47s.
Pulkovo PP = +18m.44s., PS = +28m.2s., SS = +34m.13s.
Florissant eE = +28m.55s.
St. Louis eE = +35m.25s.
Feldberg e?N = +20m.31s. = PP −2s., +33m.13s., and +43m.1s.
Uccle e = +37m.25s.? = SS −13s.
Rome e = +36m.25s. and +44m.13s.
Granada i = +9m.5s.
Long waves were also recorded at Ivigtut, Harvard, and several European stations.

June 23d. Readings also at 0h. (Berkeley, Baku, Ksara, and Taihoku), 1h. (Hong Kong, Phu-Lien, Ekaterinburg (2), Tashkent, near Manila, and near Irkutsk), 3h. (Taihoku), 7h. (Wellington), 9h. (Stuttgart), 11h., 14h., and 16h. (Taihoku), 17h. (Stuttgart and near La Paz), 19h. (near Mizusawa).

June 24d. Readings at 0h. (near Dehra Dun), 10h. (near Sumoto), 11h. (Apia, Barcelona, and near Lick), 14h. (near Toyooka), 15h. (Stuttgart), 16h. (Paris), 18h. (Ekaterinburg, Tashkent, Cheb, and near Tacubaya), 20h. (Ekaterinburg, Irkutsk, Tashkent), 21h. (Ksara, near Mizusawa, and near Nagasaki), 22h. (near Nagasaki).

June 25d. 0h. 49m. 0s. Epicentre 25°·0N. 77°·5E. (as on 1929 April 10d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	E.	2·2	13	1 27	+56	2 17	+80	2·7	—
	N.	2·2	13	e 1 28	+57	1 59	+62	2·6	—
Bombay		7·5	216	1 58	+12	3 57	+46	4·7	5·5
Andijan		16·3	346	e 3 55	+10	—	—	—	—
Baku		27·7	310	e 5 24	−20	e 9 49	−38	15·0	—
Irkutsk		34·0	30	—	—	e 14 0?	?	22·0	—
Ekaterinburg		34·1	343	e 6 44	+ 3	e 11 56	−12	16·0	20·8
Kucino		42·1	328	—	—	e 13 36	−32	e 25·2	29·2
Pulkovo		47·5	330	8 28	− 4	15 8	−18	23·0	29·1

Long waves were also recorded at Calcutta, Hyderabad, Copenhagen, De Bilt, Strasbourg, and Scoresby Sund.

June 25d. 10h. 17m. 44s. Epicentre 15°·3S. 75°·8W. N.1.

Probable error of epicentre ±0°·4.

