The International Seismological Summary.
1931 April, May, June.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present quarter of the Summary deals with 146 epicentres, 65 of these being new and 81 repetitions of old epicentres. The quality of the material according to the new notation is as follows :—

N.1=16	R.1= 4	X.=41
N.2=20	R.2=14	
N.3=29	R.3=22	

The cases of abnormal focus are as follows :—

Date 1931.	d.	h.	m.	s.	Epicentre. °	°	Focal Depth. (Below Normal).
April	3	23	19	20	19·0S.	180·0	+0·085
April	21	0	2	6	38·8N.	133·5E.	+0·035
June	2	2	37	55	35·7N.	137·3E.	+0·035
June	12	1	45	6	28·5N.	140·5E.	+0.070
June	29	16	43	18	33·9N.	136·8E.	+0·060

In the first quarter of this year the analysis of the material was as follows :—

N.1=23	R.1=10	X.=44
N.2=11	R.2=17	
N.3=21	R.3=25	

UNIVERSITY OBSERVATORY,
OXFORD.

1936 January 30.

1931 APRIL, MAY, JUNE.

April 1d. 7h. 42m. 9s. Epicentre 49°·5N. 7°·0E. N.3.

A = +·645, B = +·079, C = +·760; D = +·122, E = −·993; G = +·755, H = +·093, K = −·649.

Very rough.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Strasbourg		1·0	151	i 0 11	− 3	i 0 31	S*	—
Feldberg	E.	1·2	52	i 0 13	− 4	i 0 30	− 1	—
Stuttgart		1·6	117	e 0 26	+ 3	e 0 47	S*	—
Uccle		2·2	308	0 42	P_g	—	—	—
Neuchatel		2·5	181	i 0 37	+ 1	e 1 9	+ 5	—
Göttingen	N.	2·8	43	e 0 40	0	i 1 11	− 1	1·5
Chur		3·1	148	e 0 42	− 2	—	—	—
Jena	E.	3·3	64	e 0 51	+ 4	—	—	—

Additional readings:—
Strasbourg PP = +26s.
Feldberg iE = +35s. = S*.
Göttingen iP_gN = +45s., iN = +50s., iS_gN = +1m.17s.
Paris (Δ = 3°·0) gives e = 7h.42m.

April 1d. 13h. 13m. 40s. Epicentre 13°·2N. 85°·8W. (as on 1931 March 31d.). X.

A = +·071, B = −·971, C = +·228; D = −·997, E = −·073; G = +·017, H = −·228, K = −·974.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		19·6	72	e 6 20	?	—	—	e 9·6	—
Little Rock	N.	22·4	346	e 4 44	−11	—	—	—	—
St. Louis	N.	25·7	352	e 5 28	+ 2	e 9 53	0	—	19·6
Florissant		26·0	352	e 5 30	+ 1	e 9 51	− 7	e 14·8	19·8
Pittsburgh		27·8	10	—	—	e 10 50	+22	—	—
Tucson		29·8	314	5 43	−20	e 10 41	−20	e 14·2	—
Ottawa		33·3	15	—	—	12 20?	+25	—	—
La Paz		34·4	149	e 7 53	PP	14 25	SS	17·7	21·9
Pasadena		36·0	313	e 6 28	−30	—	—	—	—
Berkeley		40·7	316	—	—	17 20	?	e 20·8	—
Strasbourg		82·5	41	—	—	(e 19 20?)	?	e 19·3	—
Ekaterinburg		104·7	20	—	—	(33 20?)	SS	33·3	—

Additional readings:—
Little Rock eSE = +5m.1s. = PP − 14s.
Florissant iN = +5m.40s., iZ = +8m.35s.
Long waves were also recorded at Columbia, Victoria, Ivigtut, Scoresby Sund, Toronto, Baku, Tashkent, Irkutsk, and other European stations.

April 1d. Readings also at 1h. (Medan), 6h. (Chur, near Florence, and Prato), 8h. (Mizusawa, Nagoya, and near Tyosi (2)), 9h. (Baku, Ekaterinburg, Tashkent, Kucino, Ksara, Samarkand, and near Tyosi), 12h. (Ekaterinburg, Irkutsk, Neuchatel, Lick, Mizusawa, and Wellington), 13h. (Riverview, Sydney, Melbourne, Suva, Kodaikanal, Wellington, Toronto, Baku, and Tashkent), 16h. (Toledo), 17h. (Kodaikanal), 20h. (Ekaterinburg, Tashkent, Hong Kong, and Manila), 21h. (Baku), 23h. (La Paz, near Little Rock, Florissant, and St. Louis).

April 2d. 0h. 27m. 46s. Epicentre 25°·5N. 98°·5E. (as on 1930 Dec. 2d.). R.3.

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

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien	8·9	120	e 1 58	− 8	—	—	5·2	—
Calcutta	9·7	254	e 3 6	+49	5 5	+59	6·0	8·8
Hong Kong	14·7	99	6 31	S	(6 31)	+23	7·9	8·2
Hyderabad	20·3	251	5 35	+62	9 27	+75	11·8	14·7
Bombay	24·6	260	5 17	+ 1	9 34	0	12·5	13·4
Almata	24·9	321	e 5 27	+ 8	9 57	+18	—	—
Andijan	26·5	312	e 5 33	− 1	e 10 19	+12	—	—
Irkutsk	27·1	8	e 5 39	0	e 10 25	+ 8	14·3	14·8
Tashkent	28·8	311	e 5 58	+ 4	i 10 47	+ 2	15·8	18·8
Samarkand	29·8	306	e 5 56	− 7	10 49	−12	—	—
Baku	42·8	304	(e 10 14?)	PP	—	—	e 10·2	—

Additional readings :—
Hong Kong S = +7m.21s.
Long waves were also recorded at Medan, Ekaterinburg, Kucino, and Copenhagen.

April 2d. 1h. 34m. 46s. Epicentre 40°·7N. 77°·7E. (given by the Stations) N.3.

A = + ·161, B = + ·741, C = + ·652 ; D = + ·977, E = − ·213 ;
G = + ·139, H = + ·637, K = − ·758.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	2·6	348	0 39	+ 2	—	—	e 1·3	1·5
Andijan	4·0	272	0 57	0	—	—	2·0	3·2
Tashkent	6·4	278	e 1 48	P*	i 2 49	+ 6	(i 3·2)	3·9
Samarkand	8·3	266	e 1 49	− 9	e 3 32	+ 1	i 4·2	4·6

Tashkent gives P and S as e and i, also L as iS.
Long waves were recorded at Ekaterinburg.

April 2d. 12h. 22m. 56s. Epicentre 6°·5S. 126°·0E. (as on 1927 April 17d.). R.3.

A = − ·584, B = + ·804, C = − ·113 ; D = + ·809, E = + ·588 ;
G = + ·067, H = − ·092, K = − ·994.

		△	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		3·6	37	i 0 42	− 9	i 1 25	− 7	—	—
Manila		21·7	346	i 4 51	+ 3	8 36	− 4	—	—
Melbourne		35·7	153	—	—	i 11 52	−40	21·9	—
Andijan		68·7	319	e 11 2	− 1	e 20 1	− 4	—	—
Tashkent		70·4	318	i 11 18	+ 5	i 20 30	+ 4	—	—
Samarkand		71·2	316	11 12	− 6	e 20 26	− 9	—	—
Ekaterinburg		82·4	330	i 12 17	− 3	e 22 21	[−18]	35·1	—
Baku		83·7	314	—	—	e 22 46	[− 3]	—	—
La Paz	z.	153·1	149	19 43	[− 3]	—	—	—	—

Additional readings :—
Manila iZ = +5m.16s.
Melbourne i = +15m.9s. and +15m.52s.

April 2d. Readings also at 0h. (near Nagoya and Osaka), 2h. (Harvard, and Mizusawa), 3h. (Göttingen and La Paz), 4h. (Kobe), 6h. (Port au Prince), 7h. (near New Plymouth and Wellington), 10h. (Zagreb), 11h. (Perth), 12h. (near Berkeley), 14h. (Rome and Samarkand), 17h. (near Almeria and Granada), 18h. (Andijan), 20h. (near Hastings and Wellington), 21h. (Granada), 22h. (Baku, Ekaterinburg, and Zagreb), 23h. (Nagoya, Tyosi, and La Plata).

April 3d. 1h. 56m. 18s. Epicentre 9°·3S. 79°·0W. N.2.

A = +·188, B = −·969, C = −·162 ; D = −·982, E = −·191 ;
G = −·031, H = +·159, K = −·987.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		12·8	125	i 2 58	− 1	i 6 8	+46	7·0	8·5
Santiago		25·3	164	4 42	−41	9 42	− 4	12·2	—
San Juan		30·5	24	i 6 13	+ 4	i 11 22	+10	13·7	—
La Plata		32·0	147	e 5 48?	−35	—	—	16·7	—
Columbia		43·4	357	8 6	+ 6	i 14 26	− 1	e 19·2	—
Charlottesville		47·4	0	—	—	15 36	+12	e 22·2	—
Georgetown	Z.	48·3	2	8 37	− 1	e 15 41	+ 4	e 22·7	—
St. Louis		49·1	349	i 8 40	− 4	i 15 46	− 2	e 21·3	—
Florissant		49·3	349	e 8 42	− 4	i 15 49	− 2	—	32·7
Pittsburgh		49·8	359	—	—	i 15 59	+ 1	e 24·2	—
Tucson		51·5	325	9 2	− 1	e 16 21	− 1	e 25·2	—
Chicago		51·7	353	—	—	16 7	−17	e 22·7	—
Toronto		53·0	0	e 6 54	?	i 16 42	0	30·8	—
Ottawa		54·8	4	—	—	e 17 6	0	e 23·7	—
Mount Wilson		57·1	322	e 9 43	− 1	—	—	—	—
Pasadena		57·1	322	e 9 40	− 4	—	—	—	—
Haiwee	N.	58·4	324	e 9 52	− 1	—	—	—	—
Tinemaha		59·2	325	e 9 59	0	—	—	—	—
Berkeley	E.	62·0	323	—	—	i 18 44	+ 2	—	—
Victoria	E.	69·7	330	11 6	− 3	20 19	+ 1	35·8	42·6
Sitka		80·7	333	—	—	i 22 14	− 9	—	—
Malaga		83·5	51	e 12 27	+ 1	e 22 58	+ 6	—	—
Granada		84·3	51	i 12 32	+ 2	i 23 5	+ 4	i 46·8	51·9
Almeria		85·4	51	12 31	− 4	i 24 12	PS	e 48·0	52·1
Alicante		86·9	50	—	—	e 20 29	?	—	—
Scoresby Sund		88·5	16	—	—	23 36	− 6	—	—
Stonyhurst		89·8	36	—	—	e 22 50	−64	48·7	57·7
Oxford		89·9	38	—	—	i 23 52	− 3	e 43·7	50·2
Kew		90·4	38	e 13 1	+ 2	e 23 55	− 5	43·7	—
Paris		91·5	41	e 12 42	−22	—	—	43·7	52·7
Uccle		93·1	40	e 13 12	0	e 23 44	[− 7]	e 37·7	—
De Bilt		93·8	39	e 13 17	+ 2	e 23 56	[+ 2]	e 42·7	53·3
Strasbourg		94·8	42	e 13 20	0	e 25 44	PS	—	—
Feldberg		95·5	40	—	—	e 24 36	−11	e 39·6	63·1
Stuttgart		95·8	42	e 17 18	PP	e 24 54	+ 5	e 48·7	62·7
Florence		96·6	47	19 11	PPP	26 16	PS	49·7	78·7
Copenhagen		98·5	35	—	—	24 15	[− 3]	51·7	—
Ekaterinburg		123·2	25	e 20 32	PP	25 52	[− 8]	52·7	65·6
Perth		136·4	197	38 42	?	—	—	—	—
Tashkent		137·5	37	e 20 10	[+52]	—	—	e 64·7	83·2
Bombay		151·1	68	19 48	[+ 5]	—	—	e 85·7	—

Additional readings :—
Columbia PP = +9m.52s., SS = +17m.48s.
Charlottesville SS = +18m.30s., SSS = +19m.42s.
Georgetown PPZ = +10m.49s. ; T_0 = 1h.55m.36s.
St. Louis eE = +18m.27s. = S_cS − 12s.
Florissant iE = +18m.31s. = S_cS − 9s.
Toronto i = 1h.47m.44s.
Berkeley eE = +25m.40s.
Victoria SN = +20m.9s. ; T_0 = 1h.56m.17s.
Granada PP = +16m.55s., i = +20m.7s. and +22m.16s.
Scoresby Sund +24m.54s. = PS + 11s.
Stonyhurst i = +25m.0s. = PS = +11s.
Oxford eE = +23m.27s. = SKS − 5s., iN = +23m.55s.
Kew eSKSE = +23m.29s., ePSE = +25m.6s.
De Bilt eN = +24m.32s. = S + 1s.
Feldberg e = +29m.50s.
Copenhagen +25m.7s. = S − 5s.
Ekaterinburg e = +30m.32s. = PS + 1s. and +36m.48s.
Tashkent i = +22m.10s. = PP + 5s., i = +22m.59s. = PKS − 3s., e = +40m.18s. = SS + 6s.
Long waves were also recorded at Helsingfors, Baku, Irkutsk, Dakar, Melbourne, Wellington, and Kodaikanal.

April 3d. 5h. 18m. 55s. Epicentre 26°·5S. 65°·2W. N.3.

A = +·375, B = − 812, C = −·446; D = −·908, E = −·419; G = −·187, H = +·405, K = −·895.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		8·4	213	2 5	+ 6	3 37	+ 3	4·2	5·0
La Paz		10 4	344	i 2 33	+ 7	i 4 34	+11	5·6	6·8
La Plata		10·5	145	2 27	− 1	4 13	−13	4·9	—
San Juan		44·9	359	8 7	− 5	i 14 41	− 8	23·1	—
Little Rock	N.	66·4	336	e 10 45	− 3	—	—	—	—
Florissant		69·4	340	e 11 3	− 4	e 20 6	− 8	—	38·6
Riverside		78·1	318	e 11 57	− 1	—	—	—	—
Pasadena		78·6	320	e 12 1	+ 1	—	—	—	—
Mount Wilson		78·7	319	e 12 3	+ 2	—	—	—	—
Haiwee	N.	80·0	321	e 12 9	+ 1	—	—	—	—
Tinemaha		80·8	321	e 12 11	− 1	—	—	—	—
Ekaterinburg		131·4	36	i 19 11	[+ 4]	e 21 23	PP	55·1	—
Samarkand		138·4	57	e 18 50	[−29]	—	—	—	—
Tashkent		140·0	54	e 21 23	?	—	—	e 69·1	86·3
Almata		145·2	50	e 19 47	[+13]	e 23 39	PKS	—	—
Irkutsk		153·0	14	e 19 50	[+ 4]	—	—	—	—

Additional readings :—
San Juan S? = +13m.48s., e = +17m.41s. =SS − 7s.
Ekaterinburg e = +22m.34s. =PKS − 5s.
Tashkent i = +23m.3s. =PKS − 6s., e = +34m.53s.
Long waves were also recorded at Kodaikanal, Scoresby Sund, Dakar, and other European stations.

April 3d. 19h. 13m. 53s. Epicentre 5°·2S. 132°·7E. (as on 1929 May 6d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		4·7	289	i 1 1	− 6	1 48	−12	—	—
Manila		23·0	330	5 8	+ 7	9 8	+ 3	—	—
Perth		31·0	210	11 7?	S	(11 7?)	−13	—	—
Melbourne		34·4	164	—	—	12 34	+22	i 18·2	—
Christchurch		52·0	143	—	—	20 12	SS	—	—
Irkutsk		62·4	340	—	—	18 4?	−43	—	—
Tashkent		74·0	316	e 11 8	−27	i 20 43	−25	e 29·1	32·7
Samarkand		75·1	314	(e 11 12)	−29	—	—	e 11·2	—
La Paz	z.	150·1	137	20 1	[+19]	—	—	—	—

Melbourne gives also i = +15m.9s.

April 3d. 21h. 32m. 4s. Epicentre 34°·0S. 17°·5W. N.3.

A = +·791, B = −·249, C = −·559; D = −·301, E = −·954; G = −·533, H = +·168, K = −·829.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	33·1	259	—	—	(13 8)	+76	13·1	—
La Paz	48·5	279	8 40	0	i 15 40	0	22·8	28·0
San Juan	69·9	311	—	—	e 20 32	+12	e 28·6	—
Granada	72·3	10	e 12 38	?	i 23 15	?	i 30·5	38·2
Florence	82·1	21	20 11	?	—	—	—	52·9
Paris	84·7	15	—	—	e 27 56?	SS	39·9	47·9
Stuttgart	86·1	18	—	—	e 23 26	+ 8	e 35·4	—
Kew	86·8	11	—	—	e 32 56?	?	41·9	42·8
Uccle	87·0	15	—	—	e 23 20	− 7	e 34·9	—
Feldberg	87·2	16	—	—	e 23 24	− 5	e 35·8	44·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		88·3	16	—	—	e 23 38	− 2	e 35·9	43·9
Copenhagen		93·3	17	—	—	24 36	+ 9	39·9	—
Baku		96·8	46	—	—	—	—	41·9	58·3
Colombo		99·9	88	22 14	?	—	—	—	49·4
Helsingfors	N.	100·4	20	—	—	e 32 13	SS	e 53·9	—
Bombay		100·7	76	18 36	?	—	—	—	—
Kucino		101·4	29	—	—	e 25 40	+ 1	48·6	52·5
Scoresby Sund		104·5	358	—	—	33 56?	SS	—	—
Melbourne		106·4	166	—	—	e 33 19	SS	43·2	—
Tashkent		109·5	52	—	—	e 23 32	?	47·9	50·9
Irkutsk		135·2	47	e 21 56?	PP	e 30 31?	SS	e 58·9	—

Additional readings :—
Stuttgart e = +28m.56s. =SS +13s.
Feldberg e = +29m.17s. =SS +18s.
Copenhagen +30m.44s. =SS +17s.
Baku e =21h.27m.48s.
Kucino e = +32m.24s. =SS +3s. and +36m.29s. =SSS +20s.
Tashkent e = +28m.32s. =PS +9s. and +34m.26s. =SS +14s.
Irkutsk e = +33m.56s.? and +39m.56s. ? =SS +12s.
Long waves were also recorded at Johannesburg, Dakar, Tananarive, Almeria, Stonyhurst, Königsberg, Ksara, Hyderabad, Kodaikanal, and Hong Kong.

April 3d. 23h. 19m. 20s. Epicentre **19°·0S. 180°·0.** N.1.

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

A depth of focus 0·085 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	+ 3·0	1·8	302	i 1 15	+ 7	2 25	+22	—	3·7
Apia	− 0·8	9·4	57	—	—	e 6 9	?	e 8·0	8·2
Arapuni	− 3·3	19·5	190	—	—	(6 40?)	− 3	6·7	—
Wellington	− 3·8	22·7	190	4 8	− 9	7 8	−36	—	—
Riverview	− 5·1	29·6	234	i 5 14	− 1	i 9 15	−17	e 13·8	—
Sydney	− 5·1	29·6	234	—	—	(9 10)	−22	14·3	15·3
Melbourne	− 5·8	35·8	231	i 6 8	+ 3	i 10 52	−12	14·0	—
Adelaide	− 6·3	39·8	239	e 6 37	+ 1	i 11 48	−10	14·7	21·8
Honolulu T.H.	− 7·0	45·8	30	i 7 39	+17	i 13 42	+24	19·7	—
Amboina	− 7·9	52·8	280	i 9 8	+46	i 15 42	+53	—	—
Perth	− 8·3	58·6	244	e 9 50	+56	—	—	28·3	—
Tyosi	− 8·7	66·1	327	e 9 53	+ 7	—	—	—	—
Tokyo	− 8·8	66·7	326	9 50	0	—	—	—	—
Manila	− 8·8	67·2	296	i 9 54	+ 1	17 29?	−26	—	—
Nagoya	− 8·8	67·9	324	e 10 2	+ 4	(e 18 13)	+ 9	e 18·2	—
Gihu	− 8·9	68·1	324	10 1	+ 2	18 12	+ 7	—	—
Sumoto	− 8·9	68·5	322	e 10 2	0	e 18 14	+ 3	—	—
Kobe	− 8·9	68·6	322	i 10 4	+ 2	18 15	+ 3	e 29·6	—
Mizusawa	− 8·9	68·6	330	10 6	+ 4	18 18	+ 6	—	—
Koti	− 8·9	68·8	320	i 10 6	+ 3	i 18 21	+ 7	22·4	22·8
Akita	− 8·9	69·6	329	10 12	+ 3	18 20	− 5	—	—
Batavia	− 9·1	72·2	271	i 10 19	− 7	i 18 41	−15	—	—
Zinsen	− 9·3	75·6	320	10 44	− 3	19 36	0	—	—
Hong Kong	− 9·3	76·5	300	10 46	− 7	19 40	− 7	—	—
Santa Barbara E.	− 9·5	78·4	48	e 11 8	+ 4	e 20 16	+ 8	—	—
Berkeley	− 9·5	78·6	43	e 11 5	0	20 17	+ 7	—	—
Lick	− 9·5	78·7	43	e 11 5	− 1	i 20 19	+ 8	—	—
Pasadena	− 9·5	79·3	48	e 11 6	− 3	e 20 24	+ 5	—	—
Mount Wilson	− 9·5	79·4	49	e 11 8	− 2	—	—	—	—
Riverside	− 9·6	79·8	48	e 11 12	0	e 20 30	+ 6	—	—

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.
Haiwee	N.	− 9·6	80·5	47	e 11 15	− 1	e 20 39	+ 7	—	—
Tinemaha		− 9·6	80·8	46	e 11 14	− 4	e 20 32	− 3	—	—
Medan		− 9·6	83·1	277	5 4	?	—	—	—	—
Tucson		− 9·8	83·7	52	11 33	− 1	20 52	−15	—	—
Chiufeng	E.	− 9·8	83·8	317	e 11 26	− 9	—	—	—	—
Victoria	E.	− 9·8	84·2	34	15 11	?	20 54	−19	25·8	26·7
	N.	− 9·8	84·2	34	15 16	?	20 51	−22	25·8	—
Irkutsk		−10·3	96·6	324	e 11 41	−59	—	—	33·7	—
Little Rock		−10·4	98·8	57	e 14 54	?	e 23 20	−21	—	—
Florissant		−10·4	101·5	54	e 12 55	− 8	i 22 26	?	e 29·4	—
St. Louis		−10·4	101·6	54	e 15 24	?	i 22 27	?	—	—
Colombo		−10·4	101·8	274	19 58	?	22 23	[−131]	29·2	31·2
La Plata		−10·5	103·1	135	—	—	(23 28?)	[−73]	23·5?	—
La Paz	E.	−10·5	104·2	114	e 14 9	?	i 20 54	?	22·7	27·4
Hyderabad		−10·5	106·1	283	16 7	PP	22 46	[−129]	30·0	35·9
Pittsburgh		—	109·7	53	—	—	i 23 3	[−129]	36·7	—
Toronto	E.	—	110·5	49	e 20 3	?	—	—	36·8	—
Bombay		—	111·7	284	16 50	?	26 54	{+35}	45·7	—
Almata		—	112·2	310	e 18 24	PP	—	—	—	—
Ottawa		—	113·3	47	—	—	e 23 17	[−130]	e 37·7	—
Andijan		—	115·4	309	e 17 31	[−63]	—	—	—	—
San Juan		—	117·7	79	i 23 30	?	i 24 49	[−54]	—	—
Tashkent		—	117·8	309	e 17 33	[−67]	e 25 1	[−42]	—	49·8
Samarkand		—	119·5	308	e 18 20	[−24]	—	—	—	—
Ivigtut		—	124·1	26	i 16 55	?	20 16	PP	—	—
Scoresby Sund		—	126·8	10	17 58	[−63]	—	—	—	—
Baku		—	132·4	310	i 20 40	PP	i 29 27	?	e 41·7	—
Kucino		—	133·5	333	e 18 14	[−59]	—	—	—	62·2
Helsingfors		—	135·1	343	e 18 9	[−66]	e 26 45	?	e 36·7	—
Upsala		—	137·2	348	e 18 15	[−63]	—	—	e 37·7	—
Theodosia		—	140·8	320	e 18 19	[−63]	—	—	—	—
Königsberg		—	141·0	341	e 18 20	[−63]	—	—	—	—
Yalta		—	141·8	320	18 19	[−64]	22 2	PP	—	—
Lund		—	142·0	349	18 21	[−63]	—	—	—	—
Copenhagen		—	142·1	349	i 18 22	[−62]	20 51	?	—	—
Durham		—	144·2	4	18 29	[−62]	26 12	?	36·1	40·0
Hamburg	Z.	—	144·6	350	i 18 30	[−63]	—	—	—	—
Ksara	E.	—	144·8	304	i 18 30	[−63]	—	—	—	—
Stonyhurst		—	145·1	2	18 40	[−54]	i 20 2	?	—	44·4
Potsdam		—	145·1	346	i 18 30	[−64]	—	—	e 39·7	—
Bidston		—	145·5	4	i 18 35	[−61]	e 32 30	?	i 40·2	—
Göttingen		—	146·5	351	i 18 33	[−63]	i 21 8	?	—	40·2
De Bilt	Z.	—	146·7	354	i 18 33	[−64]	i 21 11	PP	—	—
Jena		—	146·8	346	e 18 32	[−65]	—	—	—	—
Oxford		—	147·2	4	i 18 39	[−58]	—	—	—	—
Cheb		—	147·4	344	i 18 40	[−57]	—	—	—	—
Kew		—	147·5	0	i 18 34	[−64]	e 21 9	?	37·7	—
Budapest		—	147·6	336	18 32	[−66]	—	—	—	—
Vienna		—	147·9	340	i 18 34	[−65]	i 21 22	?	—	—
Uccle		—	148·0	355	18 33	[−66]	28 9	?	e 39·7	—
Feldberg		—	148·1	352	i 18 41	[−58]	—	—	—	—
Belgrade		—	149·1	331	18 40	[−60]	e 19 57	?	—	—
Graz		—	149·2	340	(18 44)	[−56]	—	—	e 39·7	—
Stuttgart		—	149·3	349	i 18 36	[−64]	—	—	e 40·8	51·2
Strasbourg		—	149·8	350	i 18 39	[−63]	i 28 24	?	40·7	—
Zagreb		—	150·1	337	e 18 40?	[−62]	—	—	—	—
Paris		—	150·1	357	i 18 38	[−64]	—	—	35·7	—
Innsbruck		—	150·2	344	e 18 46	[−56]	—	—	—	—
Zurich		—	150·8	348	i 18 38	[−65]	—	—	—	—
Triest		—	151·0	340	18 43	[−60]	—	—	—	—
Chur		—	151·0	346	18 49	[−54]	—	—	—	—
Neuchatel		—	151·4	350	i 18 39	[−64]	—	—	—	—
Treviso		—	151·5	342	i 18 40	[−64]	—	—	—	—
Venice		—	151·7	341	e 18 40	[−64]	—	—	—	—
Piacenza		—	152·7	345	e 18 28	[−76]	—	—	—	41·7

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Pavia	—	152·7	346	e 18 57	[−47]	—	—	—	—
Prato	—	153·4	342	e 18 40	[−66]	—	—	—	—
Camerino	—	153·5	338	e 19 19	[−28]	—	—	—	—
Florence	—	153·5	342	18 42	[−65]	—	—	—	80·7
Rome	—	154·8	338	e 18 53	[−55]	—	—	—	—
Trenta	—	155·3	329	e 18 40	[−68]	—	—	—	—
Catania	—	157·3	328	e 18 41	[−69]	—	—	—	—
Toledo	—	158·9	9	e 18 50	[−62]	e 29 12	?	e 42·7	—
Alicante	—	160·7	1	e 29 16	?	—	—	e 47·7	—
Granada	—	161·6	9	i 18 53	[−63]	—	—	i 44·5	51·7
San Fernando	—	161·7	16	33 10	?	43 40	?	—	—
Malaga	—	161·9	11	e 18 53	[−63]	e 28 25	?	—	—
Almeria	—	162·0	6	i 18 54	[−62]	28 56	?	44·4	50·2

Additional readings and notes :—
Riverview eSN = +9m.6s., iN = +12m.24s., iE = +12m.40s.
Sydney S is given as L.
Melbourne i = +6m.11s., e = +7m.50s. and +10m.3s.
Perth S? = +6m.10s.
Manila iZ = +18m.13s. and +22m.6s.
Hong Kong SS = +23m.43s.
Berkeley eE = +11m.10s., iZ = +13m.25s., iSZ = +20m.22s., eE = +20m.38s. and +20m.53s., iE = +24m.39s., iN = +25m.5s.
Lick iSEN = +11m.12s.
Pasadena iZ = +11m.10s., +11m.15s., and +13m.33s., eZ = +14m.23s.
Haiwee iN = +11m.22s.
Tinemaha iEN = +11m.21s., eSN = +20m.37s.
Medan i = +6m.4s., +6m.28s., and +14m.46s.
Tucson PS = +21m.12s., eSS = +25m.52s.
Irkutsk i = +14m.54s., e = +21m.40s., i = +24m.33s.
Little Rock eE = +22m.5s., eN = +22m.18s., iE = +22m.47s.
Florissant iZ = +15m.16s., eZ = +17m.11s., iE = +23m.12s., eEZ = +25m.22s., iE = +26m.33s., iEZ = +27m.47s.
St. Louis iEN = +23m.12s., iE = +23m.47s., eE = +25m.20s., and +26m.10s.
Pittsburgh ePS = +24m.58s., i? = +26m.45s., eSS = +30m.46s.
Toronto iE = +23m.1s., +24m.5s., +25m.2s., and +27m.6s.
Ottawa eE = +24m.29s., +27m.26s., +31m.25s., and +32m.38s., e = +33m.49s.
San Juan e? = +30m.32s., SS = +34m.28s., SSS = +38m.40s.
Tashkent i = +19m.6s. and +21m.39s., e = +28m.4s.
Scoresby Sund +20m.22s., e = +21m.22s., and +29m.4s.
Kucino e = +21m.22s., +21m.41s., +24m.11s., +26m.58s., and +28m.11s.
Helsingfors ePPZ = +20m.44s., iPPPEN = +21m.44s., iEN = +24m.17s., eSE = +26m.48s.
Upsala i = +21m.44s., e = +24m.21s.
Königsberg e = +18m.49s., i = +21m.59s., eN = +27m.24s.
De Bilt e = +28m.3s.
Ksara iE = +19m.14s. and +19m.59s.
Potsdam iEN = +18m.33s., iE = +18m.50s., iN = +18m.54s., iE = +19m.3s., iZ = +19m.8s., iE = +20m.12s., iZ = +21m.1s.
Göttingen iP = +18m.36s.
Jena iEZ = +18m.37s., iE = +18m.48s. and +18m.59s., eZ = +22m.5s.
Oxford e = +19m.7s.
Kew eZ = +21m.9s., eEN = +21m.13s.
Budapest i = +18m.37s. and +18m.42s.
Vienna PP = +18m.39s., i = +20m.0s., P_cP? = +23m.28s.
Uccle i = +21m.9s.
Feldberg i = +21m.13s., e = +24m.34s., +28m.6s., and +31m.39s.
Belgrade e = +18m.45s., +18m.51s., and +19m.11s.
Graz readings are given as L's for separate shocks.
Stuttgart iNZ = +18m.43s., eE = +19m.55s., eN = +20m.23s., eE = iZ = +21m.11s., iN = +21m.23s., eEN = +28m.12s., eNZ = +31m.40s.
Strasbourg iPKP = +21m.17s., SKKS = +21m.35s., PS = +35m.58s.
Paris PP = +21m.12s.
Innsbruck i = +19m.33s.
Triest P_g = +18m.54s., eS = +19m.23s., S_g = +19m.49s.; phases of shock started near Triest by P?
Treviso eS? = +19m.5s.; see Triest above.
Prato iS = +18m.56s.; see Triest above.
Toledo P_cP = +19m.34s., i = +35m.40s.
Granada i = +23m.33s., +25m.57s., +26m.20s., +28m.59s., and +33m.19s.
Almeria PP = +21m.28s., PPP = +23m.33s.

April 3d. Readings also at 6h. (near Almeria and Granada), 7h. (near Zagreb), 9h. (Andijan, Tashkent, and Almeria), 19h. (near New Plymouth, Takaka, and Wellington), 22h. (near Almata, Andijan, Samarkand, Tashkent, near Christchurch, Hastings, New Plymouth, Takaka, and Wellington), 23h. (Simferopol and Tananarive).

April 4d. Readings at 0h. (near Tyosi), 1h. (Almata, near Andijan, and Samarkand), 2h. (Irkutsk and Tashkent), 4h. (La Paz), 5h. (near Berkeley and Lick), 8h. (Samarkand, Almata, Ekaterinburg, near Irkutsk, San Juan, La Paz, and near Port au Prince), 9h. (Little Rock), 10h. (Andijan and Samarkand), 11h. (near Alicante), 13h. (La Paz), 14h. (Amboina), 17h. (Stuttgart and near Catania), 18h. (near Algiers and near Tyosi), 19h. (Haiwee, Pasadena, La Plata, and near La Paz), 21h. (Tashkent and near Tortosa), 22h. (Port au Prince, near San Juan, near New Plymouth, and Wellington), 23h. (Kodaikanal, near Hastings, and New Plymouth).

April 5d. 13h. 34m. 0s. Epicentre 43°·5N. 11°·8E. (as on 1927 Dec. 1d.). R.3.

$A = +\cdot710$, $B = +\cdot148$, $C = +\cdot688$; $D = +\cdot204$, $E = -\cdot979$; $G = +\cdot674$, $H = +\cdot141$, $K = -\cdot725$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		0·5	305	0 6	− 1	—	—	—	0·3
Prato		0·6	307	e 0 11	+ 2	i 0 21	S_g	—	0·5
Rome		1·7	163	0 45	S	(0 45)	+ 1	—	—
Padova		1·9	1	e 0 28	0	0 38	P_g	—	—
Venice		2·0	11	e 0 35	P*	—	—	—	—
Piacenza		2·2	315	e 0 36	+ 5	0 58	+ 1	—	1·5
Treviso		2·2	7	e 0 29	− 2	e 0 54	− 3	—	—
Pavia		2·5	312	e 0 52	P_g	—	—	—	—
Innsbruck		3·8	356	—	—	1 30	− 7	—	—
Zagreb		3·8	51	1 8	P*	—	—	—	2·2
Zurich	N.	4·5	331	e·1 2	− 2	—	—	—	—
Ravensburg		4·6	341	e 1 25	P*	e 1 48	−10	—	—
Neuchatel		4·9	317	e 1 9	− 1	e 1 58	− 7	—	—
Stuttgart		5·6	342	e 1 40	P*	e 2 35	+12	e 3·1	—
Vienna	z.	5·7	33	e 2 24	S	(e 2 24)	− 1	—	—

Neuchatel gives also e = +1m.31s.

April 5d. 21h. 30m. 58s. Epicentre 1°·0S 140°·0E. (as on 1925 Mar. 22d.). X.

$A = -\cdot766$, $B = +\cdot643$, $C = -\cdot017$; $D = +\cdot643$, $E = +\cdot766$; $G = +\cdot013$, $H = -\cdot011$, $K = -1\cdot000$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	z.	24·4	310	e 5 30	+16	e 9 28	− 2	i 12·4	—
Batavia		33·5	260	e 8 28	?	—	—	e 14·1	—
Adelaide		34·0	181	e 5 41	−59	i 12 9	+ 3	—	17·2
Riverview		34·5	165	e 5 9	?	12 9	− 5	—	—
Sydney		34·5	165	e 9 2	(−22)	—	—	14·7	15·3
Melbourne		37·1	174	e 8 7	+60	i 13 54	+61	—	—
Perth		38·4	215	—	—	12 42	−30	15·4	—
Irkutsk		61·1	336	e 10 12	0	e 18 51	+21	e 31·0	—
Almata		71·5	317	e 12 33	+73	—	—	—	—
Andijan		74·0	313	e 11 48	+13	—	—	—	—
Tashkent		76·3	313	e 12 38	+50	i 21 49	+14	38·0	43·2
Samarkand		77·6	311	e 11 54	− 1	e 21 51	+ 2	—	—
Ekaterinburg		85·0	328	i 13 21	+48	i 22 31	[−28]	36·0	—
Baku		90·7	311	—	—	e 22 22	[−75]	48·0	—
Scoresby Sund		109·5	354	—	—	29 2?	PS	—	—

Additional readings:—
Adelaide i = +10m.14s.
Riverview iN = +6m.23s. = P − 22s.
Melbourne e = +10m.34s., i = +10m.49s.
Irkutsk e = +11m.7s. = P_cP +9s., +13m.2s. ? and +22m.46s.
Long waves were also recorded at other European stations.

April 5d. Readings also at 2h. (Ekaterinburg, Irkutsk, and Tashkent), 3h. (Haiwee, Mount Wilson, and Pasadena), 4h. (Tyosi), 5h. (Florissant, St. Louis, Little Rock, and Tucson), 8h. (Samarkand), 10h. (near Manila), 12h. (Little Rock), 13h. (Suva), 14h. (Almata, Andijan, and Samarkand), 17h. (Andijan and Samarkand), 22h. (near Nagoya), 23h. (Baku and near Santiago).

April 6d. 6h. 49m. 43s. Epicentre 7°·0S. 155°·0E. R.1.

Probable error of epicentre ±0°·32. (as on 1930 Jan. 20d.).

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		25·4	118	i 5 47	+23	10 17?	+29	13·0	13·3
Amboina		26·9	276	i 4 34	−63	10 23	+ 9	—	—
Riverview		27·1	187	i 5 42	+ 3	i 10 18	+ 1	14·1	16·3
Sydney		27·1	187	e 6 17	PP	i 11 35	SS	16·1	17·3
Adelaide		31·8	206	i 6 26	+ 5	i 11 30	− 2	14·4	19·6
Melbourne		32·1	195	6 30	+ 6	11 47	+10	15·4	18·0
Arapuni		36·3	151	e 7 17?	+17	13 17?	+36	19·3?	21·3?
Wellington		38·6	156	7 21	+ 1	13 9	− 6	18·3	23·3
Christchurch		39·7	160	i 8 16	+47	i 14 28	+56	—	—
Manila	Z.	40·1	303	i 7 34	+ 1	i 13 31	− 7	i 16·7	—
Perth		44·1	230	e 9 17	+71	16 47	?	23·0	—
Miyazaki		45·1	330	8 10	− 4	14 55	+ 3	—	—
Koti		45·4	337	e 8 29	+13	—	—	19·3	—
Batavia		47·9	267	i 8 36	+ 1	15 12	−19	25·3	—
Hong Kong		49·6	309	8 47	− 1	15 51	− 4	24·4	25·5
Zi-ka-wei	Z.	49·9	322	i 8 49	− 2	15 59	0	24·0	29·1
Honolulu T.H.		54·2	57	i 9 20	− 3	16 56	− 2	24·3	—
Phu-Lien		55·1	301	9 30	0	e 16 26	−45	23·3	—
Medan		57·2	279	9 46	+ 1	17 34	− 5	—	—
Calcutta		71·6	298	10 18	−62	19 28	−72	36·6	—
Irkutsk		73·3	330	11 26	− 5	e 19 51	?	31·3	—
Colombo		76·3	279	11 48	0	21 28	− 7	47·4	48·5
Kodaikanal		79·1	283	e 11 47	−17	—	—	e 43·4	54·6
Hyderabad		79·4	290	12 4	− 1	22 1	− 8	37·3	42·2
Agra	E.	81·7	300	e 12 10	− 7	22 15	−19	—	—
	N.	81·7	300	e 12 12	− 5	22 17	−17	e 41·0	—
Bombay		85·0	290	12 36	+ 3	22 56	−12	42·9	45·8
Sitka		85·1	31	e 12 28	− 6	23 14	+ 5	i 35·4	—
Almata		86·2	316	12 40	+ 1	e 23 31	+12	—	—
Berkeley		88·6	52	—	—	e 23 24	[0]	e 41·5	—
Lick		89·0	52	e 12 51	− 2	e 23 38	− 8	e 43·4	—
Victoria		89·8	41	12 53	− 3	23 37	−17	41·1	45·1
Santa Barbara		90·2	55	e 13 6	+ 8	e 23 57	− 1	—	—
Tashkent		91·4	313	i 13 2	− 2	i 23 27	[−14]	e 39·3	53·4
Pasadena		91·4	56	i 13 2	− 2	e 24 24	+15	e 41·5	—
Mount Wilson		91·5	56	e 13 3	− 1	—	—	—	—
La Jolla		92·0	58	e 13 5	− 2	—	—	—	—
Riverside		92·0	56	e 13 4	− 3	e 23 55	{+ 4}	—	—
Samarkand		93·0	310	e 13 13	+ 2	—	—	—	—
Tucson		97·3	58	13 23	− 8	i 24 21	[+ 8]	40·2	—
Ekaterinburg		98·2	326	i 13 33	− 2	e 25 6	− 5	42·3	56·8
Tananarive		104·0	250	—	—	e 33 11	SS	e 49·6	55·8
Baku		106·0	310	e 17 39	[−26]	e 27 56	PS	51·3	60·6
Little Rock		112·5	54	e 19 13	PP	e 25 45	[+21]	e 51·3	—
Florissant		113·5	51	i 14 41	− 6	e 26 2	{−30}	e 52·8	59·8
St. Louis		113·7	51	e 19 15	PP	—	—	e 53·1	59·1
Chicago		114·9	47	19 27	PP	29 13	PS	52·4	—
Helsingfors	E.	115·0	334	e 19 37	PP	e 25 19	[−15]	e 55·3	—
Scoresby Sund		116·5	358	19 46	PP	29 29	PS	—	—
Ksara	E.	117·9	303	e 18 5	[−35]	19 51	PP	—	—
Toronto		120·1	43	e 19 52	PP	i 29 47	SKSP	55·7	63·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pittsburgh		120·9	44	i 20 10	PP	30 4	PS	e 53·4	—
Ottawa		121·9	40	e 20 22	PP	e 26 3	[+ 7]	e 50·3	—
Helwan		122·5	301	e 20 17	PP	e 30 37	PS	—	—
Charlottesville		122·7	48	—	—	30 17	PS	e 56·3	—
Copenhagen		123·0	335	20 27	PP	30 23	PS	52·3	—
Georgetown		123·4	47	i 18 53	[0]	30 27	PS	e 55·3	—
Budapest		125·0	325	e 18 47	[−10]	—	—	e 62·3	71·8
Fordham		125·0	44	i 18 42	[−15]	e 30 35	PS	e 57·3	—
Potsdam		125·0	337	i 18 23	[−34]	i 28 9	{+20}	e 60·3	78·3
Hamburg		125·5	335	e 18 58	[0]	e 30 29	PS	e 57·3	81·3
Vienna	Z.	126·0	327	i 18 58	[− 1]	—	—	—	—
Harvard		126·3	41	e 20 45	PP	e 37 55	SS	e 57·8	—
Jena		126·6	332	e 18 57	[− 3]	—	—	e 55·3	75·3
Zagreb		127·6	325	e 19 3	[+ 1]	—	—	e 65·3	68·7
La Plata		127·9	145	19 5	[+ 2]	—	—	64·3	—
De Bilt		128·6	337	i 19 3	[− 1]	—	—	e 56·3	70·3
Feldberg		128·6	334	e 21 11	PP	e 38 34	SS	e 52·6	74·9
Triest		128·9	326	18 52	[−13]	—	—	e 34·1	—
Innsbruck		129·1	329	18 59	[− 6]	—	—	—	—
Stuttgart		129·3	331	i 19 5	[0]	—	—	e 60·3	67·9
Stonyhurst		129·8	343	e 21 24	PP	—	—	62·3	68·3
Treviso		129·8	327	i 19 8	[+ 2]	22 31	?	70·3	—
Venice		129·8	327	e 19 11	[+ 5]	e 22 24	?	—	—
Uccle		129·9	336	19 6	[0]	—	—	e 56·3	—
Padova		130·1	327	e 19 6	[− 1]	22 31	PKS	—	—
Strasbourg		130·1	331	19 4	[− 3]	—	—	—	—
Bidston		130·3	343	i 19 32	[+25]	e 30 27	?	e 58·6	67·3
Zurich		130·7	330	i 19 7	[− 1]	—	—	—	—
Kew		131·1	340	i 19 8	[− 1]	—	—	58·3	68·9
Oxford		131·1	340	e 21 27	PP	—	—	e 58·3	74·3
La Paz		131·3	119	i 19 11	[+ 2]	32 25	?	62·3	68·4
Florence		131·4	323	19 8	[− 1]	22 31	PKS	41·3	58·3
Neuchatel		131·5	330	e 19 1	[− 8]	—	—	—	—
Piacenza		131·5	328	19 23	[+14]	22 35	PKS	60·3	75·8
Prato		131·5	324	e 19 17	[+ 8]	22 17	PKS	—	—
Rome		131·8	322	e 19 4	[− 6]	—	—	—	—
Paris		132·1	337	e 19 17?	[+ 7]	i 21 37	PP	50·3	72·3
Catania		132·5	315	e 19 6	[− 5]	22 43	PKS	—	—
San Juan		138·4	69	19 23	[+ 4]	—	—	e 56·2	—
Tortosa	N.	139·2	330	e 19 24	[+ 4]	—	—	e 74·3	89·7
Alicante		141·6	329	e 19 26	[+ 3]	—	—	e 85·1	—
Toledo		142·1	334	e 19 25	[+ 1]	37 26	?	e 60·6	85·3
Almeria		143·7	331	i 19 27	[− 3]	—	—	72·6	82·2
Granada		144·1	330	i 19 27	[− 5]	—	—	i 68·3	86·8
Malaga		144·8	331	19 36	[+ 3]	34 33	?	—	—
San Fernando		145·9	332	19 17?	[−19]	30 17?	{+17}	—	—
Dakar		169·3	316	e 19 57	[− 6]	—	—	—	98·1

Additional readings :—
Suva SS = +11m.17s.
Riverview iSSS = +12m.4s.
Sydney PS = +10m.35s., SS = +12m.53s., SSS = +14m.35s.
Adelaide i=+6m.40s., +7m.23s., and +11m.39s., iSS=+13m.21s., iSSS=+13m.45s.
Melbourne i = +7m.59s., SS = +14m.25s.
Wellington PP = +8m.52s., SS = +15m.47s.
Christchurch iSSS = +17m.43s.
Manila iZ = +9m.54s.
Perth PP = +11m.27s., SS = +19m.47s.
Batavia P = +8m.39s.
Hong Kong ? = +21m.30s.
Zi-ka-wei iZ = +9m.1s., +11m.55s., and +16m.43s.
Honolulu T.H. SS = +20m.23s., SSS = +22m.53s.
Medan i = +18m.10s.
Sitka SKS = +22m.46s., iPS = +24m.17s.
Berkeley eE = +iN = +23m.31s., eE = +23m.54s., +29m.35s., and +39m.35s., eZ = +40m.23s.
Victoria PN = +13m.5s. ; T_0 = 6h.49m.40s.

Continued on next page.

Tashkent PS = +24m.19s. =S +10s.
Pasadena eZ = +16m.44s. =PP +7s., eSZ = +24m.28s., eZ = +25m.20s. = PS +12s., eE = +25m.25s., eZ = +30m.8s. =SS +8s.
Tucson PP = +17m.24s., PS = +26m.20s., SS = +31m.31s.
Ekaterinburg i = +17m.32s. =PP +3s., +18m.7s., and +18m.17s., e = +31m.27s. =SS −10s., and +37m.32s.
Tananarive eE = +33m.31s.
Baku i = +18m.37s. =PP +9s., +33m.48s. =SS +24s., and +44m.28s.
Little Rock eE = +28m.50s. =PS −2s., and +29m.7s.
Florissant eEZ = +18m.6s., iPPZ = +19m.19s., iEN = +27m.2s., iPSEZ = +28m.54s., eE = +30m.8s., iSSEN = +34m.52s., eEN = +39m.18s.
St. Louis eE = +25m.59s., iE = +26m.55s., ePS = +28m.49s., eE = +29m.58s., eSSE = +34m.50s.
Helsingfors eSKSPE = +29m.55s., ePPSN = +30m.34s., ePPSE = +30m.37s., eE = +33m.7s. and +35m.12s., eSSEN = +35m.49s., eE = +36m.1s., eSSSEN = +40m.46s., eE = +47m.49s.
Toronto iPPSE = +29m.59s., i = +31m.34s., iE = +36m.47s. =SS +14s., i = +37m.1s.
Pittsburgh SS = +36m.53s.
Ottawa eE = +27m.32s. =SKKS +3s., eN = +27m.50s., eE = +30m.21s. = SKSP +12s.
Charlottesville SS = +37m.17s.
Copenhagen eZ = +36m.10s.
Georgetown PPEZ = +20m.30s. ; T_0 = 6h.49m.48s.
Fordham eN = +38m.47s. and +44m.17s.?
Potsdam iZ = +18m.57s., e = +20m.17s.?, eZ = +30m.17s.?, and +35m.47s.
Harvard eE = +22m.15s., +32m.41s., eEN = +33m.49s.
Zagreb eNE = +19m.8s. and +19m.43s., e = +21m.57s.
De Bilt e = +21m.11s. =PP +3s. and +22m.23s., eZ = +35m.36s.
Feldberg e = +22m.25s., +31m.1s. =PS −18s., and +34m.5s.
Stuttgart ePP = +21m.10s., ePKS = +22m.27s., ePPPE = +23m.53s., ePPSEN = +33m.53s., eSSEN = +38m.35s.
Stonyhurst i = +22m.31s.
Uccle eN = +21m.11s. =PP −8s., iN = +22m.30s.
Strasbourg PP = +22m.32s., PPS = +35m.35s.
Kew ePP = +21m.25s., iPKSEN = +22m.33s.
Oxford e = +22m.30s. =PKS −8s., i = +22m.35s.
La Paz iPPE = +22m.25s., SSN = +39m.3s.
Neuchatel iP = +19m.9s., ePP = +22m.29s. =PKS −11s.
Toledo P = +23m.11s. =PKS −3s., PS = +35m.3s.
Almeria PP = +22m.56s.
Granada PP = +20m.32s., i = +21m.38s., PPP = +23m.3s., i = +29m.11s.
San Fernando PE = +19m.47s.
San Juan ePP = +22m.57s., PS = +33m.17s., eSS = +40m.47s.
Long waves were also recorded at Ann Arbor, Ivigtut, Kucino, Theodosia, and other European stations.

April 6d. Readings also at 2h. (Andijan), 3h. (Columbia), 4h. (Baku, Ekaterinburg, Tashkent, Irkutsk, Tyosi, and near Mizusawa), 5h. (near Mizusawa and Tyosi), 6h. (Chiufeng and Bergen), 7h. (near Koti and near Medan), 9h. (Kodaikanal and near New Plymouth), 11h. (near Samarkand), 12h. (Baku, Ekaterinburg, Tashkent, Irkutsk, Nagoya, Samarkand, Kodaikanal, Scoresby Sund, De Bilt, Copenhagen, Feldberg, Uccle, Hong Kong, Phu-Lien, and near Manila), 13h. (Strasbourg, Kew, Stuttgart, Granada, near Hastings, and New Plymouth), 15h. (Sumoto, near Kobe, near St. Louis, Florissant, and Little Rock), 18h. (Zi-ka-wei), 20h. (Ottawa), 21h. (near New Plymouth).

April 7d. 0h. 15m. 47s. Epicentre 25°·4N. 96°·8E. (as on 1931 Feb. 11d.) R.3.

A = −·107, B = +·897, C = +·429 ; D = +·993, E = +·118 ;
G = −·051, H = +·426, K = −·903.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	8·2	251	3 29	S	(3 29)	0	4·9	5·6
Phu-Lien	10·1	115	e 2 21	− 1	e 5 25	+69	5·7	—
Hyderabad	18·8	249	4 18	+ 2	8 9	+27	10·6	13·9
Bombay	23·1	258	4 58	− 4	9 21	+14	12·4	12·5
Andijan	25·4	313	e 5 35	+11	e 9 52	+ 4	—	—
Irkutsk	27·4	10	e 5 42	0	e 10 13	− 9	14·2	16·5
Tashkent	27·8	312	e 5 49	+ 4	e 10 46	+18	e 15·3	17·7
Samarkand	28·7	307	—	—	10 57	+14	—	—
Baku	41·6	304	e 9 27	PP	e 17 14	?	22·7	—

Additional readings :—
Calcutta S = +4m.19s. =S*.
Tashkent i = +10m.32s., e = +11m.13s. and +15m.22s.
Long waves were also recorded at Hong Kong, Kucino, and European Stations.

April 7d. 7h. 39m. 36s. Epicentre 48°·0S. 13°·0E. N.3.

A = +·652, B = +·151, C = −·743 ; D = +·225, E = −·974 ;
G = −·724, H = −·167, K = −·669.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive	40·3	56	—	—	e 14 3	+22	e 19·8	21·4
La Paz	72·0	265	i 11 22	− 1	i 20 53	+ 8	35·9	41·2
Bombay	85·5	55	12 35	− 1	e 23 1	[− 2]	41·8	—
Florence	91·8	359	26 56	?	—	—	—	54·4
Baku	94·2	28	e 17 30	?	e 26 17	PS	45·4	56·6
Stuttgart	96·8	357	e 17 39	PP	—	—	e 54·4	—
Feldberg	98·3	357	e 32 30	?	—	—	—	61·8
De Bilt	100·3	355	e 18 19	PP	e 33 12	?	60·4	62·4
Tashkent	102·2	40	e 18 24?	PP	—	—	e 49·4	59·4
Ekaterinburg	112·1	26	19 34	PP	29 1	PS	50·4	69·0
Irkutsk	126·6	50	e 20 24?	PP	e 37 24?	SS	e 65·4	—

Additional readings :—
Baku e = +31m.28s.
Stuttgart eEN = +31m.59s.
Tashkent e = +27m.24s.? = PS +15s. and +32m.48s. = SS +16s.
Long waves were also recorded at Hyderabad, Kodaikanal, Wellington, Kucino, Storesby Sund, and European stations.

April 7d. Readings also at 0h. (Andijan), 4h. (La Paz, Tashkent, near Andijan, and Samarkand), 5h. (La Plata), 8h. (Andijan), 9h. (Baku, Ekaterinburg, Samarkand, Tashkent, Kucino, and near Santiago), 13h. (Samarkand), 14h. and 15h. (near Tyosi), 16h. (near Sumoto), 19h. (near Samarkand (2) and near Malabar), 22h. (near Berkeley).

April 8d. 19h. 3m. 25s. Epicentre 2°·0S. 137°·0E. (as on 1925 July 17d.). R.2.

A = −·731, B = +·682, C = −·035 ; D = +·682, E = +·731 ;
G = +·026, H = −·024, K = −·999.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		8·9	259	2 17	+11	i 4 11	+25	6·1	6·8
Manila		23·0	317	i 5 0	− 1	i 9 13	+ 8	i 11·8	—
Batavia		30·4	261	e 6 19	+10	—	—	e 14·0	—
Hong Kong		33·0	320	—	—	11 41	−10	—	15·6
Adelaide		33·0	176	i 6 36	+ 4	i 12 3	+12	i 20·3	22·5
Riverview		34·5	159	6 35	−10	—	—	—	24·6
Sydney		34·5	159	—	—	e 12 5	− 9	20·5	25·0
Perth		36·0	212	7 15	+17	13 5	+29	22·4	—
Melbourne		36·5	169	e 8 50	?	i 12 55	+11	21·5	23·4
Phu-Lien		37·5	310	e 7 11	0	12 59	0	16·1	—
Mizusawa		41·3	5	(8 1)	+18	8 1	P	—	—
Chiufeng	E.	46·2	339	e 7 59	−23	—	—	—	—
Arapuni		50·5	139	—	—	16 35?	+30	—	—
Wellington		52·0	144	19 57	SS	25 17	?	27·6	—
Hyderabad		60·9	291	10 10	− 1	18 33	+ 5	22·6	38·8
Irkutsk		60·9	338	e 10 5	− 6	18 21	− 7	28·6	35·8
Bombay		66·5	292	10 46	− 3	19 37	− 2	34·6	—
Honolulu T.H.		67·7	64	—	—	e 31 11	?	e 35·6	—
Almata		70·2	319	11 14	+ 2	20 9	−15	—	—
Andijan		72·4	315	11 23	− 2	20 46	− 4	—	—
Tashkent		74·9	314	i 11 35	− 5	i 21 12	− 7	e 34·6	43·8
Samarkand		76·1	313	11 46	− 1	21 31	− 2	—	—
Ekaterinburg		84·3	328	i 12 27	− 3	i 22 47	[− 7]	37·6	48·8
Baku		89·1	312	e 12 56	+ 3	23 25	[− 2]	41·6	48·6
Kucino		96·7	326	—	—	e 24 47	−10	e 41·3	51·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helsingfors	E.	102·5	332	—	—	e 25 31	−17	e 57·6	—
Scoresby Sund		110·1	352	—	—	28 23	PS	56·6	—
Copenhagen		110·4	330	—	—	28 17	PS	50·6	—
Feldberg		115·2	327	—	—	e 27 13	{+29}	e 53·7	65·2
Stuttgart		115·5	325	—	—	e 27 23	{+37}	e 60·6	71·6
De Bilt		116·0	330	—	—	e 26 47	{− 2}	e 54·6	64·0
Florence		116·5	318	9 5	?	—	—	—	52·6
Uccle		117·0	329	—	—	e 26 35?	{−19}	e 53·6	—
Kew		119·0	332	—	—	e 29 54	PS	e 60·6	—
La Paz		149·0	127	i 19 46	[− 6]	—	—	75·4	97·0
San Juan		152·0	53	—	—	e 30 5	{−29}	e 76·6	—

Additional readings :—
Manila iZ = +8m.25s.
Adelaide i = +14m.11s., iSS = +18m.25s.
Perth PP = +8m.25s., PPP = +8m.40s., i = +15m.40s., +17m.5s., and +17m.35s.
Melbourne i = +16m.11s.
Baku eSS = +29m.53s.
Helsingfors eSSE = +33m.8s., eE = +40m.11s.
Feldberg e = +35m.47s. = SS +19s.
Stuttgart eN = +35m.35s.? = SS +3s.
Kew eE = +35m.45s. ? = SS −34s.
La Paz PPN = +23m.35s.
San Juan e = +33m.29s. = SKSP −23s.
Long waves were also recorded at Kobe, Kodaikanal, and other European and American stations.

April 8d. Readings also at 2h. (Sydney), 4h. (Nagoya and near La Paz), 7h. (Tyosi), 8h. (Baku, Ekaterinburg, Tashkent, Hong Kong, Manila (2), near Malabar, and near Hastings), 9h. (Nagoya), 13h. (near Kobe, Sumoto, and Toyooka), 15h. (near Hastings), 16h. (Sumoto), 21h. (near Tyosi (2)).

April 9d. 5h. 31m. 59s. Epicentre 33°·7N. 135°·2E. (as on 1930 Nov. 8d.). R.3.

A = −·590, B = +·586, C = +·555 ; D = +·705, E = +·710 ;
G = −·394, H = +·391, K = −·832.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·7	338	i 0 10	0	0 20	+ 2	—	0·4
Kobe	1·0	359	i 0 14	0	i 0 28	+ 2	—	0·5
Osaka	1·0	12	0 14	0	(0 25)	− 1	0·4	0·9
Koti	1·4	264	i 0 21	+ 1	0 36	0	—	0·6
Toyooka	1·9	350	i 0 27	− 1	i 0 49	0	—	0·8
Matuyama	2·0	274	i 0 28	− 1	i 0 48	− 3	—	1·2
Nagoya	2·0	45	e 0 31	+ 2	0 54	+ 3	—	1·0
Hukuoka	4·0	268	e 1 23	P_g	e 1 59	S*	—	—

Toyooka gives also iN = +34s. = P*, iZ = +42s.

April 9d. 14h. 1m. 0s. Epicentre 31°·5N. 137°·8E. (as on 1928 March 29d.). X.

A = −·632, B = +·573, C = +·522 ; D = +·672, E = +·741 ;
G = −·387, H = +·351, K = −·853.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		3·8	350	e 0 56	+ 2	1 38	+ 1	—	—
Osaka		3·8	330	0 53	− 1	(1 35)	− 2	1·6	1·8
Sumoto		3·8	322	0 54	0	1 36	− 1	—	1·6
Kobe		3·9	327	i 0 55	− 1	i 1 35	− 5	—	1·6
Toyooka		4·8	331	i 0 59	− 9	i 1 45	−18	—	1·8
Matuyama	N.	4·9	301	1 11	+ 1	—	—	—	—
Tyosi		5·0	30	1 12	+ 1	2 6	− 2	—	—
Mizusawa	E.	8·1	19	2 0	+ 5	2 55	−31	—	—

Osaka gives also i = +1m.15s. = P_g.

April 9d. 23h. 1m. 18s. Epicentre 43°·6N. 146°·0E. N.1.

Probable error of epicentre ±0°·25.

Wadati gives epicentre 44°·2N. 145°·6E. for this shock. See "Shallow and Deep Earthquakes" Geophys. Mag., Tokyo, Vol. IV, No. 4.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nemuro		0·4	227	0 9	+ 3	0 14	+ 4	—	—
Kusiro		1·3	242	0 18	0	0 34	+ 1	—	—
Obihiro		2·2	251	0 48	P_g	1 15	S_g	—	—
Asahigawa		2·6	275	0 44	+ 7	1 16	S*	—	—
Haboro		3·2	284	0 57	P*	1 36	S*	—	—
Sapporo		3·4	262	0 53	+ 4	1 36	S*	—	—
Ootomari		3·8	323	1 1	+ 7	1 33	− 4	—	—
Muroran		3·9	252	0 59	+ 3	1 45	+ 5	—	—
Hakodate		4·3	246	1 12	+11	1 58	+ 8	—	—
Aomori		4·8	237	1 10	+ 2	2 12	+ 9	—	—
Morioka		5·3	225	1 14	− 1	2 12	− 3	—	—
Mizusawa		5·8	221	1 21	− 1	2 21	− 7	—	—
Akita		5·9	231	1 26	+ 2	2 42	+11	—	—
Sendai		6·6	218	1 30	− 4	2 36	−12	—	—
Hukusima		7·2	217	1 38	− 4	2 54	−10	—	—
Mito		8·4	212	1 55	− 4	3 16	−18	—	—
Utunomiya		8·5	216	1 51	− 9	3 23	−13	—	—
Kakioka		8·6	213	1 56	− 6	3 28	−11	—	—
Tukubasan		8·7	214	1 56	− 7	3 25	−16	—	—
Tyosi		8·8	208	2 2	− 3	3 11	−33	3·6	5·1
Kumagaya		9·0	217	2 3	− 4	3 36	−13	—	—
Maebasi		9·0	218	2 1	− 6	3 32	−17	—	—
Nagano		9·2	223	2 7	− 3	3 41	−13	—	—
Oiwake		9·2	220	2 10	0	3 59	+ 5	—	—
Tokyo		9·3	213	2 6	− 5	3 42	−14	—	—
Yokohama		9·5	213	2 20	+ 6	3 50	−11	—	—
Mera		9·9	211	2 27	+ 8	4 0	−11	—	—
Misima		10·1	215	2 23	+ 1	4 4	−12	—	—
Vladivostok		10·2	272	2 53	+29	4 52	S*	5·5	6·4
Gihu		10·8	224	2 29	− 3	4 41	+ 8	—	—
Nagoya		10·9	223	e 2 37	+ 4	4 44	+ 8	—	—
Hatidyozima		11·5	207	2 41	− 1	4 34	−16	—	—
Toyooka		11·8	231	i 2 43	− 3	i 4 48	−10	i 6·8	7·7
Osaka		12·0	226	2 46	− 2	(5 16)	+13	5·3	6·3
Kobe		12·2	227	i 2 48	− 3	—	—	—	8·1
Sumoto		12·7	227	2 59	+ 1	e 6 21	L	(e 6·4)	8·0
Siomisaki		12·9	221	3 3	+ 2	5 38	+13	—	—
Hamada		13·8	235	3 21	+ 8	5 37	− 9	—	—
Koti		14·0	228	e 3 11	− 4	e 6 6	+15	e 7·2	9·7
Matuyama		14·2	231	e 3 14	− 4	—	—	—	—
Hukuoka		15·7	236	3 36	− 2	—	—	7·5	—
Miyazaki		16·3	229	3 50	+ 5	6 59	+14	—	—
Nagasaki		16·7	235	3 28	−22	6 18	−37	—	—
Chiufeng	E.	22·4	271	e 4 57	+ 2	8 58	+ 5	—	—
Zi-ka-wei	Z.	23·0	246	i 5 2	+ 1	i 9 12	+ 7	—	16·0
Irkutsk		28·8	303	5 56	+ 2	e 10 37	− 8	15·7	18·7
Hong Kong		33·8	240	—	—	12 2	− 1	—	19·0
Manila	Z.	36·0	225	e 6 54	− 4	(12 52)	+16	12·9	—
Phu-Lien		39·8	249	e 7 29	− 1	e 13 26	− 7	16·7	—
Almata		48·6	295	e 8 44	+ 3	15 41	0	24·9	—
Honolulu T.H.		51·3	96	—	—	e 14 42	?	e 23·7	—
Calcutta		51·5	267	9 7	+ 4	16 7	−15	25·9	—
Ekaterinburg		52·4	318	i 9 14	+ 5	i 16 38	+ 4	23·7	34·0
Andijan		52·7	295	9 17	+ 5	16 44	+ 6	27·4	—
Tashkent		54·5	296	i 9 26	+ 1	i 16 56	− 6	e 25·7	35·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	59·3	50	9 54	− 6	18 4	− 3	28·4	31·4
	N.	59·3	50	10 22	+22	18 34	+27	—	—
Batavia		61·1	226	e 10 7	− 5	i 18 38	+ 8	—	—
Hyderabad		61·9	270	9 41	−37	18 16	−25	32·6	44·5
Kucino		63·6	323	10 32	+ 3	18 52	−10	34·1	38·9
Pulkovo		64·0	330	10 31	− 1	19 3	− 4	32·7	39·5
Bombay		65·0	275	10 39	0	19 30	+10	34·6	41·8
Helsingfors		65·6	331	e 10 41	− 1	e 19 23	− 4	e 30·7	—
Scoresby Sund		65·6	356	10 42	0	19 24	− 3	34·7	—
Berkeley	E.	66·0	60	e 10 57	+12	—	—	—	—
Baku		67·2	305	10 58	+ 5	i 19 51	+ 4	34·2	43·9
Colombo		68·1	260	14 5	?	—	—	35·0	49·2
Upsala		68·2	335	i 10 56	− 3	e 19 54	− 5	—	45·4
Tinemaha	E.	69·0	58	e 11 0	− 5	e 20 2	− 7	—	—
Haiwee	N.	69·8	59	e 11 8	− 1	e 20 15	− 4	—	—
Mount Wilson	E.	71·0	60	e 11 15	− 2	—	—	—	—
Pasadena		71·0	60	e 11 15	− 2	e 20 29	− 4	—	—
Königsberg		71·2	330	i 11 18	0	i 20 33	− 2	e 40·7	—
Riverside	N.	71·6	60	e 11 20	0	—	—	—	—
Theodosia		72·0	317	e 11 23	0	—	—	—	—
Simferopol		72·7	317	e 11 26	− 1	—	—	—	—
Yalta		73·0	317	e 11 29	0	—	—	—	—
Lund		73·0	334	11 27	− 2	—	—	40·7	—
Copenhagen		73·2	334	i 11 30	0	20 56	− 3	40·7	—
Hamburg		75·8	335	i 11 45	0	e 21 28	− 1	e 42·7	49·7
Potsdam		75·8	332	i 11 40	− 5	i 21 24	− 5	e 47·2	48·7
Edinburgh		77·2	343	—	—	e 21 50	+ 5	44·7	—
Göttingen		77·5	334	i 11 53	− 2	—	—	—	45·7
Jena		77·5	332	e 11 54	− 1	—	—	e 36·7	49·7
Budapest		77·6	326	11 51	− 4	21 40	− 9	44·2	49 2
Durham		77·8	341	21 47	S	(21 47)	− 5	50·7	—
Cheb		78·0	330	e 12 11	+14	e 22 11	+17	e 39·7	46·7
Vienna		78·0	329	11 57	0	21 53	− 1	e 42·7	48·7
De Bilt		78·5	337	i 11 59	− 1	21 56	− 3	e 36·7	41·6
Stonyhurst		78·8	340	—	—	i 20 15	?	48·7	58·1
Adelaide		78·9	186	—	—	i 21 42	−22	e 34·7	41·1
Feldberg		79·1	334	e 12 1	− 2	e 21 51	−15	e 39·1	52·7
Bidston		79·4	341	—	—	28 42?	?	—	—
Ksara	E.	79·8	309	12 8	+ 1	22 16	+ 2	42·0	51·2
Uccle		79·9	337	i 12 7	0	e 22 9	− 6	e 35·7	—
Zagreb		80·2	326	e 12 10	+ 1	—	—	e 42·2	45·2
Stuttgart		80·2	332	e 12 7	− 2	e 22 2	−16	e 39·7	—
Kew		80·5	340	i 12 11	+ 1	i 22 37	+16	41·7	46·7
Oxford		80·5	341	—	—	i 22 14	− 7	e 42·7	45·7
Triest		81·2	328	12 23	+ 9	23 2	PS	e 36·7	—
Strasbourg		81·4	333	i 12 11	− 4	e 22 18	−13	41·7	—
Chur		81·7	332	i 12 16	− 1	e 22 31	− 3	—	—
Zurich		82·1	332	e 12 15	− 4	—	—	—	—
Paris		82·2	337	i 12 18	− 1	e 22 54	+15	42·7	51·7
Neuchatel		82·4	334	i 12 20	0	i 22 54	+13	—	—
Florissant		83·1	40	i 12 23	− 1	i 22 38	−10	e 40·7	—
Piacenza		83·2	330	e 12 22	− 2	22 42	− 7	—	53·3
St. Louis		83·3	40	e 12 24	− 1	e 22 40	−10	e 39·6	—
Ottawa		83·6	27	—	—	e 22 42	−11	e 33·7	—
Florence		83·7	329	i 12 24	− 3	i 22 57	+ 3	29·7	45·7
Little Rock	E.	85·3	44	e 12 23	−12	e 23 3	− 8	—	—
Helwan		85·4	308	e 12 32	− 3	e 23 7	− 5	—	—
Trenta		85·5	323	e 12 32	− 4	—	—	—	—
Pittsburgh		86·3	32	—	—	i 23 12	− 8	e 39·2	—
Fordham		88·2	29	e 17 48	?	—	—	e 37·7	—
Georgetown		88·7	31	i 12 48	− 3	e 23 24	[0]	e 45·7	48·7
Wellington		88·8	159	—	—	i 23 30	[+ 5]	42·7	—
Granada		94·6	336	e 12 35	?	i 21 7	?	i 53·5	56·8
San Juan		111·3	33	—	—	e 28 48	PS	e 56·7	—
La Paz		140·4	58	i 19 22	[0]	—	—	67·5	—

For Notes see next page.

