The International Seismological Summary.

1935 January, February, March.

FORMERLY THE BULLETIN OF THE
BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

The present number deals with 163 epicentres, 55 of which are new and 108 repetitions from old epicentres.

N.1= 8	R.1= 6	X=81.
N.2=15	R.2=11	
N.3=32	R.3=10	

The epicentres giving abnormal focal depth are :—

Date.				Epicentre.		Focal Depth.
	d.	h.	m.	s.	°	°	(Below Normal)
Jan.	1	13	20	59	14·8S.	175·0W.	+0·030
Feb.	4	21	7	33	1·9N.	127·1E.	+0·015
Feb.	10	18	29	29	29·0N.	139·0E.	+0·080
Feb.	25	2	51	31	36·0N.	25·0E.	+0·010
Mar.	18	8	40	45	35·5N.	27·0E.	+0·015
Mar.	28	23	47	53	43·6N.	132·2E.	+0·080

UNIVERSITY OBSERVATORY,
OXFORD.

1948 Oct. 30.

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1935 JANUARY, FEBRUARY, MARCH.

Jan. 1d. 13h. 5m. 45s. Epicentre 35°·0N. 139°·5E. (as on 1930 Aug. 19d.). X.

A = −·623, B = +·532, C = +·574.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	0·7	16	0 10	0	0 22	+ 4	1·5
Nagoya	2·1	274	0 32	+ 2	1 0	S*	1·2
Kobe	3·6	266	0 51	0	1 47	S*	1·9
Sumoto	3·8	261	—	—	1 48	S*	—
Toyooka	3·8	279	1 9	P_g	1 53	S*	2·3
Mizusawa	4·3	17	e 1 21	P_g	e 2 26	S_g	—

Additional readings :—
Kobe gives also ePE = +56s. = P* − 2s., iN = +1m.5s. = P_g − 1s., iZ = +1m.10s., iN = +1m.52s. = S_g − 1s.
Sumoto iZ = +3m.26s.

Jan. 1d. 13h. 20m. 59s. Epicentre 14°·8S. 175°·0W. N.1.

A = −·963, B = −·084, C = −·255; D = −·087, E = +·996;
G = +·255, H = +·022, K = −·967.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	+0·4	3·3	72	i 1 2	+ 9	i 1 48	+13	—	—
Arapuni	−1·4	24·7	198	—	—	9 1?	− 9	—	—
Wellington	−1·8	27·9	197	5 19	−11	9 25	−35	—	—
Christchurch	−2·0	30·6	197	i 5 1	−52	—	—	—	—
Sydney	−2·3	35·9	230	i 5 6	?	i 12 56	?	16·4	19·3
Riverview	−2·3	36·0	232	i 6 32a	− 6	i 11 43	−18	—	18·4
Honolulu	−2·5	39·8	25	i 7 19	+10	i 13 9	+13	16·3	—
Melbourne	−2·6	42·2	229	i 7 24	− 5	13 16	−13	18·4	22·5
Adelaide	−2·9	46·1	235	i 7 56	− 2	i 14 12	−12	—	22·4
Amboina	−3·4	57·0	275	i 9 14	− 4	i 16 45	− 5	—	—
Perth	−3·7	64·7	241	e 10 26	+15	i 18 26	− 3	e 27·9	—
Nagoya	−3·7	67·5	319	e 10 43	+12	—	—	—	—
Mizusawa E.	−3·7	67·7	324	10 15	−15	17 31	?	—	—
N.	−3·7	67·7	324	10 50	+18	19 12	+ 5	—	—
Sumoto	−3·7	68·4	317	10 40	+ 3	i 19 21	+ 5	—	20·4
Kobe	−3·7	68·4	317	e 10 41	+ 4	19 22	+ 6	—	—
Toyooka	−3·7	69·1	318	10 49	+ 8	—	—	—	—
Manila	−3·8	69·8	292	i 10 47a	+ 2	19 41	+ 9	31·2	37·0
Nagasaki	−3·8	70·9	313	10 57	+ 5	19 52	+ 6	—	—
Hukuoka B	−3·8	71·0	314	10 49	− 4	19 49	+ 2	—	—
Santa Barbara	−3·8	71·9	45	i 10 59	0	i 20 0	+ 2	—	—
Branner	−3·8	72·0	42	i 11 0	+ 1	e 20 3	+ 4	—	—
Berkeley	−3·8	72·2	41	i 11 1	0	e 20 3	+ 1	—	—
Lick	−3·8	72·3	41	i 11 3	+ 2	e 20 6	+ 3	—	—
Ukiah	−3·8	72·4	40	i 11 1	− 1	i 20 7	+ 3	e 30·3	—
Husan	−3·8	72·8	315	11 5	0	20 12	+ 3	—	—
La Jolla	−3·8	72·9	48	i 11 4k	− 1	i 20 14	+ 4	—	—
Mount Wilson	−3·8	73·0	46	i 11 4k	− 2	i 20 10	− 1	—	—
Riverside	−3·8	73·3	47	e 11 5	− 3	i 20 10	− 5	—	—
Taikyu	−3·8	73·4	315	e 11 12	+ 4	—	—	—	—
Pasadena	−3·8	73·9	47	i 11 3k	− 8	i 20 12	−10	—	—
Haiwee	−3·8	74·1	45	i 11 11k	− 2	i 20 26	+ 1	—	—
Tinemaha	−3·8	74·4	44	i 11 13k	− 1	i 20 30	+ 2	—	—
Keizyo	−3·9	75·5	316	11 22	+ 2	20 44	+ 4	—	—
Vladivostok	−3·9	75·5	323	11 24	+ 4	20 43	+ 3	25·0	—

Continued on next page,

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Zinsen	−3·9	75·7	316	i 11 24	+ 2	i 20 46	+ 3	—	—
Zi-ka-wei	−3·9	76·3	308	i 11 25a	0	i 20 57	+ 7	33·5	42·5
Heizyo	−3·9	77·1	317	i 11 34	+ 4	e 21 7	+ 8	—	—
Malabar	−3·9	77·1	265	i 11 24	− 6	i 20 43	−16	—	—
Batavia	−3·9	77·1	267	i 11 27	− 3	i 20 53	− 6	—	—
Tucson	−3·9	77·3	50	i 11 29	− 2	i 20 21	−40	e 31·0	—
Hong Kong	−3·9	78·6	300	11 39	0	21 12	− 5	—	—
Nanking	−3·9	78·8	308	i 11 40	0	i 21 13	− 6	36·8	—
Sitka	−3·9	79·0	20	i 11 37	− 4	i 21 15	− 6	e 33·0	—
Bozeman	−4·0	83·4	38	e 12 27	+22	i 22 1	− 8	e 27·6	—
Chiufeng	−4·0	84·1	314	i 12 9a	+ 1	i 22 2	−15	—	—
Phu-Lien	−4·0	84·7	293	12 11	− 1	i 22 9	−14	36·0	—
Medan	−4·1	87·4	294	i 12 25	0	i 22 21	−29	—	—
Little Rock	−4·2	92·5	55	i 12 45	− 4	e 23 15	−25	—	—
Santiago	−4·2	93·4	126	e 13 1	+ 7	—	—	—	—
Florissant	−4·3	95·1	51	i 12 56	− 5	23 42	[−20]	—	—
St. Louis	−4·3	95·2	51	e 12 58	− 4	e 23 52	[−10]	—	—
Huancayo	−4·3	96·1	104	i 13 1	− 5	i 23 13	[−53]	—	—
Chicago	−4·3	97·9	49	—	—	i 23 28	[−48]	—	—
Columbia	—	101·4	58	—	—	e 23 37	[−56]	42·0	—
La Paz	—	101·4	111	i 13 30k	−20	i 24 47	{−17}	47·0	52·6
Calcutta	—	101·6	291	e 13 25	−26	23 53	[−40]	—	—
Toronto	—	104·2	47	—	—	i 25 4	{−21}	—	—
Georgetown	—	105·3	53	i 14 16	+ 8	i 24 48	[− 3]	—	—
Colombo	—	106·4	273	14 58	?	19 22	?	23·9	27·7
Ottawa	—	106·9	46	e 18 1?	[− 7]	i 24 6	[−52]	e 34·0	—
Vermont	—	108·7	47	—	—	e 24 1	[−66]	—	—
Kodaikanal	—	109·4	278	e 16 9	?	25 11	[0]	—	—
Hyderabad	—	109·8	284	15 15	?	27 52	PS	51·0	65·0
Oak Ridge	—	109·8	50	—	—	e 26 1?	{− 4}	—	—
Semipalatinsk	—	110·7	319	e 18 42	PP	—	—	—	—
San Juan	—	111·5	75	e 18 47	PP	i 24 23	[−57]	—	—
Almata	—	113·1	311	e 18 29	?	—	—	—	—
Frunse	—	114·9	311	e 17 41	[−51]	—	—	—	—
Bombay	—	115·3	285	e 17 47	[−46]	26 48	?	—	—
Andijan	—	116·7	309	e 18 5	[−32]	—	—	—	—
Tchimkent	—	118·6	311	e 19 29	PP	—	—	—	—
Tashkent	—	118·9	309	—	—	e 52 25	?	—	64·7
Samarkand	—	120·8	308	e 18 31	[−16]	—	—	—	—
Sverdlovsk	—	120·8	328	—	—	27 9	{−13}	—	—
Scoresby Sund	—	121·9	11	21 49	?	i 36 28	SS	—	—
Tananarive	—	126·3	233	—	—	21 43	PP	—	—
Cape Town E.	—	129·6	195	20 53	?	30 25	PS	66·2	76·6
Cape Town N.	—	129·6	195	20 44	?	30 30	PS	66·5	—
Pulkovo	—	131·4	344	18 44	[−25]	i 27 34	{−57}	74·0	80·5
Baku	—	133·4	312	e 18 55	[−17]	—	—	—	—
Upsala	—	134·0	351	e 21 54	PP	—	—	54·0	—
Grozny	—	135·1	318	e 18 53	[−22]	—	—	—	—
Piatigorsk	—	136·4	320	e 19 3	[−14]	—	—	—	—
Tiflis	—	136·4	316	e 18 54	[−23]	—	—	e 58·0	—
Erevan	—	137·4	314	e 18 57	[−21]	—	—	—	—
Königsberg	—	138·2	346	e 21 56	PP	—	—	—	—
Edinburgh	—	138·4	7	—	—	i 39 48	SS	—	—
Copenhagen	—	138·7	354	18 54	[−26]	—	—	—	—
Durham	—	139·7	6	—	—	(32 26)	PS	—	32·4
Theodosia	—	140·4	326	e 22 39	PP	—	—	—	—
Stonyhurst	—	140·5	7	—	—	i 40 14	SS	—	—
Bidston	—	140·8	8	i 19 6	[−16]	—	—	—	—
Hamburg	—	141·0	355	e 19 1?	[−22]	—	—	e 53·0	54·0
Simferopol	—	141·1	327	e 19 5	[−18]	—	—	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta	—	141·3	326	e 18 57	[−26]	—	—	—	—
Sebastopol	—	141·6	327	e 19 12	[−11]	—	—	—	—
Oxford	—	142·7	6	—	—	e 28 15	?	—	—
De Bilt	—	142·7	0	e 19 3k	[−23]	—	—	—	—
Göttingen	—	143·0	355	i 19 3k	[−24]	—	—	—	—
Kew	—	143·1	5	i 19 3k	[−25]	—	—	—	—
Jena	—	143·5	353	e 19 5	[−24]	—	—	—	—
Prague	—	143·9	350	e 19 7	[−24]	e 28 55	{−52}	—	41·0
Uccle	—	144·0	2	i 19 6k	[−25]	i 28 49	{−59}	e 53·0	—
Cheb	—	144·2	352	e 19 8	[−24]	—	—	e 59·0	—
Vienna	—	145·2	347	e 19 9	[−25]	—	—	—	—
Budapest	—	145·3	343	19 8	[−26]	—	—	41·0	—
Karlsruhe	—	145·7	355	i 19 15	[−20]	—	—	—	—
Paris	—	145·9	3	i 19 11k	[−24]	e 36 1	?	51·0	61·0
Stuttgart	—	145·9	355	e 19 11	[−24]	e 29 4	{−55}	e 47·0	—
Strasbourg	—	146·1	357	i 19 10k	[−26]	29 6	{−54}	39·0	—
Ksara	—	146·2	310	i 19 10	[−26]	i 29 9	{−51}	—	—
Graz	—	146·5	347	i 19 19	[−17]	e 29 11	{−51}	e 42·0	44·7
Basle	—	147·2	357	e 19 12	[−26]	—	—	—	—
Zurich	—	147·3	355	e 19 13k	[−25]	—	—	—	—
Zagreb	—	147·6	346	e 19 13	[−25]	—	—	—	—
Neuchatel	—	147·8	357	e 19 11	[−28]	—	—	—	—
Sofia	—	148·0	334	e 19 19	[−20]	e 29 17	{−54}	—	—
Triest	—	148·3	348	i 19 13k	[−26]	i 29 13	{−60}	—	—
Venice	—	148·7	349	i 19 25	[−15]	—	—	—	—
Padova	—	148·8	351	e 19 16k	[−24]	—	—	—	—
Piacenza	—	149·4	353	19 19a	[−22]	—	—	—	43·3
Prato	—	150·4	351	i 19 19	[−23]	i 28 11	?	—	—
Florence	—	150·5	351	e 19 22k	[−20]	29 31	{−54}	42·0	—
Serra do Pilar	—	151·1	22	i 19 19	[−24]	—	—	—	—
Helwan	—	151·4	306	e 19 24	[−20]	i 29 34	{−56}	—	—
Capodimonte	—	152·7	345	e 19 42	{−29}	e 25 4	?	—	—
Barcelona	—	153·2	5	e 19 41	{−32}	e 26 22	?	—	—
Toledo	—	153·7	16	e 19 23	[−23]	—	—	—	—
Alicante	—	155·9	11	19 18	[−31]	e 28 10	?	e 41·6	—
San Fernando	—	156·2	23	e 19 28	[−21]	29 24	?	43·0	—
Granada	—	156·4	17	19 24	[−26]	22 52	?	73·5	—
Malaga	—	156·5	19	i 19 26	[−24]	30 25	{−34}	—	—
Almeria	—	157·0	15	e 19 33	[−17]	—	—	43·2	—
Algiers	—	157·9	4	e 19 28	[−23]	24 42	?	33·0	42·0

Additional readings and note :—
Wellington $P_cP = +7m.43s.$, $P_cS = +11m.10s.$, $S_cS = +15m.31s.$, $sS_cS = +17m.46s.$, $i = +20m.13s.$
Arapuni $P_cS = +10m.31s.$, $S_cS = +14m.1s.$?
Riverview $iE = +7m.30s.$, $iZ = +7m.32s.$, $iEN = +8m.12s.$, $iE = +9m.6s.$ and $+9m.43s.$, $iEN = +13m.36s.$ and $+14m.40s.$, $iN = +16m.23s.$, $iE = +16m.25s.$
Honolulu $iS_cS = +17m.23s.$
Melbourne $i = +7m.34s.$, $PP = +8m.21s.$, $i = +10m.43s.$, $SS = +16m.43s.$; all readings are given for 12h.
Adelaide $iPP? = +9m.44s.$, $i = +10m.22s.$, $+12m.30s.$, $+16m.4s.$, and $+16m.35s.$, $iSS? = +17m.24s.$, $i = +19m.32s.$
Sumoto $iZ = +11m.47s.$
Kobe $iZ = +11m.47s.$, $eZ = +12m.21s.$, $eE = +12m.31s.$, $eN = +15m.56s.$, $SZ = +19m.36s.$, $S_cSE = +20m.18s.$, $P'P'Z = +39m.49s.$, $iZ = +40m.2s.$, $eP'P'?E = +41m.9s.$
Manila $iZ = +10m.53s.$
Nagasaki $PP = +12m.4s.$
Berkeley $iSE = +20m.6s.$, $iSZ = +20m.8s.$
Lick $iN = +11m.8s.$, $eE = +11m.11s.$, $eN = +11m.24s.$
Ukiah $e = +12m.19s.$, $+16m.5s.$, $+22m.7s.$ and $+22m.46s.$, $eSS = +24m.46s.$
Pasadena $ipPZ = +12m.21s.$, $isPZ = +12m.39s.$, $iZ = +13m.48s.$, $eZ = +20m.53s.$
Keizyo $P_cP = +12m.30s.$
Vladivostok $e = +13m.5s.$, $+13m.49s.$ $= PP - 3s.$, $+28m.24s.$
Zinsen $P_cP = +12m.33s.$

Continued on next page.

Zi-ka-wei iZ = +12m.32s., +13m.8s., +14m.21s., and +21m.38s.
Malabar ipP = +12m.36s.
Amboina ipP = +10m.20s.
Batavia ipP = +12m.34s.
Tucson e = +12m.41s. and +13m.3s., i = +21m.1s., e = +22m.18s. and +22m.55s.
Hong Kong PP = +12m.43s., PPP = +13m.21s., ? = +14m.43s. and +21m.41s., SS = +23m.42s.
Nanking iP_eP = +12m.49s., PP = +14m.41s., PPP = +16m.10s., e = +25m.19s., SS = +25m.56s., SSS? = +29m.46s.
Sitka ePP = +14m.48s., iPS = +21m.41s., e = +23m.11s., eSS = +26m.46s.
Chiufeng P_cPE = +12m.30s., pPEZ = +13m.16s., sP = +13m.50s., iEN = +14m.5s., PP = +15m.26s., PPP = +17m.2s., isS = +24m.26s., iSS = +27m.40s., iSSSEN = +30m.51s.
Phu-Lien PP = +15m.31s.
Medan ipP = +13m.30s.
Little Rock ipPN = +13m.59s., ePPEN = +16m.28s., eSKSN = +22m.47s., iSKSE = +22m.53s., iSE = +23m.18s., eE = +24m.58s., isSN = +25m.27s.
Florissant epPZ = +14m.9s., iPPZ = +16m.51s., iSKSEN = +23m.6s., isS = +25m.51s., iSS = +30m.18s. ; T_0 = 13h.21m.10s.
St. Louis epPEN = +14m.12s., iPPE = +16m.51s., iSKSE = +23m.6s., i = +25m.14s., esS = +25m.52s.
Huancayo e = +14m.55s., iPP = +16m.51s., iPS = +25m.21s.
Chicago ePS = +25m.23s., eSS = +31m.15s.
Columbia eS = +24m.43s., ePS = +26m.49s., eSS = +31m.51s.
Calcutta PP = +17m.35s., SS = +32m.2s., SSS = +36m.25s.
Toronto eN = +20m.55s., iN = +32m.34s., and +37m.11s.
La Paz ipPE = +14m.37s., isPZ = +15m.5s., iPPPE = +17m.37s., iPPZ = +17m.43s., ipPPZ = +18m.43s., iSKSE = +23m.34s., iSKSN = +23m.38s., PSE = +25m.46s., PSN = +25m.50s., iE = +26m.12s., sSN = +26m.54s., iN = +26m.36s., SSN = +30m.56s., SSE = +31m.42s., SSSN = +34m.6s.
Georgetown iPP = +18m.8s., i = +23m.55s., iSKKS = +25m.20s., i = +26m.6s., iPS = +27m.29s. ; T_0 = 13h.21m.10s.
Ottawa iE = +26m.13s., eN = +33m.13s., iE = +27m.45s.
Vermont ePS = +28m.1s., e = +33m.36s. ; T_0 = 13h.20m.56s.
Kodaikanal SS = +34m.38s.
Oak Ridge e = +29m. and +37m.31s.
San Juan e = +26m.11s. and +27m.51s.
Strasbourg ipP = +20m.25s., ePP = +21m.32s., ePPP = +24m.43s., ePS? = +34m.1s.
Bombay eN = iE = +19m.18s., SKSEN = +24m.33s., SKKSEN = +25m.51s., PS = +28m.36s., SS = +34m.54s., SSS = +39m.21s.
Andijan e = +20m.45s.
Samarkand e = +20m.1s.
Sverdlovsk pP = +16m.33s., i = +18m.23s. and +19m.58s., pPP = +21m.0s., i = +21m.32s., PPP = +22m.33s., i = +24m.13s. and +26m.25s., PS = +29m.25s., sS = +30m.57s., i = +31m.28s. and +32m.32s.
Scoresby Sund i = +39m.29s.
Pulkovo PKP_2 = +19m.58s., PP = +21m.10s., i = +21m.46s., +22m.11s., and +22m.43s., pPP = +23m.20s., sPP = +23m.54s., i = +25m.28s., +29m.43s. and +31m.17s., PS = +32m.35s., SS = +38m.25s.
Tananarive PPSE = +30m.46s., N = +33m.58s., SSEN = +37m.0s., SSSE = +39m.1s.
Cape Town eEN = +21m.49s., PKP = +23m.41s., ?E = +24m.43s., PP = +25m.25s., SKPE = +27m.1s., PPPN = +28m.17s., PPPE = +29m.20s., SKKSE = +32m.42s., SN = +33m.17s., SE = +33m.36s., PSE = +30m.22s., PPS = +37m.42s., ? = +38m.43s. = SS + 8s. and +42m.4s., SS = +43m.17s. = SSS + 6s., SSSE = +47m.19s., SSSN = +47m.37s.
Baku e = +20m.9s. and +21m.25s.
Grozny e = +22m.4s. and +23m.49s.
Piatigorsk e = +25m.53s.
Tiflis e = +20m.12s., +22m.2s. = PP + 3s., +24m.16s. and +33m.22s.
Erevan e = +22m.10s. = PP + 5s.
Königsberg iZ = +22m.9s. = PP − 1s., eEN = +22m.43s., eN = +23m.55s.
Edinburgh i = +41m.43s.
Copenhagen eZ = +20m.10s., e = +21m.55s., iZ = +22m.9s. = PP − 4s., eN = +22m.34s. and +23m.43s., SS = +39m.49s.
Theodosia e = +28m.34s.
Stonyhurst i = +42m.21s.
Bidston i = +20m.16s., e = +43m.29s.
Simferopol = +28m.37s.
Yalta e = +28m.35s.
Sebastopol e = +28m.35s.
Oxford i = +40m.36s.
De Bilt iZ = +20m.13s., eZ = +22m.22s., iZ = +24m.43s., eE = +40m.31s. and +46m.15s.
Göttingen eN = +19m.6s., E = +19m.20s. and +19m.32s., eZ = +20m.16s., Z = +22m.19s.

Continued on next page.

Kew ipPKP = +20m.16s., ePP = +22m.22s., iE = +40m.39s., eN = +41m.23s., eEN = +42m.11s., iE = +42m.55s., eE = +46m.14s.
Jena ep = +19m.1s., eZ = +22m.24s., eE = +22m.31s.
Uccle ipP = +20m.19s., i = +20m.44s., iPP = +22m.26s., iPPS = +34m.34s., iSS = +40m.51s., iSSS = +46m.23s.
Cheb e = +29m.1s.? and +40m.52s.
Vienna iPN = +19m.11s., iPP? = +20m.25s., iPPP? = +20m.42s., iNZ = +21m.17s., iEN = +22m.30s.
Karlsruhe i = +20m.27s.
Stuttgart iPKPZ = +19m.14s., iZ = +20m.23s., ipPKPNZ = +20m.27s., ePP = +22m.31s., eE = +24m.0s., e = +34m.14s. and +41m.7s.
Ksara ipP = +20m.27s., sPKP = +20m.52s., PP = +22m.39s., sPP = +24m.29s., PSKP = +32m.39s., SPP = +34m.47s.
Basle epP = +20m.29s.
Zurich epP = +20m.30s.
Zagreb ePE = +19m.17s., eZ = +19m.23s., eP_cP = +19m.32s., e = +20m.9s., eZ = +20m.31s.
Neuchatel epP = +20m.29s., e = +22m.28s.
Sofia e = +22m.56s.
Triest i = +19m.18s., iP = +19m.22s., i = +19m.26s., +20m.13s., +20m.27s., +20m.31s., +20m.43s., +21m.31s., and +22m.6s., iPP = +22m.42s., i = +28m.33s., and +31m.15s., iPSKS = +32m.49s., iEN = +33m.9s., iSS = +41m.39s., iN = +42m.40s., i = +43m.1s., +45m.31s., +47m.1s., +47m.39s. =SS +0s., +54m.31s., +59m.58s., +67m.43s., and +69m.1s.
Venice iPP = +22m.47s.
Padova eP = +19m.20s., ePP = +23m.1s.
Helwan i = +19m.38s. and +20m.48s.
Toledo PKP = +19m.46s.
Alicante eP = +19m.26s.
Granada $iPKP_2$ = +27m.59s., i = +25m.29s., SKKS = +29m.0s.
Malaga $iPKP_2$ = +20m.1s., e = +23m.23s., and +25m.55s., iSS = +43m.21s., e = +49m.14s.
Algiers PP? = +20m.6s.

Jan. 1d. 23h. Readings for which no determination has been made :—

Santa Barbara ePN = 2m.44s.
Branner eE = 2m.44s., iN = 2m.45s. and 2m.55s., eE = 2m.56s.
Berkeley iPZ = 2m.45s., ePN = 2m.46s., iZ = 2m.55s., 3m.0s. and 3m.2s.
La Jolla iP = 2m.48s.
Pasadena iP = 2m.49s.k, iZ = 5m.35s.
Mount Wilson iP = 2m.50s.k, iZ = 5m.36s.
Riverside iPEZ = 2m.51s.k, eZ = 5m.37s.
Haiwee iP = 2m.56s.k.
Tinemaha iP = 2m.58s.k.
Uccle iP = 10m.51s.k.
Vienna iPZ = 10m.53s., i = 12m.9s.
Triest e = 10m.56s., i = 11m.1s. and 11m.7s.
Strasbourg e = 11m.0s., 11m.7s., 11m.14s., 11m.24s., and 12m.17s.
Stuttgart e = 11m.0s., eZ = 12m.14s.
Prato eP = 11m.7s., S = 11m.29s.
Granada e = 13m.20s.

Jan. 1d. Readings also at 0h. (Bagnères), 12h. (Santiago and Tiflis), 13h. (Samarkand), 18h. (Tucson), 22h. (Apia and Grozny (2)).

Jan. 2d. 22h. 23m. 24s. Epicentre 29°·8N. 87°·9E. N.3.

A = +·032, B = +·867, C = +·497 ; D = +·999, E = −·037 ; G = +·018, H = +·497, K = −·868.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	7·3	177	e 2 19	P_g	3 44	S*	—	5·8
Agra	9·1	255	e 2 10	+ 1	3 50	− 1	—	6·8
Hyderabad	15·1	217	—	—	8 25	?	9·1	10·7
Almata	16·1	330	—	—	e 6 44	+ 3	—	—
Andijan	16·7	315	e 3 49	− 1	e 7 8	SS	e 9·2	—
Bombay	17·5	235	e 4 9	PP	e 7 21	SS	—	11·9
Tashkent	18·9	313	e 3 56	−21	i 7 32	−12	i 9·8	11·3
Chiufeng	25·2	58	—	—	e 9 37	− 7	e 13·2	15·3
Nanking	26·5	77	5 35	+ 1	e 9 56	−11	e 14·1	—

Additional readings :—
Agra eP_g = +3m.0s., SS = +4m.2s., S_g = +5m.7s.
Long waves at Sverdlovsk.

Jan. 2d. 22h. 41m. 8s. Epicentre 40°·2N. 125°·2W. N.2.

A = −·440, B = −·624, C = +·646; D = −·817, E = +·576; G = −·372, H = −·527, K = −·764.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ferndale	0·8	62	i 0 11	0	i 0 24	+ 3	—	—
Ukiah	1·9	124	i 0 27	− 1	—	—	—	—
Berkeley	3·3	133	i 0 45	− 2	1 23	− 2	—	—
San Francisco	3·3	140	i 0 45	− 2	—	—	—	—
Branner	3·6	139	e 0 49	− 2	1 33	+ 1	—	—
Lick	4·0	134	e 0 54	− 3	e 1 38	− 4	—	—
Tinemaha	6·2	118	i 1 31k	+ 3	i 3 4	S*	—	—
Haiwee	7·0	123	i 1 41	+ 2	e 3 20	S*	—	—
Santa Barbara	7·2	141	e 1 42	0	—	—	e 3·8	—
Seattle	7·7	13	e 2 0	P*	—	—	e 4·2	—
Mount Wilson	8·3	134	e 1 58	0	—	—	—	—
Pasadena	8·3	135	e 1 57	− 1	—	—	e 4·9	—
Victoria	8·3	9	1 56	− 2	3 28	− 3	5·1	—
Bozeman	11·7	57	e 2 42	− 2	6 5	S_g	6·8	—
Tucson	14·0	120	i 3 19	+ 4	6 20	?	8·1	—
Sitka	18·1	342	e 4 7	− 1	e 7 31	+ 4	8·2	—
Little Rock	26·5	92	e 5 34	0	e 10 8	+ 1	—	14·4
Florissant	26·7	82	e 5 35	0	e 10 12	+ 2	e 12·1	i 14·9
St. Louis	26·9	82	e 5 36	− 1	e 10 13	− 1	—	14·8
Chicago	28·2	74	—	—	e 11 9	?	14·1	—
Ann Arbor	30·9	71	e 6 16	+ 3	—	—	16·3	18·3
Honolulu	33·5	245	—	—	e 14 8	SSS	i 16·3	—
Toronto	33·8	67	—	—	i 11 59	− 4	17·8	—
Ottawa	36·1	64	—	—	i 12 40	+ 2	e 17·9	—
Georgetown	36·6	74	i 7 5k	+ 2	e 12 36	− 9	e 16·9	—
Philadelphia	37·7	71	—	—	e 13 7	+ 5	e 18·1	—
Oak Ridge	39·6	68	e 7 24	− 5	e 13 36	+ 6	e 21·4	—
Huancayo	69·8	127	—	—	e 20 18	− 1	e 28·8	—
De Bilt	78·1	29	—	—	e 22 1	+ 6	e 35·9	40·2
Sverdlovsk	82·8	357	e 12 26	+ 4	e 22 36	[− 6]	36·9	—
Triest	86·6	28	e 12 46	+ 5	—	—	e 39·9	47·2

Additional readings:—
Berkeley iPN = +0m.0s., iE = +1m.10s., iN = +1m.23s. and +1m.26s., iE = +1m.40s.
San Francisco eE = +52s. = P* − 1s. and +1m.16s.
Branner eEN = +51s., eN = +2m.7s., eE = +2m.29s.
Lick eN = +57s., iE = +1m.0s. and +1m.5s. = P* +0s., eN = +1m.17s. = P_g +3s.
Tinemaha i = +1m.33s.
Little Rock ePPEN = +6m.9s., eSSEN = +11m.9s.
Chicago e = +13m.18s.
Ann Arbor e?N = +5m.4s.
Sverdlovsk e = +28m.6s.
Long waves were also recorded at Bidston, Durham, Edinburgh, Kew, Stonyhurst, Scoresby Sund, and other European and American stations.

Jan. 2d. Readings also at 1h. (La Plata and Mizusawa), 2h. (Messina and Santiago), 4h. (Amboina (2) and Santiago), 5h. (Sitka), 7h. (La Paz), 11h. (Santiago and Tiflis), 17h. (Honolulu), 19h. (Andijan and Frunse), 20h. (Batavia), 23h. (Basle, Granada, Neuchatel, and Zurich).

Jan. 3d. 1h. 50m. 14s. Epicentre 30°·8N. 88°·0E. N.1.

A = +·030, B = +·858, C = +·512; D = +·999, E = −·035;
G = +·018, H = +·512, K = −·859.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	8·3	181	2 7	+ 9	3 35	+ 4	—	—
Dehra Dun	8·6	270	2 56	P_g	3 26	−13	4·4	5·7
Agra	9·5	250	i 2 20	+ 6	i 4 4	+ 3	—	—
Almata	15·2	328	i 3 38	+ 7	i 6 50	+30	8·6	—
Hyderabad	15·9	215	3 39	− 1	6 24	−12	6·8	10·1
Andijan	16·1	313	e 3 49	+ 6	7 10	?	9·0	—
Bombay	18·1	232	i 4 9	+ 1	i 7 24	− 3	—	11·3
Tashkent	18·3	310	i 4 12	+ 2	i 7 44	+13	—	9·8
Tchimkent	18·7	313	4 17	+ 2	e 8 0	SS	15·8	—
Samarkand	19·2	303	e 4 26	+ 5	e 8 4	SS	—	—
Phu-Lien	19·5	116	e 4 24	0	7 57	+ 1	9·8	11·6
Semipalatinsk	20·5	346	e 4 13	−22	e 8 27	+11	11·8	—
Kodaikanal	22·8	208	i 4 58	− 1	i 9 9	+ 8	—	14·1
Chiufeng	24·6	60	5 15k	− 1	i 9 38	+ 4	—	15·2
Hong Kong	24·8	104	5 16	− 2	9 39	+ 2	12·8	14·5
Colombo	25·1	199	5 27	+ 6	9 55	+12	15·5	19·3
Nanking	26·2	79	i 5 30	− 1	i 10 12	+12	14·2	16·9
Zi-ka-wei	28·5	80	e 5 53	+ 1	10 54	+14	—	18·9
Medan	29·0	157	e 5 56	0	i 11 7	+19	—	—
Taihoku	30·1	90	11 27	S	16 28	?	—	—
Taito	30·5	97	6 14	+ 5	11 20	+ 8	—	—
Heizyo	31·8	65	e 6 44	+23	—	—	—	—
Sverdlovsk	32·2	332	i 6 26	+ 2	i 11 37	− 1	16·9	17·8
Zinsen	32·4	67	e 6 21	+ 5	e 11 30	−10	e 16·5	—
Keizyo	32·7	67	e 6 27	− 2	e 11 40	− 6	15·4	18·3
Taikyu	34·1	69	e 9 55	?	e 14 20	SS	18·2	—
Manila	34·3	110	i 6 44a	+ 1	i 12 8	− 3	15·6	19·8
Husan	34·3	71	e 7 2	+19	12 8	− 1	—	19·1
Tomie	34·5	76	6 56	+11	—	—	—	—
Nagasaki	35·4	74	e 7 2	+ 9	12 28	+ 1	e 17·2	23·4
Grozny	35·5	303	e 6 59	+ 6	12 41	+12	e 14·8	—
Hukuoka B	35·7	74	e 6 53	− 2	20 33	?	—	—
Hukuoka	35·7	73	e 5 39	−76	e 12 32	0	19·1	—
Kumamoto	36·1	75	6 57	− 2	—	—	—	—
Tiflis	36·1	300	7 2	+ 3	e 12 36	− 2	e 20·9	26·1
Erevan	36·3	297	e 7 5	+ 5	—	—	—	—
Vladivostok	36·7	58	e 7 4	0	e 12 48	+ 1	—	30·4
Miyazaki	36·9	77	7 6	0	12 36	−14	—	—
Piatigorsk	37·5	303	e 6 11	−60	e 14 30	?	—	—
Sumoto	39·3	72	7 20	− 6	13 29	+ 3	20·0	21·5
Kobe	39·5	71	7 23	− 5	13 28	− 1	20·2	23·8
Kyoto	39·9	71	7 30	− 1	—	—	—	—
Sotchi	39·9	303	e 7 15	−16	—	—	—	—
Gifu	40·7	70	7 33	− 5	13 51	+ 4	—	—
Nagoya	40·9	69	7 37	− 3	—	—	e 21·5	—
Batavia	41·2	151	7 36	− 6	13 52	− 2	e 22·8	—
Nagano	41·7	68	7 46	0	—	—	—	—
Malabar	42·3	150	e 7 2	−49	e 18 5	(+ 9)	e 26·8	—
Theodosia	43·0	305	e 8 2	+ 5	14 36	+15	17·7	—
Tokyo	43·0	68	8 22	+25	14 42	+21	—	—
Tukubasan	43·2	68	7 56	− 2	14 21	− 1	—	—
Ksara	43·7	288	e 8 5	+ 3	14 46	+15	—	—
Mizusawa	43·7	63	8 3	+ 1	14 21	−10	22·0	—
Simferopol	43·9	305	e 8 5	+ 1	—	—	—	—
Yalta	43·9	304	e 8 5	+ 1	14 40	+ 6	18·4	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol	44·3	304	8 6	− 1	14 46	+ 6	18·1	—
Pulkovo	47·6	325	i 8 33	0	15 35	+ 8	26·8	29·7
Helwan	48·4	285	i 8 39	0	i 15 43	+ 5	25·3	33·6
Amboina	51·5	123	9 8	+ 5	e 15 46	?	e 25·8	—
Sofia	51·9	302	e 9 8	+ 2	e 16 36	+ 9	e 28·3	36·6
Königsberg	52·5	318	e 9 16	+ 6	i 16 44	+ 9	—	31·8
Upsala	54·0	325	9 21	0	17 2	+ 6	26·8	31·7
Budapest	54·1	310	9 28	+ 6	19 13	(+ 2)	29·8	31·8
Vienna	55·8	310	e 9 32	− 2	17 40	+20	e 30·8	38·8
Graz	56·5	309	e 9 13	−26	e 17 52	+22	e 22·8	34·6
Zagreb	56·5	308	e 9 38	− 1	e 19 38	(+11)	e 31·8	34·5
Prague	56·7	313	e 9 45	+ 4	e 17 42	+10	e 30·3	32·8
Copenhagen	57·1	321	9 43	− 1	17 44	+ 6	—	—
Cheb	58·0	313	e 9 53	+ 3	e 17 57	PS	e 31·8	36·8
Padova	58·0	307	e 10 3k	+13	19 55	(+17)	e 38·8	—
Triest	58·1	308	i 9 50k	− 1	i 17 55	+ 4	—	37·9
Jena	58·3	313	e 9 52	0	—	—	e 31·8	39·8
Hamburg	58·8	308	e 9 59k	+ 3	e 18 23	PS	—	36·8
Venice	59·0	308	9 46?	−11	—	—	—	—
Göttingen	59·2	315	e 9 58	− 1	—	—	e 33·8	35·8
Florence	60·2	306	i 9 46k	−20	17 46	−33	21·8	30·8
Prato	60·3	306	i 10 8	+ 1	i 16 46	?	29·6	35·8
Stuttgart	60·4	312	e 10 6	− 1	e 18 21	0	e 30·8	35·2
Piacenza	60·9	308	10 16	+ 5	18 35	PS	25·3	41·2
Zurich	61·1	310	e 10 11	− 1	—	—	—	—
Strasbourg	61·3	312	i 10 14k	0	e 18 37	+ 4	27·8	35·8
Basle	61·7	311	e 10 16	0	—	—	—	—
De Bilt	61·9	316	i 10 18	0	18 48	PS	e 29·8	35·9
Neuchatel	62·2	310	e 10 18	− 2	—	—	—	—
Uccle	62·8	315	10 23	− 1	i 18 58	PS	29·8	36·2
Tananarive	63·1	224	—	—	18 51	− 5	29·7	35·6
Paris	64·5	314	i 10 35	0	e 19 18	+ 4	23·8	36·8
Durham	65·0	310	10 41	+ 2	—	—	—	38·8
Kew	65·4	317	i 10 44a	+ 3	i 19 29	+ 4	29·8	38·5
Edinburgh	65·5	322	e 11 4	(−10)	e 25 30	?	e 33·8	39·9
Stonyhurst	65·8	320	e 10 46	+ 2	e 19 35	+ 5	33·8	40·6
Oxford	65·9	317	10 42	− 3	i 19 34	+ 3	e 30·8	41·5
Bidston	66·3	320	10 48	+ 1	19 38	+ 2	e 39·8	41·3
Perth	68·1	154	—	—	i 19 51	− 7	28·1	—
Alicante	70·4	304	e 10 34	−39	e 20 30	+ 4	e 38·4	—
Toledo	72·2	306	e 11 24	0	e 21 36	PS	37·3	42·2
Almeria	72·4	303	e 11 22	− 3	e 21 28	PS	e 41·4	—
Granada	73·1	304	e 11 18	−11	e 20 21	−37	34·1	44·4
Malaga	73·9	304	11 32	− 2	21 10	+ 3	34·7	—
San Fernando	75·3	304	—	—	21 27	+ 3	40·8	—
Adelaide	81·1	140	e 11 56	−18	i 22 19	− 8	e 38·5	44·3
Melbourne	86·7	138	12 39	− 3	23 6	[− 5]	40·1	53·1
Riverview	87·9	132	—	—	e 23 8	[− 9]	e 42·1	52·7
Cape Town	92·1	231	13 16	+ 9	24 35	+19	43·9	53·9
Ottawa	102·4	348	—	—	e 42 46?	?	e 50·8	—
Ann Arbor	106·6	354	—	—	e 53 58	?	64·1	—
Wellington	107·6	128	—	—	i 26 26	{+37}	37·8	—
Tinemaha	107·8	22	e 18 25	[+14]	—	—	—	—
Haiwee	108·7	22	e 18 26	[+12]	—	—	—	—
Georgetown	108·9	348	i 18 56	PP	e 28 23	PS	e 48·8	—
Mount Wilson	110·5	23	e 18 27	[+ 8]	—	—	—	—
Pasadena	110·6	23	e 18 29	[+ 9]	—	—	—	—
Riverside	111·0	22	e 18 29	[+ 8]	—	—	—	—
La Jolla	112·0	23	e 18 29	[+ 5]	—	—	—	—
Tucson	114·4	17	—	—	e 56 46	?	66·2	—
San Juan	124·9	330	—	—	e 42 51	?	e 60·6	—
Sucre	153·2	290	e 19 57	[+11]	—	—	78·8	—
La Paz	154·0	298	i 19 49k	[+ 2]	—	—	73·8	91·0
Huancayo	155·7	317	e 19 52	[+ 3]	e 39 8	?	58·3	—

For Notes see nex page.

NOTES TO JAN. 3d. 1h. 50m. 14s.

Additional readings and notes :—

Agra $S_g = +4m.54s.$
Bombay PP = +4m.24s., P* = +5m.1s., $P_g = +5m.50s.$, iSS = +7m.54s., S* = +8m.31s., $S_g = +9m.31s.$
Chiufeng i = +6m.18s.
Hong Kong PP = +5m.56s., ? = +9m.46s., SS = +10m.26s.
Nanking PP = +6m.20s., SS = +10m.52s.
Zi-ka-wei iE = +11m.3s.
Medan iE = +8m.5s., iNS = +13m.52s.
Sverdlovsk $L_q = +15m.28s.$
Tiflis PP = +8m.10s. (PPP) = +8m.39s., eSS = +13m.59s., e = +15m.16s.
Erevan e = +15m.30s.
Sumoto eE = +16m.26s., eN = +16m.30s. = SSS + 2s.
Kobe ePE = +7m.26s., ePN = +7m.30s., iE = +7m.33s., eZ = +16m.31s. = SSS − 2s., eN = +16m.48s., $eL_qN = +20 \cdot 2m.$
Ksara +17m.16s. = SS − 10s.
Mizusawa PN = +8m.25s.
Pulkovo $L_q = +23m.$
Helwan iPP = +10m.41s., i = +19m.39s.
Amboina P? = +8m.11s.
Sofia iSS = +20m.56s.
Königsberg eE = +10m.36s. = P_cP + 11s. and +12m.4s. = PPP + 3s., iE = +20m.52s., eZ = +20m.57s., iE = +21m.46s. ; all readings *diminished* by 1h.
Upsala SSE = +21m.3s.
Budapest PPP = +14m.20s., PS = +20m.20s. = SS − 12s., SS = +24m.58s., SSS = +28m.20s.
Vienna eEZ = +10m.40s. = P_cP + 3s., PP = +12m.6s., PPP = +12m.58s.
Graz ip = +9m.44s.
Zagreb e = +22m.22s. and +27m.27s.
Copenhagen +11m.52s. = PP + 8s., +21m.34s. = SS + 12s.
Cheb e = +11m.0s. = P_cP + 14s. and +21m.46s. = SS + 10s.
Triest iPP = +12m.4s., i = +12m.16s., +13m.27s., +18m.10s., +18m.15s., +19m.19s., and +20m.5s., SS = +21m.46s., i = +22m.51s., +23m.6s., +24m.31s., and +24m.59s.
Hamburg eZ = +12m.5s., eE = +12m.17s. and +22m.2s., eN = +24m.31s.
Göttingen eE = +13m.26s. = PPP + 6s.
Stuttgart ePP = +12m.24s., e = +13m.52s., eSS = +22m.1s., e = +23m.51s.
Strasbourg iPP = +12m.29s., PPP = +14m.13s., ePS = +19m.2s., SS = +22m.46s., SSS = +25m.35s., SSSS = +26m.8s.
De Bilt eSSE = +23m.4s., e = +25m.34s.
Uccle PPP = +14m.25s., SS = +23m.37s., SSS = +25m.56s.
Tananarive E = +20m.19s. = S_cS + 4s. and +26m.53s.
Kew eSSS = +26m.38s., i = +26m.56s.
Stonyhurst i = +27m.21s.
Oxford i = +26m.56s.
Bidston PP = +12m.59s., PPP = +14m.44s., PS = +20m.12s., SS = +24m.14s., SSS = +26m.32s.
Perth i = +21m.6s. = S_cS + 15s. ; readings given as for 2d.
Toledo $L_q = +32m.55s.$
Granada P_cP = +11m.30s., PP = +14m.6s., PPP = +15m.27s., S_cS = +21m.15s.
Malaga PP = +14m.26s., PPP = +15m.59s., e = +18m.12s., +18m.53s., and +25m.7s., SSS = +29m.32s.
San Fernando SSS = +30m.49s.
Adelaide e = +16m.46s., i = +32m.22s.
Melbourne PP = +16m.3s., S = +23m.20s., PS = +24m.11s., SS = +28m.50s.
Riverview iEN = +23m.12s. and +23m.24s. = S − 12s.
Cape Town PP = +16m.49s., PPP = +18m.59s., SKS = +24m.3s., PS = +25m.2s. PPSN = +25m.51s., PPSE = +25m.57s., SS = +30m.27s., SSS = +35m.37s., ? = +38m.49s.
Ottawa eN = +47m.46s. ?
Wellington i = +28m.4s.
Haiwee eZ = +18m.54s. = PP + 6s.
Georgetown SS = +34m.0s. ; T_o = 1h.49m.40s.
Mount Wilson eZ = +19m.8s. = PP + 7s.
Pasadena eZ = +19m.5s. = PP + 3s.
Riverside eZ = +19m.6s. = PP + 1s.
La Jolla eZ = +19m.18s. = PP + 6s.
San Juan e = +48m.39s.
La Paz pPKPZ = +21m.16s., iPPZ = +23m.46s.
Long waves were also recorded at Bergen, Scoresby Sund, Algiers, Toyooka, and other European and American stations.

Jan. 3d. Readings for which no determination has been made :—

3h.
Almata eP = 3m.9s.
Calcutta eE = 3m.11s.
Andijan eP = 3m.18s., e = 8m.30s.
Tashkent iP = 3m.42s., iS = 7m.24s., M = 11m.42s.
Semipalatinsk eP = 3m.57s.

6h.
Calcutta eE = 52m.20s.
Almata eP = 52m.37s.
Andijan eP = 52m.40s., e = 56m.2s.
Bombay ePEN = 53m.2s., eSEN = 56m.11s., eSSEN = 56m.38s., L = 57m.22s., M = 58m.40s.
Tashkent iP = 53m.4s., iS = 56m.42s., L = 59m.12s., M = 61m.0s.
Chiufeng e = 58m.36s., eE = 62m.25s.
Nanking e = 64m.15s.
Long waves at Hyderabad and Sverdlovsk.

12h.
Karenko eP = 32m.4s., S = 32m.11s.
Takao P = 32m.
Taito P = 32m.9s., S = 32m.24s.
Arisan iP = 32m.12s., S = 32m.24s.
Taihoku P = 32m.21s., S = 32m.38s.
Nanking e = 35m.39s.
Calcutta eE = 49m.6s.

Jan. 3d. 14h. 55m. 0s. Epicentre 35°·5N. 140°·0E. (as on 1934 May 17d.). X.

A = − ·624, B = + ·523, C = + ·581.

	△	Az.	P.	O − C.	S.	O − C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	0·3	312	0 6	+ 2	0 13	+ 5	0·2
Nagoya	2·5	262	0 36	0	1 11	S*	1·4
Mizusawa	3·7	14	e 0 52	− 1	i 1 34	− 1	—
Kobe	4·1	266	0 57	− 1	1 58	S*	2·3
Toyooka	4·2	273	e 1 12	P*	2 4	S*	2·2
Sumoto	4·4	256	1 20	P_g	2 16	S_g	2·6
Hukuoka B	8·1	259	4 13	?	4 20	S_g	—

Additional readings :—
Kobe PE = +59s., eEN = +1m.5s., iZ = +1m.8s. = P* +1s., eE = +1m.12s., eN = +1m.16s. = P_g +0s., Sz = +1m.56s.
Toyooka ePE = +1m.15s.
Sumoto ePN = +1m.23s.

Jan. 3d. 18h. Readings recorded by the American stations :—

Branner eP_gN = 6m.40s., iSN = 6m.43s., iS_gN = 6m.49s.
eP_gN = 17m.25s.
iP_gEN = 42m.59s., iS_gEN = 43m.1s.

Lick eP_gEN = 6m.46s., iS_gE = 6m.55s., iEN = 7m.0s.
eP_gEN = 43m.3s., iS_gEN = 43m.9s.

San Francisco eP_gEN = 43m.6s., iSEN = 43m.14s.

Berkeley ePZ = 6m.49s., iZ = 6m.53s., eEN = 6m.54s., iNEZ = 7m.2s.
iP_gN = 43m.7s., iS_gZ = 43m.15s., iEN = 43m.16s.

Jan. 3d. Readings also at 0h. (Ksara, Sverdlovsk, Tiflis, and Tashkent), 1h. (La Paz), 2h. (Mount Wilson, Riverside, Pasadena, and Tinemaha), 3h. (Berkeley), 4h. (Jena), 5h. (Berkeley, Branner, and Lick), 6h. (Bombay and Kodaikanal), 7h. (Angra do Heroismo, Branner, Granada, and Ponta Delgada), 9h. (Manila), 14h. (Agra, Bombay, Calcutta, Andijan, and Tokyo), 15h. (Santiago and Nagoya), 17h. (Bombay, Calcutta, Berkeley (2), Branner (3), Lick (3), and San Francisco), 18h. (Agra (2), Bombay, and Calcutta), 19h. (Barcelona), 21h. (Tucson and Nagoya), 22h. (Agra and Calcutta).

Jan. 4d. 0h. Readings for more than one epicentre, from which no determinations have been made :—

Amboina iP = 11m.39s., S? = 12m.33s.
Manila eP = 16m.11s., iS = 19m.44s.
Perth i = 23m.0s., M = 40m.0s.
Adelaide eP = 23m.3s., i = 28m.44s., L = 31m.12s., M = 32·6m.
Melbourne e = 24m.57s., e = 28m.7s., M = 38·1m.
Kodaikanal eE = 25m.18s.
Calcutta eE = 25m.33s.
Granada e = 26m.14s., e = 35m.47s.
Riverview e = 31m.30s., M = 39m.22s.
Tashkent e = 31m.56s., e = 39m.54s., eL = 48m.24s., M = 55m.18s.
Malabar i = 42m.40s.
Grozny e = 54m.34s.
Long waves at Baku and Sverdlovsk.

Jan. 4d. 4h. 6m. 18s. Epicentre 51°·3N. 6°·2E. N.3.

A = + ·622, B = + ·068, C = + ·780 ; D = + ·108, E = − ·994 ; G = + ·776, H = + ·084, K = − ·625.

	△	Az.	P.	O − C.	S.	O − C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Bochum	0·6	76	i 0 9	0	i 0 20	+ 5	0·4
De Bilt	1·0	315	i 0 17	+ 3	i 0 31	S*	—
Uccle	1·3	249	i 0 16	− 2	0 31	− 2	—
Göttingen	2·4	83	i 0 39	P*	i 1 8	S*	1·2
Strasbourg	2·9	155	e 0 42	+ 1	e 1 34	S_g	—
Stuttgart	3·2	157	—	—	e 1 32	S*	—

Additional readings :—
Göttingen eN = + 51s., iE = + 1m.0s., iE = + 1m.13s. = S_g + 0s.
Strasbourg eSS = + 1m.56s.

Jan. 4d. 8h. Readings for which no determination has been made :—

Agra P = 3m.10s., P_g = 3m.58s., S = 4m.55s.
Calcutta P = 4m.22s., S = 5m.42s., L = 6m.22s.
Andijan eP = 4m.48s.
Bombay eP = 5m.2s., eS = 8m.11s., M = 14m.23s.
Tashkent iP = 5m.3s., S = 8m.44s., L = 11m.6s., M = 13m.12s.
Hyderabad S = 9m.13s., LN = 9m.39s., MN = 11m.45s.
Kodaikanal eE = 10m.6s.
Long waves at Baku, Sverdlovsk, and Chiufeng

Jan. 4d. 10h. 22m. 5s. Epicentre 37°·8N. 71°·6E. N.3.

A = + ·249, B = + ·750, C = + ·613 ; D = + ·949, E = − ·316 ; G = + ·195, H = + ·582, K = − ·790.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	3·0	12	0 51	P*	1 20	+ 3	—	—
Tashkent	3·9	336	i 0 54	− 2	(i 1 43)	+ 3	i 1·7	1·9
Samarkand	4·1	296	1 5	P*	1 49	+ 4	—	—
Tchimkent	4·8	342	i 1 8	0	i 1 58	− 5	—	—
Almata	6·8	38	e 1 45	P*	e 3 21	S*	—	3·7
Agra	12·0	150	—	—	e 5 29	+26	—	—
Semipalatinsk	14·0	24	e 3 17	+ 2	e 5 36	−15	—	—
Baku	17·0	286	e 3 58	+ 4	e 7 17	SS	7·9	9·9
Bombay	18·9	176	e 4 40	?	i 8 31	?	—	—
Grozny	20·4	294	e 4 45	PP	8 25	+11	—	—
Sverdlovsk	20·4	343	i 4 33	− 1	8 13	− 1	10·4	11·4
Tiflis	20·9	290	4 48	PP	e 8 21	− 3	12·8	—
Calcutta	21·0	152	—	—	e 9 7	SS	—	—
Kodaikanal	28·0	168	—	—	e 12 7	?	—	—
Pulkovo	34·1	324	e 7 31	+50	e 13 23	+75	15·9	18·4

For Notes see next page.

NOTES TO JAN. 4d. 10h. 22m. 5s.

Additional readings :—
Andijan $iP_g = +54s.$, PP = +59s., PsS = +1m.13s.
Samarkand $P_g = +1m.12s.$, PP = +1m.16s., SsS = +1m.51s.
Tchimkent $P_g = +1m.16s.$
Almata e = +2m.12s. $= P_g + 2s.$, i = +3m.39s. $= S_g + 0s.$
Semipalatinsk e = +7m.5s.
Grozny e = +11m.39s.
Tiflis e = +10m.43s.
Long waves at Hyderabad, Chiufeng, and other European stations.

Jan. 4d. 10h. Probably a repetition of 37°·8N. 71°·6E.
Andijan e = 38m.57s., $iS_g = 39m.53s.$, M = 39m.57s.
Samarkand eP = 39m.27s., $eS_g = 40m.20s.$, M = 40m.52s.
Almata e = 42m.9s.
Semipalatinsk e = 45m.28s.

Jan. 4d. 14h. 41m. 29s. Epicentre 40°·0N. 27°·5E. N.1.
Given by U.R.S.S.

A = +·680, B = +·354, C = +·643 ; D = +·462, E = −·887 ;
G = +·570, H = +·297, K = −·766.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	4·1	312	e 0 57	− 1	1 47	+ 2	—	—
Sebastopol	6·4	42	i 1 25	− 6	i 2 36	− 7	—	2·9
Yalta	6·7	47	i 1 29	− 6	i 2 47	− 4	—	2·9
Theodosia	7·7	51	1 43	− 6	i 3 20	+ 4	—	4·1
Ksara	9·1	130	e 2 17	+ 8	4 23	S*	—	—
Messina	9·4	264	e 2 19	+ 6	4 44	S*	—	—
Budapest	9·6	324	2 12	− 4	4 12	+ 9	5·0	7·5
Sotchi	9·8	64	e 2 15	− 3	i 4 7	− 1	—	—
Lemberg	10·1	345	e 2 24	+ 2	e 5 4	S*	—	7·4
Capodimonte	10·1	278	e 2 34	+12	e 5 36	S_g	—	6·9
Zagreb	10·2	308	e 2 23	− 1	i 4 17	− 1	—	5·8
Helwan	10·7	161	2 43	+12	4 43	+12	—	11·9
Laibach	11·2	308	e 2 39	+ 2	i 5 26	S*	—	6·1
Vienna	11·5	322	i 2 38	− 4	i 4 57	+ 7	i 5·5	6·8
Triest	11·5	306	2 36k	− 6	i 5 48	S*	—	—
Venice	12·4	305	e 2 45	− 9	i 5 37	+23	6·5	8·5
Florence	12·7	293	2 59	+ 1	6 16	S*	—	—
Padova	12·7	303	e 2 57	− 1	5 40	+20	—	—
Prato	12·8	293	i 3 1	+ 2	i 6 16	S*	—	7·1
Erevan	13·0	84	e 3 10	+ 8	7 28	S_g	e 8·7	—
Tiflis	13·2	77	3 12	+ 7	5 37	+ 5	e 7·8	—
Prague	13·6	323	i 3 8	− 2	e 5 40	− 1	e 6·0	10·0
Grozny	14·0	70	e 3 23	+ 8	—	—	—	—
Tunis	14·0	262	i 3 27	+12	—	—	7·5	—
Placenza	14·0	299	3·13	− 2	i 6 3	+12	i 7·9	9·9
Cheb	14·6	319	e 3 3	−20	e 6 9	+ 4	e 6·5	12·0
Ravensburg	15·0	307	e 3 28	0	e 6 31	SS	—	—
Hof	15·1	319	e 3 31	+ 1	e 6 31	SS	e 7·0	8·5
Zurich	15·5	305	e 3 37	+ 2	e 6 33	+ 6	—	—
Jena	15·6	321	e 3 31	− 5	e 6 31	+ 2	e 6·9	11·6
Königsberg	15·6	344	e 3 32k	− 4	e 6 31	+ 2	—	9·5
Stuttgart	15·7	310	e 3 31	− 7	i 6 42	+11	e 8·2	—
Basle	16·2	302	e 3 42	− 2	—	—	—	—
Karlsruhe	16·2	311	e 3 50	+ 6	e 6 49	+ 6	e 8·2	11·4
Neuchatel	16·4	304	e 3 46	0	e 6 54	+ 6	—	—
Strasbourg	16·5	308	e 3 46	− 2	i 7 0	SS	e 8·5	9·5
Grenoble	16·8	295	e 4 4	PP	e 7 25	SS	9·5	—
Göttingen	16·8	320	e 3 44	− 8	e 6 54	− 3	e 8·0	12·5
Marseilles	16·8	289	e 4 28	+36	—	—	10·5	—
Baku	17·1	80	i 4 3	PP	e 7 13	SS	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Besançon	17·1	303	i 3 55	0	7 7	+ 3	9·5	—
Hamburg	18·0	326	e 4 3a	− 4	i 7 26	+ 1	10·3	12·5
Copenhagen	18·6	333	i 4 13	− 1	e 7 29	− 9	—	—
Barcelona	19·2	283	i 4 21	0	e 8 2	SS	e 14·6	16·6
Algiers	19·4	268	i 4 27	+ 4	i 8 1	+ 7	9·8	13·0
Uccle	19·4	312	i 4 21a	− 2	i 7 58	+ 4	9·3	13·1
De Bilt	19·5	317	i 4 27	+ 3	8 2	+ 6	e 9·5	13·4
Pulkovo	19·8	5	i 4 25	− 2	i 8 1	− 1	10·2	11·5
Paris	19·8	305	i 4 26k	− 1	i 8 9	+ 7	10·5	10·4
Bagnères	20·5	288	e 4 58	PP	8 32	SS	10·5	—
Tortosa	20·5	280	5 12	?	9 4	?	13·1	16·3
Upsala	20·8	345	4 32	− 6	i 8 16	− 6	10·5	11·8
Alicante	21·7	277	i 4 54	+ 6	i 8 54	+14	e 10·6	12·2
Kew	22·3	311	i 4 56	+ 2	e 8 52	0	10·5	12·8
Oxford	23·0	311	i 5 3	+ 2	i 9 6	+ 1	12·9	15·5
Almeria	23·6	274	e 5 6	0	i 9 27	+11	e 11·6	16·3
Toledo	24·1	279	i 5 13	+ 2	i 9 34	+ 9	e 11·9	16·2
Durham	24·3	317	5 14	+ 1	i 9 31	+ 3	—	14·2
Stonyhurst	24·4	315	5 7	− 7	9 29	− 1	—	17·1
Granada	24·4	273	e 5 14	0	i 9 40	+10	11·2	14·5
Bidston	24·6	313	5 6	−10	9 36	+ 2	—	18·0
Bergen	24·6	335	i 5 16	0	i 9 29	− 5	12·5	15·2
Malaga	25·1	271	i 5 25	+ 4	i 9 49	+ 6	—	—
Edinburgh	25·7	319	—	—	i 9 53	0	—	19·7
Rathfarnham Castle	26·4	312	i 6 18	PP	i 10 40	SS	13·1	15·8
San Fernando	26·6	272	5 41	+ 6	i 10 28	+19	12·5	—
Sverdlovsk	27·3	41	e 5 39	− 2	i 10 19	− 1	i 12·7	16·0
Serra do Pilar	27·3	284	5 52	+11	i 10 59	+39	16·5	—
Samarkand	30·1	78	e 6 18	+10	—	—	e 16·5	—
Tashkent	31·4	74	i 6 39	+22	i 11 59	+33	18·9	23·9
Tchimkent	31·5	70	e 5 38	−40	—	—	—	—
Almata	36·5	68	e 7 11	+ 9	—	—	e 22·5	—
Semipalatinsk	37·8	54	e 7 16	+ 3	—	—	e 21·5	—
Scoresby Sund	39·5	337	—	—	13 40	+11	—	—
Dehra Dun	41·9	87	11 31	?	17 51	(− 2)	23·5	25·5
Agra	43·4	91	i 8 5	+ 5	i 14 34	+ 7	21·0	24·7
Bombay	44·1	105	i 8 10	+ 4	e 14 46	+ 9	e 21·5	27·3
Dakar	46·6	250	8 31	+ 6	15 28	+15	21·1	29·4
Hyderabad	49·2	100	8 50	+ 5	15 56	+ 6	23·4	32·1
Kodaikanal	53·2	108	e 9 21	+ 6	e 16 54	+ 9	25·5	36·5
Calcutta	53·8	89	9 23	+ 3	17 3	+10	26·4	32·2
Colombo	57·2	109	10 5	+20	—	—	—	39·1
Tananarive	61·8	159	—	—	18 49	+10	31·2	36·0
Chiufeng	64·7	58	e 10 36	− 1	19 23	+ 7	32·7	41·9
Phu-Lien	68·8	80	—	—	e 20 21	PS	39·5	—
Oak Ridge	69·8	309	e 11 13	+ 4	e 20 31?	PS	e 34·5	—
Ottawa	70·5	314	—	—	i 20 36	PS	e 31·5	—
Nanking	70·9	64	e 11 20	+ 4	e 20 44	PS	32·4	45·6
Zinsen	72·9	55	—	—	e 34 1	?	e 39·0	—
Medan	73·4	99	11 57	+26	20 59	− 2	e 40·5	—
Hong Kong	73·5	75	21 1	S	(21 1)	− 2	—	47·2
Philadelphia	73·5	309	—	—	e 21 2	− 1	—	e 37·1
Toronto	73·6	314	e 11 31	− 1	i 21 1	− 3	e 48·5	—
Cape Town	74·4	188	10 26	−71	21 17	+ 4	37·1	42·2
Georgetown	75·3	309	i 11 58	+16	i 21 32	+ 8	e 34·5	—
Charlottesville	76·8	308	—	—	e 21 41	0	37·4	—
Kobe	80·0	52	—	—	e 27 21	SS	—	58·1
Sumoto	80·0	52	—	—	36 20	?	48·6	—
San Juan	81·0	287	—	—	i 22 30	+ 4	e 35·5	—
St. Louis	83·0	316	e 12 28	+ 5	e 22 52	+ 5	—	46·5

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	83·3	77	12 16	− 9	22 41	[− 5]	39·0	45·0
Batavia	86·0	102	e 12 25	−13	23 24	+ 6	e 48·5	—
Little Rock	87·0	314	e 12 46	+ 3	e 23 17	[+ 4]	—	50·4
Victoria	88·0	341	—	—	23 36	− 1	40·3	49·9
Pasadena	99·4	332	e 13 44	+ 3	—	—	e 50·5	—
Sucre	104·1	256	e 19 24	?	—	—	56·0	—
La Paz	104·7	280	e 19 56	?	i 24 55	[+ 7]	55·6	62·5
Huancayo	107·5	269	—	—	e 24 58	[− 4]	43·9	—
Melbourne	132·3	109	22 44	PKS	—	—	64·8	—

Additional readings and note :—
Sofia i = +1m.12s. = P* +5s. and +1m.14s. = P_g −2s.
Ksara SsS = +5m.28s.
Sotchi e = +4m.31s.
Lemberg ePE = +1m.37s., eE = +4m.43s.
Zagreb e = +2m.56s., i = +3m.23s., e = +3m.47s., i = +4m.49s. and +5m.23s.
Laibach e = +3m.8s., i = +3m.39s.
Triest iP = +2m.41s., iPPsP = +3m.30s. and +3m.37s., iSSsS = +5m.57s., i = +6m.11s. = S_g −3s., +6m.29s., +6m.53s., +6m.58s., +7m.13s., and +7m.59s.
Tiflis e = +3m.24s.
Grozny i = +3m.33s., e = +8m.26s.
Piacenza SS = +6m.29s.
Königsberg iZ = +3m.40s. = PP −1s., iPP = +3m.43s., iZ = +5m.49s., eSS = +6m.45s., i = +7m.2s., +7m.23s., +7m.25s., +7m.44s., +8m.4s., +8m.23s. +8m.32s., and iE = +46m.2s.
Stuttgart iP = +3m.36s., iN = +6m.36s. ; T_0 = 14h.41m.1s.
Basle e = +8m.57s.
Strasbourg iPP = +3m.51s., iPPP = +4m.8s., i = +4m.35s., SS = +7m.22s.
Grenoble SS = +7m.45s.
Göttingen iPENZ = +3m.49s., iEZ = +4m.18s., eSE = +7m.1s., iSNZ = +7m.10s., eENZ = +7m.31s., eZ = +8m.28s.
Copenhagen P = +4m.9s., eSN = +7m.23s.
Algiers PP = +4m.41s.
Uccle i = +4m.25s.
Alicante PP = +5m.8s.
Kew i = +5m.3s., iS = +8m.56s., iNZ = +9m.3s., iE = +9m.7s.
Stonyhurst i = +13m.52s.
Granada iP = +5m.19s., PP = +5m.40s., PPP = +6m.4s., P_cP = +8m.43s., P_cS = +12m.40s., S_cS = +16m.25s.
Malaga iPP = +5m.49s., iPPP = +6m.15s., P_cP = +9m.5s., SS = +10m.41s., e = +12m.44s.
Edinburgh i = +9m.59s., +10m.8s., +14m.51s., +15m.1s., +15m.13s., and +16m.33s.
Semipalatinsk e = +16m.15s.
Scoresby Sund +9m.7s. = PPP −5s. and +16m.31s. = SSS −2s.
Agra PP = +9m.34s., iPPP = +10m.15s., SS = +17m.10s., SSS = +18m.22s.
Bombay SSEN = +17m.36s.
Dakar PS = +15m.43s., SS = +18m.58s.
Kodaikanal ePP = +11m.14s., ePPP = +12m.9s., PS = +17m.28s., SS = +20m.27s., SSS = +21m.57s.
Calcutta SS = +20m.47s.
Tananarive E = +20m.17s., SSN = +22m.56s., SSE = +26m.31s.?
Chiufeng P = +10m.41s.a, SSE = +23m.3s.
Oak Ridge e = +24m.31s.? = SS −8s.
Ottawa eE = +14m.1s., e = +25m.7s.
Hong Kong S? = +29m.21s.
Philadelphia i = +21m.7s. and +25m.48s. = SS +13s., e = +32m.27s.
Toronto iE = +12m.21s., PSE = +21m.38s. ; T_0 = 14h.41m.36s.
Cape Town PP = +13m.25s., ?E = +23m.47s., SSE = +25m.45s., SSSN = +29m.5s., ?E = +30m.19s. and +31m.23s., +32m.56s. and +34m.44s.
Georgetown iSS = +26m.9s. ; T_0 = 14h.41m.55s.
Charlottesville e = +26m.41s.
Kobe eN = +38m.54s., eZ = +51m.53s., eN = +52m.12s., eE = +55m.20s.
Sumoto eE = +41m.44s., eZ = +49m.51s.
San Juan e = +26m.1s.
Manila iZ = +12m.34s.
Little Rock iE = +23m.30s. = S +3s., eSE = +24m.29s. = PS +13s.
Huancayo e = +33m.46s. = SS +1s.
Long waves also at Reykjavik, Riverview, Sydney, Wellington, and other American and Japanese stations.