A = +·237, B = −·935, C = −·264; D = −·969, E = −·245; G = −·065, H = +·256, K = −·965.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		7·4	100	i 1 43	− 2	i 3 19	+10	3·7	4·5
Sucre		10·7	112	i 2 28	− 3	—	—	—	—
Santiago		18·7	167	4 16	+ 1	7 48	+ 8	9·9	—
La Plata		25·3	144	5 21	− 2	e 9 46	0	12·3	—
Rio de Janeiro		31·7	109	e 6 16	− 4	11 18	−13	14·3	20·6
Charlottesville		53·4	357	—	—	e 16 48	+ 1	e 25·4	—
Georgetown	z.	54·2	359	i 9 24	+ 1	e 17 16	PS	e 21·6	—
St. Louis		55·6	347	i 9 33	0	i 17 9	− 8	—	—
Florissant		55·8	347	i 9 35	+ 1	i 17 17	− 3	—	e 33·0
Fordham		56·2	1	i 9 59	+22	e 17 49	+24	e 26·4	—
Harvard		57·8	4	e 9 40	− 9	e 17 31	−16	e 32·8	—
Ann Arbor		58·1	354	e 9 40	−11	e 17 40	−11	e 27·2	37·5
Chicago		58·1	350	—	—	i 17 44	− 7	26·5	—
Tucson		58·2	325	e 10 2	+10	i 18 0	+ 8	e 25·5	—
Toronto		59·0	357	9 52	− 5	16 54	− 9	28·0	32·3
Ottawa		60·7	0	e 10 9	0	i 18 25	0	i 28·5	31·8
Victoria		76·4	330	11 53	+ 5	21 33	− 3	35·6	45·9
Ivigtut		79·6	14	11 4	−62	20 58	−73	—	—
San Fernando		83·4	49	12 29	+ 4	i 22 45	− 6	42·3	56·1
Malaga		84·9	50	12 33	0	23 3	− 4	—	—
Granada		85·6	49	i 12 35	− 1	i 23 22	+ 8	45·0	56·3
Almeria		86·4	49	12 38	− 2	e 23 15	− 6	41·3	47·3
Toledo		86·4	47	e 12 39	− 1	e 23 6	[− 3]	e 39·3	49·8
Sitka		87·5	333	—	—	23 28	[+11]	37·5	—
Alicante		88·3	49	e 12 56	+ 7	e 23 24	[+ 2]	e 51·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Honolulu T.H.		88·4	293	—	—	23 28	[+ 5]	44·4	—
Algiers		90·5	51	—	—	e 23 28	[− 8]	e 47·3	53·3
Kew		93·2	37	e 13 11	− 1	e 23 48	[− 3]	46·3	54·2
Edinburgh		93·3	32	e 13 6	− 7	e 23 48	[− 4]	e 45·3	53·8
Scoresby Sund		93·4	15	12 14	−59	24 23	− 5	48·3	—
Wellington		93·8	227	—	—	e 37 16?	SSSS	—	48·3
Paris		94·0	40	e 12 55	−21	e 23 49	[− 6]	34·3	52·3
Uccle		95·7	39	13 23	− 1	e 24 40	− 8	42·3	—
Neuchatel		96·3	43	i 13 26	0	e 24 3	[− 5]	—	—
De Bilt		96·6	38	13 27	− 1	—	—	e 47·3	52·9
Strasbourg		97·2	41	13 31	0	e 25 0	− 2	e 46·3	—
Zurich		97·4	44	e 13 31	− 1	—	—	—	—
Piacenza		97·6	45	e 14 0	+28	24 10	[− 4]	—	54·3
Chur		97·9	44	e 13 31	− 3	—	—	—	—
Feldberg	N.	98·1	40	e 13 40	+ 5	e 25 4	− 6	—	62·3
Stuttgart		98·2	41	i 13 34	− 1	e 25 26	−15	e 47·8	59·9
Florence		98·4	47	13 36	0	25 16	+ 4	45·3	52·3
Rome		98·9	49	e 13 36	− 2	—	—	—	—
Rocca di Papa		99·0	49	e 13 50	+11	i 25 12	− 6	—	89·2
Bergen		99·0	29	e 17 16?	PP	—	—	—	—
Treviso		99·5	45	(e 13 46)	+ 5	(e 24 16)	[− 7]	(e 47·3)	(62·3)
Hamburg		99·8	37	—	—	e 24 16?	[− 9]	e 50·9	57·3
Catania		99·9	54	e 12 34	−69	e 24 22	[− 3]	e 54·8	62·4
Cheb		100·5	40	e 24 29	S	(e 24 29)	[+ 1]	e 53·3	58·8
Zagreb		101·6	45	e 17 59	PP	(e 24 35)	[+ 2]	e 47·9	54·3
Copenhagen		101·6	35	13 51	0	25 32	− 9	42·3	—
Lund		102·0	35	—	—	25 34	−10	48·3	—
Budapest		104·5	44	—	—	e 24 46	[− 1]	60·3	67·3
Helsingfors	N.	108·6	30	—	—	e 22 45	PPPP	e 37·6	—
Pulkovo		111·2	30	14 36	0	25 12	[− 7]	39·3	69·6
Helwan		112·2	64	e 19 6	PP	29 56	?	—	67·3
Riverview		113·6	222	e 13 45	?	e 29 14	PS	e 58·8	66·5
Tananarive		114·5	120	—	—	e 29 17	PS	66·0	74·0
Melbourne		114·6	215	—	—	i 29 16	PS	35·6	—
Kucino		115·8	34	e 15 46	+47	e 25 28	[− 8]	e 52·4	66·6
Adelaide		120·1	213	e 20 20	PP	e 30 11	PS	e 50·9	62·9
Baku		126·8	50	e 19 6	[+ 5]	—	—	e 58·3	77·1
Samarkand		139·4	44	e 20 9	[+49]	—	—	—	—
Tashkent		140·2	41	e 19 16	[− 5]	i 23 6	PKS	67·3	88·3
Andijan		142·5	41	e 19 42	[+16]	—	—	—	—
Irkutsk		143·0	1	19 29	[+ 1]	—	—	e 75·3	87·8
Vladivostok		143·5	326	e 19 18	[−11]	—	—	70·5	—
Zi-ka-wei	Z.	157·7	318	e 19 56	[+ 5]	i 30 26	{−40}	76·0	87·1
Manila		163·8	270	i 20 25	[+27]	—	—	—	—
Hong Kong		168·2	308	21 6	{−14}	46 16	SS	e 53·9	107·8
Phu-Lien		174·1	338	22 16?	{+28}	—	—	85·3	—

