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The International Seismological Summary.

1932 January, February, March.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present quarter of the Summary deals with 120 epicentres, 55 being new and 65 repetitions from old epicentres. The quality of the material is as follows :—

N.1=10	R.1= 4	X.=41
N.2=16	R.2= 8	
N.3=29	R.3=12	

Cases of abnormal focus are as follows :—

	Date d. h. m. s.	Epicentre. °	°	Focal Depth. (Below Normal).
Jan.	9 10 21 51	6·0S.	155·3E.	+0·060
Feb.	3 7 34 34	28·5N.	140·5E.	+0·060
Mar.	1 19 1 50	36·5S.	70·1W.	+0·040
Mar.	19 23 10 42	2·0S.	152°3E.	+0·060

UNIVERSITY OBSERVATORY,
OXFORD.

1937 January 12.

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1932 JANUARY, FEBRUARY, MARCH.

Jan. 1d. Readings at 2h. (Wellington), 5h. (near La Paz), 8h. (near Wellington, near Manila, near Kobe, and Sumoto), 11h. (Andijan and Tyosi), 12h. (Phu-Lien), 13h. (near Tyosi), 16h. (Belgrade, Florence, and near Batavia), 17h. (Cheb, Kew, Strasbourg, Stuttgart, and Uccle), 21h. (Bombay, Ekaterinburg, Tashkent, and Ksara).

Jan. 2d. 23h. 33m. 48s. (I) } Epicentre 39°·0N. 17°·5E. X.
23h. 36m. 51s. (II) } (as on 1929 Aug. 8d.). R.3.

A = +·741, B = +·234, C = +·629; D = +·301, E = −·954;
G = +·600, H = +·189, K = −·777.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Naples	E.	3·1	307	(e 1 17)	S	(e 2 4)	?	—	6·0
I Sarajevo		4·9	8	i 1 9	− 1	i 2 7	+ 2	—	2·8
I Belgrade		6·2	14	e 1 55	P*	e 2 32	− 6	—	—
II		6·2	14	i 1 59	P*	—	—	—	3·5
I Florence		6·7	318	(2 12)	P_g	—	—	2·2	4·2
II		6·7	318	2 39	S	(2 39)	−12	—	4·1
I Zagreb		6·9	353	e 1 40	+ 2	e 3 4	+ 8	—	—
II		6·9	353	—	—	i 2 48	− 8	—	4·0
I Triest		7·2	338	e 1 45	+ 3	i 3 14	+10	—	5·6
II		7·2	338	i 1 57	+15	—	—	—	—
I Graz		8·2	350	i 1 52	− 4	—	—	5·2	7·4
II		8·2	350	(i 1 49)	− 7	i 1 49	P	—	—
II Vienna		9·3	356	1 19	−52	i 3 38	−18	—	6·5
II Innsbruck		9·4	334	e 2 9?	− 4	i 4 29	S*	—	—
I Chur		9·8	326	e 2 30	+12	—	—	—	—
II		9·8	326	e 2 32	+14	—	—	—	—
I Zurich		10·6	325	e 3 22	P*	—	—	—	—
I Neuchatel		11·1	320	e 4 43	S	(e 4 43)	+ 2	—	—
II		11·1	320	—	—	e 4 25	−16	—	—
II Prague		11·3	350	e 3 41	P_g	e 5 32	S*	e 6·1	7·6
II Stuttgart		11·4	332	e 3 18	+38	e 4 12	−36	4·6	7·3
II Cheb		11·6	344	e 3 9?	+26	—	—	—	8·2
II Strasbourg		11·9	327	e 2 50	+ 3	—	—	—	—
II Barcelona		12·0	287	—	—	e 6 23	S_g	—	9·5
II Karlsruhe		12·0	330	e 5 9?	S	(e 5 9?)	+ 6	—	—
II Feldberg		12·9	333	e 2 51	−10	—	—	e 6·5	10·6
II Sebastopol		13·2	60	e 4 9	?	—	—	—	—
II Göttingen		13·6	340	e 4 27	?	—	—	e 7·4	8·1
II Potsdam		13·7	348	e 3 27	+16	e 5 57	+13	e 7·2	7·8
II Alicante		14·1	273	e 3 20	+ 3	e 6 12	+19	e 7·3	—
I Theodosia		14·5	60	e 6 18	S	(e 6 18)	+15	—	—
II		14·5	60	e 3 15	− 7	—	—	—	—
II Helwan		14·6	125	3 20	− 3	5 50	−15	—	—
II Uccle		15·0	326	3 30	+ 2	e 5 59	−16	7·7	10·9
II Hamburg		15·5	343	e 2 25	−70	—	—	e 7·8	9·1
II Ksara		15·6	104	3 41	+ 5	6 11	−18	7·4	—
II Almeria		15·8	268	e 3 45	+ 7	e 6 27	− 7	e 8·0	—
II Toledo		16·6	280	3 50	+ 1	i 7 2	+10	e 8·3	10·4
II Granada		16·7	270	i 3 48	− 2	i 7 33	+38	9·0	—
II Copenhagen		17·0	350	3 47	− 7	—	—	9·1	—
II Malaga		17·4	269	e 3 53	− 6	7 25	+14	10·1	—
II San Fernando		18·9	270	4 9	− 8	8 3	+19	12·6	—
II Kucino		21·6	32	e 4 13	−33	e 8 5	−33	e 9·4	11·6
II Helsingfors		21·7	10	e 4 46	− 2	e 8 38	− 2	e 10·4	—
II Pulkovo		22·3	17	4 51	− 3	8 51	− 1	11·6	13·0
II Baku		24·8	76	e 5 22	+ 4	e 10 51	SS	14·4	16·7
II Ekaterinburg		33·2	43	i 6 38	+ 4	i 11 49	− 5	14·1	19·1
II Tashkent		39·0	69	e 8 50	PP	i 13 20	− 1	e 16·1	28·1
II Bombay		51·5	96	16 25	S	(16 25)	+ 3	—	—

For Notes see next page.

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NOTES TO JAN. 2d. 23h. 33m. 48s. (I).
23h. 36m. 51s. (II).

Additional readings and note :—
Naples I readings have been *increased* by 1m.
Sarajevo I i = +1m.32s. =P* and +1m.45s.
Belgrade I e = +2m.26s.
Florence I e = +12s., II S = +3m.19s. =S*.
Zagreb I eNE = +2m.13s. =P*, i = +3m.42s., II i = +2m.25s. and +3m.8s., iNE = +3m.28s. =S* and +3m.39s., iNW = +3m.46s., i = +3m.57s. =S_g.
Triest I PP = +2m.14s. =P*, i = +3m.22s. =S*, SS = +3m.54s. =S_g.
Vienna II P_g = +1m.44s., S = +2m.22s., +2m.30s., S* = +2m.45s., iZ = +3m.11s. =P_g, iE = +3m.28s., and +4m.27s., iN = +4m.42s., iE = +5m.19s., iN = +5m.31s., and +6m.12s.
Innsbruck II i = +5m.28s.
Strasbourg II e = +3m.45s. =P* and +5m.3s. =P_g.
Potsdam II iN = +4m.9s.
Toledo II PP = +4m.2s., SS = +7m.27s.
Granada II PP = +4m.6s.
Helsingfors II e = +5m.28s., eSN = +8m.35s.
Tashkent II e = +15m.50s. and +19m.51s.
Long waves were also recorded at Scoresby Sund, Yalta, Ottawa, and several European stations.

Jan. 2d. Readings also at 0h. (Wellington, near Nagasaki, and near Tyosi), 2h. (Andijan), 6h. and 9h. (La Paz), 10h. (near Mizusawa), 11h. (near Santiago), 18h. (near Batavia), 20h. (near Tananarive), 21h. (near Nagasaki, near Kobe, Osaka, Sumoto, Matuyama, and Hukuoka), 22h. (Baku, Ekaterinburg, and Tashkent).

Jan. 3d. 7h. 50m. 30s. Epicentre 25°·5N. 98°·5E. (as on 1931 Oct. 18d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		8·9	120	e 2 12	+ 6	4 51	+65	5·5	—
Calcutta		9·7	254	2 2	−15	4 2	− 4	4·8	—
Hong Kong		14·7	99	6 35	S	(6 35)	+27	8·0	8·2
Agra	E.	18·4	280	3 39?	−32	7 12?	−21	e 8·9?	12·2?
Hyderabad		20·3	251	4 34	+ 1	8 31	SS	11·0	15·0
Chiufeng	E.	20·7	41	e 4 10	−27	—	—	—	—
Zi-ka-wei	Z.	21·0	69	4 40	0	8 36	+10	i 11·7	13·0
Manila		23·7	113	9 42	S	(9 42)	SS	(13·4)	17·5
Bombay		24·6	260	5 23	+ 7	9 56	+22	12·8	13·5
Almata		24·9	321	5 23	+ 4	e 9 49	+10	—	—
Andijan		26·5	312	e 5 38	+ 4	—	—	—	—
Irkutsk		27·1	8	—	—	e 10 23	+ 6	14·5	—
Tashkent		28·8	311	i 5 53	− 1	i 10 45	0	e 15·8	18·3
Batavia		32·8	165	—	—	i 9 54	?	—	—
Ekaterinburg		41·4	330	i 7 42	− 2	13 56	− 1	19·5	—
Baku		42·8	304	e 9 39	?	e 14 22	+ 4	24·0	27·8
Kucino		52·7	322	—	—	e 15 55	−43	e 26·3	29·0
Pulkovo		57·3	327	9 45	0	17 37	− 3	31·2	32·0

Additional readings and note :—
Hong Kong S = +7m.40s.
Manila gives S as P, and L as S.
Tashkent e = +5m.15s.
Baku e = +17m.36s.
Kucino e = +20m.3s. =SS −5s.
Long waves were also recorded at Taihoku, Helsingfors, Copenhagen, De Bilt, and Paris.

Jan. 3d. Readings also at 3h. (New Plymouth, Takaka, Andijan, near Christchurch, Glenmuick, Wellington, near Matuyama, Hukuoka, and Nagasaki), 5h. (near Santiago), 6h. (Wellington, La Paz, and near Mizusawa), 8h. (Mizusawa and near Amboina), 9h. (Amboina), 10h. (near Malabar), 11h. (Tyosi), 13h. (Andijan, Frunse, Baku, Tashkent, and near Amboina (3)), 18h. (Tyosi), 21h. (Lick, near Berkeley and near Nagasaki), 22h. (La Paz, Melbourne, Perth, and Riverview).

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Jan. 4d. Readings at 2h. (La Plata and near Santiago), 3h. (Wellington), 4h. (Baku and near Ksara), 5h. (Almata, Ekaterinburg, Irkutsk, and Tashkent), 11h. (Tashkent, Almata, Andijan, Frunse, Agra, Bombay, and Calcutta), 12h. (near Hyderabad and near Dehra Dun), 13h. (Tyosi, Andijan, and near Mizusawa), 14h. (Tyosi), 23h. (near Amboina, near Glenmuick, and Wellington).

Jan. 5d. 0h. 34m. 50s. Epicentre 3°·0N. 134°·0E. N.3.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	8·9	221	3 38	S	(3 38)	− 8	(4·7)	—
Manila	17·3	313	3 58	0	7 11	+ 2	8·8	10·6
Hong Kong	27·3	317	6 3	+22	10 21	+ 1	—	15·8
Batavia	28·7	251	e 5 52	− 1	i 9 4	P_cP	—	—
Melbourne	42·0	167	—	—	i 14 40	+34	28·6?	—
Bombay	61·9	290	e 10 21	+ 3	—	—	—	—
Andijan	66·8	315	e 11 7	+16	—	—	—	—
Tashkent	69·2	315	—	—	e 19 58	−13	e 28·2	39·5
Ekaterinburg	78·5	328	i 17 40	?	e 26 52	SS	32·2	—
Baku	83·6	311	—	—	e 22 31	−22	41·2	46·1

Additional readings and note :—
Amboina gives S as P and L as S.
Melbourne i = +17m.52s. $=S_cS-2s$.
Baku e = +28m.26s. and +33m.42s.
Long waves were also recorded at Riverview and Pulkovo.

Second solution with epicentre determined at Batavia.

Jan 5d. 0h. 35m. 23s. Epicentre 1°·8N. 129°·3E. (as given by Batavia). N.3.

A = −·633, B = +·774, C = +·031 ; D = +·774, E = +·633 ;
G = −·020, H = +·024, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	5·5	191	3 5	S	(3 5)	+45	(4·1)	—
Manila	15·2	328	3 25	− 6	6 38	+18	8·8	10·0
Batavia	23·8	250	e 5 19	+11	i 8 31	P_cP	—	—
Hong Kong	25·3	326	5 30	+ 7	9 48	+ 2	—	15·2
Melbourne	42·1	161	—	—	14 7	− 1	28·0	—
Bombay	57·8	292	e 9 48	− 1	—	—	—	—
Andijan	64·3	316	e 10 34	0	—	—	—	—
Tashkent	66·7	316	—	—	e 19 25	−16	e 27·6	38·9
Ekaterinburg	77·0	329	i 17 7	?	e 25 19	?	31·6	—
Baku	80·8	311	—	—	e 21 58	−26	e 40·6	45·5

Additional readings and note :—
Amboina gives S as P and L as S.
Melbourne i = +17m.19s.
Baku e = +27m.53s. and +33m.9s.

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Jan 5d. 1h. 54m. 2s. Epicentre 27°·2S. 114°·2W. N.2.

A = −·365, B = −·811, C = −·457 ; D = −·912, E = +·410 ;
G = +·187, H = +·417, K = −·889.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		37·8	111	e 7 58	+45	—	—	—	20·0
La Paz		43·8	86	i 8 1	− 2	i 14 37	+ 4	19·2	21·5
Sucre		45·5	90	e 8 21	+ 4	—	—	—	—
Wellington		58·7	237	—	—	i 18 23	+24	28·0	29·0
Tucson		59·6	4	10 9	+ 7	18 10	− 1	25·0	—
Riverside		61·2	357	e 10 12	− 1	e 18 28	− 4	—	—
Pasadena		61·4	356	e 10 13	− 1	e 18 37	+ 3	e 25·8	—
Mount Wilson	N.	61·5	356	e 10 19	+ 4	e 18 46	+10	—	—
Santa Barbara	N.	61·9	355	e 10 19	+ 1	—	—	—	—
Suva		62·2	265	—	—	e 23 58?	?	—	36·0
Haiwee	N.	63·4	357	e 10 27	− 1	—	—	—	—
Rio de Janeiro	E.	63·7	104	—	—	i 19 5	+ 1	26·3	—
Tinemaha		64·4	357	e 10 33	− 2	e 19 16	+ 4	—	—
Lick	E.	64·9	354	e 10 34	− 4	—	—	—	—
San Juan		65·2	51	i 10 40	0	i 19 14	− 8	e 30·0	—
Little Rock		65·3	20	i 10 38	− 3	i 19 21	− 3	—	—
Berkeley		65·5	354	e 9 40	−62	e 18 10	−76	e 28·7	—
Ukiah		66·9	353	—	—	19 40	− 3	27·6	—
Columbia		68·8	29	—	—	e 20 5	− 2	34·0	—
St. Louis		69·5	20	i 11 3	− 5	i 20 9	− 6	—	—
Florissant		69·7	20	i 11 3	− 6	i 20 11	− 7	28·1	—
Chicago		73·2	20	—	—	20 56	− 3	e 34·2	—
Charlottesville		73·3	29	—	—	e 21 6	+ 6	e 31·0	—
Madison		73·9	19	i 11 34	0	i 20 52	−15	35·0	—
Georgetown		74·6	29	i 11 34	− 4	i 21 7	− 8	—	40·0
Pittsburgh		74·8	26	11 40	+ 1	e 21 9	− 9	e 34·0	—
Victoria		76·0	355	—	—	21 30	− 2	32·7	38·3
Buffalo		77·3	26	i 11 54	0	e 22 18	PS	e 32·0	40·0
Fordham		77·6	30	e 11 55	0	e 21 47	− 2	e 38·0	—
Toronto		77·7	25	11 49?	− 7	i 21 35?	−16	37·0	—
Riverview		78·8	239	—	—	e 22 4	+ 1	37·0	43·5
Sydney		78·8	239	e 21 58	S	(e 21 58)	− 5	37·5	43·0
Harvard		80·1	30	e 12 9	+ 1	i 22 7	−10	33·0	—
Ottawa		80·6	27	—	—	i 22 15	− 7	e 35·0	—
Melbourne		81·5	233	—	—	22 48	+16	38·0	40·5
Sitka		86·1	350	12 51	+12	e 23 16	− 2	e 41·9	—
Adelaide		87·3	233	—	—	e 23 23	[+ 8]	i 37·6	48·3
Paris		127·4	47	i 37 41	SS	—	—	59·0	74·0
Strasbourg		130·9	48	—	—	e 29 11	{+44}	e 61·0	—
Stuttgart		131·8	47	—	—	e 31 48	PS	e 62·5	—
Copenhagen		132·6	38	—	—	39 46	SS	60·0	—
Helsingfors	N.	137·0	29	e 21 59	PP	e 29 15	{+10}	e 64·0	—
Pulkovo		139·4	26	19 18	[− 3]	34 37	PPS	64·0	76·1
Irkutsk		141·9	321	e 19 37	[+13]	e 41 28	SS	67·0	76·9
Ekaterinburg		150·1	6	—	—	i 47 58?	?	66·0	—
Colombo		155·7	216	21 31	?	—	—	—	88·1
Calcutta		159·0	262	25 40	?	39 26	?	75·4	—
Baku		161·4	41	e 20 59	{+ 9}	e 45 20	SS	77·0	90·5
Andijan		165·4	340	e 20 40	{−29}	—	—	—	—
Tashkent		165·6	349	e 20 13	[+13]	—	—	79·0	89·0
Bombay		169·5	219	e 20 18	[+14]	—	—	—	—

Additional readings :—
Rio de Janeiro iSN = +19m.12s. = PS − 1s.
Berkeley eZ = +10m.40s., eE = +19m.22s.
Columbia eSS = +24m.1s., eSSS = +28m.6s.
St. Louis eE = +20m.4s.
Florissant iZ = +12m.43s. and +13m.21s. = PP − 14s.
Chicago eSS = +25m.41s.
Charlottesville eSS = +24m.58s.

Continued on next page,

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Madison ePS = +21m.38s.
Georgetown SS = +25m.58s. ; T_o = 1h.54m.0s.
Pittsburgh eSS = +26m.2s.
Buffalo e = +13m.33s.
Fordham eSSN = +26m.50s., eSSSN = +30m.48s.
Riverview e = +27m.28s.
Harvard eSS = +27m.14s.
Ottawa e = +27m.0s. = SS −22s.
Melbourne SS = +28m.27s., SSS = +31m.33s.
Sitka ePP = +16m.16s.
Strasbourg e = +38m.9s.
Stuttgart eSS = +39m.34s.
Copenhagen +44m.16s.
Helsingfors eN = +33m.0s. = PS +27s., eE = +44m.58s.?
Pulkovo PP = +22m.15s., SS = +40m.34s.
Irkutsk e = +45m.36s.
Ekaterinburg i = +53m.40s.
Baku e = +39m.58s.
Tashkent iPP = +25m.40s., eSS = +46m.40s.
Long waves were recorded at La Plata, Honolulu T.H., Scoresby Sund, Ivigtut, Kucino, Hong Kong, and other European stations.

Jan. 5d. 11h. 22m. 10s. Epicentre 18°·5N. 148°·5E. N.3.

A = −·809, B = +·496, C = +·317 ; D = +·522, E = +·853 ;
G = −·271, H = +·166, K = −·948.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	19·9	326	4 35	+ 6	8 44	+40	—	—
Kobe	20·1	326	e 4 24	− 7	—	—	—	5·3
Manila	26·6	266	5 34	− 1	i 9 37	−32	—	13·8
Ekaterinburg	73·4	325	i 11 33	+ 2	—	—	35·8	—
Santa Barbara	81·1	56	e 12 14	0	—	—	—	—
Tinemaha	81·6	52	e 12 17	+ 1	—	—	—	—
Pasadena	82·5	55	e 12 20	− 1	i 22 53	+11	—	—
Mount Wilson	82·5	55	e 12 23	+ 2	e 22 54	+12	—	—
Riverside	83·1	55	e 12 23	− 1	—	—	—	—

Ekaterinburg e = +25m.22s. = SS −12s.
Pasadena eZ = +12m.53s. and +13m.7s.
Long waves were also recorded at Tashkent.

Jan. 5d. Readings also at 2h. (near Sumoto), 3h. (near Tananarive), 4h. (Arapuni, Wellington, Suva, Adelaide, Melbourne, Riverview, Sydney, and Charlottesville), 5h. (Tyosi, Andijan (2), Agra, Bombay (2), Calcutta, and Hyderabad), 6h. (Kobe and near Sumoto), 7h. (La Paz), 8h. (near Matuyama), 10h. (Tyosi and Nagoya), 11h. (Tyosi and La Paz), 13h. (near Osaka and Sumoto), 14h. (Berkeley, Lick, Ukiah, and Victoria), 15h. (Andijan), 18h. (near Wellington), 23h. (Seattle and Victoria).

Jan. 6d. Readings at 1h. (La Paz, Samarkand, Andijan, and Tashkent), 4h. (Christchurch (2), near Wellington (2), and near Amboina), 5h. (Haiwee, Pasadena, Tinemaha, Adelaide, Riverview, Wellington, Ekaterinburg, and near Manila), 7h. (Andijan and Lick), 13h. (Andijan), 14h. (Ekaterinburg, Hong Kong, Manila, Arapuni, Wellington, Riverview, near Suva, and near Mizusawa), 15h. (Baku, Irkutsk, and Tashkent), 16h. (Matuyama (2), Melbourne, Riverview, Sydney, and Perth), 17h. (Baku, Ekaterinburg, Irkutsk, Tashkent, Phu-Lien, Manila, Bombay, Calcutta, Tananarive, Pasadena, La Paz, and San Fernando), 18h. (Ottawa), 20h. (Matuyama), 23h. (near Apia).

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Jan. 7d. 11h. 27m. 58s. Epicentre 33°·0N. 139°·0E. (as on 1928 Aug. 27d.). X.

A = −·633, B = +·550, C = +·545; D = +·656, E = +·755; G = −·411, H = +·357, K = −·839.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		2·8	321	e 0 59	P_g	2 11	?	—	—
Tyosi		3·1	29	e 1 3	P_g	2 14	?	—	2·3
Osaka		3·4	299	0 49	0	—	—	1·9	3·0
Kobe		3·6	298	—	—	i 2 12	S_g	—	2·2
Sumoto		3·7	294	e 0 53	0	e 2 9	S_g	—	2·2
Mizusawa	E.	6·3	15	1 41	+11	3 24	S_g	—	—
	N.	6·3	15	1 26	− 4	3 20	S_g	—	—

The Japanese stations give deep focus.

Jan. 7d. Readings also at 3h. (Andijan), 5h. (Tyosi), 6h. (near Amboina (2)), 7h. (Almata, Irkutsk, Andijan, Ekaterinburg, and Tashkent), 11h. (Mount Wilson, Pasadena, Riverside, Andijan, Santa Barbara, and Tinemaha, and near Tyosi), 12h. (near Mizusawa), 16h. (Neuchatel, Helwan, and near Ksara (2)), 17h. (Wellington, Kobe, and near Sumoto), 20h. (Andijan), 21h. (Ekaterinburg, La Plata, Rio de Janeiro, Ottawa, Sucre, and near La Paz (2)), 22h. (Baku and near La Paz), 23h. (near Amboina).

Jan. 8d. Readings at 0h. and 2h. (2) (near Amboina), 5h. (Baku, Ekaterinburg, Almata, Andijan, Tashkent, Samarkand, Bombay, and Calcutta), 6h. (Irkutsk, Frunse, Pulkovo, and Helsingfors), 7h. (near Wellington), 12h. (Sucre (2), near La Paz (2), and near Amboina), 13h. (Amboina), 14h. (Tashkent, Andijan, and near Mizusawa), 15h. (Baku, Ekaterinburg, Almata, Andijan, Tashkent, and near Reykjavik), 16h. (Wellington (2), Samarkand, Andijan, and near Reykjavik (2)), 17h. (Berkeley, Branner, and near Amboina), 18h. (near Berkeley and Lick), 23h. (La Paz).

Jan. 9d. 10h. 21m. 51s. Epicentre **6°·0S. 155°·3E.** N.1.

A = −·903, B = +·416, C = −·105; D = +·418, E = +·909; G = +·095, H = −·044, K = −·995.

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.
Palau	−3·0	24·7	303	4 37	−11	8 26	−14	—	—
Suva	−3·1	25·6	120	—	—	6 6	?	7·1	11·1
Amboina	−3·3	27·1	274	i 4 58	−10	—	—	—	—
Riverview	−3·6	28·1	187	i 5 12	− 3	i 9 23	− 9	—	23·1
Sydney	−3·6	28·1	187	e 5 3	−12	i 9 9	−23	16·2	19·4
Adelaide	−4·0	32·7	206	i 5 49	− 4	i 10 28	−15	12·6	13·3
Melbourne	−4·1	33·1	195	5 57	+ 1	10 46	− 2	13·4	16·9
Apia	−4·1	33·4	105	6 10	+11	9 3	PcP	9·9	11·1
Titizima	−4·2	35·4	340	6 14	− 2	11 8	−15	—	—
Arapuni	−4·4	37·0	152	—	—	12 39	+54	—	—
Wellington	−4·6	39·3	156	6 29	−17	12 22	+ 5	15·1	—
Manila	−4·6	39·8	303	6 49	− 2	12 20	− 4	16·9	—
Christchurch	−4·7	40·5	161	7 2	+ 6	12 40	+ 7	—	—
Hatidyozima	−4·8	41·8	341	7 6	0	12 47	− 4	—	—
Isigakizima	−5·0	42·9	317	7 14	0	13 6	+ 1	—	—
Tyosi	−5·0	43·9	344	i 7 24	+ 1	13 25	+ 5	—	—
Miyazaki	−5·0	44·2	330	7 25	0	13 19	− 5	—	—
Koti	−5·0	44·6	334	i 7 30	+ 1	e 13 31	+ 1	—	—
Nagoya	−5·0	44·6	339	e 7 30	+ 1	(13 31)	+ 1	13·5	—
Sumoto	−5·0	44·7	335	i 7 30	+ 1	13 32	0	e 18·1	20·4

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	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	−5·0	44·8	336	7 30	0	(13 42)	+ 9	13·7	14·0
Kobe	−5·0	44·9	336	i 7 31	0	13 34	− 1	—	19·1
Gihu	−5·0	44·9	339	7 32	+ 1	13 37	+ 2	—	—
Perth	−5·1	45·0	230	e 7 31	0	i 13 39	+ 4	18·6	24·6
Taihoku	−5·1	45·2	316	7 35	+ 2	13 41	+ 3	16·8	—
Matuyama	−5·1	45·2	335	i 7 34	+ 1	13 41	+ 3	—	13·7
Nagano	−5·1	45·6	340	7 38	+ 2	13 48	+ 4	—	—
Nagasaki	−5·1	45·7	330	i 7 37	0	i 13 47	+ 2	—	13·9
Toyooka	−5·1	45·8	338	i 7 39	+ 1	13 47	0	e 18·9	—
Hukuoka	−5·2	46·1	331	i 7 41	+ 1	i 13 53	+ 3	—	—
Sendai	−5·2	46·2	346	7 39	− 1	13 57	+ 6	—	—
Mizusawa	−5·2	47·0	347	7 49	+ 2	14 0	− 3	—	—
Malabar	−5·3	47·4	268	e 7 54	+ 5	i 14 11	+ 3	—	—
Akita	−5·3	47·8	346	7 54	+ 1	14 18	+ 5	—	—
Batavia	−5·4	48·1	269	7 49	− 5	14 14	− 2	e 28·1	—
Hong Kong	−5·4	49·2	308	8 4	+ 1	14 33	0	20·3	—
Zi-ka-wei Z.	−5·4	49·3	322	i 8 3	− 1	14 31	− 3	—	20·7
Zinsen	−5·6	51·1	330	8 19	+ 2	15 4	+ 7	—	—
Honolulu T.H.	−5·8	53·5	57	i 10 5	(−24)	15 52	+23	e 24·0	—
Phu-Lien	−5·8	54·8	300	i 8 45	+ 1	i 15 53	+ 6	22·1	—
Sikka	−5·9	56·2	351	8 53	− 1	(16 18)	+13	16·3	17·4
Chiufeng	−6·1	58·5	325	i 9 12	+ 3	16 40	+ 6	—	—
Calcutta	−6·8	71·3	297	10 19	−16	(19 1)	−13	19·0	22·1
Colombo	−7·0	76·4	279	11 2	− 5	20 5	− 9	25·6	29·8
Hyderabad	−7·1	79·3	290	11 14	−10	20 39	− 8	38·3	45·9
Agra N.	−7·2	81·6	300	11 34?	− 3	i 21 8?	− 5	e 35·6?	—
Dehra Dun	−7·3	82·1	303	11 39	0	21 19	+ 1	33·0	34·2
Sitka	−7·3	84·1	30	i 11 48	− 2	i 21 36	− 5	e 32·5	—
Bombay	−7·4	84·9	290	11 47	− 8	21 26	−23	38·9	41·0
Almata	−7·4	85·7	315	11 50	− 9	21 36	−22	—	—
Ukiah	−7·4	87·2	50	12 3	− 4	e 21 56	−18	—	—
Berkeley	−7·4	87·3	51	i 12 6	− 1	i 21 58	−17	—	—
Lick E.	−7·4	88·2	51	e 12 8	− 4	—	—	—	—
Victoria	−7·4	88·8	40	(13 41)	+86	13 41	P	23·6	29·0
Seattle	−7·4	89·3	41	e 13 45	+87	i 22 19	−17	—	—
Santa Barbara	−7·4	89·3	55	e 12 17	− 1	i 22 38	+ 2	—	—
Pasadena	−7·5	90·6	55	i 12 19	− 5	i 22 45	− 3	—	—
Mount Wilson	−7·5	90·7	55	i 12 21	− 3	i 22 42	− 7	—	—
Tinemaha	−7·5	90·8	52	e 12 21	− 4	e 22 49	− 1	—	—
Tashkent	−7·5	91·0	313	i 13 15	+49	i 22 36	[−63]	e 46·0	48·8
Riverside	−7·5	91·2	55	e 12 22	− 5	e 22 49	− 5	—	—
Bozeman	−7·7	96·9	45	e 12 53	− 1	i 23 39	− 9	—	—
Ekaterinburg	−7·7	97·6	327	i 12 45	−12	i 22 45	[−89]	41·1	51·6
Tananarive	—	104·6	250	e 17 22	?	24 11	[−37]	49·2	55·1
Baku	—	105·6	311	i 13 23	−46	—	—	—	—
Kucino	—	110·1	328	13 42	−49	27 9	PS	e 33·7	35·8
Little Rock	—	111·8	54	e 17 44	[−39]	i 25 5	[−16]	—	—
Pulkovo	—	112·2	335	13 47	−54	27 20	PS	51·1	66·3
Madison	—	112·5	44	i 13 43	−60	—	—	—	—
Florissant	—	112·7	50	e 13 53	−51	i 25 6	[−19]	—	—
St. Louis	—	112·9	50	e 13 30	−75	i 25 6	[−20]	—	—
Chicago	—	114·1	46	i 18 52	PP	27 58	PS	—	—
Helsingfors	—	114·3	336	e 18 48	PP	e 27 58	PS	e 40·1	—
Theodosia	—	115·2	317	e 18 31	[− 2]	e 28 37	PS	48·6	—
Scoresby Sund	—	115·5	359	19 3	PP	28 15	PS	—	—
Yalta	—	116·1	317	17 56	[−39]	—	—	—	—
Sebastopol	—	116·5	317	e 18 14	[−22]	—	—	—	—
Ksara	—	117·6	306	e 17 59	[−41]	(31 9?)	?	31·1	—
Toronto	—	119·3	42	e 19 23	PP	i 24 20	[−88]	—	—
Königsberg	—	119·3	332	i 18 3	[−41]	i 25 42	?	e 57·6	69·1
Buffalo	—	119·9	43	i 18 3	[−43]	—	—	—	—
Pittsburgh	—	120·0	45	19 34	PP	i 28 0	?	e 47·9	—
Ottawa	—	120·9	38	e 19 39	PP	e 24 25	[−88]	e 43·2	—
Columbia	—	121·1	52	e 20 59	?	e 28 45	?	—	—
Lund	—	121·9	336	18 8	[−42]	—	—	—	—

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	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Charlottesville	—	121·9	47	e 19 9	PP	e 29 1	PS	—	—
Ivigtut	—	122·1	13	18 4	[−46]	—	—	—	—
Copenhagen	—	122·2	336	18 6	[−45]	29 45	PS	—	—
Helwan	—	122·3	301	19 31	PP	—	—	—	—
Georgetown	—	122·6	46	e 18 9	[−43]	e 24 33	[−85]	—	—
Fordham	—	124·1	43	i 18 18	[−37]	e 36 19	SS	—	—
Potsdam	—	124·3	333	e 18 39	[−16]	—	—	e 61·1	67·1
Hamburg	—	124·7	336	e 18 9	[−47]	e 28 51	?	e 44·1	71·1
Belgrade	—	124·8	323	e 18 57	?	—	—	—	—
Vienna	—	125·3	329	i 18 13	[−45]	30 8	PS	—	69·2
Harvard	—	125·3	40	e 18 17	[−41]	(e 31 39)	?	e 31·6	—
Jena	—	125·9	333	e 18 9	[−50]	e 28 9	?	e 45·1	71·2
Cheb	—	126·1	331	e 20 13	PP	e 30 22	PS	—	64·1
Göttingen	—	126·2	333	18 15	[−44]	—	—	e 61·1	71·9
Graz	—	126·5	328	i 18 16	[−44]	e 29 12	?	49·1	66·1
Zagreb	—	126·9	325	e 18 14	[−46]	e 30 9?	PS	—	66·6
Edinburgh	—	127·3	345	i 20 23	PP	—	—	61·1	—
Laibach	—	127·6	327	e 18 18	[−44]	—	—	—	—
De Bilt	—	127·8	337	i 18 17	[−46]	—	—	—	70·7
Feldberg	—	127·9	335	e 18 13	[−50]	—	—	—	—
Triest	—	128·3	326	i 18 18	[−46]	—	—	—	—
La Plata	—	128·5	144	—	—	(37 3)	PS	37·0	—
Innsbruck	—	128·5	330	18 21	[−43]	—	—	—	—
Stuttgart	—	128·6	332	e 15 5	−54	i 26 43	{−90}	e 48·1	—
Stonyhurst	—	128·8	342	i 20 33	PP	—	—	60·1	—
Uccle	—	129·1	337	i 18 19	[−46]	i 29 42	?	e 47·1	65·8
Venice	—	129·2	327	18 9?	[−56]	—	—	—	—
Strasbourg	—	129·3	333	e 15 9?	−54	—	—	58·1	—
Bidston	—	129·4	342	e 20 39	PP	—	—	—	—
Chur	—	129·7	331	e 18 7	[−59]	—	—	—	—
Zurich	—	129·8	331	e 18 7	[−60]	—	—	—	—
Kew	—	130·3	340	i 18 22	[−46]	e 30 41	PS	40·1	67·0
Naples E.	—	130·8	320	e 20 9	PP	—	—	—	—
Florence	—	130·8	325	18 24	[−45]	30 54	PS	40·1	78·1
Neuchatel	—	130·8	332	e 18 11	[−58]	—	—	—	—
Besançon	—	131·1	332	e 18 21	[−48]	—	—	—	—
Paris	—	131·4	337	i 18 22	[−47]	—	—	45·1	66·1
La Paz	—	131·5	118	e 18 19	[−50]	i 25 24	[−59]	71·1	—
Port au Prince	—	132·0	70	e 16 48	?	—	—	—	—
Sucre	—	132·9	123	e 18 28	[−44]	—	—	—	—
San Juan	—	137·8	68	i 18 45	[−34]	—	—	—	—
Tortosa N.	—	138·5	332	—	—	22 12	PP	—	—
Algiers	—	140·1	325	i 18 40	[−41]	i 21 42	PP	22·3	—
Alicante	—	141·0	331	e 18 19	[−64]	e 21 32	PP	e 22·3	—
Toledo	—	141·4	335	18 35	[−48]	—	—	—	—
Almeria	—	143·0	331	i 18 40	[−47]	—	—	—	—
Granada	—	143·3	332	i 18 41	[−47]	—	—	—	—
Malaga	—	144·1	332	i 18 44	[−47]	—	—	—	—
San Fernando	—	145·2	334	18 50	[−44]	—	—	—	43·6
Rio de Janeiro	—	145·9	147	i 18 56	[−40]	—	—	—	—

Additional readings and notes :—
Amboina i = +5m.24s. =PP −10s. and +6m.21s.
Riverview iNZ = +6m.23s., iSSS? = +11m.39s.
Sydney SS = +11m.33s.
Adelaide i = +7m.29s.
Melbourne i = +6m.23s. =PP −21s. and +11m.37s. =SS −29s.
Wellington PP = +8m.1s., SS = +14m.37s.
Kobe i = +7m.36s., PPE = +9m.20s., SSNZ = +14m.34s.
Perth PP = +9m.19s., PPP = +9m.30s., PPPP = +9m.49s., SS = +15m.44s., SSS = +17m.9s., SSSS = +17m.19s.
Hong Kong PP = +9m.49s., PPP = +11m.39s., SS = +17m.9s., SSS = +18m.20s.
Zi-ka-wei iE = +8m.11s. and +8m.22s., PPZ = +9m.23s., PPPZ = +11m.1s., iZ = +11m.16s., +12m.45s., and +14m.49s., SSZ? = +18m.19s. and +19m.9s.
Honolulu T.H. e = +14m.9s.

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Sikka S = +11m.28s.
Chiufeng PP = +11m.22s.
Calcutta S = +15m.19s.
Sitka iSKS = +22m.39s., iPS = +24m.18s., e = +27m.24s. and +30m.50s.
Ukiah e = +13m.31s.
Berkeley eN = +12m.9s., iEZ = +13m.33s., eE = +22m.20s., iN = +22m.23s., iEZ = +23m.25s.
Seattle e = +14m.3s. and +22m.34s.
Santa Barbara eE = +22m.8s.
Pasadena ipPZ = +13m.49s., ipPPZ = +17m.16s., iE = +22m.13s., eSN = +22m.40s., i_sSEZ = +23m.56s., eSSZ = +29m.15s.
Mount Wilson e_pPN = +13m.51s., eEN = +22m.14s.
Tinemaha eE = +21m.56s., eN = +22m.16s.
Tashkent e = +21m.51s.
Riverside iEN = +22m.16s.
Bozeman ePP = +16m.50s., ePPP = +20m.42s., iSKS = +22m.51s., e = +25m.0s. and +26m.13s.
Ekaterinburg iPP = +16m.45s., iPS = +25m.3s., SS = +30m.21s.
Tananarive N = +19m.9s., E = +23m.28s., and +26m.6s., N = +28m.8s., E = +28m.12s. and +29m.30s., SSE = +32m.4s., SSN = +32m.7s., E = +33m.21s. and +36m.13s.
Kucino iPP = +18m.19s.
Little Rock iE = +18m.40s. =PP −30s., eE = +20m.0s., iEN = +23m.56s., eE = +27m.33s., +29m.49s., +31m.26s., and +36m.8s.
Pulkovo iPP = +18m.29s., i = +23m.52s., SS = +33m.45s.
Madison i = +14m.57s. and +18m.58s., e = +22m.9s.?
Florissant iPZ = +13m.57s., ipPZ = +15m.23s., ePKP = +17m.36s. =PKP −50s., ePPEZ = +17m.57s., iS_ePEZ = +18m.37s., iP_eSEZ = +18m.59s., ipPPZ = +19m.35s., esPPZ = +19m.59s., ePPPZ = +21m.5s., iSKSE = +23m.53s., iSPEZ = +26m.21s., PSE = +26m.43s., iSS? = +31m.49s., isSS = +34m.39s.
St. Louis iEN = +18m.45s., iE = +20m.4s., +23m.57s., and +27m.13s., eE = +27m.50s. and +28m.59s., iEN = +29m.54s. iE = +30m.20s. and +33m.58s.
Chicago ePP = +20m.4s., ePPP = +24m.3s., eSKS = +25m.15s., ePS = +29m.48s.
Helsingfors ePPE = +18m.52s., iE = +24m.5s., ePPSN = +28m.30s., SS = +34m.7s., eSSSN = +37m.5s.; T_0 =10h.21m.54s.
Scoresby Sund PP = +19m.3s.; no phase given +28m.55s., +30m.7s. +30m.37s., and +31m.48s., SS = +34m.45s.
Toronto i = +23m.38s., i = +35m.32s., iE = +38m.9s.?
Königsberg eZ = +19m.31s., eE = +27m.3s., +29m.3s., +48m.21s., and +51m.9s.?
Buffalo iPP = +19m.33s., iPPP = +20m.50s., iPPPP = +24m.21s., ePS = +28m.47s., PPS = +30m.13s.
Pittsburgh iPPP = +24m.24s., iSKS = +25m.52s., eS = +28m.38s., ePS = +30m.49s., i = +35m.34s.
Ottawa iN = +26m.1s., eE = +28m.8s., e = +30m.51s., eE = +35m.39s., e = +38m.9s.
Columbia ePPP = +24m.32s., e = +35m.39s.
Lund +19m.40s., SS = +35m.45s.
Charlottesville e = +19m.48s., ePPP = +24m.9s.
Ivigtut PP = +19m.33s., +19m.46s., eZ = +21m.11s., e = +30m.31s., +31m.34s., SS = +36m.9s.?
Copenhagen eZ = +19m.29s., PP = +19m.45s., eE = +22m.3s., eZ = +30m.25s., SS = +35m.39s.
Georgetown iPP = +19m.52s., e_pPP = +21m.9s., eSKS = +36m.9s. =SS −57s.
Fordham iPPEZ = +20m.8s., iEN = +21m.28s. and +24m.49s. =SKS −69s.
Potsdam eN = +19m.39s., iEN = +19m.51s. and +21m.21s., eN = +23m.27s.
Belgrade e = +20m.6s. =PP −36s. and +21m.13s.
Vienna iEN = +18m.52s., iE = +20m.8s., PKP = +21m.30s., PPP = +26m.28s., SKSP = +33m.43s., PPS? = +36m.23s., SS? = +39m.22s.
Harvard e = +20m.9s., +21m.27s., and +24m.35s.
Zagreb e = +18m.17s. and +20m.19s., i = +21m.32s.
Jena eP = +18m.15s., ePE = +18m.18s., iE = +18m.27s., i = +20m.9s.
Cheb i = +21m.33s., e = +32m.13s., and +39m.10s.
Göttingen i = +19m.9s.
Graz iP = +18m.20s., i = +20m.17s., iPP = +21m.31s.
Edinburgh i = +21m.36s.
Laibach e = +19m.39s. and 21m.36s.
De Bilt iZ = +20m.19s., iEN = +21m.39s.
Feldberg i = +20m.18s. and 21m.37s.
Triest i = +20m.17s. =PP −49s., +21m.38s., and +22m.36s.
Innsbruck i = +18m.37s., iPKP = +21m.38s.
Stuttgart ePKPZ = +18m.14s., iPKP = +18m.18s., ip_{KP} = +19m.49s., iPP = +20m.28s. and +20m.35s., iPKS = +21m.38s., e_sPP = +22m.57s., ePSNZ = +31m.27s., e = +42m.3s.

Continued on next page.

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Stonyhurst i = +21m.42s.
Uccle i = +20m.30s., +21m.43s., and +23m.14s.
Strasbourg iPKP = +18m.21s., iPP = +20m.33s., iPPP = +21m.42s.
Bidston e = +21m.49s.
Chur iP = +18m.20s., ePKP = +20m.30s., i = +21m.42s.
Zurich i = +18m.20s., ePKP = +20m.33s.
Kew e = +20m.41s., i = +21m.13s., iEN = +21m.47s.
Florence PP = +20m.49s., iS = +21m.54s.
Neuchatel iPKP = +18m.22s., ePP = +20m.40s., PPS = +21m.49s.
Besançon i = +21m.19s. and +21m.50s.
Paris PP? = +20m.45s., i = +21m.50s.
La Paz iPKPZ = +18m.22s., iPP? = +21m.14s., i = +21m.54s. and +23m.24s., iSSE = +37m.58s., eSS = +42m.59s.
Port au Prince e = +17m.28s., eNE = +17m.31s., ePKPNW = +19m.35s., e = +21m.20s., iNE = +21m.28s., iNW = +21m.37s., PPNW = +21m.59s., PPNE = +22m.4s., iNW = +22m.26s., iNE = +22m.39s., PKSNW = +23m.7s., PKSNE = +23m.11s., iNE = +23m.30s. and +23m.33s., PPPNW = +25m.35s., iNW = +26m.8s., eNW = +27m.26s.
Sucre iPP = +21m.25s.
San Juan e = +21m.33s.
Toledo PP = +21m.53s., SS = +40m.23s.
Almeria iPP = +21m.57s., i = +22m.19s.
Granada iPP = +22m.4s., PPP = +25m.41s.
San Fernando PP = +20m.23s.

Jan. 9d. Readings also at 1h. (near Mizusawa and Tyosi), 2h. (Baku and Tashkent), 3h. (Sucre and near La Paz), 4h. (Samarkand), 6h., 7h., and 8h. (Tyosi), 10h. (Florissant, St. Louis, and Little Rock), 11h. (near Christchurch, New Plymouth, and Wellington), 14h. (Alicante, Amboina, and near Sumoto), 17h. (Simferopol, Sebastopol, and Yalta), 19h. (Andijan, Samarkand, Wellington, and La Paz), 22h. (Andijan).

Jan. 10d. Readings at 1h. (Bombay, Andijan, Samarkand, Ekaterinburg, Tashkent, and Kucino), 8h. (Tyosi), 9h. (near Manila and near Tyosi), 11h. (near Amboina), 12h. (near Amboina and near Tyosi), 13h. (near Santiago), 14h. (Tyosi and near Amboina), 20h. (Tyosi), 21h. (near Amboina).

Jan. 11d. 8h. 47m. 18s. Epicentre 34°·0N. 134°·8E. (as on 1931 Aug. 20d.). X.

A = −·584, B = +·588, C = +·559.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	0·4	11	e 0 3	− 3	0 6	− 4	—	0·2
Kobe	0·7	25	0 11	+ 1	0 15	− 3	—	0·3
Osaka	0·9	38	0 6	− 7	(0 15)	− 8	0·2	0·7
Matuyama	1·7	264	i 0 37	+13	1 3	+19	—	1·2
Nagoya	2·1	57	e 0 33	+ 3	0 57	+ 3	—	—

Kobe gives also SEN = +18s.

Jan. 11d. 17h. 28m. 40s. Epicentre 35°·4N. 136°·0E. N.3.

A = −·586, B = +·566, C = +·579.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Osaka	0·8	207	0 13	+ 2	(0 24)	+ 3	0·4	0·4
Nagoya	0·8	107	e 0 13	+ 2	0 25	+ 4	—	—
Toyooka	0·9	278	i 0 12	− 1	i 0 24	+ 1	—	0·4
Kobe	1·0	223	0 12	− 2	0 25	− 1	—	0·5

Jan. 11d. Readings also at 0h. (Almata, Samarkand, and Frunse), 1h. (La Paz), 2h. (Berkeley, Lick, and near Amboina), 3h. (near Suva), 5h. (near Amboina), 7h. (near Amboina and near Suva), 8h. (Sucre, near La Paz, near Kobe, Osaka, and Sumoto), 9h. (Baku, Ekaterinburg, Tashkent, near Calcutta, and near Tyosi (2)), 15h. (Alicante), 17h. (near Batavia, Malabar, and near Wellington), 18h. (Kobe, near Sumoto, Osaka, and near Manila), 21h. (Chur, Florence, and Triest), 23h. (near Tyosi).

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Jan. 12d. Readings at 1h. (La Plata and near Santiago), 2h. (Berkeley and near Lick), 3h. (near Triest), 5h. (Almata), 7h. (near Malabar), 8h. (La Paz), 10h. (Tyosi), 12h. (near Amboina), 13h. (Nagoya and near Tyosi), 14h. (Wellington and near Hastings), 18h. (Wellington), 19h. (Suva), 20h. (Ekaterinburg, Irkutsk, Ottawa, Wellington, and near Amboina), 21h. (Baku and San Fernando), 23h. (Tyosi).

Jan. 13d. 16h. 17m. 35s. Epicentre 52°·0N. 178°·0W. (as on 1928 May 18d.) R.3.

A = −·615, B = −·021, C = +·788; D = ●·035, E = +·999; G = −·788, H = −·028, K = −·616.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		24·8	61	—	—	e 9 49	+12	11·6	—
Ukiah		39·4	89	—	—	e 13 43	+16	—	—
Berkeley		40·8	90	e 7 38	− 1	—	—	—	—
Lick		41·5	90	e 7 44	0	—	—	—	—
Bozeman		42·9	71	—	—	(e 17 55)	SS	e 17·9	—
Tinemaha	E.	43·8	87	i 8 3	0	i 14 45	+12	—	—
Irkutsk		45·3	305	e 8 18	+ 3	e 14 53	− 2	22·4	26·9
Mount Wilson		45·7	91	e 7 58	−20	e 14 51	− 9	—	—
Pasadena		45·8	91	i 8 17	− 2	—	—	—	—
Riverside		46·3	91	e 8 18	− 5	—	—	—	—
Seattle		46·6	77	—	—	e 15 43	+30	—	—
Zi-ka-wei	Z.	48·2	271	e 8 31	− 7	—	—	23·6	29·9
Madison		56·7	60	—	—	(20 25?)	(+56)	20·4	—
Hong Kong		59·0	267	—	—	18 57	+54	—	39·8
St. Louis		59·3	67	e 10 19	+19	—	—	e 28·4	—
Little Rock		60·8	70	e 10 8	− 2	—	—	—	34·9
Ekaterinburg		61·0	329	10 7	− 4	i 18 28	− 1	27·4	38·4
Toronto	N.	61·5	55	—	—	e 18 36	0	29·2	—
Ottawa		62·0	51	—	—	e 19 49	(−17)	29·4	—
Phu-Lien		64·8	275	—	—	18 25?	−52	—	—
Pulkovo		66·0	345	15 41	?	e 19 30	− 2	31·4	42·8
Kucino		68·2	341	e 15 22	?	e 19 49	−10	—	38·2
Tashkent		70·0	313	e 11 45	+34	e 20 31	+10	e 36·6	46·0
Calcutta		74·5	288	20 40	S	(20 40)	−34	54·5	—
Agra	E.	76·9	300	20 55?	S	(20 55?)	−47	38·0?	—
Baku		78·7	325	—	—	e 22 2	0	e 37·4	43·0
Hyderabad		84·3	292	12 44	+14	22 44	[−10]	42·4	51·8
Bombay		86·3	297	10 31	−129	—	—	—	47·6
Colombo		91·9	285	23 57	S	(23 57)	[+13]	—	56·7
La Paz		115·1	89	e 25 33	S	(e 25 33)	[− 1]	57·4	88·9

Additional readings :—
Zi-ka-wei iZ = +10m.53s.
Hong Kong S = +25m.35s.
Ottawa eN = +23m.25s.
Kucino e = +23m.43s., SS = +27m.31s.
Tashkent e = +25m.2s. and +28m.8s.
Calcutta S = +29m.26s.
Agra eSE = +28m.10s. ?
Baku e = +32m.1s.
Long waves were also recorded at Honolulu T.H., Florissant, Buffalo, Chicago, Charlottesville, San Juan, Rio de Janeiro, Victoria, and other European stations.

Jan. 13d. Readings also at 0h. (Tyosi (2) and near Amboina), 1h. (near Sumoto), 2h. (near Amboina (3)), 4h. (Lick), 6h. (Phu-Lien, Bombay, and near Calcutta), 7h. (Hong Kong), 8h. (Adelaide, Riverview, Sydney, Perth, Melbourne, Wellington, Hong Kong, Victoria, Samarkand, Baku, Bombay, Tashkent, Irkutsk, and Kucino), 10h. (near Tananarive (2)), 13h. (Feldberg), 14h. (Alicante and near Triest), 15h. (Riverview, Perth, and Hong Kong), 16h. (Hong Kong and near Tyosi), 17h. (near Takaka and Wellington), 19h. (Suva and Wellington), 22h. (near La Paz).

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Jan. 14d. Readings at 1h. (Chur, Neuchatel, Melbourne, Riverview, Wellington, and near Mizusawa (2)), 2h. (Arapuni, Glenmuick, Takaka, near Christchurch, Hastings, New Plymouth, and Wellington), 4h. (near Amboina), 7h. (Little Rock), 11h. (Lick), 12h. (near Almeria, Granada, Malaga, and San Fernando), 13h. (New Plymouth, Takaka, near Christchurch, Hastings, and Wellington), 14h. (near Ukiah), 16h. (Mizusawa), 17h. (Alicante and Mizusawa), 18h. (Nagasaki and Mizusawa), 23h. (near Tyosi).

Jan. 15d. 14h. 4m. 59s. Epicentre 35°·4N. 136°·4E. R.3.
(as given, with deep focus, for 1926 July 26d. in the Introduction to that quarter.)

$A = -\cdot590$, $B = +\cdot562$, $C = +\cdot579$.

	Δ	P.	O−C.	S.	O−C.	L.	M.
	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·5	e 0 6	− 1	0 13	0	—	—
Osaka	1·0	0 13	− 1	i 0 20	− 6	0·5	0·5
Kobe	1·2	i 0 18	+ 1	0 33	+ 2	—	0·6
Toyooka	1·3	i 0 19	+ 1	i 0 36	+ 3	—	0·6
Sumoto	1·6	e 0 36	P_g	0 44	+ 3	—	0·8

Jan. 15d. Readings also at 2h. (La Paz (2)), 4h. (Hastings), 11h. (near Apia), 14h. (near Tyosi), 16h. (Sumoto), 19h. (Wellington), 21h. (near Triest).

Jan. 16d. Readings at 0h. (Suva, Wellington (3), near Christchurch, and Glenmuick), 3h. (near Nagasaki), 4h. (near Manila (2), Frunse, and Samarkand), 5h. (Amboina), 7h. (Tyosi), 9h. (near Nagasaki and near Malabar), 15h. (Sumoto and Tyosi), 17h. (near Malabar), 22h. (Ekaterinburg and Tashkent).

Jan. 17d. 7h. 45m. 30s. Epicentre 15°·0S. 160°·0E. N.3.