Jan. 4d. 15h. 18m. 57s. (I) } Epicentre 40°·6N. 27°·4E. N.3.
15h. 19m. 24s. (II) } X.

A = +·674, B = +·349, C = +·651 ; D = +·460, E = −·888 ;
G = +·578, H = +·299, K = −·759.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Sofia	3·7	309	e 1 3	P*	—	—	—	—
I Sebastopol	6·0	49	e 1 27	+ 2	2 29	− 4	—	—
I Yalta	6·3	50	e 1 28	− 2	2 33	− 8	—	—
I Theodosia	7·3	51	e 1 45	+ 1	2 59	− 7	—	—
II Budapest	9·1	322	2 13	+ 4	4 40	S_g	5·6	8·6
II Lemberg	9·5	347	—	—	e 4 6	+ 5	—	8·4
I Sotchi	9·6	68	e 2 20	+ 4	e 4 10	+ 7	—	—
II Ksara	9·6	132	e 2 11	− 5	e 4 45	S*	—	—
I Zagreb	9·8	305	e 2 19	+ 1	—	—	—	5·9
II	9·8	305	—	—	i 5 18	S_g	—	—
II Capodimonte	9·9	275	e 3 21	?	e 6 4	?	—	7·1
II Laibach	10·8	304	—	—	e 4 32	− 1	—	6·1
II Vienna	10·9	318	e 3 47	?	i 6 3	S_g	—	9·6
I Triest	11·1	302	e 2 50	+14	—	—	—	—
II	11·1	302	—	—	i 5 43	S*	—	—
I Venice	12·0	300	2 45	− 3	—	—	—	—
II Florence	12·3	290	e 2 50	− 2	6 6	S*	—	8·6
II Padova	12·3	300	—	—	6 6	S*	—	—
I Prato	12·4	291	—	—	i 6 47	S_g	—	—
II	12·4	291	e 2 52	− 2	—	—	—	7·5
I Piacenza	13·7	295	e 3 9	− 2	—	—	8·0	11·9
I Stuttgart	15·3	308	e 3 43	+11	—	—	—	—
I Strasbourg	16·0	306	e 3 48	+ 7	—	—	—	—
II	16·0	306	e 8 39	L	—	—	(e 8·6)	—
I Uccle	18·9	310	4 22	+ 5	—	—	—	—

Additional readings :—
Ksara II e = +6m.23s.
Zagreb II e = +5m.2s.
Laibach II e = +5m.11s. and +5m.28s., i = +5m.42s.
Triest I iS_cS = +6m.5s. = S_g +4s. ; II SP = +3m.2s., iSS = +5m.28s., i = +5m.49s., +5m.54s., +6m.5s. = S_g +4s., and +6m.41s.

Jan. 4d. 16h. 20m. 5s. Epicentre 40°·0N. 27°·5E. (as at 14h.). R.1.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	4·1	312	i 0 59	+ 1	1 43	− 2	—	—
Sebastopol	6·4	42	i 1 29	− 2	i 2 33	−10	—	—
Yalta	6·7	47	i 1 32	− 3	i 2 38	−13	—	2·7
Theodosia	7·7	51	1 47	− 2	i 3 15	− 1	—	3·6
Ksara	9·1	130	e 2 17	+ 8	e 4 25	S*	—	—
Messina	9·4	264	e 2 11	− 2	4 32	S*	—	—
Budapest	9·6	324	2 6	−10	4 36	S*	4·9	6·9
Sotchi	9·8	64	e 2 21	+ 3	i 4 6	− 2	—	—
Lemberg E.	10·1	345	e 2 29	+ 7	e 5 1	S*	—	6·0
N.	10·1	345	e 2 20	− 2	e 5 7	S*	—	6·9
Capodimonte	10·1	278	e 2 30	+ 8	e 5 45	?	—	6·3
Zagreb	10·2	308	e 2 22	− 2	e 4 22	+ 4	—	6·8
Helwan	10·7	161	2 38	+ 7	4 49	+18	—	11·8
Laibach	11·2	308	e 2 40	+ 3	i 5 41	S*	—	6·0
Vienna	11·5	322	i 2 36	− 6	i 4 53	+ 3	—	7·0
Triest	11·5	306	i 2 39k	− 3	—	—	—	—
Platigorsk	12·2	63	e 2 15	−36	i 4 33	?	—	—
Venice	12·4	305	2 57	+ 3	4 1	?	—	—
Florence	12·7	293	3 5k	+ 7	6 33	S*	—	—
Padova	12·7	303	2 55	− 3	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Prato	12·8	293	e 2 59	0	i 6 14	S*	—	7·4
Erevan	13·0	84	e 3 11	+ 9	7 27	?	—	9·6
Tiflis	13·2	77	3 8	+ 3	i 5 41	+ 9	—	—
Prague	13·6	323	e 3 5	− 5	e 5 47	+ 6	e 6·0	8·9
Tunis	14·0	262	3 30	+15	—	—	7·9	—
Grozny	14·0	70	i 3 23	+ 8	7 51	L	(7·9)	—
Piacenza	14·0	299	3 20	+ 5	i 6 7	SS	i 7·8	10·5
Cheb	14·6	319	e 3 20	− 3	e 6 33	+28	e 8·2	10·2
Ravensburg	15·0	307	e 3 28	0	—	—	—	—
Hof	15·1	319	e 2 55	−35	—	—	e 7·9	12·9
Zurich	15·5	305	e 3 35	0	e 6 44	SS	—	—
Jena	15·6	321	e 3 31	− 5	e 6 49	SS	e 7·5	10·9
Königsburg	15·6	344	i 3 31	− 5	6 23	− 6	—	9·9
Stuttgart	15·7	310	e 3 32	− 6	i 6 38	+ 7	e 7·6	—
Basle	16·2	302	e 3 43	− 1	—	—	—	—
Karlsruhe	16·2	311	3 55	PP	e 6 46	+ 3	e 8·5	10·0
Neuchatel	16·4	304	e 3 46	0	e 6 58	SS	—	—
Strasbourg	16·5	308	e 3 47	− 1	i 7 5	SS	e 8·9	9·4
Göttingen	16·8	320	e 3 49	− 3	e 7 0	+ 3	e 8·7	11·0
Grenoble	16·8	295	e 4 5	PP	e 7 17	SS	8·9	—
Marseilles	16·8	289	e 5 30	?	—	—	11·9	—
Besançon	17·1	303	3 59	+ 4	7 25	SS	8·9	—
Hamburg	18·0	326	i 4 2k	− 5	e 7 9	−16	e 9·2	11·9
Copenhagen	18·6	333	4 7	− 7	7 31	− 7	—	—
Barcelona	19·2	283	4 21	0	e 8 0	SS	e 9·0	11·1
Algiers	19·4	268	e 4 28	+ 5	7 55	+ 1	9·9	—
Uccle	19·4	312	i 4 23k	0	i 8 1	+ 7	8·9	13·1
De Bilt	19·5	317	4 24	0	8 7	SS	e 8·9	14·3
Pulkovo	19·8	5	e 4 21	− 6	i 8 1	− 1	10·4	11·9
Paris	19·8	305	i 4 28k	+ 1	i 8 9	+ 7	9·9	10·9
Tortosa	20·5	280	4 28	− 7	9 9	?	11·4	15·2
Upsala	20·8	345	4 38	0	8 19	− 3	e 9·9	12·1
Alicante	21·7	277	i 4 52	+ 4	i 8 58	+18	e 12·1	12·4
Kew	22·3	311	e 4 54	0	i 8 59	+ 7	10·9	14·1
Oxford	23·0	311	5 27	PP	i 9 9	+ 4	e 12·0	17·0
Almeria	23·6	274	e 5 15	+ 9	i 9 27	+11	e 11·6	14·5
Toledo	24·1	279	i 5 15	+ 4	i 9 37	+12	e 11·8	17·0
Durham	24·3	317	e 5 15	+ 2	i 9 36	+ 8	—	13·9
Stonyhurst	24·4	315	5 12	− 2	9 34	+ 4	—	16·9
Granada	24·4	273	i 5 16	+ 2	e 9 37	+ 7	12·4	14·2
Bidston	24·6	313	e 5 15	− 1	i 9 40	+ 6	—	—
Bergen	24·6	335	i 5 15	− 1	i 9 35	+ 1	e 11·2	12·9
Malaga	25·1	271	i 5 26	+ 5	9 52	+ 9	12·7	—
Edinburgh	25·7	319	—	—	i 10 5	+12	—	18·2
Rathfarnham Castle	26·4	312	e 6 7	PP	e 10 46	SS	—	—
San Fernando	26·6	272	e 5 45	+10	10 31	+22	12·9	—
Sverdlovsk	27·3	41	i 5 42	+ 1	i 10 27	+ 7	12·9	17·1
Serra do Pilar	27·3	284	5 47	+ 6	10 44	+24	—	—
Samarkand	30·1	78	e 7 25	?	—	—	e 18·9	—
Tashkent	31·4	74	i 5 51	−26	—	—	17·9	25·2
Tchimkent	31·5	70	e 5 25	−53	—	—	—	—
Andijan	33·7	73	e 6 45	+ 7	e 11 1	−60	20·5	—
Almata	36·5	68	7 15	+13	—	—	—	—
Semipalatinsk	37·8	54	e 7 17	+ 4	—	—	e 19·9	—
Scoresby Sund	39·5	337	7 31	+ 3	13 43	+14	—	—
Dehra Dun	41·9	87	8 35	?	14 45	?	23·7	25·9
Agra	43·4	91	8 3	+ 3	14 32	+ 5	21·0	27·0
Bombay	44·1	105	i 8 9	+ 3	i 14 44	+ 7	e 21·6	27·4
Dakar	46·6	250	8 32	+ 7	15 22	+ 9	21·6	34·9
Hyderabad	49·2	100	8 57	+12	15 53	+ 3	23·5	32·0

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Kodaikanal	53·2	108	e 9 19	+ 4	e 17 6	+21	26·0	37·6
Calcutta	53·8	89	9 33	+13	17 5	+12	26·4	31·9
Colombo	57·2	109	13 25	?	—	—	—	37·5
Tananarive	61·8	159	—	—	18 53	PS	e 33·2	36·9
Chiufeng	64·7	58	e 10 45	+ 8	19 16	0	32·5	41·9
Oak Ridge	69·8	309	e 11 10	+ 1	—	—	e 38·4	—
Ottawa	70·5	314	—	—	i 20 41	PS	e 31·9	—
Nanking	70·9	64	e 11 23	+ 7	21 6	S_cS	—	46·1
Medan	73·4	99	12 5	+34	20 55	− 6	—	—
Hong Kong	73·5	75	21 4	S	(21 4)	+ 1	—	48·4
Philadelphia	73·5	309	—	—	e 21 49	PS	e 34·3	—
Toronto	73·6	314	e 11 21	−11	i 21 6	+ 2	36·3	—
Cape Town	74·4	188	—	—	21 19	+ 6	36·1	41·2
Georgetown	75·3	309	i 11 45a	+ 3	21 13	−11	e 35·9	—
St. Louis	83·0	316	e 12 23	0	—	—	e 46·3	—
Manila	83·3	77	12 33	+ 8	23 55	PS	44·4	—
Batavia	86·0	102	e 9 21	?	—	—	—	—
Little Rock	87·0	314	e 12 44	+ 1	e 23 39	+12	e 50·2	—
Pasadena	99·4	332	—	—	e 37 57	?	e 50·9	—

Additional readings :—
Sofia i = +1m.24s.
Ksara S_gS = +5m.37s.
Zagreb e = +2m.45s., eE = +3m.7s. and +3m.35s., iSSE = +4m.30s., i = +5m.15s. and +5m.30s.
Laibach e = +2m.53s., i = +5m.29s. = S* − 2s.
Triest i = +2m.45s. = PP + 2s. and +2m.55s., iPPsP = +3m.29s. and +3m.37s., iSSsS = +5m.56s., i = +6m.29s. and +7m.9s.
Venice S = +6m.43s. = S_g − 1s.
Tiflis e = +3m.14s.
Prague iP = +3m.16s.
Grozny i = +3m.34s.
Königsberg iPE = +3m.35s., iE = +3m.40s. = PP − 1s. and +3m.55s., e? = +5m.59s., +6m.47s., +7m.33s., +8m.31s., and +8m.55s.
Stuttgart iP = +3m.36s., iN = +6m.32s.
Basle e = +9m.8s.
Strasbourg ePPPP = +4m.14s., SS = +7m.33s.
Göttingen i = +3m.59s. = PP + 1s., i = +4m.18s., iE = +4m.37s.
Hamburg eSN = +7m.15s.
Copenhagen e = +4m.11s., eN = +8m.7s.
Algiers PP = +4m.47s.
Alicante PP = +5m.4s.
Kew iZ = +4m.57s.
Toledo SS = +10m.43s.
Stonyhurst i = +13m.48s.
Malaga PPP = +6m.9s., P_cP = +9m.1s., i = +10m.10s., SS = +10m.45s.
Edinburgh i = +10m.9s., +14m.59s., and +15m.3s.
Rathfarnham Castle iS = +10m.54s.
Tashkent i = +6m.59s. and +8m.7s., e = +9m.55s. and +14m.55s.
Almata i = +8m.37s.
Scoresby Sund +16m.13s. = SS + 9s.
Agra ePP = +9m.34s., PPP = +10m.17s., SS = +17m.22s., SSS = +8m.22s.
Dakar PP = +10m.31s., PPP = +11m.11s., PS = +15m.33s., SS = +18m.56s.
Kodaikanal PP = +11m.24s., PPP = +12m.24s., PS = +17m.35s., SS = +20m.51s., SSS = +22m.36s.
Tananarive PSN = +20m.20s.
Oak Ridge e = +22m.55s.? and +32m.55s.?
Hong Kong S? = +29m.34s.
Toronto PPN = +14m.23s. ; T_g = 16h.19m.44s.
Cape Town ?E = +15m.13s., PPP = +16m.2s., PSN = +21m.52s., E = +23m.43s., SSE = +26m.13s., E = +27m.43s., SSSN = +29m.38s., E = +30m.37s., N = +31m.53s., E = +33m.50s.
Little Rock eSKSN = +22m.55s.
Long waves were also recorded at La Paz, Phu-Lien, Sydney, Husan, Keizyo, Zinsen, and other American stations.

Jan. 4d. 19h. Readings for which no determination has been made :—
Chatham Ils. 2m.
Wellington i = 2m.16s., L = 6m.0s.
Sydney e = 5m.33s., L = 12m.55s., M = 16m.20s.
Riverview eN = 5m.48s., eL = 11m.12s., M = 15m.28s.
Melbourne e = 5m.52s., L = 10·3m.?
Bombay eEN = 9m.0s., eEN = 22m.0s.
Andijan e = 10m.10s.
Almata e = 11m.32s.
Sverdlovsk e = 33m.11s., L = 61m.
Balboa Heights = 39m.21s.
Tucson e = 40m.39s., L = 41m.18s.
Kodaikanal eE = 46m.36s.
Long waves at La Paz and other European stations.

Jan. 4d. 21h. Readings for which no determination has been made :—
Tchimkent P = 43m.25s., P_g = 43m.34s., i = 43m.57s., eS* = 44m.13s.
Tashkent iP = 43m.33s., iL = 44m.12s., M = 44m.24s.
Andijan iP = 44m.7s., iPP = 44m.18s., iS_g = 44m.38s., M = 44m.41s.
Samarkand P_g = 44m.25s., S_g = 45m.9s.
Almata eP = 45m.2s., iS* = 46m.32s., iS_g = 46m.50s. ; epicentre +38·°6 +71°·1.
Sverdlovsk e = 47m.50s., e = 54m.2s.
Agra eE = 49m.27s.
Semipalatinsk eP = 50m.12s.
Tiflis e = 52m.35s., L = 55m.48s.
Calcutta e = 52m.41s.
Baku eL = 52m.

Jan. 4d. 23h. Readings for which no determination has been made :—
Bombay e = 45m.
Calcutta e = 50m.56s.
Agra eE = 51m.34s.
Tashkent e = 57m.12s, e = 57m.46s., e = 58m.8s., e = 58m.32s., L = 58m.42s., M = 59m.54s.
Samarkand P = 57m.20s., eS = 58m.4s., S_g = 58m.16s.
Andijan eP = 57m.34s., e = 58m.45s.
Tchimkent eP = 57m.21s., e = 58m.30s., e = 58m.52s.
Almata e = 61m.20s.
Vladivostok e = 85m.28s.

Jan. 4d. Readings also at 1h. (Wellington), 3h. (Andijan), 4h. (Amboina), 5h. (Agra, Calcutta, Almata, Andijan, Samarkand, Sverdlovsk, Tashkent, and Tucson). 10h. (Manila and Santiago), 11h. (Berkeley, Branner, Lick, and San Francisco), 14h. (Sotchi), 15h. (Basle, Sofia (4), Sotchi, Stuttgart, Tucson, and Amboina (3)), 17h. (Agra, Calcutta, Sofia, and Santiago), 18h. (Sofia and Mizusawa), 22h. (Andijan), 23h. (Andijan (2)).

Jan. 5d. 4h. 20m. 20s. (I)
4h. 33m. 30s. (II)
4h. 41m. 22s. (III)
Epicentre 38°·7N. 70°·5E. (as on 1934 Sept. 11d. 14h.). X. X. X.

A = +·261, B = +·736, C = +·625.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Andijan	2·5	35	0 36	0	1 7	+ 3	—	1·2
II	2·5	35	e 0 34	− 2	i 1 6	+ 2	—	1·1
III	2·5	35	e 0 36	0	i 1 7	+ 3	—	—
I Tashkent	2·8	342	i 0 38	− 2	—	—	e 1·3	1·7
II	2·8	342	e 0 14	?	i 0 52	P_g	—	1·2
I Samarkand	2·9	289	0 55	P_g	i 1 38	S_g	—	2·1
II	2·9	289	e 0 42	+ 1	1 32	S_g	—	—
I Tchimkent	3·7	350	0 56	+ 3	1 52	S_g	—	—
I Almata	6·7	46	e 1 34	− 1	e 3 8	S*	—	3·5
II	6·7	46	—	—	e 2 54	+ 3	—	—
III	6·7	46	—	—	e 3 0	?	—	—
I Semipalatinsk	13·6	26	e 6 38	S*	—	—	—	—

Additional readings :—
Andijan I iP_g = +39s. = P* − 1s., PP = +48s. = P_g + 4s., II eS* = +1m.3s.
Samarkand S_g = +1m.51s.
Tchimkent I i = +1m.16s. and +1m.26s.
Almata I e = +2m.0s. = P_g − 8s.
Long waves were also recorded at Baku I and Sverdlovsk I.

Jan. 5d. 10h. 6m. 58s. Epicentre 6°·0S. 105°·4E. N.2.

A = −·264, B = +·959, C = −·105; D = +·964, E = +·266;
G = +·028, H = −·101, K = −·995.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Soengei Langka	0·7	341	i 0 12	+ 2	i 0 39	?	—	—
Batavia	1·4	95	i 0 27	P_g	i 0 47	S*	—	—
Malabar	2·5	126	i 0 38	+ 2	i 1 0	− 4	—	—
Medan	11·8	325	e 3 15	+29	i 6 22	S_g	—	—
Amboina	22·8	85	4 52	− 7	e 9 6	+ 5	—	—
Manila	25·7	37	5 55	PP	10 26	SS	—	15·8
Phu-Lien	26·8	3	—	—	10 2?	−10	—	—
Perth	27·7	161	9 2	(− 1)	—	—	—	12·5
Hong Kong	29·6	17	7 9	PP	12 22	SS	—	19·0
Kodaikanal	32·3	301	i 6 28	+ 3	i 11 45	+ 5	14·8	17·2
Calcutta	33·0	330	—	—	e 11 49	− 2	—	—
Bombay	40·6	308	e 7 37	0	i 13 47	+ 2	—	—
Agra	42·4	323	7 51	− 1	i 14 7	− 4	—	—
Chiufeng	47·2	12	e 8 32	+ 2	e 15 20	− 1	e 24·1	30·9
Melbourne	47·9	137	—	—	15 29	− 2	24·0	29·3
Riverview	50·6	128	—	—	i 15 57	−12	e 26·6	32·3
Andijan	55·6	330	e 9 34	+ 1	—	—	—	—
Samarkand	57·7	326	e 10 43	(− 2)	—	—	—	—
Tashkent	57·7	327	e 8 54	−54	e 17 24	−22	e 36·0	45·5
Tchimkent	58·3	329	e 10 9	+17	—	—	—	—
Tiflis	72·9	317	e 11 37	+ 9	e 21 29	PS	43·0	—
Sverdlovsk	73·0	337	i 10 25	−64	i 19 48	−69	32·0	—
Pulkovo	87·8	331	12 51	+ 4	23 27	[+ 8]	47·0	—
Oak Ridge	143·4	356	e 19 26	[− 3]	—	—	—	—

Additional readings :—
Kodaikanal PPP = +7m.33s.
Calcutta i = +14m.37s.
Bombay iE = +9m.10s. = PP +4s., eN = +9m.20s.
Melbourne SS = +19m.9s.
Long waves were recorded at Wellington, Vladivostok, and Baku.

Jan. 5d. 16h. Readings for which no determination has been made :—
Perth P = 22m.25s.
Kodaikanal e = 22m.48s.
Agra eE = 26m.55s.
Tucson e = 28m.42s.
Calcutta e = 29m.32s.
Bombay M = 32m.56s.
Sofia e = 39m.36s. and 40m.8s.

Jan. 5d. 20h. Readings for which no determination has been made :—
Tashkent e = 54m.10s., S = 54m.32s.
Andijan eP = 55m.58s., eS_g = 56m.30s., M = 56m.39s.
Samarkand eP = 56m.46s., e = 57m.5s., M = 57m.10s.
Almata eP = 58m.42s.
Sverdlovsk L = 87m.

Jan. 5d. Readings also at 0h. (Sofia), 3h. (Andijan), 5h. (Amboina and Malabar), 6h. (Amboina, Andijan, and Sofia (2)), 7h. (Baku, Sverdlovsk, Strasbourg, and La Paz), 8h. (Andijan), 9h. (Amboina), 10h. (Malabar), 11h. (De Bilt and Scoresby Sund), 12h. (Malabar), 13h. (Andijan, Berkeley, Branner, and Lick), 16h. (Montezuma, La Paz, and Sucre), 17h. (Amboina, Andijan, and Samarkand), 19h. (Berkeley (2), Branner (3), and Lick (2)), 20h. (Berkeley, Branner, Amboina, and Sofia), 21h. (Berkeley and Branner), 22h. (La Paz) 23h. (Berkeley, Branner, and Nagoya).

Jan. 6d. 7h. 10m. 33s. Epicentre 30°·5N. 86°·9E. N.3.

A = +·047, B = +·860, C = +·508 ; D = +·999, E = −·054 ;
G = +·027, H = +·507, K = −·862.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	8·1	170	1 51	− 4	3 14	−12	4·2	5·6
Agra	8·5	249	i 2 0	0	i 3 42	+ 6	—	6·2
Hyderabad	15·2	212	3 34	+ 3	6 14	− 6	7·6	10·4
Andijan	15·6	315	e 3 36	0	—	—	—	—
Bombay	17·2	231	i 3 59	+ 2	7 8	+ 2	8·5	11·5
Tchimkent	18·2	315	e 4 9	0	—	—	—	—
Kodaikanal	22·1	205	e 4 49	− 3	—	—	—	—
Chiufeng	25·6	60	e 5 4	−21	e 9 31	−20	—	15·6
Hong Kong	25·7	102	9 34	S	(9 34)	−19	—	15·0

Additional readings :—
Agra P_g = +2m.53s., S* = +4m.15s., S_g = +4m.41s.
Bombay SSN = +7m.33s.
Long waves were also recorded at Samarkand.

Jan. 6d. 11h. 24m. 58s. Epicentre 37°·2N. 122°·2W. N.3.

A = −·424, B = −·674, C = +·605 ; D = −·846, E = +·533 ;
G = −·322, H = −·512, K = −·797.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Branner	0·2	352	i 0 2	− 1	i 0 5	0
Lick	0·5	72	i 0 7	0	i 0 13	0
Berkeley	0·6	352	i 0 11	+ 2	i 0 19	S*
San Francisco	0·6	336	e 0 10	+ 1	i 0 18	S*

Berkeley eE = +13s. = S − 2s.

Jan. 6d. 17h. Readings for which no determination has been made :—

Tashkent i = 56m.24s., eL = 63m., M = 65m.6s.
Chiufeng eEZ = 57m.0s., ME = 65m.9s.
Calcutta P = 57m.5s., S = 58m.30s., L = 59m.14s., M = 60m.44s.
Agra eE = 59m.27s.
Long waves were also recorded at Bombay, Hong Kong, Sverdlovsk, Pulkovo, and Hyderabad.

Jan. 6d. 21h. 25m. 5s. Epicentre 39°·6N. 46°·3E. N.3.

Given by Sotchi.

A = +·532, B = +·557, C = +·637 ; D = +·723, E = −·691 ;
G = +·440, H = +·461, K = −·771.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Erevan	1·5	294	0 21	0	0 41	+ 2	—	0·7
Tiflis	2·4	326	0 39	P*	i 0 58	− 4	i 1·2	—
Baku	2·8	77	1 9	S	(1 9)	− 3	2·1	3·1
Grozny	3·7	354	e 1 6	P_g	i 1 56	S_g	—	—
Piatigorsk	5·0	332	e 1 34	P_g	e 2 31	S*	—	—
Sotchi	6·3	314	—	—	e 2 57	+16	—	—
Ksara	10·1	237	e 2 40	?	e 5 28	S_g	—	—
Sverdlovsk	19·6	24	4 27	+ 2	8 15	SS	11·9	—

Additional readings :—
Erevan PgP = +24s.
Grozny P* = +1m.11s.

Jan. 6d. Readings also at 0h. (Erevan and Tiflis), 4h. (Almata, Andijan, Branner (2), Berkeley (2), Lick (2), and Amboina), 5h. (Tashkent), 6h. (Amboina and Tashkent), 7h. (Andijan, Copenhagen, Baku, Pulkovo, Vladivostok, Phu-Lien, and Wellington), 11h. (Agra, Bombay, Calcutta, Almata, Pulkovo, Sverdlovsk, Tashkent, Chiufeng, Hong Kong, Nanking, and Vladivostok), 12h. (Sumoto (2)), 13h. (Amboina), 15h. (Andijan, Almata, and Tchimkent), 18h. (Santiago), 20h. (Tucson), 21h. (Andijan (2), Almata (2), Tashkent (2), and Tchimkent (2)), 22h. (Amboina).

Jan. 7d. 12h. Readings for which no determination has been made :—

Andijan iP = 39m.31s., iP_g = 39m.35s., iPP = 39m.40s., S_g = 40m.3s., M = 40m.5s.
Tashkent iP = 39m.36s., iL = 40m.11s., M = 40m.36s.
Samarkand iP = 39m.47s., iP_g = 39m.54s., iPP = 40m.5s., S* = 40m.21s., S_g = 40m.33s., M = 40m.56s.
Tchimkent eP = 39m.54s.
Almata e = 40m.36s., S_g = 42m.9s., M = 42m.17s. ; epicentre +39°·2 +70°·5.
Tiflis e = 48m.
Long waves at Pulkovo.

Jan. 7d. Readings also at 0h. (Lick), 2h. (Agra, Bombay, and Calcutta), 3h. (Wellington), 5h. (Andijan, Almata, Samarkand, and Tchimkent), 7h. (Andijan and Tiflis), 11h. (Copenhagen and Wellington), 12h. (Wellington, Amboina, Andijan, and Agra), 15h. (Grozny and Santiago (2)), 19h. (Santiago), 20h. (Andijan and Tucson), 21h. (Pasadena), 22h. (Granada and Almeria), 23h. (Santiago).

Jan. 8d.
2h. 32m. 8s. (I) X.
2h. 34m. 38s. (II) X.
2h. 56m. 16s. (III) X.
5h. 30m. 21s. (IV) X.
15h. 49m. 52s. (V) X.

Epicentre 36°·4N. 121°·3W. (as on 1934 Sept. 30d.).

A = −·418, B = −·688, C = +·593.

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
I Lick	N.	1·0	343	i 0 14	0	i 0 20	− 6
II		1·0	343	i 0 13	− 1	i 0 20	− 6
III		1·0	343	e 0 13	− 1	e 0 20	− 6
IV		1·0	343	i 0 14	0	e 0 20	− 6
V		1·0	343	i 0 14	0	i 0 20	− 6
I Branner		1·3	325	e 0 18	0	i 0 27	− 6
II		1·3	325	i 0 18	0	e 0 25	− 8
III		1·3	325	e 0 18	0	e 0 29	− 4
V		1·3	325	e 0 18	0	e 0 32	− 1
II San Francisco	ii	1·7	326	(e 0 24)	0	(e 0 42)	− 2
I Berkeley		1·7	332	e 0 25	+ 1	i 0 42	− 2
II		1·7	332	i 0 24	0	i 0 41	− 3
III		1·7	332	e 0 24	0	i 0 42	− 2
V		1·7	332	e 0 26	+ 2	i 0 45	+ 1

Additional readings and note :—
Branner I eEN = +30s., II iS_gN = +1m.27s.
San Francisco readings have been *increased* by 1m.
Berkeley I eEN = +28s., II iEN = +26s., III eE = +30s., V iZ = +49s.

Jan. 8d. Readings also at 1h. (Samarkand), 2h. (Kobe and Nagoya), 3h. (Oak Ridge), 4h. (Malabar), 7h. (Andijan and Tchimkent), 10h. (Granada, Alicante, and Toledo), 11h. (Samarkand), 12h. (Chiufeng, Hong Kong, Manila, Nanking, and Phu-Lien), 13h. (Agra, Calcutta, Copenhagen, De Bilt, Pulkovo, Stuttgart, Strasbourg, and Vladivostok), 14h. (Andijan and Granada), 15h. (Granada), 16h. (Granada, Nagasaki, Nagoya, and Sumoto), 17h. (Chiufeng and Granada), 18h. (Kobe, Mizusawa (2), Nagoya (2), and Sumoto), 20h. (Samarkand), 23h. (Granada, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, and Wellington).

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

Agra e = 13m.31s., S = 14m.44s., S_g = 15m.44s.
Calcutta e = 14m.0s.
Andijan P = 16m.52s., i = 17m.22s. and 17m.44s.
Samarkand P = 16m.55s., e = 17m.30s.
Tashkent iP = 17m.8s., iL = 18m.5s., M = 18m.12s. ; epicentre +37°·4 +67°·0.
Tchimkent iP = 17m.10s., iP_g = 17m.22s., e = 17m.40s., S_g = 18m.44s.
Almata P = 17m.41s., i = 19m.38s. and 20m.6s.

Jan. 9d. Readings also at 2h. (Ksara, Samarkand, and Tiflis), 3h. (Granada), 4h. (Agra, Bombay, and Tananarive), 5h. (Kobe and Sumoto), 6h. (La Paz), 7h. (La Paz), 9h. (Grozny, Mizusawa, and Nagoya), 11h. (Malabar), 14h. (Andijan and Sumoto), 15h. (Nagoya), 16h. (Agra, Andijan, Kobe, and Nagoya), 17h. (Santiago and Tananarive), 18h. (Erevan, Ksara, Samarkand, Tiflis), 19h. (Amboina and Batavia), 22h. (Andijan).

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

Erevan eP = 9m.42s., eS* = 10m.15s., iS_g = 10m.21s., M = 10m.34s.
Tiflis e = 10m.0s., i = 10m.15s., e = 10m.46s., L = 11m.4s., M = 12m.18s.
Grozny e = 10m.26s.
Ksara eP = 10m.57s., S = 12m.32s., SsS = 13m.28s.
Baku eP = 11m.36s., L = 12m.30s.

Jan. 10d. 11h. Readings for which no determination has been made :—

Calcutta e = 25m.38s.
Agra e = 26m.29s., i = 27m.35s.
Tashkent iS = 30m.10s., L = 31m.30s., M = 34m.42s.
Nanking eP = 31m.2s., L = 34m.58s., M = 36m.20s.
Chiufeng eP? = 31m.32s., MN = 35m.18s.
Kodaikanal e = 31m.35s., M = 36m.4s.
Long waves at Baku, Pulkovo, Bombay, Hyderabad, and Vladivostok.

Jan. 10d. Readings also at 1h. (Malabar), 3h. (Mizusawa and Triest), 7h. (Tananarive and Nagoya), 9h. (Lick and Taihoku), 10h. (Lick (2)), 11h. (Lick), 12h. (La Paz, Sebastopol, Theodosia, and Yalta), 13h. (Almata), 15h. (Florence, Prato, and Samarkand), 16h. (Samarkand), 19h. (Nagoya), 23h. (Malabar).

Jan. 11d. 0h. 8m. 24s. Epicentre 19°·0N. 120°·0E. N.3.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	4·5	167	1 2k	− 2	1 59	+ 4	—	—
Taihoku	6·2	13	e 1 37	P*	e 2 20	−18	—	—
Hong Kong	6·3	303	1 29	− 1	3 25	S_g	3·8	5·3
Zi-ka-wei	12·2	7	e 5 53	S*	—	—	6·5	9·9
Phu-Lien	12·7	281	e 3 2	+ 4	—	—	7·6	—
Nanking	13·1	355	3 19	+16	5 56	?	i 8·4	11·1
Nagasaki	16·3	31	e 3 30	−15	—	—	—	—
Chiufeng	21·3	352	e 4 38	− 5	i 8 28	− 4	10·2	14·2
Medan	25·9	236	—	—	10 59	SS	—	—
Vladivostok	26·1	20	e 4 48	−42	—	—	—	—
Baku	62·9	307	e 9 26	−59	19 2	+ 8	32·6	43·5

Additional readings :—
Hong Kong ? = +1m.58s. = P_g − 2s.
Nanking i = +3m.52s.
Long waves at Kew, Bombay, Agra, Calcutta, and other European stations.

Jan. 11d. Readings also at 1h. (Tiflis), 2h. (Samarkand), 3h. (Nagoya), 5h. (Triest). 6h. (Granada (2) and Triest), 7h. (Andijan and Samarkand), 8h. (Andijan and Samarkand), 10h. (Wellington), 11h. (Samarkand), 15h. (Amboina), 20h. (Tortosa), 21h. (Agra, Bombay, and Calcutta).

Jan. 12d. 20h. 21m. 26s. Epicentre 28°·2S. 70°·1W. N.3.

A = +·300, B = −·829, C = −·473 ; D = −·940, E = −·340 ; G = −·161, H = +·444, K = −·881.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago	5·3	184	1 28	P*	2 41	S*	—	—
Sucre	10·2	27	e 2 23	− 1	i 4 32	+14	—	—
La Paz	11·8	11	i 2 47	+ 1	i 5 9	+11	6·3	8·2
La Plata	12·3	126	2 55	+ 3	5 10	0	6·2	—

La Paz gives also ePZ = +2m.42s.

Jan. 12d. Readings also at 3h. (Tananarive), 4h. (Calcutta, Mount Wilson, Riverside, Pasadena, and Tinemaha), 8h. (La Paz and Strasbourg), 9h. (Baku, Ksara, and Sverdlovsk), 10h. (Amboina), 16h. (Andijan, Frunse, and Samarkand), 18h. (Cheb, Cape Town, and La Paz), 19h. (Amboina, Baku, and Sverdlovsk), 20h. (Haiwee, Mount Wilson, Pasadena, Riverside, and Tinemaha), 22h. (Baku), 23h. (Medan).

Jan. 13d. 16h. Readings for which no determination has been made :—
Tashkent e = 27m.25s., e = 27m.28s., eS = 27m.48s., L = 27m.48s., M = 27m.54s.
Andijan P_g = 37m.35s., S_g = 38m.1s., M = 38m.2s.
Samarkand eP_g = 37m.40s., e = 38m.20s.
Frunse e = 39m.10s.

Jan. 13d. Readings also at 1h. (Neuchatel), 2h. (Tucson), 5h. (Santiago), 6h. (Manila and Sofia), 9h. (Sofia), 11h. (Amboina), 12h. (Malabar), 14h. (Kobe, Nagoya, and Sofia), 15h. (Kodaikanal, Samarkand, Batavia, and Malabar), 20h. (Agra, Bombay, Sverdlovsk, and Tashkent), 22h. (Wellington), 23h. (Tiflis).

Jan. 14d. 2h. 4m. 36s. Epicentre 6°·5N. 127°·0E. (as on 1933 March 17d.). X.

A = −·598, B = +·793, C = +·113.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	10·0	325	2 29k	+ 8	4 33	+20	5·4	—
Hong Kong	20·1	323	4 33	+ 2	8 26	SS	—	13·0
Batavia	23·8	238	i 4 54a	−14	—	—	—	—
Phu-Lien	24·4	308	e 5 13	− 1	e 9 42	+12	—	—
Nanking	26·7	345	e 5 45	+10	10 18	+ 8	14·9	—
Medan	28·3	266	5 43	− 7	12 31	?	—	—
Chiufeng	35·0	346	e 6 51	+ 2	i 12 25	+ 4	—	—
Vladivostok	36·9	6	—	—	e 13 56	+66	—	—
Riverview	46·4	152	—	—	e 18 0	SS	—	—
Melbourne	47·3	161	—	—	i 15 4	−19	—	—
Agra	50·8	300	e 11 31	PPP	i 16 1	−11	—	—
Frunse	58·6	317	e 9 52	− 3	—	—	—	—
Andijan	59·4	313	e 10 0	0	—	—	—	—
Tashkent	61·8	315	—	—	e 18 21	−18	e 32·4	37·0
Sverdlovsk	71·8	329	e 11 6	−16	e 20 32	−11	29·4	—
Baku	76·0	311	—	—	e 21 21	−11	39·1	48·6
Pulkovo	87·8	330	—	—	e 23 10	[− 9]	48·4	—

Additional readings :—
Hong Kong PP = +5m.3s.
Nanking iN = +10m.34s.
Chiufeng pP = +7m.9s., i = +12m.42s., S_cSEN = +17m.7s.
Melbourne SS = +18m.27s.
Tashkent e = +25m.21s.
Long waves at De Bilt, Paris, Strasbourg, Stuttgart, and Uccle.

Jan. 14d. 14h. Readings for which no determination has been made :—

Taihoku P = 11m.44s., S = 11m.55s.
Karenko P = 11m.49s., S = 12m.4s.
Taityu eP = 12m.3s.
Taito eP = 12m.15s., S = 12m.55s.
Takao eP = 12m.36s.
Nanking e = 15m.10s., S = 15m.59s., eN = 16m.39s.
Vladivostok e = 23m.36s.
Long waves at Sverdlovsk and Hong Kong.

Jan. 14d. 22h. 27m. 18s. Epicentre 5°·4N. 126°·9E. N.3.

A = −·598, B = +·796, C = +·094 ; D = +·800, E = +·600 ;
G = −·057, H = +·075, K = −·996.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	10·9	328	2 38	+ 5	4 42	+ 6	6·7	—
Hong Kong	20·9	325	4 41	+ 2	8 33	+ 9	—	13·2
Batavia	23·2	240	i 5 2	− 1	—	—	—	—
Phu-Lien	25·0	310	e 5 20	0	9 50	+ 9	—	—
Nanking	27·7	345	e 5 47	+ 3	10 27	0	—	—
Chiufeng	36·0	346	e 6 34	−24	i 12 32	− 4	—	—
Vladivostok	38·0	6	e 9 7	?	—	—	—	—
Calcutta	40·9	299	e 3 28?	?	—	—	—	—
Melbourne	46·3	160	—	—	i 15 14	+ 5	—	—
Agra	51·3	301	e 8 54	− 7	i 16 8	−11	—	—
Almata	57·9	319	e 9 42	− 8	—	—	—	—
Andijan	60·1	315	e 9 58	− 7	—	—	—	—
Tashkent	62·5	315	i 10 20	− 2	i 18 41	− 7	e 29·7	38·4
Samarkand	63·6	312	e 10 34	+ 5	—	—	—	—
Pulkovo	88·7	330	—	—	i 23 11	[−13]	49·7	—

Additional readings :—
Hong Kong SSS? = +9m.32s.
Batavia iPE = +5m.6s.
Nanking iN = +15m.14s.
Chiufeng S_eS = +17m.15s.
Melbourne SS = +18m.38s.
Pulkovo e = +24m.2s.
Long waves were recorded at other European stations.

Jan. 14d. Readings also at 1h. (Tiflis, Wellington, and New Plymouth), 2h. (Amboina), 3h. (Branner), 7h. (Branner), 12h. (Almata, Andijan (2), Frunse, Samarkand (2), and Tashkent), 13h. (Santiago), 15h. (Haiwee, Hong Kong, La Jolla, Manila, Mount Wilson, Pasadena, Riverside, Sverdlovsk, Tashkent, Tinemaha, and Vladivostok), 17h. (Sverdlovsk), 18h. (Tashkent), 22h. (Chiufeng, Pulkovo, Sverdlovsk, and Tashkent), 23h. (Almata, Andijan, and Tiflis).

Jan. 15d. 11h. Readings for which no determination has been made :—

Wellington i = 33m.35s.
Mizusawa eSE = 34m.36s.
Berkeley iZ = 37m.12s.
Santa Barbara iPZ = 37m.13s.
Pasadena iP = 37m.17s. a.
La Jolla iP = 37m.18s.
Mount Wilson iP = 37m.18s.
Riverside iP = 37m.19s.
Haiwee iP = 37m.23s.
Tinemaha iP = 37m.23s. a.

Jan. 15d. Readings also at 0h. (Kobe, Nagoya, and Wellington), 3h. (Batavia and Malabar), 4h. (Bagnères), 5h. (Malabar), 6h. (Malabar and La Paz), 9h. (San Juan), 11h. (Andijan, Sverdlovsk, and Tashkent), 15h. (Karenko), 16h. (Ann Arbor and Samarkand (2)), 21h. (Tiflis and Samarkand).

Jan. 16d. 6h. 12m. 10s. Epicentre 38°·2N. 70°·9E. (as on 1933 March 28d.). X.

A = +·257, B = +·743, C = +·618.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	2·8	24	i 0 40	0	i 1 12	0	—	1·2
Tashkent	3·4	339	i 0 49	0	—	—	i 1·5	1·6
Samarkand	3·4	297	e 1 4	P_g	1 44	S_g	—	2·6
Tchimkent	4·3	346	e 1 5	+ 4	—	—	—	—
Frunse	5·5	29	e 1 18	0	i 2 18	− 2	—	2·7
Baku	16·4	285	—	—	e 7 16	?	8·8	9·7
Sverdlovsk	19·9	343	e 4 23	− 6	e 8 12	+ 8	11·1	11·5
Tiflis	20·3	288	—	—	e 8 32	SS	e 10·9	—
Calcutta	21·6	131	e 8 47	(+ 2)	—	—	—	—
Pulkovo	33·5	323	—	—	e 12 25	+27	16·8	—

Additional readings :—
Andijan iP_g = +44s. = P* − 1s., iPP = +51s. = P_g + 1s.
Samarkand iP* = +1m.8s., S_g = +1m.52s.
Tchimkent i = +1m.21s. = P_g + 1s. and +1m.31s.
Frunse S_g = +2m.38s.
Baku e = +7m.59s.
Sverdlovsk L_q = +10m.14s.
Long waves also at Copenhagen, Bombay, and Hyderabad.

Jan. 16d. 15h. Readings for which no determination has been made :—
Andijan eP = 6m.9s., S_g = 6m.46s., M = 6m.56s.
Samarkand eP = 6m.33s., S_g = 7m.13s., M = 7m.19s.
Tashkent e = 6m.50s., iL = 7m.2s., M = 7m.24s.
Frunse e = 7m.40s. ; epicentre +38°·2 +70°·9.
Sverdlovsk L = 27m.30s.

18h.
Andijan P_g = 59m.38s., S_g = 59m.57s., M = 60m.9s.
Tashkent e = 60m.7s., e = 60m.18s., e = 60n .45s., iS = 60m.51s., L = 61m.6s., M = 61m.42s.
Samarkand eP = 60m.38s., S_g = 61n .23s., M = 61m.43s.

Jan. 16d. 23h. 19m. 45s. Epicentre 38°·2N. 70°·9E. (as at 6h.). X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	2·8	24	e 0 40	0	1 12	0	—	1·2
Tashkent	3·4	339	0 50	+ 1	—	—	i 1·5	1·7
Samarkand	3·4	297	e 0 53	P*	1 29	+ 2	—	1·7
Tchimkent	4·3	346	e 1 5	+ 4	i 1 51	+ 1	—	—
Frunse	5·5	29	e 1 25	+ 5	i 2 25	+ 5	—	—
Almata	6·8	40	e 2 2	P_g	e 2 56	+ 3	—	—
Sverdlovsk	19·9	343	e 3 38	−53	—	—	—	—

Additional readings :—
Andijan P_g = +43s. = P* − 2s., PP = +47s. = P_g − 3s.
Tashkent i = +1m.1s. = P_g − 1s.
Samarkand P_g = +1m.0s., S_g = +1m.39s. = S* + 0s.
Tchimkent i = +1m.35s., S_g = +1m.57s.
Frunse e = +2m.3s., eS_g = +2m.38s. = S* − 4s.
Almata i = +3m.21s. = S* + 1s. ; epicentre +39°·3 +70°·5.

Jan. 16d. Readings also at 1h. (Santiago), 2h. (Amboina, New Plymouth, and Tiflis), 3h. (Perth and Rathfarnham Castle), 4h. (Hyderabad, Bombay, and Samarkand), 5h. (Almeria, Granada, Santiago, and Toledo), 10h. (Batavia, Lick, Malabar, and Soengei Langka), 11h. (Sucre), 12h. (Andijan and La Paz), 14h. (Taihoku), 15h. (Nanking), 16h. (Santiago), 17h. (New Plymouth and Wellington), 20h. (Malabar, Batavia, and Soengei Langka (2)), 21h. (Malabar), 22h. (Philadelphia).

Jan. 17d. 2h. 8m. 16s. Epicentre 20°·5S. 170°·0E. (as on 1933 Dec. 1d.). R.1.

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

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni	18·3	166	4 17	PP	8 2	L	(8·0)	—
Apia	18·6	72	i 4 44?	?	e 8 8	L	(8·1)	—
Takaka	20·5	174	8 44	SS	—	—	—	—
Wellington	21·2	170	4 49	+ 7	8 45	PcP	i 10·2	—
Riverview	21·4	227	i 4 44k	0	i 8 37	+ 3	9·7	16·6
Sydney	21·4	227	i 4 34	−10	i 8 44	PcP	11·0	11·7
Christchurch	23·2	175	4 44?	−19	—	—	—	—
Melbourne	27·8	226	i 5 45	0	10 24	− 4	12·7	17·1
Adelaide	31·1	235	i 4 15	?	i 11 12	− 9	e 13·3	16·9
Amboina	44·0	286	7 45	−20	14 16	−20	e 35·7	—
Honolulu	52·3	39	e 9 39	+30	e 16 58	+25	i 24·3	—
Manila	59·6	303	e 10 1	− 1	17 44	−27	27·1	31·7
Malabar	61·7	272	10 18	+ 2	18 27	−11	e 34·7	—
Batavia	62·7	276	i 10 20	− 3	i 18 43	− 8	e 29·7	—
Nagoya	63·9	330	e 10 20	−11	—	—	—	—
Nagasaki	65·6	324	e 10 33	− 9	19 11	−16	—	—
Hong Kong	69·2	305	11 4	− 2	19 59	−12	27·7	33·3
Nanking	71·9	316	i 11 17	− 5	i 20 29	−15	31·6	37·8
Vladivostok	72·5	331	e 11 21	− 5	—	—	—	—
Medan	73·9	280	11 39	+ 5	20 44?	−23	e 38·7	—
Phu-Lien	74·4	300	e 11 44?	+ 7	20 44?	−29	—	—
Chiufeng	78·6	322	i 11 56a	− 4	e 21 41	−19	32·7	—
Branner	86·1	47	e 12 40	+ 1	—	—	—	—
Berkeley	86·2	47	e 12 40	+ 1	—	—	—	—
Ukiah	86·3	45	—	—	e 23 8	[0]	e 33·5	—
Santa Barbara	86·4	51	i 12 41a	+ 1	e 24 30	PS	—	—
Pasadena	87·4	51	i 12 46a	+ 1	e 24 2	PS	e 40·2	—
La Jolla	87·5	54	i 12 48	+ 3	e 24 56	PS	—	—
Mount Wilson	87·5	52	i 12 46a	+ 1	—	—	—	—
Riverside	87·9	52	i 12 48a	+ 1	—	—	—	—
Haiwee	88·5	50	i 12 52	+ 2	—	—	—	—
Tinemaha	88·7	49	i 12 52a	+ 1	e 23 53	+ 9	—	—
Sitka	89·9	26	—	—	e 23 52	− 3	e 36·9	—
Calcutta	90·5	295	13 27	+27	23 19	[−17]	—	—
Victoria	90·8	38	23 44	SKKS	(23 44)	{+ 3}	37·7	—
Tucson	92·2	56	e 13 34	+26	24 5	−12	42·9	—
Colombo	92·5	276	11 15	?	23 33	[−14]	43·6	48·9
Kodaikanal	95·8	278	e 13 19	− 5	18 23	?	22·0	24·6
Bozeman	97·2	44	—	—	e 26 47	PS	e 45·2	—
Hyderabad	97·4	286	—	—	23 23	[−70]	27·3	31·2
Agra	100·8	295	—	—	i 24 9	[−21]	—	—
Santiago	101·0	132	—	—	45 44	L	45·7	—
Bombay	102·8	286	—	—	i 24 26	[−13]	—	53·3
Frunse	107·6	309	e 18 30	PP	—	—	—	—
Huancayo	108·0	111	e 18 57	PP	e 24 58	[− 6]	e 45·2	—
La Plata	108·4	140	19 10	PP	(28 32)	PS	28·5	—
Andijan	108·8	308	e 18 40	PP	—	—	—	—
Tchimkent	111·1	309	e 18 48	PP	—	—	—	—
Tananarive	111·2	239	—	—	28 37	PS	56·9	64·7
Tashkent	111·2	308	e 12 46	?	25 30	[+11]	49·7	59·9
La Paz	112·0	118	e 18 34	[+10]	—	—	52·1	53·7
Columbia	116·6	61	e 15 28	P	e 29 33	PS	e 55·9	—
Sverdlovsk	117·5	324	19 50	PP	25 58	[+16]	47·7	54·6
Ottawa	121·3	46	e 20 44?	PP	e 30 2	PS	e 50·7	—
Oak Ridge	124·4	52	i 18 55	[− 1]	—	—	e 61·7	—

Continued on next page.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Baku	125·7	306	21 12	PP	31 5	PS	35·4	46·2
San Juan	127·6	80	e 21 16	PP	i 31 39	PS	e 53·9	—
Tiflis	129·5	308	e 19 3	[− 3]	—	—	59·7	64·9
Erevan	129·9	306	e 19 6	[0]	—	—	—	—
Pulkovo	131·4	335	19 12	[+ 3]	28 13	{−18}	56·7	71·7
Theodosia	135·4	314	e 23 8	PKS	—	—	—	—
Simferopol	136·3	313	e 23 10	PKS	—	—	—	—
Yalta	136·4	313	e 22 52	PKS	—	—	—	—
Sebastopol	136·8	314	e 23 7	PKS	—	—	—	—
Ksara	137·4	298	i 19 20	[+ 2]	—	—	67·2	76·7
Königsberg	138·6	334	e 23 3	PKS	e 26 19	SKS	63·2	—
Copenhagen	141·0	340	19 23	[− 0]	—	—	63·7	—
Hamburg	143·5	340	e 19 25a	[− 4]	—	—	e 61·7	—
Budapest	144·2	325	19 28	[− 4]	—	—	e 65·7	—
Sofia	144·3	316	e 19 30	[− 2]	—	—	—	—
Leipzig	144·5	336	e 19 44?	[+11]	—	—	e 81·7	—
Prague	144·6	333	e 19 33	[0]	—	—	e 65·7	78·7
Vienna	145·0	330	i 19 33	[− 1]	—	—	—	—
Göttingen	145·2	337	i 19 30a	[− 4]	—	—	71·7q	—
Jena	145·2	336	e 19 32	[− 2]	—	—	—	—
Cheb	145·5	333	e 19 33	[− 1]	e 30 19	{+23}	82·7	—
De Bilt	146·3	341	i 19 36a	[0]	—	—	e 61·7	64·1
Bidston	146·6	353	i 19 41	[+ 4]	—	—	e 61·7	—
Zagreb	146·9	326	e 19 37	[0]	—	—	e 76·7	—
Uccle	147·6	342	e 19 37a	[− 1]	—	—	e 60·7	—
Stuttgart	147·8	335	e 19 38	[− 1]	e 29 50	{−20}	e 66·7	—
Karlsruhe	147·9	337	i 19 43	[+ 4]	—	—	—	—
Oxford	148·0	350	i 19 41	[+ 2]	—	—	e 60·7	—
Kew	148·1	349	i 19 41	[+ 2]	—	—	e 61·7	87·4
Triest	148·2	329	19 36a	[− 3]	i 29 53	{−19}	e 63·7	74·4
Strasbourg	148·5	339	i 19 36a	[− 4]	29 37	{−37}	43·7	—
Venice	149·0	329	19 48	[+ 8]	30 4	{−13}	—	—
Zurich	149·2	334	e 19 45	[+ 4]	—	—	—	—
Padova	149·3	330	e 19 46	[+ 5]	—	—	e 63·7	—
Basle	149·4	336	e 19 39	[− 2]	—	—	—	—
Paris	149·9	344	i 19 47	[+ 5]	—	—	71·7	79·7
Neuchatel	150·1	336	e 19 46	[+ 4]	—	—	—	—
Piacenza	150·5	331	19 44	[+ 2]	—	—	—	105·7
Florence	150·7	328	e 19 44	[+ 1]	30 7	{−19}	41·7	—
Prato	150·7	328	i 19 44	[+ 1]	30 7	{−19}	—	—
Capodimonte	151·0	320	e 19 44	[+ 1]	20 1	PKP_2	—	—
Toledo	160·0	347	20 35	{− 9}	—	—	—	—
Algiers	160·1	328	i 19 46	[− 8]	e 29 18	?	—	—
Alicante	160·4	337	e 20 8	[+14]	—	—	e 75·2	—
Almeria	162·3	340	e 20 29	[+33]	—	—	e 70·3	—
Granada	162·4	343	i 19 58	[+ 2]	—	—	81·9	91·0
Malaga	163·0	345	19 57	[0]	—	—	—	—
San Fernando	163·7	349	e 18 50	[−68]	—	—	—	—

Additional readings :—
Wellington i = +17m.1s.
Riverview iN = +4m.53s., iNE = +5m.4s. = PP + 2s., iE = +8m.38s., iSE = +8m.41s. = P_cP − 3s. and +8m.56s., iE = +9m.12s.
Adelaide i = +7m.8s. = PP − 3s., +9m.23s. = P_cP + 10s., and +13m.1s. = SS + 5s.
Honolulu e = +22m.6s.
Hong Kong [S]? = +21m.0s. = S_cS + 1s., SS = +24m.23s.
Nanking iE = +21m.52s.
Chiufeng iSN = +21m.45s.
Branner eN = +13m.7s., eE = +13m.9s.
Berkeley eE = +12m.43s., iZ = +12m.52s., eE = +13m.52s., eZ = +15m.25s.
Ukiah eSS = +30m.6s.
Santa Barbara ePPZ = +16m.26s.
Pasadena iPPZ = +16m.28s., iPSE = +24m.52s., eP'P'Z = +38m.44s.
Riverside ePPZ = +16m.32s.
Victoria PN = +23m.50s.

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Tucson ePP = +17m.22s., PS = +25m.24s.
Kodaikanal PP = +14m.6s., SS = +19m.52s.
Bombay i = +25m.4s. = SKKS −10s.
Huancayo e = +24m.19s., ePS = +28m.25s., eSS = +34m.44s.
Tananarive +34m.44s.? = SS +9s. and +51m.32s.
Tashkent PP = +19m.10s., iPS = +28m.31s., PPS = +29m.50s., SSS = +39m.8s.
La Paz iZ = +19m.24s., iN = +29m.48s., iPS = +30m.28s., SSN = +35m.44s.
Columbia e = +36m.26s.
Sverdlovsk SKKS = +26m.40s., S = +27m.30s., PS = +29m.48s., PPS = +31m.9s., SS = +35m.38s.
Ottawa e = +36m.44s.? = SS −5s.
Oak Ridge e = +37m.44s.? and +40m.56s.
San Juan iPP = +22m.19s.
Tiflis e = +20m.14s., +25m.1s., +33m.5s., +38m.36s. = SS +2s., and +34m.21s. = SSS +11s.
Erevan e = +22m.6s. and +32m.6s.
Pulkovo PP = +21m.11s., PKS = +22m.31s., SPS = +31m.37s., PPS = +33m.36s., SS = +38m.50s., SSS = +43m.50s.
Ksara pPKP = +19m.53s., PP = +21m.53s., SPP = +34m.13s.
Königsberg e = +23m.5s. and +23m.17s., eE = +29m.19s. = SKKS +4s., eN = +29m.29s.
Copenhagen +22m.38s. = PP +10s., eN = +23m.35s.
Prague e = +16m.11s.
Vienna i = +19m.58s., +20m.42s., and +21m.47s.
Göttingen iPEN = +19m.32s., iZ = +19m.52s. and +20m.38s.
De Bilt iZ = +20m.8s., eZ = +23m.4s. = PP +5s., e = +36m.12s.
Bidston i = +35m.44s., e = +42m.11s. = SS +11s.
Zagreb e = +20m.0s., eE = +20m.27s.
Uccle i = +19m.40s., e = +23m.2s. = PP −5s., +36m.20s., and +42m.2s.
Stuttgart iPKP = +19m.41s., ipPKPZ = +20m.13s., e = +30m.24s., eSKSP = +33m.50s., eSS = +42m.14s.; T_0 = 2h.8m.6s.
Kew ePPSN = +36m.27s., ePSSE = +42m.12s. = SS −6s., eSSSN = +48m.17s.
Triest iZ = +20m.0s., iEN = +20m.5s. and +20m.12s., i = +20m.19s., iN = +20m.27s. and +20m.36s., iE = +20m.48s., iN = +20m.55s., iE = +21m.8s. and +21m.27s., iN = +22m.33s. and +22m.48s., iE = +23m.26s. = PKS +2s., iN = +23m.40s., iE = +23m.44s., iN = +23m.46s., i = +30m.29s., ePSKS = +33m.44s., iSS = +42m.7s., i = +43m.15s.
Strasbourg i = +19m.41s. and +20m.3s., iPPPPP = +30m.6s., ePS = +33m.47s.
Basle e = +19m.44s. and +20m.7s.
Granada PKP_2 = +20m.31s., PP = +24m.28s.
Malaga i = +21m.11s. and +21m.45s., e = +23m.57s., i = +23m.54s. and +25m.4s., e = +25m.42s. and +29m.12s.
San Fernando SS = +43m.33s.
Long waves were also recorded at Edinburgh, Stonyhurst, Rathfarnham Castle, Cape Town, Charlottesville, and Scoresby Sund.

Jan. 17d. 5h. 45m. 32s. Epicentre 46°·5N. 13°·0E. (as on 1934 May 4d.). X.

A = +·671, B = +·155, C = +·725.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Triest	1·0	148	0 11k	− 3	i 0 26	0	—	—
Venice	1·1	204	0 28	S	(0 28)	0	—	—
Padova	1·4	216	e 0 20	0	1 4	?	—	—
Zagreb	2·2	108	e 0 36	P*	e 1 3	S*	—	—
Ravensburg	2·7	299	e 0 46	P*	e 1 21	S*	—	—
Prato	2·9	207	e 0 42	+ 1	i 1 13	− 1	—	—
Vienna	2·9	52	e 0 52	P_g	i 1 40	?	e 1·8	—
Zurich	3·2	288	e 0 48	+ 2	e 1 36	S*	—	—
Stuttgart	3·5	312	e 0 51	+ 1	e 1 52	S_g	—	2·3
Basle	3·8	287	e 0 57	+ 3	e 2 4	S_g	—	—
Strasbourg	4·1	302	e 0 53	− 5	e 2 1	S*	—	—
Neuchatel	4·1	278	e 1 1	+ 3	—	—	—	—
Jena	4·5	345	e 1 28	P_g	—	—	—	2·6

Additional readings :—
Triest i = +13s., +18s., +22s., and +28s.
Venice P = +36s., S = +45s.
Vienna i = +1m.35s.
Zurich eP_g = +55s.
Stuttgart eP_gN = +1m.3s.
Strasbourg eP_g = +1m.4s. = P_g +3s., SaS = +2m.23s.
Neuchatel e = +1m.16s. = P_g +0s.

Jan. 17d. 14h. 9m. 54s. Epicentre 47°·5N. 8°·2E. (as on 1934 Nov. 24d.). X.

A = +·669, B = +·096, C = +·737.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Zurich	0·3	104	i 0 7	+ 3	e 0 15	+ 7
Basle	0·4	279	i 0 3	− 3	i 0 8	− 2
Ebingen	0·9	40	e 0 13	0	e 0 24	+ 1
Neuchatel	0·9	200	i 0 13	0	i 0 24	+ 1
Ravensburg	1·0	69	—	—	e 0 33	+ 7
Strasbourg	1·1	343	e 0 16	0	e 0 32	+ 4
Stuttgart	1·4	27	—	—	e 0 34	− 2
Granada	13·4	227	e 3 5	− 2	e 5 17	−17

Additional readings :—
Neuchatel i = +27s. = S* +2s.
Ravensburg eN = +36s.
Stuttgart eNS(S*) = +41s., e = +43s. and +46s.

Jan. 17d. 19h. Readings for more than one shock for which no determinations have been made, reported to be repetition of 17d. 5h.

Andijan eP = 3m.4s., eS_g = 3m.34s., M = 3m.37s.
Samarkand e = 4m.3s., M = 4m.59s.
Frunse e = 4m.28s.

Triest eP_g = 58m.32s., iS_g = 58m.45s., SSsS = 59m.6s., eP_g = 59m.51s., S_g = 60m.4s.
Zagreb P_g = 58m.43s., eS_g = 58m.56s., M = 59m.7s.
Zurich e = 60m.0s.
Zagreb iS_g = 60m.15s.

Jan. 17d. 21h. Readings for which no determination has been made, reported repetition of 17d. 5h. shock.

Triest eP_g = 55m.13s., iPP = 55m.19s., iS_g = 55m.27s., iSSsS = 55m.48s.
Zagreb eP_g = 55m.26s., eS_z = 55m.41s., eZ = 55m.46s., M = 55m.47s.
Neuchatel eP = 56m.29s.
Zurich eP = 57m.6s.

Jan. 17d. Readings also at 0h. (Berkeley), 2h. (Basle, Neuchatel, and Zurich), 3h. (Mount Wilson and Pasadena), 4h. (Wellington), 8h. (Basle, Neuchatel, La Paz, Columbia, Huancayo, Oak Ridge, and San Juan), 9h. (Paris, Triest, Tashkent, and Sverdlovsk), 11h. (Andijan and Samarkand), 12h. (Frunse and Strasbourg), 17h. (Calcutta and Nagoya (2)), 19h. (Amboina and Tiflis), 20h. (Andijan, Triest, and Tainan), 21h. (Charlottesville).

Jan. 18d. 1h. Readings for which no determination has been made :—
Tiflis e = 46m.20s., e = 52m.28s., eL = 58m.48s.
Tashkent e = 48m.11s., e = 52m.27s., eL = 56m.12s., M = 60m.48s.
Baku e = 51m.48s., L = 57m.
Sverdlovsk e = 55m.47s., L = 63m.

Jan. 18d. 2h. 8m. 40s. Epicentre 13° 8N. 55°·9E. N.3.

A = +·545, B = +·804, C = +·239 ; D = +·828, E = −·561;
G = +·134, H = +·198, K = −·971.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bombay	17·1	71	i 3 50	− 5	—	—	—	—
Hyderabad	22·1	76	6 22	?	8 44	− 4	10·0	12·2
Agra	24·6	55	i 5 10	− 6	—	—	—	—
Ksara	27·0	321	(e 5 45)	+ 7	(e 10 25)	+10	—	—
Baku	27·1	350	e 4 2	?	e 10 20	+ 3	15·3	18·7

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	27·6	19	e 5 43	− 1	—	—	—	—
Erevan	28·2	341	e 5 51	+ 2	e 10 40	+ 5	—	—
Tiflis	29·5	343	6 2	+ 1	10 58	+ 2	17·5	24·0
Tashkent	29·8	20	i 6 6	+ 3	i 11 21	+20	14·5	19·1
Andijan	30·5	25	e 6 13	+ 4	—	—	—	—
Grozny	30·8	346	e 6 28	+16	—	—	—	—
Tchimkent	30·9	20	e 6 46	PP	—	—	—	—
Calcutta	32·0	69	—	—	i 11 34	− 1	—	19·7
Frunse	33·2	25	e 6 38	+ 4	—	—	—	—
Sverdlovsk	43·2	4	e 7 53	− 5	e 14 16	− 8	20·3	27·0
Triest	47·6	321	8 34	+ 1	i 15 34	+ 7	e 25·3	31·2
Pulkovo	49·7	343	e 8 48	− 1	e 15 58	+ 1	26·3	—
Cheb	50·6	326	e 8 20?	−36	e 16 16	+ 7	36·8	—
Stuttgart	51·8	322	e 13 32	?	e 16 38	+13	e 33·3	—
Copenhagen	53·5	331	9 20	+ 2	16 59	+10	—	—
Granada	57·5	306	—	—	e 36 20?	?	38·3	—

Additional readings and notes :—
Ksara readings have been *increased* by 1m.
Erevan e = +19m.54s.
Tiflis e = +6m.58s. and +16m.10s.
Stuttgart readings given for 17d.
Long waves at Alicante, De Bilt, Paris, and Strasbourg.

Jan. 18d. 2h. Readings for which no determination has been made :—
Pulkovo e = 15m.25s.
Tashkent e = 18m.31s., e = 19m.3s., L = 19m.18s.
Andijan P = 18m.35s., S_g = 19m.2s., M = 19m.4s.
Frunse e = 20m.32s.
Almata e = 21m.30s.

Jan. 18d. 7h. Readings for which no determination has been made :—
Sofia e = 34m.27s., i = 35m.8s., i = 35m.22s.
Bucharest eN = 35m.27s.
Triest e = 39m.5s., i = 39m.28s., i = 39m.40s.
Tiflis eL = 41m.18s.
Tucson e = 58m.0s.