Additional readings and note :—
Charlottesville eSN = +16m.33s., e = +20m.16s. =SS − 4s.
Georgetown iZ = +11m.26s. =PP +8s.
St. Louis eN = +11m.41s. =PP +10s. and +14m.34s.
Florissant eE = +19m.21s. =S_cS − 1s.
Harvard eE = +19m.31s. =S_cS − 6s. and +21m.23s. =SS − 10s., eN = +27m.16s.? and +30m.16s. ?; T_e =10h.17m.37s.
Ann Arbor e?N = +14m.22s., +22m.40s., eE = +19m.40s. and +23m.46s.
Chicago iE = +19m.34s. =S_cS − 5s.
Tucson ePN = +10m.10s., eE = +19m.34s. =S_cS − 5s.
Toronto SSN = +32m.38s.; T_e =10h.17m.37s.
Ottawa iE = +19m.46s. =S_cS − 11s., SSSE = +25m.16s.; T_e =10h.17m.39s.
Granada iPE = +12m.38s., i = +14m.19s., PS = +24m.16s.
Honolulu T.H. eN = +28m.46s.
Algiers e = +19m.50s. =PPPP +3s.
Kew PPZ = +16m.52s., ePS = +25m.40s.
Scoresby Sund PP = +16m.52s., SKS = +23m.52s., +25m.36s. =PS +5s.
Paris eSS = +25m.47s.
Uccle e = +26m.2s. =PS − 5s.

Continued on next page.

De Bilt ePPZ = +17m.17s.
Strasbourg PP = +17m.16s., SKS = +24m.16s., PS = +26m.18s.
Stuttgart eZ = +16m.36s., eEZ = +18m.29s., iPPEZ = +17m.28s., eSKSE = +24m.15s., iPSEZ = +26m.29s., eSSE = +31m.56s.
Rome e = +13m.49s.
Rocca di Papa e? = +8m.11s.
Treviso readings have been *increased* by 2m.
Cheb eS = +35m.26s.
Copenhagen PP = +17m.52s., SKSE = +24m.30s., PSE = +27m.4s., iZ = +27m.49s., SS = +32m.40s.
Zagreb ePPP = +24m.35s.
Lund +24m.28s. =SKS +7s.
Pulkovo PP = +19m.4s., PS = +28m.6s.
Riverview e = +14m.43s.
Tananarive eSSE = +33m.29s.
Kucino ePP = +19m.40s., ePS = +29m.25s., SS = +35m.34s.
Adelaide i = +36m.48s.
Baku ePKP = +20m.54s., SKSP = +33m.0s., SS = +39m.52s.
Tashkent PS = +32m.32s., iPPS = +34m.42s.
Irkutsk PP = +22m.43s., SS = +41m.16s.
Vladivostok PPP = +25m.37s., e = +37m.41s.
Zi-ka-wei iZ = +20m.14s., +20m.35s., +24m.14s., and +34m.24s.
Long waves were also recorded at many European stations, Ksara, Dakar, Hyderabad, Bombay, and Colombo.

June 25d. 12h. 6m. 14s. Epicentre 20°·0N. 64°·0W. N.2.

A = +·412, B = −·845, C = +·342; D = −·899, E = −·438; G = +·150, H = −·307, K = −·940.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		8·0	261	e 2 1	+ 8	i 3 18	− 6	i 5·1	5·5
Charlottesville		22·0	328	e 5 2	+11	8 54	+ 8	—	—
Georgetown	Z.	22·0	332	i 4 45	− 6	i 8 55	+ 9	—	—
Fordham		22·5	340	i 5 13	PP	i 9 27	SS	e 11·9	—
Harvard		23·2	347	—	—	i 9 22	+14	e 11·3	—
Toronto	N.	26·9	335	e 5 37	0	i 10 10	− 4	13·0	—
Ottawa		27·2	342	—	—	e 10 10	− 8	e 11·8	—
Ann Arbor		27·8	328	—	—	e 10 40	+12	e 15·0	—
St. Louis	N.	29·3	316	e 6 25	+26	e 10 49	− 4	e 13·8	—
Florissant		29·5	316	e 5 54	− 7	e 10 49	− 7	—	—
Chicago		29·6	323	—	—	10 46	−12	e 15·3	—
La Paz		36·7	187	6 43	−21	—	—	—	—
Ivigtut		42·7	12	8 46	+52	13 28	−48	23·8	—
Tucson		43·5	299	7 52	− 9	14 4	−24	26·8	—
Granada		54·8	58	i 9 29	+ 2	i 17 20	+14	e 25·6	28·0
Almeria		55·8	58	i 9 31	− 3	—	—	—	29·3
Scoresby Sund		56·3	16	—	—	13 4	PPPP	23·8	—
Kew		58·2	40	e 9 55	+ 3	e 17 56	+ 4	26·8	29·1
Uccle		61·1	42	e 10 13	+ 1	e 18 33	+ 3	—	—
De Bilt		61·6	40	10 19	+ 3	18 43	+ 6	e 29·8	32·3
Neuchatel		62·6	47	e 10 18	− 4	e 18 54	+ 4	—	—
Strasbourg		63·2	45	e 10 30	+ 3	e 19 3	+ 6	—	—
Sitka	E.	63·3	325	—	—	e 18 52	− 7	33·0	—
Zurich		63·8	48	e 10 22	− 9	—	—	—	—
Stuttgart		64·1	44	e 10 33	0	e 19 6	− 3	e 30·8	34·3
Chur		64·4	48	e 10 31	− 4	e 19 20	+ 8	—	—
Hamburg		64·6	39	e 10 38	+ 2	i 19 17	+ 2	e 31·8	34·8
Piacenza		64·7	49	19 18	S	(19 18)	+ 2	—	—
Florence		65·9	51	10 46	+ 1	18 46	−45	32·8	38·8
Copenhagen		66·0	37	10 47	+ 2	19 36	+ 4	29·8	—
Treviso		66·3	48	e 10 26	−21	(23 46)	SS	23·8	—
Rome		67·0	52	e 10 48	− 4	—	—	—	—
Rocca di Papa		67·1	52	e 10 45	− 7	—	—	e 46·6	64·3
Zagreb		69·0	47	e 11 11	+ 6	e 20 9	0	—	—
Pulkovo		75·0	30	e 11 38	− 2	i 21 16	− 4	—	39·0
Kucino		80·0	35	—	—	i 22 11	− 5	e 30·6	36·7
Ksara	E.	86·8	55	e 12 58	+16	e 23 7	−18	—	—
Irkutsk		107·0	8	e 17 46?	[−22]	—	—	52·8	64·5