NOTES TO APRIL 9d. 23h. 1m. 18s.

Additional readings :—
Kobe iEZ = +2m.58s. =PP +5s., iN = +3m.3s.
Koti PP = +3m.20s.
Zi-ka-wei iN = +5m.7s., PPZ = +5m.30s., PPPZ? = +5m.42s., PPPPZ? = +5m.52s., iZ = +9m.23s., iN = +9m.40s. =SS −1s., iZ = +11m.56s.
Helsingfors $ePcPZ$ = +11m.37s., ePSE = +20m.7s., eSSSN = +27m.10s., eSSSE = +27m.19s.
Scoresby Sund +27m.30s.
Berkeley eN = +11m.0s. =PcP −17s.
Königsberg iZ = +11m.33s., also +36m.32s.
Copenhagen +21m.48s.
Potsdam iPN = +11m.45s., iNZ = +12m.1s., eN = +21m.6s., iEN = +21m.43s. = PS −12s.
Feldberg e = +18m.36s.
Kew iSKS = +22m.17s.
Florissant iE = +23m.1s., eEN = +28m.13s.
St. Louis iE = +23m.2s.
Little Rock eSE = +22m.41s.
Pittsburgh i = +23m.32s.
Fordham iZ = +7m.24s., eE = +18m.4s.
San Juan e = +34m.36s. =SS +0s.
La Paz PPN = +23m.2s.
Long waves were also recorded at Algiers, Almeria, Catania, Graz, and Harvard.

April 9d. Readings also at 1h. (near Batavia and Malabar), 7h. (La Paz), 8h. (Sumoto), 11h. (near Almata and near Samarkand), 12h. (Andijan, Samarkand, and Tyosi), 13h. (Samarkand, Nagoya, near Osaka, Kobe, and Toyooka), 14h. (near Manila), 15h. (Matuyama), 17h. (near Hukuoka, Matuyama, and near Tyosi), 19h. (near Batavia and Malabar), 20h. (Alicante), 22h. (Algiers), 23h. (near New Plymouth).

April 10d. Readings at 6h. (Ksara), 9h. (near Zagreb), 10h. (La Paz, near New Plymouth, and near Wellington), 12h. (Batavia, Ekaterinburg, Irkutsk, Tashkent, and near Manila), 13h. (near Berkeley), 15h. (near Andijan and Tashkent), 19h. (La Paz), 23h. (Vienna).

April 11d. 1h. 25m. 42s. Epicentre 43°·0N. 12°·5E. (as on 1922 June 8d.). R.2.

A = +·714, B = +·158, C = +·682 ; D = +·216, E = −·976 ; G = +·666, H = +·148, K = −·731.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Collurania		0·9	110	0 39	+26	—	—	—	—
Rome		1·1	181	e 0 54	+38	—	—	—	2·4
Florence		1·2	311	i 0 18	+ 1	—	—	—	0·8
Prato		1·3	311	i 0 18	0	0 30	− 3	—	0·7
Venice		2·4	357	i 0 34	0	i 0 48	P_g	—	—
Padova		2·4	349	i 0 26	− 8	i 0 38	P*	—	—
Naples	E.	2·5	149	e 0 16	−20	e 1 16	S*	—	—
Treviso		2·7	355	i 0 34	− 5	i 0 49	P*	—	1·1
Triest		2·8	18	0 41	+ 1	e 1 9	− 3	—	1·3
Piacenza		2·9	315	e 0 38	− 3	0 54	P*	1·1	1·7
Pavia		3·2	312	0 44	− 2	—	—	—	—
Laibach		3·4	25	0 42	− 7	1 34	+ 7	—	1·8
Zagreb		3·8	40	e 1 3	P*	i 1 52	S*	—	2·5
Innsbruck		4·4	350	e 1 3	0	—	—	i 1·7	—
Chur		4·4	332	e 0 54	− 9	—	—	—	—
Graz		4·6	26	e 1 8	+ 2	i 2 32	S_g	—	2·6
Zurich		5·2	329	e 1 4	−10	—	—	—	—
Ravensburg	N.	5·2	338	e 1 19	+ 5	—	—	—	—
Neuchatel		5·5	317	e 1 10	− 8	2 24	+ 4	—	—
Vienna		5·9	26	e 1 31	+ 7	2 40	+ 9	—	3·5

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Stuttgart	6·2	339	e 1 33	+ 5	i 2 47	+ 9	—	—
Budapest	6·4	44	3 27	S_g	—	—	—	—
Strasbourg	6·5	330	1 51	+19	2 53	+ 7	—	—
Cheb	7·1	0	—	—	e 2 58	− 3	—	3·6
Prague	7·2	10	—	—	e 2 41	−23	—	3·3
Feldberg	7·7	340	i 2 27	P*	—	—	—	3·4
Jena	7·9	356	e 2 25	P*	e 2 59	−22	e 3·5	3·7
Göttingen	8·7	350	e 2 0	− 3	i 4 2	+21	—	4·6
Paris	9·0	313	e 3 18?	P_g	—	—	4·3	5·3
Potsdam	9·4	2	—	—	e 4 6	+ 7	—	—
Uccle	9·6	327	—	—	e 4 0	− 3	—	—
De Bilt	10·3	334	—	—	e 4 18	− 3	e 5·3?	6·4
Hamburg	10·7	352	—	—	e 5 7	S*	—	8·5
Kew	12·1	319	—	—	e 5 48	+43	—	—
Copenhagen	12·7	359	—	—	4 18?	−62	—	—
Lund	12·7	359	—	—	4 18?	−62	—	—

Additional readings :—
Laibach eP_g = +54s., i = +1m.16s.
Zagreb e = +1m.14s. = P_g, +1m.27s., and +1m.33s., i = +1m.42s.
Chur i = +1m.3s.
Ravensburg eN = +1m.45s. = P_g.
Neuchatel i = +1m.38s. = P*.
Vienna P_g = +1m.52s., PP = +1m.55s., S* = +2m.49s., S = +2m.57s., SS = +3m.10s.
Stuttgart iE = eN = +2m.40s.
Strasbourg P_g = +2m.1s., PP = +2m.5s., iSS = +3m.6s., SSS = +3m.17s.
Göttingen iP_gN = +2m.32s.
Potsdam i = +4m.19s., iEN = +4m.30s., iZ = +4m.35s., iNZ = +4m.45s., iEZ = +5m.2s., i = +5m.25s.
Long waves were recorded at Hong Kong, Tashkent, Ekaterinburg, Kucino, and Helsingfors.

April 11d. 1h. 52m. 38s. Epicentre 43°·0N. 12°·5E. (as at 1h. 25m.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Rome		1·1	181	e 0 54	S_g	—	—	2·4
Florence		1·2	311	0 15	− 2	(0 32)	+ 1	0·5
Prato		1·3	311	e 0 12	− 6	—	—	0·4
Venice		2·4	357	0 42	P*	—	—	—
Treviso		2·7	355	e 0 14	−25	0 40	−29	—
Triest		2·8	18	0 39	− 1	e 1 7	− 5	1·3
Zagreb		3·8	40	e 1 8	P*	e 1 48	+11	—
Chur		4·4	332	e 0 53	−10	—	—	—
Zurich		5·2	329	e 1 22	+ 8	—	—	—
Vienna	z.	5·9	26	—	—	e 2 48	+17	—
Strasbourg		6·5	330	—	—	2 22?	−24	—

Zagreb e = +1m.18s. = P_g, +1m.53s. = S*, eNE = +1m.58s.

April 11d. Readings also at 0h. (Samarkand and near Balboa Heights), 2h. (Andijan, Tashkent, Phu-Lien, Hong Kong, Zi-ka-wei, Medan, Calcutta, Ekaterinburg, Irkutsk, Kucino, Vladivostok, De Bilt, and Uccle), 3h. (Nagoya), 7h. (Andijan and near Almata), 13h. (near Tananarive (2)), 15h. (Adelaide, Melbourne, Riverview, Sydney, Perth, Wellington, Phu-Lien, Hong Kong, Zi-ka-wei, Honolulu T.H., Berkeley, Andijan, Tashkent, Kucino, Baku, Irkutsk, Vladivostok, Pulkovo, Feldberg, Copenhagen, Paris, Stuttgart, Florence, and La Paz; these and the readings for 16h. belong to a shock in the South-West Pacific Ocean, but are not good enough to give a determination), 16h. (Edinburgh, Kew, Göttingen, Hamburg, De Bilt, Uccle, Cheb, Granada, Helsingfors, Lund, Chicago, Ottawa, Pittsburgh, and San Juan).

April 12d. 2h. 0m. 40s. Epicentre 22°·8S. 170°·5E. (as on 1928 March 18d.). R.3.

A = −·909, B = + 152, C = − 388 ; D = +·165, E = +·986 ;
G = +·382, H = −·064, K = −·922.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		8·7	59	3 15	S	(3 15)	−26	6·2	7·3
Arapuni		15·9	165	e 4 20?	+40	i 6 50?	+14	—	8·3
Wellington		18·8	170	4 10	− 6	7 53	+11	8·5	10·7
Riverview		20·2	230	4 27	− 5	i 8 3	− 7	—	11·3
Christchurch		20·8	176	4 48	+10	i 8 48	SS	—	—
Melbourne		26·5	230	5 35	+ 1	10 8	+ 1	12·5	14·5
Adelaide		30·3	239	e 6 0	− 8	11 4	− 5	14·3	17·7
Perth		48·9	246	15 20	S	(15 20)	−25	21·8	—
Honolulu T.H.		53·8	38	e 11 10	?	e 17 1	+ 8	23·3	—
Manila		61·3	305	e 10 10	− 4	i 19 0	+27	—	—
Batavia		63·4	275	e 10 26	− 2	i 19 4	+ 4	33·3	34·3
Hong Kong		71·0	306	11 35	+18	20 50	+17	—	32·8
Zi-ka-wei		71·6	319	e 11 28	+ 8	i 21 48	+68	35·5	36·9
Medan		74·8	280	e 12 20?	+41	i 21 57	+39	40·0	—
Vladivostok		75·1	332	e 11 52	+11	e 21 23	+ 2	e 36·7	—
Phu-Lien		76·0	300	11 20?	−26	—	—	—	—
Lick	N.	87·7	46	e 13 10	+24	—	—	—	—
Pasadena	N.	88·5	50	e 13 4	+14	e 24 9	+27	—	—
Calcutta		91·9	294	11 21	?	23 29	[−15]	50 8	—
Tucson		93·1	56	—	—	24 57	+32	39·6	—
Colombo		93·3	275	15 38	?	—	—	46·1	51·5
Irkutsk		94·6	325	e 13 29	+10	e 24 20	−18	41·3	53·0
Kodaikanal		96·7	278	e 28 2	?	—	—	e 46·8	57·1
Hyderabad		98·5	285	—	—	24 57	−16	51·6	58·3
La Paz		110·5	119	19 35	?	i 29 57	?	52·3	64·0
Tashkent		113·0	306	—	—	e 27 2	?	e 45·9	76·5
Pittsburgh		119·1	53	—	—	e 37 2	SS	e 45·3	—
Ekaterinburg		119·7	323	—	—	e 26 33	[+44]	49·3	61·5
Georgetown		121·1	55	28 42	?	37 18	?	e 49·3	—
San Juan		127·1	82	e 24 20	?	—	—	61·3	—
Scoresby Sund		131·8	4	22 38	PKS	—	—	59·3	—
Kucino		132·2	324	—	—	29 48	?	58·1	66·0
Pulkovo		133·8	333	e 22 12	?	—	—	57·3	77·1
Helsingfors		135·6	335	—	—	e 23 20?	?	e 64·3	—
Copenhagen		143·4	339	19 20?	[− 9]	—	—	65·3	—
Potsdam		145·8	334	e 23 20?	PKS	—	—	e 65·3	89·3
Budapest		146·4	324	19 50	[+14]	—	—	e 73·3	—
Vienna	Z.	147·3	329	e 19 44	[+ 6]	—	—	—	—
De Bilt		148·7	341	e 19 53	[+13]	—	—	e 73·3	80·3
Zagreb		149·1	324	e 19 45	[+ 5]	—	—	e 74·7	—
Feldberg		149·3	337	e 19 44	[+ 3]	—	—	e 66·8	80·5
Uccle		150·0	342	e 20 3	[+21]	—	—	e 64·3	—
Stuttgart		150·2	335	e 19 56	[+14]	—	—	e 69·3	—
Innsbruck		150·4	331	20 8	[+26]	—	—	—	—
Kew		150·5	348	e 20 37	[+55]	—	—	82·3	88·8
Strasbourg		150·9	336	e 19 58	[+15]	35 36	?	74·3	—
Zurich		151·5	334	e 19 58	[+14]	—	—	—	—
Chur		151·6	332	e 19 58	[+14]	—	—	—	—
Paris		152·3	343	e 20 29	[+44]	—	—	74·3	92·3
Neuchatel		152·5	335	e 19 59	[+14]	—	—	—	—
Piacenza		152·8	330	—	—	e 27 20	?	—	89·0
Florence		153·0	326	20 6	[+20]	31 43	?	69·3	104·3
Granada		164·8	342	e 23 45	PKS	—	—	e 85·0	100·4

Additional readings :—
Suva S = +5m.20s.
Wellington SS = +8m.20s.
Melbourne e = +9m.55s.
Perth S = +20m.20s.

Continued on next page.

Manila iZ = +10m.48s. = P_cP −10s.
Zi-ka-wei iZ = +26m.14s.
Pasadena eE = +13m.11s.
Irkutsk ePP = +16m.31s.
La Paz iE = +26m.13s. = SKKS +3s., eE = +29m.5s.
Tashkent ePP = +19m.20s., SKS = +26m.7s., ePPS = +29m.20s.
Ekaterinburg ePP = +20m.24s., eS = +28m.2s., ePS = +29m.59s., SS = +36m.20s.
Georgetown SSN = +40m.38s.
San Juan ePS = +31m.44s., SS = +38m.26s.
Kucino ePP = +22m.52s., eSS = +39m.50s.
Feldberg e = +27m.1s., +35m.31s., and +43m.14s.
Uccle e = +48m.20s. ?
Stuttgart eZ = +20m.48s.
Kew eSKP = +23m.38s., eEN = +43m.14s.
Strasbourg PP = +23m.42s., PPS = +32m.59s.
Granada i = +24m.58s. = PP +18s., and +25m.57s.
Long waves were also recorded at Bombay, Baku, Chicago, Ottawa, and other European stations.

April 12d. Readings also at 0h. (Alicante), 1h. (near Laibach), 2h. (near Lick and near Wellington), 3h. (Cheb, Ottawa, and Stonyhurst), 4h. (Hong Kong), 5h. (Baku, Tashkent, Andijan, Samarkand, and Ksara), 6h. (Florence), 8h. (Hong Kong, Phu-Lien, Taihoku, Zi-ka-wei, Andijan, and near Samarkand), 9h. (Sumoto), 11h. (near Berkeley and Lick), 20h. (near Hastings), 21h. (Göttingen, Prague, Vienna, Alicante, and near Sumoto), 22h. (Manila and Zurich).

April 13d. Readings at 0h. (near Wellington), 1h. (Vienna and near Zagreb), 7h. (near Apia), 8h. (near Mizusawa), 9h. (Messina (3)), 10h. (Messina and Manila), 11h. (near San Juan), 12h. (Copenhagen and near Mizusawa), 13h. (near Balboa Heights), 17h. (Cheb), 19h. (Port au Prince and near Florissant), 20h. (Ottawa, near New Plymouth, and Wellington).

April 14d. 22h. 12m. 52s. Epicentre 46°·1N. 10°·9E. N.2.

A = +·681, B = +·131, C = +·721 ; D = +·189, E = −·982 ;
G = +·708, H = +·136, K = −·693.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Padova		1·0	136	i 0 1	−13	e 0 11	−15	—	—
Treviso		1·0	116	i 0 10	− 4	i 0 26	0	—	0·5
Venice		1·2	121	i 0 17	0	i 0 32	+ 1	—	1·5
Innsbruck		1·2	17	e 0 15	− 2	—	—	i 0·6	0·6
Chur		1 2	308	i 0 13	− 4	e 0 29	− 2	—	—
Piacenza		1 4	220	e 1 14	+54	(1 31)	+55	1·5	2·1
Pavia		1·5	233	i 0 25	+ 4	—	—	—	—
Zurich		1·6	309	e 0 28	+ 5	e 0 56	S_g	—	—
Ravensburg		1·9	332	i 0 30	+ 2	e 0 54	+ 5	—	—
Triest		2·0	103	0 25	− 4	0 48	− 3	—	0·9
Prato		2·2	176	e 0 31	0	i 0 50	− 7	—	1·0
Florence		2·3	174	i 0 33	0	i 1 4	S*	—	1·3
Laibach		2·5	91	e 0 41	+ 5	i 1 14	S*	—	2·4
Neuchatel		2·8	288	e 0 37	− 3	e 1 20	S*	—	—
Stuttgart		2·9	337	e 0 40	− 1	i 1 26	S*	—	1·7
Strasbourg		3·3	321	0 47	0	1 45	S*	—	—
Graz		3·3	72	0 56	+ 9	1 39	S*	—	1·8
Zagreb		3·6	94	e 0 56	+ 5	i 1 47	S*	—	2·0
Cheb		4·1	14	e 1 11	P*	e 2 0	S*	2·2	2·3
Vienna		4·3	58	e 1 5	+ 4	—	—	—	2·4
Rome		4·4	164	e 1 50	S	(e 1 50)	− 3	—	2·4
Prague		4·6	30	—	—	e 2 1	+ 3	—	2·6
Jena	E.	4·8	5	e 1 8	0	—	—	e 2·1	2·6
Göttingen	N.	5·4	354	i 1 15	− 2	i 2 52	S*	—	3·0
Budapest		5·8	74	e 2 30	S	(e 2 30)	+ 2	—	—
Paris		6·2	299	—	—	e 2 8	P_g	—	—
Uccle		6·4	320	e 1 50	P*	—	—	—	—
Potsdam		6·4	12	—	—	i 3 24	S*	—	—
Hamburg		7·5	356	—	—	e 2 59	−12	—	4·5

For Notes see next page.

NOTES TO APRIL 14d. 22h. 12m. 52s.

Additional readings :—
Zurich $iP_g = +31s.$
Ravensburg $iP_g = +32s.$, $iS_gE = +57s.$
Laibach $i = +1m.8s.$
Neuchatel $eP = +43s.$
Stuttgart $eP^*N = +45s.$, $iP_g = +50s.$, $iNZ = +53s.$, $iEN = +1m.18s.$, $iN = +1m.22s.$, $iEN = +1m.29s.$, $iS_gEN = +1m.31s.$, $iZ = +1m.30s.$, $+1m.36s.$, and $iE = +1m.39s.$
Strasbourg $P_g = +56s.$, $SS = +1m.48s.$, $SSS = +2m.8s.$
Zagreb $eP_g = +1m.0s.$, $ePPP = +1m.16s.$, $ePPSSS = +1m.25s.$, $ePPSSSS = +1m.31s.$, $ePPSS = +1m.41s.$, $iPSS = +1m.44s.$
Cheb $e = +1m.20s.$ and $+2m.4s.$
Jena $i = +1m.15s.$, $eE = +1m.22s.$, $+1m.28s.$, and $+1m.37s.$
Göttingen $iP_gN = +1m.38s.$
Potsdam $i = +3m.32s.$, $iE = +3m.46s.$, $e = +3m.56s.$ and $+4m.20s.$
Long waves were also recorded at De Bilt, Lund, and Copenhagen.

April 14d. Readings also at 0h. (Tashkent, near Andijan, and Samarkand), 1h. (Irkutsk), 2h. (Tashkent), 3h. (Naples and Rome), 9h. (near Ksara), 12h. (Stonyhurst), 14h. (La Plata and near Santiago), 16h. (Andijan), 17h. (Laibach, near Almata, and near Tyosi), 19h. (near Manila, and near Tyosi), 22h. (Hong Kong, Phu-Lien, Tashkent, Irkutsk, near Samarkand, Osaka, Nagoya, Mizusawa, and near Tyosi), 23h. (Andijan and near New Plymouth (2)).

April 15d. 16h. 59m. 3s. Epicentre 48°·0N 28°·0W. N.1.

Probable error of epicentre ±0°·18.

$A = +·591$, $B = -·314$, $C = +·743$; $D = -·469$, $E = -·883$; $G = +·656$, $H = -·349$, $K = -·669$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Azores		10·4	171	6 3	S_g	—	—	—	7·4
Bidston		16·6	62	i 3 55	+ 6	e 6 57	+ 5	i 7·6	9·4
Stonyhurst		17·0	60	e 3 48	− 6	—	—	8·0	9·5
Edinburgh		17·1	54	i 3 54	− 1	i 8 29	L	(8·5)	8·9
Oxford		17·5	68	i 3 57	− 3	i 7 24	+11	e 8·2	10·0
Durham		17·7	58	4 14	+11	7 28	+11	—	11·2
Dyce		18·1	50	4 5	− 3	7 22	− 5	—	—
Kew		18·1	69	i 4 6	− 2	e 7 38	+11	8·6	9·7
Toledo		19·0	106	i 4 20	+ 1	e 8 2	+16	e 9·0	9·9
San Fernando		19·7	118	4 37	+11	8 27	+27	9·5	12·9
Paris		20·1	76	i 4 30	− 1	8 17	+19	9·0	12·0
Malaga		20·6	115	e 4 37	+ 1	8 45	+27	11·0	—
Granada		20·8	113	i 4 42	+ 4	i 8 30	+ 8	i 10·2	11·8
Uccle		21·1	70	e 4 39	− 2	i 8 28	0	10·0	11·7
Tortosa	E.	21·4	99	4 50	+ 6	8 47	+13	—	11·0
	N.	21·4	99	4 48	+ 4	8 55	+21	9·6	12·0
De Bilt		21·5	67	i 4 45	0	8 40	+ 4	e 10·0	11·5
Almeria		21·8	111	i 4 52	+ 3	8 55	+13	10·8	12·6
Alicante		22·1	106	i 4 57	+ 5	e 9 9	+21	e 10·7	—
Barcelona		22·2	96	4 49	− 4	e 9 0	+10	e 10·7	13·2
Scoresby Sund		22·7	5	5 9	+11	10 0	+61	—	—
Grenoble		23·1	84	i 4 50	−12	8 47	−20	13·0	—
Neuchatel		23·4	79	i 5 5	0	i 9 20	+ 8	—	—
Strasbourg		23·5	75	i 5 6	+ 1	9 19	+ 5	11·0	—
Feldberg		23·7	71	i 5 8	+ 1	i 9 32	+14	e 11·9	13·4
Hamburg		24·3	62	e 5 11	− 2	e 9 30	+ 2	e 12·0	15·0
Stuttgart		24·4	74	i 5 15	+ 1	e 9 38	+ 8	e 12·0	13·6
Zurich		24·4	78	e 5 16	+ 2	e 9 27	− 3	—	—
Göttingen		24·5	67	i 5 15	0	e 9 32	0	e 12·0	14·6
Chur		25·1	79	e 5 21	0	e 10 6	+23	—	—
Algiers		25·3	105	e 5 24	+ 1	e 9 52	+ 6	e 11·0	14·0
Jena		25·6	69	e 5 25	0	e 9 57	+ 6	e 12·0	13·9
Copenhagen		25·7	57	5 26	0	9 57	+ 4	12·0	—
Piacenza		25·8	82	e 5 53	PP	10 9	+14	13·3	17·2
Cheb		26·2	70	e 5 31	0	e 10 9	+ 7	e 12·4	16·0
Lund		26·2	57	—	—	10 8	+ 6	13·0	—

Continued on next page.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Potsdam		26·3	65	e 5 21	−11	i 9 58	− 5	e 13·0	15·4
Prato		27·2	84	e 5 57	+17	e 10 57	+39	15·0	19·0
Treviso		27·2	80	10 22	S	(10 22)	+ 4	(14·1)	16·1
Florence		27·3	83	i 5 41	0	11 57?	+97	14·0	17·6
Venice		27·4	80	e 5 32	−10	—	—	—	—
Prague		27·5	70	e 6 29	PP	—	—	e 12·0	15·0
Triest		28·3	79	i 5 51	+ 1	i 10 21	−16	—	15·0
Upsala		28·6	48	e 6 34	PP	—	—	e 16·0	—
Rome		28·9	87	e 5 54	− 1	—	—	—	—
Graz		29·0	75	e 5 56	0	e 11 56	+68	14·0	16·8
Zagreb		29·7	78	e 6 7	+ 5	—	—	e 15·4	16·7
Königsberg	E.	30·4	59	—	—	e 13 57?	?	e 18·0	—
Budapest		31·8	72	e 6 37	+16	—	—	e 17·4	19·4
Helsingfors		32·3	48	e 6 32	+ 7	e 12 36	+56	e 15·6	—
Ottawa		32·3	285	e 6 25	0	e 11 44	+ 4	e 16·0	—
Messina		32·8	92	6 27	− 3	—	—	—	—
Fordham		33·0	276	e 6 34	+ 2	e 11 44	− 7	e 16·0	—
Pulkovo		35·0	48	6 50	+ 1	12 20	− 1	18·0	20·8
Toronto		35·4	284	i 6 50	− 3	12 27	0	17·6	20·0
Buffalo		35·7	281	i 6 54	− 1	i 12 42	+10	e 16·7	20·0
Georgetown		36·1	275	7 2	+ 3	12 40	+ 2	e 16·0	—
Pittsburgh		37·2	279	i 7 11	+ 3	12 45	− 9	e 16·8	—
Charlottesville		37·5	275	—	—	13 3	+ 4	16·0	—
Kucino		39·8	53	e 7 31	+ 1	13 35	+ 2	18·4	21·8
Chicago		41·6	285	e 7 45	0	13 57	− 3	20·8	—
San Juan		42·8	241	e 7 57	+ 2	i 14 30	+12	18·8	—
St. Louis		45·0	284	e 8 12	− 1	e 14 52	+ 2	e 21·8	—
Little Rock		48·6	280	e 8 34	− 7	e 15 40	− 1	e 25·5	—
Tashkent		64·8	56	e 10 45	+ 8	19 19	+ 2	e 31·0	41·2
Andijan		66·8	55	e 11 4	+13	—	—	—	—
Irkutsk		71·8	28	11 15	− 7	—	—	e 35·0	48·6
La Paz		73·8	221	i 11 56	+23	i 21 12	+ 6	35·7	41·2
Bombay		83·0	70	7 53	?	—	—	—	—

Additional readings and note :—
Stonyhurst iP = +3m.53s.
Edinburgh i = +8m.17s.
Oxford iPP? = +4m.13s.
Durham SS = +7m.54s.
Toledo PP = +4m.42s.
Malaga iP = +4m.43s.
Granada i = +5m.40s., +7m.29s., +8m.43s., and +9m.39s.
Uccle i = +4m.43s.
Grenoble SS = +10m.0s.
Strasbourg PP = +5m.37s., SS = +10m.8s.
Stuttgart iEZ = +5m.26s., eEZ = +6m.10s., eE = +7m.7s., eS?EN = +9m.4s., eSSEN = +10m.32s.
Potsdam iZ = +5m.30s., eN = +5m.33s., iE = +5m.36s., and +5m.46s., iN = +6m.2s., iE = +6m.15s., iZ = +6m.28s., iN = +6m.37s., iEN = +6m.44s., iN = +9m.4s., eE = +9m.45s., iZ = +10m.22s., eN = +10m.33s., iEN = +11m.30s.
Treviso gives S as P and L as S.
Helsingfors ePPZ = +7m.38s.
Fordham e = +7m.48s.
Toronto iE = +7m.39s. ; T_0 = 16h.58m.34s.
Buffalo i = +7m.11s., iPP = +8m.0s.
Georgetown i = +8m.22s. T_0 = 16h.58m.36s.
Pittsburgh PP = +8m.27s., S? = +13m.3s.
Charlottesville ePP = +8m.33s., e = +11m.21s.
Chicago PP = +9m.23s., e = +17m.28s.
San Juan ePP = +9m.21s., i = +15m.28s.
St. Louis eEN = +18m.23s. = S_0S +11s.
Little Rock iPEN = +8m.37s., eE = +13m.56s., and +18m.53s. = SS − 4s.
Irkutsk ePP = +14m.3s., ePS = +20m. 39s., eSS = +24m.51s.
Long waves were also recorded at Tucson and Vienna.

April 15d. Readings also at 0h. (near New Plymouth), 3h. (Kobe), 4h. (near Tyosi), 6h. (near Batavia), 9h. (near Santiago), 11h. (Stuttgart), 13h. (Nagoya), 18h. (De Bilt and Uccle), 22h. (near Graz), 23h. (near New Plymouth).

April 16d. 11h. 55m. 44s. Epicentre 9°·5S. 119°·0E. (as on 1931 Feb. 24d.). X.

A = −·478, B = +·863, C = −·165; D = +·875, E = +·485;
G = +·080, H = −·144, K = −·986.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	10·8	58	i 3 9	+37	—	—	—	—
Batavia	12·5	284	e 2 49	− 6	e 5 44	+29	—	—
Medan	24·1	302	5 10	− 1	i 9 6	−19	i 12·8	—
Manila	24·2	5	e 5 16	+ 4	i 9 48	+21	i 12·8	—
Adelaide	31·1	148	—	—	i 14 55	?	18·4	23·1
Hong Kong	32·2	353	—	—	11 27	−11	—	14·8
Melbourne	36·2	145	e 9 11	?	i 13 46	+67	24·3	27·0
Riverview	38·3	136	—	—	e 16 52	?	—	28·3
Colombo	42·3	291	9 19	PP	—	—	—	25·6
Bombay	53·6	304	7 39	?	—	—	—	—
Vladivostok	53·9	11	—	—	i 16 31	−23	—	—
Irkutsk	63·1	351	e 10 26	0	e 18 58	+ 2	e 33·3	41·6
Andijan	66·1	324	e 11 45	+59	—	—	—	—
Tashkent	68·3	323	e 11 5	+ 5	e 20 4	+ 3	e 36·3	36·8
Samarkand	68·8	320	e 11 4	+ 1	—	—	—	—
Kucino	92·9	326	—	—	e 23 41	[− 8]	e 47·8	59·4
Pulkovo	97·5	330	e 17 33	PP	—	—	34·3	—

Additional readings:—
Melbourne i = +16m.19s., +18m.26s. and +23m.21s.
Vladivostok e = +20m.16s. ? = SS − 13s.
Kucino e = +29m.22s. and +31m.37s.
Long waves were also recorded at Sydney, Phu-Lien, Copenhagen, and De Bilt.

April 16d. 21h. 34m. 50s. Epicentre 6°·0S. 160°·0E. (as on 1929 Dec. 17d.). X.

A = −·935, B = +·340, C = −·105; D = +·342, E = +·940;
G = +·098, H = −·036, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		29·0	195	6 2	+ 6	i 10 54	+ 6	i 14·9	17·5
Sydney		29·0	195	10 40	S	(10 40)	− 8	14·9	15·6
Melbourne		34·6	201	—	—	e 12 2	−13	16·1	19·9
Adelaide		35·0	211	e 6 16	−33	i 11 54	−27	16·3	21·0
Wellington		37·7	162	9 23	+131	16 20	+198	19·3	22·2
Christchurch		39·1	166	e 9 38	+134	13 44	+22	e 16·8	25·5
Manila		43·9	299	8 2	− 2	i 14 52	+18	22·3	—
Zi-ka-wei	Z.	52·4	319	9 12	+ 3	16 30	− 4	—	29·4
Hong Kong		53·1	304	—	—	16 23	−20	—	30·5
Vladivostok		55·3	336	—	—	e 18 13	+60	e 27·1	—
Phu-Lien		58·9	300	9 10?	−47	—	—	—	—
Irkutsk		75·0	328	e 11 52?	+12	e 21 10	−10	e 35·2	—
Bombay	E.	89·3	290	10 26	?	21 16	?	43·4	—
	N.	89·3	290	12 42	−12	23 24	[− 4]	44·5	—
Tashkent		94·5	313	13 30	+12	i 24 1	[+ 3]	—	52·3
Baku		109·2	311	e 18 53	PP	e 26 37	{+36}	53·0	69·9
Kucino		112·6	329	—	—	e 26 7	{−18}	e 53·0	56·6
Pulkovo		114·2	335	—	—	e 29 27	PS	55·2	—
La Paz		127·3	118	e 23 10	?	—	—	—	—
Granada		145·4	336	i 20 19	[+45]	—	—	42·0	49·2

Additional readings:—
Riverview iSS = +12m.26s., iSSSSE = +13m.16s.
Melbourne SS = +14m.16s.
Adelaide i = +14m.44s.
Manila iZ = +11m.16s.
Hong Kong SKS = +19m.16s.
Vladivostok i = +19m.20s. = SKS + 1s.
Tashkent i = +24m.30s. = S − 8s.
Baku e = +29m.20s. and +36m.0s.
Kucino e = +29m.23s. and +41m.22s.
Granada i = +21m.33s.
Long waves were also recorded at Honolulu T.H., San Juan, Scoresby Sund, and other European and American stations.

April 16d. Readings also at 0h. (near New Plymouth), 3h. (Sumoto), 5h. (Samarkand), 6h. (near Hastings and New Plymouth), 7h. (Mount Wilson, Pasadena, Tinemaha, and near Santiago), 8h. (La Paz, La Plata, and near New Plymouth), 12h. (near Apia), 15h. (Göttingen and near Lick), 16h. (Tyosi), 17h. (Tucson), 21h. (Neuchatel), 22h. (Lick), 23h. (Hong Kong, Phu-Lien, Irkutsk, Vladivostok, Kucino, Tashkent, Bombay, near Calcutta, and near Lick).

April 17d. 5h. 25m. 23s. Epicentre 14°·5S., 179°·5W. (as on 1930 Oct. 23d.). X.

A = −·968, B = −·008, C = −·250; D = −·009, E = +1·000;
G = +·250, H = +·002, K = −·968.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	4·2	209	1 4	+ 4	1 58	+10	—	2·6
Arapuni	24·0	189	4 37?	−33	—	—	—	—
Takaka	27·2	193	—	—	10 37?	+19	—	—
Wellington	27·3	189	5 37	− 4	10 27	+ 7	12·6	16·6
Christchurch	29·8	191	—	—	e 10 52	− 9	i 15·0	17·3
Riverview	32·8	230	—	—	e 10 33	−75	14·2	16·6
Sydney	32·8	230	e 11 49	S	(e 11 49)	+ 1	17·4	18·8
Melbourne	39·1	228	—	—	e 12 50	−33	19·2	23·0
Honolulu T.H.	41·6	31	e 8 7	+22	e 14 49	+49	18·6	—
Adelaide	42·8	235	—	—	e 14 13	− 5	i 17·6	23·6
Vladivostok	72·7	325	—	—	e 25 25	SS	43·5	—
Irkutsk	93·2	323	—	—	e 24 54	+28	e 50·6	—
Tashkent	115·3	310	—	—	e 29 37	PS	—	61·7
Baku	129·9	311	—	—	e 39 32	SS	58·6	81·4

Additional readings and note:—
Christchurch gives S as e and L as i.
Melbourne e = +13m.52s., i = +16m.58s.
Vladivostok e = +22m.8s. and +35m.35s.
Irkutsk e = +30m.37s. ? = SS +12s.
Tashkent e = +36m.19s.
Long waves were also recorded at Apia, Berkeley, Pittsburgh, Harvard, Kucino, De Bilt, Feldberg, and Granada.

April 17d. Readings also at 1h. (La Paz), 3h. (Riverview, Andijan, and near Samarkand), 5h. (near Manila (2)), 7h. (near Almata), 8h. (near Wellington), 9h. (Adelaide, Melbourne, Riverview, Manila, and near Amboina), 11h. (Almata, near Andijan, and Samarkand), 12h. (Little Rock and near Tucson), 23h. (Phu-Lien).

April 18d. 13h. 5m. 2s. Epicentre 9°·5N. 107°·0W. N.3.

A = −·288, B = −·943, C = +·165; D = −·956, E = +·292;
G = −·048, H = −·158, K = −·986.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson	23·1	351	e 5 1	− 1	(9 22)	+15	9·4	—
Pasadena	26·7	339	e 5 40	+ 5	—	—	e 12·7	—
Little Rock	28·6	26	e 7 50	+117	e 10 32	−10	—	—
St. Louis	32·8	25	—	—	e 11 46	− 2	—	14·7
Florissant	32·9	24	e 6 31	0	e 11 50	+ 1	e 14·0	—
Pittsburgh	39·2	33	—	—	e 15 16	?	e 18·8	—
Buffalo	41·5	31	e 6 55	−49	—	—	—	20·0

Additional readings:—
Tucson S = +7m.19s.
Pasadena eE = +11m.57s.
Long waves were also recorded at Ottawa and Scoresby Sund.

April 18d. Readings also at 1h. (Ekaterinburg, Irkutsk, Vladivostok, near Mizusawa, and Tyosi), 3h. (near Tyosi, near Victoria, near Hastings, New Plymouth, and Wellington), 4h. (La Paz), 9h. (La Paz), 12h. (Budapest, Göttingen, Vienna, Zagreb, Kobe, near Osaka, Sumoto, and near Mizusawa), 17h. (Ottawa), 18h. (Amboina and La Paz), 19h. (Kodaikanal).

April 19d. 2h. 0m. 32s. Epicentre 20°·7N. 109°·1W. N.2.

A = −·306, B = −·884, C = +·353 ; D = −·945, E = +·327 ;
G = −·116, H = −·334, K = −·935.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		11·7	352	e 2 42	− 2	4 45	−10	5·7	—
Riverside		15·2	333	e 3 31	0	(e 6 52)	+32	e 6·9	—
Pasadena		15·6	331	e 3 36	0	e 6 52	+23	—	9·5
Mount Wilson		15·7	331	e 3 38	0	e 6 53	+22	—	—
Santa Barbara	N.	16·7	328	e 4 2	+12	—	—	—	—
Tinemaha	E.	18·2	336	e 4 6	− 3	—	—	e 9·9	—
Denver		19·3	10	e 4 49	+27	e 8 22	+30	e 10·6	—
Lick		19·9	330	e 4 31	+ 2	e 8 20	+16	e 10·2	—
Little Rock		20·4	43	e 4 38	+ 4	e 8 16	+ 2	—	10·9
Berkeley		20·7	329	e 4 40	+ 3	8 28	+ 8	e 10·3	11·5
St. Louis		24·2	38	e 5 10	− 2	9 34	+ 7	e 11·2	12·6
Florissant		24·3	38	e 5 12	− 1	e 9 23	− 5	e 11·7	13·4
Chicago		27·8	36	—	—	e 10 22	− 6	12·9	—
Columbia		28·1	56	—	—	10 36	+ 2	e 15·5	—
Victoria		30·0	341	7 20	PP	11 10	+ 6	14·9	28·6
Ann Arbor		30·4	40	—	—	e 12 22	SS	i 15·8	16·3
Charlottesville		31·6	50	—	—	e 12 40	SS	—	—
Pittsburgh		31·7	44	—	—	11 22	− 9	e 16·0	—
Georgetown		33·0	49	6 33	+ 1	i 11 54	+ 3	e 17·5	—
Buffalo		33·7	43	e 6 43	+ 5	e 10 17	?	e 17·5	19·4
Toronto		33·7	41	—	—	11 51	−10	i 17·4	—
Fordham		36·0	49	e 8 14	PP	e 12 36	0	e 17·7	—
Ottawa		36·8	41	e 7 19	+14	e 11 48	0	e 17·5	—
Harvard		38·5	47	e 8 28?	PP	e 12 53	−21	e 19·5	—
San Juan		40·4	85	7 32	− 3	i 13 47	+ 5	e 18·0	—
La Paz		54·8	130	e 9 28	+ 1	—	—	—	—
Scoresby Sund		69·6	21	—	—	20 22	+ 6	35·5	—
Kew		84·9	38	—	—	e 22 28?	−39	e 40·5	—
De Bilt		87·6	34	—	—	e 23 38	+ 5	e 37·5	49·3
Copenhagen		89·0	28	—	—	29 28?	SS	41·5	—
Feldberg		90·5	35	—	—	e 23 52	− 9	e 44·8	—
Pulkovo		93·0	20	—	—	e 25 33	PS	46·5	55·0
Florence		95·6	40	—	—	e 31 4	SS	41·5	—
Ekaterinburg		102·0	7	—	—	e 24 34	[− 1]	45·5	—
Baku		115·9	18	—	—	(e 29 28?)	PS	e 29·5	—
Tashkent		118·0	2	—	—	i 29 45	PS	—	—

Additional readings :—
Tucson iP = +2m.46s., e = +5m.12s.
Berkeley ePE = +4m.43s., eE = +6m.3s., S = +8m.36s.
St. Louis eEN = +10m.22s.
Florissant iSE = +9m.34s., iE = +10m.19s. = SS +7s.
Ann Arbor e = +13m.58s.
Pittsburgh SS = +12m.28s.
Georgetown SSE = +13m.53s. ; T_e = 2h.0m.0s.
Buffalo ePP = +7m.33s., i = +15m.59s.
Toronto i = +4m.6s. and +9m.10s.
Harvard eE = +14m.57s., eN = +15m.22s.
San Juan iPP = +9m.10s., eS = +13m.16s.
Scoresby Sund +27m.58s.
Feldberg e = +29m.28s. and +39m.38s.
Pulkovo e = +30m.24s. = SS +1s. and +34m.13s. = SSS +14s.
Ekaterinburg e = +27m.4s. = PS −3s. and +32m.16s. = SS −13s.
Long waves were also recorded at Honolulu T.H., Ivigtut, and other European stations.

April 19d. 2h. 32m. 0s. Epicentre 29°·5N. 129°·0E. (as on 1927 Nov. 23d.). R.2.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kagosima		2·5	33	0 38	+ 2	1 10	+ 6	—	—
Miyazaki		3·2	41	0 45	− 1	1 46	S_g	—	—
Nagasaki		3·3	13	0 46	− 1	1 32	S*	—	1·8
Unzendake		3·4	19	0 47	− 2	1 51	S_g	—	—
Kumamoto		3·6	23	0 57	+ 6	1 38	+ 6	—	—
Hukuoka		4·3	16	1 9	+ 8	2 3	S*	—	2·5
Ooita		4·4	31	0 59	− 4	2 4	S*	—	—
Koti		5·6	43	e 1 18	− 2	2 55	S*	e 3·0	3·3
Hamada		6·0	25	1 25	0	2 37	+ 4	—	—
Isigakizima		6·7	221	1 36	+ 1	3 21	S*	—	—
Sumoto		6·9	45	1 35	− 3	3 55	S_g	—	4·6
Kobe		7·3	44	1 47	+ 3	2 50	−16	4·0	4·4
Osaka		7·6	45	1 36	−12	(3 29)	+15	3·5	5·1
Toyooka		7·8	38	e 1 51	0	e 3 43	S*	—	—
Taihoku		8·0	237	e 2 2	+ 9	5 14	?	8·1	9·0
Kameyama		8·3	48	1 59	+ 1	4 50	S_g	—	—
Hikone		8·4	45	1 47	−12	4 29	+55	—	—
Nagoya		8·8	48	e 2 15	+10	—	—	—	—
Gihu		8·8	46	2 4	− 1	4 52	S_g	—	—
Nagano		10·5	45	2 27	− 1	5 44	S_g	—	—
Oiwake		10·5	47	2 35	+ 7	6 0	L	(6·0)	—
Sendai		13·1	46	3 0	− 3	7 9	?	—	—
Tientsin		13·7	318	i 3 21	+10	7 0	+76	—	8·6
Mizusawa	E.	13·8	43	3 16	+ 3	—	—	—	—
Vladivostok		13·8	9	2 49	−24	i 5 38	− 8	6·0	7·5
Chiufeng	E.	15·0	318	e 3 39	+11	—	—	—	—
Hong Kong		15·1	245	3 32	+ 2	6 40	+23	10·2	12·2
Manila		16·6	208	3 49	0	i 7 0	+ 8	i 8·4	10·5
Phu-Lien		22·0	252	e 4 53	+ 2	—	—	—	—
Irkutsk		29·2	328	e 5 58	0	e 10 47	− 4	15·0	20·8
Calcutta		37·0	270	e 17 31	S_cS	20 31	?	21·9	23·5
Almata		43·3	305	7 17	−42	—	—	—	—
Andijan		46·8	300	8 27	0	15 21	+ 5	25·6	—
Tashkent		49·1	301	i 8 43	− 1	i 15 49	+ 1	e 22·0	30·8
Samarkand		51·1	300	9 18	+18	16 32	+16	—	—
Bombay		51·8	273	7 36	?	15 20	?	26·7	32·5
Ekaterinburg		54·0	321	i 9 21	0	i 16 58	+ 2	—	33·9
Baku		63·7	304	e 10 31	+ 1	—	—	e 27·0	39·9
Kucino		66·6	322	e 10 42	− 7	e 19 39	− 1	e 33·7	40·9

Additional readings :—
Nagasaki P_g = +58s.
Hong Kong e = +8m.12s.
Long waves were also recorded at Scoresby Sund and other European stations.

April 19d. Readings also at 1h. (Andijan), 5h. (Irkutsk, near Hastings, New Plymouth (2), and Wellington), 6h. (Baku, Ekaterinburg, Tashkent, and Vladivostok), 8h. (near Santiago), 9h. (near Tyosi and near Santiago), 12h. (near Mizusawa), 13h. (Mount Wilson, Pasadena, Tinemaha, Vladivostok, Irkutsk, La Plata, near La Paz, and near Taihoku), 17h. (Budapest, Graz, Vienna, Zagreb, Balboa Heights, and Ottawa), 19h. (near Alicante (2)), 20h. (La Paz).

April 20d. 19h. 54m. 34s. Epicentre 43°·4N. 73°·7W. (given by Pittsburgh). N.3.

A = +·204, B = −·697, C = +·687 ; D = −·960, E = −·281 ; G = +·193, H = −·659, K = −·727.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Harvard		2·1	117	e 0 35	+ 5	e 0 58	+ 4	—	—
Fordham		2·5	183	—	—	e 1 17	S*	—	1·6
Ottawa		2·5	324	e 0 37	+ 1	e 1 6	+ 2	—	—
Buffalo		3·8	265	i 0 53	− 1	i 1 36	− 1	i 1·9	—
Toronto	E.	4·2	276	e 0 38	−22	e 1 9	−39	1·8	2·0
Georgetown		5·2	213	e 1 0	−14	i 2 39	S*	—	—
Pittsburgh		5·5	240	1 33	P*	i 2 23	+ 3	3·4	—
Florissant		13·4	256	e 3 55	+48	i 6 52	+75	e 8·5	10·3
St. Louis		13·4	255	e 3 55	+48	e 6 46	+69	e 7·9	—
Little Rock	N.	16·8	245	—	—	e 6 36	−21	e 8·9	—

Additional readings :—
Fordham iE = +1m.22s., eNZ = +1m.32s.
Georgetown iZ = +2m.45s., +2m.50s., and +3m.4s.
Pittsburgh iS* = +2m.49s.
Florissant eE = +5m.38s., eN = +6m.7s., iEN = +6m.48s.
St. Louis eN = +4m.15s., iN = +5m.33s., iSN = +6m.50s.
Little Rock eN = +7m.13s. =SS +5s.

April 20d. 20h. 33m. 40s. Epicentre 34°·0N. 27°·0E. (as on 1930 Aug. 5d.). R.3.

A = +·739, B = +·376, C = +·559 ; D = +·454, E = −·891 ; G = +·498, H = +·254, K = −·829.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	7·4	89	e 1 54	+ 9	4 11	S_E	4·5	—
Taranto		10·1	313	2 35	+13	5 40	S_E	—	—
Yalta		11·9	26	2 37	−10	—	—	—	—
Simferopol		12·2	24	2 40	−11	—	—	—	—
Budapest		14·7	339	e 3 20?	− 5	—	—	8·3	—
Triest		15·4	323	3 0	−34	e 7 47	+83	e 8·0	10·0
Florence		15·6	314	e 3 45	+ 9	e 8 6	+97	—	9·8
Graz		15·7	330	e 3 57	+19	—	—	—	9·0
Baku		19·3	64	e 4 19	− 3	7 49	− 3	9·8	12·1
Cheb		19·3	331	e 4 28	+ 6	—	—	e 10·3	12·3
Stuttgart		19·8	323	e 4 30	+ 3	e 8 4	+ 2	e 10·3	—
Strasbourg		20·4	321	e 4 20?	−14	e 8 20?	+ 6	e 10·3	—
Potsdam		20·9	336	—	—	i 8 27	+ 3	e 10·3	13·3
Feldberg		21·1	325	—	—	e 8 37	+ 9	e 10·3	13·0
Hamburg		23·0	334	e 6 20?	+79	—	—	e 12·2	16·4
Kucino		23·0	16	e 5 18	+17	e 9 6	+ 1	e 12·9	14·1
Paris		23·4	317	e 4 20?	−45	—	—	12·3	12·3
Uccle		23·5	322	—	—	e 9 20?	+ 6	e 11·3	—
Lund		23·7	340	5 8	+ 1	9 8	−10	13·3	—
Copenhagen		23·9	339	5 8	− 1	9 10	−11	12·3	—
De Bilt		24·2	326	—	—	e 9 20?	− 7	e 12·3	14·0
Pulkovo		25·9	4	e 5 22	− 6	e 9 50	− 7	13·3	15·9
Kew		26·3	320	—	—	e 9 20?	−43	e 13·3	—
Oxford		27·0	320	—	—	e 11 10	SS	e 13·8	15·3
Edinburgh		30·1	326	—	—	e 12 20?	SS	—	—
Ekaterinburg		32·3	35	e 7 0	+35	e 11 21	−19	14·3	—
Tashkent		33·9	65	e 10 15	?	e 11 51	−13	e 13·6	21·4

Additional readings :—
Triest PP = +3m.30s.
Stuttgart e = +5m.18s.
Long waves were also recorded at Irkutsk, Scoresby Sund, and other European stations.

April 20d. Readings also at 4h. (Tyosi), 5h. (Tashkent, Vladivostok, near Irkutsk, and near New Plymouth), 6h. (Takaka and Tyosi), 8h. (San Juan), 9h. (San Juan, Florissant, St. Louis, Little Rock, and Ottawa), 10h. (Baku, Ekaterinburg, Budapest, Nagoya, near Tyosi, Kobe, Sumoto, Osaka (2), and near Mizusawa), 11h. (near New Plymouth), 14h. (Helsingfors), 16h. (Ekaterinburg, Tashkent, Ksara, Adelaide, Melbourne, and Manila), 17h. (Irkutsk, near La Paz (2), near Calcutta, and near Hastings), 19h. (near Tananarive), 20h. (near La Paz).

April 21d. 0h. 2m. 6s. Epicentre 38°·8N. 133°·5E. N.1.

A = −·536, B = +·565, C = +·627; D = +·725, E = +·688; G = −·431, H = +·455, K = −·779.

A *depth* of focus 0·035 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Wazima	+0·6	3·0	118	0 56	+ 5	1 40	+ 8	—	—
Kanazawa	+0·4	3·4	133	0 45	− 9	1 28	− 9	—	—
Toyooka	+0·4	3·4	162	i 1 0	+ 6	1 48	+11	—	1·8
Husiki	+0·4	3·5	125	1 0	+ 3	1 49	+ 9	—	—
Takayama	+0·3	4·0	131	1 0	− 1	1 51	+ 1	—	—
Hamada	+0·3	4·1	197	1 10	+ 7	2 4	+11	—	—
Takada	+0·3	4·1	114	1 4	+ 1	2 8	+15	—	—
Kyoto	+0·3	4·2	154	1 5	+ 1	1 57	+ 2	—	—
Nagano	+0·2	4·3	121	1 5	+ 1	1 55	0	—	—
Gihu	+0·2	4·3	142	1 5	+ 1	1 56	+ 1	—	—
Kobe	+0·2	4·4	162	1 7	+ 1	2 0	+ 2	—	2·1
Matumoto	+0·2	4·4	125	1 7	+ 1	2 2	+ 4	—	—
Osaka	+0·2	4·5	158	1 7	0	(2 2)	+ 2	2·0	2·1
Nagoya	+0·2	4·6	143	i 1 7	− 1	1 58	− 5	—	2·7
Sumoto	+0·1	4·7	166	1 10	+ 2	2 5	+ 2	—	2·2
Kameyama	+0·1	4·7	149	1 8	0	2 3	0	—	—
Oiwake	+0·1	4·7	120	1 8	0	2 2	− 1	—	—
Wakayama	+0·1	4·8	164	1 10	0	2 5	0	—	—
Matuyama	0·0	5·0	187	i 1 16	+ 5	2 16	+ 8	—	2·3
Maebasi	0·0	5·1	118	1 7	− 6	2 8	− 2	—	—
Akita	0·0	5·2	79	1 20	+ 6	2 19	+ 6	—	—
Koti	0·0	5·2	180	e 1 17	+ 3	i 2 20	+ 7	—	2·4
Hamamatu	0·0	5·3	139	1 25	+10	2 24	+ 9	—	—
Kumagaya	0·0	5·4	118	1 14	− 3	2 12	− 6	—	—
Utunomiya	0·0	5·5	112	1 26	+ 8	2 28	+ 8	—	—
Hukusima	0·0	5·6	99	1 16	− 4	2 17	− 6	—	—
Numadu	0·0	5·7	130	1 18	− 3	2 22	− 3	—	—
Siomisaki	0·0	5·7	161	1 18	− 3	2 20	− 5	—	—
Misima	0·0	5·8	129	1 16	− 6	2 17	−11	—	—
Sendai	0·0	5·8	93	1 19	− 3	2 23	− 5	—	—
Hukuoka	0·0	5·8	207	1 30	+ 8	e 2 45	+17	—	—
Tukubasan	0·0	5·8	114	1 16	− 6	2 15	−13	—	—
Kakioka	0·0	5·9	114	1 17	− 7	2 21	−10	—	—
Aomori	0·0	5·9	69	1 27	+ 3	2 34	+ 3	—	—
Mizusawa	0·0	5·9	85	1 22	− 2	2 26	− 5	—	—
Tokyo	0·0	5·9	121	1 19	− 5	2 20	−11	—	—
Morioka	0·0	6·0	79	1 22	− 3	2 29	− 4	—	—
Yokohama	0·0	6·0	123	1 21	− 4	2 21	−12	—	—
Mito	−0·1	6·1	112	1 8	−17	2 9	−24	—	—
Kumamoto	−0·1	6·4	202	1 34	+ 4	2 46	+ 5	—	—
Mera	−0·1	6·4	126	1 19	−11	2 25	−16	—	—
Tyosi	−0·1	6·6	115	1 26	− 6	2 33	−13	—	—
Nagasaki	−0·1	6·8	207	i 1 40	+ 5	e 3 1	+10	—	—
Miyazaki	−0·1	7·1	194	1 40	+ 2	2 57	+ 1	—	—
Sapporo	−0·2	7·3	52	1 44	+ 3	3 6	+ 5	—	—

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.
Hatidyozima	−0·2	7·7	137	1 42	− 4	2 56	−15	—	—
Urakawa	−0·2	7·8	62	1 56	+ 8	3 19	+ 5	—	—
Nemuro	−0·5	10·2	60	2 12	− 5	3 57	− 9	—	—
Hong Kong	−1·7	23·3	231	3 10	?	8 18	−20	11·6	12·1
Irkutsk	−1·8	24·2	313	e 4 50	− 5	e 8 48	− 5	11·0	—
Andijan	−3·3	46·0	293	7 58	+ 4	14 22	+ 6	—	—
Tashkent	−3·4	48·1	296	i 8 10	0	i 14 45	− 1	—	—
Ekaterinburg	−3·5	49·4	317	i 8 20	0	i 15 3	0	24·9	—
Samarkand	−3·6	50·3	295	8 36	+10	15 23	+ 9	—	—
Kucino	−4·1	61·6	320	e 10 0	+13	e 17 57	+14	—	—
Baku	−4·1	61·8	301	e 9 47	− 1	e 17 49	+ 3	28·9	—
Pulkovo	−4·2	63·1	328	i 9 54	− 3	i 17 58	− 3	—	—
Scoresby Sund	−4·3	69·3	352	—	—	19 12	− 8	—	—
Copenhagen	−4·4	73·0	330	—	—	19 54	−10	—	—

Additional readings :—
Kobe SN = +1m.54s.
Koti iPNZ = +1m.28s., eSN = iSZ = +2m.23s.
Hong Kong PP? = +4m.0s.
Kucino e = +19m.5s.
Pulkovo i = +19m.3s., e = +25m.47s.

April 21d. 14h. 19m. 26s. Epicentre 43°·0N. 12°·5E. (as on 11d.). R.2.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Camerino		0·4	110	0 47	+41	1 16	+66	—	—
Collurania		0·9	110	0 55	+42	—	—	—	—
Rome		1·1	181	1 2	+46	1 47	+79	—	2·4
Florence		1·2	311	i 0 21	+ 4	—	—	—	0·8
Prato		1·3	311	i 0 24	+ 6	—	—	—	0·6
Livorno		1·7	294	0 26	+ 2	0 46	+ 2	—	—
Venice		2·4	357	i 0 32	− 2	i 0 46	−16	—	—
Padova		2·4	349	i 0 26	− 8	i 0 37	−25	—	—
Treviso		2·7	355	i 0 33	− 6	0 49	P*	—	1·6
Triest		2·8	18	0 37	− 3	e 1 6	− 6	—	1·4
Piacenza		2·9	315	e 0 38	− 3	0 54	P_g	—	1·9
Pavia		3·2	312	0 47	+ 1	—	—	—	—
Zagreb		3·8	40	1 8	P*	—	—	—	2·5
Innsbruck		4·4	350	1 4	+ 1	i 1 41	−12	—	—
Chur		4·4	332	e 0 53	−10	i 1 26	P_g	—	—
Graz		4·6	26	e 1 13	+ 7	i 2 8	+10	—	2·5
Zurich	N.	5·2	329	i 1 3	−11	—	—	—	—
Ravensburg		5·2	338	e 1 19	+ 5	i 2 7	− 6	—	—
Neuchatel	N.	5·5	317	e 1 10	− 8	e 2 6	−14	—	—
Vienna		5·9	26	e 1 51	P*	2 33	+ 2	—	3·5
Stuttgart		6·2	339	e 1 26	− 2	e 2 44	+ 6	—	3·5
Budapest		6·4	44	e 2 54	S	(e 2 54)	+11	—	4·1
Strasbourg		6·5	330	e 1 36	+ 4	i 2 48	+ 2	—	—
Karlsruhe		6·6	336	e 1 45	+11	—	—	—	—
Feldberg		7·7	340	—	—	e 3 13	− 3	—	4·4
Jena		7·9	356	e 2 16	+24	e 3 21	0	e 3·5	3·7
Göttingen	N.	8·7	350	e 1 51	−12	—	—	—	3·2
Paris		9·0	313	e 2 34?	+27	(3 34?)	−15	3·6	4·6
Potsdam		9·4	2	—	—	e 4 10	+11	—	—
Uccle		9·6	327	—	—	e 3 58	− 5	—	—
De Bilt		10·3	334	—	—	e 4 34?	+13	e 5·6	6·3
Hamburg		10·7	352	—	—	e 4 34	+ 3	—	6·8
Kew		12·1	319	—	—	5 10	+ 5	—	—
Copenhagen		12·7	359	—	—	5 34?	+14	—	—
Lund		12·7	359	—	—	5 34?	+14	—	—
Pulkovo		20·0	27	e 4 2	−28	e 8 24	+18	11·6	12·5

For Notes see next page.

NOTES TO APRIL 21d. 14h. 19m. 26s.

Additional readings :—
Triest $P_g = +42s.$, $iS_g = +1m.9s.$, $Q = +1m.14s.$
Zagreb $i = +1m.22s.$, $+1m.27s.$, $+1m.52s.$, $iNW = +1m.57s.$
Innsbruck $i = +2m.4s.$
Zurich $iP_g = +1m.15s.$
Ravensburg $eN = +1m.32s.$, $eE = +1m.42s.$, $iEN = +1m.45s.$, $eEN = +2m.0s.$, $iEN = +2m.15s.$
Neuchatel $iP_g = +1m.20s.$
Vienna $P? = +1m.55s.$, $P^* = +1m.59s.$, $P_g = +2m.8s.$, and $+2m.29s.$, $S = +2m.41s.$, $S^* = +2m.50s.$, $S = +2m.57s.$, $S_g = +2m.59s.$, $SS = +3m.10s.$
Stuttgart $iP_gN = +1m.44s.$, $eN = +2m.2s.$, $eE = +2m.6s.$, $iNZ = +2m.9s.$, $eEN = +2m.24s.$
Strasbourg $iSS = +2m.59s.$
Feldberg $i = +3m.26s.$
Göttingen $eP_gN = +2m.27s.$
Potsdam $iE = +4m.31s.$, $iN = +4m.35s.$, $eE = +4m.40s.$, $iE = +5m.2s.$
Long waves were also recorded at Edinburgh and Baku.