Jan. 18d. 11h. Readings for which no determination has been made. Probably more than one epicentre :—
Arapuni 4m.
Wellington P = 4m.47s.
New Plymouth P = 4m.53s., S = 6m.8s.
Chatham Ils. P = 4m.54s., i = 6m.24s., S = 7m.9s., i = 7m.36s., L? = 8m.24s.
Christchurch P = 5m.30s., S = 7m.20s.
Hastings P = 6m.0s., S = 7m.3s.
Sydney e = 7m.45s., L = 16m.0s., M = 17m.40s.
Riverview ePE = 8m.16s., eSE = 12m.38s., eSSN = 13m.38s., eL = 14m.54s., M = 17m.22s.
Adelaide e = 9m.27s., e = 15m.54s., i = 18m.13s., M = 21·9m.
Melbourne e = 13m.45s., L = 16·5m., M = 20·9m.
Santa Barbara iP = 15m.42s.
La Jolla iPZ = 15m.45s.
Riverside iP = 15m.45s.
Pasadena iP = 15m.45s. a, eZ = 19m.14s.
Mount Wilson iP = 15m.46s., eZ = 19m.16s.
Berkeley iPZ = 15m.48s., iZ = 16m.3s.
Haiwee eP = 15m.50s.
Vladivostok e = 16m.30s., L = 18m.42s.
Ksara ePKP = 22m.20s., PP = 26m.5s.
Tiflis P = 22m.25s., e = 48m.5s., eL = 83m.0s.
Erevan eP = 22m.29s.
Piatigorsk eP = 22m.30s.
Pulkovo eP = 22m.35s., L = 80m.
Theodosia eP = 22m.38s.
Yalta eP = 22m.46s.
Simferopol eP = 22m.50s.

Continued on next page.

Strasbourg eP = 23m., e = 27m., eL = 90m.
Granada eP = 23m.2s., PKP = 25m.31s., PP = 28m.31s., L = 91m.
Sebastopol eP = 23m.5s.
Alicante e = 23m.7s.
Uccle P = 23m.44s.
De Bilt eZ = 23m.44s., eL = 91m.
Stuttgart ePZ = 23m.49s., eL = 97m.
Grozny e = 24m.25s.
Toledo PP = 24m.27s.
La Paz eN = 28m.38s., LZ = 50m.54s.
Tashkent e = 46m.0s., M = 87m.12s.
Kodaikanal e = 49m.40s.
Long waves were recorded at Kew, Bidston, Baku, Paris, and Sverdlovsk.

Jan. 18d. 12h. Readings for which no determination has been made :—
Andijan eP = 53m.22s., i = 53m.51s., S_g = 53m.53s., M = 53m.57s.
Samarkand eP = 53m.43s., S_g = 54m.31s.
Tchimkent eP = 54m.18s., P_g = 54m.29s.
Frunse e = 54m.40s., i = 55m.10s.
Almata e = 54m.56s., eS = 56m.4s. ; epicentre +39°·2, +70°·7.

Jan. 18d. 14h. Readings for which no determination has been made :—
Tiflis eP = 41m.34s., 41m.48s.
Andijan P_g = 42m.0s., S_g = 42m.16s., M = 42m.20s.
Samarkand e = 42m.21s., S_g = 42m.51s.
Frunse e = 43m.52s.
Almata e = 44m.26s.

Jan. 18d. 15h. Readings for which no determination has been made, suggested epicentre 34°·4N. 133°·1E. :—
Sumoto ePN = 48m.32s., ePE = 48m.38s., SEN = 48m.52s., SZ = 48m.54s., M = 48m.54s.
Toyooka P = 48m.39s., S = 48m.59s., M = 49m.1s.
Kobe eP = 48m.39s., iN = 48m.42s., iS = 49m.0s., M = 49m.4s.
Nagoya P = 49m.19s., S = 49m.49s.
Hukuoka B P = 49m.21s., eS = 49m.24s.

Jan. 18d. 17h. 13m. 42s. Epicentre 23°·0N. 125°·6E. N.2.

A = −·536, B = +·748, C = +·391 ; D = +·813, E = +·582 ;
G = −·228, H = +·318, K = −·921 ;

It has not been found possible to extract readings for a second shock, said to be at −16° +126° ; further readings are in the collective notes.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko		3·8	287	e 1 0	P*	2 0	S_g	—	—
Taito		4·1	265	e 1 6	P*	2 3	S*	—	—
Taihoku		4·2	300	1 2	+ 2	1 52	+ 4	—	—
Arisan		4·5	278	i 1 11	P*	2 11	S*	—	—
Taityu		4·7	286	(e 1 4)	− 3	(1 55)	− 5	—	—
Takao		5·0	267	e 0 56	−15	—	—	—	—
Hokoto		5·6	276	(e 1 29)	P*	—	—	—	—
Zi-ka-wei		9·0	337	e 2 6	− 1	3 58	+ 9	4·8	5·5
Manila		9·5	208	0 8	?	5 10	S_g	8·8	—
Nagasaki		10·4	19	e 2 42	+16	e 5 54	S_g	—	—
Nanking		10·9	328	i 2 31	− 2	4 30	− 6	i 5·2	7·4
Zinsen		14·5	3	e 3 40	+18	e 7 10	S_g	—	—
Heizyo		16·0	0	3 35	− 6	—	—	—	—
Phu-Lien		17·7	267	3 18?	?	—	—	9·3	—
Chiufeng		18·9	337	i 4 12a	− 5	7 37	− 7	10·4	12·4
Mizusawa	E.	20·8	36	4 39	+ 1	8 32	+10	—	—
	N.	20·8	36	4 55	PP	8 15	− 7	—	—
Calcutta		34·2	277	6 52	+10	14 22	SSS	—	23·6
Agra		43·1	285	e 7 58	0	—	—	—	27·9
Almata		44·7	305	e 9 8	?	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	47·8	305	e 8 39	+ 4	—	—	e 26·7	—
Bombay	49·2	276	i 8 52	+ 7	i 16 0	+10	—	30·0
Tchimkent	49·9	307	e 8 53	+ 2	—	—	—	—
Tashkent	50·2	305	i 8 56	+ 3	19 30	SS	28·5	32·8
Samarkand	51·8	303	e 9 9	+ 4	—	—	—	—
Sverdlovsk	57·3	324	i 9 41	− 4	17 54	PS	e 31·3	34·7
Grozny	67·3	309	e 10 59	+ 5	—	—	—	—
Tiflis	68·3	308	e 10 59	− 1	e 20 26	PS	36·6	44·7
Pulkovo	72·9	328	e 11 39	+11	e 20 49	− 6	37·3	45·1
Ksara	77·2	302	e 11 53	0	—	—	—	50·8
Copenhagen	83·2	329	—	—	22 18?	−31	40·3	—

Additional readings and notes :—
Taityu readings *increased* by 1m.
Hokoto readings *increased* by 1m.
Zi-ka-wei iZ = +2m.16s., iN = +4m.33s. and +4m.44s., iE = +5m.7s. and +5m.18s.
Nanking e = +4m.46s.
Chiufeng iSE = +7m.28s.
Calcutta PP = +8m.28s.
Bombay eN = +8m.57s.
Tashkent PPP = +13m.53s., SS = +24m.30s.
Sverdlovsk i = +9m.51s., PP = +13m.23s., PS = +21m.42s.
Long waves at Durham, Edinburgh, Stonyhurst, Hyderabad, Hong Kong, and other European stations.

Jan. 18d. Readings for which no determination is possible (see previous shock) :—
Manila P_gEN = 17h.18m.12s., S_gEN = 18m.22s.
Hukuoka B eP = 17h.20m.37s., S = 21m.40s.
Tucson S = 17h.35m.44s., L = 36m.4s.
Vladivostok e = 17h.38m.20s., e = 38m.51s., e = 42m.19s., eM = 43m.24s.
Upsala e = 17h.43m., eL = 62m.
Cheb e = 17h.55m., e = 62m., L = 68m.
Triest e = 17h.57m.55s., e = 63m.50s., i = 65m.43s., M = 68m.37s.
Prague e = 18h.1m., M = 3m.
Kew eZ = 18h.2m.23s., eNE = 6m.4s., eL = 8m., M = 12m.44s.
Sofia e = 18h.3m.
Florence e = 18h.5m.0s., S = 7m.58s., M = 9m.30s.
Long waves at Rathfarnham Castle and other European stations.

Jan. 18d. Readings for which no determination has been made :—
Manila PEN = 20h.35m.52s., SEN = 41m.22s., LE = 45m.20s.
Tiflis e = 20h.38m.7s., L = 21h.19m.36s.
Nanking ePE = 20h.38m.51s., S = 41m.30s., L = 43m.12s.
Chiufeng eP = 20h.40m.24s., eS?E = 43m.42s., eLE = 45m.20s., M = 48m.42s.
Samarkand eP = 20h.45m.21s.
Sverdlovsk e = 20h.46m.3s., L = 21h.5m.
Calcutta e = 20h.57m.14s.
Vladivostok e = 21h.4m.37s.
Long waves at De Bilt, Cheb, Tashkent, Pulkovo, Paris, Strasbourg, Stuttgart, and Hong Kong.

Jan. 18d. 22h. 43m. 35s. Epicentre 36°·2N. 139°·6E. (as on 1934 June 15d.). X.

A = −·615, B = +·523, C = +·591.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	0·6	166	0 7	− 2	0 13	− 2	0·2
Nagoya	2·4	244	e 0 38	P*	1 14	S_g	1·4
Mizusawa	3·1	23	e 0 59	P_g	1 47	?	—
Toyooka	3·9	261	e 1 13	P_g	e 2 3	S_g	2·2
Kobe	4·0	249	e 1 1	+ 4	2 7	S_g	2·1
Sumoto	4·3	246	e 1 16	P*	2 9	S*	2·4

Additional readings :—
Toyooka SZ = +1m.59s.
Kobe ePEN = +1m.9s. = P* +4s., iE = +1m.56s. = S* −1s., eSZ = +2m.12s.
Sumoto ePE = +1m.20s., iZ = +1m.25s., SE = +2m.14s. = S_g −2s., SN = +2m.17s.

Jan. 18d. Readings also at 1h. (Berkeley), 3h. (Sumoto), 7h. (Prague, Samarkand, and Wellington), 9h. (Berkeley and Branner), 13h. (Tucson), 17h. (Tucson), 18h. (Rathfarnham Castle), 19h. (Oak Ridge and Sofia), 20h. (Bucharest and Sofia), 21h. (Santiago (2)), 22h. (Andijan (2), Almata, Frunse, and Samarkand), 23h. (San Juan, Sverdlovsk, and Vladivostok).

Jan. 19d. 0h. 19m. 29s. Epicentre 43°·7N. 41°·2E. N.3.

A = +·544, B = +·476, C = +·691 ; D = +·659, E = −·752 ; G = +·520, H = +·455, K = −·723.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sotchi	1·1	265	i 0 18	+ 2	i 0 40	S*	0·8
Piatigorsk	1·4	78	i 0 23	P_g	i 0 42	S_g	0·8
Grozny	3·3	96	0 56	P*	1 4	P_g	2·1
Erevan	4·3	143	1 0	− 1	1 57	+ 7	2·2

Additional readings :—
Sotchi i = +24s.
Piatigorsk i = +26s.
Grozny PP = +1m.11s., S_g = +1m.50s.
Erevan P* = +1m.9s.

Jan. 19d. 0h. 40m. 38s. Epicentre 34°·2N. 134°·3E. (as on 1934 Dec. 26d.). X.

A = −·578, B = +·592, C = +·562.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sumoto	0·5	77	0 7	0	0 13	0	0·3
Kobe	0·8	55	0 11	0	0 19	− 2	0·3
Toyooka	1·4	20	—	—	0 46	S_g	—
Nagoya	2·4	65	e 0 40	P*	0 53	?	—

Jan. 19d. 0h. 49m. 28s. Epicentre 43°·7N. 41°·2E. (as at 0h. 19m.). X.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	3·3	127	0 46	− 1	i 1 24	− 1	—	—
Theodosia	4·4	286	1 8	P*	2 1	S*	2·6	3·2
Yalta	5·1	276	1 14	+ 1	2 12	+ 2	—	—
Simferopol	5·2	282	1 16	+ 2	2 17	+ 4	—	—
Sebastopol	5·6	280	1 20	0	2 25	+ 2	—	—
Ksara	10·7	205	e 6 25	?	—	—	—	8·0
Bucharest	10·9	279	—	—	e 4 31	− 5	—	—
Sofia	13·0	271	—	—	e 5 20	− 7	—	—
Sverdlovsk	18·0	36	i 4 5	− 2	7 37	SS	10·0	—
Samarkand	19·6	93	e 4 28	+ 3	—	—	—	—
Tashkent	20·8	87	—	—	e 8 45	SS	e 11·0	13·1
Andijan	23·1	86	e 5 35	PP	e 13 31	?	—	—
De Bilt	25·2	302	—	—	e 10 8	+24	14·5	—

Additional readings :—
Tiflis e = +53s. = P* +0s., +1m.13s., and +1m.38s. = S* +1s,
Bucharest eN = +4m.45s.
Long waves also at other European stations,

Jan. 19d. 11h. 14m. 25s. Epicentre 41°·1N. 144°·1E. N.3.

A = −·610, B = +·442, C = +·657; D = +·586, E = +·810; G = −·533, H = +·386, K = −·754.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Urakawa	1·5	316	0 26	P_g	0 45	S*	—	—
Kusiro	1·9	9	0 36	P_g	0 59	S_g	—	—
Obihiro	2·0	340	0 47	S	1 11	?	—	—
Miyaka	2·1	229	0 35	P_g	0 57	+ 3	—	—
Aomori	2·5	264	0 36	0	1 0	− 4	—	—
Nemuro	2·5	29	0 31	− 5	1 0	− 4	—	—
Hakodate	2·6	286	0 40	P*	1 7	0	—	—
Morioka	2·6	239	0 37	0	1 5	− 2	—	—
Muroran	2·7	298	0 30	− 9	1 7	− 2	—	—
Sapporo	2·8	312	1 5	?	1 39	?	—	—
Asahigawa	3·0	335	0 52	P_g	1 35	S_g	—	—
Mizusawa	3·0	229	0 43	0	i 1 15	− 2	—	—
Sendai	3·7	225	0 53	0	1 37	+ 2	—	—
Hukusima	4·3	222	1 1	0	1 56	+ 6	—	—
Mito	5·5	212	1 24	+ 6	2 46	S*	—	—
Kakioka	5·8	213	1 23	+ 1	2 20	− 8	—	—
Tukubasan	5·8	214	1 21	− 1	2 20	− 8	—	—
Tyosi	5·9	206	1 32	P*	2 56	S*	—	—
Maebasi	6·1	222	1 33	+ 6	2 47	+11	—	—
Kumagaya	6·2	218	1 27	− 1	2 42	+ 4	—	—
Nagano	6·4	228	1 38	+ 7	3 3	S*	—	—
Tokyo	6·4	214	1 33	+ 2	2 35	− 8	—	—
Yokohama	6·6	213	1 44	P*	—	—	—	—
Kohu	6·9	221	1 41	+ 3	3 6	+10	—	—
Hunatu	7·0	219	1 42	+ 3	3 3	+ 4	—	—
Mera	7·0	210	1 55	P*	3 39	S_g	—	—
Misima	7·2	216	1 52	P*	3 24	S*	—	—
Gihu	8·1	228	1 56	+ 1	3 47	?	—	—
Nagoya	8·2	226	e 1 31	−25	e 3 11	−18	—	4·8
Vladivostok	9·2	288	e 2 5	− 5	—	—	4·1	—
Chiufeng	21·1	277	e 4 35	− 6	—	—	—	12·6
Nanking	22·1	253	—	—	e 8 44	− 4	11·4	12·4
Sverdlovsk	53·3	317	e 9 17	+ 1	—	—	25·6?	30·2
Samarkand	56·7	296	e 9 36	− 5	—	—	—	—
Tiflis	69·7	308	—	—	e 23 45	?	e 39·6	—

Additional readings :—
Mizusawa iS = +1m.12s.
Long waves at other European stations.

Jan. 19d. 12h. 37m. 38s. Epicentre 0°·8N. 27°·9W. N.3.

A = +·884, B = −·468; C = +·014; D = −·468; E = −·884; G = +·012, H = −·007, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando	40·9	27	e 7 43	+ 3	e 15 45	?	43·9	—
San Juan	41·4	297	i 9 32	?	e 13 48	− 9	16·6	—
Sucre	41·7	240	i 7 50	+ 4	e 14 5	+ 3	21·4	—
Malaga	42·0	28	e 7 43	− 6	—	—	—	—
Granada	42·7	29	i 7 54	0	e 14 36	+20	20·4	26·9
Almeria	43·1	30	e 7 56	− 2	e 14 37	+15	e 23·3	—
La Paz	43·3	245	i 8 0k	+ 1	i 14 34	+ 9	21·6	25·5
Serra do Pilar	43·9	21	7 57	− 7	14 22	−12	20·4	—
Toledo	44·7	26	i 8 10	0	i 14 50	+ 4	e 21·0	—
Alicante	45·2	31	e 8 19	+ 5	e 15 7	+13	e 23·4	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Algiers	45·9	35	i 8 23	+ 3	e 15 8	+ 5	23·4	26·4
Huancayo	48·8	253	e 8 42	0	i 15 46	+ 2	24·7	—
Paris	54·7	24	i 9 25	− 1	e 17 5	0	25·4	28·4
Oxford	55·3	20	—	—	17 20	+ 7	23·9	—
Neuchatel	55·3	28	i 9 29	− 2	—	—	—	—
Piacenza	55·3	32	—	—	e 16 22	−51	—	44·5
Florence	55·3	34	i 9 27a	− 4	17 17	+ 4	27·4	31·4
Rathfarnham Castle	55·5	16	—	—	e 16 55	−21	—	48·4
Cape Town	55·6	133	9 35	+ 2	17 24	+ 7	—	27·8
Kew	55·8	21	—	—	e 17 21	+ 1	e 23·4	26·3
Bidston	56·5	18	—	—	i 17 29	− 1	—	26·2
Strasbourg	56·8	28	i 10 0a	+18	i 17 37	+ 3	e 24·4	—
Uccle	57·0	24	i 9 43	0	17 36	0	—	—
Oak Ridge	57·2	323	i 9 41	− 4	—	—	—	—
Stuttgart	57·6	28	9 46	− 1	e 17 44	0	—	—
Triest	57·8	33	i 9 47a	− 2	i 17 51	+ 4	—	33·0
De Bilt	58·3	23	i 9 52a	0	i 17 58	+ 5	e 24·4	30·0
Edinburgh	58·6	16	—	—	e 16 22?	?	—	28·4
Cheb	60·0	29	e 7 22	?	e 18 17	+ 1	e 29·4	36·8
Ottawa	61·2	324	—	—	e 18 22?	−10	e 25·4	—
Copenhagen	63·7	24	—	—	19 10	+ 6	28·4	—
Ksara	68·0	53	i 10 57	− 1	20 1	+ 4	—	—
Pulkovo	73·9	26	e 11 49	+15	e 21 10	+ 3	e 35·4	50·4
Tiflis	76·6	47	i 11 49	0	e 21 36	− 2	e 42·4	—
Sverdlovsk	88·6	33	i 12 47	− 4	i 23 36	− 7	36·4	—
Bombay	99·9	71	e 17 22?	PP	—	—	—	—

Additional readings :—
San Fernando eSS = +23m.43s., eSSS = +27m.59s.
San Juan iS = +13m.54s.
Malaga e = +9m.32s., +10m.28s., and +11m.32s.
Granada P_cP = +9m.39s., S_cS = +17m.39s.
La Paz PS = +15m.0s., SS = +17m.42s.
Huancayo i = +19m.20s.
Cape Town E = +12m.4s., E = +13m.6s., N = +13m.11s., E = +17m.29s. = PS + 8s., E = +18m.25s., N = +19m.35s. = S_cS + 14s., E = +23m.26s., N = +23m.34s.
Bidston i = +21m.24s. = SS + 12s., e = +23m.59s.
Stuttgart ePPP = +13m.22s., e = +29m.10s. ; T_0 = 12h.37m.20s.
Triest iPP = +11m.52s.
Ksara PP = +13m.31s., PS = +20m.37s., SS = +24m.39s.
Tiflis SKS = +21m.43s.
Sverdlovsk i = +24m.36s. = PS + 1s.
Long waves were also recorded at Durham, Stonyhurst, Calcutta, and La Plata.

Jan. 19d. 12h. 59m. 0s. Epicentre 0°·8N. 27°·9W. (as at 12h. 37m.). X.

A = +·884, B = −·468, C = +·014 ; D = −·468, E = −·884 ;
G = +·012, H = −·007, K = −1·000.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan	41·4	297	—	—	i 13 50	− 7	e 19·6	—
Sucre	41·7	240	7 51	+ 5	—	—	24·0	—
Granada	42·7	29	i 7 50	− 4	14 23	+ 7	21·0	26·4
La Paz	43·3	245	i 8 11	+12	14 40	+15	21·4	25·6
Toledo	44·7	26	e 7 11	−59	—	—	—	—
Strasbourg	56·8	28	i 8 43a	−59	—	—	—	—
Uccle	57·0	24	9 43	0	—	—	—	—
Oak Ridge	57·2	323	i 9 43	− 2	—	—	—	—
Stuttgart	57·6	28	9 47	0	—	—	—	—
Triest	57·8	33	i 9 48	− 1	i 17 51	+ 4	—	41·7
De Bilt	58·3	23	i 9 53	+ 1	—	—	—	16·5
Prague	61·0	29	e 11 30	+19	—	—	—	—
Tiflis	76·6	47	11 48	− 1	e 21 40	+ 2	42·0	—

Additional readings :—
San Juan e = +17m.55s. = S_cS + 5s.
La Paz iPE = +8m.16s., iSN? = +14m.54s.
Triest iPP = +11m.44s.

Jan. 19d. Readings also at 1h. (Bucharest), 2h. (La Paz, Samarkand, and Sofia), 3h. (Kodaikanal), 5h. (Balboa Heights), 7h. (Nagoya and Tokyo), 12h. (Amboina), 13h. (Santiago and Sofia), 14h. (Tananarive), 15h. (Santiago (4) and Tananarive), 16h. (Nanking), 17h. (Agra and Andijan), 19h. (Mizusawa and Nagoya), 21h. (Batavia, Malabar, and Soengei Langka), 22h. (Berkeley), 23h. (Batavia, Malabar, Arisan, Karenka (2), and Taihoku (2)).

Jan. 20d. 0h. Readings for which no determination has been made :—

Adelaide (e) = 5m.36s., e = 11m.34s., i = 12m.41s., M = 17·2m.
Wellington i = 6m.50s., iL = 10m.22s.
Oak Ridge i = 7m.39s.
Melbourne i = 8m.48s., M = 15·2m.
Haiwee eE = 10m.8s.
Berkeley eZ = 10m.51s., iZ = 11m.2s., eEN = 11m.3s.
Pasadena iZ = 10m.56s., iZ = 11m.7s.
Riverside iZ = 10m.58s., iZ = 11m.9s.
De Bilt iZ = 17m.42s.
Stuttgart ePZ = 17m.45s.
Strasbourg e = 37m.

Jan. 20d. Readings also at 1h. (Ksara), 6h. (Granada and Toledo), 7h. (Christchurch), 11h. (Rathfarnham Castle), 15h. (Samarkand), 16h. (Mizusawa and Nagoya), 17h. (Andijan and Samarkand), 22h. (Capodimonte), 23h. (Andijan, Frunse, and Tashkent).

Jan. 21d. 0h. Readings for which no determination has been made :

Lick ePN = 9m.38s., eSN = 10m.29s.
Berkeley ePZ = 9m.42s., ePN = 9m.45s., ePE = 9m.47s., iPZ = 9m.51s., iSE = 10m.36s., iSZ = 10m.38s., iSN = 10m.41s.
Tucson e = 13m.21s., S = 13m.39s., L = 13m.56s.

Jan. 21d. 15h. Readings for two shocks for which no determinations have been made :

Sucre iP = 33m.24s., L = 35m.0s.
La Plata P = 33m.53s., S = 35m.39s., L = 36m.6s. ; T_o = 15h.31m.44s.
La Paz PN = 33m.57s., iSN = 35m.57s., iSE = 35m.59s., M = 36m.12s.

Oak Ridge i = 41m.32s.
Pasadena iP = 42m.36s.k, iZ = 44m.33s.
Berkeley iZ = 43m.0s.
La Jolla iPZ = 44m.29s.k.
Riverside iPZ = 44m.33s.

Jan. 21d. Readings also at 0h. (Andijan, Almata, and Frunse), 2h. (Almeria), 3h. (Erevan), 4h. (Amboina), 5h. (Berkeley), 6h. (Port au Prince), 11h. (Ksara), 14h. (Alicante and Balboa Heights), 16h. (Almata), 17h. (Manila and Malabar), 20h. (Andijan, Samarkand, Branner, and Nagoya), 21h. (Baku, Ksara, and Tashkent), 22h. (Manila), 23h. (Tashkent).

Jan. 22d. 0h. 33m. 18s. Epicentre 31°·4N. 131°·1E. (as on 1934 June 2d.). X.

A = −·561, B = +·643, C = +·521 ; D = +·754, E = +·657 ;
G = −·342, H = +·393, K = −·854.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Nagasaki	1·7	322	—	—	0 27	P*	0·7
Hukuoka B	2·3	345	0 33	0	1 2	+ 3	—
Hukuoka	2·3	345	0 33	0	1 1	+ 2	—
Husan	4·1	336	0 55	− 3	1 39	− 6	1·9
Sumoto	4·3	46	—	—	e 2 10	S*	3·1
Taikyu	4·9	336	2 7	S	(2 7)	+ 2	—
Zinsen	7·2	330	—	—	i 3 8	+ 4	—
Heizyo	8·8	332	3 55	S	(3 55)	+11	—
Nanking	10·5	278	e 10 56	?	—	—	14·3

For Notes see next page.

NOTES TO JAN. 22d. 0h. 33m. 18s.

Additional readings :—
Nagasaki P = +9s.
Sumoto eE = +2m.17s. = S_g +1s., eZ = +2m.25s., SZ = +2m.48s., SE = +2m.52s., eS?N = +3m.5s.
Zinsen i = +3m.24s.
Nanking e = +13m.52s.
Long waves were also recorded at Chiufeng, Hong Kong, Pulkovo, Sverdlovsk, and Tashkent.

Jan. 22d. Readings for which no determinations have been made :—

7h.
New Plymouth P? = 43m.42s., S = 45m.1s.
Wellington P = 44m.42s., S = 46m.5s.
Adelaide e = 48m.6s., e = 55m.6s., eL = 59m.15s., M = 93·8m.
Riverview e = 48m.12s., eL = 55m.48s., M = 58m.20s.
Pasadena iPZ = 55m.47s.
Riverside ePZ = 55m.47s.

9h.
Almata eP = 11m.0s., e = 11m.46s., iS_g = 11m.52s.
Andijan e = 11m.35s., eS_g = 12m.11s.
Frunse e = 12m.36s., e = 13m.22s.
Tchimkent e = 13m.5s., e = 13m.38s., M = 13m.56s.
Tashkent e = 13m.45s., eL = 13m.18s., M = 14m.0s.
Baku eL = 32m.30s.

11h.
Sofia e = 38m.2s., eS = 38m.39s.
Belgrade e = 39m.3s., e = 39m.20s., e = 39m.32s., e = 39m.52s., e = 47m.31s.
Zagreb eP = 39m.13s., eS = 40m.16s.
Triest P = 40m.8s., PPsP = 40m.21s., i = 41m.0s., S_g = 41m.8s., i = 41m.11s., iSSsS = 41m.15s., i = 41m.30s.

Jan. 22d. 14h. 56m. 50s. Epicentre 2°·7S. 138°·8E. (as on 1929 March 18d.). R.3.

A = −·752, B = +·658, C = −·047 ; D = +·659, E = +·752 ;
G = +·035, H = −·031, K = −·999.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	10·6	264	2 33	+ 4	—	—	—	—
Manila	24·7	315	i 5 20$_a$	+ 3	9 54	+18	13·0	15·3
Batavia	32·0	265	7 41	PP	13 0	SS	—	—
Adelaide	32·3	180	e 6 23	− 2	i 13 19	SS	i 20·0	20·2
Riverview	33·2	161	e 6 35	+ 1	i 11 50	− 4	—	18·1
Sydney	33·2	161	e 11 40	S	(e 11 40)	−14	17·6	18·6
Hong Kong	34·7	318	6 44	− 2	12 14	− 3	—	19·1
Melbourne	35·6	172	e 6 50	− 4	12 26	− 4	18·4	20·2
Perth	36·4	215	8 35	PPP	14 30	SS	19·8	22·5
Zi-ka-wei	37·7	338	e 7 15	+ 3	12 53	− 9	—	19·8
Nanking	39·6	333	i 7 30	+ 1	i 13 32	+ 2	19·4	—
Medan	40·6	279	7 46	+ 9	13 50	+ 5	—	—
Vladivostok	46·3	353	—	—	e 15 9	0	21·8	—
Chiufeng	47·6	337	i 8 34$_a$	+ 1	e 15 22	− 5	e 23·2	—
Calcutta	55·3	300	9 28	− 3	17 11	− 2	—	—
Kodaikanal	62·5	283	e 10 24	+ 2	—	—	—	—
Agra	65·7	302	i 10 44	+ 1	19 28	− 1	—	—
Bombay	68·3	292	e 10 52	− 8	e 19 52	− 9	—	—
Semipalatinsk	72·8	325	e 11 57	+29	—	—	—	—
Frunse	73·4	316	e 12 10	+39	—	—	—	—
Andijan	74·3	313	e 11 37	+ 1	21 11	− 1	—	—
Tashkent	76·6	315	i 11 48	− 1	i 21 32	− 6	e 34·5	44·9
Tchimkent	76·7	314	—	—	e 21 58	PS	—	—
Samarkand	77·9	311	—	—	e 21 12	−40	—	—
Sverdlovsk	85·8	327	i 11 35	−62	i 22 36	[−29]	34·2	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	T.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka	90·0	33	—	—	e 23 41	{+ 6}	e 41·9	—
Baku	91·0	311	e 13 26	+24	i 24 3	− 2	42·1	58·6
Tiflis	94·8	311	e 15 48	?	e 24 16	{+ 3}	46·7	64·6
Pulkovo	101·5	331	—	—	e 27 57	PS	46·2	58·4
Ksara	102·2	304	e 18 9	PP	—	—	—	58·2
Copenhagen	111·9	331	—	—	35 4	SS	57·2	—
Cheb	114·6	325	e 42 10?	?	e 44 48	?	—	74·2
Triest	115·8	321	—	—	i 42 59	SSSS	—	57·0
Stuttgart	117·1	325	e 21 10	?	—	—	e 61·2	73·2
De Bilt	117·4	330	—	—	e 30 10?	PS	e 54·2	64·5
Strasbourg	118·0	325	e 20 10?	PP	—	—	e 49·2?	—

Additional readings and notes :—
Manila ePEN = +5m.23s.
Adelaide iPP = +8m.6s., i = +11m.53s., +15m.3s. and +17m.15s.
Sydney e = +8m.10s., eS = +15m.22s ; S is given as eP.
Hong Kong SS? = +14m.40s. =SSS+4s.
Melbourne PP = +7m.27s., i = +13m.0s., SS = +14m.43s.
Perth SS = +17m.7s., SSS = +17m.32s., i = +17m.50s.
Zi-ka-wei iZ = +9m.3s.
Nanking iN = +8m.13s. and +14m.31s., iSS = +16m.32s.
Chiufeng iS = +15m.27s.
Calcutta PP = +11m.32s., PPP = +12m.31s.
Sverdlovsk i = +11m.55s., +22m.1s. and +27m.39s.
Tiflis eSKKS = +26m.9s., eSSS = +30m.14s.
Pulkovo e = +32m.35s. =SS +13s. and +42m.17s.
Ksara e = +17m.7s., PPS = +28m.19s.
Triest e = +51m.17s.
Strasbourg e = +24m.10s.? +28m.10s.? and +32m.10s.?
Long waves were also recorded at La Paz, Paris, Uccle, Hastings, and Wellington.

Jan. 22d. Readings also at 0h. (Almata, Sverdlovsk, and Vladivostok), 1h. (Manila), 3h. (Agra, Andijan, Samarkand, Sverdlovsk, Tashkent, and Tchimkent), 5h. (Nagoya), 8h. (Ksara, Tiflis, and Sumoto), 10h. (Adelaide), 11h. (Paris and Philadelphia), 12h. (Mizusawa and Taihoku), 14h. (Mizusawa (2)), 15h. (La Paz), 16h. (Edinburgh), 19h. (Almata, Karenko, and Taihoku), 20h. (Andijan, Frunse, and Tchimkent), 21h. (Strasbourg), 22h. (Amboina), 23h. (Bombay, Calcutta, and Sumoto).

Jan. 23d. 7h. 24m. 9s. Epicentre 52°·5N. 169°·3W. N.1.

A = −·598, B = −·113, C = +·793 ; D = −·186, E = +·983 ;
G = −·780, H = −·147, K = −·609.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		19·9	63	i 4 30	+ 1	i 8 22	SS	i 9·2	—
Victoria		29·1	79	5 54	− 3	10 52	+ 2	—	15·9
Seattle		30·0	80	e 5 41	−24	e 10 18	−46	12·4	—
Honolulu		32·4	160	i 6 51	+25	i 11 24	−17	13·8	—
Ukiah		34·1	94	e 6 57	+16	i 12 11	+ 3	14·6	—
Berkeley		35·5	95	e 6 57	+ 4	i 12 32	+ 3	—	—
Branner		35·8	96	e 6 5	−51	11 57	−36	—	—
Morioka		35·8	268	6 57	+ 1	12 22	−11	—	—
Lick		36·2	93	e 6 57	− 3	12 42	+ 3	—	—
Mizusawa	E.	36·2	268	e 6 59	− 1	12 37	− 2	17·6	—
	N.	36·2	268	e 6 50	−10	12 42	+ 3	18·1	—
Sendai		36·9	267	7 5	− 1	12 50	0	—	—
Hukusima		37·5	267	7 7	− 4	12 57	− 2	—	—
Bozeman		37·7	76	e 7 24	+12	i 13 5	+ 3	e 15·8	—
Mito		38·3	265	7 21	+ 3	13 10	− 1	—	—
Tyosi		38·5	265	7 20	+ 1	13 9	− 5	—	—

Continued on next page.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Kakioka	38·7	265	7 19	− 2	13 7	−10	—	—
Tukubasan	38·7	266	7 18	− 3	13 13	− 4	—	—
Haiwee	39·2	92	e 7 24	− 1	e 13 19	− 5	—	—
Kumagaya	39·2	265	7 25	0	13 17	− 7	—	—
Maebasi	39·2	264	7 27	+ 2	13 18	− 6	—	—
Tokyo	39·3	265	7 21	− 5	13 22	− 4	—	—
Vladivostok	39·4	281	e 7 27	0	i 13 25	− 2	13·8	26·5
Oiwake	39·5	266	7 30	+ 2	13 28	− 1	—	—
Nagano	39·6	266	7 29	0	13 35	+ 5	—	—
Kohu	40·0	267	7 35	+ 3	13 33	− 3	—	—
Misima	40·1	264	7 33	0	13 35	− 3	—	—
Pasadena	40·4	96	i 7 36k	+ 1	e 13 40	− 2	i 16·8	—
Riverside	41·0	96	e 7 39	− 1	e 13 52	+ 1	—	—
Nagoya	41·3	266	e 5 28	?	e 8 24	?	e 17·8	—
La Jolla	41·8	97	e 7 46	− 1	14 7	+ 4	—	—
Toyooka	42·3	269	7 50	− 1	e 14 24	+14	e 18·3	23·9
Kobe	42·7	268	e 7 54	0	14 17	+ 1	e 21·2	22·3
Sumoto	43·1	268	7 54	− 4	14 22	0	18·5	22·8
Titizima	43·9	254	8 4	0	—	—	—	—
Koti	44·5	268	8 8	− 1	14 40	− 3	—	—
Heizyo	45·5	279	8 16	− 1	—	—	—	—
Keizyo	45·8	277	8 15	− 4	14 50	−12	19·3	24·2
Zinsen	46·0	278	e 8 19	− 2	e 15 2	− 2	e 18·7	—
Tucson	46·1	91	8 28	+ 7	15 11	+ 5	20·1	—
Hukuoka B	46·4	272	e 8 30	+ 6	15 9	− 1	23·3	25·3
Hukuoka	46·4	272	e 8 24	0	e 15 4	− 6	—	—
Kumamoto	46·7	269	8 29	+ 3	—	—	—	—
Unzendake	47·0	270	8 21	− 8	15 12	− 7	—	—
Nagasaki	47·3	271	8 28	− 3	15 20	− 3	e 20·8	—
Chiufeng	50·6	287	8 56a	0	i 16 9	0	22·1	34·0
Nake	50·6	266	8 54	− 2	—	—	—	—
Chicago	53·5	66	e 8 20	+ 2	i 15 53	−56	i 24·7	—
Zi-ka-wei	53·5	275	i 9 17a	− 1	16 49	0	21·1	28·7
Florissant	53·9	71	i 9 21	0	i 16 55	+ 1	—	—
St. Louis	54·2	72	e 9 22	− 1	i 16 58	0	24·4	29·4
Nanking	54·5	278	i 9 23	− 2	i 17 0	− 2	21·2	28·2
Scoresby Sund	54·8	13	9 33	+ 6	17 21	+15	—	—
Ann Arbor	55·3	64	e 9 39	+ 8	e 17 15	+ 2	26·1	35·2
Little Rock	55·6	76	e 9 32	− 1	e 17 14	− 3	24·9	31·5
Toronto	56·7	59	i 9 30	−11	i 17 32	0	27·9	—
Isigakizima	56·8	267	9 31	−11	—	—	—	—
Ottawa	57·4	56	e 9 47	+ 1	i 17 41	− 1	27·9	—
Taihoku	57·8	271	e 9 54	+ 5	17 51	+ 4	—	—
Pittsburgh	58·7	63	i 9 57	+ 2	e 17 51	− 8	i 24·1	—
Ithaca	59·1	57	e 9 57	− 1	i 18 7	+ 3	—	—
Vermont	59·3	56	e 9 57	− 3	i 18 6	− 2	e 30·2	—
Arisan	59·4	270	e 10 0	0	18 6	− 2	—	—
Taito	59·8	269	e 10 4	+ 1	18 11	− 2	—	—
Takao	60·4	267	e 28 43	?	—	—	—	—
Charlottesville	61·2	64	e 10 11	− 2	i 18 31	− 1	e 27·5	—
Georgetown	61·3	62	e 10 11a	− 3	i 18 29	− 4	e 27·9	—
Oak Ridge	61·6	56	i 10 15	− 1	i 18 39	+ 2	e 29·9	—
Philadelphia	61·6	60	i 10 13	− 3	i 18 35	− 2	e 28·4	—
Semipalatinsk	61·6	317	e 11 37	?	—	—	31·8	—
Columbia	62·7	69	e 10 26	+ 3	e 18 33	−18	28·5	—
Sverdlovsk	63·3	332	i 10 23	− 4	i 18 47	−12	41·1	42·0
Hong Kong	64·3	274	10 33	− 1	19 12	+ 1	27·5	35·7
Manila	66·2	262	i 10 43a	− 4	19 39	+ 4	32·0	36·9
Pulkovo	66·6	349	e 10 47	− 2	e 19 40	0	31·8	41·4
Upsala	67·5	357	10 53	− 2	19 47	− 4	e 27·9	40·8

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Almata	68·5	314	11 1	0	20 41	(−13)	34·9	—
Phu-Lien	70·1	279	e 11 8	− 3	e 20 19	− 3	31·9	41·3
Edinburgh	70·9	7	—	—	i 20 36	+ 4	30·9	44·8
Copenhagen	71·8	0	11 16	− 6	20 44	+ 1	30·9	—
Königsberg	72·1	354	i 11 24	+ 1	i 21 37	PS	e 37·4	44·9
Tchimkent	72·4	318	e 11 25	0	—	—	35·8	—
Andijan	72·6	316	11 23	− 3	—	—	38·1	—
Stonyhurst	73·0	7	—	—	i 21 1	+ 4	e 35·9	46·1
Rathfarnham Castle	73·2	11	11 15	−15	20 45	−13	36·6	40·9
Bidston	73·4	7	i 11 37	+ 6	i 21 23	PS	—	—
Tashkent	73·4	317	i 11 25	− 6	i 20 51	−10	e 35·1	48·3
Hamburg	73·9	0	i 11 33a	− 1	e 21 12	+ 5	e 36·0	48·9
De Bilt	75·3	3	11 42	0	21 23	− 1	31·9	48·7
Oxford	75·3	7	i 11 48	+ 6	i 21 19	− 5	e 34·9	51·1
Kew	75·6	6	i 11 43	− 1	i 21 24	− 3	e 35·9	51·4
Samarkand	75·8	318	11 42	− 3	—	—	33·9	—
Göttingen	76·0	0	i 11 56	+10	—	—	—	49·9
Jena	76·5	359	e 11 51	+ 2	e 21 32	− 5	e 35·1	52·9
Uccle	76·5	4	i 11 48a	− 1	i 21 35	− 2	32·9	49·5
Amboina	76·7	246	e 11 39	−11	21 17	−22	e 25·9	—
Cheb	77·4	359	e 10 52	−62	e 21 43	− 4	e 38·9	51·4
Prague	77·4	357	e 11 54	0	e 21 45	− 2	e 37·9	46·9
Dehra Dun	78·5	306	18 31	?	29 51	?	43·5	51·9
Karlsruhe	78·5	1	12 0	0	22 13	PS	e 43·9	47·2
Paris	78·5	4	e 11 58	− 2	e 22 6	+ 7	e 26·8	53·9
Stuttgart	78·8	1	12 1	0	e 21 58	− 5	e 32·9	46·9
Strasbourg	78·9	2	i 12 1a	− 1	i 22 1	− 3	e 35·8	53·8
Calcutta	79·4	293	12 9	+ 4	21 55	−14	—	—
Vienna	79·4	357	i 12 2	− 3	21 59	−10	e 39·9	51·9
Piatigorsk	79·5	337	12 4	− 1	22 20	+10	—	—
Budapest	79·8	354	12 6	− 1	22 12	− 2	35·9	46·9
Basle	79·9	3	e 12 8	+ 1	e 22 11	− 4	—	—
Zurich	80·1	1	e 12 9a	+ 1	22 14	− 3	—	—
Theodosia	80·2	343	e 12 9	0	22 17	− 1	34·9	—
Graz	80·3	357	i 12 9	0	i 22 17	− 2	e 36·9	56·1
Neuchatel	80·4	2	e 12 10	0	e 22 15	− 5	—	—
Simferopol	80·4	343	12 11	+ 1	22 23	+ 3	32·0	—
Yalta	80·8	342	12 13	+ 1	22 27	+ 3	e 37·7	—
Baku	81·1	331	i 12 14	0	i 22 43	+16	—	—
Agra	81·2	304	12 11	− 3	22 16	−12	39·3	53·6
Tiflis	81·3	335	12 13	− 2	e 22 22	− 8	42·9	83·2
Zagreb	81·6	355	e 12 17	+ 1	e 22 31	− 2	e 37·9	—
Triest	81·8	358	i 12 15a	− 2	i 22 29	− 6	36·0	47·1
Padova	82·0	359	i 12 20	+ 2	i 22 35	− 2	e 45·9	57·1
Belgrade	82·3	353	e 12 21	+ 1	e 22 38	− 2	e 43·6	—
Piacenza	82·4	1	12 23	+ 3	i 22 43	+ 2	39·9	50·4
Erevan	83·0	335	12 22	− 1	22 46	− 1	e 41·9	—
San Juan	83·2	68	e 12 23	− 1	i 22 47	− 2	41·1	—
Prato	83·6	357	i 12 29	+ 3	i 22 44	[− 4]	e 34·1	48·9
Florence	83·7	0	i 12 23a	− 4	i 22 49	[+ 1]	28·9	35·3
Sofia	84·2	350	e 12 41	+12	e 22 53	[0]	40·4	50·1
Serra do Pilar	84·9	15	12 33	0	23 10	+ 3	41·6	47·1
Barcelona	85·8	7	—	—	23 20	+ 4	e 29·7	53·5
Tortosa	86·2	8	12 37	− 2	23 2	[− 6]	e 37·9	57·9
Toledo	86·8	11	i 12 41	− 1	23 21	− 4	35·0	58·2
Medan	88·4	274	12 53	+ 3	23 15	[− 8]	e 58·9	—
Alicante	88·6	9	e 12 39	−12	e 23 39	− 4	e 42·7	54·8
Hyderabad	89·0	300	12 55	+ 2	23 25	[− 1]	40·7	55·1
Granada	89·4	11	i 12 52	− 3	e 23 24	[− 5]	42·4	49·6
Malaga	89·8	10	12 55	− 1	—	—	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando	89·8	14	13 2	+ 6	23 47	− 7	39·9	—
Almeria	89·9	10	e 12 34	−23	e 13 26	?	e 41·0	58·4
Algiers	90·5	6	i 12 49	−11	i 23 32	[− 4]	39·8	56·3
Bombay	90·7	303	i 12 58	− 3	23 21	[−16]	e 40·9	58·0
Tunis	90·8	1	—	—	e 22 51?	[−46]	35·9	—
Ksara	90·9	340	i 13 1	− 1	23 38	[0]	—	—
Batavia	91·2	261	13 2	− 1	23 1	[−39]	e 43·9	—
Riverview	93·0	211	e 13 21	+10	e 23 37	[−13]	e 30·0	48·3
Sydney	93·0	211	e 10 16	?	—	—	60·5	61·3
Wellington	94·8	192	—	—	23 45	[−15]	38·9	45·9
Kodaikanal	95·5	295	e 13 13	−10	i 23 57	[− 6]	42·8	59·7
Helwan	95·7	342	13 24	0	23 58	[− 6]	53·1	58·0
Colombo	96·9	291	13 20	− 9	—	—	44·6	61·0
Adelaide	98·5	220	—	—	e 24 57	−16	e 39·2	49·7
Melbourne	98·7	215	—	—	i 25 2	−13	44·9	51·6
Huancayo	102·0	94	e 14 29	+36	i 25 31	−13	48·0	—
La Paz	109·8	92	—	—	26 36	{+31}	48·2	71·0
Sucre	113·5	93	e 19 38	PP	25 14	[−14]	53·3	—
Tananarive	135·9	309	—	—	29 6	{+ 7}	70·9	76·3
Cape Town	160·6	340	20 25	{−22}	31 30	{+ 8}	83·4	93·4

Additional readings :—
Honolulu iS* = +12m.8s.
Ukiah e = +14m.21s. = SSS + 0s.
Berkeley eE = +7m.0s., iPE = +7m.3s., iPNZ = +7m.6s., iZ = +8m.6s. = PP − 1s. and +9m.24s. = P_cP − 3s., eSZ = +13m.6s., eN = +15m.11s., eZ = +16m.46s. eE = +16m.48s., eN = +17m.0s. = S_cS − 15s., eE = +19m.32s.
Branner eE = +11m.36s.
Bozeman ePP = +8m.53s. ; T_0 = 7h.24m.7s.
Pasadena iS = +13m.45s.
Toyooka eP = +7m.56s.
Kobe iZ = +8m.13s., eSN = +14m.26s., eL_qE = +17m.39s.
Sumoto PZ = +7m.56s., PN = +7m.58s., eSZ = +14m.17s.
Tucson SS = +17m.51s.
Hukuoka eP? = +7m.29s.
Chiufeng PP = +10m.53s., SS?EZ = +19m.44s.
Zi-ka-wei iZ = +9m.25s. and +9m.38s., PPZ = +11m.27s.
Florissant ipPZ = +9m.30s.; iPPZ = +11m.38s., isSEN = +17m.11s., iSSEN = +19m.7s. = S_cS − 3s., iSSSEN = +20m.37s. = SS + 8s. ; T_0 = 7h.24m.18s.
St. Louis ipPEN = +9m.31s., ePPE = +11m.17s., iEN = +11m.40s., isSEN = +17m.16s., iEN = +19m.6s. = S_cS − 6s., eSSE = +20m.40s., eSSN = +20m.51s.
Scoresby Sund +19m.27s. = S_cS + 11s.
Ann Arbor iN = +19m.15s. = S_cS − 4s., eSS = +21m.3s., eSSS = +22m.57s.
Little Rock epPE = +9m.42s., iN = +9m.54s., iEN = +10m.4s., esSEN = +17m.32s., ePSEN = +17m.40s. ; T_0 = 7h.24m.18s.
Toronto PPEN = +11m.51s.? ; T_0 = 7h.23m.56s.
Ottawa PP = +11m.57s., SS = +21m.33s.
Pittsburgh ePP = +11m.59s., iS = +17m.58s. = PS − 6s., iS_cS = +19m.42s., eSS = +21m.43s.
Ithaca ePPN = +12m.15s. ; T_0 = 7h.24m.18s.
Vermont iSKS = +19m.51s. = S_cS + 4s., eSS = +21m.56s., eSSS = +24m.51s.
Charlottesville e = +19m.55s. = S_cS − 5s., +22m.51s. and +25m.25s. = SSSS − 3s.
Georgetown PP = +12m.32s ; T_0 = 7h.24m.0s.
Oak Ridge eZ = +12m.9s., eNW = +12m.25s. = PP + 1s. and +14m.5s. = PPPP − 9s., eZ = +14m.9s., iSZ = +18m.45s., e = +22m.51s.?
Philadelphia iPP = +12m.38s., iS_cS = +20m.1s., eSS = +22m.50s., iSSS = +25m.33s. = SSSS − 4s.
Columbia i = +20m.18s. = S_cS + 6s., e = +22m.43s. = SS − 7s., SS = +25m.56s. = SSSS − 7s.
Sverdlovsk L_q = +33m.39s.
Hong Kong PP = +12m.49s., PPP = +14m.5s., PPPP = +14m.39s., SKS = +20m.15s. = S_cS − 8s., SS = +23m.9s., SSS = +24m.42s.
Upsala SSN = +24m.42s.
Copenhagen PPP = +15m.51s., PS = +21m.29s., SS = +15m.45s.
Königsberg i = +12m.2s., e = +12m.37s., i = +25m.53s., eN = +29m.21s., eE = +31m.21s.
Stonyhurst e = +17m.54s.
Bidston iSS = +26m.57s., iSSS = +30m.21s. = SSSS + 11s.
Hamburg eSS = +26m.15s., eSSS = +29m.3s.
Oxford PP = +16m.9s. = PPP + 6s.

Continued on next page.

Kew iE = +21m.32s., iPSN = +21m.44s., iZ = +22m.18s., iSS = +27m.2s., eZ = +29m.41s., iSSS = +30m.43s., eL$_q$ = +31m.51s.
Göttingen iENZ = +12m.3s.?, eNZ = +31m.3s.
Jena eN = +26m.51s., e = +30m.51s.
Uccle PP = +14m.46s., PPP = +16m.40s., iPS = +22m.18s., SS = +26m.56s., i = +30m.52s.
Prague eSS = +27m.13s.
Stuttgart iZ = +12m.21s., ePP = +14m.51s., ePS = +22m.39s. ; T$_0$ = 7h.42m.16s.
Strasbourg iPP = +15m.1s., ePP = +16m.59s., PS = +22m.37s., eSS = +27m.16s., eSSS = +31m.19s., eSSSS = +33m.22s.
Vienna P$_c$P = +12m.24s.
Budapest PP = +15m.14s., PS = +23m.10s., SS = +28m.4s., SSS = +30m.10s.
Graz iPS = +23m.15s., eSS = +28m.3s.
Agra PP = +15m.17s., SKS?N = +22m.21s., PS = +23m.18s., SS = +28m.8s., SSS = +31m.21s.
Tiflis e = +12m.51s. and +16m.29s., ePS = +23m.16s., eSS = +27m.57s.
Zagreb eSS = +28m.21s. and +32m.27s.
Triest i = +15m.37s. = PP + 18s. and +22m.48s., PS = +23m.11s., i = +23m.46s., SS = +27m.39s., i = +34m.15s.
San Juan e = +15m.56s., i = +28m.9s. = SS + 9s., e = +34m.6s.
Sofia eP = +12m.51s.
Toledo i = +12m.47s., SPS = +23m.9s.
Medan SE = +23m.31s.
Granada PP = +16m.28s.
San Fernando SS = +29m.47s.
Bombay PPEN = +16m.33s., PSN = +25m.2s., SSEN = +30m.11s., SSSEN = +34m.7s.
Ksara PS = +24m.27s.
Riverview eE = +23m.41s.
Kodaikanal PPP = +18m.33s., SKS = +23m.30s., PS = +24m.59s. = S + 12s., PPS = +25m.27s., SS = +30m.1s., SSS = +33m.42s.
Adelaide iS? = +19m.36s. = PPP + 6s., i = +31m.51s. = SS + 10s.
Melbourne e = +20m.41s. and +24m.9s. = SKS − 10s., i = +31m.31s. = SS − 13s. and +32m.10s., SSS = +35m.21s.
Huancayo ePP = +18m.9s., iSKS = +24m.27s., ePS = +27m.22s., SS = +32m.47s., e = +40m.15s.
La Paz PPZ = +19m.2s., SKS = +25m.2s., PS = +28m.26s., SSN = +34m.26s., SSE = +34m.36s.
Tananarive PSKSEN = +33m.3s., PPSEN = +33m.51s., SSEN = +40m.13s., SSSEN = +45m.30s.
Cape Town E = +21m.30s., +23m.35s., and +29m.3s., N = +32m.0s., E = +33m.20s., N = +34m.40s. = SKSP − 7s., E = +35m.20s., N = +35m.45s., E = +36m.34s., +44m.37s. = SS − 1s., N = +45m.35s.
Long waves were also recorded at Bergen, Grozny, Laibach, La Plata, and Pennsylvania.

Jan. 23d. 7h. 54m. 17s. (I)
7h. 58m. 26s. (II)
9h. 52m. 7s. (III)
13h. 46m. 57s. (IV)
Epicentre 52°·5N. 169°·3W. (as at 7h. 24m.).
X. X. X. X.

Some of these readings were given as additional readings to the previous shock.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
II Berkeley	35·5	95	e 6 55	+ 2	—	—	—	—
III	35·5	95	e 6 55	+ 2	—	—	—	—
IV	35·5	95	e 6 53	0	—	—	—	—
IV Branner	35·8	96	e 6 58	+ 2	—	—	—	—
IV Lick	36·2	93	e 6 43	−17	—	—	—	—
II Haiwee	39·2	92	e 7 25	0	—	—	—	—
III	39·2	92	e 7 33	+ 8	—	—	—	—
I Pasadena	40·4	96	i 7 41	+ 6	—	—	—	—
II	40·4	96	i 7 34	− 1	—	—	—	—
III	40·4	96	e 7 33	− 2	—	—	—	—
I Riverside	41·0	96	e 7 38	− 2	—	—	—	—
II	41·0	96	e 7 40	0	—	—	—	—
III	41·0	96	e 7 40	0	—	—	—	—
I La Jolla	41·8	97	e 7 44	− 3	—	—	—	—
II	41·8	97	e 7 46	− 1	—	—	—	—
III	41·8	97	e 7 43	− 4	—	—	—	—

Continued on next page.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
II Nanking	54·5	278	e 9 24	− 1	—	—	—	—
I Oak Ridge	61·6	56	i 10 13	− 3	—	—	—	—
II	61·6	56	i 10 16	0	—	—	e 38·1	—
II Almata	68·5	314	e 11 2	+ 1	—	—	—	—
II Frunse	69·9	317	e 11 48	(+15)	—	—	—	—
II Tchimkent	72·4	318	e 11 28	+ 4	—	—	—	—
II Andijan	72·6	316	e 11 26	0	—	—	—	—
II Samarkand	75·8	318	e 13 25	?	—	—	—	—
II Theodosia	80·2	343	e 12 30	+21	—	—	—	—
II Simferopol	80·4	343	e 12 11	+ 1	—	—	—	—
II Yalta	80·8	342	e 12 13	+ 1	—	—	—	—
II Tiflis	81·3	335	e 12 17	+ 2	—	—	—	—
II Erevan	83·0	335	e 12 20	− 3	—	—	—	—

Additional readings :—
II Berkeley iZ = +7m.8s. and +9m.0s., III iZ = +7m.1s. and +7m.11s.; IV iP = +6m.59s., eN = +7m.2s., iN = +7m.32s.
IV Branner eN = +6m.49s. and +7m.6s., eE = +7m.12s., eN = +7m.28s.
IV Lick eE = +6m.46s., eN = +6m.56s. and +7m.30s.
III Pasadena iZ = +7m.41s.
II Riverside eZ = +9m.38s. = P_cP − 7s.
III La Jolla iZ = +8m.13s.
II Oak Ridge i = +12m.19s. = PP − 5s.
Long waves also at III Oak Ridge and Vermont.

Jan. 23d. Readings also at 0h. (Apia), 2h. (Neuchatel), 3h. (Branner and Lick), 7h. (Adelaide and Nagoya), 8h. (Perth), 9h. (Hastings), 10h. (Sumoto), 11h. (Bucharest, Tiflis, and Nagoya), 12h. (Granada and Pasadena), 13h. (Malabar), 20h. (Granada and Manila), 21h. (Tiflis), 22h. (Samarkand), 23h. (Berkeley).

Jan. 24d. Readings at 0h. (Almata), 6h. (Andijan and Samarkand (2)), 7h. (Amboina), 11h. (Chatham Ils.), 12h. (Frunse, Tchimkent, and La Paz), 15h. (Erevan and Sofia), 19h. (Nagoya), 22h. (San Fernando), 23h. (La Paz).

Jan. 25d. Readings for which no determination has been made, more than one shock probably from the same epicentre :—

Samarkand eP = 13h.35m.59s.
Tashkent eP = 13h.36m.10s., eL = 36m.34s., M = 36m.36s.
Sebastopol S_g = 13h.43m.5s.

Tiflis iP = 14h.37m.44s., iL = 37m.58s.
Erevan iP_g = 14h.37m.50s., P$_s$P = 37m.55s., PP = 38m.0s., iS_g = 38m.4s.
Piatigorsk P = 14h.38m.1s., P_g = 38m.8s., iS* = 38m.41s., M = 38m.53s.
Grozny P = 14h.38m.16s., iP_g = 38m.24s., S = 38m.46s., M = 39m.8s.
Sotchi eP = 14h.38m.38s., P* = 38m.44s., P_g = 38m.50s., S_g = 39m.39s., M = 39m. 44s.
Baku eP = 14h.38m.55s., iS = 40m.10s., L = 41m.0s., M = 41m.54s.
Theodosia eP = 14h.39m.24s., S = 40m.40s.
Yalta eP = 14h.39m.28s., iS = 40m.54s.
Sebastopol eP = 14h.39m.42s., S = 40m.57s.
Simferopol eP = 14h.39m.48s., S = 40m.58s.
Ksara eP = 14h.40m.14s., S = 41m.40s., SsS = 42m.43s., SSsS = 42m.58s.
Sverdlovsk P = 14h.40m.48s., S = 44m.14s., L = 46m.30s., M = 49m.12s.
Tashkent iP = 14h.41m.54s., iS = 45m.32s., M = 55m.24s.
Pulkovo P = 14h.42m.11s., eS = 46m.13s., L = 48m.54s., M = 50m.18s.
Andijan eP = 14h.42m.21s.
Vladivostok e = 15h.11m.10s.
Long waves at Bombay.

Yalta P = 14h.45m.52s.
Sebastopol eP = 14h.46m.29s.
Tiflis P = 14h.47m.58s., e = 48m.8s., iL = 48m.11s.
Erevan eP_g = 14h.48m.5s., eS_g = 48m.19s.
Grozny e = 14h.49m.6s.

Tiflis e = 15h.44m.54s., e = 45m.3s., L = 45m.7s.
Erevan eP_g = 15m.44m.58s., eS_g = 45m.14s.
Grozny e = 15h.48m.0s.

Tiflis e = 20h.30m.47s., iL = 31m.0s.
Erevan eP_g = 20h.30m.51s., eS_g = 31m.5s.
Grozny eP = 20h.31m.15s., eS_g = 31m.55s.

Jan. 25d. 21h. 37m. 32s. Epicentre 24°·0N. 120°·0E. (as on 1924 Nov. 2d.). X.

A = −·457, B = +·792, C = +·407; D = +·866, E = +·500;
G = −·204, H = +·352, K = −·914.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Arisan	0·9	129	e 0 12	− 1	0 19	− 4
Tainan	1·0	170	e 0 16	+ 2	0 28	S*
Takao	1·4	170	e 0 31	S	(e 0 31)	− 5
Karenko	1·5	90	e 0 43	S*	—	—
Taito	1·6	145	0 23	0	0 32	P_g
Taihoku	1·8	53	e 1 11	?	—	—

Jan. 25d. Readings also at 0h. (Balboa Heights, Medan, Hong Kong, Sverdlovsk, and Tashkent), 1h. (Calcutta and Mizusawa), 3h. (Mizusawa, Nagoya, and San Juan), 5h. (Berkeley, Lick, La Paz, Christchurch, Hastings, and Wellington), 6h. (Sebastopol), 10h. (Balboa Heights), 16h. (Tiflis (2) and Mizusawa), 17h. (Tiflis (3)), 19h. (Little Rock and Mizusawa), 21h. (Erevan, Grozny, Tiflis, Arisan, Karenko, and Taihoku), 22h. (Tiflis (2) and Berkeley).

Jan. 26d. 3h. Readings for which no determination has been made:—
Tashkent eP = 7m.5s., iS = 7m.57s., M = 8m.48s.
Andijan eP = 7m.10s., e = 7m.38s., M = 8m.10s.
Tchimkent e = 8m.14s., S_g = 8m.42s.
Samarkand e = 9m.24s.

Jan. 26d. 7h. Readings for which no determination has been made:—
Haiwee eP = 30m.30s.
Pasadena iPZ = 30m.39s.a, iEZ = 30m.48s.
Mount Wilson iP = 30m.39s., iZ = 30m.49s.
Riverside ePZ = 30m.42s., iZ = 30m.51s.
La Jolla iPZ = 30m.49s., iZ = 30m.59s.
Chiufeng eL?E = 37m.59s., M = 42m.24s.
Sverdlovsk e = 41m.48s., L = 49m.
Tashkent eL = 52m.30s., M = 58m.54s.
Baku eL = 59m., M = 66m.42s.

Jan. 26d. 11h. 40m. 50s. Epicentre 41°·2N. 43°·6E. N.3.

Given by Piatigorsk.

A = +·545, B = +·519, C = +·659; D = +·690, E = −·724;
G = +·477, H = +·454, K = −·752.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis	1·0	63	e 0 4	−10	—	—	i 0·3	—
Grozny	2·6	37	e 0 39	+ 2	1 15	S*	—	1·6
Piatigorsk	2·9	352	e 0 50	P_g	1 36	S_g	—	1·8
Baku	4·8	98	e 1 26	P*	—	—	2·5	—
Theodosia	7·1	300	e 3 17	S	(e 3 17)	+16	—	—
Yalta	7·6	292	e 3 15	S	(e 3 15)	+ 1	—	—
Simferopol	7·9	295	e 3 21	S	(e 3 21)	0	—	—
Sebastopol	8·1	292	e 2 0	+ 5	—	—	—	—
Ksara	9·6	221	e 3 47	?	5 25	S_g	—	—
Sverdlovsk	19·1	30	—	—	e 7 43	− 5	i 10·5	—

Additional readings:—
Grozny P_g = +44s., PsP = +47s., S_g = +1m.21s.
Piatigorsk P_g = +56s., PP = +1m.0s., SsS = +1m.39s,
Ksara SsS = +6m.24s,

Jan. 26d. 17h. 41m. 39s. Epicentre 85°·0N. 34°·8E. N.2.

A = +·072, B = +·050, C = +·996 ; D = +·571, E = −·821 ;
G = +·818, H = +·568, K = −·087.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo	25·2	186	5 27	+ 5	9 49	+ 5	14·8	15·2
Sverdlovsk	28·7	152	5 50	− 3	i 10 44	+ 1	14·4	—
Grozny	41·8	168	e 7 51	+ 4	—	—	—	—
Tashkent	44·6	144	i 9 56	(− 1)	e 14 37	− 7	—	34·7
Baku	44·8	165	—	—	e 14 59	+12	21·8	33·2
Andijan	45·3	140	e 8 16	+ 1	—	—	—	—
Chiufeng	49·3	93	e 8 48	+ 2	e 15 56	+ 5	—	—
Ksara	51·1	180	e 18 2	?	e 27 47	?	e 33·4	—
Haiwee	58·3	335	e 9 53	+ 1	—	—	—	—
Mount Wilson	60·3	336	i 10 7	0	—	—	—	—
Pasadena	60·4	335	i 10 7	0	—	—	—	—
Riverside	60·5	334	e 10 7	− 1	—	—	—	—
La Jolla	61·6	334	i 10 17	+ 1	—	—	—	—

Additional readings and note :—
Pulkovo L_q = +12m.51s.
Tashkent e = +18m.6s. = S_cS − 4s., +20m.3s., +24m.3s., and +29m.21s. ; P_cP is given as iS.
Baku e = +7m.33s., +9m.26s., +18m.17s. = S_cS +6s. and +19m.14s.
Long waves at Scoresby Sund and Vladivostok.

Jan. 26d. Readings also at 0h. (Tiflis), 1h. (Samarkand), 2h. (Samarkand), 3h. (Tiflis), 4h. (Tiflis), 5h. (Phu-Lien), 9h. (Erevan (2), Grozny (2), and Samarkand), 10h. (Batavia and Malabar), 11h. (Perth and Riverview), 15h. (Apia, Haiwee, Mount Wilson, and Pasadena), 16h. (Batavia and Malabar (2)), 18h. (Agra and Calcutta), 19h. (Batavia and Malabar), 21h. (Malabar), 22h. (Malabar).

Jan. 27d. 16h. Readings for which no determination has been made :—
Riverview e = 3m.18s., i = 7m.10s. and 7m.16s., eL = 8m.42s.
Wellington i = 7m., L = 8m.
Pasadena iP = 11m.18s.
Mount Wilson iP = 11m.19s.
Riverside eP = 11m.20s., eZ = 11m.35s.
Perth e = 13m.0s., e = 14m.21s., M = 28m.0s.
Sverdlovsk e = 28m.10s., L = 51m.
Long waves at Baku.

Jan. 27d. Readings also at 0h. (Tashkent), 1h. (Tiflis), 3h. (La Plata, Santiago, Mizusawa, Nagoya, and Sumoto), 4h. (La Paz), 5h. (Branner, Berkeley, and Lick), 6h. (La Paz, Sebastopol, and Wellington), 8h. (Tokyo), 14h. (Wellington), 15h. (Nagoya), 16h. (Sebastopol), 17h. (De Bilt), 18h. (Andijan and Chiufeng), 20h. (Erevan and Medan), 21h. (Tiflis (2)), 22h. (Tiflis (2)), 23h. (Bombay, Calcutta, Tashkent, Tiflis, and Sverdlovsk).

Jan. 28d. Readings at 1h. (La Paz), 2h. (Chiufeng, Nanking, Sverdlovsk, Tashkent, and Vladivostok). 3h. (Almata), 5h. (Berkeley, Branner, Lick, and Santiago), 6h. (Mount Wilson, Pasadena, and Tucson), 7h. (Theodosia), 8h. (Tucson and Wellington), 9h. (Adelaide, Perth, Chiufeng, Mizusawa, Nanking, Nagoya, and Oak Ridge), 10h. (Berkeley, Haiwee, Mount Wilson, Pasadena, Riverside, and Sofia), 11h. (Berkeley, Branner, and Lick), 14h. (Mount Wilson, Riverside, and Pasadena), 15h. (Wellington), 17h. (Tiflis (2 20h. (Tchimkent), 21h. (Andijan and Tchimkent).