For Notes see next page.

NOTES TO JUNE 25d. 12h. 6m. 14s.

Additional readings :—
Georgetown iZ = +5m.5s. =PP −5s.
Fordham iPP = +5m.44s.
Ann Arbor e?N = +1m.16s. and +10m.46s., e?E = +1m.28s. and +8m.34s.
Granada iPE = +9m.32s.
Copenhagen +20m.39s. =S_cS +4s.
Rocca di Papa i = +10m.56s.
Long waves were also recorded at Ekaterinburg and many European stations.

June 25d. 13h. 2m. 14s. Epicentre 44°·7N. 147°·6E. (as on 1925 Jan. 3d.). X.

A = −·600, B = +·381, C = +·703 ; D = +·536, E = +·844 ;
G = −·594, H = +·377, K = −·711.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		3·9	301	e 1 3	+ 7	—	—	e 2·6	—
Mizusawa		7·3	223	1 46	+ 2	3 5	− 1	—	—
Tyosi		10·3	212	e 4 8	S	(e 4 8)	−13	—	—
Vladivostok		11·3	267	(2 40)	+ 1	—	—	2·7	—
Zi-ka-wei	z.	24·5	246	e 5 10	− 5	10 0	+28	14·7	16·8
Irkutsk		29·2	301	e 7 2	+64	11 0	+ 9	15·8	19·3
Ekaterinburg		52·4	317	i 9 2	− 7	—	—	25·8	34·2
Pulkovo		63·7	330	i 10 28	− 2	i 20 10	(− 9)	—	39·3
Strasbourg		80·4	335	e 12 19	+ 9	—	—	—	—

Additional readings :—
Mizusawa PE = +1m.52s.
Vladivostok e =13h.0m.55s.
Ekaterinburg e = +9m.12s. and +20m.58s.
Long waves were also recorded at Phu-Lien, Ottawa, Baku, Tashkent, Scoresby Sund, and other European stations.

June 25d. 21h. An indeterminate shock recorded by the European and neighbouring stations. The following are the earliest phases given :—

Treviso	21h.24m.46s.	Jena	21h.27m.39s.
Copenhagen	27m.32s.	Ksara	27m.42s.
Theodosia	27m.32s.	Zagreb	27m.44s.
Simferopol	27m.33s.	Zurich	27m.45s.
Yalta	27m.33s.	Chur	27m.46s.
Sebastopol	27m.35s.	Neuchatel	27m.47s.
Hamburg	27m.36s.	Budapest	28m. 0s.
Feldberg	27m.39s.	Granada	28m.42s.
Gottingen	27m.39s.	Scoresby Sund	30m.27s.

June 25d. 21h. 21m. 45s. Epicentre **14°·5S. 76°·0W.** N.1.

Probable error of epicentre ±0°·33.