$A = -\cdot908$, $B = +\cdot330$, $C = -\cdot259$; $D = +\cdot342$, $E = +\cdot940$;
$G = +\cdot243$, $H = -\cdot089$, $K = -\cdot966$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		17·9	103	4 6	+ 1	7 27	+ 5	8·5	—
Riverview		20·5	201	4 40	+ 5	—	—	11·5	13·5
Sydney		20·5	201	e 4 30	− 5	i 9 18	+62	12·8	14·5
Melbourne		26·4	208	e 5 39	+ 6	i 10 42	+37	14·5	17·8
Arapuni		26·9	152	—	—	e 9 54	−20	—	14·5
Apia		27·3	91	e 7 37	?	—	—	—	10·5
Adelaide		27·7	220	—	—	e 11 0	+33	i 14·0	17·5
Wellington		29·2	157	5 58	0	11 8	+17	26·5	—
Perth		43·6	240	19 55	?	—	—	27·6	—
Manila		48·7	308	8 34	− 7	15 30	−13	—	—
Hong Kong		58·4	310	13 44	?	18 4	+ 9	—	33·8
Irkutsk		82·6	330	e 11 50	−31	e 22 5	−38	e 36·5	42·0
Kodaikanal		85·6	283	e 22 51	SKS	(e 22 51)	[−12]	—	—
Ukiah		89·5	49	—	—	e 23 41	−10	e 37·5	—
Berkeley		89·8	50	—	—	e 27 54	?	e 38·9	—
Bombay		92·3	290	e 13 12	+ 4	—	—	—	—
Victoria	E.	92·6	40	23 58	S	(23 58)	[+10]	42·2	48·8
	N.	92·6	40	23 26	S	(23 26)	[−22]	48·2	58·8
Tashkent		100·4	312	e 18 36	?	i 24 5	[−23]	e 51·4	77·8
Ekaterinburg		107·6	326	e 18 37	PP	e 25 57	{+ 8}	44·5	54·2
St. Louis	E.	111·5	53	—	—	e 27. 30	{+72}	—	52·5
Toronto		122·3	46	—	—	e 39 0	?	e 54·5	—
La Paz		123·0	121	e 21 59	?	i 29 13	?	56·5	64·2
Ottawa		124·5	44	—	—	e 36 12	?	e 54·5	—
De Bilt		137·8	338	—	—	e 30 30?	?	e 77·5	—
Stuttgart		138·7	332	—	—	e 24 30?	?	e 43·5	—
Strasbourg		139·5	333	(e 21 30?)	?	—	—	e 21·5	—
Florence		140·8	323	—	—	e 32 30	?	—	64·5
Granada		153·5	330	i 19 24	[−22]	e 20 9	PKP_g	—	—

For Notes see next page.

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NOTES TO JAN. 17d. 7h. 45m. 30s.

Additional readings and notes :—
Riverview iSS? = +9m.9s.
Adelaide i = +13m.34s.
Hong Kong ? = +22m.37s.
Tashkent e = +26m.49s. =PS −1s., +32m.30s.? =SS +23s. and +47m.30s.?
Ekaterinburg e = +27m.46s. =PS −18s. and +33m.47s. =SS +1s.
St. Louis eE = +33m.41s. and +37m.49s.
La Paz ePN? = +23m.47s., eE = +36m.35s.
Ottawa eN = +43m.48s.
De Bilt eEN = +46m.30s.?
Stuttgart e = +31m.0s. and +36m.0s. ; readings have been *diminished* by 1h.
Readings for Russian stations have also been *diminished* by 1h.
Long waves were also recorded at San Juan, Honolulu T.H., Rio de Janeiro, Ivigtut, Scoresby Sund, Pulkovo, Kucino, Helsingfors, Paris, San Fernando, and other American stations.

Jan. 17d. Readings also at 0h. (Samarkand), 1h. (near Amboina and near Wellington), 2h. (Apia, near Berkeley, and Lick), 5h. (Apia, Adelaide, Riverview, Suva and Wellington), 7h. (San Juan, near Kobe, Osaka, Sumoto, and near Wellington), 8h. (Kodaikanal), 10h. (near Malabar), 13h. (near Amboina), 17h. (Ekaterinburg, Tashkent, Hong Kong, and near Manila), 18h. (near Osaka), 19h. (Hastings), 20h. (Hohenheim, Ravensburg, near Chur, Neuchatel, and Zurich), 22h. (Ekaterinburg), 23h. (near Chur, Neuchatel, and Zurich).

Jan. 18d. 13h. 12m. 33s. Epicentre 44°·0N. 32°·0W. N.3.

A = +·610, B = −·381, C = +·695 ; D = −·530, E = −·848 ;
G = +·589, H = −·368, K = −·719.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Toledo		21·1	92	e 4 38	− 3	e 8 27	− 1	e 10·4	—
Kew		22·4	59	—	—	(e 7 27?)	−86	e 7·4	11·4
Granada		22·5	98	i 5 4	+ 8	e 9 7	+12	10·8	11·5
Almeria		23·5	98	5 7	+ 2	9 31	+17	11·6	13·7
Tortosa	N.	24·1	86	e 4 58	−13	—	—	e 11·4	12·8
Uccle		25·2	63	e 5 25	+ 3	e 9 33	−11	e 11·4	—
De Bilt		25·5	59	—	—	e 9 45	−10	e 11·4	13·6
Neuchatel		27·2	70	e 5 41	+ 1	—	—	—	—
Strasbourg		27·5	66	e 6 27?	PP	—	—	e 12·4	—
Stuttgart		28·4	66	—	—	e 11 27	+49	e 13·4	—
Copenhagen		30·3	50	—	—	(11 27?)	+18	11·4	—
Florence		30·8	77	e 7 27	+75	12 27	+70	13·4	15·4
Ekaterinburg		55·7	41	—	—	e 14 24	?	21·4	—

Additional readings :—
Granada PP = +5m.34s., PPP = +5m.49s., SSS = +10m.4s.
Almeria PP = +5m.27s., PPP = +6m.1s.
Tortosa ePE = +5m.8s.
Long waves were also recorded at Ottawa, Pittsburgh, Oxford, Algiers, San Fernando, Paris, Cheb, Tashkent, and Irkutsk.

Jan. 18d. 20h. 26m. 54s. Epicentre 19°·0N. 120°·5E. (as on 1929 Nov. 2d.). X.

A = −·480, B = +·815, C = +·326 ; D = +·862, E = +·507 ;
G = −·165, H = +·280, K = −·946.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	4·4	173	1 9	+ 6	2 10	S*	—	—
Taihoku	6·1	9	e 1 28	+ 1	2 42	+ 6	—	—
Hong Kong	6·7	301	1 34	− 1	2 56	+ 5	3·4	4·8
Phu-Lien	13·2	281	(3 6?)	+ 1	—	—	3·1	—
Chiufeng	21·4	352	e 4 35	− 9	i 8 32	− 2	—	—
Nagoya	21·8	39	e 4 40	− 9	—	—	—	—
Irkutsk	35·6	344	—	—	e 12 6?	−24	19·1	22·7
Bombay	45·0	279	8 22	+ 9	—	—	—	—
Ekaterinburg	57·8	327	—	—	(21 6?)	SS	21·1	—

No additional readings.

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Jan. 18d. Readings also at 0h. (Neuchatel), 1h. and 4h. (near La Paz), 8h. (near Nagoya), 11h. (Melbourne and near Wellington), 12h. (Apia, Cheb, and Ottawa), 17h. (Irkutsk, Pasadena, Tinemaha, and Mount Wilson), 18h. (Helwan, Ekaterinburg, and Hong Kong), 19h. (Hastings and near Wellington), 20h. (Hastings, near Calcutta, and near Manila).

Jan. 19d. Readings at 2h. (Wellington), 4h. (Nagoya, Tyosi, near Mizusawa, and Hastings), 8h. (La Paz), 13h. (near Bombay and near Calcutta), 14h. (near Santiago), 18h. (Lick), 21h. (near Chur, Neuchatel, and Zurich).

Jan. 20d. 2h. 30m. 41s. Epicentre 12°·6S. 77°·8W. N.3.

$A = +\cdot206$, $B = -\cdot954$, $C = -\cdot218$; $D = -\cdot977$, $E = -\cdot211$; $G = -\cdot046$, $H = +\cdot213$, $K = -\cdot976$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		10·1	114	i 2 31	+ 9	i 4 35	+19	5·0	6·3
Sucre		13·7	119	e 3 5	− 6	—	—	—	—
Balboa Heights		21·6	355	e 5 19?	PP	—	—	—	—
Santiago		21·8	164	4 58	+ 9	9 20	SS	11·8	—
Port au Prince		31·6	10	e 6 17	− 2	e 11 8	−21	—	—
San Juan		33·1	21	i 6 28	− 5	i 11 29	−23	e 17·7	—
Rio de Janeiro		34·5	114	e 6 48	+ 3	i 12 9	− 5	15·7	—
Little Rock		49·3	345	e 8 46	0	e 15 37	−14	—	—
St. Louis		52·5	349	i 9 6	− 4	i 16 18	−17	—	—
Pittsburgh		53·1	358	—	—	e 16 19	−24	—	—
Harvard		55·3	7	—	—	e 16 55	−18	e 31·3	—
Toronto		56·3	359	e 9 47	+ 9	e 18 31	+64	e 31·3	—
Ottawa		58·0	2	—	—	e 17 33	−16	e 25·3	—
Pasadena		60·4	323	i 10 10	+ 3	e 18 20	− 1	—	—
Tinemaha	E.	62·5	325	e 10 22	0	e 18 43	− 5	—	—
San Fernando		83·2	50	e 12 56	+32	e 22 36	−13	—	—
Malaga		84·6	50	12 34	+ 3	22 52	[− 4]	30·3	—
Granada		85·4	50	i 12 35	0	i 22 59	[− 3]	e 40·9	45·1
Toledo		86·0	48	e 12 37	− 1	e 23 2	[− 4]	—	—
Almeria		86·2	50	e 13 49	+70	e 24 25	PS	42·8	—
Alicante		88·1	50	e 13 10	+22	—	—	—	—
Paris		93·2	41	—	—	e 31 19?	?	46·3	—
Uccle		94·9	40	e 13 35	+15	e 23 58	[− 2]	e 43·3	—
De Bilt		95·7	39	—	—	e 23 57	[− 7]	e 44·3	46·5
Florence		97·0	47	20 33	?	—	—	46·3	—
Tashkent		139·4	39	—	—	e 44 7	?	96·3	101·1
Bombay		151·1	74	19 10	[−33]	33 28	SKSP	76·1	—

Additional readings :—
La Paz iN = +4m.16s.
Port au Prince i = +7m.21s. = PP +3s., +9m.6s. = P_cP −9s. and +13m.1s. = SS −6s.
San Juan PP = +7m.43s., e = +9m.10s. = P_cP −10s. and +12m.10s.
Little Rock eEN = +16m.3s.
St. Louis iE = +16m.45s., +18m.46s. = S_cS −15s. and +19m.16s.
Ottawa eE = +19m.20s. = S_cS −18s.
Pasadena iZ = +10m.24s., eZ = +11m.9s., eEN = +18m.48s.
Granada PP = +15m.59s., PPP = +17m.52s., S_gS = +23m.11s., PS = +23m.28s., PPS = +23m.58s., SS = +28m.24s.
Toledo i = +24m.6s. = PS +2s.
Almeria PP = +16m.22s.
De Bilt eN = +24m.36s. = S −12s.
Tashkent e = +47m.19s. and +58m.19s.?
Long waves were also recorded at La Plata and other European and Russian stations.

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Jan. 20d. 15h. 6m. 6s. Epicentre 4°·5S. 146°·5E. (as on 1930 Sept. 30d.). X.

A = −·831, B = +·550, C = −·078; D = +·552, E = +·834;
G = +·065, H = −·043, K = −·997.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Adelaide		31·3	192	e 6 24	+ 7	i 11 30	+ 6	13·9	20·2
Manila		31·7	309	6 11	− 9	10 12	−79	14·7	—
Osaka		40·5	347	7 37	+ 1	—	—	9·7	—
Nagoya		40·6	349	e 7 42	+ 5	—	—	—	—
Mizusawa	E.	43·9	356	(8 12)	+ 8	8 12	P	—	—
Irkutsk		67·0	334	e 10 48	− 4	e 19 57	+12	e 35·9	—
Samarkand		84·8	312	e 12 27	− 5	—	—	—	—
Ekaterinburg		91·5	328	i 13 3	− 1	e 24 27	+17	42·9	—
La Paz	Z.	139·8	122	e 19 48	[+27]	—	—	—	—

Additional reading :—
Adelaide i = +12m.23s.
Long waves were recorded at Perth and Riverview.

Jan 20d. Readings also at 2h. (Tyosi and near Osaka), 5h. (Hohenheim, Ravensburg, near Chur, Neuchatel, Zurich, and near Amboina), 9h. (near La Paz), 13h. (near Amboina), 14h. (near Suva), 15h. (Wellington), 20h. (Hastings, Berkeley, Lick (2), and near Osaka), 21h. (near Algiers), 22h. (Naples, Nagoya, and near Tyosi (2)).

Jan. 21d. 14h. 42m. 54s. Epicentre 34°·8N. 128°·8E. N.2.

A = −·514, B = +·640, C = +·571; D = +·779, E = +·627;
G = −·358, H = +·445, K = −·821.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	1·8	132	e 0 28	+ 2	1 9	S_g	—	1·2
Nagasaki	2·3	157	0 31	− 2	0 55	− 4	—	—
Matuyama	3·4	106	0 51	+ 2	i 1 27	0	—	—
Koti	4·1	106	i 0 53	− 5	e 1 32	−13	—	—
Toyooka	5·0	79	e 1 22	+11	2 25	+17	—	2·4
Sumoto	5·1	94	e 1 11	− 2	2 3	− 7	—	2·1
Kobe	5·3	90	e 1 16	+ 1	2 14	− 1	—	2·6
Osaka	5·5	90	e 1 4	−14	(2 20)	0	2·3	3·1
Nagoya	6·7	87	e 1 32	− 3	2 53	+ 2	—	—
Batavia	45·9	211	i 8 20	0	—	—	—	—

Additional readings :—
Sumoto ePN = +1m.14s., SZ = +2m.7s.
Kobe P_gN = +1m.25s.

Jan. 21d. Readings also at 0h. (La Paz and Santiago), 1h. (Tyosi), 5h. (Kobe), 8h. (Ksara), 13h. (near Bombay, near Calcutta, and near Tyosi), 14h. (near Wellington), 19h. (Almata, Andijan, Frunse, and Samarkand), 20h. (Little Rock), 21h. (Malabar, San Juan, Ottawa, St. Louis, near Arapuni, Christchurch, Hastings, and Wellington), 23h. (Little Rock, near Amboina, and near Apia).

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Jan. 22d. 0h. 49m. 18s. Epicentre 33°·5N. 48°·0E. (as on 1929 C[illegible]27d.) X.

A = +·558, B = +·620, C = +·552.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		7·1	12	e 1 43	+ 2	i 3 21	+20	4·4	6·2
Ksara	E.	10·1	275	e 2 37	+15	4 17	+ 1	—	—
Helwan		14·6	260	3 2	−21	e 5 32	−33	—	7·9
Theodosia		15·1	323	e 3 18	−12	e 6 21	+ 4	7·7	—
Yalta		15·3	320	e 3 31	− 1	—	—	—	—
Samarkand		16·4	63	3 53	+ 7	—	—	—	—
Tashkent		18·5	59	e 4 15	+ 2	e 8 3	+27	10·3	13·3
Andijan		20·5	64	4 38	+ 3	e 9 50	+94	—	—
Frunse		22·8	58	e 5 24	+25	—	—	—	—
Almata		24·5	58	e 5 21	+ 6	—	—	—	—
Ekaterinburg		24·9	17	5 15	− 4	10 7	+28	14·7	17·8
Bombay		26·5	117	5 24	−10	10 19	+12	—	—
Pulkovo		28·7	341	—	—	e 12 29	?	17·7	—
Florence		30·2	301	—	—	e 11 42	+35	i 14·7	18·7

Baku gives also e = +2m.7s.
Long waves were also recorded at Irkutsk and the other European stations.

June 22d. Readings also at 0h. (Ottawa, Harvard, St. Louis, San Juan), 2h. (Berkeley (2) and Lick (2)), 3h. (near Wellington), 4h. (Hastings and near Tananarive), 12h. (La Paz), 13h. (La Paz and near Apia), 16h. (near La Paz and near Sumoto), 21h. (Tyosi), 23h. (Hastings).

Jan. 23d. Readings at 5h. (Samarkand), 13h. (Wellington and near Tyosi), 15h. (Ekaterinburg, Andijan, Samarkand (2), and Yalta), 16h. (Ekaterinburg, Irkutsk, Haiwee, Tinemaha, Ukiah, Andijan, near Kobe, and Sumoto), 17h. (Baku, Andijan, Samarkand, Tashkent, Hyderabad, near Bombay, and Calcutta), 23h. (Wellington).

Jan. 24d. 3h. 44m. 24s. Epicentre **16°·9S. 168°·3E.** N.1.

A = −·937, B = +·194, C = −·291; D = +·203, E = +·979;
G = +·285, H = −·059, K = −·957.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		9·7	99	3 18	+61	5 24	+78	—	6·6
Apia		19·5	84	1 33	?	—	—	—	1·8
Arapuni		22·1	164	e 6 36?	+104	10 36?	+108	13·6	14·6
Riverview		22·9	219	4 55	− 5	i 9 0	− 3	11·0	—
Sydney		22·9	219	i 5 6	+ 6	i 9 18	+15	11·6	13·1
Wellington		25·0	169	5 20	0	9 38	− 3	13·6	15·6
Melbourne		29·3	219	5 59	0	10 42	−11	13·6	16·3
Adelaide		32·0	230	e 6 21	− 2	i 11 27	− 8	i 14·2	17·8
Amboina		41·5	284	i 7 42	− 2	i 13 58	− 1	22·6	25·4
Perth		49·6	241	7 36	−12	15 41	−14	25·6	28·1
Honolulu T.H.		50·6	41	—	—	i 16 44	+35	23·2	—
Titizima		50·8	329	8 53	− 4	16 8	− 4	—	—
Manila		56·4	301	e 9 40	+ 1	17 13	−15	26·1	—
Sumoto	E.	60·3	328	e 10 5	− 2	e 20 1	(+ 7)	—	—
	N.	60·3	328	e 10 13	+ 6	e 20 17	(+23)	—	—
Osaka		60·3	329	9 55	−12	15 29	?	19·8	20·4
Miyazaki		60·3	323	10 7	0	18 18	− 2	—	—
Kobe		60·5	328	10 10	+ 2	19 54	(− 2)	—	33·2
Sendai		60·9	335	10 9	− 2	18 24	− 4	—	—
Batavia		61·0	274	i 10 18	+ 7	i 19 25	+56	35·6	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		61·5	336	10 18	+ 3	18 36	0	26·0	—
Nagasaki		61·8	324	e 10 17	0	e 18 38	− 1	—	—
Akita		62·5	335	10 27	+ 5	18 47	− 1	—	—
Hong Kong		65·9	305	10 45	0	19 10	−21	28·8	33·1
Phu-Lien		71·3	300	(10 36?)	−43	—	—	10·6	—
Medan		71·7	280	12 35	+74	21 35	+54	41·6	—
Ukiah		84·9	46	e 15 56	PP	e 22 58	[0]	e 35·3	—
Berkeley	E.	85·0	47	i 12 41	+ 8	e 24 21	PS	e 38·9	—
	N.	85·0	47	e 12 36	+ 3	e 24 29	PS	e 39·9	—
	Z.	85·0	47	e 12 33	0	—	—	—	—
Lick	E.	85·3	47	e 12 42	+ 7	—	—	—	—
Pasadena		86·5	52	e 12 39	− 2	e 22 58	[−12]	e 39·6	—
La Jolla	E.	86·7	54	e 16 14	PP	—	—	—	—
Haiwee		87·4	50	e 12 48	+ 3	—	—	—	—
Calcutta		87·5	294	11 35	−70	21 35	?	40·8	—
Tinemaha		87·6	50	e 12 48	+ 2	—	—	—	—
Irkutsk		88·5	326	—	—	e 23 14	[− 9]	45·6	52·1
Victoria		89·1	38	—	—	23 33	[+ 6]	41·6	54·5
Seattle		89·3	39	e 20 18	?	e 23 30	[+ 2]	e 45·0	—
Colombo		90·6	277	12 56	− 4	23 26	[−10]	48·3	54·4
Tucson		91·5	56	—	—	e 24 18	+ 8	37·4	—
Hyderabad		94·8	286	13 37	+17	23 58	[− 2]	44·1	64·0
Bozeman		95·7	44	—	—	e 24 8	[+ 4]	e 41·4	—
Agra	E.	97·8	296	13 3	−30	i 24 5	[−10]	46·6	—
Bombay		100·4	286	13 49	+ 4	24 25	[− 3]	46·7	63·9
Little Rock		107·0	58	e 18 46	PP	e 29 1	?	—	54·6
Tashkent		107·7	310	e 18 16	[+ 6]	i 24 57	[− 6]	e 45·6	68·1
Florissant		109·2	53	i 18 13	[− 3]	e 25 27	[+17]	49·8	—
St. Louis	E.	109·3	53	i 19 7	PP	e 25 46	{−16}	—	e 54·6
Madison		110·4	48	i 20 9	?	e 30 39	?	48·6	—
Chicago		111·5	51	—	—	e 28 49	PS	e 51·0	—
Tananarive		111·6	241	—	—	e 25 14	[− 6]	—	58·0
Ekaterinburg		113·7	326	e 18 52	+23	e 39 44	?	58·6	71·7
La Paz		115·1	119	e 19 42	PP	i 29 28	PS	54·1	61·8
Sucre		116·2	123	19 51	PP	29 40	PS	—	—
Columbia		116·2	60	—	—	e 29 36	PS	e 57·6	—
Pittsburgh		117·3	51	e 19 36	PP	e 25 36	[− 6]	—	—
Toronto		117·6	48	e 19 56	PP	e 25 36?	[− 7]	54·6	—
Buffalo		118·1	50	e 14 46	−24	—	—	e 58·6	—
Charlottesville		118·4	55	—	—	e 29 36	PS	e 56·6	—
Georgetown		119·5	54	e 20 6	PP	e 30 0	PS	57·6	—
Ottawa		120·1	45	e 20 16	PP	e 25 44	[− 7]	56·6	—
Fordham		121·9	52	e 20 42	PP	e 27 42	{+13}	e 60·6	—
Baku		122·3	309	e 18 36	[−15]	e 29 59	PS	—	—
Harvard		123·7	49	e 20 44	PP	e 25 55	[− 6]	e 60·6	—
Scoresby Sund		126·0	5	21 36?	PP	—	—	57·6	—
Pulkovo		127·6	335	e 19 5	[+ 3]	e 37 42	SS	58·6	75·4
San Juan		128·3	79	i 22 22	?	e 32 56	?	e 60·2	—
Helsingfors		129·4	337	22 31	?	e 33 1	?	e 57·6	—
Rio de Janeiro		129·7	141	e 21 16	PP	—	—	—	—
Theodosia		131·8	317	e 22 37	PKS	—	—	—	—
Upsala		132·1	341	e 17 16	?	i 22 38	PKS	e 70·6	—
Yalta		132·7	317	e 22 37	PKS	—	—	—	—
Königsberg		134·8	335	i 19 24	[+ 9]	—	—	76·6	84·6
Copenhagen		137·1	341	19 22	[+ 4]	24 3	?	63·6	—
Potsdam		139·5	337	e 22 36?	PP	—	—	e 80·6	—
Hamburg		139·6	341	e 22 36?	PP	—	—	e 66·6	98·6
Vienna		141·2	331	e 19 24	[+ 1]	—	—	e 78·6	82·6
Jena	N.	141·3	338	e 22 6	PP	—	—	e 67·6	77·1
Cheb		141·6	336	e 20 53	?	—	—	—	99·1

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		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
De Bilt		142·4	344	e 19 33	[+ 8]	—	—	e 66·6	80·9
Graz		142·4	330	i 19 47	[+22]	e 27 11	?	81·5	—
Zagreb		143·0	328	e 19 20	[− 7]	—	—	71·6	79·6
Feldberg		143·0	340	e 21 54	?	—	—	e 70·8	92·4
Uccle		143·8	345	e 19 29	[− 1]	—	—	58·6	—
Stuttgart		143·9	338	e 19 31	[0]	i 29 33	{−14}	e 74·6	100·1
Oxford		144·2	350	e 19 29	[− 3]	—	—	e 70·9	87·5
Triest		144·3	330	i 19 32	[0]	—	—	e 48·6	74·6
Kew		144·3	349	e 19 34	[+ 2]	—	—	e 77·6	84·4
Strasbourg		144·6	339	i 19 36	[+ 3]	e 27 8	?	e 60·6	—
Venice		145·2	330	19 41	[+ 7]	21 22	?	—	—
Chur		145·3	336	e 19 35	[0]	—	—	—	—
Zurich		145·3	336	e 19 35	[0]	—	—	—	—
Paris		146·1	345	i 19 38	[+ 2]	—	—	77·6	84·6
Neuchatel		146·2	339	e 19 36	[0]	—	—	—	—
Besançon		146·4	339	e 19 43	[+ 7]	—	—	90·6	—
Tortosa	N.	153·9	339	e 20 5	[+18]	—	—	e 75·6	98·4
Toledo		156·1	345	19 53	[+ 4]	34 35	SKSP	e 73·4	93·4
Algiers		156·2	330	e 13 22	?	—	—	e 39·1	—
Alicante		156·4	338	e 20 3	[+14]	e 25 3	?	96·2	—
Almeria		158·4	339	19 54	[+ 3]	i 34 38	SKSP	90·2	99·9
Granada		158·5	342	i 19 52	[0]	35 2	SKSP	e 77·6	108·6
Malaga		159·2	343	20 29	[+37]	—	—	—	—
San Fernando		159·9	347	e 20 3	[+ 9]	—	—	81·6	103·1

Additional readings and note :—
Arapuni SS = +11m.36s.?
Sydney PS = +7m.30s.
Wellington PP = +5m.53s., SS = +12m.21s.
Melbourne SS = +12m.1s.
Adelaide iSSS = +13m.26s.
Perth PP = +11m.11s., SS = +21m.36s., SSS = +22m.46s.
Sumoto ePZ = +10m.8s.
Kobe SSN = +21m.39s.
Mizusawa SN = +17m.54s.
Hong Kong SS = +23m.45s.
Medan i= +13m.29s. =PP −24s.
Ukiah e = +28m.6s. =SS −19s.
Pasadena ePPZ = +16m.15s., ePSE = +24m.32s., eSSE = +29m.38s., eSSSE = +32m.58s.
Haiwee ePPEN = +16m.24s.
Irkutsk e = +38m.49s.
Tucson eSS = +30m.50s.
Bozeman ePS = +26m.16s., eSS = +30m.36s.
Agra eN = +24m.1s.
Little Rock eE = +34m.6s. =SS +28s.
Tashkent i = +18m.42s. =PP +2s., e = +26m.32s.
Florissant e?E = +24m.10s., eE = +27m.36s., iE = +32m.46s., i = +33m.30s.
St. Louis eE = +25m.2s. =SKS −8s., +28m.21s. =PS +0s., and +29m.30s., eEN = +34m.14s. =SS +5s.
Madison iPP = +23m.48s.
Chicago eSSS = +34m.49s.
Tananarive e = +28m.53s. =PS +10s., +31m.5s., +35m.1s., and +39m.8s.
Ekaterinburg e = +19m.34s. =PP +10s., and +46m.22s.
La Paz iE = +36m.34s.
Pittsburgh eS = +27m.36s.? =SKKS +39s., ePS = +29m.18s., eSS = +35m.36s.
Toronto eE = +29m.14s. =PS −26s. and +36m.36s. ?
Buffalo e = +20m.10s. =PP +15s., +22m.56s., and +33m.24s.
Charlottesville eSS = +36m.36s.
Georgetown SKS = +37m.0s.
Ottawa e = +29m.48s. =PS −15s., eE = +35m.42s., eN = +36m.48s. =SS +15s., eE = +40m.54s., e = +45m.6s., eE = +50m.6s.
Fordham eE = +38m.2s. and +40m.51s.
Baku e = +19m.34s., +20m.48s., +37m.25s., and +41m.26s.
Harvard e = +22m.3s., +30m.24s. =PS −12s., and +33m.24s.
Pulkovo e = +21m.6s. =PP +5s. and +22m.22s.
San Juan eSS = +38m.0s.
Helsingfors ePPPE = +25m.13s., eSSE = +39m.56s.
Königsberg eN = +21m.18s. =PP −30s., +22m.54s. =PKS +1s., and +70m.18s.
Copenhagen +22m.6s. =PP +3s. and +42m.6s.

Continued on next page.

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Vienna iPZ = +19m.42s., i = +23m.14s. =PKS +2s.
Cheb e = +22m.56s. =PKS −15s.
De Bilt eZ = +23m.0s. =PKS −14s.
Feldberg e = +37m.13s., i = +40m.53s. =SS −25s.
Stuttgart iZ = +19m.49s., eZ = +20m.16s., eEN = +21m.33s., ePP = +22m.56s., ePKS = +23m.36s., eSS = +41m.36s., eSSSN = +47m.6s.
Oxford i = +21m.54s. and +23m.14s. =PKS −4s.
Triest PP = +22m.13s.
Kew iPKP$_2$Z = +19m.50s., eSKSPEN = +40m.47s., ePSSE = +41m.39s.
Strasbourg PP = +23m.2s., SKKS = +30m.6s., ePPS = +36m.50s., SS = +42m.36s.
Chur e = +23m.28s.
Zurich e = +23m.28s.
Neuchatel ePPS = +23m.31s.
Zagreb ePPNE = +23m.12s. =PKS −4s.
Toledo iPKP$_2$ = +20m.24s., PP = +24m.52s., SS = +43m.55s.
Algiers e = +16m.55s.
Almeria PP = +24m.14s.
Granada iPP = +24m.13s., PPP = +28m.14s., PPS = +38m.50s., SS = +44m.11s., SSS = +51m.16s.
Long waves were also recorded at La Plata, Sitka, Ivigtut, and other European stations.

Jan. 24d. Readings also at 1h. (Andijan, Samarkand), 2h. (Ukiah and near Belgrade), 3h. (Ekaterinburg, Irkutsk, Tashkent, Samarkand, and near Tyosi), 5h. (Tananarive), 7h. (near Göttingen), 8h. (Ekaterinburg, Tashkent, Bombay, and near Agra), 9h. (Irkutsk), 10h. (Haiwee, Mount Wilson, Pasadena, Tinemaha, Ottawa, Adelaide, Melbourne, Riverview, Hong Kong, Baku, and Ekaterinburg), 11h. (Harvard and Perth), 15h. (Haiwee (2), La Jolla (2), Pasadena (2), Riverside, Tinemaha (2), St. Louis, Ottawa, Ekaterinburg, and Irkutsk), 16h. (Andijan and Baku), 17h. (Tashkent, Samarkand, and Tyosi), 18h. (near Amboina), 19h. (Wellington), 22h. (near Sumoto).

Jan. 25d. 1h. 52m. 54s. Epicentre 18°·5S. 168°·5E. (as on 1930 March 12d.). X.

A = −·929, B = +·189, C = −·317; D = +·199, E = +·980; G = +·311, H = −·063, K = −·948.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	9·4	89	3 12	P$_g$	6 6	?	—	—
Apia	19·5	79	i 4 34	+10	10 56	+180	15·9	16·4
Riverview	21·8	222	e 4 41	− 8	i 8 58	+16	10·6	15·6
Sydney	21·8	222	e 3 30	−79	i 9 6	SS	11·6	12·7
Wellington	23·4	168	6 4	+59	9 36	+24	—	15·1
Melbourne	28·2	221	i 5 56	+ 7	(10 33)	− 2	10·6	16·3
Adelaide	31·2	233	e 6 36	+20	i 11 20	− 3	14·0	17·8
Perth	49·0	243	14 6	?	—	—	24·9	30·6
Manila	57·3	303	9 39	− 6	18 6	+26	23·6	27·9
Hong Kong	67·0	307	14 11	PP	19 30	−15	—	33·6
Bombay	101·0	286	14 9	+21	—	—	—	—
Tashkent	108·9	308	e 12 6	?	e 26 0	{+ 1}	e 48·1	62·4
Florissant	110·0	53	e 18 46	PP	e 27 48	?	54·2	—
St. Louis	110·1	53	e 19 16	PP	e 28 18	PS	—	56·1
La Paz	114·2	120	—	—	e 29 23	PS	54·1	73·1
Ekaterinburg	115·1	325	—	—	e 25 38	[+ 4]	41·1	—
Ottawa	121·0	47	—	—	e 36 14	SS	e 57·1	—
Uccle	145·3	341	e 19 34	[− 1]	—	—	e 57·1	—
Strasbourg	146·1	337	e 19·37	[+ 1]	—	—	—	—
Paris	147·6	344	i 19 35	[− 3]	—	—	79·1	—
Neuchatel	147·8	336	e 19 35	[− 4]	—	—	—	—

Additional readings :—
Riverview iP = +4m.56s. =PP −11s.
Tashkent e = +28m.10s. =PS −7s.
Florissant e = +33m.58s. =SS −21s.
St. Louis eE = +34m.15s. =SS −5s. and +39m.1s.
Ekaterinburg e = +29m.6s. =PS −11s.
Long waves were also recorded at Arapuni, Madison, Pittsburgh, Harvard, Cheb, De Bilt, Kew, and San Fernando.

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Jan. 25d. Readings also at 0h. (Tucson), 1h. (Ottawa), 2h. (Neuchatel), 4h. (Sucre, near La Paz, near Manila, and near Mizusawa), 5h. (near Santiago), 6h. (Alicante, Riverview, and Wellington), 7h. (Riverview, near Suva, Glenmuick, and near Wellington), 8h. (Adelaide, Melbourne, Perth, Wellington, Ottawa, and near Tananarive), 9h. (Adelaide and Riverview), 10h. and 11h. (near Sumoto), 12h. (Andijan), 14h. (Nagoya and near Tyosi), 19h. (near Reykjavik), 22h. (Wellington).

Jan. 26d. 10h. 11m. 54s. Epicentre 52°·0N. 125°·0W. (as on 1921 Feb. 21d.). X.

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

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bozeman		11·1	119	i 2 34	− 2	—	—	2·8	—
Tinemaha		15·7	159	e 3 48	+10	e 6 9	−22	—	—
Haiwee		16·6	160	e 3 36	−13	e 6 41	−11	—	—
Santa Barbara		17·9	166	—	—	e 7 40	+18	—	—
Mount Wilson		18·5	161	e 4 17	+ 4	—	—	—	—
Pasadena		18·6	162	e 4 16	+ 2	e 7 44	+ 6	—	—
Tucson		22·3	147	—	—	(e 7 32)	−80	e 7·5	—
Little Rock	E.	28·9	114	e 5 51	− 4	—	—	—	10·4

Additional readings:—
Bozeman i = +2m.7s. and +2m.42s. = PP +5s.
Tinemaha eN = +4m.14s.
Long waves were also recorded at Sitka and Madison.

Jan. 26d. Readings also at 0h. (Wellington), 4h. (St. Louis, Riverview, Nagoya, near Tyosi and near Calcutta), 5h. (Adelaide, Melbourne, Sydney, Perth, Wellington, Arapuni, Manila, Zurich, and near Bombay), 6h. and 8h. (La Paz), 10h. (near Victoria), 12h. (near Tyosi), 13h. (La Paz, La Plata, and near Santiago), 14h. (Wellington, Riverview, Sydney, and near Tananarive), 15h. (Branner, Lick, and near Berkeley), 18h. (near Mizusawa), 20h (Hastings).

Jan. 27d. 12h. 16m. 0s. Epicentre 31°·8N. 131°·8E. (as on 1931 Feb. 25d.). R.1.

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

Tokyo gives epicentre 32°·1N. 131°·9E.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Miyazaki	0·4	291	0 5	− 1	0 11	+ 1	—	—
Kagosima	1·0	258	0 20	+ 6	0 37	S_g	—	—
Simidu	1·4	45	0 18	− 2	0 27	P_g	—	—
Kumamoto	1·4	317	0 19	− 1	0 38	+ 2	—	—
Ooita	1·4	354	0 19	− 1	0 39	+ 3	—	—
Unzendake	1·6	309	0 29	P_g	0 51	S*	—	—
Nagasaki	1·9	300	0 27	− 1	0 53	+ 4	—	0·9
Hukuoka	2·1	327	0 30	0	0 59	+ 5	—	1·1
Matuyama	2·2	21	e 0 30	− 1	i 1 4	+ 7	—	1·2
Simonoseki	2·3	341	0 31	− 2	1 1	+ 2	—	—
Koti	2·3	40	e 0 32	− 1	e 1 8	S*	i 1·2	1·4
Niihama	2·5	29	0 41	+ 5	1 13	S*	—	—
Hirosima	2·7	12	0 42	+ 3	1 18	S*	—	—
Hamada	3·1	4	0 48	+ 4	1 22	+ 2	—	—
Ituhara	3·2	318	0 51	+ 5	1 31	+ 9	—	—

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	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Sumoto	3·7	44	0 51	− 2	1 58	S*	—	2·3
Siomisaki	3·8	63	0 51	− 3	1 34	− 3	—	—
Wakayama	3·8	48	0 50	− 4	1 38	+ 1	—	—
Nake	4·0	211	0 59	+ 2	1 41	− 1	—	—
Kobe	4·0	43	e 1 13	P*	2 8	S*	—	2·5
Osaka	4·2	46	0 33	−27	i 2 13	S*	—	3·1
Toyooka	4·5	33	1 19	P*	2 21	S*	—	2·5
Kyoto	4·6	44	1 5	− 1	—	—	—	—
Taikyu	4·8	328	1 24	P*	2 41	S_g	—	—
Kameyama	5·0	50	1 14	+ 3	2 41	S_g	—	—
Hikone	5·1	45	1 10	− 3	2 47	S_g	—	—
Nagoya	5·5	50	e 1 18	0	2 32	+12	—	—
Gihu	5·5	48	1 16	− 2	2 14	− 6	—	—
Nagano	7·2	45	1 46	+ 4	3 54	S_g	—	—
Oiwake	7·2	49	1 39	− 3	3 54	S_g	—	—

Additional readings :—
Sumoto SE = +2m.2s.
Kobe eN = +2m.0s., eE = +2m.3s.
Osaka L = +1m.29s. = P_g.
Long waves were also recorded at Baku and Ekaterinburg.

Jan. 27d. 18h. 41m. 45s. Epicentre 31°·8N. 131°·8E. (as at 12h.). X.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Nagasaki	1·9	300	0 31	+ 3	—	—	—	—
Hukuoka	2·1	327	e 0 30	0	e 0 52	− 2	—	1·0
Matuyama	2·2	21	e 0 26	− 5	i 0 48	− 9	—	—
Koti	2·3	40	(e 0 32)	− 1	(e 0 56)	− 3	—	—
Sumoto	3·7	44	e 1 0	+ 7	1 44	+ 9	—	1·8
Osaka	4·2	46	1 11	+11	—	—	2·1	2·7

Koti readings have been increased by 1m.
Long waves were recorded at Kobe.

Jan. 27d. 19h. 41m. 1s. Epicentre **51°·5N. 29°·5W.** N.1.

Probable error of epicentre ±0°·23.

A = +·542, B = −·307, C = +·783 ; D = −·492, E = −·870 ;
G = +·681, H = −·385, K = −·623.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Ivigtut		14·1	320	3 15	− 2	—	—	7·0	—
Bidston		16·1	73	—	—	e 6 39	− 2	e 7·5	8·3
Stonyhurst		16·5	71	i 3 48	0	i 6 59	+ 9	—	9·3
Oxford		17·6	78	e 4 13	+11	i 7 20	+ 5	e 8·3	10·9
Kew		18·1	79	i 4 9	+ 1	e 7 35	+ 8	8·0	8·9
Coimbra		18·4	119	4 12	+ 1	7 43	+10	—	—
Scoresby Sund		19·3	7	4 22	0	7 58	+ 6	—	—
Paris		20·5	85	i 4 34	− 1	e 8 20	+ 4	11·0	11·0
Toledo		21·1	113	e 4 40	− 1	e 8 33	+ 5	e 9·1	9·9
Uccle		21·1	78	e 4 37	− 4	i 8 28	0	9·5	10·7
De Bilt		21·2	74	i 4 43	+ 1	8 33	+ 3	e 10·0	12·1
San Fernando		22·4	124	i 5 4	+ 9	i 9 4	+11	—	10·0
Granada		23·2	118	i 5 3	0	i 9 25	+17	i 11·0	12·1
Tortosa	E.	23·2	105	5 2	− 1	9 26	+18	—	—
	N.	23·2	105	i 5 3	0	9 20	+12	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Besançon		23·3	86	5 0	− 4	9 17	+ 7	12·0	—
Feldberg		23·7	78	—	—	e 9 24	+ 6	—	13·0
Barcelona		23·8	103	e 4 37	−31	9 26	+ 7	13·8	—
Hamburg		23·8	69	e 5 7	− 1	—	—	e 12·0	15·7
Strasbourg		23·9	82	e 5 9	0	9 30	+ 9	12·0	—
Neuchatel		24·0	85	5 8	− 2	9 28	+ 5	—	—
Almeria		24·1	117	i 5 10	− 1	e 9 36	+11	e 12·1	12·6
Karlsruhe		24·1	81	e 3 59?	?	—	—	—	—
Alicante		24·2	112	i 5 17	+ 5	i 9 39	+12	—	—
Göttingen		24·3	74	i 5 13	0	i 9 37	+ 9	e 13·9	15·0
Stuttgart		24·7	81	e 5 13	− 4	i 9 44	+ 8	e 11·5	13·8
Copenhagen		24·9	64	5 15	− 4	—	—	13·0	—
Lund		25·3	63	5 59?	PP	—	—	13·0	—
Jena		25·5	75	e 5 19	− 6	—	—	e 14·0	14·7
Potsdam		25·9	71	e 6 29	+61	—	—	—	15·0
Cheb		26·2	76	e 5 31	0	e 10 4	+ 2	e 12·6	16·0
Innsbruck		26·6	82	e 5 41	+ 6	—	—	—	—
Algiers		27·3	110	i 5 42	+ 1	e 9 53	−27	11·0	—
Triest		28·8	84	e 5 49	− 5	e 11 2	+17	e 14·3	—
Vienna		29·3	78	5 52	− 7	—	—	e 14·0	16·0
Ottawa		30·8	278	—	—	e 11 14	− 3	e 14·0	—
Fordham		31·9	270	e 6 19	− 3	11 39	+ 5	16·0	—
Pulkovo		33·5	51	—	—	12 1	+ 3	16·0	20·3
Pittsburgh		35·9	274	—	—	12 47	+12	e 19·0	—
Florissant	E.	43·4	279	—	—	i 15 7	+40	i 18·5	—
St. Louis		43·4	279	i 8 1	+ 1	e 14 32	+ 5	i 18·0	24·5
Little Rock		47·2	275	e 8 29	− 1	e 15 26	+ 5	—	—
Ekaterinburg		49·2	46	8 42	− 3	15 47	− 3	23·0	—
Baku		53·6	69	9 19	+ 1	16 55	+ 5	25·7	32·0
Pasadena	Z.	63·2	293	e 10 24	− 3	—	—	—	—
Samarkand		63·6	59	e 10 24	− 5	—	—	—	—
La Paz	N.	75·9	220	e 11 49	+ 4	i 21 29	− 1	38·0	44·3
Bombay		82·7	69	e 13 59?	?	—	—	—	—

Additional readings :—
Toledo i = +4m.48s., PP = +5m.3s., PPP = +5m.15s.
Stuttgart iPEZ = ePN = +5m.17s., ePP = +6m.4s., e = +7m.29s.
Jena iE = +5m.27s. and +5m.33s., ePN = +5m.59s. = PP +2s.
Algiers PP? = +6m.16s., PPP? = +6m.47s.
Triest e = +12m.9s.
Fordham eN = +4m.9s.
Long waves were also recorded at Edinburgh, Durham, Upsala, Irkutsk, Graz, and Helsingfors.

Jan. 27d. Readings also at 5h. (Adelaide, Melbourne, and Riverview), 6h. (near Batavia and Malabar), 7h. (Riverview), 12h. (Tyosi and near Manila), 17h. (Pasadena).

Jan. 28d. Readings at 3h. (Almata, Andijan, Samarkand), 6h. (near Tananarive), 7h. (Almeria and near Granada), 17h. (Tucson), 21h. (Arapuni and Tyosi), 23h. (La Plata).

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Jan. 29d. 13h. 41m. 18s. Epicentre **6°·2S. 155°·0E.** N.1.

Probable error of epicentre ±0°·36.

A = −·901, B = +·420, C = −·108; D = +·423, E = +·906; G = +·098, H = −·046, K = −·994.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		24·6	303	5 12	− 4	9 36	+ 2	—	—
Suva		25·7	120	(5 46)	+20	5 46	P	8·1	9·7
Amboina		26·8	274	i 5 34	− 2	i 10 22	+10	18·9	—
Riverview		27·9	187	i 5 50	+ 4	i 10 18	−12	13·7	15·7
Sydney		27·9	187	i 6 12	+26	i 10 54	+24	12·1	13·2
Adelaide		32·5	206	e 6 14	−13	i 11 27	−16	15·0	20·0
Melbourne		32·9	195	6 30	− 1	11 40	− 9	14·1	17·3
Apia		33·6	105	6 32	− 5	11 5	−55	13·8	18·7
Titizima		35·5	340	7 4	+11	12 53	+24	—	—
Arapuni		37·0	151	7 29	+23	12 59	+ 8	17·2	19·7
Wellington		39·3	156	7 26	0	13 15	−11	16·4	16·7
Manila		39·6	302	7 26	− 3	13 32	+ 2	19·2	—
Isigakizima		42·8	317	7 58	+ 3	14 26	+ 8	—	—
Tyosi		44·0	345	e 8 10	+ 5	e 17 58	SS	—	—
Miyazaki		44·2	330	8 4	− 2	14 38	− 1	—	—
Perth		44·7	230	e 8 22	+12	i 14 42	− 4	21·9	30·7
Koti		44·7	334	e 8 7	− 3	18 48	(+38)	—	26·7
Nagoya		44·7	340	e 8 17	+ 7	—	—	19·6	—
Osaka		44·8	338	8 32	+21	13 40	−67	19·6	26·1
Sumoto	E.	44·8	338	8 16	+ 5	14 48	+ 1	19·1	19·2
	N.	44·8	338	8 15	+ 4	14 8	−39	19·1	21·4
Kobe		45·0	338	e 8 7	− 6	—	—	e 19·1	23·2
Taihoku		45·1	316	e 8 20	+ 6	14 53	+ 1	e 17·9	—
Matuyama		45·2	334	e 8 9	− 5	—	—	19·1	19·9
Nagasaki		45·7	330	e 8 12	− 6	e 14 35	−25	e 20·1	—
Toyooka		45·9	338	i 8 15	− 5	—	—	i 19·2	22·8
Hukuoka		46·1	332	e 8 22	+ 1	—	—	—	—
Mizusawa	E.	47·1	347	8 40	+11	15 6	−14	19·7	—
	N.	47·1	347	8 30	+ 1	15 12	− 8	19·6	—
Malabar		47·1	268	8 34	+ 5	i 15 25	+ 5	—	—
Morioka		47·7	347	8 30	− 4	15 33	+ 4	—	—
Batavia		47·9	269	8 34	− 1	i 15 13	−18	—	—
Hong Kong		49·1	308	8 42	− 2	15 47	− 1	23·2	26·2
Zi-ka-wei	E.	49·3	322	e 8 45	− 1	15 53	+ 2	—	37·9
Zinsen		51·2	330	9 1	+ 1	16 6	−12	—	—
Honolulu T.H.		53·8	58	i 9 32	+12	e 17 2	+ 9	e 22·7	—
Ootomari		54·0	350	9 37	+16	17 26	+30	23·9	28·2
Phu-Lien		54·7	301	e 9 24	− 2	e 16 42	−23	23·2	—
Medan		56·7	278	e 9 40	− 1	i 17 30	− 2	33·7	—
Chiufeng		58·5	326	e 9 51	− 3	18 0	+ 4	—	—
Calcutta		71·1	296	10 23	−54	18 36	?	31·1	33·1
Colombo		76·1	279	11 43	− 4	21 21	−12	44·8	50·6
Hyderabad		79·2	289	11 59	− 5	21 53	−14	35·3	44·9
Agra	E.	81·4	300	i 12 12	− 3	i 22 22	− 9	—	—
Dehra Dun		82·0	303	11 2	−76	22 22	−15	—	22·7
Sitka		84·4	30	e 12 42	+12	i 23 16	+14	e 33·7	—
Bombay		84·7	290	12 28	− 4	22 45	[−12]	44·1	52·4
Almata		85·6	315	e 12 48	+12	—	—	—	—
Frunse		87·3	315	e 13 0?	+15	(23 42)	+12	23·7	—
Ukiah		87·6	50	12 52	+ 6	i 23 42	+ 9	e 36·0	—
Berkeley		88·0	51	i 12 43	− 5	e 23 38	+ 1	e 38·0	—
Andijan		88·5	312	e 12 53	+ 3	—	—	—	—
Lick	E.	88·5	51	e 12 47	− 3	—	—	e 41·1	—
Victoria		89·2	41	12 59	+ 5	23 51	+ 3	40·3	45·6
Seattle		89·6	42	e 13 24	+28	e 24 4	+12	e 36·5	—
Santa Barbara		89·6	56	e 13 3	+ 7	—	—	—	—

Continued on next page.

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		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Pasadena		90·9	56	i 12 58	− 4	i 23 55	− 9	e 41·4	—
Mount Wilson		91·0	56	e 13 0	− 2	—	—	—	—
Tinemaha		91·2	52	e 13 0	− 3	—	—	—	—
Haiwee	E.	91·3	54	e 13 1	− 2	—	—	—	—
Riverside		91·5	56	e 13 1	− 3	23 50	[+ 9]	—	—
La Jolla		91·5	57	e 13 3	− 1	25 24	PS	—	—
Samarkand		92·5	310	e 13 3	− 6	—	—	—	—
Tucson		96·8	59	e 13 37	+ 8	e 23 55	[−15]	39·1	—
Bozeman		97·0	45	e 22 30	?	e 25 9	+ 9	38·6	—
Ekaterinburg		97·6	327	e 13 24	− 8	i 24 48	{+13}	40·7	54·1
Denver	E.	101·6	50	e 14 2	+11	—	—	—	47·2
Tananarive		104·3	249	—	—	e 27 25	PS	49·1	60·4
Kucino		110·0	328	e 19 9	PP	e 29 42	?	—	85·0
Little Rock		112·1	55	e 14 39	− 3	e 25 16	[− 7]	e 47·1	55·2
Pulkovo		112·2	334	—	—	e 28 56	PS	—	—
Madison		112·8	45	e 19 24	PP	e 28 48	PS	52·7	—
Florissant		113·0	50	14 49	+ 4	i 25 54	[+28]	—	58·3
St. Louis	E.	113·1	50	e 14 49	+ 3	e 25 43	[+16]	—	55·7
Helsingfors	E.	114·4	336	—	—	e 29 12	PS	e 48·6	—
Chicago		114·4	46	—	—	29 10	PS	53·2	—
Theodosia		115·1	318	e 19 40	PP	—	—	—	—
Scoresby Sund		115·7	359	—	—	29 35	PS	46·7	—
Yalta		116·0	317	e 19 49	PP	—	—	—	—
Sebastopol		116·5	317	e 20 21	PP	—	—	—	—
Upsala		117·5	338	—	—	e 36 54	SS	e 49·7	—
Ksara	N.	117·5	305	e 19 4	[+25]	30 23	PS	47·8	55·3
Toronto		119·6	42	i 17 57	[−48]	i 30 5	PS	—	—
Buffalo		120·2	43	i 18 54	[+ 8]	i 30 16	PS	—	53·7
Pittsburgh		120·3	45	e 19 8	[+22]	i 30 5	PS	46·7	—
Ottawa		121·2	39	e 20 18	PP	e 30 18	PS	e 50·7	—
Bergen		121·2	343	25 57	SKS	(25 57)	[+ 3]	50·7	—
Santiago		121·3	135	e 19 12	[+23]	—	—	—	63·7
Columbia		121·4	52	e 23 24	?	e 30 10	PS	e 50·7	—
Lund		122·0	336	—	—	30 30	PS	49·7	—
Helwan		122·1	301	20 7	PP	e 30 7	PS	—	66·1
Charlottesville		122·2	48	e 20 36	PP	e 30 36	PS	e 55·7	—
Ivigtut		122·3	12	20 12	PP	30 24	PS	—	—
Copenhagen		122·3	336	—	—	30 42?	PS	48·7	—
Georgetown		122·9	46	e 18 48	[− 5]	e 30 42	PS	57·6	67·7
Fordham		124·4	43	e 20 42	PP	e 30 57	PS	e 55·7	—
Belgrade		124·8	322	e 18 58	[+ 1]	—	—	—	—
Hamburg		124·8	335	e 19 6	[+ 9]	—	—	e 59·7	66·7
Vienna		125·3	329	i 18 53	[− 5]	29 4	?	e 53·7	76·7
Harvard		125·6	40	—	—	e 32 27	?	e 58·7	—
Jena		126·0	333	e 19 1	[+ 2]	—	—	e 53·7	58·7
Cheb		126·1	331	e 20 49	PP	e 30 54	PS	e 51·7	58·7
Graz		126·4	327	19 6	[+ 6]	e 28 25	{+27}	54·7	81·0
Zagreb		126·9	325	e 18 55	[− 6]	e 26 21	[+11]	e 70·5	—
Edinburgh		127·4	345	e 21 18	PP	—	—	53·7	99·7
De Bilt		127·8	337	e 19 7	[+ 4]	e 31 10	PS	e 54·7	61·0
Durham		127·9	343	22 29	?	30 51	PS	—	65·7
Feldberg		127·9	334	e 19 24	[+21]	—	—	—	—
Triest		128·3	326	i 18 57	[− 7]	—	—	e 52·7	76·9
Stuttgart		128·5	332	e 19 7	[+ 3]	—	—	78·7	103·2
Innsbruck		128·5	330	e 19 12	[+ 8]	(e 38 24)	SS	e 38·4	81·8
La Plata		128·5	145	19 0	[− 4]	—	—	53·7	—
Karlsruhe		128·7	332	13 42?	?	—	—	e 42·7	—
Stonyhurst		128·9	342	20 9	?	31 32	PS	54·7	65·2
Venice		129·2	326	18 46?	[−19]	—	—	—	—
Uccle		129·2	337	(e 19 6)	[+ 1]	i 31 24	PS	54·7	105·4

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg		129·4	333	e 19 11	[+ 5]	e 25 54	[−24]	58·7	103·7
Bidston		129·5	342	21 32	PP	31 27	PS	58·5	83·0
Zurich		129·8	331	e 19 2	[− 5]	—	—	—	—
Kew		130·3	340	e 19 19	[+11]	—	—	55·7	61·8
Oxford	E.	130·4	341	i 21 13	PP	e 39 30	?	—	—
	N.	130·4	341	i 19 29	[+21]	e 49 36	?	e 70·7	102·7
Naples	E.	130·8	320	e 18 52	[−17]	e 34 42	?	—	—
Florence		130·8	326	e 18 57	[−12]	—	—	54·2	68·7
Neuchatel		130·9	332	e 19 5	[− 4]	—	—	—	—
Besançon		131·2	332	i 22 38	PKS	—	—	55·7	—
Paris		131·4	337	e 19 10	[+ 1]	e 28 11	{−19}	45·7	58·7
La Paz		131·7	119	i 19 12	[+ 2]	26 20	[− 4]	55·0	65·3
Port au Prince		132·3	70	e 19 0	[−11]	—	—	63·6	—
Sucre		133·0	125	19 11	[− 1]	26 35	[+ 7]	54·7	—
Puy de Dôme		133·6	334	e 18 42?	[−31]	—	—	58·7	—
Bagnères		136·9	334	i 18 42?	[−36]	i 22 50	PKS	58·7	—
Barcelona		137·3	330	e 20 2	[+44]	—	—	59·5	80·7
San Juan		138·1	69	e 19 31	[+12]	—	—	—	—
Tortosa	N.	138·5	331	e 19 27	[+ 7]	—	—	e 57·7	118·6
Algiers		140·1	324	e 17 11	?	e 29 20	{− 5}	e 55·2	93·7
Alicante		141·0	330	e 19 33	[+10]	e 23 43	?	e 86·2	—
Toledo		141·4	334	19 22	[− 1]	34 50	?	e 59·9	104·0
Almeria		143·0	330	e 18 48	[−39]	—	—	e 69·7	103·2
Granada		143·4	331	e 15 9	?	29 38	{ − 6}	67·5	113·2
Malaga		144·2	331	19 25	[− 7]	31 25	?	41·7	—
San Fernando		145·2	333	i 19 42	[+ 8]	31 42	?	47·7	57·2
Rio de Janeiro		145·9	150	i 19 41	[+ 5]	—	—	—	81·2

Additional readings and note :—
Suva i = +6m.54s.
Amboina i = +5m.41s., +6m.25s., and +10m.48s.
Adelaide i = +6m.27s., iPPP = +7m.23s., i = +11m.38s., iSSS = +13m.28s., i = +14m.2s.
Melbourne SS = +13m.34s.
Arapuni SS = +16m.2s.
Wellington PP = +8m.47s., i = +9m.37s. = P_cP −2s.
Manila PPN = +8m.56s.
Perth PP = +10m.12s., PPP = +10m.42s., PPPP = +11m.2s., SS = +18m.22s.
Kobe ePE = +8m.10s., eZ = +10m.0s. = P_cP +2s.
Toyooka iPN = +8m.24s.
Malabar i = +9m.49s. = P_cP +17s.
Zi-ka-wei iE = +16m.29s.
Hong Kong ? = +15m.22s., SS = +18m.48s. = S_cS +5s., ? = +20m.22s.
Honolulu T.H. iS = +17m.43s.
Chiufeng SZ = +18m.1s.
Agra PN = +12m.27s.
Sitka iSKS = +23m.5s., ePS = +23m.48s.
Ukiah e = +20m.9s.
Berkeley ePE = +12m.46s. and +12m.52s.
Pasadena eZ = +16m.11s. = PP −22s., ePPZ = +17m.4s., ePSE = +25m.6s., eE = +29m.23s. and +33m.56s.
Tucson PP = +17m.35s., iPS = +26m.26s., SS = +32m.9s.
Bozeman SKS = +23m.50s., ePS = +26m.26s., e = +29m.42s., eSS = +30m.42s., eSSS = +35m.18s.
Ekaterinburg e = +18m.17s., +19m.40s., and +22m.8s., i = +26m.32s. = PS +13s., +37m.28s., and +39m.28s.
Denver eE = +20m.52s., eSSE = +32m.42s., eE = +36m.22s.
Tananarive N = +27m.39s. and +28m.55s., E = +29m.22s. and +33m.1s. = SS +0s., N = +23m.19s., E = +37m.22s., N = +37m.52s. and +43m.16s., EN = +44m.42s.?
Little Rock ePPEN = +19m.26s., iPSE = +28m.51s., eSSE = +34m.54s., eSSSE = +38m.59s.
Pulkovo e = +40m.9s.
Madison i = +30m.18s., eSS = +34m.56s., eSSS = +39m.16s., eSSSS = +43m.20s.
Florissant iPPE = +19m.32s., i?Z = +27m.7s., iPSE = +29m.12s., iZ = +34m.13s., iSS = +35m.17s., i?Z = +38m.43s., iSSS = +39m.8s., i?E = +43m.36s.
St. Louis ePP = +19m.30s., iPSEN = +29m.3s., eE = +30m.21s., eSSE = +35m.9s., eSSSE = +39m.9s., eSSSSE = +42m.52s.
Helsingfors eSSE = +35m.18s., eSSSE = +39m.50s.

