The International Seismological Summary.

1936 January, February, March.

FORMERLY THE BULLETIN OF THE
BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

EXPLANATION OF SYMBOLS.

It is appropriate here to give some account of the notation used in the Summary. This is dealt with below in sequence of occurrence in the text.

(1) Time at origin. At short distances the time of P in a normal Earthquake has approximately the form $T = T_0 + a\Delta$. The time given is the estimate of T_0 in this formula measured from Greenwich mean midnight. It usually differs by a few seconds from the time when the wave leaves the focus.

(2) The epicentre is determined in terms of *Geographic* co-ordinates, those normally used to define position on the earth's surface.

(3) The constants of the epicentre :—

$A = \cos\phi\cos\lambda$ $\quad D = \sin\lambda$ $\quad G = \sin\phi\cos\lambda$
$B = \cos\phi\sin\lambda$ $\quad E = -\cos\lambda$ $\quad H = \sin\phi\sin\lambda$
$C = \sin\phi$ $\quad K = -\cos\phi$

where ϕ and λ stand for latitude and longitude. These numbers form a set of mutually orthogonal direction cosines which can be used to calculate angular distance (Δ) and Azimuth (Az) of the observing station by means of the formulae

$$2 - 2\cos\Delta = (a-A)^2 + (b-B)^2 + (c-C)^2$$
$$\cos\Delta = aA + bB + cC$$

for Δ, where a, b, c, bear the same relation to the position of the observing station as A, B, C do to the epicentre,

also $2 + 2\sin\Delta\sin Az. = (a-D)^2 + (b-E)^2 + c^2$
$2 + 2\sin\Delta\cos Az. = (a-G)^2 + (b-H)^2 + (c-K)^2$

for the Azimuth.

δ is the nearest whole number to $(A^2 + B^2 + C^2 - 1)10^6$. Its significance is explained in a note to "The Constants of Seismological Observing Stations," Brit. Ass. Pubn. 1937.

(4) Δ and Az. Δ is the angular distance between station and epicentre calculated on the assumption of a spherical earth by the formulae in § 3. The Azimuth is the bearing of the station from the epicentre measured from North through East. Normally these are read from a terrestrial globe, but for small distances are calculated.

(5) The letters P and S denote the times of arrival of the longitudinal and transverse elastic waves refracted directly through the earth. The composite symbols PP, PS, SS refer to similar waves arriving after reflection at the surface. In the case of PP, SS the wave has travelled over both portions of its path as the same type. In PS the wave is longitudinal to the point of reflection and is then retransmitted as transverse. PPP is a longitudinal wave twice reflected at the surface.

P_cP, P_cS, S_cS imply similar reflections, but at the surface of the earth's "liquid core." When a wave is refracted through the earth's "liquid core" the longitudinal wave inside the core is denoted by K, so that, for example, PKP is a longitudinal wave refracted through the core. SKS similarly starts as transverse and after traversing the core as a longitudinal wave continues on as transverse. SKKS has been once reflected internally at the surface of the core. P_g, S_g, P*, S* are body waves observed at short distances in shallow earthquakes, the two former having travelled in the upper layer and the two latter in an intermediate layer.

pP, sP, sS are waves reflected near the epicentre in deep focus Earthquakes.

Where residuals are not given the identification is that suggested by the observing station.

(6) The tabular part of the Summary gives the times of two "body" waves in columns headed P and S, together with their residuals, and columns for L and M. All times are measured from the adopted T_0. Under P is entered the true P where this is observed, but for distances greater than those for which this phase is normally read, PP or PKP or PKP_2 are substituted. Similarly SKS, SKKS are substitutes for S. When a residual is made with reference to the tables of PKP or SKS, the entry is given in brackets [ ]. When made for PKP_2 or SKKS the entry is { }. Occasionally P_cP, S_cS tables are used and the corresponding residuals are shown in ( ).

The letter "a" after a P phase means that the initial motion is upwards and outwards from the epicentre; "k" means that it is downwards and towards the epicentre.

The tables of reference are those published in the I.S.S. Jan.-March, 1930, "Revised Travel-Time Tables," Jeffreys and Bullen.

(7) Long waves. Under L are recorded the times of onset of the surface (long) waves, which are confined to the neigbourhood of the surface. They are of two types, the Rayleigh wave giving displacements in the plane of propagation and the Love wave giving horizontal displacements at right angles to the plane of propagation. The latter is sometimes indicated by L_q. M is the time when the maximum amplitude is observed.

(8) The "Correction to Δ" used in Deep Focus Earthquakes is an addition to Δ so chosen that the travel times for P and S with the focal depth are nearly the same as those for a normal earthquake when the distances have been so corrected. The correction is not applied when recording residuals for any phase other than P and S. For table of these corrections see Introduction I.S.S. 1930 Jan., Feb., Mar.

The present year of the Summary is the first to be produced after the removal of the bureau to Kew Observatory, Richmond, Surrey. Contributors are reminded that in future their bulletins should be sent to—

DIRECTOR (I.S.S.), Kew Observatory,
Richmond,
Surrey, England.

(NOT to the
University Observatory,
Oxford).

The present Number—1936, January, February, March—gives epicentres and readings for 116 earthquakes classified as—

N_1	10	R_1	3	X	29
N_2	22	R_2	9		
N_3	27	R_3	16		

Cases of abnormal focal depth :—

	Date.		Epicentre.		Depth.
Jan.	14d.	14h.	29°·0S.	61°·0W.	0·090
Feb.	8d.	12h.	5·3S.	146·2E.	0·015
	10d.	18h.	18·7S.	177·3W.	0.070
	12d.	9h.	3·8S.	114·5E.	0·050
	16d.	14h.	21·5S.	169·0E.	0·090
	27d.	10h.	7·7S.	127·1E.	0·0225
Mar.	1d.	10h.	47·7N.	147·3E.	0·050
	31d.	3h.	21·8N.	143·5E.	0·035

KEW OBSERVATORY,
RICHMOND,
SURREY.

25th Feb., 1946.

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1936 JANUARY, FEBRUARY, MARCH.

Jan. 1d. 3h. 47m. 10s. Epicentre 46°·9N. 90°·0E. (as on 1931 Nov. 5d.). R.3.

A = ·000, B = +·6833, C = +·7302; δ = +9;
D = +1·000, E = ·000; G = ·000, H = +·730, K = −·683.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Semipalatinsk		7·3	302	e 1 48	+ 4	3 8	+ 2	3·5	3·9
Almata		9·9	253	i 2 4	−15	3 44	−27	4·9	5·1
Andijan		14·0	250	e 3 21	+ 6	7 27	S_g	—	—
Tashkent		15·9	257	e 3 37	− 3	i 6 54	+18	i 8·3	9·0
Samarkand		18·2	255	e 4 11	+ 2	e 7 39	SS	—	—
Chiufeng		20·0	99	e 4 28	− 2	e 8 16	+10	e 10·3	12·1
Sverdlovsk		20·4	310	i 4 37	+ 3	—	—	—	—
Agra	E.	21·9	209	—	—	e 8 44	0	—	—
Nanking	N.	26·5	114	e 5 29	− 5	e 8 5	?	e 13·8	—
Moscow		33·1	307	e 6 30	− 3	e 13 57	SSS	e 17·2	20·4
Pulkovo		36·4	313	i 7 2	+ 1	e 15 13	SSS	19·5	21·8
Ksara		42·3	273	e 7 57	+ 6	—	—	—	29·3

Additional readings :—
Tashkent i = +4m.1s., +6m.43s. = SS −2s., e = +7m.21s., i = +7m.54s.
Sverdlovsk i = +4m.44s. = PP −4s.
Ksara e = +9m.56s. = P_cP +7s.
Long waves were also recorded at Hong Kong, Bombay, and Copenhagen.

Jan. 1d. Readings also at 0h. (near Andijan and near Apia), 3h. and 4h. (Medan), 5h. (Mount Wilson (2), Riverside, Tinemaha, Tucson, and San Juan), 6h. (Denver, Tucson (2), and San Juan), 10h. (Hong Kong, Phu-Lien, Nanking, near Taihoku, and near Ksara), 12h. (Medan), 15h. (Malabar), 16h. (Batavia and near Andijan), 19h. (near Malabar), 20h. (near Mizusawa).

Jan. 2d. 0h. 37m.14s. Epicentre 79°·5N. 0°·0 N.2.

A = +·1822, B = 000, C = +·9833; δ = +8;
D = ·000, E = −1·000; G = +·983, H = ·000, K = −·182.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund	10·5	223	2 34k	+ 6	4 34	+ 8	4·8	—
Bergen	19·2	172	—	—	e 8 11	SS	—	—
Upsala	20·4	155	i 4 36	+ 2	8 24	+10	e 12·8	19·1
Pulkovo	21·8	136	e 4 47	− 2	8 50	+ 8	11·2	11·9
Ivigtut	23·0	247	5 28	+27	9 10	+ 5	11·8	—
Edinburgh	23·6	184	—	—	e 9 58	SS	—	—
Copenhagen	24·2	163	i 5 18	+ 6	i 9 40	+13	—	—
Königsberg	25·6	152	e 5 34	+ 9	e 9 46	− 5	e 13·8	17·2
Stonyhurst	25·7	183	—	—	e 10 16	+23	—	14·1
Hamburg	26·2	166	e 4 46?	−45	e 10 22	+20	e 12·8	13·8
Moscow	26·6	130	e 5 34	− 1	e 10 14	+ 5	e 12·3	18·1
De Bilt	27·5	172	—	—	e 10 38	+14	e 11·8	17·1
Uccle	28·7	175	—	—	i 10 58	+15	e 12·8	—
Sverdlovsk	29·3	103	i 5 59	0	i 10 54	+ 1	i 13·6	18·9
Cheb	29·7	163	—	—	e 8 46?	?	—	18·8
Prague	29·9	160	—	—	e 11 12	+ 9	e 15·3	17·8
Stuttgart	30·9	167	e 6 34	+21	e 11 30	+12	e 15·8	21·8
Budapest	32·7	155	—	—	e 12 46?	+60	e 20·8	22·8
Triest	34·2	162	e 7 48	PP	i 12 18	+ 9	i 16·8	—
Florence	36·0	165	7 46	+48	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta		37·2	138	e 7 9	+ 1	e 13 32	+38	18·8	—
Piatigorsk		38·8	129	e 7 20	− 2	—	—	e 20·6	—
Semipalatinsk		39·0	87	e 7 21	− 3	—	—	—	—
Grozny		39·9	126	7 36	+ 5	—	—	e 19·9	—
Sitka		41·0	325	—	—	e 14 1	+10	i 21·5	—
Erevan		42·8	128	e 7 2	−53	—	—	e 18·3	—
Ottawa		43·0	267	e 8 50	+53	e 14 24	+ 3	e 20·8	—
Baku		43·4	122	e 7 48	−12	14 30	+ 3	21·5	24·1
Oak Ridge		45·0	262	e 8 8	− 5	—	—	e 26·3	—
Toronto		45·3	270	e 9 11	+56	e 14 57	+ 2	22·3	—
Almata		45·3	90	8 11	− 4	—	—	—	—
Tashkent		45·8	101	i 8 18	− 1	i 15 4	+ 2	e 21·8	29·5
Andijan		46·9	99	8 26	− 2	—	—	e 26·8	—
Samarkand		47·0	105	e 8 27	− 2	—	—	e 26·2	—
Ann Arbor		47·4	274	e 10 34	PP	e 19 10	SSS	25·3	29·7
Ksara		47·9	139	i 8 36	+ 1	15 52	+21	—	—
Victoria	E.	48·0	312	e 18 53	SS	—	—	e 24·2	26·1
Philadelphia		48·1	264	—	—	e 15 19	−15	e 23·0	—
Chicago		48·6	278	—	—	i 15 53	+12	24·2	—
Bozeman		48·9	300	—	—	e 19 28	SS	i 25·1	—
Vladivostok		54·3	43	—	—	e 17 0	+ 1	27·6	34·7
Columbia		55·0	269	—	—	e 17 16	+ 7	e 24·6	—
Chiufeng		55·1	57	9 26a	− 4	e 17 5	− 6	—	35·3
Little Rock		56·3	280	e 9 39	+ 1	—	—	e 27·4	34·2
Berkeley	Z.	58·2	308	e 9 52	0	—	—	—	—
Agra		61·2	66	—	—	e 16 38	?	—	33·9
Pasadena	Z.	61·3	304	i 10 12a	− 2	—	—	31·3	—
Tucson		62·0	297	—	—	e 25 31	?	e 29·4	—
San Juan		67·7	250	e 12 6	PP	e 19 56	+ 3	e 31·2	—
Bombay		68·3	104	e 11 6	+ 6	—	—	—	39·1
Kodaikanal	E.	77·7	101	—	—	e 21 46?	− 5	—	—
Huancayo		99·2	254	—	—	e 31 46	SS	e 42·9	—
La Paz		102·4	245	e 19 2	?	—	—	51·8	58·8