April 21d. 23h. 40m. 22s. Epicentre 39°·5S. 176°·9E. (as on 1931 March 8d.) R.3.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hastings	0·1	185	0 8?	+ 7	0 21?	+18	—	—
Arapuni	1·7	324	−0 38	−62	0 1	−43	—	0·1
New Plymouth	2·2	281	0 38?	+ 7	—	—	—	—
Wellington	2·4	223	0 34	0	1 11	+ 9	—	1·2
Takaka	3·4	246	0 44	− 5	1 31	+ 4	—	1·7
Christchurch	5·1	217	1 16	+ 3	4 33	—	—	—
Riverview	21·3	277	e 4 48	+ 5	i 8 53	SS	11·6	12·8
Sydney	21·3	277	i 8 26	S	(i 8 26)	− 6	11·6	13·2
Melbourne	24·9	264	e 5 16	− 3	9 41	+ 2	12·1	14·3
Apia	27·6	24	e 8 14	?	—	—	15·5	20·1
Adelaide	30·6	269	—	—	e 10 52	−22	i 14·3	16·6
Batavia	70·7	278	e 11 38	+23	e 20 26	− 4	i 34·6	—
Manila	75·0	305	i 11 40	0	i 21 45	PS	—	—
Medan	83·2	280	—	—	i 23 10,	PS	—	—
La Paz	97·6	119	—	—	24 26	[+12]	47·3	57·5
Irkutsk	111·2	321	e 18 38?	[+17]	(28 38?)	PS	28·6	—
St. Louis	115·3	60	—	—	e 26 40	{− 4}	—	—
San Juan	122·2	91	—	—	25 56	[− 1]	e 48·6	—
Pittsburgh	123·2	62	—	—	e 27 26	{−12}	60·6	—
Toronto	124·9	60	—	—	i 37 52	SS	i 67·9	—
Tashkent	126·5	298	e 21 8	PP	e 32 32	?	—	—
Fordham	127·5	65	—	—	e 28 11	{+ 5}	e 67·6	—
Harvard	130·0	64	—	—	e 28 47	{+25}	e 67·6	—
Ekaterinburg	136·0	316	e 19 19	[+ 3]	e 31 50	SKSP	—	—
Scoresby Sund	147·5	13	19 44	[+ 6]	—	—	73·6	—
Pulkovo	150·9	325	e 19 46	[+ 3]	—	—	—	—
Copenhagen	160·8	333	19 38?	[−16]	—	—	—	—
De Bilt	164·2	338	e 21 6	{+ 3}	—	—	—	—
Kew	167·9	352	e 27 50	?	e 34 50	?	e 88·6	109·8
Strasbourg	168·1	323	e 20 38?	[+36]	—	—	—	—
Paris	169·9	339	21 20	{− 9}	—	—	—	—
Almeria	177·3	190	e 25 31	PP	i 47 19	SS	94·2	100·2

Additional readings :—
New Plymouth $P^* = +50s.$?, $P_g = +56s.$?
Wellington $P^* = +39s.$
Takaka $P^* = +54s.$, $S_g = +2m.7s.$
Sydney $iS = +10m.38s.$
Adelaide $i = +12m.58s.$
St. Louis $eE = +46m.46s.$
San Juan $PS = +30m.32s.$, $SS = +37m.38s.$
Ekaterinburg $e = +21m.56s. = PP + 0s.$, and $+22m.49s. = PKS - 8s.$
Strasbourg $ePP = +24m.38s.$?
Long waves were also recorded at Florissant, Suva, Vladivostok, Tucson, Sitka, Columbia, Charlottesville, Ivigtut, and Lund.

April 21d. 23h. 49m. 50s. Epicentre 39°·5S. 176°·9E. (as at 21d. 23h. 40m.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
New Plymouth		2·2	281	0 10?	−21	0 35?	−22	—	1·0
Wellington		2·4	223	0 30	− 4	1 2	0	—	—
Pasadena		95·0	49	e 24 57	S	(e 24 57)	+15	e 44·2	—
Berkeley		95·4	44	—	—	e 24 50	+ 4	—	—
Riverside	E.	95·4	50	—	—	e 25 3	+17	—	—
Tinemaha	E.	97·0	47	—	—	e 25 8	+ 8	—	—
Little Rock		111·8	63	—	—	e 26 45	{+25}	—	—
Florissant		115·3	60	e 19 45	PP	e 26 51	{+ 7}	—	62·7
Toronto		124·9	60	—	—	e 38 18	SS	—	—
Buffalo		125·0	61	e 19 10	[+13]	—	—	—	56·2
Fordham		127·5	65	—	—	e 26 3	[− 9]	—	—
Baku		140·0	290	—	—	e 33 2	PS	70·2	88·9
Feldberg		166·6	327	e 24 35	PP	—	—	—	—
Granada		177·6	170	i 19 53	[−14]	—	— —	e 83·4	89·8

Additional readings :—
New Plymouth P* = +18s.?
Pasadena eEN = +34m.34s.
Berkeley eN = +24m.53s.
Buffalo i = +41m.20s. and +42m.16s.
Feldberg e = +55m.34s.
Granada i = +23m.17s. and +37m.21s.
Long waves at Ivigtut, Lund, and Cheb.

April 21d. 23h. 51m. 54s. Epicentre 39°·5S. 176°·9E. (as at 23h. 49m.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Perth		49·2	260	10 6	(− 7)	e 15 16	−34	—	—
Berkeley	E.	95·4	44	e 13 24	+ 2	i 24 41	− 5	—	—
	N.	95·4	44	e 13 22	0	e 24 19	[+16]	e 42·2	—
Calcutta		103·0	290	—	—	41 48	?	50·9	—
Irkutsk		111·2	321	—	—	e 34 32	SS	56·1	64·0
Little Rock		111·8	63	—	—	e 35 13	?	—	—
Bombay		112·6	276	18 46	[+20]	—	—	—	53·7
Buffalo		125·0	61	e 19 32	[+35]	—	—	—	—
Tashkent		126·5	298	e 21 0	PP	e 31 1	PS	—	—
Fordham		127·5	65	—	—	e 38 4	SS	—	—
Ottawa		127·9	59	—	—	e 27 11	[+58]	e 53·1	—
Ekaterinburg		136·0	316	—	—	e 31 32	SKSP	61·1	80·5
Kucino		148·6	316	—	—	e 33 13	SKSP	66·8	86·3
Helsingfors		152·9	329	—	—	e 43 30	SS	—	—
Almeria		177·3	190	21 12	[+65]	—	—	—	—

Additional readings :—
Perth e = +12m.31s.
Berkeley e = +22m.46s., iE = +26m.53s., eN = +27m.11s., eE = +27m.34s., and +32m.19s., iE = +32m.23s., eE = +33m.15s.
Ottawa e = +36m.52s., eN = +40m.43s. and +45m.24s.

April 21d. Readings also at 2h. (Baku, Ekaterinburg, Irkutsk, Tashkent, La Paz, and near Hastings), 4h. (Florissant, Nagoya, and near Tyosi), 5h. (Feldberg, Christchurch, and near Wellington), 6h. (Copenhagen), 8h. (Granada), 10h. (near Santiago), 15h. (Zagreb and Prato), 17h. (near Taihoku), 18h. (Ekaterinburg and Tashkent).

April 22d. 0h. 2m. 39s. (I) } Epicentre 39°·5S. 176°·9E. R.2.
0h. 31m. 7s. (II) } (as on 21d. 23h.). X.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
II	Hastings	0·1	185	0 23	+22	0 29	+26	—	—
II	New Plymouth	2·2	281	0 7?	−38	0 17?	−40	—	—
II	Wellington	2·4	223	0 34	0	1 6	+ 4	—	—
I	Suva	21·4	4	4 6	−38	5 21	PP	—	6·4
I	Perth	49·2	260	e 8 51	+ 6	—	—	29·6	—
I	Honolulu T.H.	65·2	26	i 14 24	PPP	—	—	—	—
I	Manila	75·0	305	11 40	0	i 21 4	−16	34·2	—
I	Hong Kong	85·1	305	—	—	22 30	−39	33·6	42·1
I	Phu-Lien	89·0	299	—	—	22 21?	?	—	—
I	Victoria N.	102·6	35	13 43	−12	22 33	?	46·6	58·0
I	Calcutta	103·0	290	24 10	S	(24 10)	[−30]	40·2	—
I	Irkutsk	111·2	321	e 13 56	−40	e 23 47	?	45·4	53·2
I	Little Rock	111·8	63	—	—	e 24 56	[−25]	—	—
I	Florissant	115·3	60	—	—	25 13	[−22]	—	—
I	St. Louis E.	115·3	60	—	—	e 29 26	PS	—	—
I	Tashkent	126·5	298	e 20 16	?	i 25 41	[−28]	e 47·4	72·0
I	Ottawa	127·9	59	—	—	e 26 7	[− 6]	—	—
I	Harvard	130·0	64	e 18 45	[−22]	e 26 34	[+15]	—	—
I	Ekaterinburg	136·0	316	e 20 47	?	e 31 55	SKSP	50·4	69·8
I	Baku	140·0	290	i 20 13	?	e 40 11	SS	57·4	76·4
II		140·0	290	e 16 33	+24	—	—	—	—
I	Scoresby Sund	147·5	13	20 9	[+31]	—	—	—	—
I	Kucino	148·6	316	e 22 28	?	e 30 38	{+24}	56·0	75·6
I	Pulkovo	150·9	325	e 20 6	[+23]	—	—	63·4	73·8
I	Helsingfors	152·9	329	e 23 26	PP	e 34 29	SKSP	e 61·4	—
I	Upsala	155·9	334	e 23 27	PP	—	—	e 69·4	—
I	Königsberg	158·0	322	e 23 54	PP	e 31 51	{+44}	e 68·4	77·4
I	Copenhagen	160·8	333	20 9	[+15]	—	—	69·4	—
I	Budapest	162·1	304	e 20 21?	[+25]	—	—	e 74·4	80·4
I	Hamburg	163·4	332	e 20 24	[+27]	—	—	e 63·4	79·4
I	Edinburgh	163·6	1	e 22 21	?	—	—	—	—
I	De Bilt	164·2	338	e 20 8	[+10]	—	—	e 67·4	83·1
I	Graz	164·5	305	e 20 12	[+13]	—	—	e 69·4	81·1
I	Zagreb	164·6	300	e 20 13	[+14]	—	—	e 69·8	—
I	Durham	164·7	357	22 55	?	—	—	94·4	—
I	Stonyhurst	165·6	359	—	—	e 41 41	?	75·4	—
I	Feldberg	166·6	327	e 19 42	[−19]	—	—	—	82·0
I	Stuttgart	167·2	321	e 20 12	[+11]	—	—	e 68·4	82·4
I	Treviso	167·2	304	e 17 29	?	—	—	77·4	—
I	Uccle	167·6	338	e 20 5	[+ 3]	—	—	e 59·4	—
I	Oxford	167·7	355	e 20 27	[+25]	—	—	e 69·4	88·6
I	Kew Z.	167·9	352	e 19 51	[−11]	—	—	—	—
I	Strasbourg	168·1	323	e 20 12	[+10]	e 34 16	?	57·4	—
I	Florence	168·5	297	20 52	[+50]	26 22	?	44·0	74·4
I	Piacenza	169·1	305	20 55	[+52]	—	—	—	83·3
I	Paris	169·9	339	e 20 0	[− 4]	—	—	65·4	89·4
I	Almeria	177·3	190	i 20 37	[+30]	—	—	72·0	78·0
I	Toledo	179·2	62	e 25 31	PP	—	—	—	90·2

Additional readings :—
New Plymouth II P* = +1s., S* = +27s., S_g = +36s.
Manila I iE = +11m.47s. and +21m.38s.
Calcutta I S = +31m.3s.
Florissant I iE = +29m.22s. = PS + 4s., eN = +31m.51s.
Tashkent I e = +21m.0s. and +23m.14s.
Ottawa I eN = +29m.58s.
Harvard I e = +34m.56s.
Scoresby Sund I +37m.39s.
Ekaterinburg I i = +21m.45s. and +37m.23s.
Baku I i = +23m.45s.
Kucino I e = +23m.30s. = PP + 17s. and +26m.2s.
Pulkovo I e = +22m.7s., +23m.16s. = PP − 10s., and +39m.51s.

Continued on next page.

Helsingfors I ePPE = +24m.19s., eE = +25m.17s. and +29m.4s., ePPPE = +33m.29s. = SKSP −29s., eS_1'E = +35m.23s., ePPS = +37m.28s., eE = +40m.32s.
Copenhagen I +23m.9s. = PKS −27s.
Zagreb I e = +20m.40s. = P_3' −25s., eSS?NW = +42m.21s. ?
Feldberg I e = +42m.45s. and +47m.50s.
Stuttgart I i = +20m.20s., e = +20m.30s., eN = +42m.21s. ? and +48m.21s. ?
Long waves were also recorded at Adelaide, Sydney, Alicante, and Vladivostok.

April 22d. Readings also at 0h. (Arapuni, Wellington, and near Prato), 1h. (San Fernando), 3h. (near Tyosi), 13h. (near Wellington), 15h. (Nagoya), 17h. (San Fernando), 22h. (near Kobe, Osaka, and Sumoto), 23h. (near Hastings and New Plymouth).

April 23d. 23h. 34m. 9s. Epicentre 36°·0N. 117°·0W. N.3.

A = −·367, B = −·721, C = +·588; D = −·891, E = +·454; G = −·267, H = −·524, K = −·809.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Tinemaha	1·5	317	i 0 21	0	i 0 45	S*
Riverside	2·0	189	e 0 29	0	i 0 52	+ 1
Mount Wilson	2·0	206	e 0 28	− 1	—	—
Pasadena	2·1	207	i 0 29	− 1	i 0 51	− 3
Santa Barbara	2·7	235	i 0 42	+ 3	i 1 14	+ 5
La Jolla	3·2	184	e 0 46	0	e 1 22	0
Lick	4·0	292	e 1 3	+ 6	1 57	S*
Berkeley	4·7	295	e 1 26	P*	e 2 22	S*

Lick gives also eE = iN = +1m.10s. = P_g and +1m.14s., eE = +1m.26s., iN = +1m.50s., eE = +1m.54s., eN = +2m.2s.
Long waves were also recorded at Tucson.

April 23d. 23h. 46m. 18s. Epicentre 3°·5S. 104°·5W. N.3.

A = −·250, B = −·966, C = −·061; D = −·968, E = +·250; G = +·015, H = +·059, E = −·998.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	N.	38·0	112	e 7 15	0	i 13 7	+ 1	i 16·0	22·3
Columbia		43·5	29	—	—	14 34	+ 6	21·7	—
San Juan		43·7	58	—	—	i 14 22	− 9	20·4	—
Victoria	N.	54·4	345	—	—	17 11	+10	27·5	—
Ottawa		55·2	25	e 8 37	−53	e 17 17	+ 5	e 27·7	—
Scoresby Sund		90·8	19	—	—	24 0	− 4	49·7	—
Pulkovo		113·9	21	—	—	e 39 48	?	56·7	—
Ekaterinburg		125·4	9	—	—	e 37 42?	SS	52·7	—
Baku		136·5	27	—	—	e 35 41	?	60·7	79·8
Tashkent		141·8	6	—	—	e 33 36	?	e 70·7	86·8

Additional readings:—
Baku e = +40m.11s. = SS +11s. and +49m.6s.
Tashkent e = +47m.42s. ? and +62m.42s. ?
Long waves were also recorded at Irkutsk, Kucino, and the American and European stations.

April 23d. Readings also at 0h. (near New Plymouth and Wellington), 4h. (Bombay and near Calcutta), 5h. (Florence, Prato, Osaka, near Mizusawa, and Tyosi), 6h. (Theodosia), 7h. (near San Juan), 8h. (Suva), 11h. (near Chur, Neuchatel, and Zurich), 14h. (Baku, Ekaterinburg, Tashkent, Kucino, Alicante, and near Calcutta), 17h. (near Hastings and Wellington), 19h. (La Paz), 20h. (Baku, Ekaterinburg, Tashkent, and near Manila), 21h. (Irkutsk), 22h. (De Bilt, Ekaterinburg and Tashkent), 23h. (La Paz, near New Plymouth, and Wellington).

April 24d. 2h. 15m. 0s. Epicentre 3°·5S. 104°·5W. (as on 23d.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		38·0	112	e 7 15	0	i 13 7	+ 1	i 16·0	20·0
Little Rock	E.	39·9	16	e 7 27	− 4	e 16 34	SS	—	—
Columbia		43·5	29	—	—	14 36	+ 8	e 22·0	—
San Juan		43·7	58	—	—	i 14 30	− 1	17·7	—
St. Louis		44·1	16	e 8 20	+14	e 14 41	+ 4	—	—
Florissant		44·3	16	e 8 19	+12	e 14 41	+ 1	—	—
Ottawa		55·2	25	—	—	e 17 15	+ 3	28·0	—
Scoresby Sund		90·8	19	—	—	24 12	+ 8	45·0	—
Ekaterinburg		125·4	9	—	—	e 37 50	SS	60·0	—
Tashkent		141·8	6	—	—	e 40 54	SS	e 71·0	84·1

Long waves were also recorded at La Plata, Pittsburgh, Berkeley, Harvard, the European and Russian stations.

April 24d. 3h. 33m. 34s. Epicentre 37°·3N. 141°·7E. (as on 1931 March 3d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		1·7	204	0 23	− 1	0 41	− 3	—	0·7
Mizusawa		1·9	346	0 31	+ 3	0 50	+ 1	—	—
Nagoya		4·4	242	e 1 6	+ 3	2 10	S*	—	—
Osaka		5·6	243	1 17	− 3	—	—	2·6	3·3
Kobe	N.	5·9	245	—	—	e 2 55	S*	—	—
Sumoto		6·3	243	e 2 41	S	(e 2 41)	0	—	3·1

Tyosi gives also P_g = +30s.

April 24d. 5h. 47m. 0s. Epicentre 11°·5S. 112°·0E. (as on 1924 Dec. 12d.). X.

A = −·367, B = +·909, C = −·199; D = +·927, E = +·375;
G = +·075, H = −·185, K = −·980.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar	6·0	314	1 35	+10	i 2 37	+ 4	—	—
Batavia	7·3	316	e 1 54	+10	—	—	—	—
Perth	20·8	171	5 0?	+22	—	—	—	—
Manila	27·6	19	5 43	− 1	i 10 33	+ 8	13·4	—
Adelaide	33·7	139	—	—	e 12 0	− 1	e 15·5?	18·0
Irkutsk	64·1	355	e 10 27	− 6	e 17 48	−81	40·0	—
Tashkent	65·8	328	e 10 30	−14	—	—	e 19·9	43·2
Samarkand	66·0	326	10 50	+ 5	—	—	—	—
Baku	77·3	318	e 11 53	− 1	e 22 24	PS	e 40·0	—
Ekaterinburg	80·3	334	e 12 6	− 3	e 22 7	−12	38·0	—

Additional readings:—
Irkutsk eP = +9m.26s.
Long waves were also recorded at Riverview and Melbourne.

April 24d. 15h. 20m. 37s. Epicentre 31°·1N. 19°·9E. N.3.

A = +·805, B = +·291, C = +·517; D = +·340, E = −·940;
G = +·486, H = +·176, K = −·856.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Messina	7·9	334	3 14	S	(3 14)	− 7	—	—
Helwan	9·9	94	e 2 18	− 1	5 22	S_g	—	11·1
Stuttgart	19·4	338	e 4 17	− 6	e 7 49	− 5	—	—
De Bilt	23·6	337	5 10	+ 4	9 19	+ 3	e 13·4	—
Copenhagen	25·1	350	—	—	9 41	− 2	—	—
Baku	25·9	61	e 5 27	− 1	e 10 7	+10	15·3	—
Pulkovo	29·5	11	e 6 3	+ 2	e 10 50	− 6	16·4	—
Tashkent	40·6	61	—	—	e 18 17	(+32)	—	34·1

Long waves were recorded at Granada.

April 24d. 17h. 22m. 18s. Epicentre 6°·6S. 155°·2E. N.1.

A = −·902, B = +·417, C = −·115 ; D = +·419, E = +·908 ;
G = +·104, H = −·048, K = −·993.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		24·9	304	5 24	+ 5	9 43	+ 4	—	—
Suva		25·4	119	6 12	+48	10 47	+59	12·7	15·7
Amboina		27·0	275	i 5 37	− 1	i 10 8	− 7	18·5	—
Riverview		27·5	187	i 5 42	− 1	i 10 22	− 2	13·3	—
Sydney		27·5	188	e 5 54	+11	i 10 0	−24	11·9	12·3
Adelaide		32·2	207	i 6 25	+ 1	i 11 32	− 6	i 14·4	19·5
Melbourne		32·6	195	6 30	+ 2	11 48	+ 3	15·3	15·7
Apia		33·3	105	e 6 42	+ 8	e 14 4	?	—	—
Arapuni		36·5	152	i 9 42?	?	12 42?	− 2	15·7?	17·7?
Wellington		38·9	157	7 22	− 1	13 16	− 4	15·7	18·7
Christchurch		40·0	161	7 32	0	13 32	− 4	—	—
Manila		40·0	304	e 7 25	− 7	13 32?	− 4	18·2	—
Naha		42·3	322	7 59	+ 8	13 32	−39	—	—
Tyosi		44·4	345	e 8 5	− 3	e 17 57	(−11)	—	—
Perth		44·6	230	e 7 17	−53	i 13 42	−62	e 20·2	—
Miyazaki		44·7	330	8 10	0	14 37	− 9	—	—
Koti		45·1	336	e 8 11	− 3	—	—	e 19·0	—
Nagoya		45·2	340	e 8 25	+11	—	—	19·2	—
Sumoto		45·2	338	8 12	− 2	e 15 22	+28	19·2	22·8
Osaka		45·3	338	7 26	−49	13 53	−62	18·5	23·0
Kobe		45·4	338	e 8 15	− 1	—	—	i 18·8	22·7
Nagasaki		46·2	330	8 21	− 1	e 14 52	−15	e 19·3	—
Toyooka		46·3	338	i 8 21	− 2	—	—	e 20·1	—
Hukuoka		46·5	341	8 24	− 1	e 15 8	− 4	19·2	22·9
Hamada		46·9	336	8 26	− 2	14 57	−20	—	—
Malabar		47·2	269	i 8 43	+13	15 21	0	—	—
Mizusawa	E.	47·6	347	8 37	+ 4	15 22	− 5	22·1	—
	N.	47·6	347	9 18	+45	15 26	− 1	22·2	—
Morioka		48·1	347	8 52	+15	15 55	+21	—	—
Batavia		48·1	270	i 8 37	0	15 18	−16	23·9	—
Hong Kong		49·5	308	8 48	+ 1	15 52	− 2	24·0	25·7
Zi-ka-wei		49·7	322	i 8 50	+ 1	15 54	− 3	23·2	28·5
Honolulu T.H.		53·9	58	i 9 29	+ 8	i 17 1	+ 7	24·7	—
Vladivostok		53·9	340	i 8 17	−64	i 15 47	−67	22·1	26·8
Phu-Lien		55·0	301	9 30	+ 1	17 8	− 1	24·7	—
Medan		57·3	278	i 9 44	− 1	i 17 35	− 5	—	—
Tientsin		57·6	328	i 9 42	− 5	17 26	−18	27·9	30·1
Chiufeng	E.	58·9	326	e 9 47	−10	—	—	—	—
Calcutta		71·5	298	(11 18)	− 2	(20 11)	−28	33·8	34·8
Irkutsk		73·0	330	i 11 27	− 2	i 20 49	− 8	31·7	43·7
Colombo		76·4	279	11 46	− 2	21 30	− 6	46·5	48·7
Kodaikanal		79·2	282	i 12 36	+32	—	—	e 52·6	57·7
Hyderabad		79·4	290	12 5	0	22 0	− 9	38·4	42·9
Sitka		84·6	30	i 12 33	+ 2	i 22 55	− 9	i 35·5	—
Bombay		85·0	290	12 32	− 1	22 53	[− 6]	42·7	47·3
Almata		86·0	315	12 47	+ 9	—	—	—	—
Berkeley		88·1	51	12 50	+ 2	23 13	[− 8]	e 39·7	41·1
Lick		88·6	51	e 12 53	+ 2	e 23 44	+ 1	e 40·4	—
Andijan		88·9	311	12 54	+ 2	e 23 13	[−13]	44·7	—
Victoria		89·4	41	12 52	− 3	23 22	[− 7]	41·0	43·5
Santa Barbara	E.	89·7	55	e 13 8	+12	—	—	—	—
Pasadena		91·0	56	i 13 1	− 1	e 23 55	−10	e 41·0	—
Mount Wilson	E.	91·1	56	e 13 3	0	—	—	—	—
Tinemaha		91·3	53	e 13 3	0	—	—	—	—
Tashkent		91·4	313	i 13 7	+ 3	23 29	[−12]	e 37·6	53·0

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
			°	m. s.	s.	m. s.	s.	m.	m.
La Jolla		91·6	58	e 13 7	+ 2	—	—	—	—
Riverside		91·6	56	e 13 5	0	—	—	—	—
Samarkand		92·8	311	e 13 18	+ 8	e 23 42	[− 7]	—	—
Tucson		96·8	59	e 13 37	+ 8	e 24 52	− 6	38·3	—
Ekaterinburg		98·0	327	i 13 32	− 2	i 24 44	{+ 6}	41·7	83·4
Denver	E.	101·7	51	e 18 39	PP	—	—	e 46·7	—
Tananarive		104·3	250	—	—	e 24 43	[− 3]	e 48·7	53·7
Baku		105·9	311	e 14 10	− 1	24 53	[− 1]	51·7	66·3
Kucino		110·5	328	20 7	?	26 1	{− 9}	47·7	56·8
Little Rock		112·1	54	e 18 33	[+ 9]	e 28 29	PS	i 40·1	53·0
Pulkovo		112·7	334	14 35	− 9	25 9	[−16]	49·7	68·7
Florissant		113·1	50	i 14 43	− 3	i 26 13	{−16}	—	53·7
St. Louis		113·2	50	e 18 27	[0]	e 26 5	{−25}	e 48·1	53·9
Chicago		114·5	46	19 26	PP	e 29 6	PS	53·4	—
Helsingfors		114·7	335	e 19 24	PP	e 25 17	[−16]	e 47·7	—
Theodosia		115·5	317	e 19 27	PP	e 29 20	PS	59·7	—
Scoresby Sund		116·1	359	14 59	− 2	25 30	[− 8]	47·7	—
Ann Arbor		117·2	45	i 19 48	PP	—	—	i 55·3	—
Ksara		117·9	305	e 18 52	[+12]	—	—	67·7	—
Upsala		117·9	338	19 55	PP	25 27	[−16]	e 49·7	64·4
Toronto		119·7	41	19 0	[+15]	i 27 7	{− 7}	55·7	62·7
Königsberg		119·8	331	e 20 11	PP	25 42?	[− 8]	e 58·7	64·7
Buffalo		120·4	42	e 18 56	[+10]	—	—	—	57·2
Ottawa		121·4	39	e 20 21	PP	30 0	SKSP	e 56·4	66·7
Columbia		121·5	53	20 27	PP	25 50	[− 5]	e 50·8	—
Bergen		121·6	343	19 55	?	e 29 42?	?	51·7	—
Charlottesville		122·3	48	—	—	e 27 24	{− 8}	57·7	—
Lund		122·3	336	20 24	PP	—	—	51·7	—
Copenhagen		122·7	336	18 54	[+ 2]	25 48	[−10]	51·7	—
Georgetown	z.	123·0	46	18 56	[+ 3]	—	—	e 43·7	—
Fordham		124·6	44	i 19 6	[+10]	—	—	e 55·7	—
Budapest		124·6	325	19 10	[+14]	29 32	?	e 54·7	71·2
Hamburg		125·2	335	e 18 58	[+ 1]	e 26 0	[− 6]	e 52·7	67·7
Prague		125·6	330	—	—	e 30 42?	PS	e 51·7	68·7
Vienna		125·7	328	e 18 59	[+ 1]	28 42	?	e 54·7	72·7
Jena		126·4	332	e 19 12	[+12]	—	—	e 53·7	66·0
Cheb		126·6	331	e 19 52	[+52]	e 30 46	SKSP	e 53·7	70·7
Göttingen		126·7	333	i 19 2	[+ 2]	—	—	e 54·7	76·8
Graz		126·9	327	i 19 15	[+14]	e 27 47	{−15}	e 58·7	75·7
Zagreb		127·3	325	e 19 4	[+ 2]	e 31 3	PS	e 55·4	75·7
Edinburgh		127·8	344	e 21 7	PP	—	—	e 54·7	67·1
La Plata		128·1	145	21 6	PP	—	—	54·7	—
Durham		128·3	342	20 20	?	—	—	61·7	71·7
De Bilt		128·3	336	i 19 4	[0]	—	—	e 54·7	64·4
Feldberg		128·3	333	i 18 12	?	e 28 0	{−11}	e 56·8	78·0
Triest		128·7	326	19 6	[+ 2]	e 30 32	PS	e 43·7	60·7
Innsbruck		128·9	330	e 19 6	[+ 1]	e 22 36	?	—	—
Stuttgart		129·0	332	i 19 5	[0]	e 25 57	[−19]	e 57·2	71·2
Stonyhurst		129·4	341	21 18	PP	i 28 28	{+10}	56·7	68·7
Taranto		129·4	319	21 0	PP	32 42?	?	51·7	77·0
Treviso		129·6	325	i 19 10	[+ 4]	22 33	?	57·7	75·7
Venice		129·6	325	19 15	[+ 9]	—	—	—	—
Uccle		129·6	336	i 19 6	[0]	i 28 10	{− 9}	e 56·7	71·7
Strasbourg		129·8	333	i 19 7	[+ 1]	e 35 42?	?	e 52·7	—
Padova		129·9	325	e 19 10	[+ 4]	i 22 31	?	—	—
Chur		130·1	330	e 19 8	[+ 1]	—	—	—	—
Zurich		130·3	330	e 19 8	[+ 1]	—	—	—	—
Trenta		130·7	318	e 19 42	[+34]	—	—	—	—
Kew		130·8	340	i 19 8	[0]	—	—	53·7	68·9
Oxford		130·8	342	e 19 21	[+13]	i 22 29	PKS	e 53·7	74·0

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		131·2	325	19 5	[− 4]	30 42	?	—	—
Naples	E.	131·2	320	e 19 21	[+12]	e 31 31	PS	72·7	—
La Paz		131·3	119	i 19 21	[+12]	26 21	[− 2]	61·4	65·0
Neuchatel		131·3	332	e 19 7	[− 2]	—	—	—	—
Piacenza		131·3	329	19 12	[+ 3]	22 40	PKS	43·7	75·6
Prato		131·3	325	e 18 32	[−37]	22 42	PKS	65·7	—
Rome		131·7	323	e 19 16	[+ 6]	29 31	?	—	—
Paris		131·9	336	e 19 11	[+ 1]	—	—	32·7	59·7
Port au Prince		132·3	71	e 18 54	[−17]	—	—	63·7	—
Catania		132·4	316	—	—	22 34	PKS	e 67·6	81·5
Barcelona		137·7	330	e 19 34	[+15]	—	—	e 68·4	84·4
San Juan		138·1	70	i 19 26	[+ 7]	—	—	e 57·0	—
Tortosa		139·0	331	e 19 26	[+ 6]	—	—	e 57·7	89·5
Algiers		140·9	323	e 19 28	[+ 6]	—	—	68·7	76·7
Alicante		141·4	329	e 19 37	[+14]	—	—	e 65·9	—
Toledo		141·9	334	19 26	[+ 3]	e 30 11	?	e 59·7	80·8
Almeria		143·5	329	i 19 26	[− 3]	32 52	SKSP	66·5	82·2
Granada		143·8	331	i 19 27	[− 4]	—	i	72·7	78·7
Malaga		144·6	331	19 29	[− 4]	29 37	{−14}	38·0	—
Dakar		169·2	319	e 20 9	[+ 6]	—	—	—	91·4

Additional readings and note :—
Suva PP = +7m.12s.
Amboina i = +10m.53s.
Riverview iPP = +6m.24s., i = +10m.37s. and +10m.50s.
Adelaide iPP = +7m.21s., i = +11m.57s. and +14m.2s.
Melbourne SS = +14m.12s
Wellington PPP = +9m.12s.
Christchurch PS = +14m.8s.
Manila i = +7m.33s.
Perth iP = +7m.27s., ePP = +9m.22s., and +9m.42s., eSS = +17m.2s. and +17m.12s.
Batavia iN = +16m.13s.
Hong Kong ? = +16m.11s.
Zi-ka-wei iZ = +9m.6s., PPZ? = +11m.2s., PPPPZ = +11m.50s., SSZ = +19m.34s.
Honolulu T.H. SSS = +22m.36s.
Phu-Lien PPP? = +12m.53s.
Tientsin PP = +12m.8s., PPP = +13m.1s., PPPP = +13m.44s., SS = +22m.9s.
Calcutta readings have been *increased* by 3m.
Sitka eSS = +28m.45s.
Berkeley eP = +12m.58s., eE = +13m.4s. and +16m.24s. = PP +14s., eSE = +23m.18s. and +23m.26s., iSE = eSN = +23m.33s., eE = +29m.29s. = SS +16s.
Lick iN = +13m.4s.
Victoria SN = +23m.30s. ; T_0 = 17h.22m.38s.
Pasadena iPPZ = +16m.44s., iE = +16m.58s., eN = +17m.3s.
Mount Wilson eE = +16m.45s. = PP +12s.
La Jolla eE = +16m.54s. = PP +16s.
Riverside eE = +16m.43s. = PP +5s.
Tucson PP = +17m.33s., SKS = +23m.56s., PS = +26m.12s., SS = +31m.30s., SSS = +35m.19s.
Ekaterinburg SKS = +24m.2s., SS = +31m.24s.
Tananarive E = +27m.34s. = PS +3s., +28m.19s., +33m.4s. = SS +3s., and +35m.49s., N = +43m.19s.
Baku iPKP = +18m.30s. = PP +3s., PS = +27m.50s., SS = +33m.48s.
Kucino PS = +29m.28s., SS = +35m.42s.
Little Rock ePPE = +19m.3s., iE = +19m.35s., eE = +21m.50s. and +29m.24s.
Pulkovo PS = +28m.42s., PPS = +29m.30s., SS = +35m.12s.
Florissant ePKPZ = +18m.13s., iPPEZ = +19m.22s., iZ = +21m.43s. = PPP +6s. iPPPZ = +22m.8s., eZ = +28m.43s., iEZ = +28m.57s. = PS +1s., iPPSE = +29m.27s., iSSE = +34m.51s., eSSSE = +39m.13s., eSSSSE = +42m.32s.
St. Louis ePPE = +19m.20s., ePSE = +28m.46s., eE = +30m.15s., eSSE = +34m.54s., eSSSE = +39m.24s.
Chicago PPP = +21m.57s., eSS = +35m.12s.
Helsingfors eE = +20m.26s., ePPPE = +22m.20s., eSKSN = +25m.20s., eSKKSN = +26m.23s., eSKKSE = +26m.26s., eN = +27m.26s., ePSEZ = +29m.20s., ePPSEN = +30m.26s., eN = +31m.30s., eE = +31m.38s., eE = +32m.20s., eEN = +32m.53s., eN = +33m.52s., eE = +34m.20s., eSSE = +35m.26s., eSSN = +35m.29s., eN = +36m.35s., $ePPP_2N$ = +37m.59s., eSSSEN = +39m.33s., eN = +40m.53s. and +42m.5s.

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Scoresby Sund PP = +19m.46s., PS = +29m.21s., SS = +35m.54s., SSS = +39m.54s.
Ann Arbor e = +23m.18s., +25m.6s., +29m.12s. = PS − 24s., +39m.48s., and +49m.36s.
Ksara eEN = +20m.0s. = PP + 6s., eE = +20m.27s., eN = +22m.52s., eE = +22m.58s., and +36m.8s. = SS + 4s.
Upsala SS = +35m.48s., SSS = +40m.48s.
Toronto P = +14m.57s., iPP = +20m.12s., iSS = +36m.29s. ; T_0 = 17h.22m.29s.
Königsberg eE = +27m.40s., PS'?E = +30m.2s., SSE = +37m.0s., eE = +46m.42s. ? ; T_0 = 17h.21m.54s.
Buffalo eP = +15m.16s., iPP = +20m.15s., iPPS = +29m.54s., eSS = +36m.34s.
Ottawa PKPE = +23m.2s., e = +27m.18s., PPS = +36m.6s., SS = +41m.42s.
Columbia PS = +30m.12s., eSS = +36m.36s.
Charlottesville ePS = +29m.36s., PPS = +30m.24s.
Copenhagen PP = +20m.24s., PS = +30m.6s., SS = +36m.12s.
Georgetown PPZ = +20m.32s., PSZ = +30m.20s.
Fordham ePP = +20m.41s., ePS? = +30m.37s., eSS = +37m.29s.
Hamburg eZ = +36m.3s.
Prague e = +37m.12s., and +42m.42s. ?
Vienna PP = +24m.23s., SKKS = +30m.46s., SSS = +47m.2s.
Jena eE = +21m.6s., eN = +22m.18s.
Cheb e = +21m.52s., +32m.42s., and +37m.58s.
Göttingen iZ = +19m.11s., eE = +21m.8s., eEN = +22m.16s.
Zagreb e = +19m.14s., eNE = +21m.5s., ePKPNE = +22m.22s., ePPS = +35m.35s., e = +38m.2s., eE = +43m.0s., and +49m.12s.
Edinburgh i = +22m.24s. and +30m.28s.
Durham ? = +21m.13s. = PP + 7s. and +22m.21s.
De Bilt i = +21m.10s. = PP + 4s., eEN = +22m.26s.
Feldberg i = +22m.29s., e = +30m.54s. = SKSP − 4s., and +37m.1s.
Stuttgart ePZ = +15m.52s., iZ = +19m.14s., ePP = +21m.9s., ePKSEN = +22m.22s., iPPPE = +24m.16s., eS = +28m.24s. = SKKS + 9s., ePS = +31m.0s., eSS = +38m.42s. ?
Stonyhurst PP? = +22m.31s. and +32m.41s.
Uccle i = +21m.17s. = PP + 2s., +22m.31s., e = +31m.20s. = PS − 8s.
Strasbourg e = +21m.14s. = PP − 2s., ePP = +22m.17s.
Chur ePP = +22m.19s.
Zurich ePP = +22m.31s. = PKS − 3s.
Kew iPP = +21m.26s., iSKP = +22m.31s.
Florence i = +21m.31s. = PP + 6s. and +22m.28s. = PKS − 11s.
La Paz iPP? = +22m.39s. = PKS + 0s., SKSN = +26m.41s.
Neuchatel ePP = +22m.35s. = PKS − 4s.
Paris e = +21m.31s. = PP + 1s., PP = +22m.32s. = PKS − 10s.
Port au Prince i = +22m.33s. = PKS − 10s., +22m.46s., and +22m.54s.
San Juan PP = +22m.9s., ePS = +32m.10s., eSS = +40m.12s., e = +44m.42s. and +46m.30s.
Tortosa ePN = +19m.35s.
Toledo PKP = +22m.51s. = PKS − 22s., SKS = +29m.59s. = SKKS + 24s.
Almeria PP = +22m.41s., i = +27m.33s., and +29m.38s. = SKKS − 7s.
Granada i = +21m.2s., +23m.40s., +26m.17s., and +30m.8s. = SKKS + 22s.
Long waves were also recorded at Cape Town, Ivigtut, and Laibach.

April 24d. Readings also at 0h. (Samarkand), 2h. (near Koti, Matuyama, and Sumoto), 5h. (Taihoku), 8h. (near Samarkand), 9h. (near Treviso), 11h. (near Andijan and Samarkand), 12h. (near Calcutta), 13h. (near Amboina, Manila, and near Samarkand), 16h. (Medan, near Batavia, Malabar, and near Manila), 17h. (Andijan, Ekaterinburg, and Tashkent), 18h. (Andijan, Manila, La Paz, Tucson, Pasadena, Berkeley, and near Lick), 19h. (near Mizusawa), 20h. (Apia, Adelaide, Riverview, and near Andijan), 21h. (near La Paz).

April 25d. 11h. 3m. 31s. Epicentre 14°·0N. 89°·0W. (as on 1930 July 14d.). X.

A = +·017, B = −·970, C = +·242.

		Δ	Az.	P.	O − C.	S.	O − C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
St. Louis		24·6	358	e 5 19	+ 3	e 9 31	− 3	—
Florissant		24·9	357	i 5 19	0	e 9 38	− 1	—
Tucson		27·1	316	5 35	− 4	e 10 12	− 5	i 10·9
La Paz	z.	36·8	145	7 35	+30	—	—	—

Additional readings :—
St. Louis eN = +6m.12s. and +10m.28s. = SS − 8s.
Tucson S = +8m.45s.
Long waves were recorded at Berkeley.

April 25d. 19h. 13m. 48s. Epicentre 12°·5N. 148°·0E. (as given by De Bilt). N.3.

A = −·828, B = +·517, C = +·216; D = +·530, E = +·848; G = −·184, H = +·115, K = −·976.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	26·4	278	e 5 2	−31	i 9 27	−38	i 12·2	—
Riverview	46·4	176	—	—	e 16 24	+74	—	22·2
Adelaide	49·0	190	—	—	e 15 12	−35	i 21·4	31·2
Irkutsk	52·9	329	e 9 10	− 3	e 16 21	−20	25·2	31·8
Tashkent	73·4	310	e 11 59	+28	20 44	−17	e 34·2	44·1
Ekaterinburg	77·8	326	e 11 57	0	e 21 47	− 5	35·2	—
Baku	88·0	311	e 12 52	+ 4	e 23 24	−13	41·7	55·4
Pulkovo	92·4	334	e 16 18	?	e 23 41	[− 6]	46·2	59·5
Scoresby Sund	96·7	357	22 12?	?	—	—	52·2	—

Additional readings :—
Manila iZ = +5m.13s., iE = +5m.18s., iN = +5m.28s.
Adelaide e = +16m.59s.
Tashkent e = +24m.42s.
Long waves were also recorded at Hong Kong, Vladivostok, and European stations.

April 25d. 22h. 4m. 45s. Epicentre 6°·6S. 155°·2E. (as on 24d.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	27·5	187	—	—	e 9 45	−39	14·2	16·2
Sydney	27·5	187	6 27	PP	—	—	16·0	16·6
Adelaide	32·2	207	—	—	e 10 30	−68	15·6	19·9
Manila	40·0	304	e 7 35	+ 3	i 13 41	+ 5	—	—
Irkutsk	73·0	330	e 11 29	0	e 20 41	−16	e 34·2	—
Andijan	88·9	311	e 13 29	+37	e 23 40	− 6	—	—
Tashkent	91·4	313	—	—	i 23 32	[− 9]	e 43·2	55·8
Ekaterinburg	98·0	327	—	—	e 24 53	{+15}	41·2	—
Baku	105·9	311	—	—	(e 23 15?)	?	e 23·2	—

Additional readings and notes :—
Irkutsk ePP = +14m.51s., eSS = +26m.21s.
Tashkent i = +24m.4s. = S − 5.
Ekaterinburg e = +31m.35s. = SS + 1s.
Long waves were also recorded at Christchurch, Melbourne, Hong Kong, and Scoresby Sund.

April 25d. Readings also at 1h. (near Berkeley and Lick), 2h. (near Sumoto), 4h. (Balboa Heights), 5h. (Pasadena and near Algiers), 8h. (Adelaide, Riverview, near Christchurch, New Plymouth, Takaka, and Wellington), 9h. (near Medan), 10h. (Paris and near La Paz), 11h. (Baku, Ekaterinburg, Tashkent, Scoresby Sund, Andijan, and near Samarkand), 12h. (near San Juan), 13h. (La Paz, Tashkent, near Andijan, and Samarkand), 14h. (Simferopol), 16h. (Copenhagen, near Simferopol, Theodosia, and Yalta (4)), 17h. (Strasbourg and Yalta), 19h. (Florence), 20h. (near Batavia. Malabar, and near New Plymouth).

April 26d. 0h. 13m. 57s. Epicentre 39°·8N. 74°·3E. (given by the stations). N.3.

A = +·208, B = +·740, C = +·640; D = +·963, E = −·271; G = +·173, H = +·616, K = −·768.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·8	299	0 23	− 3	(i 0 48)	+ 2	i 0·8	1·2
Almata	4·0	29	1 22	P_g	—	—	i 2·3	2·8
Tashkent	4·1	293	e 0 57	− 1	i 1 34	−11	i 2·0	2·6
Samarkand	5·6	272	1 23	+ 3	—	—	i 2·8	3·4

Long waves were also recorded at Baku, Ekaterinburg, and Irkutsk.

April 26d. 4h. 22m. 9s. Epicentre 53°·2N. 162°·6E. (as on 1923 May 23d.). R.1.

Probable error of epicentre ±0°·20.

A = −·572, B = +·179, C = +·801; D = +·299, E = +·954; G = −·764, H = +·239, K = −·599.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oiwake		23·8	235	5 7	− 1	9 18	− 1	—	—
Misima		24·6	232	5 20	+ 4	9 31	− 3	—	—
Osaka		26·6	237	5 29	− 6	(10 5)	− 4	10·1	—
Kobe	z.	26·8	237	5 36	0	—	—	—	—
Irkutsk		34·3	294	6 39	− 4	e 12 9	− 2	18·8	21·4
Ekaterinburg		53·0	320	e 9 11	− 3	e 16 34	− 8	27·8	33·8
Almata		54·5	298	—	—	e 16 55	− 7	—	—
Scoresby Sund		56·3	3	9 41	+ 3	17 33	+ 6	27·8	—
Pasadena		57·2	77	e 9 52	+ 7	—	—	—	—
Andijan		58·6	299	e 10 7	+12	—	—	30·6	—
Tashkent		59·9	301	10 1	− 3	e 18 9	− 6	e 32·8	37·2
Pulkovo		60·8	335	10 7	− 3	18 23	− 3	30·8	40·2
Helsingfors		61·7	339	e 10 13	− 3	e 18 29	− 9	e 32·8	—
Kucino		62·0	329	e 10 18	0	e 18 43	+ 1	e 28·2	38·6
Samarkand		62·3	301	e 10 24	+ 4	—	—	—	—
Königsberg		67·5	339	—	—	e 20 2	+11	e 41·8	44·8
Copenhagen		68·4	342	11 0	− 1	20 21	PS	31·8	—
Florissant		68·6	54	e 11 7	+ 5	i 20 12	+ 8	e 33·8	—
St. Louis		68·8	54	e 11 6	+ 3	i 20 11	+ 4	e 31·3	39·4
Baku		70·0	311	e 11 8	− 3	e 20 32	+11	38·4	46·4
Little Rock		70·8	59	e 11 17	+ 1	e 20 21	−10	—	—
Hamburg		70·9	345	e 11 15	− 1	—	—	e 39·8	—
Theodosia		71·9	325	11 21	− 1	—	—	—	—
Simferopol		72·5	325	e 11 23	− 3	—	—	—	—
Yalta		72·8	325	11 26	− 2	—	—	45·8	—
De Bilt		73·0	346	—	—	e 21 53	PS	e 39·8	46·3
Cheb		73·8	340	e 21 1	S	(e 21 1)	− 5	e 40·8	46·8
Vienna	z.	74·6	339	e 11 37	− 1	—	—	—	—
Budapest		74·7	336	11 41	+ 2	—	—	—	—
Bombay		74·8	282	e 28 51	SSS	—	—	—	—
Stuttgart		75·6	344	e 11 41	− 3	—	—	e 40·8	—
Strasbourg		76·1	345	e 11 55	+ 8	—	—	e 40·8	—
Innsbruck		76·6	341	11 45	− 4	—	—	—	—
Zagreb		77·0	338	e 11 51?	− 1	—	—	e 42·8	46·8
Chur		77·3	344	e 11 53	− 1	—	—	—	—
Neuchatel		77·7	345	e 11 56	0	—	—	—	—
Venice		78·2	340	11 51	− 7	—	—	—	—
Piacenza		79·1	341	—	—	e 21 51	−15	—	51·6
Florence		79·9	340	12 8	+ 1	22 6	− 9	e 32·8	42·8
Rome		81·5	339	e 12 18	+ 2	23 7	PS	—	—

Additional readings :—
Scoresby Sund +22m.27s.
Helsingfors eN? = +14m.56s., eE = +19m.59s.
Königsberg eN = +21m.6s.=SKS +19s.
Florissant iPZ = +11m.31s.
Cheb eS? = +30m.13s.
Long waves were also recorded at Hong Kong, Sitka, San Juan, and other European stations.

April 26d. 6h. 24m. 55s. Epicentre 34°·5N. 26°·4E. (as on 1930 March 6d.). R.3.

A = +·738, B = +·366, C = +·566 ; D = +·445, E = −·896 ;
G = +·507, H = +·252, K = −·824.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara		7·9	92	4 31	S_g	5 47	?	—	—
Belgrade		11·3	338	e 3 23	+44	e 4 45	0	—	—
Yalta		11·7	28	e 2 43	− 1	e 4 52	− 3	e 6·5	—
Theodosia		12·6	30	e 2 50	− 6	—	—	—	—
Zagreb		13·8	328	e 3 15	+ 2	e 6 1	+15	—	12·7
Budapest		14·1	339	6 9	S	(6 9)	+16	7·1	—
Triest		14·7	323	3 20	− 5	e 6 35	+27	e 7·8	12·1
Florence		14·9	313	e 5 5	S	(e 5 5)	−68	(8·1)	15·9
Graz		15·0	330	e 1 37	?	(e 6 5?)	−10	e 6·1	7·6
Venice		15·3	320	7 40	?	8 50	?	—	—
Padova		15·6	319	e 7 42	?	9 42	?	—	—
Vienna		15·6	335	e 3 36	0	—	—	e 7·1	9·1
Chur		17·7	319	e 4 12	+ 9	—	—	—	—
Cheb		18·6	331	—	—	e 7 25	−13	e 9·5	15·3
Neuchatel		19·2	316	e 4 31	+10	—	—	—	—
Baku		19·6	66	e 4 13	−12	8 29	+31	10·9	14·3
Strasbourg		19·7	321	(e 6 5?)	?	—	—	e 6·1	—
Feldberg		20·4	325	—	—	e 9 17	+63	e 10·3	16·8
Hamburg		22·3	334	—	—	e 8 5?	−47	—	—
Pulkovo		25·4	5	5 26	+ 2	e 9 29	−19	12·1	13·8
Helsingfors	E.	25·7	358	—	—	e 9 25	−28	e 12·2	—
Ekaterinburg		32·1	31	e 7 8	+44	e 11 39	+ 2	17·1	—
Tashkent		34·2	62	—	—	e 13 22	+73	i 16·0	22·0

Additional readings and note :—
Ksara ePN = +4m.39s.
Belgrade e = +5m.4s.
Zagreb eNE = +3m.33s.
Florence gives S and L as P and S respectively.
Pulkovo e = +11m.13s.
Ekaterinburg e = +12m.42s.
Long waves were also recorded at Simferopol, Scoresby Sund, and other European stations.

April 26d. Readings also at 1h. (Bombay and La Paz), 2h. (Baku, Ekaterinburg, and Tashkent), 6h. (Granada, Vladivostok, and near Hastings), 7h. (Baku, Ekaterinburg, Irkutsk, Pulkovo, Tashkent, Scoresby Sund, near Mizusawa, near New Plymouth (2), and Wellington (2)), 9h. (Ekaterinburg, Irkutsk, Vladivostok, and near New Plymouth), 10h. (Baku), 12h. (near Toyooka, Osaka, and near Zagreb), 15h. (La Paz, near Andijan, and Samarkand), 16h. (Andijan), 17h. (Ekaterinburg and Irkutsk), 19h. (Manila), 20h. (Baku, Ekaterinburg, and Tashkent), 21h. (near Andijan).

April 27d. 16h. 50m. 45s. Epicentre **38°·7N. 46°·1E.** N.1.

Probable error of epicentre ±0·25.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		3·4	59	i 0 50	+ 1	(i 1 34)	+ 7	i 1·6	—
Ksara	N.	9·5	243	2 21	+ 7	4 29	+28	5·0	—
Theodosia		10·2	311	2 25	+ 1	5 39	S_g	8·2	—
Yalta		10·6	307	2 29	0	—	—	—	—
Simferopol		10·9	308	i 2 32	− 1	e 6 6	S_g	—	—
Helwan		15·0	238	i 3 30	+ 2	i 6 40	+25	—	9·3
Samarkand		16·2	80	i 3 47	+ 3	—	—	—	8·7
Kucino		17·9	345	3 59	− 6	e 6 54	−28	—	—
Tashkent		17·9	74	i 4 5	0	7 17	− 5	—	—
Lemberg	E.	19·2	312	e 4 16	− 5	e 7 52	+ 2	—	—
	N.	19·2	312	e 4 26	+ 5	e 7 56	+ 6	—	10·8

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Belgrade		20·0	296	4 27	− 3	e 8 16	+10	—	14·7
Andijan		20·3	75	4 36	+ 3	8 23	+11	11·4	12·2
Ekaterinburg		20·5	23	i 4 30	− 5	i 8 7	− 9	10·8	—
Budapest		21·4	303	i 4 36	− 8	8 36	+ 2	14·2	16·2
Taranto		22·2	284	i 4 50	− 3	i 8 55	+ 5	—	15·0
Trenta		23·0	281	i 5 5	+ 4	i 9 15	+10	—	13·2
Pulkovo		23·2	340	i 5 0	− 3	i 9 13	+ 5	11·2	14·4
Zagreb		23·2	297	i 5 5	+ 2	i 9 17	+ 9	e 11·8	15·6
Vienna		23·4	304	e 5 3	− 2	9 4	− 8	i 14·3	19·2
Königsberg		23·5	321	i 5 4	− 1	i 9 34	+20	e 11·7	13·5
Almata		23·6	69	i 5 11	+ 4	—	—	—	14·4
Graz		23·7	300	i 5 9	+ 2	i 9 26	+ 8	—	14·8
Messina		23·8	278	5 11	+ 3	9 21	+ 2	—	—
Laibach		24·3	298	e 5 18	+ 5	e 9 39	+11	e 14·6	—
Catania		24·3	277	i 5 14	+ 1	9 12	−16	13·6	16·4
Naples	E.	24·4	285	e 5 39	PP	e 9 41	+11	—	18·2
Casamicciola		24·7	285	5 6	−11	9 24	−12	—	9·9
Collurania		24·7	290	5 23	+ 6	—	—	—	—
Mineo		24·7	276	5 12	− 5	—	—	—	—
Triest		24·8	296	i 5 35	PP	i 9 42	+ 5	10·1	17·1
Prague		25·1	307	i 5 25	+ 4	i 9 54	+11	e 13·2	17·8
Camerino		25·2	291	5 26	+ 4	—	—	—	—
Helsingfors		25·2	335	i 5 18	− 4	i 9 38	− 6	11·9	—
Venice		25·7	296	i 5 30	+ 4	i 11 2	+69	—	12·8
Rome		25·7	288	i 5 28	+ 2	9 56	+ 3	—	11·1
Treviso		25·9	296	i 5 29	+ 1	9 58	+ 1	—	18·7
Cheb		26·3	307	(e 5 35)	+ 3	e 5 35	P	e 16·2	17·4
Florence		26·5	292	i 5 35	+ 1	10 15	+ 8	—	—
Innsbruck		26·5	300	5 33	− 1	10 7	0	—	—
Potsdam		26·5	312	i 5 37	+ 3	i 10 4	− 3	e 12·2	17·8
Prato		26·6	292	5 35	0	10 15	+ 6	—	12·2
Jena	E.	27·0	308	e 5 35	− 3	i 10 25	+10	e 13·2	18·4
	N.	27·0	308	e 5 37	− 1	i 10 15	0	e 13·2	16·2
Livorno		27·1	292	5 25	−14	10 15	− 2	—	—
Dehra Dun		27·4	98	e 5 35	− 7	10 35	+13	16·8	19·2
Lund		27·6	318	5 42	− 2	10 19	− 6	13·2	—
Piacenza		27·6	295	5 47	+ 3	10 27	+ 2	14·4	18·7
Upsala		27·7	329	i 5 40	− 4	i 10 32	+ 5	—	17·0
Chur		27·8	299	i 5 44	− 1	e 10 31	+ 3	—	—
Ravensburg		27·8	301	i 5 45	0	e 10 25	− 3	e 15·8	—
Pavia		28·0	295	5 54	+ 7	—	—	—	—
Copenhagen		28·1	318	i 5 46	− 2	10 29	− 5	—	—
Göttingen		28·1	309	i 5 48	0	i 10 33	− 1	i 11·8	19·0
Stuttgart		28·2	303	e 5 48	− 1	i 10 29	− 6	e 15·8	19·1
Zurich		28·4	300	i 5 54	+ 3	e 11 15	+37	—	—
Hamburg		28·7	313	i 5 51	− 2	e 10 44	+ 1	e 15·6	20·0
Karlsruhe		28·7	303	5 57	+ 4	10 45	+ 2	—	—
Feldberg		28·8	306	i 5 56	+ 2	—	—	e 14·0	21·0
Agra	E.	29·0	104	5 10	−46	e 10 26	−22	e 14·3	20·8
Strasbourg		29·1	303	i 5 55	− 2	e 11 20	+30	14·2	20·6
Neuchatel		29·5	299	i 6 1	0	e 10 33	−23	—	—
Grenoble		30·4	297	e 5 54	−15	e 12 30	SS	17·2	—
Bombay		30·5	123	6 16	+ 7	11 26	+14	15·8	21·8
De Bilt		31·2	310	i 6 17	+ 1	11 21	− 2	e 14·2	20·8
Uccle		31·6	307	i 6 19	0	i 11 28	− 1	14·2	17·2
Paris		32·6	304	i 6 27	− 1	11 40	− 5	15·2	19·2
Bergen		33·3	325	i 6 33	− 1	(11 47)	− 8	(16·2)	(18·2)
Barcelona		33·4	290	6 37	+ 2	e 11 57	0	e 16·4	21·6
Algiers		33·8	282	6 38	− 1	12 0	− 3	14·7	19·2
Kew		34·4	310	i 6 44	0	i 12 11	− 1	i 14·8	24·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tortosa		34·7	290	6 47	+ 1	12 17	0	13·2	—
Oxford		35·1	310	i 6 50	0	i 12 18	− 5	—	24·8
Hyderabad		35·3	119	7 0	+ 8	12 30	+ 4	16·8	20·8
Durham		35·5	313	6 53	0	12 24	− 5	17·1	19·9
Stonyhurst		35·9	311	i 6 57	0	i 12 30	− 5	—	24·5
Alicante		36·0	285	e 6 59	+ 1	e 12 39	+ 3	e 14·7	—
Dyce		36·2	322	e 6 57	− 3	i 12 35	− 4	e 16·9	22·6
Bidston		36·3	311	i 7 5	+ 5	i 12 40	− 1	e 14·8	22·8
Edinburgh		36·5	316	7 3	+ 1	12 42	− 2	i 19·8	25·4
Almeria		37·9	282	i 7 13	− 1	i 13 6	+ 1	16·1	19·9
Toledo		38·3	289	i 7 16	− 2	e 12 52	−19	e 15·6	26·9
Granada		38·7	283	i 7 21	0	—	—	—	25·1
Calcutta		39·4	101	8 16	+49	14 13	+46	20·5	31·1
Malaga		39·5	283	i 7 32	+ 4	i 13 34	+ 5	16·4	—
Kodaikanal		39·9	128	i 14 3	S	(i 14 3)	+28	i 17·4	26·2
San Fernando		40·9	283	7 39	− 1	11 45	?	12·8	26·8
Irkutsk		41·7	50	7 48	+ 2	14 7	+ 5	23·2	26·8
Colombo		44·0	127	7 51	−14	14 53	+17	23·0	30·4
Scoresby Sund		46·6	334	i 8 25	0	15 17	+ 4	26·2	—
Chiufeng	N.	52·7	65	e 9 1	−11	—	—	—	—
Tientsin		53·8	65	i 9 25	+ 5	16 53	0	29·6	32·2
Phu-Lien		54·5	91	9 29	+ 4	e 17 9	+ 7	24·2	—
Tananarive	N.	57·6	179	9 56	+ 9	e 17 53	+ 9	28·3	31·4
Ivigtut		58·7	326	i 9 53	− 2	17 57	− 2	27·2	—
Medan		59·2	113	e 10 12	+13	i 19 28	(−18)	—	—
Hong Kong		59·5	85	10 6	+ 5	18 15	+ 6	—	37·1
Dakar		60·3	265	e 18 29	S	(e 18 29)	+ 9	—	—
Zi-ka-wei		60·5	71	10 11	+ 3	18 31	+ 8	34·8	40·5
Vladivostok		62·0	56	i 10 17	− 1	i 18 45	+ 3	32·4	39·0
Nagasaki		65·8	67	i 10 46	+ 2	19 42	+12	37·7	—
Toyooka		67·8	62	i 10 57	0	e 19 56	+ 2	e 38·8	43·5
Koti		68·0	64	e 10 59	+ 1	19 54	− 3	37·4	39·4
Kobe		68·5	63	—	—	e 20 7	+ 4	e 39·0	44·0
Sumoto		68·5	63	e 11 3	+ 2	—	—	—	45·8
Osaka		68·8	63	10 53	−10	20 8	+ 1	—	—
Manila		69·2	88	11 4	− 2	i 20 23	PS	i 32·9	—
Kameyama		69·3	63	11 9	+ 3	20 15	+ 2	—	—
Nagoya		69·4	61	e 11 10	+ 3	e 20 19	+ 5	e 37·6	—
Mizusawa	E.	70·1	55	11 12	+ 1	20 25	+ 3	—	—
Kumagaya		70·6	59	11 21	+ 7	20 32	+ 4	—	—
Batavia		71·8	115	e 11 54	+32	i 20 40	− 3	—	—
Ottawa		81·0	323	e 12 10	− 3	e 22 22	− 4	e 38·2	—
Fordham		83·4	320	e 12 30	+ 5	e 22 45	− 6	e 38·2	—
Toronto		84·0	324	12 29	+ 1	i 22 43	−15	e 38·4	—
Buffalo		84·3	323	i 12 25	− 5	e 23 44	PS	e 47·2	—
Georgetown		86·5	320	i 12 40	− 1	i 23 22	0	e 37·8	—
Ann Arbor		87·0	326	e 14 27	?	—	—	e 49·8	—
Charlottesville		87·9	320	—	—	e 23 15?	[− 4]	e 40·2	—
Victoria		92·4	354	23 45	SKS	(23 45)	[− 2]	50·9	57·9
Florissant		92·8	328	e 12 35	−35	i 23 45	[− 4]	—	—
St. Louis		93·0	328	e 13 8	− 3	e 23 36	[−14]	e 47·8	—
San Juan		94·7	300	16 59	PP	24 30	− 9	e 38·2	—
Little Rock		97·2	327	e 17 12	PP	e 23 49	[−23]	—	56·5
Berkeley	E.	102·7	352	e 18 15	PP	—	—	e 45·8	—
Pasadena		105·8	348	e 18 29	PP	—	—	—	—
Adelaide		112·7	118	—	—	e 27 50	?	—	69·2
Melbourne		118·8	118	—	—	e 25 45	[− 1]	—	71·2
La Paz		119·0	272	e 19 50	PP	e 27 45	{+35}	60·2	75·4

For Notes see next page.

NOTES TO APRIL 27d. 16h. 50m. 45s.

Additional readings and note :—

Belgrade e = +4m.46s., eSE = +8m.19s., e = +8m.32s.
Zagreb eP_cP = +9m.3s., i = +9m.42s.
Vienna iP = +5m.7s., PP = +5m.31s., SS = +9m.22s., SSS = +10m.9s., P_cS? = +12m.9s., S_cS = +16m.10s.
Königsberg eNZ = +5m.34s., eZ = +5m.52s. and +7m.56s., iN = +9m.47s., +9m.58s., and +10m.10s., eN = +10m.49s., iN = +11m.14s.
Graz PP = +5m.39s., PPP = +5m.49s., SS = +9m.55s., SSS = +10m.28s., P_cS = +13m.3s., S_cS = +16m.24s.
Laibach e = +6m.22s. and +10m.35s.
Triest PP = +5m.39s., PPP = +6m.0s., SS = +10m.42s., SSS = +11m.0s.
Helsingfors i = +5m.44s. = PP −8s., iPPN = +6m.2s., iPPPEZ = +6m.12s., iE = +6m.27s., iN = +6m.50s., iZ = +7m.8s., iNZ = +7m.28s., iE = +7m.50s., iZ = +8m.15s., P_cPN = +8m.38s., P_cPE = +8m.47s., SZ = +9m.44s., iSSN = +10m.47s., iSSE = +11m.8s., iZ = +11m.14s.
Cheb e = +10m.48s.
Innsbruck PP = +5m.56s., SS? = +11m.38s., S_cS = +15m.59s.
Potsdam iEN = +10m.20s. and +10m.35s., iN = +10m.41s., iE = +11m.8s. = SS +2s., iN = +11m.42s.
Jena iE = +6m.19s. = PP +2s., eN = +7m.3s., eE = +11m.15s. = SS +3s., eN = +11m.39s.
Upsala iPP = +6m.24s., iPPP = +6m.31s., SSE = +11m.47s., iSSN = +11m.51s.
Copenhagen eN = +6m.9s., N = +11m.21s.
Göttingen eE = +6m.23s. = PP −9s., iEN = +11m.3s.
Stuttgart iPPEN = +6m.29s., iPPPE = +6m.55s., iEZ = +7m.20s., eEZ = +7m.55s., iE = +11m.1s., iSSN = +11m.51s.
Hamburg ePPE = +6m.37s., iPPE = +6m.44s., P_cPN = +8m.45s., iSSE = +11m.52s.
Feldberg i = +7m.57s., +8m.11s., +8m.33s., +11m.27s., and +11m.51s. = SS −10s.
Strasbourg PP = +6m.56s., ePPP = +7m.10s.
De Bilt iPPZ = +7m.12s.
Uccle iPP = +7m.13s., iSS = +13m.3s.
Bergen e = (+6m.55s.), (+7m.44s.), and (+12m.57s.); readings having been *increased* by 25m.
Barcelona PP = +7m.24s.
Kew ePP = +8m.0s., eZ = +14m.42s.
Oxford iPP = +8m.9s.
Durham PP = +8m.1s., PPP = +8m.21s., PPPP = +8m.34s., SS = +14m.33s., SSS = +15m.1s., SSSS = +15m.26s.
Bidston PP = +8m.45s., SS = +14m.20s.
Edinburgh PPP = +8m.29s., SS = +14m.36s., i = +15m.29s.
Almeria PP = +8m.21s.
Toledo PP = +8m.30s., PPP = +8m.43s., PPPP = +8m.50s., i = +13m.11s., SS = +14m.29s., SSSS = +15m.34s.
Granada i = +8m.57s. = PP +11s.
Scoresby Sund +10m.12s. = PP +5s., +18m.32s., SSSN = +19m.21s.
Tientsin PP = +11m.1s., PPP = +11m.41s., PPPP = +12m.1s., SS = +19m.57s., SSS = +20m.57s., SSSS = +21m.31s.
Tananarive eN = +13m.25s., eE = +18m.5s., eN = +19m.6s. and +21m.45s. = SS +15s.
Zi-ka-wei iZ = +10m.15s.
Toyooka eSN = +20m.0s.
Koti SN = +20m.0s.
Manila iZ = +11m.10s., iE = +11m.15s., S_cSEN = +21m.35s.
Batavia i = +22m.7s.
Fordham PP = +15m.42s., eSS = +28m.15s. ?
Toronto e = +11m.26s.
Buffalo iPKP = +15m.41s. = PP +1s.
Georgetown PPZ = +16m.7s., iSKSN = +23m.1s.; T_e = 16h.50m.36s.
Ann Arbor e = +21m.51s., i = +22m.51s., e = +33m.51s.
Charlottesville eS = +24m.15s., ePS = +25m.15s.
Victoria SE = +32m.23s.
Florissant eEN = +16m.48s. = PP +0s., eE = +22m.50s., iEN = +24m.19s. = S −3s., iN = +25m.27s. = PS +3s.
St. Louis iN = +16m.39s. = PP −10s., +24m.58s., and +25m.27s. −PS +0s.
San Juan iSKS = +23m.39s., ePS = +27m.15s., eSS = +30m.55s.
Little Rock iE = +24m.39s. = SKKS +8s.
Berkeley eE = +32m.52s.
Adelaide e = +37m.38s.
La Paz iE = +20m.1s. and +36m.27s. = SS +8s.
Long waves were also recorded at Cape Town, Johannesburg, Riverview, and Pittsburgh.