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Chicago SS = +35m.54s., SSS = +39m.34s.
Scoresby Sund +36m.48s.
Toronto i = +20m.6s. =PP +0s., +36m.49s. =SS +22s. and +41m.5s.
Buffalo e = +20m.10s. =PP +0s., i = +31m.50s. and +37m.18s.
Pittsburgh ePP = +20m.8s., i = +30m.20s., +37m.10s., and +37m.34s.
Ottawa eE = +26m.3s. =SKS +9s., eN = +27m.24s. =SKKS +0s. and +29m.0s., e = +37m.0s. =SS +12s. and +41m.6s. =SSS +0s., eE = +47m.18s.
Bergen S? = +30m.34s., e = +37m.14s.
Columbia e = +28m.50s. and +37m.2s. =SS +12s., eSS = +37m.22s.
Charlottesville SS = +37m.22s.
Georgetown ePP = +20m.30s., i = +38m.6s., eSSS = +49m.48s.
Fordham eSSN = +37m.42s., eSSSN = +42m.42s.?
Belgrade e = +19m.38s., +20m.53s. =PP +11s. and +23m.55s.
Vienna PP = +22m.49s., SKKS = +30m.6s., PPS = +32m.21s., SS = +37m.12s.
Harvard eSS = +38m.12s., eSSS = +42m.39s.
Jena eZ = +19m.4s., eEN = +19m.12s.
Cheb e = +38m.13s. =SS +22s.
Zagreb eNW = +19m.4s., e = +21m.14s. =PP +17s. and +22m.0s., eNE = +39m.22s., eNW = +40m.33s., +52m.6s., +54m.30s., +56m.24s., and +58m.30s., eNE = +60m.0s., eNW = +64m.30s., eNE = +65m.12s. and +67m.6s.
Edinburgh i = +22m.32s.
De Bilt eZ = +20m.55s. =PP −8s., eEN = +21m.20s., e = +22m.31s., eZ = +24m.19s.
Durham ? = +34m.52s.
Triest i = +22m.29s. and +22m.49s., PP = +24m.19s.
Stuttgart iPPZ = +21m.11s., eE = +22m.27s. and +64m.42s.
Innsbruck e = +22m.24s.
La Plata ePP = +22m.18s.
Stonyhurst PPP = +22m.37s., PPPP = +25m.50s.
Uccle e = +21m.13s. =PP +1s., i = +21m.28s. and +22m.36s., e = +38m.48s. = SS +18s., i = +39m.33s. ; PKP is given as PP.
Strasbourg e = +16m.42s.? =P +39s., ePP = +21m.38s., SKKS = +27m.7s., ePS = +29m.40s., eSS = +36m.42s.
Bidston S = +33m.27s., SS = +40m.12s.
Kew ePKS = +22m.38s., ePSE = +33m.0s., eSSN = +39m.35s.
Oxford iN = +22m.39s. =PKS +4s., eE = +44m.12s.
Neuchatel e = +22m.25s. =PKS −12s.
Paris PP = +22m.44s. =PKS +5s.
La Paz PPE = +21m.36s., iPP = +21m.40s., iPKS = +22m.44s., SKSP = +32m.54s., PS = +33m.52s., SSE = +39m.40s., iE = +41m.22s.
Port au Prince PP = +22m.47s., PPP = +24m.55s.
Sucre PP = +22m.36s.
Puy de Dôme i = +21m.53s. =PP +12s. and +23m.10s.
San Juan ePKP = +19m.34s., e = +21m.8s., ePP = +23m.1s., ePPP = +25m.34s.
Algiers iPP = +19m.31s., iPPP = +22m.31s., ePS = +28m.14s., e = +30m.21s., SS = +39m.5s.
Toledo ePZ = +16m.44s., PP = +22m.37s.
Almeria e = +21m.58s., iPP = +22m.14s., i = +24m.45s.
Granada iPP = +19m.34s., i = +21m.34s., PPP = +22m.26s.
Long waves were also recorded at Königsberg, Göttingen, Potsdam, Baku, and Balboa Heights.

Jan. 29d. 15h. 39m. 13s. Epicentre 6°·2S. 155°·0E. (as at 13h.). R.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	24·6	303	5 17	+ 1	9 39	+ 5	—	—
Amboina	26·8	274	5 36	0	i 10 2	−10	e 16·8	—
Riverview	27·9	187	e 5 15	−31	i 10 23	− 7	—	14·8
Sydney	27·9	187	—	—	i 10 59	+29	13·8	15·4
Adelaide	32·5	206	6 5	−22	i 11 31	−12	15·8	19·5
Melbourne	32·9	195	6 49?	+18	11 36	−13	15·6	—
Manila	39·6	302	7 30	+ 1	13 31	+ 1	—	—
Miyazaki	44·2	330	8 4	− 2	14 43	+ 4	—	—
Perth	44·7	230	e 14 42	S	(e 14 42)	− 4	19·4	—
Osaka	44·8	338	5 47	?	(11 9)	?	18·5	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kobe		45·0	338	e 8 4	− 9	—	—	e 21·1	22·0
Nagasaki		45·7	330	e 8 17	− 1	e 15 3	+ 3	—	—
Batavia		47·9	269	e 8 33	− 2	i 15 23	− 8	21·8	—
Hong Kong		49·1	308	8 46	+ 2	15 49	+ 1	23·9	26·1
Zi-ka-wei	E.	49·3	322	e 7 43	−63	—	—	—	31·0
Phu-Lien		54·7	301	—	—	e 17 6	+ 1	23·8	—
Medan		56·7	278	e 9 39	− 2	i 17 29	− 3	35·8	—
Ukiah		87·6	50	—	—	(e 23 41)	+ 8	e 40·5	—
Andijan		88·5	312	e 12 49	− 1	—	—	—	—
Pasadena		90·9	56	i 13 1	− 1	—	—	e 45·1	—
Mount Wilson		91·0	56	e 13 3	+ 1	—	—	—	—
Tinemaha		91·2	52	e 13 5	+ 2	—	—	—	—
Haiwee		91·3	54	e 13 5	+ 2	—	—	—	—
Riverside		91·5	56	e 13 5	+ 1	—	—	—	—
Samarkand		92·5	310	e 13 20	+11	—	—	—	—
Madison		112·8	45	—	—	e 41 19	?	54·8	—
La Paz		131·7	119	i 19 22	[+12]	—	—	62·8	96·9

Additional readings and notes :—
Amboina i = +6m.13s. =PP −1s. and +11m.20s. =SS +8s.
Riverview S = +9m.55s.
Perth S = +17m.47s. =SS +3s.
Kobe ePN = +8m.11s.
Hong Kong SS = +19m.15s., ? = +20m.57s.
Ukiah eSS = +29m.35s. ; true S is given as PS.
Pasadena eZ = +14m.47s.
Long waves were also recorded at Ivigtut, Göttingen, Potsdam, Cheb, De Bilt, and Georgetown.

Jan. 29d. 19h. 0m. 16s. Epicentre 4°·5S. 153°·5E. N.3.

A = −·892, B = +·445, C = −·078 ; D = +·446, E = +·895 ;
G = +·070, H = −·035, K = −·997.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Adelaide		33·4	203	—	—	i 11 59	+ 2	15·8
Melbourne		34·2	192	—	—	e 12 1	− 8	16·1
Manila		37·5	301	7 11	0	12 59	0	—
Perth		44·7	229	14 44	S	(14 44)	− 2	—
Bombay		82·6	290	e 23 18	PS	—	—	—
Mount Wilson		91·2	56	e 13 26	+23	—	—	—
Pasadena		91·2	56	i 13 26	+23	—	—	—
Tinemaha		91·3	53	e 13 28	+25	—	—	—
Haiwee	E.	91·4	54	e 13 29	+25	—	—	—
Riverside		91·8	56	e 13 28	+22	—	—	—
La Paz	Z.	133·8	120	e 20 34	[+81]	—	—	—

Additional reading :—
Adelaide e = +15m.2s.
Long waves were also recorded at Hong Kong, Victoria, Ottawa, Uccle, and De Bilt.

Jan. 29d. Readings also at 0h. (near Sumoto), 3h. (near Tyosi), 4h. (Lick and near Berkeley), 14h. (Amboina, Batavia, St. Louis, Florissant, Little Rock, Haiwee, Mount Wilson, Pasadena, Tinemaha, and La Paz (2)), 15h. (Copenhagen, Lund, and Tananarive), 21h. (Wellington and La Paz), 22h. (Adelaide, Perth, Hong Kong, Pasadena, Tinemaha, Andijan, Samarkand, and near Tyosi).

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Jan. 30d. 3h. 4m. 52s. Epicentre 6°·8S. 155°·4E. N.2.

$A = -\cdot 903$, $B = +\cdot 413$, $C = -\cdot 118$; $D = +\cdot 416$, $E = +\cdot 909$; $G = +\cdot 108$, $H = -\cdot 049$, $K = -\cdot 993$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		25·1	119	—	—	10 8?	+25	—	—
Riverview		27·3	188	e 5 34	− 7	i 10 16	− 4	—	15·8
Sydney		27·3	188	—	—	9 44	−36	11·3	14·9
Adelaide		32·1	207	e 6 19	− 5	i 11 24	−13	14·9	19·8
Apia		33·0	105	8 19	(−60)	—	—	15·4	18·6
Arapuni		36·3	152	—	—	12 50	+ 9	16·1	18·1
Wellington		38·6	156	7 20	0	13 12	− 3	18·1	22·1
Manila		40·3	303	7 34	− 1	13 45	+ 4	—	—
Perth		44·6	230	e 8 13	+ 3	i 14 43	− 1	20·5	25·1
Batavia		48·3	270	i 8 44	+ 6	—	—	32·1	—
Hong Kong		49·8	308	8 52	+ 2	16 0	+ 2	—	26·7
Phu-Lien		55·3	301	—	—	(17 8?)	− 5	17·1	—
Medan		57·6	279	e 9 59	+12	i 18 2	+18	—	—
Calcutta		71·8	297	13 59	PP	20 54	+11	29·0	—
Irkutsk		73·3	330	e 12 40	+69	20 56	− 4	33·1	—
Colombo		76·6	279	11 45	− 4	—	—	—	—
Agra	E.	82·0	300	12 20	+ 2	i 22 28	− 9	—	—
Sitka		84·7	30	—	—	e 29 14	?	e 35·9	—
Bombay		85·3	290	12 37	+ 2	22 57	[− 4]	42·2	—
Ukiah		87·6	50	—	—	e 23 44	+11	—	—
Berkeley		88·1	51	e 19 2	?	e 27 32	?	—	—
Andijan		89·2	312	e 13 5	+11	—	—	—	—
Victoria	E.	89·3	41	—	—	23 36	[+ 8]	41·1	45·6
Seattle		89·8	42	—	—	e 23 48	− 6	e 40·8	—
Pasadena		90·9	56	e 13 0	− 2	—	—	e 45·1	—
Mount Wilson	N.	91·0	56	e 13 1	− 1	—	—	—	—
Tinemaha	E.	91·2	53	e 13 13	+10	—	—	—	—
Tucson		96·8	58	—	—	e 30 8?	?	—	—
Ekaterinburg		98·3	327	—	—	i 25 6	− 6	37·1	58·2
Scoresby Sund		116·3	259	—	—	29 8?	PS	67·1	—
Toronto		119·7	42	e 20 58	PP	i 25 30	[−19]	—	—
Ottawa		121·4	39	e 20 50	PP	e 25 53	[− 2]	54·1	—
Uccle		129·8	336	e 22 36	?	—	—	e 58·1	—
Strasbourg		130·1	333	(e 22 8?)	PKS	—	—	e 22·1	—
La Paz		131·0	119	e 19 22	[+13]	26 39	[+17]	64·1	72·6
Paris		132·1	336	e 24 8?	PPP	—	—	66·1	82·1
Sucre		132·3	124	19 16	[+ 5]	—	—	—	—
Granada		144·1	331	i 19 34	[+ 3]	—	—	e 86·8	120·5
Rio de Janeiro	N.	145·2	150	e 19 38	[+ 4]	—	—	—	—
San Fernando		145·9	333	e 19 46	[+10]	—	—	—	103·1

Additional readings :—
Riverview iP = +5m.42s., i = +12m.16s.
Adelaide iPPP = +7m.23s. =PP − 1s., iSSS = +13m.20s. =SS − 6s.
Wellington PP = +8m.50s., SS = +16m.10s.
Perth ePP = +10m.38s., SS = +17m.28s.
Hong Kong SS? = +20m.1s.
Ukiah eSS? = +24m.44s.
Berkeley eE = +34m.32s. and +34m.56s.
Pasadena eEZ = +13m.7s.
Mount Wilson eE = +13m.11s.
Toronto iE = +30m.8s.? =PS +9s., eN = +36m.15s. =SS −13s.
Ottawa eN = +27m.43s. =SKKS +17s., e = +30m.23s. =SKSP +18s., eE = +36m.56s. =SS +6s.
La Paz iPPE = +22m.39s. =PKS +1s.
Sucre PP = +22m.46s. =PKS +3s.
Long waves were also recorded at Honolulu T.H., Harvard, Hyderabad, Baku, De Bilt, Kew, and Cheb.

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Jan. 30d. 7h. 12m. 40s. Epicentre 6°·8S. 155°·4E. (as at 3h.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·3	188	e 5 8	−33	10 16	− 4	—	15·9
Sydney		27·3	188	—	—	9 56	−24	11·7	12·3
Adelaide		32·1	207	e 5 41	−43	i 11 28	− 9	15·1	19·8
Arapuni		36·3	152	—	—	12 20?	−21	—	—
Manila		40·3	303	6 31	−64	13 36	− 5	—	25·8
Perth		44·6	230	—	—	i 14 40	− 4	22·8	—
Hong Kong		49·8	308	9 0	+10	16 0	+ 2	—	26·8
Bombay		85·3	290	12 41	+ 6	—	—	—	—
Pasadena	z.	90·9	56	e 13 0	− 2	—	—	—	—
Mount Wilson		91·0	56	e 12 59	− 3	—	—	—	—
Ottawa		121·4	39	—	—	e 30 29	PS	e 57·3	—
La Paz		131·0	119	e 19 11	[+ 2]	—	—	65·3	72·6
Sucre		132·3	124	e 19 29	[+18]	—	—	—	—

Additional readings :—
Adelaide ePPP = +7m.16s., i = +13m.46s.
La Paz iPPE = +22m.37s. =PKS −1s.
Long waves are also recorded at Apia, Rio de Janeiro, Berkeley, Victoria, Harvard, Irkutsk, Baku, Ekaterinburg, De Bilt, Uccle, Paris, and Strasbourg.

Jan. 30d. Readings also at 0h. (Perth), 1h. (Adelaide), 2h. (Riverview and near Manila), 6h. (Rio de Janeiro), 7h. (near Tyosi), 10h. (Almata, Andijan, Samarkand, and near Wellington), 11h. (near Ksara), 12h. (Manila), 13h. (Hong Kong and near Apia), 14h. (Johannesburg), 15h. (near Malabar), 17h. (near Ksara), 19h. (Bombay, Baku, Andijan, Samarkand, Ekaterinburg, Irkutsk, and Ksara), 21h. (Adelaide, Riverview, Wellington, Manila, Bombay, Baku, Ekaterinburg, and Ksara), 22h. (Ottawa and Ksara), 23h. (Baku, Ekaterinburg, Bombay, and near Wellington).

Jan. 31d. 4h. 35m. 3s. Epicentre 6°·2S. 155°·0E. (as on 29d.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		27·9	187	e 5 42	− 4	e 10 4	−26	16·0	—
Sydney		27·9	187	—	—	9 57	−33	14·2	15·4
Adelaide		32·5	206	—	—	e 11 37	− 6	15·1	17·1
Manila		39·6	302	7 30	+ 1	13 31	+ 1	19·3	22·9
Perth		44·7	230	—	—	(14 42)	− 4	22·4	—
Hong Kong		49·1	308	8 48	+ 4	15 47	− 1	—	29·4
Bombay		84·7	290	12 32	0	22 48	[− 9]	—	—
Andijan		88·5	312	e 13 25	+35	—	—	—	—
Pasadena		90·9	56	e 13 2	0	—	—	—	—
Mount Wilson		91·0	56	e 13 7	+ 5	—	—	—	—
Tinemaha	E.	91·2	52	e 13 6	+ 3	—	—	—	—
La Jolla	E.	91·5	57	e 13 4	0	—	—	—	—
Ekaterinburg		97·6	327	—	—	e 31 37	SS	41·0	60·8
La Paz		131·7	119	e 19 29	[+19]	—	—	67·0	72·4

Additional readings and note :—
Adelaide i = +13m.54s.
Perth S = +18m.2s. =S_cS −8s. ; true S is given as P_cP.
La Paz iPPE = +22m.41s. =PKS +0s.
Long waves were also recorded at Wellington, Berkeley, Victoria, Ottawa, Irkutsk, Baku, Kew, Paris, De Bilt, and Uccle.

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Jan. 31d. 5h. 29m. 48s. Epicentre 32°·9N. 130°·8E. (as on 1930, Dec. 12d.). R.3.

A = −·549, B = +·636, C = +·543; D = +·757, E = +·653;
G = −·355, H = +·411, K = −·840.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka	0·8	335	e 0 11	0	0 40	+19	—	0·8
Nagasaki	0·8	258	0 12	+ 1	0 41	+20	—	—
Matuyama	1·9	60	e 0 22	− 6	0 51	+ 2	—	—
Koti	2·4	74	e 0 33	− 1	0 59	− 3	—	—
Sumoto	3·7	65	e 0 58	+ 5	1 41	+ 6	—	1·8
Kobe	4·1	62	—	—	e 2 5	S*	—	—
Osaka	4·3	64	1 8	+ 7	(2 13)	S*	2·2	—
Scoresby Sund	74·8	352	12 12?	+33	—	—	—	—
Stuttgart	83·3	325	e 12 42	+17	(e 22 12?)	−38	e 22·2	—
Strasbourg	84·1	326	(e 17 12?)	PPP	—	—	e 17·2	—

Jan. 31d. 9h. 18m. 52s. Epicentre 38°·0N. 138°·9E. (as on 1927, Dec. 10d.). X.

A = −·594, B = +·518, C = +·616; D = +·657, E = +·754;
G = −·464, H = +·405, K = −·788.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	2·1	56	0 30	0	1 17	S_g	—	—
	N.	2·1	56	0 26	− 4	1 20	S_g	—	—
Tyosi		2·8	146	e 0 37	− 3	1 9	− 3	—	1·3
Nagoya		3·2	211	e 0 44	− 2	1 32	S*	—	—
Osaka		4·3	220	e 1 6	+ 5	(2 0)	S*	2·0	2·4
Kobe		4·5	224	e 0 48	−16	e 2 1	+ 6	—	3·5
Sumoto		4·9	228	e 1 23	+13	2 26	S*	—	2·7

Jan. 31d. 9h. 22m. 9s. Epicentre 40°·0N. 140°·0W. N.3.

Very rough.

A = −·587, B = −·492, C = +·643; D = −·643, E = +·766;
G = −·492, H = −·413, K = −·766.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ukiah		13·0	89	e 2 39	−23	—	—	—	—
Berkeley		13·9	93	e 3 7	− 7	e 5 32	−17	—	—
Lick	E.	14·6	94	e 3 15	− 8	—	—	—	—
Victoria	E.	14·6	49	—	—	(5 27)	−38	5·4	6·4
Seattle		14·8	53	e 3 40	+14	e 5 32	−38	e 7·2	—
Tinemaha	E.	17·2	93	e 3 48	− 9	—	—	—	—
Haiwee	E.	17·7	95	e 3 59	− 4	—	—	—	—
Pasadena		18·4	102	e 4 11	0	e 7 33	0	—	—
Mount Wilson	E.	18·4	101	e 4 28	+17	—	—	—	—
Riverside		19·0	101	e 4 23	+ 4	—	—	—	—
Bozeman		21·9	66	—	—	(e 8 39)	− 5	e 8·6	—
Tucson		24·7	99	e 5 31	+14	—	—	11·0	—
St. Louis	E.	38·0	76	e 7 39	+24	e 12 28	−38	—	19·5
Ottawa		46·3	61	—	—	e 14 40	−29	e 22·8	—

Additional readings:—
Ukiah e = +2m.51s.
Berkeley ePE = +1m.45s., ePEN = +2m.45s., ePZ = +3m.1s., eEZ = +4m.25s.
Tinemaha eN = +3m.52s., +6m.17s., and +6m.29s.
Haiwee eN = +4m.4s.
Pasadena eZ = +4m.25s. = PP + 5s., iZ = +8m.36s.
Bozeman eS = +7m.33s.
Long waves were recorded at De Bilt and Paris.

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Jan. 31d. 16h. 1m. 12s. Epicentre 6°·2S. 155°·0E. (as at 4h.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		25·7	120	6 48?	+82	—	—	—	—
Amboina		26·8	274	i 5 34	− 2	i 11 28	+76	—	—
Riverview		27·9	187	e 5 11	−35	i 10 27	− 3	—	14·8
Sydney		27·9	187	—	—	9 36	−54	13·1	14·8
Adelaide		32·5	206	e 8 3	+96	i 12 52	+69	14·5	19·1
Wellington		39·3	156	7 28	+ 2	16 2	SS	—	27·8
Manila		39·6	302	7 31	+ 2	13 37	+ 7	19·1	23·0
Perth		44·7	230	14 8	S	(14 8)	−38	22·3	—
Batavia		47·9	269	i 8 22	−13	i 14 59	−32	—	—
Hong Kong		49·1	308	9 4	+20	15 57	+ 9	—	30·8
Medan		56·7	278	e 10 48	+67	i 20 41	?	—	—
Irkutsk		72·6	330	e 11 40	+14	e 20 50	− 2	e 33·8	—
Hyderabad		79·2	289	—	—	22 0	− 7	24·0	26·1
Agra	E.	81·4	300	12 17	+ 2	22 29	− 2	—	—
Bombay		84·7	290	12 53	+21	22 53	−12	—	—
Berkeley		88·0	51	—	—	e 23 48?	+11	—	—
Tashkent		90·9	312	e 14 56	+114	i 24 56	+52	—	—
Pasadena		90·9	56	e 12 58	− 4	—	—	—	—
Mount Wilson		91·0	56	e 12 59	− 3	—	—	—	—
Ekaterinburg		97·6	327	—	—	e 24 14	[0]	43·8	61·6
Baku		105·5	311	—	—	e 25 29	{− 6}	e 54·8	—
Ottawa		121·2	39	—	—	e 27 21	{− 3}	e 59·8	—
Stuttgart		128·5	332	e 22 24	PP	—	—	e 65·8	—
Strasbourg		129·4	333	(e 17 48?)	?	—	—	e 17·8	—
La Paz		131·7	119	e 19 20	[+10]	—	—	69·8	100·3
San Fernando		145·2	333	e 19 40	[+ 6]	—	—	—	100·3

Additional readings :—
Ekaterinburg e = +24m.58s. =SKKS +23s., +31m.49s. =SS +21s., and +37m.24s.
Baku e = +28m.9s. =PS +26s. and +41m.25s.
Ottawa eE = +39m.8s. and +41m.58s.
La Paz iPPE = +22m.36s. =PKS −5s.
Long waves were also recorded at Honolulu T.H., Tucson, Pulkovo, Kew, De Bilt, Uccle, and Paris.

Jan. 31d. 19h. 45m. 27s. Epicentre 45°·0N. 143°·0E. (as on 1926, Jan. 15d.). X.

A = −·565, B = +·426, C = +·707 ; D = +·602, E = +·799 ;
G = −·565, H = +·426, K = −·707.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ootomari		1·7	354	0 26	+ 2	0 52	+ 8	—	1·0
Sikka		4·2	1	e 0 12	?	—	—	—	2·4
Mizusawa	E.	6·0	194	1 10	−15	2 2	P_g	—	—
Nagoya		10·8	207	e 2 36	+ 4	—	—	—	—
Osaka		12·0	212	2 50	+ 2	(4 59)	− 4	5·0	—
Sumoto		12·3	213	e 3 2	+10	—	—	7·6	—
Irkutsk		26·3	300	—	—	e 9 54	− 9	14·6	16·2
Ekaterinburg		50·0	316	e 10 47	PP	e 19 49	SS	24·6	—
Ksara	N.	77·3	306	—	—	e 23 3?	?	—	—

Additional readings :—
Mizusawa SN = +2m.9s.
Osaka i = +3m.23s.
Irkutsk e = +13m.29s.
Long waves were also recorded at Hong Kong, Tashkent, Baku, Ottawa, and some European stations.

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Jan. 31d. Readings also at 0h. (Andijan and Samarkand), 1h. (Bombay, Manila, Hong Kong, Perth, Adelaide, Riverview, Wellington, and Ksara), 2h. (Ksara, De Bilt, Uccle, and Ottawa), 3h. (Ksara (2)), 4h. (Baku, Ekaterinburg, Bombay, and Ksara), 5h. (near Ksara), 6h. (Koti and Nagasaki), 8h. (Samarkand), 9h. (Ksara), 10h. (near Toyooka), 11h. (Ukiah), 12h. (Agra, Bombay, Hyderabad, Baku, Ekaterinburg, Tashkent, Ksara, Helwan, De Bilt, Uccle, Feldberg, Paris, Strasbourg (3), Stuttgart, and San Fernando), 13h. (Ksara (2), Samarkand, and near Tyosi), 14h. (Ekaterinburg and Tashkent), 15h. (Baku, Ekaterinburg, Tashkent, and Ksara), 16h. (near Tyosi), 20h. (Hong Kong and Bombay), 21h. (Batavia, Manila, Agra, Bombay, Hyderabad, Ekaterinburg, Tashkent, near Amboina, and near Medan), 22h. (Baku, Ksara, and Irkutsk), 23h. (Baku, Ekaterinburg, Tashkent, Hong Kong, and near Manila).

Feb. 1d. 7h. 38m. 24s. Epicentre 10°·3N. 42°·7E. (as on 1930 Oct. 24d.). X.

A = +·723, B = +·667, C = +·179 ; D = +·678, E = −·735 ;
G = +·131, H = +·121, K = −·984.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan	22·2	333	4 46	− 7	i 8 46	− 4	11·9	14·4
Ksara	24·3	346	e 5 21	+ 8	9 38	+10	14·3	—
Bombay	30·4	70	6 17	+ 8	11 22	+12	15·7	—
Baku	30·7	10	11 10	S	(11 10)	− 6	17·6	21·4
Tashkent	38·8	32	—	—	e 14 11	+53	e 21·6	23·7
Calcutta	45·3	69	13 28	S	(13 28)	−87	25·7	—
Ekaterinburg	48·6	13	—	—	e 15 36	− 5	23·6	—
Paris	51·0	327	(e 11 36?)	PPP	—	—	e 11·6	—

Additional readings :—
Baku eS = +15m.20s.
Calcutta S = +19m.18s.
Ekaterinburg e = +19m.0s. =SS +3s.
Long waves were also recorded at Edinburgh, Kew, and Irkutsk.

Feb. 1d. Readings also at 4h. (Baku, Ekaterinburg, Ksara, and Wellington), 6h. (Baku, Tashkent, and Ksara (2)), 7h. (De Bilt and La Paz), 8h. (Almeria, Alicante, Granada, Malaga, San Fernando, Toledo, and near Malabar), 9h. (La Paz), 10h. (Ksara), 11h. (La Paz), 14h. (near Manila), 19h. (near Santiago (2)), 20h. (La Paz, Sucre, and San Juan), 21h. (Sumoto, Andijan, and near Manila), 22h. (Perth), 23h. (Andijan and near Tyosi).

Feb. 2d. 6h. 59m. 30s. Epicentre 11°·0S. 176°·0W. (as on 1921 Sept. 20d.). X.

A = −·979, B = −·068, C = −·191 ; D = −·070, E = +·997 ;
G = +·190, H = +·013, K = −·982.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		5·0	125	1 18	+ 7	(2 9)	+ 1	2·2	2·3
Suva		8·9	217	2 30	+24	3 48	+ 2	—	—
Wellington		31·4	194	4 30?	?	8 30?	?	13·5	—
Perth		65·7	240	—	—	i 20 0	+31	—	—
Manila		67·4	291	10 48	− 6	16 35	?	—	—
Pasadena		71·1	49	i 11 17	0	—	—	—	—
Mount Wilson		71·1	49	e 11 17	0	—	—	—	—
Haiwee		72·1	47	e 11 25	+ 2	—	—	—	—
Tinemaha	E.	72·4	46	i 11 27	+ 2	—	—	—	—
Irkutsk		92·5	322	e 17 14	PP	e 23 26	[−21]	—	—
La Paz	Z.	103·6	110	e 17 18	?	—	—	—	—
Andijan		113·5	310	e 19 35	PP	—	—	—	—
Ekaterinburg		117·1	329	20 10	PP	e 25 6	[−35]	46·5	—

Additional reading :—
Ekaterinburg e = +26m.45s. =SKKS −12s.

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Feb. 2d. 10h. 59m. 25s. Epicentre 33°·3N. 139°·8E. N.3.

A = −·638, B = +·539, C = +·549; D = +·645, E = +·764; G = −·419, H = +·354, K = −·836.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi	2·6	20	e 0 38	+ 1	1 4	− 3	—	—
Nagoya	3·0	308	e 0 43	0	1 20	+ 3	—	—
Osaka	3·8	293	0 53	− 1	(1 41)	+ 4	1·7	2·0
Kobe	4·1	291	e 0 37	?	i 1 45	0	—	2·0
Sumoto	4·2	286	e 1 0	0	1 47	− 1	—	2·0
Mizusawa	5·9	10	1 4	−20	2 20	−11	—	—

Feb. 2d. Readings also at 5h. (near Batavia and Malabar), 11h. (Perth and near Apia), 12h. (near Apia), 13h. (Ekaterinburg, Almata, Frunse, and Samarkand), 14h. (Ksara), 16h. (La Paz), 18h. (Andijan, Almata, and Samarkand), 20h. (Tyosi, Berkeley, and near Lick), 21h. (Tyosi).

Feb. 3d. 6h. 16m. 3s. Epicentre **19°·7N. 75°·5W.** N.1.

Probable error of the epicentre ±0°·27.

A = +·236, B = −·911, C = +·337; D = −·968, E = −·250; G = +·084, H = −·326, K = −·941.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		3·2	111	i 0 49	+ 3	i 1 22	0	—	—
San Juan		8·9	97	i 2 7	+ 1	—	—	i 4·6	—
Balboa Heights		11·4	201	2 38	− 2	e 5 3	+15	e 7·1	—
Columbia		15·1	342	3 34	+ 4	6 12	− 5	e 7·1	—
Charlottesville		18·5	353	e 4 13	0	e 7 45	+ 9	11·1	—
Georgetown		19·3	356	i 4 20	− 2	i 7 52	0	11·4	—
Little Rock		21·2	319	e 4 38	− 4	i 8 27	− 3	e 10·2	11·3
Fordham		21·2	3	i 4 40	− 2	i 8 39	+ 9	11·0	—
St. Louis		22·8	329	i 4 57	− 2	i 9 5	+ 4	i 10·6	11·6
Harvard		23·0	8	i 5 0	− 1	i 9 13	+ 8	e 10·4	—
Florissant		23·0	329	e 4 58	− 3	i 9 7	+ 2	11·6	14·1
Buffalo		23·4	354	5 1	− 4	9 14	+ 2	e 10·9	12·3
Ann Arbor		23·6	345	i 5 9	+ 3	i 9 21	+ 5	i 12·1	15·4
Toronto	E.	24·2	353	e 5 10	− 2	i 9 20	− 7	i 11·7	14·0
Chicago		24·3	338	i 5 13	0	i 9 30	+ 2	12·7	—
Ottawa		25·7	357	e 5 26	0	e 9 52	− 1	11·9	—
Madison		26·1	337	i 5 30	0	e 10 1	+ 1	12·2	—
Denver		32·2	316	e 6 28	+ 4	e 11 50	+12	—	17·6
Tucson		34·0	300	i 6 42	+ 2	e 12 1	− 5	e 18·9	—
La Paz		36·9	168	i 7 5	− 1	12 50	0	18·9	21·1
Bozeman		39·1	320	7 24	0	i 13 23	+ 1	18·5	—
La Jolla	N.	39·4	300	e 7 23	− 4	e 13 26	− 1	—	—
Riverside		39·7	301	e 7 31	+ 2	—	—	—	—
Sucre		40·0	165	i 7 29	− 3	13 50	+14	22·7	—
Mount Wilson		40·3	302	e 7 35	0	—	—	—	—
Pasadena		40·3	302	e 7 33	− 2	13 45	+ 4	e 23·4	—
Haiwee	N.	40·6	305	e 7 43	+ 6	e 13 50	+ 5	—	—
Tinemaha		41·0	307	i 7 39	− 1	i 13 57	+ 6	—	—
Santa Barbara		41·7	302	i 7 52	+ 6	—	—	—	—
Lick	N.	43·7	306	e 8 5	+ 3	—	—	e 25·3	—
Branner		44·1	306	e 8 9	+ 3	—	—	—	—
Berkeley	E.	44·3	307	e 8 7	0	i 14 42	+ 2	e 24·6	30·6
Ukiah		45·2	308	8 16	+ 2	i 14 53	− 1	e 21·4	—
Ivigtut		45·7	18	8 25	+ 7	15 0	0	—	—
Seattle		46·9	319	8 49	+21	e 18 31	SS	—	—
Victoria		47·8	320	8 37	+ 2	14 47	−33	26·6	29·1
Rio de Janeiro	E.	53·0	142	i 9 17	+ 3	i 16 47	+ 5	25·4	—
Santiago		53·3	176	9 11	− 5	16 44	− 2	—	38·9
La Plata		57·1	164	9 35	− 9	17 31	− 7	27·2	—
Sitka		57·6	326	—	—	17 41	− 3	27·0	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		59·7	19	10 2	0	18 19	+ 7	—	—
San Fernando		62·1	59	10 32	+13	18 42	− 1	25·4	41·9
Malaga		63·4	58	10 33	+ 5	19 21	+21	35·6	—
Toledo		63·5	54	e 10 29	0	19 6	+ 5	e 29·3	35·4
Bidston		63·9	40	—	—	i 19 7	+ 1	—	—
Edinburgh		63·9	36	10 36	+ 5	i 19 27	+21	i 33·0	45·2
Granada		64·1	57	i 10 16	−17	i 19 1	− 8	27·1	30·5
Stonyhurst		64·2	40	10 37	+ 3	19 27	+17	—	—
Durham		64·8	38	—	—	19 22	+ 5	—	44·4
Oxford		64·9	41	i 10 42	+ 4	i 19 22	+ 3	—	46·9
Almeria		65·1	57	i 10 44	+ 5	e 19 30	+ 9	31·0	38·4
Kew		65·5	41	i 10 42	0	e 19 29	+ 3	26·9	41·9
Alicante		66·3	55	e 10 50	+ 3	e 19 49	PS	e 27·3	41·4
Bagnères		66·5	50	e 11 49	+60	e 20 38	+59	e 23·9	—
Tortosa	N.	66·9	52	i 9 57	−54	18 47	−56	e 25·9	31·9
Paris		67·5	44	i 10 54	− 1	e 19 53	+ 2	23·9	27·9
Barcelona		68·0	51	e 10 59	+ 1	e 20 12	+15	e 31·7	39·1
Bergen		68·4	30	10 57?	− 4	20 4	+ 2	30·9	—
Uccle		68·5	41	i 11 1	0	i 20 3	0	27·9	31·5
De Bilt		68·9	40	11 4	0	20 12	+ 4	—	41·9
Algiers		69·4	57	11 3	− 4	20 13	− 1	e 28·9	31·9
Besançon		70·0	45	e 11 13	+ 2	20 29	+ 8	26·9	—
Neuchatel		70·7	45	e 11 13	− 2	e 20 22	− 8	—	—
Strasbourg		70·9	44	i 11 16	0	i 20 32	0	e 25·9	—
Feldberg		71·2	41	i 11 29	+11	i 20 38	+ 3	—	33·4
Karlsruhe		71·4	43	11 18	− 1	—	—	e 45·9	—
Hamburg		71·6	38	e 11 17	− 3	i 20 41	+ 1	e 33·0	43·9
Zurich		71·7	45	e 11 13	− 8	e 20 43	+ 2	—	—
Stuttgart		71·8	44	i 11 21	− 1	i 20 39	− 4	—	33·6
Göttingen		71·9	40	i 11 22	0	i 20 48	+ 4	e 30·4	47·1
Chur		72·4	45	e 11 15	−10	e 20 53	+ 3	—	—
Copenhagen		72·7	35	11 27	0	20 48	− 5	—	—
Jena		73·0	40	e 11 27	− 2	e 20 57	0	e 29·0	34·4
Lund		73·1	35	11 28	− 1	20 51	− 7	—	—
Potsdam		73·6	39	i 11 31	− 1	i 21 9	+ 5	e 30·9	35·3
Innsbruck		73·6	44	e 11 39	+ 7	e 21 10	+ 6	e 28·6	—
Cheb		73·7	41	e 11 26	− 7	e 21 8	+ 3	e 34·9	39·4
Florence		74·2	49	11 31	− 5	i 21 6	− 5	27·4	33·9
Upsala		74·6	30	e 11 29	− 9	i 21 11	− 4	e 33·9	51·2
Venice		74·6	46	e 11 43	+ 5	e 20 38	−37	—	—
Prague		75·0	41	e 11 41?	+ 1	e 21 18	− 2	—	38·9
Triest		75·5	45	i 11 43	0	21 28	+ 2	e 31·9	—
Honolulu T.H.		76·1	290	—	—	i 21 31	− 2	e 41·1	—
Graz		76·3	43	i 11 44	− 4	i 21 37	+ 2	30·9	45·3
Vienna		76·6	42	e 11 40	− 9	e 21 10	−28	—	36·9
Zagreb		76·8	45	e 11 45	− 5	e 21 43	+ 2	—	34·7
Naples	E.	77·0	50	e 12 0	+ 8	e 21 44	+ 1	31·9	37·9
Helsingfors	E.	78·0	30	e 11 58	+ 1	e 21 53	− 1	e 34·4	—
Königsberg		78·6	36	e 13 15	+75	i 21 45	−15	e 43·9	57·9
Pulkovo		80·6	29	i 12 11	0	i 22 19	− 3	36·9	44·4
Yalta		89·4	42	12 55	0	—	—	—	—
Theodosia		90·0	41	13 2	+ 5	23 30	[− 3]	50·9	—
Helwan		93·9	56	13 17	+ 2	23 55	[0]	—	59·0
Ekaterinburg		95·2	23	i 13 22	+ 1	23 56	[− 6]	40·0	62·4
Baku		101·4	40	e 13 55	+ 5	i 24 33	[0]	43·9	49·6
Andijan		112·6	26	e 18 57	[+31]	—	—	61·7	—
Wellington		117·5	233	—	—	29 37	PS	55·9	—
Chiufeng	N.	119·2	350	e 25 55	SKS	(e 25 55)	[+ 7]	e 83·4	—
Tananarive		126·5	98	—	—	30 57?	PS	63·9	73·9
Agra	E.	126·6	30	21 2	PP	e 34 32	?	e 74·7	81·5
Bombay		130·4	40	9 40	?	22 37	PKS	56·2	90·8
Calcutta	N.	134·9	21	12 42	?	25 57	[−36]	62·2	—
Hyderabad		134·9	37	21 43	PP	34 14	?	65·2	94·3
Riverview		136·4	241	e 22 45	PKS	—	—	72·9	—
Hong Kong		136·9	348	22 18	PP	—	—	64·5	85·2

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	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Melbourne	140·6	234	i 22 36	PP	i 29 18	{− 9}	67·1	—
Manila	142·1	335	19 28	[+ 4]	—	—	74·9	—
Colombo	144·0	45	18 5	?	—	—	—	82·6
Adelaide	146·3	236	e 19 57	[+21]	—	—	65·9	74·4
Medan	156·0	14	e 20 58	{+32}	—	—	—	—
Perth	164·1	218	e 20 22	[+24]	—	—	—	—
Batavia	166·3	350	i 21 22	{+ 9}	—	—	—	—

Additional readings :—
Port au Prince +1m.40s. =S*.
Balboa Heights e = +4m.38s.
Columbia ? = +3m.20s., S = +6m.28s. =SS +3s.
Charlottesville iP = +4m.16s. =PP −5s., iS = +7m.52s. =SS +2s.
Little Rock iPE = +4m.41s., iPPE = +5m.0s., iSSE = +9m.14s., iSSSE = +9m.24s.
Fordham iPPZ = +5m.7s., iSS = +9m.35s.
St. Louis iE = +5m.21s. =PP +1s. and +9m.2s., iN = +9m.9s., iSSE = +9m.54s., iN = +10m.6s.
Florrisant iP=+5m.3s., iPPZ=+5m.23s., iPPPZ=+5m.33s., ePPPPZ=+5m.36s. i?Z = +8m.16s., iP$_c$PE = +8m.43s., iSSN = +10m.5s., iSSSN = +10m.18s., and +10m.27s., i?EN = +11m.7s., iP$_c$SS$_c$P = +12m.34s., eS$_c$S = +15m.57s., i = +24m.29s.
Buffalo i = +5m.44s. and +5m.57s., iSS = +10m.17s.
Ann Arbor iPPN = +6m.3s., iSSE = +10m.21s., iSSN = +10m.39s.
Toronto iSN = +9m.24s. ; T$_o$ =6h.15m.51s.
Chicago i = +9m.35s.
Ottawa ePPZ = +6m.4s., eE = +8m.21s., eSSEZ = +11m.1s. ; T$_o$ =6h.15m.55s.
Denver iN = +6m.53s., iE = +6m.59s.
Tucson iS = +12m.7s.
La Paz iPPN = +8m.27s., iPPP = +8m.41s., iSN = +12m.54s., PSN = +13m.16s., SSE = +15m.22s., SSN = +15m.36s., SSS = +15m.54s.
Bozeman e = +8m.32s. =PP −18s., i = +13m.37s.
Pasadena ePP = +9m.16s., eZ = +12m.29s., eE = +17m.0s.
Berkeley eP = +8m.12s., iZ = +9m.58s., eZ = +14m.30s., eE = +14m.36s., iSS = +18m.15s.
Ukiah e = +10m.3s. and +18m.27s. =S$_c$S +14s.
Ivigtut +10m.10s. =P$_c$P +9s. and +18m.15s. =S$_c$S −2s.
Seattle eS = +19m.3s.
Victoria SN = +15m.34s. ; T$_o$N =6h.16m.10s. ; T$_o$E =6h.16m.57s.
Scoresby Sund +18m.38s. and +22m.3s. =SS +0s.
Toledo P$_c$P = +11m.45s., PPP = +14m.27s., PS = +19m.24s.
Bidston i = +26m.37s., +29m.32s.
Edinburgh e = +19m.14s., i = +19m.56s.
Granada i = +11m.23s., +12m.3s., and +22m.6s.
Kew iEZ = +10m.46s.
Bergen PP = +13m.19s.
Uccle SS = +24m.13s.
Feldberg e = +14m.15s. and +16m.1s.
Hamburg eSSSE = +29m.3s.
Stuttgart i = +11m.26s., ePP = +13m.57s., eSS = +24m.57s., eSSS = +28m.15s.
Göttingen eEZ = +14m.9s.
Copenhagen +14m.15s. =PP +13s. and +21m.0s. =PS −14s.
Jena ePN = +11m.33s.
Lund +14m.15s. =PP +10s.
Potsdam iEN = +11m.39s., iN = +12m.35s., eE = +20m.51s., iN = +21m.21s., eN = +23m.57s.?, iN = +26m.22s.
Cheb eSS = +26m.10s.
Upsala SSN = +25m.58s.
Triest PP = +14m.50s., PS = +22m.2s.
Honolulu T.H. e = +22m.39s.
Vienna P$_c$P = +12m.0s., i = +13m.32s., PPP = +16m.33s., iE = +18m.13s. PS = +21m.42s., iE = +24m.20s., SSS = +29m.2s., iE = +35m.13s.
Zagreb e = +11m.56s., i = +12m.42s., eSS = +24m.45s.
Helsingfors ePPE = +15m.8s., ePPPE = +16m.55s., eSSE = +27m.6s., eSSSEN = +29m.27s. ; T$_o$ =6h.16m.9s.
Königsberg eSSN = +26m.35s., eE = +26m.57s. =SS +6s. and +30m.21s.
Ekaterinburg PP = +17m.19s., PPP = +19m.33s., iPS = +26m.3s., iSS = +31m.15s.
Baku ePP = +17m.57s.
Tananarive SS = +42m.57s.?
Agra eN = +21m.13s.
Hong Kong PKS = +23m.0s., ? = +28m.31s., +34m.6s., and +36m.36s.
Melbourne i = +24m.13s. and +42m.8s.
Manila iEN = +22m.25s. =PP −9s., i = +23m.27s. =PKS +13s.
Adelaide e = +7m.52s. and +43m.45s.
Long waves were also recorded at Phu-Lien, Ootomari, Taihoku, and Sydney.

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Feb. 3d. 7h. 34m. 34s. Epicentre 28°·5N. 140°·5E. (as on 1931 June 12). R.1.

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

A focal depth of 0·060 has been assumed here : On 1928 Aug. 16d. and 1931 June 12d. a depth of focus 0·070 was used with this epicentre.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima		+1·7	2·0	134	1 1	+ 8	1 50	+15	—	—
Hatidyozima		+0·7	4·6	353	1 17	+ 2	2 16	+ 1	—	—
Siomisaki		+0·2	6·4	322	1 33	− 1	2 44	− 4	—	—
Mera		+0·2	6·4	355	1 37	+ 3	2 50	+ 2	—	—
Hamamatu		+0·1	6·6	340	1 37	+ 2	2 41	−10	—	—
Numadu		+0·1	6·7	349	1 35	− 2	2 54	+ 1	—	—
Misima		+0·1	6·7	349	1 40	+ 3	3 0	+ 7	—	—
Yokohama		0·0	7·0	355	1 44	+ 5	3 3	+ 4	—	—
Muroto		0·0	7·2	313	1 40	− 2	2 59	− 5	—	—
Kameyama		0·0	7·2	332	1 43	+ 1	3 3	− 1	—	—
Nagoya		−0·1	7·3	336	e 1 47	+ 5	2 37	−27	e 3·1	—
Wakayama		−0·1	7·4	323	1 33	−11	3 3	− 3	—	—
Osaka		−0·1	7·5	327	1 12	−33	(2 51)	−18	2·8	3·5
Sumoto		−0·1	7·5	322	1 45	0	3 8	− 1	—	3·2
Gihu		−0·1	7·6	336	1 46	0	3 10	− 1	—	—
Hikone		−0·1	7·6	333	1 46	0	3 7	− 4	—	—
Kobe		−0·1	7·7	325	i 1 44	− 4	3 11	− 3	—	3·2
Kyoto		−0·1	7·7	330	1 49	+ 1	3 13	− 1	—	—
Kakioka		−0·1	7·7	358	1 49	+ 1	3 13	− 1	—	—
Tukubasan		−0·1	7·7	357	1 50	+ 2	3 14	0	—	—
Koti		−0·2	7·8	312	i 1 48	0	e 3 10	− 4	—	—
Mito		−0·2	7·9	0	1 53	+ 4	3 15	− 1	—	—
Maebasi		−0·2	8·0	352	1 41	−10	3 14	− 5	—	—
Oiwake		−0·2	8·0	349	1 52	+ 1	3 13	− 6	—	—
Nagano		−0·3	8·4	347	1 53	− 2	3 24	− 2	—	—
Toyooka		−0·4	8·5	328	i 1 56	+ 1	3 28	+ 2	—	3·6
Miyazaki		−0·4	8·5	296	1 56	+ 1	3 28	+ 2	—	—
Hukusima		−0·5	9·2	0	2 6	+ 3	3 46	+ 5	—	—
Wazima		−0·6	9·4	342	1 59	− 6	3 36	− 8	—	—
Kumamoto		−0·6	9·6	300	2 7	0	3 51	+ 2	—	—
Hamada		−0·6	9·6	314	2 7	0	3 45	− 4	—	—
Nake		−0·6	9·6	272	2 8	+ 1	3 50	+ 1	—	—
Sendai		−0·7	9·8	2	2 14	+ 5	3 56	+ 5	—	—
Hukuoka		−0·7	10·0	303	2 11	0	(3 55)	− 1	3·9	4·1
Nagasaki		−0·7	10·1	298	2 12	− 1	3 58	− 1	—	4·1
Mitusawa		−0·8	10·6	3	2 23	+ 5	4 18	+10	—	—
Tonie		−0·9	10·9	298	2 23	+ 2	4 18	+ 5	—	—
Morioka		−0·9	11·2	3	2 30	+ 5	4 31	+10	—	—
Hakodate		−1·3	13·3	1	3 7	+19	—	—	—	—
Sapporo		−1·5	14·6	2	3 6	+ 3	5 37	+ 8	—	—
Zinsen		−1·6	14·7	311	2 47	−16	5 29	0	—	—
Isigakisima		−1·6	15·2	258	3 8	− 2	5 42	+ 1	—	—
Ootomari		−2·5	18·2	5	3 10	−28	(6 14)	−17	6·2	—
Manila		−2·8	22·8	236	4 23	− 7	7 4	−62	—	—
Medan		−5·3	46·9	245	e 7 51	+ 6	i 14 5	+ 5	20·0	—
Batavia		−5·3	47·5	230	i 7 53	+ 3	i 14 4	− 5	—	—
Ekaterinburg		−6·3	61·0	323	i 9 30	+ 4	—	—	—	—
Pulkovo		−7·0	74·9	331	i 10 56	− 2	19 55	− 1	—	—
Helsingfors	E.	−7·1	77·0	334	i 11 7	− 3	i 20 16	− 4	—	—
Theodosia		−7·2	79·9	318	e 11 25	− 2	20 49	− 4	—	—

Continued on next page.

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		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund		−7·2	80·2	355	—	—	20 58	+ 1	—	—
Tinemaha		−7·3	81·4	53	i 11 38	+ 3	e 21 19	+ 9	—	—
Santa Barbara		−7·3	81·6	55	—	—	e 21 34	PS	—	—
Haiwee		−7·3	82·0	54	e 11 41	+ 2	e 21 22	+ 5	—	—
Pasadena		−7·3	82·9	55	i 11 45	+ 1	i 21 27	0	—	—
Mount Wilson		−7·3	82·9	55	e 11 46	+ 2	e 21 27	0	—	—
Riverside		−7·4	83·4	55	11 47	+ 1	—	—	—	—
La Jolla	N.	−7·4	84·1	56	e 11 48	− 2	e 21 34	− 5	—	—
Lund		−7·4	84·6	335	—	—	21 35	−10	—	—
Copenhagen		−7·4	84·9	335	—	—	21 38	−10	—	—
Strasbourg		−7·6	92·1	332	e 12 26?	− 5	—	—	—	—
La Paz	Z.	—	151·1	72	19 15	[−28]	—	—	—	—

Additional readings :—
Medan i = +15m.15s.
Helsingfors eSN = +20m.19s. ; T_0 = 7h.34m.33s.
Tinemaha eEN = +21m.11s.
Haiwee eE = +12m.19s. and +13m.18s.
Pasadena e = +13m.18s.
Riverside eEN = +13m.35s.
La Jolla eN = +11m.55s.
Long waves were also recorded at De Bilt.

Feb. 3d. 9h. 16m. 51s. (I) } Epicentre 19°·7N. 75°·5W. X.
12h. 36m. 40s. (II) } (as at 6h.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I	Balboa Heights	11·4	201	—	—	4 0	P_g	4·4	—
II	Little Rock	21·2	319	e 4 38	− 4	e 8 50	SS	—	—
II	Fordham	21·2	3	e 4 47	+ 5	e 8 50	SS	—	—
II	St. Louis	22·8	329	i 4 57	− 2	e 9 7	+ 6	—	11·8
I	Florissant	23·0	329	—	—	e 7 49	?	—	—
II		23·0	329	i 4 59	− 2	i 9 7	+ 2	12·5	
II	Toronto	24·2	353	e 3 46	−86	e 9 36	+ 9	—	—
II	Ottawa	25·7	357	e 3 50	−96	e 10 4	+11	e 13·3	—
I	La Paz	36·9	168	e 7 5	− 1	e 12 50	0	17·8	20·4
II		36·9	168	e 7 5	− 1	—	—	—	24·4
I	Riverside	39·7	301	e 8 10	+41	—	—	—	—
I	Sucre	40·0	165	7 34	+ 2	—	—	—	—
I	Mount Wilson	E. 40·3	302	e 8 5	+30	—	—	—	—
I	Pasadena	40·3	302	e 8 5	+30	—	—	—	—
II		Z. 40·3	302	e 7 45	+10	—	—	—	—
I	Haiwee	E. 40·6	305	e 8 14	+37	—	—	—	—
I	Tinemaha	41·0	307	e 8 19	+39	—	—	—	—
II		41·0	307	e 7 41	+ 1	—	—	—	—

Additional readings :—
Fordham II iPN = +4m.50s.
Florissant II ePPN = +5m.26s., ePPP = +5m.33s.
Ottawa II eE = +10m.40s.
Pasadena I eZ = +8m.14s. and +8m.21s.
Long waves were also recorded at Ann Arbor II, Port au Prince I and II, Madison I and II, Scoresby Sund I and II, Pulkovo I, Ekaterinburg I, Tashkent I, Adelaide II, and European stations.