Jan. 29d. Readings for which no determination has been made :—
Batavia iP = 23h.4m.51s., iS = 5m.10s.
Malabar iP = 23h.5m.22s., iS = 5m.37s.
Soengei Langka iP = 23h.10m.48s., iS = 11m.3s.
Batavia eP = 23h.11m.1s., iS = 11m.20s.
Malabar eP = 23h.11m.41s., iS = 12m.8s.
Malabar P = 23h.16m.6s., iS = 16m.23s.

Jan. 29d. Readings also at 0h. (Mount Wilson, Pasadena, and Triest), 2h. (Sverdlovsk and Tashkent), 3h. (Hastings), 9h. (Mizusawa and Nagoya), 16h. (Nagoya), 20h. (Berkeley), 21h. (La Paz), 23h. (Amboina and Sofia).

Jan. 30d. 0h. 35m. 21s. Epicentre 50°·4N. 95°·0E. N.2.

A = −·056, B = +·635, C = +·771; D = +·996, E = +·087; G = −·067, H = +·768, K = −·637.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Semipalatinsk	9·4	277	2 14	+ 1	4 36	S*	4·9	5·1
Almata	14·3	247	3 20	+ 1	5 58	0	6·8	8·0
Frunse	15·9	250	3 39	− 1	6 47	SS	8·8	—
Chiufeng	18·0	117	e 4 5	− 2	e 7 35	SS	e 9·2	10·7
Andijan	18·5	247	4 12	− 1	7 34	− 2	9·2	—
Tchimkent	19·2	255	4 31	PP	7 57	+ 7	9·4	—
Tashkent	20·0	252	i 4 27	− 3	i 8 6	0	i 10·1	11·0
Sverdlovsk	21·1	301	i 4 43	+ 2	i 8 42	PcP	12·8	13·4
Nanking	25·4	127	5 21	− 3	9 49	+ 1	13·3	16·1
Vladivostok	26·0	91	e 5 31	+ 2	—	—	—	—
Calcutta	28·4	193	—	—	e 10 20	−18	—	—
Baku	32·7	271	—	—	e 11 46	0	e 17·1	22·1
Grozny	33·8	277	e 7 52	PP	—	—	—	—
Tiflis	35·2	276	6 53	+ 2	e 12 4	−20	e 21·6	—
Erevan	36·2	274	e 7 5	+ 5	—	—	—	—
Pulkovo	36·6	310	—	—	13 0	+15	20·6	22·9
Ksara	45·6	272	e 8 10	− 8	e 15 7	+ 8	—	—
Pasadena	90·6	27	e 13 4	+ 4	—	—	—	—

Additional readings:—
Frunse e = +7m.39s.
Sverdlovsk L_g = +11m.45s.
Baku e = +14m.30s.
Tiflis e = +14m.54s., +16m.26s., +18m.43s., and +19m.28s.
Pulkovo e = +17m.49s.
Ksara ePP = +9m.58s., eSS = +18m.16s. = S_eS +0s., eSSS = +19m.27s.
Long waves also at Bombay, Hyderabad, Bidston, Edinburgh, Kew, and other European stations.

Jan. 30d. 0h. Readings for which no determination has been made:—
Phu-Lien 48m.
Heizyo P = 48m.27s.
Zinsen eE = 48m.53s., eL = 51m.2s.
Hong Kong P? = 49m.4s., S? = 50m.49s., L = 51m.38s., M = 52m.25s.
Husan P = 49m.17s., S = 50m.50s., L = 53m.5s.
Manila P = 51m.35s., S = 55m.57s., L = 58m.36s., M = 61m.

Jan. 30d. 7h. Readings for which no determination has been made:—
Medan P = 20m.34s., iNS = 21m.1s., iS = 21m.21s.
Andijan eP = 27m.38s., S = 33m.54s.
Samarkand P = 27m.46s.
Frunse eP = 28m.0s.
Tchimkent eP = 28m.56s.
Sverdlovsk iP = 29m.42s., S = 37m.48s., L = 47m.
Nanking e(S) = 37m.5s.
Long waves at De Bilt and Hong Kong.

Jan. 30d. Readings also at 0h. (La Paz), 1h. (Florence and Phu-Lien), 2h. (Nagoya), 4h. (Andijan, Almata, and Samarkand), 10h. (Ksara), 11h. (Nagoya and Tiflis), 13h. (Tiflis), 17h. (Erevan, Grozny, and Nagasaki), 18h. (Toyooka), 20h. (Oak Ridge), 21h. (Triest).

Jan. 31d. 6h. 27m. 30s. Epicentre 38°·7N. 70°·5E. (as on Jan. 5d.). X.

A = +·261, B = +·736, C = +·625.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	2·5	35	e 0 35	− 1	1 3	− 1	—	1·1
Tashkent	2·8	342	e 0 40	0	i 1 14	+ 2	e 1·3	1·9
Samarkand	2·9	289	e 0 46	P*	e 1 26	S*	—	—
Tchimkent	3·7	350	—	—	i 1 35	0	—	—
Frunse	5·2	36	e 2 20	S	(e 2 20)	+ 7	—	—

Jan. 31d. 9h. 5m. 54s. (I) N.3.
9h. 8m. 34s. (II) X.
9h. 12m. 36s. (III) X.
9h. 17m. 48s. (IV) X.
9h. 50m. 3s. (V) Epicentre 47°·7N. 9°·1E. X.
10h. 33m. 7s. (VI) X.
12h. 39m. 33s. (VII) X.
16h. 45m. 56s. (VIII) X.

Epicentre given by W. Hiller, "Jahre. und Mitteil. des Ober., Geol. Vereins," Bd. XXV, p, 81 1936.

A = +·665, B = +·106, C = +·740; D = +·158, E = −·987;
G = +·730, H = +·117, K = −·673.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Ravensburg	0·4	80	e 0 6	0	—	—	—	—
II	0·4	80	e 0 6	0	e 0 13	+ 3	—	—
IV	0·4	80	e 0 6	0	e 0 13	+ 3	—	—
V	0·4	80	—	—	e 0 13	+ 3	—	—
VI	0·4	80	—	—	e 0 13	+ 3	—	—
VII	0·4	80	e 0 6	0	i 0 13	+ 3	—	—
VIII	0·4	80	—	—	e 0 8	− 2	—	—
I Ebingen	0·5	346	e 0 7	0	—	—	—	—
II	0·5	346	e 0 7	0	e 0 15	+ 2	—	—
IV	0·5	346	e 0 8	+ 1	e 0 14	+ 1	—	—
V	0·5	346	e 0 7	0	—	—	—	—
VII	0·5	346	e 0 7	0	i 0 15	+ 2	—	—
VIII	0·5	346	—	—	0 15	+ 2	—	—
I Zurich	0·5	231	−0 1	− 8	i 0 5	− 8	—	—
II	0·5	231	—	—	i 0 13	0	—	—
III	0·5	231	e 0 6	− 1	e 0 12	− 1	—	—
IV	0·5	231	i 0 5	− 2	i 0 12	− 1	—	—
V	0·5	231	e 0 6	− 1	e 0 12	− 1	—	—
VI	0·5	231	e 0 7	0	i 0 12	− 1	—	—
VII	0·5	231	e 0 7	0	i 0 14	+ 1	—	—
VIII	0·5	231	e 0 7	0	i 0 14	+ 1	—	—
II Basle	1·0	263	e 0 16	+ 2	i 0 31	S*	—	—
IV	1·0	263	i 0 16	+ 2	e 0 31	S*	—	—
V	1·0	263	e 0 17	+ 3	e 0 31	S*	—	—
VII	1·0	263	i 0 17	+ 3	e 0 32	S*	—	—
I Stuttgart	1·1	4	—	—	e 0 25	− 3	—	—
II	1·1	4	e 0 18	+ 2	e 0 32	S*	—	—
IV	1·1	4	e 0 18	+ 2	e 0 33	S*	—	—
V	1·1	4	—	—	e 0 35	S*	—	—
VI	1·1	4	—	—	e 0 33	S*	—	—
VII	1·1	4	0 18	+ 2	i 0 33	S*	—	—
VIII	1·1	4	—	—	e 0 32	S*	—	—
IV Strasbourg	1·2	309	—	—	i 0 37	S*	—	—
VII	1·2	309	e 0 19	+ 2	i 0 38	S*	—	—
VII Karlsruhe	1·4	339	0 25	P_g	0 44	S*	—	—
II Neuchatel	1·6	249	e 0 27	P_g	i 0 50	S_g	—	—
III	1·6	249	—	—	e 0 52	S_g	—	—
IV	1·6	249	e 0 23	0	i 0 48	S*	—	—
VII	1·6	249	i 0 24	+ 1	0 47	S*	—	—
VII Heidelberg	1·7	350	e 0 33	P_g	i 0 56	S_g	—	—
VII Munich	1·8	76	e 0 34	P_g	e 0 54	S_g	—	—
VII Padova	3·0	136	e 1 36	S_g	—	—	—	—
VII Venice	3·2	131	e 1 45	S_g	e 2 17	?	—	—
IV Jena	3·6	31	—	—	e 1 54	S_g	—	2·0
VII	3·6	31	e 0 57	P*	—	—	e 1·8	1·9

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
I Triest	3·8	119	e 1 22	P_g	—	—	—	—
VII	3·8	119	e 1 22	P_g	i 2 0	S_g	—	—
IV Göttingen	3·9	10	—	—	2 0	S_g	—	—
VII	3·9	10	e 1 12	P_g	i 2 2	S_g	—	—
VII Bochum	4·0	339	—	—	e 1 57	S*	—	2·5
VII Prato	4·1	155	e 1 34	?	i 2 6	S_g	—	—
VII Uccle	4·4	309	1 27?	P_g	—	—	—	—
VII Vienna	4·9	85	e 1 38	P_g	i 2 42	S_g	—	—
I Zagreb	5·1	109	e 1 22	P*	1 47	P_g	—	—

Additional readings :—
Ravensburg IV e = +11s., VII i = +11s., i = +18s.
Ebingen IV e = +18s.
Basle VII iP_g = +18s., iS_g = +31s.
Stuttgart IV i = +34s., VII i = +21s. and +37s.
Strasbourg IV ePP = +28s.
Neuchatel IV i = +26s. and +50s., VII P_g = +27s., iS_g = +51s., i = +54s.
Munich VII iS_g = +58s.
Jena VII eP* = +1m.5s., iP_g = +1m.9s., iS_g = +1m.59s.
Triest I SSsS = +2m.21s.
Göttingen VII eP_g = +1m.15s., S_g = +2m.9s.
Vienna VII iZ = +1m.53s., iN = +2m.47s.
Long waves were recorded at VII Granada, V Paris.

Jan. 31d. 11h. 56m. 10s. Epicentre 4°·3S. 105°·6E. N.3.

A = −·268, B = +·960, C = −·075 ; D = +·963, E = +·269 ;
G = +·020, H = −·072, K = −·997.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Soengei Langka	1·2	195	i 0 19	+ 2	i 0 31	0
Batavia	2·3	152	i 0 31	− 2	i 0 52	− 7
Malabar	3·5	151	i 0 53	+ 3	i 1 36	S*

Jan. 31d. 12h. Readings for which no determination has been made :—
Calcutta P? = 2m.50s., P = 3m.10s., S = 3m.50s.
Medan eP = 2m.59s., eS = 5m.4s.
Agra eP = 3m.43s., S = 6m.8s.
Andijan eP = 5m.36s., e = 9m.42s.
Nanking eP = 5m.46s., S = 9m.45s., L = 12m.51s.
Chiufeng (e) = 5m.47s., eS = 10m.2s., eSN = 10m.6s., MEN = 13m.48s.
Frunse eP = 5m.48s., e = 9m.42s.
Samarkand e = 6m.8s.
Malabar i = 8m.42s.
Bombay eEN = 9m.

Jan. 31d. 17h. 45m. 53s. Epicentre 11°·5S. 166°·5E. N.3.

A = −·953, B = +·229, C = −·199 ; D = +·233, E = +·972 ;
G = +·194, H = −·047, K = −·980.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	21·3	99	i 4 51	+ 8	—	—	e 9·2	—
Riverview	26·4	210	e 5 19	−14	i 9 44	−21	e 13·1	16·9
Sydney	26·4	210	e 4 57	−36	i 9 52	−13	13·4	15·6
Wellington	30·7	168	7 7	PP	11 35	+19	14·1	16·1
Melbourne	32·6	213	e 6 27	− 1	11 27	−18	15·9	18·8
Adelaide	34·5	223	e 6 47	+ 1	i 11 55	−20	e 14·7	20·9
Perth	50·8	237	16 7	S	(16 7)	− 5	—	30·6
Manila	52·1	299	i 9 9k	+ 2	16 31	+ 1	—	20·4
Nagoya	54·4	330	e 9 3	−21	—	—	—	—
Mizusawa	55·9	336	(e 9 48)	+13	e 9 48	P	—	—
Batavia	59·1	269	e 9 53	− 5	e 17 50	−14	—	—
Zi-ka-wei	60·7	314	e 10 9	0	—	—	35·6	45·1
Hong Kong	61·4	304	(10 16)	+ 2	18 37	+ 3	—	35·6
Nanking	63·1	315	10 26	0	i 18 58	+ 2	—	—
Vladivostok	63·1	333	i 10 26	0	e 19 6	PS	23·1	47·8

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Medan	69·1	278	e 11 9	+ 4	i 20 37	PS	—	—
Chiufeng	69·5	321	i 11 6a	− 2	e 20 13	− 2	—	—
Calcutta	83·6	295	12 28	+ 2	22 51	− 2	—	—
Pasadena	84·6	54	e 12 23	− 8	—	—	e 38·1	—
Riverside	85·2	54	e 12 33	− 1	—	—	—	—
Agra	93·9	296	e 17 5	PP	i 24 7?	{+ 1}	—	—
Bombay	96·9	288	—	—	e 24 7	[− 3]	—	65·4
Frunse	99·2	312	e 24 33	SKS	(e 24 33)	[+11]	—	—
Tashkent	102·9	310	—	—	i 24 34	[− 6]	e 48·1	67·9
Sverdlovsk	108·2	326	e 18 40	PP	e 25 0	[− 5]	50·1	75·0
Huancayo	114·3	109	—	—	e 29 14	PS	54·4	—
Ottawa	117·5	45	—	—	e 29 37	PS	64·1	—
Baku	117·6	310	e 20 15	PP	e 29 30	SKSP	56·1	—
La Paz	119·2	117	—	—	e 25 7	[−41]	58·1	66·4
Tiflis	121·1	312	e 20 17	PP	e 30 11	PS	e 60·1	92·3
Pulkovo	121·9	337	e 20 33	PP	—	—	60·1	72·6
San Juan	128·8	76	e 22 22	?	e 33 7	?	e 61·7	—
Ksara	129·8	305	e 21 26	PP	—	—	—	84·1
Stuttgart	138·2	338	e 19 21	[+ 2]	—	—	89·1	—
Triest	138·7	331	e 19 14	[− 6]	—	—	e 66·1	82·1
Strasbourg	138·9	339	e 19 7?	[−13]	—	—	e 74·1	—
Florence	141·3	331	19 19	[− 4]	31 7	?	76·1	—
Granada	152·8	342	e 19 47	[+ 2]	—	—	93·4	100·3

Additional readings and notes :—
Riverview e(P) = +4m.18s., PPP = +5m.44s. ; P in the table is given as ePP.
Wellington SS = +12m.44s.
Melbourne e = +8m.18s., i = +15m.6s.
Adelaide i = +8m.15s.
Hong Kong SS = +22m.48s. ; P has been *increased* by 5m.
Nanking e = +20m.19s. = S_cS +4s. and +23m.9s. = SS +12s.
Medan e = +16m.22s.
Chiufeng P_cPE = +11m.52s., PPEN = +13m.35s., PS?EN = +20m.42s., S_cSE = +21m.2s., SSE = +25m.12s.
Calcutta SS = +28m.29s.
Tashkent e = +15m.25s., +17m.25s., +27m.19s. = PS +3s., +32m.49s. = SS +7s., +34m.7s., and +42m.43s.
Sverdlovsk e = +28m.13s. = PS +3s.
Huancayo eSS = +36m.7s. ; T_0 = 17h.45m.53s.
Ottawa eN = +45m.7s.?
Baku e = +41m.19s.
Tiflis e = +20m.48s.
Pulkovo e = +28m.23s. and +37m.13s. = SS +16s.
Ksara e = +35m.35s. and +42m.25s.
Stuttgart e = +22m.14s. = PP +4s., +72m.7s.? and +75m.7s.?
Triest eZ = +22m.13s. = PP +0s., iPP = +22m.57s., i = +23m.8s. = PKS +3s., +27m.23s., and +30m.20s.
Strasbourg e = +22m.7s.? = PP −8s.
Granada iPKP = +20m.7s. = PKP_2 −5s.
Long waves were also recorded at Kew, Arapuni, Honolulu, and other European and American stations.

Jan. 31d. Readings also at 0h. (Amboina, Hong Kong, Manila, Tashkent, Sverdlovsk), 1h. (Mizusawa), 4h. (Nagoya), 5h. (Wellington and Christchurch), 8h. (Samarkand, Ravensburg, Bozeman, and La Paz), 12h. (Wellington and Granada), 13h. (Berkeley, Lick, Prague, and Wellington), 17h. (Cheb and Tiflis), 18h. (Tiflis), 22h. (Branner and Manila).

Feb. 1d. 1h. Readings for which no determination has been made :—
Tiflis P = 41m.3s., L = 41m.15s.
Erevan P_g = 41m.8s., S_g = 41m.25s.
Grozny eP = 41m.47s., eS = 42m.30s.

Feb. 1d. Readings also at 0h. (Samarkand), 1h. (Tiflis (3)), 6h. (Mount Wilson, Pasadena, Riverside, Santa Barbara, and Wellington), 8h. (Apia), 9h. (Andijan), 13h. (Granada, Manila, and Nagoya), 14h. (Wellington), 18h. (Samarkand), 20h. (Sebastopol, Simferopol, Theodosia, Triest, and Yalta), 21h. (Manila and Medan).

Feb. 2d. 20h. Readings for which no determination has been made :—

Zurich $eP_g = 22m.11s.$, $iS_g = 22m.17s.$
Ravensburg e = 22m.17s.
Ebingen e = 22m.18s.
Stuttgart e = 22m.38s.
Basle $eP_g = 23m.20s.$, $eS_g = 23m.36s.$

Feb. 2d. 23h. Readings for which no determination has been made :—

Zagreb $iP_g = 26m.15s.$, iSZ = 26m.17s., M = 26m.18s., i = 26m.20s. and 26m.23s.
Triest e = 26m.38s., i = 26m.59s.
Andijan eP = 29m.16s., S = 30m.22s.
Agra e = 29m.32s.

Feb. 2d. Readings also at 0h. (Berkeley), 1h. (Batavia), 3h. (Santiago), 4h. (Wellington), 5h. (Nagasaki), 6h. (Malabar), 9h. (Samarkand, Stuttgart, and Zurich), 10h. (Mount Wilson, Pasadena, Riverside, and Wellington), 11h. (Tananarive), 13h. (Branner, Lick, and Tiflis), 15h. (Agra, Bombay, Calcutta, and Tiflis), 19h. (Mount Wilson and Pasadena), 20h. (Bucharest), 23h. (Tchimkent and Andijan).

Feb. 3d. 2h. 10m. 34s. Epicentre 35°·8N. 70°·4E. N.3.

A = + ·272, B = + ·764, C = + ·585 ; D = + ·942, E = − ·335 ;
G = + ·196, H = + ·551, K = − ·811.

		△	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		4·7	318	1 6	− 1	1 46	−14	—	2·0
Andijan		5·2	14	1 21	P*	i 2 15	+ 2	—	2·6
Tashkent		5·5	345	i 1 25	+ 7	—	—	2·4	32·8
Tchimkent		6·5	355	1 37	+ 5	2 47	+ 1	—	—
Frunse		7·8	23	i 1 36	−15	—	—	—	2·5
Dehra Dun		8·4	128	3 16	?	3 36	+ 2	—	5·4
Agra	E.	10·8	141	i 2 31	− 1	i 4 25	− 8	—	—
	N.	10·8	141	2 35	+ 3	i 4 28	− 5	—	—
Semipalatinsk		16·3	23	3 44	− 1	i 6 54	SS	—	—
Baku		16·7	292	3 58	PP	i 7 0	SS	8·4	15·2
Bombay		17·0	172	i 3 59	+ 5	i 7 12	SS	8·4	—
Hyderabad	N.	19·7	157	4 32	PP	8 12	SS	10·0	13·5
Grozny		20·4	299	4 35	+ 1	e 8 4	−10	—	—
Calcutta		20·5	126	4 35	0	8 15	− 1	9·8	11·8
Tiflis		20·7	294	5 19	?	8 6	−14	e 12·4	—
Erevan		20·8	290	4 40	+ 2	—	—	—	—
Sverdlovsk		22·0	346	i 4 54	+ 3	i 8 43	− 3	12·6	12·6
Sotchi		24·7	298	5 17	0	e 9 41	+ 5	—	—
Kodaikanal		26·3	164	e 5 44	+12	e 9 52	−11	12·0	13·9
Theodosia		28·0	300	e 6 1	+14	—	—	—	—
Ksara		28·3	276	e 6 19	+29	e 11 19	+42	—	—
Yalta		28·7	299	e 5 52	− 1	—	—	—	—
Simferopol		28·9	300	e 5 54	− 1	—	—	—	—
Colombo		30·2	161	5 35	−32	11 0	− 7	20·5	20·9
Helwan		33·1	272	e 7 13	?	i 11 44	− 8	—	23·0
Pulkovo		35·1	326	6 48	− 2	e 12 57	?	13·9	14·5
Chiufeng		36·0	69	i 6 56a	− 2	i 12 29	− 7	—	—
Nanking		39·9	80	7 19	−12	13 16	−19	—	—
Hong Kong		40·2	97	7 32	− 2	13 30	− 9	19·3	—
Medan		41·5	134	8 47	+63	i 13 43	−16	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	42·3	81	e 7 48	− 3	—	—	—	—
Triest	43·1	301	8 37	+39	i 14 12	−10	—	—
Copenhagen	43·5	316	—	—	19 26?	?	—	—
Cheb	43·6	308	e 10 26?	?	e 17 56	(− 8)	—	29·4
Jena	44·0	309	e 8 2	− 3	—	—	—	—
Padova	44·5	301	8 26?	+17	—	—	—	—
Florence	45·2	299	e 8 26	+12	—	—	14·4	20·4
Stuttgart	45·8	306	e 8 20	+ 1	—	—	—	—
Basle	47·0	305	e 8 25	− 4	—	—	—	—
Vladivostok	47·0	61	e 8 27	− 2	e 15 6	−13	25·5	—
Manila	49·8	102	8 48a	− 2	i 15 53	− 5	—	—
Kew	51·3	311	—	—	e 14 26?	?	—	—
Granada	57·9	295	—	—	e 17 1	−47	—	—
Mount Wilson	109·5	7	e 18 53	PP	—	—	—	—
Pasadena	109·6	8	e 18 56	PP	—	—	—	—

Additional readings :—
Andijan i = +1m.24s. = P* − 2s., iP_g = +1m.32s., i = +1m.45s. and +1m.57s.
Frunse i = +2m.26s. = P_g − 4s.
Tiflis PP = +5m.57s.
Calcutta SS = +8m.55s.
Sverdlovsk L_g = +11m.20s.
Kodaikanal PPP = +6m.20s.?
Chiufeng pPEZ = +7m.25s., sPEZ = +7m.36s., PPEZ = +8m.22s., iEZ = +8m.55s., iE = +13m.3s., isSNZ = +13m.19s.
Hong Kong ? = +14m.18s., SS = +16m.36s.
Zi-ka-wei iZ = +8m.34s. and +32m.7s.
Triest i = +15m.7s., +17m.26s., and +21m.50s.
Manila iZ = +9m.36s., iE = +10m.47s.
Mount Wilson iZ = +19m.0s.
Long waves were also recorded at other European stations.

Feb. 3d. 16h. Readings for which no determination has been made :—
Colombo P = 34m.35s., S = 37m.24s., L = 38m.35s., M = 39m.34s.
Bombay iP = 35m.42s., iS = 39m.16s., MN = 43m.7s.
Hyderabad PN = 35m.52s., SN = 39m.32s., LN = 40m.50s., MN = 44m.12s.
Calcutta P = 37m.7s., S = 42m.32s., L = 46m.29s.
Tiflis (eP) = 37m.32s., e = 49m.24s., L = 54m.18s., M = 56m.48s.
Baku e = 37m.53s., e = 45m.45s., e = 49m.30s., L = 53m.
Medan eP = 37m.53s., e = 50m.9s.
Ksara e = 39m.31s., e = 49m.33s., M = 56m.
Manila PENZ = 40m.52s., S?EN = 45m.11s.
Agra eE = 41m.9s., eN = 42m.33s., M = 47m.30s.
Tashkent e = 45m.0s., eL = 50m.42s., M = 57m.0s.
Sverdlovsk e = 48m.44s., L = 59m.
Long waves at Hong Kong and Tananarive.

Feb. 3d. Readings also at 1h. (Andijan and Mizusawa), 4h. (La Paz and Wellington), 5h. (Wellington), 6h. (Andijan and Frunse), 7h. (Prato), 11h. (Kobe, Sumoto, and Nagoya), 13h. (Simferopol and Yalta), 14h. (Branner and Lick), 16h. (Branner), 19h. (Hastings), 20h. (Hong Kong), 21h. (Nanking and Tiflis), 22h. (Bucharest and Sofia).

Feb. 4d. 3h. Readings for which no determination has been made :—
Pasadena iPZ = 15m.46s., eZ = 16m.7s.
Mount Wilson ePZ = 15m.47s., eZ = 16m.10s.
Riverside iPZ = 15m.50s., eZ = 16m.11s.

Lick eP = 43m.3s., iS = 43m.17s.
Branner eP_g = 43m.8s., eSE = 43m.24s., eSN = 43m.26s,

Feb. 4d. 7h. 47m. 46s. Epicentre 8°·3S. 107°·5E. N.3.

Given by Batavia.

A = −·298, B = +·944, C = −·144; D = +·954, E = +·301;
G = +·043, H = −·138, K = −·990.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Malabar	1·0	344	i 0 14	0	i 0 28	S*	—	—
Batavia	2·2	344	i 0 32	+ 1	i 0 58	+ 1	—	—
Medan	14·8	324	3 38	+12	—	—	—	—
Amboina	21·1	79	4 40	− 1	i 8 27	− 1	—	—
Perth	24·9	161	—	—	e 9 52	+13	—	—
Manila	26·5	30	5 36	+ 2	10 40	SS	—	17·1
Kodaikanal	35·2	302	e 6 50	− 1	i 12 18	− 6	—	19·0
Nanking	41·8	14	—	—	e 13 51	−12	e 23·1	—
Bombay	43·7	309	e 8 4	+ 2	e 15 24	− 7	—	26·9
Melbourne	44·8	136	—	—	e 14 51	+ 4	23·2	30·2
Agra	45·5	322	—	—	i 14 39	−18	—	—
Chiufeng	49·0	6	e 8 37	− 7	e 15 37	−10	—	29·6
Andijan	58·8	330	e 10 0	+ 4	—	—	—	11·2
Tashkent	60·7	328	i 10 2	− 7	e 18 4	−21	e 27·9	39·5
Baku	72·0	318	e 11 21	− 2	e 20 33	−12	35·2	47·5
Sverdlovsk	75·5	337	i 11 32	−11	i 21 6	−20	34·2	—
Tiflis	75·9	316	e 11 38	− 7	—	—	—	—
Pasadena	130·8	52	e 19 7	[− 1]	—	—	—	—
Mount Wilson	130·8	51	e 19 6	[− 2]	—	—	—	—
Oak Ridge	145·7	359	i 19 32	[− 3]	—	—	—	—

Additional readings:—
Medan e = +7m.35s.
Perth i = +10m.14s. = SS − 13s.
Melbourne e = +18m.9s. = S_cS − 2s.
Andijan S_g = +11m.2s.
Tiflis e = +11m.26s.
Oak Ridge i = +19m.52s.
Long waves were also recorded at Hong Kong, Phu-Lien, Wellington, and Ksara.

Feb. 4d. 17h. 24m. 33s. Epicentre 20°·0S. 174°·0W. N.3.

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

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Wellington	23·3	202	5 12	+ 8	9 7	− 3	11·1	—
Riverview	33·8	239	—	—	e 12 21	+18	e 17·6	19·0
Sydney	33·8	239	—	—	e 11 45	−18	17·9	19·8
Melbourne	39·7	234	e 7 23	− 6	e 13 25	− 7	—	26·2
Honolulu	44·2	22	e 10 27	PPP	—	—	—	—
Perth	66·3	244	e 26 27	SSS	—	—	—	36·7
Manila	72·7	293	11 28	+ 1	20 28	−25	31·4	37·4
Santa Barbara	75·0	44	e 11 39	− 1	—	—	—	—
Nagasaki	75·2	314	e 11 40	− 1	—	—	—	—
Berkeley	75·6	40	e 10 43	−61	—	—	—	—
La Jolla	75·7	46	e 11 51	+ 7	—	—	—	—
Pasadena	75·9	45	i 11 43a	− 2	—	—	e 34·5	—
Mount Wilson	76·0	45	i 11 45	− 1	—	—	—	—
Riverside	76·3	46	e 11 45a	− 3	—	—	—	—
Haiwee	77·2	44	e 11 52	− 1	—	—	—	—
Batavia	77·7	268	11 52	− 4	22 35	PS	—	—
Tucson	79·9	50	12 13	+ 6	22 14	− 1	34·6	—
Vladivostok	80·3	323	e 11 49	−20	—	—	38·4	—
Zi-ka-wei	80·3	310	(12 9)	0	—	—	—	47·9
Hong Kong	81·9	297	12 16	− 2	22 51	+15	—	45·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nanking	82·7	308	e 12 32	+10	e 23 8	PS	—	—
Chiufeng	88·4	314	i 12 50a	0	e 23 26	[+ 3]	—	53·5
Medan	88·7	276	12 54	+ 3	e 22 39	[−45]	e 47·4	—
Huancayo	93·8	104	—	—	i 23 53	[− 1]	e 42·9	—
La Paz	98·6	111	e 13 51	+14	i 25 17	+ 3	45·4	51·8
Toronto	106·9	49	e 26 41	S	(e 26 41)	{+57}	42·9	—
Philadelphia	109·3	53	—	—	e 28 27	PS	e 52·9	—
Ottawa	109·8	48	e 26 45	S	(e 26 45)	{+40}	e 42·4	—
San Juan	112·5	79	—	—	e 25 14	[−10]	e 53·6	—
Tashkent	122·9	307	e 20 17	PP	e 25 57	]− 2]	—	81.0
Samarkand	124·6	305	e 9 45	?	—	—	—	—
Sverdlovsk	125·7	327	e 20 46	PP	—	—	50·4	68·5
Pulkovo	136·6	343	e 22 54	PKS	e 37 50	?	68·4	75·4
Baku	137·5	309	e 22 3	PP	—	—	52·4	65·6
Tiflis	140·7	312	e 19 57	[+35]	—	—	e 62·4	84·7
Theodosia	145·2	324	19 36	[+ 2]	—	—	—	—
Yalta	146·1	323	19 39	[+ 3]	—	—	—	—
Simferopol	146·2	324	19 37	[+ 1]	—	—	—	—
Hamburg	146·3	356	e 19 37	[+ 1]	—	—	—	—
Sebastopol	146·4	323	19 40	[+ 4]	—	—	—	—
De Bilt	147·9	1	i 19 47	[+ 8]	—	—	e 78·4	83·7
Kew	148·2	7	e 19 47	[+ 8]	—	—	e 75·4	—
Göttingen	148·3	355	e 19 41k	[+ 2]	—	—	—	—
Uccle	149·2	2	19 46	[+ 5]	—	—	e 78·4	—
Ksara	150·1	304	i 19 48a	[+ 6]	—	—	—	90·4
Vienna	150·5	346	i 19 50	[+ 8]	—	—	—	—
Stuttgart	151·1	356	e 19 45	[+ 2]	—	—	e 85·4	—
Strasbourg	151·4	358	e 19 43	[− 1]	—	—	e 95·4	—
Zagreb	152·9	345	e 20 4	{− 8}	—	—	—	—
Granada	160·9	24	e 20 57	{+ 9}	—	—	85·7	92·4

Additional readings and note :—
Wellington SS = +10m.12s.
Riverview eN = +15m.3s.
Melbourne e = +16m.31s. =SSS − 7s.
Zi-ka-wei P has been *increased* by 12m.
Hong Kong SS? = +28m.14s.
Huancayo ePS = +26m.1s., eSS = +30m.31s.
La Paz PPE = +18m.1s., iSKSE = +24m.14s., PSE = +26m.23s.
Philadelphia e = +34m.39s.
Ottawa eE = +28m.27s. =PS + 1s., eS = +34m.27s. =SS +11s.
San Juan ePS = +30m.3s., eSS = +35m.0s.
Tashkent e = +20m.45s. =PP +16s., +30m.17s., +30m.27s., +36m.9s., +37m.9s. =SS − 1s. and +55m.54s.
Sverdlovsk e = +22m.12s.
Tiflis e = +23m.39s., +31m.51s. and +42m.39s.
Göttingen eZ = +20m.12s.
Ksara PP = +23m.35s.
Stuttgart ePKP = +20m.6s.
Strasbourg i = +19m.58s. and +20m.22s.
Long waves also at Apia, Arapuni, Bombay, and other European and American stations.

Feb. 4d. 20h. Readings for which no determination has been made :—
Hukuoka B, P = 10m.28s., iS = 10m.47s.
Sumoto ePN = 10m.40s., ePE = 10m.42s., eZ = 10m.52s., SN = 11m.10s., SE = 11m.13s., M = 11m.20s.
Kobe iEN = 10m.53s., eE = 11m.16s., eZ = 11m.25s., eSE = 11m.28s., M = 11m.29s.
Nagasaki eP = 10m.55s.
Husan e = 10m.59s.

Feb. 4d. 21h. 7m. 33s. Epicentre 1°·9N. 127°·1E. N.2.

Given by Berlage, Gerl. Beit. Geophy: Vol. 50, p. 7, 1937.

A = −·603, B = +·797, C = +·033; D = +·798, E = +·603;
G = −·020, H = +·026, K = −1·000.

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

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	+0·1	5·7	169	i 1 16	− 6	i 2 22	− 6	—	—
Palau	−0·1	9·2	53	2 6	− 3	3 42	− 9	—	—
Manila	−0·3	14·1	335	i 3 14k	+ 1	i 5 53	+ 7	—	—
Batavia	−0·6	21·8	248	i 4 43	+ 1	i 8 46	+16	—	—
Hong Kong	−0·7	24·0	329	5 0	− 4	9 17	+ 7	—	—
Phu-Lien	−0·9	27·5	315	5 27	− 8	—	—	—	—
Medan	−0·9	28·4	275	e 5 28	−15	11 8	SS	—	—
Zi-ka-wei	−1·0	29·8	350	(5 56)	+ 2	(i 11 42)	− 3	—	—
Nanking	−1·1	31·2	346	i 6 11	+ 5	e 9 47	?	12·8	—
Husan	−1·1	33·2	3	—	—	e 11 58	+21	—	—
Kobe	−1·1	33·6	12	i 6 29	+ 2	—	—	—	—
Hamamatu	−1·1	34·3	16	6 35	+ 1	—	—	—	—
Nagoya	−1·1	34·5	16	e 6 36	+ 1	—	—	—	—
Kohu	−1·2	35·4	16	6 42	0	—	—	—	—
Perth	−1·2	35·5	197	14 27	SSS	—	—	—	—
Oiwake	−1·2	36·1	16	6 49	+ 1	—	—	—	—
Nagano	−1·2	36·2	15	6 51	+ 2	12 26	+ 5	—	—
Hukusima	−1·2	37·9	17	7 5	+ 1	12 50	+ 3	—	—
Mizusawa	−1·3	39·4	17	e 6 45	?	i 7 18	P	—	—
Chiufeng	−1·3	39·5	347	i 7 18k	+ 1	13 7	− 2	—	—
Vladivostok	−1·3	41·5	5	e 7 33	− 1	—	—	—	—
Agra	−1·6	53·3	303	e 9 2	− 2	i 16 31	+ 7	—	—
Bombay	−1·7	55·7	292	—	—	e 17 27?	PS	—	—
Frunse	−1·8	62·1	319	i 10 17	+10	—	—	—	—
Semipalatinsk	−1·8	62·6	328	i 7 43	?	e 15 53	?	—	—
Andijan	−1·8	62·7	316	e 10 11	0	i 18 39	+11	—	—
Tashkent	−1·9	65·1	316	i 10 35	+ 8	i 19 6	+ 9	e 31·7	37·9
Tchimkent	−1·9	65·2	316	—	—	e 18 9	−50	—	—
Samarkand	−1·9	66·1	313	e 10 40	+ 6	19 20	+10	—	—
Sverdlovsk	−2·0	75·7	329	i 11 29	− 4	21 0	− 5	36·4	—
Baku	−2·0	79·0	311	e 12 15	+23	i 21 50	+ 7	40·4	53·0
Grozny	−2·1	82·4	314	e 12 24	+15	e 22 19	0	—	—
Tiflis	−2·1	83·0	312	e 12 3	−10	e 22 27	+ 2	—	—
Erevan	−2·1	83·2	310	e 12 15	+ 1	e 22 27	0	—	—
Piatigorsk	−2·1	84·4	314	e 11 18	−62	—	—	—	—
Theodosia	−2·1	89·8	315	—	—	e 23 10	[−21]	—	—
Yalta	−2·1	90·7	315	—	—	e 23 15	[−22]	—	—
Sebastopol	−2·1	91·2	315	—	—	e 23 20	[−20]	—	—
Pulkovo	−2·1	91·8	330	—	—	e 24 0	+ 9	—	—

Additional readings and note:—
Hong Kong PP = +5m.34s.
Medan P = +5m.47s.
Zi-ka-wei readings have been *increased* by 12m.
Kobe iN = +6m.33s., eZ = +7m.36s., eE = +8m.1s., iN = +8m.13s.
Baku e = +13m.44s.
Tiflis e = +12m.59s.
Theodosia e = +23m.37s.
Yalta e = +23m.47s. =S +4s.
Sebastopol e = +23m.47s. =S +0s.
Pulkovo e = +30m.0s.

Feb. 4d. Readings also at 0h. (Toyooka, Kobe, Sumoto, and Nagoya), 1h. (Hastings), 2h. (Hastings), 6h. (Malabar), 8h. (Tiflis), 10h. (Batavia and Malabar (2)), 11h. (Berkeley and Tiflis), 15h. (Tiflis and Erevan), 18h. (Florence and Cheb), 19h. (Florence), 20h. (Nagoya), 21h. (Amboina), 22h. (Sverdlovsk, Manila, Medan, and Nanking), 23h. (Cheb, Pulkovo, Sverdlovsk, and Uccle).

Feb. 5d. Readings at 1h. (Lick), 2h. (Grozny), 3h. (Kodaikanal and Tiflis), 4h. (Bucharest), 6h. (Andijan), 8h. (Erevan, La Paz, Sucre, and Tiflis), 11h. (Medan), 12h. (Andijan and Samarkand), 14h. (Andijan), 18h. (Sumoto), 19h. (Chiufeng, Hukuoka B, Nanking, Nagasaki, Sverdlovsk, and Tashkent), 23h. (Berkeley).

Feb. 6d. 1h. 53m. 55s. Epicentre 28°·8N. 41°·9W. N.2.

A = + ·652, B = − ·585, C = + ·482; D = − ·668, E = − ·744;
G = + ·359, H = − ·322, K = − ·876.

	Δ	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan	24·4	250	e 5 28	+14	i 10 3	SS	e 12·3	—
Oak Ridge	27·5	309	i 5 40	− 3	e 10 22	− 2	e 12·6	—
Philadelphia	29·4	304	e 6 58	PPP	10 54	− 1	e 13·6	—
Georgetown	30·7	298	6 11	0	11 18	+ 2	e 13·1	—
San Fernando	30·8	66	6 16a	+ 4	e 10 56	−21	14·1	—
Ottawa	31·3	312	e 6 15	− 2	e 11 17	− 7	14·1	—
Malaga	32·2	66	6 29	+ 5	11 47	+ 9	15·4	—
Toledo	32·9	60	i 6 33	+ 2	e 11 51	+ 2	e 13·7	—
Granada	32·9	64	i 6 34	+ 3	e 11 58	+ 9	15·3	—
Toronto	33·3	307	i 6 34	0	i 11 56	+ 1	15·1	—
Almeria	33·9	65	e 6 38	− 1	e 12 15	+11	e 16·6	—
Alicante	35·4	63	e 6 59	+ 6	e 12 37	+10	—	—
Oxford	37·8	41	—	—	i 12 57	− 6	18·8	—
Algiers	38·2	64	e 7 19	+ 2	13 5	− 4	—	—
Chicago	39·0	302	e 7 24	0	e 13 21	0	e 18·4	—
Paris	39·2	46	i 7 23	− 2	—	—	18·1	—
Uccle	40·9	43	7 35	− 5	e 13 43	− 7	e 18·1	—
St. Louis	40·9	298	i 7 41	+ 1	e 13 49	− 1	e 20·1	—
Florissant	41·0	297	i 7 42	+ 2	e 13 56	+ 5	e 20·3	—
De Bilt	41·7	44	—	—	e 13 56	− 6	e 19·1	21·5
Strasbourg	42·7	47	e 7 52	− 2	14 11	− 5	e 20·1	—
Scoresby Sund	43·2	10	—	—	14 12	−12	20·1	—
Piacenza	43·5	50	e 8 33	+32	—	—	—	26·7
Stuttgart	43·5	48	e 7 58	− 3	e 14 21	− 7	e 22·1	—
Florence	44·5	55	e 8 5	− 4	14 40	− 3	21·4	23·6
Hamburg	44·9	41	e 8 10	− 2	—	—	e 23·1	—
Cheb	45·7	46	e 8 17	− 1	e 15 1	+ 1	e 21·1	—
Triest	46·3	52	i 8 19k	− 4	i 15 8	− 1	—	25·4
Copenhagen	46·7	38	8 24	− 2	15 10	− 4	22·1	—
Prague	47·0	45	e 8 28	− 1	e 15 21	+ 2	e 24·1	26·1
Zagreb	47·9	52	e 8 33	− 2	e 15 30	− 1	—	—
La Paz	51·9	213	i 9 26k	+20	i 17 1	+34	28·6	—
Huancayo	52·1	223	e 9 42	+35	i 16 55	+25	25·9	—
Sofia	53·3	57	e 9 18	+ 2	e 16 50	+ 4	—	—
Pulkovo	56·5	35	9 36	− 3	17 21	− 9	28·1	31·6
Sebastopol	60·3	52	e 9 36	−31	—	—	—	—
Simferopol	60·6	52	e 10 19	+10	—	—	—	—
Yalta	60·8	52	e 9 56	−14	—	—	—	—
Kucino	61·0	40	—	—	18 49	+20	27·9	35·4
Tinemaha	62·9	296	e 10 24	− 1	—	—	—	—
Haiwee	63·0	299	e 10 28	+ 3	—	—	—	—
Riverside	63·1	296	e 10 27	+ 1	—	—	—	—
Mount Wilson	63·6	297	e 10 30	+ 1	—	—	—	—
Pasadena	63·7	296	i 10 31	+ 1	—	—	e 33·6	—
Santa Barbara	64·9	296	e 10 39	+ 1	—	—	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	65·0	64	i 10 42$_a$	+ 3	18 49	−31	—	—
Berkeley	65·6	301	e 10 45	+ 3	—	—	—	—
Tiflis	69·0	53	e 11 11	+ 6	e 20 11	+ 2	—	—
Erevan	69·4	55	e 11 11	+ 4	—	—	—	—
Sverdlovsk	72·6	35	11 20	− 6	20 41	−11	32·1	—
Samarkand	84·9	48	e 12 33	0	—	—	—	—
Tashkent	85·4	45	e 12 50	+15	i 23 5	[+ 3]	e 41·8	48·5
Frunse	87·6	41	e 13 5	+19	—	—	—	—
Andijan	87·6	44	e 12 51	+ 5	—	—	—	—

Additional readings :—
Oak Ridge eZ = +5m.46s.
Philadelphia iPP = +7m.25s., e = +10m.16s. and +11m.51s.
Ottawa SSN = +12m.45s.; T_o = 1h.54m.0s.
Malaga PP = +7m.28s., PPP = +7m.41s., SS = +13m.26s.
Granada PP = +7m.34s., PPP = +7m.52s., P_cP = +9m.10s., PS = +12m.7s., P_cS = +12m.48s., S_cS = +16m.13s.
Toronto PPE = +7m.25s.; T_o = 1h.53m.56s.
St. Louis eE = +9m.3s. = PP − 6s.
Strasbourg eSS = +17m.25s.
Stuttgart eSS = +17m.30s., e = +19m.59s.
Triest iZ = +8m.24s., eSS = +18m.14s.
Copenhagen +18m.23s. = SS + 1s.
Prague ePP = +30m.16s.
Zagreb eE = +8m.47s.
Kucino e = +20m.31s. and +24m.34s.
Ksara pP = +11m.26s., sP = +11m.47s., PP = +12m.59s., PPP = +14m.31s., sS = +20m.5s., SS = +22m.51s.
Samarkand eS_g = +13m.5s.
Tashkent e = +23m.46s.
Long waves at Bidston, Edinburgh, and Kew.

Feb. 6d. Readings also at 2h. (Amboina), 3h. (Andijan, Frunse, Batavia, Malabar, and Medan), 4h. (Sofia, Sverdlovsk, and Baku), 5h. (Batavia), 6h. (Baku, Ksara, Sverdlovsk, Tashkent, and Tiflis), 8h. (Samarkand), 10h. (Alicante), 11h. (New Plymouth and Wellington), 13h. (Samarkand), 15h. (Nagoya 17h. (Vladivostok), 20h. (Prague).

Feb. 7d. 17h. 29m. 6s. Epicentre 13°·0N. 123°·0E. (as on 1921 July 21d.). R.2.

A = −·531, B = +·817, C = +·225 ; D = +·839, E = +·545 ;
G = −·123, H = +·189, K = −·974.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	2·6	309	i 0 34$_a$	− 3	i 1 2	− 5	—	—
Hong Kong	12·5	319	−0 3?	?	2 58	P	4·7	6·6
Palau	12·6	116	3 8	+12	6 18	S*	—	—
Amboina	17·4	163	4 11	PP	—	—	—	—
Phu-Lien	17·5	299	e 3 59	− 1	e 7 12	− 1	7·9	—
Zi-ka-wei	18·2	356	e 4 5	− 4	—	—	10·7	13·2
Nanking	19·5	349	i 2 54	−90	e 6 27	−89	10·7	14·8
Kagosima	19·8	19	4 30	+ 3	—	—	—	—
Miyazaki	20·5	21	4 36	+ 1	—	—	—	—
Nagasaki	20·7	17	4 37	0	i 8 34	SS	—	—
Kumamoto	21·0	18	4 43	+ 3	—	—	—	—
Matuyama	22·6	21	4 50	− 7	9 8	+11	—	—
Husan	22·7	13	4 55	− 3	9 9	+10	—	—
Taikyu	23·4	12	5 5	0	e 9 13	+ 1	—	—
Sumoto	23·9	25	5 9	0	e 9 18	− 3	—	—
Wakayama	23·9	25	5 6	− 3	—	—	—	—
Kobe	24·3	25	i 5 15	+ 2	—	—	—	—
Zinsen	24·7	7	e 5 22	+ 5	e 9 30	− 6	—	—
Batavia	25·1	221	5 22	+ 1	i 11 36	?	—	—
Nagoya	25·5	27	e 5 26	+ 1	—	—	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Gihu	25·6	27	5 27	+ 2	—	—	—	—
Medan	25·8	251	5 29	+ 2	10 10	+15	—	—
Oiwake	27·2	28	5 44	+ 4	—	—	—	—
Chiufeng	27·8	349	i 5 43a	− 2	10 20	− 8	—	18·5
Calcutta	34·3	291	e 8 13	PPP	—	—	—	—
Agra	44·3	296	e 8 11	+ 4	e 14 27	−13	—	—
Bombay	48·5	282	8 40	0	i 15 40	0	—	—
Tashkent	54·5	312	i 9 33	+ 8	i 17 5	+ 3	e 25·5	31·3
Sverdlovsk	64·2	329	(10 28)	− 6	(19 1)	− 9	(30·9)	(44·3)
Baku	68·8	309	e 11 6	+ 3	i 20 6	− 1	33·6	41·0
Pulkovo	80·2	329	e 12 5	− 4	e 22 14	− 4	40·9	51·3
Ksara	80·5	303	i 12 9a	− 1	22 19	− 2	40·9	50·9
Cheb	92·7	323	—	—	e 24 54?	+33	e 45·9	54·9
Triest	93·7	319	i 22 24	?	e 27 30	?	e 38·9	50·9
Florence	96·0	317	—	—	e 24 54	+ 3	—	56·9
Rathfarnham Castle	100·8	332	—	—	e 41 54	?	e 47·2	54·6
San Fernando	111·3	316	i 54 44a	L	—	—	(i 54·7)	—

Additional readings and notes :—
Nanking e = +6m.45s., iN = +8m.17s. =SS +3s., iE = +9m.3s.
Sumoto eE = +9m.26s.
Kobe eN = +6m.15s., eN = +6m.42s., eZ = +6m.53s., eE = +6m.57s.
Chiufeng PP = +6m.23s., PPP = +6m.39s., SSE = +11m.32s.
Bombay SSEN = +18m.33s. =S_cS −2s.
Sverdlovsk readings have been *increased* by 30m.
Ksara ePP = +15m.21s., ePPP = +16m.59s., PS = +23m.9s.
Cheb e = +30m.54s.?
Long waves were also recorded at Bidston, Edinburgh, Kew, and other European stations.

Feb. 7d. Readings also at 2h. (Mount Wilson, Pasadena, and Tinemaha), 3h. (Sverdlovsk and Tashkent), 6h. (Taihoku), 7h. (Tiflis, Christchurch, and Wellington), 9h. (Berkeley, Branner, and Lick), 11h. (Amboina), 12h. (Baku, Ksara, Sverdlovsk, and Nagasaki (3)), 13h. (Nagoya), 14h. (Manila), 17h. (Andijan, Frunse, and Samarkand), 19h. (Granada).

Feb. 8d. 4h. Readings for which no determination has been made, apparently two epicentres :—
Lick ePEN = 24m.24s., eSEN = 25m.13s.
Branner ePN = 24m.33s., eSN = 25m.25s.
Berkeley eP = 24m.34s., eN = 24m.48s., eE = 24m.51s., eN = 25m.30s., eE = 25m.32s., iZ = 25m.34s., eN = 25m.36s., iZ = 25m.38s. and 25m.44s.

Frunse e = 34m.15s., e = 34m.46s., iS_g = 34m.50s.
Tashkent iL = 34m.18s., M = 36m.54s.
Samarkand eP = 34m.40s., e = 35m.7s.
Andijan eP = 34m.53s., eS_g = 35m.49s., M = 35m.56s.
Sverdlovsk L = 42m.

Feb. 8d. Readings also at 0h. (Manila), 1h. (Granada), 2h. (Granada), 7h. (Granada, Riverview, and Sydney), 11h. (Tananarive), 12h. (Mizusawa), 14h. (Amboina), 15h. (Granada), 16h. (Amboina), 18h. (Riverview, Sydney, and Wellington), 19h. (Perth), 23h. (Branner and Lick).

Feb. 9d. 19h. 19m. 42s. Epicentre 24°·2N. 121°·8E. (as on 1934 Dec. 17d.). R.1.

A = −·481, B = +·775, C = +·410; D = +·850, E = +·527; G = −·216, H = +·348, K = −·912.

	Δ	Fz.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	0·3	218	e 0 9	+ 5	0 22	?	—	—
Taihoku	0·9	343	i 0 13	0	0 22	− 1	—	—
Taityu	1·0	268	i 0 33	?	0 50	?	—	—
Arisan	1·2	230	i 0 21	P_g	0 36	S*	—	—
Taito	1·6	201	i 0 28	P_g	0 58	?	—	—
Tainan	1·9	232	e 0 36	P_g	1 5	?	—	—
Isigakizima	2·1	86	1 26	?	1 50	?	—	—
Takao	2·1	218	e 0 44	P_g	1 19	S_g	—	—
Hokoto	2·2	252	e 0 37	P*	e 1 2	S*	—	—
Zi-ka-wei	7·0	357	e 1 34	− 5	3 0	+ 1	—	—
Hong Kong	7·3	257	1 48	+ 4	3 17	+11	4·0	4·3
Nake	8·0	57	1 56	+ 3	3 42	S*	—	—
Nanking	8·3	342	i 1 55	− 3	e 3 18	−13	i 3·7	5.1
Manila	9·6	184	2 29	+13	4 27	+24	—	—
Tomie	10·4	34	2 28	+ 2	5 31	S_g	—	—
Nagasaki	11·1	38	i 2 35	− 1	e 6 30	?	—	—
Unzendake	11·3	39	2 41	+ 2	7 0	?	—	—
Miyazaki	11·5	45	2 44	+ 2	5 5	+10	—	—
Kumamoto	11·6	40	2 45	+ 2	6 45	?	—	—
Hukuoka	12·0	37	2 49	+ 1	5 26	+23	e 6·5	—
Hukuoka B	12·0	37	2 51	+ 3	6 49	S_g	9·5	—
Husan	12·5	28	i 2 55	0	7 7	?	—	—
Taikyu	13·1	25	i 3 5	+ 2	6 18	S*	—	—
Matuyama	13·6	42	3 3	− 7	6 11	?	—	—
Zinsen	13·9	16	i 3 15	+ 1	e 6 1	+12	e 7·2	8·1
Hamada	13·9	38	3 16	+ 2	5 43	− 6	—	—
Keizyo	14·1	17	i 2 18	−59	4 57	−56	6·5	7·9
Phu-Lien	14·4	259	e 3 26	+ 5	e 6 29	?	7·8	18·4
Sumoto	15·2	45	e 3 21	−10	7 28	?	—	—
Heizyo	15·2	12	3 31	0	6 34	+14	8·3	—
Wakayama	15·3	46	3 33	+ 1	7 37	?	—	—
Kobe	15·6	45	e 3 36	0	e 7 33	?	e 10·2	10·5
Toyooka	15·9	42	e 3 39	− 1	e 7 38	?	—	—
Osaka	15·9	46	2 37	−63	6 18	−18	—	—
Chiufeng	16·6	345	i 3 49a	0	i 6 58	+ 6	8·0	9·3
Nagoya	17·1	48	3 56	+ 1	—	—	e 11·0	—
Gihu	17·1	46	3 52	− 3	8 41	?	—	—
Hamamatu	17·4	49	3 42	−17	8 28	?	—	—
Omaesaki	17·6	51	3 9	−53	6 32	−43	—	—
Hunatu	18·5	48	4 8	− 5	7 42	+ 6	—	—
Titizima	18·5	77	4 1	−12	7 41	+ 5	—	—
Nagano	18·8	45	4 18	+ 2	8 27	?	—	—
Vladivostok	20·6	21	i 4 36	0	i 8 24	+ 6	10·3	24·1
Palau	20·8	142	4 43	+ 5	8 43	+21	—	—
Mizusawa	22·1	43	e 4 46	− 6	8 49	+ 1	13·0	—
Amboina	28·6	167	e 6 9	+16	e 10 53	+11	—	—
Medan	30·4	231	6 23	+14	e 19 47	?	—	—
Calcutta	30·7	274	e 6 18	+ 7	11 23	+ 7	—	19·9
Batavia	33·7	209	6 42	+ 4	12 54	+53	—	—
Hyderabad	40·9	269	7 56	+16	13 58	+ 8	20·7	25·2
Semipalatinsk	41·4	320	i 7 54	+10	—	—	—	—
Frunse	42·9	308	8 22	+26	—	—	24·3	—
Andijan	44·2	304	e 8 6	0	14 42	+ 3	24·4	—
Kodaikanal	44·4	262	e 8 6	− 2	e 14 41	0	24·1	28·7
Bombay	45·6	275	e 8 21	+ 3	i 15 3	+ 4	—	27·2

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tchimkent	46·4	306	e 8 22	− 2	e 15 10	0	27·6	—
Tashkent	46·6	304	i 8 26	+ 1	i 15 12	− 1	e 22·9	31·0
Sverdlovsk	54·3	324	i 9 21	− 2	i 16 55	− 4	33·3	34·2
Grozny	63·9	308	e 10 32	+ 1	—	—	—	—
Tiflis	64·8	307	e 10 36	− 1	e 19 17	0	35·8	43·1
Pulkovo	70·0	328	e 11 10	− 1	—	—	35·3	42·6
Theodosia	70·7	312	e 11 14	− 1	—	—	—	—
Yalta	71·7	311	e 11 22	+ 1	—	—	—	—
Ksara	73·6	300	i 11 33	+ 1	21 13	+ 9	36·3	48·9
Cheb	83·1	323	—	—	e 23 18?	PS	45·3	53·3
Triest	84·6	318	i 12 18	−13	e 22 53	[− 3]	e 44·3	54·3
Padova	85·8	319	12 18?	−19	—	—	—	—
De Bilt	85·8	326	—	—	e 33 18?	?	e 39·3	49·2
Florence	87·0	317	e 12 18	−25	22 18	[−55]	47·3	55·3
Paris	89·2	324	—	—	e 35 18?	SSSS	48·3	56·3
Rathfarnham Castle	90·4	332	—	—	e 29 12	SS	e 43·3	58·4
Tinemaha	96·6	44	i 13 28	0	—	—	—	—
Mount Wilson	98·4	46	e 13 35	− 1	—	—	—	—
Pasadena	98·5	46	i 13 36k	− 1	—	—	—	—
Riverside	99·1	46	e 13 38	− 1	—	—	—	—
La Paz	167·9	53	20 9	[+ 7]	—	—	32·3	46·9

Additional readings :—
Zi-ka-wei iZ = +3m.16s., iE = +3m.33s., iN = +3m.49s. = S_g +4s., iZ = +3m.55s., iN = +4m.12s., iZ = +4m.41s. and +4m.47s., iN = +4m.52s. and +5m.18s., iZ = +5m.44s., +6m.30s., +7m.21s., +8m.22s., +9m.32s., +14m.10s., and +17m.48s.
Nanking iE = +2m.45s. = P_g +5s., eN = +3m.5s.
Sumoto ePEZ = +3m.27s., SE = +7m.29s., eZ = +8m.39s.
Kobe ePN = +3m.38s., eZ = +3m.47s., iN = +3m.53s., eN = +7m.20s., iE = +10m.1s., iN = +10m.4s., eZ = +10m.16s.
Chiufeng iE = +6m.50s.
Batavia SE = +13m.35s. = SS − 21s.
Semipalatinsk e = +19m.18s.
Bombay PPE = +10m.7s.
Sverdlovsk L_g = +29m.30s.
Tiflis P = +10m.44s., PP = +13m.19s., PS = +19m.34s., SS = +23m.34s., e = +30m.4s.
Ksara ePP = +14m.21s., PS = +21m.48s.
Cheb e = +28m.18s. ?
Long waves were also recorded at Edinburgh, Durham, Bidston, Kew, Stonyhurst, and other European stations.

Feb. 9d. Readings also at 5h. (Mizusawa and Samarkand), 6h. (Erevan, New Plymouth, and Tiflis), 7h. (Amboina, La Paz, and Sucre), 10h. (Sebastopol and Yalta), 16h. (Andijan (2), Frunse, Samarkand, Tashkent, Tchimkent, and Balboa Heights), 18h. (Algiers, Balboa Heights and Tiflis).

Feb. 10d. 10h. Readings for which no determination has been made :—
Tinemaha iP = 18m.15s. k, iZ = 18m.35s
Pasadena iP = 18m.30s. k, iZ = 18m.43s.
Mount Wilson iPZ = 18m.30s. k.
Riverside ePZ = 18m.33s., eZ = 19m.18
Samarkand eP = 38m.11s.
Long waves at Baku, Sverdlovsk, Tiflis a Tashkent.

Feb. 10d. 18h. 29m. 29s. Epicentre 29°·0N. 139°·0E (as on 1922 May 10d.). R.3.

A = −·660, B = +·574, C = +·485; D = +·656, E = +·755;
G = −·366, H = +·318, K = −·875.

A *depth* of focus 0·080 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto	+0·4	6·3	328	i 1 33	− 2	2 48	− 3	—	5·8
Nagoya	+0·4	6·4	346	i 1 35	− 2	i 2 50	− 3	—	2·9
Kobe	+0·4	6·5	332	i 1 35	− 3	2 50	− 6	—	4·6
Toyooka	+0·1	7·4	333	1 44	− 2	3 5	− 6	—	3·2
Hukuoka B	−0·4	8·6	304	(i 1 56)	0	i 1 56	P	—	—
Nagasaki	−0·5	8·7	296	i 1 58	+ 2	3 30	+ 1	—	—
Mizusawa	−1·0	10·3	9	2 19	+ 8	i 4 3	+ 7	—	—
Husan	−1·0	10·4	309	2 14	+ 1	4 2	+ 3	—	—
Taikyu	−1·1	11·1	311	2 5	−16	4 1	−12	—	—
Vladivostok	−2·1	15·2	340	i 3 5	+ 2	5 37	+ 8	7·6	—
Nanking	−2·7	17·7	285	3 23	− 5	i 6 13	− 2	—	—
Chiufeng	−3·3	21·8	307	e 4 6	− 7	i 6 23	?	—	—
Phu-Lien	−4·9	30·4	262	—	—	9 32?	−18	—	—
Frunse	−7·4	52·6	303	—	—	e 15 31	?	—	—
Andijan	−7·5	54·6	302	e 8 17	−12	i 15 33	+13	—	—
Tchimkent	−7·6	56·4	304	—	—	e 15 49	+ 5	—	—
Tashkent	−7·6	56·8	303	e 8 56	+11	i 16 1	+11	—	—
Samarkand	−7·7	58·9	300	—	—	e 16 24	+ 6	—	—
Sverdlovsk	−7·9	59·8	322	e 9 21	+15	i 16 38	+11	31·5	—
Baku	−8·5	71·1	306	—	—	e 18 58	+ 8	e 27·5	—
Tinemaha	−9·3	82·1	52	i 11 32k	+ 4	—	—	—	—
Pasadena	−9·3	83·6	54	i 11 39k	− 3	—	—	—	—
Mount Wilson	−9·3	83·8	54	i 11 39k	+ 2	—	—	—	—
Riverside	−9·3	84·2	54	i 11 42k	+ 2	—	—	—	—

Additional readings :—
Kobe iN = eZ = +1m.40s., iN = +1m.55s., eN = +2m.40s., eZ = +2m.44s., eN = +3m.15s., eEN = +3m.43s. and +4m.55s.
Toyooka SZ = +3m.8s.
Sverdlovsk e = +19m.46s. = SS − 9s.
Tinemaha eZ = +13m.20s.

Feb. 10d. 19h. Readings for which no determination has been made :—
San Juan e = 58m.8s., e = 76m.42s.
Tucson P = 63m.7s., S = 68m.4s., L = 70m.7s.
Mount Wilson eZ = 64m.21s.
Pasadena eZ = 64m.23s.
Tinemaha eZ = 64m.45s.
Huancayo e = 70m.44s., e = 73m.11s., e = 75m.18s.
Mizusawa eP = 72m.34s., SE = 73m.33s.
Phu-Lien 78m., L = 79m.
Nanking e = 78m.44s., e = 81m.27s., eL = 82m.36s.
Calcutta e = 80m.49s.
Chiufeng e = 82m.32s.?, ME = 84m.37s.
Medan eP = 87m.2s.
Vladivostok e = 88m.50s.
Long waves at Sverdlovsk, Tashkent, Bombay, and Hong Kong.

Feb. 10d. 22h. 9m. 50s. Epicentre 44°·5N. 34°·5E. (as on 1929 April 19d.). R.3.

A = +·588, B = +·404, C = +·701.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Yalta	0·2	270	0 2	− 1	i 0 7	+ 2
Simferopol	0·5	326	0 6	− 1	i 0 12	− 1
Sebastopol	0·7	279	0 10	0	i 0 23	+ 5
Theodosia	0·8	48	0 12	+ 1	i 0 22	+ 1

Feb. 10d. Readings also at 6h. (Sofia), 8h. (Prague), 15h. (Nagoya), 16h. (Amboina and Sofia), 17h. (Sofia), 19h. (Tucson), 21h. (Baku, Samarkand, and Tashkent), 22h. (Medan).

Feb. 11d. 20h. Readings for which no determination has been made :—

Sofia eP =27m.32s., iS =28m.21s.
Capodimonte eP =27m.52s., eS =29m.27s.
Bucharest eN =27m.58s., eE =28m.16s.
Zagreb e =28m.35s., eE =29m.5s., e =29m.53s., e =30m.17s.
Zurich eP? =29m.40s.
Neuchatel eP =29m.41s., e =32m.45s.
Basle eP =29m.41s.
Triest eP =30m.16s., i =30m.19s., i =31m.9s., i =31m.31s., iSSsS =31m.59s., isSS =32m.13s.
Stuttgart e =32m.0s.
Tiflis e =32m.10s., e =33m.52s., eL =35m.36s.
Sverdlovsk P =32m.26s., L =39m.30s.
Budapest e =32m.30s.

Feb. 11d. Readings also at 3h. (Mizusawa), 4h. (Lick), 8h. (Branner), 9h. (Florence), 10h. (Almeria, Granada, Malaga, and Toledo), 11h. (Malaga and Tiflis), 13h. (Nagoya), 14h. (New Plymouth), 17h. (Mizusawa, Nagoya, and Tokyo), 19h. (Tiflis), 23h. (La Paz).

Feb. 12d. Readings at 7h. (Medan), 8h. (Tiflis), 9h. (Tiflis and New Plymouth), 11h. (Prato and Sumoto), 12h. (Granada and Mizusawa), 15h. (Malabar and Samarkand), 16h. (La Paz), 21h. (Sumoto and Nagoya), 22h. (Samarkand).

Feb. 13d. 9h. Readings for which no determination has been made :—

Sucre P =38m.38s., S? =45m.6s., L =53m.0s.
Granada eP =38m.51s., i =39m.3s., PP =40m.36s., L =53m.27s., M =56m.20s.
La Paz iPZ =38m.53s., iSE =45m.21s., iSZ =45m.25s., LZ =53m.30s., M =56m.30s.
San Juan e =40m.10s., i =44m.48s., eL =47m.30s.
Uccle (eP) =40m.36s., eS =48m.40s., eL =55m.0s.
Strasbourg eP =40m.37s., eS =48m.41s., eL =55s.
Stuttgart eP =41m.6s., eS =48m.42s., eL =58m.
Ksara iP =41m.57s.k, PP =44m.34s., S =51m.28s., L =65m., M =71m.
Sverdolovsk e =44m.5s., L =75m.30s.
Edinburgh e =45m.
Huancayo e =46m.38s., e =50m.3s., eL =54m.48s.
Oxford S =48m.20s., L =57m.4s.
Cape Town 48m.20s., M =59·3m.
Oak Ridge iZ =40m.36s.
De Bilt eS =48m.54s., eL =56m., M =60m.45s.
Stonyhurst e =57m.
Bidston e =58m.12s.
Kew e =58m.
Baku e =62m.3s., L =73m.48s., M =82m.6s.
Long waves at Copenhagen, Paris, Prague, San Fernando, Scoresby Sund, and Tashkent.

Feb. 13d. 17h. 22m. 4s. Epicentre 23°·2S. 69°·0W. (as on 1929 Oct. 19d.). X.