Additional readings :—
Upsala SN = +8m.29s.
Pulkovo L_q = +10·3m.
Copenhagen +6m.38s. and +8m.51s. = P_cP − 2s.
Königsberg eN = +7m.23s. and +8m.7s., eE = +11m.54s.
Prague e = +10m.46s.
Triest i = +8m.8s. and +14m.52s., iN = +20m.15s., iE = +21m.26s.
Sitka eSS = +17m.2s.
Oak Ridge eN = +8m.16s.
Ann Arbor eE = +23m.10s.
Ksara P_cP = +9m.57s., PP = +10m.32s., S_cS = +18m.25s., SS = +19m.21s.
Victoria ePN = +19m.5s.
Philadelphia e = +20m.24s.
Chicago eSS = +19m.16s.
Bozeman e = +22m.31s. and +24m.14s.
Columbia eSS = +20m.36s.
Little Rock ePE = +9m.42s., eN = +24m.19s.
Berkeley eZ = +10m.5s.
San Juan eSS = +25m.0s.
Long waves were also recorded at Seattle, Madison, Ukiah, Hong Kong, Phu-Lien, Husan, Calcutta, Colombo, Hyderabad, Sebastopol, Theodosia, and other European stations.

Jan. 2d. 17h. 26m. 47s. Epicentre 9°·0S. 119°·8E. (as on 1935 July 30d.). R.3.

A = −·4909, B = +·8571, C = −·1564 ; δ = +6 ;
D = +·868, E = +·497 ; G = +·077, H = −·136, K = −·988.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar	12·2	277	e 2 55	+ 4	i 5 5	− 3	—	—
Batavia	13·1	282	i 3 13	+10	i 6 26	S*	i 7·3	—
Palau	21·9	43	4 52	+ 2	8 57	+13	—	—
Perth	23·2	186	4 58	− 5	9 3	− 5	15·0	—
Medan	24·5	300	5 18	+ 3	—	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hong Kong		31·8	350	6 22	+ 1	11 31	− 1	14·2	25·7
Taito		31·8	3	6 30	+ 9	—	—	—	—
Phu-Lien		32·4	337	i 6 30	+ 4	e 11 44	+ 3	14·2	—
Melbourne		36·6	144	i 7 8	+ 5	12 38	− 7	20·6	23·6
Riverview		38·0	134	e 7 22	+ 7	i 13 4	− 2	e 22·0	24·3
Sydney		38·0	134	e 7 43	+28	(12 53)	−13	20·6	30·2
Zi-ka-wei	Z.	40·2	3	i 8 8k	+34	—	—	21·8	24·2
Nanking		41·1	357	i 7 43a	+ 2	13 48	− 5	—	29·0
Colombo		42·9	290	7 50	− 6	14 12	− 7	21·4	24·6
Calcutta	E.	44·0	316	i 8 8	+ 3	—	—	23·5	—
Wakayama		45·6	19	8 20	+ 2	—	—	—	—
Kohu		48·0	22	8 38	+ 2	—	—	—	—
Oiwake		48·6	21	8 43	+ 2	—	—	—	—
Hyderabad		48·7	302	13 57	?	—	—	20·7	28·2
Nagano		48·8	21	8 49	+ 7	—	—	—	—
Maebasi		48·9	21	8 23	−20	—	—	—	—
Chiufeng		49·2	356	i 8 45a	0	15 49	− 1	e 25·6	35·3
Hukusima		50·6	23	9 3	+ 7	—	—	—	—
Vladivostok		53·3	12	i 9 18	+ 2	e 16 43	− 3	27·1	32·6
Bombay		54·0	301	e 9 15	− 6	i 16 49	− 7	—	37·8
Agra	E.	54·3	313	9 19	− 4	16 48	−11	25·4	—
Christchurch		57·3	137	e 7 44	?	e 17 37	− 3	e 29·0	35·8
Wellington		58·0	133	—	—	i 17 43	− 6	e 23·2	—
Almata		65·2	328	e 10 22	−18	18 59	−23	—	—
Andijan		66·2	322	10 43	− 4	19 28	− 7	—	—
Tashkent		68·3	320	i 10 56	− 4	i 19 54	− 7	e 31·7	46·2
Semipalatinsk		68·6	335	10 57	− 5	19 59	− 5	—	—
Samarkand		68·9	318	10 59	− 5	19 59	− 9	—	—
Baku		80·9	312	e 12 12	− 1	22 14	−11	37·2	51·9
Sverdlovsk		81·6	331	i 12 15	− 1	22 19	−14	38·9	48·8
Erevan		84·8	312	12 29	− 3	22 49	[− 9]	—	—
Grozny		84·8	314	12 35	+ 3	22 57	[− 1]	—	—
Ksara		90·0	302	i 12 57a	0	23 53	− 3	—	—
Theodosia		92·4	315	e 13 8	− 1	e 23 36	[−11]	—	—
Helwan		93·1	299	e 13 11	− 1	e 23 41	[−10]	—	—
Moscow		93·1	325	13 8	− 4	23 54	[+ 3]	e 51·7	60·4
Yalta		93·2	314	e 13 10	− 2	e 23 39	[−12]	—	—
Sebastopol		93·7	315	e 13 11	− 3	e 23 41	[−13]	—	—
Cape Town		95·0	234	—	—	23 49	[−12]	43·7	49·7
Pulkovo		97·5	330	e 13 39	+ 7	24 3	[−11]	53·2	56·6
Cheb		108·0	321	e 25 15	S	(e 25 15)	[+11]	e 62·2	69·2
De Bilt		112·1	323	—	—	e 29 13	PS	e 61·2	70·6
Tinemaha	Z.	120·7	52	e 18 48	[+ 1]	e 20 17	PP	—	—
Pasadena		121·4	55	i 18 50a	[+ 1]	—	—	—	—
Mount Wilson	Z.	121·5	55	i 18 52	[+ 3]	e 28 24	?	—	—
Riverside	Z.	121·8	55	e 18 52	[+ 2]	e 20 18	PP	—	—
Oak Ridge		145·0	13	i 19 34	[0]	i 22 56	PP	—	—
Sucre		151·4	170	e 19 55	[+11]	—	—	81·2	—
La Paz		153·3	163	i 19 51a	[+ 5]	—	—	79·2	86·9
Huancayo		154·1	144	e 20 7	[+20]	e 30 32	{−14}	e 74·1	—
San Juan		168·9	31	e 25 13	PP	—	—	—	—

Additional readings and note :—
Malabar iSN = +5m.11s.
Batavia iE = +4m.2s., iN = +6m.3s., iE = +6m.19s.
Perth ? = +5m.13s. and +5m.38s., PKS = +8m.15s., PS = +9m.13s., SS = +11m.44s., SSS = +12m.48s., SSSS = +13m.33s.
Medan iE = +7m.18s., iN = +10m.30s., iE = +11m.15s.
Hong Kong PP? = +7m.52s.
Melbourne i = +18m.8s.
Riverview e = +15m.31s. = SS −8s.
Sydney gives P as e and S as eP.
Zi-ka-wei iZ = +8m.21s.
Nanking PP = +9m.36s., iN = +17m.24s.
Calcutta PPP = +10m.50s., SS = +18m.50s.

Continued on next page.

Hyderabad S = +18m.37s. = S_cS +1s.
Chiufeng pPNZ = +8m.59s., PPNZ = +10m.40s., sSN = +16m.16s., iZ = +21m.40s., iN = +21m.51s.
Agra PSE = +17m.21s., SSSE = +21m.51s.
Ksara iE = +24m.8s., iPS = +24m.49s., SS = +29m.55s.
Helwan iSP = +23m.56s., PS = +24m.27s.
Moscow PP = +17m.5s.
Cape Town N = +23m.54s. and E = +25m.36s.
Pulkovo PP = +17m.32s., PS = +26m.27s., SS = +31m.43s., L_q = +46·2m.
Cheb e = +34m.25s.
Pasadena iZ = +19m.52s., eZ = +20m.20s. = PP +1s., iZ = +20m.39s. and +22m.23s.
Mount Wilson iZ = +19m.54s., +20m.18s. = PP −1s., +20m.35s. and +22m.26s.
Sucre PP = +23m.44s.
La Paz PPZ = +23m.53s., iN = +30m.30s. = SKKS −11s., SSZ? = +43m.37s.
Huancayo ePS = +35m.10s., e = +37m.32s., eSS = +43m.4s.
Long waves were also recorded at other European stations and Rio de Janeiro.

Jan. 2d. 22h. 34m. 28s. Epicentre 0°·2S. 98°·9E. N.1.