Feb. 3d. Readings also at 2h. (near Toyooka), 4h. (Königsberg, Ekaterinburg, Mizusawa, Nagoya, Osaka, Sumoto, and Tyosi), 5h. (Andijan, Frunse, and Baku), 6h. (La Paz (2) and Andijan), 9h. (Florissant and La Paz), 11h. (Wellington and Riverview), 12h. (Adelaide, Melbourne, Sydney, Perth, Bombay, Baku, Ekaterinburg, Tashkent, Alicante, and La Paz), 13h. (Riverview and Pulkovo), 14h. (Adelaide, Melbourne, Riverview, Perth, Andijan, Tashkent, and Manila), 15h. (Ekaterinburg and Strasbourg), 17h. (Baku and Tashkent), 18h. (Mizusawa and near Tyosi), 19h. (Baku, Ekaterinburg, Ksara, Tashkent, Helwan, and Port au Prince), 20h. (Irkutsk and La Paz), 21h. (La Plata), 22h. (near Kobe, Osaka, and Sumoto), 23h. (near Andijan and Samarkand).

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Feb. 4d. 21h. 18m. 16s. Epicentre 26°·4N. 62°·3E. (as on 1929 Sept. 3d.). R.2.

A = +·416, B = +·793, C = +·445; D = +·885, E = −·465; G = +·207, H = +·394, K = −·896.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		12·3	125	2 51	− 1	5 54	+44	7·7	12·8
Samarkand		13·8	15	e 3 13	0	—	—	—	—
Tashkent		15·9	20	3 37	− 3	e 6 30	− 6	e 7·7	10·6
Andijan		16·6	28	e 3 52	+ 3	—	—	—	—
Baku		17·3	327	e 4 16	+18	i 7 37	+28	9·7	13·6
Hyderabad		17·4	117	3 58	− 1	7 15	+ 4	10·3	12·3
Frunse		19·3	29	e 4 41?	+19	—	—	—	—
Almata		20·6	31	e 4 33	− 3	—	—	—	—
Ksara	E.	24·0	295	e 5 39	+29	—	—	—	—
Calcutta		24·0	94	7 16	+126	11 16	+113	13·7	15·2
Ekaterinburg		30·4	358	i 6 9	0	i 11 5	− 5	14·7	19·5
Pulkovo		39·9	336	7 32	+ 1	13 31	− 4	19·7	25·3
Irkutsk		40·6	40	7 36	− 1	e 13 51	+ 6	e 23·7	—
Vienna	Z.	41·7	317	i 7 47	+ 1	—	—	—	—
Helsingfors	E.	42·2	334	i 7 48	− 2	i 14 0	− 9	e 22·7	—
Florence		44·4	308	(7 44?)	−24	—	—	7·7	22·7
Innsbruck		44·8	313	e 8 14	+ 3	—	—	—	—
Jena		45·3	318	i 8 19	+ 4	—	—	—	—
Copenhagen		46·1	324	i 8 23	+ 2	15 12	+ 6	—	—
Stuttgart		46·5	315	i 8 24	− 1	e 18 44?	SS	e 29·7	—
Zurich		46·7	311	e 8 26	0	e 15 13	− 1	—	—
Strasbourg		47·4	315	e 7 44?	−48	—	—	—	—
Neuchatel		47·8	311	e 8 35	0	—	—	—	—
De Bilt		49·5	319	—	—	e 16 14	+20	e 26·7	—
Uccle		49·8	317	e 8 52	+ 2	e 15 59	+ 1	—	—

Additional readings :—
Helsingfors iE = +8m.1s.; T_0 = 21h.18m.5s.
Jena iEZ = +8m.33s.
Copenhagen +8m.37s.
De Bilt eE = +19m.44s. ?
Uccle e = +19m.44s. ?
Long waves were recorded at Paris.

Feb. 4d. Readings also at 0h. (Tyosi), 1h. (Wellington), 4h. (Almata and Andijan), 5h. (Kobe, near Amboina, near Tananarive, Tokyo, near Nagoya, Mizusawa, Osaka, and Tyosi), 6h. (Bombay, La Paz, and Sucre), 7h. (Adelaide, Melbourne, Riverview (2), Perth, Wellington, Manila, Hong Kong, Irkutsk, La Paz, Andijan, Ekaterinburg, Tashkent, near Kobe, and Sumoto), 8h. (Baku), 9h. (Sucre, near La Paz, and near Port au Prince), 13h. (San Fernando), 17h. (Riverview), 22h. (Kucino).

Feb. 5d. 5h. 12m. 52s. Epicentre 35°·6N. 4°·5W. N.2.

(as given by the Spanish stations).

A = +·811, B = −·064, C = +·582; D = −·078, E = −·997; G = +·580, H = −·046, K = −·813.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Malaga	1·1	3	0 16	0	0 31	+ 3	—	—
San Fernando	1·6	302	0 19	− 4	0 37	− 4	—	—
Granada	1·8	24	e 0 25	− 1	i 0 52	S*	—	1·4
Almeria	2·2	53	i 0 31	0	1 6	S*	—	2·6
Alicante	4·2	48	1 8	+ 8	2 18	S_E	—	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Toledo		4·3	5	i 1 1	0	i 2 17	S*	—	2·3
Coimbra		5·5	328	1 10	− 8	—	—	—	—
Algiers		6·2	78	i 1 34	+ 6	i 3 0	S*	—	—
Serra do Pilar		6·4	331	1 22	− 9	—	—	—	—
Tortosa		6·6	36	1 34	0	3 25	S*	3·6	—
Barcelona		7·8	39	e 2 19	P*	—	—	e 3·6	—
Uccle		16·5	20	e 3 47	− 1	—	—	e 9·2	—
Innsbruck		16·6	40	4 8?	+19	—	—	—	—
Vienna	z.	20·0	44	i 4 26	− 4	—	—	—	—

Additional readings :—
Malaga PP = +26s., SS = +49s.
Granada PP = +32s., P_gS = +46s., S_gS = +56s., SS = +1m.2s.
Almeria P_g = +36s., PP = +42s., P_gS = +58s., S_g = +1m.9s., SS = +1m.19s.
Alicante iPS = +2m.2s.
Toledo P_g = +1m.15s., i = +1m.23s. and +1m.34s., iPS = +1m.49s.
Algiers i = +1m.41s. and +2m.46s., SS? = +3m.35s., i = +4m.39s.
Long waves were also recorded at other European stations.

Feb. 5d. 13h. 43m. 34s. Epicentre 25°·4N. 96°·8E. (as on 1931 May 20d.). 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	2 10	+14	4 23	+54	5·2	8·2
Hong Kong	16·2	97	6 57	S	(6 57)	+14	8·8	9·1
Agra	16·9	280	i 3 45	− 8	6 41	−18	e 7·9	—
Hyderabad	18·8	249	4 11	− 5	7 44	+ 2	9·9	12·9
Chiufeng	21·8	43	e 5 0	+11	12 1	L	(12·0)	—
Medan	21·9	175	4 49	− 1	11 42	L	(11·7)	—
Bombay	23·1	258	5 1	− 1	9 21	+14	12·7	12·8
Almata	24·1	323	e 6 11	+60	—	—	—	—
Manila	25·1	111	5 26	+ 5	10 3	+20	12·9	—
Frunse	25·3	320	e 6 19	+56	—	—	—	—
Andijan	25·4	313	5 45	+21	10 13	+25	—	—
Irkutsk	27·4	10	e 5 38	− 4	(10 26?)	+ 4	10·4	15·0
Tashkent	27·8	312	e 5 38	− 7	e 9 56	−32	e 14·0	16·3
Samarkand	28·7	307	e 5 58	+ 5	—	—	—	—
Batavia	33·1	163	—	—	i 15 19	?	i 17·2	—
Ekaterinburg	40·7	330	7 37	− 1	e 13 44	− 3	20·4	25·1
Baku	41·6	304	e 9 21	PP	e 14 11	+11	22·2	24·4
Kucino	51·9	322	—	—	e 21 8	?	26·9	29·5
Pulkovo	56·5	327	—	—	e 17 34	+ 4	30·4	33·9

Additional readings :—
Hong Kong S = +8m.18s.
Agra ePN = +3m.54s.
Chiufeng iN = +16m.11s. = S_cS +12s.
Medan i = +4m.54s. and +12m.13s.
Ekaterinburg SS = +21m.8s.
Baku e = +17m.17s. = SSS −7s.
Long waves were also recorded at Phu-Lien, Algiers, and European stations.

Feb. 5d. Readings also at 3h. (Little Rock, Port au Prince, and Tucson), 4h. (Berkeley, near Branner, and Lick), 5h. (Tyosi), 6h. (Alicante, Baku, Irkutsk, Ekaterinburg, Pulkovo, near Tashkent, Almata, Andijan, Samarkand, Berkeley, near Branner, and Lick), 7h. (Mizusawa), 8h. (La Paz, Andijan (2), San Juan, Florissant, St. Louis, and near Port au Prince (2)), 10h. (Andijan), 15h. (Almata and Andijan), 17h. (Baku, Ekaterinburg, Tashkent, and San Juan), 19h. (Ekaterinburg, Victoria, Seattle, and near Sitka), 20h. (Baku, Tashkent, and near Santiago), 21h. (near Balboa Heights), 23h. (Baku and Ekaterinburg).

Feb. 6d. Readings at 2h. (La Paz), 3h. (Wellington), 5h. (Agra, Bombay, Baku, Ekaterinburg, and Tashkent), 6h. (Ekaterinburg, Irkutsk, and La Paz), 7h. (Baku and Tashkent), 8h. (La Paz), 17h. (Manila, Melbourne, and Riverview), 18h. (Baku and Ekaterinburg), 23h. (Tyosi (2)).

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Feb. 7d. Readings at 2h. (near Soengei Langka), 9h. (Almata), 11h. (Hastings and Wellington), 18h. (near Calcutta), 21h. (Adelaide, Tucson, near Wellington, and near Calcutta), 22h. (Mizusawa).

Feb. 8d. 15h. 22m. 30s. Epicentre 37°·9N. 141°·8E. (as on 1930 Sept. 17d.). R.3.

A = −·620, B = +·488, C = +·614; D = +·618, E = +·786;
G = −·483, H = +·380, K = −·789.

Tokyo gives epicentre 38°·0N. 141°·5E.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Isinomaki	0·7	324	0 15	P*	0 24	S*	—	—
Sendai	0·8	298	0 12	+ 1	0 21	0	—	—
Hukusima	1·1	262	0 16	0	0 30	+ 2	—	—
Yamagata	1·2	287	0 17	0	0 31	0	—	—
Mizusawa	1·3	337	0 19	+ 1	0 32	− 1	—	—
Miyako	1·7	5	0 23	− 1	0 43	− 1	—	—
Mito	1·8	215	0 31	+ 5	0 54	S*	—	—
Morioka	1·9	344	0 23	− 5	0 43	− 6	—	—
Utunomiya	2·0	229	0 33	+ 4	0 58	S*	—	—
Kakioka	2·1	218	0 32	+ 2	0 53	− 1	—	—
Niigata	2·2	271	0 39	P*	1 9	S*	—	—
Akita	2·3	323	0 31	− 2	0 52	− 7	—	—
Tyosi	2·3	199	0 38	P*	1 4	+ 5	—	—
Kumagaya	2·6	228	0 40	+ 3	1 4	− 3	—	—
Maebasi	2·6	235	0 34	− 3	0 58	− 9	—	—
Aomori	3·0	345	0 42	− 1	1 3	P_g	—	—
Oiwake	3·0	239	0 45	+ 2	1 36	S*	—	—
Yokohama	3·0	215	0 47	+ 4	1 24	+ 7	—	—
Nagano	3·1	247	0 47	+ 3	1 36	S*	—	—
Numadu	3·6	221	0 56	+ 5	1 37	+ 5	—	—
Wazima	3·9	262	0 54	− 2	1 38	− 2	—	—
Nagoya	4·8	236	e 1 11	+ 3	2 19	S*	—	—
Osaka	6·0	240	1 26	+ 1	—	—	3·0	3·5
Nemuro	6·2	27	0 45	−43	1 4	?	—	—

No additional readings.

Feb. 8d. Readings also at 8h. (near Wellington), 9h. (near Batavia), 15h. (near Tyosi), 17h. (Little Rock), 18h. (Neuchatel), 19h. (Manila and Medan), 20h. (Ekaterinburg, Tashkent, Strasbourg, near Triest, and Zagreb), 21h. (Manila and Tyosi), 23h. (La Paz).

Feb. 9d. 2h. 19m. 44s. Epicentre 36°·5N. 70°·5E. (as on 1930 Sept. 11d.). X.

A = +·268, B = +·758, C = +·595; D = +·943, E = −·334;
G = +·199, H = +·561, K = −·804.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	4·2	320	i 1 20	+20	(i 2 10)	+22	i 2·2	2·7
Tashkent	4·9	350	(i 1 32)	P*	(i 2 28)	S*	2·8	—
Almata	8·4	34	i 2 5	+ 6	(e 4 0)	+26	e 4·0	4·1
Baku	16·6	290	—	—	e 6 36	−16	—	—
Bombay	17·7	173	4 3	0	—	—	—	—
Hyderabad	20·3	157	4 32	− 1	8 3	− 9	10·5	12·5
Ekaterinburg	21·4	345	i 4 43	− 1	i 8 30	− 4	—	—
Irkutsk	28·4	46	e 6 52	+61	e 11 16?	+38	—	—
Kucino	29·2	322	—	—	e 11 34	+43	—	—

Additional readings and notes:—
Tashkent readings have been *diminished* by 2m.
Baku e = +7m.14s. and +7m.50s.

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Feb. 9d. Readings also at 1h. (Tyosi), 2h. (Sucre and La Paz), 3h. (Tyosi), 4h. (Hastings), 5h. (near Wellington), 13h. (near Berkeley and Lick), 16h. (Wellington), 17h. (Manila and Perth), 20h. (Manila).

Feb. 10d. Readings at 0h. (near Tyosi), 3h. (near Sumoto), 4h. (Hastings), 9h. (near Santiago and near Sumoto), 11h. (Manila), 14h. (Kobe and near Sumoto), 15h. (near Kobe and Sumoto), 16h. and 17h. (Sumoto), 18h. (La Paz, Sucre, near Granada, and near Tyosi).

Feb. 11d. Readings at 2h. (La Paz, Almata, Frunse, and Samarkand), 3h. (Kobe), 4h. (La Paz and Mizusawa), 11h. (Agra, Bombay, Baku, Tashkent, Ksara (2), Helwan, and Paris), 12h. (Bombay, Ekaterinburg, Pulkovo, De Bilt, Strasbourg, San Fernando, Algiers, Alicante, Granada, Malaga, and La Paz), 13h. (Tashkent, Baku, Kucino, and Suva), 14h. (Algiers and Strasbourg), 15h. (Ekaterinburg, Irkutsk, and Tashkent), 16h. (Copenhagen and Lund), 18h. (near Nagoya), 23h. (Lick, Hastings, and Wellington).

Feb. 12d. 0h. 58m. 17s. Epicentre 11°·0N. 57°·0E. (as on 1927 Nov. 5d.). R.2.

$A = +\cdot535$, $B = +\cdot823$, $C = +\cdot191$; $D = +\cdot839$, $E = -\cdot545$; $G = +\cdot104$, $H = +\cdot160$, $K = -\cdot982$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay		17·2	61	3 58	+ 1	7 20	SS	9·7	10·4
Hyderabad		21·8	70	4 46	− 3	7 49	−53	9·3	10·8
Colombo		23·0	98	4 57	− 4	9 16	+11	10·8	12·8
Agra	E.	25·6	48	i 5 28	+ 3	9 57	+ 6	—	—
	N.	25·6	48	e 5 33	+ 8	10 3	+12	e 12·8	—
Dehra Dun		27·5	42	—	—	8 3?	?	13·9	15·7
Ksara	E.	29·9	323	6 45	+41	11 49	+46	16·3	—
Baku		30·0	349	e 6 21	+16	i 11 20	+16	16·0	25·9
Samarkand		30·0	16	e 7 45	+100	—	—	—	—
Helwan		30·4	313	e 6 15	+ 6	e 11 11	+ 1	16·0	17·1
Tananarive		31·3	197	—	—	e 11 15	− 9	13·0	14·4
Calcutta		32·1	64	6 36	+12	11 14	−23	14·2	16·2
Tashkent		32·2	17	e 6 26	+ 2	11 39	+ 1	14·7	20·2
Frunse		35·4	22	e 7 10	+17	—	—	—	—
Almata		36·6	25	e 7 11	+ 8	—	—	—	—
Theodosia		38·7	335	e 7 1	−20	e 13 19	+ 2	25·7	—
Yalta		38·8	334	e 8 57	PP	—	—	—	—
Sebastopol		39·2	334	e 9 26	?	—	—	—	—
Medan		42·0	97	i 8 40	+51	—	—	—	—
Ekaterinburg		45·9	3	8 20	0	15 8	+ 5	19·7	31·0
Kucino		47·2	347	e 8 36	+ 6	15 24	+ 3	30·4	30·6
Vienna		50·6	327	e 8 49	− 7	18 3	?	—	36·7
Florence		51·2	318	e 9 18	+18	e 14 43	?	—	48·7
Batavia		52·5	108	i 6 44	?	—	—	—	—
Pulkovo		52·7	345	e 9 10	− 2	e 16 29	− 9	26·7	33·4
Cheb		53·5	325	e 12 28	PPPP	e 16 49	0	e 22·1	39·5
Potsdam		54·3	329	e 10 7	+44	i 16 52	− 7	e 33·7	—
Helsingfors		54·5	341	e 9 50	+25	e 17 5	+ 3	e 28·7	—
Stuttgart		54·7	323	e 9 43	+17	e 17 9	+ 4	e 27·7	—
Algiers		54·7	309	e 8 4	?	(i 17 8)	+ 3	—	—
Neuchatel		55·2	320	e 9 29	− 1	—	—	—	—
Strasbourg		55·5	323	e 9 43?	+11	e 16 43?	−33	e 24·7	—
Hong Kong		55·6	70	9 31	− 2	17 18	+ 1	—	36·7
Irkutsk		56·1	33	e 9 37	0	17 29	+ 5	27·7	32·2
Lund		56·1	332	—	—	17 32	+ 8	—	—
Copenhagen		56·5	332	9 38	− 1	17 29	− 1	31·7	—
Hamburg		56·6	329	e 9 43?	+ 3	e 21 49	SS	e 33·7	39·7
Upsala		56·9	338	—	—	e 17 30	− 5	—	—
De Bilt		58·4	326	e 9 55	+ 2	17 57	+ 2	e 27·7	33·2
Uccle		58·4	324	e 9 52	− 1	17 56	+ 1	e 27·7	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Paris		58·7	321	e 9 43?	−12	e 17 43?	−16	23·7	41·7
Granada		60·0	307	—	—	e 25 42	?	e 37·2	41·2
Oxford		62·0	324	—	—	i 18 38	− 4	e 25·7	—
Manila		62·3	79	10 14	− 6	19 9	+23	28·7	36·4
Zi-ka-wei	Z.	62·5	60	e 10 19	− 3	—	—	36·0	37·4
Kew		62·9	324	—	—	e 18 43?	−11	—	—
Edinburgh		64·4	327	—	—	i 19 13	+ 1	39·7	—
Scoresby Sund		76·0	341	13 13	+87	21 31	− 1	43·7	—
Ottawa	N.	109·4	328	—	—	e 30 3	?	e 49·7	—
San Juan		116·6	299	—	—	e 30 19	PS	e 61·3	—
La Paz		126·6	258	—	—	e 31 26	PS	60·7	73·0

Additional readings and note :—
Hyderabad SS = +8m.49s. =S +7s.
Dehra Dun P =0h.57m.50s.?
Tananarive eE = +9m.31s. =P_cP +17s., eSN = +11m.18s., E = +12m.36s., N = +12m.39s.
Medan e = +6m.14s.
Vienna PP = +11m.54s.
Batavia e =0h.57m.26s.
Potsdam iE = +11m.3s. =PP −16s.
Helsingfors eZ = +12m.37s. =PPP +11s., eN = +12m.48s. =PPPP +7s., eZ = +15m.55s. and +16m.43s., eN = +19m.8s. =S_cS −6s. and +20m.59s. = SS +20s., eE = +23m.1s. =SSSS +12s. and +24m.50s.
Stuttgart e = +12m.37s. =PPPP −7s., eN = +22m.43s. =SSSS −10s.
Algiers S is given as SS.
Strasbourg eSS = +20m.43s.?
Hong Kong ? = +13m.3s.
Uccle e = +13m.24s. =PPPP −9s. and +24m.6s. =SSSS −16s.
Granada e = +27m.32s.
Oxford iE = +22m.0s.
Ottawa eN = +34m.23s. =SS +13s.
San Juan e = +36m.37s. and +55m.31s.
Long waves were also recorded at Ann Arbor, Feldberg, and San Fernando.

Feb. 12d. 2h. 4m. 40s. Epicentre 25°·5N. 123°·5E. (as on 1930 March 2d.). R.3.

A = −·498, B = +·753, C = +·431 ; D = +·834, E = +·552 ; G = −·238, H = +·359, K = −·903.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		1·8	255	0 38	P_g	1 3	S_g	—	—
Hokoto		4·1	242	1 3	+ 5	1 43	− 2	—	—
Zi-ka-wei	Z.	6·0	343	1 28	+ 3	i 2 36	+ 3	—	—
Hong Kong		9·1	252	2 3	− 6	3 42	−11	—	5·6
Nagasaki		9·1	35	2 11	+ 2	—.	—	—	—
Manila		11·2	193	2 33	− 4	4 59	+16	6·2	—
Sumoto		13·2	45	(3 9)	+ 4	3 9	P	—	3·4

Long waves were also recorded at Algiers.

Feb. 12d. Readings also at 2h. (Sucre, near La Paz, and near Reykjavik), 6h. (Mizusawa), 7h. (near Nagoya and Tyosi), 10h. (Hastings), 11h. (San Juan), 14h. (Suva (2) and near Tyosi), 16h. (Mizusawa), 19h. (near Nagoya), 21h. (near Matuyama), 22h. (Mizusawa), 23h. (Medan).

Feb. 13d. 0h. A local Spanish shock, for which these readings are reported :—
Malaga iP_g =3m.13s., i =3m.20s.
Granada iP_g =3m.25s., P_gP =3m.29s., iS_g =3m.41s., P_gS =3m.42s., S_gS =3m.49s., SS =3m.59s., i =4m.10s.
Toledo iP =3m.32s., eP_g =4m.0s., iPS =4m.27s., iS_g =4m.42s., i =4m.59s. and 5m.3s.
Almeria eP_g =3m.33s., iS_g =3m.55s.
San Fernando P =3m.47s., S =4m.3s.
Alicante P =2m.49s. (presumably 3m.49s.).

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Feb. 13d. 19h. 12m. 30s. Epicentre 13°·5N. 146°·0E. N.3.

A = −·806, B = +·544, C = +·233; D = +·559, E = +·829;
G = −·194, H = +·131, K = −·972.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Miyazaki		22·7	326	4 59	+ 1	9 1	+ 2	—	—
Koti		23·1	333	5 0	− 2	9 6	− 1	—	—
Oiwake		23·8	345	5 7	− 1	9 26	+ 7	—	—
Manila		24·3	276	5 12	− 1	9 21	− 7	11·5	14·0
Bombay		70·0	286	—	—	e 20 30?	+ 9	—	—
Tashkent		71·2	310	e 12 42	+84	20 32	− 3	33·5	44·7
Ekaterinburg		76·2	326	i 11 44	− 3	21 27	− 7	36·5	46·9
Baku		85·9	311	—	—	e 23 9	− 8	e 42·5	—
Tinemaha	E.	86·4	52	e 12 41	+ 1	—	—	—	—
Haiwee	E.	86·8	53	e 12 45	+ 3	—	—	—	—
Pasadena	Z.	87·2	55	e 12 43	− 1	—	—	—	—
Pulkovo		90·6	334	—	—	e 36 30	?	46·5	56·9
La Paz	Z.	146·9	99	e 19 33	[− 4]	—	—	—	—

Long waves were also recorded at Riverview, Kucino, Stuttgart, De Bilt, and Uccle

Feb. 13d. Readings also at 8h. (Durham, Baku, Ekaterinburg, Pulkovo, Almata, Samarkand, Copenhagen, Uccle, De Bilt, Stuttgart, Edinburgh, Kew, Paris, Reykjavik, Scoresby Sund, and Ivigtut), 13h. (near Sumoto), 14h. (near Malaga), 16h. (Lick), 18h. (Baku, Tashkent, Irkutsk, Tyosi, Pasadena, Haiwee, Tinemaha, and Riverview), 19h. (Ekaterinburg), 21h. (Mizusawa and Frunse), 22h. (near Amboina), 23h. (Adelaide and Perth).

Feb. 14d. 11h. 51m. 36s. Epicentre 13°·0S. 165°·5E. (as on 1928 Sept. 22d.). X.

A = −·943, B = +·244, C = −·225; D = +·250, E = +·968;
G = +·218, H = −·056, K = −·974.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	24·6	210	i 5 12	− 4	i 9 33	− 1	e 12·4	14·2
Sydney	24·6	210	e 9 42	S	(e 9 42)	+ 8	13·4	14·6
Wellington	29·4	166	6 2	+ 2	11 46	+51	16·4	18·4
Melbourne	30·8	214	—	—	e 11 17	0	i 17·2	21·7
Adelaide	32·7	223	—	—	e 11 24	−22	e 13·6	17·1
Manila	52·0	300	9 9	+ 3	16 35	+ 7	25·4	29·4
Bombay	96·6	288	24 7	SKS	(24 7)	[− 2]	—	—
Ekaterinburg	109·0	325	—	—	e 25 3	[− 6]	49·4	69·4
De Bilt	137·9	340	e 22 12	PP	—	—	e 66·4	—
Stuttgart	139·4	336	e 22 24	PP	e 34 36	?	e 85·4	—
Strasbourg	140·0	337	—	—	e 32 24?	SKSP	38·4	—

Additional readings:—
Riverview i = +9m.40s.
Melbourne i = +13m.2s. =SSSS −3s. and +15m.19s.
Ekaterinburg e = +28m.27s. =PS +9s. and +34m.14s. =SS +9s.
Long waves were also recorded at Suva, Arapuni, Ottawa, Pittsburgh, Kucino, Uccle, Paris, and Scoresby Sund.

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Feb. 14d. 20h. 30m. 25s. Epicentre 37°·5N. 70°·5E. (as on 1931 Jan. 7d.). X.

The Central Asia stations give epicentre 37°·4N. 70°·8E.

A = +·265, B = +·748, C = +·609; D = +·943, E = −·334;
G = +·203, H = +·574, K = −·793.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		3·4	310	e 0 59	P*	—	—	1·9	2·1
Andijan		3·6	24	e 0 56	+ 5	—	—	e 1·8	2·7
Frunse		6·2	29	1 47	P*	2 59	S*	—	3·1
Almata		7·6	39	e 1 49	+ 1	—	—	—	4·6
Agra	E.	12·1	146	e 2 46	− 4	—	—	—	—
Bombay		18·7	173	4 11	− 4	—	—	—	—
Ekaterinburg		20·4	345	4 35	+ 1	e 8 32	SS	10·6	—

No additional readings.

Feb. 14d. 21h. 32m. 31s. Epicentre 30°·9N. 131°·3E. (as given by Tokyo). N.2.

A = −·566, B = +·645, C = +·514; D = +·751, E = +·660;
G = −·339, H = +·386, K = −·858.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kagosima	0·9	316	0 13	0	0 27	+ 4	—	—
Miyazaki	1·0	7	0 19	+ 5	0 40	+14	—	—
Kumamoto	2·0	345	0 26	− 3	0 51	0	—	—
Nagasaki	2·2	327	0 25	− 6	0 49	− 8	—	—
Simidu	2·4	37	0 35	+ 1	1 7	+ 5	—	—
Hukuoka	2·8	344	0 34	− 6	1 9	− 3	—	1·2
Nake	3·0	212	0 41	− 2	1 9	− 8	—	—
Matuyama	3·2	23	e 0 45	− 1	i 1 24	+ 2	—	—
Koti	3·3	35	e 0 48	+ 1	e 1 28	+ 3	—	1·5
Muroto	3·4	46	0 51	+ 2	1 34	+ 7	—	—
Tadotu	3·9	31	0 54	− 2	1 41	+ 1	—	—
Sumoto	4·6	41	i 1 6	0	2 1	+ 3	—	2·1
Kobe	5·0	39	1 13	+ 2	2 11	+ 3	—	2·5
Osaka	5·2	42	1 11	− 3	—	—	2·5	3·1
Toyooka	5·5	32	i 1 17	− 1	3 22	+62	—	—
Kameyama	5·8	46	1 29	+ 7	2 34	+ 6	—	—
Hikone	6·0	42	1 27	+ 2	2 34	+ 1	—	—
Gihu	6·4	44	1 34	+ 3	2 48	+ 5	—	—
Nagoya	6·4	46	e 1 35	+ 4	2 48	+ 5	—	—
Wazima	7·9	34	1 54	+ 2	3 26	+ 5	—	—

No additional readings.

Feb. 14d. 23h. 13m. 39s. Epicentre 19°·7S. 66°·5E. N.3.

A = +·375, B = +·863, C = −·337; D = +·917, E = −·399;
G = −·134, H = −·309, K = −·941.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive		17·9	269	e 4 7	+ 2	8 3	+41	—	10·7
Colombo		29·6	28	5 59	− 2	10 37	−21	11·4	15·8
Bombay		39·1	10	7 23	− 1	13 4	−18	18·2	22·1
Medan		39·3	58	i 7 30	+ 4	i 15 44	SS	i 20·1	—
Batavia		41·4	77	i 7 42	− 2	i 18 9	(+19)	i 21·2	—
Perth		45·6	116	11 21	?	e 15 36	+37	i 19·7	—
Calcutta		47·3	29	7 38	−53	14 8	−75	19·8	—
Agra	E.	48·2	15	8 16	−22	14 59	−37	21·3	—
	N.	48·2	15	8 33	− 5	15 11	−25	e 21·1	—
Phu-Lien		56·4	47	e 9 43	+ 4	—	—	23·4	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		59·3	1	e 9 53	− 7	—	—	—	—
Helwan		60·0	325	e 10 1	− 3	i 18 11	− 5	24·7	—
Andijan		60·7	6	e 10 7	− 2	—	—	—	—
Ksara	N.	60·9	331	e 21 3	?	30 45	L	(30·8)	—
Baku		62·0	347	10 20	+ 2	i 18 32	−10	28·7	32·1
Hong Kong		62·7	51	10 25	+ 2	17 43	−68	25·5	34·5
Frunse		63·0	7	e 10 40	+15	—	—	—	—
Almata		63·7	10	e 10 43	+13	—	—	—	—
Manila		63·8	62	10 37	+ 6	18 54	−11	29·7	34·6
Adelaide		64·5	120	—	—	e 18 21?	−53	—	—
Melbourne		69·1	125	—	—	e 20 41	(−18)	32·8?	—
Riverview		74·9	121	—	—	e 35 33	?	e 39·6	43·4
Sydney		74·9	121	e 34 33	?	—	—	42·1	43·8
Ekaterinburg		76·6	356	e 11 48	− 1	i 21 20	−18	32·4	37·2
Kucino		79·2	345	—	—	e 20 56	?	33·0	38·5
Vienna	Z.	81·3	330	i 12 24	+ 9	—	—	—	—
Cheb		84·5	329	e 22 55	S	(e 22 55)	− 8	—	—
Pulkovo		84·8	344	e 19 35	?	e 22 48	−18	42·4	—
Stuttgart		85·3	328	—	—	e 22 59	−12	—	—
Strasbourg		86·0	327	(e 12 21?)	−17	—	—	e 12·4	—
Helsingfors		86·6	342	—	—	e 23 12	−11	e 41·4	—
Uccle		89·0	327	e 12 58	+ 5	e 23 36	−10	36·4	—
Paris		89·0	325	e 13 21?	+28	—	—	51·4	—
De Bilt		89·3	328	e 13 21?	+27	e 23 42	− 7	e 46·4	—
Oxford		92·6	326	—	—	i 24 17	− 3	e 33·4	60·9
La Paz		122·6	234	e 21 26	?	—	—	63·4	68·9
Ottawa		139·7	318	—	—	e 40 27	SS	e 59·4	—
St. Louis		152·4	318	e 20 22	{+12}	e 33 21	SKSP	e 73·4	81·4

Additional readings :—
Tananarive iPPE = +4m.26s., E = +4m.31s., and +4m.37s., SSE = +8m.46s., SSN = +8m.49s.
Batavia i = +8m.29s.
Manila PSEN = +19m.10s., SSE = +23m.31s.
Cheb e = +28m.16s. =SS −4s.
Pulkovo e = +28m.3s. =SS −21s., L_q = +37·4m.
Stuttgart eZ? = +16m.27s.
Helsingfors eE = +35m.21s. ?
Uccle e = +29m.55s. =SS +29s. and +32m.38s. =SSS −18s.
De Bilt e = +29m.27s. =SS −3s. and +36m.9s.
Long waves were also recorded at Wellington,, Stonyhurst, Scoresby Sund, San Fernando, and San Juan.

Feb. 14d. Readings also at 1h. (Adelaide, Melbourne, Riverview, Wellington, and near Tyosi), 2h. (Bombay, Calcutta, and near Tyosi), 3h. (Kobe, Tyosi, and near Mizusawa), 6h. (near Zurich), 8h. (near Sumoto), 12h. (near Taihoku), 15h. (Bombay, near Calcutta, near Samarkand (2), and near Melbourne), 16h. (Nagoya, Tyosi, near Mizusawa, and near Santiago), 17h. (near Taihoku), 20h. (Perth and near Malaga), 21h. (Andijan).

Feb. 15d. 1h. 6m. 39s. Epicentre 31°·5N. 132°·1E. (as on 1931 Nov. 2d.). X.

A = −·572, B = +·633, C = +·522.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Nagasaki	2·3	303	0 33	0	—	—	—
Matuyama	2·4	13	e 0 33	− 1	i 1 0	− 2	—
Hukuoka	2·6	326	0 40	+ 3	1 7	0	—
Sumoto	3·7	39	e 1 13	P_g	e 1 45	S*	1·9

No additional readings.

Feb. 15d. Readings also at 0h. (near Manila), 1h. (Calcutta), 4h. (near Tyosi), 8h. (near Sumoto), 9h. (Agra, Bombay, and near Algiers), 16h. (near Nagoya), 18h. (Ksara and near Manila), 22h. (near Taihoku), 23h. (Toledo).

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Feb. 16d. 13h. 48m. 55s. Epicentre 15°·3S. 179°·5W. N.2.

A = −·965, B = −·008, C = −·264; D = −·009, E = +1·000; G = +·264, H = +·002, K = −·965.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		3·5	216	−0 2	−52	0 23	−67	—	—
Apia		7·6	79	e 1 49	+ 1	—	—	2·7	3·6
Arapuni		23·2	190	—	—	9 8	0	11·1	—
Wellington		26·5	190	5 29	− 5	10 15	+ 8	12·1	17·1
Riverview		32·3	230	i 6 25	0	11 39	− 1	e 15·4	17·6
Sydney		32·3	230	e 6 5	−20	i 11 53	+13	16·5	18·4
Melbourne		38·6	228	7 19	− 1	13 17	+ 2	18·4	28·1
Adelaide		42·3	235	e 7 57	+ 6	i 14 10	0	18·2	31·6
Honolulu T.H.		42·3	31	—	—	i 14 24	+14	i 19·2	—
Amboina		52·7	278	8 9	−63	—	—	30·8	—
Perth		60·7	243	11 55	?	e 18 35	+10	e 25·1	30·5
Manila		66·0	295	e 10 48	+ 3	19 36	+ 4	31·4	—
Batavia		72·7	270	11 23	− 4	i 20 45	− 8	44·4	—
Zi-ka-wei	Z.	73·3	311	11 35	+ 4	i 21 43	PS	35·0	53·9
Hong Kong		75·0	300	11 41	+ 1	21 33	+13	32·2	40·2
Berkeley		75·5	44	—	—	e 21 29	+ 3	e 35·0	—
Santa Barbara		75·5	48	e 12 0	+17	—	—	—	—
Ukiah		75·6	42	—	—	21 20	− 7	31·3	—
Pasadena		76·5	49	e 11 46	− 3	i 21 32	− 5	e 34·9	—
Riverside	E.	76·9	49	e 11 51	0	—	—	—	—
Haiwee		77·6	47	e 11 54	− 1	—	—	—	—
Tinemaha		77·9	46	e 11 58	+ 1	—	—	—	—
Victoria		80·9	34	—	—	22 20	− 5	37·2	40·4
Tucson		81·0	53	12 26	+13	22 32	+ 6	33·0	—
Sitka		81·1	24	—	—	e 21 51	−36	e 37·0	—
Medan		83·1	276	i 12 42	+18	—	—	53·1	—
Bozeman		86·6	40	—	—	e 23 17	− 6	e 37·8	—
Irkutsk		93·9	325	e 13 16	+ 1	—	—	41·1	46·4
Little Rock		96·4	56	e 13 39	+12	—	—	—	49·1
Calcutta		97·7	292	25 46	S	(25 46)	+40	44·0	—
Florissant		98·9	53	e 13 39	+ 1	i 25 10	− 7	i 45·9	62·3
St. Louis		99·0	53	e 14 38	+59	i 25 18	0	e 42·1	48·1
Madison		100·5	47	—	—	i 24 31	[+ 3]	47·1	—
Chicago		101·5	50	—	—	24 34	[+ 1]	47·2	—
Colombo		102·0	275	24 34	SKS	(24 34)	[− 1]	—	63·2
Kodaikanal		105·1	278	e 18 24	PP	27 40	PS	e 59·1	63·6
La Paz		105·2	112	e 18 40	PP	(25 50)	{+18}	49·2	62·1
Columbia		105·4	59	—	—	e 24 49	[− 3]	e 47·2	—
Hyderabad		105·7	285	17 12	[−52]	28 0	PS	52·0	70·6
Pittsburgh		107·1	50	—	—	e 25 5	[+ 5]	e 48·1	—
Agra	E.	107·7	296	e 18 53	PP	e 28 17	PS	—	—
Toronto	E.	107·8	47	—	—	e 25 5?	[+ 2]	—	—
Buffalo		108·1	49	e 18 7	[− 4]	—	—	e 49·1	55·1
Georgetown		109·1	52	—	—	34 41	SS	50·8	54·6
Almata		110·2	311	e 19 5	PP	—	—	—	—
Ottawa		110·4	46	—	—	e 25 10	[− 5]	e 47·1	—
Bombay		111·2	285	17 44	[−38]	30 1	?	58·3	69·5
Fordham		111·7	51	—	—	e 26 21	{+ 2}	e 54·1	60·1
Andijan		113·5	309	e 19 32	PP	—	—	—	—
Ekaterinburg		118·9	328	e 18 49	[+ 6]	—	—	48·1	66·8
Rio de Janeiro		122·7	130	—	—	26 5?	[+ 7]	—	—
Baku		130·4	311	e 19 18	[+10]	—	—	—	82·3
Kucino		130·4	334	e 19 29	[+21]	e 26 29	[+ 9]	—	71·5
Pulkovo		130·5	340	e 20 44	[+96]	31 45	PS	54·1	75·6
Helsingfors		131·7	344	(e 22 49)	PKS	e 39 11	SS	e 56·1	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Upsala		133·7	348	—	—	40 2	SS	e 69·1	—
Lund		138·4	349	23 5?	PKS	—	—	59·1	—
Copenhagen		138·5	349	23 5?	PKS	40 41	SS	—	—
Hamburg		141·0	351	e 19 23	[0]	—	—	e 71·1	82·1
De Bilt		143·0	355	e 21 53	PP	e 41 32	SS	e 66·1	68·3
Ksara		143·1	307	e 19 55	[+28]	—	—	71·1	—
Cheb		143·9	346	e 28 5?	?	e 41 5?	SS	e 61·1	80·1
Uccle		144·3	356	e 19 32	[0]	e 41 5?	SS	e 60·1	—
Feldberg		144·5	352	i 19 43	[+10]	e 41 46	SS	e 71·9	106·0
Vienna	z.	144·5	340	e 19 33	[0]	—	—	—	—
Stuttgart		145·8	349	e 19 36	[0]	e 30 35	{+37}	e 61·1	—
Graz		145·9	341	e 18 30	[−66]	—	—	92·1	—
Strasbourg		146·2	350	e 19 38	[+ 2]	—	—	e 61·1	—
Paris		146·4	358	e 19 20	[−16]	—	—	69·1	94·1
Innsbruck		146·7	346	19 35	[− 2]	—	—	—	—
Triest		147·7	342	i 19 47	[+ 9]	—	—	—	85·1
Neuchatel		147·9	352	e 19 39	[0]	—	—	—	—
Florence		150·1	344	i 19 50	[+ 8]	e 28 35	?	45·1	61·1
Toledo		155·1	8	e 20 0	[+12]	e 31 28	{+37}	e 73·1	—
Granada		157·8	9	i 19 22	[−29]	29 57	PPPP	e 74·4	86·5
San Fernando		158·0	14	—	—	e 50 45	SSS	76·6	91·1
Almeria		158·3	6	e 19 32	[−19]	30 4	{−65}	e 78·7	86·8

Additional readings and note :—
Arapuni SS = +10m.5s.?
Wellington PP = +6m.15s., SS = +11m.2s.
Riverview iSN = +11m.42s., iN = +14m.44s.
Sydney iPP = +7m.23s., SSS = +14m.35s.
Melbourne PP = +8m.49s., SS = +16m.12s.
Adelaide iSSS = +17m.36s.
Honolulu T.H. e = +17m.35s.
Manila PPEZ = +13m.35s., PPPN = +14m.55s.
Batavia i = +12m.23s. and +24m.52s.
Zi-ka-wei LZ = +25m.53s. =SS +21s.
Hong Kong SS = +26m.14s.
Santa Barbara iN = +12m.29s.
Ukiah SS = +26m.22s.
Pasadena i = +11m.56s., ePPPE = +16m.40s., eE = +22m.21s.
Sitka eSS = +27m.5s., eSSS = +30m.47s.
Medan i = +16m.29s.
Bozeman eSS = +29m.15s.
Irkutsk ePP = +16m.57s., SS = +30m.53s.
Calcutta S = +33m.1s.
Florissant eZ = +17m.35s., ePPZ = +17m.48s., iSKSN = +24m.15s., iPSN = +26m.17s., ePPS = +27m.18s., iP_eSS_ePN = +28m.8s., eSSE = +32m.3s., ePPPSE = +32m.11s., eSSSE = +36m.20s., eSSSSE = +39m.29s.
St. Louis ePPE = +18m.28s., eSKKSE = +26m.13s. =PS −22s., eE = +32m.39s.
Madison iPS = +26m.47s., eSS = +32m.23s., eSSS = +36m.45s.
Chicago PS = +26m.59s., eSS = +32m.33s.
La Paz SKS = +28m.36s., SKKS = +29m.26s., PPS = +33m.30s. ; true SKKS is given as PPPE.
Columbia ePS = +27m.40s., eSS = +33m.22s.
Pittsburgh e = +27m.35s. =PS −24s., eSS = +33m.59s.
Toronto iE = +28m.7s. =PS +1s. and +34m.21s.
Buffalo e = +42m.55s.
Ottawa eE = +28m.33s. =PS +2s., e = +34m.41s. =SS +17s.
Fordham eSS = +34m.50s.
Ekaterinburg PP = +20m.1s., SS = +36m.29s., SSS = +40m.47s.
Baku ePP = +21m.29s., iPPS = +22m.41s., SS = +39m.23s.
Kucino e = +37m.59s.
Pulkovo PP = +21m.36s., PKS = +22m.38s., iSS = +38m.41s.
Helsingfors eE = +43m.59s. =SSS +17s.
Ksara +20m.58s., eE = +21m.35s., +31m.32s., and +42m.24s.
Vienna iPz = +19m.43s., i = +20m.9s., and +22m.38s. =PP −11s.
Stuttgart eZ = +20m.19s., eSS = +41m.59s.
Strasbourg i = +20m.38s., ePP = +23m.43s., PKS = +24m.2s., PPPS = +37m.5s., eSS = +42m.5s.?
Triest PKP = +22m.17s., PP = +25m.10s.
Toledo eSKS = +37m.12s., SS = +44m.26s., SSS = +44m.28s.
Granada eP = +17m.28s., PP = +23m.19s., PPP = +27m.10s., i = +32m.11s., PPS = +37m.14s.
Almeria PP = +23m.18s.
Long waves were also recorded at Tananarive, La Plata, Charlottesville, Ann Arbor, Seattle, Harvard, Ivigtut, Scoresby Sund, Algiers and other European stations.

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Feb. 16d. Readings also at 1h. (near New Plymouth and Wellington), 4h. (Samarkand, near Almata, Andijan, and near Santiago), 7h. (near Batavia), 8h. (near Tyosi), 13h. (Paris, De Bilt, Uccle, San Juan, and La Paz), 14h. (Mizusawa, Nagoya, Osaka, and near Tyosi (3)), 17h. (near Tyosi), 19h. (Sumoto and near Manila), 20h. (near Sumoto), 23h. (near Andijan and Samarkand).

Feb. 17d. **16h.** 7m. 2s. Epicentre 12°·0N. 73°·3W. N.2.

A = +·281, B = −·937, C = +·208 ; D = −·958, E = −·287 ; G = +·060, H = −·199, K = −·978.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince		6·6	9	i 1 32	− 2	i 2 41	− 7	i 3·2	3·3
Balboa Heights		6·8	245	e 1 58?	+21	—	—	—	—
San Juan		9·4	46	2 22	+ 9	i 3 47	−12	4·8	—
Columbia		23·1	344	5 2	0	9 17	+10	14·6	—
Charlottesville		26·4	351	e 5 28	− 5	e 9 40	−25	e 11·5	—
Georgetown		27·1	354	i 5 40	+ 1	10 22	+ 5	15·1	—
Little Rock		28·7	326	e 5 54	+ 1	e 11 2	+19	e 15·1	18·1
Fordham		28·9	359	e 5 54	− 1	e 10 47	0	e 14·5	—
La Paz		29·0	170	e 5 54	− 2	i 10 40	− 8	14·0	16·0
Pittsburgh		29·1	350	—	—	e 8 49	PcP	e 12·1	—
St. Louis		30·7	333	i 6 9	− 2	i 11 9	− 7	i 16·8	18·4
Florissant		30·8	333	i 6 6	− 6	i 11 18	+ 1	e 13·5	—
Buffalo		31·3	352	i 6 18	+ 1	—	—	e 18·6	—
Ann Arbor		31·6	346	e 6 22	+ 3	—	—	e 20·3	—
Sucre		32·0	166	6 28	+ 5	—	—	—	—
Toronto	N.	32·1	352	e 6 21	− 3	i 11 31	− 6	—	—
Chicago		32·3	340	—	—	e 11 34	− 6	17·3	—
Ottawa		33·4	356	e 6 37	+ 2	e 12 0	+ 3	e 17·0	—
Madison		34·1	340	i 6 41	0	i 12 3	− 5	15·6	—
La Jolla	N.	45·2	305	e 8 36	+22	—	—	—	—
Pasadena		46·3	307	e 8 28	+ 5	—	—	—	—
Tinemaha	E.	47·4	311	e 8 33	+ 1	—	—	—	—
Uccle		73·0	40	e 11 28	− 1	e 20 53	− 4	e 31·0	—
De Bilt		73·6	39	11 33	+ 1	21 3	− 1	e 32·0	33·9
Strasbourg		75·1	42	(e 13 58?)	PP	—	—	e 14·0	—
Stuttgart		76·1	42	e 11 58	+11	e 21 28	− 5	e 37·0	—
Ekaterinburg		101·4	24	—	—	e 24 31	[− 2]	47·0	—

Additional readings :—
Port au Prince i = +2m.55s.
Fordham eSS = +12m.17s.
La Paz iSN = +10m.56s.
St. Louis iEN = +6m.16s. and +6m.56s., iN = +11m.18s. and +16m.48s. = S_cS +0s.
Buffalo iPP = +7m.3s.
Ann Arbor eE = +6m.40s.
Toronto eN = +4m.21s.
Madison ePP = +7m.35s.
Stuttgart eSSEN = +26m.22s.
Long waves were also recorded at Harvard, Bozeman, Seattle, Ukiah, Sitka, Rio de Janeiro, La Plata, Ivigtut, Scoresby Sund, and other European and Russian stations.

Feb. 17d. Readings also at 0h. (Florissant), 1h. (Baku, Ekaterinburg, Pasadena, Tinemaha, Berkeley, Lick, Riverside, Haiwee, La Jolla, Andijan, and near Samarkand), 2h. (near Neuchatel and Zurich), 3h. (Frunse and near Andijan), 6h. (near Sebastopol, Theodosia, and Yalta), 8h. (Wellington), 9h. (La Paz and near Andijan), 10h. (Alicante), 11h. (La Paz (2) and Ottawa), 12h. (Sumoto), 15h. (San Juan and near Manila), 16h. (San Juan), 18h. (Vienna and near Granada), 19h. (near Andijan and Samarkand), 21h. (Nagoya), 23h. (Bombay, Kodaikanal, Baku, Ekaterinburg, Irkutsk, Kucino, Pulkovo, De Bilt, Uccle, Paris, Strasbourg, Scoresby Sund, and Ottawa).

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Feb. 18d. Readings at 1h. (Bombay), 3h. (near Andijan and near Nagasaki), 5h. (Chur), 13h. (near La Paz), 19h. (Berkeley, near Branner and Lick (2)), 22h. (near Nagoya, Osaka, Tokyo, and Tyosi).

Feb. 19d.

12h. 57m. 11s.	(I)	N.3.
19h. 2m. 2s.	(II)	X.
20h. 15m. 5s.	(III)	X.
20h. 31m. 33s.	(IV)	X.

Epicentre 45°·3N. 11°·1E.

A = +·690, B = +·135, C = +·711; D = +·193, E = −·981; G = +·698, H = +·137, K = −·703.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
I	Venice	0·9	81	i 0 12	− 1	0 39	S_g	1·7
I	Florence	1·5	176	0 34	S	(0 34)	− 5	1·1
I	Chur	1·9	325	e 0 26	− 2	e 0 46	− 3	—
III		1·9	325	e 0 23	− 5	e 0 43	− 6	—
IV		1·9	325	e 0 23	− 5	e 0 42	− 7	—
I	Triest	1·9	79	e 0 37	P*	1 4	S*	—
I	Zurich	2·7	320	e 0 40	+ 1	e 1 13	+ 4	—
II		2·7	320	e 0 37	− 2	e 1 10	+ 1	—
III		2·7	320	e 0 38	− 1	e 1 10	+ 1	—
IV		2·7	320	e 0 39	0	e 1 13	+ 4	—
I	Ravensburg	2·7	338	e 0 41	+ 2	i 1 14	S*	—
III		2·7	338	e 0 43	+ 4	e 1 13	+ 4	—
I	Neuchatel	3·3	300	e 0 47	0	i 1 31	S*	—
II		3·3	300	e 0 48	+ 1	e 1 28	+ 3	—
III		3·3	300	e 0 45	− 2	e 1 31	S*	—
IV		3·3	300	e 0 51	+ 4	e 1 30	+ 5	—
I	Zagreb	3·5	81	e 1 8	P*	1 59	S_g	2·1
I	Stuttgart	3·7	340	e 0 53	0	i 1 52	S_g	2·3
III		3·7	340	e 0 55	+ 2	e 1 48	S*	—
I	Strasbourg	4·0	326	e 0 57	0	e 1 47	+ 5	—
III		4·0	326	e 1 23	P_g	e 2 13	S_g	—
I	Besançon	4·0	300	0 57	0	—	—	—
III		4·0	300	e 1 24	P_g	—	—	—
I	Karlsruhe	4·1	334	0 19	−39	—	—	—
I	Jena E.	5·6	3	e 1 43	P*	—	—	—
I	Göttingen	6·2	353	e 1 28	0	i 3 9	S*	—
I	Uccle	7·1	323	—	—	e 3 19	+18	—
I	Bagnères	8·0	257	e 2 49?	P_g	—	—	—

Additional readings :—
Chur I e = +29s., III eP = +26s., IV e = +26s.
Triest I iP = +40s. = P_g, P_gP = +42s., iS_g = +1m.6s., q = +1m.8s.
Zurich I eP_g = +43s., III eP_g = +40s.
Ravensburg I e = +57s.
Neuchatel I eP_g = +54s., III eP_g = +52s.
Zagreb I eP_g = +1m.40s., eE = +2m.15s. and +2m.25s.
Stuttgart I eP_gNZ = +1m.3s., i = +1m,22s.
Strasbourg I eP_g = +1m.11s., PP = +1m.15s., eS_g = +1m.59s., SS = +2m.12s.
III eSS = +2m.27s.
Jena I eE = +1m.55s. = P_g, m. = +3m.10s. = S_g.
Göttingen I iP_gEN = +1m.54s.

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Feb. 19d. 13h. 25m. 28s. Epicentre 32°·9N. 140°·3E. N.2.
Given by Tokyo with a suggestion of a depth of focus 150km.