A = + ·329, B = − ·858, C = − ·394 ; D = − ·934, E = − ·358 ; G = − ·141, H = + ·368, K = − ·919.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Montezuma	0·6	7	0 53	?	1 18	?	1·7	—
Sucre	5·5	41	1 38	P_g	i 3 8	S_g	3·6	—
La Paz	6·8	7	i 2 1a	P_g	i 3 57	S_g	4·4	5·7
Santiago	10·3	188	(2 26)	+ 1	(3 47)	−34	—	—
Huancayo	12·6	331	i 3 27	?	i 6 11	S*	7·6	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	m.
	°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata	15·1	143	3 8	−22	5 56	−21	7·4	—
San Juan	41·7	4	—	—	i 14 1	− 1	e 17·1	—
Little Rock	62·1	338	e 10 23	+ 4	e 18 38	− 5	—	—
Georgetown	62·5	354	i 10 24	+ 2	18 52	+ 4	e 29·9	—
St. Louis	64·9	341	e 10 39	+ 1	e 19 17	− 2	—	—
Florissant	65·2	341	i 10 40	0	e 19 19	− 2	—	—
Oak Ridge	65·8	358	i 10 45	+ 1	—	—	—	—
Toronto	67·5	352	—	—	i 19 39	−12	—	—
Tucson	68·4	323	e 11 2	+ 1	i 20 4	+ 2	—	—
Ottawa	68·8	356	—	—	e 20 8	+ 1	e 24·9	—
Riverside	73·3	320	e 11 30	− 1	—	—	—	—
Mount Wilson	73·9	319	i 11 34	0	—	—	—	—
Pasadena	73·9	320	i 11 35k	+ 1	—	—	—	—
Haiwee	75·3	321	i 11 43	+ 1	—	—	—	—
Cape Town	75·3	120	—	—	21 51	PS	—	—
Tinemaha	76·1	321	i 11 45	− 2	—	—	—	—
Berkeley	79·0	320	i 12 2	− 1	—	—	—	—
San Fernando	84·0	45	e 12 27	− 1	i 22 49	[− 3]	—	—
Malaga	85·4	46	e 12 35	0	e 23 5	[+ 3]	31·9	—
Granada	86·2	46	e 12 41	+ 2	e 23 19	0	36·1	—
Almeria	86·8	46	—	—	e 22 58	[−14]	—	—
Toledo	87·4	44	e 12 44	− 1	23 19	[+ 4]	—	—
Alicante	88·8	46	—	—	e 23 18	[− 7]	—	—
Paris	96·0	39	17 56	?	—	—	—	—
De Bilt	98·9	37	—	—	e 22 56?	?	—	—
Strasbourg	99·0	40	(e 15 56?)	?	—	—	e 15·9	—
Scoresby Sund	99·3	13	—	—	26 44	PS	—	—
Stuttgart	99·9	41	—	—	e 23 56	[−29]	—	—
Triest	101·6	45	—	—	i 24 51	[+18]	—	—
Cheb	102·4	40	—	—	e 24 56?	[+19]	—	—
Ksara	114·6	60	19 35	PP	29 10	PS	—	—
Tiflis	122·6	54	e 20 35	PP	—	—	32·3	—
Sverdlovsk	130·6	33	i 19 5	[− 3]	—	—	61·9	—
Tashkent	140·9	52	i 19 17	[− 5]	—	—	e 68·1	76·3
Andijan	143·2	52	e 19 29	[+ 1]	—	—	—	—
Kodaikanal	145·5	104	e 15 35	?	—	—	—	—
Batavia	150·3	172	i 19 36	[− 6]	21 14	?	—	—
Vladivostok	153·6	324	e 19 44	[− 2]	—	—	—	—

Additional readings and note :—
La Paz iZ = +2m.31s. and +3m.7s.
Santiago readings have been *increased* by 1m.
Huancayo i = +5m.2s.
Little Rock eE = +19m.26s.
Georgetown e = +10m.21s. ; T_0 = 17h.22m.5s.
St. Louis epPE = +11m.4s., esSE = +19m.58s.
Florissant ipPZ = +11m.5s., esS = +20m.1s.
Oak Ridge iZ = +11m.11s. = P_cP −5s.
Toronto eN = +24m.25s. = SS = +11s.
Riverside iZ = +11m.58s. and +12m.8s.
Pasadena iZ = +12m.1s. and +12m.12s.
Tinemaha iZ = +12m.10s. and +12m.23s.
Cape Town E = +20m.59s., N = +21m.3s., E = +26m.10s. = SS + 8s.
Berkeley iZ = +12m.4s., eZ = +12m.29s.
Malaga e = +13m.4s., +23m.57s. = PS + 1s. and +25m.39s.
Granada iP_cP = +13m.6s.
Toledo SKS = +23m.5s., iZ = +23m.11s.
Stuttgart eZ = +26m.37s. = PS − 7s.
Triest e = +22m.19s., i = +24m.18s., e = +26m.29s.
Ksara pPP = +20m.0s., PPP = +22m.3s., PPS = +30m.16s.
Sverdlovsk i = +19m.32s., e = +22m.47s. = PKS + 11s., i = +23m.22s.
Tashkent i = +22m.30s. = PP + 3s., e = +23m.14s. = PKS + 3s., i = +23m.36s., e = +35m.30s. and +41m.50s.
Long waves at Hong Kong.

Feb. 13d. Readings also at 8h. (La Paz), 9h. (Samarkand), 13h. (Manila), 17h. (Nagasaki), 20h. (Cape Town).

Feb. 14d. Readings at 0h. (Berkeley), 1h. (Mizusawa and Santiago), 2h. (Andijan, Berkeley, Tucson, and Santiago), 3h. (Granada and Tucson), 6h. (Nagoya), 8h. (Mizusawa), 15h. (Kodaikanal), 16h. (Kobe and Nagoya), 19h. (Berkeley), 23h. (Algiers).

Feb. 15d. Readings at 1h. (Santiago), 4h. (Arisan and Taito), 5h. (Christchurch), 10h. (Hong Kong and Phu-Lien), 11h. (Lick), 13h. (La Paz, Santiago, Sucre, and Tiflis (2)), 15h. (Tiflis, Grozny, and Erevan), 17h. (Takaka), 19h. (Mount Wilson and Pasadena), 21h. (Medan and Samarkand).

Feb. 16d. 22h. 43m. 10s. Epicentre 22°·5N. 121°·5E. (as on 1934 June 19d.). R.3.

A = − ·483, B = + ·788, C = + ·383.

	△	Az.	P.	O − C.	S.	O − C.
	°	°	m. s.	s.	m. s.	s.
Taito	0·4	308	0 3	− 3	0 10	0
Kosyun	0·9	234	(e 0 13)	0	(0 19)	− 4
Takao	1·2	276	e 0 26	S	(e 0 26)	− 5
Arisan	1·2	327	e 0 22	P_g	0 40	S_g
Tainan	1·3	293	0 21	P_g	0 34	+ 1

Kosyun readings have been *increased* by 1m.

Feb. 16d. Readings also at 0h. (Erevan, Grozny, Branner, La Paz, and Tiflis), 4h. (Sofia), 6h. (Wellington), 7h. (Kobe and Sumoto), 8h. (Andijan, Frunse, Tchimkent, and Tiflis), 14h. (Florence and Prato), 15h. (Pasadena, Mount Wilson, and Tinemaha), 16h. (Branner), 18h. (Tiflis), 20h. (Baku, Ksara, Tiflis, and Tashkent), 22h. (Tiflis).

Feb. 17d. 1h. Readings for which no determination has been made :—

Riverside iPZ = 21m.6s.
Pasadena iP = 21m.9s.k.
Tinemaha iP = 21m.20s.k.
Andijan eP = 23m.12s.
Tchimkent eP = 23m.40s.
Frunse e = 24m.40s., e = 25m.40s.

Feb. 17d. 16h. 13m. 30s. Epicentre 24°·0N. 121°·6E. N.2.

Felt at Karenko.

A = − ·479, B = + ·778, C = + ·407 ; D = + ·852, E = + ·524 ;
G = − ·213, H = + ·346, K = − ·914.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	0·0	0	− i 0 1	− 1	0 3	+ 3	—	—
Taityu	0·9	283	e 0 12	− 1	0 25	+ 2	—	—
Arisan	0·9	232	i 0 15	+ 2	0 29	S*	—	—
Taihoku	1·0	354	i 0 15	+ 1	i 0 27	+ 1	—	—
Taito	1·3	198	e 0 20	+ 2	0 46	?	—	—
Tainan	1·6	230	e 0 34	+11	1 5	?	—	—
Takao	1·8	220	e 0 9	?	0 34	P_g	—	—
Hokoto	2·0	258	e 0 26	− 3	0 53	+ 2	—	—
Kosyun	2·2	200	0 46	P_g	0 56	− 1	—	—
Hong Kong	7·0	258	3 12	S	(3 12)	+13	4·6	5·2
Zi-ka-wei	7·2	359	—	—	e 3 11	+ 7	—	4·7
Nanking	8·4	344	e 1 55	− 4	3 54	S*	4·4	5·4
Husan	12·8	29	7 9	?	8 23	?	—	—
Phu-Lien	14·2	259	—	—	e 7 30?	S_g	9·3	—
Keizyo	14·3	17	e 7 50	L	—	—	(e 7·8)	—
Chiufeng	16·7	345	e 2 51	+ 1	e 6 2	?	e 7·8	10·1
Vladivostok	20·9	21	4 45	PP	—	—	—	14·7
Calcutta	30·5	274	—	—	e 13 48	?	—	—

Additional readings :—
Hong Kong ? = +3m.37s., S? = +4m.14s.
Long waves at Taikyu and some European stations.

Feb. 17d. 21h. Readings for which no determination has been made :—

Andijan eP = 38m.19s., S* = 38m.49s., S_g = 38m.56s., M = 38m.59s.
Tashkent P = 38m.21s., i = 38m.56s., ī = 39m.8s., iL = 39m.12s., M = 39m.18s.
Tchimkent eP = 38m.50s., e = 39m.30s., M = 39m.55s.
Frunse e = 39m.0s., iS_g = 40m.0s.

Feb. 17d. Readings also at 0h. (Göttingen), 5h. (Mizusawa), 8h. (Grozny, Lick, and Tiflis), 14h. (Mount Wilson, Pasadena, Tinemaha, and Wellington), 15h. (Baku and Tashkent), 17h. (Stuttgart), 18h. (New Plymouth and Wellington).

Feb. 18d. 2h. Readings for which no determination has been made :—

Arisan eP = 27m.24s., S = 27m.29s.
Tainan eP = 27m.26s., S = 27m.37s.
Takao eP = 27m.27s., S = 27m.39s.
Taito eP = 27m.36s., S = 27m.43s.
Taityu eP = 27m.41s.
Kosyun eP = 27m.48s., S = 27m.57s.
Taihoku eP = 28m.7s., eS = 28m.23s.

Feb. 18d. 6h. 40m. 12s. Epicentre 40°·4N. 23°·3E. (as on 1933 May 31d.). R.2.

A = +·699, B = +·301, C = +·648 ; D = +·396, E = −·918 ;
G = +·595, H = +·256, K = −·762 ;

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	2·3	0	i 0 31	− 2	i 0 59	0	—	1·3
Bucharest	4·5	29	e 1 3	− 1	—	—	i 2·3	2·9
Belgrade	4·9	336	1 17	P*	i 2 19	S*	—	2·9
Capodimonte	6·9	276	e 1 39	+ 1	e 3 41	S_g	5·8	—
Zagreb	7·6	318	e 1 48?	0	e 4 3	S_g	—	4·6
Budapest	7·7	338	e 2 0	P*	4 18	S_g	4·8	8·2
Laibach	8·5	315	e 2 5	+ 5	e 4 32	S_g	—	5·6
Triest	8·7	310	2 10	+ 7	i 4 18	S*	—	—
Graz	8·7	321	i 2 1	− 2	i 4 10	S*	—	5·2
Yalta	9·0	59	2 9	+ 2	3 51	+ 2	—	—
Simferopol	9·1	56	e 2 15	+ 6	e 3 53	+ 2	—	—
Vienna	9·2	330	i 2 11	+ 1	e 5 0	S_g	—	6·8
Venice	9·4	306	e 2 35	+22	5 30	?	5·8	7·8
Florence	9·5	295	e 3 11	?	5 12	S_g	—	6·1
Prato	9·6	296	e 2 48	+32	5 10	S_g	—	6·2
Padova	9·7	310	2 55	+38	5 23	S_g	—	—
Theodosia	10·0	58	2 23	+ 2	4 22	+ 9	—	—
Piacenza	11·0	300	4 48	SS	6 8	S_g	7·1	10·2
Prague	11·5	330	—	—	e 5 30	S*	—	6·8
Ksara	12·0	119	e 2 48?	0	e 5 56	S*	—	—
Cheb	12·3	325	e 2 48?	− 4	—	—	6·8	7·3
Zurich	12·6	308	e 2 57	+ 1	—	—	—	—
Stuttgart	13·0	315	e 3 4	+ 2	e 6 10	?	e 7·0	7·6
Basle	13·3	308	e 3 10	+ 4	e 6 42	?	—	—
Jena	13·3	326	e 3 16	+10	—	—	—	—
Strasbourg	13·7	312	e 3 21	+10	—	—	e 7·8	—
Göttingen	14·4	325	e 3 18	− 3	5 18	?	—	—
Königsberg	14·5	353	—	—	e 7 50	?	—	—
Tiflis	16·2	78	3 40	− 4	e 6 38	− 5	9·5	10·6
Uccle	16·8	314	e 3 55	+ 3	—	—	8·8	—
Grozny	16·9	73	e 3 50	− 3	—	—	—	—
Pulkovo	19·8	10	i 4 23	− 4	e 8 10	SS	10·8	12·0
Baku	20·2	81	e 4 33	+ 1	e 8 51	P_cP	11·8	14·4
Tashkent	34·4	73	—	—	e 13 30	?	e 19·8	26·1

For Notes see next page.

NOTES TO FEB. 18d. 6h. 40m. 12s.

Additional readings :—
Sofia i = +35s. = P* − 1s.
Bucharest ePNZ = +1m.6s., iP*N = +1m.11s., P_gEN = +1m.22s., dNE = +2m.10s. = S* − 2s.
Belgrade P* = +1m.27s., i = +1m.33s. = P_g + 1s., sP_gS = +2m.7s. = S + 2s., sPS = +2m.33s. = S_g − 3s.
Zagreb e = +3m.26s.
Laibach e = +2m.50s. and +4m.57s.
Triest i = +2m.42s., PPsP = +2m.57s., i = +3m.57s. and +4m.48s. = S_g + 7s., iSsSE = +4m.52s., i = +4m.57s., iSSsS = +4m.59s., i = +5m.36s. and +5m.44s.
Vienna eEN = +4m.23s. = S* − 9s. and +6m.24s.
Venice S = +5m.2s. = S_g − 2s.
Prague e = +6m.23s.
Jena eENZ = +7m.18s., eEZ = +8m.18s., eE = +11m.48s.
Strasbourg SS = +7m.41s.
Königsberg iE = +8m.11s. and +8m.28s., EN = +8m.55s., iE = +9m.38s. and +10m.24s., eN = +10m.58s.
Pulkovo L_q = +9m.24s.
Long waves at other European stations.

Feb. 18d. Readings also at 0h. (Tiflis), 3h. (Amboina and Manila), 4h. (Branner, Lick, and Kobe), 5h. (Prato), 8h. (La Plata, La Paz, and Santiago), 10h. (Apia, Pasadena, and Tinemaha), 13h. (Pasadena and Tinemaha), 14. (Kobe, Mizusawa, and Nagoya), 15h. (Mizusawa), 20h. (La Jolla, Mount Wilson, Pasadena, Riverside, Santa Barbara, and Tinemaha), 21h. (New Plymouth).

Feb. 19d. 0h. 1m. 28s. Epicentre 44°·4N. 7°·5E. N.3.

Prato gives epicentre as Cuneo.

A = +·708, B = +·093, C = +·700 ; D = +·130, E = −·991 ;
G = +·694, H = +·091, K = −·714.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Piacenza	1·7	67	e 0 32	P_g	—	—	0·7	1·0
Marseilles	1·9	240	(i 0 25)	− 3	i 0 25	P	—	—
Prato	2·7	100	e 0 37	− 2	1 9	0	—	1·5
Florence	2·8	103	0 39	− 1	1 12	0	—	—
Padova	3·2	74	e 1 9	S	(e 1 9)	− 3	—	—
Zurich	3·0	17	e 0 44	+ 1	—	—	—	—
Basle	3·1	0	c 0 48	P*	e 1 30	S*	—	—

Additional readings :—
Marseilles eP = +5s., eP_g = +8s.
Padova S = +1m.43s.
Long waves at Granada.

Feb. 19d. 7h. Readings for which no determination has been made :—
Phu-Lien e = 44m., L = 45m.30s., M = 45m.49s.
Nanking e = 45m.33s., S = 48m.13s., L = 49m.20s., iE = 49m.38s., M = 50m.27s.
Hong Kong M = 47m.40s.
Chiufeng e = 49m.13s., eE = 50m.39s., i = 50m.58s.

Feb. 19d. 8h. Readings for which no determination has been made :—
Samarkand eP = 19m.40s., e = 20m.40s., M = 21m.50s.
Andijan eP = 19m.43s.
Frunse e = 21m.8s., e = 21m.32s.
Tchimkent e = 21m.30s.

Feb. 19d. 14h. Readings for which no determination has been made :—

Taito P = 32m.17s., S = 32m.23s.
Arisan eP = 32m.27s., S = 32m.32s.
Karenko P = 32m.30s.
Tainan eP = 32m.32s., S = 32m.48s.
Takao eP = 32m.34s., S = 32m.46s.
Kosyun eP = 32m.38s., S = 32m.45s.
Taityu eP = 33m.5s.

Feb. 19d. 19h. Readings for which no determination has been made. Epicentre 24°S 69°W. has been suggested.

Huancayo eP = 26m.31s., e = 28m.25s., iS = 29m.56s., iL = 31m.20s.
San Juan iP = 27m.39s., iS = 31m.28s., iL = 34m.0s.
La Paz PZ = 27m.53s., SZ = 33m.21s., LN = 35m.51s., M = 37m.30s.
Philadelphia e = 31m.19s., e = 35m.30s., eL = 38m.45s.
La Jolla ePZ = 31m.32s.
Riverside ePZ = 31m.35s.
Pasadena iP = 31m.41s.
Tinemaha e = 31m.57s.
Tucson L = 45m.0s.
La Plata L = 47m.24s.

Feb. 19d. 20h. 10m. 24s. Epicentre 35°·5N. 141°·0E. (as on 1933 Sept. 14d.) R.1.

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

		△	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tyosi		0·2	332	0 9	+ 6	0 16	+11	—	—
Kiyosumi		0·7	241	0 7	− 3	0 17	− 1	—	—
Kakioka		1·0	319	0 13	− 1	0 21	− 5	—	—
Mito		1·0	335	0 14	0	0 24	− 2	—	—
Tukubasan		1·0	316	0 14	0	0 24	− 2	—	—
Tokyo		1·1	278	0 16	0	0 26	− 2	—	0·5
Yokosuka		1·1	258	0 16	0	0 39	?	—	—
Yokohama		1·1	267	0 19	+ 3	0 32	S*	—	—
Mera		1·2	237	0 18	+ 1	0 31	0	—	—
Onahama		1·4	355	0 37	S	0 54	?	—	—
Kumagaya		1·5	297	0 22	+ 1	0 41	+ 2	—	—
Ito		1·7	250	0 25	+ 1	0 46	+ 2	—	—
Misima		1·7	255	0 26	P*	0 49	S*	—	—
Maebasi		1·8	300	0 25	− 1	0 46	0	—	—
Numadu		1·8	256	0 29	P_g	0 41	− 5	—	—
Kohu		1·9	270	0 30	P*	0 56	S*	—	—
Hunatu		1·9	275	0 27	− 1	0 55	S*	—	—
Oiwake		2·2	294	0 32	+ 1	0 54	− 3	—	—
Aidu		2·2	340	0 18	?	0 41	P_g	—	—
Hukusima		2·3	249	0 36	P*	1 4	S*	—	—
Omaesaki		2·5	249	0 38	+ 2	1 12	S*	—	—
Matumoto		2·6	287	0 38	+ 1	1 7	0	—	—
Nagano		2·6	298	0 38	+ 1	1 6	− 1	—	—
Iida		2·6	270	0 39	+ 2	1 10	+ 3	—	—
Hatidyozima		2·6	203	0 45	P_g	1 12	S*	—	—
Takada		2·7	306	0 41	P*	1 13	+ 4	—	—
Sendai		2·8	358	0 42	+ 2	1 12	0	—	—
Niigata		2·8	326	0 39	− 1	1 21	S*	—	—
Hamamatu		2·8	251	0 40	0	1 16	+ 4	—	—
Isinomake		2·9	5	0 45	P*	1 9	− 5	—	—
Takuyama		3·1	283	0 50	P*	1 27	S*	—	—
Nagoya		3·4	265	i 0 49	0	1 43	S_g	—	2·3
Gihu		3·5	264	0 50	0	1 42	S*	—	—
Husiki		3·5	293	0 51	+ 1	2 7	?	—	—
Mizusawa	E.	3·6	1	i 0 56	P*	i 1 40	S*	—	—
	N.	3·6	1	e 0 54	+ 3	e 1 38	+ 6	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Wazima	3·8	300	0 55	+ 1	1 40	+ 3	—	—
Kameyama	3·8	260	0 57	+ 3	1 55	S_g	—	—
Hikone	3·9	265	0 54	− 2	1 58	S*	—	—
Morioka	4·2	1	1 0	0	1 43	− 5	—	—
Akita	4·3	349	1 11	P*	2 31	?	—	—
Kyoto	4·4	265	1 4	+ 1	2 5	S*	—	—
Osaka	4·6	261	1 5	− 1	2 10	S*	—	—
Siomisaki	4·8	246	1 9	+ 1	2 14	S*	—	—
Kobe	4·9	262	1 9	− 1	2 16	S*	—	3·0
Wakayama	5·0	257	1 11	0	2 14	+ 6	—	—
Toyooka	5·0	273	1 21	P*	2 31	S*	—	2·8
Sumoto	5·2	258	1 13	− 1	2 32	S*	—	3·0
Muroto	6·1	250	1 16	−11	3 17	S_g	—	—
Koti	6·5	255	1 31	− 1	3 4	S*	—	—
Simidu	7·2	250	1 43	+ 1	3 38	S*	—	—
Hamada	7·3	264	1 45	+ 1	3 17	+11	—	—
Sapporo	7·6	2	1 51	+ 3	3 16	+ 2	—	—
Titizima	8·5	173	2 2	+ 2	3 57	?	—	—
Miyazaki	8·7	246	2 6	+ 3	4 43	S_g	—	—
Kumamoto	8·9	256	2 8	+ 2	—	—	—	—
Hukuoka	8·9	261	2 7	+ 1	i 4 9	?	4·6	5·2
Hukuoka B	9·0	260	i 2 9	+ 2	i 4 23	S*	—	—
Nagasaki	9·7	257	2 16	− 1	e 4 40	S*	—	5·3
Husan	9·8	271	e 2 41	?	4 37	S*	—	—
Taikyu	10·1	270	2 24	+ 2	4 38	?	—	—
Vladivostok	10·4	321	i 2 26	0	e 4 24	+ 1	4·6	8·4
Tomie	10·6	258	2 29	0	4 47	+19	—	—
Zinsen	11·7	284	e 2 44	0	e 5 18	+23	—	—
Nanking	18·8	265	i 4 8	− 8	7 44	+ 2	—	10·2
Chiufeng	20·0	291	4 26a	− 4	8 0	− 6	10·2	—
Hong Kong	26·8	248	6 24	PP	10 9	− 3	—	17·1
Manila	27·6	226	e 6 12	PP	10 1	−24	12·1	—
Phu-Lien	33·5	253	—	—	14 36?	SSS	—	—
Semipalatinsk	45·5	309	e 6 30	?	—	—	—	—
Calcutta	47·3	269	e 8 24	− 7	15 54	+21	—	29·2
Frunse	50·7	300	e 9 10	+13	—	—	—	—
Andijan	52·9	298	e 9 9	− 4	e 16 51	+10	—	—
Agra	53·6	280	e 9 13	− 5	e 16 47	− 3	—	—
Tchimkent	54·4	300	e 9 40	+16	—	—	—	—
Tashkent	54·9	300	i 9 27	− 1	e 16 59	− 9	e 24·6	33·7
Bombay	61·7	274	e 10 12	− 4	18 48	PS	—	39·2
Baku	68·7	306	—	—	e 20 21	PS	33·3	43·5
Tiflis	71·3	308	11 15	− 4	e 20 33	− 4	37·6	45·7
Erevan	72·4	307	e 11 23	− 2	—	—	—	—
Berkeley	73·7	55	e 11 34	+ 1	—	—	—	—
Tinemaha	76·8	54	e 11 51	+ 1	—	—	—	—
Santa Barbara	77·2	56	e 11 55	+ 2	—	—	—	—
Haiwee	77·4	54	i 11 56	+ 2	—	—	—	—
Pasadena	78·5	56	i 12 0	0	—	—	—	—
Riverside	79·1	56	e 12 3	0	—	—	—	—
La Jolla	79·9	56	e 12 7	0	—	—	—	—
Ksara	81·6	306	i 12 13a	− 3	23 21	PS	45·6	50·6

Additional readings :—
Nagoya P_g = +58s.
Kobe iEZ = +1m.18s. =P* −3s., iNZ = +1m.23s., eE = +1m.25s., i = +1m.32s. =P_g +0s., iZ = +1m.52s., SE = +2m.19s.
Toyooka P_gE = +1m.35s., SZ = +2m.35s. =S_g −4s.
Nanking PP = +4m.26s., eN = +5m.14s., i = +8m.7s.
Chiufeng iEZ = +8m.31s. =SSS +0s.
Calcutta SS = +19m.37s.
Tiflis e = +33m.49s.
Ksara PP = +15m.23s.
Long waves also at other European stations.

Feb. 19d. Readings also at 3h. (Andijan, Bombay, Frunse, and Tchimkent), 5h. (Batavia), 6h. (Lick and Zurich), 8h. (Amboina, Kobe, Nagoya, and Sumoto), 11h. (La Jolla, Pasadena, Riverside, Santa Barbara, and Tinemaha) 12h. (Amboina), 14h. (Branner and Lick), 15h. (Taihoku), 17h. (Kobe, Nagoya, and Sumoto), 19h. (Cape Town, Hong Kong, La Paz, and Manila).

Feb. 20d. 11h. 26m. 38s. Epicentre 14°·9N. 98°·0W. N.2.

A = −·135, B = −·957, C = +·257; D = −·990, E = +·139; G = −·036, H = −·255, K = −·966.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Little Rock	20·5	13	e 4 30	− 5	e 8 23	+ 7	—
Tucson	21·0	328	4 39	− 1	8 26	0	i 10·5
St. Louis	24·7	15	e 5 16	− 1	e 9 41	+ 5	—
Florissant	24·9	14	i 5 15	− 4	e 9 39	0	—
La Jolla	25·1	318	i 5 21	0	—	—	—
Riverside	25·9	321	i 5 28a	0	—	—	—
Mount Wilson	26·5	320	i 5 34	0	—	—	—
Pasadena	26·5	320	i 5 34a	0	e 10 14	+ 7	e 14·3
Haiwee	27·7	324	i 5 45	+ 1	—	—	—
Tinemaha	28·6	325	i 5 53	0	i 10 42	0	—
Georgetown	30·3	33	e 4 15	?	e 11 8	− 1	e 18·4
Berkeley	31·5	322	e 5 12	−66	e 17 42	?	—
Philadelphia	32·0	34	—	—	e 11 28	− 7	e 19·1
Bozeman	32·7	343	e 14 35	?	e 16 48	(−11)	17·3
Toronto	32·8	25	—	—	i 11 48	0	18·4
Huancayo	35·1	139	—	—	e 12 50	+27	—

Additional readings:—
Little Rock epPE = +4m.45s., esSE = +8m.51s.
St. Louis eE = +10m.7s. and +10m.26s. =SS +4s.
Florissant ipPZ = +5m.21s.
Georgetown ePP = +6m.11s.; T_0 =11h.22m.5s.
Long waves at Victoria and other American stations.

Feb. 20d. 18h. Readings for which no determination has been made. Batavia suggests 3°·6S. 124°·7E.

Amboina iP =15m.19s., iS =16m.3s.
Batavia P =18m.43s., S =22m.2s.
Malabar P =18m.43s., eS =22m.11s.
Manila P =18m.51s.k, S =20m.55s.
Medan P =20m.54s., S =25m.34s.
Nagasaki P =21m.20s.
Semipalatinsk eP =23m.22s.
Andijan eP =24m.52s., S =33m.34s.
Perth P =25m.30s.
Riverview e =28m.18s.

Feb. 20d. Readings also at 3h. (Wellington), 4h. (Prato and Tinemaha), 5h. (Florence and Prato), 14h. (La Paz), 15h. (La Paz), 17h. (Prato), 20h. (Andijan, Frunse, and Samarkand), 19h. (Berkeley, Branner, Lick, and Santiago), 23h. (Branner, Glenmuick, and Manila).

Feb. 21d. 9h. Readings for which no determination has been made:—

Andijan eP =20m.36s., iPP =20m.48s., e =21m.10s., S_g =21m.20s., M =21m.28s.
Samarkand eP =20m.40s., e =21m.4s., S =21m.34s., S_g =21m.48s., M =22m.18s.
Tchimkent eP =21m.17s., e =22m.7s.
Frunse eP =21m.30s., i =22m.18s., i =22m.50s., M =22m.51s.
Almata eP =21m.37s., e =22m.54s.

Feb. 21d. 18h. Readings for which no determination has been made :—

Phu-Lien eP =41m.32s., eS =42m.35s., L =43m., M =43m.10s.
Nanking ePE =41m.46s., eS =44m.42s., i =45m.33s., L =45m.53s., i =46m.29s., ME =47m.2s.
Hong Kong P? =43m.4s., S? =44m.6s., L =44m.47s., MN =45m.19s.
Chiufeng eE =43m.21s., eNZ =43m.24s., eSN =46m.28s., eSEZ =46m.35s., eL = 47m.54s., M =48m.48s.
Agra e =44m.11s., i =48m.59s.
Manila eP =44m.27s., SEN =44m.55s., LEN =49m.30s., MEN =51m.
Medan P? =45m.18s., P? =49m.32s., eS? =52m.26s.
Calcutta eP =45m.32s., S =47m.44s., L =48m.30s.
Almata eP =46m.0s.
Vladivostok e =50m.5s., L =53m.54s.
Batavia P? =50m.16s., eS? =56m.58s.
Bombay eEN =50m.39s., M =59m.15s.
Tashkent e =51m.7s., eL =57m.0s., M =59m.48s.
Baku eL =63m.42s.
Tiflis e =64m.24s., eL =70m.30s., M =71m.6s.

Feb. 21d. Readings also at 8h. (Santiago), 10h. (Manila), 11h. (Lick), 12h. (Apia, Wellington, and Samarkand), 14h. (Santiago (2)), 16h. (Andijan), 20h. (Nanking and Phu-Lien), 21h. (Kobe), 23h. (Hong Kong, Manila, and Tiflis).

Feb. 22d. 8h. Readings for which no determination has been made :—

Santiago P =54m.19s., S =54m.35s.
La Plata P =56m.17s., S =58m.23s., L =59m.0s.
La Paz iPZ =57m.22s.a, iSN =60m.36s., LN =61m.46s., M =62m.10s.

Feb. 22d. 8h. 55m. 28s. Epicentre 24°·2N. 121°·8E. (as on 9d.). R.2.

Given by Nanking.

A = − ·481, B = + ·775, C = + ·410 ; D = + ·850, E = + ·527 ;
G = − ·216, H = + ·348, K = − ·912.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	0·3	218	i 0 1	− 3	0 5	− 3	—	—
Taihoku	0·9	343	i 0 14	+ 1	i 0 28	S*	—	—
Taityu	1·0	268	e 0 17	+ 3	0 29	S*	—	—
Arisan	1·2	230	i 0 14	− 3	0 29	− 2	—	—
Taito	1·6	201	e 0 20	− 3	0 41	0	—	—
Tainan	1·9	232	(e 0 32)	P_g	(1 4)	S_g	—	—
Takao	2·1	218	0 30	0	1 1	S*	—	—
Hokoto	2·2	252	e 0 28	− 3	0 56	− 1	—	—
Kosyun	2·4	203	e 0 39	P*	1 5	+ 3	—	—
Zi-ka-wei	7·0	357	e 1 41	+ 2	i 3 30	S*	—	6·3
Hong Kong	7·3	257	1 42	− 2	3 12	+ 6	4·2	4·7
Nanking	8·3	342	e 2 12	P*	3 51	+20	4·4	6·1
Manila	9·6	184	2 19	+ 3	4 24	+21	—	—
Hukuoka B	12·0	37	e 5 29	?	e 9 3	?	—	—
Husan	12·5	28	e 3 1	PP	e 7 15	?	8·6	—
Keizyo	14·1	17	e 3 23	PP	7 47	?	—	—
Chiufeng	16·6	345	e 3 50	+ 1	7 4	SS	8·7	11·1
Vladivostok	20·6	21	e 4 43	PP	e 8 43	SS	11·5	14·9
Medan	30·4	231	e 11 26	S	(e 11 26)	+16	—	—
Calcutta	30·7	274	e 11 37	S	(e 11 37)	+21	19·3	21·8
Agra	39·4	284	—	—	e 23 48	?	—	26·0
Bombay	45·6	275	—	—	e 18 32	(+16)	—	28·0
Tashkent	46·6	304	—	—	e 15 15	+ 2	—	31·2
Samarkand	48·3	302	9 4	+26	—	—	—	—
Baku	61·3	304	—	—	e 18 37	+ 4	e 35·3	45·3
Ksara	73·6	300	e 11 37	+ 5	e 21 23	PS	—	—

For Notes see next page.

NOTES TO FEB. 22d. 8h. 55m. 28s.

Additional readings and notes :—
Tainan readings have been *increased* by 1m.
Zi-ka-wei eZ = +3m.16s., iN = +3m.47s. = S_g +2s. and +3m.55s., iE = +4m.1s. and +4m.17s., iZ = +4m.32s. and +4m.42s.
Chiufeng iN = +8m.7s.
Medan eS = +19m.59s.
Calcutta S = +16m.20s., SS = +17m.47s.
Tashkent e = +24m.32s.
Baku e = +15m.47s. and +25m.48s.
Ksara ePP = +14m.25s., PS = +22m.3s.
Long waves at Cheb, Copenhagen, Pulkovo, Tiflis, Phu-Lien, and Zinsen.

Feb. 22d. 9h. 5m. 8s. Epicentre 24°·2N. 121°·8E. (as at 8h. 55m.). X.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Karenko	0·3	218	e 0 0	− 4	0 3	− 5	—
Taihoku	0·9	343	0 14	+ 1	0 26	S*	—
Taityu	1·0	268	e 0 18	+ 4	—	—	—
Arisan	1·2	230	e 0 16	− 1	0 33	S*	—
Tainan	1·9	232	e 0 36	P_g	1 2	S_g	—
Takao	2·1	218	e 0 44	P_g	—	—	—
Bombay	45·6	275	e 8 32	+15	—	—	27·9

Feb. 22d. 16h. Reading from the American stations for two shocks :—

Riverside iPZ = 0m.25s.	eP = 47m.12s.
Pasadena iP = 0m.27s.	iP = 47m.15s.
Mount Wilson ePZ = 0m.27s.	iPZ = 47m.16s.
Tinemaha iPZ = 0m.31s.	iPZ = 47m.35s.
La Jolla	ePZ = 47m.11s.

Feb. 22d. 17h. 6m. 3s. Epicentre 53°·3N. 174°·9E. N.1.

A = −·595, B = +·053, C = +·802 ; D = +·089, E = +·996 ; G = −·799, H = +·071, K = −·598.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nemuro		21·7	255	4 35	−13	8 34	− 6	—	—
Asahigawa		23·3	259	5 1	− 3	—	—	—	—
Urakawa		24·0	255	5 12	+ 2	9 16	− 7	—	—
Aomori		26·1	255	5 34	+ 4	—	—	—	—
Mizusawa	E.	27·0	252	e 5 37	− 1	e 10 44	?	e 16·7	—
	N.	27·0	252	e 5 27	−11	e 10 36	+21	e 16·1	—
Sitka		28·0	62	i 6 1	+14	i 10 50	+18	e 13·9	—
Hukusima		28·3	251	5 47	− 3	11 0	+23	—	—
Tukubasan		29·6	249	6 31	PP	—	—	—	—
Vladivostok		29·9	268	e 6 5	+ 1	e 12 4	SS	16·8	24·0
Tokyo		30·2	249	6 35	+28	11 45	+38		—
Nagoya		32·1	251	6 48	+24	(13 32)	SSS	13·5	17·5
Toyooka		33·1	253	e 6 35	+ 2	e 14 8	?	19·8	26·2
Kobe		33·5	252	6 48	+12	e 12 22	+24	14·5	20·5
Sumoto		33·9	252	e 6 54	+15	e 12 1	− 3	14·6	18·8
Koti		35·2	253	6 56	+ 5	12 27	+ 3	—	—
Titizima		35·7	236	6 51	− 4	12 45	+13	—	—
Heizyo		36·0	267	7 18	+20	e 12 57	+21	—	29·2
Keizyo		36·3	264	6 53	− 7	12 41	0	15·5	16·4
Taikyu		36·4	261	7 13	+12	11 23	−79	14·9	—
Zinsen		36·5	264	e 6 59	− 3	e 12 13	−31	e 15·1	—
Husan		36·8	259	e 7 2	− 3	13 15	+27	—	—
Hukuoka B		37·0	256	7 39	+33	13 7	+16	20·6	23·8
Hukuoka		37·0	256	e 6 59	− 7	e 13 9	+18	e 18·6	—
Miyazaki		37·6	253	7 11	− 1	13 6	+ 6	—	—
Nagasaki		37·9	256	e 7 23	+ 9	e 13 22	+17	e 15·5	22·3

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Victoria	38·1	71	7 21	+ 5	13 3	− 5	17·9	—
Honolulu	38·2	136	e 7 33	+16	i 13 15	+ 6	i 16·3	—
Tomie	38·7	257	7 40	+19	—	—	—	—
Seattle	39·0	72	7 31	+ 7	13 8	−13	17·0	—
Chiufeng	41·1	276	e 7 35	− 6	i 15 1	?	—	22·2
Ukiah	43·6	83	8 9	+ 7	e 14 20	−10	e 18·3	—
Zi-ka-wei	44·0	262	e 8 3	− 2	i 19 43	?	22·4	46·7
Nanking	44·9	266	e 8 21	+ 9	i 15 8	+19	20·0	26·4
Berkeley	45·0	84	i 8 12	− 1	i 15 10	+20	—	—
Saskatoon	45·0	58	e 8 24	+11	i 15 9	+19	—	—
Branner	45·3	84	e 8 15	0	e 14 58	+ 3	—	—
Lick	45·7	84	e 8 17	− 1	e 14 50	−10	—	—
Bozeman	46·5	68	e 8 27	+ 2	i 15 32	+20	21·1	—
Tinemaha	47·9	82	i 8 34	− 1	e 15 55	+24	—	—
Taihoku	48·5	256	e 12 1	?	e 17 57?	?	—	—
Haiwee	48·6	82	e 8 42	+ 1	e 16 0	+19	—	—
Mount Wilson	49·9	85	i 8 49	− 2	e 16 10	+11	—	—
Pasadena	49·9	85	i 8 48a	− 3	e 16 13	+14	e 21·4	—
Riverside	50·5	84	e 8 52	− 3	e 16 30	+22	—	—
La Jolla	51·4	85	e 9 0	− 2	e 16 46	+26	—	—
Denver	53·8	70	i 9 18	− 2	e 16 50	− 3	e 25·6	i 31·3
Semipalatinsk	54·0	309	9 21	0	17 38	+42	22·0	—
Hong Kong	54·9	260	9 25	− 3	17 9	+ 1	—	35·9
Scoresby Sund	55·3	7	9 51	+20	i 17 47	+34	—	—
Tucson	55·6	81	e 9 40	+ 7	17 11	− 6	24·7	—
Manila	57·2	249	e 9 49	+ 4	17 49	PS	28·3	33·9
Phu-Lien	60·6	266	e 10 6	− 3	e 18 31	PS	27·9	29·6
Almata	60·7	304	e 10 10	+ 1	—	—	e 32·4	—
Chicago	61·5	57	e 10 32	+17	i 18 53	PS	i 30·2	—
Frunse	62·1	305	e 10 17	− 2	e 19 33	?	32·2	—
Florissant	62·3	61	i 10 18	− 2	e 18 57	PS	30·4	36·9
St. Louis	62·5	61	e 10 19	− 3	e 18 58	PS	e 30·4	37·4
Ann Arbor	63·1	54	e 10 45	+19	i 19 21	PS	e 32·6	42·5
Pulkovo	63·4	341	e 10 29	+ 1	e 19 23	PS	30·9	36·8
Toronto	64·1	51	i 10 43	+10	i 19 28	PS	30·9	—
Little Rock	64·3	66	e 10 33	− 1	e 19 20	PS	e 30·9	36·8
Ottawa	64·4	47	e 10 42	+ 7	19 30	PS	e 30·9	—
Tchimkent	65·0	308	e 10 37	− 2	—	—	32·4	—
Upsala	65·4	348	11 13	(− 2)	i 19 52	PS	e 34·9	44·6
Tashkent	65·9	308	(i 10 38)	− 7	(i 19 52)	PS	(33·9)	41·3
Bergen	66·0	353	e 11 33	(+16)	e 20 12	(−23)	—	—
Vermont	66·2	46	e 11 9	(− 9)	i 19 49	PS	e 35·6	—
Pittsburgh	66·3	53	i 10 59	+12	i 19 50	PS	e 30·6	—
Ithaca	66·4	50	i 10 57	+ 9	i 19 59	PS	—	—
Pennsylvania	67·0	52	e 11 11	(−10)	i 20 12	PS	e 33·9	45·6
Apia	68·1	166	e 13 19	PP	20 28	PS	28·9	—
Samarkand	68·3	308	e 11 3	+ 3	—	—	34·5	—
Oak Ridge	68·5	47	i 11 1	0	e 20 21	PS	35·9	—
Georgetown	68·9	52	e 10 59	− 5	i 20 3	− 5	—	—
Philadelphia	69·0	50	—	—	i 20 19	+10	i 34·0	—
Amboina	69·1	232	11 6	+ 1	20 10	0	e 31·9	—
Königsberg	69·8	345	i 11 49	(+17)	e 20 4	−15	e 35·2	41·9
Dehra Dun	69·9	294	10 57	−13	19 7	?	38·9	39·9
Copenhagen	70·1	350	11 17	+ 6	20 42	PS	29·9	—
Calcutta	70·2	281	11 19	+ 7	20 39	PS	34·7	41·5
Edinburgh	70·7	359	i 21 2	S	(i 21 2)	PS	—	54·4
Columbia	70·8	59	e 13 35	PP	e 20 37	+ 6	i 35·2	—
Agra	72·4	292	e 11 20	− 5	20 40	−10	34·5	43·1
Hamburg	72·4	351	e 11 33	+ 8	e 21 12	PS	—	47·9
Stonyhurst	72·8	358	—	—	i 21 15	PS	—	49·2

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Rathfarnham Castle	73·4	1	—	—	i 21 38	PS	46·3	—
Grozny	74·0	324	11 35	0	e 21 14	+ 6	e 23·9	—
De Bilt	74·2	353	—	—	e 21 27	PS	e 36·9	51·6
Piatigorsk	74·2	326	e 11 52	+16	—	—	—	—
Leipzig	74·3	349	—	—	e 21 3	− 9	e 37·9	46·9
Göttingen	74·4	350	e 11 57?	+20	e 21 30	PS	e 40·9R	45·9
Jena	74·8	349	e 12 14	+35	e 21 27	+ 9	e 37·9	52·9
Oxford	74·9	358	—	—	i 21 46	PS	e 37·9	—
Kew	75·1	357	e 12 12	+31	i 21 34	PS	e 36·9	59·9
Prague	75·3	347	e 12 3	+21	e 21 39	PS	e 37·7	48·4
Uccle	75·5	354	12 5	+22	i 21 37	+11	36·9	52·8
Cheb	75·6	349	e 11 57?	+13	e 21 50	PS	e 43·9	47·9
Theodosia	75·7	332	e 11 50	+ 6	21 37	+ 9	38·9	—
Sotchi	75·8	328	11 42	− 3	e 21 39	+10	—	—
Tiflis	75·8	324	11 43	− 2	e 21 47	PS	40·4	45·4
Simferopol	76·1	333	e 11 51	+ 4	21 45	+12	36·5	—
Yalta	76·5	332	e 11 53	+ 4	21 49	+12	31·4	—
Vienna	76·8	345	e 11 23	−27	22 16	PS	e 35·9	56·9
Budapest	77·2	343	e 11 52	− 1	e 22 29	PS	37·9	49·9
Stuttgart	77·3	350	i 12 17	+23	e 22 5	PS	e 38·9	—
Erevan	77·4	324	11 28	−26	e 21 38	− 9	—	—
Paris	77·6	355	e 13 19	?	e 22 8	PS	32·9	48·9
Strasbourg	77·6	351	e 12 9	+14	e 22 16	PS	e 37·9	58·9
Graz	78·1	346	i 12 17	+19	e 22 32	PS	e 40·9	51·2
Basle	78·6	351	e 11 59	− 1	—	—	—	—
Zurich	78·6	351	e 12 0	0	—	—	—	—
Medan	78·9	261	12 14	+12	—	—	46·9	—
Neuchatel	79·2	352	e 12 6	+ 2	—	—	—	—
Zagreb	79·2	345	e 12 24	+20	e 22 22	+15	—	46·9
Belgrade	79·5	342	e 12 1	− 4	e 22 33	PS	e 39·7	53·8
Triest	79·8	347	i 12 36	+29	i 22 28	+14	—	49·2
Padova	80·2	348	e 11 49	−20	23 57?	?	e 48·9	52·4
Piacenza	80·8	349	12 57	+45	23 23	PS	42·4	58·4
Sofia	80·9	339	e 12 27	+14	e 23 44	?	e 43·4	55·2
Bombay	81·9	291	e 12 15	− 3	22 36	0	e 40·9	47·5
Florence	81·9	349	e 13 37	?	—	—	—	—
Batavia	82·3	249	i 12 27	+ 7	23 8	PS	e 49·9	—
Barcelona	85·0	355	e 13 13	?	e 23 32	PS	36·2	54·5
Tortosa	85·8	356	e 12 57?	+20	e 23 57?	PS	—	60·1
Ksara	85·9	327	e 12 43	+ 5	23 22	+ 5	41·9	—
Kodaikanal	86·2	282	e 12 44	+ 5	i 23 25	+ 6	40·4	53·5
Messina	86·8	344	12 50	+ 8	23 50	+25	—	—
Toledo	86·8	359	e 13 5	+23	i 23 49	+24	e 39·6	60·7
Colombo	87·5	278	13 1	+16	23 28	− 4	43·5	55·1
Alicante	88·2	356	e 13 28	+39	e 23 54	+15	e 54·1	—
Tunis	88·9	348	—	—	e 24 57?	PS	33·9	—
Granada	89·4	359	e 12 41	−14	i 23 8	[−21]	40·9	59·5
Algiers	89·6	353	e 12 57	+ 1	e 23 44	− 8	42·9	62·9
Riverview	89·6	200	e 13 11	+15	e 23 50	− 2	e 36·1	43·8
Sydney	89·6	200	e 12 57	+ 1	—	—	44·8	47·6
Almeria	89·8	358	e 13 31	−35	e 24 5	+11	e 46·7	65·6
Malaga	89·9	359	13 19	+22	24 17	+22	43·4	—
San Fernando	90·2	1	i 24 16	?	e 35 16	?	53·9	60·4
Helwan	91·0	329	e 13 28	+26	i 23 53	+12	53·2	62·9
San Juan	91·2	56	e 13 15	+12	e 24 26	+19	e 37·2	—
Arapuni	91·4	179	—	—	36 57	?	—	—
Adelaide	93·7	209	e 13 32	+18	i 24 40	+10	e 41·7	52·6
Wellington	94·6.	181	23 52	S	(23 52)	[− 7]	43·9	48·9
Melbourne	94·7	203	e 14 27	+68	24 40	+ 1	39·7	43·8
Perth	99·4	228	e 13 57	+16	24 47	{− 2}	—	—
Huancayo	111·4	81	e 19 21	PP	i 25 22	[+ 3]	47·9	—
La Paz	119·1	78	i 20 19k	PP	27 5	{− 5}	57·9	73·8
Tananarive	127·1	290	21 41	PP	26 23	[+12]	e 53·4	73·1
Cape Town	154·4	310	21 28	?	30 57	{+10}	64·6	75·3

For Notes see next page.

NOTES TO FEB. 22d. 17h. 6m. 3s.

Additional readings and notes :—
Toyooka ePE = +6m.39s., PZ = +6m.56s., SN = +14m.11s., SZ = +14m.38s.
Kobe eZ = +7m.0s., iN = +7m.3s., eZ = +13m.56s. = SS +4s., eN = +14m.7s.
Sumoto eSE = +12m.5s., eSN = +12m.16s.
Victoria SN = +13m.31s. ; T_0N = 17h.5m.55s.
Honolulu i = +10m.43s. and +13m.39s.
Seattle PP = +9m.22s. = P_cP − 17s., SS = +16m.24s. = SSS + 3s.
Chiufeng PPE = +9m.44s. = P_cP − 1s., PPPZ = +10m.37s., iSSEZ = +18m.38s.
Ukiah ePP = +10m.49s., iPPP = +10m.57s., iS = +14m.50s., i = +16m.33s.
Nanking iPKP = +8m.32s.
Berkeley eN = +8m.14s., iPE = +8m.26s., iPN = +8m.28s., iE = +8m.51s., eZ = +15m.1s., eE = +15m.17s., eZ = +16m.27s., eE = +18m.19s. = S_cS + 7s., eN = +18m.30s., eZ = +21m.24s., eE = +29m.2s.
Branner eSE = +15m.2s., eN = +15m.46s.
Lick eN = +9m.54s. = PP − 4s., +9m.58s. = P_cP − 3s., and +19m.10s.
Bozeman e = +10m.35s., iSS = +19m.10s.
Pasadena eSE = +16m.30s.
Denver ePPEN = +11m.16s., eSSE = +20m.32s., eSSSE = +22m.1s.
Hong Kong ? = +10m.2s., PP? = +12m.14s., ? = +13m.2s. and +17m.27s., SS? = +19m.51s.
Tucson iP = +9m.52s., SS = +21m.39s.
Chicago SS = +23m.7s.
Florissant ePPZ = +12m.42s. ; T_0 = 17h.5m.59s.
St. Louis eP_cPEN = +11m.1s., ePPE = +12m.42s. ; T_0 = 17h.5m.59s.
Ann Arbor eN = +17m.21s., eSS = +23m.51s., iSSS = +26m.27s.
Toronto iPE = +10m.50s., PPPN = +14m.24s. ; T_0 = 17h.6m.16s.
Ottawa PPE = +13m.17s., PPPE = +14m.45s., SS = +26m.33s.
Tashkent readings have been *diminished* by 8m.
Vermont ePPP = +15m.27s., eSS = +23m.7s.
Pittsburgh eP_cP = +11m.27s., ePP = +14m.13s., iPPP = +15m.5s., iS_cS = +20m.13s., i = +21m.9s. and +21m.44s., eSS = +24m.21s., i = +27m.34s.
Ithaca iPSN = +20m.27s. ; T_0 = 17h.5m.59s.
Pennsylvania e = +28m.9s.
Oak Ridge eZ = +11m.7s., i = +11m.18s. = P_cP − 9s. ; T_0 = 17h.5m.50s.
Georgetown iP_cP = +11m.24s., iPP = +13m.57s., iPS = +20m.35s.
Philadelphia e = +15m.25s. and +28m.13s., i = +29m.8s., e = +30m.37s.
Amboina e = +17m.57s.
Königsberg e = +14m.24s., iE = +21m.0s. = S_cS − 4s., iN = +21m.54s., iE = +22m.16s., iN = +22m.20s., iE = +22m.44s., eE = +23m.24s., iN = +28m.49s. = SSSS + 1s., +30m.16s. and +31m.52s., eE = +39m.15s.
Copenhagen +20m.54s.
Calcutta SS = +25m.26s., SSS = +28m.9s.
Edinburgh i = +28m.24s.
Columbia e = +27m.43s. = SSS − 4s., i = +29m.20s. = SSSS + 9s.
Agra eN = +11m.25s., PP = +14m.16s., SS? = +25m.36s., SSS = +28m.22s.
Hamburg eZ = +22m.57s., eE = +32m.57s. ?
Stonyhurst i = +33m.53s.
Rathfarnham Castle i = +29m.48s.
Leipzig e = +30m.9s.
Göttingen PZ = +12m.9s., eZ = +12m.57s., eN = +22m.15s., eE = +22m.33s., N = +24m.16s., eL_g = +34m.39s.
Jena eN = +30m.21s., eE = +30m.27s.
Prague e = +22m.57s., +26m.57s., +34m.39s., and +35m.39s.
Kew iSKS = +21m.48s., iNE = +32m.21s., iE = +33m.55s., iN = +35m.6s., i = +36m.4s., iE = +36m.19s., iN = +47m.27s.
Uccle iE = +22m.45s., iSS = +26m.49s., iE = +32m.35s.
Tiflis P_cP = +11m.56s., PP = +15m.1s., PPP = +16m.54s., e = +21m.16s., e(SS) = +28m.3s., SSS = +30m.47s.
Vienna iEN = +13m.17s., PP = +15m.28s., PPP = +17m.42s., iEN = +18m.23s., PPS = +24m.17s., PKKP = +27m.50s.
Strasbourg ePS = +22m.37s., eSS = +27m.43s.
Graz iPS = +23m.47s., eSS = +27m.32s.
Zagreb ePS = +23m.50s.
Belgrade e = +12m.25s. and +13m.22s., ePPP = +17m.31s., i = +23m.50s.
Triest PP = +15m.30s., i = +15m.45s., iN = +22m.47s. = PS + 1s., iPSE = +23m.10s., i = +23m.29s. and +23m.41s., iSSE = +27m.43s., iE = +33m.43s., i = +37m.43s. and +38m.38s., iE = +40m.58s. and +44m.46s.
Batavia i = +19m.39s., eL = +27m.57s.? = SS + 10s., e = +40m.57s.?
Ksara PP = +16m.0s., PS = +24m.22s.
Kodaikanal PP = +15m.48s., iPPP = +17m.53s., SKS = +23m.1s.
Granada PPP = +17m.8s., PS = +23m.56s. = S + 6s., PPS = +24m.16s., iSS = +27m.41s.
Algiers PS = +24m.38s., PPS = +25m.14s., SS = +29m.49s.
Sydney e = +9m.7s.

Continued on next page.

Malaga e = +14m.57s., PP = +16m.57s., e = +21m.40s., SKKS = +23m.49s., e = +25m.45s. and +26m.59s., SS = +29m.33s.
San Fernando PP = +27m.23s., SS = +41m.27s.
San Juan e = +14m.44s., ePP = +17m.10s., SKS = +23m.53s., iPS = +27m.17s., e = +29m.57s. and +31m.57s.
Adelaide i = +17m.22s., +33m.41s., and +34m.36s.
Wellington SS? = +38m.10s.
Melbourne i = +23m.55s. = SKS − 4s., e = +30m.57s. = SS +11s. and +37m.45s.
Perth PP = +17m.17s., SP = +25m.47s., SS = +32m.2s., SSS = +36m.52s., SSSS = +39m.22s.
Huancayo e = +22m.4s. and +22m.57s. = PPPP − 7s., S = +27m.53s., iPS = +29m.0s., SS = +35m.7s.
La Paz iPPZ = +23m.8s., SKSZ = +26m.53s., iN = +30m.4s., SKSP = +32m.39s., SSN = +33m.7s., SSSN = +48m.59s., L_q = +51m.59s.
Tananarive N = +22m.53s., PPPN = +23m.56s., N = +34m.50s. and +36m.29s.
Cape Town PKPE = +25m.10s., PPN = +26m.12s., PPE = +26m.17s., SKPE = +27m.47s., SKPN = +28m.1s., PPPE = +29m.9s., SKSN = +31m.27s., SKKSE = +33m.42s., SN = +34m.23s., SE = +34m.27s., PSE = +36m.27s., PSE = +36m.32s., SSE = +44m.11s., SSN = +44m.17s.
Long waves also at Durham, La Plata, Santiago, and other European stations.

Feb. 22d. Readings also at 2h. (Andijan), 4h. (Capodimonte and Messina), 9h. (Hawaii, Lick, Pasadena, Mount Wilson, Riverside, and Tinemaha), 14h. (Almata, Frunse, and Phu-Lien), 15h. (La Paz), 16h. (Huancayo and La Paz), 17h. (Pasadena), 19h. (Pasadena, Perth, Mount Wilson, and Tinemaha), 20h. (Karenko and Tananarive), 23h. (Karenko and La Paz).

Feb. 23d. 3h. Readings for which no determination has been made :—

Adelaide eE = 35m.24s., iE = 37m.0s., e = 38m.21s., e = 46m.42s., e = 48m.7s., i = 51m.37s., M = 54m.42s.
Sydney eP = 37m.30s., L = 44m.30s., M = 49m.38s.
Wellington P = 39m.30s., S = 44m.6s., L = 45m.31s.
Riverview eN = 39m.56s., eL = 44m.30s., M = 46m.22s.
Melbourne i = 40m.19s., e = 41m.56s., i = 46m.6s., L = 50m.35m., M = 51m.42s.
Apia L? = 41m.
Vladivostok e = 43m.39s., L = 52m.54s.
Tiflis P = 43m.45s., eS = 53m.36s., e = 65m.30s., L = 74m.12s., M = 76m.54s.
Chiufeng ePZ = 46m.1s., iEN = 55m.55s.
Pasadena eP = 46m.28s.k, i = 46m.30s., eSE? = 56m.1s., eLZ = 71m.
Mount Wilson iPZ = 46m.30s.
La Jolla eP = 46m.30s.
Riverside iP = 46m.32s.
Haiwee iP = 46m.37s.
Tinemaha iP = 46m.37s.
Batavia e = 50m.2s.
Bombay e = 53m.
Ksara PKP = 53m.36s., PP = 56m.28s., PPP = 59m.23s., PSKS = 66m.33s.
Honolulu e = 55m.0s.
Almata iP_g = 55m.51s.
Perth P = 56m.0s., M = 71m.0s.
Agra i = 58m.52s.
Pulkovo e = 59m.28s., e = 69m.34s., L = 93m.
Long waves at Bozeman, Tashkent, and Hong Kong.

Feb. 23d. 12h. Readings for which no determination has beem made :—

Melbourne e = 38m.45s., i = 41m.55s., L = 42m.40s., M = 45m.18s.
Adelaide eP = 39m.4s., iS = 43m.10s., iL = 44m.39s., MN = 45m.54s.
Riverview iPN = 39m.15s., iSN = 43m.33s., eL = 44m.42s., M = 46m.50s.
Sydney e = 42m.30s., L = 45m.48s., M = 46m.30s.
Perth P = 49m.15s., 50m.0s., M = 55m.0s.

Feb. 23d. 20h. 52m. 29s. Epicentre 24°·0 121°·6E. (as on 17d.). R.2.

A = −·479, B = +·778, C = +·407 ; D = +·852, E = +·524 ; G = −·213, H = +·346, K = −·914.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Karenko	0·0	0	−i 0 1	− 1	0 2	+ 2	—	—
Arisan	0·9	232	i 0 13	0	0 27	S*	—	—
Taityu	0·9	283	e 0 13	0	0 24	+ 1	—	—
Taihoku	1·0	354	i 0 14	0	i 0 26	0	—	—
Taito	1·3	198	e 0 21	+ 3	0 43	?	—	—
Tainan	1·6	230	−e 0 1	−24	0 31	−10	—	—
Hokoto	2·0	258	e 0 14	−15	0 43	− 8	—	—
Kosyun	2·2	200	e 0 44	P_g	1 12	S_g	—	—
Hong Kong	7·0	258	1 35	− 4	3 2	+ 3	3·8	4·2
Zi-ka-wei	7·2	359	e 1 40	− 2	3 21	S*	—	4·7
Nanking	8·4	344	e 2 1	+ 2	i 3 52	S*	4·3	4·4
Manila	9·4	183	e 2 49	?	4 44	S*	9·9	—
Nagasaki	11·3	38	e 2 41	+ 2	6 35	?	—	—
Hukuoka B	12·3	37	(e 2 51)	− 1	e 2 51	P	—	—
Taikyu	13·3	26	e 3 5	− 1	6 50	?	—	—
Zinsen	14·1	17	e 3 17	0	e 6 20	S*	—	—
Phu-Lien	14·2	259	—	—	e 5 31?	−25	—	—
Keizyo	14·3	17	2 59	−20	7 36	S_g	—	—
Chiufeng	16·7	345	3 53k	+ 3	e 7 1	SS	8·6	11·2

Additional readings :—
Zi-ka-wei iN = +3m.37s. = S* +5s., iE = +3m.46s., iZ = +3m.50s. = S_g −2s., iN = +3m.56s.
Long waves at Agra, Bombay, Calcutta, and Kodaikanal.

Feb. 23d. 23h. 7m. 7s. Epicentre 24°·0N. 121°·6E. (as at 20h.). X.

	△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.
Karenko	0·0	0	−0 4	− 4	−0 1	− 1
Arisan	0·9	232	e 0 15	+ 2	0 28	S*
Taityu	0·9	283	e 0 12	− 1	—	—
Taihoku	1·0	354	e 0 16	+ 2	0 28	S*
Taito	1·3	198	e 0 40	S*	—	—

Feb. 23d. Readings also at 0h. (Ksara and Tiflis), 1h. (Seattle), 3h. (Arapuni), 7h. (Graz), 8h. (Triest), 9h. (Tiflis), 11h. (Wellington), 13h. (Manila), 14h, (Cheb), 18h. (Baku, Sverdlovsk, and Tashkent), 21h. (Baku, Pulkovo. Sverdlovsk, Tashkent, and Tiflis), 22h. (Tucson).

Feb. 24d.	**0h. 4m. 29s.**	(I)	X.
	0h. 6m. 16s.	(II)	X.
	0h. 37m. 17s.	(III)	X.
	3h. 1m. 33s.	(IV)	X.
	4h. 29m. 21s.	(V)	X.
	5h. 54m. 9s.	(VI)	X.
	7h. 3m. 30s.	(VII)	X.
	13h. 45m. 13s.	(VIII)	X.

Epicentre 24°·0N. 121°·6E. (as at 23d. 23h.).

		△ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.
I	**Karenko**	0·0	0	−e 0 2	− 2	0 0	0
II		0·0	0	−e 0 2	− 2	0 1	+ 1
III		0·0	0	−e 0 3	− 3	0 0	0
IV		0·0	0	e 0 0	0	0 4	+ 4
VII		0·0	0	e 0 2	+ 2	0 5	+ 5
I	**Taityu**	0·9	283	e 0 13	0	—	—
II		0·9	283	e 0 12	− 1	—	—
IV		0·9	283	e 0 14	+ 1	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
I Arisan	0·9	232	e 0 14	+ 1	0 28	S*
II	0·9	232	e 0 14	+ 1	0 28	S*
IV	0·9	232	e 0 16	+ 3	0 29	S*
I Taihoku	1·0	354	e 0 16	+ 2	0 26	0
II	1·0	354	e 0 16	+ 2	0 26	0
III	1·0	354	0 25	S	(0 25)	− 1
IV	1·0	354	0 15	+ 1	0 26	0
VII	1·0	354	e 0 25	S	(e 0 25)	− 1
I Taito	1·3	198	e 0 53	?	—	—
IV	1·3	198	0 41	?	—	—
I Manila	9·4	183	1 22	?	1 57	?
II	9·4	183	2 42	?	3 22	?
V	9·4	183	2 13	0	2 53	?
VI	9·4	183	2 13	0	2 53	?
VIII	9·4	183	2 13	0	2 53	?

Feb. 24d. 0h. 45m. 15s. Epicentre 32°·2N. 115°·5W. R.2.
(as on 1934 Dec. 30d.).

A = − ·364, B = − ·764, C = + ·533 ; D = − ·903, E = + ·431 ;
G = − ·229, H = − ·481, K = − ·846.

	△	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
La Jolla	1·7	293	i 1 22	?	—	—	—
Riverside	2·4	322	i 0 32	− 2	—	—	—
Mount Wilson	2·9	315	e 0 41	0	—	—	—
Pasadena	2·9	312	e 0 40a	− 1	i 1 23	S*	—
Tucson	3·9	89	1 5	P*	1 59	S*	2·2
Santa Barbara	4·2	304	e 1 2	+ 2	—	—	—
Haiwee	4·5	334	e 1 4	0	—	—	—
Tinemaha	5·4	336	e 1 16	− 1	—	—	—
Lick	7·2	318	e 1 45	+ 3	e 3 14	+10	—
Berkeley	7·9	318	e 1 49	− 3	i 4 22	S_g	—
Florissant	21·4	65	e 4 46	+ 2	e 8 57	SS	e 11·4
St. Louis	21·5	66	e 4 47	+ 2	e 8 57	SS	—
Toronto	30·4	57	—	—	e 12 45?	SSS	i 16·2
Granada	86·0	48	i 9 32	?	e 22 17	?	—

Additional readings :—
Tucson P* = +1m.17s., P_g = +1m.39s.
Lick eN = +2m.6s. = P* +6s., iEN = +3m.56s. = S_g +4s.
Berkeley eE = +1m.53s., eN = +1m.56s. and +3m.7s., eE = +3m.39s., eN = +3m.47s., iN = +4m.3s., iE = +4m.11s. = S_g −4s., eN = +4m.22s., eE = +4m.31s.
St. Louis eE = +11m.57s., iE = +12m.34s.
Long waves at Ann Arbor, Charlottesville, Philadelphia, Pittsburgh, Sitka, Ukiah, and Victoria

Feb. 24d. 11h. Readings for which no determination has been made :—

Apia eP = 1m.49s., i = 2m.21s., M = 2m.39s.
La Paz ePN = 3m.40s., LN = 50m.2s., M = 62m.42s.
Sydney e = 8m.30s., L = 18m.24s., M = 22m.4s.
Adelaide e = 8m.40s., i = 13m.34s., i = 15m.50s., i = 17m.39s., eL = 21m.48s., M = 26m.30s.
Riverview eEN = 10m.12s., eLN = 16m.12s., ME = 18m.36s.
Amboina iP = 10m.26s., eS = 18m.44s.
Melbourne i = 10m.27s., L = 18m.7s., M = 23m.0s.
Wellington e = 12m., i = 16m.
Manila P = 12m.27s., SN = 21m.31s., MN = 39m.9s.
Kodaikanal e = 12m.45s.
Batavia P = 13m.10s., S = 21m.42s.
Chiufeng eEZ = 13m.28s., eEN = 23m.58s.
Chatham Ils. e = 14m.0s.

Continued on next page.

Honolulu e =18m.0s.
Ksara iPKP =20m.45s., PP =24m.18s., PSKS =34m.26s., M =85m.
Vladivostok e =24m.11s., L =36m.30s.
Huancayo e =25m.50s., e =32m.18s., L =41m.36s.
Baku e =30m.17s., e =42m.2s., e =57m.33s., eL =62m., M =85m.18s.
Sverdlovsk e =37m.5s., L =50m., M =67m.6s.
Tashkent e =(37m.30s.), e =51m.18s., e =66m.0s., M =71m.12s., e *increased* by 30m.
Long waves at Copenhagen, Bombay, Pulkovo, Tiflis, Sitka, Philadelphia, and Hong Kong.

Feb. 24d. Readings also at 0h. (Hong Kong, Nanking, Phu-Lien, Tucson, Sverdlovsk, and Tashkent), 1h. (Berkeley and Medan), 2h. (Oak Ridge), 3h. (Taikyu), 5h. (Kobe and Nagoya), 6h. (Hong Kong and Samarkand), 8h. (Sebastopol, Simferopol, Theodosia, Yalta, and Tucson), 9h. (Mizusawa), 13h. (Hong Kong and Nanking), 16h. (Kobe and Sumoto), 19h. (Batavia and Malabar), 20h. (Samarkand).