April 27d. 18h. 5m. 20s. Epicentre 40°·0N. 47°·0E. (as on 1928 March 28d.). X.

A = +·523, B = +·560, C = +·643 ; D = +·731, E = −·682 ;
G = +·439, H = +·470, K = −·766.

		△	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Baku		2·3	80	0 33	0	i 1 5	+ 6	i 1·4
Ksara	N.	10·8	239	2 42	+10	5 6	+33	6·0
Samarkand		15·4	85	e 3 34	0	—	—	—
Ekaterinburg		19·0	23	i 4 14	− 5	i 8 12	SS	—
Andijan		19·3	79	e 4 23	+ 1	—	—	—
Pulkovo		22·3	338	e 4 48	− 6	e 8 47	− 5	—

Baku gives P_g = +43s.

April 27d. Readings also at 3h. (near Algiers), 6h. (near Tyosi), 10h. (Andijan, near Hastings, and New Plymouth), 11h. (near Ksara), 14h. (Tananarive), 16h. (Apia), 18h. (Honolulu T.H., Sitka, Columbia, and near Mizusawa), 19h. (Baku, Ekaterinburg, Pulkovo. Tashkent, Strasbourg, Paris, and Scoresby Sund), 20h. (La Paz), 21h. (De Bilt, Stuttgart, Copenhagen, Adelaide, Riverview, Baku, Ekaterinburg, Tashkent, Irkutsk, and Manila), 22h. (Kucino), 23h. (near Baku).

April 28d. Readings at 2h. (near Apia), 4h. (Tashkent, near Andijan, and Samarkand), 5h. (near Hukuoka, Nagasaki, Koti, Matuyama, Sumoto, and near Tananarive), 6h. (Matuyama, Koti, near Hukuoka (2), and near Nagasaki (2)), 7h. (Adelaide, Melbourne, and Riverview), 8h. (Matuyama, Sumoto, near Koti, Hukuoka, and Nagasaki), 10h. (Almata, Ekaterinburg, near Andijan (2), Tashkent (2), and Samarkand (2)), 12h. (near Tyosi), 13h. (Alicante, Baku, Ekaterinburg, and near Tyosi), 14h. (near Hukuoka), 16h. (near Santiago), 17h. (Chicago), 18h. (Tyosi and near Sumoto), 20h. (Messina), 21h. (Baku), 23h. (Collurania, and near Wellington).

April 29d. Readings at 3h. (Yalta, Samarkand, near Almata, and Andijan), 4h. (near Lick), 5h. (Nagasaki), 6h. (Andijan and Samarkand), 8h. (Ekaterinburg, Tashkent, Hong Kong, Phu-Lien), 9h. (Baku and Irkutsk), 11h. (Alicante), 12h. (near Mizusawa), 14h. (La Paz), 15h. (near Apia), 16h. (Almata, Samarkand, and near Andijan), 22h. (Baku), 23h. (near Santiago).

April 30d. 4h. 39m. 33s. Epicentre 34°·0N. 135°·5E. (as on 1930 Nov. 24d.). X.

A = −·591, B = +·581, C = +·559 ; D = +·701, E = +·713 ;
G = −·399, H = +·392, K = −·829.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·6	304	i 0 8	− 1	0 13	− 2	—	0·2
Osaka	0·7	355	0 9	− 1	(0 18)	0	0·3	0·7
Kobe	0·7	339	0 11	+ 1	0 22	+ 4	—	0·4
Koti	1·7	255	0 25	+ 1	0 43	− 1	—	—
Nagoya	1·7	45	—	—	e 0 58	S_g	—	—
Matuyama	2·3	266	e 0 0	?	0 30	?	—	0·5

Kobe iN = +14s., iE = +18s.

April 30d. Readings also at 1h. (Andijan), 2h. (near Nagasaki), 8h. (Edinburgh), 10h. (near Medan), 17h. (Tucson), 19h. (Samarkand), 21h. (Ekaterinburg, Irkutsk, Tashkent, and near Manila), 22h. (Messina, Mineo, Trenta, near Catania, and near La Paz), 23h. (near San Juan, and near Sumoto).

May 1d. 9h. 47m. 55s. Epicentre 18°·0N. 37°·5E. N.3.

A = +·755, B = +·579, C = +·309 ; D = +·609, E = −·793 ;
G = +·245, H = +·188, K = −·951.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Helwan	13·1	336	e 3 11	+ 8	e 6 45	+76	—	10·0
Ksara	15·9	355	e 3 35	− 5	8 33	+57	9·3	—
Baku	24·8	23	5 17	− 1	9 38	+ 1	12·6	16·2
Theodosia	27·1	357	e 5 45	+ 6	—	—	—	—
Tashkent	35·8	41	e 7 31	+35	—	—	e 20·5	22·9
Andijan	37·6	45	e 7 18	+ 6	—	—	—	—
Ekaterinburg	42·5	19	i 7 49	− 4	14 5	− 8	21·1	—

Irkutsk records long waves.

May 1d. 22h. 36m. 58s. Epicentre 8°·2N. 69°·8W. N.1.

Probable error of epicentre ±0°·20.

A = +·342, B = −·929, C = +·143 ; D = −·938, E = −·345 ;
G = +·049, H = −·134, K = −·990.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Balboa Heights		9·7	276	2 24	+ 7	3 55	−11	4·7	—
Port au Prince		10·6	347	e 1 37	−52	e 3 2	−86	e 4·0	4·4
San Juan		10·8	19	i 2 33	+ 1	4 28	− 5	5·4	—
La Paz		24·8	176	i 5 16	− 2	i 9 40	+ 3	i 11·8	14·4
Columbia		27·8	340	—	—	e 10 38	+10	e 11·4	—
Georgetown	Z.	31·4	350	6 18	+ 1	—	—	—	—
Fordham		32·8	355	e 6 31	+ 1	e 11 48	0	e 16·0	—
Pittsburgh		33·5	348	6 37	+ 1	e 12 2	+ 4	14·8?	—
Little Rock	N.	33·7	325	e 6 39	+ 1	e 11 59	− 2	—	—
Harvard		34·2	358	e 6 47	+ 5	e 12 13	+ 4	—	—
St. Louis		35·5	331	i 6 54	+ 1	e 12 28	− 1	—	19·4
Buffalo		35·6	349	i 6 54	0	e 12 48	+18	e 17·0	—
Florissant		35·8	331	i 6 54	− 2	i 12 28	− 5	e 16·6	19·2
Toronto		36·4	349	e 6 56	− 5	e 12 32	−10	e 17·3	—
Chicago		37·1	338	e 7 29	+22	e 13 16	+23	16·0	19·5
Ottawa		37·5	354	e 7 11	0	e 13 2	+ 3	e 16·0	—
Tucson		45·0	309	8 12	− 1	14 49	− 1	e 18·2	—
Riverside		50·7	309	e 8 58	+ 1	—	—	—	—
Mount Wilson	E.	51·3	309	e 9 0	− 1	—	—	—	—
Pasadena		51·3	309	e 9 0	− 1	—	—	—	—
Haiwee		51·9	311	e 8 57	− 9	—	—	—	—
Lick	N.	55·1	311	e 9 29	0	—	—	—	—
Berkeley	E.	55·7	311	e 9 36	+ 2	e 18 35	+76	e 27·4	—
Victoria	E.	60·2	322	18 19	S	(18 19)	0	36·3	41·0
Malaga		65·4	53	e 10 22	−19	e 19 53	+28	—	—
Granada		66·1	53	i 10 48	+ 2	i 19 50	+16	i 30·5	37·0
Toledo		66·2	49	e 10 46	− 1	e 19 39	+ 4	e 30·6	—
Almeria		67·0	53	10 49	− 3·	19 51	+ 6	31·6	34·5
Alicante		68·7	51	e 11 51	(+23)	—	—	—	—
Scoresby Sund		69·1	16	11 2	− 3	20 11	+ 1	—	—
Stonyhurst		70·1	37	—	—	e 25 17	SS	e 34·0	44·0
Edinburgh		70·2	34	—	—	e 20 32	+ 8	—	—
Kew		70·9	38	e 11 14	− 2	e 28 56	?	e 36·0	—
Paris		72·2	41	e 11 23	− 1	—	—	34·0	—
Uccle		73·5	40	11 31	− 1	e 21 1	− 2	e 32·0	—
De Bilt		74·3	39	11 36	0	21 12	0	e 32·0	48·2
Strasbourg		75·6	41	i 11 44	0	—	—	e 31·0	—
Stuttgart		76·6	41	e 11 47	− 2	e 21 32	− 6	e 35·0	49·5
Hamburg		77·4	36	e 11 56	+ 2	—	—	e 40·0	—
Florence		77·9	47	e 12 2	+ 5	—	—	27·0	33·0

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Cheb		78·7	40	—	—	e 25 2?	?	e 43·0	51·0
Copenhagen		78·8	35	12 2	+ 1	22 2	− 1	38·0	—
Helsingfors	E.	85·3	30	—	—	e 23 11	0	e 43·0	—
Pulkovo		87·9	30	12 48	+ 1	e 23 36	0	43·0	52·0
Tashkent		117·8	34	—	—	e 26 32	{−29}	e 60·0	77·7

Additional readings :—
Harvard eN = +7m.55s. =PP +4s., e = +14m.15s. =SS +7s.
St. Louis iPP = +8m.9s., eSS = +14m.44s.
Buffalo iPP = +8m.8s., eSS = +14m.49s., iSSS = +15m.18s.
Florissant ePPNZ = +8m.12s., eSSE = +14m.55s.
Toronto iPP = +8m.13s.
Chicago ePP = +8m.50s.
Tucson PP = +10m.21s.
Berkeley eN = +31m.5s., i = +31m.55s.
Granada PS = +20m.50s. =S_gS +14s.
Stuttgart eE = +24m.30s., eN = +32m.20s.
Helsingfors eE = +25m.47s., eN = +26m.58s., and +28m.1s.
Tashkent e = +29m.32s. =PS −10s., and +55m.2s. ?
Long waves were also recorded at La Plata, Bozeman, Sitka, Feldberg, Göttingen, and Upsala.

May 1d. Readings also at 0h. (Baku and Tashkent), 1h. (near Lick), 4h. (Ekaterinburg), 5h. (Tashkent), 12h. and 13h. (near Wellington), 14h. (near Santiago), 15h. (near La Paz), 21h. (near Tortosa), 23h. (La Paz and near Wellington).

May 2d. Readings at 0h. (La Paz (2)), 2h. (near Manila), 3h. (Almata), 4h. (La Paz and near Wellington), 5h. (near Batavia and near Medan), 6h. (Malaga, near Almeria, and Granada), 7h. (Alicante), 11h. (near Lick), 13h. (Baku), 17h. (Andijan, Phu-Lien, and near Calcutta), 18h. (Ekaterinburg, Irkutsk, Tashkent, and La Paz), 21h. (Andijan (2), near Samarkand, and near Manila), 22h. (Samarkand (2), Andijan, La Jolla, Mount Wilson, Pasadena, Riverside, Tucson, Little Rock, and Ottawa), 23h. (Haiwee, Mount Wilson, Pasadena, and Riverside).

May 3d. 8h. 5m. 36s. Epicentre 35°·7N. 136°·2E. N.3.

A = −·586, B = +·562, C = +·584 ; D = +·692, E = +·722 ;
G = −·421, H = +·404, K = −·812.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·8	131	e 0 13	+ 2	i 0 23	+ 2	—	0·4
Toyooka	1·1	262	i 0 16	0	i 0 29	+ 1	—	0·5
Osaka	1·2	207	0 17	0	(0 29)	− 2	0·5	1·5
Kobe	1·4	219	i 0 19	− 1	0 32	− 4	—	0·6
Sumoto	1·8	219	0 23	− 3	0 49	+ 3	—	0·9
Matuyama	3·4	237	e 0 51	+ 2	—	—	—	—
Tyosi	3·8	88	e 1 16	P_g	—	—	—	—

May 3d. 19h. 22m. 30s. Epicentre 30°·5N. 54°·5E. (as on 1929 Aug. 11d.). X.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	10·5	341	—	—	e 4 20	− 6	6·1	10·5
Tashkent	16·0	44	e 3 55	+14	e 7 40	+62	e 10·2	13·5
Ksara	16·1	287	e 3 58	+15	7 20	+39	8·7	—
Ekaterinburg	26·6	8	e 5 25	−10	e 10 4	− 5	15·5	18·5
Kucino	27·8	340	—	—	e 10 20	− 8	e 15·3	—
Pulkovo	33·4	338	—	—	e 13 46	SS	—	—
Irkutsk	42·1	44	—	—	e 17 30?	(−24)	e 26·5	—
Manila	62·5	90	10 53	(−10)	i 12 53	PP	—	—

For Notes see next page.

NOTES TO MAY 3d. 19h. 22m. 30s.

Additional readings :—
Baku e = +5m.17s.
Irkutsk e = +22m.30s. ?
Manila i = +13m.59s. =PPP +3s.
Long waves were also recorded at Helsingfors.

May 3d. Readings also at 0h. (La Paz), 2h. (Adelaide, Melbourne, Riverview, and Wellington), 4h. (near Phu-Lien), 6h. (Belgrade, Copenhagen, and De Bilt), 7h. (Zagreb), 8h. (Edinburgh, Durham, and near Stonyhurst ; Manchester earthquake), 9h. (Bidston), 10h. (Camerino), 12h. (Mizusawa, Simferopol, and Yalta), 16h. (La Paz), 17h. (La Paz, near Florence (2), and near Prato (2)), 18h. (near Florence and Prato), 19h. (Medan), 20h. (Bombay, Calcutta, Hyderabad, Phu-Lien, Hong Kong, Almata, Andijan, Samarkand, Tashkent, Baku, Ekaterinburg, Irkutsk, Kucino, Pulkovo, Stuttgart, Copenhagen, De Bilt, and La Paz), 21h. (Camerino and Vladivostok), 22h. (Santiago).

May 4d. 17h. 26m. 12s. Epicentre 3°·0S. 143°·5E. (as on 1931 Jan. 15d.). X.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	28·4	309	6 40	+49	11 8?	+30	—	—
Riverview	31·7	168	e 6 17	− 3	—	—	e 15·7	18·3
Sydney	31·7	168	e 11 48	S	(e 11 48)	+17	e 15·6	16·8
Adelaide	32·3	188	—	—	i 11 33	− 7	i 15·8	21·5
Melbourne	34·8	178	—	—	i 11 13	−65	i 17·6	22·4
Perth	38·9	219	—	—	e 13 3	−17	—	—
Vladivostok	47·2	350	8 32	+ 2	15 38	+17	—	—
Irkutsk	64·4	335	e 10 35	0	e 19 12	0	e 32·8	—
Tashkent	80·3	313	e 14 36	PP	e 28 6	?	—	—
Ekaterinburg	88·6	328	e 13 15	+24	e 23 38	[+14]	40·8	—
Pulkovo	104·1	331	e 18 28	PP	e 27 46	PS	53·8	—
De Bilt	120·0	332	—	—	e 40 48?	SSS	—	—
Edinburgh	120·7	339	—	—	e 43 48	?	—	—
Strasbourg	120·8	330	—	—	(e 28 48?)	?	e 28·8	—
Uccle	121·2	331	—	—	37 48?	?	—	—
Paris	123·4	330	—	—	40 48?	?	—	—
Granada	134·4	323	e 21 36	PP	—	—	40·8	43·5

Additional readings :—
Melbourne i = +13m.59s.
Vladivostok e = +11m.29s.
Irkutsk e = +11m.7s. =P_cP −5s.
Tashkent e = +16m.0s.
Ekaterinburg e = +23m.58s. =S +13s.
Long waves were also recorded at Baku, Copenhagen, and Stuttgart.

May 4d. Readings also at 1h. (near Florence (2) and near Tananarive), 2h. (Andijan, Samarkand, Tashkent, Ekaterinburg, Medan, Bombay, Calcutta, Phu-Lien, Hong Kong, Manila, and Florence), 3h. (Hyderabad, Irkutsk, Vladivostok, Pulkovo, Kucino, Copenhagen, Feldberg, Ottawa, and Florence), 7h. (near Sumoto), 8h. and 9h. (near Florence), 11h. (Belgrade, Ravensburg, Stuttgart, and near Zagreb), 12h. (near Florence), 13h. (Nagoya), 14h. (Toyooka, Mizusawa, near Nagoya, near Tokyo, and Tyosi), 16h. (Baku), 17h. (La Paz (2), Scoresby Sund, and near Toyooka), 18h. (Vladivostok, Baku, and Ekaterinburg), 20h. (La Paz), 22h. (Ekaterinburg, Vladivostok, Stuttgart, and near La Paz), 23h. (Bergen).

May 5d. 6h. 42m. 19s. (I)
11h. 40m. 7s. (II)
14h. 10m. 45s. (III)
Epicentre 26°·0N. 54°·8E. (see 7d. 0h.).
N.2. X. X.

A = +·518, B = +·734, C = +·438; D = +·817, E = −·576; G = +·253, H = +·358, K = −·899.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Baku	14·9	345	e 3 24	− 3	i 6 7	− 6	9·4	14·0
II		14·9	345	e 3 26	− 1	e 6 12	− 1	9·4	—
III		14·9	345	e 3 25	− 2	e 6 7	− 6	9·5	13·4
I	Samarkand	17·0	34	i 3 58	+ 4	—	—	9·5	—
II		17·0	34	3 57	+ 3	—	—	—	—
III		17·0	34	3 58	+ 4	—	—	9·5	—
I	Bombay	18·1	109	4 20	PP	7 50	SS	9·9	—
III		18·1	109	4 24	PP	7 54	SS	10·1	—
I	Ksara E.	18·1	300	4 7	− 1	9 33	L	(9·5)	13·9
II	N.	18·1	300	4 11	+ 3	9 45	L	(9·7)	10·3
III	E.	18·1	300	e 5 40	+92	7 23	− 4	8·0	—
I	Tashkent	19·4	34	4 37	PP	8 21	SS	11·0	12·2
II		19·4	34	e 5 41	+78	e 8 39	+45	e 10·4	12·7
III		19·4	34	4 24	+ 1	7 49	− 5	i 10·4	13·0
I	Andijan	20·8	40	4 41	+ 3	—	—	—	—
I	Helwan	21·0	286	4 44	+ 4	8 41	P_cP	—	—
III		21·0	286	e 4 27	−13	i 8 40	P_cP	—	15·0
I	Theodosia	24·6	325	e 5 16	0	e 9 31	− 3	—	12·7
III		24·6	325	e 5 16	0	e 9 35	+ 1	—	—
I	Yalta	24·9	323	e 5 17	− 2	e 9 34	− 5	—	—
III		24·9	323	e 5 19	0	e 9 39	0	—	—
I	Almata	25·0	40	5 29	+ 9	—	—	—	—
I	Simferopol	25·2	324	5 21	− 1	e 9 45	+ 1	—	—
III		25·2	324	e 5 22	0	e 9 44	0	—	—
I	Sebastopol	25·3	323	e 5 12	−11	—	—	—	—
III		25·3	323	—	—	e 9 51	+ 7	—	—
I	Ekaterinburg	31·1	6	i 6 13	− 2	11 19	− 2	14·7	19·9
III		31·1	6	—	—	e 11 18	− 3	14·2	19·3
I	Kucino	32·2	342	—	—	e 11 23	−15	e 18·0	—
I	Pulkovo	37·8	340	7 9	− 4	e 12 50	−13	15·7	—
III		37·8	340	e 7 17	+ 4	e 12 56	− 7	17·2	—
I	Helsingfors	39·8	338	—	—	e 13 26	− 7	—	—
I	Chur	41·2	312	e 7 39	− 3	—	—	—	—
II		41·2	312	e 7 39	− 3	—	—	—	—
I	Stuttgart	41·9	315	e 9 41	− 7	e 16 53	SS	e 23·7	—
III		41·9	315	—	—	e 16 45?	SS	e 27·2	—
I	Zurich	42·0	312	e 7 46	− 3	—	—	—	—
II		42·0	312	e 7 46	− 3	—	—	—	—
III		42·0	312	e 7 47	− 2	—	—	—	—
I	Copenhagen	42·6	327	—	—	e 13 41	−34	—	—
III		42·6	327	—	—	14 15	0	—	—
I	Neuchatel	42·9	312	e 7 54	− 2	—	—	—	—
II		42·9	312	e 7 54	− 2	—	—	—	—
III		42·9	312	e 7 55	− 1	—	—	—	—
I	De Bilt	45·3	319	—	—	e 14 59	+ 4	e 23·7	—
I	Irkutsk	45·3	41	e 8 17	+ 2	14 41	−14	24·7	26·1
I	Uccle	45·4	317	—	—	17 41	SS	—	—

Additional readings :—
Ksara II ePN = +8m.6s.
Kucino I e = +14m.30s.
Helsingfors eSE = +13m.29s.
Long waves were also recorded at Feldberg, Hamburg, for Shock I, at Ekaterinburg for Shock II, and at Irkutsk for Shock III.

May 5d. Readings also at 4h. (near Zagreb), 6h. (Ksara), 7h. (near Toyooka, near Irkutsk, and Vladivostok), 8h. (near Santiago), 11h. (near Sumoto), 12h. (Florissant, St. Louis, and Little Rock), 13h. (Baku, Ekaterinburg, Tashkent, Vladivostok, near Mizusawa, and Tyosi), 14h. (Andijan and Ksara (3)), 15h. (Irkutsk and Ekaterinburg), 17h. (near Neuchatel), 18h. and 19h. (near Prato), 20h. (Zurich and Hastings, near Wellington), 21h. (near La Paz).

May 6d. 9h. 13m. 8s. Epicentre 16°·3N. 120°·6E. (as on 1926 Oct. 30d.). X.

A = −·489, B = +·829, C = +·281 ; D = +·861, E = +·509 ;
G = −·143, H = +·242, K = −·960.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	1·8	168	i 0 28	+ 2	i 0 48	+ 2	—	—
Hong Kong	8·5	316	1 12?	−48	3 26?	−10	4·0	4·6
Irkutsk	38·0	345	—	—	e 13 7	+ 1	15·9	—
Andijan	48·1	311	e 15 29	S	(e 15 29)	− 5	—	—
Tashkent	50·5	312	—	—	i 17 1	+53	e 26·9	29·9
Ekaterinburg	60·1	327	i 10 1	− 4	i 17 57	−20	26·9	—

Manila gives epicentre 16°·2N. 121°·2E.
Ekaterinburg gives also i = +19m.35s. = S_cS −18s.

May 6d. 14h. 55m. 56s. Epicentre 39°·5S. 176°·9E. (as on April 22d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hastings		0·1	185	0 14?	+13	—	—	—	—
Arapuni		1·7	324	i 0 16	− 8	i 0 43	− 1	—	1·0
Wellington		2·4	223	0 40	+ 6	1 43	S_g	—	2·1
Takaka		3·4	246	0 53	+ 4	1 52	S_g	—	2·5
Christchurch		5·1	217	1 16	+ 3	3 28	+78	—	—
Riverview		21·3	277	i 3 55	−48	7 55	−37	9·7	12·4
Sydney		21·3	277	e 4 52	+ 9	i 9 16	SS	12·7	13·5
Suva		21·4	4	5 9	PP	8 37	+ 3	9·6	10·1
Melbourne		24·9	264	e 5 40	PP	e 9 59	+20	12·4	14·6
Adelaide		30·6	269	e 5 44?	−26	e 11 33	+19	15·5	19·0
Manila	N.	75·0	305	12 38	+58	21 9	−11	33·1	—
La Paz	N.	97·6	119	e 13 33	+ 1	—	—	46·8	60·4
Colombo		99·8	271	38 17	?	—	—	—	66·1
Victoria	E.	102·6	35	24 33	S	(24 33)	[− 5]	48·8	56·7
Irkutsk		111·2	321	e 18 4?	[−17]	e 28 33	PS	48·1	56·3
Bombay		112·6	276	e 27 7	S	(e 27 7)	{+42}	—	63·7
Tashkent		126·5	298	—	—	e 28 10	{+11}	e 54·9	71·0
Ottawa		127·9	59	—	—	e 38 9	SS	e 59·1?	—
Ekaterinburg		136·0	316	e 19 36	[+20]	e 39 42	SS	57·1	80·7
Scoresby Sund		147·5	13	19 34	[− 4]	43 40	?	70·1	—
Pulkovo		150·9	325	19 45	[+ 2]	—	—	78·1	96·6
Helsingfors		152·9	329	—	—	e 49 52	?	e 74·1	—
Copenhagen		160·8	333	—	—	34 4	SKSP	83·1	—
Strasbourg		168·1	323	e 29 4?	PPP	—	—	e 55·1	—
Paris		169·9	339	e 27 4?	?	—	—	88·1	103·1
Almeria		177·3	190	e 19 8	[−59]	36 44	SKSP	80·5	100·0
Granada		177·6	170	i 19 5	[−62]	i 32 46	{− 6}	86·1	101·4

Additional readings :—
Hastings P* = +20s., P_g = +29s.
Wellington P* = +49s., P_g = +1m.3s., S_g = +1m.59s.
Takaka P_g = +1m.8s., S* = +2m.0s., S_g = +2m.20s.
Adelaide i = +14m.14s. and +14m.58s.
Tashkent e = +37m.52s. = SS −4s.
Ekaterinburg i = +21m.54s. = PP −2s.
Almeria i = +23m.10s. = PKS −34s. and +25m.42s. = PP +0s.
Granada i = +20m.46s., SPP = +21m.58s. = P_g'−7s., i = +26m.14s. = PP +31s., PPP* = +29m.23s., i = +32m.48s., +36m.43s. = SKSP +21s., +40m.23s., and +47m.42s. = SS +13s.
Long waves were recorded at Perth, Hong Kong, Hyderabad, Sitka, Buffalo, Pittsburgh, Vladivostok, Baku, and European stations.

May 6d. 17h. 19m. 16s. Epicentre 51°·5N. 108°·5E. N.3.

A = −·198, B = +·590, C = +·783 ; D = +·948, E = +·317 ;
G = −·248, H = +·742, K = −·623.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	2·7	289	0 37	− 2	(1 7)	− 2	1·1	—
Vladivostok	17·9	109	i 3 44?	−21	i 5 3	?	5·6	—
Ekaterinburg	27·9	300	e 5 46	0	10 30	0	14·7	17·6
Tashkent	28·5	265	—	—	e 10 45	+ 5	e 14·0	15·9
Baku	40·7	278	—	—	e 17 47	(+ 1)	e 21·6	—
Pulkovo	42·3	310	—	—	e 14 2	− 9	—	28·2
Copenhagen	52·5	315	—	—	20 32	SS	24·7	—

Additional readings :—
Tashkent i = +11m.29s.
Long waves were also recorded at Almata, Andijan, Samarkand, Hong Kong, Riverview, and European stations.

May 6d. 20h. 22m. 25s. Epicentre 38°·0N. 38°·5E. (as on 1931 Jan. 9d.). R.3.

A = +·617, B = +·490, C = +·616 ; D = +·623, E = −·783 ;
G = +·482, H = +·383, K = −·788.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	4·7	207	1 17	P*	2 39	S_g	—	—
	N.	4·7	207	1 13	+ 6	2 43	S_g	—	—
Theodosia		7·4	343	2 4	+19	—	—	—	—
Sebastopol		7·6	332	e 2 11	+23	—	—	—	—
Simferopol		7·6	336	e 2 5	+17	—	—	—	—
Baku		9·2	71	e 2 7	− 3	i 3 56	+ 2	4·4	7·1
Rome		20·2	289	e 4 42	+10	9 4?	+54	—	—
Königsberg		20·7	330	—	—	e 8 32	+12	—	—
Florence		21·2	294	3 35	−67	7 50	−40	—	13·6
Cheb		22·1	312	—	—	e 8 8	−40	—	15·6
Samarkand		22·2	78	e 4 53	0	—	—	—	—
Pulkovo		22·4	349	4 43	−12	8 51	− 2	11·6	14·1
Piacenza		22·5	298	—	—	e 9 15?	+20	—	18·2
Stuttgart		23·6	307	—	—	e 9 23	+ 7	14·6	15·9
Helsingfors		23·7	343	e 5 6	− 1	e 9 24	+ 6	e 12·4	—
Ekaterinburg		23·8	31	i 5 1	− 7	i 9 14	− 5	12·6	16·7
Tashkent		23·8	72	e 5 3	− 5	(e 9 17)	− 2	e 9·3	16·0
Feldberg		24·5	310	—	—	e 9 53	+21	—	16·8
Strasbourg		24·5	305	i 9 57	S	(i 9 57)	+25	e 13·6	—
Copenhagen		24·8	324	—	—	9 51	+14	—	—
Hamburg		24·9	318	—	—	e 9 35	− 4	—	18·4
Andijan		26·2	73	e 5 53	+22	—	—	—	—
De Bilt		27·1	312	—	—	e 10 44	+27	e 14·6	—
Uccle		27·2	309	—	—	e 9 35?	−43	—	—

Additional readings :—
Helsingfors eSN = +9m.27s., eE = +9m.54s. =SS −4s., eN = +10m.3s. = SSS −1s., eSSSE = +11m.9s.
Tashkent e = +7m.35s.
Long waves were also recorded at Irkutsk, Scoresby Sund, Edinburgh, Kew, Paris, and Granada.

May 6d. Readings also at 4h. (Mount Wilson, Pasadena, Tinemaha), 5h. (Almata, Vladivostok, and Suva), 6h. (Tashkent, and Almata), 10h. (Hong Kong), 11h. (Tashkent, near Andijan, and Samarkand), 13h. (Andijan, Samarkand, and Camerino), 15h. (near Hastings and Wellington), 16h. (Florence and Alicante), 17h. (near Hastings, Takaka, Wellington, and Stuttgart), 18h. (Simferopol, Theodosia, near Sebastopol, and Yalta), 19h. (La Paz), 20h. (near Apia), 21h. (Vienna), 23h. (Adelaide, Riverview, and La Paz).

May 7d. 0h. 45m. 40s. Epicentre 26°·0N. 54°·8E. (as on 5d.). R.2.

A = +·518, B = +·734, C = +·438; D = +·817, E = −·576;
G = +·253, H = +·358, K = −·899.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		14·9	345	i 3 28	+ 1	i 6 10	− 3	8·9	12·8
Samarkand		17·0	34	4 0	+ 6	7 10	+ 8	8·5	—
Bombay		18·1	109	4 22	+14	7 52	+25	—	—
Ksara	N.	18·1	300	e 4 8	0	7 40	+13	9·3	—
Tashkent		19·4	34	i 4 23	0	i 7 50	− 4	12·3	13·4
Andijan		20·8	40	4 38	0	e 9 1	+39	—	—
Agra		20·8	81	—	—	e 9 7	+45	—	—
Helwan		21·0	286	4 41	+ 1	i 8 40	+14	—	—
Simferopol		25·2	324	e 5 22	0	9 50	+ 6	—	—
Sebastopol		25·3	323	e 5 22	− 1	—	—	—	—
Ekaterinburg		31·1	6	e 6 13	− 2	i 11 18	− 3	15·3	19·1
Pulkovo		37·8	340	7 10	− 3	13 2	− 1	18·3	26·4
Florence		39·3	309	14 20?	?	16 50	?	—	—
Helsingfors		39·8	338	—	—	e 13 30	− 3	e 17·9	—
Cheb		40·3	318	—	—	e 17 20?	(−23)	—	—
Piacenza		40·7	310	e 7 20	−18	—	—	—	30·5
Zurich		42·0	312	e 7 47	− 2	—	—	—	—
Copenhagen		42·6	327	—	—	14 14	− 2	—	—
Strasbourg		42·8	314	—	—	(e 13 20?)	−58	e 13·7	—
De Bilt		45·3	319	—	—	e 15 2	+ 7	e 24·3	—
Irkutsk		45·3	41	—	—	e 18 20	(+ 6)	—	—
Uccle		45·4	317	8 18	+ 2	e 14 44	−12	e 25·3	—
Paris		46·2	314	—	—	e 19 20?	SSS	e 28·3	—
Scoresby Sund		61·2	339	—	—	18 56	+24	32·3	—

Additional readings:—
Helsingfors ePPEN = +9m.0s., eSSE = +16m.6s.
Uccle eS = +18m.22s. = S_cS +7s.
Long waves were also recorded at Stuttgart, Kew, and Granada.

May 7d. Readings also at 0h. (near Ksara), 3h. (near Hastings and Wellington), 4h. (Christchurch, Wellington, Arapuni, Hastings, Takaka, and near Malabar), 5h. (Adelaide, Melbourne, Riverview, Sydney, Suva, Baku, Ekaterinburg, Tashkent, Tyosi, Stuttgart, near Manila, and near Belgrade)), 6h. (Copenhagen, Strasbourg, De Bilt, Uccle, Feldberg, Paris, Kew, Granada, and Scoresby Sund), 9h. (Wellington), 11h. (Suva, Strasbourg, and near Santiago), 16h. (near Apia and near Mizusawa), 17h. (near Tyosi (2)), 18h. (Baku, Ekaterinburg, Tashkent, and Ksara), 19h. (Ksara, and near Amboina), 21h. (near La Paz), 23h. (Charlottesville).

May 8d. 9h. 6m. 3s. Epicentre 40°·5N. 46°·0E. N.3.

A = +·528, B = +·547, C = +·649; D = +·719, E = −·695;
G = +·451, H = +·467, K = −·760.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	3·0	91	i 0 47	+ 4	e 1 10	− 7	1·3	4·5
Ksara	10·4	233	e 2 26	0	4 30	+ 7	5·3	—
Samarkand	16·0	87	e 3 35	− 6	—	—	—	—
Tashkent	17·5	80	—	—	e 8 3	+50	e 10·4	13·0
Ekaterinburg	18·9	26	i 4 17	0	e 7 52	+ 8	10·5	13·8
Andijan	20·0	81	e 4 29	− 1	—	—	—	—
Pulkovo	21·6	338	4 48	+ 2	8 56	SS	12·4	16·8

Additional readings:—
Baku iP = +37s., i = +1m.0s.

May 8d. Readings also at 0h. (Ekaterinburg, Irkutsk, Tashkent, Trenta, Scoresby Sund, Harvard, Ottawa, Tucson, and Victoria,) 1h. (Strasbourg), 11h. (Andijan, Samarkand, near Hastings, and Wellington), 13h. (Tyosi, near Ksara, Casamari (2), Collurania, Naples, near Casamicciola, and Rome), 14h. (near La Paz), 15h. (Casamari and Rome), 18h. (Kew), 19h. (La Paz and near Manila), 23h. (near Manila).

May 9d. 10h. 34m. 38s. Epicentre 23°·2N. 109°·2W. N.2.

A = −·302, B = −·868, C = +·394; D = −·944, E = +·329; G = −·130, H = −·372, K = −·919.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		9·2	351	2 4	− 6	3 31	−23	4·2	4·8
La Jolla		12·0	326	e 2 50	+ 2	—	—	—	—
Riverside		12·9	328	e 3 2	+ 1	—	—	—	—
Pasadena		13·4	326	e 3 8	+ 1	e 5 57	+20	—	—
Mount Wilson	E.	13·4	327	e 3 12	+ 5	—	—	—	—
Santa Barbara		14·5	323	e 3 37	+15	—	—	—	—
Haiwee		15·0	332	e 3 38	+10	—	—	—	—
Denver		16·9	11	e 3 47	− 6	e 7 0	+ 1	e 8·7	9·9
Lick	E.	17·7	326	e 4 8	+ 5	—	—	e 9·4	—
	N.	17·7	326	e 4 5	+ 2	e 7 53	+36	e 11·1	—
Berkeley		18·5	326	e 4 12	− 1	e 7 45	+ 9	e 8·9	9·1
Little Rock	N.	18·6	48	e 6 56	?	—	—	e 10·5	12·9
St. Louis		22·3	42	e 4 52	− 2	e 8 41	−11	e 10·2	11·6
Florissant		22·4	41	e 4 50	− 5	e 8 44	− 9	e 10·4	11·4
Bozeman		22·6	356	4 59	+ 2	9 4	+ 7	11·7	—
Chicago		25·8	39	—	—	10 25	+30	i 13·6	—
Columbia		26·8	60	5 37	+ 1	10 12	0	e 14·1	—
Victoria		27·6	340	10 28	S	(10 28)	+ 3	14·5	16·3
Pittsburgh		30·0	48	—	—	10 51	−13	e 14·6	—
Charlottesville		30·1	54	—	—	e 11 4	− 2	e 15·4	—
Georgetown	Z.	31·4	53	e 6 22	+ 5	e 11 28	+ 2	e 14·4	—
Buffalo		31·9	44	—	—	e 11 46	+12	i 17·4	—
Toronto		31·9	42	e 6 0	−22	e 11 22	−12	e 16·4	—
Fordham	N.	34·4	50	—	—	e 12 6	− 6	e 17·1	—
Ottawa		35·0	42	—	—	e 12 17	− 4	e 16·4	—
Harvard	N.	36·7	49	—	—	e 12 34	−13	e 17·4	—
San Juan		40·4	89	7 37	+ 2	13 44	+ 2	e 19·4	—
La Paz		56·4	132	e 23 17?	SSS	—	—	—	—
Scoresby Sund		67·3	21	—	—	19 46	− 2	34·4	—
Kew		82·9	37	—	—	e 33 22	SSSS	e 36·4	—
De Bilt		85·5	35	—	—	e 23 12	− 1	e 37·4	52·9
Toledo		86·1	48	e 12 42	+ 3	e 23 17	− 1	e 39·3	—
Copenhagen		86·9	29	—	—	23 22	− 4	43·4	—
Malaga		87·2	50	e 12 26	−18	—	—	—	—
Granada		87·6	50	i 13 1	+15	—	—	44·0	50·9
Feldberg		88·2	35	—	—	e 28 46	SS	e 42·3	47·3
Almeria		88·6	50	e 15 42	PP	i 24 11	PS	—	47·8
Helsingfors	E.	88·7	21	—	—	e 22 31	[−53]	e 45·4	—
Alicante		89·2	48	e 12 12	−42	—	—	—	—
Stuttgart		89·5	36	e 12 46	− 9	e 23 48	− 3	e 43·1	53·0
Florence		93·7	40	34 17	?	43 22	?	—	51·4
Ekaterinburg		99·5	7	—	—	e 24 24	[+ 1]	44·4	56·9

Additional readings :—
Riverside eE = +3m.10s., eN = +7m.48s.
Pasadena eE = +5m.16s. and +6m.4s.
Berkeley iPNZ = +4m.16s., eN = +4m.22s., iSE = +7m.47s., iSN = +7m.49s., iSZ = +8m.14s.
St. Louis ePP = +5m.13s.
Florissant iSN = +8m.52s.
Pittsburgh iSS = +11m.26s.
Charlottesville eSS = +12m.22s.

Continued on next page.

Buffalo eSS = +13m.22s., i = +16m.26s. = S_cS −28s.
Toronto e = +11m.41s.
Fordham eN = +15m.51s.
Harvard eSS = +15m.6s.
San Juan PP = +9m.10s.
Scoresby Sund +27m.28s.
Helsingfors eN = +26m.52s., eE = +40m.31s.
Stuttgart eN = +27m.52s. and +34m.34s.
Ekaterinburg e = +28m.41s., +32m.1s. = SS +6s., and +36m.26s.
Long waves were also recorded at Honolulu T.H., Sitka, Ann Arbor, Ivigtut, the European, and Russian stations.

May 9d. Readings also at 1h. (La Paz), 3h. (Nagoya and Samarkand), 4h. and 7h. (Nagoya), 12h. (La Paz and Uccle), 17h. (Andijan and Samarkand), 19h. (Andijan, Samarkand, and near Almata), 20h. (near Amboina), 21h. (Santiago).

May 10d. 10h. 48m. 55s. Epicentre 40°·8N. 14°·3E. N.3.

Epicentre uncertain, but near Naples.

A = +·734, B = +·187, C = +·653; D = +·247, E = −·969;
G = +·633, H = +·161, K = −·757.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Naples	0·1	—	e 0 1	0	e 0 3	0	—	1·6
Casamicciola	0·3	261	0 20	+16	0 32	+24	—	1·0
Benevento	0·4	0	−0 11	−17	—	—	—	0·0
Casamari	1·1	320	i 0 50	S_g	—	—	—	—
Collurania	1·7	347	0 26	+ 2	—	—	—	—
Rome	1·8	309	e 0 26	0	0 38	− 8	—	2·0
Trenta	2·2	134	e 0 30	− 1	1 0	+ 3	—	—
Taranto	2·3	98	i 0 15	−18	i 0 35	−24	—	0·8
Camerino	2·5	339	1 7	S	(1 7)	+ 3	(1·6)	—
Messina	2·8	160	0 35	− 5	—	—	—	—
Catania	3·3	170	1 7	P_g	—	—	—	—
Mostar	3·7	45	e 0 49	− 4	—	—	—	1·1
Florence	3·8	325	0 5	−49	1 10	−27	—	2·7
Prato	3·9	324	e 1 46	S	(e 1 46)	+ 6	—	3·0
Venice	4·9	344	e 1 27	P*	3 25	?	—	—
Triest	4·9	355	e 1 19	+ 9	i 2 19	+14	—	3·0
Padova	5·0	339	e 1 47	P_g	e 3 20	?	—	—
Treviso	5·1	343	e 1 38	P*	3 6	S_g	—	3·4
Zagreb	5·2	14	0 57	−17	i 2 14	+ 1	i 2·5	2·7
Laibach	5·3	2	e 1 27	+12	e 2 12	− 3	—	2·9
Piacenza	5·4	323	—	—	e 2 29	?	—	4·0
Belgrade	6·1	46	e 1 23	− 4	e 2 54	S*	—	2·4
Chur	7·0	332	e 1 39?	0	e 2 50	− 9	—	—
Budapest	7·5	28	3 16	S	(3 16)	+ 5	4·6	—
Vienna	7·6	11	e 2 0	+12	3 18	+ 4	—	4·8
Zurich	7·8	330	e 2 0	+ 9	—	—	—	—
Ravensburg	7·8	336	—	—	e 3 41	+22	e 4·5	—
Stuttgart	8·8	337	—	—	e 3 53	+ 9	e 5·4	—
Pulkovo	21·4	22	e 3 50	−54	e 8 28	− 6	13·1	—

Additional readings:—
Rome S = +1m.10s.
Mostar eP = +10s., e = +18s.
Prato S = +2m.45s.
Triest i = +1m.51s.
Zagreb i = +1m.19s. and +1m.54s., e = +1m.58s.
Laibach e = +1m.59s. and +2m.22s.
Belgrade e = +1m.29s. and +2m.19s.
Vienna S* = +3m.30s., iS_g = +3m.42s.
Stuttgart e = +4m.53s. = S_g.
Long waves were also recorded at Baku, Ekaterinburg, Irkutsk, and European stations.

May 10d. 19h. 24m. 45s. Epicentre 25°·3S. 116°·7W. **N.2.**

A = −·406, B = −·808, C = −·427; D = −·893, E = +·449; G = +·192, H = +·382, K = −·904.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		45·9	88	e 8 20	0	i 14 55	− 8	18·5	22·7
Tucson		57·8	6	9 59	+10	e 18 11	+24	28·8	—
Pasadena		59·4	359	e 10 9	+ 9	—	—	—	—
Haiwee	N.	61·4	359	e 10 10	− 4	—	—	—	—
Tinemaha	E.	62·4	358	e 10 25	+ 4	—	—	—	—
Berkeley		63·4	355	—	—	e 19 24	PS	e 31·2	—
Little Rock		64·3	22	e 12 15	PP	—	—	—	36·8
San Juan		65·8	53	e 10 41	− 3	19 26	− 4	e 27·4	—
St. Louis		68·5	22	e 11 14	+13	e 20 9	+ 6	e 31·8	37·2
Georgetown	Z.	74·1	30	e 11 57	+22	e 20 27	−43	e 35·2	—
Pittsburgh		74·1	28	e 11 33	− 2	i 20 16	−54	e 37·2	43·0
Buffalo		76·6	28	e 11 45	− 4	—	—	e 39·2	—
Toronto	N.	76·9	27	e 12 9	+18	i 21 37	− 5	e 38·2	—
Fordham		77·2	31	e 11 50?	− 3	e 21 42?	− 3	e 38·2	—
Sydney		77·9	239	e 31 27	?	—	—	40·2	42·0
Ottawa		79·9	28	e 12 29	+22	e 22 19	+ 4	e 38·2	—
Scoresby Sund		115·3	21	—	—	29 15?	PS	55·2	—
Kew		125·8	41	—	—	e 41 15	?	59·2	—
De Bilt		129·0	41	—	—	e 38 45	SS	e 61·2	65·1
Copenhagen		132·4	35	22 51	PKS	—	—	65·2	—
Cheb		133·9	42	e 19 39	[+26]	—	—	65·2	77·2
Florence		134·2	52	42 30	?	—	—	66·2	73·2
Pulkovo		138·6	25	e 19 40	[+20]	—	—	65·2	79·8
Irkutsk		139·1	322	e 22 37	PP	—	—	71·2	—
Ekaterinburg		148·4	3	i 19 46	[+ 6]	i 35 38	?	55·2	83·8
Baku		161·2	33	e 20 8	[+13]	e 44 2	SS	73·2	84·6
Andijan		162·8	336	e 44 54	SS	—	—	—	—
Tashkent		163·2	344	e 32 0	SKKS	e 52 15?	?	e 83·2	88·8
Samarkand		165·3	349	e 20 25	[+26]	—	—	—	—
Bombay		169·1	236	23 56	—	—	—	e 79·2	—

Additional readings :—
Berkeley iE = +28m.46s.
St. Louis eEN = +8m.23s., eN = +9m.5s., eEN = +19m.34s., iN = +20m.47s. = S_cS −7s., eEN = +24m.22s. = SS +2s.
Georgetown ePPZ = +14m.45s.
Buffalo ePP = +15m.11s., ePPP = +16m.27s.
Toronto iN = +26m.50s.
Fordham eN = +27m.3s.
Cheb +23m.15s. ? = PKS +25s.
Pulkovo e = +23m.13s. = PKS +8s., and +40m.34s. = SS +9s.
Irkutsk e = +10m.21s., +27m.15s. ?, and +35m15s. ?
Long waves were also recorded at Wellington, Adelaide, Melbourne, Riverview, Honolulu T.H., Chicago, and European stations.

May 10d. Readings also at 2h. (Sebastopol and Simferopel), 3h. (Rome, near Casamicciola, Naples, Trenta, and near Medan), 6h. (near Samarkand), 7h. (Tyosi), 8h. (Little Rock, Florissant, and St. Louis), 10h. (near Alicante), 12h. (Mizusawa, Andijan, Samarkand, near Taranto, near Lick, and near Manila), 15h. (near Alicante), 16h. (Andijan and Samarkand), 17h. (Trenta, Samarkand, near Almata, and Andijan), 22h. (Andijan, near Samarkand, near Sebastopol, Simferopol, Theodosia, and Yalta (2)), 23h. (near Sebastopol (2), Simferopol (3), and Yalta (4)).

May 11d. 18h. 26m. 38s. Epicentre 37°·3N. 141°·7E. (as on April 24d.). R.1.

Probable error of epicentre ±0°·14.

K. Wadati in "Shallow and Deep Earthquakes," Geophys. Mag., Tokyo, Vol. IV, No. 4, gives epicentre 37°·3N. 141°·5E.—rather shallow.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·7	240	−0 6	−16	0 2	−16	—	—
Hukusima	1·1	294	0 12	− 4	0 25	− 3	—	—
Isinomaki	1·2	345	0 14	− 3	0 27	− 4	—	—
Mito	1·3	227	0 16	− 2	0 33	0	—	—
Yamagata	1·4	312	0 18	− 2	0 37	+ 1	—	—
Kakioka	1·6	229	0 21	− 2	0 40	− 1	—	—
Utunomiya	1·6	243	0 22	− 1	0 43	+ 2	—	—
Tyosi	1·7	204	0 25	+ 1	0 47	+ 3	—	1·0
Mizusawa	1·9	346	0 25	− 3	0 45	− 4	—	—
Kumagaya	2·2	238	0 29	− 2	0 58	+ 1	—	—
Niigata	2·2	287	0 32	+ 1	0 57	0	—	—
Tokyo	2·3	224	0 32	− 1	0 57	− 2	—	1·2
Maebasi	2·3	247	0 34	+ 1	0 59	0	—	—
Morioka	2·4	350	0 33	− 1	1 1	− 1	—	—
Yokohama	2·5	222	0 38	+ 2	1 3	− 1	—	—
Oiwake	2·7	249	0 36	− 3	1 16	+ 7	—	—
Akita	2·7	333	0 37	− 2	1 16	+ 7	—	—
Nagano	2·8	257	0 41	+ 1	1 24	S*	—	—
Mera	2·8	212	0 45	+ 5	1 20	+ 8	—	—
Misima	3·1	225	0 46	+ 2	1 18	− 2	—	—
Numadu	3·2	242	0 48	+ 2	1 43	S*	—	—
Aomori	3·6	349	0 51	0	1 32	0	—	—
Wazima	3·8	272	0 53	− 1	—	—	—	—
Hamamatu	4·1	232	1 0	+ 2	1 46	+ 1	—	—
Gihu	4·4	245	1 1	− 2	1 51	− 2	—	—
Nagoya	4·4	242	e 1 6	+ 3	1 48	− 5	—	2·1
Hatidyozima	4·5	200	1 1	− 3	1 48	− 7	—	—
Hakodate	4·5	353	1 8	+ 4	2 5	+10	—	—
Urakawa	4·9	10	1 12	+ 2	2 4	− 1	—	—
Kameyama	4·9	241	1 17	+ 7	2 3	− 2	—	—
Hikone	4·9	246	1 11	+ 1	1 59	− 6	—	—
Osaka	5·6	243	1 22	+ 2	i 2 28	+ 5	2·7	3·4
Toyooka	5·8	254	i 1 20	− 2	i 2 27	− 1	—	3·0
Sapporo	5·8	357	1 29	+ 7	2 33	+ 5	—	—
Kobe	5·9	245	e 1 32	+ 8	2 53	S*	—	3·3
Sumoto	6·3	243	e 2 22	P_g	e 3 5	S*	—	3·5
Koti	7·6	243	—	—	e 3 45	S*	—	—
Vladivostok	9·4	311	2 8	− 5	e 3 52	− 7	4·3	—
Irkutsk	30·0	312	e 8 22	?	—	—	e 15·4	18·5
Tashkent	54·5	298	—	—	e 16 57	− 5	e 29·1	33·2
Ekaterinburg	54·9	319	i 9 22	− 6	17 1	− 7	28·4	34·7
Pulkovo	67·3	330	e 11 7	+13	e 20 29	(−16)	35·4	43·5

Additional readings :—
Tyosi P_g = +32s.
Vladivostok e = +2m.24s., i = +3m.59s.
Long waves were also recorded at Baku, Copenhagen, and Uccle.

May 11d. Readings also at 0h. (Sebastopol, Simferopol, and Yalta), 2h. (Simferopol and Yalta), 3h. (Mizusawa, Adelaide, Riverview, and Wellington), 4h. (Baku, Ekaterinburg, Irkutsk, Scoresby Sund, Ottawa, and Melbourne), 7h. (La Paz), 18h. (Simferopol, Theodosia, and near Yalta), 19h. (La Paz), 20h. (near Lick), 21h. (Ekaterinburg, Irkutsk, Pulkovo, Tashkent, and Vladivostok).

May 12d. 1h. 37m. 7s. Epicentre 52°·2N. 158°·1E. N.1.

Probable error of epicentre ±0°·24.

A = −·569, B = +·229, C = +·790; D = +·373, E = +·928;
G = −·733, H = +·295, K = −·613.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nemuro		12·2	228	2 52	+ 1	—	—	—	—
Mizusawa		17·6	229	4 1	− 1	7 17	+ 2	—	—
Vladivostok		19·7	253	4 21	− 5	7 55	− 5	9·8	13·0
Tukubasan		20·4	226	4 32	− 2	8 14	0	—	—
Tyosi		20·5	223	4 33	− 2	8 16	0	—	—
Yokohama		21·3	226	4 47	+ 4	8 40	+ 8	—	—
Nagoya		22·7	230	(e 4 56)	− 2	—	—	e 4·9	—
Kameyama		23·2	230	5 1	− 2	9 13	+ 5	—	—
Toyooka	E.	23·4	234	i 5 4	− 1	9 17	+ 5	—	—
Osaka		23·8	231	5 1	− 7	(9 28)	+ 9	9·5	10·3
Kobe		24·0	232	i 5 9	− 1	9 29	+ 6	—	13·6
Sumoto		24·4	231	5 11	− 3	9 32	+ 2	—	9·6
Siomisaki		24·7	229	5 17	0	9 42	+ 6	—	—
Koti		25·6	233	i 5 26	+ 1	i 9 58	+ 7	12·9	—
Matuyama		25·8	235	e 5 24	− 3	—	—	—	—
Hukuoka		27·2	238	5 37	− 3	e 10 10	− 8	—	—
Nagasaki		28·2	238	5 49	0	10 30	− 5	—	—
Chiufeng		31·0	265	e 6 10	− 4	—	—	—	—
Irkutsk		32·2	291	6 27	+ 3	e 11 23	−15	16·6	22·3
Zi-ka-wei	Z.	33·9	245	i 6 37	− 2	14 13	SS	22·5	36·4
Sitka		37·3	55	—	—	i 13 58	+62	i 22·3	—
Hong Kong		44·9	244	8 7	− 5	14 42	− 7	22·1	—
Honolulu T.H.		45·8	116	—	—	e 14 53	− 9	23·3	—
Manila		47·8	231	8 30	− 5	15 21	− 9	23·2	—
Victoria	E.	47·9	62	8 36	+ 1	15 26	− 5	23·6	—
	N.	47·9	62	8 54	+19	15 44	+13	21·9	—
Phu-Lien		50·4	250	e 8 53	− 1	15 53?	−13	22·9?	—
Ekaterinburg		51·8	316	i 9 7	+ 2	16 26	+ 1	25·9?	30·5
Almata		52·4	294	e 9 12	+ 3	—	—	28·6	—
Berkeley	E.	55·1	71	e 9 28	− 1	i 17 11	0	i 26·0	28·5
Lick	E.	55·9	71	e 9 35	0	e 17 20	− 1	—	—
Andijan		56·6	295	9 38	− 2	17 53	+22	30·2	—
Scoresby Sund		57·4	0	9 48	+ 2	17 43	+ 1	28·9	—
Tashkent		58·0	298	9 51	+ 1	i 17 47	− 2	e 30·9	37·1
Haiwee		58·8	70	e 9 52	− 4	e 17 53	− 7	—	—
Calcutta		60·0	270	10 2	− 2	18 9	− 7	30·5	—
Mount Wilson		60·1	71	e 10 3	− 2	e 18 13	− 4	—	—
Pasadena		60·1	71	e 10 5	0	e 18 14	− 3	—	—
Samarkand		60·3	298	e 10 13	+ 6	—	—	—	—
Pulkovo		60·5	332	10 8	0	18 20	− 3	33·9	40·3
Riverside		60·7	71	e 10 6	− 3	—	—	—	—
Helsingfors	E.	61·5	335	e 10 12	− 3	e 18 27	− 9	e 30·7	—
	N.	61·5	335	e 10 15	0	e 18 30	− 6	e 31·7	—
La Jolla		61·6	71	e 10 37	+21	—	—	—	—
Agra		62·9	280	e 18 3	S	(e 18 3)	−51	—	—
Upsala		63·6	339	i 10 29	0	i 18 56	− 6	e 35·9	—
Ivigtut		64·7	13	—	—	19 14	− 2	28·9?	—
Tucson		65·7	68	e 10 47	+ 4	19 26	− 3	31·4	—
Königsberg		67·4	334	—	—	e 19 53	+ 3	—	46·9
Lund		68·3	340	11 1	+ 1	19 59	− 2	—	—
Copenhagen		68·4	340	i 11 2	+ 1	i 20 1	− 1	—	—
Medan		68·8	246	10 59	− 4	i 19 52	−15	—	—
Hyderabad		70·0	274	11 8	− 3	20 11	−10	36·9	45·3
Chicago		70·2	46	—	—	i 20 34	+10	—	—
Edinburgh		70·8	349	—	—	i 20 29	− 2	—	—
Hamburg		71·0	340	i 11 18	+ 1	i 20 33	0	e 37·9	46·9

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Theodosia		71·1	321	e 11 17	0	e 20 29	− 5	37·9	—
Florissant		71·4	50	e 11 17	− 2	20 31	− 7	e 35·9	40·0
Potsdam		71·4	338	e 11 17	− 2	i 20 32	− 6	—	58·9
St. Louis		71·6	50	e 11 17	− 3	i 20 34	− 6	e 34·3	40·0
Simferopol		71·6	321	e 11 20	0	e 21 19	PS	—	—
Yalta		72·0	321	11 22	− 1	—	—	—	—
Ottawa		72·1	36	e 11 47	+24	e 20 37	− 9	e 36·9	—
Toronto	N.	72·2	40	i 11 37	+13	i 20 36	−11	e 33·3	—
Bombay		72·3	278	11 23	− 2	20 41	− 7	—	46·8
Stonyhurst		72·7	347	—	—	e 21 23	PS	—	—
Batavia		72·8	234	i 11 21	− 7	i 20 44	−10	—	—
Göttingen		72·9	340	i 11 29	+ 1	i 20 53	− 3	—	42·1
Buffalo		73·0	40	i 11 45	+16	e 20 43	−14	—	40·9
Jena		73·1	339	e 11 23	− 6	—	—	—	—
De Bilt		73·3	344	i 11 31	0	i 21 0	0	e 35·9	40·9
Little Rock		73·6	54	e 11 33	+ 1	i 20 55	− 9	—	40·9
Cheb		73·7	337	(e 11 6)	−27	(e 20 11)	−54	e 41·9	45·5
Budapest		74·4	331	i 11 39	+ 2	21 10?	− 3	e 41·4	51·1
Feldberg		74·4	340	e 11 37	0	i 21 12	− 1	—	46·4
Vienna		74·4	334	e 11 37	0	21 2	−11	e 34·9	49·9
Oxford		74·6	347	—	—	i 21 10	− 5	—	—
Pittsburgh		74·6	41	e 10 53	−45	e 20 29	−46	e 34·9	—
Uccle		74·7	342	i 11 39	0	i 21 13	− 4	32·9	—
Kew		74·8	347	i 11 39	0	e 21 14	− 4	30·8	—
Stuttgart		75·4	339	i 11 44	+ 1	i 21 22	− 3	e 42·4	—
Strasbourg		76·2	340	i 11 47	0	i 21 23	−11	e 34·9	—
Harvard		76·3	35	e 11 56	+ 8	i 21 28	− 7	e 40·9	—
Fordham		76·6	38	e 12 3	+14	e 21 29	− 9	e 35·9	—
Innsbruck		76·6	337	11 51	+ 2	—	—	—	—
Zagreb		76·8	333	e 11 51	+ 1	e 21 35	− 6	e 42·4	45·9
Paris		76·9	344	i 11 51	0	e 21 39	− 3	32·9	49·9
Georgetown	Z.	77·1	40	i 12 7	+14	21 36	− 8	e 30·9	—
Zurich		77·2	339	i 11 53	0	e 21 49	+ 4	—	—
Chur		77·4	339	i 11 54	0	e 21 28	−19	—	—
Neuchatel		77·8	340	e 11 56	− 1	e 21 47	− 5	—	—
Venice		78·0	335	i 12 1	+ 4	21 55	+ 1	—	—
Padova		78·2	335	e 11 59	+ 1	21 56	0	—	—
Pavia		79·1	338	e 12 2	− 1	—	—	—	—
Piacenza		79·1	338	12 5	+ 2	22 1	− 5	—	50·7
Columbia		79·6	46	12 22	+16	21 59	−12	37·9	—
Florence		79·9	335	i 12 9	+ 2	22 53	PS	—	50·9
Camerino		80·0	334	12 29	+21	—	—	—	—
Rome		81·4	334	i 12 21	+ 6	e 22 4	−27	—	—
Tortosa		85·0	343	e 14 10	?	23 0	− 8	e 44·9	—
Toledo		86·7	346	e 12 42	0	e 23 4	[− 7]	—	—
Alicante		87·6	344	e 12 21	−25	e 23 9	[− 8]	—	—
Granada		89·2	345	i 12 53	− 1	23 20	[− 8]	45·5	51·6
San Juan		99·6	42	—	—	1 24 11	[−12]	e 38·9	—
La Paz		129·1	63	i 19 5	[0]	—	—	78·9	—

Additional readings and note :—
Osaka i = +5m.10s. =PP −10s.
Kobe iEZ = +5m.34s. =PP −3s., iENZ = +6m.46s.
Sumoto PZ = +5m.15s., PN = +5m.38s., SNZ = +9m.34s.
Koti SN = +9m.49s.
Zi-ka-wei iZ = +7m.3s., +8m.15s., +8m.33s., +17m.3s. =S_cS −3s., +17m.23s., +19m.17s.
Hong Kong SS = +18m.36s.
Honolulu T.H. eSS = +18m.8s.
Manila iE = +8m.33s., iN = +8m.35s., PPNZ = +10m.30s.
Berkeley ePN = +9m.31s. and +9m.34s., iPE = +9m.38s.
Lick eSN = +17m.22s.
Scoresby Sund +10m.6s. and +13m.35s.
Pasadena ePEN = +10m.4s.
Helsingfors ePPPNE = +14m.28s., ePSNE = +18m.57s., ePPSN = +19m.27s., ePPSE = +19m.33s., eE = +19m.57s. =S_cS −6s., eSKSN = +20m.23s., eSKSE = +20m.27s., eSSN = +23m.9s., eN = +23m.57s., eSSSN = +25m.27s., eSSSE = +25m.35s., eE = +26m.21s., eN = +26m.27s., eNE = +28m.42s.

Continued on next page.

Agra ePN = +17m.40s.
Medan i = +22m.22s.
Hamburg iSN = +20m.31s.
Florissant iPZ=+11m.21s., iZ=+11m.34s. and +11m.39s., iE=+21m.4s.=PS+7s.
St. Louis iEN = +11m.21s., ePP = +14m.13s., ePPPN = +15m.44s., iE = +21m.7s. =PS +8s.
Toronto iSE = +20m.34s.
Batavia iP = +11m.23s.
Göttingen ePcPZ = +12m.8s.
Buffalo e = +15m.53s. and +21m.27s. =PS +9s.
Little Rock e = +21m.29s. =PS +3s.
Cheb P and S readings have been *diminished* by 10m.
Feldberg e = +38m.0s. and +42m.17s.
Pittsburgh e = +10m.41s., iS = +20m.8s.
Kew eEN = +21m.46s. =PS +4s.
Stuttgart iPS = +21m.53s., i = +22m.24s., eN = +31m.11s.
Strasbourg iPS = +22m.5s.
Fordham eSSN = +26m.28s., eSSSN = +29m.54s.
Innsbruck i = +12m.37s.
Zagreb e = +12m.29s., +22m.1s. =PS −7s., +22m.27s., and +37m.35s.
Toledo SKSP = +23m.47s.
Granada i = +20m.20s., +24m.18s., and +26m.15s.
San Juan ePP = +17m.48s., ePS = +26m.29s., eSS = +32m.9s.

May 12d. 10h. 25m. 10s. Epicentre 37°·5N. 45°·5E. (as on 1930 May 29d.). R.3.
A = +·556, B = +·566, C = +·609; D = +·713, E = −·701;
G = +·427, H = +·434, K = −·793.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	48	i 1 1	− 3	(1 43)	−12	1·7	3·8
Ksara		8·6	248	2 18	+16	4 25	S*	5·0	—
Theodosia		10·7	318	2 34	+ 3	4 30	− 1	6·8	—
Simferopol		11·3	314	e 2 36	− 3	e 4 47	+ 2	7·1	—
Sebastopol		11·5	312	e 2 37	− 5	—	—	—	—
Samarkand		16·9	76	3 57	+ 4	—	—	10·8	—
Tashkent		18·7	71	i 4 12	− 3	i 7 43	+ 3	e 9·8	16·7
Andijan		21·0	73	4 42	+ 2	—	—	13·0	—
Budapest		21·7	306	4 52	+ 4	8 52?	+12	13·3	—
Graz		24·0	303	e 5 9	− 1	e 9 35	+12	15·8	19·9
Pulkovo		24·3	341	i 5 8	− 5	9 18	−10	12·8	14·7
Almata		24·5	67	e 5 23	+ 8	—	—	—	—
Helsingfors		26·1	337	e 5 26	− 4	e 9 53	− 7	e 12·0	—
Florence		26·5	294	5 35	+ 1	10 45	+38	—	17·3
Cheb		26·7	309	e 6 59?	?	e 10 21	+11	e 16·8	19·2
Piacenza		27·7	297	e 5 50	+ 6	—	—	—	20·5
Lund		28·2	320	—	—	10 50?	+15	—	—
Stuttgart		28·5	305	—	—	e 10 26	−14	—	—
Upsala		28·5	331	e 6 18	+26	—	—	—	20·0
Copenhagen		28·7	320	—	—	10 50?	+ 7	—	—
Hamburg		29·2	315	—	—	e 11 38	+47	—	19·8
Agra	N.	29·2	101	12 54	SS	—	—	—	—
Strasbourg		29·4	304	—	—	(e 10 50?)	− 5	e 10·8	—
Bombay		30·2	120	4 29	?	11 22	+15	20·4	—
De Bilt		31·6	310	—	—	e 11 29	0	—	22·4
Edinburgh		37·1	316	—	—	e 12 50?	− 3	—	—
Irkutsk		42·8	50	e 7 52	− 3	e 14 4	−14	24·8	—
Scoresby Sund		47·5	335	8 50?	+18	—	—	28·8	—

Additional readings :—
Baku iP_g = +1m.10s.
Helsingfors ePN=+5m.29s., eZ=+5m.39s., eEN=+10m.40s., eSSEN=+11m.21s.
Irkutsk e = +9m.32s. =PP +3s.
Long waves were also recorded at Paris, Rome, Kew, Granada, Hyderabad, and Vladivostok.