A = −·646, B = +·536, C = +·543; D = +·639, E = +·769;
G = −·418, H = +·347, K = −·840.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hatidyozima	0·4	297	0 29	+23	0 47	+37	—	—
Misima	2·5	333	0 39	+ 3	1 2	− 2	—	—
Numadu	2·5	331	0 40	+ 4	1 8	+ 4	—	—
Yokohama	2·6	348	0 44	+ 7	1 16	+ 9	—	—
Tokyo	2·8	351	0 46	+ 6	1 15	+ 3	—	1·3
Tyosi	2·9	9	0 49	+ 8	1 22	+ 8	—	—
Kumagaya	3·3	347	0 53	+ 6	1 27	+ 2	—	—
Tukubasan	3·3	357	0 51	+ 4	1 26	+ 1	—	—
Mito	3·5	3	0 56	+ 6	1 32	+ 2	—	—
Nagoya	3·6	312	0 51	0	1 25	− 7	—	1·6
Gihu	3·7	314	0 53	0	1 31	− 4	—	—
Utunomiya	3·7	355	0 54	+ 1	1 32	− 3	—	—
Oiwake	3·7	339	0 55	+ 2	1 34	− 1	—	—
Tsu	3·7	302	0 51	− 2	1 27	− 8	—	—
Kameyama	3·7	304	0 53	0	1 29	− 6	—	—
Siomisaki	3·9	279	0 53	− 3	1 28	−12	—	—
Hikone	4·1	307	0 56	− 2	1 33	−12	—	—
Nagano	4·1	336	1 0	+ 2	1 51	+ 6	—	—
Kyoto	4·4	302	0 59	− 4	1 41	−12	—	—
Osaka	4·4	296	0 59	− 4	(1 43)	−10	1·7	2·0
Wakayama	4·5	290	1 0	− 4	1 44	−11	—	—
Kobe	4·7	295	1 3	− 4	i 1 48	−12	—	1·8
Sumoto	4·7	290	1 4	− 3	1 50	−10	—	1·9
Hukusima	4·8	2	1 11	+ 3	2 0	− 3	—	—
Toyooka	5·2	303	i 1 9	− 5	i 2 2	−11	—	2·2
Sendai	5·3	6	1 23	+ 8	2 16	+ 1	—	—
Wazima	5·3	329	1 14	− 1	2 7	− 8	—	—
Isinomaki	5·6	9	1 21	+ 1	2 16	− 7	—	—
Koti	5·7	·276	e 1 16	− 5	i 2 13	−12	—	—
Titizima	6·0	165	1 34	+ 9	2 36	+ 3	—	—
Mizusawa	6·2	6	1 31	+ 3	2 33	− 5	—	—
Morioka	6·8	6	1 38	+ 1	2 45	− 8	—	—
Akita	6·8	358	1 30	− 7	2 45	− 8	—	—
Hamada	7·1	289	1 23	−18	2 33	−28	—	—
Miyazaki	7·5	265	1 43	− 3	3 1	−10	—	—
Nagasaki	8·8	272	3 41	S	(3 41)	− 3	—	—
Manila	25·4	228	e 4 35	−49	10 19	+31	—	—

No additional readings.

Feb. 19d. Readings also at 2h. (Hastings), 3h. (near Sumoto), 4h. (Hastings), 5h. (Almata, Andijan, Frunse, Halwee, Tinemaha, Pasadena, and Riverside), 9h. (Zurich, near Andijan, and Samarkand), 13h. (Nagoya), 16h. (near Lick), 18h. (near Ksara (2)), 19h. (Yalta), 21h. (near Andijan).

Feb. 20d. 5h. 3m. 9s. Epicentre 45°·3N. 11·1E. (as on 19d.). X.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Triest	1·9	79	0 40	P_g	1 6	S_g
Chur	1·9	325	e 0 25	− 3	e 0 46	− 3
Zurich	2·7	320	e 0 40	+ 1	e 1 12	+ 3
Ravensburg	2·7	338	e 0 41	+ 2	—	—
Neuchatel	3·3	300	e 0 47	0	e 1 32	S*
Stuttgart	3·7	340	e 0 51	− 2	e 1 55	S*
Strasbourg	4·0	326	1 28	P_g	2 15	S_g

Additional readings:—
Chur e = +30s.
Zurich eP = +43s.
Neuchatel eP* = +55s.
Strasbourg SSS = +2m.28s.

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Feb. 20d. Readings also at 6h. (Almata, Samarkand, near Andijan, near Berkeley, Branner, and Lick), 7h. (Suva), 8h. (Riverview), 9h. (Baku, Ekaterinburg, Irkutsk, Pasadena, and Tinemaha), 10h. (Balboa Heights), 12h. (near Tananarive), 15h. (Andijan), 16h. (Baku, Ekaterinburg, and Ksara), 18h. (Alicante, Florence, and Calcutta), 19h. (Paris and Strasbourg), 20h. (Tyosi).

Feb. 21d. 13h. 21m. 0s. Epicentre 3°·5N. 62°·7E. N.3.

$A = +\cdot458$, $B = +\cdot887$, $C = +\cdot061$; $D = +\cdot889$, $E = -\cdot459$; $G = +\cdot028$, $H = +\cdot054$, $K = -\cdot998$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kodaikanal	16·1	65	(3 43)	0	(7 30)	?	7·5	8·1
Bombay	18·3	32	e 4 7	− 3	—	—	—	10·4
Tananarive	26·9	213	—	—	e 8 45	P_gP	12·8	15·0
Agra	27·9	31	e 5 47	+ 1	—	—	12·9	15·6
Calcutta	31·3	50	11 28	S	(11 28)	+ 4	15·9	18·9
Baku	38·7	345	e 7 24	+ 3	13 22	+ 5	19·9	24·4
Ksara	39·3	324	9 0	PP	—	—	20·0	—
Ekaterinburg	53·4	359	i 9 13	− 4	16 41	− 6	22·0	32·5

Additional readings and notes :—
Kodaikanal gives P as S and S as L.
Calcutta S = +14m.21s.
Long waves were also recorded at Colombo, Hong Kong, Irkutsk, Pulkovo, Tashkent, De Bilt, and La Paz.

Feb. 21d. 15h. 55m. 37s. Epicentre 31°·0N. 130°·6E. (as on 1931, March 17d.). X.

$A = -\cdot558$, $B = +\cdot651$, $C = +\cdot515$; $D = +\cdot759$, $E = +\cdot651$; $G = -\cdot335$, $H = +\cdot391$, $K = -\cdot857$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagasaki		1·9	343	0 30	+ 2	1 5	S_g	—	—
Hukuoka		2·6	357	e 0 38	+ 1	1 19	S*	—	—
Matuyama		3·4	32	e 1 4	P*	—	—	—	—
Koti		3·6	43	e 1 4	P*	e 1 52	S*	—	—
Sumoto		4·9	46	e 1 6	− 4	e 2 42	S_g	—	3·0
Kobe		5·3	45	e 1 31	S*	—	—	—	3·2
Osaka		5·6	47	1 24	+ 4	—	—	2·8	3·9
Toyooka	E.	5·8	37	e 2 50	S*	e 3 29	S_g	—	—
	N.	5·8	37	e 2 42	S*	e 3 21	S_g	—	3·6
Nagoya		6·7	50	e 1 33	− 2	(e 2 53)	+ 2	—	—

Nagoya gives S as P of a second shock, for which is eS = +3m.36s.

Feb. 21d. Readings also at 1h. (Haiwee (2), Santa Barbara (2), Tinemaha (2), Pasadena (2), Riverside (2), Strasbourg, Stuttgart, Feldberg, Uccle, Paris, Florence, Suva, Manila, Kobe, Koti, Nagoya, near Osaka, and Sumoto), 2h. (Branner and Lick), 3h. (Lick), 4h. (Berkeley, near Branner, Lick, and near Manila), 5h. (near Santiago), 6h. (Tucson), 7h. (near Tyosi, near Manila and near Santiago), 10h. (Riverview and near Hastings), 11h. (Melbourne, Riverview, Sydney, Wellington, Suva, Pasadena, Haiwee, Tinemaha, Strasbourg, and near Andijan), 12h. (Agra, Kodaikanal (2), Bombay, Colombo, Perth, Baku, Ekaterinburg, Tashkent, Andijan, De Bilt, Uccle, Paris, Kew, Tyosi, and near Tokyo), 13h. (Irkutsk and Suva), 14h. (Agra), 15h. (near Andijan), 16h. (Batavia), 19h. (near Andijan), 20h. (near Manila).

Feb. 22d. Readings at 0h. (Baku, Ekaterinburg, Hong Kong (2), Manila (2), Phu-Lien, Zi-ka-wei (2), near Taihoku (3), and Hokoto), 1h. (Hong Kong, Strasbourg, Uccle, Kew, De Bilt, Feldberg, Paris, Stuttgart, Helsingfors, and Pulkovo), 2h. (Baku, Ekaterinburg, and La Paz), 3h. (La Paz), 4h. (Simferopol, Theodosia, Yalta, Baku, Ekaterinburg, Uccle, Strasbourg, Stuttgart, Pittsburgh, Sucre, La Paz, San Juan, and near Balboa Heights), 8h. (near Hastings), 9h. (La Paz), 14h. (near Manila), 15h. (Scoresby Sund), 17h. (near Santiago), 18h. (Lick and near Santiago), 20h. (Baku, Ekaterinburg, Tashkent, and Ksara), 21h. (Cheb).

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Feb. 23d. 0h. 13m. 54s. Epicentre 60°·3S. 12°·5W. N.2.

A = +·484, B = −·107, C = −·869; D = −·216, E = −·976;
G = −·848, H = +·188, K = −·495.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Cape Town	33·1	51	6 30	− 3	11 32	−20	13·1	13·7
La Plata	38·6	290	7 20	0	13 22	+ 7	15·7	—
Rio de Janeiro	43·1	318	i 7 49	− 9	i 14 1	−21	19·9	23·6
Santiago	45·9	279	8 20	0	15 15	+12	—	23·1
Sucre	55·5	295	i 9 34	+ 2	—	—	—	—
Tananarive	59·0	73	e 9 33	−24	(17 32)	−31	21·1	24·9
La Paz	59·0	293	i 9 57	0	i 18 7	+ 4	28·3	39·7
Wellington	78·3	186	i 12 11	+12	22 1	+ 4	39·1	47·1
Perth	78·6	137	e 11 56	− 4	e 22 1	+ 1	—	38·6
Melbourne	80·2	163	15 52	PP	i 22 18	0	41·2	42·6
Arapuni	81·4	186	—	—	22 42	+11	35·1	—
Adelaide	81·9	156	e 12 21	+ 3	i 22 41	+ 5	36·6	42·3
Riverview	85·0	166	e 12 54	+21	i 23 11	+ 3	e 34·9	42·6
Sydney	85·0	166	i 22 54	S	(i 22 54)	−14	34·3	43·4
San Juan	89·8	310	—	—	e 25 6?	PS	—	—
Port au Prince	92·3	306	e 13 17	+ 9	—	—	—	—
San Fernando	96·8	5	e 14 43	+74	i 24 0	[−10]	37·1	45·6
Helwan	97·1	38	—	—	23 51	[−21]	—	47·7
Colombo	97·1	88	15 26	?	—	—	—	40·1
Almeria	97·5	8	e 13 30	− 2	e 22 15	?	e 45·1	53·8
Granada	97·7	7	i 13 26	− 7	21 43	?	e 34·6	51·6
Algiers	97·9	13	e 14 13	+39	e 24 16	[0]	e 40·6	44·1
Batavia	98·4	119	e 17 29	PP	i 24 5	[−13]	—	—
Kodaikanal	98·8	84	16 21?	?	23 55	[−25]	38·2	41·2
Alicante	99·1	10	e 14 35	?	e 24 55	{+ 8}	e 34·8	—
Toledo	100·3	6	—	—	e 24 57	{+ 3}	e 38·1	45·5
Ksara	102·1	39	—	—	e 22 6?	?	46·6	—
Medan	103·5	105	24 6?	?	25 29	{+ 9}	49·1	—
Bombay	104·0	76	18 7	PP	27 1	PS	41·8	43·4
Hyderabad	105·5	81	16 58	?	24 30	[−22]	36·3	45·3
Florence	105·9	18	17 46	[−19]	27 31	PS	39·1	42·1
Triest	108·1	19	18 18	[+ 7]	e 27 53	PS	e 44·1	56·1
Neuchatel	108·4	13	e 17 48	[−25]	—	—	—	—
Zagreb	108·6	20	e 18 27	[+14]	e 27 42	PS	e 50·1	53·4
Columbia	109·6	305	—	—	e 24 54	[−17]	e 51·9	—
Graz	109·7	20	e 18 29	[+12]	e 27 59	PS	48·1	67·5
Paris	109·8	10	e 14 6?	−24	(e 28 6?)	PS	e 28·1	47·1
Strasbourg	110·1	13	e 14 6?	−25	e 26 34	{+26}	50·1	—
Stuttgart	110·4	14	e 14 36	+ 3	e 26 12	{+ 2}	e 43·6	—
Vienna	111·0	20	e 18 9	[−12]	—	—	e 45·1	63·1
Feldberg	111·8	13	e 18 51	[+28]	e 28 14	PS	—	67·1
Uccle	111·9	11	e 18 31	[+ 7]	e 26 37	{+17}	45·1	48·3
Charlottesville	112·1	309	e 19 6	PP	e 28 38	PS	—	—
Kew	112·2	8	e 18 46	PP	e 26 41	{+19}	44·1	47·7
Cheb	112·2	17	e 25 41	S	(e 25 41)	[+18]	e 44·1	48·6
Oxford	112·4	7	—	—	i 26 46	{+22}	40·9	51·2
Georgetown	112·4	311	—	—	(i 25 17)	[− 7]	(e 60·1)	—
Baku	112·7	46	e 18 57	[+31]	i 25 8	[−17]	45·1	62·5
Göttingen	113·3	15	e 19 42	PP	e 28 24	PS	e 44·6	48·1
De Bilt	113·3	12	e 19 6	[+38]	e 25 8	[−19]	e 45·1	49·0
Harvard	113·3	317	—	—	i 28 42	PS	e 51·6	—
Agra E.	113·6	75	19 6	[+37]	i 28 30	PS	i 45·2	48·4
Agra N.	113·6	75	19 9	[+40]	28 38	PS	e 45·4	—
Bidston	114·0	6	—	—	e 24 56	[−34]	47·3	53·6
Stonyhurst	114·5	7	—	—	e 27 7	{+28}	46·8	49·6

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		114·7	86	17 39	[−53]	28 14	PS	49·5	53·3
Pittsburgh		114·8	310	—	—	e 34 54	SS	—	—
Hamburg		115·2	14	e 19 20	PP	e 34 36	SS	e 45·7	48·1
Durham		115·3	7	—	—	26 21	{−23}	—	49·4
Edinburgh		116·4	6	—	—	e 27 24	{+32}	46·1	48·9
Buffalo		116·5	311	e 19 14	PP	i 30 30	PS	—	55·1
Toronto		117·3	311	e 19 49	PP	i 29 26	PS	49·3	—
St. Louis		117·4	300	i 19 51	PP	i 29 30	PS	—	51·1
Ottawa		117·5	316	e 19 49	PP	e 29 26	PS	e 49·1	—
Florissant		117·6	300	i 19 53	PP	i 25 26	[−17]	i 51·1	55·9
Lund		117·7	15	—	—	29 24	PS	46·1	—
Copenhagen		117·7	15	19 30	PP	29 6	PS	—	—
Ann Arbor		117·8	308	e 19 48	PP	e 36 6	SS	e 55·9	—
Chicago		118·9	305	—	—	e 29 37	PS	e 49·6	—
Madison		120·8	305	e 20 12	PP	i 29 56	PS	56·1	—
Tashkent		121·3	60	20 44	PP	26 26	[+32]	61·1	86·1
Bergen		121·5	10	—	—	36 18?	SS	48·1	56·1
Tucson		121·7	281	e 20 26	PP	e 30 34	PS	—	—
Andijan		122·2	62	e 18 44	[− 7]	—	—	e 60·3	—
Upsala		122·4	17	—	—	e 29 54	PS	e 50·1	56·5
Kucino		122·7	31	20 7	PP	27 8	{−27}	48·5	66·0
Manila		123·2	123	19 46	[+53]	30 26	PS	48·8	55·5
Helsingfors		123·9	21	—	—	e 41 36	SSS	e 47·1	—
Pulkovo		124·5	25	20 17	PP	25 34	[−30]	53·1	64·9
Ivigtut		124·6	340	—	—	37 6?	SS	52·1	—
La Jolla	N.	125·3	276	e 18 55	[− 3]	—	—	—	—
Pasadena		126·7	276	e 18 55	[− 5]	(e 38 6)	SS	e 38·1	—
Hong Kong		127·1	110	20 56	PP	31 35	PS	53·0	68·6
Haiwee		128·3	279	e 19 17	[+13]	—	—	—	—
Tinemaha	N.	129·1	279	e 19 11	[+ 6]	—	—	—	—
Ekaterinburg		130·4	42	e 18 54	[−14]	26 6	[−14]	55·1	70·4
Scoresby Sund		130·9	355	22 37	PKS	26 15	[− 7]	52·1	—
Berkeley		131·8	275	—	—	e 39 6?	SS	—	—
Ukiah		133·2	275	—	—	e 39 42	SS	e 54·7	—
Victoria	E.	140·0	285	22 21	PP	35 15	?	60·4	76·3
Koti	Z.	145·3	125	e 19 24	[−11]	—	—	—	—
Irkutsk		145·4	75	e 19 23	[−12]	29 21	{−35}	59·1	76·9
Sumoto		146·5	126	e 18 59	[−37]	—	—	—	—
Kobe		146·9	126	e 19 42	[+ 5]	—	—	—	—
Nagoya		148·1	128	e 19 52	[+13]	—	—	—	—
Gihu		148·2	128	19 44	[+ 5]	—	—	—	—
Nagano		149·9	129	19 37	[− 5]	—	—	—	—
Kakioka		150·2	132	19 29	[−13]	—	—	—	—

Additional readings and notes :—
Cape Town PP = +7m.34s., PPP = +8m.21s., +8m.36s.
Rio de Janeiro PPN = +9m.6s., PPPN = +9m.34s., iSE = +14m.6s., SSE = +16m.40s., SSSE = +17m.27s.
Tananarive PP = +9m.40s., e = +9m.55s., S = +14m.19s., e = +19m.37s. = S_cS −8s. ; true S is given as SS.
La Paz PPZ? = +11m.54s., PPE = +12m.43s., PPPN = +13m.33s., iSNZ = +18m.10s., iPSE = +18m.21s., iSPS = +18m.45s., iSSE = +22m.3s., iSSN = +22m.39s., iE = +24m.53s., L_qN = +26m.13s.
Wellington PP = +16m.11s.
Melbourne PPP = +17m.56s., SS = +27m.36s., i = +31m.13s., SSS = +32m.56s.
Adelaide ePP = +15m.8s., iPS = +23m.27s., iSS = +28m.9s., iSSS = +33m.31s.
Riverview iN = +29m.13s.
Sydney iS = +28m.36s. =SS +9s.
Port au Prince i = +16m.44s. =PP +0s. and +17m.41s.
San Fernando iPS = +24m.42s. =SKKS +14s.
Helwan e = +16m.38s. and +30m.48s.
Almeria PP = +15m.43s.
Granada PP = +15m.42s., PPP = +17m.9s. =PP −16s., SS = +26m.14s. = PS −6s., SSS = +29m.27s.
Algiers ? = +31m.6s.? =SS −26s.
Batavia i = +24m.50s. =SKKS +9s.

Continued on next page.

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Toledo iS = +25m.6s.
Triest PP = +21m.19s., e = +26m.0s. =SKKS +7s.
Zagreb eE = +28m.51s., e = +32m.48s., eE = +44m.1s.
Columbia iPS = +28m.26s., e = +33m.56s. =SS −16s. and +34m.30s.
Paris e = +18m.6s.? =PKP −11s.
Strasbourg ePKP = +18m.6s.?, ePP = +18m.38s., SKS = +24m.56s., PS = +28m.3s., PPS = +28m.38s., SS = +33m.36s.
Stuttgart ePPNZ = +18m.38s., ePPPNZ = +21m.0s., eSKSN = +24m.50s., ePSNZ = +27m.58s., eSS = +33m.36s., eSSSE = +37m.42s.
Feldberg i = +38m.14s.
Uccle e = +24m.51s. =SKS −31s., i = +28m.19s., e = +29m.21s., and +34m.24s. =SS −20s.
Charlottesville e = +33m.44s. and +34m.56s. =SS +9s.
Kew ePPP = +21m.23s., ePSN = +28m.21s., eSSEN = +34m.16s., eSSSN = +38m.23s.
Cheb eS = +33m.51s.
Oxford SS = +34m.14s., SSS = +38m.21s.
Georgetown iPPS = (+34m.52s.) = SS +1s. and (+34m.57s.), iPPSS = (+41m.7s.) iSSS = (+45m.11s.); all readings have been *increased* by 36m.
Baku iPS = +28m.26s.
De Bilt eE = +26m.52s., eN = +28m.33s., eEN = +34m.30s.
Harvard i = +29m.50s., eSS = +34m.38s., e = +37m.52s.
Bidston e = +28m.56s. and +34m.56s. =SS −18s., +38m.46s.
Stonyhurst e = +34m.45s. =SS −34s. and +38m.25s.
Durham S? = +34m.44s.
Edinburgh e = +33m.18s., i = +39m.30s. =SSS −25s.
Toronto eN = +28m.33s., iN = +35m.51s. =SS −5s., eN = +40m.14s. =SSS +6s.
St. Louis iN = +20m.2s. =PP +12s., eEN = +35m.51s. =SS −7s.
Ottawa eSS = +35m.48s., eSSSE = +40m.36s.
Florissant iZ = +20m.8s. =PP +16s., +21m.18s., and +22m.18s., i = +23m.8s., iZ = +24m.21s., iEN = +29m.33s. =PS −7s., +29m.53s., and +31m.26s., iE = +32m.6s., i = +36m.8s. =SS +8s.
Lund +35m.28s. =SS −34s.
Copenhagen e = +35m.30s. =SS −32s.
Chicago eSS = +35m.51s.
Madison iSS = +36m.36s.
Tashkent PS = +30m.36s.
Tucson eSS = +36m.8s., eSSS = +41m.53s.
Upsala e = +36m.14s.
Kucino PS = +30m.8s., SS = +36m.6s., SSS = +41m.6s.
Manila SSSE = +40m.39s., SSSSE = +42m.46s.
Pulkovo PS = +30m.28s., SS = +36m.48s.
La Jolla eN = +19m.21s.
Pasadena iPNZ = +19m.11s., eZ = +20m.56s. =PP +1s., iZ = +21m.6s., and +24m.15s.
Hong Kong PP = +24m.45s., SS = +38m.16s., SSS = +42m.36s.
Haiwee eN = +21m.19s. =PP +13s.
Tinemaha eN = +21m.21s. =PP +10s.
Ekaterinburg iPP = +20m.58s., iPKS = +22m.12s., PPS = +32m.52s., iSS = +38m.6s.
Scoresby Sund SS = +38m.18s., +41m.12s., and +43m.12s.
Ukiah eSSS = +46m.52s.
Irkutsk eSS = +41m.6s.
Sumoto eN = +19m.21s., eZ = +19m.35s., eE = +19m.39s.
Long waves were also recorded at Barcelona, Tortosa, Besançon, Königsberg, and Bozeman.

Feb. 23d. 20h. 11m. 22s. Epicentre 9°·8S. 162°·0E. N.2.

A = −·937, B = +·305, C = −·170; D = +·309, E = +·951; G = +·162, H = −·053, K = −·985.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	18·0	119	i 4 23	+16	—	—	—	—
Riverview	26·0	201	e 5 21	− 8	i 9 47	−11	e 12·7	14·6
Sydney	26·0	201	e 5 32	+ 3	i 10 14	+16	14·2	15·2
Melbourne	31·9	205	e 6 23	+ 1	11 23	−11	13·8	16·4
Adelaide	33·0	217	e 6 32	0.	i 11 34	−17	14·1	17·5
Manila	47·4	300	8 34	+ 2	15 16	− 8	22·1	—
Perth	48·0	235	i 15 23	S	(i 15 23)	−10	i 23·1	27·0
Batavia	54·7	270	e 9 24	− 2	e 16 48	−17	—	—
Hong Kong	56·8	306	9 41	− 1	17 18	−16	24·2	29·9
Irkutsk	79·2	329	e 12 22	+18	21 51	−16	36·6	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Berkeley		85·0	50	e 12 34	+ 1	—	—	40·4	—
Santa Barbara		86·1	54	e 12 39	0	—	—	—	—
Pasadena		87·2	54	i 12 42	− 2	—	—	e 40·9	—
La Jolla		87·7	55	i 12 45	− 1	—	—	—	—
Riverside		87·8	54	e 12 45	− 2	—	—	—	—
Haiwee		87·8	52	e 12 47	0	—	—	—	—
Tinemaha		87·9	51	e 12 47	0	—	—	—	—
Agra	E.	89·1	298	e 12 58	+ 5	23 11	[−16]	e 42·9	—
Bombay		92·4	290	10 20	?	—	—	—	—
Andijan		96·0	311	e 40 15	?	—	—	—	—
Tashkent		98·4	312	e 20 42	?	—	—	e 41·6	58·4
Ekaterinburg		104·4	326	e 18 6	PP	e 25 43	−22	43·6	61·1
Tananarive	E.	109·3	246	—	—	e 28 24	PS	—	55·9
Florissant		109·8	51	—	—	e 34 38	SS	e 52·2	58·4
St. Louis	E.	110·0	51	—	—	28 33	PS	—	54·1
Baku		113·1	310	e 19 26	PP	e 30 8	PS	51·6	61·4
Pulkovo		118·5	335	e 20 14	PP	e 30 53	PS	56·5	67·0
Ottawa		119·4	42	—	—	e 37 8	SS	e 58·6	—
De Bilt		133·7	340	e 21 38?	PP	—	—	e 66·6	74·5
Stuttgart		134·9	334	e 21 43	PP	e 31 56	PS	e 66·6	—
Triest		135·0	330	e 22 40	PKS	—	—	71·6	—
Uccle		135·0	340	e 21 38?	PP	—	—	e 60·6	—
Strasbourg		135·6	335	e 18 38?	[−38]	—	—	e 68·6	—
Kew		135·9	344	e 21 40	PP	—	—	e 66·6	76·5
Paris		137·3	340	e 18 38?	[−40]	—	—	71·6	78·6
Florence		137·6	327	e 19 6	[−13]	—	—	—	86·1

Additional readings :—
Riverview iPEN = +5m.31s.
Hong Kong ? = +13m.18s.
Tashkent e = +28m.36s., +32m.20s., +35m.32s., and +39m.26s.
Ekaterinburg iPP = +18m.22s., PPS = +28m.26s.
St. Louis eE = +34m.28s. =PP +9s.
Pulkovo SS = +36m.26s., SSS = +40m.44s.
Stuttgart ePKS = +22m.53s.
Long waves were also recorded at Wellington, Ivigtut, Scoresby Sund, and other European and American stations.

Feb. 23d. Readings also at 7h. (Batavia), 10h. (near Tyosi and near Andijan), 11h. (Adelaide, San Juan, and near Tyosi), 12h. and 13h. (San Juan), 14h. (near Andijan and La Paz), 19h. (near Apia), 20h. (La Paz), 23h. (Lick and Tucson).

Feb. 24d. Readings at 1h. (Kobe), 2h. (La Paz), 5h. (near Taihoku), 9h. (near La Paz), 14h. (Tyosi, San Juan, and Wellington), 15h. (Wellington), 18h. (Sitka and near Port au Prince), 20h. (San Juan), 21h. (Bombay).

Feb. 25d. 6h. 10m. 9s. Epicentre 33°·1N. 132°·3E. (as on 1930, Oct. 21d.). X.

A = −·564, B = +·620, C = +·546.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama	0·8	27	i 0 11	0	i 0 18	− 3	—	0·3
Koti	1·2	66	i 0 16	− 1	0 26	− 5	—	0·5
Hukuoka	1·6	287	e 0 31	P_g	0 55	S_g	—	1·0
Sumoto	2·5	60	0 36	0	1 7	+ 3	—	1·2
Kobe	2·9	57	e 0 50	P*	1 18	+ 4	—	2·3
Osaka	3·1	60	0 44	0	(1 22)	+ 2	1·4	1·9
Toyooka	3·3	40	i 0 55	P*	1 23	− 2	—	1·6
Nagoya	4·4	60	1 7	+ 4	1 48	− 5	—	2·3

Additional readings :—
Sumoto SEZ = +1m.11s.
Toyooka iPZ = +59s.

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Feb. 25d. Readings also at 0h. (Suva), 7h. (near Berkeley, Branner, and Lick), 9h. (Vienna), 11h. (Kobe, Andijan, Tashkent, and Baku), 12h. (near Koti and Sumoto), 13h. (near Reykjavik), 14h. (La Paz, Adelaide, Melbourne, Riverview, and Perth), 16h. (Adelaide, Melbourne, Riverview, Sydney, and Perth), 17h. (Stuttgart), 21h. (La Paz and Sucre).

Feb. 26d. 6h. 11m. 39s. Epicentre 35°·7N. 140°·4E. (as on 1928, Oct. 5d.). X.

A = −·626, B = +·518, C = +·584.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Tyosi		0·4	85	0 8	+ 2	e 0 16	S_g	e 0·3
Tokyo		0·5	268	0 6	− 1	0 15	+ 2	—
Nagoya		2·9	259	0 40	− 1	1 13	− 1	—
Mizusawa	E.	3·5	9	—	—	1 27	− 3	—

No additional readings.

Feb. 26d. 7h. 1m. 50s. Epicentre 34°·8N. 135°·7E. (as on 1931, July 13d.). 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 5	+ 2	0 6	+ 1	0·2	0·2
Kobe	0·4	254	0 5	− 1	0 10	0	—	1·1
Sumoto	0·8	236	0 12	+ 1	0 22	+ 1	—	0·4
Toyooka	1·0	316	i 0 13	− 1	0 23	− 3	—	0·4
Nagoya	1·1	71	0 6	−10	0 41	+13	—	—

No additional readings.

Feb. 26d. 11h. 31m. 11s. Epicentre 8°·0N. 113°·5E. N.3.

A = −·395, B = +·908, C = +·139; D = +·917, E = +·399;
G = −·055, H = +·128, K = −·990.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	9·8	47	2 16	− 2	i 4 10	+ 2	—	—
Batavia	15·7	205	3 39	+ 1	i 6 46	+15	—	—
Bombay	40·9	290	8 5	+25	—	—	—	—
Andijan	49·0	320	e 8 53	+ 9	e 16 16	+29	—	—
Tashkent	51·3	319	e 9 35	+34	i 16 18	− 1	e 24·0	35·2
Ekaterinburg	63·7	331	i 10 16	−14	i 18 48	−16	26·8	—
Baku	64·8	311	e 10 36	− 1	e 20 0	+43	30·8	—

Baku e = +13m.20s.

Feb. 26d. Readings also at 2h. (La Paz), 3h. (Andijan and Frunse), 5h. (Sumoto), 6h. (Kodaikanal), 7h. (Tyosi, Ekaterinburg, Tashkent, and Bombay), 8h. (Irkutsk (2) and Koti), 9h. (Ekaterinburg and Tashkent), 13h. (Andijan), 15h. (Wellington), 16h. (near Berkeley, Branner, and Lick), 17h. (Ukiah and Wellington), 18h. (near La Paz), 19h. (Sucre and near La Paz), 21h. (San Juan), 22h. (near Wellington), 23h. (Branner).

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Feb. 27d. 8h. 49m. 37s. Epicentre 22°·5S. 70°·2W. N.3.

A = +·313, B = −·869, C = −·383; D = −·941, E = −·339; G = −·130, H = +·360, K = −·924.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sucre		5·8	53	i 1 21	− 1	—	—	—	—
La Paz		6·3	18	i 1 30	0	i 2 30	−11	—	3·2
Santiago		10·9	182	e 2 51	+18	5 17	S*	6·8	—
La Plata		16·4	142	e 3 47	+ 1	6 59	+11	8·2	—
La Jolla	N.	71·3	319	e 11 20	+ 1	—	—	—	—
Riverside		72·1	320	e 11 23	0	—	—	—	—
Pasadena		72·7	320	i 11 26	− 1	—	—	—	—
Tinemaha		74·8	322	e 11 37	− 2	—	—	—	—

Additional readings:—
La Paz iP_gE = +1m.40s.
Riverside eEN = +11m.53s.
Pasadena i = +11m.56s.
Tinemaha eN = +12m.9s.

Feb. 27d. 23h. 59m. 30s. Epicentre 33°·1N. 132°·3E. (as on 25d.). X.

	Δ	Az.	P.	O−C.	S.	O−C	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama	0·8	27	e 0 14	+ 3	i 0 24	+ 3	—	0·4
Hukuoka	1·6	287	0 22	− 1	0 42	+ 1	—	0·7
Sumoto	2·5	60	e 1 10	S	(e 1 10)	+ 6	(e 1·3)	1·5
Toyooka	3·3	40	e 0 45	− 2	1 12	−13	—	1·3

Additional readings and note:—
Koti (Δ = 1°·2) gives eS = 23h.59m.14s.
Sumoto gives S as P and L as S.
Toyooka ePN = +48s.

Feb. 27d. Readings also at 0h. (Andijan, Tashkent, Adelaide, Riverview, Wellington, and near Suva), 1h. (La Paz, Lick, Paris, Kew, De Bilt, Pulkovo, Ekaterinburg, Kucino, and Baku), 5h. (Sucre and near La Paz), 7h. (near Tananarive), 10h. (La Paz, La Plata, Sucre, and near Manila), 11h. (Baku, Ekaterinburg, Tashkent, Paris, Strasbourg, and La Paz), 14h. (Alicante), 21h. (La Paz, Pulkovo, Ekaterinburg, Tashkent, Irkutsk, Bombay, near Almata, Andijan, and Frunse), 22h. (De Bilt, Stuttgart, and Strasbourg), 23h. (La Paz and near Wellington).

Feb. 28d. 3h. 0m. 5s. Epicentre 37°·4N. 137°·9E. (as on 1930, Sept. 26d.). R.3.

A = −·589, B = +·533, C = +·607; D = +·670, E = +·742; G = −·461, H = +·407, K = −·794.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		2·3	199	0 24	− 9	0 56	− 3	—	—
Tyosi		2·9	125	e 0 38	− 3	1 12	− 2	—	—
Toyooka		3·0	233	i 0 52	P*	1 24	+ 7	—	1·5
Mizusawa	E.	3·1	53	0 7	−37	1 29	+ 9	—	—
	N.	3·1	53	0 13	−31	1 25	+ 5	—	—
Osaka		3·3	215	0 44	− 3	(1 31)	+ 6	1·5	[illegible]
Kobe		3·5	220	0 49	− 1	1 35	+ 5	—	[illegible]
Sumoto		3·9	219	1 3	+ 7	1 51	+11	—	[illegible]
Koti		5·2	224	—	—	1 2 25	+12	—	[illegible]

Kobe gives also ePN? = +56s., eN = +1m.13s., SZ = +1m.39s.

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Feb. 28d. 14h. 40m. 27s. Epicentre 48°·0N. 8°·0E. (as on 1931, May 29d.). X.

A = +·663, B = +·093, C = +·743.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Strasbourg	0·6	345	e 0 8	− 1	i 0 18	+ 3
Zurich	0·7	148	e 0 11	+ 1	e 0 23	+ 5
Hohenheim	1·1	48	—	—	e 0 33	S_g
Ravensburg	1·1	101	—	—	e 0 37	S_g
Stuttgart	1·1	46	—	—	e 0 35	S_g
Neuchatel	1·2	216	e 0 17	0	e 0 30	− 1
Chur	1·5	136	e 0 27	P*	e 0 48	S_g

Additional readings :—
Hohenheim e = +37s.
Chur e = +51s.

Feb. 28d. Readings also at 2h. (Andijan), 3h. (near Calcutta), 4h. (Koti, near Sumoto, and near Andijan), 5h. (Strasbourg), 8h. (near Taihoku), 12h. (near Mizusawa), 13h. (near Hukuoka), 15h. (Hastings), 17h. (near Andijan (2)), 18h. (Perth), 20h. (near Hokoto).

Feb. 29d. Readings at 0h. (San Juan), 1h. (La Plata, Sucre, and near La Paz), 4h. (Sumoto), 5h. (Balboa Heights, Edinburgh, De Bilt, Paris, and Stuttgart), 7h. (Sumoto), 8h. (Wellington), 10h. (San Juan), 13h. (La Paz), 22h. (Agra, Bombay, Tashkent, Christchurch, and Wellington), 23h. (Ekaterinburg).

March 1d. 7h. 13m. 49s. Epicentre 34°·8N. 135°·7E. (as on 1932 Feb. 26d.). R.3.

A = −·588, B = +·574, C = +·571.

	△	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 6)	+ 1	0·1	0·1
Kobe	0·4	254	0 7	+ 1	0 15	S*	—	0·3
Sumoto	0·8	236	0 11	0	0 21	0	—	0·4
Toyooka	1·0	316	e 0 19	+ 5	0 36	S_g	—	0·6

March 1d. 15h. 42m. 22s. Epicentre 35°·1N. 138°·1E. N.3.

A = −·609, B = +·546, C = +·575.

As given by Nagoya.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	0·9	274	i 0 10	− 3	0 23	0	—	0·4
Osaka	2·2	258	0 31	0	(1 2)	S*	1·0	1·3
Tyosi	2·3	74	e 0 42	P*	—	—	—	—
Kobe	2·5	260	0 31	− 5	1 7	+ 3	—	1·3
Toyooka	2·7	279	i 0 43	+ 4	1 14	+ 5	—	1·4
Sumoto	2·8	254	e 0 41	+ 1	1 21	+ 9	—	1·5

Additional readings :—
Kobe ePZ = +37s., eE = +1m.4s., S_g? = +1m.12s.
Toyooka iPZ = +47s., iS_g = +1m.20s.

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March 1d. 19h. 1m. 50s. Epicentre 36°·5S. 70°·1W. N.3.

A = +·274, B = −·756, C = −595; D = −·940, E = −·340;
G = −·202, H = +·559, K = −·804.

Depth of focus 0°·040.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago	+0·6	3·1	351	0 38	−15	1 8	−27	1·3	1·4
La Plata	−0·5	10·0	84	2 14	0	4 4	+ 3	—	—
Sucre	−1·4	18·0	15	i 3 52	+ 3	—	—	—	—
La Paz	−1·6	20·1	5	4 15	+ 2	7 35	− 1	—	9·1
La Jolla	−5·2	82·2	322	i 11 52	0	—	—	—	—
Riverside	−5·2	83·1	322	e 11 58	+ 1	—	—	—	—
Pasadena	−5·2	83·6	322	e 11 59	0	—	—	—	—
Mount Wilson	−5·2	83·7	322	e 11 59	− 1	—	—	—	—
Haiwee	−5·3	85·2	324	e 12 7	0	—	—	—	—
Tinemaha	−5·3	86·1	324	i 12 10	− 2	—	—	—	—
Samarkand	—	146·4	71	e 19 29	[− 7]	—	—	—	—
Andijan	—	150·6	70	e 19 20	[−23]	—	—	—	—
Frunse	—	152·3	65	e 20 15	[+30]	—	—	—	—

La Paz gives also i = +6m.17s., iE = +8m.10s.

March 1d. Readings also at 1h. (Baku and Medan), 2h. (Wellington), 4h. (Chur, Neuchatel, and Sumoto), 10h. (near Santiago), 16h. (near Sumoto), 17h. (Tyosi and near Mizusawa), 19h. (near Tokyo and Tyosi (2)), 22h. (Baku).

March 2d. 17h. 41m. 36s. Epicentre 40°·2N. 127°·0W. N.3.

A = −·460, B = −·610, C = +·645; D = −·799, E = +·602;
G = −·389, H = −·515, K = −·764.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ukiah	3·1	109	e 0 38	− 6	—	—	i 1·4	—
Berkeley	4·3	121	e 1 1	0	e 1 46	− 4	—	—
Branner	4·6	125	i 1 5	− 1	e 1 56	− 2	—	—
Lick	5·1	122	e 1 10	− 3	e 2 5	− 5	e 2·8	—
Tinemaha	7·5	112	i 1 49	+ 3	e 3 16	+ 5	e 4·6	—
Haiwee	8·2	117	e 1 58	+ 2	e 3 48	+19	e 5·2	—
Victoria	8·6	17	2 18	+16	3 47	+ 8	—	4·6
Mount Wilson	9·3	127	e 2 11	0	—	—	—	—
Pasadena	9·3	128	i 2 10	− 1	—	—	—	—
Tucson	15·2	116	e 3 35	+ 4	e 6 57	+37	e 8·6	—
Florissant	28·1	80	e 5 26	−22	e 10 31	− 3	e 13·4	16·1
St. Louis	28·3	81	e 5 50	0	e 10 41	+ 4	e 15·3	—

Additional readings:—
Berkeley eEZ = +48s., iE = +1m.7s., eE = +1m.14s., iE = +2m.16s., eE = +3m.0s., iE = +4m.23s.
Long waves were also recorded at Seattle, Bozeman, Madison, Pittsburgh, Ivigtut, Scoresby Sund, Copenhagen, De Bilt, Paris, and Uccle.

March 2d. Readings also at 1h. (near Mizusawa), 2h. (near Mizusawa, Nagoya, and Tyosi), 3h. (Andijan, Berkeley, Lick, and near Branner), 4h. (near Andijan), 5h. (Sydney and near Mizusawa), 8h. (near Triest, Vienna, and Zagreb), 9h. (Baku and Samarkand), 11h. (Little Rock and St. Louis), 12h. (Pasadena, Tinemaha, Frunse, and near Andijan), 13h. (Adelaide, Melbourne, Riverview, Sydney, Perth, and La Paz), 14h. (De Bilt, Uccle, Paris, Strasbourg, Stuttgart, Batavia, and near Medan), 17h. (near Branner and Malabar), 18h. (Tyosi (2)), 20h. (Lick, Samarkand, and near Andijan), 22h. (Pulkovo, Baku, near Christchurch, Glenmuick (2), Seattle, Takaka, and Wellington), 23h. (near Andijan, Samarkand, near Christchurch, Takaka, and Wellington).

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March 3d. Readings at 1h. (Sebastopol, Theodosia, and near Yalta), 9h. (De Bilt, Budapest, Feldberg, Ekaterinburg, Pulkovo, Batavia, and near Malabar), 12h. (Edinburgh, Sucre, and near La Paz), 13h. (Sucre and near La Paz), 14h. (La Paz (2), Sucre, Rio de Janeiro, and near Baku), 18h. (Suva), 20h. (La Paz), 22h. (Kobe, Nagoya, Hong Kong, and near Manila), 23h. (Ekaterinburg, Tashkent, and near Apia).

March 4d. 23h. 20m. 55s. Epicentre 33°·5N. 81°·0E. N.2.

$A = +\cdot130$, $B = +\cdot824$, $C = +\cdot552$; $D = +\cdot988$, $E = -\cdot156$; $G = +\cdot086$, $H = +\cdot545$, $K = -\cdot834$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		4·1	220	0 55	− 3	1 55	+10	2·2	—
Agra		6·8	202	1 36	− 1	2 53	0	i 3·7	—
Andijan		10·0	319	e 2 19	− 2	4 7	− 6	4·8	5·5
Almata		10·3	343	e 2 5?	−20	—	—	—	—
Frunse		10·7	334	e 2 28	− 3	4 30	− 1	—	6·1
Calcutta		12·7	148	1 54	−64	4 24	−56	5·6	8·3
Samarkand		12·8	303	2 58	− 1	5 6	−16	—	—
Bombay		16·3	209	3 47	+ 2	7 10	+25	8·7	10·1
Kodaikanal		23·5	189	i−0 48	?	i 3 34	?	6·3	6·8
Irkutsk		25·1	35	5 27	+ 6	e 9 48	+ 5	15·1	15·4
Baku		25·7	295	5 29	+ 3	10 8	+15	13·5	16·8
Phu-Lien		25·9	113	e 5 37	+ 9	10 5?	+ 8	14·1?	—
Colombo		26·6	183	10 8	S	12 5	?	14·3	14·9
Ekaterinburg		27·2	335	i 5 39	− 1	10 14	− 4	14·1	16·6
Hong Kong		31·2	102	11 27	S	(11 27)	+ 4	18·9	19·5
Zi-ka-wei	Z.	34·0	81	e 6 47	+ 7	e 12 15	+ 9	—	22·1
Kucino		37·0	321	e 9 47	(+15)	—	—	20·3	22·6
Manila		40·7	107	7 38	0	14 17	+30	21·6	25·0
Pulkovo		42·1	326	i 7 48	− 1	e 14 3	− 5	21·1	26·0
Helsingfors	E.	44·7	325	i 8 11	+ 1	e 14 50	+ 4	e 24·1	—
	N.	44·7	325	e 8 20	+10	e 14 35	−11	e 24·1	—
Königsberg	N.	46·5	317	—	—	e 19 49	?	—	26·1
Vienna		49·5	308	i 8 47	0	—	—	—	34·1
Zagreb		50·1	306	e 8 54	+ 2	—	—	—	—
Potsdam		51·1	314	i 9 1	+ 1	—	—	e 28·1	31·1
Copenhagen		51·2	319	9 0	0	16 23	+ 5	27·1	—
Triest		51·7	307	i 9 3	− 1	e 16 26	+ 2	—	—
Hamburg		52·8	316	e 9 12	0	—	—	—	30·1
Florence		53·8	303	e 10 5	+45	16 5	−48	30·1	35·1
Stuttgart		54·1	310	i 9 22	0	e 17 11	+14	e 28·1	35·0
Chur		54·3	308	e 9 23	0	—	—	—	—
Feldberg		54·3	313	—	—	e 16 50	− 9	—	34·0
Strasbourg		55·1	310	i 9 28	− 2	e 17 23	+12	e 29·1	—
De Bilt		55·9	314	i 9 36	+ 1	—	—	e 30·1	32·0
Neuchatel		56·0	309	e 9 35	− 1	—	—	—	—
Uccle		56·7	313	e 9 40	− 1	e 17 41	+ 9	e 28·1	—
Paris		58·4	311	i 9 51	− 2	—	—	32·1	33·1
Kew		59·4	315	e 9 59	− 1	—	—	e 31·1	—
Toledo		65·9	303	10 43	− 2	—	—	—	—
La Paz		147·5	292	i 19 42	[+ 4]	—	—	82·1	88·8

Additional readings:—
Hong Kong ? +14m.17s., S_cS = +17m.19s.
Helsingfors iPPE = +9m.57s.; T_e = 23h.20m.42s.
Königsberg eN = +20m.5s., e = +24m.35s.
Potsdam iZ = +11m.0s. = PP +10s.
Copenhagen +10m.59s. = PP +8s.
Triest PP = +11m.3s., e = +16m.46s.
Hamburg eE = +21m.29s., eN = +28m.5s.?
Florence S = +18m.5s.
Stuttgart eSS = +21m.5s.
Strasbourg eSS = +21m.37s.
Long waves were also recorded at Stonyhurst, Edinburgh, Cheb, Bergen, Lund, and Upsala.

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March 4d. Readings also at 2h. (Frunse, near Andijan, and Samarkand), 4h. (near Andijan), 5h. (near Mizusawa), 6h. (Almata, Andijan, and Frunse), 7h. (Glenmuick, near Christchurch, Wellington, Samarkand, near Almata, and Andijan), 8h. (near Christchurch and Wellington), 12h. (Suva, Andijan, and near Medan), 15h. (Tyosi), 18h. (near Tokyo and Tyosi), 21h. (Adelaide, Riverview, Suva, and near Amboina).

March 5d. 1h. 40m. 48s. Epicentre 36°·5S. 180°· N.3.

A = −·804, B = ·000, C = −·595; D = ·000, E = +1·000; G = +·595, H = ·000, K = −·804.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni	3·8	244	0 36	−18	1 4	−33	—	—
Wellington	6·2	219	1 36	+ 8	2 51	+13	—	—
Takaka	7·1	231	1 37	− 4	4 4	S_g	—	—
Christchurch	9·0	216	2 14	+ 7	4 0	+11	—	—
Riverview	23·6	268	e 5 6	0	e 9 24	+ 8	e 12·2	15·5
Sydney	23·6	268	e 4 42	−24	e 9 12	− 4	11·8	13·4
Melbourne	27·8	257	6 30	PP	10 32	+ 4	13·0	16·3
Adelaide	33·4	260	e 7 21	+46	e 12 46	+49	i 15·3	18·6
La Paz	96·8	116	—	—	e 25 6	+ 8	e 47·2	54·8
Ekaterinburg	135·5	316	23 10	PKS	e 34 29	?	—	—

Additional readings:—
Arapuni i = +45s., S_g = +1m.28s., i = +2m.4s.
Wellington i = +1m.54s. and +2m.12s., P* = +2m.22s., S* = +3m.21s., S_g = +3m.44s.
Takaka i = +1m.46s., P_g = +2m.52s.
Christchurch i = +2m.44s., P* = +2m.55s., P_g = +3m.18s., PS = +3m.37s., S* = +4m.14s., S_g = +4m.53s.
Melbourne SS = +11m.44s.
Adelaide iSS = +14m.23s.
Long waves were also recorded at Perth, Bombay, Pulkovo, Baku, Irkutsk, and European stations.

March 5d. 2h. 10m. 35s. Epicentre 37°·6N. 2°·8W. (given by Tortosa). N.2.

A = +·791, B = −·039, C = +·610.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Granada		0·7	238	i 0 11	+ 1	i 0 23	+ 5	—	—
Malaga		1·6	236	i 0 22	− 1	i 0 46	+ 5	—	—
Alicante		2·0	68	0 29	0	i 1 0	S*	—	1·1
Toledo		2·4	338	0 41	P*	1 21	S_g	—	—
San Fernando		2·7	247	i 0 56	P_g	i 1 25	S*	—	2·4
Tortosa	E.	4·1	38	1 0	+ 2	1 57	S*	2·2	3·1
Algiers		4·8	98	i 1 3	− 5	i 1 49	−14	2·1	4·9
Barcelona		5·4	43	1 13	− 4	2 16	− 2	2·9	4·2
Serra do Pilar		5·7	310	—	—	5 11	?	—	—
Puy de Dôme		9·3	26	e 3 25	S	4 28	S*	—	—
Neuchatel		11·8	35	e 2 44	− 2	e 5 23	S*	—	—
Paris		11·9	17	e 4 38	S	e 6 17	?	7·4	7·4
Chur		13·0	41	e 3 4	+ 2	e 7 6	L	(7·1)	—
Kew		14·0	7	e 4 25?	+70	—	—	e 6·4	7·9
Karlsruhe		14·0	32	5 14	S	6 37	?	6·9	—
Stuttgart		14·1	34	e 3 25	+ 8	—	—	e 7·6	9·3
Uccle		14·2	19	—	—	e 6 5	+ 9	7·4	—
Triest		14·7	52	3 23	− 2	—	—	e 11·6	—
Feldberg		15·0	29	e 4 13	+45	—	—	—	10·1
Zagreb		16·2	54	e 3 45	+ 1	e 6 58	+15	—	—
Vienna		17·6	47	e 4 1	− 1	i 10 7	?	—	—
Hamburg		18·2	25	e 4 14	+ 5	e 8 1	+32	e 9·4	11·2
Potsdam		18·4	32	e 4 7	− 4	e 6 25	−68	9·9	—
Pulkovo		30·5	33	e 8 56	?	—	—	15·2	20·7
Ekaterinburg		45·2	44	e 8 12	− 2	e 18 23	SS	29·4	—

For Notes see next page.

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NOTES TO MARCH 5d. 2h. 10m. 35s.

Additional readings :—
Granada $P_gS = +26s.$, $S_gS = +33s.$, $i = +2m.44s.$, and $+4m.50s.$
Malaga $P_gP = +25s.$, $PP = +30s.$, $P_gS = +42s.$, $i = +1m.55s.$
Alicante $iPP = +34s.$, $PS = +54s.$, $SS = +1m.4s.$
Toledo $P_g = +47s.$, $PP = +51s.$, $PPP = +56s.$, $i = +58s.$, $P_gS = +1m.3s.$, $PPS = +1m.7s.$, $PS = +1m.11s.$, $PPPPS = +1m.14s.$, $PPSS = +1m.20s.$, $PPPSS = +1m.23s.$, $SS = +1m.31s.$, $PSSS = +1m.33s.$, $PPSSS = +1m.36s.$, $SSS = +1m.39s.$ and $+1m.48s.$
San Fernando $PP = +1m.15s.$
Tortosa $PZ = +47s.$
Algiers $P_g = +1m.20s.$, $S_g = +1m.59s.$
Stuttgart $eSS = +6m.19s.$
Uccle $e = +6m.23s.$ and $+7m.21s.$
Long waves were also recorded at Baku and other European stations.

March 5d. Readings also at 0h. (Almeria, Granada, and near Tyosi), 2h. (Florence), 3h. (Granada and Wellington), 5h. (Alicante, Almeria, Granada, Tortosa, near Malaga, and Toledo), 7h. (Almeria, Tortosa, near Alicante, Granada, and Toledo), 8h. (Koti, near Matuyama, and Sumoto), 10h. (Hastings), 12h. (Almata, Andijan, Frunse, and Samarkand), 14h. (Neuchatel), 17h. (Florence), 21h. (near Batavia).

March 6d. 0h. 18m. 4s. Epicentre 25°·5N. 92°·5E. N.3.

$A = -·039$, $B = +·902$, $C = +·431$; $D = +·999$, $E = +·044$; $G = -·019$, $H = +·430$, $K = -·903$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		4·8	233	1 10	+ 2	2 35	+32	2·9	4·9
Agra	E.	13·1	281	i 2 52	−11	—	—	—	—
Hyderabad		15·3	241	(3 29)	− 3	3 29	P	4·2	4·9
Bombay		19·4	254	4 47	+24	8 30	+36	10·4	10·6
Kodaikanal		20·9	226	3 10	−89	7 11	−73	9·6	11·4
Andijan		22·6	318	e 4 59	+ 2	e 9 3	+ 6	—	—
Frunse		22·8	324	e 4 57	− 2	e 8 47	−14	—	—
Tashkent		24·8	315	(i 5 29)	+11	i 5 29	P	8·7	14·6
Samarkand		25·6	310	e 5 29	+ 4	—	—	—	—
Irkutsk		28·2	15	e 5 49	0	e 10 35	0	14·9	16·4
Manila		28·8	107	10 57	S	(10 57)	+12	(19·0)	—
Baku		38·3	304	—	—	e 13 14	+ 3	e 21·4	26·3
Ekaterinburg		38·7	333	i 7 20	− 1	—	—	18·9	—

Additional readings and note :—
Hyderabad $P = +1m.39s.$
Tashkent $e = +2m.2s.$
Manila gives S as P and L as S.
Baku $e = +17m.25s. = S_eS - 7s.$
Long waves were also recorded at Pulkovo.

March 6d. 21h. 43m. 50s. Epicentre 31°·0N. 96°·0E. (as on 1931 Jan. 29d.). X.

$A = -·090$, $B = +·852$, $C = +·515$; $D = +·995$, $E = +·105$; $G = -·054$, $H = +·512$, $K = -·857$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta		10·9	222	3 25	P*	4 37	+ 1	5·3	7·4
Phu-Lien		13·9	134	e 2 15	−59	(5 10?)	−39	5·2	—
Agra	E.	16·2	261	3 27	−17	i 7 1	+18	8·8	—
Hong Kong		18·4	114	6 20	+129	7 15	−18	7·7	8·4
Chiufeng		18·6	55	e 3 47	−27	e 9 10	L	(e 9·2)	—
Almata		19·5	314	e 4 10	−14	—	—	—	—
Frunse		20·8	311	e 7 23	?	—	—	—	—
Andijan		21·4	304	e 5 5	PP	—	—	—	—
Irkutsk		22·1	14	e 4 43	− 9	e 8 59	+11	11·7	12·6
Bombay		24·2	245	5 15	+ 3	9 48	+21	12·9	15·8

Continued on next page.

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	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Samarkand	25·1	298	e 5 37	+16	—	—	—	—
Kodaikanal	27·0	223	5 30	− 8	10 4	−11	18·6	—
Medan	27·5	174	9 33	S	(9 33)	−51	i 13·3	—
Manila	28·1	120	5 50	+ 2	9 45	−49	11·7	14·0
Ekaterinburg	35·5	327	e 7 6	+13	e 11 51	−38	17·2	—
Baku	38·2	298	—	—	e 16 41	?	20·7	24·2
Pulkovo	51·5	324	—	—	e 21 4	SSS	29·2	29·7

Pulkovo gives e = +24m.53s.
Long waves were also recorded at Tashkent, Copenhagen, De Bilt, Uccle, and Florence.