A = −·1547, B = +·9880, C = −·0035; δ = +9;
D = +·988, E = +·155; G = +·001, H = −·003, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		3·8	357	i 1 5	P*	—	—	—	—
Batavia		9·9	127	2 23	+ 4	i 4 53	S*	—	—
Malabar		11·2	129	2 35	− 2	i 4 39	− 4	—	—
Colombo		20·3	290	e 4 34	+ 1	8 1	−11	9·9	10·4
Phu-Lien		22·3	20	4 56	+ 2	8 58	+ 6	10·5	15·1
Kodaikanal	E.	23·8	297	i 5 9	+ 1	i 9 27	+ 8	11·9	14·0
Calcutta	E.	25·0	337	i 5 25	+ 5	i 9 42	+ 1	e 11·9	21·9
Hyderabad		26·8	312	5 39	+ 3	10 10	− 2	13·4	16·4
Hong Kong		27·0	33	5 39	+ 1	11 4	SS	15·4	18·2
Bombay		31·9	307	i 6 27	+ 5	i 11 34	0	15·3	19·7
Taihoku		33·4	39	12 10	?	e 19 10	?	—	21·1
Agra		33·9	325	i 6 37	− 2	12 0	− 4	16·4	—
Perth		35·6	155	7 2	+ 8	12 32	+ 2	16·9	18·1
Palau		36·3	77	6 55	− 5	—	—	—	—
Dehra Dun		36·4	329	6 42	−19	12 42	0	20·4	22·5
Nanking		37·3	28	i 7 8a	− 1	e 12 16	−40	18·9	22·9
Zi-ka-wei		38·0	32	i 7 48k	+33	13 46	+40	22·6	26·4
Chiufeng		43·2	19	i 7 57a	− 1	i 14 48	+24	20·9	28·1
Nagasaki		44·0	38	8 5	0	—	—	—	—
Miyazaki		44·5	40	8 8	− 1	14 41	− 2	—	—
Kumamoto		44·6	39	8 9	− 1	—	—	—	—
Hukuoka B		44·9	38	e 19 47	?	23 25	?	—	—
Husan		45·1	35	8 55	+41	e 15 16	+24	e 24·5	—
Taikyu		45·4	34	e 13 57	?	—	—	23·4	—
Zinsen	N.	45·6	31	e 8 17a	− 1	e 14 56	− 3	e 22·1	—
Simidu		46·0	41	7 58	−23	—	—	—	—
Koti		46·9	40	8 28	0	15 14	− 3	—	—
Andijan		47·5	332	8 34	+ 2	—	—	27·5	—
Almata		47·7	339	i 8 19	−15	15 12	−17	—	—
Sumoto		48·2	40	i 8 38	0	15 34	− 2	27·5	32·6
Siomisaki		48·3	42	8 12	−26	—	—	—	—
Wakayama		48·3	40	8 39	+ 1	15 26	−11	—	—
Kobe	E.	48·6	40	e 8 40	− 1	—	—	—	32·4
	N.	48·6	40	e 8 36	− 5	e 16 2	+21	e 25·6	31·4
	Z.	48·6	40	e 8 38	− 3	e 15 59	+18	e 25·9	32·2
Osaka		48·8	39	8 25	−17	14 7	−97	21·1	32·4
Toyooka	N.	48·9	39	—	—	e 16 2	+17	25·6	—
Samarkand		49·4	327	8 46	− 1	15 48	− 4	—	—
Tashkent		49·4	331	i 8 46	− 1	15 51	− 1	25·5	34·5
Kameyama		49·6	39	8 49	+ 1	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hikone		49·7	39	8 43	− 6	—	—	—	—
Ibukisan		49·8	39	8 50	0	—	—	—	—
Gihu		50·1	39	8 53	+ 1	—	—	—	—
Nagoya		50·1	41	e 9 14	+22	—	—	—	—
Toyama		51·2	39	9 5	+ 5	—	—	—	—
Misima		51·4	42	9 2	0	16 13	− 7	—	—
Kohu		51·4	41	9 1	− 1	—	—	—	—
Oiwake		51·8	40	9 6	+ 1	—	—	—	—
Nagano		51·8	40	9 7	+ 2	—	—	—	—
Yokohama		52·0	42	9 13	+ 7	—	—	—	—
Maebasi		52·2	40	9 9	+ 1	—	—	—	—
Tokyo		52·2	42	9 8	0	—	—	—	—
Tukubasan		52·8	42	9 10	− 2	—	—	—	—
Semipalatinsk		53·0	346	9 15	+ 1	16 42	0	—	—
Mito		53·1	42	9 12	− 3	—	—	—	—
Tananarive		53·7	247	e 9 24	+ 5	16 54	+ 2	e 24·9	27·5
Hukusima		53·9	41	9 20	− 1	16 51	− 3	—	—
Mizusawa		55·1	39	9 30	0	—	—	—	29·3
Hakodate		56·4	36	9 44	+ 5	—	—	—	—
Melbourne		56·6	136	9 41	+ 1	17 32	+ 1	26·3	33·0
Sapporo		57·5	35	9 48	+ 1	—	—	—	—
Riverview		59·3	129	i 10 0k	0	i 18 5	− 2	e 30·8	34·6
Baku		60·2	318	e 10 5	− 1	18 48	+29	27·7	33·4
Erevan		63·7	316	10 30	0	19 0	− 4	43·5	—
Tiflis		64·2	317	—	—	e 19 27	+17	36·5	—
Grozny		64·3	320	10 38	+ 4	19 9	− 2	34·5	—
Sverdlovsk		64·8	338	i 10 36	− 1	i 19 12	− 5	29·6	41·4
Ksara		68·0	306	i 10 56a	− 2	19 58	+ 1	32·0	37·9
Helwan		70·8	302	e 11 10	− 6	20 19	−12	32·3	40·4
Theodosia		71·8	318	11 20	− 2	20 34	− 9	35·5	—
Yalta		72·4	317	11 24	− 1	i 20 41	− 9	28·5	—
Simferopol		72·6	318	11 25	− 1	20 44	− 8	e 30·5	—
Sebastopol		72·9	317	11 25	− 3	20 46	−10	—	—
Moscow		74·5	328	11 34	− 3	21 2	−12	37·0	48·3
Christchurch		78·1	134	i 11 57	− 1	e 21 44	−11	37·7	43·8
Wellington		79·3	131	12 2	− 2	21 57	−11	35·5	45·5
Arapuni		79·5	128	—	—	22 32	PS	39·5	49·5
Pulkovo		79·6	331	i 12 3	− 3	i 22 0	−11	39·0	49·5
Cape Town		82·0	236	12 23	+ 5	22 31	− 6	37·5	45·2
Budapest		83·3	317	12 24	− 1	i 22 39	[− 7]	e 51·5	56·0
Königsberg		83·5	325	i 12 26	0	e 22 41	[− 7]	e 40·5	51·4
Vienna		85·2	319	e 12 34	0	e 23 1	[0]	e 55·5	—
Zagreb		85·2	316	e 12 33a	− 1	e 22 58	[− 3]	—	50·5
Graz		85·7	316	i 12 34	− 3	i 23 3	[− 1]	e 40·5	56·4
Upsala		85·8	330	e 12 47	+10	i 23 2	[− 3]	e 44·5	52·8
Prague		86·6	320	e 12 40	− 1	e 23 11	[0]	e 41·5	57·0
Triest		86·8	316	i 12 40a	− 2	i 23 12	[0]	38·3	45·5
Cheb		87·9	320	e 12 47	0	e 23 26	[+ 7]	e 45·5	59·5
Padova		88·1	315	e 13 2	+14	23 32?	− 6	—	—
Copenhagen		88·2	326	i 12 48	− 1	i 23 28	[+ 7]	37·5	—
Florence		88·4	314	i 12 32	−18	i 23 31	−10	—	—
Jena	N.	88·5	321	—	—	e 23 32	−10	—	—
Göttingen		89·5	322	i 12 52	− 3	i 23 36	[+ 6]	—	63·5
Hamburg		89·5	324	i 12 54a	− 1	e 23 39	[+ 9]	e 41·5	53·5
Chur		89·7	317	e 12 55	− 1	e 23 41	−12	—	—
Stuttgart		90·0	319	i 12 56a	− 1	e 23 44	[+11]	e 36·2	60·5
Strasbourg		90·9	318	i 12 59a	− 3	i 23 54	−10	e 42·5	—
Neuchatel		91·5	317	e 13 5	+ 1	—	—	—	—
Bergen		92·0	330	—	—	e 24 4	−11	—	—
De Bilt		92·4	322	i 13 8	− 1	e 24 10	− 8	e 41·5	67·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle		93·0	321	e 13 12	+ 1	i 24 13	−11	e 42·5	—
Paris		94·4	319	e 13 32?	+14	e 24 32?	− 5	52·5	68·5
Algiers		94·8	307	12 32?	−48	24 27	−13	49·5	65·5
Kew		95·9	322	—	—	i 24 38	−12	e 41·5	65·0
Bidston		97·3	324	—	—	i 25 2	− 1	e 41·7	65·3
Almeria		99·2	307	—	—	e 24 55	{+ 8}	e 56·3	—
College		99·8	23	—	—	e 24 12	[−13]	e 50·9	—
Granada		100·0	307	—	—	25 17	− 9	—	—
Scoresby Sund		100·1	343	17 58	PP	e 24 26	[0]	—	—
Malaga		100·8	307	e 18 1	PP	e 23 52	[−38]	53·0	—
San Fernando		102·2	307	—	—	i 25 29	+ 1	52·5	—
Sitka		108·7	27	—	—	e 25 0	[− 7]	e 58·8	—
Victoria		119·6	31	e 21 9	?	—	—	65·0	—
Ukiah		125·3	39	—	—	e 37 45	SS	e 59·8	—
Tinemaha		129·6	39	i 21 8	PS	—	—	—	—
Santa Barbara	Z.	130·3	42	i 19 14	[+ 7]	—	—	—	—
Haiwee		130·4	39	i 19 9	[+ 2]	—	—	—	—
Mount Wilson		131·5	41	e 18 58	[−11]	—	—	—	—
Pasadena		131·5	41	e 18 58	[−11]	—	—	64·8	—
Riverside		132·1	41	i 19 12	[+ 2]	—	—	—	—
Ottawa		134·6	354	21 48	PP	e 31 50	PS	64·5	—
Toronto		136·5	358	e 21 53	PP	e 28 45	{−17}	65·5	—
Oak Ridge		136·8	349	i 19 20	[+ 3]	—	—	83·5	—
Tucson		137·4	38	e 22 50	PKS	—	—	e 68·5	—
Ann Arbor		137·8	2	e 22 8	PP	28 44	{−26}	e 76·8	88·0
Philadelphia		139·9	352	e 22 42	PKS	e 29 40	{+17}	e 67·2	—
St. Louis	E.	140·7	11	e 19 20	[− 2]	e 31 51	?	e 78·7	—
Charlottesville		142·1	356	—	—	e 50 38	SSSS	68·4	—
Little Rock		143·9	17	i 19 32	[+ 1]	—	—	e 84·3	—
Columbia		146·2	0	e 19 39	[+ 3]	e 26 38	SKS	e 82·9	—
Sucre		155·3	218	e 20 18	[+30]	—	—	62·5	—
San Juan		156·6	322	e 20 7	[+17]	—	—	e 74·0	—
La Paz		159·0	217	i 19 58a	[+ 6]	30 58	{−15}	75·3	84·7
Huancayo		166·5	205	e 20 2	[+ 1]	e 35 26	SKSP	78·9	—

Additional readings :—
Malabar iE = +5m.28s. =S* −3s., iN = +5m.31s.
Colombo iP = +4m.44s.
Kodaikanal SSE = +10m.34s.
Hong Kong PP = +6m.13s., PPP = +6m.31s., ? = +10m.24s. =S +9s., SS = +12m.0s.
Bombay SSEN = +13m.4s.
Agra SSE = +14m.5s.
Perth PP = +8m.21s., PPP = +8m.23s., PPPP = +8m.32s., P_cP = +9m.32s., P_cS = +13m.32s., SS = +14m.22s., SSS = +15m.2s., SSSS = +15m.22s.
Nanking iPP = +9m.0s., i = +12m.55s. =S −1s.
Zi-ka-wei iZ = +8m.11s., PPZ = +9m.24s., PPPZ = +9m.56s. and +10m.11s., iZ = +14m.6s., SSSZ = +17m.20s., SSSSZ = +17m.36s. =S_cS +6s., iZ = +19m.18s.
Chiufeng iN = +8m.38s., iZ = +9m.53s. =P_cP +1s., iN = +10m.28s., P_cSN = +13m.24s., iZ = +13m.58s., iN = +14m.10s., S_cSN = +18m.3s.
Almata iPP = +10m.15s.
Kobe PEN = +8m.42s., eE = +13m.42s.
Osaka PP = +9m.44s., PPP = +9m.54s., P_cP = +10m.46s., SS = +16m.25s., S_cS = +19m.0s. =SS −2s.
Tananarive PPP = +12m.18s., PSEN = +17m.35s.
Mizusawa PN = +9m.37s.
Riverview iPSN = +18m.27s.
Baku ePPP = +14m.30s.
Ksara ipP = +11m.19s., ipS = +20m.30s.
Christchurch ePPZ = +14m.47s., iPS = +22m.12s., eSS = +27m.5s.
Wellington i = +22m.27s. =PS −13s., SS = +27m.9s.
Cape Town PP = +15m.43s., E = +21m.38s., SN = +22m.52s., E = +23m.54s., SS = +27m.46s.
Königsberg iE = +11m.59s., iZ = +12m.50s., eZ = +13m.0s., iE = +23m.7s., iPSE = +23m.32s.?, eZ = +26m.55s., iN = +35m.32s. ?
Vienna PS = +23m.37s.
Zagreb e = +23m.20s. =S +10s.