May 12d. Readings also at 0h. (near La Paz), 1h. (Ekaterinburg and near Sumoto), 3h. (Wellington), 4h. (near Kobe), 5h. (Manila), 8h. (Hastings and Zagreb), 10h. (Zagreb), 12h. (Ksara, Pulkovo, and near Baku), 13h. (Samarkand and near Andijan), 14h. (Baku and Sumoto), 15h. (Collurania and Rome), 17h. (near Amboina and near Ksara), 18h. (La Paz and near Matuyama), 20h. (near Manila).

May 13d. 23h. 3m. 54s. Epicentre 27°·4N. 128°·8E. N.3.

A = −·556, B = +·692, C = +·460 ; D = +·779, E = +·627 ;
G = −·288, H = +·359, K = −·888.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		5·4	9	1 19	+ 2	2 34	+16	—	—
Hukuoka		6·4	12	i 1 32	+ 1	e 2 50	+ 7	—	3·0
Koti	z.	7·4	32	e 1 45	0	—	—	—	—
Zi-ka-wei	z.	7·4	302	1 41	− 4	3 9	0	4·2	7·2
Sumoto		8·7	35	2 1	− 2	—	—	5·2	7·6
Kobe		9·1	35	e 2 9	0	e 4 10	+19	—	9·4
Osaka		9·3	37	2 14	+ 3	i 4 3	+ 7	i 4·3	6·5
Nagoya		10·4	40	e 2 32	+ 6	—	—	—	—
Hong Kong		14·2	252	3 13?	− 5	6 14	+18	7·3	8·3
Manila		14·7	212	e 3 27	+ 2	6 18	+10	7·7	8·9
Vladivostok		15·9	8	3 39	− 1	i 6 48	+12	8·3	—
Chiufeng	z.	16·4	324	e 3 31	−15	—	—	—	—
Phu-Lien		21·3	257	e 4 38	− 5	—	—	—	—
Irkutsk		30·9	330	e 5 55	−18	e 10 59	−19	16·1	19·9
Calcutta		36·8	272	e 11 30	S	(e 11 30)	−78	21·5	—
Almata		44·3	305	e 9 53	(− 3)	—	—	24·0	—
Andijan		47·7	300	8 33	− 1	—	—	24·8	—
Tashkent		50·1	301	(i 8 47)	− 5	(15 51)	−11	e 25·8	29·1
Bombay		51·7	273	15 9	S	(15 9)	−75	—	—
Samarkand		51·9	300	9 6	0	—	—	—	—
Pulkovo		70·6	328	e 11 7	− 7	e 20 20	− 8	38·1	46·0
Helsingfors	E.	72·9	330	—	—	e 22 30	?	e 43·1	—
Scoresby Sund		80·0	350	—	—	22 6?	−10	44·1	—
Florence		88·7	320	12 26	−25	e 23 6	−38	34·1	46·1

Additional readings and note :—
Zi-ka-wei iZ = +1m.59s., iN = +3m.21s.
Kobe eN = +4m.18s.
Osaka i = +2m.46s., i = +5m.31s.
Hong Kong ? = +3m.35s.
Manila iN = +6m.24s., iEZ = +6m.28s.
Tashkent P and S have been *increased* by 2m.
Calcutta S = +17m.0s.
Pulkovo PS = +21m.4s., SS = +29m.6s.
Long waves were also recorded at Ottawa and European stations.

May 13d. Readings also at 0h. (Rome and Manila), 1h. and 2h. (Manila), 4h. (Manila and Riverview), 6h. (Wellington), 7h. (Riverview, Amboina, Manila (2), Batavia, Bombay, Colombo, Medan, near Almata (2), Andijan (2), Tashkent, and near Neuchatel) 8h. (Riverview, Sydney, Phu-Lien (2), Hyderabad, Vladivostok, Irkutsk, Tashkent, La Paz, Koti, and near Mizusawa (2)), 9h. (Hong Kong, Florissant, Ottawa, Scoresby Sund. Copenhagen, Feldberg, and near Neuchatel), 14h. (Ksara), 15h. (Mizusawa (2)), 16h. (Ottawa), 18h. (Andijan and Samarkand), 19h. (near Taihoku), 21h. (Mineo), 23h. (De Bilt).

May 14d. 23h. 22m. 32s. Epicentre 40°·7N. 145°·8E. (as on 1927 Sept. 30d.). X.

A = −·627, B = +·426, C = +·652 ; D = +·562, E = +·827 ;
G = −·539, H = +·367, K = −·758.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	3·9	247	0 50	− 6	1 22	−18	—	—
Tyosi	6·3	219	e 1 39	+ 9	—	—	e 3·0	—
Nagoya	8·9	234	e 2 3	− 3	—	—	—	—
Osaka	10·2	237	2 25	+ 1	—	—	4·7	5·7
Vladivostok	10·6	288	e 2 17	−12	i 4 9	−19	5·2	—
Irkutsk	30·3	308	e 6 10	+ 2	e 11 16	+ 7	15·5	19·0
Ekaterinburg	54·5	319	i 9 29	+ 4	e 16 54	− 8	25·5	33·9
Tashkent	55·7	299	—	—	17 37	+18	e 28·8	35·7

Additional readings :—
Osaka i = +3m.10s.
Tashkent e = +21m.4s. =SS +5s. and +26m.34s.
Long waves were recorded at Kobe, Hong Kong, and many other European stations.

May 14d. Readings also at 0h. (Yalta), 2h. (Amboina), 8h. (near Lick, near Hastings, Takaka, and Wellington), 10h. (Zurich, Messina, Mineo, and near Catania), 17h. (La Paz and near Santiago), 18h. (Ekaterinburg, Tashkent, and San Juan), 23h. (Mizusawa).

May 15d. 7h. 41m. 55s. Epicentre 8°·0S. 173°·0E. N.3.

A = −·983, B = +·121, C = −·139; D = +·122, E = +·993; G = +·138, H = −·017, K = −·990.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		11·4	153	2 41	+ 1	4 11	−37	4·6	5·1
Riverview		32·8	217	i 7 26	PP	—	—	i 14·9	—
Sydney		32·8	217	(e 5 35)	−55	—	—	e 5·6	15·8
Wellington		33·4	178	3 5?	?	—	—	i 14·4	15·9
Melbourne		39·1	218	i 7 23	− 1	i 13 24	+ 1	20·4?	—
Adelaide		41·5	225	i 11 30	?	—	—	17·2	19·7
Osaka		55·4	322	10 14	(−22)	—	—	12·5	13·6
Mizusawa	E.	55·6	330	—	—	11 0	PP	—	—
Manila		56·3	294	e 10 32	(− 7)	18 56	(−30)	—	—
Vladivostok		63·2	328	i 21 3	?	—	—	—	—
Batavia		65·6	269	i 10 43	+ 1	i 19 19	− 8	—	—
Phu-Lien		71·3	295	11 5?	−14	—	—	—	—
Medan		75·0	276	11 47	+ 7	i 21 19	− 1	—	—
Mount Wilson		77·5	51	e 11 54	− 1	e 21 44	− 4	—	—
Pasadena		77·5	51	e 11 53	− 2	e 21 43	− 5	—	—
Haiwee	N.	78·2	50	e 12 1	+ 3	e 21 37	−19	—	—
Victoria		79·2	37	21 59	S	(21 59)	− 8	22·6	—
Tucson		82·8	55	12 11	−11	22 24	−21	—	—
Little Rock		98·3	56	e 17 41	PP	e 23 10	?	—	—
Almata		99·8	314	e 19 12	?	i 25 3	{+11}	—	—
Bombay		102·1	288	e 21 5	?	—	—	—	—
Andijan		103·2	311	e 19 14	?	(e 24 15)	[−26]	e 24·2	—
Tashkent		105·6	311	i 19 45	?	i 24 22	[−31]	—	—
Samarkand		107·4	310	e 19 31	?	—	—	—	—
Toronto	N.	108·2	45	—	—	i 26 5	{+11}	—	—
Ekaterinburg		108·8	329	i 18 19	[+ 5]	i 24 37	[−31]	29·1	—
Ottawa	N.	110·6	44	—	—	e 26 39	{+28}	—	—
La Paz		114·8	112	e 15 35	?	i 23 5	?	—	—
San Juan		121·7	72	19 29	[+40]	i 24 13	?	28·1	—
Theodosia		128·0	323	18 56	[− 7]	e 20 58	PP	—	—
Simferopol		128·8	323	e 18 58	[− 7]	—	—	—	—
Yalta		129·0	323	18 58	[− 7]	—	—	—	—
De Bilt		134·8	349	e 19 14	[− 1]	e 42 4	?	—	—
Zurich		138·4	343	e 20 5	[+46]	—	—	—	—
Chur		138·6	343	i 19 48	[+28]	e 29 25	{+10}	—	—

Additional readings :—
Riverview i = +8m.54s.
Melbourne i = +5m.54s. and +10m.23s.
Adelaide i = +14m.55s. and +15m.45s.
Osaka i = +10m.56s. = P_cP +20s.
Vladivostok e = +24m.29s.
Pasadena e = +21m.30s.
Tashkent i = +21m.33s. and +22m.43s.
Toronto iN = +29m.48s. and +36m.26s.
Ekaterinburg i = +20m.26s. and +26m.24s.
Ottawa eN = +30m.10s. and +35m.9s.
La Paz ePZ = +16m.28s.
San Juan i = +25m.38s.

May 15d. Readings also at 0h. (Andijan and near Samarkand), 5h. (near Almata, Andijan, and Samarkand), 6h. (Tashkent), 7h. (Samarkand), 9h. (Almata, Andijan, Samarkand, and Tashkent), 12h. (Irkutsk, Ekaterinburg, Tashkent, Hong Kong, and Phu-Lien), 14h. (near Zagreb), 18h. (Tyosi and near Mizusawa), 19h. (Ekaterinburg and Tashkent), 20h. (near Berkeley).

May 16d. 7h. 15m. 14s. Epicentre 36°·0N. 71°·0E. (as on 1930 Dec. 16d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	4·9	13	e 1 12	+ 2	(i 2 11)	+ 6	i 2·2	2·6
Tashkent	5·4	347	i 1 20	+ 3	(i 2 0)	−18	i 2·0	3·0
Almata	8·6	31	2 0	− 2	(4 4)	S*	4·1	4·2
Ekaterinburg	21·9	345	4 47	− 3	8 41	− 3	10·8	—

Additional readings :—
Andijan i = +1m.34s. =P*
Tashkent e = +1m.34s. =P*.
Ekaterinburg e = +8m.37s.

May 16d. 15h. 50m. 49s. (I) R.2.
15h. 53m. 35s. (II) Epicentre 44°·5N. 11°·0E. X.
15h. 55m. 5s. (III) (as on 1930 Oct. 26d.). R.3.
16h. 19m. 9s. (IV) X.

A = +·700, B = +·136, C = +·701 ; D = +·191, E = −·982 ;
G = +·688, H = +·134, K = −·713.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Prato	0·6	173	e 0 11	+ 2	0 20	S_g	—	0·5
II	0·6	173	e 0 5	− 4	—	—	—	—
III	0·6	173	e 0 4	− 5	0 14	− 1	—	0·3
IV	0·6	173	e 0 1	− 8	0 9	− 6	—	0·3
I Florence	0·7	166	−0 4	−14	—	—	—	0·2
III	0·7	166	0 5	− 5	—	—	—	0·3
IV	0·7	166	−0 4	−14	—	—	—	0·1
I Padova	1·1	35	0 7	− 9	—	—	—	—
II	1·1	35	0 16	0	—	—	—	—
III	1·1	35	0 11	− 5	—	—	—	—
IV	1·1	35	0 2	−14	0 16	−12	—	—
I Piacenza	1·1	300	e 0 21	P*	—	—	—	0·6
II	1·1	300	—	—	e 0 25	− 3	—	—
III	1·1	300	e 0 25	S	(e 0 25)	− 3	—	0·6
IV	1·1	300	e 0 16	0	—	—	—	0·5
I Treviso	1·4	36	i 0 15	− 5	0 33	− 3	—	1·2
II	1·4	36	e 0 25	P*	e 0 45	S*	—	—
III	1·4	36	i 0 19	− 1	0 33	− 3	—	1·1
IV	1·4	36	0 24	P*	i 0 29	− 7	—	—
I Pavia	1·5	298	0 27	P*	—	—	—	—
III	1·5	298	0 47	S	(0 47)	S*	—	—
IV	1·5	298	e 0 28	P*	—	—	—	—
I Camerino	2·0	133	1 5	S	(1 5)	S*	—	—
III	2·0	133	1 9	S	(1 9)	S_g	—	—
IV	2·0	133	1 1	S	(1 1)	S*	—	—
I Triest	2·2	59	e 0 21	−10	e 0 48	− 9	e 0·9	—
II	2·2	59	—	—	e 1 0	+ 3	e 1·5	—
III	2·2	59	e 0 33	+ 2	(e 1 9)	S*	1·1	1·2
IV	2·2	59	e 0 26	− 5	e 0 53	− 4	e 1·0	1·1
I Chur	2·6	337	e 0 34	− 3	—	—	—	—
II	2·6	337	e 0 45	P*	—	—	—	—
III	2·6	337	e 0 42	P*	—	—	—	—
IV	2·6	337	e 0 31	− 6	—	—	—	—
I Collurania	2·7	133	0 39	0	—	—	—	—
II	2·7	133	(0 36)	− 3	—	—	—	—
III	2·7	133	0 44	P*	—	—	—	—
IV	2·7	133	0 40	+ 1	—	—	—	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
III Innsbruck		2·8	6	0 7	−33	1 17	+ 5	—	—
IV		2·8	6	0 39	− 1	—	—	—	—
I Rome		2·8	157	e 0 57	P_g	1 32	S_g	—	2·2
III		2·8	157	0 47	P*	1 35	S_g	—	2·2
IV		2·8	157	0 35	− 5	1 13	+ 1	1·5	2·2
I Zurich		3·3	330	e 0 53	+ 6	—	—	—	—
II		3·3	330	e 0 43	− 4	—	—	—	—
IV		3·3	330	0 50	+ 3	—	—	—	—
IV Ravensburg		3·4	344	e 0 57	P*	e 1 46	S*	—	—
I Neuchatel		3·7	313	e 0 45	− 8	e 1 8	−27	—	—
III		3·7	313	e 0 8	−45	e 0 32	−63	—	—
IV		3·7	313	0 48	− 5	i 2 32	+57	—	—
I Zagreb		3·8	68	e 0 59	+ 5	e 1 35	− 2	—	—
III		3·8	68	e 0 42	−12	e 1 19	P_g	—	—
IV		3·8	68	e 0 56	+ 2	e 1 36	− 1	—	—
I Stuttgart		4·4	345	e 1 11	+ 8	e 2 6	S*	2·3	3·1
III		4·4	345	e 1 13	+10	e 2 9	S*	2·4	3·2
IV		4·4	345	e 1 9	+ 6	e 2 3	+10	—	3·1
I Strasbourg		4·6	336	e 0 11?	−55	—	—	—	—
IV		4·6	336	e 0 51?	−15	—	—	—	—
I Vienna		5·2	44	e 2 11	S	(e 2 11)	− 2	—	—
III		5·2	44	e 1 13	− 1	—	—	—	—
IV		5·2	44	e 1 40	P*	—	—	—	—
III Göttingen	N.	7·0	355	e 2 9	P*	—	—	—	3·9
IV		7·0	355	e 2 25	P_g	—	—	—	4·0
I Potsdam		8·0	9	—	—	e 4 5	S*	—	—
III		8·0	9	—	—	e 4 13	S*	—	—

Additional readings and note :—
Triest II eS = +1m.20s., IV PS = +54s., S = +56s.
Collurania II P has been *increased* by 1m.
Innsbruck III i = +1m.41s.
Zagreb I e = +1m.47s. =S*, III e = +1m.43s., IV e = +1m.51s. ?
Stuttgart IV e = +2m.16s. =S*.
Long waves were also recorded at I Kew, I, III, IV De Bilt, I Paris.

May 16d. 20h. 47m. 39s. Epicentre 16°·4N. 97°·0W. N.1.

Probable error of epicentre ±0°·21.

A = −·117, B = −·952, C = +·282 ; D = −·992, E = +·122 ;
G = −·034, H = −·280, K = −·959.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Little Rock		18·9	12	i 4 12	− 5	e 7 41	− 3	—	—
Tucson		20·2	324	i 4 30	− 2	i 8 14	+ 4	10·7	—
Columbia		22·7	36	i 4 57	− 1	i 9 9	+10	14·6	—
St. Louis		23·0	14	i 4 59	− 2	i 9 10	+ 5	—	—
Port au Prince		23·6	81	e 4 39	−27	e 8 54	−22	—	—
Denver	E.	24·3	345	e 5 20	+ 7	e 9 49	+21	—	12·9
La Jolla		24·6	316	e 5 31	+15	—	—	—	—
Riverside		25·4	318	e 5 23	− 1	e 9 51	+ 3	—	—
Pasadena		25·9	317	e 5 28	0	e 10 4	+ 7	e 12·8	—
Mount Wilson		26·0	317	e 5 29	0	e 9 59	+ 1	—	—
Chicago		26·6	16	i 5 29	− 6	10 6	− 3	e 12·4	—
Charlottesville		27·1	34	5 37	− 2	10 21	+ 4	13·8	—
Haiwee	N.	27·2	321	e 5 44	+ 4	—	—	—	—
Ann Arbor		28·3	21	e 7 9	?	i 11 9	+32	e 16·4	—
Pittsburgh		28·3	28	i 5 48	− 2	e 10 39	+ 2	e 13·8	—
Georgetown	Z.	28·5	34	i 5 53	+ 1	i 10 43	+ 3	e 13·4	—
San Juan		29·5	82	i 6 2	+ 1	e 10 59	+ 3	15·2	—
Berkeley	E.	30·9	320	—	—	i 11 17	− 1	i 14·4	16·6
	N.	30·9	320	—	—	i 11 21	+ 3	e 14·8	16·8
Toronto		31·1	25	i 6 11	− 4	i 11 13	− 8	i 17·4	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bozeman		31·5	340	6 23	+ 5	11 20	− 8	e 17·0	—
Fordham		31·6	35	i 6 18	− 1	i 11 28	− 1	e 14·4	—
Ottawa		34·0	27	e 6 40	0	e 12 8	+ 2	e 17·4	—
Harvard		34·1	35	i 6 41	0	i 12 6	− 2	e 18·4	—
Victoria		38·6	332	—	—	13 14	− 1	19·6	20·7
La Paz		43·5	139	i 8 1	0	i 14 33	+ 5	19·3	22·4
Ivigtut		56·5	26	9 39	0	17 28	− 2	30·4	—
Edinburgh		78·6	35	e 15 1	PP	i 21 58	− 2	37·4	—
Stonyhurst		79·4	38	i 15 9?	PP	i 22 6	− 3	38·9	51·8
Durham		79·8	37	—	—	22 9	− 5	—	50·8
Oxford		80·7	39	—	—	i 22 18	− 5	e 38·4	44·4
Kew		81·4	39	i 12 14	− 1	e 22 27	− 4	35·4	44·7
Toledo		81·8	51	—	—	e 22 30	− 5	e 39·5	—
Paris		83·8	40	e 12 26	− 1	e 22 44	−11	40·4	—
De Bilt		84·3	37	12 31	+ 1	e 22 54	− 7	e 37·4	43·2
Uccle		84·3	39	12 30	0	e 22 51	−10	e 36·4	—
Hamburg		86·5	35	e 12 41	0	e 23 21?	− 1	e 40·4	54·4
Copenhagen		86·9	31	12 33	−10	23 24	− 2	42·4	—
Strasbourg		87·1	40	e 12 48	+ 4	e 23 28	0	32·4	—
Göttingen	E.	87·4	36	e 15 48	PP	e 23 3	[−13]	—	50·5
Lund		87·4	31	—	—	23 27	− 4	42·4	—
Upsala	E.	87·5	27	16 8	PP	e 23 24	− 8	—	—
Stuttgart		87·9	39	e 12 47	0	e 23 17	−19	e 42·4	52·3
Potsdam		88·7	35	e 16 15	PP	e 24 15	PS	e 49·4	55·4
Piacenza		89·7	42	13 5	+ 9	23 21	[−10]	—	49·4
Helsingfors	E.	90·4	25	e 16 29	PP	e 23 42	{+ 4}	e 44·4	—
Florence		91·3	44	13 16	+13	e 24 6	− 2	39·4	46·8
Pulkovo		92·8	23	e 13 21	+11	23 43	[− 6]	40·4	49·4
Rome		92·8	45	e 12 58	−12	—	—	—	—
Zagreb		93·4	40	e 13 21?	+ 8	e 23 42	[−10]	—	48·4
Wellington		99·4	230	—	—	e 35 46	?	41·3	45·4
Ekaterinburg		104·4	13	i 18 21	PP	i 24 40	[− 7]	43·4	64·2
Irkutsk		108·9	347	e 18 52	PP	25 3	[− 5]	e 53·4	65·8
Baku		115·3	27	e 19 55	PP	—	—	53·4	64·0
Riverview		116·9	240	27 10	S	(27 10)	{+15}	37·0	39·4
Sydney		116·9	240	—	—	(33 9)	?	33·2	37·4
Tashkent		120·9	12	i 20 23	PP	i 25 49	[− 4]	56·4	75·2
Melbourne		122·0	235	—	—	e 31 46	?	37·8	40·0
Hong Kong		130·7	321	—	—	39 50	?	—	50·4
Manila		131·4	309	e 21 5	PP	—	—	36·8	—
Bombay		143·3	15	e 18 21	[−68]	—	—	—	59·7

Additional readings :—
Tucson eSS = +9m.50s.
St. Louis iN = +5m.32s., iEN = +9m.14s., eN = +9m.57s., iSS = +10m.16s.
Chicago eSS = +11m.21s.
Charlottesville SS = +11m.9s.
Pittsburgh ePP = +6m.24s.
Toronto iN = +11m.21s.
Fordham ePP = +7m.17s., ePPP = +7m.33s.
La Paz PPPN = +10m.2s.
Oxford e? = +22m.3s.
Kew iZ = +12m.26s.
De Bilt ePPZ = +15m.47s.
Uccle ePP = +15m.46s.
Hamburg PP = +16m.0s.
Copenhagen PP = +16m.7s., PPP = +18m.3s. ; no phase +23m.8s. =SKS −5s., and +24m.21s. =PS +7s.
Strasbourg ePP = +16m.10s., eSKS = +23m.11s.
Stuttgart ePP = +16m.11s.
Helsingfors eSKSE = +23m.23s., eSeSE = +24m.1s. =S +1s., ePPSE = +25m.27s., eE = +25m.58s. and +27m.46s., eSSE = +29m.59s.
Pulkovo PP = +16m.51s., PPS = +25m.42s., SS = +30m.21s.
Ekaterinburg PS = +27m.35s.
Irkutsk PS = +28m.15s., SS = +34m.3s.
Baku PS = +29m.30s., eSS = +35m.45s.
Riverview S? = +32m.54s.
Tashkent ePS = +30m.21s.?, eSS = +37m.33s.
Manila PEZ = +31m.5s. =SKSP −18s., SEZ? = +34m.49s.
Long waves were also recorded at Sitka, Honolulu T.H., Adelaide, Perth, Feldberg, and Tortosa.

May 16d. Readings also at 2h. (Ottawa), 6h. (Stonyhurst), 9h. (Hong Kong, Phu-Lien, Bombay, near Calcutta, and near Andijan), 10h. (Ekaterinburg, Tashkent, and Prato), 11h. (Santiago and near Manila), 14h. (near Tananarive), 21h. (Nagoya, near Mizusawa, and Tyosi), 23h. (Little Rock).

May 17d. 9h. 8m. 0s. Epicentre 42°·3N. 142°·4E. (as on 1931 Feb. 16d.). R.2.

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

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Urakawa		0·3	118	0 6	+ 2	0 14	S_g
Muroran		1·1	272	0 20	+ 4	0 43	S_g
Sapporo		1·2	312	0 19	+ 2	0 39	S_g
Hakodate		1·4	248	0 24	+ 4	0 48	+12
Asahigawa		1·5	359	0 28	+ 7	0 45	+ 6
Kusiro		1·6	65	0 10	−13	0 24	−17
Aomori		1·9	219	0 33	+ 5	1 0	S*
Nemuro		2·5	66	0 30	− 6	0 54	−10
Morioka		2·8	202	0 40	0	1 13	+ 1
Akita		3·1	214	1 3	+19	1 43	S_g
Mizusawa	E.	3·3	198	0 48	+ 1	1 30	+ 5
	N.	3·3	198	0 54	+ 7	1 34	S*
Hukusima		4·8	199	1 7	− 1	2 1	− 2
Kakioka		6·4	196	1 27	− 4	2 27	−16
Oiwake		6·6	208	1 47	+13	3 9	+21
Tyosi		6·6	191	e 2 44	S	(e 2 44)	− 4

No additional readings.

May 17d. 9h. 28m. 40s. Epicentre 22°·5N. 117°·5E. (as on 1929 Oct. 24d.). X.

A = −·427, B = +·819, C = +·383 ; D = +·887, E = +·462 ;
G = −·177, H = +·339, K = −·924.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hokoto		2·1	61	0 30	0	0 52	− 2	—	—
Hong Kong		3·1	268	0 42?	− 2	1 19	− 1	1·4	1·6
Taihoku	N.	4·4	55	(0 40)	−23	(2 8)	S*	(2·1)	(2·4)
Manila		8·6	157	e 3 41	S	(e 3 41)	+ 2	(i 5·3)	—
Zi-ka-wei		9·3	21	—	—	e 3 42	−14	i 4·6	5·1
Phu-Lien		10·3	263	e 4 22?	S	(e 4 22?)	+ 1	5·5	—
Chiufeng	N.	17·6	357	e 7 43	S	(e 7 43)	+28	—	—
Calcutta		26·9	276	11 18	S	(11 18)	+64	17·5	—
Irkutsk		31·4	344	—	—	e 13 20?	SS	15·3	16·7
Bombay		41·8	275	e 5 20	?	—	—	—	—
Tashkent		44·4	310	—	—	e 18 58	(+50)	e 23·3	27·4
Stuttgart		84·5	323	—	—	e 34 14	?	e 41·7	49·3

Additional readings and notes :—
Taihoku readings have been *increased* by 9m.
Manila gives S as P and L as S.
Zi-ka-wei iZ = +4m.8s., iN = +4m.27s., and +4m.44s., iZ = +4m.50s., iE = +5m.24s. and +5m.44s.
Phu-Lien S = +5m.20s.
Calcutta S = +15m.8s.
Long waves were recorded at other European and Russian stations.

May 17d. 15h. 23m. 19s. Epicentre 41°·5N. 47°·9E. N.3.

(as given by Russian stations).

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	1·9	107	i 0 15	−13	—	—	0·6	—
Yalta	10·4	291	e 2 34	+ 8	—	—	—	—
Simferopol	10·6	293	e 2 41	+12	—	—	—	—
Ksara	12·2	235	e 2 50	− 1	6 28	S*	8·5	—
Ekaterinburg	17·5	24	(i 3 57)	− 3	(e 7 8)	− 5	(10·7)	(15·1)
Andijan	18·4	84	e 4 6	− 5	—	—	e 11·2	—
Pulkovo	21·3	335	4 46	+ 3	8 48	P_cP	11·7	15·4
Almata	21·4	76	e 8 20	S	(e 8 20)	−14	—	—
Helsingfors	23·4	331	e 5 5	0	e 9 21	+ 9	e 11·8	—
Upsala	26·1	325	e 6 2	PP	e 10 41	SS	—	17·4
Copenhagen	27·0	316	—	—	10 41	+26	18·7	—
Hamburg	27·9	309	—	—	e 11 41	SS	—	18·7
Stuttgart	28·0	298	—	—	e 12 41?	?	e 16·7	18·7
De Bilt	30·6	305	—	—	e 12 41?	SS	e 17·7	—
Bombay	31·0	129	—	—	e 10 16	?	—	—

Additional readings and notes :—
Baku i = +20s., +24s., and +27s.
Ekaterinburg readings have been *increased* by 5m.
Helsingfors eN = +5m.27s. = PP − 2s., SN = +9m.36s., eN = +10m.2s. = SS +12s. eSEN = +10m.27s., eSSSE = +10m.48s.
Long waves were also recorded at Samarkand, Lund, Edinburgh, Kew, and Cheb.

May 17d. Readings also at 0h. (Andijan, Samarkand, Bombay, Calcutta, and Phu-Lien), 1h. (Baku, Ekaterinburg, Irkutsk, Pulkovo, Tashkent, Hong Kong, and De Bilt), 5h. (Tananarive), 6h. (Baku, Ekaterinburg, Irkutsk, and Tashkent), 11h. (near Manila), 12h. (Baku, Ekaterinburg, Pulkovo, Bombay, De Bilt, Perth, Adelaide, Melbourne, Riverview, Sydney, Christchurch, Wellington, and Suva), 13h. (Suva, Wellington, Irkutsk, Kodaikanal, Copenhagen, Edinburgh, Kew, Paris, Stuttgart, and Strasbourg), 14h. (De Bilt and near Apia), 16h. (Baku), 17h. (Baku (2), and Arapuni), 22h. (Baku and Florence), 23h. (Baku).

May 18d. Readings at 3h. (Samarkand), 5h. (near Wellington), 7h. (near Tyosi), 8h. (near Osaka and near Tyosi), 10h. (Ekaterinburg and La Paz), 11h. (Baku, Copenhagen, Stuttgart, Strasbourg, Paris, and Kew), 13h. (near La Paz and near Tyosi), 15h. (Ksara, Baku, Tashkent, and Ekaterinburg), 17h. (Samarkand and near Andijan), 19h. (near Hastings), 20h. (near Berkeley and Lick).

May 19d. Readings at 1h. (near Sumoto, near Takaka, and Wellington), 3h. (Almata, Andijan, and near Tyosi), 4h. (Little Rock), 5h. (Baku, Ekaterinburg, and Tashkent), 7h. (near Manila), 9h. (San Juan, near Port au Prince, and near Manila), 10h. (Andijan and Samarkand), 11h. (near Trenta), 12h. (Takaka), 13h. (Phu-Lien, Manila, Vladivostok, Irkutsk, Ekaterinburg, and La Paz), 14h. (Copenhagen and near Manila), 15h. (near Andijan (2), near Zagreb, and near Takaka), 17h. (Ekaterinburg and Tashkent), 19h. (near Prato), 21h. (Takaka), 23h. (Neuchatel and near Apia).

May 20d. 2h. 22m. 56s. Epicentre 37°·4N. 15°·9W. N.1.

Probable error of epicentre ±0°·22.

A = +·764, B = −·218, C = +·607; D = −·274, E = −·962;
G = +·584, H = −·166, K = −·794.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Azores		7·7	275	1 34	−15	—	—	—	6·2
San Fernando		7·8	94	1 53	+ 2	3 16	− 3	3·6	7·1
Malaga		9·2	91	i 2 9	− 1	—	—	—	3·7
Toledo		9·6	72	e 2 9	− 7	—	—	—	3·8
Granada		9·8	88	i 2 19	+ 1	i 4 20	+12	—	—
Almeria		10·8	89	i 2 28	− 4	i 4 38	+ 5	4·8	5·6
Alicante		12·2	81	i 2 52	+ 1	i 5 7	− 1	e 5·4	5·7
Tortosa		13·2	70	i 3 3	− 2	5 29	− 3	—	—
Bagnères		13·6	60	i 4 3	+53	5 49	+ 8	7·3	—
Barcelona		14·5	68	3 16	− 6	6 19	+16	6·8	7·9
Algiers		15·1	87	i 3 28	− 2	i 6 31	+14	—	9·1
Puy de Dôme		16·4	53	i 3 47	+ 1	i 7 5	+17	8·4	—
Marseilles		17·2	63	i 4 9	+12	7 25	+19	8·6	—
Paris		17·6	44	i 4 0	− 2	i 7 21	+ 6	8·1	9·1
Oxford		17·7	31	i 3 59	− 4	i 7 26?	+ 9	—	10·1
Kew	z.	17·9	33	i 4 4	− 1	i 7 22	0	i 8·9	15·2
Bidston		18·3	25	i 4 4	− 6	i 7 34	+ 3	—	9·2
Stonyhurst		18·9	25	i 4 18	+ 1	i 7 52	+ 8	—	10·6
Carloforte		19·0	78	4 25	+ 6	—	—	—	—
Lille		19·0	39	i 5 1	+42	i 8 36	+50	9·6	—
Neuchatel		19·4	53	i 4 23	0	i 7 58	+ 4	—	—
Uccle		19·7	41	i 4 25	− 1	i 8 5	+ 5	9·1	9·9
Durham		19·9	25	4 30	+ 1	8 6	+ 2	—	12·1
Pavia		20·3	60	4 36	+ 3	—	—	—	—
Edinburgh		20·4	21	4 35	+ 1	8 14	0	—	12·1
Strasbourg		20·5	50	i 4 34	− 1	i 8 22	+ 6	9·1	15·4
Zurich		20·5	53	e 4 37	+ 2	e 8 23	+ 7	—	—
Piacenza		20·6	60	i 4 38	+ 2	i 8 34	SS	i 10·7	13·3
De Bilt		20·8	38	i 4 38	0	8 22	0	e 9·6	10·8
Livorno		20·8	65	4 50	PP	8 49	SS	—	—
Chur		21·0	55	e 4 41	+ 1	i 8 45	SS	—	—
Karlsruhe		21·1	49	i 4 44	+ 3	8 19	− 9	11·1	12·0
Ravensburg		21·4	53	i 4 44	0	i 8 42	+ 8	i 10·1	—
Stuttgart		21·4	50	i 4 45	+ 1	i 8 36	+ 2	i 10·0	16·9
Prato		21·4	64	i 4 48	+ 4	—	—	(8·9)	14·1
Florence		21·5	64	i 4 49	+ 4	8 49	+13	—	—
Dyce		21·9	20	i 4 53	+ 3	8 58	+14	—	—
Padova		22·2	60	i 4 54	+ 1	e 8 54	+ 4	—	—
Rome		22·2	70	i 4 55	+ 2	9 6	+16	e 11·1	—
Innsbruck		22·3	55	4 52	− 2	8 52	0	—	13·0
Treviso		22·4	60	i 4 58	+ 3	i 9 8	+15	—	16·4
Venice		22·5	60	i 5 2	+ 6	i 9 22?	SS	—	—
Camerino		22·7	67	5 4	+ 6	—	—	—	—
Dakar		22·8	356	e 4 58	− 1	i 9 7	+ 6	10·4	16·6
Göttingen		23·1	44	i 5 2	0	i 9 15	+ 8	—	12·3
Collurania		23·2	68	5 2	− 1	9 15	+ 7	—	—
Casamicciola		23·3	73	4 51	−13	8 17	−53	11·3	—
Triest		23·5	60	i 5 6	+ 1	i 9 16	+ 2	i 9·6	17·3
Naples		23·5	72	i 5 1	− 4	e 9 21	+ 7	14·1	16·1
Jena		23·7	47	i 5 8	+ 1	i 9 22	+ 4	e 10·3	17·1
Cheb		23·9	49	i 5 9	0	i 9 44	+23	i 12·1	13·0
Hamburg		24·1	40	i 5 12	+ 1	i 9 38	+13	e 12·0	19·1
Laibach		24·1	60	e 5 12	+ 1	e 9 29	+ 4	—	12·8
Mineo		24·2	81	4 47	−25	9 39	+12	—	—
Catania		24·5	80	5 16	+ 1	9 52	+20	13·4	19·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Messina		24·8	79	5 15	− 3	9 58	+21	—	—
Graz		25·0	57	i 5 18	− 2	i 9 43	+ 2	e 10·1	16·6
Potsdam		25·1	44	i 5 21	0	i 9 49	+ 6	e 11·8	18·6
Prague		25·1	50	i 4 42	−39	9 6	−37	e 10·1	14·6
Zagreb		25·1	60	i 5 22	+ 1	i 9 38	− 5	i 12·3	14·6
Trenta		25·3	76	i 5 22	− 1	9 34	−12	11·9	—
Bari		25·5	71	5 27	+ 2	7 41	?	10·1	—
Vienna		25·8	55	e 5 25	− 2	10 1?	+ 6	—	19·1
Taranto		25·9	73	i 5 30	+ 2	i 10 18	+21	16·3	24·3
Copenhagen		26·4	37	i 5 32	− 1	i 10 5	0	12·1	—
Reykjavik		27·0	354	5 45	+ 7	10 23	+ 8	12·4	—
Budapest		27·4	57	5 42	0	9 24	PcP	13·6	16·1
Belgrade		28·1	63	5 48	0	9 28	PcP	—	19·8
Königsberg	N.	30·2	43	e 6 11	+ 4	i 10 39	−22	—	16·1
Upsala		30·9	33	i 6 11	− 2	i 11 7	−11	14·1	17·3
Lemberg	E.	31·0	54	e 6 17	+ 3	e 11 11	− 9	17·2	24·9
	N.	31·0	54	e 6 49	+35	e 10 59	−21	13·2	20·6
Ivigtut		31·2	330	6 12	− 4	11 16	− 7	—	—
Scoresby Sund		33·3	355	6 34	0	i 11 54	− 1	—	—
Helsingfors		34·4	36	i 6 41	− 3	i 12 1	−11	14·1	—
Pulkovo		36·7	38	i 7 2	− 2	i 12 44	− 3	15·1	22·0
Simferopol		37·8	61	7 13	0	13 6	+ 3	15·6	21·9
Yalta		37·9	61	7 14	0	13 5	0	20·1	21·8
Theodosia		38·7	60	7 24	+ 3	13 18	+ 1	22·1	28·4
Helwan		39·6	88	i 7 29	0	i 13 38	+ 8	—	29·6
Ksara		41·7	79	7 47	+ 1	—	—	17·5	21·3
Harvard		41·9	295	i 7 43	− 5	i 13 56	− 9	e 18·1	—
Ottawa		44·5	300	e 8 10	+ 1	e 14 41	− 2	e 19·1	—
Fordham		44·6	293	e 8 6	− 4	i 14 35	− 9	—	—
Georgetown	Z.	47·2	291	i 8 30	0	i 15 22	+ 1	e 22·1	—
Buffalo		47·3	297	i 8 26	− 5	i 15 16	− 7	e 32·0?	—
Toronto		47·5	299	i 8 29	− 3	e 15 18	− 8	e 22·7	—
San Juan		47·6	264	i 8 29	− 4	i 15 25	− 2	18·9	—
Charlottesville		48·5	291	8 46	+ 6	15 28	−12	e 23·3	—
Pittsburgh		48·8	295	i 8 37	− 5	i 15 38	− 6	e 20·6	—
Baku		50·1	65	i 8 58	+ 6	i 16 13	+11	—	—
Ann Arbor		50·9	299	i 7 58	−60	i 15 16	−57	e 23·8	—
Columbia		51·9	287	9 16	+10	16 34	+ 7	e 21·9	—
Port au Prince		52·4	267	e 9 30	+21	e 16 33	− 1	e 23·6	—
Ekaterinburg		52·5	42	i 9 9	− 1	i 16 36	+ 1	27·1	—
Chicago		53·8	299	i 8 54	−26	i 16 28	−25	24·5	—
St. Louis		56·8	298	e 9 39	− 3	17 29	− 5	e 23·2	29·1
Florissant		56·9	298	i 9 39	− 3	i 17 29	− 6	i 24·4	29·1
Little Rock		60·1	292	e 10 2	− 3	e 18 8	− 9	e 23·0	30·2
Samarkand		62·4	59	10 30	+ 9	18 54	+ 7	34·1	—
Tashkent		63·2	57	i 10 28	+ 1	i 18 48	− 9	—	37·1
Andijan		65·6	57	e 10 44	+ 2	e 19 26	− 1	36·1	—
Denver		66·6	303	e 10 38	−11	i 19 31	− 9	e 26·7	31·1
Almata		67·2	52	i 10 57	+ 4	i 20 0	PS	i 35·7	41·6
Sitka		72·7	330	—	—	20 52	− 1	29·6	—
Victoria		72·8	320	11 30	+ 2	20 50	− 4	34·0	39·4
La Paz		72·9	233	i 11 27	− 1	i 20 56	0	36·1	41·1
Tucson		74·5	300	11 38	+ 1	21 12	− 2	35·2	—
Dehra Dun		74·9	63	11 14	−26	20 44	−35	36·9	43·1
Irkutsk		76·4	33	11 46	− 2	21 27	− 9	35·1	49·5
Agra	E.	76·8	65	e 10 40	−70	i 20 30	−71	i 39·7	50·1
Haiwee	N.	77·1	307	e 11 49	− 4	—	—	—	—
Bombay		77·7	76	11 56	0	21 48	− 3	41·1	49·1
Riverside		77·9	306	e 11 57	0	—	—	—	—
Cape Town		78·2	150	12 18	+20	22 34	PS	45·9	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Mount Wilson		78·3	306	e 12 3	+ 4	—	—	—	—
Pasadena		78·4	306	e 11 56	− 3	e 22 8	+10	e 35·3	—
La Jolla	E.	78·4	305	e 12 17	+18	—	—	—	—
Lick	E.	78·6	310	e 12 0	0	e 22 30	PS	e 37·5	—
	N.	78·6	310	e 11 57	− 3	e 22 14	+14	—	—
Berkeley	E.	78·7	310	i 12 5	+ 4	e 22 26	PS	e 34·2	46·8
	N.	78·7	310	i 12 8	+ 7	i 22 16	+14	i 36·4	—
Santa Barbara		79·2	307	e 12 17	+13	—	—	—	—
Tananarive	E.	82·0	120	e 12 29	+11	22 35	− 2	40·5	43·3
Hyderabad		82·9	74	12 17	− 6	22 33	−13	41·8	51·6
Kodaikanal		86·4	80	23 52	S	(23 52)	PS	e 45·6	53·6
Calcutta		87·0	64	12 40	− 3	23 3	[−10]	47·5	56·4
Santiago		87·2	224	e 12 49	+ 5	23 32	+ 3	43·8	—
Colombo		90·3	82	12 55	− 4	24 0	+ 1	47·0	56·8
Chiufeng	E.	91·0	35	e 13 38	+36	24 3	− 2	—	49·6
Vladivostok		94·4	24	e 13 14	− 4	23 44	[−14]	46·3	54·4
Akita		99·8	19	19 4	?	—	—	—	—
Phu-Lien		100·6	55	e 16 51	?	—	—	33·1	—
Mizusawa	E.	100·6	19	(13 10)	−36	(25 52)	+20	50·1	—
	N.	100·6	19	(13 46)	0	(26 22)	PS	50·4	—
Zi-ka-wei		100·7	36	e 13 48	+ 1	24 30	[+ 1]	49·7	55·9
Hukuoka		102·5	29	e 18 40	?	e 32 3	SS	e 47·1	59·4
Nagasaki		102·9	30	e 18 7	PP	e 32 33?	SS	e 48·3	—
Kobe		103·1	25	e 18 59	?	32 43	SS	e 48·3	68·7
Nagoya		103·2	23	e 18 9	PP	—	—	e 49·2	—
Osaka		103·2	25	17? 8	?	29 40	?	48·5	65·0
Sumoto		103·3	25	e 18 4	PP	—	—	e 42·2	69·8
Tokyo		103·6	21	19 0	?	—	—	—	—
Koti		103·6	26	e 18 4?	PP	e 25 36	{+16}	e 49·3	55·7
Hong Kong		104·1	48	18 12?	PP	24 29?	[−16]	52·1	59·7
Taihoku		105·9	40	i 42 34	?	51 39	?	58·5	—
Medan		107·0	72	e 18 1	[− 7]	i 26 36	?	46·3	64·1
Honolulu T.H.		111·2	323	e 28 40	PS	34 26	SS	e 54·5	—
Manila		114·1	47	e 18 28	[− 2]	i 19 25	PP	55·1	61·3
Batavia		119·5	75	e 10 49	?	—	—	67·1	72·1
Amboina		133·0	52	i 19 41	[+29]	(48 4)	?	e 69·1	—
Perth		140·4	98	22 54	PKS	—	—	57·9	—
Adelaide		159·4	91	—	—	e 29 37	?	55·5?	90·2
Melbourne		164·9	97	i 21 39	{+33}	—	—	77·1	—
Riverview		168·9	75	—	—	e 25 22	PP	53·1	102·6
Arapuni		170·8	261	—	—	e 37 4?	?	97·1	100·1
Wellington		170·8	241	i 20 16	[+12]	—	—	96·1	103·1

Additional readings and notes :—
Serra do Pilar (Δ =6°·8 Az. =56°) gives 2h.30m.
Toledo iP = +2m.12s., i = +2m.37s., PP = +2m.48s., PPP = +3m.8s., PPPS = +3m.21s.
Granada i = +2m.27s., +2m.30s., +2m.47s., +2m.52s., +2m.56s., +3m.1s., +3m.5s., +3m.17s., +3m.29s., +3m.45s., +3m.54s., +4m.0s., and +4m.2s., SS = +4m.46s.
Almeria i = +2m.47s., +2m.55s., +3m.9s., +3m.13s., +3m.36s., +4m.4s., and +4m.26s.
Marseilles PP = +4m.20s.
Kew iN = +4m.58s., i = +6m.56s., iN = +7m.6s., iSN = +7m.16s., iE = +7m.26s. iZ = +7m.39s.
Uccle i = +7m.47s.
Durham PP = +4m.50s.
Pavia +5m.46s.
Chur iP = +4m.48s.
Ravensburg P_2 = +4m.52s., iPP_2 = +5m.22s.
Stuttgart iP_2 = +4m.52s., iPP_2 = +5m.14s., e = +7m.9s., iS_2 = +8m.43s., iSS_2 = +9m.33s.
Innsbruck PP = +5m.20s., PPP? = +5m.35s., SSS? = +9m.52s.
Göttingen P = +5m.16s., iPP = +5m.22s., iPPP = +5m.37s., i = +9m.10s.
Triest PP = +5m.32s., PPP = +5m.50s., SS = +10m.16s., SSS = +10m.28s., P_cS = +12m.8s.

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Jena iEZ = +5m.40s., iN = +5m.44s., iZ = +6m.4s., iEN = +6m.11s., iSZ = +9m.28s.
Laibach e = +5m.42s., +6m.27s., +6m.59s., +7m.28s., and +8m.25s.
Graz iPP = +5m.48s., iPPP = +6m.8s., P_cP = +8m.54s., SSS = +10m.56s., P_cS = +12m.35s.
Potsdam iPPEN = +5m.45s., iPPPEN = +6m.3s., iE = +11m.5s., iSSEN = +11m.27s.
Zagreb i = +5m.29s., iPP = +5m.59s., iPPP = +6m.22s., iPPPP = +6m.56s., i = +7m.42s. and +8m.50s. = P_cP − 5s., iP_cP = +9m.18s., iPS = +9m.48s., iSS = +10m.48s., iSSS = +11m.20s., iSSSS = +11m.50s.
Vienna iP = +5m.29s., PP = +5m.58s., PPP = +6m.19s., P_cP = +7m.48s., P_cS = +11m.46s., SSS = +13m.51s.
Copenhagen i = +6m.1s. = PP − 8s.
Reykjavik e = +5m.51s. and +5m.57s., PPP = +6m.33s., SS = +11m.32s., SSS = +11m.57s.
Belgrade e = +6m.21s. = PP − 11s., +6m.46s., ePPP = +6m.50s., e = +7m.45s., eSE = +9m.57s.
Königsberg eN = +6m.30s., ePPN = +6m.47s., ePPPN = +7m.14s., eP_cPN = +8m.51s., eN = +9m.23s., +9m.45s., and +11m.34s., eSS = +12m.20s., iN = +12m.52s.; T_o = 2h.23m.0s.
Upsala iPP = +6m.57s., iSS = +12m.40s.
Ivigtut eSN = +10m.57s.
Scoresby Sund iNZ = +6m.37s., eNZ = +7m.28s., and +7m.46s., eE = +7m.54s., eN = +12m.3s., iE = +12m.53s.
Helsingfors iE = +7m.10s., iPPEN = +7m.35s., iPPZ = +7m.40s., iPPPNZ = +8m.11s., iEN = +8m.25s., iZ = +8m.40s., iP_cPN = +8m.46s., iP_cPE = +9m.3s., iN = +9m.18s., iE = +9m.42s., iN = +10m.15s., iZ = +10m.30s., iN = +10m.58s., iE = +11m.27s., iZ = +11m.49s., iSN = +12m.4s., iZ = +12m.19s., iN = +13m.21s., iE = +13m.46s.
Helwan PP = +9m.4s., SS = +16m.34s.
Ksara eEN = +8m.11s., PPEN = +8m.46s., PPPEN = +9m.17s., PPPPEN = +9m.30s., PSEN = +13m.17s.
Harvard iN = +17m.8s.; T_o = 2h.22m.48s.
Ottawa eN = +10m.59s., eSSS? = +17m.56s.; T_o = 2h.22m.52s.
Fordham iPPZ = +9m.49s., iSSN = +17m.52s., iSSSN = +18m.56s.
Georgetown iPPZ = +10m.26s.
Buffalo iPP = +10m.18s.
Toronto iPPE = +10m.18s., eN = +11m.57s., iSSN = +18m.29s.
Charlottesville ePP = +10m.28s., eSS = +18m.34s.; T_o = 2h.22m.51s.
Baku PP = +11m.1s.
Ann Arbor ePP = +10m.4s., ePPP = +10m.46s., eSS = +18m.34s.
Columbia eSS = +20m.16s.
Port au Prince i = +9m.48s., PP = +11m.50s.
Ekaterinburg iPP = +11m.10s.
Chicago SS = +20m.17s.
St. Louis iE = +11m.48s. = PP + 6s.
Florissant iZ = +10m.24s., iEZ = +11m.19s., iSN = +17m.33s., iN = +23m.30s., and +24m.8s.
Denver eN = +19m.16s.
Victoria PN = +11m.20s.
La Paz PPE = +14m.11s., PPPN = +15m.51s., iSN = +20m.47s., PSEN = +21m.32s., SSE = +25m.23s., SSSN = +28m.57s., SSSE = +29m.1s.
Pasadena eEN = +12m.3s., eZ = +15m.1s. and +17m.1s.
Berkeley ePN = +12m.11s., eN = +12m.50s., eE = +20m.5s., +21m.21s., +23m.59s., and +27m.8s.
Tananarive eP_cPN = +12m.33s., PPE = +15m.23s., eN = +16m.23s., SKKSN = +22m.57s., N = +26m.50s., eSSE = +28m.56s., SSSSN = +34m.5s.
Mizusawa P and S have been *decreased* by 10m.
Zi-ka-wei iPZ = +17m.52s. = PP + 4s., +20m.6s., and iZ = +27m.42s.
Kobe eE = +41m.50s.
Koti eE = +42m.16s.
Hong Kong PS = +27m.50s., +28m.33s., +33m.17s. = SS + 19s., and +37m.13s.
Medan i = +29m.33s.
Perth P = +23m.4s., SS = +40m.54s.
Adelaide e = +38m.54s., i = +50m.19s.
Melbourne i = +25m.34s., e = +31m.12s., and +33m.4s. ?, i = +47m.19s. and and +52m.52s.
Arapuni SSS = +54m.4s. ?
Wellington PP = +25m.24s., PPP = +30m.4s., SSS = +53m.19s.
Long waves were also recorded at La Plata, Sydney, Toyooka, and Tyosi.

May 20d. 5h. 10m. 6s. Epicentre 25°·4N. 96°·8E. (as on April 7d.). X.

A = −·107, B = +·897, C = +·429; D = +·993, E = +·118;
G = −·051, H = +·426, K = −·903.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		8·2	251	1 32	−24	3 33	+ 4	4·1	5·6
Hong Kong		16·2	97	—	—	8 46	?	9·7	10·0
Agra	E.	16·9	280	e 4 24	+31	—	—	—	—
Medan		21·9	175	i 4 50	0	11 53	L	(11·9)	—
Zi-ka-wei	Z.	22·4	69	e 4 56	+ 1	9 10	SS	—	14·3
Bombay		23·1	258	5 2	0	9 15	+ 8	11·9	17·4
Almata		24·1	323	e 5 5	− 6	9 35	+10	—	—
Andijan		25·4	313	e 5 26	+ 2	—	—	—	—
Tashkent		27·8	312	i 5 48	+ 3	i 11 0	+32	i 16·1	20·6
Samarkand		28·7	307	e 6 0	+ 7	—	—	—	—
Ekaterinburg		40·7	330	i 7 34	− 4	—	—	—	—

Long waves were also recorded at Phu-Lien, Vladivostok, and Batavia.

May 20d. 21h. 53m. 58s. Epicentre 27°·7S. 71°·5W. N.2.

A = +·281, B = −·840, C = −·465; D = −·948, E = −·317;
G = −·147, H = +·441, K = −·885.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		5·8	173	1 46	P*	2 41	S*	2·9	3·2
La Paz		11·6	16	i 3 4	+21	i 5 32	+39	6·3	7·4
La Plata		13·6	125	3 10	0	5 42	+ 1	6·7	—
San Juan		46·4	8	i 8 25	+ 1	i 15 14	+ 4	e 23·0	—
Little Rock		65·6	341	e 10 43	+ 1	e 19 27	0	—	—
Georgetown	Z.	66·8	356	i 10 51	0	19 51	+ 9	e 32·0	—
Dakar		67·4	58	e 19 57	S	(e 19 57)	+ 7	—	—
St. Louis		68·6	345	i 11 1	− 1	e 20 2	− 2	—	—
Pittsburgh		68·6	354	i 10 1	−61	e 19 14	−50	e 27·5	—
Fordham		68·6	359	i 11 4	+ 2	e 20 8	+ 4	e 33·0?	—
Florissant		68·7	345	i 11 2	− 1	e 20 0	− 5	—	—
Chicago		69·8	349	—	—	e 20 2	−17	—	—
Tucson		70·7	325	11 15	0	20 29	− 1	e 34·0	—
Buffalo		71·0	355	i 11 18	+ 1	e 20 18	−15	—	—
Toronto		71·7	355	i 11 21	0	i 20 43	+ 2	34·4	—
Ottawa	N.	73·2	357	e 11 32	+ 2	e 20 59	0	e 31·0	—
La Jolla	N.	74·6	322	e 11 34	− 4	—	—	—	—
Riverside		75·5	323	e 11 40	− 3	—	—	—	—
Mount Wilson		76·0	322	e 11 46	0	—	—	—	—
Pasadena		76·0	323	e 11 44	− 2	e 21 29	− 3	—	—
Haiwee	N.	77·4	323	e 11 55	+ 1	—	—	—	—
Lick	N.	80·3	322	e 12 9	0	e 22 19	0	—	—
Berkeley		81·0	322	e 12 14	+ 1	i 22 23	− 3	e 39·3	—
Victoria		89·1	330	13 6	+13	23 39	− 8	45·3	56·0
Granada		90·9	48	e 12 26	−36	—	—	—	—
Toledo		92·1	46	13 9	+ 2	e 23 47	[+ 2]	—	—
Kew		100·7	37	e 18 38	?	e 24 32	[+ 3]	47·0	—
Paris		100·9	40	(e 18 2?)	PP	—	—	e 18·0	60·0
Edinburgh		101·6	32	—	—	e 24 38	[+ 5]	—	—
Piacenza		103·6	45	—	—	e 30 38?	?	—	70·5
Strasbourg		103·8	41	(i 18 2?)	PP	—	—	e 18·0	—
De Bilt		104·0	38	e 18 22	PP	e 24 50	[+ 5]	e 51·0	59·3
Rome		104·0	50	—	—	e 31 54	?	—	—
Scoresby Sund		104·2	15	—	—	24 2?	[−44]	—	—
Stuttgart		104·7	41	e 14 14	+ 9	e 26 12	+ 4	e 50·0	63·1
Feldberg		105·0	40	—	—	e 24 47	[− 3]	e 51·6	62·9
Cheb		107·2	42	—	—	e 25 2	[+ 2]	e 50·0	62·0
Copenhagen		109·2	36	19 2	PP	25 8	[− 2]	54·0	—
Helsingfors	E.	116·9	34	—	—	e 25 33	[− 7]	e 62·0	—
Pulkovo		119·5	34	e 20 15	PP	30 5	PS	56·0	72·9

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kucino		123·3	40	20 42	PP	26 2	[+ 2]	e 54·0	69·4
Baku		130·7	59	i 19 15	[+ 7]	—	—	58·0	70·0
Ekaterinburg		135·6	36	i 19 17	[+ 1]	—	—	59·0	—
Tashkent		145·3	55	i 21 40	?	—	—	e 66·0	79·5
Colombo		145·8	121	19 38	[+ 3]	—	—	—	81·1
Bombay		146·2	95	19 42	[+ 6]	—	—	—	—
Andijan		147·7	55	e 19 44	[+ 6]	—	—	—	—
Almata		150·2	50	e 19 58	[+16]	—	—	—	—
Mizusawa		150·7	301	18 56	[−47]	19 51	P_2'	—	—
Irkutsk		155·2	6	i 19 52	[+ 4]	—	—	e 78·0	101·0
Vladivostok		155·6	315	i 19 47	[− 2]	—	—	—	—
Manila		162·5	224	i 19 51	[− 5]	—	—	—	—
Zi-ka-wei	z.	168·2	290	i 20 2	[0]	25 0	PP	—	—
Hong Kong		172·6	225	20 22	[+17]	—	—	—	—

Additional readings :—
San Juan iPP = +10m.17s., iSS = +18m.50s.
Fordham ePS = +20m.32s.
Florissant e = +24m.33s. =SS +10s.
Berkeley iSSE = +27m.59s.
Victoria SE = +23m.55s.
Granada i = +16m.53s. =PP +20s., and +25m.22s.
Florence (△ =103°·9) gives eP =21h.45m.30s.
Stuttgart ePP = +18m.27s., ePPP = +21m.20s., eSKS = +24m.48s., ePS = +27m.50s., ePPS = +28m.44s., eSS = +33m.26s.
Feldberg e = +33m.20s. =SS +9s.
Helsingfors ePPSE = +30m.25s., eE = +43m.19s.
Pulkovo PPP = +25m.39s., PS = +31m.7s., PPS = +34m.19s.
Kucino SS = +37m.50s.
Baku iPKS = +22m.41s., PS = +31m.53s.
Ekaterinburg PP = +21m.57s., PKS = +22m.49s., SS = +40m.2s.
Tashkent i = +22m.1s., e = +58m.2s.?
Irkutsk ePP = +23m.53s., e = +31m.44s.
Vladivostok i = +20m.14s., ePP = +23m.50s.
Zi-ka-wei iZ = +21m.10s. =P'_2 −11s.
Long waves were also recorded at Wellington, Stonyhurst, and Uccle.

May 20d. Readings also at 0h. (Ekaterinburg, Tashkent, Pasadena, Haiwee, and near Tyosi), 2h. (Yalta), 3h. (La Paz), 5h. (near Sumoto), 6h. (near Tyosi), 8h. (near Belgrade and Zagreb), 10h. (Ekaterinburg, Kucino, Haiwee, and Pasadena), 13h. (Takaka and near Wellington), 15h. (Ekaterinburg, Tashkent, near Almata, Andijan, and Samarkand), 16h. (near Amboina), 17h. (La Paz and near Sumoto), 18h. (Andijan and near Amboina), 19h. (Ekaterinburg, Tashkent, and Andijan), 20h. (near Sumoto), 21h. (Baku, Ekaterinburg, and Tashkent), 22h. (Florissant and Little Rock), 23h. (Kodaikanal).

May 21d. Readings at 0h. (near Andijan), 1h. (Paris), 4h. (Samarkand, near Almata, Andijan, near Hastings, and Wellington), 6h. (near Andijan and Samarkand), 7h. and 9h. (Tyosi), 11h. (near Manila and near Mizusawa), 12h. (Baku, Ekaterinburg, Irkutsk, Kucino, Pulkovo, Andijan, Almata, Samarkand, Theodosia and Helsingfors), 13h. (Feldberg, Pulkovo, Kucino, Ekaterinburg, Ksara, and near Baku), 15h. (Helsingfors), 17h. (Dakar), 18h. (near Santiago), 19h. (near Samarkand).

May 22d. 7h. 19m. 6s. Epicentre 47°·2N. 11°·3E. (as on 1931 March 23d.). R.3.
A = +·666, B = +·133, C = +·734.

	△	P.	O−C.	S.	O−C.
	°	m. s.	s.	m. s.	s.
Chur	1·3	e 0 17	− 1	i 0 34	+ 1
Ravensburg	1·3	e 0 18	0	i 0 31	− 2
Zurich	1·9	e 0 17	−11	e 0 38	−11
Hohenheim	2·0	e 0 29	0	i 0 52	+ 1
Stuttgart	2·1	e 0 30	0	i 0 54	0
Strasbourg	2·7	—	—	e 1 11	+ 2
Neuchatel	3·0	e 0 47	+ 4	e 1 26	S*

Additional readings :—
Chur iP_g = +19s.
Hohenheim e = +49s.
Strasbourg S_g = +1m.17s. =S*, SS = +1m.51s.
Neuchatel eP_g = +50s.

May 22d. Readings also at 0h. (Irkutsk and Perth), 1h. (Baku, Ekaterinburg (2), Irkutsk, Kucino, Vladivostok, Scoresby Sund, and Pittsburgh), 2h. (Baku and Tashkent), 5h. (near Manila), 6h. (near Sumoto), 7h. (Baku, Ekaterinburg, Irkutsk, Vladivostok, and Tashkent), 8h. (Cheb, De Bilt, Feldberg, Paris, Strasbourg, Königsberg, Copenhagen, Hamburg, Helsingfors, Kucino, Pulkovo, Almata, and Scoresby Sund), 12h. (near Andijan), 17h. (near Manila), 18h. (Ekaterinburg and Tashkent), 19h. (near Berkeley), 20h. (Scoresby Sund and near Berkeley), 21h. (Messina and La Paz), 23h. (Baku, Ekaterinburg, Tashkent, La Paz, and near Nagasaki).

May 23d. Readings at 0h. (Perth, Berkeley, Ekaterinburg, Irkutsk, and Tashkent), 3h. (De Bilt, Scoresby Sund, Ottawa, Harvard, Buffalo, Georgetown, La Paz, Port au Prince, and near San Juan), 4h. (near Tananarive), 6h. (Irkutsk, Tashkent, Manila, Phu-Lien, Zi-ka-wei, and near Hong Kong), 8h. (Andijan and Samarkand), 12h. (San Fernando), 19h. (Hastings and near Wellington), 20h. (Sumoto), 21h. (near Calcutta), 23h. (Andijan, near Almata, and La Paz).

May 24d. 0h. 13m. 7s. Epicentre 9°·9N. 125°·7E. N.2.

$A = -\cdot 575$, $B = +\cdot 800$, $C = +\cdot 172$; $D = +\cdot 812$, $E = +\cdot 584$; $G = -\cdot 100$, $H = +\cdot 140$, $K = -\cdot 985$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	6·6	316	1 32	− 2	2 48	0	—	—
Amboina	13·8	170	e 3 20	+ 7	—	—	—	—
Hong Kong	16·6	320	3 46	− 3	6 56	+ 4	8·4	9·4
Phu-Lien	21·4	303	4 42	− 2	8 33	− 1	8·9	—
Zi-ka-wei	21·7	350	4 46	− 2	8 42	+ 2	11·9	—
Miyazaki	22·7	13	4 58	0	9 4	+ 5	—	—
Nagasaki	23·2	9	5 3	0	9 14	+ 6	—	—
Koti	24·7	16	5 19	+ 2	e 9 35	− 1	—	—
Batavia	24·8	230	5 20	+ 2	i 9 50	+13	—	—
Sumoto	25·8	18	5 30	+ 3	e 9 58	+ 3	—	10·6
Kobe	26·2	18	5 32	+ 1	e 10 15	+13	e 14·0	16·3
Osaka	26·4	19	5 29	− 4	(10 19)	+14	10·3	11·5
Medan	27·5	259	5 46	+ 3	i 9 56	+32	—	—
Vladivostok	33·6	9	—	—	e 11 53?	− 7	—	—
Calcutta	37·9	295	9 21	+ 7	13 7	+ 2	16·0	—
Irkutsk	45·8	342	8 18	− 1	e 14 56	− 6	22·9	27·6
Hyderabad	46·4	285	8 26	+ 2	15 8	− 2	23·3	31·4
Melbourne	51·0	160	—	—	i 16 31	+16	27·6	31·1
Bombay	51·8	287	9 5	0	16 28	+ 3	26·7	—
Almata	53·8	317	e 9 27	+ 7	—	—	27·9	—
Andijan	56·1	314	9 34	− 3	e 17 19	− 5	30·9	—
Tashkent	58·5	314	i 9 54	0	i 17 40	−16	e 28·9	33·9
Ekaterinburg	68·2	328	i 10 53	− 6	i 19 50	− 9	27·9	37·6
Baku	72·9	310	e 11 35	+ 7	e 20 58	+ 2	34·9	45·6
Kucino	80·6	325	e 12 8	− 3	e 22 7	−15	38·2	45·4
Pulkovo	84·2	330	e 12 27	− 2	22 47	−13	35·9	48·1
Helsingfors	86·7	330	e 12 37	− 5	e 23 30	+ 6	e 41·9	—
Copenhagen	94·4	329	—	—	22 53?	?	46·9	—
Scoresby Sund	96·6	350	17 53	PP	24 9	[0]	42·9	—
Cheb	96·8	324	—	—	e 24 53?	− 5	e 50·9	60·9
Feldberg	99·0	325	—	—	e 25 10	− 8	e 48·3	54·5
Stuttgart	99·2	325	—	—	e 25 11	− 8	e 50·9	—
De Bilt	99·9	328	e 18 53	?	e 24 53	{+ 1}	e 46·9	53·8
Florence	100·1	318	e 21 46	?	i 24 31	[+ 5]	—	54·6
Kew	103·1	330	—	—	e 24 53?	[+12]	e 48·9	57·3
Granada	113·2	318	i 21 18	?	—	—	1 57·6	61·6
Ottawa	121·4	16	—	—	e 36 59	SS	59·9	—

For Notes see next page.

NOTES TO MAY 24d. 0h 13m. 7s..