March 6d. Readings also at 1h. (Hong Kong), 6h. (near Batavia and Malabar), 8h. (near Nagoya), 10h. (Pasadena and Tinemaha), 11h. (Lick, Almata, Frunse, near Andijan, and near Wellington), 12h. (Haiwee, Pasadena, Tinemaha, and Andijan), 15h. (Sebastopol, Simferopol, Theodosia, Yalta, and near Ksara), 16h. (Almata, Frunse, and near Andijan), 19h. (Almata), 22h. (near Santiago).

March 7d. Readings at 0h. (La Paz, Nagoya, Sumoto, Samarkand, near Andijan, and near Ksara), 1h. (Irkutsk, Tashkent, Hong Kong, and near Manila), 2h. (Agra, Bombay, Andijan, and Samarkand), 3h. (Ekaterinburg and Tashkent), 5h. (Baku, Ekaterinburg, and Irkutsk), 6h. (Ponta Delgada and Zagreb), 7h. (Wellington and near Christchurch), 9h. (Nagoya, near Mizusawa, and Tyosi), 10h. (near Andijan), 13h. (La Paz, Edinburgh, and San Fernando), 14h. (Baku, Ekaterinburg, Tashkent, and De Bilt), 17h. (Frunse, near Almata, Andijan, Samarkand, near Kobe, Osaka, and Sumoto), 18h. (La Paz), 21h. (Sebastopol and near Tyosi).

March 8d. 3h. 11m. 14s. Epicentre 5°·0S. 155°·0E. (as on 1929 Jan. 11d.). X.

A = −·903, B = +·421, C = −·087; D = +·423, E = +·906;
G = +·079, H = −·037, K = −·996.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Amboina		26·8	272	i 5 27	− 9	—	—	—	—
Riverview		29·0	186	—	—	10 28	−20	—	15·8
Sydney		29·0	186	c 10 52	S	(e 10 52)	+ 4	14·2	14·8
Adelaide		33·6	205	e 8 46	?	i 13 28	SS	i 15·2	18·2
Melbourne		34·1	192	—	—	i 11 33	−35	15·7	20·3
Manila		39·0	301	7 21	− 3	14 13	+52	—	—
Batavia		48·0	266	e 9 47	PP	—	—	—	—
Hong Kong		48·4	307	8 37	− 2	15 54	+16	24·6	29·3
Medan		56·9	278	e 10 10	+28	e 16 28	?	—	—
Irkutsk		71·5	330	e 11 20	0	e 20 45	+ 6	c 40·8	48·8
Agra	E.	80·8	300	e 11 38	−34	21 44	−40	—	—
Bombay		84·2	290	12 28	− 1	22 47	−13	43·3	—
Frunse		86·4	315	e 12 38	− 2	—	—	—	—
Andijan		87·7	313	e 12 47	+ 1	—	—	—	—
Santa Barbara	N.	88·9	55	e 13 6	+14	—	—	—	—
Pasadena		90·2	55	e 13 1	+ 3	—	—	—	—
Tinemaha	E.	90·4	52	e 13 2	+ 3	—	—	—	—
Mount Wilson		90·4	55	e 13 2	+ 3	—	—	—	—
Haiwee		90·6	53	e 13 2	+ 2	—	—	—	—
Riverside	E.	90·8	56	e 13 5	+ 4	—	—	—	—
La Jolla	N.	90·9	57	e 13 7	+ 5	—	—	—	—
Ekaterinburg		96·5	327	e 17 26	PP	24 45	−11	43·8	—
Baku		104·7	310	—	—	e 26 58	PS	e 53·8	—

Additional readings:—
Amboina i = +6m.48s.
Melbourne i = +13m.8s.
Pasadena iZ = +13m.16s.
Ekaterinburg e = +31m.10s. =SS −3s.
Baku e = +38m.16s.
Long waves were also recorded at Wellington and Pulkovo.

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March 8d. 4h. 29m. 37s. Epicentre 51°·7N. 178°·0W. N.1.

Probable error of epicentre ±0°·20.

A = −·619, B = −·022, C = +·785; D = −·035, E = +·999;
G = −·784, H = −·027, K = −·620.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sikka		24·6	280	9 54	S	(9 54)	+20	—	14·8
Victoria		34·4	72	12 19	S	(12 19)	+ 7	16·5	17·2
Seattle		35·3	72	—	—	12 48	+22	e 17·6	—
Nagoya		35·9	262	e 6 59	+ 2	—	—	—	—
Osaka		37·1	263	7 8	+ 1	10 26	?	12·9	—
Kobe	E.	37·4	263	(7 25)	+15	—	—	—	7·4
Sumoto		37·7	263	6 24	−48	—	—	—	—
Ukiah		39·4	86	—	—	e 13 26	− 1	e 18·3	—
Berkeley		40·7	86	e 7 41	+ 3	i 13 52	+ 5	—	—
Lick		41·5	86	e 7 46	+ 2	—	—	—	—
Nagasaki		41·9	266	7 47	− 1	—	—	—	—
Tinemaha		43·7	85	e 8 6	+ 4	i 14 38	+ 7	—	—
Santa Barbara	N.	44·5	89	—	—	e 14 48	+ 5	—	—
Haiwee		44·5	86	e 8 10	+ 1	e 14 53	+10	—	—
Irkutsk		45·5	304	8 16	− 1	e 14 34	−23	22·4	26·8
Pasadena		45·7	88	e 8 20	+ 2	e 15 4	+ 4	—	—
Mount Wilson		45·7	88	e 8 20	+ 2	e 15 3	+ 3	—	—
Riverside		46·3	89	e 8 29	+ 6	e 15 24	+15	—	—
La Jolla	N.	47·1	89	e 8 30	+ 1	e 15 43	+23	—	—
Scoresby Sund		56·6	10	9 41	+ 1	18 5	+34	24·4	—
Hong Kong		59·1	269	9 53	− 5	17 59	− 5	25·6	32·4
Florissant		59·2	65	i 10 4	+ 5	i 18 6	+ 1	28·4	—
St. Louis		59·4	65	i 9 59	− 1	i 18 7	− 1	—	—
Manila		60·8	258	10 6	− 4	18 18	− 8	27·1	31·4
Little Rock		60·9	70	i 10 10	− 1	i 18 27	− 1	—	—
Ekaterinburg		61·3	329	i 10 13	− 1	i 18 34	+ 1	30·4	40·0
Ottawa		62·2	50	e−2 12	?	—	—	e 29·4	—
Almata		65·1	310	e 11 13	(0)	—	—	—	—
Pulkovo		66·2	345	10 43	− 4	e 19 29	− 6	32·4	39·5
Frunse		66·5	311	e 10 48	− 1	—	—	—	—
Helsingfors	E.	66·6	349	e 13 2	PP	—	—	e 37·4	—
Andijan		69·2	311	e 11 3	− 3	—	—	—	—
Copenhagen		72·2	354	11 25	+ 1	20 49	+ 2	36·4	—
Edinburgh		72·3	3	—	—	e 20 23?	−25	—	—
Hamburg		74·5	355	e 11 36	− 1	—	—	e 40·4	50·4
De Bilt		76·1	358	e 11 47	0	—	—	e 36·4	48·2
Agra		77·0	299	11 21	−31	21 3	−40	e 40·3	—
Uccle		77·4	359	i 11 53	− 1	—	—	e 36·4	—
Cheb		77·8	353	—	—	e 21 23?	−29	e 44·4	50·4
Feldberg		77·9	356	e 11 41	−16	e 21 35	−18	—	53·1
Baku		79·0	325	i 12 2	− 1	22 21	+16	39·4	52·2
Vienna	Z.	79·3	350	i 12 4	0	—	—	—	—
Stuttgart		79·3	355	i 12 4	0	e 21 53	−15	e 39·4	—
Paris		79·5	0	i 12 5	0	—	—	45·4	51·4
Strasbourg		79·6	356	i 12 7	+ 1	—	—	33·4	—
Innsbruck		80·6	354	11 53	−18	—	—	—	—
Neuchatel		81·2	356	e 12 14	0	e 22 23	− 5	—	—
Florence		84·2	354	i 12 31	+ 2	23 13	+13	43·4	50·4
Bombay		86·5	296	12 40	− 1	23 1	−21	43·9	52·9
Toledo		88·2	5	12 49	0	e 23 49	+10	e 42·2	—
San Juan		88·3	61	—	—	e 23 12	[−10]	e 44·9	—
La Paz	Z.	115·1	87	19 55	PP	—	—	—	—

For Notes see next page.

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NOTES TO MARCH 8d. 4h. 29m. 37s.

Additional readings :—
Osaka i = +8m.15s. =PP −12s.
Ukiah S = +13m.35s.
Berkeley eZ = +7m.46s., eE = +12m.23s.?, eN = +16m.59s.
Irkutsk ePP = +9m.55s., SS = +18m.5s.
Scoresby Sund +13m.39s. and +21m.11s. =SS −3s.
Florissant i = +10m.38s. =P_cP −12s., i = +19m.54s. =S_cS +8s.
St. Louis iEN = +19m.47s. =S_cS −1s.
Little Rock iEN = +19m.58s. =S_cS +0s.
Stuttgart ePP = +14m.53s.
San Juan e = +22m.35s., i = +23m.32s.
Long waves were also recorded at Honolulu T.H., Rio de Janeiro, Ivigtut, Kodaikanal, and other European and American stations.

March 8d. 8h. 52m. 56s. Epicentre 42°·2N. 143°·0E. R.2.
(as on 1929 Jan. 10d., and as given by Tokyo).

A = −·592, B = +·446, C = +·672 ; D = +·602, E = +·799 ;
G = −·536, H = +·404, K = −·741.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Urakawa	0·2	253	0 5	+ 2	0 12	+ 7	—
Obihiro	0·7	12	0 8	− 2	0 19	+ 1	—
Kusiro	1·3	53	0 19	+ 1	0 34	+ 1	—
Muroran	1·5	275	0 21	0	0 40	+ 1	—
Sapporo	1·5	306	0 19	− 2	0 38	− 1	—
Hakodate	1·8	256	0 36	P*	0 58	S*	—
Aomori	2·2	230	0 31	0	1 0	+ 3	—
Morioka	2·9	209	0 41	0	1 13	− 1	—
Mizusawa	3·4	205	0 45	− 4	1 27	0	—
Sendai	4·3	203	1 1	0	1 43	− 7	—
Hukusima	4·9	205	1 7	− 3	1 55	−10	—
Mito	6·1	199	1 29	+ 2	2 29	− 7	—
Kakioka	6·4	201	1 26	− 5	—	—	—
Tukubasan	6·4	202	1 30	− 1	—	—	—
Tyosi	6·6	195	e 2 41	S	(e 2 41)	− 7	—
Oiwake	6·8	212	1 43	+ 6	3 6	+13	—
Irkutsk	27·8	304	—	—	e 10 4?	−24	e 16·1

Tyosi eS = +3m.21s. =S*.
Long waves were also recorded at Baku and Ekaterinburg.

March 8d. 18h. 1m. 6s. Epicentre 18°·0S. 179°·5W. (as on 1929 Oct. 6d.). R.2.

A = −·951, B = −·008, C = −·309 ; D = −·009, E = +1·000 ;
G = +·309, H = +·003, K = −·951.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Suva		2·0	266	i 0 30	+ 1	—	—	—	—
Arapuni		20·5	191	—	—	8 34	+18	11·9	—
Wellington		23·8	191	5 14	+ 6	9 27	+ 8	12·9	16·9
Riverview		30·6	233	e 6 10	0	e 11 11	− 3	13·9	17·2
Sydney		30·6	233	e 6 0	−10	i 11 24	+10	15·3	17·6
Melbourne		36·8	230	i 7 5	0	12 47	− 1	17·4	21·2
Adelaide		40·8	238	—	—	14 4	+16	i 18·1	21·7
Honolulu T.H.		44·7	30	—	—	e 14 54	+ 8	e 19·2	—
Amboina		53·1	279	i 8 58	−17	i 16 49	+ 6	31·9	—
Perth		59·4	243	10 54	(+ 3)	18 9	+ 1	27·1	33·7
Manila		67·1	296	e 10 57	+ 5	20 20	PS	33·9	39·4
Zi-ka-wei	z.	75·0	310	11 36	− 4	—	—	35·1	39·9
Hong Kong		76·3	300	14 33	PP	21 25	−10	29·7	39·4
Berkeley		77·5	43	—	—	e 23 12	?	—	—
Pasadena		78·3	48	e 12 8	+ 9	—	—	—	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mount Wilson		78·4	48	e 12 11	+12	—	—	—	—
Riverside	E.	78·7	49	e 12 18	+17	—	—	—	—
Haiwee		79·4	46	e 12 18	+13	—	—	—	—
Tinemaha		79·7	45	e 12 24	+18	—	—	—	—
Seattle		83·2	35	—	—	e 22 36	[− 9]	e 38·2	—
Irkutsk		96·0	324	e 12 54?	−31	e 22 54?	[−72]	e 42·9	51·7
Florissant		100·6	53	—	—	e 27 6	PS	—	51·4
Colombo		102·2	273	25 34	S	(25 34)	−12	—	59·6
La Paz		104·2	112	e 19 1	?	—	—	48·9	63·3
Kodaikanal		105·4	275	e 24 54	SKS	(e 24 54)	[+ 2]	57·1	—
Agra	E.	108·8	294	e 17 50	[−24]	—	—	—	—
Bombay		111·9	283	17 54?	[−30]	—	—	—	—
Ottawa		112·3	47	—	—	e 35 46	SS	e 48·9	—
Tashkent		117·5	307	e 19 0	[+21]	e 25 0	[−42]	e 51·5	60·2
Rio de Janeiro		120·9	131	—	—	28 54	?	e 108·9	—
Tananarive		120·9	233	e 20 53	PP	26 50	{−32}	—	59·6
Ekaterinburg		121·2	325	18 52	[+ 4]	e 28 29	{+65}	47·9	56·4
Ivigtut		125·0	26	—	—	37 54?	SS	58·9	—
Scoresby Sund		125·8	9	—	—	38 12	SS	58·9	—
Baku		132·2	309	e 21 40	PP	e 24 27	?	e 58·9	63·2
Pulkovo		133·0	340	e 22 46	PKS	e 26 41	+13	60·9	80·8
Copenhagen		141·2	349	22 54	PP	—	—	64·9	—
Ksara		144·7	301	e 19 45	[+12]	24 8	?	—	—
De Bilt		145·7	353	e 19 53	[+18]	—	—	e 71·9	83·7
Kew		146·5	1	e 19 50	[+14]	—	—	e 75·9	80·5
Uccle		147·0	355	e 19 47	[+10]	e 42 5	SS	59·9	—
Vienna		147·1	340	e 19 42	[+ 5]	—	—	—	—
Feldberg		147·2	350	i 19 47	[+10]	—	—	e 80·5	123·7
Stuttgart		148·4	348	e 19 49	[+10]	—	—	e 85·9	—
Strasbourg		148·9	350	19 54	[+14]	26 11	PPP	e 58·7	—
Paris		149·1	357	e 20 50	[+70]	—	—	76·9	89·9
Innsbruck		149·4	344	19 54?	[+13]	—	—	—	—
Zagreb		149·4	337	e 19 46	[+ 5]	—	—	—	—
Zurich		149·9	349	e 19 53	[+11]	—	—	—	—
Chur		150·2	348	e 19 50	[+ 8]	—	—	—	—
Neuchatel		150·5	351	e 19 51	[+ 9]	—	—	—	—
Florence		153·3	343	19 54	[+ 8]	e 24 24	?	89·9	91·9
Alicante		159·6	2	e 22 2	?	—	—	e 85·7	—
Granada		160·5	10	19 38	[−16]	27 45	?	e 80·3	90·9
San Fernando		160·6	17	21 48	?	—	—	79·9	93·9

Additional readings :—

Wellington PP = +6m.0s., SS = +10m.44s.
Melbourne PPP = +8m.44s., SS = +15m.6s.
Adelaide i = +16m.51s.
Perth P_cP = +11m.54s., PP = +12m.49s., +12m.59s., PPP = +13m.49s., PPPP = +14m.39s., PS = +18m.19s., SS = +22m.4s., SSS = +24m.36s., SSSS = +25m.39s.
Manila PSEN = +20m.46s.
Hong Kong SS = +26m.8s.
Seattle SS = +28m.54s.
Irkutsk e = +16m.54s.?
Tashkent e = +24m.24s. and +26m.42s. =SKKS −17s.
Ekaterinburg e = +20m.21s. =PP+4s., +31m.26s., +34m.0s., and +36m.45s. = SS − 3s.
Baku e = +39m.17s. =SS+10s. and +49m.36s.
Pulkovo e = +25m.8s.
Kew eSSSEN = +47m.36s.
Uccle e = +47m.40s.
Vienna i = +20m.30s.
Stuttgart eSS = +43m.6s., eSSS = +48m.54s., eZ? = +71m.8s.
Strasbourg eP = +16m.11s., ePP = +22m.4s.
Granada PKP = +20m.51s., PKS = +24m.20s., PP = +25m.35s., PPP = +29m.27s., SKKS = +32m.45s., SKSP = +36m.3s.
Long waves were also recorded at Apia, La Plata, Rio de Janeiro, Kucino, Algiers, and other European and American stations.

March 8d. Readings also at 2h. (Pasadena, Christchurch, Seatown, and Wellington), 4h. (Wellington, near Hastings, and near Mizusawa), 6h. (Baku), 7h. (Ekaterinburg), 9h. (Nagoya and near Tyosi), 11h. (Baku), 14h. (near Mizusawa), 15h. (Wellington), 18h. (Hong Kong, near Hokoto, and Taihoku), 21h. (near Amboina), 22h. (Zagreb).

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March 9d. 1h. 11m. 50s. Epicentre 36°·3N. 69°·4E. (as on 1931 Sept. 14d.). R.3.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	3·8	331	1 10	P*	—	—	2·0	—
Andijan	5·0	27	e 1 10	− 1	(i 1 59)	− 9	i 2·0	2·3
Tashkent	5·0	359	e 1 26	P*	i 2 7	− 1	i 2·2	2·3
Almata	9·1	37	e 2 10	+ 1	—	—	—	—
Ekaterinburg	21·3	347	e 4 42	− 1	e 8 32	0	—	—

Additional reading:—
Tashkent i = +1m.58s.

March 9d. 7h. 1m. 53s. Epicentre 36°·7N. 2°·0W. (as on 1927 Aug. 17d.). X.

A = +·801, B = −·028, C = +·598.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Almeria	0·3	292	i 0 10	P_g	i 0 20	S_g
Granada	1·4	290	i 0 20	0	i 0 32	− 4
Alicante	2·0	36	0 50	S	(0 50)	− 1
Malaga	2·0	271	e 0 29	0	i 0 53	+ 2
San Fernando	3·4	266	2 23	?	—	—
Toledo	3·5	334	e 0 47	− 3	i 1 27	− 3

Additional readings:—
Granada P_gS = +35s.
Alicante S = +1m.18s.
Toledo P_g = +53s., iPS = +1m.19s.

March 9d. 10h. 16m. 55s. Epicentre 38°·0N. 20°·5E. (as on 1931 Sept. 23d.). R.1.

Probable error of epicentre ±0°·22.

A = +·738, B = +·276, C = +·616; D = +·350, E = −·937; G = +·577, H = +·216, K = −·788.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Naples	E.	5·6	303	e 1 17	− 3	e 2 27	+ 4	3·2	4·2
Mostar		5·7	341	1 14	− 7	2 53	S*	—	3·3
Sarajevo		6·0	346	i 1 22	− 3	i 2 29	− 4	—	3·5
Belgrade		6·9	0	e 1 34	− 3	e 3 27	S*	—	5·0
Zagreb		8·5	338	e 1 47	−13	i 3 38	+ 2	—	5·6
Florence		9·0	313	2 26	+19	4 17	+28	—	5·3
Triest		9·1	329	i 2 6	− 3	i 3 42	− 9	—	5·0
Laibach		9·2	333	1 51	−19	3 29	−25	—	—
Budapest		9·5	355	2 6	− 8	5 36	S_g	6·3	8·1
Venice		9·6	323	e 2 15	− 1	i 4 26	+23	—	7·6
Graz		9·8	340	i 2 13	− 5	i 5 17	S_g	i 6·1	7·0
Vienna		10·6	345	i 2 26	− 3	5 22	S*	i 6·0	8·1
Innsbruck		11·4	327	e 2 41	+ 1	e 4 41	− 7	—	—
Sebastopol		11·8	52	e 2 47	+ 1	—	—	—	—
Chur		12·0	321	e 2 46	− 2	e 4 53	−10	—	—
Yalta		12·1	54	e 2 53	+ 3	—	—	—	—
Simferopol		12·3	52	e 2 53	+ 1	—	—	—	—
Ravensburg		12·6	324	e 3 5	+ 9	—	—	—	—
Prague		12·8	342	e 3 2	+ 3	e 6 31	+69	e 7·8	9·0
Zurich		12·8	321	e 2 57	− 2	e 5 21	− 1	—	—
Ksara		13·1	104	e 3 19	+16	6 37	+68	9·1	—
Theodosia		13·1	53	e 3 16	+13	—	—	—	—
Neuchatel		13·4	316	e 3 5	− 2	e 5 20	−17	—	—
Cheb		13·4	337	—	—	e 6 23	+46	e 8·9	9·3
Stuttgart		13·5	327	e 3 5	− 4	e 5 25	−14	e 7·6	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers		13·9	271	—	—	i 4 23	−86	e 6·7	11·1
Karlsruhe		14·0	325	3 30	+15	6 5?	+14	8·1	—
Strasbourg		14·0	323	e 3 5?	−10	e 6 12	+21	9·1	—
Besançon		14·0	316	3 22	+ 7	5 43	− 8	e 9·1	—
Jena		14·3	337	e 3 17	− 2	e 7 5	+67	e 7·7	8·6
Barcelona		14·5	289	—	—	e 6 15	+12	e 7·2	10·6
Feldberg		14·9	329	i 3 33	+ 6	i 6 9	− 4	i 8·5	10·4
Potsdam		15·3	343	e 3 35	+ 3	e 6 41	+19	e 8·6	9·1
Göttingen	Z.	15·4	335	e 3 35	+ 1	—	—	—	11·5
Tortosa	N.	15·7	287	—	—	6 42	+11	—	12·9
Alicante		16·5	278	e 3 45	− 3	e 6 57	+ 7	e 11·5	—
Königsberg		16·8	0	i 3 55	+ 3	e 7 2	+ 5	e 9·5	10·1
Hamburg		17·2	339	i 3 58	+ 1	i 7 15	+ 9	e 9·1	13·4
Uccle		17·2	323	3 55	− 2	i 7 13	+ 7	9·1	—
De Bilt		17·7	328	i 4 4	+ 1	7 29	+12	e 9·4	11·8
Lund		18·3	347	4 11	+ 1	7 41	+10	10·1	—
Copenhagen		18·5	346	4 11	− 2	7 42	+ 6	10·1	—
Toledo		19·1	283	e 4 23	+ 3	7 51	+ 3	e 9·9	—
Granada		19·1	275	e 4 26	+ 6	e 8 1	+13	10·8	17·4
Kew		19·8	319	e 4 34	+ 7	e 7 59	− 3	10·1	14·6
Oxford		20·5	319	—	—	i 8 19	+ 3	—	—
San Fernando		21·3	274	5 3	PP	—	—	—	14·6
Upsala		21·9	356	4 48	− 2	e 8 42	− 2	e 12·1	14·8
Stonyhurst		22·3	323	e 4 52	− 2	—	—	—	—
Helsingfors		22·4	6	e 4 52	− 3	i 8 57	+ 4	e 11·8	—
Pulkovo		22·6	13	4 56	− 1	8 59	+ 2	12·1	14·9
Baku		22·8	75	e 4 49	−10	i 9 13	+12	13·8	16·1
Edinburgh		23·8	326	—	—	i 9 27	+ 8	i 13·5	—
Ekaterinburg		32·3	41	i 6 25	0	11 35	− 5	14·6	19·5
Samarkand		35·9	71	e 6 57	0	—	—	—	—
Tashkent		37·6	69	e 6 45	−27	e 11 5?	?	i 15·4	20·1
Andijan		39·6	69	e 7 59	+30	—	—	—	—
Frunse		40·7	65	e 8 12	+34	—	—	—	—
Almata		42·3	64	e 17 25	SSS	—	—	—	—
Bombay		49·1	98	8 10	−34	—	—	—	—

Additional readings :—
Mostar i = +2m.17s.
Sarajevo i = +2m.1s., iPPS = +2m.16s., iPSS = +2m.50s.
Belgrade e = +2m.8s. =P*, +2m.46s., and +2m.48s. =S+5s.
Zagreb i = +2m.48s. =P*, iPS = +3m.27s., i = +3m.45s. and +3m.48s., iPPSSS = +4m.1s., iPPPS = +4m.25s., iPPSSS = +4m.45s., iPSS = +4m.53s.
Triest i = +2m.15s., iPP = +2m.40s., i = +3m.59s. and +4m.20s., iSS = +4m.30s.
Laibach +2m.8s. and +5m.16s.
Vienna iN = +2m.50s. and +3m.33s., iE = +4m.44s.
Innsbruck i = +4m.54s. and +5m.19s.
Neuchatel e = +3m.13s.
Cheb e = +8m.0s.
Stuttgart e = +6m.3s.
Algiers e? = +1m.26s.
Strasbourg eSSS = +8m.16s.
Helsingfors iPE = +5m.0s., iPPE = +5m.22s. ; T_0 = 10h.16m.41s.
Long waves were also recorded at Bidston, Scoresby Sund, Irkutsk, and Bergen.

March 9d. 11h. 25m. 48s. Epicentre 31°·0S. 68°·0W. N.3.

A = +·321, B = −·795, C = −·515 ; D = −·927, E = −·375 ; G = −·193, H = +·478, K = −·857.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago	3·3	223	0 42	− 5	i 1 15	−10	1·9	1·9
La Plata	9·3	117	2 13	+ 2	(4 24)	S*	4·4	—
Sucre	12·1	12	2 43	− 7	—	—	—	—
La Paz	14·5	359	3 26	+ 4	i 6 11	+ 8	7·5	9·2

No additional readings.

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March 9d. Readings also at 0h. (near Zagreb), 1h. (Bombay), 2h. (Seattle, Sitka, Ukiah, Mount Wilson, Pasadena, Riverside, Haiwee, Santa Barbara, Tinemaha, and Victoria), 3h. (Perth, Baku, Ekaterinburg, Irkutsk, Samarkand, Tashkent, Copenhagen, Scoresby Sund, Ivigtut, De Bilt, Uccle, Feldberg, Florence, Kew, Edinburgh, Strasbourg, Stuttgart, Paris, Florissant, Chicago, Madison, Berkeley, and near Lick), 4h. (Andijan), 5h. (Ottawa), 8h. (Andijan and Frunse), 9h. (Andijan, Samarkand, Bombay, Sucre, and near La Paz), 10h. (Almata, near Andijan, Frunse, and Samarkand), 12h. (Frunse, Almata, near Andijan, Samarkand, and near Tyosi), 14h. (Wellington), 18h. (Bombay), 22h. (Lick), 23h. (near Santiago (2)).

March 10d. 5h. 17m. 52s. Epicentre 54°·3S. 135°·1W. N.2.

$A = -\cdot413$, $B = -\cdot412$, $C = -\cdot812$; $D = -\cdot706$, $E = +\cdot708$; $G = +\cdot575$, $H = +\cdot573$, $K = -\cdot584$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Wellington		35·2	271	—	—	i 12 25	+ 1	16·0	20·1
Arapuni		36·8	276	—	—	e 15 8	SS	—	—
Suva		50·7	296	—	—	e 13 8?	?	i 23·1	25·1
Riverview		54·0	262	—	—	i 16 58	+ 2	25·1	28·1
Sydney		54·0	262	i 16 56	S	(i 16 56)	0	25·6	30·7
Melbourne		54·7	253	—	—	17 6	+ 1	25·3	27·7
Adelaide		60·3	251	—	—	i 18 4	−16	25·5	30·8
Sucre		63·0	84	e 10 22	− 3	—	—	—	—
La Paz		63·3	80	10 30	+ 3	i 19 10	+11	30·3	36·1
Rio de Janeiro		72·7	103	—	—	e 20 57	+ 4	32·1	—
Perth		74·5	236	e 11 8	−29	e 21 8	− 6	34·1	—
Pasadena		89·6	13	e 12 55	− 1	—	—	e 41·6	—
Haiwee	E.	91·7	13	e 13 5	0	—	—	—	—
Tinemaha	E.	92·5	12	e 13 9	0	—	—	—	—
Berkeley		92·9	10	—	—	e 24 23	0	e 42·6	—
Ukiah		94·0	9	—	—	e 31 0	SS	e 39·6	—
Manila		109·9	268	—	—	e 24 42	[−31]	—	—
Sitka		111·4	0	—	—	e 28 42	PS	e 51·1	—
Ottawa		111·7	40	—	—	e 35 16	SS	e 55·1	—
Zi-ka-wei	z.	122·5	280	—	—	e 26 30	[+32]	59·9	72·1
Colombo		124·9	222	37 28	SS	—	—	—	59·8
Kodaikanal		128·9	221	e 38 8	SS	—	—	60·4	—
Calcutta		134·6	243	22 0	PP	34 10	?	63·8	—
Bombay		138·7	221	21 20	?	—	—	—	—
Granada		143·0	95	e 19 56	[+29]	—	—	68·9	104·8
Irkutsk		145·5	290	e 19 32	[− 3]	—	—	e 68·1	74·1
Algiers		146·5	102	i 19 47	[+11]	—	—	74·5	—
Edinburgh		153·0	67	—	—	e 44 8?	?	87·1	—
Kew		153·0	77	e 27 8?	PPP	—	—	e 74·1	—
Paris		153·5	84	e 20 4	[+18]	—	—	76·1	110·1
Uccle		155·4	81	e 29 8?	PPPP	e 33 8?	?	e 64·1	—
Florence		155·9	102	e 21 8	?	—	—	79·1	95·1
De Bilt		156·4	79	e 20 8?	[+19]	e 44 8?	SS	e 77·1	95·5
Strasbourg		156·4	89	e 19 8?	[−41]	—	—	e 32·1	—
Andijan		157·3	245	e 19 52	[+ 2]	—	—	—	—
Stuttgart		157·3	89	e 19 56	[+ 6]	—	—	e 81·1	—
Frunse		157·4	252	e 20 17	[+27]	—	—	—	—
Tashkent		159·3	241	e 20 19	[+26]	—	—	73·1	110·8
Hamburg		159·6	78	e 20 8?	[+15]	—	—	e 79·1	97·1
Potsdam	z.	161·0	83	e 20 8?	[+13]	—	—	e 77·1	—
Copenhagen		161·5	73	24 8?	PP	—	—	78·1	—
Baku		165·7	196	e 20 27	[+27]	—	—	e 72·1	110·6
Pulkovo		170·4	49	e 20 44	[+40]	—	—	76·1	92·7

For Notes see next page.

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NOTES TO MARCH 10d. 5h. 17m. 52s.

Additional readings and note :—
Wellington i = +14m.53s. =SS +22s.
Sydney iS = +22m.38s. =SSS +24s.
Melbourne PPP = +12m.49s., i = +18m.29s., e = +23m.13s.
Adelaide i = +20m.57s.
La Paz iN = +12m.16s. and +12m.58s. =PP +19s.
Sitka e = +35m.16s.
Granada e = +22m.49s. =PP +9s.
Irkutsk e = +24m.8s.? and +31m.8s.
Algiers e = +23m.30s. =PP +30s., i = +54m.34s.
Edinburgh e = +67m.8s.?
Uccle e = +44m.39s.
Strasbourg e = +21m.7s. and +21m.58s.
Stuttgart eEN = +29m.8s.?
Tashkent e = +24m.40s. =PP +28s., +27m.28s., +32m.33s., +33m.8s., +44m.8s.? and +48m.8s.?
Baku e = +38m.31s., +45m.23s., 48m.5s., and +53m.28s.
Pulkovo ePKP = +22m.38s., PKS = +26m.24s., PPP = +30m.27s., PS = +38m.18s.
Long waves were also recorded at Hong Kong, Honolulu T.H., Seattle, Lick, Victoria, Tucson, La Plata, Scoresby Sund, Ivigtut, Kucino, Feldberg, Stonyhurst, Helsingfors, and San Fernando.

March 10d. 23h. 1m. 34s. Epicentre 18°·5N. 95°·8W. N.3.

A = −·096, B = −·944, C = +·317 ; D = −·995, E = +·101 ; G = −·032, H = −·316, K = −·948.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Little Rock	E.	16·6	10	e 3 49	0	i 6 55	+ 3	—
Tucson		19·3	318	e 4 28	+ 6	7 55	+ 3	10·0
St. Louis		20·7	12	i 4 37	0	i 8 20	0	—
Florissant		20·9	12	i 4 38	− 1	i 8 29	+ 5	—
Mount Wilson	E.	25·3	313	e 5 19	− 4	—	—	—
Pasadena		25·3	313	e 5 20	− 3	—	—	—
Haiwee	E.	26·4	317	e 5 41	+ 8	—	—	—
Tinemaha		27·1	318	e 5 38	− 1	e 14 46	?	—

Additional readings :—
Little Rock iE = +4m.9s., eE = +6m.48s., iE = +7m.10s.
St. Louis iN = +4m.50s. =PP −2s., eN = +5m.12s.
Florissant i = +5m.16s. and +9m.17s.
Pasadena eN = +6m.6s.
Long waves were also recorded at Paris and Strasbourg.

March 10d. Readings also at 1h. (Bombay), 4h. (near Wellington), 10h. (Irkutsk and Tashkent), 12h. (Andijan, Samarkand, Kobe, Koti, near Sumoto, near Mizusawa, Nagoya, Tyosi, and Tokyo), 19h. (near Mizusawa), 20h. (Frunse, Samarkand, and near Andijan), 21h. (near Santiago), 22h. (near Tyosi).

March 11d. Readings at 1h. (La Paz), 2h. (Almata, Frunse, Tashkent, Irkutsk, and near Wellington), 4h. (La Paz and Wellington), 5h. (near Christchurch (2), Glenmuick, Seatown (2), and Wellington (2)), 6h. (Kobe), 11h. (near Malabar and near Santiago), 12h. (Wellington), 15h. (Alicante), 16h. (Perth and near Wellington), 17h. (Wellington and near Sumoto), 18h. (near Mizusawa), 21h. (Balboa Heights), 23h. (Tucson).

March 12d. Readings at 6h. (near Manila), 7h. (Andijan), 8h. (Manila), 9h. (La Paz), 12h. (La Paz, Mount Wilson, Pasadena, Tinemaha, and near Manila), 13h. (Tyosi, Ekaterinburg, Irkutsk, Calcutta, Phu-Lien, Hong Kong, and Manila), 23h. (near Christchurch and Wellington).

March 13d. Readings at 1h. (near Sumoto), 2h. (Sebastopol, near Theodosia, and Yalta), 5h. (Wellington), 7h. (near Santiago), 8h. (Almata, Samarkand, and near Andijan (2)), 10h. (Andijan and Wellington), 11h. (near Santiago), 14h. (near Batavia and Malabar), 15h. (near Nagoya, Tokyo, and Tyosi), 16h. (Ekaterinburg and Irkutsk), 17h. (Tucson), 18h. (near Amboina (2)), 21h. (Samarkand), 23h. (Lick and Wellington).

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March 14d. 4h. 5m. 55s. Epicentre 20°·7N. 109°·1W. (as on 1931 April 19d.). R.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	2 43	− 1	e 4 59	+ 4	e 5·4	—
La Jolla		14·2	331	e 3 17	− 1	(e 6 22)	+26	e 6·4	—
Riverside	N.	15·2	333	e 3 33	+ 2	—	—	—	—
Pasadena		15·6	331	i 3 38	+ 2	e 6 28	− 1	e 8·8	—
Mount Wilson		15·7	331	e 3 38	0	e 6 49	+18	—	—
Santa Barbara		16·7	328	e 3 52	+ 2	—	—	—	—
Haiwee		17·3	335	i 3 57	− 1	e 7 14	+ 5	—	—
Tinemaha		18·2	336	e 4 10	+ 1	i 7 30	+10	—	—
Denver		19·3	10	e 4 14	− 8	e 7 45	− 7	—	11·0
Lick		19·9	330	e 4 31	+ 2	—	—	—	—
Little Rock		20·4	43	i 4 31	− 3	i 8 12	− 2	—	10·4
Berkeley		20·7	329	e 4 40	+ 3	e 8 24	+ 4	e 9·9	—
Ukiah		22·1	330	—	—	e 9 1	+13	e 11·8	—
St. Louis		24·2	38	i 5 11	− 1	e 9 25	− 2	e 11·9	12·5
Florissant		24·3	38	i 5 11	− 2	i 9 27	− 1	e 11·9	14·5
Bozeman		25·1	357	e 5 21	0	9 39	− 4	e 12·1	—
Chicago		27·8	36	—	—	e 10 16	−12	e 13·8	—
Madison		27·8	32	e 6 0	+15	i 10 58	+30	14·1	—
Columbia		28·1	56	—	—	e 10 47	+13	e 15·2	—
Victoria		30·0	341	11 5	S	(11 5)	+ 1	15·0	19·2
Ann Arbor		30·4	40	—	—	e 12 47	SS	e 15·6	16·1
Charlottesville		31·6	50	—	—	e 11 28	− 1	e 16·5	—
Pittsburgh		31·7	44	—	—	11 30	− 1	e 13·8	—
Georgetown		33·0	49	e 6 8	−24	e 11 35	−16	—	17·4
Toronto		33·7	41	—	—	i 11 41	−20	i 17·6	—
Fordham		36·0	49	—	—	e 12 33	− 3	e 18·1	—
Ottawa		36·8	41	—	—	e 12 43	− 5	e 18·1	—
Harvard		38·5	47	—	—	e 13 1	−13	e 19·1	—
San Juan		40·4	85	e 7 10	−25	i 13 53	+11	e 21·1	—
Sitka		41·2	339	—	—	e 14 23	+29	e 22·1	—
La Paz		54·8	130	e 9 42	+15	17 23	+17	23·4	35·1
Sucre		58·5	130	e 10 13	+19	—	—	—	—
Scoresby Sund		69·6	21	—	—	27 5?	SSS	36·1	—
Pulkovo		93·0	20	—	—	e 25 31	PS	46·1	54·9
Florence		95·6	40	—	—	e 30 5	?	e 47·1	53·1
Ekaterinburg		102·0	7	—	—	e 27 5	PS	47·1	58·1
Tashkent		118·0	2	—	—	e 27 5	{+ 2}	e 61·1	73·3

Additional readings:—
Riverside eN = +6m.46s., iE = +7m.12s.
Pasadena eEZ = +6m.48s.
Santa Barbara eE = +7m.6s., eN = +7m.15s.
Tinemaha eN = +7m.13s.
Little Rock iEN = +5m.6s. and +5m.39s.
Berkeley eSE = +8m.28s., eSZ = +8m.35s.
Ukiah iS = +9m.6s.
St. Louis iSN = +9m.33s.
Florissant iPPN = +5m.39s., iPPPZ = +5m.47s., iPPPPN = +6m.53s., iP_cPEN = +8m.50s., iSSE = +10m.31s., iSSSN = +10m.45s., eSSSSN = +11m.0s., iP_cSE = +11m.35s., iS_cSN = +15m.55s., iP_cSS_cPN = +24m.5s.
Charlottesville e = +12m.33s. and +12m.55s.
Georgetown eSS = +13m.29s.
Toronto iN = +11m.45s. and +13m.22s.
Fordham eN = +14m.15s. and +15m.5s.
Ottawa eN = +15m.5s. =SS −2s.
Harvard eN = +15m.51s. =SS +7s.
San Juan iPP = +9m.33s., e = +10m.42s.
Ekaterinburg e = +32m.28s. =SS −1s.
Tashkent e = +29m.12s.
Long waves were also recorded at Baku, Irkutsk, Honolulu T.H., Seattle, Buffalo, and several European stations.

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March 14d. 22h. 42m. 56s. Epicentre 8°·2N. 71°·9W. N.1.

Probable error of epicentre ±0°·20.

A = +·308, B = −·941, C = +·143; D = −·951, E = −·311;
G = +·044, H = −·136, K = −·990.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		7·6	277	e 1 51	+ 3	e 2 51	−23	3·1	—
Port au Prince		10·3	358	i 2 20	− 5	i 4 8	−13	i 5·4	6·2
San Juan		11·6	28	i 2 41	− 2	i 5 16	+23	—	—
La Paz	N.	25·0	171	i 5 21	+ 1	i 9 38	− 3	11·8	16·2
Columbia		27·1	343	e 5 41	+ 2	i 10 23	+ 6	e 13·1	—
Sucre		28·0	166	i 5 50	+ 3	—	—	—	—
Charlottesville		30·4	350	—	—	i 11 28	+18	—	—
Georgetown		31·1	354	i 6 16	+ 1	i 11 22	+ 1	—	19·2
Little Rock		32·6	329	i 6 27	− 1	i 11 39	− 6	—	20·1
Fordham		32·7	357	i 6 32	+ 3	i 11 50	+ 4	e 16·1	—
Pittsburgh		33·0	350	i 6 41	+ 9	i 11 49	− 2	—	—
Harvard		34·2	1	e 6 42	0	e 12 16	+ 7	e 17·1	—
St. Louis		34·6	335	i 6 46	0	i 12 13	− 2	e 17·1	22·4
Florissant		34·8	335	i 6 48	+ 1	i 12 15	− 3	e 15·2	27·1
Buffalo		35·2	351	i 6 53	+ 2	i 12 27	+ 3	e 18·6	—
Ann Arbor		35·6	345	e 6 58	+ 4	e 12 34	+ 4	e 19·1	23·6
Toronto		36·0	351	6 55	− 3	i 12 34	− 2	17·1	21·1
Chicago		36·3	341	e 6 51	− 9	12 34	− 7	e 16·9	—
Ottawa		37·3	357	i 7 10	+ 1	e 12 55	− 1	e 17·1	—
Madison		38·1	340	i 7 23	+ 7	i 13 11	+ 3	18·1	—
Santiago		41·7	179	7 45	− 1	—	—	—	—
Rio de Janeiro		41·9	139	i 7 47	− 1	i 13 54	−11	19·2	25·6
Tucson		43·4	310	8 0	0	14 27	0	e 17·8	—
La Plata		45·1	164	8 8	− 6	14 39	−13	22·4	—
La Jolla		48·7	308	i 8 39	− 2	i 15 41	− 2	—	—
Riverside		49·1	310	e 8 45	+ 1	e 15 48	0	—	—
Mount Wilson		49·7	310	i 8 48	− 1	e 15 54	− 3	—	—
Pasadena		49·7	310	i 8 49	0	—	—	—	—
Haiwee		50·3	312	e 8 53	− 1	e 16 8	+ 3	—	—
Bozeman		50·3	325	e 8 54	0	16 4	− 1	e 23·1	—
Tinemaha		50·9	313	i 8 59	+ 1	i 16 15	+ 2	—	—
Lick		53·5	312	e 9 16	− 2	—	—	—	—
Branner		54·0	312	e 9 20	− 1	—	—	—	—
Berkeley		54·2	312	e 9 19	− 4	e 16 58	0	—	—
Ukiah		55·3	312	—	—	e 17 15	+ 2	—	—
Ivigtut		55·8	14	i 9 35	+ 1	17 4?	−16	—	—
Seattle		58·0	323	e 10 4?	+14	e 17 34	−15	—	—
Victoria		58·9	323	9 52	− 5	18 2	+ 1	34·2	34·9
San Fernando		65·6	53	11 12	(− 3)	19 36	+ 9	29·1	40·6
Malaga		67·1	53	i 10 52	0	e 19 18	−28	31·1	—
Granada		67·8	53	i 10 56	− 1	—	—	—	—
Toledo		67·8	50	e 10 37	−20	e 19 13	−41	e 28·8	—
Almeria		68·7	53	i 10 59	− 4	e 19 44	−21	e 31·7	—
Scoresby Sund		69·7	16	i 11 8	− 1	20 16	− 2	—	—
Alicante		70·3	51	i 10 57	−16	e 19 56	−29	e 30·0	—
Bidston		70·9	37	e 18 34	?	e 20 19	−13	32·2	—
Stonyhurst		71·3	37	i 11 19	0	20 46	+ 9	34·1	43·1
Edinburgh		71·4	33	11 20	+ 1	20 46	+ 8	35·1	46·1
Tortosa	N.	71·4	49	11 18	− 1	23 52	?	32·9	33·5
Oxford		71·6	39	11 22	+ 2	21 47	?	e 33·6	41·8
Durham		72·0	35	11 23	0	20 48	+ 3	—	—
Kew		72·2	39	i 11 23	− 1	e 20 48	+ 1	32·1	35·7
Algiers		73·1	54	i 11 28	− 1	e 21 11	+13	31·1	—
Paris		73·6	40	i 11 31	− 1	e 21 7	+ 3	34·1	40·1
Uccle		75·0	39	i 11 39	− 1	e 21 19	− 1	e 32·1	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
De Bilt		75·6	38	i 11 44	0	21 34	+ 7	e 33·1	36·0
Besançon		75·8	43	i 11 43	− 2	—	—	e 37·1	—
Neuchatel		76·4	43	e 11 48	0	e 21 26	−10	—	—
Bergen		76·6	29	21 45	S	(21 45)	+ 7	38·1	—
Strasbourg		77·0	41	i 11 51	− 1	e 22 37	PS	37·1	—
Karlsruhe		77·5	41	i 12 1	+ 6	—	—	—	—
Zurich		77·6	43	e 11 47	− 8	—	—	—	—
Stuttgart		78·0	41	i 11 57	0	e 21 48	− 6	e 38·1	41·1
Chur		78·2	43	e 11 58	0	e 21 52	− 4	—	—
Göttingen		78·6	39	i 11 59	− 1	e 22 1	+ 1	e 33·1	47·3
Hamburg		78·6	36	i 12 0	0	—	—	37·1	40·1
Florence		79·4	47	i 12 4	− 1	22 52	PS	36·1	41·1
Innsbruck		79·4	43	e 12 4	− 1	e 20 4	?	—	—
Jena		79·6	39	e 12 4	− 2	—	—	—	—
Cheb		80·1	40	e 12 8	0	e 22 22	+ 5	e 37·1	40·1
Copenhagen		80·1	34	12 10	+ 2	22 21	+ 4	—	—
Venice		80·1	45	i 12 14	+ 6	e 22 34	+17	—	—
Potsdam		80·4	36	i 12 12	+ 2	i 22 18	− 2	e 37·1	46·1
Lund		80·5	34	12 12	+ 2	—	—	39·1	—
Triest		81·1	45	i 12 13	− 1	22 22	− 5	—	48·1
Graz		82·2	42	i 12 16	− 3	i 22 37	− 2	37·1	48·3
Zagreb		82·6	45	e 12 22	+ 1	e 22 41	− 2	e 36·6	41·6
Upsala	E.	82·6	30	i 12 20	− 1	i 22 44	+ 1	e 41·1	43·7
Vienna		82·8	41	i 12 20	− 2	22 47	+ 2	e 42·1	52·1
Budapest		84·7	43	12 30	− 2	23 4?	− 1	e 47·1	—
Helsingfors		86·3	29	i 12 37	− 3	e 23 22	+ 2	e 40·1	—
Pulkovo		89·0	29	i 12 53	0	e 23 31	[+ 5]	40·1	47·1
Kucino		94·0	31	e 16 40	PP	i 23 57	[+ 2]	e 40·8	48·7
Simferopol		95·3	43	13 21	− 1	—	—	—	—
Theodosia		96·1	42	e 13 28	+ 2	e 24 8	[+ 2]	—	—
Ekaterinburg		104·2	25	i 14 3	0	24 44	[− 2]	41·1	56·8
Baku		108·0	42	i 18 49	PP	i 28 19	?	52·1	66·0
Tashkent		119·0	32	e 18 41	[− 2]	29 38	SKSP	56·1	65·9
Irkutsk		119·4	3	e 19 38	PP	e 28 52	?	e 61·1	69·6
Andijan		121·0	30	e 18 52	[+ 4]	—	—	—	—
Agra	E.	134·1	38	19 15	[+ 2]	—	—	—	—
Bombay		135·8	50	19 24	[+ 8]	22 55	PKS	24·8	101·8
Calcutta		143·7	31	16 52	−23	30 32	{+46}	71·9	—
Kodaikanal		144·3	59	e 19 32	[0]	—	—	74·7	—
Colombo		148·0	63	19 43	[+ 4].	—	—	—	93·5
Hong Kong		148·9	350	19 52	[+12]	30 21	{+ 5}	—	90·7
Manila		153·9	331	19 50	[+ 3]	—	—	—	—
Batavia		177·6	32	e 20 6	[− 1]	i 26 8	PP	—	—

Additional readings and note :—
La Paz iN = +10m.3s. and +12m.56s.
Columbia eS = +10m.59s.
Georgetown iP_cS = +12m.53s. ; T_o = 22h.42m.32s.
Little Rock iEN = +6m.33s.
Fordham iPPPNZ = +8m.2s.
Pittsburgh i = +13m.37s. = SS − 3s.
Harvard ePP = +7m.50s. ; T_o = 22h.42m.43s.
St. Louis iEN = +6m.53s., iN = +7m.0s., iE = +14m.43s.
Florissant ePPZ = +7m.49s., ePPPE = +8m.12s., ePPPPZ = +8m.17s., eP_cPZ = +8m.27s., iP_cSE = +13m.16s., iSSE = +14m.14s., iSSSE = +14m.52s., iSSSSN = +15m.7s., iS_cSE = +17m.16s., eP_cSS_cP = +25m.4s.
Buffalo iPP = +7m.57s., iPPP = +8m.11s., eSSS = +14m.51s.
Ann Arbor ePPN = +8m.22s., eSSiN = +14m.16s., eSSE = +14m.34s.
Toronto iPPN = +8m.8s., SSSN = +15m.34s. ; T_o = 22h.42m.29s.
Chicago ePP = +8m.18s., eSS = +15m.29s.
Ottawa ePPN = +8m.27s., eSSS = +15m.40s. ; T_o = 22h.42m.50s.
Madison ePP = +8m.41s., eSS = +15m.30s., e = +16m.33s.
Tucson ePP = +9m.54s.
Berkeley iPZ = +9m.23s., eEZ = +10m.22s.
Seattle ePP = +12m.34s.
San Fernando +11m.46s.

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Granada PP = +13m.46s.
Almeria PP = +13m.45s.
Alicante PS = +20m.42s.
Bidston eS = +27m.59s. =SSS +10s.; true S is given as e.
Oxford i = +18m.37s.
Kew iEZ = +11m.29s., eE = +21m.35s.
Algiers i = +14m.14s. =PP +9s., and +15m.22s.
Paris e = +14m.18s. =PP +9s.
Strasbourg ePP = +14m.43s., ePPP = +17m.45s.
Stuttgart ePP = +14m.52s.
Innsbruck i = +12m.13s.
Copenhagen +21m.58s.
Potsdam iEZ = +15m.5s. =PP −2s., iN = +22m.15s., eZ = +22m.22s., iN = +22m.45s.
Triest i = +15m.22s. =PP +9s., iSKS = +22m.30s.
Zagreb eNW = +12m.25s.
Vienna i = +13m.28s.
Helsingfors eE = +12m.29s., iE = +13m.17s., ePPE = +16m.9s., ePPZ = +16m.28s., ePPPZ = +18m.22s., eSKSE = +23m.0s., eSKSN = +23m.3s., iPSE = +24m.31s., eSSE = +29m.3s.; T_0 = 22h.42m.47s.
Pulkovo PP = +16m.23s., PS = +24m.45s.
Kucino PS = +25m.9s.
Ekaterinburg ePKP = +18m.2s., PS = +27m.30s., SS = +33m.46s.
Irkutsk e = +35m.52s.
Hong Kong ? = +25m.51s. and +32m.45s., SS? = +43m.18s.
Long waves were recorded at Tananarive and Adelaide.

March 14d. Readings also at 0h. (Perth), 2h. (Sucre and near La Paz), 4h. (Tucson), 7h. (Andijan, Samarkand, Sucre, and near La Paz), 9h. (Lick), 10h. (near Manila), 13h. (Nagasaki, Zi-ka-wei, Koti, Sumoto, and near Hukuoka), 14h. (Ekaterinburg, Irkutsk (2), Hong Kong, Nagasaki, and near Hukuoka), 19h. (near Tyosi), 21h. (Berkeley, Lick, Branner, Phu-Lien, Hong Kong, Manila, Kobe, Nagoya, Irkutsk, Ekaterinburg, near Hokoto, near Taihoku).

March 15d. 4h. 32m. 19s. Epicentre 10°·8N. 144°·4E. N.1.

Probable error of epicentre ±0°·23.