Continued on next page.

Upsala SE = +23m.5s. =SKS +0s.
Triest i = +13m.11s., iSKKS = +23m.22s. =S −3s., iN = +23m.36s., i = +23m.46s., iPS = +24m.5s., iE = +24m.8s., iSS = +28m.42s., i = +36m.14s.
Copenhagen eEZ = +20m.20s., SS = +29m.20s., SSS = +33m.32s.
Göttingen eE = +23m.50s. =S −1s.
Stuttgart iP$_c$P = +13m.6s., ePS = +24m.48s., ePPS = +25m.11s.
Strasbourg i = +13m.21s., ePP = +16m.41s., ePS = +25m.3s., PPS = +25m.25s.
Uccle ePP = +16m.54s., PPS = +25m.36s., i = +31m.27s.
Algiers PP = +16m.44s.
Kew e = +26m.24s.
Bidston i = +26m.14s. =PS −2s.
College ePP = +17m.42s., ePS = +26m.50s., eSS = +33m.15s.
Granada PP = +17m.36s.
Scoresby Sund e = +24m.55s. =SKKS +1s. and +25m.38s. =S +11s., +32m.26s. =SS +23s.
Malaga e = +18m.46s., +20m.22s., and +39m.52s.
San Fernando SSSN = +38m.4s.
Sitka ePP = +18m.55s., ePS = +28m.22s., eSS = +33m.56s., eSSS = +38m.15s., e = +54m.10s.
Tinemaha iPKS = +22m.26s.
Haiwee iPKS = +22m.29s.
Mount Wilson iPKPZ = +19m.12s., iPPZ = +21m.14s., iPKSZ = +22m.34s.
Pasadena iZ = +19m.6s., iPKP = +19m.12s., iZ = +19m.21s., +19m.34s., and +20m.18s., iPPZ = +21m.21s., iPKS = +22m.31s., i = +22m.52s., iZ = +23m.4s., eN = +24m.15s. =PPP +5s.
Riverside iPKS = +22m.33s.
Ottawa eN = +22m.45s. =PKS −7s., eE = +39m.20s. =SS −17s.
Toronto i = +34m.13s.
Tucson iPKS = +23m.2s., e = +56m.7s. and +63m.54s.
Ann Arbor eN = +47m.50s. and +54m.2s.
Philadelphia ePP = +22m.22s., eSS = +40m.55s., eSSS = +46m.55s., e = +60m.25s.
St. Louis ePKPN = +21m.18s., iSKPEN = +22m.54s., iEN = +23m.8s. = PKS −2s.
Charlottesville e = +58m.32s.
Little Rock iEN = +19m.43s., iPPEN = +22m.57s.
Columbia ePKP$_2$ = +19m.59s., ePP = +22m.59s., eSKKS = +30m.10s., eSS = +42m.2s., eSSS = +47m.45s., e = +62m.52s.
Sucre PP = +24m.5s.
San Juan ePKP$_2$ = +20m.25s., eSS = +43m.22s., eSSS = +49m.16s., e = +67m.0s.
La Paz iE = +20m.53s. =PKP$_2$ +13s., iPPZ = +24m.19s., iPPPZ = +28m.2s., SKSZ? = +26m.22s., iSKSP = +34m.30s., iE = +35m.10s., SSZ = +45m.26s., iSSE = +45m.54s., iSSS = +50m.32s., SSSS = +54m.26s.
Huancayo iPKP$_2$ = +21m.14s., ePP = +25m.4s., ePPP = +28m.44s., eSS = +45m.34s.
Long waves Edinburgh, Durham, Stonyhurst, Sydney, Ivigtut, Keizyo, Heizyo, Hukuoka, Bozeman, Madison, La Plata, and Santiago.

Jan. 2d. Readings also at 1h. (Berkeley), 2h. (Almata and near Andijan), 3h. (Calcutta, New Plymouth, and Tucson), 4h. (Tucson (2)), 7h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 10h. (near Algiers, near New Plymouth, and Wellington), 12h. (near Sumoto), 17h. and 18h. (near Mizusawa), 19h. (Sverdlovsk, Tashkent, Batavia, and near Malabar), 20h. (Rio de Janeiro), 21h. (Mount Wilson, Pasadena, and Tinemaha), 22h. (Malabar, Tucson, near Santiago and San Javier).

Jan. 3d. Readings at 0h. (Stuttgart), 3h. (Dakar), 6h. (Grozny, Santiago, Kodaikanal, and near Amboina), 7h. (Amboina and La Paz), 11h. (Bergen), 12h. (Amboina (2)), 13h. (Wellington, Bucharest, Triest, and Zagreb), 14h. (Tucson, Samarkand, and near Andijan), 15h. (near Amboina), 17h. (Bucharest), 23h. (Amboina).

Jan. 4d. 14h. 31m. 44s. Epicentre 5°·7N. 82°·7W. (as on 1934 Aug. 3d.). X.

$A = +\cdot1264$, $B = -\cdot9870$, $C = +\cdot0993$; $\delta = +1$;
$D = -\cdot992$, $E = -\cdot127$, $G = +\cdot013$, $H = -\cdot099$, $K = -\cdot995$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights	4·6	42	e 1 6	0	e 1 58	0	—	—
Huancayo	19·2	157	i 4 20	− 1	i 7 57	+ 7	9·0	—
San Juan	20·6	51	i 4 36	0	i 8 16	− 2	—	—
La Paz	26·5	147	5 34	0	i 10 20	+13	i 12·8	16·5
Philadelphia	34·9	10	—	—	e 14 44	SS	e 16·6	—
La Jolla	42·1	315	i 7 53	+ 4	—	—	—	—
Riverside	42·8	316	i 7 58a	+ 3	—	—	—	—
Pasadena	43·4	316	i 8 3a	+ 3	—	—	e 12·2	—
Tinemaha	45·1	319	i 8 16a	+ 2	—	—	—	—

Additional readings :—
Huancayo i = +4m.25s. and +4m.43s., e = +7m.50s.
San Juan iSS = +8m.36s., iP_cP = +8m.43s.
Long waves were also recorded at Tucson, Scoresby Sund, Pulkovo, Sverdlovsk, and Tashkent.

Jan. 4d. Readings also at 0h. (Samarkand, near Andijan, and Tashkent), 1h. (Almata, Tashkent, Baku, Sverdlovsk, Bombay, and near Colombo), 3h. (Berkeley, Branner, and Lick), 4h. (Kodaikanal), 6h. (Kodaikanal and La Paz), 8h. (Tacubaya and near Mizusawa), 10h. (Santiago and near San Javier), 11h. (Paris), 12h. (Samarkand and near Andijan), 14h. (Toledo, Granada, and near Malaga), 15h. (Tucson), 17h. (near Sumoto), 23h. (Berkeley and near La Paz).

Jan. 5d. Readings at 1h. (near Wellington), 3h. (near Taihoku), 5h. (Ksara and near Taihoku), 6h. (Granada, Ksara, Almata, Samarkand, and near Andijan), 9h. (near Andijan), 10h. (Samarkand and near Andijan), 11h. (Berkeley, near Branner (2), and Lick (2)), 12h. (near New Plymouth and Wellington), 15h. (Chiufeng and Medan), 16h. (Pulkovo and Sverdlovsk), 19h. and 20h. (Medan).

Jan. 6d. Readings at 0h. (near Mizusawa), 3h. (Vladivostok, Chiufeng, Nanking, Hong Kong, Batavia, Baku, Tashkent, and Sverdlovsk), 4h. (Copenhagen and Pulkovo), 5h. (near Mizusawa and Nagoya), 6h. (near Amboina, near La Paz, and near Malabar), 11h. (Scoresby Sund), 13h. (Chiufeng), 15h. (Andijan, Frunse, Samarkand, Tashkent, Sverdlovsk, and near Amboina (2)), 16h. (Andijan, Frunse, Samarkand, Ksara, and near Santiago), 17h. (Ksara), 23h. (near Amboina).

Jan. 7d. 11h. 52m. 58s. Epicentre 37°·8N. 71°·6E. (as on 1935 Jan. 4). X.

$A = +\cdot2494$, $B = +\cdot7498$, $C = +\cdot6129$; $\delta = +5$;
$D = +\cdot949$, $E = -\cdot316$; $G = +\cdot195$, $H = +\cdot582$, $K = -\cdot790$;

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		3·0	12	1 9	+26	1 59	+42	—	2·7
Tashkent		3·9	336	1 16	P_g	—	—	i 2·0	2·6
Samarkand		4·1	296	1 15	P_g	2 2	S*	—	—
Tchimkent		4·8	342	e 1 30	P_g	i 2 55	+52	—	—
Frunse		5·6	23	1 51	P_g	e 2 47	S*	i 3·1	—
Dehra Dun		9·1	143	3 22	S	(3 22)	−39	—	—
Agra	E.	12·0	150	e 2 36	−12	i 4 29	−34	—	—
Baku		17·0	286	e 4 9	PP	e 6 58	− 4	—	—
Bombay		18·9	176	—	—	i 7 26	−18	—	—
Sverdlovsk		20·4	343	i 4 37	+ 3	8 22	+ 8	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Grozny		20·4	294	4 32	− 2	8 9	− 5	—	—
Calcutta	E.	21·0	132	—	—	e 8 8	−18	—	—
Erevan		21·1	286	e 4 48	+ 7	8 40	+12	—	—
Piatigorsk		22·3	296	4 47	− 7	—	—	—	—
Sotchi		24·7	294	e 5 52	PP	—	—	—	—
Moscow		28·9	320	5 51	− 4	e 10 28	−19	—	—
Ksara		29·1	273	e 6 35	PP	e 12 1	SS	—	—
Pulkovo		34·1	324	i 6 37	− 4	—	—	14·0	—

Additional readings :—
Andijan P_g = +1m.18s. =S +1s.
Samarkand iPP = +1m.33s., S_g = +2m.14s.