Additional readings :—
Zi-ka-wei iN = +5m.14s. =PP +8s., PPPZ = +5m.22s., SSZ? = +9m.40s.
Kobe eSN = +10m.22s.
Medan i = +10m.19s. and +19m.10s.
Hyderabad SS = +18m.41s.
Helsingfors SKSN = +23m.0s., eSN = +23m.12s., ePSE = +24m.3s., ePPS = +24m.24s., eE = +25m.1s., eN = +30m.12s., eSSSE = +33m.3s.
Feldberg e = +36m.12s.
Stuttgart eN = +32m.5s. =SS +14s., eE = +33m.41s.
Florence S = +27m.21s.
Long waves were also recorded at Colombo, Kodaikanal, and European stations.

May 24d. 20h. 4m. 32s. Epicentre 47°·2N. 11°·3E. (as on 22d.). R.3.

		Δ	P.	O−C.	S.	O−C.	M.
		°	m. s.	s.	m. s.	s.	m.
Chur		1·3	e 0 18	0	i 0 33	0	—
Ravensburg		1·3	e 0 18	0	i 0 33	0	—
Zurich		1·9	e 0 28	0	e 0 48	− 1	—
Hohenheim		2·0	e 0 32	+ 3	i 0 55	+ 4	—
Stuttgart		2·1	e 0 33	+ 3	i 0 56	+ 2	—
Karlsruhe		2·6	1 15	S*	—	—	—
Neuchatel		3·0	e 0 45	+ 2	e 1 23	+ 6	—
Göttingen	N.	4·4	e 1 4	+ 1	—	—	2·3

Additional readings :—
Chur e = +22s. =P*.
Ravensburg i = +37s. =S*.
Hohenheim e = +51s.
Neuchatel e = +49s.

May 24d. 21h. 22m. 5s. Epicentre 8°·0S. 122°·0E. (as on 1929 Sept. 1d.). X.

A = −·525, B = +·840, C = −·139 ; D = +·848, E = +·530 ;
G = +·074, H = −·118, K = −·990.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	7·5	55	i 1 41	− 5	—	—	15·1	—
Batavia	15·2	276	3 43	+12	—	—	—	—
Manila	22·6	357	4 57	0	i 9 39	SS	—	—
Perth	24·6	193	—	—	9 15	−19	17·4	—
Adelaide	31·0	152	e 11 15?	S	(e 11 15?)	− 5	14·9	14·9
Melbourne	36·3	148	e 6 25	−35	i 12 0	−41	20·7	23·4
Riverview	37·3	139	—	—	e 11 55	−61	i 19·8	—
Irkutsk	62·2	349	e 10 12	− 8	e 17 55	−50	e 29·9	—
Almata	65·5	325	e 10 45	+ 3	e 19 26	0	—	—
Andijan	66·7	320	e 10 50	0	e 19 37	− 4	—	—
Tashkent	69·0	320	10 59	− 6	e 20 4	− 5	e 35·9	41·4
Samarkand	69·6	317	e 11 15	+ 7	e 20 23	+ 7	—	—
Copenhagen	107·6	325	18 43	PP	—	—	—	—
Scoresby Sund	113·5	346	19 55	PP	29 1	PS	—	—

Additional readings :—
Perth PP = +3m.25s., S = +8m.55s. =P_cP +1s.
Adelaide i = +13m.1s. =SSS −4s., iS = +14m.18s.
Melbourne i = +17m.5s. =S_cS −15s.
Irkutsk e = +11m.55s. ? =P_cP +53s.
Long waves were also recorded at Hong Kong, Wellington, and De Bilt.

May 24d. Readings also at 3h. (near Tyosi), 4h. (near Manila), 6h. (near Tyosi (5)), 8h. (Bombay, near Almata, and Andijan), 9h. (near Berkeley and Lick), 11h. (San Fernando), 13h. (near Mizusawa), 16h. (Sumoto), 18h. (Samarkand, near Almata, and Andijan), 19h. (Andijan and near Samarkand), 20h. (near Manila), 23h. (Andijan, Samarkand, Bergen, Kobe, and near Sumoto).

May 25d. 6h. 48m. 58s. Epicentre 38°·3N. 141°·2E. N.2.

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

A = −·612, B = +·492, C = +·620 ; D = +·627, E = +·779 ;
G = −·483, H = +·388, K = −·785.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Isinomaki	0·2	35	0 6	+ 3	0 16	S_g	—	—
Yamagata	0·7	266	0 12	+ 2	0 23	+ 5	—	—
Hukusima	0·8	227	0 12	+ 1	0 23	+ 2	—	—
Mizusawa	0·8	350	0 29	P_g	0 40	S_g	—	—
Morioka	1·4	356	0 22	+ 2	0 41	+ 5	—	—
Onahama	1·4	190	0 13	− 7	0 30	− 6	—	—
Miyako	1·5	25	0 20	− 1	0 36	− 3	—	—
Niigata	1·7	258	0 46	S	(0 46)	+ 2	—	—
Akita	1·7	328	0 25	+ 1	0 46	+ 2	—	—
Mito	2·0	197	0 27	− 2	0 50	− 1	—	—
Utunomiya	2·0	211	0 29	0	0 54	+ 3	—	—
Kakioka	2·2	201	0 30	− 1	0 54	− 3	—	—
Tukubasan	2·3	203	0 30	− 3	0 50	− 9	—	—
Kumagaya	2·6	214	0 35	− 2	0 57	−10	—	—
Tyosi	2·6	186	0 36	− 1	e 1 6	− 1	—	1·4
Oiwake	2·8	227	0 40	0	1 11	− 1	—	—
Nagano	2·9	236	0 40	− 1	1 11	− 3	—	—
Tokyo	2·9	204	0 41	0	1 10	− 4	—	—
Yokohama	3·1	203	0 45	+ 1	1 20	0	—	—
Wazima	3·5	256	0 48	− 2	1 25	− 5	—	—
Mera	3·6	197	0 52	+ 1	1 27	− 5	—	—
Gihu	4·6	232	1 3	− 3	1 54	− 4	—	—
Nagoya	4·6	229	e 1 4	− 2	1 43	−15	—	2·0
Sapporo	4·8	1	1 13	+ 5	2 6	+ 3	—	—
Hikone	5·0	234	1 14	+ 3	2 5	− 3	—	—
Hatidyozima	5·3	193	1 17	+ 2	2 5	−10	—	—
Kyoto	5·5	236	1 14	− 4	2 14	− 6	—	—
Toyooka	5·8	244	i 1 20	− 2	i 2 25	− 3	—	2·4
Osaka	5·8	233	1 24	+ 2	i 2 10	−18	2·8	3·5
Kobe	6·1	235	e 1 43	+16	2 49	+13	—	2·9
Sumoto	6·4	234	1 27	− 4	2 37	− 6	—	3·1
Koti	7·8	235	—	—	3 2?	−17	—	—

Additional readings :—
Niigata S = +1m.36s.
Tyosi P_g = +45s.
Kobe iE = +1m.49s., i = +2m.29s., SN = +2m.56s.
Long waves were also recorded at Tashkent and Vladivostok.

May 25d. Readings also at 0h. (San Fernando, Andijan, and near Samarkand), 5h. (La Paz, La Plata, and near Santiago), 7h. (near Barcelona), 8h. (Stonyhurst, near Berkeley, near Koti, and Matuyama), 10h. (San Juan, near La Paz (2), near Nagoya and Tyosi), 11h. (near Kobe and Sumoto), 12h. (near Tyosi), 20h. (Tucson and Yalta), 21h. (Baku, Kucino, near Simferopol (2), Theodosia (2), and Yalta (2)), 22h. (Ekaterinburg and Tashkent), 23h. (near Sumoto).

May 26d. 9h. 11m. 54s. Epicentre 37°·4N. 141°·5E. N.2.

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

A = −·622, B = +494, C = +·607; D = +·623, E = +·783; G = −·475, H = +·378, K = −·794.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·7	226	0 7	− 3	0 15	− 3	—	—
Hukusima	0·9	293	0 13	0	0 26	+ 3	—	—
Isinomaki	1·1	352	0 16	0	0 29	+ 1	—	—
Yamagata	1·3	313	0 18	0	0 35	+ 2	—	—
Mito	1·3	219	0 19	+ 1	0 34	+ 1	—	—
Kakioka	1·6	222	0 20	− 3	0 40	− 1	—	—
Utunomiya	1·6	237	0 22	− 1	0 43	+ 2	—	—
Tyosi	1·7	197	e 0 24	0	e 0 43	− 1	—	—
Tukubasan	1·7	223	0 22	− 2	0 40	− 4	—	—
Mizusawa	1·8	350	0 25	− 1	0 46	0	—	—
Kumagaya	2·1	234	0 29	− 1	0 51	− 3	—	—
Tokyo	2·2	219	0 29	− 2	0 57	0	—	—
Morioka	2·3	353	0 33	0	1 1	+ 2	—	—
Miyako	2·3	10	0 34	+ 1	1 1	+ 2	—	—
Yokohama	2·5	217	0 35	− 1	1 4	0	—	—
Oiwake	2·6	246	0 37	0	1 14	S*	—	—
Akita	2·6	334	0 40	+ 3	1 12	+ 5	—	—
Nagano	2·8	254	0 42	+ 2	1 27	S*	—	—
Mera	2·9	209	0 41	0	1 16	+ 2	—	—
Misima	3·1	222	0 44	0	1 19	− 1	—	—
Numadu	3·1	223	0 44	0	1 20	0	—	—
Wazima	3·7	274	1 9	P*	1 52	S*	—	—
Gihu	4·3	243	1 1	0	1 54	+ 4	—	—
Nagoya	4·3	240	e 1 8	+ 7	1 54	+ 4	—	2·7
Hatidyozima	4·5	198	1 3	− 1	1 48	− 7	—	—
Hikone	4·8	244	1 9	+ 1	2 8	+ 5	—	—
Kameyama	4·8	238	1 23	P*	2 28	S*	—	—
Osaka	5·5	242	1 36	P*	(2 48)	S*	2·8	3·6
Toyooka	5·7	252	i 1 22	+ 1	i 2 29	+ 4	—	3·2
Kobe	5·8	244	e 1 24	+ 2	2 58	S*	—	4·0
Sumoto	6·2	242	1 49	P*	2 59	S*	—	3·3
Vladivostok	9·3	311	e 2 10	− 1	—	—	4·8	—
Ekaterinburg	54·0	318	e 9 20	− 1	—	—	28·1	—

Additional readings:—
Mizusawa PE = +28s.
Kobe eSE = +3m.6s.
Sumoto ePN = +1m.54s.
Long waves were also recorded at Irkutsk, Tashkent, Copenhagen, and De Bilt.

May 26d. Readings also at 0h. (Baku and San Juan), 2h. (near Balboa Heights and near Manila), 3h. (Granada), 6h. (Mizusawa), 10h. (Fordham), 12h. (Almata and Andijan), 14h. (Ekaterinburg, Pulkovo, and Zi-ka-wei), 15h. (Copenhagen, Strasbourg, De Bilt, Edinburgh, Helsingfors, Casamari, Collurania, Monte Cassino (2), near Naples and Rome), 16h. (Ottawa), 20h. (Baku and Tashkent).

May 27d. 0h. 43m. 33s. Epicentre 27°·5N. 98°·5E. N.3.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		10·0	130	2 32	+11	4 23	+10	4·4	—
Calcutta		10·4	242	3 46	+80	4 46	+23	5·2	—
Agra	N.	18·2	274	—	—	e 6 58	−31	—	—
Almata		23·5	318	e 5 8	+ 3	—	—	—	—
Manila		24·6	117	5 10	− 6	9 27	− 7	11·9	—
Bombay		25·0	255	9 31	S	(9 31)	−10	13·0	15·0
Irkutsk		25·1	8	e 5 19	− 2	e 10 9	+26	14·2	14·6
Andijan		25·2	308	e 5 26	+ 4	e 10 8	+24	—	—
Tashkent		27·6	308	e 6 10	PP	i 11 0	+35	e 14·6	16·2
Ekaterinburg		39·6	328	i 7 23	− 6	13 43	+13	20·4	—
Baku		41·8	301	—	—	e 14 5	+ 2	24·2	—
Pulkovo		55·6	325	—	—	e 17 23	+ 6	28·4	34·6

Additional readings :—
Tashkent e = +9m.36s.
Ekaterinburg e = +8m.57s. =PP +2s.
Baku e = +17m.21s.
Pulkovo e = +24m.4s.
Long waves were also recorded at Hong Kong, Hyderabad, Medan, Vladivostok, Kucino, and many European stations.

May 27d. 5h. 59m. 30s. Epicentre 52°·5N. 161°·5E. N.3.

A = −·577, B = +·193, C = +·793 ; D = +·317, E = +·948 ;
G = −·752, H = +·252, K = −·609.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok		21·8	256	—	—	e 8 59	+17	10·8	14·0
Irkutsk		34·0	295	e 6 47	+ 7	e 11 59	− 7	17·5	21·7
Ekaterinburg		53·0	319	i 9 8	− 6	—	—	28·5	35·0
Haiwee	N.	56·7	74	e 10 9	+28	—	—	—	—
Pasadena	Z.	58·0	76	e 9 45	− 5	—	—	—	—
Pulkovo		61·1	336	10 12	0	e 18 44	+14	31·5	41·2
Helsingfors	E.	62·1	339	—	—	e 18 51	+ 8	e 32·5	—
Copenhagen		68·8	344	—	—	20 13	+ 6	36·5	—
Florissant		69·5	53	e 11 19?	+11	e 20 22	+ 7	—	37·5
St. Louis	E.	69·7	53	—	—	e 20 23	+ 5	—	37·4
De Bilt		73·5	346	e 11 34	+ 2	e 21 21	+18	e 40·5	—
Harvard	N.	74·8	39	—	—	e 23 30	?	—	56·0
Georgetown	E.	75·4	45	—	—	i 21 28	+ 3	e 28·5	—
Stuttgart		76·0	343	—	—	e 21 36	+ 4	e 41·7	43·0
Feldberg		76·2	344	—	—	e 22 0	PS	e 41·8	59·3
Piacenza		79·5	340	e 4 10	?	—	—	—	30·4
Florence		80·3	340	e 12 15	+ 6	e 23 0	PS	48·5	51·0
Granada		89·3	350	—	—	i 23 51	+ 2	i 50·8	51·5

Additional readings :—
Ekaterinburg i = +9m.21s., SS = +20m.36s.
Florence e = +4m.30s., +17m.0s., S = +28m.0s.
Long waves were also recorded at Ottawa, La Plata, Adelaide, Wellington, Hong Kong, Hyderabad, Bombay, Kucino, and European stations.

May 27d. 6h. 34m. 21s. Epicentre 25°·3S. 116°·7W. (as on 10d.). R.3.

A = −·406, B = −·808, C = −·427 ; D = −·893, E = +·449 ;
G = +·192, H = +·382, K = −·904.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	E.	45·9	88	i 8 18	− 2	i 14 46	−17	18·5	24·5
Tucson		57·8	6	9 58	+ 9	—	—	e 24·4	—
Pasadena	N.	59·4	359	e 10 4	+ 4	—	—	e 27·0	—
Haiwee	N.	61·4	359	e 10 19	+ 5	—	—	—	—
Berkeley		63·4	355	—	—	e 19 9	+ 9	e 29·8	—
Little Rock	N.	64·3	22	i 11 13	(− 3)	e 18 26	−45	—	—
San Juan		65·8	53	—	—	e 26 9	?	—	—
St. Louis		68·5	22	i 10 59	− 2	e 19 39	−24	—	35·3
Florissant		68·7	21	i 10 59	− 4	i 19 40	−25	—	35·6
Georgetown	Z.	74·1	30	i 11 32	− 3	—	—	e 29·6	—
Pittsburgh		74·1	28	11 23	−12	20 34	−36	e 30·6	—
Buffalo		76·6	28	i 11 48	− 1	e 21 42	+ 4	e 30·6	—
Harvard		79·6	33	—	—	e 21 9	−62	e 32·8	—
Ottawa		79·9	28	—	—	e 21 50	−25	e 36·6	—
Ekaterinburg		148·4	3	e 19 53	[+13]	—	—	60·6	—
Simferopol		149·4	43	e 19 59	[+18]	—	—	—	—
Yalta		149·6	43	e 19 58	[+17]	—	—	—	—
Theodosia		150·1	41	e 20 1	[+19]	—	—	—	—

Additional readings :—
La Paz PPP = +10m.23s.
Ekaterinburg i = +20m.38s.
Long waves were also recorded at Honolulu T.H., Chicago, Pulkovo, and European stations.

May 27d. 10h. 21m. 2s. Epicentre 17°·5N. 102°·0W. (as on 1928 July 7d.). R.3.

A = −·198, B = −·933, C = +·301 ; D = −·978, E = +·208 ;
G = −·063, H = −·294, K = −·954.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		16·8	333	3 49	− 3	6 53	− 4	8·8	—
Little Rock	N.	19·3	25	i 4 17	− 5	e 7 56?	+ 4	—	11·8
La Jolla	E.	20·7	321	e 4 36	− 1	—	—	—	—
Riverside		21·5	323	e 4 43	− 2	e 11 10	L	(11·2)	—
Pasadena	N.	22·0	322	e 4 50	− 1	—	—	—	—
Mount Wilson		22·1	322	e 4 50	− 2	—	—	—	—
Haiwee	N.	23·4	326	e 5 10	+ 5	e 11 51	L	(11·9)	—
St. Louis		23·5	23	i 5 9	+ 4	e 9 12	− 2	e 13·3	—
Florissant		23·6	23	i 5 10	+ 4	i 9 17	+ 1	—	13·5
Lick	E.	26·3	323	e 5 33	+ 1	e 14 4	L	(e 14·1)	—
	N.	26·3	323	e 5 36	+ 4	e 14 14	L	(e 14·2)	—
Berkeley		27·1	323	—	—	i 10 31	+14	i 14·3	—
Bozeman		29·2	347	—	—	11 45	+54	e 15·2	—
Pittsburgh		29·8	35	6 40	PP	e 11 5	+ 4	e 12·0	—
Georgetown	Z.	30·4	41	e 7 7	PP	13 10	?	e 19·0	—
Buffalo		32·1	33	e 5 28	−56	e 13 18	SS	e 20·0	—
San Juan		34·1	83	—	—	e 12 16	+ 8	—	—
Ottawa		35·4	33	e 8 14	PP	—	—	e 28·0?	—
Victoria		35·4	337	—	—	13 33	?	18·8	22·2
Harvard		36·1	40	—	—	e 12 37	− 1	e 21·0	—
La Paz		47·6	135	e 9 5	+32	—	—	22·0	26·5
De Bilt		86·3	36	—	—	e 23 23	+ 3	e 47·0	—

Additional readings :—
Tucson i = +4m.40s., e = +8m.11s.
St. Louis iN = +9m.19s.
Victoria PN = +15m.5s.
Long waves were also recorded at Sitka, Chicago, European, and Russian stations.

May 27d. Readings also at 3h. (near Apia and near La Paz), 6h. (Granada), 7h. (Andijan, Edinburgh, and Barcelona), 9h. (Ekaterinburg, Irkutsk, and Vladivostok), 10h. (Florence), 11h. (Andijan, Tyosi, and near Mizusawa), 12h. (San Fernando and near Sumoto), 13h. (near Mizusawa), 17h. (Ksara, Andijan, and near Manila), 18h. (near Malabar), 20h. (Sumoto and near Nagoya), 21h. (near Tyosi), 22h. (Tucson, Almata, near Andijan, and Samarkand), 23h. (Ekaterinburg, Irkutsk, and Suva).

May 28d. 3h. 15m. 0s. Epicentre 17°·0S. 63°·0W. (as on 1927 Jan. 5d.). X.

A = +·434, B = −·852, C = −·292 ; D = −·891, E = −·454 ;
G = −·133, H = +·261, K = −·956.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	4·9	276	i 1 12	+ 2	i 2 0	− 5	2·3	2·9
San Juan	35·5	355	e 9 24	(− 3)	i 13 1	+32	25·0	—
Georgetown	57·4	348	e 9 52	+ 6	17 59	+17	e 25·0	—
St. Louis	61·2	336	e 10 11	− 2	i 18 29	− 3	—	—
Florissant	61·4	336	e 10 13	− 1	e 18 32	− 2	—	—
Ottawa	63·4	351	—	—	e 19 17	PS	—	—
De Bilt	90·7	35	—	—	e 23 45	[+ 8]	—	—
Scoresby Sund	92·0	13	—	—	24 0?	−15	—	—
Copenhagen	96·1	33	—	—	24 0?	[− 6]	—	—

Additional readings :—
San Juan e = +13m.30s., i = +13m.59s., e = +16m.30s.
St. Louis eE = +19m.19s.
Florissant eNZ = +10m.43s., eE = +19m.19s.
Long waves were recorded at La Plata.

May 28d. 18h. 34m. 16s. Epicentre 53°·0N. 160°·5E. N.2.

A = −·567, B = +·201, C = +·799 ; D = +·334, E = +·943 ;
G = −·753, H = +·267, K = −·602.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	N.	19·2	231	(4 14)	− 7	4 14	P	10·9	—
Hukusima		20·6	230	4 31	− 5	—	—	9·3	—
Nagano		22·6	233	4 56	− 1	—	—	—	—
Nagoya		24·4	232	e 5 18	+ 4	—	—	—	—
Irkutsk		33·2	293	e 6 34	0	e 12 6	+12	17·7	22·6
Zi-ka-wei	Z.	35·6	249	e 7 30	+36	16 38	(−38)	20·0	23·4
Manila		49·4	235	8 39	− 8	15 54?	+ 2	24·2?	32·2
Ekaterinburg		52·2	319	i 9 5	− 3	e 16 41	+10	28·7	33·5
Scoresby Sund		56·5	2	9 42	+ 3	17 41	+11	25·7	—
Andijan		57·5	298	e 9 46	− 1	e 18 2	+19	31·7	—
Tashkent		58·8	300	i 8 55	−61	—	—	e 30·7	35·8
Pulkovo		60·4	335	i 10 8	+ 1	18 42	+21	29·7	36·1
Samarkand		61·2	300	e 10 24	+11	—	—	—	—
Helsingfors		61·3	337	10 13	− 1	e 18 51	+18	e 31·7	—
Kucino		61·4	328	10 17	+ 3	e 18 43	+ 9	e 32·6	39·4
Upsala		63·3	340	e 10 23	− 4	e 19 15	PS	e 36·7	—
Copenhagen		68·1	342	11 0	+ 1	20 6	+ 8	37·7	—
Baku		69·2	310	e 11 5	− 1	e 20 32	PS	39·2	46·5
Florissant		69·7	52	e 11 15	+ 6	i 20 19	+ 1	—	37·6
St. Louis	E.	69·9	52	—	—	e 20 17	− 3	—	37·4
Edinburgh		70·3	351	—	—	e 19 44	−41	—	—
Hamburg		70·7	343	e 11 16	+ 1	—	—	e 38·7	—
Theodosia		71·3	324	e 11 19	0	—	—	—	—
Simferopol		71·8	324	e 11 24	+ 2	—	—	—	—
Yalta		72·2	324	e 11 24	0	—	—	—	—

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		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		72·9	345	11 29	+ 1	21 1	+ 5	e 40·7	43·4
Cheb		73·4	340	—	—	e 21 22	PS	e 40·7	44·7
Bombay		73·6	280	11 30	− 2	21 14	+10	39·8	48·4
Feldberg		74·1	343	e 11 37	+ 2	e 21 32	PS	—	45·2
Uccle		74·2	346	e 19 47	?	—	—	36·7	—
Kew		74·3	349	e 11 38	+ 2	—	—	e 45·7	—
Stuttgart		75·4	341	e 11 43	0	e 21 28	+ 3	e 40·7	52·9
Strasbourg		75·8	343	11 45	0	—	—	e 40·7	—
Paris		76·5	347	e 11 51	+ 2	—	—	46·7	—
Piacenza		78·8	340	e 12 12	+11	22 8	+ 5	—	48·2
Rome		81·2	337	e 12 34	+20	23 12	PS	—	—
Granada		88·7	349	—	—	i 23 49	+ 5	i 49·6	52·7

Additional readings :—
Mizusawa P = 18h.31m.30s., SE = +4m.17s.
Tashkent e = +16m.5s. and +16m.27s.
Helsingfors ePSE = +19m.16s., ePPSE = +19m.54s. = S_cS + 7s., eSKSEN = +20m.12s., eE = +29m.4s.
Long waves were also recorded at Chiufeng, Hong Kong, Phu-Lien, Hyderabad, Ottawa, Pittsburgh, San Juan, Ivigtut, Lund, and Königsberg.

May 28d. Readings also at 0h. (Baku, Kucino, near La Paz, and near Wellington), 1h. (Paris), 3h. (near Manila and near Tyosi), 4h. (Andijan), 5h. (Baku, Copenhagen, De Bilt, Edinburgh, Feldberg, Granada, Ivigtut, Kew, Kucino, Ottawa, Paris, Scoresby Sund, Strasbourg, Stuttgart, and Uccle), 9h. (Manila), 10h. (Baku, Ekaterinburg, and Samarkand), 14h. (Baku, Ekaterinburg, Tashkent, and near Sumoto), 15h. (Andijan and Tashkent), 16h. (Andijan, Ekaterinburg, Irkutsk, Nagasaki, Koti, Kobe, Sumoto, Osaka, Nagoya, and Mizusawa, also near La Paz ; the Japanese readings should be numerous enough to determine this epicentre, but it is not possible to find a position to fit them closely enough), 17h. (Baku, Ekaterinburg, Tashkent, Florence and Koti).

May 29d. 5h. 16m. 40s. Epicentre 63°·5N. 149°·0W. N.2.

A = −·382, B = −·230, C = +·895 ; D = −·515, E = +·857 ; G = −·767, H = −·461, K = −·446.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		9·3	128	i 2 8	− 3	i 4 15	+19	i 4·9	—
Victoria		20·6	125	4 49	+13	(8 51)	P_cP	8·8	9·0
Bozeman		27·6	112	—	—	10 58	+33	14·6	—
Haiwee	N.	33·2	131	e 6 32	− 2	—	—	—	—
Mount Wilson		35·0	134	e 6 45	− 4	—	—	—	—
Pasadena	Z.	35·0	134	e 6 45	− 4	—	—	—	—
Riverside	N.	35·4	132	e 6 48	− 5	—	—	—	—
La Jolla	E.	36·4	132	e 7 18	+17	—	—	—	—
Chicago		40·9	93	—	—	e 16 50	SSS	e 21·6	—
Scoresby Sund		41·1	26	—	—	13 58	+ 5	—	—
Florissant		42·1	98	i 7 49	0	e 14 38	+30	e 17·3	21·8
St. Louis		42·3	98	i 7 49	− 2	i 14 37	+26	e 17·4	22·5
Toronto	N.	43·1	84	—	—	e 14 48	+26	22·8	—
Ottawa		43·3	80	—	—	e 14 27	+ 2	e 21·3?	—
Little Rock	N.	44·6	102	e 7 54	−16	—	—	—	23·3
Pittsburgh		45·4	88	—	—	15 34	+38	e 22·3	—
Fordham		47·7	83	—	—	e 15 34	+ 5	e 21·3	25·8
Harvard		47·7	79	—	—	e 16 1	+32	e 22·1	25·1
Georgetown		47·9	86	8 37	+ 2	16 7	+36	e21·3	—
Pulkovo		56·7	1	i 9 44	+ 3	i 17 33	+ 1	—	—

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	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ekaterinburg	57·5	343	i 9 44	− 3	i 17 39	− 4	24·3	—
Kucino	60·6	356	e 10 7	− 2	e 18 25	+ 1	e 29·1	—
De Bilt	62·6	19	—	—	e 17 54	−56	e 62·3	—
Andijan	70·7	330	e 11 19	+ 4	—	—	—	—
Tashkent	70·9	331	e 12 23	+67	—	—	e 33·0	40·0
Samarkand	73·0	333	e 11 37	+ 8	—	—	—	—
Baku	75·0	347	e 11 39	− 1	e 21 17	− 3	38·3	—
Phu-Lien	77·7	293	—	—	24 20?	?	—	—
Bombay	91·4	322	27 44	?	—	—	—	—

Additional readings :—
Sitka iPP = +2m.31s.
Victoria PE = +5m.53s.
Haiwee eN = +6m.52s.
Pasadena eEN = +7m.6s.
Riverside eEN = +7m.7s.
Scoresby Sund +9m.38s. = P_cP −7s.
Ottawa eN = +14m.52s.
Pittsburgh SS = +18m.20s.
Fordham e = +16m.5s., +19m.20s., and +19m.50s.
Tashkent e = +14m.2s., i = +18m.25s., e = +27m.20s.
Long waves were also recorded at Irkutsk and Copenhagen.

May 29d. 8h. 26m. 21s. Epicentre 13°·4N. 121°·5E. (as on 1929 Aug. 21d.). X.

A = −·508, B = +·829, C = +·232 ; D = +·853, E = +·522 ; G = −·121, H = +·198, K = −·973.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	1·3	337	0 22	+ 4	0 41	+ 8	—	—
Phu-Lien	16·0	300	3 39?	− 2	—	—	—	—
Osaka	24·7	29	5 22	+ 5	(9 55)	+19	9·9	11·3
Irkutsk	41·2	345	e 7 39	− 3	e 13 39	−15	e 20·6	26·2
Andijan	50·6	313	9 22	+26	—	—	—	—
Tashkent	53·1	314	e 4 57	?	i 15 39	−64	e 24·6	31·6
Samarkand	54·3	309	e 9 39	+16	—	—	—	—
Ekaterinburg	63·0	328	e 10 20	− 5	e 18 51	− 4	30·6	—
Baku	67·4	308	e 10 56	+ 2	e 19 55	+ 5	33·6	—
Scoresby Sund	92·4	350	—	—	23 39	[− 8]	—	—

Additional readings :—
Tashkent i = +14m.50s.
Long waves were also recorded at Hong Kong, Pulkovo, and European stations.

May 29d. 11h. 51m. 13s. Epicentre 48°·0N. 8°·0E. (as on 1926 June 28d.). R.3.

A = +·663, B = +·093, C = +·743.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Strasbourg	0·6	345	i 0 6	− 3	i 0 15	0
Zurich	0·7	148	e 0 11	+ 1	i 0 21	+ 3
Hohenheim	1·1	48	e 0 16	0	i 0 27	− 1
Ravensburg	1·1	101	e 0 17	+ 1	i 0 31	+ 3
Stuttgart	1·1	46	e 0 15	− 1	i 0 29	+ 1
Neuchatel	1·2	216	e 0 17	0	e 0 37	+ 6

Additional readings :—
Hohenheim iN = +26s.
Ravensburg iN = +33s. = S^*, iE = +36s. = S_g.
Stuttgart e = +28s., i = +33s. = S^*.
Neuchatel iP_g = +20s.

May 29d. Readings also at 0h. (Baku, Ekaterinburg, Andijan, Samarkand, and Tashkent), 2h. (near Manila, near Batavia, and Malabar), 3h, (near La Paz), 4h. (Baku, Samarkand, and Tashkent), 5h. (Ekaterinburg, Andijan, Samarkand, near Berkeley, and Lick), 6h. (Alicante, La Paz, and Tananarive), 12h. (Messina), 13h. (Baku and Ekaterinburg), 17h. (Almata, Tashkent, Ekaterinburg, Irkutsk, and San Juan), 19h. (Ekaterinburg, Tashkent, Samarkand, and near Manila), 21h. (near Manila), 23h. (Florence).

May 30d. 11h. 34m. 16s. Epicentre 52°·2N. 173°·3E. N.3.

$A = -·609$, $B = +·072$, $C = +·790$; $D = +·117$, $E = +·993$; $G = -·785$, $H = +·092$, $K = -·613$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		29·4	60	—	—	e 12 28	SS	16·4	—
Victoria	E.	39·4	70	9 0	PP	13 25	− 2	19·4	26·6
Berkeley		46·1	83	—	—	i 15 14	+ 8	e 22·2	—
Scoresby Sund		56·9	8	9 32	−10	17 34	− 1	25·7	—
Ekaterinburg		57·8	325	i 9 47	− 2	e 17 43	− 4	26·7	32·6
Florissant		63·8	60	e 10 32	+ 1	i 19 3	− 2	—	35·7
Pulkovo		64·2	341	e 10 35	+ 2	e 19 32	PS	34·7	39·4
Tashkent		65·8	309	e 10 59	+15	i 19 36	+ 6	e 33·1	35·7
Kucino		66·0	335	e 14 48	PPP	e 19 24	− 8	e 32·0	40·7
Georgetown	E.	70·4	51	i 20 23	S	(i 20 23)	− 3	e 34·7	—
Copenhagen		70·9	349	11 26	+10	20 50	PS	37·7	—

Additional readings :—
Victoria PN = +9m.25s. = P_cP −15s.
Florissant ePN = +10m.38s.
Georgetown eS = +24m.56s. = SS +8s.
Long waves were also recorded at Honolulu T.H., San Juan, Ottawa, Pittsburgh, Bombay, and European stations.

May 30d. 16h. 55m. 27s. Epicentre 34°·8N. 135°·7E. (as on 1930 Feb. 7d.). R.3.

$A = -·588$, $B = +·574$, $C = +·571$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	0·2	218	0 2	− 1	(0 8)	+ 3	0·1	0·1
Kobe	0·4	254	0 4	− 2	0 10	0	—	0·2
Sumoto	0·8	236	0 12	+ 1	0 22	+ 1	—	0·4
Toyooka	1·0	316	i 0 11	− 3	i 0 22	− 4	—	0·4
Nagoya	1·1	71	e 0 18	+ 2	0 33	+ 5	—	—

May 30d. 18h. 37m. 59s. Epicentre 3°·5S. 142°·0E. (as on 1925 June 12d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		27·7	312	5 43	− 1	10 27	0	13·7	—
Sydney		31·5	165	e 11 25	S	(e 11 25)	− 3	17·9	18·6
Perth		37·6	218	13 1	S	(13 1)	+ 1	—	—
Tashkent		79·5	313	e 12 12	+ 7	e 21 48	−22	e 39·0	42·0
Ekaterinburg		88·2	328	e 12 49	0	e 23 23	[+ 2]	40·0	—
Scoresby Sund		112·2	354	—	--	29 1?	PS	—	—
La Paz	Z.	144·1	125	e 19 54	[+23]	—	—	—	—

Long waves were also recorded at Adelaide, Riverview, Melbourne, and European stations.

May 30d. Readings also at 4h. (Andijan and Samarkand), 5h. (Triest), 7h. (Almata, Samarkand, Andijan, and Bombay), 8h. (Ekaterinburg and Irkutsk), 9h. (near Manila), 14h. and 15h. (Tyosi), 16h. (near Sumoto), 17h. (Baku and Tashkent), 20h. (Scoresby Sund and near Sumoto), 22h. (near Manila), 23h. (Baku and Tashkent).

May 31d. Readings at 0h. (Perth), 1h. (near Lick), 2h. (Almata), 14h. (Phu-Lien), 15h. (Monte Cassino), 18h. (near Mizusawa).

June 1d. 11h. 54m. 30s. Epicentre 4°·5S. 152°·0E. (as on 1918 Dec. 30d.). R.3.

A = −·880, B = +·468, C = −·079; D = +·470, E = +·883;
G = +·069, H = −·037, K = −·997.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		29·2	182	e 5 57	− 1	e 10 49	− 2	e 14·4	17·2
Sydney		29·2	182	e 9 54	S	(e 9 54)	−57	15·1	17·0
Adelaide		32·8	200	e 6 36?	+ 6	i 11 21	−27	14·3	19·2
Melbourne		33·9	190	—	—	e 11 30	−34	16·3	—
Manila		36·2	302	6 59	− 1	12 55	+16	18·0	—
Arapuni		39·9	150	e 9 30?	PP	—	—	—	—
Wellington		42·1	154	—	—	13 55	−13	19·5	22·5
Perth		43·5	227	—	—	i 14 0	−28	—	—
Batavia		44·9	266	—	—	i 14 52	+ 3	—	—
Hong Kong		45·7	308	8 18	0	15 0	0	21·8	23·6
Zi-ka-wei	Z.	46·1	323	8 22	+ 1	15 32	+26	23·1	24·7
Vladivostok		51·0	341	10 2	+63	e 17 26	+71	—	27·2
Honolulu T.H.		55·5	60	e 9 50	+18	e 17 30	+14	e 26·0	—
Irkutsk		69·6	331	e 11 7	− 1	e 19 38	−38	32·5	38·2
Bombay		81·3	290	5 38	?	—	—	—	—
Andijan		85·2	313	e 12 42	+ 8	—	—	—	—
Samarkand		89·0	311	e 12 38	−15	—	—	—	—
Berkeley		89·4	52	—	—	i 23 56	+ 6	e 38·3	—
Victoria	E.	89·9	41	—	—	23 53	− 2	42·5	45·1
Pasadena		92·5	56	e 13 15	+ 6	—	—	—	—
Mount Wilson		92·5	56	e 13 15	+ 6	—	—	—	—
Haiwee		92·7	54	e 13 17	+ 7	—	—	—	—
La Jolla	E.	93·1	58	e 13 19	+ 7	—	—	—	—
Riverside		93·1	57	e 13 19	+ 7	—	—	—	—
Ekaterinburg		94·5	327	e 12 54	−24	e 23 5	(−53)	38·5	54·0
Baku		101·8	311	e 17 47	PP	e 27 24	PS	46·5	63·1
Kucino		107·1	327	e 18 41	PP	e 28 6	PS	47·0	62·6
Helsingfors		111·6	334	e 19 35	PP	e 28 45	PS	e 56·5	—
Scoresby Sund		113·9	358	19 42	PP	29 28	PS	53·5	—
Florissant	E.	114·2	50	e 27 2	S	(e 27 2)	{+26}	—	55·8
Copenhagen		119·5	335	20 18	PP	—	—	59·5	—
Edinburgh		125·0	343	—	—	e 43 30?	SSS	—	—
De Bilt		125·1	336	e 20 33	PP	—	—	e 61·5	68·8
Stuttgart		125·7	331	e 20 54	PP	—	—	e 62·5	73·5
Strasbourg		126·5	331	e 20 30?	PP	—	—	e 32·5	—
Kew		127·7	339	e 22 42	?	—	—	58·5	77·6
Paris		128·7	335	e 21 17	PP	—	—	67·5	—
La Paz	Z.	135·1	119	e 19 24	[+ 9]	—	—	—	—
Granada		140·5	330	i 22 24	PP	—	—	e 59·0	74·6

Additional readings:—
Riverview e = +10m.28s., SS = +12m.31s. and +12m.56s., SSS = +13m.5s., iSSSS = +13m.19s.
Sydney iS = +12m.48s.
Melbourne e = +10m.35s.
Manila ScSEN = +17m.11s.
Wellington PP = +9m.40s., SS = +17m.20s.
Perth i = +17m.0s. = SS − 22s.
Hong Kong SS = +18m.51s.
Zi-ka-wei PPZ = +10m.32s.
Ekaterinburg ePS = +24m.4s.
Kucino e = +34m.26s.
Helsingfors eE = +28m.50s. = PS + 7s. and +30m.46s., eEN = +34m.35s. = SS − 5s., eE = +38m.59s. = SSS + 16s.
Florissant eE = +29m.23s. = PS + 15s.
Stuttgart eZ = +22m.30s., eEN = +32m.36s.
Kew eZ = +31m.34s., eEN = +37m.24s.
Granada i = +32m.11s. = SKSP − 20s. and +37m.4s.
Long waves were also recorded at Phu-Lien, Pulkovo, Buffalo, Ottawa, Toronto, and other European stations.

June 1d. Readings also at 0h. (Copenhagen, De Bilt, Uccle, Feldberg, Granada, Bombay, Calcutta, Ekaterinburg (2), Tashkent, Samarkand, Irkutsk, Manila, and Melbourne), 1h. (Adelaide, Tashkent, and Riverview), 2h. (near Andijan and Samarkand), 6h. (Monte Cassino), 12h. (Tyosi), 14h. (Baku, Ekaterinburg, Tashkent, Kucino, Scoresby Sund, and Copenhagen), 16h. (La Paz), 17h. (Göttingen), 19h. (near Tyosi), 20h. (Florissant, St. Louis, and Tucson), 21h. (Granada), 22h. (near Kobe and Sumoto).

June 2d. 2h. 37m. 55s. Epicentre 35°·7N. 137°·3E. N.1.

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

A = −·597, B = +·551, C = +·584; D = +·678, E = +·735; G = −·429, H = +·396, K = −·812.

A depth of focus 0·035 is assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Gihu	+1·1	0·5	235	0 33	+10	0 58	+17	—	—
Takayama	+1·1	0·5	355	0 39	+16	1 5	+24	—	—
Nagoya	+1·1	0·6	207	i 0 32	+ 8	0 58	+14	—	1·0
Matumoto	+1·1	0·8	45	0 34	+ 6	0 58	+ 9	—	—
Hikone	+1·0	1·0	243	0 33	+ 4	1 0	+ 9	—	—
Kameyama	+1·0	1·1	219	0 37	+ 7	1 5	+11	—	—
Nagano	+1·0	1·2	37	0 35	+ 4	1 4	+ 7	—	—
Oiwake	+1·0	1·2	58	0 34	+ 3	1 2	+ 5	—	—
Tsu	+1·0	1·2	213	0 37	+ 6	1 8	+11	—	—
Numadu	+0·9	1·4	115	0 37	+ 4	1 9	+10	—	—
Kyoto	+0·9	1·5	242	0 38	+ 4	1 9	+ 7	—	—
Takada	+0·9	1·6	29	0 35	− 1	1 5?	+ 1	—	—
Kumagaya	+0·9	1·7	75	0 37	0	1 7	0	—	—
Osaka	+0·8	1·8	234	0 39	+ 2	(1 15)	+ 8	1·3	1·3
Yokohama	+0·8	1·9	98	0 42	+ 3	1 15	+ 6	—	—
Kobe	+0·8	2·0	240	i 0 43	+ 3	1 17	+ 5	—	1·4
Tokyo	+0·8	2·0	90	0 41	+ 1	1 13	+ 1	—	2·7
Toyooka	+0·8	2·0	265	i 0 42	+ 2	i 1 16	+ 4	—	1·3
Mera	+0·7	2·2	111	0 43	+ 2	1 16	+ 2	—	—
Tukubasan	+0·7	2·3	77	0 42	− 1	1 15	− 2	—	—
Kakioka	+0·7	2·4	77	0 42	− 2	1 15	− 5	—	—
Sumoto	+0·7	2·4	236	i 0 47	+ 3	i 1 24	+ 4	—	1·5
Tyosi	+0·5	2·9	89	0 49	0	1 28	+ 1	—	1·5
Hukusima	+0·4	3·3	51	0 51	− 2	1 33	− 2	—	—
Hatidyozima	+0·4	3·3	141	0 57	+ 4	1 41	+ 6	—	—
Koti	+0·4	3·8	236	e 1 2	+ 2	i 1 51	+ 3	—	1·9
Matuyama	+0·3	4·2	245	i 1 1	− 3	e 2 1	+ 6	—	2·1
Hamada	+0·2	4·3	260	1 8	+ 4	2 0	+ 5	—	—
Akita	+0·2	4·6	27	1 9	+ 1	2 1	− 2	—	—
Mizusawa	+0·2	4·6	40	1 7	− 1	1 57	− 6	—	—
Simidu	+0·2	4·6	233	1 14	+ 6	2 10	+ 7	—	—
Morioka	0·0	5·0	35	1 11	0	2 6	− 2	—	—
Simonoseki	0·0	5·5	254	0 47	−31	1 27	−53	—	—
Hukuoka	−0·1	6·0	251	1 30	+ 6	i 2 41	+10	—	2·8
Miyazaki	−0·1	6·1	234	1 33	+ 8	3 24	+51	—	—
Kumamoto	−0·1	6·2	244	1 32	+ 5	3 4	+28	—	—
Nagasaki	−0·1	6·8	247	1 41	+ 6	2 58	+ 7	—	3·6
Tomie	−0·3	7·7	249	1 18	−27	2 56	−13	—	—
Vladivostok	−0·3	8·5	332	i 1 55	− 1	i 3 29	0	—	—
Zi-ka-wei	−0·8	14·0	256	3 6	+ 1	i 5 51	+19	—	10·4

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.
Chiufeng		−1·1	17·2	291	i 3 44	+ 1	6 48	+ 7	—	—
Hong Kong		−1·8	24·1	243	4 55	+ 1	8 54	+ 2	10·4	—
Manila		−1·9	25·7	220	5 5	− 3	9 15	− 4	11·7	—
Irkutsk		−2·2	28·6	316	e 5 32	− 1	e 10 0	− 5	—	12·0
Phu-Lien		−2·3	30·7	250	e 5 52	+ 1	e 10 33	− 5	12·1	—
Calcutta		−3·1	44·2	269	10 11	(+15)	14 7	+14	—	—
Almata		−3·3	46·1	299	8 2	+ 7	14 30	+12	19·7	—
Andijan		−3·6	50·1	297	e 8 32	+ 7	e 15 25	+13	—	—
Batavia		−3·6	50·8	222	8 37	+ 7	i 15 25	+ 4	—	—
Tashkent		−3·7	52·2	300	(e 8 41)	+ 1	(15 41)	+ 1	(e 24·1)	(31·7)
Ekaterinburg		−3·8	53·8	320	i 8 53	+ 2	i 16 5	+ 4	25·1	33·0
Honolulu T.H.		−4·0	57·8	86	—	—	e 17 5	+12	e 24·5	—
Bombay		−4·0	58·7	273	10 31	(−17)	17 17	+12	25·4	—
Kucino		−4·2	66·0	323	e 10 21	+ 4	i 18 46	+ 7	32·5	36·5
Baku		−4·2	66·1	305	e 10 22	+ 4	i 18 50	+ 9	32·1	43·7
Helsingfors		−4·3	67·4	330	—	—	e 20 5?	PS	e 37·1	—
Pulkovo		−4·3	67·4	331	10 29	+ 3	19 3	+ 7	33·1	39·2
Upsala		−4·4	72·4	334	—	—	e 19 58	+ 1	—	39·0
Scoresby Sund		−4·4	72·8	354	12 23	+82	20 8	+ 6	—	—
Königsberg		−4·4	74·6	328	—	—	22 5?	PS	e 38·0	40·1
Berkeley		−4·5	76·0	54	e 11 19	− 1	—	—	—	—
Lund		−4·5	77·0	331	—	—	20 51	0	40·1	—
Copenhagen		−4·5	77·3	331	11 27	− 1	20 54	0	—	—
Ksara		−4·5	79·0	304	e 11 35	− 2	21 17	+ 3	—	—
Tinemaha		−4·5	79·1	52	e 11 35	− 3	e 21 15	0	—	—
Hamburg		−4·5	79·8	331	e 11 39	− 3	e 23 5?	PS	e 43·1	45·1
Haiwee		−4·5	79·8	53	i 11 42	0	—	—	—	—
Budapest		−4·6	80·2	323	—	—	(e 23 5?)	PS	e 23·1	44·1
Mount Wilson		−4·6	80·9	55	e 11 45	− 3	—	—	—	—
Pasadena		−4·6	80·9	55	e 11 45	− 3	—	—	—	—
Vienna	Z.	−4·6	81·0	325	e 12 47	+59	—	—	—	—
Cheb		−4·6	81·4	328	—	—	e 23 5?	PS	e 33·1	44·1
Edinburgh		−4·6	82·4	339	—	—	e 23 5?	PS	—	—
De Bilt		−4·6	82·8	333	e 12 54	+56	e 21 51	− 5	e 40·1	46·4
Ivigtut		−4·6	83·0	3	—	—	21 47	−11	—	—
Stuttgart		−4·7	83·8	330	e 12 1	− 2	e 23 43	PS	e 38·1	47·7
Uccle		−4·7	84·1	333	e 13 3	+58	e 23 47	PS	e 40·1	—
Strasbourg		−4·7	84·6	330	e 13 5?	+58	(e 24 5?)	PS	e 24·1	—
Kew		−4·7	85·2	336	—	—	e 24 5?	?	44·1	47·1
Piacenza		−4·7	86·4	325	22 25	S	(22 25)	− 9	—	50·6
Paris		−4·7	86·5	333	—	—	e 32 5?	?	47·1	—
Tortosa	N.	−4·9	93·7	330	17 57	PPP	—	—	e 52·1	—
Almeria		−5·0	98·3	329	—	—	e 31 51	SS	—	61·2
Granada		−5·0	98·6	330	—	—	e 23 51	[−28]	51·8	56·2
La Paz	Z.	—	150·3	56	e 19 18	[−24]	—	—	—	—

Additional readings and notes :—
Vladivostok i = +2m.15s. and +2m.41s.
Tashkent readings have been *diminished* by 3m.
Helsingfors ePPSEN = +21m.5s.?, eSSN = +27m.5s.?, eSSE = +27m.17s.?
Scoresby Sund +21m.53s.
Copenhagen +12m.26s. and +22m.39s., e = +25m.53s.
Cheb e = +33m.5s.?
De Bilt e = +23m.36s.
Stuttgart eZ = +13m.1s., eE = +27m.11s.
Granada i = +26m.3s., +31m.9s., and +40m.15s.

June 2d. 17h. 36m. 55s. Epicentre 32°·9N. 69°·3E. N.3.
(given by the Russian stations).

A = +·297, B = +·785, C = +·543 ; D = +·935, E = −·353 ;
G = +·192, H = +·508, K = −·840.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	8·3	16	1 55	− 3	3 4	−27	3·4	3·7
Tashkent	8·4	0	i 2 49	P_g	—	—	4·8	5·5
Agra	9·5	124	2 12	− 2	e 3 34	−27	—	—
Baku	17·2	301	e 4 16	+19	e 7 26	+20	e 11·1	—
Calcutta	19·8	117	—	—	11 51	?	13·8	—
Ekaterinburg	24·6	349	e 5 11	− 5	e 9 20	−14	11·6	13·7
Kucino	31·5	326	—	—	e 10 19	−69	e 15·6	16·8
Irkutsk	31·7	42	—	—	e 10 5?	−86	e 16·1	—
Pulkovo	37·1	328	e 6 24	−43	e 12 49	− 4	15·1	20·5

Additional readings :—
Calcutta P = 17h.35m.16s.
Long waves were also recorded at Almata, Hyderabad, Bombay, Vladivostok, Scoresby Sund, and European stations.

June 2d. Readings also at 1h. (Monte Cassino), 3h. (Batavia, Medan, Hong Kong, Phu-Lien, Bombay, Calcutta, Ekaterinburg, Irkutsk, and Tashkent), 4h. (Ottawa, San Juan, Scoresby Sund, Granada, and La Paz), 5h. (Baku, Ekaterinburg, Tashkent, Copenhagen, Stuttgart, De Bilt, Uccle, Kew, Alicante, Scoresby Sund, Yalta, Simferopol, Riverview, Adelaide, Sydney, Suva, Arapuni, and Wellington), 6h. (Buffalo, Harvard, Ekaterinburg, and Tashkent), 7h. (Granada, De Bilt, and Uccle), 8h. (Phu-Lien), 9h. (Ekaterinburg and Tashkent), 11h. (Messina and near Batavia), 12h. (Agra, Bombay, Hyderabad, Ekaterinburg, Tashkent, and Messina), 13h. (Messina), 16h. (Medan and Monte Cassino), 18h. (Ekaterinburg, near Tashkent, and near Sumoto), 19h. (Tucson), 22h. (Berkeley), 23h. (near Barcelona and Tortosa).

June 3d. 13h. 59m. 50s. Epicentre 8°·0N. 128°·0E. (as on 1927 June 6d.). X.

A = −·610, B = +·780, C = +·139 ; D = +·788, E = +·616 ;
G = −·086, H = +·110, K = −·990.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	9·5	314	2 26	+12	4 24	+23	5·5	—
Batavia	25·5	237	e 5 22	− 3	9 8	P_cP	—	—
Vladivostok	35·3	5	—	—	e 13 6	+40	—	—
Tashkent	61·4	313	—	—	e 18 28	− 6	26·2	37·9
Ekaterinburg	71·0	328	1 11 17	0	e 20 31	− 2	34·2	—
Baku	75·8	310	—	—	e 21 25	− 4	e 40·2	—
La Paz	162·1	120	e 21 48	?	—	—	—	—

Additional reading :—
Baku e = +31m.46s.
Long waves were also recorded at Hong Kong and Irkutsk.

June 3d. Readings also at 0h. (Ekaterinburg, Tashkent, San Juan, and near Barcelona), 1h. (Baku), 2h. (Berkeley and near Hastings), 3h. (Berkeley), 4h. (Irkutsk), 5h. (Tashkent and Andijan), 6h. (Berkeley), 20h. (near La Paz), 21h. (Suva), 22h. (Monte Cassino).

June 4d. 9h. 50m. 8s. Epicentre 6°·2S. 130°·2E. N.2.

A = −·642, B = +·759, C = −·108 ; D = +·764, E = +·645 ;
G = +·070, H = −·082, K = −·994.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		3·2	321	i 0 58	P*	i 1 41	S*	—	—
Manila		22·7	336	e 4 59	+ 1	i 9 2	+ 3	11·3	—
Batavia		23·3	269	i 5 10	+ 6	—	—	—	—
Perth		29·0	206	i 6 17	+21	—	—	—	—
Adelaide		29·8	166	i 6 4	+ 1	i 10 55	− 6	13·4	18·5
Hong Kong		32·6	331	6 44	+16	11 31	−14	—	15·6
Medan		33·0	287	7 37	PP	—	—	—	—
Riverview		33·8	148	i 6 39	0	i 11 57	− 6	—	19·9
Sydney		33·8	148	e 11 34	S	(e 11 34)	−29	18·6	19·2
Melbourne		34·3	160	i 6 46	+ 3	i 12 7	− 4	—	19·2
Phu-Lien		35·6	320	e 6 52	− 2	e 12 23	− 7	13·9	—
Miyazaki		38·2	1	7 13	− 4	12 53	−16	—	—
Zi-ka-wei	Z.	38·3	349	e 7 12	− 6	e 12 52	−19	19·5	—
Sumoto		40·8	7	7 26	−13	e 13 31	−17	e 16·9	—
Kobe		41·1	7	e 7 45	+ 4	e 13 35	−18	—	—
Osaka		41·2	7	7 32	−10	(13 36)	−18	13·6	14·6
Toyooka		41·9	6	e 7 59	+11	—	—	—	—
Nagoya		41·9	9	e 7 49	+ 1	—	—	—	—
Mizusawa	E.	46·4	13	8 25	+ 1	15 3	− 7	—	—
	N.	46·4	13	8 20	− 4	14 52	−18	—	—
Vladivostok		49·3	1	e 8 46	0	i 15 32	−19	—	—
Calcutta		50·0	308	8 41	−10	15 48	−13	26·4	—
Colombo		51·9	283	8 57	− 9	16 27	0	27·2	31·8
Wellington		52·9	139	—	—	i 16 32	− 9	25·9	—
Hyderabad		56·3	296	9 37	− 1	17 22	− 5	28·8	31·7
Bombay		61·8	296	10 18	+ 1	18 37	− 2	31·0	—
Irkutsk		62·5	344	e 10 23	+ 1	e 18 36	−12	e 29·9	—
Almata		69·0	322	e 11 6	+ 1	20 2	− 7	—	—
Andijan		70·7	319	e 11 17	+ 2	e 20 21	− 9	—	—
Tashkent		73·0	317	e 14 6	PP	—	—	e 36·9	40·4
Baku		86·7	313	e 13 45	+63	23 3	[− 8]	39·9	52·5
Kucino		96·4	325	—	—	e 23 52	[−16]	e 39·0	61·9
Ksara	E.	97·0	305	e 14 0	+30	e 25 2	+ 2	—	—
Berkeley	E.	107·6	51	—	—	i 33 37	SS	e 53·0	—
Vienna	Z.	110·4	319	e 19 3	PP	—	—	—	—
Copenhagen		110·6	328	—	—	27 52?	PS	57·9	—
Scoresby Sund		113·3	350	19 40	PP	28 52	PS	—	—
Stuttgart		114·8	321	—	—	e 29 52?	PS	e 62·9	—
Strasbourg		115·8	321	—	—	e 28 52?	PS	e 63·9	—
De Bilt		115·9	326	i 20 30	PP	—	—	e 57·9	—
Paris		118·8	323	e 20 6	PP	e 31 31	?	68·9	—
Florissant		131·0	42	i 21 28	PP	—	—	e 76·9	—
Buffalo		135·2	31	e 16 52	?	e 21 38	PP	e 48·8	71·5
La Paz	Z.	150·9	143	e 19 43	[0]	—	—	—	—
San Juan		159·9	51	e 20 34	[+40]	—	—	—	—

Additional readings :—
Perth e = 9h.50m.20s.
Adelaide SS = +12m.12s.
Medan i = +10m.9s., +15m.30s., and +17m.41s.
Riverview SS = +13m.55s., SSS = +14m.20s., SSSS = +14m.40s.
Sydney eS = +15m.4s.
Melbourne i = +7m.55s. = PP +3s. and +13m.31s.
Zi-ka-wei iZ = +7m.46s., eZ = +15m.44s. = SS +4s.
Tashkent i = +14m.29s., +14m.58s., and +23m.46s.
Kucino e = +24m.34s. and +26m.43s.
Florissant iZ = +22m.21s., eSSN = +39m.27s.
Long waves were also recorded at Honolulu T.H., Pittsburgh, Toronto Ottawa, and Helsingfors.

June 4d. Readings also at 0h. (Baku, Tashkent, and near Koti), 1h. (Granada), 2h. (Calcutta), 3h. (Granada), 5h. (Berkeley (2) and Lick (2)), 6h. (La Paz), 9h. (Granada, Nagoya, near Osaka, Kobe, and Toyooka, also near Nagasaki), 13h. (near Almata, Andijan, and near Manila), 17h. (Monte Cassino (2) and near Nagoya), 20h. (Trenta), 22h. (near Almata and Andijan).

June 5d. Readings at 0h. (near Sumoto), 1h. (Andijan), 4h. (La Paz), 7h. (near Sumoto), 8h. (San Juan), 9h. (near Santiago), 11h. (near Sumoto), 13h. (Phu-Lien), 14h. (near Tananarive), 20h. (Hong Kong, Phu-Lien, Koti, Strasbourg, Stuttgart, De Bilt, Feldberg, Copenhagen, Helsingfors, Baku, Kucino, Pulkovo, Almata, Andijan, and near Irkutsk), 21h. (San Juan and Granada), 22h. (Manila and near Chiufeng).

June 6d. 5h. 20m. 55s. Epicentre 35°·0N. 135°·5E. (as on 1930 Dec. 4d.). N.3.

A = − ·584, B = + 574, C = + 574.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	0 4	173	0 4	− 2	(0 10)	0	0·2	0·2
Kobe	0·5	219	0 5	− 2	0 11	− 2	—	0·2
Toyooka	0·8	314	i 0 13	+ 2	i 0 24	+ 3	—	0·4
Sumoto	0·9	212	0 13	0	0 25	+ 2	—	0·4
Nagoya	1·2	82	e 0 17	0	0 32	+ 1	—	—

No additional readings.

June 6d. 11h. Epicentre near Fiji Islands. The readings do not afford definite determination :—

Apia eP = 11h.58m.56s., M = 59m.30s.
Suva PE = 11h.56m.0s., SN = 57m.0s., L? = 57m.20s., M = 58m.0s.
Manila P = 12h.4m.47s., S = 13m.6s.
Santa Barbara ePN = 12h.5m.39s.
La Jolla ePE = 12h.5m.44s.
Pasadena e = 12h.5m.44s.
Mount Wilson eEN = 12h.5m.47s.
Riverside ePEN = 12h.5m.47s.
Haiwee ePEN = 12h.5m.52s.
Strasbourg e = 12h.13m., eL = 20m.
Theodosia eP = 12h.13m.5s.
Simferopol eP = 12h.13m.7s.
Copenhagen 12h.13m.8s.
Lund 12h.13m.8s.
Yalta eP = 12h.13m.9s.
Stuttgart eZ = 12h.13m.19s., eEN = 13m.24s.
De Bilt eZ = 12h.13m.20s. and 15m.29s.
Göttingen iN = 12h.13m.20s.

June 6d. Readings also at 0h. (Andijan, near Berkeley, and Lick), 2h. (Berkeley, Lick, and Hong Kong), 4h. (Phu-Lien), 5h. (Ksara), 6h. (Tyosi and near Wellington), 7h. (near La Paz), 8h. (Baku, Pulkovo, Kucino, near Almata, Andijan and near Tyosi) 11h. (Ksara), 13h. (Manila), 16h. (Paris, Strasbourg, Andijan, near Tyosi, and near Wellington) 17h. (De Bilt, Stuttgart, Feldberg, Copenhagen, and Ksara), 21h. (near Nagoya and Osaka), 22h. (St. Louis).

June 7d. 0h. 25m. 21s. Epicentre 53°·8N. 1°·2E. N.1.

Probable error of epicentre ±0°·17.

Epicentre given by Kew. Other determinations are 53°·5N. 2°·0E. by Strasbourg, 54°·5N. 3°·5E. by the Russian stations.

A = +·590, B = +·012, C = +·807; D = +·021, E = −1·000; G = +·807, H = +·017, K = −·591.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Durham	1·9	301	0 28	0	—	—	—	—
Stonyhurst	2·1	271	i 0 32	+ 2	i 0 59	+ 5	—	1·3
West Bromwich	2·3	236	0 34	+ 1	—	—	—	1·8
Bidston	2·5	261	i 0 39	+ 3	i 1 4	0	—	1·3
Kew	2·5	201	i 0 39	+ 3	i 1 9	+ 5	—	1·6
Oxford	2·5	216	i 0 40	+ 4	—	—	—	—
De Bilt	3·0	125	i 0 42	− 1	i 1 14	− 3	i 1·5	1·8
Edinburgh	3·2	310	0 47	+ 1	i 1 8	P_g	—	1·8
Uccle	3·6	146	i 0 49	− 2	i 1 34	+ 2	—	—
Dyce	3·9	333	0 52	− 4	1 49	S*	—	—
Paris	5·1	170	i 1 12	− 1	i 2 8	− 2	2·6	2·6
Hamburg	5·2	89	e 1 11	− 3	—	—	2·9	3·4
Feldberg	5·7	126	i 1 20	− 1	—	—	—	5·8
Göttingen	5·8	109	e 1 18	− 4	i 2 17	−11	—	3·8
Karlsruhe	6·6	134	1 37	+ 3	2 45	− 3	3·5	4·5
Strasbourg	6·6	139	1 31	− 3	e 2 47	− 1	4·2	4·3
Copenhagen	6·7	69	i 1 30	− 5	i 2 38	−13	—	3·6
Jena	7·0	110	e 1 37	− 2	i 2 47	−12	i 3·2	4·1
Stuttgart	7·1	131	e 1 39	− 2	i 3 20	+19	i 3·6	4·2
Lund	7·2	69	1 37	− 5	2 49	−15	—	—
Besançon	7·3	153	1 40	− 4	i 2 56	−10	—	—
Potsdam	7·3	96	e 1 42	− 2	i 2 55	−11	—	4·4
Neuchatel	7·8	149	i 1 47	− 4	e 2 54	−25	—	—
Cheb	7·9	113	e 1 47	− 5	e 3 17	− 4	e 3·5	4·6
Ravensburg	8·0	135	e 1 53	0	e 3 43	+19	—	—
Zurich	8·0	141	i 1 51	− 2	e 3 12	−12	—	—
Puy de Dôme	8·1	167	e 1 41	−14	e 3 13	−13	—	—
Chur	8·7	139	e 2 2	− 1	—	—	—	—
Prague	9·0	109	e 2 3	− 4	e 3 54	+ 5	e 4·6	5·2
Grenoble	9·1	159	i 2 15	+ 6	i 3 8	P_g	—	—
Innsbruck	9·2	131	e 2 9	− 1	—	—	4·8	5·6
Pavia	10·1	146	e 2 36	+14	4 36	+20	—	7·2
Piacenza	10·4	144	2 31	+ 5	4 54	+31	—	7·0
Bagnères	10·8	183	i 3 39	+67	e 5 55	L	(e 5·9)	—
Treviso	10·8	134	i 2 34	+ 2	5 57	L	(5·9)	—
Upsala	10·8	49	e 2 23	− 9	i 4 15	−18	e 5·4	6·2
Marseilles	10·9	163	e 2 30	− 3	4 12	−24	—	—
Padova	10·9	136	i 2 38	+ 5	i 5 40	+64	—	—
Venice	11·0	135	i 2 37	+ 2	4 40	+ 2	—	8·5
Vienna	11·0	114	e 2 30	− 5	4 41	+ 3	5·8	6·6
Triest	11·2	131	i 2 53	+16	5 40	S*	i 6·4	6·6
Graz	11·3	121	i 2 43	+ 4	i 4 38	− 7	e 4·8	6·1
Königsberg	11·3	77	e 2 37	− 2	e 4 40	− 5	e 5·2	7·5
Laibach	11·5	127	2 9	−33	e 4 47	− 3	—	6·2
Barcelona	12·4	177	5 4	S	(5 4)	− 9	6·6	6·9
Zagreb	12·5	124	e 2 50	− 5	e 6 16	+61	—	7·5
Budapest	13·0	112	i 3 1	− 1	6 12	+45	7·6	8·2
Tortosa E.	13·0	182	e 3 13	+11	5 18	− 9	5·5	7·0
N.	13·0	182	e 2 59	− 3	5 7	−20	5·4	—
Rome	14·1	143	e 3 24	+ 7	8 15	?	—	9·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Helsingfors		14·3	54	e 3 8	−11	e 5 38	−20	i 8·6	—
Toledo		14·4	196	e 3 17	− 4	e 5 49	−12	e 6·1	—
Lemberg	E.	14·6	95	—	—	e 5 39	−26	—	8·8
Alicante		15·5	185	4 44	+69	e 7 4	+37	e 7·5	8·4
Naples		15·7	141	e 3 27	−11	e 6 12	−19	7·0	
Pulkovo		16·8	57	i 3 47	− 5	6 39	−18	9·6	10·8
Granada		17·0	193	i 3 55	+ 1	i 7 6	+ 4	i 8·3	9·3
Algiers		17·1	175	—	—	e 7 13	+ 9	—	9·2
Almeria		17·1	190	e 3 57	+ 2	i 7 12	+ 8	8·7	10·0
Malaga		17·5	195	e 4 2	+ 2	e 7 27	+14	8·6	—
San Fernando		18·1	199	3 39?	−29	7 39?	+12	8·6	—
Catania		18·9	144	e 3 51	−26	8 12	+28	—	—
Scoresby Sund		19·6	337	4 21	− 4	8 2	+ 4	—	—
Kucino		21·1	70	4 37	− 4	8 13	−15	9·8	11·8
Simferopol		23·0	99	4 59	− 2	—	—	e 13·2	—
Yalta		23·3	100	5 2	− 2	9 12	+ 2	—	—
Theodosia		23·6	98	5 8	+ 2	9 22	+ 6	13·4	—
Baku		35·0	92	8 15	PP	e 12 18	− 3	19·8	21·6
Andijan		47·9	75	e 10 11	(+ 2)	—	—	—	—
Ottawa		48·1	293	20 39?	?	—	—	—	—
Almata		48·8	70	20 16	?	—	—	—	—

Additional readings :—
Kew iP_g = +47s., i = +1m.13s. =S*, iS_g = +1m.21s.
Edinburgh i = +56s.
Uccle iP* = +51s., iP_g = +1m.0s., iPP = +1m.6s., iPPP = +1m.13s., i = +1m.18s. and +1m.29s., iS_g = +1m.42s.
Hamburg i = +1m.56s., iN = +2m.3s.
Göttingen eP*Z = +1m.34s., eP_gZ = +1m.51s., iS*EZ = +2m.37s., iN = +2m.59s. iS_g = +3m.12s.
Strasbourg eSS = +3m.27s., eSSS = +3m.35s.
Copenhagen i = +1m.40s., e = +1m.52s.
Jena iE = eN = +1m.45s. and +2m.0s., iZ = +2m.17s., iN = +2m.20s. = P_g +0s., eN = +2m.27s., iE = +2m.31s., eEZ = +2m.39s., eN = +2m.47s., iSN = +2m.51s., iN = +2m.54s., iE = +2m.59s.
Stuttgart i = +1m.42s., P = +1m.56s., iN = +2m.54s., iE = +2m.59s., i = +3m.11s., iEN = +3m.28s.
Potsdam iEN = +1m.54s. and +2m.15s.
Innsbruck PP? = +2m.18s., i = +2m.32s. and +4m.13s.
Upsala iE = +2m.32s., iN = +3m.7s., eN = +4m.0s.
Vienna iP = +2m.33s., i = +2m.47s., iN = +2m.53s., i = +3m.0s., iN = +3m.14s., iZ = +3m.26s., iN = +3m.32s., i = +4m.13s., SSN = +4m.54s., iZ = +5m.1s., SSSN = +5m.13s., iZ = +5m.26s., iNZ = +5m.41s.
Triest PP = +3m.2s., SS = +5m.54s.
Königsberg iE = +2m.46s. and +4m.2s., eN = +4m.21s. and +4m.27s., eE = +4m.43s., +4m.46s., and +5m.3s.; T_0 = 0h.25m.18s.
Laibach e = +2m.33s. and +5m.1s.
Barcelona eS = +6m.54s.
Zagreb e = +2m.55s. = PP − 2s.
Helsingfors ePP = +3m.19s., eSS = +7m.47s.; T_0 = 0h.25m.13s.
Toledo SS = +7m.32s.
Lemberg eN = +5m.51s.
Granada i = +4m.1s. = PP +0s., +4m.40s., +7m.3s., +7m.28s., and +7m.34s.
Almeria i = +4m.6s. = PP +4s.
Scoresby Sund +4m.33s. = PP − 3s.
Baku eS = +13m.48s. and +14m.39s.