Feb. 25d. 2h. 51m. 31s. Epicentre 36°·0N. 25°·0E. (as on 1930 Feb. 14d.). R.1.

A = +·733, B = +·342, C = +·588 ; D = +·423, E = −·906 ;
G = +·533, H = +·248, K = −·809.

A *depth* of focus 0·010 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	0·0	6·8	349	i 1 39	+ 2	e 2 54	+ 1	—	6·8
Messina	−0·1	7·8	294	i 1 45	− 4	i 3 1	−15	—	—
Helwan	−0·1	8·1	137	i 1 52	− 1	i 3 17	− 7	—	4·2
Bucharest	−0·1	8·4	5	i 2 3	+ 5	3 48	+17	—	—
Ksara	−0·1	9·2	100	i 2 9k	0	i 4 5	+14	—	—
Belgrade	−0·1	9·4	340	i 2 7	− 4	i 3 55	− 1	5·1	6·3
Sebastopol	−0·1	10·8	34	2 32	+ 1	i 5 24	+53	—	—
Yalta	−0·1	11·0	37	2 36	+ 3	—	—	—	—
Simferopol	−0·1	11·3	35	e 2 52	+15	—	—	—	—
Zagreb	−0·1	11·9	328	e 2 41	− 5	i 4 44	−14	—	8·4
Tunis	−0·1	12·0	278	i 3 56	?	i 7 17	?	9·5	—
Theodosia	−0·1	12·0	37	—	—	i 5 14	+14	—	—
Budapest	−0·1	12·3	341	2 49	− 2	5 0	− 8	6·5	9·5
Laibach	−0·2	12·8	325	e 3 0	+ 4	i 5 16	− 1	—	7·8
Triest	−0·2	12·8	322	i 2 52k	− 4	i 5 4	−13	—	—
Graz	−0·2	13·1	330	i 2 56	− 5	i 5 42	+17	i 6·2	7·0
Florence	−0·2	13·1	311	i 2 58k	− 3	5 14	−11	6·5	—
Prato	−0·2	13·2	311	i 2 58	− 4	i 5 39	+12	—	7·4
Venice	−0·2	13·4	318	i 2 59	− 6	i 5 51	+19	—	—
Sotchi	−0·2	13·6	52	3 15	+ 8	e 5 49	+12	—	—
Carloforte	−0·2	13·6	288	3 8	+ 1	5 37	0	—	—
Padova	−0·2	13·7	318	i 3 11	+ 2	e 5 41	+ 2	—	—
Lemberg	−0·2	13·8	357	e 3 23	+13	e 5 57	+16	—	6·8
Vienna	−0·2	13·8	335	e 5 7	?	i 5 53	+12	6·8	10·3
Piacenza	−0·2	15·0	313	3 17k	− 9	i 6 9	− 1	i 7·6	12·2
Erevan	−0·2	15·8	69	3 42	+ 6	e 6 43	+14	e 7·5	—
Piatigorsk	−0·2	16·0	54	3 1	−38	i 6 6	−28	—	—
Prague	−0·2	16·0	335	e 3 41	+ 2	i 6 41	+ 7	e 7·5	10·5
Ravensburg	−0·2	16·4	321	i 3 42	− 2	i 6 47	+ 4	—	9·1
Tiflis	−0·2	16·4	64	i 3 47	+ 3	i 6 57	+14	8·1	—
Zurich	−0·2	16·7	318	3 47k	− 1	e 6 48	− 2	—	—
Sion	−0·2	16·7	313	e 3 44	− 4	e 6 43	− 7	—	—
Cheb	−0·2	16·7	331	e 3 46	− 2	e 6 56	+ 6	e 8·5	9·0
Marseilles	−0·2	16·7	302	3 43	− 5	6 49	− 1	9·5	—
Ebingen	−0·2	16·9	321	i 3 50	0	i 6 51	− 4	—	9·2

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Stuttgart	−0·2	17·2	323	i 3 53	− 1	i 6 59	− 3	e 8·8	9·3
Basle	−0·2	17·3	319	e 3 53	− 2	e 7 0	− 4	—	—
Neuchatel	−0·2	17·3	315	e 3 54	− 1	—	—	—	—
Grozny	−0·3	17·5	59	4 1	+ 4	i 7 37	?	—	—
Algiers	−0·3	17·6	279	i 4 0	+ 2	i 7 14	+ 5	9·0	—
Jena	−0·3	17·7	331	i 3 59	0	i 7 13	+ 2	e 8·5	11·5
Leipzig	−0·3	17·8	333	i 3 59	− 1	i 7 15	+ 2	e 9·5	10·6
Karlsruhe	−0·3	17·8	322	i 4 0	0	7 35	?	9·5	10·8
Strasbourg	−0·3	17·8	320	i 4 2k	+ 2	i 7 23	+10	e 9·5	9·5
Besançon	−0·3	18·0	314	i 4 3	0	i 7 16	− 1	10·5	—
Barcelona	−0·3	18·6	294	i 4 9	− 1	i 7 33	+ 2	—	—
Göttingen	−0·3	18·8	330	i 4 13k	0	e 7 36	0	7·8	12·5
Königsberg	−0·3	19·1	352	i 4 16	0	i 7 30	−12	—	—
Tortosa	−0·4	19·7	292	i 4 23	+ 1	i 8 4	+12	—	8·3
Baku	−0·4	20·0	70	e 4 28	+ 3	i 8 11	+13	9·7	12·1
Alicante	−0·4	20·4	284	i 4 30	0	i 8 12	+ 6	e 10·0	15·5
Hamburg	−0·4	20·5	334	i 4 29	− 2	i 8 12	+ 4	e 10·7	14·5
Paris	−0·4	20·8	315	i 4 34k	0	i 8 17	+ 3	10·5	13·5
Uccle	−0·4	20·9	321	i 4 36k	+ 1	i 8 22	+ 6	9·5	—
De Bilt	−0·4	21·4	325	4 39	− 1	i 8 31	+ 5	e 10·5	11·7
Copenhagen	−0·4	21·5	340	4 35	− 6	8 28	0	—	—
Almeria	−0·4	22·0	280	i 4 45	− 1	i 8 33	− 5	e 11·2	—
Granada	−0·4	22·9	279	i 4 57	+ 1	i 9 8	+13	11·0	13·0
Toledo	−0·4	23·1	288	i 4 57	− 1	i 8 54	− 5	e 10·7	—
Malaga	−0·4	23·6	281	e 5 1	− 2	i 9 10	+ 2	11·0	—
Kew	−0·4	23·7	318	i 5 3k	− 1	i 9 18	+ 8	11·9	13·5
Pulkovo	−0·4	24·0	7	i 5 7	+ 1	i 9 19	+ 3	12·0	14·5
Oxford	−0·4	24·4	318	i 5 8	− 2	i 9 23	0	—	—
San Fernando	−0·5	25·1	280	i 5 16a	0	i 9 31	− 3	—	10·5
Stonyhurst	−0·5	26·1	322	5 23	− 2	i 9 48	− 3	—	—
Bidston	−0·5	26·2	320	i 5 7	−19	i 9 39	−14	—	14·0
Durham	−0·5	26·2	324	5 26	0	9 48	− 5	—	—
Serra do Pilar	−0·5	26·6	292	5 29	− 1	10 1	+ 1	—	—
Edinburgh	−0·6	27·5	325	6 23	PP	i 10 45	SS	—	13·1
Rathfarnham Castle	−0·6	27·8	319	i 5 34	− 6	i 10 14	− 4	13·0	15·4
Sverdlovsk	−0·7	31·6	38	i 6 17	+ 4	i 11 17	− 1	19·7	23·0
Samarkand	−0·7	33·1	70	e 6 31	+ 5	—	—	—	—
Tashkent	−0·7	34·6	68	i 6 23	−16	i 11 34	−30	15·1	22·3
Tchimkent	−0·7	34·7	66	e 6 44	+ 4	i 12 7	+ 1	—	—
Andijan	−0·8	37·0	69	7 4	+ 4	i 12 45	+ 6	—	—
Frunse	−0·8	38·0	64	7 29	+21	i 13 21	+27	—	—
Almata	−0·8	40·0	64	i 7 29	+ 4	e 13 33	+ 9	—	—
Semipalatinsk	−0·8	41·7	52	e 7 44	+ 4	13 54	+ 4	—	—
Scoresby Sund	−0·8	42·4	340	7 50	+ 5	14 3	+ 3	—	—
Bombay	−0·9	45·2	99	i 8 9	+ 2	i 14 47	+ 7	—	—
Agra	−0·9	45·5	85	i 8 10	0	14 33	−11	—	—
Hyderabad E.	−1·0	50·5	96	9 0	+13	16 0	+ 6	20·0	26·5
Kodaikanal	−1·0	53·9	105	8 29?	−44	i 16 43	+ 2	25·8	34·4
Calcutta	−1·1	55·9	85	9 32	+ 5	17 11	+ 5	—	—
Colombo	−1·1	57·8	107	7 8	?	17 36	+ 4	30·1	39·0
Chiufeng	−1·2	68·5	55	e 10 57	+ 3	i 19 52	+ 4	32·4	—
Cape Town	−1·3	70·2	186	11 1	− 3	19 57	−11	34·3	40·5
Oak Ridge	−1·3	70·8	309	i 11 10	+ 2	e 20 53	PS	e 31·0	—
Phu-Lien	−1·3	71·4	78	e 11 16	+ 5	20 25	+ 3	—	—
Ottawa	−1·3	71·8	315	e 11 33	+19	i 20 31	+ 4	33·5	—
Ithaca	−1·3	73·9	311	—	—	i 20 51	− 1	—	—
Philadelphia	−1·3	74·4	308	11 57	+28	e 20 57	− 1	e 28·7	—
Nanking	−1·3	74·5	61	e 10 46	−44	i 21 22	PS	e 30·5	—
Medan	−1·3	74·7	96	11 53	+21	i 20 57	− 4	—	—
Toronto	−1·3	74·9	315	e 11 40	+ 8	i 21 7	+ 3	38·5	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Georgetown	−1·3	76·2	310	e 11 42	+ 2	i 21 20	0	e 32·5	—
Hong Kong	−1·3	76·5	73	21 22	S	(21 22)	0	—	31·9
Vladivostok	−1·3	76·7	47	e 11 44	+ 1	i 21 23	− 2	40·6	50·5
Ann Arbor	−1·3	78·2	316	—	—	i 21 41	− 1	e 37·7	—
San Juan	−1·3	80·2	286	e 12 15	+13	i 21 58	+ 6	—	—
Chicago	−1·3	80·8	317	—	—	i 22 18	+ 8	e 39·5	—
Hukuoka B	−1·3	81·6	54	e 12 14	+ 5	e 22 17	− 2	—	—
Nagasaki	−1·3	81·7	55	e 12 19	+ 9	22 18	− 2	—	—
Columbia	−1·3	81·8	306	—	—	e 22 14	− 7	—	—
Kumamoto	−1·3	81·8	55	12 15	+ 5	—	—	—	—
Miyazaki	−1·3	83·2	55	12 19	+ 1	—	—	—	—
Kobe	−1·3	84·0	51	12 24	+ 2	—	—	—	—
Sumoto	−1·3	84·0	51	e 12 24	+ 2	e 22 36	− 8	—	—
Kameyama	−1·3	84·3	50	12 29	+ 6	22 46	− 1	—	—
Florissant	−1·3	84·4	317	e 12 24	0	e 22 35	−13	—	—
St. Louis	−1·3	84·4	317	e 12 26	+ 2	i 22 36	−12	—	—
Nagano	−1·3	84·5	48	12 28	+ 4	22 45	− 4	—	—
Mizusawa	−1·3	84·6	45	e 12 15	−10	e 22 54	+ 4	—	—
Nagoya	−1·3	84·8	50	12 28	+ 2	(e 22 42)	−10	e 22·7	—
Siomisaki	−1·4	85·1	52	12 49	+22	—	—	—	—
Misima	−1·4	86·0	49	12 27	− 4	23 0	− 4	—	—
Tokyo	−1·4	86·1	48	12 28	− 4	22 48	−17	—	—
Manila	−1·4	86·2	75	e 12 55	+23	e 22 54	−12	36·5	—
Batavia	−1·4	87·1	100	12 38	+ 1	i 22 49	−26	—	—
Little Rock	−1·4	88·3	313	e 12 51	+ 8	e 23 1	−25	—	—
Bozeman	−1·4	89·2	331	—	—	23 30	− 5	e 41·7	—
Victoria	−1·4	91·0	340	24 19	S	(24 19)	+27	41·4	—
Seattle	−1·4	91·4	338	—	—	e 23 47	− 9	—	—
Tinemaha	−1·4	99·4	331	i 13 34	0	—	—	—	—
Tucson	—	100·2	324	—	—	24 10	[−17]	—	—
Mount Wilson	—	101·7	330	e 17 33	PP	—	—	—	—
Pasadena	—	101·9	330	e 18 14	PP	—	—	—	—
La Paz	—	102·1	260	e 14 41	+47	i 24 52	{−17}	49·5	61·6
Huancayo	—	105·3	266	—	—	e 24 34	[−17]	e 40·7	—
Melbourne	—	132·8	111	e 21 59	PP	i 33 11	?	—	—

Additional readings :—
Bucharest PPEN = +2m.45s., SSE = +4m.4s.
Ksara iSsS = +5m.22s.
Belgrade i = +2m.25s., +2m.44s., +3m.17s., +3m.35s., and +4m.36s.
Zagreb i = +2m.49s., +2m.59s., and +3m.23s., iE = +4m.15s. and +5m.10s.
Laibach i = +3m.24s., +3m.59s., and +5m.37s.
Triest i = +2m.57s., +3m.14s., and +3m.29s., iPPsP = +3m.44s., i = +3m.49s., +3m.57s., and +5m.38s., SSsS = +6m.18s., i = +6m.30s., +6m.47s., +6m.59s., and +7m.16s.
Sotchi i = +15m.36s.
Vienna iP = +5m.12s., i = +5m.24s.
Piacenza iP = +3m.25s.
Tiflis PP = +3m.59s., PPP = +4m.7s.
Marseilles PP = +3m.54s.
Stuttgart i = +6m.23s.
Neuchatel e = +6m.26s.
Grozny i = +4m.57s. and +7m.29s.
Algiers i? = +4m.7s. =PP+2s., PP = +4m.13s.
Jena iN = +4m.25s., eN = +7m.4s., iN = +7m.18s., eZ = +7m.23s., i = +7m.35s.
Leipzig iN = +5m.23s., i = +7m.31s.
Göttingen PP = +4m.33s., Z = +4m.57s. and +5m.20s., ENZ = +6m.26s., SE = +7m.42s., SN = +7m.44s.
Königsberg iZ = +4m.22s. =PP − 3s., iN = +4m.24s., iZ = +4m.29s., iNZ = +4m.34s., eE = +4m.38s., eN = +4m.46s., iN = +4m.54s., iZ = +5m.4s., iNE = +5m.8s., iN = +5m.27s., iE = +5m.36s., i = +7m.46s., iE = +8m.10s., iN = +8m.12s.
Alicante PP = +4m.51s.
Uccle i = +5m.4s. and +8m.47s.
De Bilt iZ = +4m.55s. =PP − 1s., i = +5m.10s.
Copenhagen eZ = +5m.5s., eNZ = +5m.37s., iNE = +8m.58s.
Almeria PP = +5m.9s.
Granada iPP = +5m.23s.

Continued on next page.

Malaga i = +5m.3s. and +5m.19s., iPP = +5m.28s., i = +5m.38s., i = +5m.52s., +6m.7s., +6m.13s., +6m.22s., +6m.43s., +9m.17s., and +9m.48s. = SS+3s., e = +10m.21s. and +17m.29s.
Kew iNZ = +5m.27s. = PP +0s., eE = +9m.11s. = S +1s., iNE = +9m.39s.
Oxford i = +5m.27s.
Bidston i = +5m.29s., e = +8m.49s.
Serra do Pilar PP = +6m.6s.
Edinburgh i = +10m.12s. = S − 2s.
Sverdlovsk L_g = +14m.29s.
Andijan i = +7m.44s. and +13m.45s.
Scoresby Sund +17m.41s.
Agra eN = +8m.16s., iN = +14m.51s., SS = +16m.53s., SSS = +17m.52s.
Kodaikanal iSS = +20m.29s.
Calcutta PS = +17m.44s., SS = +20m.38s.
Chiufeng PSN = +20m.25s., eSSEZ = +24m.12s., iEN = +28m.8s.
Cape Town PPN = +13m.32s., PPPN = +15m.1s., PSN = +20m.34s., PSE = +20m.41s., SSE = +25m.2s., SSSN = +27m.21s., SSSE = +28m.1s.
Ottawa PSE = +21m.5s., SSS = +27m.37s. ; T_0 = 2h.52m.18s.
Philadelphia iS = +21m.1s., e = +21m.15s.
Nanking iEN = +20m.50s. = S − 9s.
Medan iP = +12m.37s.
Georgetown iP_cP = +12m.12s., iPP = +14m.48s., iSS = +25m.59s.
Hong Kong ? = +21m.51s. = PS − 13s., S? = +26m.25s.
San Juan e = +21m.49s.
Chicago i = +22m.52s. = PS − 7s.
Kobe eN = +13m.36s., eZ = +13m.40s., iEN = +14m.4s., iE = +14m.7s., iZ = +14m.12s., iNZ = +14m.14s.
Florissant epPZ = +12m.42s., esSEN = +23m.10s.
St. Louis epPE = +12m.44s., isSEN = +23m.11s.
Batavia iP = +12m.54s.
Little Rock epPE = +13m.7s., isSE = +23m.24s., iE = +23m.59s.
Bozeman e = +24m.7s.
Tinemaha iZ = +14m.4s., eZ = +16m.27s., eE = +18m.4s.
Tucson PP = +18m.35s.
La Paz S? = +26m.13s., PS = +27m.17s.
Huancayo ePP = +18m.48s., ePS = +27m.59s.
Long waves were also recorded at Bergen, La Plata, and Ukiah.

Feb. 25d. Readings also at 3h. (Simferopol, Theodosia, and Yalta), 4h. (Erevan), 8h. (Mount Wilson, Pasadena, Riverside, Tinemaha, and Tucson), 12h. (Taihoku), 15h. (Mount Wilson, Pasadena, Tinemaha, La Paz, Sucre, Kobe, Nagoya, and Sumoto).

Feb. 26d. 1h. Readings for which no determination has been made :—

Sofia eP = 1m.12s., L = 3m., M = 4m.15s.
Ksara eP = 1m.21s., eS = 2m.32s., i = 3m.9s.
Tiflis eP = 2m.52s., e = 5m.48s., eL = 7m.30s.
Baku eP = 4m.20s., S = 8m.15s., L = 10m.12s.

Erevan P_g = 18m.33s., S_g = 18m.43s.
Tiflis iP = 18m.42s., e = 18m.49s., iL = 19m.0s.

Feb. 26d. 6h. 46m. 17s. Epicentre 24°·0N. 121°·6E. (as on 24d. 0h.). X.

	Δ	Az.	P.	O − C.	S.	O − C.
	°	°	m. s.	s.	m. s.	s.
Karenko	0·0	0	e 0 0	0	0 4	+ 4
Arisan	0·9	232	e 0 15	+ 2	0 31	?
Taihoku	1·0	354	e 0 14	0	0 24	− 2
Taito	1·3	198	e 0 31	S	0 47	?

Feb. 26d. Readings also at 0h. (Nagasaki (2)), 1h. (Alicante), 5h. (Nagoya), 6h. (Medan), 10h. (Tananarive), 11h. (Alicante), 12h. (Mizusawa), 17h. (Erevan), 19h. (Samarkand), 22h. (La Paz).

Feb. 27d. 9h. 9m. 28s. Epicentre 3°·0N. 126°·0E. (as on 1933 Sept. 3d.). R.2.

A = −·587, B = +·808, C = +·052 ; D = +·809, E = +·588 ;
G = −·031, H = +·042, K = −·999.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	7·0	162	i 0 20	?	i 1 27	?	—	—
Palau	9·5	62	2 12	− 2	3 51	− 8	—	—
Manila	12·6	337	3 7a	PP	6 0	S*	—	—
Batavia	21·2	244	4 42	0	8 33	+ 3	—	—
Isigakizima	21·4	356	4 50	PP	—	—	—	—
Hong Kong	22·5	330	4 56	0	9 12	SS	11·6	18·0
Naha	23·3	1	5 14	+10	—	—	—	—
Phu-Lien	26·0	315	e 5 31	+ 2	10 2	+ 4	11·5	—
Medan	27·3	272	i 5 42	+ 1	10 17	− 3	—	—
Zi-ka-wei	28·5	352	5 54	+ 2	—	—	15·0	23·3
Miyazaki	29·4	8	5 58	+ 2	10 47	− 8	—	—
Nanking	29·9	348	i 6 6	+ 2	10 48	−15	14·9	—
Nagasaki	30·0	7	6 6	+ 1	e 11 7	+ 3	—	—
Wakayama	32·4	14	6 26	0	—	—	—	—
Taikyu	33·0	2	6 32	0	—	—	—	—
Nagoya	33·8	16	e 6 38	− 1	—	—	—	—
Gihu	33·9	16	6 42	+ 3	—	—	—	—
Nagano	35·5	19	6 54	+ 1	12 30	+ 1	—	—
Perth	36·3	194	—	—	i 12 32	− 9	—	19·0
Sendai	37·9	19	7 4	−10	13 7	+ 2	—	—
Chiufeng	38·2	348	i 7 17a	0	e 13 7	− 2	e 18·0	—
Mizusawa	38·7	21	(e 7 19)	− 2	e 7 19	P	—	—
Vladivostok	40·5	7	i 7 36	0	i 13 51	+ 7	20·5	—
Riverview	43·8	149	e 9 2	?	i 14 9	−24	e 24·2	28·6
Sydney	43·8	149	e 6 2	?	—	—	24·5	29·8
Melbourne	44·4	159	—	—	i 14 24	−17	25·4	27·1
Agra	51·8	303	9 1	− 4	16 19	− 6	—	—
Bombay	54·3	291	e 9 19	− 4	—	—	—	31·0
Almata	59·2	320	e 9 52	− 7	—	—	—	—
Frunse	60·6	319	e 10 6	− 3	—	—	—	—
Semipalatinsk	61·1	329	e 9 32	−40	—	—	—	—
Andijan	61·2	315	e 10 13	0	—	—	—	—
Tashkent	63·5	315	i 10 27	− 2	18 59	− 2	e 30·5	38·8
Tchimkent	63·7	316	e 10 23	− 7	—	—	—	—
Sverdlovsk	74·2	329	i 11 33	− 3	21 8	− 3	33·5	43·9
Baku	77·5	312	11 54	− 1	21 50	+ 2	39·7	48·3
Grozny	80·8	313	12 11	− 1	—	—	—	—
Tiflis	81·5	312	12 13	− 3	e 22 22	−10	45·5	57·0
Erevan	81·6	310	12 14	− 2	—	—	—	—
Ksara	88·4	304	i 12 48a	− 2	e 24 39	PS	—	50·0
Pulkovo	90·3	330	—	—	23 48	−11	47·5	56·0
Tinemaha	108·3	49	e 18 46	PP	—	—	—	—
Pasadena	109·3	52	e 18 52	PP	—	—	54·5	—
Mount Wilson	109·4	52	e 18 47	PP	—	—	—	—
Riverside	110·0	52	e 18 54	PP	—	—	—	—
Granada	118·4	316	e 20 45	?	—	—	—	—

Additional readings :—
Manila iNEZ = +3m.9s.
Hong Kong PP = +5m.30s., SS = +9m.50s.
Nanking eN = +9m.37s.
Perth +14m.32s.
Melbourne i = +17m.25s. =SS −14s.
Tiflis e = +35m.14s.
Ksara ePP = +16m.19s., ePPS = +25m.9s.
Pulkovo e = +18m.32s. and +33m.14s.
Mount Wilson eZ = +18m.51s.
Long waves were also recorded at Copenhagen, De Bilt, Huancayo, Sitka, and Wellington.

Feb. 27d. 15h. 27m. 16s. Epicentre 7°·4N. 83°·1W. (as on 1934 July 19d.). R.3.

$A = +\cdot119$, $B = -\cdot984$, $C = +\cdot129$; $D = -\cdot993$, $E = -\cdot120$; $G = +\cdot015$, $H = -\cdot128$, $K = -\cdot992$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	3·8	64	i 0 55	+ 1	i 1 41	+ 4	—	2·0
San Juan	19·8	55	e 4 27	0	i 8 6	+ 4	e 12·3	—
Huancayo	20·9	158	e 4 52	PP	e 8 50	SS	—	—
La Paz	28·2	148	e 6 50	PP	—	—	15·3	—
Ottawa	38·5	9	—	—	e 16 18	SSS	e 18·7	—
Riverside	41·3	314	e 7 43	0	—	—	—	—
Mount Wilson	41·9	314	e 7 49	+ 1	—	—	—	—
Pasadena	41·9	314	i 7 49	+ 1	—	—	—	—
Tinemaha	43·6	318	e 8 1	− 1	—	—	—	—

Feb. 27d. 20h. 28m. 28s. Epicentre 24°·0N. 121°·6E. (as at 26d.). X.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Karenko	0·0	0	e −0 2	− 2	0 2	+ 2
Arisan	0·9	232	e 0 14	+ 1	0 28	S*
Taihoku	1·0	354	e 0 16	+ 2	—	—
Taito	1·3	198	e 0 38	S*	1 5	?

Feb. 27d. Readings also at 5h. (Almeria), 12h. (Samarkand), 18h. (Samarkand), 20h. (La Paz), 21h. (Wellington).

Feb. 28d.
0h. 23m. 53s. (I) X.
0h. 41m. 51s. (II) X.
16h. 34m. 26s. (III) X.
16h. 35m. 42s. (IV) X.
16h. 56m. 40s. (V) X.
17h. 37m. 25s. (VI) X.
21h. 14m. 31s. (VII) X.
} Epicentre 24°·0N. 121°·6E. (as on 27d. 20h.).

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
II Karenko	0·0	0	e 0 0	0	0 4	+ 4
III	0·0	0	−0 1	− 1	0 1	+ 1
IV	0·0	0	0 0	0	0 2	+ 2
V	0·0	0	0 0	0	0 2	+ 2
VI	0·0	0	−0 2	− 2	0 0	0
VII	0·0	0	−0 1	− 1	0 1	+ 1
III Arisan	0·9	232	0 13	0	0 29	S*
IV	0·9	232	0 19	+ 6	—	—
V	0·9	232	0 11	− 2	0 28	S*
VI	0·9	232	0 13	0	0 29	S*
IV Taityu	0·9	283	0 21	S	(0 21)	− 2
VI	0·9	283	0 16	+ 3	—	—
VII	0·9	283	0 28	S	(0 28)	S*
I Taihoku	1·0	354	e 0 14	0	e 0 26	0
II	1·0	354	0 11	− 3	—	—
III	1·0	354	0 26	S	(0 26)	0
IV	1·0	354	0 10	− 4	e 0 21	− 5
V	1·0	354	0 17	+ 3	—	—
VI	1·0	354	0 13	− 1	0 25	− 1
VII	1·0	354	0 14	0	0 27	+ 1
IV Taito	1·3	198	0 39	S*	0 52	?
VI	1·3	198	0 24	P_g	0 46	?
VII	1·3	198	0 27	?	0 49	?

Feb. 28d. 0h. 56m. 13s. Epicentre 53°·3N. 174°·9E. (as on 22d. 17h.). R.3.

A = −·595, B = +·053, C = +·802.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok	29·9	268	—	—	e 11 0	− 3	—	—
Chiufeng	41·1	276	e 7 41	0	e 13 55	+ 2	—	28·6
Nanking	44·9	266	e 8 12	0	14 49	0	21·8	—
Tinemaha	47·9	82	i 8 36	+ 1	—	—	—	—
Pasadena	49·9	85	i 8 50	− 1	—	—	—	—
Riverside	50·5	84	e 8 53	− 2	—	—	—	—
Sverdlovsk	57·5	324	e 10 19	?	—	—	25·8	31·9
Andijan	64·9	305	e 10 39	+ 1	—	—	—	—
Tashkent	65·9	308	e 10 54	+ 9	19 27	− 4	e 33·8	38·2
Tiflis	75·8	324	11 48	+ 3	21 33	+ 4	41·8	44·8

Additional readings :—
Chiufeng iE = +17m.42s. = S_gS − 6s.
Tashkent e = +20m.47s. = S_cS +13s.
Long waves at Baku, Sitka, and Hong Kong.

Feb. 28d. 7h. 9m. 58s. Epicentre 23°·5S. 64°·0W. N.2.

Given by U.S. Coast and Geod. Survey.

A = +·402, B = −·824, C = −·399 ; D = −·899, E = −·438 ;
G = −·175, H = +·358, K = −·917.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sucre	4·6	348	i 1 34	P_g	i 2 10	S*	—	—
Montezuma	4·6	280	e 1 10	+ 4	2 2	+ 4	2·5	—
La Paz	8·0	330	i 2 8	P*	i 3 11	−13	3·3	3·4
Santiago	11·5	209	4 17	?	6 40	?	—	—
La Plata	12·5	156	—	—	6 36	S_g	9·0	—
Huancayo	15·7	315	i 3 42	PP	5 6	?	i 5·2	—
San Juan	42·0	355	e 7 47	− 2	i 13 24	?	—	—
Little Rock	64·2	335	e 10 21	−13	i 18 19	−51	—	—
Oak Ridge	66·4	354	i 10 48	0	—	—	—	—
St. Louis	66·8	338	e 10 47	− 4	i 19 0	?	—	—
La Jolla	75·9	317	i 11 46	+ 1	—	—	—	—
Riverside	76·7	223	i 11 48	− 2	—	—	—	—
Mount Wilson	77·3	317	i 11 53	− 1	—	—	—	—
Pasadena	77·3	317	i 11 53k	− 1	i 21 6	?	—	—
Haiwee	78·5	318	i 12 0	0	—	—	—	—
Santa Barbara	78·5	317	e 11 59	− 1	—	—	—	—
Tinemaha	79·2	319	i 12 4k	0	i 21 31	−36	—	—
Lick	81·5	317	i 12 17	+ 1	—	—	—	—
Branner	81·9	317	i 12 19	+ 1	—	—	—	—
Berkeley	82·2	317	e 12 19	0	—	—	—	—
Samarkand	135·9	56	22 6	PP	22 21	?	—	—
Andijan	139·7	54	e 22 59	PKS	—	—	—	—
Almata	142·4	48	e 20 2	[+37]	—	—	—	—

Additional readings :—
San Juan e = +10m.42s., i = +13m.26s. and +16m.32s., e = +16m.41s.
Little Rock iE = +19m.46s.
St. Louis epPE = +11m.32s., isSE = +20m.15s.
Riverside iZ = +12m.53s.
Pasadena iZ = +12m.59s., eE = +21m.37s. = S − 9s.
Haiwee iZ = +12m.47s.
Tinemaha iZ = +13m.0s. and +13m.13s.
Lick iN = +12m.26s., eE = +12m.49s.
Branner eE = +11m.52s., iN = +12m.22s.

Feb. 28d. Readings from American stations for which no determination has been made :—

Lick iP_gN =10h.22m.54s., iSEN =23m.3s., iN =23m.5s., iN =23m.9s.
Branner eP_gN =10h.22m.59s., eP_gE =23m.1s., eS_gEN =23m.11s.
Berkeley ePZ =10h.23m.5s., iPZ =23m.7s.

Lick eP_gEN =11h.43m.37s., eS_gNE =43m.45s.
Branner eP*EN =11h.43m.42s., eS_gN =43m.59s.

Lick ePN =19h.7m.7s., iNE =7m.23s., iSNE =7m.27s.
Branner ePE =19h.7m.8s., ePN =7m.10s., iSEN =7m.32s.
Berkeley ePZ =19h.7m.15s., eE =iPZ =7m.19s., iZ =7m.43s., iE =7m.45s., iZ = 7m. 48s.

Feb. 28d. Readings also at 5h. (Manila), 6h. (Mizusawa and Nanking), 13h. (Kodaikanal), 14h. (Kodaikanal and Tiflis), 20h. (Santiago and New Plymouth), 22h. (Samarkand), 23h. (Ksara).

March 1d. 0h. 5m. 45s. (I)
1h. 25m. 24s. (II)
1h. 26m. 53s. (III)
3h. 56m. 13s. (IV)
4h. 1m. 58s. (V)
} Epicentre 24°·0N. 121°·6E. (as on Feb. 28d.). X. X. X. X. X.

A = −·479, B = +·778, C = +·407.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
I Karenko	0·0	0	e 0 5	+ 5	0 8	+ 8
II	0·0	0	e 0 0	0	0 3	+ 3
III	0·0	0	e 0 2	+ 2	0 4	+ 4
IV	0·0	0	e −0 6	− 6	−0 3	− 3
V	0·0	0	e −0 5	− 5	−0 2	− 2
I Arisan	0·9	232	e 0 24	S	(0 24)	+ 1
IV	0·9	232	e −0 9	?	0 25	S*
V	0·9	232	e 0 13	0	0 29	S_g
I Taityu	0·9	232	e 0 23	S	(e 0 23)	0
IV	0·9	232	e 0 15	+ 2	—	—
I Taihoku	1·0	354	e 0 23	S	(e 0 23)	− 3
II	1·0	354	e 0 18	+ 4	0 30	S*
III	1·0	354	e 0 25	S	(e 0 25)	− 1
IV	1·0	354	0 14	0	0 26	0
V	1·0	354	e 0 16	+ 2	0 29	S*
I Taito	1·3	198	e 0 30	S	(e 0 30)	− 3
II	1·3	198	e 0 51	?	—	—
IV	1·3	198	e 0 23	P_g	0 50	?
V	1·3	198	e 0 42	?	—	—
I Tainan	1·6	230	e 0 32	?	1 4	?
I Kosyun	2·1	1	e 0 52	S	(e 0 52)	− 2
I Nanking	8·4	344	e 2 11	+12	e 4 12	S*

Additional readings :
I Arisan S = +37s.
I Taihoku S = +36s.
I Taito S = +50s.
I Kosyun S = +1m.17s.
I Nanking e = +4m.37s.

March 1d. 5h. Reading for a shock in New Zealand, for which Wellington gives the epicentre 42°·8S. 172°E.

Christchurch P_g =53m.42s., S_g =53m.53s.
New Plymouth P =53m.47s., S =54m.27s.
Wellington P =54m.2s., S =54m.32s., S_g? =54m.38s.
Glenmuick P_g =55m.42s., S_g =55m.54s.

March 1d. Readings also at 0h. (Tucson), 1h. (Kobe, Nagoya, and Sumoto), 2h. (Santiago), 3h. (Santiago), 4h. (Samarkand and Sumoto), 5h. (Wellington), 8h. (Andijan and Almata), 9h. (Christchurch and Glenmuick), 10h. (Granada and Tucson), 11h. (Florissant, St. Louis, and Oak Ridge), 12h. (La Paz), 13h. (Pasadena and Tinemaha), 15h. (Alicante and Strasbourg), 17h. (New Plymouth), 18h. (Mizusawa, Nagoya, and Tokyo), 23h. (Tucson).

March 2d. 0h. 53m. 2s. (I)
6h. 10m. 33s. (II)
13h. 10m. 8s. (III)
13h. 53m. 41s. (IV)
Epicentre 24°·0N. 121°·6E. (as on 1d.)
X. X. X. X.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
I Karenko	0·0	0	−0 9	− 9	−0 5	− 5
II	0·0	0	−0 10	−10	−0 8	− 8
III	0·0	0	−0 9	− 9	—	—
IV	0·0	0	−0 3	− 3	—	—
I Arisan	0·9	232	e 0 12	− 1	—	—
II	0·9	232	e 0 14	+ 1	—	—
III	0·9	232	e 0 16	+ 3	0 32	+ 9
IV	0·9	232	0 13	0	0 27	+ 4
III Taityu	0·9	232	e 0 12	− 1	—	—
IV	0·9	232	e 0 13	0	—	—
I Taihoku	1·0	354	e 0 20	+ 6	—	—
II	1·0	354	e 0 21	+ 7	—	—
III	1·0	354	e −0 4	−18	0 7	−19
IV	1·0	354	e 0 20	+ 6	e 0 29	+ 3
II Taito	1·3	198	e 0 41	S*	—	—
III	1·3	198	e 0 41	S*	—	—
IV	1·3	198	e 0 42	S*	1 0	?

March 2d. Reading for more than one epicentre for which no determinations have been made :—

Tashkent eP =5h.32m.5s., e =33m.49s., iS =33m.58s., e =34m.5s., M =34m.18s.
Andijan eP =5h.32m.45s., PP =32m.53s., S_g =33m.13s., M =33m.16s.
Frunse eP =5h.34m.12s.
Tchimkent iS_g =5h.34m.17s.
Vladivostok e =5h.56m.10s., M =63m.48s.
Sverdlovsk iP =5h.57m.23s., S =62m.10s., L =68m.54s., M =69m.0s.
Chiufeng eE =5h.57m.54s., e =58m.8s., eNZ =58m.20s., i =58m.39s., i =59m.3s., MNZ =60m.42s.
Semipalatinsk e =6h.0m.17s., eS =0m.31s.
Pulkovo e =6h.1m.17s., L =17m., M =19m.24s.
Tashkent e =6h.2m.10s., e =2m.31s., e =6m.24s., i =6m.35s., i =6m.46s., M =7m.0s.
Sverdlovsk iP =6h.2m.25s., iS =5m.24s.
Frunse e =6h.4m.4s., e =4m.20s.
Andijan e =6h.5m.54s.
Tchimkent i =6h.6m.10s.
Samarkand e =6h.7m.6s.
Hong Kong P? =6h.7m.15s., S? =8m.36s., L =9m.30s., M =10m.10s.
Phu-Lien 6h.8m.
Baku e =6h.8m.23s., e =9m.49s., e =13m.53s., eL =17m.24s., M =18m.48s.
Agra e =6h.10m.25s.
Cheb e =6h.25m., 28m.
Prague e =6h.26m.30s.
Long waves at Copenhagen, De Bilt, Paris, Strasbourg, Stuttgart, Tiflis, and Uccle

March 2d. 6h. Readings for a Japanese shock for which no determination has been made :—

Keizyo eP =1m.32s.
Zinsen eS =2m.43s.
Taikyu eP =3m.42s., P =9m.2s.
Husan P =4m.17s., S =6m.14s.
Nagasaki eP =5m.16s.

March 2d. 7h. Readings for which no determination has been made :—
Riverside eZ =16m.55s., iZ =18m.4s., iZ =18m.10s.
Tinemaha iZ =17m.10s., iZ =18m.4s., iZ =18m.10s.
Pasadena iZ =18m.0s., iZ =18m.8s.
Mount Wilson iZ =18m.0s.
La Jolla eZ =18m.4s.
Haiwee iZ =18m.11s.

March 2d. 13h. Readings for which no determination has been made :—
Victoria P =10m.9s., L =11m.4s., M =11m.35s.
Tinemaha iP =12m.55s.
Haiwee eP =13m.0s., eZ =13m.53s.
Mount Wilson ePZ =13m.29s.
Riverside ePZ =13m.31s.
Florissant ePEN =15m.18s., eLEN =23m.56s., eMEN =26m.59s.
Long waves at Philadelphia and Sitka.

March 2d. 18h. Readings for which no determination has been made :—
La Paz PN =41m.42s., SN =48m.58s., LN =59m.2s., M =63m.56s.
Riverside iPZ =51m.8s.
Pasadena iP =51m.10s.
Mount Wilson iPZ =51m.11s.
Haiwee iPZ =51m.13s.
Tinemaha iP =51m.14s.
Santa Barbara iPZ =51m.14s.
Ksara e =59m.43s., e =67m.3s., L =90m., M =97m.30s.
Tashkent e =70m.21s., e =82m.24s., e =91m.0s., M =96m.54s.
Sverdlovsk e =71m.44s., L =93m.
Malabar i =83m.42s.
Long waves at Baku.

March 2d. Readings also at 2h. (Lick), 7h. (Kobe, La Paz, and Malabar), 9h. (La Paz), 10h. (Amboina), 12h. (Bozeman and Seattle), 15h. (Branner and Lick), 17h. (La Paz), 18h. (Berkeley), 20h. (Malabar), 23h. (Santiago).

March 3d. 2h. 18m. 45s. (I)
2h. 22m. 8s. (II)
2h. 24m. 46s. (III)
2h. 26m. 3s. (IV)
4h. 34m. 14s. (V)
11h. 48m. 0s. (VI)
11h. 59m. 36s. (VII)
Epicentre 24°·0N. 121°·6E. (as on 2d.).
X. X. X. X. X. X. X.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
I Karenko	0·0	0	e −0 9	− 9	−0 7	− 7
III	0·0	0	e −0 1	− 1	0 1	+ 1
IV	0·0	0	−0 3	− 3	—	—
V	0·0	0	−0 6	− 6	−0 3	− 3
VI	0·0	0	−0 6	− 6	−0 3	− 3
VII	0·0	0	−0 8	− 8	−0 6	− 6
I Arisan	0·9	232	e 0 8	− 5	0 25	+ 2
II	0·9	232	e 0 5	− 8	0 22	− 1
III	0·9	232	e 0 12	− 1	0 22	− 1
IV	0·9	232	e 0 13	0	0 26	+ 3
V	0·9	232	e 0 8	− 5	0 22	− 1
VI	0·9	232	e 0 15	+ 2	—	—
VII	0·9	232	e 0 16	+ 3	—	—
I Taityu	0·9	232	e 0 15	+ 2	—	—
III	0·9	232	e 0 16	+ 3	—	—
IV	0·9	232	e 0 18	+ 5	—	—
V	0·9	232	e 0 12	− 1	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
I Taihoku	1·0	354	e 0 9	− 5	0 21	− 5
II	1·0	354	e 0 19	+ 5	—	—
III	1·0	354	e 0 16	+ 2	0 27	+ 1
V	1·0	354	e 0 12	− 2	0 23	− 3
VI	1·0	354	e 0 11	− 3	—	—
VII	1·0	354	e 0 11	− 3	—	—
I Taito	1·3	198	e 0 22	P_g	0 43	S_g
II	1·3	198	0 22	P_g	—	—
III	1·3	198	0 24	P_g	0 46	S_g
V	1·3	198	e 0 27	?	—	—
VI	1·3	198	e 0 44	S_g	—	—
VII	1·3	198	e 0 44	S_g	—	—
I Tainan	1·6	230	e 0 31	P_g	1 1	?
III	1·6	230	e 0 36	?	1 3	?
III Takao	1·8	218	e 0 45	S	(e 0 45)	− 1
III Hokoto	2·0	255	0 29	0	0 58	S*
I Nanking	8·4	344	—	—	e 3 35	+ 1
II	8·4	344	—	—	e 4 4	S*
III	8·4	344	—	—	e 4 7	S*

March 3d. Readings for which no determinations have been made :—

5h.
Lick ePEN = 50m.1s., eSNE = 50m.29s.
Berkeley eZ = 50m.6s., eE = 50m.9s., eN = 50m.11s., iS = 50m.38s.
Branner ePN = 50m.7s., eSEN = 50m.38s.

10h.
Ferndale eP_gE = 19m.2s., iSE = 19m.7s., iE = 19m.10s.
Berkeley ePZ = 19m.41s., eE = 19m.45s., iZ = 20m.11s., iENZ = 20m.14s., iZ = 20m.16s.
Branner eP_gEN = 19m.46s., iSEN = 19m.50s.
Lick ePEN = 19m.51s., eSEN = 20m.33s.

11h.
Lick iP_gEN = 26m.44s., iN = 26m.50s., iS_gNE = 26m.57s.
Branner iPEN = 26m.49s., iSE = 27m.4s.
Berkeley ePZ = 26m.55s., eENZ = 27m.0s., iN = 27m.19s., iE = 27m.23s., iN = 27m.27s.

March 3d. 22h. 46m. 8s. Epicentre 30°·1N. 89°·0E. N.3.

A = +·015, B = +·865, C = +·502 ; D = +1·000, E = −·018 ;
G = +·009, H = +·501, K = −·865.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	7·6	184	3 36	S*	7 36	?	—	—
Agra	10·1	256	e 2 21	− 1	i 4 5	−11	—	6·9
Almata	16·3	327	e 4 52	+67	—	—	—	—
Frunse	17·2	322	e 4 52	+55	—	—	—	—
Bombay	18·5	236	e 4 16	+ 3	e 7 43	SS	9·1	13·2
Tashkent	19·5	310	i 4 23	− 1	i 8 0	+ 4	e 10·5	12·5
Tchimkent	19·8	313	e 4 28	+ 1	—	—	—	—
Samarkand	20·3	304	e 4 41	PP	—	—	—	—
Hong Kong	23·8	103	9 57	SS	—	—	—	15·0
Chiufeng	24·2	58	e 5 26	+14	i 9 52	SS	—	14·1
Nanking	25·5	78	—	—	e 8 29	?	—	15·1
Baku	33·2	299	—	—	e 13 51	SS	e 18·6	—
Sverdlovsk	33·2	332	e 6 35	+ 1	e 14 27	?	15·9	—

Additional readings :—
Calcutta P* = +4m.28s.
Agra S* = +4m.45s., eS_g? = +5m.21s.
Baku e = +15m.46s.
Long waves at De Bilt and Tiflis.

March 3d. Readings also at 2h. (Karenko (4)), 4h. (Karenko), 5h. (Samarkand (2) and Santiago), 6h. (Messina), 10h. (Honolulu and Jena), 14h. (Reykjavik and Wellington), 16h. (Santiago), 17h. (Mizusawa, New Plymouth, and Wellington), 18h. (Reykjavik and Tiflis), 21h. (Lick and Mizusawa).

March 4d. 16h. Readings for two shocks, probably from the same epicentre, which is reported to be Tibet.

Tashkent e = 14m.0s., e = 17m.0s., i = 18m.8s.
Sverdlovsk e = 14m.39s., e = 20m.13s., L = 21m.
Baku e = 15m.32s., e = 23m.24s., e = 29m.32s., L = 33m.12s., M = 39m.42s.
Frunse e = 15m.40s.
Semipalatinsk P_g = 15m.55s., S_g = 16m.16s.
Almata e = 16m.45s., S = 18m.1s.
Tchimkent eP = 17m.9s., eS = 18m.36s.
Agra PE = 17m.37s., SE = 19m.21s., eN = 19m.23s., S_g = 20m.33s., MN = 22m.23s.
Samarkand e = 18m.6s., eS = 19m.51s., M = 20m.34s.
Andijan e = 18m.19s.
Calcutta E = 18m.43s., P* = 19m.38s., S = 21m.40s.
Tashkent iP = 18m.55s., iS = 23m.13s., eL = 25m.24s., M = 27m.30s.
Bombay ePEN = 19m.27s., eSEN = 22m.46s., SSEN = 23m.26s., eL = 24m.14s., M = 27m.1s.
Chiufeng eEN = 20m.41s., eN = 22m.11s., S = 25m.3s., M = 29m.16s.
Phu-Lien 23m.
Kodaikanal S = 24m.33s., L = 27m.22s.
Hong Kong P? = 25m.10s., S? = 28m.45s., M = 30m.20s.
Nanking eS = 25m.44s., eL = 31m.30s.
Pulkovo e = 29m.24s., e = 32m.21s., L = 40m.
Sverdlovsk e = 29m.30s., L = 31m.
Long waves at Copenhagen, De Bilt, and Hydcrabad.

March 4d. 19h. Readings from Japanese stations for which no determinations have been made :—

Karenko eP = 46m.6s., S = 46m.9s.
Arisan eP = 46m.21s., S = 46m.36s.
Taityu eP = 46m.25s.
Taihoku eP = 46m.25s., S = 46m.37s.
Taito eP = 46m.45s., S = 47m.1s.
Nagoya P = 47m.18s., S = 47m.26s.

Karenko eP = 49m.30s., S = 49m.32s.
Taihoku eP = 49m.57s.
Nanking e = 50m.34s.

Karenko eP = 57m.49s., S = 57m.51s.
Taihoku eP = 58m.8s.
Arisan eP = 58m.22s., S = 58m.37s.
Taito eP = 58m.29s.

March 4d. Readings also at 0h. (Reykjavik, Karenko, and Santiago), 1h. (Kobe and Reykjavik), 3h. (Pasadena and Tinemaha), 4h. (Kobe, Mizusawa, and Nagoya), 7h. (Almata, Andijan (2), Frunse, and Samarkand), 9h. (Grozny), 11h. (Baku, Chiufeng, Pulkovo, Sverdlovsk, Tashkent, and Vladivostok), 13h. (Karenko), 19h. (Amboina and Malabar), 22h. (Almata and Frunse).

March 5d. 10h. 26m. 42s. Epicentre 36°·3N. 53°·5E. (as on 1932 May 20d.). R.2.

A = +·479, B = +·648, C = +·592 ; D = +·804, E = −·595 ;
G = +·352, H = +·476, K = −·806.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Erevan	8·1	299	1 56	+ 1	3 34	+ 8	—	5·3
Tiflis	8·7	311	e 1 57	− 6	i 3 31	−10	e 3·9	7·8
Grozny	9·2	320	2 7	− 3	i 3 49	− 5	—	4·2
Samarkand	11·1	68	2 41	+ 5	e 5 29	S*	—	—
Piatigorsk	11·1	317	(2 42)	+ 6	(i 4 42)	+ 1	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sotchi		12·9	309	e 2 54	− 7	—	—	—	—
Tashkent		13·2	63	i 3 6	+ 1	5 32	0	—	9·1
Tchimkent		13·8	59	e 3 15	+ 2	e 6 24	?	—	8·2
Ksara		14·6	266	i 3 19a	− 4	i 6 13	+ 8	i 8·1	—
Andijan		15·4	67	3 41	PP	e 6 55	?	8·9	9·4
Yalta		16·8	305	e 3 51	− 1	e 6 57	0	20·3	—
Simferopol		17·0	306	e 3 57	+ 3	7 6	+ 4	e 13·6	—
Sebastopol		17·3	305	e 3 52	− 6	7 0	− 9	—	—
Frunse		17·4	61	4 0	+ 1	e 7 35	SS	—	—
Almata		19·2	62	i 4 28	PP	8 22	?	—	12·2
Helwan		19·6	257	i 4 20	− 5	i 7 56	− 2	—	13·1
Dehra Dun		21·3	99	4 8	−35	7 38	−54	12·3	14·3
Bucharest		22·3	300	e 4 56	+ 2	i 7 1	?	—	9·3
Agra		22·7	107	e 5 4	+ 6	e 9 16	SS	—	—
Semipalatinsk		23·8	45	e 5 15	+ 7	—	—	e 12·4	—
Sofia		24·0	295	e 5 10	0	e 9 30	+ 7	—	—
Bombay		24·3	130	e 5 15	+ 2	e 9 34	+ 6	12·1	15·4
Budapest		27·7	305	e 5 58	+14	i 10 54	+27	17·3	21·8
Pulkovo		27·8	335	i 5 46	+ 1	i 10 26	− 4	16·5	19·4
Hyderabad	N.	29·0	124	e 6 54	PPP	10 44	− 4	12·7	16·7
Königsberg		29·1	320	i 6 2	+ 5	e 10 50	0	—	18·8
Zagreb		29·5	300	e 5 33	−28	e 11 5	+ 9	—	—
Vienna		29·6	306	e 5 56	− 5	e 11 32	?	—	—
Graz		29·8	303	i 6 9	+ 6	—	—	e 20·3	27·0
Prague		31·2	309	—	—	e 11 57	+34	e 19·3	22·8
Triest		31·3	300	4 49	?	i 11 47	+23	—	—
Venice		32·2	300	5 54	?	11 48	+10	—	—
Prato		32·4	296	e 6 29	+ 3	11 45	+ 4	17·3	—
Cheb		32·5	308	e 9 18?	(0)	e 11 37	− 6	19·3	25·3
Padova		32·5	299	e 5 18?	?	—	—	—	—
Florence		32·8	296	e 6 28	− 2	e 11 47	− 1	14·9	17·8
Upsala		32·9	326	—	—	e 12 50	+61	e 19·3	23·7
Calcutta		33·1	104	e 7 41	PP	i 14 13	SSS	—	22·1
Copenhagen		33·8	319	6 43	+ 4	i 12 5	+ 2	—	—
Kodaikanal		33·9	136	5 56	?	e 12 8	+ 4	17·8	—
Piacenza		33·9	299	e 7 18	?	12 18	+14	19·7	26·0
Göttingen		34·2	310	e 6 48	+ 6	—	—	—	—
Stuttgart		34·4	305	e 6 41	− 3	e 12 6	− 6	e 19·3	25·3
Hamburg		34·6	314	e 8 24	?	e 13 54	?	—	25·3
Zurich		34·7	302	e 6 42	− 4	—	—	—	—
Basle		35·4	303	e 7 6	+13	—	—	—	—
De Bilt		37·2	311	—	—	e 13 0	+ 6	e 19·3	25·6
Colombo		38·0	134	8 45	PP	14 37	?	22·7	23·5
Paris		38·8	305	e 8 18?	+56	—	—	19·3	24·3
Oxford		41·2	310	—	—	13 58	+ 4	e 22·3	26·8
Alicante		42·4	290	—	—	e 14 7	− 4	e 22·9	—
Granada		45·1	289	—	—	e 14 18?	−34	—	—
San Fernando		47·3	289	—	—	e 10 40	PPP	26·3	—
Chlufeng		48·3	64	e 8 42	+ 4	15 49	+12	e 23·7	30·0
Scoresby Sund		51·3	335	9 18	+17	16 29	+10	—	—
Nanking		53·1	74	e 9 44	+29	e 16 56	+13	e 28·3	32·3
Hong Kong		53·8	88	16 58	S	(16 58)	+ 5	—	31·3
Zi-ka-wei		55·5	74	e 9 38	+ 6	17 34	+19	34·2	36·7
Zinsen		56·9	65	e 8 28	?	—	—	e 31·3	—
Vladivostok		58·5	57	—	—	e 18 7	+11	29·2	41·4
Manila		63·4	91	18 42	S	(18 42)	−18	—	35·3

Additional readings and note :—
Erevan e = +2m.18s. =P* +2s.
Piatigorsk readings have been *increased* by 1m.
Bucharest ePPEN = +5m.18s., ePPPEN = +5m.36s.
Sofia eSN = +9m.34s.
Königsberg eE = +10m.12s., iE = +10m.26s.
Zagreb e = +6m.57s. =PPP +1s.

Continued on next page.

Vienna P_cP = +8m.23s., SS = +13m.53s.
Graz e = +9m.45s. and +14m.23s.
Prague e = +16m.6s.
Triest i = +8m.12s., eN = +11m.15s., i = +19m.0s. and +22m.5s.
Cheb e = +14m.33s.
Kodaikanal SS = +14m.38s., SSS = +15m.23s.
Stuttgart e = +8m.35s.; T_0 = 10h.26m.15s.
Hamburg eN = +21m.18s. ?
Oxford e = +13m.1s., i = +16m.48s.
Granada i = +20m.1s.
San Fernando ePP = +3m.37s., SS = +15m.32s.
Chiufeng PPEZ = +10m.39s.
Scoresby Sund +20m.18s.
Nanking SSN = +21m.8s.
Hong Kong S? = +21m.30s.
Manila SEN = +24m.39s.
Long waves were also recorded at Bidston, Durham, Edinburgh, Kew, Rathfarnham Castle, Stonyhurst, Phu-Lien, Cape Town, La Paz, and other European stations.

March 5d. 16h. 8m. 30s. Epicentre 22°·5N. 121°·5E. (as on 1935 Feb. 16d.). X.

A = −·483, B = +·788, C = +·383.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Taito	0·4	308	i 0 6	0	0 11	+ 1
Kosyun	0·9	234	e 0 11	− 2	0 18	− 5
Arisan	1·2	327	e 0 21	P_g	0 31	0
Takao	1·2	276	e 0 18	+ 1	—	—
Tainan	1·3	293	e 0 20	P_g	0 32	− 1
Karenko	1·5	4	e 0 33	S	(e 0 33)	− 6

March 5d. 22h. 15m. 59s. Epicentre 29°·6N. 80°·4E. N.1.

Indian Weather Review gives 28°·5N. 79°·0E.

A = +·145, B = +·857, C = +·494; D = +·986, E = −·167; G = +·082, H = +·487, K = −·870.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		2·2	290	−0 19	?	—	—	−0·2	0·0
Agra		3·3	219	i 0 52	P*	i 1 46	S_g	—	—
Calcutta		10·1	133	2 22	0	4 14	− 2	5·1	6·9
Hyderabad	N.	12·3	189	3 9	+17	5 24	+14	6·5	8·1
Bombay		12·7	214	i 2 58	0	5 9	−11	5·9	8·1
Andijan		12·9	332	3 2	+ 1	e 5 11	−14	—	5·8
Almata		13·9	249	3 13	− 1	e 5 51	+ 2	—	7·0
Frunse		14·1	342	e 3 9	− 8	—	—	—	—
Tashkent		14·7	325	i 3 21	− 4	i 5 59	− 9	i 7·9	8·9
Samarkand		14·9	316	3 17	−10	e 5 57	−16	—	—
Tchimkent		15·4	329	e 3 28	− 6	6 19	− 5	—	—
Kodaikanal		19·6	189	i 4 27	+ 2	i 7 47	−11	—	10·5
Colombo		22·7	182	e 5 2	+ 4	12 5	?	17·6	18·2
Phu-Lien		25·3	104	e 5 24	+ 1	e 9 48	+ 2	—	—
Baku		27·0	302	5 47	+ 9	i 10 21	+ 6	13·7	19·7
Sverdlovsk		30·5	339	i 6 8	− 1	i 11 8	− 4	18·6R	17·8
Grozny		30·8	306	6 14	+ 2	11 16	− 1	—	—
Medan		30·9	142	e 7 26	?	—	—	—	—
Chiufeng		30·9	60	i 6 13a	0	11 17	− 1	i 14·7	20·0
Erevan		31·0	300	e 6 5	− 9	—	—	—	—
Hong Kong		31·1	95	6 18	+ 3	11 20	− 1	17·6	19·2
Tiflis		31·1	303	6 16	+ 1	i 11 22	+ 1	e 17·0	21·9
Nanking		32·9	76	e 6 28	− 3	11 49	0	17·6	19·4
Sotchi		35·1	305	6 53	+ 3	e 12 25	+ 2	—	—
Zi-ka-wei		35·2	77	e 6 51	0	i 12 15	− 9	—	24·5

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	37·8	288	i 7 18k	+ 5	13 30	+27	—	—
Theodosia	38·4	306	e 7 28	+10	13 11	− 1	22·5	—
Yalta	39·1	306	e 7 36	+12	13 22	0	—	—
Simferopol	39·3	306	e 7 27	+ 1	e 13 25	− 1	—	—
Sebastopol	39·6	306	e 7 34	+ 5	—	—	—	—
Manila	40·2	103	7 34	0	16 53	SSS	—	—
Helwan	42·3	283	7 53	+ 2	i 14 12	+ 2	—	29·9
Vladivostok	42·9	57	e 7 56	0	—	—	25·3	33·9
Pulkovo	45·0	327	i 8 9	− 4	14 43	− 7	27·0R	26·1
Königsberg	49·0	319	i 8 35	− 9	—	—	27·0	—
Budapest	49·7	309	8 52	+ 3	16 0	+ 3	e 30·0	33·0
Upsala	51·2	325	e 9 1	+ 1	—	—	e 25·0	—
Vienna	51·5	310	i 9 4	+ 1	—	—	—	—
Zagreb	52·0	307	e 9 9	+ 3	e 16 24	− 4	—	31·4
Prague	52·7	313	—	—	e 16 43	+ 5	—	34·0
Triest	53·5	307	i 9 18a	0	i 16 50	+ 1	—	—
Copenhagen	53·7	320	9 14	− 5	16 55	+ 3	26·0	—
Cheb	54·0	313	—	—	e 16 49	− 7	—	35·0
Padova	54·9	307	e 10 1?	+33	17 1?	− 7	—	—
Hamburg	55·2	317	e 9 28	− 2	—	—	—	34·0
Göttingen	55·4	315	—	—	e 17 13	− 2	—	34·0
Prato	55·6	305	e 17 1	S	i 22 29	?	—	—
Florence	55·6	305	i 17 32	S	(i 17 32)	+15	29·0	42·0
Stuttgart	56·2	311	e 9 37	0	17 28	+ 3	31·0	32·7
Piacenza	56·4	307	e 9 37	− 2	17 35	+ 7	—	51·1
Zurich	56·8	310	e 9 41	− 1	e 17 31	− 3	—	—
Strasbourg	57·2	311	—	—	e 17 39	0	e 25·0	—
Basle	57·4	310	e 9 46	0	—	—	—	—
Neuchatel	57·9	310	e 9 49	− 1	e 17 46	− 2	—	—
De Bilt	58·2	316	e 9 53	+ 1	e 18 1	PS	e 32·0	33·8
Uccle	59·0	315	e 9 55	− 2	e 18 5	+ 2	e 30·0	—
Paris	60·5	312	e 10 4	− 4	—	—	34·0	39·0
Oxford	62·3	316	—	—	17 34	?	32·6	37·6
Alicante	65·5	302	—	—	e 19 24	− 2	—	—
Almeria	67·5	301	—	—	i 19 47	− 4	—	—
Granada	68·2	301	—	—	i 19 50	− 9	—	—
San Fernando	70·4	302	—	—	20 21	− 5	42·0	—
La Paz	147·8	287	i 19 43k	[+ 4]	—	—	—	—

Additional readings :—
Bombay SSEN = +5m.32s.
Andijan e = +4m.12s.
Frunse i = +3m.59s., e = +6m.1s. =SS +1s.
Colombo iP = +9m.5s.
Sverdlovsk L_q = +5m.49s.
Grozny i = +8m.20s. and +13m.59s.
Hong Kong SS = +14m.5s.
Tiflis ePP = +7m.6s., e = +11m.52s. and +13m.1s.? =SS +5s.
Nanking eN = +13m.28s. =SS − 10s., iN = +14m.18s.
Ksara PP = +8m.38s., SS = +15m.58s.
Pulkovo L_q = +22m.1s.
Triest iPP = +11m.23s., i = +16m.57s. and +19m.5s. =S_cS − 3s., e = +31m.51s.
Cheb e = +31m.17s.
Hamburg eNE = +23m.1s., e = +30m.43s.
Florence i = +25m.1s.
Stuttgart eSS = +21m.19s. ; T_o =22h.15m.35s.
La Paz PPN = +23m.16s., iN = +31m.43s.
Long waves also at Bidston, Durham, Kew, Stonyhurst, Scoresby Sund, Sofia, Huancayo, San Juan, and Sitka.

March 5d. Readings also at 0h. (Amboina), 2h. (Samarkand), 3h. (Agra, Bombay, Calcutta, Karenko, and Tunis), 4h. (Karenko and Sotchi), 6h. (Sofia), 8h. (Tunis), 9h. (Adelaide, Haiwee, Manila, Melbourne, Mount Wilson, Pasadena, Riverside, Riverview, Tinemaha, and Wellington), 10h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Zagreb, Mizusawa, Nagoya, and Zi-ka-wei), 11h. (Alicante and Samarkand), 12h. (Samarkand), 14h. (Alicante and New Plymouth), 17h. (Mizusawa), 20h. (Edinburgh), 22h. (Keizyo), 19h. (Karenko, Taihoku, and Taito).

March 6d. Readings at 0h. (Mizusawa and Karenko), 3h. (Baku, Calcutta, and Tashkent), 4h. (Berkeley, Branner, Lick, and Phu-Lien), 7h. (Chiufeng, Hong Kong, Manila, Nanking, Sverdlovsk, and Vladivostok), 8h. (Alicante, Baku, and Tashkent), 9h. (Hukuoka, Hukuoka B, Nagasaki, and Manila), 10h. (Hukuoka B), 11h. (Mount Wilson, Pasadena, and Tinemaha), 12h. (La Paz, Mount Wilson, Pasadena, Sebastopol, Simferopol, Theodosia, Tinemaha, and Yalta), 15h. (Nagoya, Haiwee, Mount Wilson, Pasadena, and Tinemaha), 18h. (Andijan), 20h. (New Plymouth and Wellington), 22h. (Branner), 23h. (Granada and Tananarive).

March 7d. 10h. 26m. 47s. Epicentre 40°·0N. 139°·6E. N.2.

Given by the Japanese stations.

A = − ·583, B = + ·497, C = + ·643 ; D = + ·648, E = + ·761 ;
G = − ·490, H = + ·417, K = − ·766.

		△	Az.	P.	O − C.	S.	O − C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Akita		0·5	126	0 14	S	0 27	+14	—	—
Aomori		1·2	50	0 23	P_g	0 51	+20	—	—
Morioka		1·2	103	0 27	S	0 44	+13	—	—
Mizusawa		1·5	123	i 0 31	+10	i 0 53	S_g	—	—
Tanabe		1·8	46	0 18	− 8	0 38	− 8	—	—
Miyako		1·9	100	0 42	S	1 8	S_g	—	—
Hakodate		2·0	26	0 35	P_g	1 12	S_g	—	—
Sendai		2·0	148	0 36	P_g	1 15	S_g	—	—
Niigata		2·1	191	0 40	P_g	1 15	S_g	—	—
Hukusima		2·4	161	0 38	P*	1 17	S_g	—	—
Aidu		2·5	170	0 43	P_g	1 16	S_g	—	—
Onahama		3·2	161	0 20	−26	0 44	P	—	—
Wazima		3·3	220	0 42	− 5	1 26	+ 1	—	—
Sapporo		3·4	25	0 52	+ 3	1 44	S_g	—	—
Nagano		3·5	200	0 53	+ 3	1 46	S*	—	—
Maebasi		3·6	185	0 58	P*	1 53	S_g	—	—
Mito		3·7	169	1 4	P_g	1 50	S_g	—	—
Oiwake		3·7	192	0 59	P*	1 45	S*	—	—
Kakioka		3·8	172	1 3	P*	1 59	S_g	—	—
Toyama		3·8	210	1 4	P*	2 25	?	—	—
Tukubasan		3·8	175	1 2	P*	1 47	S*	—	—
Kumagaya		3·9	184	1 3	P*	2 4	S_g	—	—
Matumoto		4·0	199	1 1	+ 4	2 4	S_g	—	—
Obihiro		4·0	45	1 6	P*	2 54	S*	—	—
Tokyo		4·3	178	1 14	P*	2 23	S_g	—	—
Kohu		4·4	191	1 15	P*	2 36	?	—	—
Tyosi		4·4	166	1 24	P_g	2 21	S_g	—	—
Hunatu		4·5	189	1 14	P*	2 30	S_g	—	—
Yokohama		4·6	180	1 23	P_g	2 24	S_g	—	—
Misima		4·9	185	1 22	P*	2 29	S*	—	—
Mera		5·1	178	1 20	P*	2 35	S*	—	—
Gihu		5·1	206	1 23	P*	3 2	?	—	—
Nagoya		5·2	204	1 23	P*	2 42	S_g	—	3·6
Hamamatu		5·4	195	1 38	P_g	2 54	S_g	—	—
Omaesaki		5·5	191	1 45	P_g	2 52	S_g	—	—
Kameyama		5·7	205	1 43	P_g	2 36	+11	—	—
Toyooka		5·8	220	1 34	P*	3 6	S_g	—	—
Osaka		6·2	211	1 42	P*	3 16	S_g	—	—
Kobe	E.	6·4	214	e 2 6	P_g	e 3 1	S*	—	3·8
	N.	6·4	214	e 1 52	P*	e 2 51	+ 8	—	4·7
Sumoto		6·7	204	e 1 45	P*	3 18	S*	—	4·9
Wakayama		6·7	210	1 40	+ 5	3 8	+17	—	—
Matuyama		8·2	222	1 59	+ 3	3 29	0	—	—
Taikyu		9·5	244	e 4 41	S*	—	—	—	—
Husan		9·7	239	e 2 20	+ 3	—	—	6·3	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka B	9·8	229	e 2 24	+ 6	e 5 42	?	7·2	—
Keizyo	10·1	258	4 8	S	4 58	S*	—	6·4
Miyazaki	10·4	220	2 32	+ 6	4 49	+26	—	—
Zinsen	10·4	260	—	—	e 4 24	+ 1	e 5·1	—
Nagasaki	10·7	230	e 4 11	S	e 5 29	S*	e 6·9	—
Chiufeng	17·9	278	4 2k	− 3	i 7 30	+ 8	e 9·0	11·8
Nanking	18·5	251	e 3 59	−14	7 26	−10	9·3	11·7
Sverdlovsk	51·8	318	i 9 2	− 3	i 16 21	− 4	26·2	30·8
Tashkent	51·8	297	—	—	e 19 56	SS	—	33·7
Agra	51·9	276	—	—	e 19 54	SS	—	—
Bombay	60·3	270	—	—	e 17 13?	−67	—	—
Pulkovo	64·7	329	e 10 40	+ 3	e 19 0	−16	32·2	40·2
Copenhagen	74·3	332	11 34	− 2	—	—	39·2	—
Tinemaha	75·0	54	i 11 41a	+ 1	—	—	—	—
Santa Barbara	75·7	56	i 11 43a	− 1	—	—	—	—
Haiwee	75·8	54	i 11 44	− 1	—	—	—	—
Mount Wilson	77·0	55	i 11 52a	0	—	—	—	—
Pasadena	77·0	55	i 11 51a	− 1	—	—	—	—
Riverside	77·5	56	i 11 54a	− 1	—	—	—	—
Ksara	78·0	304	e 11 47	−10	e 21 37	−17	—	50·2
La Jolla	78·4	56	i 11 59	0	—	—	—	—
Vienna	78·4	325	e 11 58	− 1	—	—	—	—
La Paz	146·4	54	19 42	[+ 6]	—	—	—	—

Additional readings :—
Mizusawa iSE = +58s.
Toyooka PEN = +1m.56s. = P_g +6s., SZ = +3m.13s.
Kobe eSZ = +2m.58s.
Sumoto SN = +3m.23s., SE = +3m.25s.
Tashkent e = +20m.24s., +26m.34s., and +31m.12s.
Long waves also at Hong Kong, Phu-Lien, Serra do Pilar, and other European stations.