Jan. 7d. 19h. 33m. 38s. Epicentre 35°·2N. 135°·9E. (as on 1932 July 25d.). X.

A = −·5868, B = +·5687, C = +·5764 ; δ = −1 ;
D = +·696, E = +·718 ; G = −·414, H = +·401, K = −·817.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Osaka	0·6	218	0 8	− 1	0 15	0	0·3
Kobe	0·8	228	i 0 10k	− 1	i 0 19	− 2	0·3
Toyooka	0·9	291	0 13k	0	0 24	+ 1	0·5
Nagoya	0·9	92	i 0 17k	+ 4	0 31	+ 8	0·6
Sumoto	1·2	224	i 0 17k	0	0 30	− 1	0·5
Hukuoka B	4·8	252	e 1 29	P_g	2 27	S_g	—

Sumoto gives also eEN = +2m.40s.

Jan. 7d. Readings also at 0h. (Ksara and Tashkent), 1h. (Baku), 2h. (Kodaikanal), 3h. (Balboa Heights and Medan), 5h. (near Taihoku), 6h. (near Berkeley, Branner, and Lick), 7h. (East Cape), 8h. (Lick), 13h. (Hong Kong, Nanking, Pasadena, Riverside, and Tinemaha), 17h. (near Lick), 18h. (near Lick and near Mizusawa), 19h. (Malaga, near Almeria, Granada, and near Batavia, and Malabar), 22h. (Berkeley, Branner, and near Lick), 23h. (Wellington).

Jan. 8d. 12h. 34m. 43s. Epicentre 27°·0N. 52°·5E. (as on 1934 March 19d.). X.

A = +·5424, B = +·7069, C = +·4540 ; δ = +2 ;
D = +·793, E = −·609 ; G = +·276 ; H = +·360, K = −·891.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		13·5	353	e 3 35	+26	e 5 35	− 4	e 6·4	—
Erevan		14·8	335	e 3 33	+ 7	—	—	—	—
Ksara		15·9	300	e 3 44	+ 4	8 4	L	(8·1)	—
Tiflis		16·0	339	3 38	− 3	e 6 40	+ 2	8·8	—
Grozny		17·2	343	4 6	PP	—	—	—	—
Samarkand		17·4	40	4 0	+ 1	7 10	− 1	—	—
Platigorsk		18·7	338	4 9	− 6	7 29	−11	8·0	—
Helwan		18·8	284	4 22	+ 6	7 51	+ 9	—	13·0
Bombay		20·3	109	e 4 17?	− 6	—	—	—	—
Tchimkent		20·7	37	e 4 35	− 2	—	—	—	—
Andijan		21·3	45	e 4 37	− 6	—	—	e 11·1	—
Theodosia		22·6	327	4 57	0	e 8 56	− 1	—	—
Yalta		22·8	325	e 4 59	0	e 8 59	− 2	—	—
Simferopol		23·2	326	e 5 1	− 2	e 9 4	− 4	—	—
Sebastopol		23·3	322	5 3	− 1	9 7	− 3	—	—
Frunse		23·9	43	e 3 27	?	—	—	—	—
Sverdlovsk		30·4	9	6 8	− 1	11 1	− 9	15·3	16·3
Moscow		30·7	343	6 11	0	11 2	−14	e 20·5	—
Calcutta	E.	32·7	90	—	—	e 12 44	+58	—	—
Pulkovo		36·1	341	6 57	− 2	e 12 29	− 9	17·3	21·1

Additional readings :—
Ksara SS = +8m.58s.
Tiflis PP = +3m.53s.

Jan. 8d. 16h. 23m. 7s. Epicentre 46°·5N. 14°·9E. N.3.

Given by Laibach.

$A = +·6652$, $B = +·1770$, $C = +·7254$; $\delta = +3$;
$D = +·257$, $E = -·966$; $G = +·701$, $H = +·187$, $K = -·688$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Laibach	0·5	210	i 0 5	− 2	i 0 13	0	—	0·3
Graz	0·7	33	i 0 3	− 7	(i 0 14)	− 4	i 0·2	—
Zagreb	1·0	132	e 0 10a	− 4	i 0 23	− 3	—	0·5
Triest	1·2	223	0 16	− 1	i 0 31	0	—	—
Vienna	2·0	29	i 0 31	+ 2	0 51	0	—	1·1
Padova	2·4	242	e 0 53	+19	e 1 17	S_g	—	—
Budapest	3·0	71	0 49	P*	1 29	S*	1·9	—
Prague	3·6	355	e 1 0	P*	e 1 44	S*	—	2·3
Florence	3·7	225	1 11	P_g	1 45	S*	—	3·4
Chur	3·7	277	e 0 55	+ 2	—	—	—	—
Ravensburg	3·8	292	e 1 9	P_g	e 2 3	S_g	—	—
Cheb	3·9	336	—	—	e 1 46	+ 6	—	2·1
Zurich	4·4	284	e 1 3	0	e 2 18	S_g	—	—
Stuttgart	4·5	303	1 8	+ 4	2 23	S_g	—	—
Jena	4·9	335	e 1 11	+ 1	e 2 9	+ 4	e 2·5	2·8
Neuchatel	5·4	278	e 1 16	− 1	—	—	—	—
Göttingen	6·0	329	e 1 33	P*	e 3 5	S*	—	3·4

Additional readings :—
Laibach PP = +7s., i = +11s.
Zagreb i = +13s. and +18s.
Triest iP_g = +21s.
Vienna iP_g = +35s.
Budapest P_g = +57s., PPS = +1m.35s. = S_g + 2s., S_g = +1m.41s.
Jena e = +2m.17s., eE = +2m.27s. = S* +3s.
Long waves were also recorded at Granada.

Jan. 8d. Readings also at 5h. (near Wellington), 6h. (Little Rock and Tucson), 7h. (Tucson), 8h. (Medan and near Nagoya), 11h. (Bombay, Kodaikanal, near Mizusawa, and Nagoya), 12h. (Grozny), 13h. (Pasadena and Tinemaha), 14h. (Göttingen), 18h. (Medan and near Wellington), 19h. (La Paz and Wellington), 22h. (Balboa Heights, Samarkand, near Mizusawa, and Nagoya).

Jan. 9d. Readings at 0h. and 1h. (Pasadena), 4h. (Rio de Janeiro), 5h. (Andijan, Samarkand, Glenmuick, and near Santiago), 6h. (Andijan and Samarkand), 10h. (Pennsylvania), 13h. (near Santiago), 16h. (Balboa Heights), 19h. (Sydney), 20h. (Medan and Pennsylvania), 23h. (Adelaide, Melbourne, Riverview, Perth, Wellington, Andijan (2), Tchimkent, Tashkent, Samarkand, Baku, Sverdlovsk, and Cheb).

Jan. 10d. Readings at 1h. (La Paz), 3h. (Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, and near Apia), 4h. (La Paz, Sucre, Mount Wilson, Pasadena, Tinemaha, Balboa Heights, Huancayo, San Juan, near Medan, Batavia, and near Phu-Lien), 5h. (Nanking), 6h. (Medan), 7h. (Samarkand), 8h. (La Paz), 9h. (near Alicante, near Taihoku and Nanking), 11h. (Medan), 12h. (Sumoto), 14h. (Sumoto), 15h. (Samarkand and Medan), 16h. (near Malaga and near Hukuoka B), 20h. (Medan), 21h. (Kodaikanal and Sebastopol), 22h. (Medan and Samarkand), 23h. (Chiufeng).

Jan. 11d. Readings at 0h. (Cheb), 3h. (Amboina), 5h. (Drome (2)), 6h. (Lick), 7h. (Wellington), 8h. (Andijan and near Samarkand), 9h. (Andijan and near Samarkand), 14h. (Tucson), 15h. (Oaxaca and Tacubaya), 17h. (Tucson), 18h. (Baku and Tiflis), 21h. (Sebastopol, Tchimkent, Samarkand, and near Andijan), 22h. (Andijan (2), Samarkand, Chiufeng, Nanking, and Sumoto), 23h. (Apia).

Jan. 12d. Readings at 2h. (near Batavia), 3h. (Calcutta and Santiago), 4h. (near Santiago), 5h. (Cape Town), 6h. (Medan and Oaxaca), 8h. (Tucson and near Mizusawa), 9h. (Budapest), 10h. (Belgrade, Padova, near Triest, and Zagreb), 15h. (Wellington), 16h. (Drome), 17h. (Batavia, Drome, Berkeley, near Branner, and Lick), 18h. (Drome), 20h. (La Paz and near San Javier), 21h. (near Andijan), 22h. (Tucson), 23h. (near La Paz).

Ján. 13d. 4h. 40m. 12s. Epicentre 2°·0S. 121°·0E. (as ln 1933 May 16d.). X.

$A = -\cdot5147$, $B = +\cdot8566$, $C = -\cdot0349$; $\delta = -10$;
$D = +\cdot857$, $E = +\cdot515$; $G = +\cdot018$, $H = -\cdot030$, $K = -\cdot999$.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Amboina		7·4	104	1 57	P*	3 28	S*
Malabar		14·4	248	3 22	+ 1	—	—
Batavia	z.	14·7	253	i 3 21k	− 4	—	—
Medan		23·0	284	i 5 43	+42	i 9 39	SS
Nanking		34·1	356	—	—	e 10 19	?
Samarkand		64·6	316	e 10 41	+ 5	—	—
Sverdlovsk		76·0	331	i 11 45	− 1	20 41	−51
Ksara		87·1	303	i 12 48	+ 4	e 23 24	− 4
Moscow		88·0	325	e 12 25	−23	—	—

Additional readings :—
Batavia iPEN = +3m.24s.
Samarkand e = +10m.6s.
Ksara ePP = +16m.8s., eSKS = +22m.54s., PS = +24m.14s.
Moscow e = +14m.35s.

Jan. 13d. 4h. 54m. 30s. Epicentre 36°·5N. 138°·5E. (as on 1924 Dec. 13d.). X.

$A = -\cdot6021$, $B = +\cdot5327$, $C = +\cdot5948$; $\delta = +8$;
$D = +\cdot663$, $E = +\cdot749$; $G = -\cdot446$, $H = +\cdot394$, $K = -\cdot804$.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Nagoya	1·9	223	i 0 29a	+ 1	i 0 48	− 1	0·9
Osaka	3·1	234	0 45	+ 1	1 21	+ 1	1·6
Toyooka	3·1	252	0 45	+ 1	1 17	− 3	1·4
Kobe	3·3	237	—	—	1 26	+ 1	1·5
Sumoto	3·6	234	e 1 32	S	(e 1 32)	0	1·7

Sumoto gives eS = +1m.42s.

Jan. 13d. 18h. 10m. 16s. Epicentre 5°·0S. 83°·0E. N.3.