June 7d. Readings also at 1h. (Tucson), 2h. (Baku, Irkutsk, Vladivostok, Calcutta, Phu-Lien, and Hong Kong), 7h. (near Berkeley and Lick), 9h. (near Ksara), 11h. (near Berkeley and Lick), 14h. (Andijan and Perth), 16h. (Perth and Wellington), 17h. (Baku, Ekaterinburg, near Ksara, and near Tananarive), 18h. (near Mizusawa), 20h. (La Paz and La Plata), 23h. (Charlottesville).

June 8d. 22h. 23m. 54s. Epicentre 42°·2N. 143°·8E. (as on 1929 May 31d.). R.2.

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

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Urakawa	0·7	266	0 13	+ 3	0 27	S*
Kusiro	0·9	29	0 10	− 3	0 21	− 2
Obihiro	0·9	328	−0 14	−27	−0 2	−25
Nemuro	1·7	49	0 24	0	0 40	− 4
Muroran	2·1	274	0 25	− 5	0 47	− 7
Sapporo	2·1	296	0 30	0	0 51	− 3
Hakodate	2·3	259	0 34	+ 1	1 9	S*
Morioka	3·2	219	0 45	− 1	1 21	− 1
Mizusawa	3·7	214	0 55	+ 2	1 35	0
Akita	3·8	233	0 57	+ 3	1 39	+ 2
Hukusima	5·2	211	1 12	− 2	2 11	− 2
Kakioka	6·6	206	1 31	− 3	2 44	− 4
Tyosi	6·8	200	e 2 54	S	(e 2 54)	+ 1
Oiwake	7·1	216	1 43	+ 2	—	—

No additional readings.

June 8d. Readings also at 0h. (Berkeley), 2h. (near Manila), 4h. (Ekaterinburg, Tashkent, and Malaga), 10h. (Alicante), 11h. (Balboa Heights), 14h. (Nagoya, Manila, and near Amboina), 22h. (Granada).

June 9d. 0h. 29m. 22s. Epicentre 32°·9N. 69°·3E. (as on 2d.). X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	8·3	16	e 2 4	+ 6	(3 32)	+ 1	3·5	4·2
Tashkent	8·4	0	e 2 15	+16	—	—	i 2·9	13·4
Baku	17·2	301	—	—	e 7 4	− 2	e 9·3	—
Ekaterinburg	24·6	349	e 5 10	− 6	e 9 22	−12	11·6	14·5
Kucino	31·5	326	—	—	e 11 56	+28	e 18·8	21·0
Pulkovo	37·1	328	e 8 49	+102	e 13 48	+55	19·6	21·6
Granada	58·3	297	i 7 47	−125	—	—	33·4	37·8

Additional readings:—
Tashkent i = +2m.18s. and +2m.53s. = P_g.
Kucino e = +16m.24s.
Granada e = 0h.26m.37s.
Long waves were also recorded at Almata, Copenhagen, De Bilt, and Almeria.

June 9d. 5h. 7m. 46s. Epicentre **36°·1N. 141°·5E.** R.1.
(as on 1930 Feb. 1d.).

Probable error of epicentre ±0°·20.

A = −·632, B = +·503, C = +·589; D = +·623, E = +·783; G = −·461, H = +·367, K = −·808.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	0·6	235	0 11	+ 2	0 28	+13	—	0·8
Mito	0·8	289	0 0	−11	0 8	−13	—	—
Onahama	1·0	330	0 9	− 5	0 17	− 9	—	—
Kakioka	1·1	277	0 16	0	0 26	− 2	—	—
Tukubasan	1·1	276	0 14	− 2	0 23	− 5	—	—
Tokyo	1·5	254	0 23	+ 2	0 39	0	—	0·8
Yokohama	1·6	246	0 27	+ 4	0 49	S*	—	—
Kumagaya	1·7	272	0 24	0	0 42	− 2	—	—
Mera	1·8	229	0 31	+ 5	0 55	S*	—	—
Hukusima	1·8	334	0 24	− 2	0 43	− 3	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M
	°	°	m. s.	s.	m. s.	s.	m.	m.
Aidu	1·8	323	0 17	− 9	0 36	−10	—	—
Sendai	2·2	347	0 30	− 1	0 52	− 5	—	—
Misima	2·3	245	0 34	+ 1	1 2	+ 3	—	—
Yamagata	2·3	337	0 31	− 2	0 54	− 5	—	—
Numadu	2·3	245	0 36	+ 3	1 4	+ 5	—	—
Isinomaki	2·3	356	0 30	− 3	0 53	− 6	—	—
Oiwake	2·4	276	0 34	0	0 53	− 9	—	—
Niigata	2·7	313	0 45	+ 6	1 22	S*	—	—
Nagano	2·7	282	0 39	0	1 9	0	—	—
Mizusawa	3·0	354	0 43	0	1 15	− 2	—	—
Hatidyozima	3·3	204	0 55	+ 8	1 29	+ 4	—	—
Morioka	3·6	356	0 50	− 1	1 29	− 3	—	—
Akita	3·8	344	0 58	+ 4	1 43	+ 6	—	—
Nagoya	3·8	257	i 0 58	+ 4	1 44	+ 7	2·0	2·0
Wazima	3·9	290	0 55	− 1	1 43	+ 3	—	—
Gihu	3·9	261	0 57	+ 1	1 45	+ 5	—	—
Kameyama	4·3	254	1 4	+ 3	1 59	+ 9	—	—
Hikone	4·3	260	1 5	+ 4	2 3	+13	—	—
Aomori	4·8	354	1 10	+ 2	2 10	+ 7	—	—
Osaka	5·0	255	1 16	+ 5	(2 18)	+10	2·3	3·0
Kobe	5·3	256	e 1 17	+ 2	2 15	0	—	3·0
Siomisaki	5·4	242	1 19	+ 2	2 26	+ 8	—	—
Toyooka	5·4	266	e 1 18	+ 1	i 2 25	+ 7	—	2·9
Sumoto	5·6	254	1 21	+ 1	2 40	+17	—	3·0
Hakodate	5·7	354	1 31	+10	2 52	S*	—	—
Urakawa	6·2	9	1 26	− 2	2 30	− 8	—	—
Koti	7·0	251	e 1 40	+ 1	3 6	+ 7	—	3·8
Sapporo	7·0	359	1 51	+12	2 58	− 1	—	—
Matuyama	7·5	255	i 1 47	+ 1	3 45	S*	—	4·3
Hamada	7·7	264	1 49	0	4 0	+44	—	—
Miyazaki	9·3	246	2 14	+ 3	3 57	+ 1	—	—
Hukuoka	9·4	258	2 14	+ 1	4 29	+30	4·9	5·3
Kumamoto	9·5	253	2 15	+ 1	4 56	+55	—	—
Vladivostok	10·1	316	2 20	− 2	i 4 18	+ 2	5·1	7·0
Nagasaki	10·2	254	e 2 24	0	e 4 24	+ 6	—	—
Taikyu	10·4	273	2 29	+ 3	4 29	+ 6	—	—
Hong Kong	27·4	247	5 42	0	10 24	+ 2	—	15·9
Manila	28·3	226	6 33	+43	10 23	−14	12·4	—
Andijan	52·9	299	e 9 13	0	e 16 23	−18	—	—
Tashkent	55·0	300	e 9 30	+ 1	e 17 5	− 4	e 27·2	33·9
Ekaterinburg	55·7	320	e 9 31	− 3	e 17 13	− 6	24·7	34·9
Kucino	67·7	324	—	—	e 19 41	−12	e 30·3	36·1
Baku	68·6	307	e 10 58	− 4	e 20 22	+18	e 34·2	43·3
Pulkovo	68·8	330	11 0	− 3	19 57	−10	27·2	40·9
Helsingfors E.	70·6	333	e 13 49	PP	e 20 43	PS	—	37·2
Scoresby Sund	72·8	355	11 14	−14	21 2	+ 8	34·2	—
Copenhagen	78·4	334	11 57	− 2	21 51	− 7	40·2	—
Edinburgh	83·2	340	—	—	e 30 14?	?	—	—
De Bilt	84·0	335	e 12 27	− 1	e 22 46	−12	e 42·2	45·3
Stuttgart	85·1	331	e 12 32	− 2	e 23 19	+10	e 44·2	—
Strasbourg	85·9	332	12 35	− 3	—	—	e 43·2	—
Paris	87·6	335	e 12 43	− 3	—	—	51·2	55·2
Placenza	87·9	328	—	—	e 23 14	[− 5]	—	56·0
Florence	88·2	327	12 44	− 5	22 14	?	—	47·2
Granada	99·9	333	e 14 14	+31	—	—	i 50·5	57·2
La Paz	147·2	62	e 19 41	[+ 4]	—	—	71·2	—

Additional readings :—
Tyosi P = +14s., PP = +16s., PPP = +23s.
Nagoya P_g = +1m.4s.
Osaka i = +1m.39s. =P_g and +1m.50s.
Kobe iE = +1m.34s. =P*, SN = +2m.19s., S_g? = +2m.39s.
Toyooka iPEN = +1m.21s.
Sumoto SE = +2m.47s. =S*.
Koti S_gE = +3m.32s., iS_g = +3m.44s.
Copenhagen +22m.12s.
Stuttgart eSKSEN = +22m.58s.
Long waves were also recorded at Ottawa and other European stations.

June 9d. 12h. 14m. 6s. Epicentre 50°·5N. 164°·0E. (as on 1923 Feb. 5d.). R.2.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	19·7	244	(4 36)	+10	4 36	P	—	—
Vladivostok		23·0	264	e 4 51	−10	—	—	12·9	15·5
Nagoya		24·9	242	e 5 39	PP	—	—	—	—
Irkutsk		36·2	297	e 6 50	−10	e 11 54?	−45	18·9	22·2
Hong Kong		47·7	252	—	—	15 35	+ 6	—	29·9
Ekaterinburg		55·5	320	e 9 26	− 6	e 16 58	−18	25·9	31·5
Andijan		60·6	301	e 10 12	+ 3	—	—	30·9	—
Tashkent		62·0	305	—	—	e 18 19	−23	e 32·5	44·9
Pulkovo		63·5	336	10 25	− 4	18 47	−14	32·9	40·4
Helsingfors	E.	64·5	339	e 10 16	−19	e 18 42	−32	e 34·9	—
Kucino		64·7	330	e 10 24	−13	e 19 0	−16	31·4	39·4
Upsala		66·3	342	e 10 46	− 1	e 19 20	−16	—	—
Florissant	E.	69·5	54	—	—	e 20 37	+22	—	36·9
St. Louis	E.	69·7	54	—	—	e 20 39	+21	e 34·4	38·1
Lund		71·1	345	11 18	+ 1	—	—	39·9	—
Copenhagen		71·2	345	11 17	− 1	20 24	−11	39·9	—
Baku		72·4	313	e 11 23	− 2	e 20 50	0	e 37·9	45·8
Edinburgh		73·0	353	—	—	e 20 54?	− 3	—	—
Simferopol		75·1	326	e 11 38	− 3	—	—	—	—
De Bilt		75·8	347	11 49	+ 4	21 32	+ 3	e 40·9	—
Uccle		77·2	348	e 11 52	− 1	—	—	e 43·9	—
Feldberg		77·2	345	—	—	e 21 25	−20	e 32·5	46·0
Vienna		77·4	339	e 11 54	0	—	—	e 48·9	—
Stuttgart		78·4	344	e 12 0	+ 1	e 22 0	+ 2	e 41·4	45·9
Strasbourg		78·9	344	e 12 0	− 2	—	—	e 41·9	—
Paris		79·4	348	e 12 7	+ 2	—	—	47·9	54·9
Zagreb		79·7	339	e 12 2	− 4	—	—	e 43·9	—
Neuchatel		80·5	345	e 12 12	+ 2	—	—	—	—
Piacenza		81·9	342	e 8 54	?	—	—	—	48·3
Florence		82·7	340	12 25	+ 3	e 22 54	+10	—	40·9
Ksara		84·0	320	e 12 35	+ 7	—	—	e 53·9	—
Rome		84·3	339	e 12 46	+16	—	—	—	—
Granada		91·6	350	i 13 51	+46	i 24 5	− 6	50·0	52·3

Additional readings :—
Zi-ka-wei (△ = 36°·9 Az. = 255°) eZ = 12h.11m.44s., SZ = 12h.15m.4s., L = 12h.18m.6s.
Tashkent e = +18m.47s. and +31m.6s.
Helsingfors eE = +10m.42s. and +11m.39s., ePPE = +12m.21s., eE = +14m.19s. and 15m.20s., ePSE = +20m.23s., eSSE = +23m.32s., eSSSE = +26m.13s.
Feldberg e = +27m.41s.
Vienna iPZ = +12m.5s.
Stuttgart eEN = +17m.24s.
Zagreb e = +12m.25s.
Long waves were also recorded at Phu-Lien, Chiufeng, Medan, Hyderabad, Ottawa, Pittsburgh, San Juan, Scoresby Sund, and other European stations.

June 9d. 13h. 52m. 12s. Epicentre 18°·0S. 173°·0W. (as on 1924 Aug. 17d.). R.3.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	8·2	268	0 48	−68	2 38	−51	3·0	4·8
Wellington	25·5	202	—	—	i 11 53	?	14·8	17·8
Christchurch	28·3	202	i 8 16	?	13 52	?	—	—
Riverview	35·7	236	e 7 8	+13	e 12 40	+ 8	e 17·0	22·0
Sydney	35·7	236	i 12 48	S	(i 12 48)	+16	21·8	23·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		41·6	233	—	—	i 13 53	− 7	19·8	25·0
Honolulu T.H.		42·0	21	e 7 48?	− 1	e 13 48?	−18	i 17·0	—
Mizusawa	E.	71·5	324	11 24	+ 4	19 0	−99	27·4	—
	N.	71·5	324	13 0	?	20 0	−39	28·9	—
Manila		72·8	292	11 12	−16	20 38	−16	32·8	—
Berkeley		73·4	40	e 11 28	− 3	e 20 55	− 6	e 41·8	—
Pasadena		73·8	44	e 11 32	− 1	e 21 8	+ 2	e 32·5	—
Tucson		77·8	49	e 11 58	+ 1	e 21 54	+ 2	—	—
Vladivostok		79·2	321	e 11 44	−20	21 43	−24	35·0	38·0
Victoria		79·8	31	12 9	+ 2	21 59	−15	36·6	40·1
Zi-ka-wei		79·9	308	e 11 54	−13	i 25 42	?	—	37·2
Sitka		81·4	20	e 12 2	−13	i 22 6	−25	i 32·7	—
Hong Kong		81·8	297	12 8	− 9	22 5	−30	—	42·0
Bozeman		84·7	37	e 12 30	− 2	e 22 42	[−15]	e 34·8	—
Phu-Lien		87·8	292	—	—	(22 48?)	[−31]	22·8	—
Florissant		95·6	50	e 13 22	− 1	e 24 0	[− 4]	e 44·3	47·8
St. Louis		95·7	50	e 13 34	+10	e 24 2	[− 2]	—	—
La Paz		98·4	111	e 18 33	PP	—	—	49·8	57·0
Chicago		98·6	49	e 18 18	PP	24 6	[−13]	e 46·3	—
Irkutsk		99·8	321	e 13 23	−20	e 23 47	?	44·8	51·3
Pittsburgh		103·8	50	e 16 48?	?	e 28 0	?	e 49·8	—
Toronto		104·8	48	e 17 59	[− 1]	e 28 16	?	e 46·8	—
Georgetown		105·7	54	17 48	[−16]	i 25 2	[+ 9]	e 48·8	52·8
Ottawa		107·7	47	e 17 57	[−13]	e 28 6	PS	e 47·8	—
Fordham		108·5	51	e 17 48?	[−25]	e 28 18	PS	e 51·1	—
San Juan		111·0	76	e 19 6	PP	—	—	e 53·3	—
Tashkent		122·4	308	e 17 59	[−52]	—	—	e 48·8	68·9
Ekaterinburg		124·5	328	20 16	PP	e 28 13	?	53·8	65·8
Pulkovo		135·0	344	21 29	PP	26 13	[−20]	56·8	71·1
Kucino		135·6	335	22 44	PKS	—	—	e 57·8	77·1
Helsingfors		135·9	347	e 21 24	PP	e 26 16	?	e 60·8	—
Baku		137·0	310	e 19 31	[+13]	—	—	60·8	74·4
Upsala		137·4	352	22 48?	PKS	—	—	e 70·8	—
Edinburgh		141·3	9	—	—	e 40 48?	SS	—	—
Copenhagen		142·1	355	19 36	[+12]	23 12	PKS	67·8	—
Hamburg		144·3	357	e 21 48?	?	—	—	e 60·8	—
De Bilt		145·9	2	19 36	[0]	—	—	e 72·8	82·1
Kew		146·0	8	e 19 41	[+ 5]	e 26 12	PPP	72·8	84·4
Uccle		147·1	4	i 19 39	[+ 2]	—	—	—	—
Feldberg		147·8	358	i 19 37	[− 2]	e 29 9	?	e 67·4	80·5
Vienna		148·8	349	e 19 39	[− 1]	—	—	e 73·8	85·8
Budapest		148·9	344	19 30	[−10]	—	—	e 73·8	78·3
Paris		149·0	6	i 19 45	[+ 5]	—	—	68·8	86·8
Stuttgart		149·2	357	e 19 43	[+ 3]	—	—	e 70·8	84·4
Strasbourg		149·4	358	e 19 43	[+ 2]	—	—	58·8	—
Ksara		149·7	307	e 19 49	[+ 8]	—	—	74·8	79·8
Neuchatel		151·0	0	e 19 48	[+ 5]	—	—	—	—
Zagreb		151·2	347	e 33 54	SKSP	—	—	78·8	—
Triest		151·8	350	19 28	[−16]	—	—	e 79·8	85·8
Piacenza		152·9	355	19 58	[+12]	—	—	—	86·1
Florence		154·0	352	19 55	[+ 8]	—	—	—	77·8
Rome		155·6	350	e 19 55	[+ 6]	—	—	—	—
Toledo		156·2	21	e 19 52	[+ 3]	—	—	e 83·2	90·2
Granada		158·7	24	i 19 57	[+ 5]	—	—	i 79·2	82·6
Almeria		159·4	21	e 20 0	[+ 7]	—	—	e 78·6	83·8

Additional readings :—
Wellington i = +13m.38s.
Christchurch e = +11m.28s., SSS = +16m.26s.
Sydney iS = +18m.6s.
Melbourne e = +17m.33s. = S_cS −18s.
Honolulu T.H. eSS = +16m.18s.
Manila iE = +11m.35s.
Berkeley ePEN = +11m.34s., ePEZ = +11m.38s., eE = +11m.43s. and +12m.14s., eSE = +20m.58s., iSNZ = +21m.2s., eE = +22m.55s., +29m.58s., +33m.34s., and +39m.7s.

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Pasadena eN = +26m.53s.
Tucson ePPP = +19m.6s.
Sitka ePPP = +17m.12s.
Bozeman S = +23m.0s. =S −5s., SS = +28m.24s.
St. Louis eE = +18m.4s., +21m.14s., and +24m.16s. =SKKS −4s.
Chicago S = +26m.6s. =PS −24s.
Irkutsk ePP = +17m.40s., eSS = +30m.48s.
Ottawa ePPN = +22m.3s., eSS = +33m.48s.
Tashkent PS = +29m.24s., SS = +36m.24s., SSS = +30m.54s.
Ekaterinburg SS = +37m.18s.
Pulkovo PKS = +22m.39s., PPS = +33m.25s., SS = +39m.6s.
Kucino PPP = +25m.42s., PPS = +34m.33s., SS = +39m.42s.
Helsingfors ePPE = +22m.46s. =PKS −11s., eE = +32m.9s. =PS −14s., ePPSE= +34m.30s., eSSE = +38m.20s.
Baku PKS = +22m.56s., i = +37m.11s., SS = +40m.0s.
Feldberg i = +20m.1s., e = +22m.35s., +32m.57s., +36m.29s., and +42m.24s.
Vienna iN = +19m.44s., +21m.5s., and +22m.45s.
Stuttgart eE =iNZ = +19m.47s. and +19m.55s., eNZ = +21m.46s.
Strasbourg e = +21m.47s., PP = +22m.58s.
Ksara eE = +24m.6s., +26m.2s., and +30m.56s.
Granada PP = +22m.39s., i = +26m.12s., and +29m.54s.
Almeria e = +25m.15s.
Long waves were also recorded at Adelaide, Arapuni, Kobe, Kodaikanal, La Plata, Tananarive, Ivigtut, Charlottesville, Columbia, and other European stations.

June 9d. 15h. 58m. 41s. Epicentre 24°·0S. 175°·3W. N.3.

A = −·910, B = −·075, C = −·407; D = −·082, E = +·997; G = +·405, H = +·033, K = −·914.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		8·3	314	3 16	S	(3 16)	−15	6·2	9·3
Wellington		19·1	203	—	—	i 7 39	− 9	10·6	12·0
Christchurch		21·9	204	4 47	− 3	i 9 7	+23	—	17·2
Riverview		30·8	244	e 6 6	− 6	e 11 31	+14	e 14·6	17·6
Sydney		30·8	244	e 6 19	+ 7	e 11 49	+32	16·9	18·4
Melbourne		36·5	237	e 7 6	+ 4	i 12 59	+15	17·5?	23·1
Honolulu T.H.		48·4	22	e 15 51	S	(e 15 51)	+13	—	—
Manila		73·2	295	11 28	− 2	21 45	PS	36·3	41·3
Berkeley	E.	79·4	40	—	—	e 16 49	PPP	—	—
Zi-ka-wei		81·9	310	e 12 21	+ 3	i 22 53	+17	—	48·5
Hong Kong		82·7	298	12 22	0	22 35	− 9	—	46·5
Vladivostok		82·8	324	e 12 19	− 3	e 22 43	− 2	49·9	—
Tucson		83·3	50	22 52	S	(22 52)	+ 2	—	—
Victoria		86·0	31	e 13 10	+32	23 20	+ 2	42·7	46·6
Medan		87·8	275	—	—	i 23 18	−17	53·3	—
Bozeman		90·8	38	e 22 43	PP	—	—	e 41·3	—
La Paz		98·2	112	e 13 51	+16	i 24 23	[+ 6]	47·3	53·8
St. Louis		101·2	51	—	—	e 25 35	− 2	—	52·0
Colombo		106·4	270	25 8	S	(25 8)	[+12]	—	76·7
Pittsburgh		109·2	52	e 27 13	?	—	—	54·8	—
Toronto		110·4	49	—	—	i 26 54	?	e 49·8	—
Hyderabad		111·5	281	24 14	S	(24 14)	[−66]	—	75·0
Ottawa		113·3	48	—	—	e 27 25	{+55}	e 51·3	—
Fordham		113·8	54	—	—	e 25 21	[− 8]	e 59·3	—
San Juan		114·4	80	e 21 19	?	—	—	e 54·3	—
Tashkent		124·3	305	—	—	e 32 19?	?	e 52·3	83·7
Ekaterinburg		128·4	325	e 22 27	?	e 28 12	{+ 1}	58·3	71·5
Baku		138·9	305	e 19 24	[+ 4]	e 23 6	PKS	e 67·3	—
Kucino		140·0	331	e 24 13	?	e 29 18	{− 6}	e 65·4	85·1
Pulkovo		140·1	340	e 19 27	[+ 6]	—	—	65·3	80·9
Königsberg	N.	147·1	343	e 19 49	[+12]	—	—	e 83·3	—
Theodosia		147·5	319	e 19 46	[+ 8]	—	—	—	—
Edinburgh		147·6	8	—	—	e 43 19?	SS	—	—
Copenhagen		147·8	351	19 44	[+ 5]	—	—	—	—
Hamburg		150·2	354	e 20 19	{+19}	—	—	e 84·3	95·3

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	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	151·0	297	e 19 55	[+12]	—	—	89·3	—
Oxford	151·9	8	—	—	i 43 3	SS	e 78·6	88·3
De Bilt	151·9	359	e 19 53	[+ 9]	—	—	e 81·3	89·4
Kew	152·3	7	e 19 50	[+ 5]	e 43 15	SS	82·3	88·4
Uccle	153·2	1	20 5	{− 8}	—	—	—	91·8
Cheb	153·3	349	—	—	e 27 19?	PPP	e 81·3	93·3
Feldberg	153·7	355	i 19 55	[+ 8]	e 23 25	PP	—	97·9
Paris	155·1	4	e 19 52	[+ 4]	—	—	84·3	88·3
Strasbourg	155·3	355	e 20 16	{− 7}	—	—	33·3	—
Zagreb	156·4	340	e 20 19?	{− 9}	—	—	e 88·3	—
Piacenza	158·6	350	e 20 19	{−19}	—	—	—	97·8
Florence	159·5	346	20 4	[+11]	25 9	?	75·6	86·1
Granada	165·1	27	e 20 43	{−24}	i 31 20	{−26}	84·1	89·9
Almeria	165·8	24	20 0	[0]	24 43	PP	e 83·9	92·1

Additional readings :—
Suva S = +5m.16s.
Wellington i = +9m.9s.
Christchurch S = +10m.37s., SSS = +13m.55s.
Melbourne e = +8m.43s. and +12m.14s.
Victoria PE = +13m.20s.
La Paz iSSE = +32m.15s.
Ottawa eE = +29m.24s. =PS +24s.
Fordham e = +29m.29s. =PS +24s.
San Juan PP = +25m.25s., ePPP = +29m.1s., ePS = +35m.49s.
Pulkovo e = +22m.51s. =PKS −18s., +28m.8s., and 32m.40s.
Ksara eE = +23m.25s. =PKS −3s. and +29m.20s.
De Bilt iZ = +20m.26s. =PKS +19s., eE = +43m.4s. =SS +2s.
Long waves were also recorded at Arapuni, Phu-Lien, Tananarive, Bombay, Kodaikanal, Florissant, Chicago, Charlottesville, La Plata, Ivigtut, Scoresby Sund, and other European stations.

June 9d. Readings also at 3h. (near Berkeley), 6h. (near Santiago), 8h. (Ekaterinburg and Tashkent), 12h. (Bombay, Calcutta, and Hong Kong), 13h. (near Granada), 16h. (near Hastings and Wellington), 19h. (Dakar), 20h. (Granada, San Juan, La Plata, and near La Paz), 22h. (near Mizusawa), 23h. (La Paz and near Taihoku).

June 10d. 17h. 1m. 37s. Epicentre 44°·5N. 11°·0E. (as on 1931 May 16d.). R.3.

A = +·700, B = +·136, C = +·701; D = +·191, E = −·982;
G = +·688, H = +·134, K = −·713.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Prato	0·6	173	e 0 3	− 6	i 0 18	+ 3	—	0·4
Florence	0·7	166	i 0 8	− 2	—	—	—	—
Padova	1·1	35	i 0 13	− 3	i 0 27	− 1	—	—
Piacenza	1·1	300	0 20	+ 4	—	—	i 0·6	0·8
Venice	1·3	45	e 0 14	− 4	i 0 35	+ 2	—	—
Treviso	1·4	36	i 0 19	− 1	i 0 37	+ 1	—	—
Pavia	1·5	298	i 0 30	P_g	—	—	—	1·3
Camerino	2·0	133	1 4	S_g	—	—	—	—
Triest	2·2	59	e 0 32	+ 1	i 1 1	+ 4	1·1	1·3
Chur	2·6	337	e 0 38	+ 1	—	—	—	—
Collurania	2·7	133	0 45	+ 6	—	—	—	—
Rome	2·8	157	e 0 49	P*	1 38	S_g	—	2·3
Laibach	2·9	58	e 0 45	+ 4	e 1 12	− 2	—	1·7
Zurich	3·3	330	e 0 48	+ 1	—	—	—	—
Ravensburg	3·4	344	e 1 1	P*	i 1 54	S_g	—	—
Neuchatel	3·7	313	e 0 55	+ 2	i 2 0	S_g	—	—
Zagreb	3·8	68	1 7	P*	i 1 43	− 6	—	2·0
Stuttgart	4·4	345	e 1 18	P*	e 2 10	S*	—	—
Naples	4·4	146	e 1 35	P_g	—	—	—	—
Strasbourg	4·6	336	e 1 16	+10	i 2 49	S_g	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna	5·2	44	e 1 37	P_g	—	—	i 2·6	3·4
Feldberg	6·0	344	i 1 29	+ 4	i 3 10	S*	—	3·4
Budapest	6·3	59	3 28	S_g	—	—	—	—
Uccle	7·7	327	—	—	e 4 5	S*	—	—
Potsdam	8·0	9	—	—	e 3 59	S*	—	—
Hamburg	9·1	356	—	—	e 4 23?	S*	—	—

Additional readings :—
Triest S_g = +1m.4s.
Zurich eP_g = +59s.
Ravensburg iP*N = +1m.7s. =P_g, iEN = +1m.31s.
Neuchatel eP_g = +1m.7s.
Zagreb i = +1m.18s.
Stuttgart iNZ = +2m.31s., e = +3m.3s.
Strasbourg eP_g = +1m.45s., iSS = +2m.57s.
Feldberg i = +1m.57s. and +3m.21s.
Potsdam i = +4m.17s.
Long waves were also recorded at De Bilt, Paris, Kew, Copenhagen, Helsingfors, Pulkovo, and Ekaterinburg.

June 10d. Readings also at 0h. (Granada), 1h. (Baku and Ekaterinburg), 3h. (Granada, Hong Kong, Phu-Lien, and near Hastings), 7h. (near Kobe, near Berkeley and Lick), 10h. (near Hukuoka), 12h. (De Bilt, Feldberg, Copenhagen, Helsingfors, Pulkovo, Baku, Kucino, Ekaterinburg, Almata, Andijan, Tashkent, Irkutsk, Phu-Lien, Hong Kong, Calcutta, near Medan, near Berkeley, and Lick (3)), 13h. (Stonyhurst), 15h. (Catania, Messina, and San Juan), 16h. (San Juan).

June 11d. 6h. 16m. 11s. Epicentre 35°·4N. 138°·9E. N.1.

Probable error of epicentre ±0°·17.

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

A = −·614, B = +·536, C = +·579 ; D = +·657, E = +·754 ;
G = −·437, H = +·381, K = −·815.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Misima	0·3	172	0 3	− 1	0 9	+ 1	—	—
Numadu	0·3	188	0 5	+ 1	0 10	+ 2	—	—
Kohu	0·4	311	0 1	− 5	0 8	− 2	—	—
Yokosuka	0·6	98	0 8	− 1	0 20	+ 5	—	—
Yokohama	0·6	87	0 10	+ 1	0 18	+ 3	—	—
Tokyo	0·8	68	0 10	− 1	0 21	0	—	0·4
Mera	0·9	122	0 13	0	0 25	+ 2	—	—
Kumagaya	0·9	28	0 11	− 2	0 22	− 1	—	—
Oiwake	1·0	343	0 13	− 1	0 24	− 2	—	—
Maebasi	1·0	8	0 12	− 2	0 25	− 1	—	—
Matumoto	1·1	318	0 16	0	0 36	S_g	—	—
Hamamatu	1·2	235	0 15	− 2	0 33	+ 2	—	—
Kakioka	1·3	51	0 18	0	0 33	0	—	—
Tukubasan	1·3	50	0 16	− 2	0 31	− 2	—	—
Utunomiya	1·4	34	0 20	0	0 37	+ 1	—	—
Nagano	1·4	336	0 20	0	0 38	+ 2	—	—
Takayama	1·5	299	0 32	P_g	0 55	S_g	—	—
Nagoya	1·6	262	i 0 24	+ 1	0 48	S*	—	1·1
Mito	1·6	52	0 21	− 2	0 41	0	—	—
Gihu	1·7	·270	0 26	+ 2	0 51	S*	—	—

Continued on next page.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Tyosi		1·7	78	0 22	− 2	0 45	+ 1	—	0·9
Takada		1·8	343	0 26	0	0 48	+ 2	—	—
Kameyama		2·0	255	0 32	+ 3	1 0	S*	—	—
Hatidyozima		2·1	162	0 35	+ 5	1 8	S_g	—	—
Hikone		2·2	266	0 38	+ 7	1 11	S_g	—	—
Hukui		2·2	287	0 28	− 3	0 55	− 2	—	—
Onahama		2·3	46	0 26	− 7	0 51	− 8	—	—
Niigata		2·5	3	0 41	+ 5	1 16	S*	—	—
Wazima		2·6	321	0 38	+ 1	1 14	+ 7	—	—
Kyoto		2·6	262	0 38	+ 1	1 11	+ 4	—	—
Hukusima		2·7	28	0 37	− 2	1 8	− 1	—	—
Osaka		2·8	255	0 42	+ 2	(1 27)	S*	1·4	1·9
Kobe		3·1	257	0 46	+ 2	1 27	+ 7	—	1·7
Siomisaki		3·2	233	0 56	P*	1 42	S*	—	—
Toyooka		3·3	272	i 0 46	− 1	i 1 41	S*	—	1·7
Sumoto		3·4	252	e 0 45	− 4	1 42	S*	—	2·0
Mizusawa	E.	4·1	24	1 0	+ 2	1 51	+ 6	—	—
	N.	4·1	24	0 58	0	1 47	+ 2	—	—
Akita		4·4	12	1 3	0	2 13	S*	—	—
Morioka		4·7	21	1 6	− 1	2 4	+ 4	—	—
Koti		4·8	250	1 8?	0	2 8	+ 5	—	2·6
Matuyama		5·3	254	e 1 15	0	i 2 35	S*	—	3·0
Aomori		5·6	14	1 21	+ 1	2 28	+ 5	—	—
Hakodate		6·6	12	1 39	+ 5	3 34	S_g	—	—
Miyazaki		7·1	243	1 53	+12	3 30	S*	—	—
Hukuoka		7·2	258	e 1 58	+16	3 45	S*	—	4·1
Sapporo		7·9	13	1 56	+ 4	3 46	S*	—	—
Nagasaki		7·9	253	e 2 22	+30	e 3 47	+26	—	4·5
Taikyu		8·3	276	2 12	+14	4 18	S*	—	—
Vladivostok		9·4	327	2 10	− 3	—	—	4·4	5·3
Zi-ka-wei	z.	15·1	259	e 3 35	+ 5	6 44	+27	—	9·7
Hong Kong		25·2	245	2 52	?	—	—	—	17·1
Manila		26·3	222	5 0	−32	9 22	−41	12·1	—
Almata		47·4	300	5 50	?	—	—	—	—
Andijan		51·3	298	8 59	− 2	—	—	—	—
Tashkent		53·4	300	e 4 49?	?	—	—	e 21·8	37·8
Ekaterinburg		54·8	320	i 9 24	− 3	e 17 0	− 6	29·8	35·1
Baku		67·3	304	e 10 51	− 3	e 19 49	+ 1	33·8	—
Pulkovo		68·3	330	e 10 57	− 3	e 19 44	−17	31·8	40·0
Königsberg		75·6	329	—	—	e 27 49?	?	—	—

Additional readings :—
Kobe iZ = +1m.4s., S_gN = +1m.37s., S_gE = +1m.41s.
Toyooka iPN = +58s.
Sumoto iP = +49s.
Koti P_g? = +1m.19s., S_g = +2m.20s.
Hukuoka e = +3m.33s.
Vladivostok i = +2m.20s. and +2m.38s.
Long waves were also recorded at Kucino, Phu-Lien, Scoresby Sund, and the European stations.

June 11d. Readings also at 2h. (near Manila), 5h. (Scoresby Sund), 7h. (Padova and Nagoya), 8h. (near Tananarive), 9h. (Tyosi), 10h. (near La Paz and near Manila), 11h. (near Tyosi), 17h. (Padova), 18h. (Riverview, Sydney, Wellington, and Suva), 19h. (Granada, Scoresby Sund, Ottawa, Pittsburgh, near Mizusawa and Tyosi), 20h. (De Bilt), 23h. (Tyosi).

June 12d. 1h. 45m. 6s. Epicentre 28°·5N. 140°·5E. (as on 1930 Dec. 23d.). R.2.

A = −·678, B = +·559, C = +·477; D = +·636, E = +·772;
G = −·368, H = +·304, K = −·879.

A depth of focus 0·070 used with this epicentre on 1928 Aug. 16d. 3h. is retained here.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·0	7·2	3	e 1 39	− 3	e 2 57	− 7	—	—
Nagoya	z.	0·0	7·3	336	e 1 38	− 6	2 55	−11	—	—
Sumoto		0·0	7·5	322	1 39	− 7	3 0	−11	—	3·0
Osaka		0·0	7·5	327	1 46	0	(2 54)	−17	2·9	3·4
Kobe	E.	0·0	7·7	325	—	—	i 3 5	−11	—	—
Toyooka		−0·3	8·5	328	i 1 52	− 4	i 3 20	− 9	—	3·4
Hukuoka		−0·8	10·0	303	2 8	− 2	3 54	0	—	4·0
Mizusawa		−0·9	10·6	3	2 18	+ 1	4 9	+ 3	—	—
Zi-ka-wei	z.	−2·2	16·7	284	e 3 17	− 5	e 5 45	−18	—	—
Manila		−3·2	22·8	236	5 29	+64	9 30	+92	—	—
Hong Kong		−3·5	24·5	261	6 31	?	8 27	+ 1	—	—
Phu-Lien		−4·5	31·6	266	e 5 46	+ 7	10 21	+ 4	—	—
Irkutsk		−4·9	35·8	322	e 6 19	+ 6	e 10 47	−31	e 13·6	—
Andijan		−6·8	56·0	304	8 40	− 5	—	—	—	—
Baku		−7·8	72·4	309	e 10 45	+ 9	e 21 9	PS	36·9	—
Pulkovo		−8·0	74·9	331	10 59	+ 8	19 55	+12	—	—
Helsingfors		−8·1	77·0	334	e 11 7	+ 3	e 20 15	+ 7	e 28·9	—
Scoresby Sund		−8·2	80·2	355	—	—	20 54?	+ 9	—	—
Copenhagen		−8·4	84·9	335	—	—	38 54?	?	—	—
Granada		−8·9	106·2	332	—	—	(e 26 6)	?	e 26·1	67·6

Additional readings:—
Kobe iN = +3m.35s.
Zi-ka-wei iZ = +6m.15s.
Helsingfors ePPE = +13m.34s., ePPN = +13m.48s., ePSE = +21m.14s., eE = +21m.41s., +25m.16s., and +28m.8s.
Long waves were also recorded at Tashkent.

June 12d. Readings also at 1h. (De Bilt, Uccle, Granada, and Scoresby Sund), 5h. (Honolulu T.H.), 6h. (Almata and Andijan), 9h. and 10h. (near Mizusawa), 11h. (Montecassino and near Granada), 13h. (Messina), 14h. (near Mizusawa), 17h. (Andijan), 21h. (La Paz, La Plata, and near Santiago), 23h. (San Juan and near Manila).

June 13d. 15h. 34m. 6s. Epicentre 24°·0S. 175°·3W. (as on 9d.). R.3.

A = −·910, B = −·075, C = −·407; D = −·082, E = +·997;
G = +·405, H = +·033, K = −·914.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		8·3	314	2 14?	+16	4 14	S*	4·9	7·4
Wellington		19·1	203	—	—	e 8 34	+46	10·5	12·9
Christchurch		21·9	204	e 4 49	− 1	10 37	L	16·0	—
Riverview		30·8	244	e 6 2	−10	e 11 28	+11	e 14·5	16·7
Sydney		30·8	244	e 5 30	−42	—	—	15·7	18·2
Melbourne		36·5	237	e 8 26	+84	e 12 57	+13	18·2	20·1
Adelaide		41·2	243	e 9 41	(− 5)	e 13 2	−52	17·0	24·9
Honolulu T.H.		48·4	22	—	—	(e 15 34)	− 4	e 15·6	—
Manila		73·2	295	e 11 25	− 5	e 21 18	PS	36·4	42·4
Pasadena	z.	79·5	45	e 12 2	− 3	—	—	e 45·6	—
Zi-ka-wei		81·9	310	e 12 16	− 2	e 22 44	+ 8	—	50·1
Hong Kong		82·7	298	11 58	−24	22 37	[− 4]	—	45·7
Vladivostok		82·8	324	e 17 46	?	—	—	54·6	—
Victoria		86·0	31	23 15	S	(23 15)	− 3	44·9	52·9
Sitka		87·7	20	—	—	e 23 22	[+ 4]	—	—

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Bozeman	90·8	38	—	—	e 23 36	[− 1]	e 46·9	—
La Paz	98·2	112	—	—	24 18	[+ 1]	49·9	56·4
Florissant	101·1	51	—	—	e 24 26	[− 5]	e 48·3	53·0
St. Louis	101·2	51	—	—	e 25 35	− 2	—	53·1
Irkutsk	103·2	322	e 13 51	− 7	24 22	[−19]	e 47·9	60·8
Toronto	110·4	49	—	—	e 26 17	{+ 7}	e 53·2	—
Georgetown	111·0	55	19 8	PP	—	—	e 55·9	61·4
Ottawa	113·3	48	—	—	e 26 16	{−14}	e 55·9	—
Fordham	113·8	54	—	—	e 25 20	[− 9]	e 59·9	—
San Juan	114·4	80	—	—	i 25 20	[−11]	—	—
Tashkent	124·3	305	—	—	e 28 30	?	e 56·9	89·2
Ekaterinburg	128·4	325	e 20 57	PP	e 27 59	{−12}	55·9	79·4
Scoresby Sund	131·0	11	21 48	PP	—	—	67·9	—
Kucino	140·0	331	e 22 58	PP	e 29 24	{ 0}	e 69·0	87·1
Pulkovo	140·1	340	e 19 20	[− 1]	—	—	60·9	83·1
Theodosia	147·5	319	e 19 39	[+ 1]	—	—	—	—
Edinburgh	147·6	8	—	—	42 54?	SS	e 81·9	—
Copenhagen	147·8	351	19 42	[+ 3]	—	—	85·9	—
Hamburg	150·2	354	e 19 43	[+ 1]	—	—	e 82·9	—
De Bilt	151·9	359	i 19 46	[+ 2]	—	—	e 81·9	93·8
Kew	152·3	7	e 19 40	[− 5]	—	—	81·9	91·3
Uccle	153·2	1	e 19 54?	[+ 8]	—	—	e 81·9	—
Feldberg	153·7	355	e 20 0	[+13]	—	—	e 80·7	98·6
Stuttgart	155·0	353	e 19 48	[0]	—	—	e 82·9	—
Paris	155·1	4	e 19 49	[+ 1]	—	—	83·9	87·9
Strasbourg	155·3	355	e 19 54	[+ 6]	—	—	—	—
Piacenza	158·6	350	e 19 54	[+ 2]	—	—	—	98·1
Florence	159·5	346	19 54	[+ 1]	e 24 14	PP	—	75·9

Additional readings :—
Riverview e = +7m.11s. =PP +4s.
Manila SPS = +26m.33s.
Pasadena eZ = +26m.7s., +39m.9s., and +41m.37s.
Bozeman e = +41m.30s.
Florissant eN = +25m.28s. =S −8s.
Irkutsk PPS = +26m.54s.?, SS = +31m.54s. ?
Toronto e = +36m.16s.
Georgetown PS = +28m.36s., SSE = +34m.24s.
Ottawa eN = +27m.21s., eE = +29m.4s. =PS +4s., eN = +35m.1s. =SS −2s., eE = +36m.14s., eN = +48m.36s. and +52m.0s.
Fordham eE = +28m.54s. =PS −11s. and +34m.44s. =SS −26s.
San Juan e = +29m.6s. =PS −4s., eL = +35m.42s. =SS +24s.
Ekaterinburg e = +22m.21s. and +29m.17s.
Scoresby Sund +22m.33s. =PKS −5s., e = +31m.48s. =PS +8s., and +35m.18s.
Pulkovo e = +22m.18s. =PP −5s., +25m.32s. =PPP +14s., +34m.38s., and +36m.51s.
De Bilt iZ = +23m.32s. =PP +1s., eN = +33m.48s. =SKSP −3s.
Kew eEN = +23m.10s., eZ = +23m.29s. =PP −5s.
Stuttgart eN = +27m.18s. =PPP +6s., e = +34m.0s. =SKSP −12s.
Strasbourg ePP = +23m.54s.?, e = +27m.24s. =PPP +10s., eL = +33m.54s.? = SKSP +20s.
Long waves were also recorded at Apia, Arapuni, Ivigtut, other American and European stations.

June 13d. 22h. 45m. 22s. Epicentre 36°·1N. 141°·5E. (as on 9d.). X.

A = −·632, B = +·503, C = +·589.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Tyosi		0·6	235	i 0 8	− 1	i 0 11	− 4	—	—
Tokyo		1·5	254	0 22	+ 1	0 36	− 3	—	1·2
Mizusawa	E.	3·0	354	1 1	P_g	1 28	S^*	—	—
	N.	3·0	354	1 2	P_g	1 38	S_g	—	—
Nagoya		3·8	257	e 1 6	P^*	1 50	S^*	—	—
Osaka		5·0	255	1 31	P^*	—	—	2·7	3·4
Kobe		5·3	256	e 1 40	P_g	2 36	S^*	—	2·8
Toyooka		5·4	266	e 1 36	P^*	2 44	S^*	—	2·9
Sumoto		5·6	254	e 1 44	P^*	2 54	S^*	—	3·0

Toyooka gives also iSZ = +2m.38s.

June 13d. Readings also at 2h. and 3h. (La Paz), 5h. (Ekaterinburg, Tashkent, Phu-Lien, and La Paz), 8h. (Tyosi), 10h. (Nagoya), 11h. (Hohenheim and Ravensburg), 12h. (Cheb), 14h. (Ekaterinburg, Irkutsk, Pulkovo, Vladivostok, Phu-Lien, Zi-ka-wei, Hong Kong, near Manila (2), and near Taihoku), 15h. (Copenhagen, Helsingfors, and Perth), 16h. (Riverview), 20h. (Nagoya and near Tyosi (2)), 22h. (near Andijan and near Tyosi), 23h. (Almata and near Tashkent).

June 14d. Readings at 2h. (near Tyosi), 3h. (near Manila), 4h. (near Hastings and Wellington), 6h. (Florence), 7h. (Ekaterinburg, Pulkovo, Tashkent, Helsingfors, Scoresby Sund, near Berkeley, and Lick), 11h. (Ekaterinburg, Irkutsk, Tashkent, Hong Kong, Phu-Lien, and Vladivostok), 14h. (near Manila), 19h. (near La Paz), 21h. (Lick and near Sumoto), 23h. (La Paz).

June 15d. 11h. 20m. 2s. Epicentre 14°·5S. 76°·0W. (as on 1930 June 25d.). R.2.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		7·8	106	i 1 43	− 8	i 3 15	− 4	3·8	4·7
Santiago		19·6	167	4 24	− 1	8 0	+ 2	10·9	—
La Plata		26·1	145	5 22	− 8	9 58	− 2	12·5	—
San Juan		34·2	15	e 6 47	+ 5	12 10	+ 1	e 17·7	—
Georgetown		53·4	359	9 19	+ 2	13 58	?	e 26·0	—
St. Louis		54·7	347	e 9 27	+ 1	i 17 8	+ 3	—	—
Florissant		55·0	347	i 9 29	0	e 17 10	+ 1	—	33·5
Pittsburgh		55·1	356	—	—	e 17 10?	− 1	e 26·5	—
Fordham		55·4	1	e 9 33	+ 1	e 17 19	+ 4	e 27·0	—
Harvard		57·0	4	e 10 42	(0)	e 17 29	− 7	e 30·5	—
Chicago		57·2	350	—	—	(e 16 40)	−59	e 16·7	—
Toronto		58·2	357	e 9 58	+ 6	e 17 48	− 4	e 27·4	32·0
Ottawa		59·9	0	e 10 4	0	e 18 17	+ 2	e 29·0	—
La Jolla		61·6	321	e 10 22	+ 6	—	—	—	—
Riverside		62·4	322	e 10 30	+ 9	—	—	—	—
Pasadena		63·0	321	e 10 29	+ 4	—	—	—	—
Mount Wilson		63·0	321	e 10 33	+ 8	—	—	—	—
Sitka		86·6	333	—	—	i 23 22	− 1	e 49·9	—
Scoresby Sund		92·6	15	13 12	+ 3	24 14	− 6	46·0	—
Kew		92·7	37	e 16 58?	PP	—	—	48·0	—
De Bilt		96·1	38	e 17 28	PP	—	—	e 49·0	55·4
Strasbourg		96·8	41	—	—	(e 22 58?)	?	e 23·0	—
Feldberg		97·6	40	e 20 58	?	e 39 52	?	—	56·8
Copenhagen		101·1	35	—	—	23 58?	[−33]	46·0	—
Kucino		115·3	34	—	—	e 35 50	SS	e 54·5	68·7
Baku		126·5	50	e 21 0	PP	(31 58?)	?	32·0	—
Ekaterinburg		126·5	28	e 18 59	[− 1]	i 20 55	PP	47·0	68·5
Tashkent		139·7	41	e 22 58	PP	—	—	e 77·0	84·4
Andijan		142·0	41	20 28	[+64]	—	—	—	—
Zi-ka-wei	z.	156·9	319	e 19 52	[+ 2]	—	—	76·2	79·7

Additional readings :—
La Paz iSN = +3m.19s.
San Juan SS = +14m.22s.
St. Louis iN = +9m.40s.
Florissant eE = +19m.13s. = S_0S − 4s.
Pittsburgh e = +19m.16s.? = S_0S − 2s.
Ottawa eSSSE = +25m.8s. ; T_0 = 11h.19m.55s.
Scoresby Sund +30m.28s. = SS +11s.
Zi-ka-wei eZ = +24m.8s. and +30m.16s.
Long waves were also recorded at Tucson, Bozeman, Bombay, Hong Kong, and other European stations.

June 15d. Readings also at 2h. (Cheb and near La Paz), 3h. (near Wellington), 6h. (near Lick), 7h. (Triest), 9h. (San Juan), 10h. (Ekaterinburg, Tashkent, Scoresby Sund, and near Sumoto), 20h. (near La Paz), 22h. (La Paz, Tyosi, near Mizusawa (2), and near Manila), 23h. (Granada).

June 16d. Readings at 1h. (near Mizusawa), 4h. (near Sumoto), 5h. (near Santiago), 6h. (La Paz), 7h. (Andijan), 9h. (near Taihoku), 10h. (near Sumoto (2)), 14h. (near Berkeley and Lick), 15h. (Collurania, near Naples, Rome, near Mizusawa, Nagoya, and Tyosi), 17h. (Andijan, near Wellington, and near Zi-ka-wei), 18h. (near Balboa Heights), 20h. (near Lick), 22h. (near Batavia and Malabar), 23h. (Berkeley).

June 17d. 12h. 9m. 44s. Epicentre 35°·6N. 139°·4E. N.1.

Probable error of epicentre ±0°·34.

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

A = −·617, B = +·529, C = +·582; D = +·651, E = +·759; G = −·442, H = +·379, K = −·813.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·3	74	0 8	+ 4	0 14	+ 6	—	0·3
Yokohama	0·3	129	0 8	+ 4	0 14	+ 6	—	—
Yokosuka	0·4	144	0 6	0	0 14	+ 4	—	—
Misima	0·6	217	0 11	+ 2	0 21	+ 6	—	—
Kumagaya	0·6	359	0 8	− 1	0 16	+ 1	—	—
Kohu	0·7	273	0 22	+12	0 43	+25	—	—
Numadu	0·7	222	0 11	+ 1	0 19	+ 1	—	—
Mera	0·8	153	0 14	+ 3	0 27	S*	—	—
Tukubasan	0·8	43	0 11	0	0 22	+ 1	—	—
Kakioka	0·9	45	0 11	− 2	0 21	− 2	—	—
Utunomiya	1·0	22	0 14	0	0 27	+ 1	—	—
Oiwake	1·0	317	0 14	0	0 26	0	—	—
Mito	1·2	48	0 16	− 1	0 28	− 3	—	—
Tyosi	1·2	84	i 0 17	0	0 34	+ 3	—	0·8
Matumoto	1·3	298	0 19	+ 1	0 37	+ 4	—	—
Nagano	1·4	318	0 17	− 3	0 38	+ 2	—	—
Hamamatu	1·6	237	0 27	+ 4	0 51	S_g	—	—
Takada	1·7	328	0 25	+ 1	0 51	+ 7	—	—
Takayama	1·8	288	0 30	+ 4	1 1	S_g	—	—
Nagoya	2·0	258	i 0 30	+ 1	0 58	S*	—	1·2
Gihu	2·1	265	0 32	+ 2	0 59	+ 5	—	—
Hukusima	2·3	22	0 30	− 3	0 57	− 2	—	—
Niigata	2·3	353	0 33	0	1 5	+ 6	—	—
Kameyama	2·5	253	0 38	+ 2	1 21	S_g	—	—
Hatidyozima	2·5	172	0 37	+ 1	1 9	+ 5	—	—
Hukui	2·6	280	0 31	− 6	1 16	S*	—	—
Wazima	2·7	312	0 37	− 2	1 21	S*	—	—
Sendai	2·9	24	0 40	− 1	1 19	S*	—	—
Kyoto	3·0	259	0 44	+ 1	1 33	S*	—	—
Osaka	3·3	253	0 48	+ 1	—	—	1·6	2·9
Kobe	3·6	255	i 0 52	+ 1	1 48	S*	—	2·2
Toyooka	3·7	271	0 54	+ 1	i 1 54	S*	—	2·0
Siomisaki	3·7	235	0 54	+ 1	1 49	S*	—	—
Mizusawa	3·8	21	0 52	− 2	1 39	+ 2	—	—
Sumoto	3·9	252	0 56	0	1 55	S*	—	2·7
Akita	4·1	7	0 59	+ 1	2 6	S*	—	—
Morioka	4·3	18	1 1	0	1 54	+ 4	—	—
Koti	5·2	249	e 1 15	+ 1	2 19	+ 6	—	2·9
Matuyama	5·7	254	i 1 20	− 1	i 2 52	S*	—	3·3
Hamada	6·0	265	1 27	+ 2	2 57	S*	—	—
Miyazaki	7·5	243	1 49	+ 3	3 29	+18	—	—
Sapporo	7·6	10	1 44	− 4	3 2	−12	—	—
Hukuoka	7·6	257	1 54	+ 6	3 50	S*	—	4·3
Kumamoto	7·7	251	1 51	+ 2	3 44	S*	—	—
Nagasaki	8·4	253	2 7	+ 8	3 52	+18	—	4·7

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima		8·8	164	2 3	− 2	3 40	− 4	—	—
Nemuro		9·1	30	3 25	?	4 48	?	—	—
Tomie		9·3	254	2 19	+ 8	4 19	+23	—	—
Naha		13·7	230	2 15	−56	5 9	−35	—	—
Dairen		14·5	288	3 22	0	5 31	−32	—	—
Zi-ka-wei		15·6	259	3 42	+ 6	—	—	—	9·7
Isigakizima		17·3	233	3 56	− 2	7 36	+27	—	—
Taihoku	N.	18·6	240	3 34	−40	(7 57)	SS	8·0	—
Chiufeng		18·8	291	4 26	+10	8 23	+41	—	—
Hong Kong		25·6	246	5 22	− 3	10 23	SS	13·7	17·1
Manila		26·7	223	5 30	− 5	i 9 57	−13	12·8	—
Irkutsk		29·8	315	e 5 56	− 7	e 10 59	− 2	15·3	19·1
Phu-Lien		32·3	250	e 6 21	− 4	—	—	—	—
Calcutta		44·6	270	10 47	?	14 45	+ 1	17·8	—
Almata		47·7	300	8 31	− 3	15 24	− 5	—	—
Andijan		51·6	298	e 8 59	− 4	e 16 17	− 6	—	—
Tashkent		53·7	300	e 9 7	−12	i 16 59	+ 7	e 24·3	33·3
Ekaterinburg		54·9	320	i 9 22	− 6	i 17 1	− 7	26·3	35·1
Bombay		60·3	275	12 29	PP	18 11	− 9	23·7	—
Kucino		67·0	323	e 11 1	+ 9	19 35	−10	32·2	48·5
Baku		67·5	306	10 53	− 2	i 19 46	− 5	31·9	42·7
Pulkovo		68·3	330	10 57	− 3	19 49	−12	30·3	45·7
Helsingfors	E.	70·2	331	e 11 8	− 4	i 20 12	−12	e 31·3	—
Scoresby Sund		73·0	355	11 25	− 4	20 47	−10	35·3	—
Upsala		73·2	334	e 11 30	0	e 20 43	−16	e 41·3	—
Theodosia		74·1	316	e 11 30	− 5	e 20 59	−11	35·3	—
Berkeley		74·6	54	e 11 33	− 5	—	—	—	—
Simferopol		74·9	316	11 36	− 4	21 6	−13	—	—
Yalta		75·1	316	11 36	− 5	21 6	−15	—	—
Königsberg		75·6	329	—	—	e 21 10	−17	44·3	49·7
Lund		77·9	333	—	—	21 36	−17	44·3	—
Copenhagen		78·1	333	11 53	− 5	21 41	−14	38·3	—
Santa Barbara		78·3	56	e 11 56	− 3	—	—	—	—
Mount Wilson		79·6	56	e 11 59	− 7	—	—	—	—
Pasadena		79·6	55	e 12 1	− 5	e 21 59	−12	—	—
Riverside		80·1	55	e 12 2	− 6	—	—	—	—
Ksara		80·4	306	e 12 8	− 2	22 4	−16	—	—
Potsdam		80·4	330	—	—	e 22 4	−16	e 38·3	—
Hamburg		80·7	333	e 12 20	+ 8	e 22 10	−13	e 42·9	51·3
La Jolla		80·9	56	e 12 9	− 4	—	—	—	—
Budapest		81·3	324	12 8	− 7	22 18	−12	43·3	45·3
Dyce		81·6	340	—	—	22 21	−12	44·6	—
Vienna		82·0	326	e 12 12	− 6	22 25	−12	e 47·3	52·3
Cheb		82·4	328	e 22 35	S	(e 22 35)	− 6	e 44·3	48·3
Belgrade		82·4	321	11 16	−64	e 21 28	−73	e 48·9	—
Edinburgh		83·1	340	—	—	e 22 32	−16	46·3	—
Graz		83·2	326	i 12 21	− 3	i 22 36	−13	e 33·3	53·8
De Bilt		83·6	334	12 24	− 2	22 38	−15	e 40·3	49·7
Feldberg		83·9	331	i 12 22	− 6	e 22 52	− 4	e 43·7	49·1
Zagreb		84·0	325	e 12 16?	−12	e 22 38	−20	e 44·6	—
Stuttgart		84·8	330	e 12 26	− 6	e 22 44	−22	e 43·3	54·8
Uccle		85·0	334	12 27	− 6	i 22 46	−22	42·3	—
Triest		85·1	326	e 12 26	− 8	i 22 45	−24	e 44·1	50·4
Bidston		85·2	339	e 12 36	+ 2	i 22 36	−24	e 43·3	—
Strasbourg		85·5	330	e 12 30	− 6	e 22 51	−22	e 40·3	—
Kew		86·0	337	e 12 37	− 1	e 22 18	−60	44·3	48·8
Zurich		86·1	329	e 12 51	+12	e 22 52	−26	—	—
Neuchatel		87·0	330	e 12 37	− 6	e 22 59	−28	—	—
Paris		87·2	334	e 12 40	− 4	e 23 0	−29	44·3	52·3
Piacenza		87·4	327	13 12	+27	23 4	−27	—	60·3

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florence		87·6	325	12 43	− 3	23 16	−17	40·3	45·3
Rome		88·5	323	e 13 7	+17	e 20 44	?	—	—
Florissant		92·5	37	e 13 4	− 5	i 23 33	[−14]	e 31·3	—
St. Louis		92·7	37	e 12 59	−11	e 23 32	[−16]	—	—
Ottawa		93·0	24	—	—	e 23 23	[−27]	e 45·3	—
Toledo		97·4	334	—	—	e 23 50	[−23]	—	—
Granada		99·6	332	i 17 37	PP	i 26 7	PS	51·1	58·6
San Juan		120·8	29	—	—	e 36 16?	SS	e 57·0	—
La Paz	Z.	148·9	59	i 19 36	[− 4]	—	—	—	—

Additional readings :—
Osaka i = +57s., +1m.0s., and +1m.6s.
Kobe iZ = +59s., iEN = +1m.3s., iE = +1m.17s.
Sumoto i = +1m.4s.
Koti eP_gE = +1m.19s., P_g = +1m.45s., S_gN = +2m.40s.
Zi-ka-wei eZ = 12h.5m.0s., SZ = 12h.10m.58s., iE = +3m.52s., SSZ = +4m.6s.
Taihoku S = +4m.58s.
Chiufeng PPE = +4m.41s., iE = +7m.52s. = S +10s. and +8m.3s. = SS +6s.
Manila iZ = +6m.14s. = PP +1s., iEN = +6m.36s. and +6m.52s., iE = +7m.30s.
Helsingfors $ePcPE$ = +12m.8s., ePPE = +13m.50s., ePPPE = +14m.58s., ePSE = +20m.54s., eSSE = +24m.49s.
Scoresby Sund +25m.4s. = SS −24s.
Königsberg eE = +39m.34s.
Copenhagen +14m.48s. = PP +0s. and +26m.51s. = SS +7s.
Pasadena eEN = +12m.4s.
Vienna i = +13m.25s., PS = +23m.15s., i = +25m.39s.
Cheb eS? = +31m.46s.
Belgrade e = +11m.21s. and +11m.33s.
Feldberg e = +15m.35s. = PP −1s.
Zagreb ePP = +15m.51s.
Stuttgart iZ = +12m.41s., ePS = +23m.25s.
Strasbourg ePS = +23m.54s.
Kew eE = +24m.7s. = PS +3s.
St. Louis eEN = +24m.5s.
Ottawa e = +25m.18s. = PS −9s.
San Juan i = +45m.8s.
La Paz i = +20m.12s. and +20m.23s.
Long waves were also recorded at Göttingen, Puy de Dôme, Almeria, San Fernando, and Ivigtut.

June 17d. 17h. 1m. 56s. Epicentre 6°·2S. 146°·8E. N.3.