A = +·234, B = −·939, C = −·250 ; D = −·970, E = −·242 ;
G = −·061, H = +·243, K = −·968.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		7·8	106	i 1 55	+ 4	i 3 22	+ 3	4·6	6·1
Sucre		11·2	115	i 2 34	− 3	—	—	—	—
Santiago		19·6	167	4 21	− 4	6 39	−79	10·4	—
Balboa Heights		23·7	351	5 1	− 6	9 41	+23	12·0	—
La Plata		26·1	145	5 28	− 2	9 48	−12	15·3	—
Rio de Janeiro		32·1	110	i 6 15	− 9	i 11 35	− 2	i 15·1	29·7
Port au Prince		33·2	6	e 7 3	+29	—	—	—	—
Tacubaya		40·8	326	7 43	+ 4	14 1	+13	—	—
Charlottesville		52·5	357	9 10	0	16 39	+ 4	20·3	—
Georgetown	z.	53·4	359	i 9 16	− 1	i 17 1	+14	—	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
St. Louis		54·7	347	e 9 24	− 2	i 17 4	− 1	e 22·9	—
Florissant		55·0	347	e 9 26	− 3	i 17 7	− 2	—	e 33·9
Fordham		55·4	1	i 9 33	+ 1	e 17 20	+ 5	e 25·3	—
Harvard		57·0	4	i 9 41	− 2	i 17 38	+ 2	e 30·3	—
Ann Arbor		57·2	354	e 9 39	− 6	i 17 39	0	e 27·0	36·5
Chicago		57·2	350	i 9 45	0	i 17 35	− 4	e 25·6	—
Tucson		57·4	324	9 50	+ 4	i 17 47	+ 5	e 25·4	—
Toronto		58·2	357	i 9 48	− 4	i 17 44	− 8	28·3	33·5
Ottawa		59·9	357	e 10 0	− 4	i 18 13	− 2	e 27·3	38·2
Dakar		64·8	66	e 10 34	− 3	e 19 16	− 1	29·3	36·6
Lick		67·3	322	e 10 56	+ 2	e 11 34	PcP	—	—
Victoria		75·6	330	11 1	−43	21 21	− 6	43·4	44·9
Ivigtut		78·8	14	10 57	−64	20 51	−72	—	—
San Fernando		83·1	49	12 28	+ 4	22 44	− 4	42·8	54·8
Malaga		84·5	50	12 34	+ 3	23 12	+ 9	29·7	51·8
Granada		85·2	49	i 12 35	+ 1	i 23 18	+ 8	e 43·4	54·2
Cape Town		85·6	124	e 12 35	− 1	23 9	− 5	—	—
Toledo		86·0	47	e 12 37	− 1	i 23 18	0	e 38·8	49·4
Almeria		86·1	49	12 35	− 4	23 12	− 6	—	47·6
Sitka	E.	86·6	333	—	—	e 23 9	[− 2]	39·8	—
Honolulu T.H.		87·8	292	—	—	23 25	[+ 6]	40·6	—
Alicante		87·9	49	e 12 55	+ 8	e 23 37	+ 1	e 43·3	—
Tortosa		89·6	47	13 0	+ 4	23 51	− 1	38·3	51·6
Algiers		90·2	51	—	—	23 51	− 7	42·3	56·2
Barcelona		90·9	47	—	—	e 25 22	PS	e 43·4	49·5
Oxford		92·2	37	13 7	− 1	i 23 37	[− 9]	e 47·3	49·1
Scoresby Sund		92·6	15	13 10	+ 1	24 13	− 7	44·3	—
Kew		92·7	37	e 13 8	− 2	e 24 45	+24	39·3	49·0
Edinburgh		92·7	32	e 13 15?	+ 5	i 24 50	+29	44·3	54·9
Paris		93·5	40	e 13 13	− 1	e 23 46	[− 7]	36·3	53·3
Dyce		93·7	31	e 13 18	+ 4	e 25 26	PS	—	59·6
Marseilles		93·8	46	—	—	e 26 15?	PS	e 45·3	—
Wellington		94·3	227	—	—	24 0	{− 9}	40·3	43·3
Uccle		95·3	39	13 21	− 1	e 25 56	PS	e 42·3	56·3
Neuchatel		95·9	43	i 13 24	− 1	e 23 57	[− 8]	—	—
De Bilt		96·1	38	13 28	+ 2	e 24 52	0	e 43·3	50·7
Strasbourg		96·8	41	13 29	0	24 14	[+ 4]	e 46·3	—
Zurich		97·0	44	e 13 28	− 2	e 24 7	[− 4]	—	—
Piacenza		97·2	46	e 13 35	+ 4	24 15	[+ 3]	—	53·9
Chur		97·6	44	e 13 32	0	—	—	—	—
Feldberg	N.	97·6	40	e 16 27	?	—	—	—	59·7
Stuttgart		97·7	41	i 13 31	− 2	i 25 6	0	e 47·3	58·7
Florence		98·1	47	i 13 34	− 1	24 17	[+ 1]	47·3	52·3
Rome		98·5	49	e 13 45	+ 8	—	—	—	—
Rocca di Papa		98·6	49	13 40	+ 3	e 24 50	{+ 7}	e 52·6	60·6
Gottingen		98·9	38	—	—	e 22 15?	?	e 49·3	62·3
Treviso		99·1	45	—	—	21 15	PPPP	53·3	57·3
Hamburg		99·3	37	e 17 21	PP	e 24 6	[−16]	e 42·7	52·3
Catania		99·6	54	e 12 55	−47	e 24 17	[− 6]	e 53·8	64·2
Cheb		100·1	40	e 13 46	+ 2	i 24 28	[+ 2]	e 49·3	60·3
Copenhagen		101·1	35	13 46	− 3	25 30	− 6	44·3	—
Lund		101·5	35	e 14 45	+55	25 33	− 7	44·3	—
Graz		101·6	43	—	—	e 25 24	−17	46·3	57·7
Zagreb		101·7	46	—	—	e 24 31	[− 3]	e 55·3	—
Budapest		104·0	44	—	—	e 18 15?	PP	e 48·3	58·3
Upsala	E.	104·3	30	—	—	e 27 18	PS	e 51·2	62·6
	N.	104·3	30	—	—	e 25 53	−11	e 43·3	60·8
Konigsberg		105·6	36	—	—	e 24 40	[−13]	e 46·6	63·8
Helsingfors	N.	108·0	30	—	—	e 26 29	{+36}	e 48·3	—
Pulkovo		110·7	30	14 31	− 3	26 31	{+12}	48·3	60·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan		112·0	64	19 15	PP	29 59	?	—	69·1
Riverview		114·1	222	—	—	e 26 9	{−29}	e 48·3	57·5
Sydney		114·1	222	e 24 39	?	i 29 3	PS	35·7	36·7
Melbourne		115·1	215	—	—	e 25 30	[− 4]	—	—
Tananarive		115·2	120	—	—	e 29 21	PS	60·5	67·9
Kucino		115·3	34	—	—	25 12	[−23]	e 43·8	63·3
Ksara	E.	116·1	59	19 50	PP	—	—	—	—
Adelaide		120·7	213	e 14 52?	−31	e 25 47	[− 5]	e 52·9?	60·6
Ekaterinburg		126·5	28	i 18 43	[−17]	31 2	PS	50·3	68·8
Baku		126·5	50	—	—	e 29 54	?	43·3	—
Samarkand		139·0	44	e 19 28	[+ 8]	—	—	—	—
Tashkent		139·7	41	19 17	[− 4]	—	—	61·3	81·0
Andijan		142·0	41	e 19 41	[+17]	—	—	e 55·6	—
Irkutsk		142·2	1	19 27	[+ 2]	—	—	68·3	83·4
Kobe		145·5	311	e 19 18	−16	—	—	—	—
Bombay		149·9	76	e 20 15?	[+33]	—	—	—	—
Colombo		155·1	105	20 5	[+17]	34 20	SKSP	—	89·1
Hyderabad		155·3	80	20 13	[+25]	34 10	SKSP	78·0	88·7
Batavia		159·1	188	e 20 42	[+50]	—	—	—	—
Manila		163·6	273	i 20 3	[+ 5]	—	—	76·2	116·4
Hong Kong		167·6	311	21 25	{+ 6}	46 13	SS	—	104·7
Medan		167·9	154	e 21 41	?	e 46 55	?	93·2	—
Phu-Lien		173·2	339	20 15?	[+10]	—	—	—	—