$A = +\cdot1214$, $B = +\cdot9888$, $C = -\cdot0872$; $\delta = +7$;
$D = +\cdot993$, $E = -\cdot122$; $G = -\cdot011$, $H = -\cdot086$, $K = -\cdot996$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Colombo		12·3	345	4 34	?	—	—	—	10·6
Kodaikanal	E.	16·2	340	e 3 38	− 6	i 6 51	SS	7·9	9·4
Medan		17·9	62	e 3 56	− 9	i 5 9	?	—	—
Hyderabad		22·9	349	6 14	+74	e 9 14	+11	11·2	12·7
Batavia	E.	23·8	93	5 10a	+ 2	9 21	+ 2	—	—
Bombay		25·9	337	e 5 33	+ 5	i 10 3	+ 6	12·2	17·0
Calcutta	E.	28·0	11	e 5 34	−13	10 46	+14	e 14·6	21·2
Agra	E.	32·5	352	e 5 1	?	—	—	—	18·6
Hong Kong		40·9	47	13 56	S	(13 56)	+ 6	—	25·4
Perth		40·9	135	16 44	SS	—	—	—	—
Andijan		46·8	348	e 8 29	+ 2	—	—	—	—
Frunse		48·5	351	e 9 10	+30	—	—	—	—
Almata		48·6	354	e 8 37	− 4	—	—	—	—
Chiufeng		54·4	30	—	—	e 17 8	+ 7	e 27·1	—
Baku		54·6	329	—	—	e 23 40	?	e 30·9	—
Ksara		59·0	314	e 11 3	(+13)	e 19 47	(+ 2)	—	—
Sverdlovsk		64·5	347	i 10 37	+ 2	18 42	−32	32·7	—
Riverview		69·1	124	—	—	e 29 26	?	e 32·6	36·3
Mount Wilson	z.	144·9	38	i 19 29	[− 4]	—	—	—	—
Pasadena	z.	144·9	38	i 19 28	[− 5]	—	—	—	—
Riverside	z.	145·4	38	i 19 30	[− 5]	—	—	—	—

For Notes see next page.

NOTES TO JAN. 13d. 18h. 10m. 16s.

Additional readings :—
Batavia eN = +17m.1s.
Bombay SSE = +10m.55s.
Hong Kong S? = +17m.24s.
Ksara ePP = +13m.29s. = PPP +11s.
Pasadena iZ = +20m.13s.
Long waves were also recorded at Nanking and Phu-Lien.

Jan. 13d. Readings also at 0h. (near Apia and near Wellington), 2h. (Ksara, La Paz, and Tucson), 3h. (Santiago), 4h. (near Santiago), 5h. (Samarkand), 6h. (Ukiah), 8h. (Santiago), 10h. (Hawaii, Mount Wilson, Pasadena, Riverside, and Tinemaha), 12h. (near Apia), 13h. (Baku), 14h. (La Plata), 21h. (Sebastopol), 23h. (La Paz and Medan).

Jan. 14d. 0h. 4m. 8s. Epicentre 23°·5N. 115°·5W. N.3.

A = −·3948, B = −·8277, C = +·3987 ; δ = −8 ;
D = −·903, E = +·431 ; G = −·172, H = −·360, K = −·917.

	Δ	Az.	P.	O−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
La Jolla	9·5	351	e 2 35	+21	e 4 4	+ 3	—
Tucson	9·7	24	e 2 5	−12	(i 3 4)	−62	i 3·1
Riverside	10·6	352	e 2 29	0	i 4 35	+ 7	—
Pasadena	10·9	348	i 2 37	+ 4	i 4 42	+ 6	—
Mount Wilson	11·0	349	i 2 37	+ 2	e 4 44	+ 6	—
Haiwee	12·8	351	i 2 59	0	e 5 25	+23	—
Tinemaha	13·8	351	e 3 13	0	—	—	—
Little Rock	23·0	57	e 4 57	− 4	e 10 23	+78	e 11·6
Florissant	26·3	48	e 5 37	+ 5	i 9 28	−35	i 12·3
St. Louis	26·3	48	e 5 27	− 5	e 9 30	−33	i 13·0
Madison	29·1	41	—	—	e 12 52?	SS	—
Ann Arbor	32·3	46	—	—	e 13 46	SSS	e 15·8

Additional readings :—
Tucson e = +2m.16s.
Little Rock eN = +10m.32s., iN = +10m.43s.
St. Louis ePPPEN = +5m.59s.
Ann Arbor eN = +15m.16s.
Long waves were also recorded at Bozeman, Oak Ridge, Philadelphia, Ukiah, Scoresby Sund, Strasbourg, Sverdlovsk, and Baku.

Jan. 14d. 5h. 36m. 31s. Epicentre 60°·5S. 22°·2W. N.2.

A = +·4559, B = −·1861, C = −·8704 ; δ = +7 ;
D = −·378, E = −·926 ; G = −·806, H = +·329, K = −·492

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Plata		34·3	301	6 45	+ 2	12 17	+ 6	15·5	—
Cape Town	E.	37·2	63	7 9	+ 1	12 52	− 2	16·3	17·3
	N.	37·2	63	7 6	− 2	12 56	+ 2	17·1	17·5
Rio de Janeiro		40·3	330	i 7 38	+ 3	i 13 51	+10	i 17·0	—
Santiago		41·2	288	7 40	− 2	13 57	+ 3	—	—
Sucre		51·4	304	i 8 59	− 3	i 16 4	−16	24·8	—
La Paz		54·9	303	i 9 29a	+ 1	i 17 5	− 3	26·8	32·8
Huancayo		61·9	297	i 10 17	− 1	i 18 48	+ 7	e 24·4	—
Tananarive	E.	63·7	81	10 29	− 1	19 5	+ 1	26·2	31·5
	N.	63·7	81	10 29	− 1	19 8	+ 4	29·7	37·5
Chatham Is.		73·5	198	i 15 29?	PPP	—	—	—	—
Dakar		75·3	5	i 11 44	+ 2	i 21 35	+11	e 32·6	33·8
Christchurch		76·3	190	e 11 41	− 1	i 21 19	− 5	e 35·7	39·6
Wellington		77·3	193	11 54	0	21 39	− 7	41·5	—
Arapuni		80·3	194	—	—	22 23	+ 4	33·5	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Melbourne		81·1	169	e 12 42	+28	22 15	−12	35·8	41·0
Perth		81·4	144	12 59	+44	22 21	−10	38·2	—
Adelaide		83·3	164	i 12 25	0	i 22 45	− 5	e 39·6	47·1
Riverview		85·5	174	e 12 55	+19	i 23 5	[+ 2]	e 34·4	42·9
Sydney		85·5	174	e 14 44	+128	i 23 9	[+ 6]	42·2	44·0
San Juan		86·4	319	e 11 51	−49	e 22 39	[−30]	e 35·0	—
San Fernando		97·9	12	—	—	e 24 45	{+ 8}	40·5	53·5
Malaga		98·3	14	13 35	− 1	23 45	[−32]	40·2	—
Almeria		98·7	15	—	—	e 28 41	?	e 45·6	—
Granada		98·9	14	—	—	17 56	PP	39·6	—
Algiers		99·5	20	16 29?	?	i 24 13	[−10]	41·5	50·5
Colombo		101·9	97	22 27	?	—	—	—	42·7
Kodaikanal	E.	103·7	93	e 17 29?	PKP	—	—	—	—
Ksara		105·6	47	e 14 10	+ 1	—	—	49·6	58·5
Capodimonte		105·7	28	(e 17 29)	[−35]	(26 59)	PS	—	—
Columbia		106·0	312	e 18 39	PP	e 24 51	[− 4]	e 44·1	—
Florence		107·8	25	e 18 1	[−10]	27 59	PS	49·5	—
Medan		107·9	115	e 19 15	PP	—	—	e 32·5	—
Charlottesville		108·7	316	e 18 45	PP	e 28 11	PS	e 45·1	—
Bombay		108·8	84	e 18 49	PP	i 28 18	PS	—	—
Philadelphia		109·4	319	e 18 56	PP	—	—	e 43·8	—
Triest		110·1	26	e 18 27	[+ 9]	i 28 29	PS	e 45·8	51·2
Chur		110·4	22	e 18 24	[+ 5]	—	—	—	—
Oak Ridge		110·6	323	i 19 19	PP	e 42 37	?	e 55·5	—
Zagreb		110·8	27	e 19 9	PP	e 29 14	PS	—	61·5
Paris		111·1	17	e 19 29?	PP	—	—	e 44·5	47·5
Strasbourg		111·7	20	e 19 20	PP	—	—	e 43·5	—
Graz		111·8	26	—	—	e 34 4	SS	e 46·5	61·6
Stuttgart		112·2	22	e 19 29?	PP	—	—	e 48·0	60·5
Vermont		112·9	323	e 19 30	PP	—	—	e 52·9	—
Budapest		113·0	29	—	—	e 34 59	SS	64·0	67·0
Uccle		113·3	17	e 19 59	PP	i 29 5	PS	48·5	50·7
Kew		113·3	15	—	—	e 29 6	PS	45·5	49·8
Oxford		113·5	14	—	—	e 29 4	PS	e 43·1	60·9
St. Louis	N.	113·6	307	—	—	i 26 48	{+16}	i 48·6	61·0
Florissant		113·7	307	e 19 13	PP	—	—	e 52·6	56·5
Cheb		114·0	23	e 24 38?	?	e 35 38	SS	e 55·5	59·5
Toronto		114·1	318	e 14 50	− 1	—	—	e 54·0	—
Ann Arbor		114·4	314	—	—	e 28 59	PS	e 51·4	—
Erevan		114·4	50	e 19 5	PP	—	—	59·8	—
Prague		114·4	25	—	—	e 28 59	PS	e 49·0	59·5
Ottawa		114·5	322	19 33	PP	—	—	e 48·5	—
De Bilt		114·7	18	e 20 38	?	e 29 18	PS	e 46·5	63·1
Göttingen		115·0	21	—	—	e 29 11	PS	e 49·5	65·5
Chicago		115·3	311	e 19 17	PP	—	—	e 53·3	—
Stonyhurst		115·4	12	—	—	i 39 57	SSS	47·5	59·2
Tiflis		115·8	50	e 19 1	[+26]	e 29 33	PS	53·9	57·6
Baku		116·7	54	e 19 38	PP	29 30	PS	52·5	62·4
Tucson		117·0	288	—	—	e 29 35	PS	e 56·2	—
Madison		117·1	311	—	—	e 29 29?	PS	—	—
Piatigorsk		117·2	47	e 19 4	[+26]	—	—	62·5	—
Edinburgh		117·4	11	—	—	e 40 29?	SSS	e 53·5	—
Grozny		117·5	50	e 18 55	[+15]	—	—	60·5	—
Agra	E.	118·3	85	e 19 52	PP	i 36 12	SS	—	—
Copenhagen		119·4	21	—	—	29 59	PS	47·5	—
Calcutta		119·5	96	20 5	PP	30 16	PS	e 48·5	57·5
Riverside	Z.	121·6	284	e 18 47	[− 2]	—	—	—	—
Mount Wilson	Z.	122·1	284	e 18 53	[+ 3]	—	—	—	—
Pasadena	Z.	122·1	284	i 18 51	[+ 1]	—	—	i 59·1	—
Ivigtut		123·3	345	—	—	37 11	SS	47·5	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		123·4	66	e 18 57	[+ 3]	—	—	—	—
Haiwee	z.	123·6	285	e 18 55	[+ 1]	—	—	—	—
Upsala		124·2	23	—	—	e 37 29?	SS	e 53·5	
Tinemaha	z.	124·5	285	e 18 56	[0]	—	—	—	—
Moscow		125·4	37	18 55	[− 3]	—	—	e 55·7	73·2
Andijan		126·7	70	e 18 56	[− 4]	—	—	—	—
Tchimkent		126·7	67	e 19 34	[+34]	—	—	—	—
Manila		126·9	227	i 20 55k	PP	26 25	[+15]	31·0	—
Pulkovo		127·0	30	—	—	31 56	PS	64·5	69·4
Bozeman		128·0	297	e 21 2	PP	—	—	e 57·7	—
Frunse		129·4	71	e 21 17	PP	e 24 27	PPP	—	—
Honolulu		130·1	239	—	—	e 39 29	SS	e 66·5	—
Almata		130·8	72	e 19 7	[− 2]	e 22 19	PKS	—	—
Scoresby Sund		131·0	359	21 25	PP	—	—	53·5	—
Hong Kong		131·3	122	21 22	PP	32 37	?	54·5	61·7
Sverdlovsk		134·0	49	e 19 4	[− 9]	—	—	58·5	78·3
Victoria		135·6	291	e 23 8	PKS	—	—	e 58·8	75·1
Semipalatinsk		137·6	67	e 22 49	PKS	—	—	—	—
Nanking		141·8	120	i 19 38	[+15]	e 29 17	{−17}	59·2	72·5
Sitka		146·7	295	e 20 19	?	—	—	e 58·9	—
Chiufeng		147·3	109	i 19 37a	[− .1]	29 40	{−27}	61·0	73·2
Sumoto		149·9	141	e 19 43	[+ 1]	—	—	—	—
Kobe	z.	150·3	141	e 19 46	[+ 4]	—	—	—	—
College		155·5	304	—	—	e 33 34	—	e 65·2	—
Vladivostok		156·7	127	e 19 49	[− 1]	—	—	e 73·9	89·0