March 7d. 10h. 41m. 18s. Epicentre 33°·0N. 131°·0E. (as on 1934 Jan. 29d.). R.3.
Nagoya gives 33°·1N. 131°·1E.

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

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Hukuoka B		0·7	320	0 10	0	0 21	+ 3	0·4
Hukuoka		0·7	320	0 10	0	0 20	+ 2	0·4
Nagasaki		1·0	254	i 0 14	0	e 0 31	S*	—
Husan		2·7	323	0 46	P_g	i 1 19	S*	—
Taikyu		3·4	326	e 1 10	P_g	1 55	S_g	—
Sumoto		3·5	66	0 55	P*	1 37	+ 7	1·8
Kobe		3·8	62	0 59	+ 5	e 1 49	S*	—
Toyooka	z.	4·1	50	1 3	P*	1 58	S*	2·8
Nagoya		5·4	65	1 13	− 4	2 32	S*	3·1
Keizyo		5·6	326	2 42	S*	—	—	—
Zinsen		5·8	323	—	—	e 2 55	S*	—

Additional readings :—
Hukuoka i = +23s.
Sumoto SZ = +1m.41s. = S* −1s.
Kobe eSN = +1m.52s.
Toyooka PEN = +1m.6s., SE = +1m.59s.

March 7d. 17h. 27m. 35s. (I)
17h. 31m. 40s. (II)
18h. 44m. 40s. (III)
20h. 23m. 56s. (IV)'
23h. 23m. 18s. (V)
Epicentre 37°·4N. 139°·6E. (given by Japan). N.3. X. X. X. X.

A = −·605, B = +·515, C = +·607; D = +·648, E = +·762;
G = −·463, H = +·394, K = −·794.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
II Tokyo		1·7	176	0 25	+ 1	0 48	S*	—	0·8
I Mizusawa		2·1	36	e 0 38	P_g	1 5	S_g	—	—
II		2·1	36	i 0 34	P*	i 1 1	S*	—	—
III		2·1	36	e 0 30	0	e 1 13	S_g	—	—
V		2·1	36	i 0 35	P_g	0 51	− 3	—	—
I Nagoya		3·1	224	0 52	P*	1 37	S_g	—	2·0
II		3·1	224	e 0 49	P*	1 36	S_g	—	1·8
III		3·1	224	1 3	+19	1 47	+27	—	—
II Toyooka	N.	4·2	244	1 3	+ 3	2 12	S_g	—	2·5
I Kobe		4·5	231	—	—	e 2 19	S_g	—	—
II		4·5	231	e 1 17	P*	2 19	S_g	—	3·1
I Sumoto		4·9	230	e 2 25	S*	—	—	—	—
II		4·9	230	e 1 24	P*	2 24	S*	—	3·0
IV		4·9	230	e 1 20	P*	2 5	0	—	2·0
II Hukuoka B		8·4	242	4 8	S*	4 31	S_g	—	—
II Nagasaki		9·2	239	—	—	e 4 35	S*	—	—
II Nanking		17·9	260	e 4 0	− 5	—	—	e 11·3	—
II Chiufeng		18·4	285	e 4 14	+ 3	—	—	—	—
II Sverdlovsk		53·7	318	e 9 18	− 1	—	—	27·8	—

Additional readings :—
Toyooka II PZ = +1m.12s. = P* +3s., ePE = +1m.15s. = P_g −3s., SZ = +2m.16s., eSE = +2m.19s.
Kobe I eE = +3m.27s., II ePEN = +1m.20s. SZ = +2m.22s. = S_g −1s.
Long waves at Tashkent.

March 7d. Readings also at 0h. (Apia, Wellington, Manila, Ksara, La Jolla, Mount Wilson, and Pasadena), 1h. (Baku, Paris, Pulkovo, Sverdlovsk, and La Paz), 3h. (Mizusawa), 6h. (Mount Wilson, Pasadena, Riverside, Santa Barbara, Tinemaha, Ksara, Tashkent, Sverdlovsk, and La Paz), 7h. (Granada, Agra, Bombay, and Kodaikanal), 8h. (Granada, Ksara, Pulkovo, Simferopol, Sebastopol, Sofia, Sverdlovsk, Theodosia, Tiflis, Yalta, Nagoya, and Tokyo), 10h. (Nagasaki), 11h. (Batavia and Malabar), 12h. (Christchurch, Wellington, Pasadena, and Tinemaha), 14h. (Triest), 16h. (Hukuoka (4), Hukuoka B (4), Nagasaki (3)), 17h. (Wellington), 19h. (Hukuoka B), 20h. (Hukuoka, Nagasaki, and Amboina).

March 8d. 0h. Readings for which no determination has been made :—
Hukuoka B iP = 45m.21s., iS = 45m.31s., M = 45m.45s.
Hukuoka P = 45m.24s., S = 45m.35s.
Nagasaki P = 45m.24s., eS = 45m.41s.
Sumoto ePN = 46m.0s., ePE = 46m.2s., S = 46m.53s., M = 47m.2s.
Husan P = 46m.31s., S = 47m.29s.

March 8d. 11h. 59m. 10s. Epicentre 4°·2S. 79°·8W. N.3.

A = +·177, B = −·981, C = −·073; D = −·984, E = −·177; G = −·013, H = +·072, K = −·997.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Huancayo	9·0	149	i 2 10	+ 3	i 3 49	0	i 4·5	—
La Paz	16·8	136	i 3 51k	− 1	i 7 12	SS	i 8·3	9·8
Sucre	20·5	136	i 4 39	+ 4	i 8 15	− 1	10·5	—
San Juan	26·3	30	—	—	e 10 8	+ 5	—	—
Florissant	44·1	349	i 8 6	0	e 14 32	− 5	—	—
Oak Ridge	47·3	9	i 8 56	+25	—	—	—	—
La Jolla	51·3	320	i 9 1	0	—	—	—	—
Mount Wilson	52·6	320	i 9 13	+ 2	—	—	—	—
Pasadena	52·7	320	i 9 12	0	—	—	—	—
Tinemaha	54·6	323	i 9 26	0	—	—	—	—
Granada	81·6	52	i 15 22	PP	—	—	—	—

Additional readings:—
Huancayo PP = +3m.0s., i = +4m.57s. = S_g − 6s.
Florissant eE = +17m.54s.
Mount Wilson iZ = +9m.38s., +10m.20s. = P_cP − 6s. and +10m.46s.
Pasadena iZ = +9m.36s., +9m.52s., +10m.39s. = P_cP + 13s. and +10m.46s.
Tinemaha iZ = +9m.51s. and +10m.53s.

March 8d. 16h. 8m. 19s. Epicentre 36°·5N. 141°·5E. X.

Japanese stations give 36°·6N. 141°·1E. (as on 1930 Dec. 7d.).

A = −·629, B = +·500, C = +·595; D = +·623, E = +·783; G = −·466, H = +·370, K = −·804.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Mizusawa	E.	2·6	354	e 0 37	0	i 1 7	0	—
	N.	2·6	354	e 0 40	P*	i 1 9	+ 2	—
Nagoya		4·0	252	0 55	− 2	1 42	0	2·1
Kobe		5·5	253	e 1 28	P*	e 2 20	0	—
Toyooka		5·5	262	1 19	+ 1	2 24	+ 4	2·8
Sumoto		5·8	250	e 1 27	+ 5	2 43	S*	3·0

Additional readings:—
Kobe eN = +1m.50s., eSN = +2m.28s.
Sumoto eZ = +2m.19s.

March 8d. Readings also at 5h. (Samarkand, Adelaide, and Melbourne), 6h. (Samarkand), 8h. (Hukuoka, Hukuoka B, and Nagasaki), 9h. (Reykjavik (2)), 12h. (Reykjavik), 13h. (Wellington), 14h. (Nagoya), 15h. (Grozny and La Paz), 16h. (Mizusawa), 18h. (Karenko), 19h. (Granada), 20h. (Grozny), 23h. (Malabar)

March 9d. 3h. Readings for which no determination has been made:—

Calcutta P = 23m.21s., S = 24m.36s.
Almata eP = 25m.14s., i = 26m.4s.
Tashkent e = 25m.30s., S = 29m.36s., eL = 31m.36s., M = 31m.48s.
Samarkand e = 25m.37s., e = 29m.44s.
Frunse e = 25m.58s.
Andijan eP = 27m.51s., eS = 28m.59s.
Bombay eN = 29m.
Tchimkent e = 29m.51s.
Chiufeng ePEN = 30m.55s., eS?EN = 34m.52s.
Sverdlovsk L = 33m.

March 9d. Readings also at 2h. (Andijan, La Paz, and Sucre), 3h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Frunse, and Tchimkent), 5h. (Sumoto), 9h. (Samarkand), 10h. (Mizusawa), 13h. (Chiufeng, Nanking, and Medan), 14h. (Amboina and Manila), 15h. (New Plymouth and Wellington), 16h. (Mizusawa, Arisan, Karenko, Tainan, Taihoku, Taito, Taityu, and Triest), 17h. (Andijan and Granada), 18h. (Batavia and Malabar), 19h. (Pasadena and Tinemaha), 21h. (Tiflis, Nagasaki, and Phu-Lien), 23h. (Amboina).

March 10d. 16h. Readings for which no determination has been made; 41°·5N. 34°·5E. has been suggested.

Sotchi P =13m.0s., S =13m.44s.
Erevan P =13m.19s.
Tiflis eP =13m.26s., L =14m.30s., M =15m.12s.
Grozny P =14m.0s., eS =15m.22s., M =16m.0s.
Ksara eP =14m.2s., S =15m.24s., SS =16m.14s.
Yalta e =14m.25s.
Baku eP =14m.31s., S =16m.43s., L =17m.42s., M =19m.30s.
Simferopol e =14m.46s.
Theodosia e =15m.43s.
Sverdlovsk P =16m.55s., S =20m.57s., L =23m.
Tashkent e =21m.3s., eL =23m.30s., M =25m.36s.
Long waves at Copenhagen, Pulkovo, and Stuttgart.

March 10d. 23h. 23m. 23s. Epicentre 41°·9N. 75°·9E. (as on 1934 Sept. 27d.). X.

A = +·181, B = +·722, C = +·668; D = +·970, E = −·244; G = +·163, H = +·648, K = −·744.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Frunse	1·4	317	0 22	+ 2	—	—	—	1·3
Almata	1·6	29	0 17	− 6	i 1 0	?	—	1·0
Andijan	2·9	247	e 0 40	− 1	1 17	+ 3	—	—
Tchimkent	4·7	277	e 1 41	?	i 2 27	S_g	—	3·9
Tashkent	5·0	266	e 1 24	P*	—	—	i 2·6	3·6
Samarkand	7·1	254	e 1 41	0	e 3 37	S_g	—	—
Semipalatinsk	9·0	22	e 3 40	S	(e 3 40)	− 9	—	—
Sverdlovsk	17·8	332	—	—	e 9 23	?	11·1	—

Additional readings:—
Frunse P* = +25s., PsS = +54s., i = +1m.8s., S_g = +1m.14s.
Almata P* = +20s., iP_g = +23s., PP = +28s.
Andijan P* =45s., i = +1m.0s. and +1m.28s. =S* +3s., S_g = +1m.37s.
Tchimkent P_g = +1m.59s. =S −1s., S* = +3m.7s., eS_g = +3m.25s.
Sverdlovsk e = +9m.46s. and +10m.14s.

March 10d. Readings also at 2h. (Arisan), 3h. (Medan), 7h. (Santiago), 10h. (Pasadena, Sverdlovsk, Tashkent, and Tinemaha), 13h. (Malabar), 14h. (Christchurch (2), New Plymouth (2), Wellington (2), and Tananarive), 15h. (Andijan, Almata, and Frunse), 20h. (Pasadena).

March 11d. 11h. 21m. 43s. Epicentre 25°·0N. 127°·0E. N.3.

A = −·545, B = +·724, C = +·423; D = +·799, E = +·602; G = −·254, H = +·338, K = −·906.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku	4·9	273	e 1 42	P_g	e 3 8	+63	—	—
Arisan	5·8	253	e 1 24	+ 2	—	—	—	—
Zi-ka-wei	7·9	323	e 2 5	P*	4 38	S_g	5·4	6·0
Nagasaki	8·1	17	e 1 59	+ 4	e 3 28	+ 2	e 4·4	—
Nanking	10·1	317	2 25	+ 3	e 5 42	?	7·2	7·9
Husan	10·3	10	—	—	e 4 3	−18	—	—
Taikyu	10·9	7	2 33	0	5 59	S_g	—	—
Manila	11·9	208	3 55	?	6 11	S_g	—	8·8
Hong Kong	12·1	261	3 23	?	6 22	S_g	8·1	9·8
Zinsen	12·5	358	e 2 52	− 3	—	—	e 7·2	—
Keizyo	12·6	2	e 5 22	S	(e 5 22)	+ 5	—	8·1
Chiufeng	17·6	332	4 2a	0	7 21	+ 6	e 9·3	12·9
Phu-Lien	19·2	262	—	—	8 17?	SS	—	—
Calcutta	35·3	275	—	—	e 19 54	?	—	26·0
Agra	43·8	285	e 14 54	?	e 18 18	(+13)	—	29·7

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	50·1	305	—	—	e 16 47	+45	—	34·6
Bombay	50·3	275	e 14 17?	?	—	—	—	—
Sverdlovsk	56·5	323	i 9 39	0	17 35	+ 5	35·8R	37·3
Pulkovo	71·9	328	e 11 17	− 5	e 19 42	−62	29·9	46·8
Ksara	77·2	302	e 12 0	+ 7	e 22 50	PS	—	—

Additional readings and note :—
Arisan reading has been *diminished* by 10m.
Chiufeng iNZ = +7m.37s.
Tashkent e = +20m.17s. and +29m.17s.
Sverdlovsk L_q = +29·0m.
Ksara eSS = +38m.55s.
Long waves at Vladivostok and other European stations.

March 11d. 19h. Readings for which no determination has been made :—
Zi-ka-wei eZ = 50m.38s., M = 53m.10s.
Chiufeng ePN = 50m.57s., ePEZ = 51m.1s., eS = 54m.18s., eNZ = 54m.31s., eLE = 56m.30s., M = 60m.6s.
Nanking e? = 51m.39s., eL = 54m.13s.
Vladivostok e = 54m.30s.
Agra e = 73m.54s.
Long waves at Hong Kong and some European stations.

March 11d. Readings also at 0h. (Tucson), 2h. (Messina), 3h. (Nagoya), 6h. (Neuchatel), 7h. (Alicante, Granada, and Toledo), 8h. (Nagoya), 11h. (Berkeley), 13h. (Florence, Prato, and Santiago), 14h. (Amboina and Nagasaki), 15h. (Adelaide, Melbourne, Riverview, Sydney, Wellington, Agra, Sverdlovsk, and Stuttgart), 16h. (Amboina and Baku), 17h. (Manila), 18h. (Triest), 19h. (Branner, La Paz, Manila, and Santiago), 20h. (Santiago), 22h. (Mount Wilson, Montezuma, Pasadena, Riverside, Santa Barbara, Tinemaha, and La Paz).

March 12d. 13h. Readings for which no determination has been made :—
Cape Town E = 17m.37s., N = 19m.55s., E = 21m.23s., E = 21m.51s., N = 22m.23s., E = 22m.41s., E = 23m.19s., E = 23m.40s., N = 24m.27s., N = 26m.15s., E = 26m.35s.
La Paz PN = 25m.51s., iS?N = 34m.34s., LN = 41m.54s., M = 45m.54s.
Ksara e = 30m.45s., e = 41m.15s., e = 45m.53s., M = 69m.
Tananarive eN = 31m.28s., eE = 32m.4s., eL = 35m.28s., M = 39m.34s.
Mount Wilson eZ = 34m.35s., eZ = 36m.51s.
Pasadena iZ = 34m.37s., eZ = 34m.53s.
Riverside eZ = 34m.38s.
Tinemaha eZ = 34m.39s., eZ = 37m.8s.
Huancayo e = 35m.57s., L = 44m.0s.
Bombay eN = 38m., eEN = 40m.33s.
Baku e = 43m.18s., L = 64m., M = 70m.42s.
Pulkovo e = 44m.54s., e = 51m.35s., L = 71m., M = 85m.42s.
Sverdlovsk e = 45m.56s., e = 53m.1s., L = 66m., M = 80m.12s.
Wellington e = 52m.
Vladivostok e = 56m.25s.
Long waves at La Plata, Melbourne, Riverview, San Juan, Kew, and other European stations.

March 12d. Readings also at 8h. (Hastings), 10h. (Berkeley, Branner, Lick, and Manila), 11h. (Amboina), 14h. (Vladivostok), 15h. (Tashkent and Sverdlovsk), 18h. (Alicante and Barcelona), 22h. (Sydney and Wellington).

March 13d. 3h. Readings for which Prato suggests the epicentre as Pavullo (Modena), probably more than one shock :—
Prato iP = 13m.13s., iS = 13m.24s.
Florence P = 13m.16s.
Calcutta P = 16m.26s., S = 17m.32s., L = 17m.53s.
Agra e = 19m.1s., i = 21m.11s.
Samarkand e = 20m.18s.
Bombay eEN = 22m.45s., eEN = 24m.15s.
Chiufeng eEZ = 25m.3s., eN = 28m.47s.
Tashkent e = 25m.12s., eL = 28m., M = 31m.54s.
Nanking e = 26m.30s.
Long waves at Baku and Hong Kong.

March 13d. 16h. 42m. 42s. Epicentre 23°·3N. 122°·0E. (as on 1931 Jan. 1d.). R.3.

A = −·487, B = +·779, C = +·396 ; D = +·848, E = +·530 ;
G = −·209, H = +·335, K = −·918.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Karenko	0·8	332	e 0 11	0	0 22	+ 1
Taito	1·0	230	e 0 14	0	0 25	− 1
Arisan	1·1	279	e 0 14	− 2	0 26	− 2
Taityu	1·5	305	e 0 22	+ 1	—	—
Takao	1·7	240	e 0 50	S_g	—	—
Tainan	1·7	260	e 0 27	P*	0 46	+ 2
Kosyun	1·7	216	e 0 27	P*	0 40	− 4
Taihoku	1·8	345	e 0 30	P_g	e 0 41	− 5

March 13d. 18h. 37m. 4s. Epicentre 6°·8S. 155°·4E. (as on 1932 Jan. 30d.). R.2.

A = −·903, B = +·413, C = −·118 ; D = +·416, E = +·909 ;
G = +·108, H = −·049, K = −·993.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	27·3	275	5 51	+10	9 17	−63	—	—
Riverview	27·3	188	e 5 39	− 2	i 10 43	+23	e 14·2	17·6
Sydney	27·3	188	—	—	e 10 29	+ 9	14·3	14·7
Melbourne	32·4	196	—	—	i 13 53	SS	14·9	16·0
Manila	40·3	303	i 7 35a	0	13 42	+ 1	—	—
Hong Kong	49·8	308	8 51	+ 1	15 58	0	23·4	26·6
Nanking	52·2	320	i 9 8	0	16 31	0	e 25·9	—
Vladivostok	54·3	339	i 9 24	+ 1	e 17 4	+ 5	—	—
Chiufeng	59·2	326	9 57	− 2	e 17 59	− 6	e 27·9	—
Bombay	85·3	290	—	—	e 22 56?	[− 5]	—	—
Almata	86·3	314	e 13 16	+36	—	—	—	—
Frunse	88·0	314	e 12 56	+ 8	—	—	—	—
Santa Barbara	89·6	55	i 12 56	0	—	—	—	—
Pasadena	90·9	56	i 13 2a	0	—	—	—	—
Mount Wilson	91·0	56	i 13 3	+ 1	—	—	—	—
Tinemaha	91·2	53	i 13 3a	0	—	—	—	—
Haiwee	91·3	54	i 13 3	0	—	—	—	—
La Jolla	91·4	57	i 13 4	0	—	—	—	—
Tashkent	91·6	311	i 12 36	−29	i 23 36	[− 6]	e 42·9	51·4
Samarkand	93·1	310	e 13 19	+ 7	—	—	—	—
Sverdlovsk	98·3	327	i 13 33	− 3	24 6	−11	40·9	—
Ksara	118·2	305	i 20 6a	PP	—	—	—	71·9
La Paz	131·0	119	19 25	[+16]	—	—	—	—
Granada	144·1	331	19 32	[0]	—	—	—	—

Additional readings and note :—
Riverview iE = +12m.51s.
Hong Kong SS = +18m.46s. = S_cS +3s.
Sverdlovsk iPP = +17m.36s.
Ksara pPKP = +20m.35s.
La Paz PN = +22m.33s. = PKS −5s. ; this is given as for another shock.
Granada e = +19m.46s., i = +19m.52s.
Long waves at Wellington, Huancayo, Tucson, and some European stations.

March 13d. Readings also at 1h. (Sumoto), 3h. (Kobe, Nagoya, and Sumoto), 7h. (Samarkand and San Juan), 13h. (Wellington and New Plymouth), 16h. (Christchurch and Nagoya), 17h. (Hong Kong, Manila, New Plymouth, and San Fernando), 18h. (Sverdlovsk and Tashkent), 19h. (Wellington)

March 14d. 11h. Readings for which no determination has been made :—
Sydney e =43m.45s., eP =45m.0s., L =48m.30s., M =49m.33s.
Adelaide e =44m.21s., eL =49m.7s., M =54m.54s.
Riverview eN =45m.12s., eL =48m.24s., M =53m.44s.
Wellington e? =46m., L =49m.
Melbourne e =46m.54s., L =50m.48s.
Manila P? =47m.5s., SEN =52m.7s.
Santa Barbara e =48m.17s.
Pasadena eZ =48m.20s., iZ =48m.25s.
Mount Wilson eZ =48m.22s.
Riverside eZ =48m.23s.
Tinemaha iZ =48m.27s., iZ =48m.31s.

March 14d. 12h. Readings for which no determination has been made, apparently more than one shock :—
Perth P =2m.0s.
Sverdlovsk e =2m.12s., e =25m.7s., i =29m.10s., i =29m.50s., e =33m.23s., e =50m.11s., L =82m., M =96m.18s.
Tashkent e =10m.0s., e =30m.42s., M =39m.18s.
La Paz PN =13m.48s., L =30m.0s., M =32m.36s.
Huancayo e =15m.0s., i =21m.58s., e =29m.5s., L =29m.30s.
Riverside ePZ =16m.26s.
Mount Wilson ePZ =16m.28s.
Pasadena eP =16m.30s., eLZ =45·3m.
Tinemaha eP =16m.42s.
Melbourne i =21m.30s., i =30m.43s., L =33m.18s.
Uccle e =23m., eL =55m.
Ksara iPKP =23m.30s., PKP_2 =23m.58s., PP =27m.28s., ePPS =40m.54s., eSS =47m.8s., L =80m., M =108m.30s.
Stuttgart eP =23m.30s., eL =83m.
Paris i =23m.31s., L =75m.
Bombay eEN =27m.
Honolulu e =40m.
Pulkovo e =40m.41s., e =44m.47s., e =49m.41s., e =54m.55s., L =86m., M =100m.48s.
Ukiah e =45m.12s.
De Bilt e =51m., eL =79m.
Long waves at Wellington, La Plata, Sitka, Tucson, and some European stations.

March 14d. 13h. Readings for which no determination has been made :—
Riverview eP?E =45m.18s., eSE =49m.22s., eSN =49m.24s., eL =51m.24s., M =53m.17s.
Adelaide i =45m.23s., e =54m.30s., M =58m.6s.
Sydney e =45m.42s., L =49m.25s., M =51m.45s.
Amboina eP =47m.38s., eL =65m.
Wellington i =49m., L =54m.
Melbourne e =51m.5s., L =54m.12s., M =55m.24s.
Manila P? =51m.30s., S =58m.10s., L =65m., M =69m.5s.
Pasadena iP =52m.37s., iZ =52m.42s.
Mount Wilson iPZ =52m.38s.
Riverside ePZ =52m.39s.
Tinemaha iPZ =52m.43s., iZ =52m.47s., eZ =52m.59s.
La Jolla iP =52m.44s.
Haiwee eP =52m.45s.
Long waves at some European stations.

March 14d. 14h. 15m. 53s. Epicentre 35°·5N. 139°·1E. (as on 1933 Oct. 9d.). R.3.

A = −·615, B = +·533, C = +·581.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	0·6	71	0 18	+ 9	0 36	+21	0·6
Nagoya	1·8	259	0 28	P*	i 0 53	S*	0·9
Kobe	3·3	257	e 0 45	− 2	e 1 25	0	—
Toyooka	3·4	272	0 48	− 1	e 1 26	− 1	1·6
Sumoto	3·6	252	e 0 47	− 4	1 32	0	1·5
Mizusawa	3·9	24	e 0 58	+ 2	i 1 44	+ 4	—

Additional readings :—
Toyooka eSN = +1m.30s.
Sumoto ePN = +1m.0s. =P* +2s.

March 14d. 15h. Readings for which no determination has been made :—

Melbourne e =41m.27s., i =45m.52s., L =51m.24s., M =55m.6s.
Amboina P =42m.23s., eL =67m.
Adelaide i =43m.3s., i =50m.17s., MN =57m.42s.
Riverview eN =43m.18s., eL =46m.24s., M =51m.17s.
Manila P =44m.9s., S =54m.27s., L =69m.0s.
Sydney eP =44m.40s., L =48m.15s., M =50m.25s.
Santa Barbara eZ =44m.47s.
La Jolla eP =44m.50s.
Pasadena eP =44m.50s., eL =71m.
Riverside iPZ =44m.51s.
Mount Wilson iPZ =44m.52s.
Haiwee ePN =44m.54s.
Tinemaha iP =45m.0s., iZ =45m.31s.
Vladivostok eP =45m.4s.
Hong Kong P? =45m.12s., S? =55m.41s., M =75m.30s.
Chiufeng iPZ =45m.42s.a, eSEN =56m.12s., eLN =73m.30s., M =80m.24s.
Bombay eE =52m., eN =58m.
Paris e =52m.27s., L =111m., M =126m.
Copenhagen i =52m.28s., L =108m.
Theodosia e =52m.29s.
Yalta e =52m.31s.
Simferopol e =52m.32s.
Ksara iPKP =52m.32s., PP =56m.14s., PSKS =66m.36s., SS =75m.54s., M =118m.30s.
Stuttgart eZ =52m.33s., e =56m., eZ? =111m.3s., eL =114m.
Hamburg eZ =52m.35s., eLE =120m., eZ =126m.48s.
Vienna ePZ =52m.36s.
Sebastopol e =52m.39s.
De Bilt eZ =52m.39s., eZ =56m.11s., eL =116m., MN =121m.29s.
Uccle e(P) =52m.42s., e(L) =110m.
Sverdlovsk e =55m.7s., L =85m., M =104m.54s.
Scoresby Sund 55m.20s., 64m.18s., L =96m.
Baku e =55m.31s., e =63m.11s., e =67m.52s., e =75m.28s., e =78m.40s., e =88m.10s., L =98m., M =140m.
Tucson e =55m.33s., L =73m.0s.
Nanking e =55m.42s., M =78m.7s.
Pulkovo ePKP =55m.46s., SKS =62m.51s., PS =67m.39s., SS =74m.25s., L =107m., M =111m.24s.
Huancayo e =56m.36s., e =64m.4s., L =77m.0s.
San Juan e =58m.10s., e =62m.5s., e =77m.32s., eL =95m.24s.
Ottawa eE =62m.0s., eE =68m.18s., eL =84m.
Long waves at Wellington, La Paz, Bidston, Kew, Stonyhurst, and other European and American stations.

March 14d. 17h. 2m. 18s. Epicentre 36°·8N. 3°·8W. N.3.

A = +·799, B = −·053, C = +·599 ; D = −·066, E = −·998 ;
G = +·598, H = −·040, K = −·801.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Granada	0·4	22	i 0 11	+ 5	i 0 22	+12	—	—
Malaga	0·5	260	i 0 9	+ 2	i 0 18	+ 5	—	—
Almeria	1·1	84	i 0 14	− 2	i 0 24	− 4	—	—
San Fernando	2·0	260	i 0 26	− 3	i 0 49	− 2	—	—
Alicante	3·0	59	1 1	?	1 59	?	—	—
Toledo	3·1	357	0 44	0	1 19	− 1	—	—
Tortosa	5·2	39	0 59	−15	1 54	−19	—	—
Algiers	5·4	92	i 1 20	+ 3	i 2 21	+ 3	—	—
Serra do Pilar	5·7	320	i 1 20	− 1	i 2 18	− 7	3·1	—
Barcelona	6·6	44	1 32	− 2	2 39	− 9	—	4·3
Neuchatel	12·9	35	e 3 1	0	—	—	—	—
Paris	12·9	16	e 5 17	S	(e 5 17)	− 8	6·7	8·7
Piacenza	13·1	46	e 4 6	?	9 2	?	—	20·7
Basle	13·6	34	e 3 23	+13	—	—	—	—
Zurich	14·0	34	e 3 15	0	—	—	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg	14·5	32	—	—	e 5 57	− 6	—	—
Ravensburg	14·8	38	—	—	e 6 42?	?	e 8·0	—
Kew	14·9	9	e 3 25	− 2	e 6 14	+ 1	7·7	—
Karlsruhe	15·1	32	—	—	e 6 42?	+25	i 8·5	—
Stuttgart	15·2	34	e 3 42	+11	—	—	e 8·2	—
Uccle	15·2	16	e 3 32	+ 1	—	—	e 7·7	—
Göttingen	17·7	29	4 42?	?	—	—	—	—
Vienna	18·7	46	e 3 57	−18	—	—	—	—

Additional readings :—
Almeria ? = +30s. = S_g +0s.
Alicante iP_g = +1m.11s., SSsS = +1m.18s., PPS = +1m.41s.
Toledo P_g = +48s. = P* −2s., iPP = +50s., PPsP = +54s. = P_g −2s., PPS = +1m.11s., SSsS = +1m.30s.
Strasbourg e = +5m.43s., eSS = +7m.30s., i = +8m.20s.
Kew eNE = +6m.1s., eN = +6m.38s.
Long waves also at Edinburgh and other European stations.

March 14d. 23h. 39m. 47s. Epicentre 25°·5N. 122°·0E. (as on 1934 Jan. 22d.). X.

A = −·478, B = +·765, C = +·431.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Taihoku	0·6	223	e 0 7	− 2	0 15	0
Karenko	1·6	194	e 0 20	− 3	0 35	− 6
Taityu	1·8	222	e 0 26	0	—	—
Arisan	2·2	209	e 0 34	P*	0 54	− 3
Taito	2·9	196	e 0 41	0	1 27	S*
Nanking	7·1	337	—	—	e 3 50	S_g

Nanking gives also iN = +4m.17s.

March 14d. Readings also at 2h. (Simferopol and Theodosia), 3h. (Tananarive), 4h. (Wellington), 9h. (Chiufeng, Hong Kong, Nanking, Phu-Lien, Bombay, Calcutta, Tashkent, Sverdlovsk, and Medan), 11h. (Arapuni, Erevan, and Grozny), 12h. (Nagasaki), 14h. (Nanking and Perth), 15h. (Tiflis), 16h. (Perth, Prague, and Nagoya), 17h. (Amboina), 18h. (Batavia, Malabar, and Soengei Langka), 21h. (Amboina (3)), 22h. (Amboina), 23h. (Berkeley and Amboina (4)).

March 15d. 10h. 33m. 52s. Epicentre 29°·6N. 80°·4E. (as at 5d. 22h.). X.

Indian Weather Review say after-shock of 5d.

A = +·145, B = +·857, C = +·494.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun	2·2	290	0 28	− 3	—	—	—	1·1
Agra	3·3	219	0 50	+ 3	i 1 45	S_g	—	—
Calcutta	10·1	133	e 2 32	+10	4 31	+15	5·1	—
Hyderabad	12·3	189	e 2 43	− 9	—	—	—	8·0
Bombay	12·7	214	e 2 58	0	e 5 18	− 2	—	8·3
Almata	13·9	249	e 3 21	+ 7	—	—	—	—
Tashkent	14·7	325	e 3 28	+ 3	—	—	i 2·0	5·8
Samarkand	14·9	316	e 3 36	PP	e 6 51	?	—	—
Kodaikanal	19·6	189	—	—	e 7 50	− 8	—	—
Sverdlovsk	30·5	339	e 6 7	− 2	e 11 15	+ 3	e 14·1	—
Pulkovo	45·0	327	i 8 25	+12	—	—	27·1R	25·5

Additional readings :—
Bombay S_gEN = +6m.35s.
Tashkent e = +3m.58s. and +4m.50s.
Kodaikanal S? = +10m.12s.
Pulkovo e = +18m.0s., L_g = +22·1m.
Long waves at Baku, Copenhagen, and De Bilt.

March 15d. 11h. Readings for which no determination has been made :—

Sydney e = 9m.45s., L = 24m.24s., M = 28m.35s.
Wellington P = 16m.36s., S = 20m.45s., L = 22m., i = 24m., M = 25m.
Riverview eE = 19m.18s., eL = 24m.24s., M = 27m.17s.
Melbourne e = 22m.14s., e = 23m.39s., L = 24m.10s., M = 24m.48s.
Perth P = 30m.0s.
Sverdlovsk i = 31m.19s., e = 58m.57s., L = 78m.
Tashkent e = 32m.0s., eL = 70m., M = 79m.0s.
Long waves at Adelaide, Christchurch, Agra, Bombay, and other European stations.

March 15d. 12h. Readings for which no determination has been made :—

Hyderabad PEN = 20m.21s., SEN = 24m.24s., LN = 26m.54s., ME = 27m.24s.
Bombay iEN = 20m.30s. and 24m.40s.
Colombo P = 20m.58s., M = 24m.52s.
Agra e = 30m.55s.
Tinemaha iP = 35m.10s., i = 35m.20s.
Pasadena eP = 35m.16s.
Riverside iP = 35m.17s.
La Jolla eZ = 35m.19s.
Long waves at Bidston, Kew, and some European stations.

March 15d. Readings also at 0h. (Nanking, Taihoku, Baku, Ksara, Sverdlovsk, Tashkent, and Amboina), 1h. (Amboina (3)), 2h. (Amboina (2)), 5h. (Triest and Amboina), 6h. (Karenko, Taihoku, and Amboina (3)), 7h. (Triest and Malabar), 10h. (Amboina), 11h. (Amboina), 14h. (Algiers), 16h. (Almata, Semipalatinsk, Tashkent, Tchimkent, Sverdlovsk, and Amboina), 17h. (Wellington and Amboina), 22h. (Amboina), 23h. (Tiflis).

March 16d. 7h. 50m. 16s. Epicentre 4°·0S. 128°·3E. N.3.

A = −·618, B = +·783, C = −·070 ; D = +·785, E = +·620 ;
G = +·043, H = −·055, K = −·997.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	0·4	340	i 0 9	S	(i 0 9)	− 1	—	—
Manila	20·0	338	i 4 31a	+ 1	8 11	+ 5	—	—
Malabar	20·8	262	e 4 41	+ 3	—	—	—	—
Batavia	21·5	263	i 4 47	+ 2	8 37	+ 1	—	—
Hong Kong	29·7	334	6 12	+10	(11 1)	+ 2	11·0	13·2
Medan	30·5	285	6 30	+21	e 11 30	+18	—	—
Adelaide	32·4	164	—	—	e 13 14	SS	—	21·1
Riverview	36·6	147	—	—	e 15 41	?	—	21·1
Melbourne	37·0	157	—	—	e 13 6	+15	—	—
Nanking	37·2	346	—	—	e 12 46	− 8	—	—
Nagoya	40·0	12	e 7 38	+ 6	—	—	—	—
Chiufeng	45·5	347	e 8 17	0	e 14 52	− 5	—	—
Calcutta	47·1	307	e 8 28	− 1	—	—	—	—
Vladivostok	47·3	4	e 8 25	− 6	—	—	—	—
Agra	57·6	308	e 9 46	− 1	i 17 37	− 7	—	—
Bombay	59·2	296	i 9 57	− 2	i 17 57	− 8	e 28·1	—
Almata	66·0	321	e 11 14	(− 3)	—	—	—	—
Tchimkent	69·8	318	e 10 44	−25	—	—	—	—
Tashkent	70·2	317	e 11 22	+10	20 16	− 8	e 31·8	38·7
Samarkand	71·1	315	e 10 18	−59	—	—	—	—
Sverdlovsk	81·4	329	e 12 15	0	e 22 26	− 5	43·7	—

Additional readings and note :—
Batavia i = +7m.44s., E = +8m.9s.
Hong Kong S? = +8m.58s. = P_cP −11s.
Medan e = +14m.58s.
Adelaide i = +17m.11s. = S_cS +14s.
Melbourne i = +20m.41s.
Nanking reading *increased* by 1h.
Sverdlovsk PS = +23m.12s.

March 16d. Readings also at 2h. (Amboina), 6h. (Amboina), 7h. (Amboina (4)), 8h. (Amboina (4) and Wellington), 9h. (Amboina (6) and Calcutta), 10h. (Amboina (8)), 11h. (Amboina and Perth), 15h. (Tifiis and Soengei Langka), 17h. (Santiago (2)), 18h. (Capodimonte and Santiago), 21h. (Wellington), 22h. (Baku and Tifiis), 23h. (Tashkent and Tifiis).

March 17d. 10h. Readings for which no determination has been made :—

Pasadena iP =2m.41s.a.
Mount Wilson cP =2m.43s.
Tinemaha iP =2m.51s., iN =9m.37s.
Florissant ePN =7m.21s., eSE =11m.7s., eLEN =12m.45s., eME =14m.21s.
San Juan e =8m.30s.
Columbia e =10m.12s.
Ann Arbor e?E =12m.48s., eE =14m.12s., eLE =15m.42s.
Charlottesville eL =12m.18s.

March 17d. 20h. Readings for which no determination has been made :—

Nanking e =5m.50s., e =8m.41s., eLE =9m.52s., M =10m.45s.
Zi-ka-wei eZ =6m.54s., M =10m.30s.
Chiufeng e? =7m.10s., M =15m.42s.
Manila PN =9m.26s., SN =13m.3s.
Calcutta e =24m.40s.
Agra e =31m.36s.
Long waves at Hong Kong, Baku, Cheb, Copenhagen, De Bilt, Paris, Pulkovo Sverdlovsk, Strasbourg, Stuttgart, Tashkent, and Tifiis.

March 17d. 21h. 33m. 20s. Epicentre 14°·7N. 91°·3W. (as on 1934 May 19d.). R.2.

A = − ·022, B = − ·967, C = + ·254 ; D = −1·000, E = + ·023 ;
G = − ·006, H = − ·254, K = − ·967.

	△	Az.	P.	O − C.	S.	O − C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Port au Prince	18·6	75	i 4 18	+ 4	i 7 46	SS	e 9·0	—
Columbia	21·4	24	e 4 47	+ 3	8 46	+12	11·7	—
St. Louis	23·9	2	i 5 9	0	e 9 27	+ 6	—	—
Florissant	24·1	2	i 5 12	+ 1	i 9 31	+ 6	e 12·1	—
San Juan	24·4	76	e 5 4	−10	—	—	i 12·4	—
Tucson	25·0	319	5 23	+ 3	9 44	+ 3	13·7	—
Charlottesville	25·9	24	e 5 22	− 6	e 9 56	− 1	—	—
Georgetown	27·2	24	i 5 40	0	10 14	− 4	—	—
Chicago	27·4	6	—	—	e 10 49	+27	—	—
Ann Arbor	28·4	12	i 6 16	+25	e 11 16	+38	e 19·9	—
Philadelphia	28·9	26	i 5 56	+ 1	i 11 19	+32	13·4	—
La Jolla	29·8	312	i 6 3	0	e 11 4	+ 3	—	—
Riverside	30·4	317	i 6 9	0	—	—	—	—
Toronto	30·6	17	i 5 59	−11	i 12 18	?	18·3	—
Huancayo	31·0	149	e 6 29	+15	i 11 4	−16	e 12·5	—
Mount Wilson	31·0	316	i 6 15	+ 1	—	—	—	—
Pasadena	31·1	316	i 6 17a	+ 2	i 11 19	− 2	—	—
Haiwee	32·0	319	i 6 23	0	e 11 32	− 3	—	—
Santa Barbara	32·3	314	e 6 25	0	—	—	—	—
Oak Ridge	32·6	29	i 6 26	− 2	e 13 32	SS	e 16·7	—
Tinemaha	32·8	320	i 6 31a	+ 1	e 11 39	− 9	—	—
Ottawa	33·4	20	i 6 34	− 1	e 11 51	− 6	16·7	—
Bozeman	35·1	336	—	—	e 12 12	−11	—	—
Lick	35·1	318	e 6 52	+ 2	—	—	—	—
Ukiah	37·1	317	—	—	e 12 53	0	18·7	—
La Paz	38·7	143	i 7 12	− 9	13 4	−13	16·3	18·5
La Plata	58·9	148	—	—	17 34	−27	—	—
De Bilt	82·4	38	e 12 14	− 6	—	—	e 38·7	41·0
Copenhagen	85·3	33	12 54	+19	23 32	+21	38·7	—
Stuttgart	85·7	40	e 12 31	− 6	e 23 40	PS	e 41·7	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Cheb	87·3	39	—	—	e 21 40?	?	e 42·7	—
Triest	89·7	42	13 13	+17	e 24 4	+11	e 43·7	—
Pulkovo	92·0	25	e 16 43	PP	e 25 24	PS	42·7	55·1
Simferopol	102·5	36	e 18 28	PP	—	—	—	—
Yalta	102·8	37	e 18 4	PP	—	—	—	—
Theodosia	103·2	36	e 18 21	PP	—	—	—	—
Sverdlovsk	104·7	15	e 18 11	PP	e 24 34	[−14]	44·7	56·7
Ksara	110·1	46	—	—	28 37	PS	—	—
Tiflis	110·6	34	—	—	e 29 3	PS	e 56·7	—
Baku	114·2	31	e 19 31	PP	e 29 20	PS	53·7	68·3
Tashkent	120·8	17	i 20 12	PP	e 29 14	?	e 56·7	72·5
Samarkand	122·0	20	e 19 4	[+14]	—	—	—	—

Additional readings and note :—
Port au Prince PP = +4m.30s., PPP = +4m.36s., SS = +8m.17s.
St. Louis ipPN = +5m.30s., esSN = +10m.9s. ; T_0 = 21h.33m.15s.
Florissant ipPNZ = +5m.32s., isSEN = +10m.10s. ; T_0 = 21h.33m.15s.
San Juan ePP = +5m.39s., e = +7m.59s.
Georgetown ipP = +6m.9s., isS = +11m.17s. ; T_0 = 21h.33m.21s.
Chicago e = +8m.46s.
Ann Arbor ePP = +6m.58s., iSS = +12m.52s., i = +15m.40s. ; T_0 = 21h.33m.36s.
Philadelphia i = +6m.9s. and +7m.22s., e = +10m.12s.
La Jolla iP_cP = +9m.3s., eS_cP = +12m.40s., eSS = +16m.36s. = S_cS −7s.
Riverside iP_cP = +9m.5s., eS_cP = +12m.40s. = SS +1s.
Toronto iSSN = +14m.57s. ; T_0 = 21h.31m.38s.
Huancayo iSS = +11m.47s.
Pasadena ipP = +6m.37s., isP = +6m.54s., iPP = +7m.11s., iP_cP = +9m.8s.k, iZ = +9m.51s., iSN = +11m.24s., iS_cP = +12m.43s. = SS −13s., iSSN = +16m.41s. = S_cS −9s.
Haiwee iP_cP = +9m.9s., eSSN = +16m.47s. = S_cS −8s.
Santa Barbara iP_cP = +9m.10s.
Oak Ridge pP = +6m.48s., iZ = +6m.54s. and +6m.58s. ; T_0 = 21h.31m.4s.
Tinemaha ipP = +6m.53s., isP = +7m.12s., eE = +8m.19s., iP_cP = +9m.11s.k, eSN = +11m.48s., iS_cP = +12m.49s., iSS = +16m.50s. = S_cS −10s., e = +17s.33s.
Ottawa i = +6m.58s., PP = +7m.50s., eE = +14m.10s.; T_0 = 21h.33m.24s.
Bozeman e = +17m.4s. = S_cS −9s.
Lick eN = +6m.54s., eE = +6m.59s. and +7m.11s., eN = +7m.15s., eE = +7m.26s.
La Plata P is given as L for one shock, and S as P for another shock.
Copenhagen +15m.50s. = PP + 2s.
Stuttgart eP_cP = +12m.58s.
Triest PS = +24m.59s.
Sverdlovsk e = +27m.39s. = PS +4s.
Ksara PP = +19m.1s., PPS = +29m.45s.
Tiflis e = +29m.55s.
Baku e = +36m.20s.
Tashkent e = +20m.38s. = PP + 23s., +31m.10s., and +32m.10s.
Long waves at Agra and other European stations.

March 17d. Readings also at 0h. (Samarkand), 1h. (Tiflis), 3h. (Almata, Frunse, Samarkand, and Tchimkent), 8h. (Mount Wilson, Pasadena, Tinemaha, and Santiago), 12h. (Phu-Lien), 13h. (Agra), 18h. (Karenko), 20h. (Lick), 21h. (Nagoya and La Plata), 23h. (Grozny).

March 18d. 8h. 40m. 45s. Epicentre 35°·5N. 27°·0E. N.1.

A = +·725, B = +·370, C = +·581 ; D = +·454, E = −·891 ;
G = +·518, H = +·264, K = −·814

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

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan	0·0	6·7	146	i 1 37	+ 2	i 2 45	− 6	—	2·9
Ksara	−0·1	7·5	102	i 1 45	0	i 3 3	− 6	—	—
Sofia	−0·1	7·7	339	i 1 50	+ 2	i 3 14	0	—	—
Bucharest	−0·1	8·9	358	i 2 5	0	4 7	?	—	4·3
Messina	−0·1	9·5	290	i 2 10	− 3	i 3 49	−10	—	3·9
Sebastopol	−0·2	10·4	26	2 24	0	4 9	− 9	—	—
Yalta	−0·2	10·5	29	2 26	+ 1	i 4 18	− 3	—	—
Belgrade	−0·2	10·6	334	i 2 21	− 5	e 4 41	+18	—	7·2
Simferopol	−0·2	10·9	28	2 28	− 3	4 41	+10	—	—
Capodimonte	−0·2	11·4	302	e 2 2	?	e 4 2	?	—	—
Theodosia	−0·2	11·4	31	2 29	− 8	4 24	−21	6·2	—
Sotchi	−0·2	12·6	46	e 2 57	+ 3	—	—	—	—
Zagreb	−0·3	13·2	324	e 2 58	− 3	e 5 54	+29	e 6·7	9·8
Budapest	−0·3	13·3	336	e 3 1	− 1	e 5 39	+12	7·2	9·7
Tunis	−0·3	13·7	281	e 3 55	−12	i 6 19	?	—	—
Triest	−0·3	14·3	320	3 12a	− 3	i 5 54	+ 3	—	—
Graz	−0·3	14·4	327	i 3 20	+ 3	e 6 34,	?	e 7·2	13·8
Erevan	−0·3	14·5	67	e 3 21	+ 3	—	—	—	—
Florence	−0·3	14·6	309	i 3 20a	+ 1	i 6 6	SS	—	7·5
Prato	−0·3	14·8	321	i 3 21	− 1	i 6 7	+ 4	—	—
Venice	−0·3	14·9	316	i 3 28	+ 5	6 37	?	—	—
Vienna	−0·4	15·0	332	i 3 25	+ 2	i 6 23	+18	—	—
Tiflis	−0·4	15·1	59	i 3 31	+ 6	6 25	+17	8·5	11·0
Padova	−0·4	15·2	315	i 3 29	+ 3	6 5	− 5	—	—
Piacenza	−0·4	16·2	319	3 39a	0	6 47	SS	—	10·2
Grozny	−0·4	16·3	56	e 3 27	−13	—	—	—	—
Prague	−0·4	17·2	334	i 3 54	+ 2	e 7 25	SS	—	11·2
Ravensburg	−0·5	17·8	319	i 4 0	+ 2	e 7 31	SS	—	—
Cheb	−0·5	18·0	329	e 4 1	+ 1	e 7 18	+ 5	—	10·7
Zurich	−0·5	18·1	317	e 4 3a	+ 1	e 7 21	+ 6	—	—
Baku	−0·5	18·6	68	4 17	PP	7 45	SS	9·9	13·3
Stuttgart	−0·5	18·6	320	i 4 9	+ 1	i 7 45	SS	e 10·2	—
Basle	−0·5	18·8	317	e 4 10	0	e 7 47	SS	—	—
Neuchatel	−0·5	18·9	313	e 4 11	0	e 7 36	+ 3	—	—
Jena	−0·5	19·0	330	i 4 13	0	e 8 7	?	—	12·2
Leipzig	−0·5	19·0	333	i 4 10	− 3	e 7 21	−15	—	8·2
Karlsruhe	−0·5	19·2	321	4 15?	0	7 52	+12	10·7	—
Strasbourg	−0·5	19·3	320	i 4 15a	− 1	i 7 53	+11	e 11·2	—
Algiers	−0·5	19·4	281	i 4 14	− 3	7 50	+ 6	—	—
Königsberg	−0·5	19·8	348	e 4 21k	− 1	i 7 54	+ 2	9·5	10·2
Göttingen	−0·5	20·1	328	i 4 24a	− 1	8 4	+ 6	—	—
Barcelona	−0·5	20·3	294	4 25	− 2	8 11	+ 9	—	—
Tortosa	−0·6	21·4	292	5 7	?	6 15	?	6·5	—
Hamburg	−0·6	21·7	332	i 4 42a	+ 1	—	—	—	9·4
Alicante	−0·6	22·1	286	e 4 59	+14	i 8 43	+ 7	—	—
Paris	−0·7	22·4	314	i 4 46	− 2	i 8 45	+ 5	13·2	—
Uccle	−0·7	22·4	320	i 4 49a	+ 1	i 8 46	+ 6	11·2	—
Copenhagen	−0·7	22·5	340	i 4 47	− 2	8 46	+ 4	—	—
De Bilt	−0·7	22·7	326	i 4 52	+ 1	i 8 54	+ 8	e 11·3	—
Almeria	−0·7	23·8	283	e 5 9	+ 7	i 9 11	+ 4	—	—
Pulkovo	−0·7	24·3	4	i 5 6	0	i 9 14	− 2	10·7	11·9
Granada	−0·7	24·6	285	e 5 23	+14	i 9 29	+ 8	11·2	—
Toledo	−0·7	24·8	290	5 15	+ 4	i 9 28	+ 3	e 11·9	—
Upsala	−0·8	25·1	348	i 5 10	− 3	i 9 32	+ 4	—	16·0
Kew	−0·8	25·2	319	e 5 15	+ 1	i 9 44	+14	—	—

Continued on next page.

	Corr for Focus	Δ	Az.	P	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Malaga	−0·8	25·3	285	5 21	+ 6	9 36	+ 4	—	—
Oxford	−0·8	25·9	319	i 5 20	− 1	9 40	− 3	—	—
San Fernando	−0·8	26·8	283	e 6 20	− 9	e 9 40	−18	10·8	—
Durham	−0·9	27·5	324	—	—	10 55	SS	—	—
Stonyhurst	−0·9	27·5	321	—	—	i 10 10	+ 1	—	—
Bidston	−0·9	27·6	320	—	—	i 9 39	−31	—	—
Edinburgh	−0·9	28·9	324	—	—	e 11 15?	+43	—	—
Sverdlovsk	−1·0	31·0	35	i 6 9	+ 4	11 5	+ 1	—	—
Samarkand	−1·0	31·7	70	e 5 54	−17	—	—	—	—
Tashkent	−1·1	33·3	66	e 6 57	+33	e 11 41	+ 3	19·2	22·4
Tchimkent	−1·2	33·4	64	e 6 52	+28	—	—	—	—
Frunse	−1·2	37·1	63	e 7 23	+26	—	—	—	—
Bombay	−1·3	43·5	99	e 8 15?	+25	e 14 55	+46	—	18·3
Cape Town	−2·0	70·0	186	—	—	30 41	?	36·6	40·6
Mount Wilson	—	103·0	330	e 18 4	PP	—	—	—	—
Pasadena	—	103·1	330	e 18 0	PP	—	—	—	—
La Jolla	—	103·9	331	i 18 13	PP	—	—	—	—

Additional readings and note :—
Sofia iNW = +2m.41s.
Bucharest PPN = +2m.50s. ; all readings given for 9h.
Belgrade iP = +2m.26s., e = +2m.51s., +3m.21s., and +5m.36s.
Zagreb i = +3m.6s., eE = +3m.27s., e = +3m.46s., +4m.6s., and +4m.33s.
Triest iP = +3m.15s., iPP = +3m.24s., i = +3m.58s. and +4m.1s., iN = +5m.41s., i = +5m.59s., +6m.49s., +6m.56s., and +6m.58s., SsS = +7m.43s., i = +7m.46s., +9m.15s., and +9m.25s.
Venice iP = +3m.31s.?, iS? = +5m.55s.?, +9m.40s.
Vienna i = +5m.5s., P_gP = +8m.14s.
Tiflis i = +3m.46s. and +4m.3s., SS = +6m.44s.
Grozny i = +15m.37s.
Ravensburg e = +7m.46s.
Stuttgart iPP = +4m.36s., eS = +7m.31s., e = +8m.3s.
Basle e = +9m.12s.
Jena ePZ = +4m.10s., eN = +4m.27s., eZ = +4m.33s., eE = +4m.41s., eSZ = +8m.9s.
Leipzig i = +4m.40s.
Strasbourg iPP = +4m.35s., iPPPP = +4m.54s., i = +5m.10s., SSS = +8m.54s.
Algiers PP = +4m.52s., i? = +8m.3s.
Königsberg iN = +4m.25s., PPN = +4m.38s., iZ = +4m.40s., iN = +4m.46s., iZ = +4m.51s., iPPPN = +4m.58s., iSN = +7m.56s., iZ = +7m.59s., eSSN = +8m.32s.
Göttingen iE = +5m.2s., ENZ = +8m.33s.
Uccle i = +5m.30s.
Copenhagen +9m.28s.
De Bilt eZ = +9m.37s.
Granada iPP = +5m.42s.
Toledo PP = +5m.42s.
Upsala iSS = +11m.7s.
Kew iNZ = +9m.52s., iNE = +10m.16s. =SS+1s., and +10m.42s., iS_eSN = +16m.7s.
Malaga PP = +5m.48s., PPP = +6m.3s., SS = +10m.33s. and +12m.53s., e = +16m.13s.
Oxford i = +10m.26s. =SS−6s.
Stonyhurst i = +8m.46s. and +10m.58s. =SS−10s.
Bidston i = +10m.20s., +10m.55s., and +18m.5s.
Tashkent e = +9m.47s., +13m.53s., and +16m.27s.
Cape Town E = +32m.9s., +33m.19s., and +36m.19s.

March 18d. 12h. 31m. 43s. Epicentre 37°·5N. 136°·0E. (as on 1934 Aug. 18d.). X.

A = −·571, B = +·551, C = +·609.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Toyooka	2·2	205	0 40	P_g	1 14	S_g	1·2
Nagoya	2·5	161	i 0 34	− 2	i 1 4	0	1·1
Kobe	2·9	194	i 0 41	0	i 1 17	+ 3	—
Sumoto	3·3	196	i 0 45	− 2	i 1 22	− 3	1·4
Mizusawa	4·3	67	e 1 24	P_g	i 2 1	S*	—

March 18d. Readings also at 2h. (Samarkand), 4h. (Lick), 7h. (Taihoku), 8h. (Serra do Pilar, Sebastopol, Simferopol, Theodosia, and Yalta), 9h. (Bombay, Calcutta, Samarkand, Tashkent), 10h. (Samarkand (2) and Sverdlovsk), 20h. (Oak Ridge and San Juan).

March 19d. 7h. 27m. 21s. Epicentre 44·7N. 6°·5E. N.2.

Given by Strasbourg.

A = +·706, B = +·081, C = +·703; D = +·113, E = −·994; G = +·699, H = +·080, K = −·711.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Grenoble	1·0	305	i 0 15	+ 1	—	—	—	—
Marseilles	1·6	211	i 0 22	− 1	i 0 44	+ 3	—	—
Piacenza	2·3	81	0 35a	+ 2	—	—	1·0	2·4
Neuchatel	2·4	8	e 0 31	− 3	e 1 0	− 2	—	—
Besançon	2·6	350	e 0 43	P*	e 1 10	+ 3	e 1·4	—
Basle	3·0	15	e 0 40	− 3	e 1 17	0	—	—
Zurich	3·0	31	e 0 41	− 2	e 1 27	S*	—	—
Prato	3·4	102	e 0 42	− 7	i 1 28	+ 1	—	i 1·9
Florence	3·5	103	i 0 42	− 8	1 43	S*	—	i 1·9
Padova	3·8	80	e 1 26	+32	e 2 13	+36	—	—
Ravensburg	3·8	40	e 0 57	+ 3	i 1 53	S_g	i 2·0	—
Strasbourg	4·0	13	e 0 57	0	e 2 3	S_g	—	2·6
Venice	4·2	81	e 1 12	S*	e 1 32	−16	3·3	—
Stuttgart	4·5	27	e 1 3	− 1	e 2 8	S*	i 2·4	—
Barcelona	4·6	226	e 1 9	+ 3	e 2 19	S*	e 2·4	2·5
Paris	5·0	321	e 1 16	+ 5	2 4	− 4	2·4	2·6
Triest	5·2	81	e 1 7	− 7	i 2 8	− 5	—	—
Uccle	6·3	340	e 1 30	0	e 2 28	−13	i 3·3	—
Graz	6·6	72	e 1 30	− 4	e 2 50	+ 2	i 3·5	5·1
Zagreb	6·7	82	e 1 37	+ 2	e 2 23	−28	—	—
Cheb	6·7	42	e 1 5	−30	e 2 29	−22	i 3·5	3·8
Capodimonte	6·8	125	e 3 25	S*	e 5 24	?	—	—
Jena	7·1	32	e 2 3	P*	—	—	e 3·3	4·2
Göttingen	7·2	22	e 1 57	P*	e 3 9	+ 5	—	—
Prague	7·5	41	e 2 57	+11	e 4 1	S_g	—	4·6
Vienna	7·7	66	e 2 8	P*	e 3 33	+17	—	—
Leipzig	7·7	36	—	—	e 3 45	S*	—	4·7
Alicante	8·2	228	—	—	e 4 28	S_g	e 6·8	—
Kew	8·2	331	—	—	e 2 42	P_g	—	5·3
Algiers	8·3	200	e 2 40	P_g	e 4 27	S_g	—	—
Budapest	9·1	75	—	—	e 4 39?	S*	6·1	7·1
Hamburg	9·2	10	—	—	e 4 15	+21	—	5·6
Toledo	9·2	244	e 2 17	+ 7	e 4 38	S*	—	—
Almeria	10·4	228	—	—	e 5 49	S_g	e 8·5	—
Granada	10·7	232	e 2 16	−15	—	—	—	—
Bidston	10·7	328	—	—	e 4 21	−10	e 5·5	7·1
Stonyhurst	10·9	333	—	—	e 5 21	S*	e 6·1	7·1
Durham	11·3	336	—	—	6 14	S_g	—	—
Malaga	11·5	230	—	—	4 50	0	—	—
Sofia	12·3	94	—	—	e 6 20	S*	—	9·3
San Fernando	12·7	235	e 6 9	S*	7 26	?	—	—
Edinburgh	12·8	335	—	—	i 7 23	?	—	—
Sebastopol	19·1	80	e 4 19	− 1	—	—	—	—
Simferopol	19·5	78	e 4 27	+ 3	—	—	—	—
Yalta	19·6	81	e 4 23	− 2	—	—	—	—
Theodosia	20·3	77	e 4 32	− 1	—	—	—	—
Pulkovo	20·8	35	4 41	+ 3	8 30	+ 8	10·6	12·1
Tashkent	44·9	71	—	—	e 18 9	(− 2)	—	29·2

For Notes see next page.

NOTES TO MARCH 19d. 7h. 27m. 21s.

Additional readings and note :—
Grenoble i = +18s.
Piacenza P_g = +46s.
Basle eS_g = +1m.29s. =S* +1s., e = +1m.36s. =S_g +3s.
Zurich eP_g = +48s. =P* +0s.
Strasbourg eP_g = +1m.8s. =P* +3s., iPsP = +1m.12s., iPPP = +1m.21s., iSS = +2m.11s., iSSS = +2m.28s.
Venice readings given as at 8h.
Stuttgart eP* = +1m.17s., iP_g = +1m.28s., eS* = +2m.17s.
Triest i = +2m.16s., iSsS = +3m.8s., i = +3m.13s., +3m.21s., +3m.53s., +4m.9s., and +4m.20s.
Uccle e = +2m.10s.
Zagreb eE = +3m.4s., e = +4m.7s. and +5m.22s.
Cheb e = +3m.5s.
Göttingen eE = +2m.21s. =P_g +3s., eEZ = +3m.27s., E = +3m.46s.
Vienna eNZ = +4m.25s.
Leipzig e = +4m.8s. =S_g +0s., i = +4m.18s.
Kew eNE = +4m.26s. =S_g +1s.
Bidston e = +3m.5s., i = +4m.45s.
Malaga e = +5m.43s. =S* +3s.
Sofia e = +7m.13s. and +7m.27s.
Long waves were also recorded at Copenhagen, De Bilt, and Sverdlovsk.

March 19d. 13h. Readings for which no determination has been made, but Batavia gives the epicentre as 7°·0S. 118°·8E. :—
Malabar P =45m.35s., iS =47m.19s.
Batavia iP =45m.43s., S =47m.49s.
Medan iP =47m.48s., e =53m.39s.
Manila iPZ =47m.53s.a, SEN =51m.46s.
Perth P =50m.0s., i =51m.5s.
Sverdlovsk iP =54m.38s.
Tiflis e =55m.7s.

March 19d. Readings also at 0h. (Berkeley), 4h. (La Paz), 5h. (La Paz), 7h. (Granada), 12h. (Batavia and Malabar), 13h. (Hukuoka, Hukuoka B (4), and Nagasaki (2)), 14h. (Oak Ridge), 15h. (Wellington), 17h. (Phu-Lien), 22h. (Tinemaha).

March 20d. 22h. 57m. 28s. Epicentre 7°·8S. 156°·3E. N.2.