Additional readings :—
La Paz iSZ = +3m.15s.
Georgetown eZ = +10m.59s.
Florissant iPNZ = +9m.31s., iZ = +10m.32s., iE = +19m.14s., eN = +22m.0s.
St. Louis iPEN = +9m.28s., iSN = +17m.7s.
Harvard iE = +19m.29s. = S_cS − 2s., eN = +21m.30s. = SS +10s. ; T_o = 21h. 21m.23s.
Ann Arbor ePP? = +12m.21s., ePPP = +13m.21s., iE = +19m.27s. = S_cS − 5s., eSS = +21m.45s., eSSS = +24m.3s.
Chicago iE = +19m.29s. = S_cS − 4s., eSS = +21m.27s.
Tucson eE = +19m.33s. = S_cS − 1s.
Toronto PPPN = +13m.39s., SN = +17m.47s., SSN = +22m.23s. ; T_o = 21h.21m.35s.
Ottawa PPPN = +13m.45s., SSN = +22m.57s., SSSE = +24m.45s. ; T_o = 21h.21m.34s.
Granada iPE = +12m.38s., PP = +15m.48s., SPS = +23m.9s., SS = +24m.13s., SS = +28m.22s.
Honolulu T.H. iN = +23m.41s. = S +6s., ePSN = +24m.45s.
Algiers e = +16m.27s. = PP +0s., PS? = +23m.29s. = SKS − 5s.
Barcelona e = +19m.7s.
Oxford e = +18m.8s., i = +24m.41s. and +28m.37s.
Scoresby Sund +14m.15s., PP = +16m.51s., SKS = +23m.47s., PS = +25m.21s., SS = +30m.9s., SSS = +33m.45s.
Kew PP = +16m.51s., eSKS = +23m.43s.
Edinburgh i = +25m.33s. = PS +10s.
Paris ePP = +16m.55s.
Uccle e = +23m.57s. = [S] − 5s.
De Bilt ePP = +17m.2s., eE = +23m.51s. = [S] − 15s.
Strasbourg PP = +17m.25s., eS = +25m.15s., PS = +26m.20s.
Stuttgart eEZ = +16m.39s. and +18m.15s., iPPEZ = +17m.20s., ePPPZ? = +20m.15s. ?, iEZ = +22m.20s., iSKSE = +24m.15s., iPSEZ = +26m.25s., ePPSE = +27m.35s., eSSEZ = +31m.55s., eSSSSE? = +39m.15s. ?, eZ = +43m.45s.
Rocca di Papa i = +17m.40s., S = +26m.9s.
Cheb ePP? = +17m.50s., ePS? = +26m.55s.
Copenhagen PP = +17m.51s., SKSE = +24m.30s., PSE = +26m.57s., eZ = +27m.50s., SS = +32m.33s.
Lund +24m.23s. = [S] − 10s., +27m.3s. = PS +2s.
Zagreb eP = +5m.59s., eS = +17m.54s. = PS − 1s., e = +28m.10s.
Konigsberg eE = +27m.35s. = PS − 9s.
Pulkovo PP = +18m.57s., SKS = +25m.5s., PS = +28m.38s.
Riverview e = +29m.9s. = PS + 2s., +35m.39s., and +39m.57s.
Melbourne i = +29m.15s. = PS − 2s., and +35m.37s. = SS + 10s.
Tananarive SS = +35m.57s.
Kucino PP = +19m.32s., SKKS = +26m.36s., PS = +29m.14s., PPS = +30m.30s., SS = +35m.15s.