Additional readings and note :—
Cape Town PPPN = +8m.36s., PPPE = +8m.46s., SSS = +15m.21s. =SS +5s.
Sucre iPP = +10m.59s., iSS = +19m.42s.
La Paz iE = +9m.55s., ipPE = +10m.25s., isPE = +10m.48s., iPP = +11m.41s., ipPP = +12m.23s., iZ = +12m.43s., iPPP = +13m.43s., iE = +17m.19s., PSZ = +17m.37s., isSE = +18m.24s., iS_cS = +19m.28s., iSSE = +20m.49s., iSSZ = +21m.11s.
Huancayo i = +10m.29s., ePPP = +14m.27s., iP_cS = +15m.16s., iSS = +22m.48s.
Tananarive SSN = +22m.38s.
Christchurch eSS = +26m.26s., SSSS = +31m.26s., eZ = +34m.32s.
Wellington SS = +26m.29s.?, L_q = +31·5m.
Melbourne SS = +27m.38s., SSS = +30m.51s., i = +32m.51s. =SSSS +2s.
Perth PP = +16m.29s., PPP = +18m.19s., PPPP = +19m.40s., SS = +23m.14s. =PS +7s., SSS = +27m.44s. =SS +11s., +28m.19s., and +31m.14s., SSSS = +33m.29s.
Adelaide e = +16m.7s. and +17m.3s. =PPP −12s., i = +23m.34s. =PS +4s. and +28m.21s. =SS +19s., e = +33m.39s. =SSS +7s.
Riverview iSE = +23m.8s., eSSEN = +28m.33s.
Sydney SS = +28m.53s.
San Juan i = +12m.47s. =P +7s. and +16m.9s. =PP +12s., e = +19m.16s., iPS = +23m.17s. =S −4s., e = +25m.16s.
San Fernando iSKS = +25m.19s. =S +11s., SSE = +31m.49s.
Malaga PP = +16m.57s., e = +17m.32s. =PP +2s., i = +17m.45s., SS? = +29m.29s.
Algiers iPS = +26m.46s., iSSS = +35m.59s.
Ksara ePP = +18m.26s., PS = +27m.46s., SS = +33m.44s.
Capodimonte PKP is given as S and PS as L.
Columbia ePS = +27m.19s., eS_cSP = +27m.51s., eSS = +32m.59s., e = +37m.34s. =SSS +15s.
Charlottesville e = +28m.17s. =PS +2s., +33m.29s., and +34m.13s. =SS +12s.
Philadelphia e = +19m.10s., ePPP = +21m.12s., ePS = +28m.15s., eSS = +33m.28s.
Triest i = +19m.0s. =PP +2s., and +28m.54s., iPS = +29m.10s., i = +29m.39s., e = +34m.13s. =SS −7s., iE = +34m.30s. and +38m.8s. =SSS −13s., e = +39m.59s.
Zagreb e = +34m.48s. =SS +19s. and +45m.29s. ?
Strasbourg PS = +28m.41s., ePPS = +29m.15s., SS = +34m.45s., SSS = +38m.44s.
Stuttgart ePS = +28m.44s., eSS = +34m.57s.
Vermont ePPS = +28m.48s. =PS −8s., iSSS = +35m.11s. =SS +13s.
Uccle e = +26m.23s. =SKKS −7s. and +27m.15s., iSS = +35m.15s., i = +35m.33s.
Kew iEN = +35m.24s. =SS +21s., iE = +39m.27s. =SSS +18s.
St. Louis iPSN = +28m.57s., iPPSN = +29m.50s., eN = +34m.29s.

Continued on next page.

Florissant eN = +20m.3s., iPS = +28m.59s., iSSEN = +35m.27s.
Toronto iPP = +19m.39s., PS = +29m.0s., SS = +35m.22s. ; T_0 = 5h.36m.32s.
Ann Arbor ePP = +19m.47s., eSS = +35m.35s., eSSS = +39m.35s.
Prague e = +35m.23s. = SS + 5s.
Ottawa PS = +29m.7s., SS = +35m.7s., SSS = +39m.59s. ; T_0 = 5h.36m.42s.
De Bilt e = +35m.25s. = SS + 3s. and +39m.50s. = SSS + 20s.
Chicago ePP = +19m.47s., e = +24m.27s., ePS = +29m.17s., e = +29m.37s., eSS = +34m.35s.
Tiflis e = +19m.38s. = PP − 1s. and +37m.25s.
Baku e = +25m.36s. = SKS − 4s., PPP = +27m.49s., PPS = +36m.11s.
Tucson eSS = +35m.29s., e = +42m.9s., +43m.59s. and +47m.9s.
Edinburgh i = +49m.21s.
Grozny e = +20m.1s. = PP + 9s.
Copenhagen +35m.37s., e = +40m.53s.
Calcutta SSE = +36m.27s.
Mount Wilson eZ = +20m.27s. = PP + 3s.
Pasadena eZ = +20m.35s. = PP + 11s., iEZ = +20m.50s., eZ = +31m.47s., and +54m.23s.
Tinemaha eZ = +20m.41s. = PP + 1s.
Moscow e = +32m.16s. and +37m.59s.
Pulkovo SS = +37m.41s., SSS = +42m.41s.
Bozeman ePP = +21m.15s., ePPS = +32m.52s., e = +33m.11s., eSS = +38m.2s., eSSS = +43m.2s.
Scoresby Sund +21m.40s. = PP + 16s., e = +39m.29s.?
Hong Kong ? = +22m.36s. = PKS − 3s., PP = +24m.37s., PPP = +26m.35s. = SKS + 12s., PPPP = +28m.32s. = SKKS + 2s., ? = +31m.39s. = PS − 4s., SS = +38m.55s., SSS = +43m.38s.
Sverdlovsk i = +19m.13s. and +21m.45s. = PP + 1s., PKP = +22m.33s. = PKS + 17s., PP = +24m.22s. = PPP − 8s., PPS = +35m.5s., i = +38m.10s. and +39m.26s. = SS − 3s., SS = +40m.11s.
Nanking iE? = +20m.52s., iSS = +41m.35s.
Sitka eSS = +42m.9s., eSSS = +47m.14s., e = +48m.39s.
Chiufeng PPN = +23m.5s., PKSEZ = +23m.29s., SKKSEN = +29m.52s., SKSPZ = +33m.10s., iSSEZ = +42m.5s., SSN = +42m.13s.
Sumoto eSEZ = +19m.52s.
Kobe eE = +17m.38s., eN = +18m.16s.
College eSS = +44m.19s., eSSS = +49m.9s.
Vladivostok i = +24m.9s., eL = +45m.41s.
Long waves were also recorded at Apia, Barcelona, Tortosa, Rathfarnham Castle, Karlsruhe, Hamburg, Tashkent, and Phu-Lien.

Jan. 14d. 12h. Pacific earthquake.

Wellington e = 16m., i = 23m.8s. and 27m.35s.
Melbourne i = 18m.44s., e = 24m.22s., L = 29m.45s.
Arapuni e = 19m.
Riverview eE = 19m.0s., eN = 22m.54s., eL = 25m.30s., M = 31m.2s.
Apia eP = 20m.47s.
Christchurch eEN = 20m.49s., eZ = 25m.17s.
Sydney eP = 22m.8s., eS = 28m.0s., L = 31m.0s., M = 32m.0s.
Batavia ePE = 22m.33s., iPZ = 23m.3s., iSE? = 33m.1s.
Manila P = 22m.40s., SEN = 26m.51s., M = 32m.5s.
La Jolla e = 22m.57s.
Mount Wilson iPZ = 22m.57s.
Pasadena iPEZ = 22m.57s. a.
Riverside ePZ = 22m.57s.
Haiwee iP = 23m.4s.
Tinemaha eP = 23m.6s. a.
Nanking e = 23m.37s., iS = 33m.1s.
Chiufeng PEZ = 24m.3s. a, M = 35m.8s.
Tiflis e = 25m.28s., 29m.51s., 30m.36s., and 34m.18s.
Ksara ePKP = 30m.53s., ePP = 34m.42s., ePSKS = 44m.41s., M = 95m.
Yalta P = 30m.53s.
Sebastopol P = 30m.54s.
Simferopol P = 30m.57s.
Göttingen e = 31m.
Zagreb eNW = 31m.2s., eNE = 31m.22s.
Sverdlovsk e = 31m.40s. and 42m.22s., L = 65m., M = 80m.48s.
Malaga e = 31m.40s., 31m.51s., and 35m.59s.
Granada eP = 31m.41s., i = 40m.29s.
Hong Kong P? = 33m.48s., M = 53m.30s.
Huancayo e = 34m.56s., 35m.42s., 37m.18s., and 41m.58s., eL = 53m.28s.
Long waves were also recorded at Scoresby Sund, Baku, De Bilt, Uccle, Paris, Strasbourg, Stuttgart, Vermont, and Tucson.

Jan. 14d. 14h. 12m. 18s. Epicentre 29°·0S. 61°·0W. N.1.

A = +·4240, B = −·7650, C = −·4848 ; δ = +3 ;
D = −·875, E = −·485 ; G = −·235, H = +·424, K = −·875.