A = −·907, B = +·398, C = −·136 ; D = +·402, E = +·916 ;
G = +·124, H = −·055, K = −·991.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	26·4	189	e 5 35	+ 2	i 10 22	+17	e 12·9	16·1
Sydney	26·5	189	e 5 34	0	i 10 32	+25	13·6	14·9
Adelaide	31·6	208	i 6 21	+ 2	i 11 42	+13	e 14·2	18·8
Melbourne	31·7	178	e 6 25	+ 5	11 34	+ 3	14·9	17·3
Arapuni	34·9	152	—	—	12 32	+12	—	—
Wellington	37·3	157	7 9	0	12 57	+ 1	18·5	20·5
Christchurch	38·5	159	7 32?	+13	—	—	—	—
Manila	41·6	303	i 7 45k	0	i 14 8	+ 8	—	—
Miyazaki	46·3	330	8 22	− 1	14 48	−21	—	—
Sumoto	46·8	335	—	—	e 20 54	?	—	23·4
Kobe	46·9	335	—	—	e 21 0	?	e 21·6	25·7
Nagano	47·6	340	8 40	+ 7	—	—	—	—
Nagasaki	47·7	330	e 8 32	− 2	e 15 27	− 2	e 19·3	—
Batavia	49·1	269	8 42	− 2	15 59	+11	e 25·9	—
Husan	50·0	331	—	—	16 5	+ 4	e 23·7	—
Taikyu	50·9	330	—	—	e 17 7	+54	24·1	—
Hong Kong	51·1	306	8 59	− 1	16 14	− 2	25·7	26·6
Zi-ka-wei	51·3	321	9 2	+ 1	—	—	24·9	34·2
Zinsen	53·1	330	e 9 21	+ 6	16 42	− 1	—	—
Nanking	53·6	319	9 26	+ 8	i 16 55	+ 5	—	27·3

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok	55·6	339	i 9 32	− 1	i 17 20	+ 3	20·4	34·6
Phu-Lien	56·5	302	e 9 40	+ 1	17 32?	+ 2	23·5	—
Medan	58·6	279	10 36	+41	18 13	+16	32·8	—
Chiufeng	60·6	325	i 10 15k	+ 6	i 16 59	?	e 24·3	36·6
Calcutta	73·0	297	11 17	−12	20 51	− 6	35·2	40·8
Colombo	77·6	279	11 51	− 4	21 49	0	—	42·7
Agra	83·3	298	e 12 21	− 4	22 43	[− 3]	—	—
Sitka	85·1	30	—	—	i 23 8	− 1	e 35·5	—
Bombay	86·4	289	12 40	0	23 20	− 1	e 41·5	49·9
Almata	87·7	314	e 13 32	+46	—	—	—	—
Frunse	89·3	313	e 12 54	0	—	—	—	—
Santa Barbara	89·5	55	e 12 52	− 3	—	—	—	—
Victoria	89·5	41	23 58	S	(23 58)	+ 7	41·6	60·8
Pasadena	90·7	55	i 12 59k	− 2	—	—	e 43·3	—
Mount Wilson	90·8	55	i 13 1	0	—	—	—	—
Tinemaha	91·0	53	i 13 2	0	—	—	—	—
Haiwee	91·2	54	i 13 4	+ 1	—	—	—	—
La Jolla	91·3	56	i 13 3	0	—	—	—	—
Tchimkent	92·9	312	e 13 9	− 2	—	—	—	—
Tashkent	93·0	311	i 13 9	− 2	i 24 13	−11	e 42·5	53·5
Samarkand	94·4	309	e 12 58	−20	—	—	—	—
Sverdlovsk	99·6	326	i 13 39	− 3	i 25 10	−13	48·2R	53·9
Baku	107·5	310	—	—	26 40	?	48·5	56·9
Tiflis	111·3	312	e 19 20	PP	e 25 15	[− 4]	55·5	70·2
Pulkovo	114·3	333	—	—	25 17	[−14]	55·5	65·7
Upsala	119·4	338	—	—	e 40 32?	SSS	e 58·5	—
Ksara	119·5	305	20 11	PP	—	—	59·0	66·5
Ottawa	121·7	40	—	—	e 27 32?	{+ 4}	e 54·5	—
Copenhagen	124·3	336	20 38	PP	37 38	SS	56·5	—
Huancayo	124·9	111	—	—	e 30 52	PS	e 59·0	—
Hamburg	126·8	336	e 19 3	[+ 2]	—	—	e 62·5	65·5
Prague	127·2	330	—	—	e 42 32?	SSS	e 56·5	64·5
La Paz	129·7	119	i 19 11a	[− 5]	26 30	[+12]	60·5	66·8
De Bilt	129·8	337	e 22 32?	PKS	e 38 32?	SS	e 57·5	66·4
Triest	130·3	327	e 19 5	[− 2]	—	—	—	63·5
Stuttgart	130·6	331	e 19 2	[− 6]	—	—	e 60·5	64·5
Sucre	131·0	123	19 15	[+ 6]	—	—	—	—
Uccle	131·2	338	e 22 38	PKS	e 37 50	?	57·5	—
Bidston	131·4	344	—	—	e 45 32?	?	e 57·5	104·5
Kew	132·3	340	—	—	e 45 32?	?	e 57·5	105·8
Prato	132·9	327	e 19 13	[+ 1]	21 56	PP	—	22·5
Piacenza	132·9	333	e 22 32	PKS	—	—	66·5	75·6
Florence	132·9	326	19 4	[− 8]	22 35	PKS	59·5	64·5
Paris	133·4	337	e 21 32?	PP	—	—	65·5	69·5
San Juan	137·4	71	i 22 53	PKS	—	—	65·5	—
Almeria	145·1	330	e 19 33	[− 1]	—	—	71·4	—
Granada	145·5	332	i 19 36	[+ 2]	—	—	84·2R	88·0
Malaga	146·2	332	19 38	[+ 2]	—	—	72·5	—
San Fernando	147·2	334	19 42a	[+ 4]	26 45	SKS	74·5	—

Additional readings :—
Riverview PPN = +6m.13s.
Adelaide iPP? = +7m.20s., i = +9m.3s. = P_cP −12s. and +12m.50s., iSS? = +13m.53s.
Melbourne SS = +13m.56s.
Wellington PP = +8m.45s., SS = +15m.33s.
Sumoto eN = +14m.38s., eE = +14m.50s., eSE = +21m.0s., eSN = +21m.32s.
Batavia i = +10m.10s. = P_cP −3s.
Hong Kong ? = +9m.4s., PP = +10m.35s., SS = +19m.52s., SSS? = +21m.52s.
Zi-ka-wei iZ = +20m.38s. and +22m.58s.
Chiufeng PP = +11m.48s., iZ = +18m.19s.
Agra PS = +23m.43s., SS = +28m.27s.
Sitka e = +22m.52s. = SKS −8s.
Victoria SE = +30m.0s.
Tashkent ePP = +16m.12s., SKS = +23m.42s.

Continued on next page.

Sverdlovsk iPP = +17m.43s., SKS = +24m.16s., PS = +26m.43s., iSS = +32m.20s., SSS = +36m.14s., L_g = +43·1m.
Baku ePP = +19m.34s., SS = +35m.14s.
Tiflis e = +28m.45s. = PS +4s.
Pulkovo ePP = +19m.31s., PS = +29m.7s., SS = +35m.25s., SSS = +40m.8s.
Ksara PKP = +21m.37s., PPS = +31m.29s., SS = +36m.58s.
Ottawa e = +36m.32s.?
Huancayo eSS = +38m.2s., e = +45m.32s., and +52m.30s.
Hamburg eE = +40m.32s.?
La Paz iPKPN = +19m.17s., iPPN = +22m.32s. = PKS +0s., SS = +38m.57s.
Triest i = +22m.29s. = PKS − 6s.
Stuttgart ePP = +21m.22s.
San Juan e = +20m.8s. and +57m.42s.
Granada PP = +22m.59s., SKPKP = +23m.29s., L_q = +73·7m.
Malaga e = +21m.48s., +25m.40s., and +29m.0s.
San Fernando PKP_2 = +20m.10s., PP = +23m.30s., PPP = +27m.16s., PPS = +36m.56s., SS = +43m.6s., SSS = +48m.52s.
Long waves were also recorded at Stonyhurst, Edinburgh, Tananarive, Toyooka, and other European and American stations.

March 20d. Readings also at 0h. (Baku, Ksara, Sverdlovsk, Hukuoka, Hukuoka B, and Nagasaki), 3h. (Arisan and Taito), 8h. (Baku, Pulkovo, Sverdlovsk, Tashkent, Vladivostok, Mount Wilson, and Tinemaha), 9h. (Bombay, Ksara, Paris, and Perth), 10h. (Baku, Bombay, Sverdlovsk, Tashkent, and Malabar), 13h. (Manila), 16h. (Samarkand), 17h. (Mizusawa), 20h. (New Plymouth and Wellington), 21h. (Almeria and Wellington), 22h. (Samarkand).

March 21d. 0h. 4m. 2s. Epicentre 24°·4N. 89°·5E. N.2.

A = +·008, B = +·911, C = +·413; D = +1·000, E = −·009.
G = +·004, H = +·413, K = −·911.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	2·1	206	0 34	P*	1 6	S_g	1·3	—
Agra	10·7	288	i 2 34	+ 3	4 38	+ 7	—	—
Dehra Dun	11·8	305	2 8	−36	4 18	−40	5·5	5·9
Hyderabad	12·4	238	2 53	− 1	5 11	− 2	6·3	7·9
Phu-Lien	16·2	98	3 28	−16	e 8 18	?	10·0	—
Bombay	16·4	253	i 3 49	+ 3	i 6 43	− 5	i 7·7	9·4
Colombo	19·8	211	4 29	+ 2	5 57	− 5	8·3	8·8
Almata	21·5	334	i 4 50	+ 5	8 46	PcP	—	—
Frunse	22·2	330	4 55	+ 2	8 58	+ 8	—	—
Medan	22·6	154	i 4 53	− 4	i 8 52	− 5	—	—
Tashkent	23·9	322	i 5 10	+ 1	i 9 23	+ 2	12·6	17·7
Tchimkent	24·3	322	5 12	− 1	9 58	SS	—	—
Samarkand	24·3	313	e 5 21	+ 8	e 9 26	− 2	—	—
Nanking	26·8	66	i 5 38	+ 2	e 10 4	− 8	—	—
Semipalatinsk	27·0	348	e 5 37	− 1	e 10 41	+26	—	—
Chiufeng	27·3	47	i 5 41a	0	i 10 17	− 3	—	—
Zi-ka-wei	28·9	68	e 5 56	+ 1	11 12	+25	—	—
Manila	31·2	101	6 16	0	13 57	?	23·5	—
Zinsen	34·2	58	—	—	e 14 2	SS	—	—
Batavia	35·0	147	6 51	+ 2	12 7	−14	—	—
Taikyu	35·5	62	e 12 6	S	(e 12 6)	−23	—	—
Husan	35·7	62	—	—	e 12 20	−12	—	—
Sverdlovsk	38·5	335	i 7 16	− 3	i 13 18	+ 4	20·4	—
Grozny	40·4	309	e 7 36	+ 1	—	—	e 20·9	—
Erevan	40·7	304	e 7 40	+ 2	—	—	—	—
Tiflis	40·7	306	7 39	+ 1	e 13 52	+ 5	21·7	—
Nagoya	42·2	63	e 7 54	+ 4	—	—	—	—
Sotchi	44·7	308	e 7 52	−18	—	—	—	—
Mizusawa	45·6	58	(8 19)	+ 1	8 19	P	—	—
Ksara	47·3	294	i 8 32	+ 1	i 15 37	+14	—	—
Theodosia	48·0	310	e 8 35	− 1	—	—	—	—
Yalta	48·8	308	8 42	0	15 44	0	—	—
Simferopol	48·9	309	8 42	− 1	15 45	0	—	—
Sebastopol	49·2	308	8 44	− 1	15 48	− 2	—	—
Pulkovo	53·7	327	9 14	− 5	16 47	− 5	26·0	29·7

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	T.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	56·6	307	(e 9 39)	− 1	(e 17 34)	+ 3	—	—
Zagreb	61·6	310	e 10 14	− 2	e 18 35	− 2	—	—
Copenhagen	62·9	324	10 16	− 9	18 51	− 3	32·0	—
Triest	63·1	311	10 20	− 6	18 53	− 3	—	—
Hamburg	64·5	321	e 10 32	− 3	—	—	—	41·0
Prato	65·3	312	e 10 35	− 6	—	—	—	—

Additional readings and note :—
Bombay iSSEN = +7m.12s.
Almata i = +5m.5s. =PP +2s.
Tchimkent i = +5m.24s.
Nanking PP = +6m.12s., iS = +10m.24s.
Zi-ka-wei iZ = +12m.8s. and +19m.2s.
Tiflis ePS = +14m.9s., eSS = +17m.2s. =SSS +0s.
Sofia readings have been *increased* by 1m.
Triest PS = +19m.16s., e = +19m.31s.
Long waves were recorded at De Bilt and Hong Kong.

March 21d. Readings also at 1h. (Frunse, Samarkand, and Tashkent), 3h. (Mizusawa and Tinemaha), 6h. (Erevan), 8h. (Agra, Bombay, and Kodaikanal), 9h. (Oak Ridge), 14h. (Wellington), 17h. (Grozny, Huancayo, San Juan, and Tiflis), 18h. (La Paz), 19h. (Manila), 21h. (Lick), 22h. (Lick (2) and Grozny), 23h. (Perth).

March 22d. Readings at 0h. (Grozny), 1h. (Arisan, Karenko, Taito, and Berkeley), 2h. (Arisan, Karenko, and Taito), 3h. (Arisan, Karenko, Taito, and Nagoya), 6h. (Andijan and La Paz), 7h. (Nagoya, Christchurch, New Plymouth, and Wellington), 12h. (Ksara, Sverdlovsk, and Tashkent), 14h. (La Paz and Sucre), 16h. (Branner and Nagoya), 21h. (Lick), 22h. (Batavia, Malabar, and Soengei Langka), 23h. (Bombay).

March 23d. Readings at 0h. (Sverdlovsk and Tashkent), 4h. (Cape Town, Ksara, Sverdlovsk, and Tashkent), 8h. (Berkeley, Branner, Ukiah, and Ebingen), 13h. (Samarkand and Wellington), 15h. (Grozny and Malabar), 23h. (Pulkovo, Sofia, Sverdlovsk, Simferopol, Theodosia, and Tiflis).

March 24d. 0h. Readings for which no determination has been made :—
Tchimkent eP =0m.22s.
Samarkand eP =0m.22s., eS =3m.47s.
Tashkent iP =0m.39s., iS =3m.49s., eL =4m.36s., M =5m.36s.
Andijan e =0m.59s., e =4m.42s.
Frunse e =1m.24s.
Almata e =2m.0s.
Agra i =2m.2s., M =5m.32s.
Tiflis e =2m.59s., e =3m.11s., L =11m.30s.
Grozny e =3m.12s.
Sverdlovsk e =3m.54s., L =12m.
Bombay eEN =4m.0s.
Calcutta e =6m.16s., i =8m.31s.
Long waves at Copenhagen and Pulkovo.

March 24d. 14h. 27m. 0s. Epicentre 21°·9N. 123°·1E. N.3.

A = −·507, B = +·777, C = +·373 ; D = +·838, E = +·546 ;
G = −·204, H = +·312, K = −·928.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taito	2·0	298	i 0 33	P_g	1 0	S_g	—	—
Kosyun	2·2	273	i 0 35	P*	1 7	S_g	—	—
Karenko	2·5	330	e 0 41	P*	1 11	S*	—	—
Arisan	2·7	310	e 0 43	P*	1 18	S*	—	—
Takao	2·8	288	e 0 51	P_g	1 29	S_g	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tainan	2·9	295	e 0 50	P_g	1 29	S_g	—	—
Taityu	3·2	319	e 0 51	P*	1 31	S*	—	—
Taihoku	3·4	339	e 0 55	P*	1 34	S*	—	—
Hokoto	3·7	300	e 0 52	− 1	—	—	—	—
Manila	7·6	194	i 1 46a	− 2	4 37	?	5·7	7·5
Hong Kong	8·3	276	2 5	+ 7	3 8	−23	4·2	5·5
Nanking	10·9	339	e 2 33	0	e 4 29	− 7	e 5·4	—
Vladivostok	22·4	17	e 4 52	− 3	e 9 2	+ 9	12·5	16·9
Malabar	32·9	211	i 7 59	PP	—	—	—	—
Almata	43·6	312	e 8 32	+30	—	—	—	—
Frunse	45·3	309	e 8 16	+ 1	—	—	—	—
Andijan	46·6	306	e 8 33	+ 8	—	—	—	—
Tchimkent	48·8	308	8 40	− 2	—	—	—	—
Tashkent	48·9	307	i 8 42	− 1	15 49	+ 4	e 24·0	33·2
Samarkand	50·5	304	e 9 0	+ 5	—	—	—	—
Sverdlovsk	56·8	325	9 40	− 2	e 17 33	− 1	26·0	30·4
Tiflis	67·2	308	—	—	e 19 45	− 2	e 35·5	—

Long waves were recorded at other European stations.

March 24d. Readings also at 1h. (Sofia), 6h. (Tananarive), 7h. (Samarkand), 8h. (Samarkand and Mizusawa), 11h. (Strasbourg), 13h. (Almata), 16h. (Nagoya and Mizusawa), 17h. (Manila and Nanking), 18h. (Erevan, Piatigorsk, and Sotchi), 22h. (Batavia, Soengei Langka, Tananarive, and Triest), 23h. (Manila).

March 25d. Readings at 0h. (Nanking), 3h. (Lick), 4h. (Medan), 5h. (Kodaikanal), 6h. (Batavia, Malabar, Medan, and Perth), 12h. (Almeria), 13h. (Baku, Ksara, and Sverdlovsk), 15h. (Triest, Branner, Lick, and Malabar), 18h. (Jena, Tiflis, and Nagoya), 19h. (Hukuoka and Nagasaki).

March 26d. 0h. 6m. 52s. Epicentre 24°·2N. 122°·3E. (as on 1933 May 30d.). R.2.

A = −·487, B = +·771, C = +·410 ; D = +·845, E = +·534 ;
G = −·219, H = +·346, K = −·912.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Karenko	0·6	251	e 0 10	+ 1	0 16	+ 1	—	—
Taihoku	1·1	319	e 0 18	+ 2	0 30	S*	—	—
Taityu	1·4	268	e 0 20	0	0 33	− 3	—	—
Arisan	1·5	239	e 0 19	− 2	0 34	− 5	—	—
Taito	1·8	212	e 0 25	− 1	0 50	S*	—	—
Tainan	2·2	238	e 0 36	P*	1 8	S_g	—	—
Takao	2·4	230	e 0 57	S	(e 0 57)	− 5	—	—
Hokoto	2·6	255	e 0 37	0	1 13	S*	—	—
Kosyun	2·6	213	e 0 38	+ 1	1 8	+ 1	—	—
Nanking	8·4	339	i 2 1	+ 2	3 27	− 7	e 4·1	i 4·6

March 26d. 19h. Readings for which no determination has been made :—
La Paz iPZ = 55m.49s.a, iSE = 56m.37s., M = 57m.54s.
Huancayo iP = 55m.57s., iS = 56m.34s., iL = 56m.50s.
Sucre P = 56m.37s., iS = 57m.53s., L = 58m.24s.
La Plata P = 59m.42s., S = 63m.54s. ; T_0 = 19h.54m.12s,

March 26d. 21h. 32m. 24s. Epicentre 16°·9N. 84°·0W. N.3.

A = +·100, B = −·951, C = +·291; D = −·995, E = −·105; G = +·030, H = −·289, K = −·957.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan	17·1	82	e 3 56	+ 1	—	—	e 6·8	—
Little Rock	19·3	338	e 4 55	?	e 8 51	?	—	—
Charlottesville	21·6	13	—	—	e 8 36	− 2	e 10·9	—
St. Louis	22·4	346	i 4 49	− 6	i 8 52	− 1	—	—
Florissant	22·6	348	i 4 51	− 6	e 8 51	− 6	—	i 12·7
Philadelphia	24·3	17	—	—	9 20	− 8	e 12·4	—
Chicago	25·3	353	e 9 50	S	(e 9 50)	+ 4	13·3	—
Ann Arbor	25·4	359	e 7 6	?	e 9 48	0	e 13·3	—
Toronto	27·0	6	—	—	e 10 19	+ 4	—	—
Ottawa	29·3	12	—	—	e 10 36?	−17	e 14·6?	—
Huancayo	30·2	163	e 6 47	PP	e 11 12	+ 5	13·0	—
La Jolla	33·9	305	i 6 41a	+ 2	—	—	—	—
Riverside	34·4	306	i 6 44	0	—	—	—	—
Mount Wilson	35·0	306	i 6 50	+ 1	—	—	—	—
Pasadena	35·1	307	i 6 50a	0	—	—	—	—
Haiwee	35·7	310	e 6 56	+ 1	—	—	—	—
Tinemaha	36·3	310	i 7 1	+ 1	—	—	—	—
Santa Barbara	36·4	305	i 7 2	+ 1	—	—	—	—
La Paz	36·9	154	i 7 11	+ 5	i 12 53	+ 3	18·7	21·6
Berkeley	39·5	310	e 7 9	−19	—	—	—	—
Samarkand	117·3	24	e 18 40	[+ 1]	—	—	—	—

Additional readings:—
Little Rock epPE = +5m.28s., esSE = +9m.47s.
St. Louis iN = +5m.6s.
Florissant ipPENZ = +5m.21s., esSE = +9m.43s.; T_0 = 21h.32m.26s.
Chicago eS = +12m.44s.
Ann Arbor eE = +11m.48s.
Toronto eN = +14m.6s.
Long waves also at Baku, Scoresby Sund, Sverdlovsk, and Tashkent.

March 26d. Readings also at 0h. (Erevan), 5h. (Columbia), 7h. (Ebingen), 9h. (Nagoya and Tokyo), 10h. (Karenko (2), 12h. (Erevan, Granada, Tiflis, and Santiago), 15h. (Stuttgart), 18h. (Batavia and Malabar), 19h. (Almata, Andijan, Grozny, Samarkand, and Hukuoka B), 20h. (Haiwee, La Jolla, Mount Wilson, Oak Ridge (2), Pasadena, Riverside, San Juan, and Tinemaha), 23h. (Sumoto).

March 27d. 4h. 45m. 39s. Epicentre 45°·8N. 6°·8E. N.3.

A = +·692, B = +·083, C = +·717; D = +·119, E = −·993; G = +·712, H = +·085, K = −·697.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	1·2	5	e 0 17	0	e 0 30	− 1
Basle	1·8	17	e 0 30	P_g	e 0 48	+ 2
Zurich	2·0	41	e 0 36	P_g	e 0 58	S*
Chur	2·1	63	e 0 38	P_g	e 1 9	S_g

Neuchatel e = +19s.

March 27d. 14h. Readings for which no determination has been made :—

Apia iP = 24m.26s., L = 26m.6s.
Riverview iE = 27m.46s., iENZ = 29m.10s., iN = 29m.37s., iEN = 32m.11s.
Sydney e = 28m.15s., L = 31m.55s., M = 33m.0s.
Wellington 29m.
Manila iP = 32m.30s.k, SEN = 40m.52s.
Santa Barbara iP = 33m.31s.
Pasadena iP = 33m.33s.a, i = 33m.36s.k, iZ = 36m.37s.
Mount Wilson iP = 33m.34s., i = 33m.36s., iZ = 36m.39s.
La Jolla iP = 33m.36s.
Haiwee eP = 33m.39s., iZ = 33m.42s., iZ = 34m.8s.
Batavia eP = 33m.41s., iS = 41m.43s.
Tinemaha iP = 33m.44s., iZ = 33m.47s., iZ = 33m.55s.
Chiufeng (e)? = 34m.16s., SEN = 43m.40s.
Sverdlovsk e = 42m.1s., e = 48m.9s., e = 49m.16s., e = 53m.32s., L = 69m.
Vladivostok e = 42m.14s.
Bombay eEN = 46m.
Baku e = 62m., L = 78m.

March 27d. Readings also at 3h. (Bombay), 6h. (New Plymouth and Wellington), 10h. (Erevan (3), Grozny (2), Tiflis (2)), 13h. (Lick), 17h. (Andijan and Samarkand), 19h. (Chiufeng, Nanking, Manila, Vladivostok, Baku, Sverdlovsk, and Samarkand), 20h. (Copenhagen, De Bilt, Paris, Pulkovo, Strasbourg, Stuttgart, Uccle, and Santiago), 21h. (Balboa Heights and Columbia), 23h. (Medan and Prato).

March 28d. 23h. 47m. 53s. Epicentre 43°·6N. 132°·2E. N.1.

A = −·486, B = +·536, C = +·690 ; D = +·741, E = +·672 ;
G = −·463, H = +·512, K = −·724.

A *depth* of focus 0·080 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok	+3·5	0·5	202	i 1 5	+ 8	e 1 32	−10	—	—
Heizyo	+0·5	6·6	228	1 36	− 5	2 56	− 5	—	—
Keizyo	+0·3	7·2	215	i 1 42	− 4	3 5	− 6	—	3·3
Zinsen	+0·2	7·4	216	i 1 43	− 5	i 3 10	− 4	—	3·3
Mizusawa	−0·1	8·1	122	i 1 59	+ 6	i 3 33	+ 9	—	—
Taikyu	−0·1	8·2	201	1 53	− 2	3 23	− 3	—	—
Toyooka	−0·2	8·4	164	1 58	+ 2	3 34	+ 5	—	3·7
Husan	−0·4	8·9	196	e 1 59	− 1	e 3 36	0	—	—
Kobe	−0·5	9·2	165	—	—	e 3 44	+ 3	—	3·9
Nagoya	−0·5	9·3	155	2 8	+ 3	4 5	+21	—	4·6
Sumoto	−0·7	9·6	166	e 2 26	+20	e 3 53	+ 7	—	4·1
Hukuoka	−0·9	10·2	188	2 13	+ 2	4 3	+ 7	—	—
Hukuoka B	−0·9	10·2	188	2 14	+ 3	4 3	+ 7	—	—
Chiufeng	−1·5	12·5	262	i 2 34	− 1	4 28	−10	—	6·6
Nanking	−2·3	15·7	230	i 3 6	− 1	i 5 35	− 2	—	—
Hong Kong	−4·2	26·0	222	4 42	− 7	8 26	−16	10·6	13·3
Manila	−4·9	30·6	203	i 5 22k	− 4	9 42	−11	—	—
Phu-Lien	−5·1	31·2	232	e 5 24	− 6	—	—	12·1	—
Semipalatinsk	−5·4	35·3	301	5 58	− 6	10 51	−12	—	—
Almata	−5·9	39·3	291	7 7	+32	—	—	—	—
Frunse	−6·1	41·1	291	7 7	+18	e 12 37	+16	—	—
Andijan	−6·4	43·6	289	e 7 11	+ 3	e 12 57	+ 3	—	—
Tchimkent	−6·5	44·7	292	e 7 20	+ 3	—	—	—	—
Sverdlovsk	−6·6	45·3	314	i 7 27	+ 6	i 13 27	+10	—	—
Tashkent	−6·6	45·3	291	i 7 26	+ 5	i 13 25	+ 8	—	41·2
Agra	−6·7	46·3	268	i 7 29	0	i 13 29	− 1	—	—
Samarkand	−6·9	47·6	290	e 7 15	−23	i 13 35	−12	—	—
Medan	−7·1	49·8	227	e 8 23	+29	i 14 ·18	+ 2	—	—
Hyderabad	−7·3	52·0	258	5 42	?	10 0	?	14·8	18·4
Bombay	−7·6	55·1	264	8 33	+ 1	e 15 30	+ 4	—	—

Continued on next page.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	−7·7	58·5	299	9 2	+ 5	i 16 27	+15	23·6	25·5
Pulkovo	−7·7	58·6	325	9 4	+ 6	i 16 26	+13	32·1	—
Grozny	−7·8	59·6	303	i 9 12	+ 7	i 16 35	+10	—	—
Erevan	−8·0	62·3	301	e 9 27	+ 4	e 17 1	+ 2	—	—
Theodosia	−8·0	64·7	310	e 9 42	+ 1	e 17 42	+10	—	—
Simferopol	−8·1	65·4	310	e 9 47	+ 2	17 47	+ 7	—	—
Yalta	−8·1	65·7	309	e 9 47	0	17 45	+ 1	—	—
Sebastopol	−8·1	65·9	310	—	—	17 51	+ 4	—	—
Ksara	−8·6	71·4	299	e 10 20	− 4	e 18 52	0	—	—
Vienna	−8·6	72·2	321	e 10 30	+ 1	e 19 12	+10	—	—
De Bilt	−8·7	73·9	330	—	—	19 30	+ 8	41·1	—
Berkeley	−8·7	74·4	52	i 8 4	?	—	—	—	—
Stuttgart	−8·8	74·9	325	e 10 45	− 1	e 19 36	+ 2	—	—
Triest	−8·8	75·4	322	e 10 39	−10	i 19 40	0	—	—
Strasbourg	−8·8	75·8	326	—	—	e 19 49	+ 4	—	—
Chur	−8·9	76·3	325	e 10 51	− 3	e 19 48	− 2	—	—
Zurich	−8·9	76·3	325	e 10 51	− 3	e 19 57	+ 7	—	—
Basle	−8·9	76·6	326	e 10 55	− 1	e 19 58	+ 5	—	—
Tinemaha	−9·0	77·1	50	i 11 3a	+ 4	e 20 15	+17	—	—
Neuchatel	−9·0	77·3	325	e 10 59	− 1	—	—	—	—
Prato	−9·0	77·9	324	e 11 3	− 1	i 20 10	+ 2	—	—
Haiwee	−9·0	77·9	51	i 11 6a	+ 2	e 20 20	+12	—	—
Santa Barbara	−9·1	78·1	53	e 11 8	+ 3	—	—	—	—
Mount Wilson	−9·1	79·3	52	i 11 14	+ 8	e 20 35	+24	—	—
Pasadena	−9·1	79·3	52	i 11 13a	+ 7	i 20 33	+22	—	—
Riverside	−9·1	79·8	52	i 11 16a	+ 1	e 20 26	− 4	—	—
La Jolla	−9·2	80·7	53	i 11 20a	0	i 20 49	+10	—	—
Toledo	−9·5	87·6	328	—	—	21 46	− 9	—	—
Granada	−9·7	89·8	327	e 13 7	?	e 24 34	PS	—	—

Additional readings :—
Vladivostok i = +1m.56s., e = +2m.30s.
Zinsen i = +2m.31s., S_eSE = +3m.37s.
Sumoto eE = +2m.31s.
Chiufeng iZ = +5m.54s.
Nanking iE = +5m.39s. and +7m.31s., iEN = +13m.55s.
Hong Kong ? = +7m.16s., SS = +8m.44s.
Bombay PPE = +10m.22s., iSE = +15m.27s., SSE = +18m.32s.
Stuttgart ePP = +13m.35s.
Triest iPS? = +20m.1s., e = +31m.21s.
Tinemaha iZ = +13m.1s.
Haiwee i = +13m.4s., eN = +14m.54s.
Santa Barbara iZ = +13m.6s., eZ = +14m.12s.
Pasadena iNZ = +13m.10s., iZ = +14m.8s., eZ = +14m.29s.
Riverside i = +13m.14s., eZ = +14m.11s.
La Jolla i = +13m.20s.
Long waves were also recorded at Tortosa.

March 28d. Readings also at 0h. (Copenhagen), 1h. (Nagoya), 7h. (Arisan), 8h. (Sumoto), 12h. (Triest, Zagreb, Branner, and Lick), 13h. (Triest), 14h. (Erevan, Triest, and Perth), 17h. (Samarkand (2)), 18h. (Almata), 22h. (Haiwee, Pasadena, and Tinemaha), 23h. (Almata, Calcutta, Erevan, Florence, Ksara, and Sverdlovsk).

March 29d. 12h. 24m. 25s. Epicentre 29°·0S. 178°·0W. (as on 1917 Nov. 16d.) R.2.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni	10·5	209	2 35	+ 7	i 4 25	− 1	—	—
New Plymouth	12·0	210	e −5 35	?	—	—	9·6	—
Wellington	13·6	205	2 50	?	6 50	S*	—	—
Christ Church	16·3	205	2 35?	?	—	—	—	—
Riverview	26·2	252	i 5 37	+ 6	i 10 45	SS	13·4	17·3
Sydney	26·2	252	i 5 40	+ 9	i 9 35	−27	14·0	17·1
Melbourne	31·9	244	6 20	− 2	11 44	+10	16·0	18·5
Adelaide	37·0	250	e 7 5	− 1	i 12 55	+ 4	19·2	25·6
Honolulu	54·0	23	—	—	e 17 13	+17	24·5	—
Perth	56·2	249	9 35	− 2	—	—	30·3	39·6
Manila	73·3	298	i 11 30a	− 1	i 21 16	+16	35·6	—
Batavia	74·0	272	11 31	− 4	21 25	PS	42·6	—
Hong Kong	83·0	300	12 15	− 8	22 53	+ 6	39·9	47·8
Zi-ka-wei	83·3	311	e 12 23	− 2	—	—	43·7	50·9
Santa Barbara	84·0	45	e 12 26	− 2	—	—	—	—
La Jolla	84·6	47	e 12 27	− 4	—	—	—	—
Pasadena	84·7	46	i 12 29a	− 3	e 23 14	[+ 7]	e 35·1	—
Berkeley	84·7	41	i 12 45	+13	i 22 53	[− 4]	—	—
Ukiah	85·1	39	—	—	i 23 8	− 1	e 35·7	—
Riverside	85·2	45	i 12 29	− 5	e 23 1	[0]	—	—
Nanking	85·6	310	—	—	i 23 7	[+ 4]	42·6	—
Medan	85·9	276	12 42	+ 4	23 0	[− 6]	e 48·6	—
Haiwee	86·2	44	e 12 36	− 3	e 22 56	[−12]	—	—
Tinemaha	86·6	43	i 12 39	− 2	e 23 24	+ 1	—	—
Phu-Lien	88·0	294	e 12 49	+ 1	e 23 22	[+ 2]	—	—
Tucson	88·4	51	12 47	− 3	23 19	[− 4]	36·1	—
Seattle	91·5	34	—	—	e 24 15	+ 5	e 46·2	—
Victoria	91·6	33	24 8	S	(24 8)	− 3	43·9	47·6
Chiufeng	92·2	315	13 8	0	i 23 43	[− 3]	e 41·8	56·6
Sitka	93·3	21	—	—	i 24 30	+ 3	51·6	—
La Plata	94·7	133	(13 1)	−18	—	—	47·1	—
Huancayo	95·0	106	e 13 43	+23	24 31	−11	43·6	—
Bozeman	96·2	39	—	—	e 23 59	[− 8]	e 47·7	—
La Paz	98·5	114	—	—	i 24 9	[− 9]	46·9	59·1
Sucre	99·4	117	—	—	i 24 13	[−10]	49·6	—
Calcutta	103·7	287	—	—	24 46	[+ 2]	63·7	76·0
Colombo	104·0	270	e 18 20	PP	33 11	SS	57·7	66·9
Florissant	106·1	53	—	—	e 24 50	[− 5]	—	55·7
Chicago	109·2	51	—	—	e 48 49	?	e 55·2	—
Ann Arbor	112·1	52	—	—	e 51 11	?	e 66·2	—
Agra	114·1	288	e 19 35?	PP	i 29 9	PS	—	—
Cape Town	115·2	195	22 50	?	35 10	SS	59·0	68·3
Toronto	115·4	52	—	—	i 26 47	{+ 2}	i 51·6	—
Bombay	115·4	278	e 18 29	[− 5]	27 29	{+44}	—	70·9
San Juan	117·5	82	—	—	e 25 28	[−14]	e 57·9	—
Ottawa	118·5	51	—	—	e 27 5	{− 1}	e 59·6?	—
Tashkent	125·0	301	—	—	e 27 47	{− 2}	—	84·1
Sverdlovsk	130·9	322	e 19 18	[+10]	—	—	67·6	89·6
Baku	139·5	299	i 23 2	{− 6}	e 29 40	{+19}	57·6	87·6
Pulkovo	143·8	336	19 28	[− 3]	29 32	{−14}	76·6	85·9
Theodosia	149·2	311	e 19 58	{+ 2}	—	—	—	—
Simferopol	150·1	312	e 19 54	{− 5}	—	—	—	—
Yalta	150·2	309	e 19 46	[+ 4]	—	—	—	—
Sebastopol	150·6	311	e 20 3	{+ 2}	—	—	—	—
Ksara	150·8	288	e 19 50	[+ 7]	—	—	—	83·2

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	m.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Copenhagen	152·3	348	—	—	43 19	SS	77·6	—
De Bilt	156·8	355	—	—	e 44 15	SS	87·6	106·2
Oxford	157·1	5	—	—	44 3	SS	e 86·6	113·1
Uccle	158·1	356	e 20 32	{− 3}	—	—	e 64·6	—
Stuttgart	159·5	346	e 19 53	[0]	—	—	e 87·6	102·6
Strasbourg	159·9	348	e 19 53	[0]	—	—	e 37·6	—
Paris	160·2	358	e 20 40	{− 5}	—	—	86·6	89·6
Triest	161·0	334	e 20 4	[+ 9]	i 31 21	{− 3}	—	96·4
Florence	163·5	335	e 19 58	[+ 1]	—	—	85·6	96·6
San Fernando	169·9	40	e 20 4	[0]	32 13	{+ 2}	87·6	108·1
Alicante	170·4	12	—	—	e 35 53	SKSP	e 94·7	—
Granada	170·6	29	e 21 32	{ 0}	—	—	86·1	126·0
Malaga	170·6	42	e 22 23	?	—	—	90·6	—
Almeria	171·3	25	—	—	e 46 35	SS	e 100·0	—
Algiers	172·2	354	18 35?	?	·29 35?	PPP	36·6	99·6

Additional readings and note :—
Wellington i = +5m.1s., P_cP = +5m.55s., sS? = +8m.50s., SS? = +9m.50s., S_cS = +13m.10s., sS_cS = +15m.10s.
Riverview iPPE = +6m.15s., iSSN = +11m.49s.
Melbourne i = +7m.44s., SS = +13m.46s.
Adelaide i = +8m.41s. = PPP + 2s.
Perth PP = +13m.25s., e = +16m.35s., i = +27m.15s. and +28m.25s.
Manila iZ = +18m.45s. and +18m.50s.
Hong Kong PP = +15m.38s., ? = +23m.15s., SS = +28m.15s.
Berkeley eN = +13m.5s., eZ = +14m.35s., and +22m.35s., eN = +23m.0s. = S − 5s., eE = +35m.40s.
Ukiah e = +28m.51s.
Nanking iN = +16m.8s.
Seattle e = +36m.58s.
Chiufeng iEN = +24m.21s. = S + 4s.
Sitka eSS = +30m.39s.
La Plata P has been *increased* by 20m.
Huancayo SKS = +23m.53s., PS = +25m.23s., SS = +31m.4s.
La Paz iN = +26m.16s. = PS − 13s.
Calcutta PP = +18m.17s.
Colombo iP = +24m.40s. = SKS − 5s.
Florissant eEN = +26m.12s., eE = +47m.42s.
Ann Arbor e?E = +61m.35s.
Cape Town PPE = +27m.2s., PPPE = +29m.26s. = PS + 8s., SKSE = +33m.8s., SKKSE = +34m.19s., PSE = +36m.12s., PPSE = +37m.32s., SSE = +42m.47s., SSSE = +47m.2s.
Toronto eN = +38m.50s.
Bombay PPEN = +19m.41s., SKSEN = +25m.29s., PSEN = +29m.29s., PPSEN = +30m.44s.
San Juan e = +29m.54s. = PS + 15s.
Ottawa e = +29m.35s.? = PS − 13s., eN = +39m.35s.?
Tashkent e = +21m.40s., +26m.3s. = SKS − 2s., +28m.59s., +30m.51s. = PS + 4s., +34m.1s., +56m.51s., and +58m.19s.
Sverdlovsk e = +22m.8s., i = +22m.32s. = PKS − 5s., e = +29m.48s. and +38m.6s.
Baku e = +18m.50s., i = +26m.24s. = SKS, e = +34m.56s.
Pulkovo i = +20m.14s., PP = +22m.47s., e = +32m.24s. = SKSP − 31s., PPS = +35m.31s., e = +38m.31s., +40m.7s., and +43m.9s., SSS = +46m.11s.
Stuttgart eSS = +44m.40s., eZ = +79m.11s.
Strasbourg $ePKP_2$ = +20m.44s., i = +24m.18s. = PP + 3s., iPP = +24m.56s., e = +25m.52s., ePPP = +28m.35s., i = +29m.55s., e = +32m.47s.
Triest iPP? = +25m.20s., i = +38m.32s., e = +45m.6s., SS? = +45m.42s., i = +50m.14s., e = +63m.11s.
Florence i = +20m.53s. = PKP_2 − 7s.
San Fernando ePPPPP = +25m.10s. = PP + 4s.
Granada e = +18m.14s.
Long waves were also recorded at Bidston, Edinburgh, Stonyhurst, Kew, Rathfarnham Castle, Tananarive, and other European and American stations.

March 29d. Readings also at 2h. (Neuchatel), 3h. (Erevan and Ksara), 5h. (Andijan and Frunse), 8h. (Mizusawa), 11h. (Chiufeng), 15h. (Apia), 16h. (Hukuoka, Hukuoka B, and La Paz), 19h. (Sumoto), 21h. (La Plata and Santiago), 23h. (Manila and Florence).

March 30d. 2h. Readings for which no determination has been made :—

Andijan eP =13m.15s., iS_g =14m.27s., M =14m.29s.
Samarkand eP =13m.18s.
Frunse e =14m.54s., eS =15m.26s.
Almata e =16m.0s.
Santa Barbara eP =20m.27s.
La Jolla eP =20m.29s.
Pasadena iP =20m.30s.
Mount Wilson eP =20m.32s.
Riverside eP =20m.32s.
Haiwee eP =20m.39s.
Tinemaha iP =20m.40s.
Pulkovo i =27m.28s. L =90m.
Erevan e =27m.32s.
Simferopol e =27m.48s.
Theodosia e =27m.50s.
Sebastopol =28m.10s.
Sverdlovsk e =30m.32s., L =73m.
Long waves at Melbourne, Huancayo, Ukiah, Bombay, and other European stations.

March 30d. 16h. Readings for more than one shock, from which no determinations have been made :—

Wellington 30m.
Riverside iP =34m.51s., iZ =35m.19s., i =35m.32s.
La Jolla eP =34m.46s., e =35m.14s.
Pasadena iP =34m.54s., iZ =35m.22s., iZ =35m.35s.
Mount Wilson iP =34m.55s.
Haiwee eP =35m.6s.
Tinemaha eP =35m.7s.
Riverview iN =43m.35s., iE =48m.44s.
Santa Barbara eP =44m.20s.
Vladivostok e =44m.21s.
Pasadena iP =44m.24s.a, iZ =46m.9s.
La Jolla iP =44m.25s., e =46m.7s.
Mount Wilson iP =44m.26s., iZ =46m.8s.
Riverside iP =44m.27s., eZ =46m.10s.
Haiwee iP =44m.32s., e =46m.14s.
Tinemaha eP =44m.34s., eN =46m.17s.
Batavia P =44m.40s., eS =51m.52s.
Manila P? =44m.48s., SE =52m.2s.
Chiufeng eP =44m.48s., iS =54m.31s.
Sverdlovsk P =51m.18s., e =52m.56s., i =57m.36s., i =59m.9s., i =63m.44s., L =73m.
Yalta eP =51m.40s., eS =54m.50s.
Simferopol eP =51m.58s.
Sebastopol eP =51m.58s.
Göttingen EN =52m.6s.
Jena e =52m.6s.
Vienna eP =52m.7s., eZ =54m.7s.
Strasbourg e =52m.8s., i =52m.14s. ; epicentre 3°S 145°·5E.
De Bilt iZ =52m.8s., eL =110m.
Stuttgart eP =52m.9s., iZ =52m.15s., e =54m.5s.
Zurich eP =52m.11s.
Neuchatel eP =52m.12s.
Basle eP =52m.12s.
Chur eP =52m.14s.
Paris i =53m.14s.
Tashkent e =54m.4s., e =57m.23s., i =58m.48s., i =59m.2s., e =63m.36s., e =68m.7s., M =82m.48s.
Pulkovo i =54m.26s., e =60m.21s., L =66m.
Baku e =54m.31s.
Grozny eP =54m.33s.
Theodosia eS =54m.48s.
Copenhagen 54m.51s. and 61m.12s.

March 30d. 21h. 19m. 45s. Epicentre 37°·4N. 141°·5E. (as on 1931 May 26d.). R.1.

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

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Onahama	0·7	226	0 13	+ 3	0 22	S*	—	—
Hukusima	0·9	293	0 17	+ 4	0 32	+ 9	—	—
Sendai	1·0	330	0 15	+ 1	0 30	+ 4	—	—
Isinomaki	1·1	352	0 13	− 3	0 25	− 3	—	—
Yamagata	1·3	313	0 18	0	0 38	S*	—	—
Mito	1·3	219	0 19	+ 1	0 39	S*	—	—
Kakioka	1·6	222	0 22	− 1	0 44	S*	—	—
Tyosi	1·7	197	0 23	− 1	0 49	S*	—	—
Tukubasan	1·7	223	0 23	− 1	0 46	+ 2	—	—
Mizusawa	1·8	350	i 0 29	P*	0 52	S*	—	—
Niigata	2·0	285	0 39	P_g	1 18	?	—	—
Kumagaya	2·1	234	0 32	+ 2	1 4	S_g	—	—
Tokyo	2·2	219	0 34	P*	1 1	S*	—	1·7
Maebasi	2·2	241	0 33	+ 2	1 7	S_g	—	—
Morioka	2·3	353	0 35	+ 2	1 7	S*	—	—
Miyako	2·3	10	0 36	P*	1 5	S*	—	—
Yokohama	2·5	217	0 39	P*	1 8	S*	—	—
Akita	2·6	334	0 41	P*	1 16	S*	—	—
Oiwake	2·6	246	0 44	P_g	1 16	S*	—	—
Yokosuka	2·6	216	0 44	P_g	1 17	S*	—	—
Takada	2·6	262	0 47	P_g	1 26	S_g	—	—
Nagano	2·8	254	0 46	P*	1 22	S*	—	—
Mera	2·9	209	0 42	+ 1	1 17	+ 3	—	—
Kohu	3·0	232	0 48	P*	1 30	S*	—	—
Hunatu	3·0	228	0 44	+ 1	1 20	+ 3	—	—
Numadu	3·1	223	0 44	0	1 28	S*	—	—
Misima	3·1	222	0 46	+ 2	1 26	+ 6	—	—
Toyama	3·5	257	0 58	P*	1 46	S*	—	—
Wazima	3·7	274	1 0	P*	1 53	S_g	—	—
Omaesaki	3·9	222	0 58	+ 2	1 36	− 4	—	—
Hamamatu	4·1	228	1 4	P*	1 49	+ 4	—	—
Gihu	4·3	243	1 5	+ 4	1 57	+ 7	—	—
Nagoya	4·3	240	i 1 8	P*	1 57	+ 7	—	2·6
Hakodate	4·5	352	1 21	P_g	2 13	S*	—	—
Hatidyozima	4·5	198	1 4	0	1 51	− 4	—	—
Kameyama	4·8	238	1 12	+ 4	2 9	+ 6	—	—
Hikone	4·8	244	1 17	P*	2 27	S*	—	—
Kyoto	5·3	243	1 13	− 2	2 33	S*	—	—
Osaka	5·5	242	1 23	+ 5	2 44	S*	—	—
Toyooka	5·7	252	1 25	+ 4	2 30	+ 5	—	3·5
Kobe	5·8	244	e 1 28	+ 6	i 2 47	S*	—	3·7
Wakayama	6·1	239	1 30	+ 3	2 52	S*	—	—
Siomisaki	6·1	229	1 28	+ 1	2 30	− 6	—	—
Sumoto	6·2	242	1 31	+ 3	2 55	S*	—	3·4
Nemuro	6·7	29	1 27	− 8	2 39	−12	—	—
Matuyama	8·0	243	1 58	+ 5	4 51	?	—	—
Hamada	8·0	251	2 3	+10	3 34	+10	—	—
Simidu	8·4	235	2 0	+ 1	4 32	S_g	—	—
Vladivostok	9·3	311	i 2 15	+ 4	4 10	+14	7·6	12·9
Kumamoto	9·9	244	2 20	+ 1	4 45	S*	—	—
Hukuoka	9·9	246	e 2 40	?	4 31	+20	—	5·3
Hukuoka B	9·9	246	2 34	+15	4 41	S*	—	5·7
Miyazaki	9·9	236	2 21	+ 2	4 25	+14	—	—
Unzendake	10·3	243	(2 41)	+16	(5 2)	S*	—	—
Husan	10·4	256	2 7	−19	4 59	+36	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Taikyu	10·5	260	2 25	− 3	5 34	+ 8	—	—
Nagasaki	10·6	251	2 5	−24	4 54	+26	—	5·7
Kagosima	10·7	243	2 38	+ 7	6 14	?	—	—
Keizyo	11·5	277	2 47	+ 5	6 4	S_g	—	7·5
Zinsen	11·8	277	e 2 41	− 5	e 5 15	+17	e 7·0	—
Zi-ka-wei	17·7	257	e 4 2	− 1	7 41	SS	9·3	12·7
Nanking	19·4	264	4 18	− 5	i 8 6	SS	9·6	12·9
Chiufeng	19·9	288	4 28a	− 1	i 8 8	+ 4	10·1	11·2
Taihoku	21·0	241	8 0	S	(8 0)	−26	—	—
Hong Kong	27·9	246	5 48	+ 2	10 27	− 3	13·4	16·2
Manila	29·2	227	5 56k	− 2	12 13	SS	18·2	21·8
Phu-Lien	34·4	254	—	—	e 11 15	−57	18·2	—
Calcutta	47·7	269	8 39	+ 5	15 32	+ 3	22·8	29·1
Almata	48·3	299	9 39	+61	—	—	—	—
Frunse	50·1	298	9 15	+23	—	—	28·7	—
Medan	51·7	242	9 22	+18	e 16 37	+13	e 29·2	—
Andijan	52·4	297	e 9 13	+ 4	e 16 38	+ 4	26·2	—
Agra	53·7	280	e 9 16	− 3	i 16 45	− 7	—	35·0
Tchimkent	53·8	300	9 15	− 5	—	—	31·5	—
Sverdlovsk	54·0	318	i 9 24	+ 3	i 17 4	+ 8	33·8R	34·4
Batavia	54·3	226	9 17	− 6	i 16 55	− 4	—	—
Honolulu	54·3	88	—	—	e 19 3	(− 4)	—	—
Tashkent	54·4	300	i 9 24	0	i 17 1	0	26·7	34·9
Sitka	55·8	41	e 9 34	0	e 17 22	+ 2	e 27·9	—
Samarkand	56·6	298	9 55	+15	e 17 35	+ 4	—	—
Hyderabad	58·3	270	10 3	+11	17 59	+ 6	27·5	37·1
Bombay	62·0	275	e 10 15	− 3	18 39	− 3	e 30·2	39·4
Pulkovo	67·7	330	i 10 50	− 6	19 48	− 5	35·2	42·8
Baku	67·9	306	e 10 56	− 2	19 59	+ 3	33·7	42·9
Grozny	69·0	310	e 11 5	0	e 19 25	?	—	—
Scoresby Sund	71·5	355	—	—	20 42	+ 3	34·2	—
Riverview	71·8	171	—	—	e 20 33	−10	38·2	41·8
Sotchi	72·5	313	e 10 25	−61	—	—	—	—
Perth	73·4	203	e 21 15	PS	—	—	—	—
Theodosia	73·8	316	—	—	e 20 55	−11	43·2	—
Yalta	75·1	315	11 14	−27	e 21 16	− 5	43·2	—
Tinemaha	75·3	55	e 11 39	− 3	i 21 19	− 5	—	—
Sebastopol	75·4	317	e 11 54	+11	—	—	42·2	—
Santa Barbara	75·9	58	e 11 41	− 4	—	—	—	—
Haiwee	76·1	55	i 11 44	− 3	e 21 27	− 6	—	—
Pasadena	77·1	57	i 11 47	− 6	i 21 34	−10	e 32·0	—
Mount Wilson	77·2	56	e 11 47	− 6	e 21 35	−10	—	—
Copenhagen	77·3	334	i 11 52	− 2	21 40	− 6	34·2	—
Riverside	77·7	57	e 11 50	− 6	e 21 36	−15	—	—
La Jolla	78·5	58	e 11 54	− 6	e 21 49	−10	—	—
Hamburg	79·9	334	e 12 7	0	e 22 15	0	e 43·2	50·2
Budapest	80·8	326	e 12 15?	+ 3	e 21 15?	−69	45·2	52·2
Ksara	80·8	307	—	—	e 22 22	− 2	47·7	52·2
Prague	80·9	330	—	—	e 22 15	−10	e 42·2	51·2
Vienna	81·5	327	e 12 14	− 2	e 22 19	−13	e 50·2	—
Cheb	81·7	330	e 22 29	S	(e 22 29)	− 5	e 45·2	50·2
Edinburgh	81·9	341	—	—	e 34 15?	?	—	51·2
Belgrade	82·2	323	e 12 19	0	e 22 33	[− 4]	e 52·0	—
Sofia	82·2	320	—	—	e 22 35	[− 2]	e 45·2	52·3
Graz	82·7	327	i 12 42	+20	e 23 6	PS	e 44·2	53·7
De Bilt	82·8	336	e 12 20	− 2	e 22 33	[− 9]	e 41·2	49·5
Tucson	83·0	55	—	—	22 39	− 6	36·6	—
Stonyhurst	83·6	340	—	—	e 22 25	[−23]	45·2	52·5
Stuttgart	84·1	332	12 28	− 1	e 22 47	[− 5]	e 45·2	53·6
Uccle	84·1	336	e 12 29	0	i 22 48	[− 4]	42·2	53·2

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	m.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bidston	84·1	340	e 12 50	+21	e 23 3	+ 4	e 39·2	53·7
Triest	84·6	328	11 49	−42	i 22 50	[− 6]	e 46·1	58·6
Strasbourg	84·8	333	e 11 31	−61	i 22 54	[− 4]	e 42·2	57·7
Kew	85·1	338	e 12 25	− 9	e 22 51	[− 9]	e 39·2	52·2
Oxford	85·3	338	—	—	22 58	[− 3]	e 41·2	53·8
Chur	85·4	330	e 12 33	− 2	—	—	—	—
Zurich	85·4	331	e 12 33	− 2	e 28 57	SS	—	—
Basle	85·6	333	e 12 33	− 3	e 23 8	[+ 5]	—	—
Neuchatel	86·3	331	e 12 36	− 4	—	—	—	—
Piacenza	86·9	328	23 5	S	(23 5)	[− 8]	—	56·7
Paris	87·2	335	e 12 15?	−29	—	—	45·2	51·2
Florence	87·2	327	e 12 34	−10	23 7	[− 8]	33·0	48·2
Chicago	88·9	36	—	—	e 23 35	[+ 9]	50·3	—
Florissant	90·1	38	e 12 57	− 1	i 23 47	−10	—	—
St. Louis	90·3	39	e 12 58	− 1	i 23 48	−11	—	—
Ottawa	90·7	26	—	—	e 23 23	[−14]	e 44·2	—
Philadelphia	95·6	27	—	—	e 23 44	[−20]	e 46·7	—
Georgetown	95·8	30	e 13 22	− 2	23 40	[−25]	e 47·2	—
San Juan	118·4	29	—	—	e 25 36	[− 9]	e 58·5	—
Huancayo	138·5	62	—	—	e 40 18	SS	e 58·3	—
La Paz	146·5	59	i 19 35k	[− 1]	—	—	83·4	89·6

Additional readings and notes :—
Toyooka SZ = +2m.34s. = P* +0s.
Kobe eE = +2m.26s. = S − 2s., eN = +2m.31s., SN = +2m.50s., SZ = +2m.59s., iN = +3m.3s. = S_g − 3s.
Sumoto SE = +2m.58s., SZ = +3m.4s. = S* +1s.
Unzendake readings have been *diminished* by 1m.
Zinsen i = +5m.31s.
Chiufeng iZ = +8m.15s., iE = +8m.23s. = SS − 1s.
Hong Kong PP = +6m.22s., SS = +11m.52s.
Calcutta SS = +18m.38s.
Agra PS = +17m.16s., eSS = +20m.26s.
Sverdlovsk L_q = +27m.9s.
Sitka e = +23m.37s.
Bombay iPE = +10m.18s., iSE = +18m.42s., PSN = +19m.3s., SSEN = +23m.17s., SSSEN = +25m.48s.
Scoresby Sund +25m.33s.
Copenhagen +14m.47s. = PP +6s. and +26m.27s. = SS − 5s.
Cheb eS? = +29m.49s.
Stuttgart ePPP = +17m.39s., ePS = +23m.45s., eSSS = +32m.15s.
Triest iPS = +23m.49s., i = +24m.8s.
Strasbourg e = +12m.29s., ePP = +15m.48s.?
Chicago e = +43m.27s.
Florissant ePPNZ = +16m.27s., eSKSEN = +23m.20s., eSSN = +29m.51s.
St. Louis eSKSEN = +23m.23s. ; T_0 = 21h.19m.49s.
Ottawa eN = +24m.55s. = PS − 5s., e = +33m.39s.
Philadelphia e = +17m.5s. = PP − 4s., PS = +24m.39s. = S − 9s., e = +36m.41s.
Georgetown ePP = +17m.16s., iSKS = +23m.32s., iPS = +26m.1s.
San Juan e = +20m.5s. = PP +8s., +29m.43s. = PS − 5s. and +36m.15s. = SS +4s.
La Paz $iPKP_3$ = +19m.50s., L_q = +75m.15s.
Long waves also at Wellington, Malabar, Algiers, and other European and American stations.

March 30d. Readings also at 0h. (Sumoto), 2h. (Riverview, Sydney, and Wellington), 4h. (Mizusawa), 6h. (Sofia), 8h. (Bucharest and Santiago), 9h. (Almata and Berkeley), 10h. (Apia, Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, Santa Barbara, and Tinemaha), 13h. (Toledo), 16h. (Baku, Grozny, Apia, La Paz, and Sucre), 17h. (Calcutta), 20h. (Calcutta, Hong Kong, Medan, Phu-Lien, and Nanking), 23h. (Andijan, Erevan, Mizusawa (2), and Nagoya).

March 31d. 3h. 21m. 31s. Epicentre 41°·1N. 20°·4E. N.1.

A = +·706, B = +·263, C = +·657; D = +·349, E = −·937;
G = +·616, H = +·229, K = −·754.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia	2·7	56	e 0 50	P_g	i 1 15	S*	—	1·9
Belgrade	3·7	0	e 0 57	+ 4	i 1 51	S*	—	2·2
Capodimonte	4·7	265	e 1 6	− 1	e 1 43	−17	1·8	3·6
Zagreb	5·7	322	e 1 20	− 1	e 2 19	− 6	—	3·7
Laibach	6·5	315	e 1 34	+ 2	i 2 45	− 1	3·7	4·0
Budapest	6·5	350	1 30	− 2	3 8	S*	4·5	7·5
Triest	6·7	310	i 1 32k	− 3	i 2 43	− 8	—	—
Graz	6·9	325	i 1 37	− 1	i 3 27	S*	—	6·7
Venice	7·3	304	e 1 45	+ 1	i 2 50	−16	3·8	6·2
Florence	7·3	290	1 45	+ 1	2 59	− 7	—	—
Prato	7·4	290	e 1 45	0	i 3 20	+11	—	i 4·5
Padova	7·6	301	e 1 53	+ 5	3 29?	+15	—	6·5
Vienna	7·7	335	i 1 51	+ 2	3 13	− 3	3·9	4·8
Piacenza	8·8	295	e 2 9	+ 4	4 23	S*	5·7	9·1
Chur	9·7	303	e 2 13	− 4	—	—	—	—
Prague	9·9	339	i 2 21	+ 2	e 4 23	+12	e 5·0	5·0
Ravensburg	10·2	313	e 2 19	− 5	—	—	e 4·5	—
Sebastopol	10·2	64	2 32	+ 8	4 49	?	5·8	—
Zurich	10·5	310	e 2 25	− 3	e 4 34	+ 8	—	—
Cheb	10·6	333	1 32	−57	e 4 16	−12	e 5·7	6·3
Yalta	10·6	67	2 37	+ 8	4 57	?	5·9	—
Simferopol	10·7	62	2 39	+ 8	5 0	?	6·2	—
Stuttgart	11·0	320	e 2 31	− 4	e 4 36	− 2	e 4·7	—
Basle	11·2	309	e 2 34	− 3	e 4 51	+ 8	—	—
Neuchatel	11·3	310	e 2 35	− 4	e 4 39	− 6	—	—
Jena	11·6	333	e 2 47	+ 4	5 47	S*	e 6·2	6·7
Theodosia	11·6	64	2 43	0	5 5	+12	6·0	—
Karlsruhe	11·6	321	2 42	− 1	4 45	− 8	5·7	7·2
Strasbourg	11·7	316	e 2 42	− 2	e 5 3	+ 8	e 6·5	7·0
Leipzig	11·7	336	e 2 43	− 1	e 6 7	?	—	—
Besançon	12·0	306	e 2 47	− 1	—	—	8·5	—
Göttingen	12·7	330	e 3 4	PP	e 6 29	S*	—	7·6
Barcelona	13·7	280	e 3 18	PP	—	—	6·8	8·3
Ksara	14·2	117	—	—	e 6 35	?	—	9·5
Hamburg	14·3	334	e 3 21k	+ 2	e 6 5	+ 7	—	9·5
Sotchi	14·4	72	e 3 17	− 4	e 6 43	?	—	—
Uccle	14·7	317	e 3 24	− 1	e 6 27	?	7·6	8·4
Paris	14·8	309	e 3 24	− 2	—	—	9·5	10·5
De Bilt	15·1	324	i 3 37	+ 7	—	—	e 7·5	10·2
Copenhagen	15·5	344	3 35	0	6 48	SS	7·5	—
Alicante	16·2	270	e 3 50	+ 6	e 7 12	?	e 9·3	—
Kew	17·6	314	i 4 3	+ 1	e 7 26	+11	e 8·5	10·0
Almeria	18·2	268	e 4 10	+ 1	e 7 30	+ 1	e 10·3	—
Oxford	18·3	314	4 3	− 7	e 7 26	− 5	9·9	14·6
Erevan	18·3	82	e 4 29	?	—	—	—	—
Toledo	18·6	275	e 4 13	− 1	e 7 53	SS	—	13·9
Upsala	18·8	357	4 14	− 2	e 7 49	+ 7	e 10·5	12·0
Grozny	18·8	73	e 4 29	PP	—	—	18·5	—
Granada	19·0	268	i 4 19	0	e 7 49	+ 3	11·1R	13·7
Pulkovo	19·6	15	i 4 27	+ 2	8 9	+11	9·9	11·7
Malaga	19·7	269	4 27	+ 1	8 2	+ 2	9·5	10·9
Stonyhurst	19·9	320	i 4 34	+ 5	e 8 6	+ 2	—	16·3
Bidston	20·0	316	e 4 21	− 9	e 7 49	?	8·5	12·5
San Fernando	21·2	269	e 4 38	− 4	8 29	− 1	12·5	14·0
Edinburgh	21·3	323	—	—	e 8 47	P_cP	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bergen	21·4	342	—	—	e 8 27	− 7	11·0	—
Rathfarnham Castle	21·7	315	e 4 58	PP	e 8 59	SS	11·2	13·7
Baku	22·2	79	e 5 8	PP	i 9 11	SS	13·5	—
Sverdlovsk	30·1	43	6 9	+ 3	11 7	+ 1	18·7R	19·0
Tashkent	36·3	72	—	—	8 27	PP	e 12·5	29·2
Scoresby Sund	36·3	338	—	—	12 59	+18	19·5	—
Agra	48·8	87	—	—	e 15 46	+ 2	—	—
Bombay	49·6	99	e 10 29	PP	—	—	—	—
Ottawa	65·5	310	—	—	e 19 29?	+ 3	e 29·5?	—
Philadelphia	68·6	306	—	—	e 20 4	0	e 32·9	—
Chiufeng	68·6	55	—	—	e 20 12	PS	—	38·4

Additional readings :—
Sofia i = +56s. and +1m.32s.
Belgrade i = +1m.8s. = P_g +0s., +1m.11s., +1m.22s., +1m.35s. = S +0s., +1m.44s., and +1m.52s.
Zagreb eZ = +1m.27s., i = +1m.45s. = P_g −3s. and +1m.54s., e = +2m.51s. = S* +3s., eS_g = +3m.3s., eSSS = +3m.12s.
Laibach i = +2m.4s. = P_g +0s., iS_g = +3m.16s.
Budapest PP = +2m.11s., SS = +4m.0s.
Triest i = +1m.39s. and +2m.2s., iSSsS = +3m.32s., $iSSsS_2$ = +3m.45s., i = +3m.50s., +4m.0s., and +4m.13s.
Graz iP* = +1m.43s., iS* = +3m.55s.
Vienna eNZ = +2m.37s., S* = +3m.43s.
Piacenza P = +2m.33s., PP = +3m.27s., SS = +5m.13s.
Stuttgart e = +3m.11s.
Jena eS = +5m.50s.
Strasbourg eSS = +6m.25s. = S_g +5s., eSSS = +6m.29s.
Leipzig e = +5m.7s., eN = +5m.25s., i = +6m.21s. = S_g +1s. and +6m.43s., iE = +6m.54s., i = +7m.23s., iN = +8m.55s.
Besançon eSS = +6m.35s. = S_g +5s.
Göttingen e = +3m.5s., eE = +3m.47s., iZ = +6m.49s., iEN = +6m.57s. = S_g +3s., iZ = +7m.3s., eZ = +9m.29s.
Hamburg eEN = +6m.59s., iN = +7m.48s.
Paris e = +7m.50s., SS = +8m.43s.
De Bilt iZ = +7m.21s.
Oxford i = +7m.49s.
Upsala eSE = +7m.52s.
Malaga E = +5m.9s., e = +5m.18s. and +6m.59s., SS = +8m.43s.
Granada L_q = +9·2m.
Bidston i = +6m.51s.
San Fernando SS = +9m.9s.
Sverdlovsk L_q = +15m.29s.?
Philadelphia e = +27m.40s.
Long waves at Algiers, Tortosa, and Vladivostok.

March 31d. 3h. 44m. 55s. Epicentre 41°·1N. 20°·4E. (as at 3h. 21m.). X.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sofia	2·7	56	e 0 52	P_g	i 1 33	S_g	—
Belgrade	3·7	0	0 9	?	i 1 58	S_g	2·1
Capodimonte	4·7	265	e 1 8	+ 1	e 2 13	S*	4·1
Zagreb	5·7	322	e 1 25	+ 4	e 2 56	S*	3·8
Budapest	6·5	350	e 3 14	S*	—	—	—
Triest	6·7	310	e 1 31	− 4	i 2 46	− 5	—
Graz	6·9	325	e 1 38	0	—	—	3·9
Venice	7·3	304	e 3 34	S*	—	—	—
Florence	7·3	290	2 3	P*	e 4 14	?	—
Prato	7·4	290	e 7	P*	i 3 37	S*	—
Vienna	7·7	335	e	P*	e 4 11	S_g	—
Chur	9·7	303	e 2 20	+ 3	—	—	—
Prague	9·9	339	—	—	e 5 5	S*	6·1
Ravensburg	10·2	313	—	—	e 4 5?	−13	—
Zurich	10·5	310	e 2 26	− 2	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Stuttgart	11·0	320	—	—	e 4 5	?	—
Basle	11·2	309	e 2 33	− 4	—	—	—
Neuchatel	11·3	310	e 2 36	− 3	—	—	—
Karlsruhe	11·6	321	5 35	S*	—	—	—

Additional readings :—
Belgrade i = +1m.8s. = P_g +0s. and +1m.15s., e = +1m.48s. = S* +0s.
Zagreb e = +1m.48s. = P_g +0s.
Triest iPPsP = +2m.2s., iSSsS = +3m.32s., i = +3m.39s. = S_g +4s., iSSsS_2 = +3m.43s., i = +3m.48s.
Long waves at Strasbourg.

March 31d. 13h. 44m. 13s. Epicentre 45°·6N. 15°·4E. N.3.

A = +·674, B = +·186, C = +·715 ; D = +·266, E = −·964 ;
G = +·689, H = +·190, K = −·699.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb	0·4	61	e 0 3	− 3	i 0 9	P	—	0·3
Laibach	0·8	303	0 11	0	i 0 20	− 1	—	0·4
Triest	1·2	272	0 15	− 2	i 0 30	− 1	—	—
Graz	1·5	0	i 0 21	0	i 0 38	− 1	—	0·7
Padova	2·5	265	e 0 43	P_g	e 1 17	S_g	—	—
Vienna	2·7	18	e 0 40	+ 1	1 13	+ 4	i 1·3	—
Prato	3·5	242	e 1 12	P_g	1 47	S_g	—	—
Zurich	5·0	288	e 1 22	P*	e 1 34	S_g	—	—
Stuttgart	5·3	300	—	—	e 2 17	+ 2	—	—
Basle	5·7	286	e 1 25	+ 4	—	—	—	—
Neuchatel	6·0	284	e 1 24	− 1	—	—	—	—

Additional readings :—
Zagreb i = +5s. = P* +1s., +20s., and +43s., e = +1m.36s.
Triest iPPS = +33s. = S +2s., iSS = +35s. = S* +1s., i = +44s.

March 31d. 23h. 19m. 52s. Epicentre 33°·7N. 135°·2E. (as on 1934 Sept. 8d.) R.3.

A = −·590, B = +·586, C = +·555.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sumoto	0·7	338	i 0 10	0	0 19	+ 1	0·3
Osaka	1·0	12	0 14	0	0 27	+ 1	0·5
Kobe	1·0	359	0 14	0	0 26	0	0·4
Toyooka	1·9	350	0 21	− 7	0 47	− 2	0·8
Nagoya	2·0	45	0 30	+ 1	0 51	0	0·9

Additional readings :—
Kobe eN = +1m.34s.
Toyooka PENZ = +25s.

March 31d. Readings also at 1h. (Jena), 2h. (Almata, Andijan, Frunse, and Ukiah), 3h. (Mizusawa and Serra do Pilar), 6h. (Almata), 7h. (Almata, Baku, Sverdlovsk, Tashkent, Hong Kong, and Manila), 8h. (Malabar, Batavia, and Samarkand), 9h. (Ukiah), 11h. (Lick), 12h. (Mizusawa, Nagoya (2), and Sumoto), 13h. (Mizusawa), 14h. (Baku and Sverdlovsk), 20h. (Wellington), 21h. (Andijan, Almata, Frunse, and Granada), 22h. (Riverview, Sydney, and Wellington), 23h. (Perth).

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