A = −·799, B = +·572, C = +·187; D = +·582, E = +·813; G = −·152, H = +·109, K = −·982.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima		16·4	353	3 36	−10	6 39	− 9	—	—
Amboina		21·6	229	i 4 53	+ 7	—	—	—	—
Manila		23·2	282	e 5 5	+ 2	9 24	+16	12·3	—
Isigakizima		23·5	308	5 17	+12	9 33	+19	—	—
Miyazaki		24·3	332	5 12	− 1	9 10	−18	—	—
Koti		24·9	338	e 5 18	− 1	9 46	+ 7	—	—
Kameyama		25·1	344	5 19	− 2	9 44	+ 1	—	—
Sumoto		25·1	341	5 19	− 2	9 42	− 1	e 11·1	14·3
Osaka		25·2	343	5 21	− 1	9 46	+ 2	12·1	—
Nagoya		25·3	346	e 5 23	0	—	—	12·4	—
Kobe		25·4	342	e 5 17	− 7	e 9 47	− 1	e 10·8	13·7
Kakioka		25·7	352	5 23	− 3	9 49	− 4	—	—
Nagasaki		25·7	331	5 26	0	10 24	+31	—	—
Oiwake		26·1	349	5 28	− 2	9 56	− 4	—	—
Toyooka	E.	26·3	342	e 5 33	+ 1	e 10 50	SS	e 14·9	—
Mizusawa		28·5	355	(5 47)	− 5	(10 29)	−11	10·5	—
Zi-ka-wei		29·5	317	e 5 55	− 6	11 39	+43	13·7	15·4
Hong Kong		31·1	296	6 17	+ 2	(11 25)	+ 4	13·1	14·7
Phu-Lien		37·6	290	e 7 15	+ 3	—	—	15·7	—
Chiufeng	N.	38·5	325	e 7 19	0	e 13 9	− 5	—	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		41·1	248	i 7 42	+ 1	i 13 57	+ 4	—	—
Riverview		45·1	172	10 43	?	—	—	—	27·7
Sydney		45·1	172	e 19 29	?	i 22 5	?	24·0	25·1
Medan		45·9	265	i 8 20	0	i 15 4	+ 1	—	—
Adelaide		46·1	186	i 14 25	?	e 19 26	?	i 22·5	25·2
Melbourne		48·6	180	—	—	i 15 41	0	—	29·6
Perth		50·7	211	16 11	S	(16 11)	0	—	30·2
Irkutsk		52·6	330	9 12	+ 1	e 16 34	− 3	24·7	29·7
Calcutta		54·6	290	10 3	+37	17 41	+37	28·8	—
Honolulu T.H.		56·3	70	—	—	e 25 5	?	e 35·1	—
Wellington		59·1	154	—	—	i 18 11	+ 7	28·7	—
Agra		64·2	296	10 29	− 5	e 19 5	− 5	—	—
Kodaikanal		65·7	277	19 43	S	(19 43)	+14	—	—
Bombay		69·3	286	11 3	− 3	20 12	− 1	34·3	—
Andijan		69·4	311	e 11 5	− 2	e 20 14	0	—	—
Tashkent		71·8	311	e 11 23	+ 1	—	—	—	36·7
Samarkand		73·5	309	e 11 34	+ 2	—	—	—	—
Baku		86·5	311	i 12 44	+ 3	i 23 20	− 2	40·7	56·4
Tinemaha		89·3	52	e 12 52	− 2	—	—	—	—
Haiwee	E.	89·7	53	e 12 55	− 1	—	—	—	—
Mount Wilson		90·1	55	e 12 58	0	—	—	—	—
Pasadena		90·1	55	e 12 59	+ 1	—	—	—	—
Riverside	E.	90·7	55	e 13 2	+ 1	—	—	—	—
La Jolla		91·1	56	e 12 59	− 4	—	—	—	—
Pulkovo		92·3	333	13 7	− 1	24 12	− 5	45·7	57·7
Helsingfors		94·4	335	—	—	23 41?	[−17]	e 47·7	—
Scoresby Sund		98·2	356	—	—	24 41?	{+ 1}	—	—
Copenhagen		102·4	335	—	—	24 41?	[+ 4]	51·7	—
Potsdam		104·4	332	e 17 41?	PP	e 24 11	[−36]	e 51·7	56·7
Vienna		105·3	328	e 18 18	PP	—	—	e 55·7	64·7
Cheb		106·1	330	—	—	e 34 41?	?	e 53·7	56·7
De Bilt		108·0	335	e 18 49	PP	e 28 17	PS	e 50·7	58·7
Edinburgh		108·1	341	—	—	e 33 41?	SS	e 57·7	—
Triest		108·3	327	e 18 40	PP	e 25 1	[− 4]	—	55·7
Stuttgart		108·6	331	i 18 54	PP	e 28 16	PS	e 54·7	56·7
Chicago		109·1	40	—	—	e 46 41?	?	e 51·7	—
Uccle		109·3	335	i 18 58	PP	e 28 17	PS	e 50·7	—
Strasbourg		109·4	331	e 16 41?	?	28 59	PS	e 47·7	—
Kew		110·7	338	i 19 7	PP	—	—	e 50·7	65·3
Florence		111·0	325	19 11	PP	e 28 41	PS	63·7	66·7
Paris		111·6	335	i 19 14	PP	—	—	58·7	59·7
Ottawa		113·2	30	—	—	e 36 5	?	e 49·7	—
La Paz		147·8	102	19 53	[+14]	27 0	?	71·7	84·2

Additional readings and notes :—
Manila SSEN = +10m.12s.
Kobe eN = +6m.6s.
Toyooka ePN = +5m.28s.
Mizusawa PN = +29s., PE = +41s., LE = +10m.53s. (?S); true P is given as S and S as L.
Zi-ka-wei iZ = +6m.25s. and +6m.51s.
Hong Kong S = +9m.58s. = PcP +45s.; true S is given as L.
Batavia i = +9m.22s.
Honolulu T.H. e = +26m.41s.?
Tashkent e = +13m.8s. and +17m.41s.?
Pulkovo PP = +16m.51s., SKS = +23m.43s., SS = +30m.23s.
Helsingfors ePPSE = +25m.41s.?, eSSE = +30m.23s., eSSN = +30m.41s.?, eSSSE = +37m.49s.
Triest e = +28m.15s. = PS +4s.
Stuttgart e = +37m.59s.
Strasbourg iPP = +19m.2s., SS = +33m.52s.
Ottawa eE? = +38m.11s.
La Paz PP? = +23m.6s.
Long waves were also recorded at Ekaterinburg, Kucino, San Juan, [illegible], Tucson, and other European stations.

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March 15d. 7h. 44m. 34s. Epicentre 39°·7N. 44°·0E. (as on 1926 July 8d.). X.

A = +·553, B = +·535, C = +·639; D = +·695, E = −·719:
G = +·459, H = +·444, K = −·769.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		4·5	80	e 0 22	−42	i 1 28	−27	e 2·2	5·4
Theodosia		8·3	312	e 2 2	+ 4	e 4 50	+79	6·4	—
Ksara		8·8	230	2 25	+20	4 18	+34	5·0	—
Simferopol		9·1	308	e 2 11	+ 2	—	—	—	—
Sebastopol		9·2	305	e 2 19	+ 9	—	—	—	—
Kucino		16·5	348	—	—	e 6 8	−42	—	10·6
Samarkand		17·6	84	e 4 4	+ 2	—	—	—	—
Ekaterinburg		20·3	27	i 4 26	− 7	i 8 10	− 2	10·4	14·3
Andijan		21·6	78	e 4 39	− 7	—	—	—	—
Pulkovo		21·8	341	4 47	− 2	e 8 52	+10	11·9	13·7
Florence		24·6	291	5 14	− 2	i 9 56	+22	i 16·8	—
Potsdam		24·7	311	—	—	e 9 50	+14	e 14·4	18·4
Almata		24·7	71	e 5 13	− 4	—	—	—	—
Stuttgart		26·3	302	—	—	e 10 26	+23	e 16·4	—
Hamburg		26·8	312	—	—	e 10 26?	+14	—	21·4
De Bilt		29·3	308	—	—	e 10 56	+ 3	e 17·4	—
Agra	E.	30·8	104	—	—	e 11 1	−16	—	—
Bombay		32·3	122	—	—	e 11 26?	−14	—	—
Irkutsk		42·4	52	—	—	e 17 26?	SS	e 24·4	—

Long waves were also recorded at Edinburgh, Paris, and Scoresby Sund.

March 15d. 10h. 18m. 10s. Epicentre 34°·2N. 48°·0E. N.3.

A = +·553, B = +·615, C = +·562; D = +·743, E = −·669;
G = +·376, H = +·418, K = −·827.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		6·3	14	e 2 0	P*	i 3 0	S*	3·6	4·8
Ksara	N.	10·1	271	2 35	+13	5 34	+78	6·7	—
Theodosia		14·5	322	3 23	+ 1	6 5	+ 2	8·3	—
Helwan		14·8	258	i 3 21	− 5	e 7 55	L	11·0	13·4
Simferopol		15·1	319	e 3 30	0	—	—	—	—
Sebastopol		15·3	318	e 3 33	+ 1	—	—	—	—
Samarkand		16·1	65	e 3 44	+ 1	—	—	—	—
Tashkent		18·2	61	i 4 9	0	i 7 40	SS	e 10·2	14·1
Andijan		20·3	64	e 4 33	0	—	—	—	—
Ekaterinburg		24·2	17	5 13	+ 1	9 32	+ 5	12·8	17·3
Agra		26·7	97	e 5 32	− 3	10 20	+10	e 15·1	17·8
Bombay		26·8	118	e 5 56	+20	—	—	—	—
Pulkovo		28·1	341	e 6 30	PP	e 10 50	+16	16·3	17·1
Florence		29·9	300	—	—	e 13 50	?	i 17·3	19·3
De Bilt		35·3	314	—	—	e 15 20	?	e 18·8	—
Irkutsk		43·5	48	—	—	e 14 50?	+22	e 25·8	—

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

March 15d. Readings also at 1h. (near New Plymouth and Wellington), 3h. (Wellington), 5h. (near Nagoya), 6h. (La Paz, Agra, Bombay, Kodaikanal, Irkutsk, Ekaterinburg, Tashkent, Almata, Samarkand, and near Andijan), 7h. (La Paz), 11h. (Baku (2), Tashkent, and near Ksara (2)), 15h. (Edinburgh), 19h. (near Mizusawa, Nagoya, and Tyosi), 23h. (Samarkand, Frunse, and near Andijan).

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March 16d. 20h. 40m. 20s. Epicentre 24°·0S. 171°·6E. (as on 1918 Sept. 30d.). X.

A = −·904, B = +·133, C = −·407 ; D = +·146, E = +·989 ;
G = +·402, H = −·059, K = −·914.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Suva	8·6	48	2 0	− 2	4 16	S*	5·7	6·7
Wellington	17·5	172	3 57	− 3	8 4	+51	8·7	10·7
Sydney	20·3	236	e 3 58	−35	i 7 46	−26	11·2	12·1
Riverview	20·4	236	i 4 40	+ 6	8 42	SS	10·5	12·7
Melbourne	26·6	232	e 7 5	+90	10 30	+21	14·0	16·5
Adelaide	30·7	242	—	—	11 40	+24	15·1	18·0
Perth	49·4	248	e 14 30	S	(e 14 30)	−82	23·0	28·7
Bombay	105·3	283	e 14 40?	+32	—	—	—	—
Tashkent	114·5	306	—	—	e 30 21	?	e 55·7	78·5
Ekaterinburg	121·3	323	—	—	e 37 33	?	48·7	—
De Bilt	150·1	342	e 19 40?	[− 2]	—	—	e 81·7	—

Additional readings :—
Riverview i = +8m.48s.
Perth eS = +18m.55s. = S_gS +14s., SS = +20m.55s.
Tashkent e = +35m.3s. = SS − 16s.
Long waves were also recorded at Baku, Pulkovo, Strasbourg, Paris, Granada, and San Fernando.

March 16d. Readings also at 2h. (Ekaterinburg, Pulkovo, Copenhagen, Stuttgart, De Bilt, Florence, Triest, and Zagreb), 3h. (Tashkent), 5h. (Suva, Wellington, Haiwee, Pasadena, Tinemaha, Simferopol, Theodosia, Yalta, Ekaterinburg, and Zagreb), 6h. (Agra), 8h. (Sebastopol, Simferopol, Yalta, Frunse, Samarkand, and near Andijan), 11h. (near Nagoya, Tokyo, and Tyosi), 15h. (Almata, Andijan, Frunse, Theodosia, Yalta, and near Sebastopol), 19h. (Balboa Heights), 20h. (near Mizusawa), 21h. (Buffalo and Madison), 23h. (Tucson).

March 17d. 0h. 50m. 56s. Epicentre 32°·4N. 132°·1E. (as on 1931 Nov. 3d.). X.

A = −·566, B = +·626, C = +·536 ; D = +·742, E = +·670 ;
G = −·359, H = +·398, K = −·844.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Matuyama		1·5	21	i 0 18	− 3	i 0 43	+ 4	—	0·9
Koti		1·7	46	(e 0 14)	−10	(0 46)	+ 2	—	(0·9)
Hukuoka		1·9	310	0 25	− 3	0 48	− 1	—	1·2
Nagasaki		1·9	280	0 25	− 3	0 53	+ 4	—	—
Sumoto		3·0	50	0 41	− 2	1 32	S*	—	1·6
Kobe		3·4	48	e 0 52	+ 3	1 44	S*	—	1·9
Osaka		3·6	50	0 53	+ 2	—	—	1·8	2·6
Toyooka		3·9	36	i 1 3	+ 7	1 51	+11	—	2·9
	z.	3·9	36	i 1 1	+ 5	1 54	S*	—	1·9
Nagoya		4·9	55	e 1 7	− 3	2 25	S*	—	—
Irkutsk		28·3	323	—	—	e 11 4?	+27	15·1	—

Additional readings and note :—
Koti iP = (+20s.) readings have been *increased* by 1m.
Sumoto PZ = +46s.
Kobe iE = +59s.
Long waves were recorded at European and other Russian stations.

March 17d. Readings also at 4h. (New Plymouth), 5h. (near Hukuoka), 6h. (New Plymouth and Paris), 7h. (Sumoto and Tyosi), 8h. (Riverview, New Plymouth (2), and Wellington (2)), 10h. (Nagoya), 12h. (near [illegible]), 16h. (Edinburgh and Lick), 17h. (near Samarkand), 21h. (Wa[illegible]n), 23h. (Ekaterinburg, Tashkent, and near Frunse).

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March 18d. 5h. 16m. 26s. Epicentre 17°·0S. 65°·5E. N.2.

A = +·397, B = +·870, C = −·292; D = +·910, E = −·415;
G = −·121, H = −·266, K = −·956.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive		17·2	261	e 3 57	0	e 7 24	+18	e 8·1	9·2
Colombo		27·9	32	6 25	PP	10 20	−10	11·4	13·2
Kodaikanal		29·7	24	e 6 3	+ 1	10 43	−16	12·8	16·5
Bombay		36·6	12	7 9	+ 6	12 56	+11	17·9	24·3
Hyderabad		36·7	21	7 7	+ 3	12 33	−14	15·8	19·9
Medan		38·7	61	7 25	+ 4	13 41	+24	i 19·2	—
Batavia		41·8	80	i 7 44	− 3	i 14 2	− 1	—	—
Calcutta		45·4	30	9 48	PP	16 36	?	26·2	—
Agra	E.	45·8	16	8 18	− 1	i 15 1	− 1	e 21·0	—
Perth		47·8	118	—	—	i 15 34	+ 4	—	25·4
Andijan		58·1	6	e 10 3	+12	—	—	—	—
Tashkent		58·4	4	i 9 55	+ 2	i 17 56	+ 1	e 26·6	34·7
Baku		59·2	347	i 10 8	+ 9	18 26	+21	28·8	31·8
Frunse		60·5	8	e 6 34	?	—	—	—	—
Hong Kong		61·8	52	18 37	S	(18 37)	− 2	—	33·2
Manila		63·2	62	12 8	PP	18 53	− 4	26·1	—
Zi-ka-wei	Z.	72·1	49	e 11 24	+ 1	—	—	—	41·0
Ekaterinburg		73·9	357	11 32	− 2	21 4	− 3	29·6	38·6
Irkutsk		77·0	23	11 54	+ 2	21 37	− 6	34·6	—
Florence		78·4	324	13 34?	?	—	—	—	—
Pulkovo		81·9	344	e 12 10	− 8	e 22 36	0	33·6	50·4
Stuttgart		82·5	328	e 12 34	+13	e 22 48	+ 6	e 34·6	—
Potsdam		82·8	331	e 12 34?	+12	e 22 34?	−11	—	33·6
Strasbourg		83·2	327	(e 11 34?)	−50	—	—	e 11·6	—
Helsingfors		83·8	341	—	—	e 23 0	+ 5	e 47·6	—
Granada		84·5	312	—	—	e 23 22	+19	42·1	50·4
Lund		84·9	334	—	—	23 15	+ 8	—	—
Hamburg		85·0	331	e 12 34?	+ 1	—	—	38·6	—
Copenhagen		85·2	334	—	—	23 14	+ 4	37·6	—
Upsala	E.	86·0	339	—	—	e 23 5	−13	—	—
Toledo		86·0	314	—	—	e 22 24	−54	e 35·1	—
San Fernando		86·1	311	—	—	23 7	−11	41·6	55·1
Uccle		86·2	327	e 12 54	+15	e 23 20	+ 1	35·6	—
De Bilt		86·5	329	—	—	e 23 33	+11	e 35·9	36·6
Kew		89·0	325	—	—	e 23 48	+ 2	e 36·6	—
Edinburgh		92·7	329	—	—	e 25 34?	PS	—	—
Scoresby Sund		105·1	340	—	—	31 34?	?	55·6	—

Additional readings:—
Tananarive SSE = +7m.48s., SSN = +7m.52s.
Perth 1 = +19m.34s. = SSS − 17s.
Hong Kong ? = +22m.42s. = SS + 5s., S? = +25m.41s. = SSSS − 1s.
Stuttgart eSSEN = +27m.34s.
Helsingfors eE = +28m.21s. = SS + 12s.
Granada +24m.56s.
Copenhagen +28m.40s. = SS + 10s.
Uccle e = +16m.28s.
Scoresby Sund +43m.34s.
Long waves were also recorded at Riverview, Sydney, Chicago, Kucino, San Juan, and La Paz.

March 18d. Readings also at 5h. (near Tananarive), 7h. (Florence and near Reykjavik), 9h. (near Reykjavik), 12h. (near Tyosi), 15h. (Samarkand), 16h. (Lick and near Santiago), 19h. (Lick), 20h. (La Paz), 21h. (near Reykjavik).

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March 19d. 10h. 59m. 43s. Epicentre 15°·7N. 147°·7E. N.1.

Probable error of epicentre ±0°·23.

A = −·814, B = +·514, C = +·271; D = +·534, E = +·845; G = −·229, H = +·145, K = −·963.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima		12·5	336	2 56	+ 1	5 0	−15	—	—
Hatidyozima		18·8	339	4 16	0	7 39	− 3	—	—
Mera		20·4	341	4 37	+ 3	8 17	+ 3	—	—
Tyosi		20·9	344	4 43	+ 4	8 28	+ 4	—	—
Numadu		21·0	339	4 39	− 1	8 25	− 1	—	—
Tokyo		21·2	342	4 40	− 2	8 30	0	—	—
Mito		21·6	344	4 46	0	8 39	+ 1	—	—
Nagoya		21·7	336	4 54	+ 6	8 40	0	—	—
Osaka		21·9	332	4 47	− 3	8 38	− 6	11·5	—
Sumoto		21·9	331	4 52	+ 2	8 43	− 1	11·7	12·8
Koti		22·0	327	e 4 46	− 5	e 8 43	− 3	—	—
Gihu		22·0	336	4 51	0	8 48	+ 2	—	—
Kobe		22·1	332	4 58	+ 6	8 47	− 1	e 11·3	12·7
Matuyama		22·6	326	e 4 56	− 1	e 8 55	− 2	12·3	—
Hukusima		22·9	345	5 1	+ 1	9 8	+ 5	—	—
Nagasaki		23·5	320	5 1	− 4	9 7	− 7	—	—
Hukuoka		23·7	322	e 5 2	− 5	e 9 16	− 2	e 10·4	13·4
Isigakizima		23·7	295	5 9	+ 2	9 20	+ 2	—	—
Mizusawa	E.	24·1	347	5 12	+ 1	9 32	+ 7	13·7	—
	N.	24·1	347	5 11	0	9 22	− 3	13·2	—
Morioka		24·7	348	5 16	− 1	9 32	− 4	—	—
Manila		25·8	271	5 28	+ 1	10 8	+13	13·3	—
Taihoku		26·2	295	5 32	+ 1	9 45	−17	11·8	—
Amboina		27·4	226	i 5 41	− 1	i 11 9	SS	17·6	—
Zi-ka-wei	E.	28·5	308	e 5 48	− 4	10 43	+ 3	14·3	20·7
Hong Kong		32·3	286	6 22	− 3	11 28	−12	15·2	18·1
Chiufeng		36·7	319	e 7 4	0	12 40	− 7	—	—
Phu-Lien		39·3	283	e 7 26	0	13 17	− 9	18·3	—
Batavia		46·1	245	i 8 19	− 2	i 14 57	− 9	—	—
Riverview		49·7	176	i 8 47	− 2	15 58	+ 1	22·8	28·3
Sydney		49·7	176	e 15 5	S	(e 15 5)	−52	28·5	31·3
Medan		49·7	263	9 18	+29	i 16 5	+ 8	26·6	—
Irkutsk		50·1	327	e 8 50	− 2	15 56	− 6	23·3	29·9
Adelaide		51·4	189	i 9 4	+ 2	i 16 27	+ 7	24·3	31·7
Honolulu T.H.		51·7	75	—	—	i 16 41	+17	24·3	—
Melbourne		53·2	182	9 21	+ 6	16 49	+ 4	25·8?	36·6
Perth		56·6	213	17 37	S	(17 37)	+ 6	—	—
Wellington		62·3	157	i 10 17?	− 3	i 18 47	+ 1	32·3	—
Agra	E.	65·1	294	10 37	− 2	19 10	−11	—	—
Almata		65·4	311	e 10 41	0	e 19 31	+ 6	—	—
Hyderabad		66·0	282	10 52	+ 7	19 28	− 4	34·0	39·8
Colombo		66·9	271	10 55	+ 4	19 37	− 6	33·2	41·0
Frunse		67·1	311	e 10 52	0	19 42	− 4	35·3	—
Kodaikanal		68·5	275	i 11 4	+ 3	i 19 56	− 7	34·5	37·1
Andijan		68·8	309	11 7	+ 4	20 3	− 4	35·2	—
Sitka		69·8	35	—	—	e 20 12	− 7	e 31·4	—
Bombay		71·1	285	11 17	0	20 26	− 8	36·7	39·7
Tashkent		71·1	310	11 19	+ 2	i 20 24	−10	e 32·3	37·5
Ekaterinburg		75·3	327	i 11 39	− 3	i 21 13	−11	30·3	45·1
Victoria		77·6	42	11 55	0	21 47	− 2	37·3	39·8
Seattle		78·4	43	e 15 5	PP	e 21 47	−11	e 36·3	—
Ukiah		79·4	52	e 12 7	+·2	e 22 7	− 2	e 36·5	—
Berkeley	E.	80·4	53	e 12 9	− 1	e 22 12	− 8	—	—
Lick		81·2	53	e 12 11	− 3	—	—	—	—
Tinemaha		83·7	53	e 12 27	0	i 22 50	− 4	—	—
Haiwee		84·2	54	i 12 31	+ 2	e 22 54	− 6	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pasadena		84·6	56	i 12 30	− 1	i 22 56	− 8	e 34·3	—
Mount Wilson		84·7	56	e 12 32	0	—	—	—	—
Riverside		85·2	56	i 12 34	0	—	—	—	—
La Jolla		85·6	57	i 12 38	+ 2	—	—	—	—
Baku		85·7	311	12 38	+ 1	i 22 59	[+ 5]	40·1	55·5
Bozeman		86·4	43	e 12 38	− 2	e 22 59	[−10]	e 35·3	—
Kucino		87·7	329	e 12 43	− 3	—	—	e 41·9	56·0
Pulkovo		90·0	334	12 51	− 6	23 31	[− 2]	42·3	52·8
Tucson		91·0	56	13 7	+ 5	e 23 37	[− 2]	e 37·4	—
Helsingfors		91·3	335	e 13 2	− 1	23 54	[+14]	e 45·3	—
Scoresby Sund		93·5	357	13 13	− 1	23 41	[−12]	—	—
Theodosia		93·9	320	e 13 6	− 9	e 23 44	[−11]	55·3	—
Upsala		94·4	338	—	—	e 23 43	[−15]	e 49·3	56·7
Simferopol		94·7	320	e 13 22	+ 3	—	—	—	—
Königsberg		96·6	333	e 13 43	+15	i 24 1	[− 8]	e 58·3	60·3
Ksara	E.	98·4	310	e 12 50	−46	24 11	[− 7]	50·5	—
Lund		99·0	337	—	—	24 13	[− 8]	48·3	—
Copenhagen		99·3	336	13 41	+ 1	24 14	[− 8]	48·3	—
Potsdam		101·4	334	i 17 4	?	i 24 26	[− 7]	e 51·3	58·3
Hamburg		101·8	336	e 17 54?	PP	—	—	e 49·3	61·3
Budapest		101·9	327	18 18	PP	e 24 29	[− 5]	e 53·3	60·8
Vienna		102·8	330	e 18 5	PP	—	—	—	64·3
Florissant		103·1	43	e 14 1	+ 3	i 25 8	{− 9}	—	56·3
Chicago		103·2	40	e 27 28	PS	—	—	e 45·3	—
St. Louis		103·3	43	e 14 38	+39	i 24 44	[+ 2]	—	56·3
Cheb		103·4	332	e 24 33	SKS	(e 24 33)	[− 9]	e 50·3	64·3
Göttingen		103·4	335	i 18 17	PP	—	—	e 54·8	61·8
Little Rock		103·7	47	e 18 27	PP	e 24 42	[− 2]	—	55·3
Edinburgh		104·3	345	e 16 47	?	—	—	e 52·3	—
Durham		104·8	344	18 30	PP	27 44	PS	—	—
De Bilt		104·8	337	e 14 12	+ 6	e 27 30	PS	e 51·3	65·1
Innsbruck		105·8	331	e 18 47	PP	—	—	—	65·5
Stonyhurst		105·8	342	i 18 38	PP	—	—	53·3	—
Stuttgart		105·8	334	e 14 5	− 5	e 24 41	[− 7]	e 50·3	65·9
Triest		105·9	329	18 38	PP	—	—	e 62·3	—
Uccle		106·1	337	e 18 33	PP	e 24 47	[− 8]	51·3	—
Strasbourg		106·5	334	e 14 33	+19	25 25	[+28]	50·3	—
Toronto	N.	106·7	33	—	—	e 24 39	[−19]	e 48·3	—
Kew		107·3	340	e 18 41	PP	e 27 55	PS	e 54·3	55·8
Oxford		107·3	341	i 18 48	PP	24 51	[−10]	e 56·3	—
Ottawa		107·3	30	—	—	e 25 1	[0]	e 47·3	—
Buffalo		107·5	34	e 18 17	[+ 7]	—	—	e 58·3	—
Neuchatel		108·1	334	e 18 30	PP	29 8	?	—	—
Florence		108·4	329	e 18 28	[+15]	28 7	PS	59·3	64·3
Paris		108·4	337	e 18 50	PP	e 28 6	PS	54·3	68·3
Charlottesville		110·9	37	—	—	e 28 35	PS	e 52·3	—
Georgetown		111·2	36	—	—	e 27 53	PS	—	59·3
Granada	—	120·6	335	i 20 15	PP	—	—	68·4	76·5
San Juan		132·3	45	22 39	PKS	—	—	e 54·3	—
La Paz		145·6	94	i 19 37	[+ 2]	26 40	SKS	72·8	91·5
Sucre		148·4	100	19 41	[+ 2]	—	—	—	—
La Plata		150·1	135	(19 17?)	[−25]	—	—	19·3	—

Additional readings :—
Tyosi SN = +8m.38s.
Nagoya PP = +5m.31s.
Sumoto ePZ = +4m.59s., SE = +8m.47s.
Kobe ePE = +5m.10s. =PP − 1s.
Manila PPPN = +6m.23s., SSN = +11m.38s., SSSN = +12m.2s.
Hong Kong PP = +7m.23s., ? = +12m.0s., SS = +12m.58s.
Chiufeng PN = +7m.9s.
Batavia i = +8m.22s.
Sydney iS = +22m.17s.
Honolulu T.H. e = +20m.17s. =SS +25s.

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Sitka eSS = +26m.57s.
Berkeley eSE = +21m.21s.
Kucino e = +15m.46s. =PP −21s., and +29m.17s. =SS +10s.
Tucson PP = +16m.43s., e = +23m.53s. =SKKS +10s., eSS = +30m.3s.
Helsingfors ePE = +13m.8s., PP = +16m.48s., eSKSE = +23m.23s., iPSE = +25m.3s., iSSE = +30m.52s., eSSSE = +35m.17s.; T_0 =10h.59m.55s.
Scoresby Sund PP = +17m.0s., +24m.17s. =SKKS +14s.
Königsberg iE = +14m.33s., eN = +17m.24s. =PP +7s., +23m.39s., and +24m.19s. =SKKS −8s., iE = +24m.37s. =S −19s., eE = +35m.29s. and +51m.29s., eN = +52m.17s.?
Copenhagen +17m.47s. =PP +10s.
Hamburg iZ = +18m.6s.
Florissant iE = +24m.38s. =SKS −3s.
Cheb eS = +33m.2s. =SS +13s.
De Bilt e = +18m.29s. =PP +10s.
Stuttgart eZ = +14m.14s., iPP = +18m.36s., i = +18m.54s., e = +20m.35s. = PPP +1s., eSKKSE = +25m.57s., iPS = +27m.39s., ePPS = +28m.47s., e = +30m.23s., eSS = +33m.23s., e = +41m.17s.
Uccle i = +27m.42s. =PS −7s., e = +33m.25s. =SS −1s.
Strasbourg iPP = +18m.58s., iPS = +28m.4s., SS = +33m.52s.
Toronto eN = +28m.24s.
Oxford i = +27m.51s. =PS −10s.
Ottawa eN = +28m.29s. =PS +28s., eE = +29m.17s.
Florence i = +18m.56s. =PP +11s.
Charlottesville ePPS = +29m.17s.
Georgetown i = +28m.47s. =PS +7s., e = +43m.59s.
Granada PP = +22m.31s. =PPP −10s.
La Paz iN = +19m.43s., iPKPN = +20m.1s., iN = +20m.11s. and +20m.15s. PPN = +22m.44s., PPE = +22m.58s., iE = +29m.57s. =SKKS +0s., and +33m.18s. =SKSP +10s.
Long waves were also recorded at Arapuni, Madison, Harvard, Ann Arbor, Ivigtut, Zagreb, Jena, Toledo, and San Fernando.

Mar. 19d. 23h. 10m. 42s. Epicentre 2°·0S. 152°·3E. (as on 1930 Nov. 17d.). X.

A = −·885, B = +·465, C = −·035; D = +·465, E = +·885;
G = +·031, H = −·016, K = −·999.

Very uncertain. Considerable focal depth is suspected and correction for 0·060 applied.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		−3·0	24·1	265	i 5 14	+33	—	—	—	—
Riverview		−3·9	31·9	182	e 5 49	+ 2	10 37	+ 5	15·3	17·8
Manila		−4·2	35·2	300	6 18	+ 4	11 35	+15	—	14·3
Adelaide		−4·2	35·3	200	e 5 36	−39	i 11 18	− 3	14·7	18·2
Melbourne		−4·3	36·4	192	e 5 26	−58	11 43	+ 6	14·6?	20·0
Wellington		−5·0	44·2	155	—	—	19 18?	?	—	—
Hong Kong		−5·0	44·4	306	9 37	?	13 54	+27	17·2	19·0
Perth		−5·1	45·5	225	17 8	?	—	—	—	—
Calcutta		−6·6	66·9	296	(9 59)	− 8	(18 6)	−14	(30·2)	—
Irkutsk		−6·7	67·6	330	e 10 19	+ 8	e 19 11	+43	31·3	36·2
Agra	E.	−7·1	77·0	299	11 8	− 2	e 20 12	− 8	—	—
Bombay		−7·2	80·7	290	11 35	+ 3	—	—	—	—
Frunse		−7·3	82·4	314	e 9 19	?	—	—	—	—
Andijan		−7·3	83·7	312	e 11 47	− 1	—	—	—	—
Tashkent		−7·4	86·1	312	e 12 16	+15	i 22 30	+ 28	e 38·3	56·1
Ukiah		−7·4	87·0	51	—	—	e 36 18	?	—	—
Berkeley		−7·5	87·6	52	e 12 6	− 2	e 23 6	[−11]	e 39·3	—
Pasadena		−7·5	90·8	56	e 12 37	+12	—	—	—	—
Ekaterinburg		−7·6	92·5	327	e 12 30	− 3	e 23 32	{−23}	37·3	50·7
Baku		−7·8	100·7	311	e 13 30	+19	—	—	46·1	56·1
Pulkovo		—	107·3	334	18 10	PP	24 25	[−36]	49·3	63·3
Helsingfors	E.	—	109·4	335	—	—	e 26 53	?	e 56·3	—
Scoresby Sund		—	114·4	358	—	—	28 6	PS	55·3	—
Copenhagen		—	117·4	336	—	—	28 18?	?	55·3	—
Potsdam		—	119·3	333	e 19 48	PP	e 29 6	PS	e 56·3	70·3

Continued on next page.

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	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Ottawa	—	119·6	37	—	—	e 27 54	?	e 50·3	—
De Bilt	—	122·9	336	—	—	e 36 42	SS	e 56·3	64·9
Stuttgart	—	123·6	331	e 22 48	?	—	—	e 60·3	74·3
Uccle	—	124·2	336	—	—	e 31 6	?	e 56·3	—
Strasbourg	—	124·4	332	e 16 14	?	—	—	e 58·3	—
Paris	—	126·5	335	—	—	e 29 18?	?	57·3	79·3
San Juan	—	138·9	64	e 22 36	PKS	—	—	—	—

Additional readings and note :—
Manila PEN = +6m.21s.
Calcutta readings have been *increased* by 9m.
Ekaterinburg SKS = +23m.4s., SS = +29m.54s.
Baku ePP +17m.38s., PS = +25m.44s.
Pulkovo SS = +33m.24s.
Helsingfors eE = +29m.48s., eSSE = +33m.18s.
Potsdam eEN = +29m.18s.?
Ottawa e = +36m.18s.
Stuttgart e = +31m.48s., eEN = +41m.36s.
Strasbourg ePP = +20m.31s., e = +31m.18s.?
San Juan e = +24m.58s., +29m.6s., and +32m.36s., eL = +36m.18s.?
Long waves were also recorded at Honolulu T.H., Chicago, Kucino, Lund, Edinburgh, Stonyhurst, Kew, Cheb, Granada, and La Paz.

Mar. 19d. Readings also at 2h. (near Toyooka), 6h. (near Plymouth), 7h. (Wellington), 10h. (Vienna), 12h. (New Plymouth), 13h. (Bombay), 17h. (Samarkand), 18h. (near Mizusawa and Tyosi), 19h. (Ekaterinburg, Rio de Janeiro, La Paz, La Plata, and Sucre), 20h. (La Paz, San Juan, Uccle, Paris, De Bilt, Strasbourg, Stuttgart, Copenhagen, Pulkovo, and near Mizusawa), 21h. (Balboa Heights), 23h. (Rio de Janeiro, La Paz, La Plata, and Sucre).

Mar. 20d. Readings at 0h. (Ekaterinburg, near Medan, and near Mizusawa), 10h. (Edinburgh and Suva), 13h. (Ottawa and near Medan), 14h. (La Paz and near Suva), 15h. (Ottawa), 18h. (Ekaterinburg, Tyosi (2), and near Mizusawa), 19h. (Baku and Tashkent), 20h. (near Tyosi (2)).

Mar. 21d. 19h. 53m. 35s. Epicentre 38°·0N. 42°·0E. (as on 1929 Oct. 15d.). X.

A = +·586, B = +·527, C = +·616 ; D = +·669, E = −·743 ;
G = +·458, H = +·412, K = −·788.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	E.	6·4	232	e 2 44	S	(e 2 44)	+ 1	5·8	—
Baku		6·6	66	e 1 41	+ 7	i 2 36	−12	3·0	6·0
Samarkand		19·5	77	e 4 18	− 6	—	—	—	—
Tashkent		21·2	72	e 5 8	PP	e 8 18	−12	e 10·9	17·1
Ekaterinburg		22·6	27	i 4 51	− 6	i 8 39	−18	10·4	14·8
Pulkovo		23·0	345	i 5 7	+ 6	e 9 11	+ 6	12·9	14·0
Andijan		23·5	75	e 5 4	− 1	e 9 59	SS	—	—
Frunse		25·1	68	e 4 21	−60	—	—	—	—

Ksara gives SE = +5m.3s.

March 21d. Readings also at 1h. (Florence), 2h. (near Apia), 3h. (near Sumoto), 6h. (Ekaterinburg, Riverview, and near Wellington), 11h. (Bombay), 13h. (Baku and Tashkent), 17h. (near Apia), 18h. (Ksara and Tucson), 19h. (Wellington), 22h. (Ekaterinburg and near Baku).

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Mar. 22d. 13h. 58m. 23s. Epicentre 15°·7N. 147°·7E. (as on 19d.). R.2.

A = −·814, B = +·514, C = +·271 ; D = +·534, E = +·845 ;
G = −·229, H = +·145, K = −·963.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Misima		20·9	340	4 39	0	8 22	− 2	—
Sumoto		21·9	331	e 8 45	S	(e 8 45)	+ 1	—
Oiwake		22·2	340	4 52	− 1	8 48	− 2	—
Hukusima		22·9	345	4 59	− 1	9 8	+ 5	—
Sendai		23·3	346	5 7	+ 3	9 19	+ 9	—
Manila		25·8	271	5 53	PP	10 40	SS	—
Frunse		67·1	311	e 10 53	+ 1	—	—	—
Andijan		68·8	309	e 10 49	−14	e 19 54	−13	—
Samarkand		73·0	308	e 11 31	+ 2	—	—	—
Ekaterinburg		75·3	327	i 11 39	− 3	e 21 17	− 7	34·6
Tinemaha		83·7	53	e 12 28	+ 1	—	—	—
Pasadena		84·6	56	e 12 31	0	—	—	—
La Paz	z.	145·6	94	e 19 40	[+ 5]	—	—	—

Long waves were recorded at Baku.

March 22d. Readings also at 6h. (Alicante), 8h. (Tyosi and near Mizusawa), 13h. (Baku and Tashkent), 14h. (near Mizusawa), 20h. (near Sumoto), 21h. (Wellington).

Mar. 23d. 9h. 4m. 7s. Epicentre 37°·7N. 69°·8E. N.3.

The stations give epicentre 37°40′N. 69°48′E.

A = +·273, B = +·742, C = +·612 ; D = +·938, E = −·345 ;
G = +·211, H = +·574, K = −·791.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	2·9	312	0 44	+ 3	—	—	1·4	1·5
Tashkent	3·6	354	i 0 54	+ 3	—	—	1·6	2·2
Andijan	3·6	33	0 51	0	—	—	i 1·7	2·0
Frunse	6·3	33	e 1 10	−20	—	—	e 3·0	3·2
Almata	7·8	42	e 1 44	− 7	3 15	− 4	3·7	—

No additional readings.

Mar. 23d. 12h. 8m. 2s. Epicentre 37°·0S. 100°·0W. N.3.

A = −·139, B = −·787, C = −·602 ; D = −·985, E = +·174 ;
G = +·105, H = +·593, K = −·799.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		24·1	90	5 13	+ 2	9 31	+ 6	—	11·9
La Plata		33·9	100	6 38	− 1	—	—	14·6	—
La Paz		34·7	62	i 6 45	− 1	i 12 15	− 2	15·2	17·9
Sucre		35·3	70	6 48	− 4	—	—	—	—
Rio de Janeiro	N.	50·5	93	e 16 8	S	(e 16 8)	0	23·1	—
San Juan		64·0	35	e 10 35	+ 3	e 18 58	− 9	e 34·0	—
Ottawa		85·3	18	—	—	e 22 58	[− 3]	e 39·0	—
Baku		156·4	72	e 20 28	{ 0}	24 32	PP	71·0	—
Ekaterinburg		156·4	27	e 20 0	[+10]	e 34 39	SKSP	64·0	—
Bombay		160·8	159	e 20 58?	{+10}	—	—	e 79·0	—
Frunse		172·8	34	e 22 42	?	—	—	—	—
Andijan		173·0	55	e 20 45	[+40]	—	—	—	—

Additional readings :—
La Paz PPN = +7m.53s., iSN = +12m.21s.
Baku e = +49m.18s. =SSS −13s.
Long waves were also recorded at Wellington, Adelaide, Seattle, Ukiah, Scoresby Sund, and European stations.

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March 23d. Readings also at 0h. (Berkeley, Branner, Lick, and Tucson), 2h. (Sucre and near La Paz), 3h. (Sucre and near La Paz (2)), 5h. (near Berkeley, Lick, and near Santiago), 10h. (Sucre and near La Paz), 14h. (Nagoya, Haiwee, Pasadena, and Tinemaha), 15h. (La Paz, near Christ Church, New Plymouth, Wellington, near Nagoya, and Tyosi), 16h. (Edinburgh), 17h. (Venice), 22h. (near Nagoya, Tokyo, and near Tyosi).

Mar. 24d. 16h. 8m. 44s. Epicentre 25°·8N. 90°·2E. (as on 1931 Feb. 7d.). R.3.

A = −·003, B = +·900, C = +·435; D = +1·000, E = +·003;
G = −·002, H = +·435, K = −·900.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	3·7	207	0 26	−27	1 11	−24	1·4	—
Agra	10·9	280	i 2 30	− 3	4 43	+ 7	e 6·1	—
Hyderabad	13·7	235	5 29	S	(5 29)	−15	6·9	8·0
Phu-Lien	15·9	105	3 16?	−24	—	—	—	—
Bombay	17·4	250	3 57	− 2	7 23	+12	9·1	9·8
Kodaikanal	19·7	220	e 4 24	− 2	7 57	− 3	10·2	10·7
Almata	20·5	332	e 4 41	+ 6	—	—	—	—
Andijan	21·0	320	e 4 48	+ 8	—	—	—	—
Frunse	21·4	327	e 4 45	+ 1	—	—	—	—
Hong Kong	22·1	94	4 47	− 5	8 27	−21	11·1	12·0
Medan	23·6	158	i 4 54	−12	i 8 25	−51	—	—
Samarkand	23·8	311	i 5 22	+14	e 9 54	SS	—	—
Chinfeng	25·9	50	e 5 34	+ 6	—	—	—	—
Irkutsk	28·5	18	e 5 54	+ 2	e 10 44	+ 4	15·3	17·1
Manila	30·9	105	7 1	PP	12 5	SS	—	—
Baku	36·4	307	e 7 2	+ 1	e 13 3	+21	18·8	—
Ekaterinburg	37·5	334	i 7 15	+ 4	13 10	+11	19·3	—
Pulkovo	52·9	329	9 12	− 1	e 16 48	+ 7	26·3	—

Additional readings:—
Agra PN = +2m.37s.
Hyderabad S = +6m.26s.
Long waves were also recorded at Kucino, Copenhagen, De Bilt, and Paris.

March 24d. Readings also at 1h. (Stuttgart, Triest, Vienna, and Zagreb), 3h. (Ekaterinburg, Tashkent, Pulkovo, Scoresby Sund, and Pittsburgh), 4h. (De Bilt, Paris, and Strasbourg), 7h. (Vienna), 8h. (Paris, La Paz, San Juan, and Lick), 9h. (La Paz), 11h. (Ekaterinburg and Irkutsk), 14h. (Tucson), 18h. (La Paz (2)), 20h. (Edinburgh).

March 25d. 4h. 29m. 32s. Epicentre 30°·0N. 89°·2E. N.3.

A = +·012, B = +·866, C = +·500; D = +1·000, E = −·014;
G = +·007, H = +·500, K = −·866.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	7·5	186	3 11	S	(3 11)	0	5·3	6·3
Agra	10·2	256	2 13	−11	4 1	−17	e 4·5	—
Hyderabad	15·9	220	3 37	− 3	6 16	−20	8·3	11·0
Almata	16·5	327	e 3 52	+ 4	e 6 50	0	—	—
Andijan	17·4	313	e 4 12	+13	—	—	—	—
Frunse	17·4	322	e 5 43	?	—	—	—	—
Phu-Lien	18·2	116	3 28?	−41	—	—	—	—
Bombay	18·5	235	4 13	0	7 16	−20	8·7	9·9
Samarkand	20·5	304	e 7 42	S	(e 7 42)	−34	(10·4)	—
Kodaikanal	22·6	211	4 58	+ 1	(8 54)	− 3	8·9	—
Irkutsk	24·9	22	e 5 18	− 1	—	—	10·5	—
Ekaterinburg	33·4	332	e 6 33	− 2	i 11 51	− 6	16·5	—
Baku	33·5	299	—	—	e 11 55	− 3	e 15·2	—
Pulkovo	48·9	325	e 8 53	+10	15 36	− 9	23·5	—

Additional readings and note:—
Calcutta S = +4m.41s.
Agra PN = +2m.16s.
Samarkand gives S as P and L as S.

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March 25d. 23h. 55m.0s. Epicentre 62°·5N. 153°·3W. N.2.

See the following shock.

$A = -\cdot413$, $B = -\cdot207$, $C = +\cdot887$; $D = -\cdot449$, $E = +\cdot893$; $G = -\cdot792$, $H = -\cdot399$, $K = -\cdot462$.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Victoria	E.	21·8	116	4 55	+ 6	8 35	− 7	12·6	16·9
	N.	21·8	116	4 54	+ 5	8 27	−15	12·7	16·4
Bozeman		29·2	105	—	—	e 10 30	−21	—	—
Ukiah		29·6	128	—	—	e 11 53	SS	—	—
Berkeley		31·0	129	e 6 12	− 2	e 16 54	(+ 5)	—	—
Lick		31·8	129	e 6 18	− 3	—	—	e 17·5	—
Tinemaha		33·3	124	e 6 33	− 1	—	—	—	—
Haiwee	N.	34·2	125	i 6 42	0	—	—	—	—
Santa Barbara		35·0	128	i 6 52	+ 3	—	—	—	—
Pasadena		35·9	127	e 6 52	− 5	—	—	—	—
Mount Wilson		35·9	127	e 6 54	− 3	—	—	—	—
Riverside	E.	36·3	126	e 6 57	− 3	i 12 51	+10	—	—
La Jolla		37·4	127	e 7 9	− 1	—	—	—	—
Tucson		40·4	119	e 7 37	+ 2	—	—	—	—
Honolulu T.H.		41·3	186	—	—	e 17 54	(+ 4)	e 21·0	—
Chicago		42·9	87	—	—	e 17 36	(−23)	21·2	—
St. Louis		44·2	91	e 8 0	− 6	—	—	—	—
Little Rock	N.	46·4	97	e 8 19	− 5	—	—	—	—
Irkutsk		50·1	310	e 8 51	− 1	e 16 8	+ 6	27·6	—
Osaka		51·1	274	9 1	+ 1	—	—	—	—
Helsingfors		57·3	1	—	—	e 17 41	+ 1	—	—
Ekaterinburg		57·8	340	i 9 47	− 2	i 17 52	+ 5	—	—
Edinburgh		59·4	20	—	—	e 17 30	−38	—	—
Zi-ka-wei		60·5	281	i 10 0	− 8	—	—	—	—
Bidston		61·8	20	—	—	22 44	SS	—	—
Oxford		63·6	20	—	—	i 18 28	−34	—	—
Potsdam		64·7	10	i 10 36	− 1	—	—	—	—
Uccle		65·4	15	e 10 40	− 1	—	—	—	—
Stuttgart		67·9	13	e 10 57	− 1	—	—	—	—
Vienna		69·0	8	e 11 0	− 5	—	—	—	—
Zurich		69·2	13	e 11 4	− 2	—	—	—	—
Neuchatel		69·4	15	e 11 4	− 3	—	—	—	—
Innsbruck		69·5	11	e 11 6	− 2	—	—	—	—
Chur		69·8	13	e 11 7	− 2	—	—	—	—
Andijan		70·4	325	e 11 15	+ 2	—	—	—	—
Zagreb		71·3	9	e 11 21	+ 2	—	—	—	—
Venice		71·4	11	11 0?	−19	—	—	—	—
Hong Kong		71·4	283	11 19	0	20 42	+ 4	—	—
Triest		71·4	10	11 15	− 4	—	—	—	—
Samarkand		72·9	329	e 11 34	+ 6	—	—	37·5	—
Florence		73·0	11	e 11 30	+ 1	—	—	—	—
Toledo		74·8	24	11 35	− 4	—	—	—	—
Baku		75·5	342	e 11 45	+ 2	—	—	—	—
Granada		77·4	25	i 11 43	−11	e 22 28	PS	—	—
Almeria		77·9	23	e 11 52	− 5	—	—	—	—
Agra		81·5	317	12 3	−13	22 13	−19	41·6	54·7
Batavia		100·0	277	e 14 37	+53	—	—	—	—
La Paz	N.	102·4	100	e 18 2	PP	—	—	—	—

Additional readings :—
Tinemaha iE = +6m.36s.
St. Louis iE = +8m.3s. and +9m.46s. = PP +3s.
Little Rock iN = +8m.27s.
Osaka i = +11m.21s.
Helsingfors eN = +14m.14s. and +14m.48s., eSN? = +17m.12s., eSSE = +21m.43s., eSSN = +22m.12s.
Zagreb e = +11m.26s.
Toledo eP = +11m.38s.
Granada P_gP = +12m.3s.
La Paz ePE = +18m.24s.
Long waves were also recorded at Sumoto.

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March 25d. 23h. 58m. 39s. Epicentre **62°·5N. 153°·3W.** R.1.
(as at 23h. 55m.).

Probable error of epicentre ±0°·27.

A = −·413, B = −·207, C = +·887; D = −·449, E = +·893;
G = −·792, H = −·399, K = −·462.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	E.	21·8	116	4 56	+ 7	—	—	9·0	13·3
	E.	21·8	116	4 48	− 1	—	—	9·1	12·8
Seattle		22·8	116	i 5 51	+52	i 9 22	+21	12·2	—
Saskatoon		26·6	91	4 59	−36	9 42	−27	—	—
Bozeman		29·2	105	i 5 49	− 9	i 10 53	+ 2	15·3	—
Ukiah		29·6	128	6 10	+ 9	10 57	− 1	i 14·2	—
Berkeley		31·0	129	i 6 14	0	i 11 27	+ 7	—	—
Branner		31·5	129	e 6 21	+ 3	—	—	—	—
Lick		31·8	129	e 6 20	− 1	—	—	e 15·9	—
Tinemaha		33·3	124	i 6 34	0	i 12 4	+ 9	—	—
Haiwee	N.	34·2	125	i 6 43	+ 1	e 12 14	+ 5	—	—
Santa Barbara		35·0	128	i 6 52	+ 3	—	—	—	—
Pasadena		35·9	127	i 6 54	− 3	i 12 42	+ 7	i 15·4	—
Mount Wilson		35·9	127	e 7 2	+ 5	i 12 41	+ 6	—	—
Riverside		36·3	126	e 6 57	− 3	e 12 42	+ 1	—	—
Denver		36·7	105	e 6 55	− 9	e 12 39	− 8	e 18·0	e 20·2
La Jolla		37·4	127	e 7 10	0	e 13 6	+ 9	—	—
Tucson		40·4	119	i 7 38	+ 3	13 52	+10	19·1	—
Honolulu T.H.		41·3	186	i 7 40	− 3	i 14 2	+ 6	—	—
Sapporo		41·7	275	7 56	+10	14 4	+ 2	—	—
Scoresby Sund		42·8	23	7 56	+ 1	14 25	+ 7	—	—
Chicago		42·9	87	i 7 58	+ 2	e 14 23	+ 4	—	—
Florissant		44·0	91	i 8 3	− 2	i 14 42	+ 6	e 21·3	25·5
St. Louis		44·2	91	i 8 3	− 3	i 14 42	+ 3	e 20·0	23·5
Ann Arbor		44·3	84	e 8 9	+ 2	e 14 51	+11	e 21·1	26·9
Morioka		44·4	272	8 8	0	14 51	+10	—	—
Mizusawa		44·9	271	8 15	+ 3	14 14	−35	—	—
Toronto		45·2	79	i 8 12	− 2	i 14 48	− 6	21·6	—
Ottawa		45·5	75	e 8 16	− 1	e 14 53	− 4	e 21·3	—
Sendai		45·7	271	8 20	+ 2	15 13	+13	—	—
Little Rock		46·4	97	i 8 22	− 2	e 15 14	+ 4	e 21·2	24·3
Mito		47·4	270	8 28	− 4	15 36	+12	—	—
Pittsburgh		47·5	82	i 8 35	+ 3	i 15 27	+ 1	21·3	—
Tyosi		47·8	269	—	—	(e 15 35)	+ 5	e 15·6	—
Kumagaya		48·1	272	8 34	− 3	15 49	+15	—	—
Fordham		49·9	77	i 8 44	− 7	i 16 0	+ 1	e 24·3	27·3
Harvard		49·9	74	i 8 52	+ 1	i 16 3	+ 4	e 20·8	—
Georgetown		50·0	80	i 8 51	0	i 16 4	+ 3	22·6	26·2
Irkutsk		50·1	310	8 53	+ 1	16 5	+ 3	27·3	—
Charlottesville		50·1	83	i 8 53	+ 1	i 16 12	+10	i 26·2	—
Nagoya		50·1	273	e 8 53	+ 1	(16 14)	+12	16·2	—
Toyooka		50·7	275	i 8 56	− 1	e 15 18	−53	e 25·7	29·7
Osaka		51·1	274	9 1	+ 1	16 16	0	23·4	31·1
Kobe		51·3	274	9 4	+ 3	i 16 31	+12	e 26·2	28·8
Sumoto		51·7	273	9 4	0	16 34	+10	e 19·4	31·7
Columbia		52·3	87	i 9 9	0	i 16 37	+ 4	e 24·0	—
Zinsen		52·9	281	9 12	− 1	16 53	+12	—	—
Koti		53·0	274	e 9 15	+ 1	16 50	+ 8	—	—
Hukuoka		54·4	276	e 9 26	+ 2	17 11	+10	e 26·9	30·4
Titizima		54·5	263	9 23	− 2	17 13	+11	—	—
Miyazaki		55·3	275	9 32	+ 1	17 27	+14	—	—
Chiufeng		55·4	292	e 9 34	+ 2	e 17 20	+ 5	e 26·2	31·0
Nagasaki		55·4	276	9 32	0	17 29	+14	—	—
Bergen		56·1	13	8 41	−56	—	—	23·3	—
Helsingfors		57·3	1	e 9 43	− 2	e 17 49	+ 9	e 25·4	—
Upsala		57·5	5	10 4	+17	e 18 9	+26	e 25·3	26·4

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo		57·7	358	e 9 46	− 2	17 50	+ 4	31·0	35·1
Ekaterinburg		57·8	340	i 9 48	− 1	i 17 53	+ 6	25·3	36·1
Nake		59·2	275	9 59	0	18 16	+11	—	—
Edinburgh		59·4	20	—	—	e 18 11	+ 3	22·3	30·4
Zi-ka-wei		60·5	281	i 10 3	− 5	18 29	+ 6	30·4	39·7
Durham		60·7	19	10 13	+ 4	18 36	+11	—	35·2
Copenhagen		61·3	10	10 11	− 3	18 45	+12	—	—
Lund		61·4	9	i 10 16	+ 2	18 21	−13	25·3	—
Stonyhurst		61·4	20	—	—	i 18 41	+ 7	28·3	31·3
Kucino		61·4	354	10 7	− 7	18 31	− 3	29·1	42·2
Bidston		61·8	20	i 10 15	− 2	e 23 8	?	30·2	39·7
Königsberg		62·6	4	10 22	0	e 18 58	+ 8	e 31·9	36·3
Oxford		63·6	20	i 10 29	0	i 19 8	+ 6	e 30·5	41·0
Kew		64·1	19	i 10 32	− 1	i 19 58	+49	26·8	32·4
De Bilt		64·2	14	10 31	− 3	e 19 17	+ 7	e 31·3	34·2
Potsdam		64·7	10	e 10 27	−10	i 19 23	+ 7	e 26·3	40·3
Isigakizima		65·1	275	10 37	− 2	19 29	+ 8	—	—
Göttingen		65·3	12	e 10 38	− 3	e 19 21?	− 3	e 35·3	41·3
Uccle		65·4	15	i 10 41	0	i 19 30	+ 5	26·3	33·5
Jena		66·0	11	e 10 48	+ 3	e 19 39	+ 7	e 26·3	34·9
Cheb		66·9	10	e 10 57	+ 6	e 19 55	+12	e 27·3	34·3
Paris		67·1	18	i 10 51	− 1	(24 21?)	SS	24·3	33·3
Karlsruhe		67·6	13	10 58	+ 2	—	—	—	—
Frunse		67·8	325	e 9 43	−74	—	—	40·0	—
Stuttgart		67·9	13	i 10 55	− 3	i 20 3	+ 7	e 37·3	—
Strasbourg		68·0	14	i 10 51	− 7	20 1	+ 4	27·4	—
Vienna		69·0	8	i 11 2	− 3	—	—	e 31·3	49·3
Besançon		69·0	15	11 10	+ 5	—	—	34·3	—
Zurich		69·2	13	e 11 2	− 4	—	—	—	—
Neuchatel		69·4	15	e 11 2	− 5	—	—	—	—
Port au Prince		69·5	89	i 10 4	−64	19 55	−20	—	—
Innsbruck		69·5	11	e 11 8	0	—	—	—	—
Chur		69·8	13	e 11 7	− 2	—	—	—	—
Budapest		69·9	8	11 11	+ 1	20 34	+14	31·4	48·4
Graz		70·1	9	i 11 9	− 2	—	—	e 39·3	52·3
Zagreb		71·3	9	e 11 16	− 3	e 20 33	− 4	e 28·9	e 35·9
Hong Kong		71·4	283	11 20	+ 1	20 44	+ 6	35·7	41·3
Triest		71·4	10	11 21	+ 2	21 29	PS	e 30·9	37·3
Theodosia		72·2	355	11 28	+ 4	e 20 51	+ 4	38·3	—
Simferopol		72·4	355	e 11 28	+ 3	—	—	39·5	—
San Juan		72·5	84	e 11 22	− 4	i 20 46	− 5	e 33·3	—
Belgrade		72·6	5	e 11 24	− 2	e 20 51	− 1	38·4	50·1
Serra do Pilar		72·6	28	11 26	0	—	—	—	—
Yalta		72·8	355	e 11 29	+ 1	21 2	+ 8	36·3	—
Florence		73·0	11	i 11 26	− 3	(20 41)	−16	28·3	33·9
Barcelona		74·2	19	11 34	− 2	e 21 2	− 9	e 33·7	43·0
Tortosa	N.	74·6	20	11 40	+ 2	21 55	PS	e 34·0	38·9
Toledo		74·8	24	i 11 36	− 3	e 21 12	− 6	—	—
Manila		75·1	275	11 45	+ 4	21 27	+ 6	36·0	41·3
Baku		75·5	342	i 11 44	+ 1	i 21 31	+ 5	38·3	43·6
Phu-Lien		76·1	290	e 11 42	− 5	21 32	− 1	36·3	43·2
Alicante		77·0	21	e 11 51	− 1	e 21 43	0	e 32·2	—
Granada		77·4	25	11 45	− 9	—	—	37·0	51·9
San Fernando		77·6	27	11 58	+ 3	21 58	+ 9	36·3	51·9
Almeria		77·9	23	11 49	− 8	e 18 57	?	37·9	50·4
Dehra Dun		78·5	318	12 1	+ 1	22 11	+12	40·0	45·3
Algiers		79·0	19	i 12 4	+ 1	i 22 4	− 1	i 32·9	—
Agra	N.	81·5	317	e 12 8	− 8	—	—	—	51·1
Calcutta		82·1	306	12 30	+11	22 53	+15	42·4	45·3
Ksara		83·4	353	i 12 31	+ 6	—	—	43·3	—

Continued on next page.