Continued on next page.

Ksara PPE = +20m.36s., PPPPN = +26m.17s., PPPPE = +26m.44s., PSN = +29m.15s., PSE = +29m.36s., PPSE = +33m.50s.
Adelaide i = +30m.12s. = PS + 3s., and +37m.25s., e = +39m.35s.
Ekaterinburg PP = +20m.56s., SKS = +27m.50s., PS = +33m.32s.
Baku PP = +20m.56s.
Tashkent PP = +22m.9s., PS = +32m.30s.
Irkutsk PP = +22m.37s., SS = +41m.8s.
Batavia i = +24m.22s.
Manila iPKPE = +20m.5s., ePKPN = +20m.7s., PPPPP?N = +33m.10s.
Long waves were also recorded at Stonyhurst, Bergen, Jena, Bagnères, Belgrade, Vienna, and Perth.

June 25d. Readings also at 5h. (near La Paz and Sucre), 6h. (near Merida), 7h. (Tashkent, near Andijan, and Samarkand), 8h. (near Lick), 9h. (Andijan and Samarkand), 10h. (Hong Kong, Phu-Lien, and Vera Cruz), 11h. (near Mizusawa), 12h. (La Paz (2) and Florissant), 13h. (Irkutsk, Mizusawa and Taihoku), 14h. (Ekaterinburg), 15h. (Irkutsk, Ksara, Tashkent, Vladivostok, Ekaterinburg, and near Mizusawa), 16h. (La Paz), 18h. (Florissant and La Paz), 19h. (Wellington, La Paz, Vladivostok, Irkutsk, Ekaterinburg, and Tashkent), 20h. (De Bilt, Uccle, Granada, Scoresby Sund, Ann Arbor, Florissant, Tucson, Ottawa, near Merida, Tacubaya, near Andijan, and Samarkand), 21h. (La Paz, Ekaterinburg (2), Pulkovo, and Tashkent), 22h. (La Paz, Agra, Bombay, and near Ootomari).