A = −·832, B = +·544, C = −·108 ; D = +·548, E = +·837 ;
G = +·090, H = −·059, K = −·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		18·7	277	i 4 14	− 1	i 7 46	+ 6	—	—
Riverview		27·9	172	e 5 43	− 3	i 10 13	−17	e 15·1	18·1
Sydney		27·9	172	e 8 4	?	e 11 28	SS	14·3	16·8
Adelaide		29·7	193	e 5 59	− 3	i 10 48	−11	i 14·4	20·4
Melbourne		31·6	182	—	—	i 10 54	−35	15·5	19·1
Manila		33·0	310	6 30	− 2	i 11 36	−15	15·3	18·1
Perth		38·7	225	6 0	−81	13 4	−13	20·9	—
Arapuni		41·2	144	—	—	13 4?	−50	—	—
Sumoto		42·1	346	e 7 46	− 3	13 53	−15	—	—
Osaka		42·2	346	8 1	+11	(13 59)	−10	14·0	14·9
Kobe		42·3	346	e 8 0	+ 9	i 14 0	−10	—	—
Hong Kong		42·8	313	8 12	+17	14 13	− 5	—	—
Wellington	N.	43·0	148	—	—	i 14 4	−17	23·1	—
Oiwake		43·3	351	7 53	− 6	14 14	−11	—	—
Christchurch		43·7	152	e 8 1	− 1	14 31	0	—	—
Sendai		44·8	354	8 8	− 3	14 34	−13	—	—
Mizusawa	E.	45·6	355	8 14	− 4	14 49	−10	—	—
	N.	45·6	355	7 58	−20	14 52	− 7	21·8	—
Phu-Lien		47·8	305	—	—	(15 4?)	−26	15·1	—
Medan		49·0	280	i 6 46	−118	i 13 49	118	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		63·9	299	12 16	?	(19 10)	+ 4	19·2	—
Irkutsk		68·7	334	e 10 53	−10	e 19 52	−13	32·1	36·0
Bombay		77·0	291	14 54	PP	21 25	−18	29·0	—
Almata		79·9	316	e 13 12	?	—	—	—	—
Andijan		82·4	313	e 12 25	+ 5	22 25	−16	—	—
Tashkent		84·8	313	e 13 10	+38	e 22 34	−32	e 38·1	43·4
Ekaterinburg		93·1	327	e 13 2	−10	24 6	[+15]	36·1	52·0
Baku		99·3	310	—	—	e 24 10	[−12]	48·6	—
Pulkovo		108·5	331	e 19 11	PP	24 47	[−19]	43·1	59·1
Helsingfors	E.	110·8	332	—	—	e 25 30	[+13]	e 42·1	—
Scoresby Sund		115·3	355	19 58	PP	29 10	PS	58·1	—
Copenhagen		118·8	332	20 4	PP	29 58	PS	58·1	—
Feldberg		124·0	330	e 19 10	[+15]	e 28 58	?	—	66·1
De Bilt		124·4	332	e 20 39	PP	e 23 40	PPP	e 63·1	70·8
Stuttgart		124·4	328	e 20 34	PP	e 32 4?	?	e 71·1	—
Strasbourg		125·3	328	(e 19 4?)	[+ 6]	—	—	e 19·1	—
Uccle		125·6	331	—	—	e 31 4?	PS	e 62·1	—
Ottawa		126·2	36	—	—	e 32 9	?	e 53·1	—
Kew		127·2	335	—	—	e 31 4?	PS	e 60·1	—
Paris		127·8	331	e 20 46	PP	e 31 50	?	67·1	76·1
La Paz		138·6	124	e 19 20	[0]	—	—	—	—
Granada		139·0	323	i 19 14	[− 6]	i 22 48	PP	69·1	82·9
San Juan		145·6	65	e 19 30	[− 5]	—	—	—	—

Additional readings :—
Riverview i = +10m.28s. and +13m.36s.
Adelaide i = +6m.20s. and +12m.7s. =SS −16s.
Melbourne i = +13m.22s.
Perth SS = +16m.44s., SSS = +17m.54s.
Sumoto SE = +13m.57s.
Hong Kong ? = +17m.24s.
Medan i = +14m.14s.
Irkutsk e = +13m.31s. =PP +4s., and +23m.32s.
Ekaterinburg SKS = +23m.29s., PS = +25m.30s., SS = +30m.34s.
Baku e = +26m.45s. =PS +7 and +34m.57s.
Pulkovo PPS = +29m.23s., SS = +33m.58s.
Helsingfors eE = +28m.4s.? =PS −31s.
Feldberg e = +36m.58s.
La Paz PPN = +22m.54s.
Long waves were also recorded at Berkeley, Kucino, Edinburgh, and San Fernando.

June 17d. Readings also at 0h. (near Andijan (2)), 1h. (near Hastings and Wellington), 3h. (Nagoya and near Wellington), 4h. (near Mizusawa and Tyosi), 7h. (Calcutta, Phu-Lien, Ekaterinburg, and Tashkent), 11h. (near Batavia), 12h. (La Paz, Tyosi, near Berkeley, and Lick (3)), 13h. (Lick, near Tyosi (2), and Tokyo), 14h. (Andijan, near Tokyo and Tyosi), 20h. (Ottawa), 21h. (La Paz), 23h. (Manila).

June 18d. 12h. 58m. 36s. Epicentre 30°·4N. 84°·0E. N.2.

A = +·090, B = +·858, C = +·506 ; D = +·995, E = −·105 ;
G = +·053, H = +·503, K = −·863.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		5·2	271	1 34	P*	2 44	S*	3·4	3·4
Agra	E.	6·1	239	(1 9)	−18	(2 34)	− 2	(3·2)	(4·2)
	N.	6·1	239	(1 14)	−13	(2 26)	−10	(3·1)	(4·0)
Calcutta		8·8	152	2 4	− 1	3 35	− 9	4·1	6·4
Hyderabad		13·9	202	3 17	+ 3	5 40	− 9	7·0	8·0
Andijan		14·0	321	e 3 18	+ 3	e 5 48	− 3	7·1	7·4
Almata		14·0	339	3 27	+12	6 18	+27	9·8	9·9
Bombay		15·3	224	3 31	− 1	6 14	− 8	7·4	10·5
Tashkent		16·1	317	i 3 39	− 4	i 6 43	+ 2	—	13·4
Phu-Lien		22·5	110	e 4 56	0	e 9 2	+ 7	11·4	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo		23·8	190	5 13	+ 5	9 37	+18	12·9	14·8
Irkutsk		26·5	29	e 5 34	0	e 10 7	0	14·2	15·9
Hong Kong		28·1	99	5 46	− 2	10 33	− 1	14·8	15·7
Baku		29·3	299	e 6 7	+ 8	11 4	+11	14·9	19·7
Ekaterinburg		31·0	335	i 6 19	+ 5	i 11 15	− 5	15·4	18·9
Manila		37·4	106	e 6 54	−16	13 37	+40	20·4	24·4
Theodosia		40·5	307	e 9 12	PP	—	—	—	—
Ksara	N.	40·5	290	13 48	S	(13 48)	+ 4	21·4	—
Kucino		41·0	322	7 44	+ 4	13 52	+ 1	20·4	22·6
Simferopol		41·3	306	e 7 45	+ 2	—	—	—	—
Helwan		45·2	283	8 14	0	14 59	+ 5	—	30·1
Pulkovo		46·1	327	i 8 22	+ 1	15 7	+ 1	22·4	27·9
Helsingfors		48·7	326	e 8 42	+ 1	e 15 47	+ 4	e 25·4	—
Königsberg		50·6	319	—	—	e 17 14	+65	e 26·9	29·4
Upsala		52·4	325	e 9 9	0	e 16 40	+ 6	—	29·7
Copenhagen		55·2	320	9 31	+ 1	17 16	+ 4	29·4	—
Cheb		55·8	314	—	—	e 16 51	−29	e 26·8	36·4
Hamburg		56·8	318	—	—	e 17 24?	−10	—	34·4
Göttingen		57·1	315	—	—	(e 22 24?)	?	e 22·4	—
Florence		57·7	306	9 48	0	(22 24)	?	22·4	29·4
Stuttgart		58·1	313	e 9 52	+ 1	e 17 52	+ 1	e 30·4	32·9
Feldberg		58·2	314	—	—	e 22 18	?	—	33·0
Piacenza		58·5	308	18 2	S	(18 2)	+ 6	—	39·3
Strasbourg		59·0	312	e 9 58	+ 1	—	—	e 22·4	—
De Bilt		59·9	316	10 5	+ 1	18 17	+ 2	e 30·4	34·6
Uccle		60·7	315	e 10 10	+ 1	—	—	e 30·4	—
Paris		62·3	314	e 10 21	+ 1	—	—	25·4	25·4
Kew		63·3	318	i 10 28	+ 1	e 26 2	?	34·4	36·1
Oxford		63·9	318	—	—	19 4	− 2	e 33·4	—
Scoresby Sund		66·6	340	10 54	+ 5	19 45	+ 5	37·4	—
Almeria		69·7	303	i 11 7	− 2	—	—	—	49·4
Toledo		69·7	305	e 11 8	− 1	e 20 25	+ 7	—	—
Granada		70·5	304	i 11 14	0	—	—	e 40·3	45·9
Malaga		71·2	304	e 11 15	− 3	e 20 34	− 1	—	—

Additional readings and notes :—
Agra readings have been *increased* by 2m.
Hong Kong ? = +11m.5s.
Baku i = +11m.39s.
Helsingfors eP_cPE = +10m.10s., eE = +11m.45s., ePSE = +15m.57s., eSSE = +19m.22s.
Copenhagen +20m.54s. = SS + 3s.
Stuttgart eEZ = +13m.24s., eEN = +22m.24s. ?
Strasbourg ePP = +13m.24s. ?
Scoresby Sund +27m.36s.
Toledo i = +11m.12s.
Granada i = +15m.2s. = PPP − 14s., +21m.14s. = PS + 29s., and +30m.43s.
Long waves were also recorded at Kodaikanal, Lund, Edinburgh, Bidston, and San Fernando.

June 18d. Readings also at 0h. (Harvard, Ottawa, San Juan, and La Paz), 1h. (Ekaterinburg and Tashkent), 3h. (Tyosi), 4h. (San Juan), 7h. (near Collurania (2) and Rome), 8h. (near Tyosi), 10h. (Tananarive), 12h. (Alicante), 13h. (Agra, Bombay, Calcutta, and La Paz), 14h. and 16h. (La Paz), 22h. (near Manila).

June 19d. Readings at 1h. and 2h. (De Bilt), 3h. (Apia), 5h. (San Juan), 7h. (Barcelona), 9h. (Barcelona and Granada), 10h. (near Casamicciola and near La Paz), 11h. (Ekaterinburg, Irkutsk, Hong Kong, near Berkeley, and Lick), 12h. (Lick and near Manila), 13h. (Alicante, near Hastings, and Wellington), 19h. (Nagoya, near Sumoto, Kobe, Osaka, and near Hastings), 21h. (Andijan, Pulkovo, Ekaterinburg, Helsingfors, Theodosia, near Baku, Ksara, and near Tananarive), 22h. (Helsingfors, Copenhagen, Suva, and near Manila), 23h. (Baku, Ekaterinburg, and Ottawa).

June 20d. 1h. 16m. 24s. Epicentre 54°·1N. 160°·8E. N.2.

A = −·554, B = +·193, C = +·810; D = +·329, E = +·944;
G = −·765, H = +·266, K = −·586.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	33·0	290	e 6 31	− 1	e 11 58	+ 7	16·6	21·0
Ekaterinburg	51·6	317	e 9 4	+ 1	e 16 20	− 3	23·6	31·3
Scoresby Sund	55·4	1	—	—	17 36?	+21	25·6	—
Andijan	57·2	296	10 3	+18	—	—	—	—
Pulkovo	59·5	334	e 11 26	+85	e 18 40	+31	30·6	38·4
Copenhagen	67·2	341	—	—	19 48	+ 1	37·6	—
Baku	68·6	311	—	—	e 20 2	− 2	36·6	46·5
Florissant	68·9	52	i 11 4	0	e 20 8	0	—	—
St. Louis	69·1	52	i 11 5	0	e 20 9	− 1	—	—
Stuttgart	74·4	341	e 11 36	− 1	—	—	e 44·6	—
Georgetown	74·5	43	11 38	+ 1	e 21 9	− 5	e 33·6	—
Zurich	75·9	341	e 11 45	0	—	—	—	—
Chur	76·1	341	e 11 47	0	—	—	—	—
Neuchatel	76·5	342	i 11 49	0	—	—	—	—
Casamicciola	81·0	335	12 23	+10	—	—	—	—

Additional readings :—
Baku e = +25m.38s.
Georgetown SSEN = +26m.6s.; T_o = 1h.16m.30s.
Long waves were also recorded at Hong Kong, Phu-Lien, Ottawa, Kucino, Feldberg, Strasbourg, Uccle, and Granada.

June 20d. 15h. 5m. 22s. Epicentre 86°·3N. 79°·0E. N.2.

A = +·012, B = +·063, C = +·998; D = +·982, E = −·191;
G = +·190, H = +·980, K = −·065.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		20·5	291	4 29	− 6	8 14	− 2	9·6	—
Helsingfors	E.	27·8	240	e 5 24	−21	e 10 16	−12	e 14·1	—
	N.	27·8	240	e 5 45	0	e 10 27	− 1	—	—
Pulkovo		28·0	234	e 5 50	+ 3	e 10 35	+ 3	14·1	15·8
Kucino		31·6	225	—	—	e 11 24	− 5	e 20·1	24·8
Copenhagen		33·0	252	—	—	11 50	− 1	18·6	—
Irkutsk		34·4	152	e 7 1	+17	e 12 36	+24	20·6	—
Hamburg		35·3	254	e 8 14	PP	—	—	—	28·6
De Bilt		37·1	259	7 9	+ 2	12 53	0	e 17·6	—
Kew		38·0	264	—	—	e 13 8	+ 2	e 17·6	—
Uccle		38·4	259	e 13 13	S	(e 13 13)	+ 1	e 18·6	—
Feldberg		38·7	255	i 8 2	+41	e 15 48	SS	—	30·7
Stuttgart		40·1	254	e 7 33	0	e 16 56	?	e 29·6	—
Strasbourg		40·4	255	e 7 36	+ 1	—	—	e 19·6	—
Paris		40·5	261	e 7 36	0	—	—	20·6	—
Florence		44·9	251	8 15	+ 3	—	—	—	29·6
Victoria	N.	45·0	21	8 17	+ 4	14 59	+ 9	25·2	29·2
Baku		46·5	211	e 8 33	+ 8	e 15 29	+17	23·3	32·1
Ottawa		48·0	336	e 8 34	− 2	e 15 27	− 6	e 24·6	—
Toronto		49·8	340	e 8 30	−20	i 15 0	−58	26·6	—
Fordham		52·4	334	e 9 10	+ 1	—	—	e 22·6	—
Georgetown		54·4	337	i 9 23	− 1	i 17 3	+ 2	e 21·6	—
Florissant		54·8	350	i 9 25	− 2	e 17 39	+33	e 26·9	—
Mount Wilson		59·3	16	e 10 2	+ 2	—	—	—	—
Pasadena		59·4	16	i 10 2	+ 2	—	—	—	—
Riverside		59·5	16	e 10 3	+ 2	—	—	—	—

Additional readings and note :—
Helsingfors eSSE = +12m.16s.
Feldberg e = +8m.39s. = PP − 7s.; all readings are given without phase.
Florissant eN = +11m.29s. = PP + 5s.
Long waves were also recorded at Ivigtut, Edinburgh, Cheb, Granada, Pittsburgh, and Chicago.

June 20d. Readings also at 0h. (Scoresby Sund), 2h. (Irkutsk and Calcutta), 6h. (near Tyosi), 7h. (Phu-Lien), 16h. (Manila), 20h. (Tyosi, Ottawa, near Berkeley, and Lick), 23h. (Takaka).

June 21d. 12h. 23m. 10s. Epicentre 18°·0N. 107°·0W. N.2.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		14·7	347	i 3 21	− 4	e 6 20	+12	e 6·8	—
La Jolla		17·5	330	e 3 56	− 4	—	—	—	—
Riverside		18·5	332	e 4 11	− 2	—	—	—	—
Pasadena		18·9	330	4 17	0	—	—	e 12·8	—
Mount Wilson		18·9	331	e 4 16	− 1	—	—	—	—
Santa Barbara	N.	20·0	328	e 4 32	+ 2	—	—	—	—
Denver		21·7	4	e 4 24	−24	e 8 14	−26	e 10·8	—
Lick		23·2	329	e 5 3	0	—	—	—	—
Berkeley		24·0	329	i 5 10	0	i 9 23	0	e 11·5	—
Florissant		25·3	31	e 5 23	0	i 9 49	+ 3	e 12·1	13·4
St. Louis		25·3	32	e 5 21	− 2	e 9 48	+ 2	e 12·4	13·8
Bozeman		27·8	354	6 50?	+65	10 50?	+22	14·8	—
Columbia		28·1	50	—	—	10 41	+ 7	e 15·8	—
Chicago		28·9	30	—	—	10 50	+ 3	14·8	—
Charlottesville		31·9	45	—	—	11 50?	+16	15·8	—
Pittsburgh		32·3	40	e 6 32	+ 7	—	—	—	—
Victoria		33·2	341	6 38	+ 4	11 56	+ 2	17·0	19·9
Georgetown		33·3	45	i 6 38	+ 4	e 11 57	+ 2	e 13·6	18·3
Toronto		34·6	36	e 6 39	− 7	12 3	−12	e 16·6	19·6
Fordham		36·4	45	e 7 8	+ 7	e 12 53	+11	—	—
Ottawa		37·7	37	e 7 12	0	e 13 7	+ 5	e 19·8	—
San Juan		38·7	82	e 7 25	+ 4	e 13 26	+ 9	e 19·1	—
Harvard		39·0	43	e 8 53	PP	e 13 19	− 2	e 19·8	—
Sitka		44·4	338	—	—	e 14 49	+ 8	e 24·8	—
Ivigtut		59·4	29	—	—	18 8	0	30·8	—
Scoresby Sund		71·4	21	—	—	20 44	+ 6	34·8	—
De Bilt		88·6	35	—	—	e 24 50?	PS	e 41·8	55·8
Feldberg		91·4	36	—	—	e 25 19	PS	e 45·6	52·8
Stuttgart		92·6	36	—	—	e 25 20	PS	e 44·8	—
Pulkovo		94·9	20	—	—	e 24 12	{−2}	44·8	49·2
Ekaterinburg		104·4	8	e 19 36	?	e 33 11	SS	40·8	—
Baku		117·8	20	—	—	e 24 33	?	51·8	68·9

Additional readings :—
Berkeley iPE = +5m.15s., eE = +7m.26s.
Florissant iPPZ = +5m.59s., iPPPZ = +6m.9s., iN = +9m.59s., iSSN = +10m.58s.
St. Louis iPEN = +5m.24s., iSN = +9m.52s., eN = +10m.53s., iN = +10m.59s.
Chicago iSS = +12m.49s.
Pittsburgh ePP = +7m.26s.
Georgetown PPEN = +7m.30s.
Toronto e = +7m.10s., PPP = +8m.14s., SSSS = +15m.10s. ; T_o = 12h.22m.45s.
Fordham ePPEN = +8m.18s.
Ottawa ePPP = +8m.38s., eSSSN = +15m.51s. ; T_o = 12h.22m.54s.
Feldberg e = +39m.21s.
Baku e = +35m.34s.
Long waves were also recorded at Honolulu T.H., Ann Arbôr, Irkutsk, Kucinò, and other European stations.

June 21d. Readings also at 0h. (Andijan, Matuyama, Sumoto, Kobe, and near Koti), 4h. (near Manila), 7h. (Tortosa), 14h. (Edinburgh and near Laibach), 16h. (near Matuyama, near Andijan, near Hastings, and Wellington), 18h. (near Tyosi), 20h. (Baku, Ekaterinburg, Irkutsk, Helsingfors, Pulkovo, near Hastings, and Wellington), 22h. (near Wellington (2), Takaka (2), and near Malabar).

June 22d. 15h. 31m. 8s. Epicentre 39°·0S. 180°·0 (as on 1929 May 10d.). X.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hastings		2·5	255	0 52?	+16	1 20?	+16	—	1·4
Arapuni		3·5	284	0 52?	+ 2	1 25?	− 5	—	1·5
Wellington		4·6	238	1 1	− 5	2 2	+ 4	—	2·3
Takaka		5·8	249	0 52?	−30	1 58?	−30	—	2·0
Christchurch		7·2	228	e 1 42	0	i 3 12	+ 8	—	—
Riverview		23·7	276	e 5 8	+ 1	—	—	e 11·3	13·3
Sydney		23·7	276	e 8 16	?	e 12 4	L	13·9	14·5
Melbourne		27·3	261	—	—	i 10 20	0	12·5	14·8
Manila		76·8	303	e 11 29	−21	21 38	− 3	36·9	—
Victoria	E.	100·8	34	30 6	?	36 59	SSS	50·0	55·5
Kucino		149·9	315	—	—	e 42 32	SS	e 72·7	—
Granada		176·6	122	20 28	[+21]	—	—	86·0	94·9

Additional readings :—
Hastings P_g = +1m.8s. ?
Arapuni S_g = +1m.52s.?
Wellington P* = +1m.24s., P_g = +1m.44s., S_g = +2m.14s.
Takaka P_g = +1m.22s. ?, S* = +2m.28s. ?
Christchurch i = +2m.6s.
Riverview eSS? = +9m.45s., eSSS? = +10m.2s.
Granada i = +26m.22s., +33m.10s., and +42m.57.
Long waves were also recorded at Suva, Adelaide Bombay, La Paz, Scoresby Sund, Ottawa, Baku, Ekaterinburg, Pulkovo, Tashkent, and European stations.

June 22d. Readings also at 9h. (Ekaterinburg, Pulkovo, and Pasadena), 10h. (Baku, Kucino, Helsingfors, Copenhagen, De Bilt, Paris, Stuttgart, Strasbourg, and Scoresby Sund), 12h. (La Paz and near Berkeley), 13h. (Andijan), 14h. (Granada, Perth, Ottawa, Pasadena, San Juan, near La Paz, and Santiago), 16h. (near Manila), 18h. (Mizusawa), 22h. (La Plata).

June 23d. 6h. 15m. 1s. Epicentre 36°·5N. 141°·7E. N.1.

Probable error of epicentre ±0°·21.

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

A = −·631, B = +·498, C = +·595; D = +·620, E = +·785; G = −·467, H = +·369, K = −·804.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·8	304	−0 28	−39	0 9	−12	—	—
Mito	1·0	263	0 13	− 1	0 24	− 2	—	—
Tyosi	1·0	221	0 14	0	0 24	− 2	—	0·6
Kakioka	1·3	258	−0 20	?	0 15	−18	—	—
Tukubasan	1·4	258	0 1	− 9	0 7	−29	—	—
Utunomiya	1·5	273	0 20	− 1	0 31	− 8	—	—
Hukusima	1·6	322	0 25	+ 2	0 48	+ 7	—	—
Tokyo	1·8	243	0 27	+ 1	0 41	− 5	—	1·6
Sendai	1·9	340	0 30	+ 2	0 53	+ 4	—	—
Kumagaya	1·9	259	0 28	0	0 45	− 4	—	—
Yokohama	2·0	237	0 30	+ 1	0 52	+ 1	—	—
Mera	2·2	224	0 31	0	0 52	− 5	—	—
Misima	2·6	238	0 39	+ 2	1 13	+ 6	—	—
Niigata	2·6	304	0 38	+ 1	1 7	0	—	—
Mizusawa	2·7	350	0 42	+ 3	1 14	+ 5	—	—
Nagano	2·8	273	0 42	+ 2	1 14	+ 2	—	—
Morioka	3·2	353	0 50	+ 4	1 32	+10	—	—
Akita	3·5	339	0 56	+ 6	1 44	S*	—	—
Hatidyozima	3·7	205	0 55	+ 2	1 32	− 3	—	—
Wazima	4·0	284	0 58	+ 1	1 45	+ 3	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		4·1	252	i 1 0	+ 2	1 53	+ 8	—	2·4
Gihu		4·1	255	1 2	+ 4	2 6	S*	—	—
Kameyama		4·6	250	1 7	+ 1	2 27	S*	—	—
Hikone		4·6	256	1 6	0	2 4	+ 6	—	—
Kyoto		5·1	255	1 12	− 1	2 22	+12	—	—
Osaka		5·3	252	1 13	− 2	—	—	2·5	3·2
Hakodate		5·3	352	1 26	+11	2 41	S*	—	—
Toyooka		5·6	262	i 1 21	+ 1	i 2 29	+ 6	—	3·4
Kobe		5·6	253	1 20	0	2 27	+ 4	—	3·0
Urakawa		5·7	8	1 27	+ 6	2 33	+ 8	—	—
Siomisaki		5·8	239	1 21	− 1	2 48	S*	—	—
Muroran		5·8	354	1 28	+ 6	2 36	+ 8	—	—
Sumoto		6·0	251	1 24	− 1	2 38	+ 5	—	3·2
Koti		7·3	249	1 44	0	e 3 12	+ 6	e 3·6	3·9
Nemuro		7·4	22	1 48	+ 3	3 5	− 4	—	—
Matuyama		7·8	253	i 1 50	− 1	i 3 56	S*	—	4·7
Hamada		8·0	261	2 4	+11	3 21	− 3	—	—
Titizima		9·4	178	2 9	− 4	3 44	−15	—	—
Miyazaki		9·6	245	2 16	0	4 17	+14	—	—
Hukuoka		9·7	256	2 19	+ 2	4 36	+30	5·0	6·0
Kumamoto		9·8	251	2 17	− 1	4 44	+36	—	—
Vladivostok		10·0	314	2 14	− 7	4 8	− 5	4·7	5·9
Nagasaki		10·5	253	2 32	+ 4	4 35	+ 9	—	5·6
Taikyu		10·6	270	2 31	+ 2	4 39	+11	—	—
Tomie		11·4	254	2 25	−15	5 1	+13	—	—
Zi-ka-wei	Z.	17·6	258	i 3 59	− 3	7 29	+14	10·3	11·7
Isigakizima		19·4	236	4 18	− 5	7 45	− 9	—	—
Chiufeng	N.	20·3	288	e 4 22	−11	8 19	+ 7	—	—
Taihoku		20·7	242	8 35	S	(8 35)	+15	(12·7)	—
Hong Kong		27·7	247	5 43	− 1	10 11	−16	—	17·6
Manila		28·7	226	e 5 50	− 3	10 25	−18	—	13·5
Irkutsk		30·6	313	6 6	− 4	11 9	− 5	15·0	19·4
Phu-Lien		34·3	254	e 6 42	− 1	e 12 4	− 7	15·0	—
Amboina		42·1	201	7 41	− 8	i 13 58	−10	—	—
Calcutta		47·8	271	8 2	−33	15 44	+14	28·2	—
Medan		51·4	240	i 9 24	+22	—	—	32·0	—
Andijan		52·9	299	e 9 16	+ 3	16 48	+ 7	31·0	—
Batavia		53·8	226	i 9 15	− 5	i 16 43	−10	—	—
Tashkent		54·9	299	i 8 51	−37	i 16 11	−57	e 26·0	32·6
Ekaterinburg		55·5	320	i 9 33	+ 1	i 17 16	0	24·0	35·4
Hyderabad		58·5	272	9 51	− 3	17 51	− 5	31·3	38·7
Bombay		62·2	275	10 16	− 4	19 5	+20	34·5	38·8
Colombo		63·4	260	3 24	?	—	—	—	40·7
Kucino		67·4	325	—	—	i 20 12	+22	30·2	40·3
Pulkovo		68·6	330	i 11 1	− 1	i 20 1	− 3	34·0	43·5
Helsingfors	E.	70·3	332	e 11 12	− 1	e 20 23	− 2	e 33·4	—
	N.	70·3	332	e 11 13	0	e 20 27	+ 2	e 34·0	—
Riverview		70·9	172	—	—	i 20 25	− 7	e 37·0	—
Adelaide		71·5	183	—	—	i 20 28	−11	e 33·8	39·5
Scoresby Sund		72·4	355	11 26	+ 1	20 51	+ 1	39·0	—
Berkeley		72·6	56	e 11 33	+ 7	i 20 56	+ 4	e 33·8	—
Upsala		73·3	335	e 11 28	− 3	e 20 55	− 5	e 38·0	44·7
Melbourne		74·4	178	—	—	i 20 59	−14	—	37·5
Theodosia		74·9	317	e 11 40	0	e 21 13	− 6	e 41·0	—
Simferopol		75·6	317	11 44	0	—	—	—	—
Yalta		75·8	317	11 44	− 1	21 25	− 4	—	—
Königsberg		75·8	330	e 11 44	− 1	—	—	e 44·0	47·5
Pasadena		77·5	58	e 11 51	− 4	i 21 46	− 2	—	—
Lund		77·9	335	—	—	21 41	−12	39·0	—
Copenhagen		78·1	335	11 57	− 1	21 50	− 5	39·0	—
Potsdam		80·6	332	e 12 23	+12	e 21 47	−35	—	53·0
Hamburg		80·7	335	i 12 12	0	e 22 19	− 4	e 39·0	51·0
Ksara		81·4	309	e 12 13	− 2	e 22 32	+ 1	52·0	—
Budapest		81·7	326	11 59	−18	22 49	+15	42·0	52·5
Ivigtut		81·9	5	—	—	22 34	− 2	39·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna		82·3	328	i 12 22	+ 2	—	—	—	51·0
Göttingen		82·4	333	e 12 21	+ 1	e 31 15	SSS	—	56·0
Cheb		82·6	330	—	—	e 21 59?	−44	e 42·0	53·0
Edinburgh		82·9	341	—	—	e 22 32	−14	41·0	—
Tucson		83·4	55	22 52	S	(22 52)	+ 1	—	—
De Bilt		83·6	336	i 12 28	+ 2	e 23 10	+17	e 42·0	49·7
Graz		83·6	328	i 12 25	− 1	i 23 8	+15	e 45·0	54·0
Feldberg		84·0	333	i 12 29	+ 1	i 23 12	+14	e 42·3	54·6
Zagreb		84·3	327	e 12 31	+ 1	e 23 7	+ 6	e 42·6	—
Stonyhurst		84·5	340	—	—	e 24 41	?	42·3	53·0
Stuttgart		84·9	332	i 12 34	+ 1	e 22 56	[− 2]	e 42·5	48·6
Uccle		85·0	336	e 12 33	0	e 22 53	−15	e 43·0	—
Triest		85·4	328	e 12 35	0	e 22 37	−35	e 33·6	55·0
Strasbourg		85·6	333	i 12 36	0	23 0	−14	e 33·0	—
Kew		86·0	339	i 12 39	+ 1	e 23 5	−13	40·0	54·7
Oxford		86·0	340	—	—	23 11	− 7	e 40·0	55·0
Helwan		86·9	307	12 44	+ 1	(23 46)	+20	—	23·8
Neuchatel		87·2	332	e 12 44	0	e 23 3	[−12]	—	—
Paris		87·3	336	i 12 45	0	e 24 5	PS	46·0	56·0
Piacenza		87·7	330	12 53	+ 7	23 17	[− 1]	—	55·9
Florence		88·0	326	i 12 49	+ 1	e 23 31	− 6	41·0	43·0
Rome		89·0	325	e 12 55	+ 2	—	—	—	—
St. Louis		90·9	39	—	—	i 23 57	− 7	—	—
Ottawa		91·4	26	—	—	e 24 1	− 8	e 49·0	—
Toronto	E.	91·6	29	—	—	e 24 1	−10	e 49·0	—
Fordham		96·0	27	—	—	e 24 2	[− 4]	e 48·0	—
Georgetown		96·6	30	17 24	PP	24 48	− 8	e 41·0	—
Granada		99·6	334	i 17 58	PP	—	—	60·9	64·2
San Fernando		101·2	335	24 29	S	(24 29)	[− 3]	54·5	65·0
San Juan		119·1	31	—	—	32 59?	SS	—	—
La Paz		146·9	62	19 40	[+ 3]	—	—	71·5	83·7

Additional readings and note :—
Tyosi SN = +28s.
Osaka i = +1m.25s., +1m.45s. = P_g, +2m.8s., and +2m.26s.
Kobe iEN = +1m.33s., iZ = +1m.50s. = P_g.
Sumoto SE = +2m.42s.
Koti iP_gZ = +1m.56s., SEZ = +3m.19s.
Zi-ka-wei PPZ = +4m.16s., SSZ = +7m.57s., SSSZ = +8m.7s.
Taihoku gives S as P and L as S.
Batavia iP = +9m.19s.
Kucino e = +21m.9s., +24m.6s. = SS +3s., and +27m.8s.
Helsingfors eP_cPN = +11m.34s., eN = +13m.56s. = PP +15s., ePPE = +14m.31s. ePPPE = +16m.34s., ePSE = +20m.42s., ePSN = +20m.55s., eSSE = +24m.38s., eSSN = +24m.44s., eSSSN = +28m.40s., eSSSE = +28m.43s.
Riverview i = +21m.19s.
Adelaide e = +24m.38s. = SS −18s.
Scoresby Sund +14m.6s. = PP +7s. and +25m.35s. = SS +16s.
Berkeley ePN = +12m.3s., eN = +30m.35s.
Upsala SKS = +21m.10s. = PS −3s.
Königsberg eE = +38m.53s., eN = +42m.23s.
Pasadena ePZ = +11m.54s., eE = +21m.26s.
Copenhagen +26m.53s. = SS +9s.
Hamburg eZ = +15m.13s. = PP +3s.
Tucson SS = +39m.35s.
De Bilt PPZ = +15m.43s.
Feldberg e = +31m.47s. = SSS +11s.
Zagreb eNE = +12m.53s. and +15m.46s. = PP +6s., e = +22m.50s. = SKS −4s.
Stuttgart iZ = +12m.46s., eSKSEZ = +23m.19s. = S +12s., ePS = +24m.14s.
Uccle eSS = +27m.59s. ?
Triest e = +28m.13s. = SS −20s.
Strasbourg ePP = +15m.59s. ?
Kew ePPNZ = +15m.59s.
Helwan S = +16m.6s. = PP +5s.
St. Louis iEN = +24m.25s.
Ottawa eE = +30m.17s. = SS +17s.
Toronto eE = +30m.20s. = SS +17s.
Georgetown iSKSEN = +24m.4s., PSN = +25m.11s.
San Fernando S = +35m.59s.
La Paz iPKPZ = +19m.42s., iPKPN = +19m.44s.
Long waves were also recorded at Kodaikanal, Harvard, and other European stations.

June 23d. 12h. 12m. 53s. Epicentre 13°·5N. 52°·0E. (as on 1928 Sept. 18d.). X.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay	20·8	72	4 48	+10	—	—	—	—
Ksara	25·1	327	e 5 21	0	(9 53)	+10	14·4	—
Helwan	25·2	314	5 17	− 5	9 57	+13	—	14·3
Ekaterinburg	43·9	6	e 8 1	− 3	i 14 30	− 4	20·1	25·3

Ksara gives SN = +12m.55s. ; P being given as eEN, and true S as PN.
Long waves were also recorded at Copenhagen and Tashkent.

June 23d. Readings also at 0h. (near Andijan), 3h. (near Medan), 4h. 6h. (3), 7h.(3) and 10h. (near Tyosi), 12h. (near Theodosia and Yalta), 13h. (Tyosi), 16h. (Baku Ekatererinburg, Irkutsk, and Helsingfors), 17h. (Lick), 18h. (near Malabar), 20h. (Tyosi), 21h. (Baku, Tyosi, and near Hastings), 22h. (Ekaterinburg and near Kobe), 23h. (Messina).

June 24d. 23h. 47m. 12s. Epicentre 15°·0N 59°·7E. N.2.

A = +·487, B = +·834, C = +·259 ; D = +·863, E = −·505 ;
G = +·131, H = +·223, K = −·966.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		13·1	71	3 5	+ 2	—	—	—	9·5
Hyderabad		18·1	80	6 5	+117	7 35	+ 8	8·7	11·3
Dehra Dun		22·7	44	3 48	−70	8 18	−41	20·6	21·8
Baku		26·8	343	i 5 38	+ 2	i 10 8	− 4	14·5	21·4
Tashkent		27·6	16	5 38	− 6	i 10 21	− 4	e 14·8	21·3
Andijan		28·0	21	5 48	+ 1	10 54	+22	—	—
Calcutta		28·1	70	10 38	S	(10 38)	+ 4	14·5	—
Ksara	E.	28·6	316	e 5 44	− 9	11 0	+18	15·6	—
Helwan		30·0	305	—	—	11 3	−1	—	17·2
Ekaterinburg		41·8	1	e 7 44	− 3	13 54	− 9	17·8	31·7
Kucino		44·0	344	e 9 48	(− 7)	e 14 24	−12	22·5	30·7
Pulkovo		49·6	342	8 49	+ 1	15 48	− 7	26·8	33·0
Florence		50·1	316	e 14 49	?	19 48	SS	23·8	27·3
Irkutsk		51·2	34	e 7 48?	?	e 16 10	− 8	26·8	31·4
Helsingfors		51·7	340	e 9 7	+ 3	e 16 34	+10	e 26·8	—
Cheb		51·8	324	—	—	e 16 25	0	—	—
Hong Kong		51·9	73	—	—	16 31	+ 4	—	31·0
Stuttgart		53·2	321	—	—	e 16 30	−15	e 29·8	34·4
Strasbourg		54·0	320	—	—	(e 16 48?)	− 8	e 16·8	—
Feldberg		54·1	323	—	—	e 16 6	−51	—	32·4
Copenhagen		54·3	330	9 18	− 5	16 54	− 5	30·8	—
De Bilt		56·7	323	—	—	e 17 37	+ 5	e 28·8	—
Granada		59·8	306	—	—	i 18 16	+ 3	e 31·4	38·2
Edinburgh		62·5	326	—	—	e 18 48?	0	36·8	—
Scoresby Sund		73·1	340	11 30	+ 1	20 58	0	—	—

Additional readings :—
Calcutta S = +13m.23s.
Irkutsk e = +19m.28s? = SS − 15s.
Helsingfors eE = +11m.25s., and +12m.31s., eN = +15m.34s., ePSE = +16m.48s.?, eSSN = +20m.26s., eE = +22m.36s., eN = +24m.30s.
Stuttgart e = +20m.42s.
De Bilt eSSE = +21m.44s.
Granada i = +14m.0s. and +18m.43s.
Long waves were also recorded at Kew, Paris, and Uccle.

June 24d. Readings also at 0h. (near Sumoto), 1h. (La Paz), 5h. (near Lick), 8h. (Manila), 10h. (Andijan and Cheb), 12h. (Andijan), 13h. (near Malabar), 18h. (near Mizusawa), 19h. (Tucson, Lick, and Tyosi), 22h. (Helsingfors and near La Paz), 23h. (Tyosi).

June 25d. 0h. 40m. 12s. Epicentre 27°·0N 100°·0E. (as on 1926 Dec. 5d.). X.

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

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		8·6	134	1 48?	−14	—	—	—	—
Calcutta		11·5	253	e 3 48	P_g	—	—	7·7	—
Zi-ka-wei	Z.	19·2	72	e 4 26	+ 5	8 26	SS	—	12·7
Manila		23·1	118	4 56	− 6	9 29	+22	—	—
Medan		23·4	183	e 11 4	S	(e 11 4)	+112	i 13·7	—
Irkutsk		25·5	6	—	—	e 9 48?	− 2	13·8	14·6
Bombay	E.	26·2	258	—	—	e 9 48	−14	—	—
Andijan		26·6	308	e 5 38	+ 3	e 10 12	+ 3	—	—
Tashkent		29·0	308	—	—	i 11 57	SS	e 16·2	19·5
Ekaterinburg		40·8	327	e 7 32	− 7	e 13 45	− 3	21·8	—

Additional readings :—
Manila iE = +9m.56s.
Bombay eN = +8m.48s.
Tashkent e = +4m.6s. and +10m.33s. =S −15s.
Long waves were also recorded at Hong Kong, Vladivostok, Pulkovo, Kucino, Helsingfors, Copenhagen, and De Bilt.

June 25d. Readings also at 0h. (Tyosi and near Mizusawa), 5h. (Camerino, near Rome, and Triest), 10h. (near Hastings and Wellington), 11h. (near Mizusawa), 13h. (La Paz and Ottawa), 14h. (Tananarive), 19h. (near La Paz), 21h. (Baku, Ekaterinburg, Ksara, Tashkent, and near Mizusawa), 22h. (Helsingfors and Mizusawa (2)).

June 26d. Readings at 1h. (Baku, Ekaterinburg, Tashkent, Vladivostok, Granada, and Nagoya), 2h. (Manila, Nagoya, and Tyosi), 6h. (near Batavia and Malabar), 7h. (Apia), 9h. (Tyosi), 11h. (near Andijan), 13h. (Alicante), 16h. (Andijan), 18h. (Tyosi), 20h. (near Mizusawa), 22h. (near Andijan).

June 27d. 18h. Indeterminate shock with epicentre in Pacific Ocean. The observational data is as follows :—

Batavia e = 18h.0m.48s.
Adelaide eP = 18h.7m.0s.?, iS = 13m.27s., L = 18m.0s., M = 23m.0s.
Manila eP = 18h.7m.39s., iE = 9m.44s., iN = 9m.52s., iE = 11m.37s., iS = 14m.45s., LEZ = 22m.39s.
Hong Kong P? = 18h.8m.17s., ? = 11m.13s., S = 15m.41s., M = 23m.30s.
Osaka eP = 18h.8m.39s. eL = 11m.45s.
Zi-ka-wei eZ = 18h.9m.24s., SZ? = 15m.54s., LZ = 22m.4s., MZ = 23m.54s.
Phu-Lien eP? = 18h.10m.4s.
Vladivostok eP = 18h.10m.11s., S = 17m.13s.
Riverview e? = 18h.10m.48s., e = 12m.46s., eS? = 14m.47s., eSS = 15m.47s., eL = 17m.48s., M = 22m.30s.
San Juan e = 18h.11m., L = 19h.10m.
Irkutsk eP = 18h.12m.18s., e = 14m.8s., and 19m.22s., L = 34m.
Melbourne e = 18h.12m.50s., i = 13m.52s., 16m.25s., and 17m.5s., L? = 17m.40s., L = 23m.36s.
Tashkent e = 18h.13m.42s. and 21m.48s., iS = 24m.28s., eL = 41m., M = 52m.18s.
Ekaterinburg P = 18h.14m.30s., e = 18m.11s., 25m.3s., 25m.32s., 26m.39s., and 31m.30s., L = 45m., M = 53m.
Honolulu T.H. e = 18h.19m.30s., eL = 30m.48s.
Pulkovo e = 18h.20m.5s., 22m.5s., 27m.36s., and 34m.56s., L = 52m., M = 19h.5m.12s.
Baku e = 18h.20m.32s., 25m.51s., and 29m.7s., L = 49m., M = 19h.0m.18s.
Bombay e = 18h.23m.0s.
Perth i = 18h.23m.0s. and 18h.25m.0s.
Paris e = 18h.25m.4s., L = 19h.7m., M = 19m.
Berkeley ePE = 18h.25m.13s., iSE = 31m.55s., eLE = 43m.24s.
Kucino e = 18h.26m.12s., 27m.21s., and 34m.18s., L = 51m.24s., M = 19h.2m.18s.
Ottawa e = 18h.29m.4s., eL = 55m.
Copenhagen 18h.30m., L = 19h.0m.
Scoresby Sund 18h.30m., L = 19h.0m.
Strasbourg eL = 18h.30m., M = 19h.15m.
De Bilt e = 18h.32m., eL = 19h.2m., M = 12m.57s.
Long waves also at Wellington, Sydney, and other European stations.

June 27d. Readings also at 0h. (Nagoya (2)), 3h. (Andijan), 8h. (near Manila), 10h. (near Balboa Heights), 12h. (Ottawa and near Manila), 16h. (Ottawa, near Andijan (2) and Tashkent), 17h. (Ekaterinburg, Irkutsk, and Koti), 18h. (near Algiers) 20h. (Andijan).

June 28d. 16h. 27m. 3s. Epicentre 54°·1N. 164°·1E. N.2.

A = −·564, B = +·161, C = +·810 ; D = +·274, E = +·962 ; G = −·779, H = +·222, K = −·586.

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Mizusawa		21·6	236	4 40	− 6	8 28	−10	—	—
Nagoya		26·7	236	e 5 41	+ 6	—	—	—	—
Irkutsk		34·8	293	e 6 44	− 3	e 12 16	− 2	19·0	20·6
Zi-ka-wei		38·0	251	e 7 15	0	e 13 5	− 1	24 2	27·2
Ekaterinburg		52·9	319	i 9 13	0	i 16 48	+ 7	24·0	32·0
Mount Wilson		56·1	78	e 9 36	− 1	—	—	—	—
Pasadena		56·2	77	i 9 37	0	—	—	—	—
Andijan		58·9	299	e 9 57	0	e 18 6	+ 5	—	—
Tashkent		60·2	301	10 0	− 6	18 20	+ 1	e 30·0	34·0
Pulkovo		60·3	335	10 7	0	18 30	+10	30·0	35·2
Helsingfors	E.	61·2	339	e 10 9	− 4	e 18 39	+ 7	e 29·0	—
	N.	61·2	339	e 10 14	+ 1	e 18 44	+12	e 29·0	—
Kucino		61·6	329	10 18	+ 2	18 44	+ 7	30·6	34·2
Ivigtut		61·9	18	i 10 15	− 3	—	—	—	—
St. Louis	N.	66·7	55	i 10 54	+ 4	e 19 55	+14	—	—
Florissant		67·4	55	i 10 52	− 2	e 19 54	+ 4	e 32·0	37·5
Copenhagen		67·8	343	—	—	19 57?	+ 3	39·0	—
Edinburgh		69·5	354	—	—	19 57?	−18	—	—
Baku		70·0	312	e 11 10	− 1	e 20 28	+ 7	35·0	43·4
De Bilt		72·4	347	11 24	− 1	—	—	e 40·0	—
Stuttgart		75·0	344	—	—	e 32 3	?	e 44·0	48·0
Strasbourg		75·4	345	e 11 47	+ 4	—	—	e 41·0	—
Paris		75·9	350	e 11 45	0	—	—	47·0	—
Zagreb		76·5	339	e 11 49	0	—	—	—	—
Zurich		76·5	344	e 11 48	− 1	—	—	—	—
Chur		76·7	344	e 11 49	− 1	—	—	—	—
Neuchatel		77·1	345	e 11 51	− 2	—	—	—	—
Florence		79·4	341	e 17 57	PPPP	—	—	—	—
Granada		88·1	351	—	—	i 23 45	+ 7	52·6	61·3
San Juan		95·7	48	—	—	e 23 19	[−45]	50·0	—

Additional readings :—
Zi-ka-wei eZ = +16m.27s.
Helsingfors ePPE = +12m.36s., ePPN = +12m.45s., ePPPN = +13m.56s., eSSN = +23m.43s., eSSE = +25m.37s. ; T_0 = 16h.26m.48s.
Granada i = +40m.25s.
Long waves were also recorded at Honolulu T.H., Vladivostok, Hong Kong, Ottawa, Feldberg, Uccle, and Kew.

June 28d. Readings also at 1h. (Baku, Ekaterinburg (2), Pulkovo (2), Helsingfors, Ksara, Tashkent, and near Andijan), 3h. (near La Paz), 5h. (San Juan and near La Paz), 6h. (Copenhagen), 8h. (La Plata, La Paz, San Juan, Santiago, Mt. Wilson, and Pasadena), 9h. (near Manila, near Triest (2) and Zagreb (2)) 10h. (near Berkeley and Lick), 11h. (Tyosi), 12h. (De Bilt, Copenhagen, Helsingfors, Pulkovo, Baku, Ekaterinburg, Irkutsk, Kucino, near Andijan, near Calcutta, and near Manila), 13h. (Irkutsk, Mt. Wilson, Pasadena, Zi-ka-wei, Theodosia, Yalta, and near Simferopol), 14h. (Baku, Tashkent, and Ekaterinburg), 15h. (Helsingfors), 16h. (Sumoto, Koti, and Nagasaki), 17h. (near Wellington), 19h. (near Mizusawa), 21h. (Scoresby Sund).

June 29d. 16h. 8m. 52s. Epicentre 36°·2N. 139°·6E. (as on 1931 March 9d.). X.

A = −·615, B = +·523, C = +·591; D = +·648, E = +·762;
G = −·450, H = +·383, K = −·807.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tokyo	0·6	166	0 5	− 4	0 13	− 2	—	0·3
Tyosi	1·1	115	0 19	+ 3	0 32	+ 4	—	0·6
Nagoya	2·4	244	e 0 32	− 2	1 0	− 2	—	—
Mizusawa	3·1	23	0 50	+ 6	1 37	S*	—	—
Osaka	3·7	245	0 52	− 1	(1 42)	+ 7	1·7	2·5
Toyooka	3·9	261	1 4	P*	e 1 59	S*	—	—
Kobe	4·0	249	e 1 7	P*	e 1 53	+11	—	2·1
Sumoto	4·3	246	e 1 26	P_g	2 2	S*	—	2·4
Koti	5·6	244	1 41?	P*	2 38?	S*	—	—

Kobe gives also eSN = +1m.57s.

June 29d. 16h. 43m. 18s. Epicentre 33°·9N. 136°·8E. N.1.

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

A = −·605, B = +·568, C = +·558; D = +·685, E = +·729;
G = −·407, H = +·382, K = −·830.

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.
Siomisaki		+2·2	1·0	242	0 46	0	1 24	+ 2	—	—
Kameyama		+2·2	1·0	344	0 49	+ 3	1 25	+ 3	—	—
Hamamatu		+2·2	1·1	43	0 49	+ 2	1 25	0	—	—
Nagoya	N.	+2·1	1·3	6	i 0 49	0	1 28	+ 1	—	1·5
Osaka		+2·1	1·3	306	0 49	0	(1 27)	0	1·4	1·8
Hikone		+2·0	1·4	342	0 55	+ 6	1 30	+ 3	—	—
Kyoto		+2·0	1·4	322	0 50	+ 1	1 27	0	—	—
Gihu		+2·0	1·5	359	0 50	0	1 29	− 1	—	—
Kobe		+2·0	1·6	299	0 50	− 1	1 28	− 4	—	1·5
Sumoto		+2·0	1·6	286	i 0 49	− 2	1 28	− 4	—	1·5
Numadu		+1·8	2·1	55	0 56	0	1 39	− 1	—	—
Misima		+1·8	2·1	55	0 54	− 2	1 37	− 3	—	—
Toyooka		+1·6	2·3	315	e 0 53	− 3	1 35	− 5	—	1·7
Kohu		+1·6	2·4	40	0 57	0	1 42	0	—	—
Koti		+1·4	2·7	263	0 58	0	1 40	− 5	—	1·8
Hatidyozima		+1·4	2·7	108	0 59	+ 1	1 46	+ 1	—	—
Mera		+1·4	2·7	69	0 57	− 1	1 43	− 2	—	—
Tokyo		+1·3	3·0	54	1 1	0	1 49	− 1	—	1·9
Nagano		+1·3	3·0	22	1 1	0	1 46	− 4	—	—
Kumagaya		+1·3	3·1	43	1 1	− 2	1 48	− 5	—	—
Matuyama		+1·1	3·4	270	i 1 2	− 2	1 54	− 1	—	2·0
Simidu		+1·1	3·4	251	1 4	0	1 53	− 2	—	—
Takada		+1·1	3·4	20	1 6	+ 2	1 56	+ 1	—	—
Wazima		+1·1	3·5	1	1 8	+ 2	1 56	− 2	—	—
Tukubasan		+1·1	3·5	49	1 5	− 1	1 51	− 7	—	—
Utunomiya		+1·1	3·6	43	1 5	− 2	1 37	−23	—	—
Hirosima		+1·1	3·6	279	1 6	− 1	1 57	− 3	—	—
Kakioka		+1·1	3·6	50	1 4	− 3	1 55	− 5	—	—
Tyosi		+1·0	3·8	60	i 1 6	− 2	i 2 0	− 3	—	2·1
Mito		+0·9	3·9	50	1 7	− 1	1 58	− 5	—	—

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.
Hamada		+0·9	4·0	286	1 10	0	2 5	0	—	—
Niigata		+0·7	4·4	24	1 18	+ 5	2 11	+ 1	—	—
Hukusima		+0·5	4·9	37	1 18	+ 1	2 17	− 1	—	—
Simonoseki		+0·5	4·9	273	1 19	+ 2	2 22	+ 4	—	—
Miyazaki		+0·5	4·9	247	1 20	+ 3	2 20	+ 2	—	—
Kumamoto		+0·5	5·2	260	1 23	+ 2	2 30	+ 5	—	—
Hukuoka		+0·4	5·3	268	i 1 23	+ 2	i 2 30	+ 5	—	2·6
Kagosima		+0·4	5·7	248	1 36	+ 9	2 44	+ 8	—	—
Isinomaki		+0·3	5·8	38	1 27	0	2 30	− 6	—	—
Nagasaki		+0·3	6·0	261	1 31	+ 1	2 43	+ 2	—	2·8
Ituhara		+0·2	6·2	275	1 31	0	2 52	+ 9	—	—
Mizusawa		+0·2	6·2	33	1 35	+ 4	2 43	0	—	—
Akita		+0·2	6·4	23	1 38	+ 4	2 50	+ 2	—	—
Morioka		+0·1	6·7	30	1 38	+ 1	2 57	+ 4	—	—
Tomie		0·0	6·9	261	1 43	+ 5	3 3	+ 7	—	—
Taikyu		0·0	7·0	288	1 43	+ 4	3 4	+ 5	—	—
Aomori		−0·1	7·6	24	1 49	+ 3	3 15	+ 4	—	—
Titizima		−0·3	8·3	144	1 55	+ 2	3 27	+ 3	—	—
Muroran		−0·5	9·0	20	2 3	+ 3	3 41	+ 5	—	—
Urakawa		−0·6	9·5	28	1 49	−17	3 23	−23	—	—
Sapporo		−0·7	9·8	20	2 14	+ 5	4 0	+ 9	—	—
Vladivostok		−0·7	9·9	339	1 12	−58	i 3 0	−54	—	—
Naha		−0·9	11·0	228	2 31	+ 9	4 33	+17	—	—
Zi-ka-wei	z.	−1·2	13·2	263	i 2 48	0	5 10	+ 7	i 6·7	—
Chiufeng		−2·0	17·6	296	3 40	+ 4	i 6 46	+17	—	—
Manila		−3·0	24·1	220	e 4 39	− 2	8 42	+14	10·7	—
Phu-Lien		−3·7	29·7	252	e 5 34	+ 5	—	—	—	—
Andijan		−5·5	50·5	299	e 8 26	+13	e 15 14	+24	—	—
Tashkent		−5·7	52·7	300	—	—	i 15 37	+18	e 21·7	25·5
Ekaterinburg		−5·9	54·8	321	i 8 55	+12	i 16 6	+21	21·7	—
Baku		−6·6	66·7	306	—	—	e 18 39	+22	33·7	—
Kucino		−6·6	67·1	324	—	—	e 18 38	+15	34·2	36·0
Pulkovo		−6·7	68·8	330	10 26	+ 7	18 58	+15	36·7	—
Helsingfors		−6·8	70·7	331	e 10 37	+ 6	e 19 22	+16	e 31·7	—
Scoresby Sund		−7·0	74·5	354	i 11 1	+ 6	i 20 9	+18	—	—
Lund		−7·1	78·4	332	—	—	20 45	+ 8	—	—
Copenhagen		−7·1	78·7	332	11 24	+ 4	20 49	+ 9	—	—
Pasadena		−7·3	82·3	54	e 11 42	+ 2	e 21 28	+ 8	—	—
Mount Wilson		−7·3	82·3	54	e 11 43	+ 3	—	—	—	—
Riverside		−7·3	82·8	54	e 11 46	+ 3	—	—	—	—
Edinburgh		−7·4	84·0	340	—	—	21 42?	+ 4	—	—
De Bilt		−7·4	84·2	332	i 11 52	+ 2	21 45	+ 4	e 44·7	—
Feldberg		−7·4	84·3	330	i 11 53	+ 2	i 21 47	+ 5	—	46·9
Ivigtut		−7·4	84·8	3	i 11 56	+ 2	21 42	− 5	—	—
Stuttgart		−7·4	85·1	330	e 11 55	− 1	i 21 55	+ 4	e 46·7	—
Strasbourg		−7·4	85·9	330	—	—	i 22 2	+ 3	e 34·7	—
Chur		−7·4	86·4	328	e 12 2	− 1	—	—	—	—
Zurich		−7·4	86·4	328	e 12 2	− 1	e 22 6	+ 1	—	—
La Paz	z.	—	151·6	58	e 19 5	[−39]	—	—	—	—

Additional readings :—
Koti iS = +1m.45s.
Tyosi iPEN = +1m.9s.
Vladivostok i = +2m.9s.
Baku SS = +23m.18s., SSS = +26m.30s.
Kucino PS = +19m.12s., SSS = +26m.27s.
Helsingfors ePPN = +13m.25s., ePPE = +13m.40s., ePSE = +20m.1s., eSSE = +23m.54s., eSSN = +24m.1s., eSSSE = +26m.40s. ; T_o = 16h.43m.18s.
Long waves were also recorded at Hong Kong and Paris.

June 29d. 20h. 22m. 42s. Epicentre 48°·5N. 123°·5E. N.3.

A = −·366, B = +·553, C = +·749 ; D = +·834, E = +·552 ;
G = −·413, H = +·625, K = −·663.

Very uncertain.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng	9·9	215	2 19	0	i 4 8	− 3	—	—
Irkutsk	12·8	295	e 2 33	−26	(4 18?)	−64	4·3	—
Phu-Lien	30·8	212	—	—	10 18?	−59	—	—
Andijan	36·5	278	e 7 3	+ 1	—	—	—	—
Ekaterinburg	37·6	308	i 7 12	0	—	—	16·3	21·0
Tashkent	38·3	281	—	—	i 14 59	SS	16·7	17·7
Kucino	49·6	313	—	—	e 18 48	(+ 6)	24·3	25·6
Pulkovo	51·1	320	9 16	+16	—	—	26·3	31·2
Baku	51·2	290	—	—	e 19 12	(+20)	24·9	—
Florence	70·3	315	e 7 18	?	—	—	31·3	38·3

Additional readings :—
Tashkent, e = +11m.12s. and +12m.25s.
Baku e = +22m.51s. and +24m.12s.
Long waves were also recorded at Hong Kong, Calcutta, Copenhagen, De Bilt, and Uccle.

June 29d. 20h. 24m. 11s. Epicentre 29°·5S 71°·0W. (as on 1928 Jan. 12d.). R.2.

A = +·283, B = −·823, C = −·492 ; D = −·946, E = −·326 ;
G = −·160, H = +·466, K = −·870.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		4·0	176	0 59	+ 2	1 42	0	1·9	1·9
La Plata		12·3	119	2 51	− 1	5 1	− 9	5·7	—
La Paz		13·3	12	i 3 18	+12	i 6 4	+30	7·1	9·2
San Juan		48·1	6	e 8 37	0	15 30	− 4	e 23·8	—
Georgetown		68·6	356	i 11 2	0	i 20 6	+ 2	e 36·8	—
Fordham		70·4	359	i 11 13	0	e 20 29	+ 3	e 33·8	—
St. Louis		70·4	346	i 11 11	− 2	i 20 23	− 3	—	—
Florissant		70·6	346	i 11 13	− 1	i 20 25	− 3	—	—
Tucson		72·4	326	11 18	− 7	—	—	—	—
Toronto		73·5	355	e 11 27	− 5	e 20 49?	−14	—	—
Ottawa		74·9	358	e 11 41	+ 1	e 21 17	− 2	e 32·8	—
La Jolla	N.	76·2	322	e 11 47	0	—	—	—	—
Riverside		77·1	323	e 11 55	+ 2	—	—	—	—
Pasadena		77·6	322	i 11 53	− 2	—	—	—	—
Mount Wilson		77·7	322	e 11 54	− 2	—	—	—	—
Santa Barbara		78·7	321	e 12 14	+13	—	—	—	—
Lick		81·9	322	e 12 18	0	—	—	—	—
Granada		91·8	48	e 16 3	PP	—	—	44·8	51·8
Kew		101·9	38	e 18 1	PP	e 24 49	[+14]	e 52·8	61·2
Paris		102·0	41	e 17 49?	PP	—	—	36·8	58·8
Edinburgh		102·9	33	—	—	e 24 49?	[+ 9]	—	—
Strasbourg		104·9	43	e 17 49?	PP	(e 24 49?)	[0]	e 24·8	—
De Bilt		105·1	39	e 18 25	PP	—	—	e 52·8	60·6
Scoresby Sund		105·8	16	18 33	PP	25 9	[+15]	53·8	—
Stuttgart		105·8	43	—	—	e 25 7	[+13]	e 53·8	62·8
Feldberg		106·1	41	i 18 49	PP	e 27 57	PS	—	64·1
Cheb		108·3	44	—	—	e 32 36	?	e 59·8	60·8
Hamburg		108·4	38	—	—	e 30 49?	?	e 58·8	—
Zagreb		108·8	48	18 13	[− 1]	—	—	—	—
Helsingfors	E.	118·2	35	e 20 0	PP	—	—	e 61·8	—
Pulkovo		120·7	35	i 18 59	[+12]	—	—	60·8	71·7
Ekaterinburg		136·8	37	e 15 3	?	e 22 19	PP	58·8	80·1
Mizusawa		151·9	298	19 19	[−25]	20 4	PKP_2	—	—
Manila		161·5	219	e 18 59	[−56]	—	—	—	—

For Notes see next page.

NOTES TO JUNE 29d. 20h. 24m. 11s.

Additional readings and notes :—
San Juan e = +19m.26s.
St. Louis "apparently two shocks" for the second iPN = +11m.23s., iSE = +20m.37s.
Florissant iPNZ = +11m.24s., iZ = +11m.28s., iSE = +20m.38s., iE = +20m.48s.
Lick e = +12m.29s.
Granada i = +16m.30s. = PP −10s. and +17m.8s.
Strasbourg e = +20m.49s. ?
Scoresby Sund e = +27m.49s. = PS +2s.
Feldberg e = +34m.16s.
Cheb e = +37m.11s.
Helsingfors eE = +21m.3s., +22m.5s., and +27m.48s., ePPSE = +31m.24s.
Manila iE = +20m.36s.
Long waves were also recorded at Baku, Tashkent, Kucino, Copenhagen, Stonyhurst, and Göttingen.

June 29d. Readings also at 0h. (near Apia), 1h. (near Santiago and near Tananarive), 4h. (Hong Kong and near Phu-Lien), 5h. (near Matuyama, Koti, and Sumoto), 6h. (La Plata, Nagoya, Osaka, near Mizusawa, and Tyosi), 8h. (Nagoya, Kobe, Koti, near Osaka, Sumoto, Mizusawa, and Tyosi), 9h. (Catania), 13h. (Pasadena, Nagoya, and near Tyosi), 19h. (Zagreb and near Ksara), 20h. (Koti), 22h. (Andijan), 23h. (Simferopol and Yalta).

June 30d. 10h. 23m. 56s. Epicentre 36°·5N 23°·0E. (as on 1927 Feb. 14d.). R.2.

A = +·740, B = +·314, C = +·595 ; D = +·391, E = −·921 ;
G = +·548, H = +·232, K = −·804.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Trenta		5·9	300	i 1 34	+10	i 2 34	+ 3	—	—
Taranto		6·0	314	i 1 25	0	i 2 29	− 4	—	2·5
Messina		6·1	288	1 28	+ 1	—	—	—	—
Catania		6·4	282	2 30	+59	2 36	− 7	—	2·9
Mineo		6·6	279	1 43	+ 9	—	—	—	—
Naples		8·1	305	e 1 46	− 9	e 3 15	−11	—	—
Casamicciola		8·3	304	2 3	+ 5	3 35	+ 4	5·0	—
Belgrade		8·5	348	1 44	−16	—	—	—	—
Collurania		9·5	314	2 16	+ 2	—	—	—	—
Helwan		9·6	131	i 2 14	− 2	i 3 55	− 8	—	—
Rome		9·8	307	e 2 26	+ 8	—	—	—	5·1
Zagreb		10·7	333	e 2 30	− 1	i 4 36	+ 5	—	4·8
Ksara	E.	10·9	100	2 33	0	4 25	−11	—	—
Florence		11·5	313	e 2 34	− 8	—	—	—	5·1
Triest		11·5	326	e 2 40	− 2	i 4 43	− 7	4·8	5·2
Yalta		11·7	43	2 47	+ 3	—	—	—	—
Simferopol		11·9	42	2 49	+ 2	—	—	—	—
Theodosia		12·6	44	3 0	+ 4	—	—	—	—
Chur		14·4	320	e 3 23	+ 2	e 5 56	− 5	—	—
Zurich		15·2	320	e 3 33	+ 2	e 6 29	+ 9	—	—
Neuchatel		15·8	316	e 3 40	+ 2	e 6 16	−18	—	—
Stuttgart		15·9	325	e 3 39	− 1	e 6 40	+ 4	—	—
Strasbourg		16·4	322	e 3 47	+ 1	—	—	—	—
Feldberg		17·2	327	i 3 58	+ 1	e 7 30	+24	—	—
Paris		19·3	316	e 4 21	− 1	e 7 58	+ 6	—	—
Uccle		19·6	323	e 4 24	− 1	—	—	—	—
De Bilt		20·0	327	4 29	− 1	e 8 11	+ 5	—	—
Lund		20·3	344	—	—	8 12	0	—	—
Copenhagen		20·5	343	5 10	+35	8 15	− 1	—	—
Granada		21·2	280	i 5 41	+59	—	—	i 10·1	—
Baku		21·3	71	e 4 42	− 1	e 8 34	+ 2	9·9	—
Toledo		21·4	287	e 4 41	− 3	—	—	—	—
Oxford		23·0	319	—	—	9 3	− 2	—	—
Helsingfors	E.	23·7	3	e 5 9	+ 2	i 9 23	+ 5	e 13·1	—
Pulkovo		23·7	9	5 8	+ 1	9 10	− 8	—	—
Ekaterinburg		32·2	39	i 6 22	− 2	e 11 25	−13	—	—
Scoresby Sund		41·4	339	—	—	14 4?	+ 7	—	—

For Notes see next page.

NOTES TO JUNE 30d. 10h. 23m. 56s.

Additional readings :—
Belgrade e = +1m.53s. and +2m.33s.
Zagreb i = +2m.39s.
Feldberg i = +4m.10s.
De Bilt iZ = +5m.6s.
Helsingfors ePPE = +5m.40s., eSSE = +11m.12s., eE = +12m.9s.

June 30d. 13h. 35m. 41s. Epicentre 36°·6N 3°·8W. (given by the stations). N.3.

A = +·801, B = −·053, C = +·596.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Malaga	0·5	285	0 8	+ 1	—	—	0·3
Granada	0·6	15	i 0 9	0	i 0 17	+ 2	—
Almeria	1·2	77	0 16	− 1	0 28	− 3	—
Alicante	3·1	56	—	—	e 1 41	S_g	—
Toledo	3·3	357	e 1 31	S*	e 1 41	S_g	—

Granada gives also PS = +22s., SS = +25s.

June 30d. Readings also at 3h. (Apia), 6h. (near Alicante), 7h. (near La Paz (2) and near Toledo), 13h. (Phu-Lien and Taihoku), 14h. (Nagoya and Tyosi), 17h. (near Sumoto), 18h. (Balboa Heights and San Juan (2)), 21h. (near La Paz), 22h. (Baku, Ekaterinburg, Tashkent, Kucino, Pulkovo, Helsingfors, Scoresby Sund, Pittsburgh, and Nagoya).

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