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	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan	87·6	356	12 53	+ 7	i 23 33	0	—	57·9
Hyderabad	90·4	312	11 30	−89	23 38	{0}	42·2	54·6
Bombay	90·9	318	12 58	− 4	23 38	{− 4}	45·5	50·8
Medan	94·9	288	e 12 38	−42	—	—	44·3	52·6
Colombo	99·6	308	17 56	PP	28 1	?	47·8	54·5
Batavia	100·0	277	e 17 21	PP	i 27 9	PS	54·3	65·9
La Paz	102·4	100	18 17	PP	26 6	+18	49·6	61·0
Riverview	105·9	226	e 18 27	PP	—	—	—	51·9
Sydney	105·9	226	—	—	e 25 9	[+15]	—	62·6
Adelaide	111·5	235	i 23 31	?	i 28 41	PS	47·2	57·1
Melbourne	111·7	229	e 27 10	?	i 28 56	PS	47·3	59·5
Perth	118·3	255	29 51	PS	—	—	55·9	—
Rio de Janeiro	119·5	82	e 20 1	PP	e 30 11	PS	—	68·3
La Plata	122·9	101	20 33	PP	—	—	61·3	—
Tananarive	134·1	331	22 47	PKS	—	—	65·0	85·0

Additional readings :—
Berkeley e = +6m.17s., e = +11m.57s.
Denver iN = +7m.11s.
Tucson e = +16m.48s. =SS +27s., i = +17m.7s.
Honolulu T.H. e = +7m.52s., +14m.51s., and +17m.9s.
Scoresby Sund PP = +9m.42s., PSN = +14m.48s. ; also +17m.38s. =S_cS −20s.
Chicago iPP = +9m.42s.
Florissant iP_cPE = +9m.42s., iPPZ = +9m.50s., iPPPZ = +10m.26s., iPPPPZ = +10m.43s., iP_cSN = +13m.49s., iPSE = +14m.49s., iSSN = +17m.55s., iS_cS = +18m.0s., iSSSEN = +19m.0s., eSSSSE = +19m.25s., eP_cSS_cP = +25m.6s.
St. Louis iE = +8m.6s. and +8m.11s., iPPE = +9m.52s., iE = +10m.9s., +11m.56s., +14m.32s., and +15m.14s., iSSE = +18m.4s. =S_cS −3s.
Ann Arbor ePP = +10m.3s., eSS = +18m.3s. =S_cS −5s., eSSS = +19m.27s.
Toronto iPPN = +9m.59s., iPPE = +10m.5s., iSE = +14m.52s., iSSN = +18m.13s. =S_cS +0s. : T_o =23h.58m.23s.
Ottawa ePP = +10m.6s. =P_cP +6s., eSS = +18m.26s. =S_cS +10s.
Little Rock iEN = +8m.31s., eN = +10m.15s. =PP +10s., iN = +10m.31s., eN = +18m.14s. =SS −3s., eSSN = +18m.38s.
Pittsburgh iPP = +10m.23s., e = +18m.53s. =SS +16s. and +19m.35s.
Fordham iPPNZ = +10m.51s., iPSN = +16m.13s., eSSZ = +19m.53s.
Harvard iSS = +19m.37s. : T_o =23h.58m.38s.
Charlottesville iPP = +10m.45s., e = +19m.29s. and +19m.41s.
Georgetown iSS = +19m.40s. : T_o =23h.58m.30s.
Toyooka iPEN = +8m.59s., SN = +15m.22s.
Columbia e = +11m.11s. =PP +10s., +12m.11s., and +20m.9s. =SS +7s.
Bergen PP = +11m.27s., PPP = +12m.40s.
Helsingfors ePE = +9m.50s., ePPN = +11m.47s., iPPE = +12m.16s., ePPPN = +12m.51s., ePPPE = +13m.3s., eSSN = +21m.51s., eSSE = +22m.3s., eSSSN = +24m.3s. ; T_o =23h.58m.22s.
Upsala e = +17m.46s., SSN = +22m.1s., SSSE = +23m.57s.
Zi-ka-wei iZ = +12m.21s. =PP +7s., i = +13m.55s. and +18m.1s.
Durham PPP = +14m.3s., PS = +18m.57s.
Copenhagen i = +10m.14s., PP = +12m.21s., PPP = +14m.3s., SS = +22m.21s.
Lund +22m.39s. =SS +9s.
Stonyhurst eSSS? = +22m.41s.
Königsberg PPN = +12m.42s., eN = +13m.24s., ePSN = +19m.30s., eN = +20m.14s. =S_cS +3s., eSSN = +23m.3s.
Oxford iSN = +19m.29s., i = +23m.47s.
Kew eSSEZ = +23m.32s.
De Bilt ePPZ = +12m.54s.
Potsdam iNZ = +10m.34s. and +10m.38s., iE = +10m.42s., iN = +11m.30s. = P_cP +18s., +11m.43s., and +11m.56s., iZ = +12m.54s. =PP +3s., iNZ = +13m.7s., i = +14m.51s., iE = +20m.36s. =S_cS +10s., iN = +20m.50s.
Göttingen eNZ = +11m.12s. =P_cP −2s., iNZ = +13m.4s. =PP +7s., eNZ = +14m.38s. =PPP +13s.
Uccle i = +13m.5s. =PP +7s. and +24m.12s.
Jena ePE = +10m.51s., e = +20m.45s. =S_cS +10s.
Paris e = +13m.21s. =PP +8s.
Stuttgart ePNZ = +10m.47s., ePPNZ = +13m.21s., eN = +18m.59s., iEN = +21m.0s. =S_cS +11s., iSSEN = +24m.21s., eSSS = +28m.1s., eZ = +33m.3s., eEN = +35m.21s.
Strasbourg PP = +14m.5s., PS = +20m.34s., SS = +24m.51s.
Port au Prince PP = +12m.50s., PPP = +13m.39s.
Graz iP = +11m.15s., e = +25m.40s.
Hong Kong SS = +25m.21s.

Continued on next page,

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Triest PP = +12m.5s., i = +15m.47s.
San Juan e = +20m.33s.
Belgrade e = +14m.12s. =PP +11s. and +14m.47s.
Toledo i = +11m.40s. and +11m.46s., PS = +21m.52s.
Granada PPP = +14m.0s., PS = +19m.28s., PPS = +20m.0s., SS = +24m.38s.
Batavia e = +17m.0s.
La Paz PPPN = +20m.36s., iN = +24m.37s. =SKS +0s., SKS = +24m.54s., SSN = +32m.39s., SSSN = +37m.3s., SSSSN = +39m.46s.
Adelaide iPS = +29m.41s., iSS = +33m.32s., i = +38m.34s.
Melbourne iPS? = +29m.31s., i = +33m.15s., iSS? = +34m.54s., iSSS? = +39m.16s.
Perth PP = +31m.16s., PPP = +33m.36s., PPPP = +37m.16s., PS = +40m.21s., i = +40m.41s., PPS = +41m.1s., SS = +44m.11s.
Tananarive eE = +24m.30s.
Long waves were also recorded at Andijan, Malaga, Kodaikanal, and Wellington.

March 25d. Readings also at 7h. (near Lick), 11h. (near Wellington), 17h. (San Juan and near Port au Prince), 20h. (Baku, Ekaterinburg, and Irkutsk), 21h. (Andijan, Frunse, Baku, Ekaterinburg, Irkutsk, Haiwee, Mount Wilson, Pasadena, and Tinemaha), 22h. (Helsingfors, Pulkovo, Tashkent, and near La Paz), 23h. (Kobe, Amboina, La Plata, Sucre, and near La Paz).

March 26d. 7h. 8m. 56s. Epicentre 2°·0N. 66°·5E. N.3.

A = +·399, B = +·916, C = +·035 ; D = +·917, E = −·399 ;
G = +·014, H = +·032, K = −·999.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kodaikanal		13·7	53	(3 15)	+ 4	3 15	P	6·6	7·5
Colombo		14·2	69	3 24	+ 6	—	—	7·1	8·3
Bombay		18·0	20	e 4 6	− 1	—	—	—	13·2
Hyderabad		19·4	37	5 28	+64	9 23	+89	10·6	12·8
Agra	E.	27·5	23	5 38	− 5	10 25	+ 1	13·8	—
Tananarive		28·0	221	e 6 57	PP	9 30	PcP	13·3	14·9
Baku		41·2	340	7 44	+ 2	i 14 0	+ 6	20·6	25·0
Ekaterinburg		55·0	356	i 9 26	− 3	e 17 3	− 6	25·1	—
Pulkovo		64·1	341	—	—	e 26 4	?	35·1	—
Ponta Delgada		90·5	308	27 4	?	—	—	—	40·1

Additional readings :—
Kodaikanal P = 7h.4m.11s.
Agra eN = +5m.41s.
Tananarive N = +13m.3s.
Ekaterinburg e = +20m.53s. =SS +5s.

March 26d. 9h. 52m. 25s. Epicentre 4°·4S. 128°·3E. N.1.

Probable error of epicentre ±0°·16.
Batavia gives epicentre 4°·4S. 128°·9E.

A = −·618, B = +·782, C = −·077 ; D = +·785, E = +·620 ;
G = +·048, H = −·060, K = −·997.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	20·4	339	4 34	0	8 24	+10	10·4	12·6
Malabar	20·8	261	i 4 42	+ 4	i 8 36	+14	—	—
Batavia	21·5	264	i 4 46	+ 1	i 9 7	SS	13·2	—
Perth	29·9	201	i 6 0	− 4	i 11 5	+ 2	15·7	21·1
Hong Kong	30·1	333	6 4	− 2	10 59	− 7	13·6	16·9
Taihoku	30·2	350	e 6 10	+ 3	—	—	—	—
Naha	30·7	0	6 13	+ 2	11 8	− 8	—	—
Medan	30·7	285	(i 5 37)	−34	(i 11 16)	0	—	—
Adelaide	32·0	165	i 6 24	+ 1	i 11 33	− 2	i 14·1	19·8
Nake	32·8	3	6 31	+ 1	11 42	− 6	—	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		33·0	320	e 6 33	+ 1	e 11 41	−10	14·1	—
Titizima		34·2	24	6 41	− 1	11 57	−12	—	—
Zi-ka-wei		36·2	353	e 6 25	−35	11 57	−42	—	16·8
Riverview		36·3	147	i 6 58	− 2	i 12 40	− 1	18·6	20·6
Sydney		36·3	147	e 6 23	−37	i 12 53	+12	19·4	23·3
Miyazaki		36·5	5	7 2	0	12 39	− 5	—	—
Melbourne		36·7	159	i 7 4	0	12 47	0	17·6	20·6
Nagasaki		37·2	3	7 8	0	12 47	− 7	—	—
Hukuoka		38·0	4	7 15	0	13 4	− 2	e 18·6	20·8
Koti		38·3	8	i 7 17	− 1	e 13 7	− 4	—	—
Wakayama		39·2	10	7 25	0	13 18	− 6	—	—
Sumoto		39·2	10	7 26	+ 1	13 19	− 5	20·5	24·5
Kobe		39·6	10	7 30	+ 1	13 26	− 4	—	22·6
Osaka		39·7	10	7 10	−19	13 29	− 3	16·3	21·5
Nagoya		40·4	13	e 7 34	− 1	13 39	− 3	—	—
Toyooka		40·5	10	i 7 35	− 1	13 39	− 5	e 23·4	26·6
Gihu		40·6	13	7 33	− 4	13 37	− 8	—	—
Tyosi		41·8	17	e 7 48	+ 1	e 14 3	0	—	—
Zinsen		42·0	358	7 47	− 2	14 2	− 4	—	—
Kakioka		42·1	15	7 46	− 3	13 59	− 9	—	—
Hukusima		43·6	15	8 0	− 2	14 25	− 5		—
Mizusawa		45·1	15	8 16	+ 2	14 48	− 4	21·0	—
Morioka		45·7	15	8 19	+ 1	15 1	+ 1	—	—
Chiufeng		45·9	348	e 8 20	0	15 26	+23	—	—
Calcutta		47·4	306	9 2	+30	16 2	+38	32·2	32·7
Sapporo		48·9	13	8 45	+ 2	15 43	− 2	—	—
Colombo		49·7	283	8 49	0	20 10	?	35·4	40·1
Kodaikanal		52·7	287	i 9 11	− 1	16 41	+ 3	25·8	30·2
Hyderabad		53·8	296	10 23	+63	17 57	+64	28·8	40·0
Arapuni		54·6	135	8 35?	−49	17 0	− 4	30·6	—
Wellington		55·4	140	9 32	0	17 10	− 5	27·6	35·6
Agra		57·9	306	9 41	− 9	i 17 41	− 7	e 29·6	36·0
Dehra Dun		59·3	310	9 55	− 5	18 15	+ 8	32·9	44·6
Bombay		59·4	296	9 59	− 1	17 49	−19	29·9	40·7
Irkutsk		60·2	340	i 10 5	− 1	18 28	+ 9	29·6	—
Frunse		67·7	321	e 13 32	PP	—	—	—	—
Andijan		68·1	319	e 11 0	+ 1	e 19 58	0	—	—
Honolulu T.H.		76·7	67	i 11 53	+ 3	e 21 11	−28	21·6	—
Tananarive		79·9	253	12 25	+18	22 20	+ 5	40·6	43·4
Ekaterinburg		81·8	330	i 12 15	− 2	i 22 21	−14	38·6	46·6
Baku		84·2	313	i 12 30	+ 1	i 22 55	− 5	40·1	50·7
Kucino		93·9	326	e 11 5	?	e 23 53	[− 2]	48·3	56·4
Ksara	E.	94·5	305	—	—	i 23 58	[0]	28·6	—
Theodosia		95·2	316	e 13 24	+ 3	e 24 0	[− 2]	47·6	—
Yalta		96·0	316	—	—	e 24 2	[− 4]	—	—
Sitka		97·2	34	—	—	e 24 39	{+ 7}	e 40·2	—
Pulkovo		97·9	330	e 13 54	+20	24 56	−12	47·6	58·3
Helwan		98·3	300	e 13 45	+ 9	i 24 15	[− 2]	58·0	59·7
Helsingfors	E.	100·4	331	e 17 18	PP	e 25 18	−12	e 50·6	—
Königsberg		103·8	326	i 20 57	PPP	i 25 22	{ 0}	e 59·6	62·6
Upsala		104·1	332	—	—	i 24 43	[− 2]	e 50·6	68·2
Victoria	E.	105·4	41	24 50	SKS	(24 50)	[− 2]	49·1	64·5
Belgrade		105·8	316	e 18 30	PP	e 24 48	[− 6]	58·9	—
Budapest		106·2	316	18 24	PP	24 48	[− 8]	43·6	66·6
Ukiah		107·1	50	—	—	e 24 57	[− 3]	e 44·5	—
Lund		107·6	329	18 53	PP	24 59	[− 3]	49·6	—
Vienna		107·8	320	e 18 1	[− 9]	—	—	—	73·6
Berkeley		108·0	50	—	—	e 26 5	{+12}	e 46·6	—
Copenhagen		108·0	329	18 35	PP	24 59	[− 5]	—	—
Zagreb		108·6	317	e 17 35?	[−38]	—	—	—	—

Continued on next page,

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Potsdam		108·7	324	e 17 35?	[−39]	—	—	e 55·6	—
Bergen		109·5	334	25 9	SKS	(25 9)	[− 2]	—	—
Cheb		109·8	321	e 20 35?	?	—	—	e 55·6	66·6
Jena		110·0	322	e 18 53	PP	—	—	e 62·6	67·6
Hamburg	Z.	110·1	326	e 19 4	PP	—	—	e 63·6	72·6
Triest		110·2	317	e 18 2	[−17]	25 6	[− 8]	e 54·6	—
Göttingen		110·8	323	e 17 35?	[−45]	—	—	e 65·6	74·6
Scoresby Sund		111·2	350	19 5	PP	26 59	{+44}	55·6	—
Tinemaha	E.	111·2	50	e 18 35	[+14]	—	—	—	—
Venice		111·2	317	17 35?	[−46]	—	—	—	—
Innsbruck		111·3	320	18 5	[−17]	—	—	—	—
Pasadena		111·9	54	e 18 34	[+10]	—	—	e 52·6	59·1
Stuttgart		112·2	322	e 19 20	PP	e 24 11	[−72]	e 58·6	—
Florence		112·4	315	i 19 12	PP	26 25	{+ 1}	34·6	45·6
Riverside	E.	112·6	54	e 18 16	[−10]	—	—	—	—
Strasbourg		113·2	322	e 19 24	PP	28 52	PS	57·6	—
De Bilt		113·3	325	—	—	e 26 35?	{+ 5}	e 53·6	67·4
Bozeman		114·2	41	e 19 35	PP	e 26 29	{− 8}	52·6	—
Paris		116·2	324	—	—	29 35?	PS	61·6	68·6
Kew		116·6	328	—	—	e 28 35	PS	53·6	74·8
Tucson		118·2	55	i 19 59	PP	e 26 18	[+33]	e 54·5	—
Alicante		122·6	314	—	—	e 35 43	?	—	—
Toledo		124·4	316	—	—	e 38 6	?	—	—
Chicago		130·8	35	e 21 23	PP	—	—	e 53·8	—
Florissant		130·9	40	e 15 57	−15	26 25	[+ 3]	—	—
Little Rock		131·7	45	i 19 15	[+ 5]	—	—	—	—
Ann Arbor		132·6	31	e 22 41	PKS	e 33 23	?	e 57·6	67·6
Toronto	N.	133·8	27	15 35?	−51	i 44 27	SSS	58·1	—
Ottawa		134·0	22	15 57	−31	e 31 52	SKSP	e 56·6	—
Pittsburgh		135·9	30	e 17 34	?	e 25 54	?	—	—
Harvard		138·0	21	e 17 51	?	e 22 51	PP	e 57·6	—
Fordham		138·5	26	e 19 20	[0]	—	—	e 64·6	75·6
Charlottesville		138·5	31	e 22 13	PP	e 32 35	PS	e 61·6	—
Columbia		139·8	38	e 22 19	PP	—	—	63·1	—
La Plata		140·3	172	22 23	PP	—	—	60·5	—
Rio de Janeiro		151·4	197	e 37 35	?	—	—	—	—
Sucre		153·0	151	e 19 40	[− 6]	—	—	—	—
La Paz		153·5	142	i 19 52	[+ 5]	30 17	{+25}	78·8	95·4
San Juan		160·1	44	e 19 50	[− 4]	—	—	76·6	—

Additional readings and notes:—
Perth PP = +7m.0s., SS = +13m.4s., SSS = +13m.35s., SSSS = +14m.10s.
Hong Kong PP = +7m.5s., SS = +12m.25s.
Medan i = (+6m.53s.) and (+13m.50s.): all readings have been *increased* by 3m.
Adelaide i = +11m.43s., +12m.22s., and +12m.51s., iSS = +13m.8s.
Sydney SS = +15m.11s.
Melbourne PP = +8m.32s., SS = +14m.53s.
Kobe iE = +8m.18s., iN = +8m.47s. = PP − 8s.
Arapuni SS = +22m.5s.
Wellington PP = +11m.35s., SS = +23m.15s.
Honolulu T.H. e = +17m.9s.
Tananarive PP = +16m.19s., SKS = +22m.0s., PS = +23m.7s., E = +24m.16s., SS = +28m.25s., SSS = +30m.44s.
Kucino e = +17m.17s. = PP + 21s.
Sitka eSS = +31m.35s.
Pulkovo SKS = +24m.6s., SS = +30m.59s.
Helsingfors SKS = +24m.22s., eSN = +25m.12s., ePPSN = +27m.17s., eSSN = +32m.2s., eSSSN = +35m.35s., eSKSN (Δ > 180°) = +39m.35s.?
Königsberg iEN = +24m.44s. = SKS + 0s., eN = +25m.18s., eE = +29m.0s. and +29m.40s., eN = +29m.43s., iE = +30m.32s., eN = +37m.41s., iN = +39m.52s.
Belgrade e = +19m.51s., +29m.23s., and +32m.19s.
Ukiah ePS = +28m.5s., eSS = +33m.41s.
Potsdam eEN = +19m.35s.?
Bergen S = +33m.35s.?
Jena e = +19m.5s. = PP + 8s.
Triest i = +19m.39s. = PP + 40s., PP = +21m.27s. = PPP + 15s.

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Pasadena iZ = +19m.13s. =PP +2s., eZ = +21m.22s. =PPP −5s.
Stuttgart e = +19m.48s., ePPP = +22m.17s., ePS = +29m.16s.
Florence e = +14m.35s. =P −7s.
Strasbourg PPS = +29m.55s.
Bozeman e = +32m.53s., eSS = +35m.23s.
Tucson ePS = +29m.46s.
Chicago e = +22m.29s., SS = +38m.44s.
Florissant iPKPE = +19m.12s. =PKP +4s., iPPE = +21m.18s., iSKPE = +22m.35s., iPPPE = +24m.29s. and +27m.15s., iPSE = +32m.5s., iPPSE = +43m.15s.
Little Rock eE = +15m.39s., iE = +22m.35s. =PKS −6s., iEN = +23m.0s.
Ann Arbor eN = +36m.11s., eE = +36m.41s., e = +41m.17s., eE = +50m.35s.
Toronto iN = +22m.43s. =PKS −6s.
Ottawa e = +22m.43s. =PKS −7s., eN = +44m.53s.
Pittsburgh ePP = +22m.1s., e = +38m.5s.
Fordham eZ = +22m.20s. =PP +8s., iN = +22m.57s. =PKS −8s., and +26m.31s., eN = +41m.11s.
Charlottesville eSS = +39m.35s.
Columbia e = +23m.5s. =PP −1s., eSS = +40m.25s.
La Paz PPN = +23m.18s., iSKS = +27m.2s., SKSN = +27m.5s., SKSP = +33m.42s., PPSN = +37m.11s., iN = +40m.59s., SSE = +43m.23s., SSSN = +46m.47s.
Long waves were also recorded at Simferopol and other European stations.

March 26d. Readings also at 0h. (near Mizusawa), 1h. (Andijan, Frunse, Ekaterinburg, near Osaka, and Nagoya), 2h. (Ekaterinburg, Ottawa, Ann Arbor, and Toronto), 3h. (Hong Kong), 5h. (Kodaikanal), 9h. (Amboina and Sitka), 10h. (Taihoku and near Amboina), 11h., 12h. (2), 13h., and 16h. (near Amboina), 19h. (La Paz, Belgrade, Zagreb, near Triest and Sarajevo (2)), 20h. (near Sarajevo), 23h. (near Santiago).

March 27d. 8h. 44m. 45s. Epicentre 25°·5N. 92°·5E. (as on 6d.). X.

A = −·039, B = +·902, C = +·431 ; D = +·999, E = +·044 ;
G = −·019, H = +·430, K = −·903.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	4·8	233	0 51	−17	1 51	−12	2·2	6·7
Agra	13·1	281	2 51	−12	5 17	−12	7·1	—
Dehra Dun	13·6	294	5 55	S	(5 55)	+14	8·1	8·2
Phu-Lien	13·8	107	e 2 50	−23	—	—	7·1	7·7
Hyderabad	15·3	241	3 49	+17	6 25	+ 3	8·4	9·8
Bombay	19·4	254	4 9	−14	7 59	+ 5	10·1	11·7
Hong Kong	20·1	95	4 30	− 1	7 52	−16	10·2	11·4
Kodaikanal	20·9	226	i 4 19	−20	i 8 4	−20	11·0	—
Almata	21·8	328	e 4 57	+ 8	—	—	—	—
Colombo	22·2	215	8 12	S	(8 12)	−38	(12·7)	23·8
Andijan	22·6	318	e 4 42	−15	—	—	—	—
Medan	22·7	163	2 26	?	—	—	i 11·6	—
Frunse	22·8	324	e 8 29	S	(e 8 29)	−32	—	—
Irkutsk	28·2	15	e 5 53	+ 4	e 10 27	− 8	15·8	18·9
Manila	28·8	107	6 46	+52	11 19	+34	14·4	—
Baku	38·3	304	—	—	e 13 21	+10	e 21·8	23·6
Ekaterinburg	38·7	333	i 7 26	+ 5	14 36	+79	20·2	26·8
Kucino	49·4	322	—	—	e 17 59	+127	—	28·6
Pulkovo	54·3	326	i 9 24	+ 1	—	—	29·2	35·2

Additional readings and note :—
Colombo gives S as P and L as S.
Kucino e = +20m.3s.
Long waves were also recorded at Copenhagen and Helsingfors.

March 27d. Readings also at 0h. (near Batavia and Soengei Langka), 1h. (Perth), 3h. (La Paz and Lick), 4h. (near Belgrade and Sarajevo), 6h. (Andijan, near Almata, and Frunse), 7h. (La Paz), 9h. (Manila and near Amboina), 10h. (Ekaterinburg, Irkutsk, and near Ksara), 11h. (Tyosi), 13h. (Manila and near Tananarive), 15h. (near Belgrade, Mostar, Triest, and Zagreb), 17h. (Baku, Bombay, Kodaikanal, Tashkent, and Ekaterinburg), 19h. (La Paz and near Amboina), 22h. (near Sumoto), 23h. (Georgetown).

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March 28d. 0h. 35m. 38s. Epicentre 8°·7S. 98°·5E. N.2.

A = −·146, B = +·978, C = −·151 ; D = +·989, E = +·148 ;
G = +·022, H = −·150, K = −·988.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Soengei Langka		7·4	64	e 2 12	P*	—	—	i 6·4	—
Batavia		8·6	74	i 2 3	+ 1	i 3 35	− 4	—	—
Malabar		9·1	81	i 2 10	+ 1	i 3 18	P_g	—	—
Medan		12·3	1	e 2 28	−24	i 4 51	−19	i 6·5	—
Colombo		24·2	309	5 15	+ 3	9 25	− 2	13·9	15·6
Kodaikanal		28·2	312	e 5 53	+ 4	10 37	+ 2	13·6	14·0
Phu-Lien		30·5	15	e 6 11	+ 2	e 11 12	0	15·4	—
Manila		32·2	44	6 26	+ 2	12 38	+60	22·0	—
Calcutta		32·7	343	6 30	+ 1	11 45	− 1	16·6	—
Hyderabad		32·8	323	6 33	+ 3	11 47	− 1	15·7	23·0
Hong Kong		34·6	26	6 42	− 4	12 18	+ 3	16·0	21·4
Bombay		37·5	319	7 10	− 1	13 5	+ 6	18·7	25·4
Agra	E.	41·0	332	i 7 34	− 6	13 44	− 7	—	—
Dehra Dun		43·7	334	7 52	−10	14 52	+21	21·2	22·4
Adelaide		45·1	132	—	—	i 14 47	− 5	21·4	24·7
Zi-ka-wei	Z.	45·5	28	i 8 14	− 3	—	—	24·8	31·9
Tananarive		50·4	255	—	—	16 12	+ 6	—	23·4
Melbourne		50·9	134	—	—	i 16 17	+ 4	24·8	—
Chiufeng		51·4	17	e 7 32	?	—	—	—	—
Riverview		54·4	126	—	—	e 16 34	−27	—	29·4
Sydney		54·4	126	e 23 4	?	—	—	31·8	32·2
Andijan		55·0	337	e 9 46	+17	—	—	—	—
Almata		55·5	342	e 9 38	+ 6	—	—	—	—
Frunse		56·0	340	e 13 32	?	—	—	—	—
Samarkand		56·5	331	e 10 30	(−10)	—	—	—	—
Tashkent		56·7	335	e i 9 35	− 6	e 17 58	+26	e 20·4	26·6
Irkutsk		61·2	4	10 9	− 4	e 18 24	− 8	30·4	—
Baku		66·4	323	10 48	0	i 19 41	+ 4	32·4	36·2
Ekaterinburg		72·5	340	i 11 23	− 3	i 20 42	− 9	30·4	35·1
Ksara	N.	72·9	310	e 11 29	+ 1	20 58	+ 2	36·4	—
Theodosia		77·9	320	e 11 57	0	e 21 40	−13	—	—
Yalta		78·5	320	e 12 2	+ 2	—	—	—	—
Simferopol		78·7	320	e 12 2	+ 1	—	—	—	—
Kucino		81·5	330	12 8	− 8	22 23	− 9	37·9	47·3
Pulkovo		86·9	333	i 12 41	− 2	23 13	[0]	47·4	54·3
Helsingfors		89·5	332	—	—	e 23 28	[− 2]	e 49·0	—
Florence		94·0	315	e 19 22	?	25 52	PS	—	45·9
Copenhagen		95·0	325	—	—	24 21?	[+20]	—	—
De Bilt		98·8	322	—	—	e 32 4	?	e 50·4	53·8
Barcelona		100·5	312	e 2 50	?	—	—	—	—
Tinemaha		136·3	43	e 19 16	[− 1]	e 22 2	PP	—	—
Pasadena	Z.	137·9	47	e 19 16	[− 3]	—	—	—	—
Ottawa		142·4	351	—	—	e 41 22	SS	60·4	—
Fordham		147·1	349	e 19 34	[− 3]	e 42 22?	SS	e 73·4	—
St. Louis		149·1	12	e 19 48	[+ 8]	e 23 12	PP	e 63·0	79·4
La Paz		151·6	208	19 50	[+ 6]	—	—	75·9	80·9
San Juan		162·2	305	e 20 10	[+14]	—	—	—	—

Additional readings :—
Malabar iP = +2m.13s.
Manila PN = +6m.30s.
Adelaide iSS = +18m.7s., i = +20m.28s.
Tananarive eSE = +19m.19s. =SS −10s., E = +20m.34s., N = +20m.58s. = SSS +7s. and +22m.10s., EN = +22m.37s.
Melbourne SS = +20m.27s.
Pulkovo PS = +24m.13s., SS = +28m.34s., L_q = +39·4m.
Helsingfors eSKSE = +22m.28s., eN = +31m.58s., eE = +32m.5s.
La Paz iPKP$_2$ = +20m.28s.
Long waves were also recorded at Rio de Janeiro, Pittsburgh, Scoresby [illegible], Kew, Cheb, Granada, and San Fernando.

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March 28d. Readings also at 1h. (near Port au Prince), 3h. (Samarkand), 4h. (La Paz, Sucre, Rio de Janeiro, San Juan, Pasadena, Tinemaha, Baku, and Ekaterinburg), 8h. (Bombay, Hong Kong, and Phu-Lien), 9h. (Ekaterinburg and Irkutsk), 13h. (Samarkand, Frunse, near Andijan, and near Amboina), 15h. (La Paz and near Santiago), 23h. (Frunse and near Andijan).

March 29d. Readings at 0h. (Berkeley, Lick, Ukiah, Seattle, Victoria, Haiwee, Tinemaha, Pasadena, Mount Wilson, Riverside, La Jolla, Madison, Pittsburgh, Scoresby Sund, La Plata, and Ekaterinburg), 1h. (Irkutsk), 2h. (Tyosi), 3h. (Seattle, Victoria, Haiwee, Tinemaha, Pasadena, Mount Wilson, Riverside, La Jolla, and near Amboina), 4h. (Madison, Pittsburgh, and Scoresby Sund), 9h. (Adelaide, Melbourne, Riverview, Sydney, Perth, Arapuni, Wellington; also distinct Asiatic shock: Bombay, Almata, Andijan, Frunse, and near Samarkand), 10h. (La Paz and San Fernando), 12h. (Alicante, Samarkand, near Almata, Andijan, and Frunse), 13h. (La Paz and Wellington), 14h. (near Tyosi (2)), 17h. (Ekaterinburg and Irkutsk), 18h. (Baku and near Amboina), 19h. (Ekaterinburg and Ksara), 20h. (near Medan), 21h. (near Tyosi), 22h. (Branner (2)).

March 30d. 15h. 1m. 36s. Epicentre 6°·2S. 155°·0E. (as on 1932 Jan. 31d.). R.2.

A = −·901, B = +·420, C = −·108; D = +·423, E = +·906; G = +·098, H = −·046, K = −·994.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		26·8	274	i 5 35	− 1	i 10 43	SS	—	—
Riverview		27·9	187	i 5 42	− 4	i 10 39	+ 9	13·6	—
Sydney		27·9	187	e 10 0	S	(e 10 0)	−30	14·6	14·9
Adelaide		32·5	206	7 24	PP	e 13 44	SS	15·8	24·8
Melbourne		32·9	195	i 6 56	+25	i 11 41	− 8	15·8	17·6
Wellington		39·3	156	7 28	+ 2	13 29	+ 3	—	—
Manila		39·6	302	7 29	0	13 29	− 1	18·8	—
Perth		44·7	230	e 13 59	S	(e 13 59)	−47	—	—
Batavia		47·9	269	i 8 34	− 1	i 15 19	−12	—	—
Hong Kong		49·1	308	8 40	− 4	15 38	−10	—	25·9
Medan		56·7	278	e 7 3	?	i 15 40	?	—	—
Calcutta		71·1	296	15 16	PPP	20 46	+12	24·9	—
Agra	E.	81·4	300	(e 12 11)	− 4	—	—	e 12·2	—
Bombay		84·7	290	e 13 8	+36	—	—	—	—
Frunse		87·3	315	e 18 19	?	—	—	—	—
Andijan		88·5	312	e 11 52	−58	—	—	—	—
Victoria	E.	89·2	41	24 10	S	(24 10)	+22	42·1	45·4
Pasadena		90·9	56	i 13 2	0	—	—	—	—
Mount Wilson		91·0	56	e 13 3	+ 1	—	—	—	—
Tinemaha		91·2	52	e 13 4	+ 1	—	—	—	—
Haiwee	N.	91·3	54	e 13 12	+ 9	—	—	—	—
Ekaterinburg		97·6	327	e 17 29	PP	e 25 3	− 2	42·4	—

Additional readings:—
Riverview i = +11m.23s. = SS − 17s.
Adelaide e = +14m.42s.
Melbourne e = +14m.4s.
Perth e = +17m.54s. = SS +10s.
Medan i = +16m.2s.
Pasadena iZ = +13m.16s.
Long waves were also recorded at Baku, Pulkovo, Copenhagen, De Bilt, and Scoresby Sund.

March 30d. Readings also at 5h. (Berkeley and Lick), 7h. (Ekaterinburg, Tashkent, and near Amboina), 9h. (Belgrade, Triest, Zagreb, near Naples, Sarajevo, and near Amboina), 11h. (Melbourne, Riverview, Sydney, and Perth), 12h. (La Paz), 17h. (near Batavia and Malabar), 18h. (Adelaide, Melbourne, Riverview, and Sydney), 19h. (Ekaterinburg, Kucino, Tashkent, Pittsburgh, Perth, and Wellington), 20h. (near Apia), 23h. (La Paz and near Sumoto).

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March 31d. 9h. 30m. 1s. Epicentre 40°·8S. 174°·0E. (given by Wellington). N.3.

$A = -\cdot753$, $B = +\cdot079$, $C = -\cdot653$.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Wellington	0·8	130	0 9	− 2	0 19	− 2	0·4
Seatoun	0·8	131	(−0 1)	−12	(0 10)	−11	—
New Plymouth	1·7	2	0 25	+ 1	0 46	+ 2	—
Christchurch	2·9	200	0 42	+ 1	1 14	0	—

Additional readings and notes :—
Wellington and Seatown readings are given as P_g and S_g.
Seatown readings have been *increased* by 3m.
Takaka (△ =0°·9) gives 9h.30m.
New Plymouth $P_g = +31$s.

March 31d. Readings also at 4h. (near Amboina), 7h. (near Santiago), 9h. (La Paz), 11h. (Theodosia, Simferopol, and near Yalta), 12h. (Andijan, Frunse, San Fernando, and near Amboina), 14h. (near Amboina), 16h. (Manila), 18h. (Little Rock, Mount Wilson, Pasadena, Riverside, Haiwee, Tinemaha, and Sitka), 19h. (Georgetown, Pittsburgh, Madison, Ann Arbor, Bozeman, Baku, and Tashkent), 22h. (Almata, Andijan, Frunse, Tashkent, Baku, Bombay, and Hong Kong).

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READINGS FOR 1932, JANUARY, FEBRUARY, AND MARCH, too late to appear in the text.

Tiflis, Ann Arbor, Dakar, Budapest, and Angra do Hirosima.

Jan. 1d. 21h. (readings at Tiflis).

Jan. 2d. 23h. 36m. 51s. Epicentre 39°·0N. 17°·5E. R.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	20·9	74	4 39	0	8 42	SS	12·0	14·4

e = +5m.42s.

Jan. 2d. 22h. (readings at Tiflis and Budapest).

Jan. 3d. 7h. 50m. 30s. Epicentre 25°·5N. 98°·5E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	46·7	305	9 6	+40	e 15 21	+ 7	27·2	32·9

Also e = +18m.50s.

Jan. 3d. 13h. (reading at Tiflis).

Jan. 4d. 4h. and 12h. (readings at Tiflis).

Jan. 5d. 0h. 34m. 50s. Epicentre 3°·0N. 134°·0E. (first solution). N.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	87·4	312	e 13 22	+37	e 23 24	− 7	e 41·2	—

0h. 35m. 23s. Epicentre 1°·8N. 129°·3E. (second solution). N.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	84·8	312	e 12 49	+17	e 22 51	−15	e 40·6	—

Jan. 5d. 1h. 54m. 2s. Epicentre 27°·2S. 114°·2W. N.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ann Arbor	75·0	23	—	—	e 21 16	− 4	e 39·8	—
Tiflis	157·5	44	20 42	{+ 9}	31 3	{− 1}	e 71·0	86·1

Tiflis gives also e = +22m.27s., PPS = +37m.46s., SSS = +50m.3s.

Jan. 5d. 9h. (readings at Tiflis).

Jan. 6d. 14h. and 17h. (readings at Tiflis).

Jan. 7d. 16h. (reading at Tiflis).

Jan. 8d. 5h. and 15h. (readings at Tiflis).

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Jan. 9d. 10h. 21m. 51s. Epicentre 6°·0S. 155°·0E. N.1.
Focal depth 0·060.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	109·3	313	13 37	?	24 32	[−38]	e 36·8	—
Ann Arbor	116·7	45	e 21 33	?	e 24 15	?	e 42·0	—
Budapest	124·2	326	18 11	[−44]	29 59	?	—	71·2
Dakar	168·8	321	19 27	[−36]	—	—	—	—

Additional readings :—
Tiflis PKP = +17m.47s., PP = +18m.11s. =PKP −4s., PPP = +20m.17s., e = +23m.40s., PS = +26m.23s. =SKKS +21s., PPS = +27m.6s., PKKP = +29m.37s., eSS = +32m.37s., e = +35m.25s.
Ann Arbor e = +28m.15s., eSS = +30m.15s., eSSSN = +34m.15s., eSSSE = +34m.57s.
Dakar PP = +25m.29s., PPP = +29m.45s.

Jan. 10d. 1h. (readings at Tiflis (2)).

Jan. 11d. 9h. (readings at Tiflis).

Jan. 13d. 16h. 17m. 35s. Epicentre 52°·0N. 178°·0W. R.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	79·2	329	—	—	22 42	PS	38·0	45·6

Ann Arbor and Budapest record long waves.

Jan. 14d., 18h., 20h., and 23h. (readings at Tiflis).

Jan. 16d. 2h. (readings at Tiflis).

Jan. 22d. 0h. 49m. 18s. Epicentre 33°·5N. 48°·0E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	8·6	343	e 2 23	+21	4 42	S_g	e 5·2	—

Jan. 24d. 3h. 44m. 24s. Epicentre 16°·9S. 168°·3E. N.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Budapest	140·4	327	e 22 1	PP	—	—	e 72·1	84·6
Dakar	174·0	111	23 36?	PKS	—	—	—	—

Long waves also at Ann Arbor.

Jan. 27d. 16h. (readings at Angra do Hirosima).

Jan. 27d. 19h. 41m. 1s. Epicentre 51°·5N. 29°·5W. N.1.
Long waves at Budapest.

Jan. 29d. 13h. 41m. 18s. Epicentre 6°·2S. 155°·0E. N.1.

	△	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Tiflis	109·2	313	e 14 48	+21	25 8	[− 2]	—
Ann Arbor	117·0	45	—	—	e 26 48	{− 8}	e 52·7
Budapest	124·2	325	18 58	[+ 3]	—	—	e 53·7
Dakar	168·8	319	20 8	[+ 5]	—	—	—

Tiflis PP = +19m.1s.
Ann Arbor eSS = +36m.48s., eSSS = +40m.48s.

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Jan. 30d. 3h. 4m. 52s. Epicentre 6°·8S. 155°·4E. N.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	109·9	313	—	—	e 25 3	[−10]	e 55·1	—

Tiflis ePPS = +28m.44s.
Long waves at Dakar.

Jan. 30d. 7h. 12m. 40s. Epicentre 6°·8S. 155°·4E. X.
Tiflis long waves.

Jan. 31d. 16h. 1m. 12s. Epicentre 6°·2S. 155°·0E. X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	109·2	313	—	—	e 24 36	[−34]	e 55·8	—

Jan. 31d. 19h. 45m. 27s. Epicentre 45°·0N. 143°·0E. X.
Long waves at Tiflis.

Jan. 31d. 12h. and 15h. (readings at Tiflis).

Feb. 1d. 7h. 38m. 24s. Epicentre 10°·3N. 42°·7E. X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	31·4	3	e 6 4	−13	e 11 14	−12	14·8	17·5

$\widetilde{e}$ = +14m.10s.

Feb. 2d. 12h., 13h., 15h., and 19h. (readings at Tiflis).

Feb. 3d. 6h. 16m. 3s. Epicentre 19°·7N. 75°·5W. N.1.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dakar	55·4	85	e 9 36	+ 4	e 17 26	+11	—	—
Budapest	78·4	43	12 11	+12	21 57	− 1	37·0	38·0
Tiflis	97·5	41	e 13 39	+ 7	e 24 15	[+ 1]	—	—

Tiflis gives also e = +17m.11s. =PP −13s. and +23m.58s., PS = +26m.25s., SS = +32m.0s.

Feb. 3d. 4h., 12h., 15h., 17h., and 19h. (readings at Tiflis).

Feb. 4d. 21h. 18m. 16s. Epicentre 26°·4N. 62°·3E. R.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	21·0	321	e 4 45	+ 5	8 34	+ 8	11·3	—

e = +8m.45s. =P_cP +2s.

Feb. 4d. 8h. (readings at Tiflis).

Feb. 5d. 13h. 43m. 34s. Epicentre 25°·4N. 96°·8E. R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	45·5	305	e 9 5	+48	—	—	25·4	31·1

e = +19m.23s. and +21m.51s.

Feb. 5d. 6h., 17h., 18h., and 23h. (readings at Tiflis).

Feb. 6d. 5h. and 7h. (readings at Tiflis).

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Feb. 8d. 20h. (reading at Tiflis).

Feb. 9d. 2h. 19m. 44s. Epicentre 36°·5N. 70°·5E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	20·5	293	e 4 30	− 5	e 8 21	+ 5	—	—

i = +5m.35s., e = +7m.28s.

Feb. 11d. 12h. (readings at Tiflis).

Feb. 12d. 0h. 58m. 17s. Epicentre 11°·0N. 57°·0E. R.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	32·5	342	6 29	+ 2	11 49	+ 6	e 18·1	22·1
Budapest	48·4	326	10 30	PP	19 30	?	—	—

Tiflis gives also PP = +7m.25s., PPP = +7m.41s., e = +8m.4s., eSS = +13m.32s.

Feb. 13d. 19h. 12m. 30s. Epicentre 13°·5N. 146°·0E. N.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	89·2	313	—	—	e 22 22	?	e 47·5	55·4

Feb. 13d. 5h., 8h., and 13h. (readings at Tiflis).

Feb. 14d. 20h. 30m. 25s. Epicentre 37°·5N. 70°·5E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	20·2	290	e 5 12	+40	e 8 48	+38	e 13·6	—

Feb. 14d. 23h. 13m. 39s. Epicentre 19°·7S. 66°·5E. N.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	64·6	343	e 10 52	+16	19 9	− 6	e 28·4	31·2

Tiflis eSKKS = +29m.49s. = S_cS +24s., eSS = +23m.4s., SSS = +25m.46s.
Dakar records long waves.

Feb. 16d. 13h. 48m. 55s. Epicentre 15°·3S. 179°·5W. N.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	133·7	314	19 45	[+32]	—	—	64·1	80·9
Budapest	144·3	338	19 36	[+ 4]	—	—	e 73·1	—

Tiflis gives also ePP = +21m.50s., ePKS = +22m.51s.; PPS = +34m.9s., eSS = +39m.8s., PSS = +39m.48s., eSSS = +44m.46s.

Feb. 17d. 16h. 7m. 2s. Epicentre 12°·0N. 73°·3W. N.2.
Long waves at Tiflis.

Feb. 17d. 1h. and 23h. (readings at Tiflis).

Feb. 20d. 9h., 16h., and 19h. (2) (readings at Tiflis).

Feb. 21d. 1h., 12h., and 13h. (readings at Tiflis).

Feb. 22d. 0h., 2h., 4h., and 20h. (readings at Tiflis).

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Feb. 23d. 0h. 13m. 54s. Epicentre 60°·3S. 12°·5W. N.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dakar	75·1	355	e 11 24	−17	e 20 43	?	—	—
Budapest	110·8	22	e 18 6?	[−14]	e 24 36	?	e 35·1	69·6
Tiflis	112·2	42	18 54	PP	e 24 57	[−26]	46·1	55·9

Tiflis gives also ePPP = +21m.35s., PS = +28m.16s., PPS = +29m.22s., SS = +34m.19s., SSS = +38m.46s.

Feb. 23d. 20h. 11m. 22s. Epicentre 9°·8S. 162°·0E. N.2.
Long waves at Tiflis.

Feb. 26d. 11h. 31m. 11s. Epicentre 8°·0N. 113°·5E.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	68·8	312	e 10 4	−59	e 20 9	+ 2	e 28·8	—

e = +23m.44s.

Feb. 26d. 7h. (readings at Tiflis).

Feb. 27d. 1h. and 11h. (readings at Tiflis).

Feb. 29d. 0h. (reading at Tiflis).

March 1d. 0h. and 22h. (2) (readings at Tiflis).

March 2d. 9h., 14h., and 22h. (readings at Tiflis).

March 4d. 23h. 20m. 55s. Epicentre 33°·5N. 81°·0E. N.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	29·6	297	6 4	+ 3	11 5	+ 7	17·3	21·4

SS = +12m.49s.

March 4d. 15h. (reading at Tiflis).

March 5d. 1h. 40m. 48s. Epicentre 36°·5N. 180°· N.3.
Long waves at Tiflis.

March 5d. 2h. 10m. 35s. Epicentre 37°·6N. 2°·8W. N.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	36·4	68	e 8 27	PP	e 12 37	− 5	e 18·4	—

March 6d. 0h. 18m. 4s. Epicentre 25°·5N. 92°·5E. N.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	42·3	305	e 8 6	+15	e 14 2	− 8	e 25·3	—

March 6d. 21h. 43m. 50s. Epicentre 31°·0N. 96°·0E. X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m
Tiflis	42·0	300	—	—	e 19 9	?	25·7	33·0

e = +22m.4s.

March 6d, 5h., 11h., and 15h. (readings at Tiflis).

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March 7d. 1h. (reading at Tiflis).

March 8d. 3h. 11m. 14s. Epicentre 5°·0S. 155°·0E. X.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	108·4	312	e 14 30	+ 7	e 25 11	[+ 5]	e 61·7	—

e = +28m.9s. =PS −3s. and +41m.10s.

March 8d. 4h. 29m. 37s. Epicentre 51°·7N. 178°·0W. N.1.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	79·5	329	12 5	0	22 7	− 3	e 41·4	48·9

SS = +27m.11s., e = +32m.41s.

March 8d. 8h. 52m. 56s. Epicentre 42°·2N. 143°·0E. R.2.
Long waves at Tiflis.

March 8d. 18h. 1m. 6s. Epicentre 18°·0S. 179°·5W. R.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	135·6	312	e 22 54	PKS	e 31 3	?	61·9	65·2

e = +40m.11s.

March 8d. 3h., 11h., and 20h. (readings at Tiflis).

March 9d. 1h. 11m. 50s. Epicentre 36°·3N. 69°·4E. R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	19·8	293	—	—	e 9 1	?	—	—

March 9d. 10h. 16m. 55s. Epicentre 38°·0N. 20°·5E. R.1.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	18·9	71	e 4 22	+ 5	8 11	+27	10·7	12·7

P = +4m.25s., i = +8m.19s., SSS = +9m.18s., e = +9m.52s.

March 9d. 3h., 10h., 11h., and 13h. (readings at Tiflis).

March 10d. 5h. 17m. 52s. Epicentre 54°·3S. 135°·1W. N.2.
Long waves at Tiflis.

March 10d. 13h. (readings at Tiflis).

March 13d. 4h. and 14h. (readings at Tiflis).

March 14d. 4h. 5m. 55s. Epicentre 20°·7N. 109°·1W. R.2.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	113·1	21	—	—	e 29 7	PS	54·1	6[illegible]

e = +35m.5s. =SS +5s.

March 14d. 22h. 42m. 56s. Epicentre 8°·2N. 71°·9W. N.1.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dakar	53·6	78	—	—	e 17 4[illegible]	+14	e 3[illegible]	—
Tiflis	103·7	44	e 14 7	+ 6	24 49	[+ 5]	e 50[illegible]	75·7

Tiflis ePP = +18m.17s., PS = +27m.27s., PPS = +28m.16s., e = +4[illegible].

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March 15d. 4h. 32m. 19s. Epicentre 10°·8N. 144°·4E. N.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	89·9	313	e 13 0	+ 3	i 23 33	[+ 1]	45·7	57·4

e = +16m.41s. = PP + 16s.

March 15d. 7h. 44m. 34s. Epicentre 39°·7N. 44°·0E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	2·1	17	e 0 27	− 3	—	—	i 1·2	—

i = +33s. = P* and +1m.7s. = S_g.

March 15d. 10h. 18m. 10s. Epicentre 34°·2N. 48°·0E. N.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	7·9	342	1 55	+ 3	i 4 0	S*	i 4·4	4·9

March 15d. 11h. (2) (readings at Tiflis).

March 16d. 2h., 5h., and 8h. (reading at Tiflis).

March 17d. 0h. 50m. 56s. Epicentre 32°·4N. 132°·1E. X.
Long waves at Tiflis.

March 18d. 5h. 16m. 26s. Epicentre 17°·0S. 65°·5E. N.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	61·7	342	e 10 30	+14	18 54	PS	27·6	31·0

ePPP = +14m.3s., e = +18m.47s. = S + 9s., SSS = +25m.34s.
Long waves at Dakar.

March 19d. 10h. 59m. 43s. Epicentre 15°·7N. 147°·7E. N.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	88·9	313	e 12 50	− 2	23 10	[−16]	e 42·3	56·0

P_cP = +12m.58s., PS = +24m.38s.

March 19d. 23h. 10m. 42s. Epicentre 2°·0S. 152°·3E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	104·3	312	e 17 41	PP	e 24 7	[−39]	51·3	65·1

eSS = +32m.23s.

March 20d. 5h., 18h., 23h. (readings at Tiflis).

March 21d. 19h. 53m. 35s. Epicentre 38°·0N. 42°·0E. X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	4·3	29	e 0 52	− 9	i 1 30	−15	i 1·6	—

Tiflis i = +56, e = +1m.7s. = P*.

March 21d. 3h., 6h., 13h., 14h., 16h., 21h., and 22h. (3) (readings at Tiflis).

March 22d. 13h. 58m. 23s. Epicentre 15°·7N. 147°·7E. R.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	88·9	313	e 16 37	PP	e 23 37	− 9	e 47·6	56·4

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March 22d. 0h., 2h., 3h., and 12h. (readings at Tiflis).

March 23d. 12h. 8m. 2s. Epicentre 37°·0S. 100°·0W. N.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	152·6	69	e 20 3	{−8}	30 40	{+ 3}	79·0	—

e = +24m.34s. and +34m.52s.

March 23d. 3h. and 9h. (readings at Tiflis).

March 24d. 16h. 8m. 44s. Epicentre 25°·8N. 90°·2E. R.3.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	40·4	305	7 39	+ 4	13 59	+17	e 22·3	—

eSS = +16m.21s., eSSS = +17m.32s. = S_cS −12s.

March 24d. 0h., 2h., and 3h. (2) (readings at Tiflis).

March 25d. 23h. 55m. 0s. Epicentre 62°·5N. 153°·3W. N.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	74·8	346	e 11 45	+ 6	—	—	—	—

March 25d. 23h. 58m. 39s. Epicentre 62°·5N. 153°·3W. R.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	74·8	346	e 11 40	+ 1	i 21 22	+ 4	e 31·4	54·0
Dakar	95·5	42	—	—	e 24 16	[+13]	—	—

Tiflis ePP = +15m.0s., SKS = +21m.57s. = PS +15s., SKKS = +22m.15s., e = +24m.21s.

March 25d. 22h. (readings at Tiflis).

March 26d. 9h. 52m. 25s. Epicentre 4°·4S. 128°·3E. N.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	88·1	312	12 48	0	i 23 15	[− 6]	e 39·6	60·7
Dakar	144·8	289	e 19 35?	[+ 2]	—	—	—	—

Tiflis PP = +16m.25s.

March 27d. 22h. (readings at Tiflis).

March 28d. 15h. (readings at Tiflis).

March 29d. 17h. and 18h. (readings near Tiflis).

March 30d. 15h. 1m. 36s. Epicentre 6°·2S. 155°·0E. R.2.

	△	Az.	P.	O−C.	S.	O−C.	L.	T.
	°	°	m. s.	s.	m. s.	s.	m.	
Tiflis	109·2	312	e 19 1	PP	e 28 13	PS	59·4	

March 30d. 19h. and 22h. (2) (readings at Tiflis).

March 31d. 14h., 19h., and 22h. (readings at Tiflis).