June 26d. Readings at 0h. (La Paz (4) and Sucre, Andijan, Samarkand, Nagoya, (2) near Tyosi (2), and Kobe), 1h. (near Lick), 2h. (Taihoku), 3h. (La Paz (3) and Sucre), 4h. (La Paz (3), Sucre, Rio de Janeiro, Copenhagen, Kew, and De Bilt), 5h. (Scoresby Sund), 9h. (La Paz, Tyosi, and Paris), 10h. (Andijan, Ottawa, La Paz, and near Balboa Heights), 12h. (near Lick), 14h. (Adelaide and Melbourne), 15h. and 16h. (Taihoku), 18h. (Samarkand), 19h. (Ottawa, Tucson, Florissant, Scoresby Sund, Granada, and Wellington), 20h. (Baku, Irkutsk, Tashkent, Florissant, and St. Louis), 21h. (Chicago), 22h. and 23h. (La Paz).

June 27d. 5h. 28m. 20s. Epicentre 40°·3N. 76°·3E. (given by the stations). N.3.

A = +·181, B = +·741, C = +·647; D = +·972, E = −·237; G = +·153, H = +·628, K = −·763.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	3·0	9	0 42	− 1	(1 1 24)	+ 7	1 1·4	1·4
Andijan	3·0	281	0 47	+ 4	(1 31)	+14	1·5	1·7
Tashkent	5·8	284	e 1 35	+13	—	—	1 2·9	3·5
Samarkand	7·1	268	1 37	− 4	—	—	3·6	4·4

Ekaterinburg records long waves.

June 27d. Readings also at 1h. (St. Louis), 2h. (La Paz), 4h. (Sitka), 5h. (Florissant, Ottawa, Harvard, and near Victoria), 6h. (St. Louis, Andijan, and Samarkand), 9h. (La Paz and Taihoku), 10h. (Harvard, Ottawa, Florissant, St. Louis, and Tucson), 11h. (Andijan and Samarkand), 14h. (Nagoya, near Mizusawa, and Tyosi), 15h. (Taihoku), 17h. (Alicante, Sucre, and near La Paz), 18h. (Andijan), 19h. (Kew and Merida), 20h. (near Vera Cruz).

June 28d. Readings at 2h. (Andijan and Bagnères), 4h. (Messina), 7h. (Florissant and St. Louis), 8h. (Tyosi), 14h. (La Paz), 17h. (Samarkand, Almata, and Andijan), 19h. (Baku, Irkutsk, Tashkent, Pulkovo, Copenhagen, and Stuttgart), 20h. (De Bilt, Uccle, Strasbourg, and Granada), 21h. (Budapest).

June 29d. 0h. 25m. 12s. Epicentre 36°·5N. 140°·5E. (as on May 31d.). R.3.

$A = -\cdot620$, $B = +\cdot511$, $C = +\cdot595$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tukuba		0·4	219	0 4	− 2	—	—	—	—
Tyosi		0·9	160	0 11	− 2	(0 20)	− 3	0·3	0·4
Tokyo		1·1	216	0 11	− 5	0 20	− 8	—	0·4
Mizusawa	E.	2·6	10	0 42	+ 5	1 22	+15	—	—
	N.	2·6	10	0 48	+11	1 26	+19	—	—
Nagoya		3·2	245	0 46	0	1 21	− 1	—	—
Osaka		4·5	248	1 1	− 3	(2 2)	+ 7	2·0	2·4
Kobe		4·7	249	e 1 19	+12	2 8	+ 8	—	2·2
Sumoto		5·1	246	—	—	e 2 3	− 7	(e 2·4)	2·5

Sumoto gives S as e and L as S.

June 29d. Readings also at 1h. (Kobe and near Sumoto), 4h. (Andijan and near Malabar), 6h. (near Nagasaki), 7h. (near La Paz and Sucre), 8h. (Amboina, Andijan, Samarkand, and near Zagreb), 9h. (Bombay), 13h. (Samarkand), 14h. (Ksara), 16h. (Sitka and near Victoria), 17h. (Ottawa), 18h. (La Plata), 19h. (La Paz, Taihoku, and near Amboina), 22h. (La Paz, Rocca di Papa, Strasbourg, and Tyosi).

June 30d. Readings at 0h. (Ekaterinburg, Pulkovo, Ksara, Kucino, Copenhagen, Tashkent, and Taihoku), 1h. (Sumoto), 4h. (Ann Arbor and Zurich), 5h. (La Paz and near Sumoto), 6h. (Samarkand), 7h. (La Paz), 9h. (Messina), 10h. (near Tyosi (3)), 12h. (Ekaterinburg and near Apia), 13h. (Adelaide Melbourne, Riverview, Honolulu T.H., Irkutsk, Florissant, and Stuttgart), 14h. (Paris), 16h. (Nagoya and near Tyosi), 17h. (near Taihoku (2)), 18h. (Ksara), 22h. (Andijan and Port au Prince), 23h. (Berkeley, La Plata, La Paz, Sucre, Almata, Baku, Ekaterinburg, Tashkent, and near Andijan).

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.