A *depth* of focus 0·090 has been assumed.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
			°	°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		− 0·9	9·4	239	2 1	+ 1	3 41	+ 5	—	—
Sucre		− 1·2	10·7	338	i 2 23	+ 9	i 4 23	+22	—	—
San Javier		− 1·3	11·2	231	2 23	+ 4	4 19	+ 8	—	—
La Paz	N.	− 2·2	14·1	331	i 2 52a	+ 5	i 5 9	+ 9	6·5	8·9
Rio de Janeiro		− 3·0	17·1	73	i 3 42	+25	—	—	i 6·5	—
Huancayo		− 3·9	21·6	319	i 4 3	0	i 7 25	+ 8	—	—
Balboa Heights		− 6·9	42·0	333	i 6 56	+ 6	i 12 25	+ 2	—	—
Port au Prince		− 7·8	48·8	347	i 5 16	?	i 14 6	+15	—	—
Merida	N.	− 8·7	57·1	328	8 44?	+ 5	—	—	—	—
Dakar		− 8·9	60·6	51	e 9 15	+11	i 16 56	+32	32·4	—
Tacubaya	N.	− 8·9	60·8	319	9 10	+ 4	—	—	—	—
Columbia		− 9·2	65·8	343	e 11 43	PP	i 17 34	+ 3	—	—
Cape Town	E.	− 9·3	66·2	117	10 1	+19	18 11	+36	27·9	—
	N.	− 9·3	66·2	117	10 3	+21	18 17	+42	27·5	—
Charlottesville		− 9·4	69·0	346	e 10 4	+ 2	i 18 11	0	e 25·2	—
Georgetown		− 9·4	69·5	348	i 10 17	+12	i 18 24	+ 7	e 29·7	—
Philadelphia		− 9·4	70·2	350	i 10 11	+ 1	i 18 31	+ 5	e 26·1	—
Little Rock		− 9·4	70·3	333	e 10 10	− 1	i 18 26	− 2	—	—
Pennsylvania		− 9·5	71·5	348	i 10 19	+ 1	i 18 49	+ 7	—	—
Cincinnati		− 9·5	71·6	342	i 10 17	− 2	i 18 42	− 1	—	38·1
Oak Ridge		− 9·5	72·2	354	i 10 25	+ 2	i 18 56	+ 5	—	—
St. Louis		− 9·6	72·9	337	i 10 25	− 2	i 18 56	− 3	—	—
Florissant		− 9·6	73·1	337	i 10 26	− 3	i 18 57	− 4	—	—
Halifax		− 9·6	73·7	359	e 10 32	− 1	i 19 22	+13	—	—
Buffalo		− 9·6	73·8	348	i 10 33	− 1	i 19 50	+40	—	—
Ann Arbor		− 9·7	74·3	344	e 10 36	0	i 19 12	− 3	e 31·7	—
Vermont		− 9·7	74·4	353	e 10 36	− 1	i 19 21	+ 5	—	—
Toronto		− 9·7	74·6	347	i 10 38	0	i 19 9	−10	e 30·7	—
Chicago		− 9·7	74·9	340	—	—	i 19 15	− 7	e 30·5	—
Ottawa		− 9·7	75·6	350	—	—	i 19 31	0	—	—
Madison		− 9·8	76·7	340	i 10 46	− 5	i 19 38	− 5	—	—
Tucson		− 9·8	77·4	319	e 11 0	+ 4	i 19 51	− 1	—	—
La Jolla		−10·1	81·7	316	i 11 14	− 6	i 20 32	− 8	—	—
Riverside		−10·2	82·5	316	i 11 15k	−10	i 20 36	−12	—	—
Pasadena		−10·2	83·1	316	i 11 20k	− 8	i 20 41	−15	—	—
Mount Wilson		−10·2	83·1	316	i 11 19k	− 9	i 20 39	−17	—	—
San Fernando		−10·2	83·3	42	11 29	0	i 20 56	− 2	33·7	—
Haiwee		−10·3	84·3	318	i 11 26	− 9	i 20 49	−19	—	—
Malaga		−10·3	84·5	43	i 11 37	+ 1	i 20 59	−12	—	—
Tinemaha		−10·4	85·1	318	i 11 31k	− 8	i 20 55	−22	—	—
Granada		−10·4	85·3	43	i 11 40k	0	—	—	—	—
Almeria		−10·4	85·7	44	e 11 43	+ 1	e 21 29	+ 5	e 35·8	—
Lick		−10·5	87·3	316	e 11 43	− 7	e 21 28	−13	—	—
Brunner		−10·5	87·7	316	e 11 45	− 8	21 30	−15	—	—
Berkeley		−10·6	88·0	316	e 11 45	− 9	e 21 33	−14	—	—
Algiers		−10·6	89·1	46	i 11 59	− 1	i 22 0	+ 1	e 34·7	—
Ukiah		−10·6	89·4	317	—	—	i 21 23	−40	—	—
Tortosa	N.	−10·6	90·1	42	i 12 3	− 2	i 21 35	−35	—	—
Ivigtut		−10·6	90·8	6	12 0	− 9	i 22 5	−13	—	—
Barcelona		−10·6	91·4	42	e 12 8	− 4	21 39	−45	—	28·6
Christchurch		−10·7	92·4	215	e 12 7	−10	e 22 19	−15	—	—
Wellington		−10·7	92·9	218	—	—	i 21 42?	−57	—	—
Victoria		−10·8	95·3	323	e 14 41	?	i 21 51	−72	—	22·4
Paris		−10·8	96·2	37	e 12 27	− 8	22 53	−19	31·7	33·7
Oxford		−10·8	96·2	33	—	—	i 22 4	−68	—	—

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.
Bidston	−10·8	96·4	30	17 42?	PPP	—	—	—	—
Stonyhurst	−10·8	97·0	30	—	—	i 22 11	−68	—	—
Neuchatel	−10·8	97·5	40	e 12 34	− 8	e 22 16	−68	—	—
Durham	−10·8	98·0	30	—	—	i 22 17	−72	—	—
Edinburgh	−10·8	98·1	29	—	—	i 22 27	−63	—	—
Florence	−10·8	98·2	44	e 15 42	PP	21 42?	−99	—	—
Uccle	−10·8	98·4	35	e 12 36	−10	i 22 51	−42	—	—
Zurich	−10·8	98·6	40	e 12 40k	− 7	e 23 20	PS	—	—
Capodimonte	−10·8	98·6	48	—	—	e 20 11	?	22·2	—
Chur	−10·8	98·9	40	e 12 42k	− 6	e 22 21	−77	—	—
Strasbourg	−10·8	98·9	38	i 12 46	− 2	i 23 23	PS	e 47·7	—
Karlsruhe	—	99·5	38	22 28	?	24 18	−64	25·7	—
De Bilt	—	99·5	35	i 14 52	?	i 22 26	[−117]	—	—
Padova	—	99·5	43	e 12 42	−59	e 22 31	[−112]	—	—
Stuttgart	—	99·7	39	e 12 46k	−56	e 22 27	[−117]	—	—
Triest	—	100·7	44	e 13 34	− 3	i 22 31	[−118]	—	—
Göttingen	—	101·7	36	i 22 35	SKS	(i 22 35)	[−119]	—	—
Zagreb	—	102·1	44	e 17 12	PP	e 23 17	[−79]	—	—
Cheb	—	102·2	39	e 15 9	?	e 22 39	[−117]	—	—
Jena	—	102·2	39	e 17 15	PP	e 22 39	[−117]	—	—
Graz	—	102·5	43	—	—	i 22 39	[−119]	—	32·6
Hamburg	—	102·8	35	e 17 19	PP	i 22 46	[−113]	—	—
Scoresby Sund	—	103·3	12	—	—	i 22 42	[−120]	—	—
Prague	—	103·3	39	—	—	i 22 43	[−119]	—	39·2
Vienna	—	103·5	42	e 12 49	−71	e 22 42	[−121]	—	—
Budapest	—	104·8	44	—	—	i 22 49	[−120]	—	—
Copenhagen	—	105·1	34	—	—	i 22 53	[−117]	—	—
Helwan	—	105·8	64	e 13 20	−50	i 22 54	[−120]	—	—
Honolulu	—	105·8	286	—	—	e 22 42	[−132]	—	—
Sitka	—	106·2	327	—	—	i 22 50	[−126]	34·9	—
Bucharest	—	107·9	48	—	—	24 1	{−111}	—	—
Riverview	—	110·2	208	—	—	e 24 12	{−116}	e 27·4	33·3
Ksara	—	110·9	63	e 13 42	−53	i 23 10	[−127]	—	—
Sebastopol	—	112·9	50	—	—	i 23 25	[−121]	—	—
Yalta	—	113·3	51	e 18 47	PP	e 23 29	[−118]	—	—
Simferopol	—	113·4	50	—	—	i 23 23	[−125]	—	—
Theodosia	—	114·3	50	e 18 51	PP	e 23 26	[−125]	—	—
College	—	114·7	332	—	—	e 24 19	[−74]	—	—
Pulkovo	—	115·4	34	e 20 6	PP	i 23 31	[−124]	—	—
Moscow	—	118·3	39	e 17 43	[−58]	i 23 42	[−123]	—	—
Perth	—	119·0	177	18 42	[− 1]	—	—	—	—
Piatigorsk	—	119·3	53	e 17 46	[−58]	—	—	—	—
Erevan	—	119·4	58	e 17 38	[−66]	i 25 7	{−125}	—	—
Tiflis	—	120·0	56	e 17 47	[−59]	i 25 21	{−115}	—	—
Grozny	—	121·1	54	e 17 52	[−56]	i 24 1	[−113]	—	—
Baku	—	123·5	58	e 20 15	PP	e 24 42	[−79]	—	—
Sverdlovsk	—	131·0	38	i 18 7	[−62]	i 26 26	{−122}	—	—
Samarkand	—	136·4	62	e 18 23	[−54]	e 27 1	{−121}	—	—
Bombay	—	136·9	93	e 18 15	[−63]	—	—	—	—
Kodaikanal R.	—	136·9	107	e 17 42?	[−96]	—	—	—	—
Colombo	—	137·0	114	18 11	[−67]	—	—	—	39·4
Tchimkent	—	138·4	57	e 18 23	[−56]	—	—	—	—
Andijan	—	140·5	60	e 23 48	?	27 24	{−123}	—	—
Frunse	—	142·0	57	18 24	[−60]	i 27 38	{−118}	—	—
Malabar	—	142·2	161	i 18 32	[−52]	—	—	—	—
Batavia	—	142·9	159	i 18 32k	[−55]	—	—	—	—
Almata	—	143·6	55	i 18 22	[−68]	i 27 36	{−129}	—	—
Semipalatinsk	—	143·9	42	e 18 33	[−58]	e 27 46	{−121}	—	—
Agra R.	—	144·0	83	i 18 30	[−61]	i 27 41	{−127}	41·4	—
Amboina	—	146·1	197	18 33	[−63]	—	—	—	—

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.
Medan		—	148·1	138	i 18 46	[−53]	—	—	—	—
Calcutta	E.	—	151·7	96	18 47	[−57]	28 30	{−123}	e 43·0	—
Hukuʻsima		—	160·1	302	18 55	[−59]	—	—	—	—
Oiwake		—	162·0	299	19 1	[−55]	—	—	—	—
Misima		—	162·1	295	18 58	[−58]	—	—	—	—
Kohu		—	162·2	297	19 2	[−54]	—	—	—	—
Nagano		—	162·2	301	19 10	[−46]	29 17	{−133}	—	—
Vladivostok		—	162·5	327	e 18 53	[−63]	i 29 19	{−133}	—	—
Manila		—	165·5	188	i 19 1k	[−59]	—	—	—	—
Phu-Lien		—	166·1	123	e 20 13	{−59}	—	—	—	—
Koti		—	166·8	294	19 0	[−61]	—	—	—	—
Chiufeng		—	168·7	11	i 19 2k	[−60]	i 30 12	{−113}	—	—
Miyazaki		—	168·9	289	19 3k	[−60]	—	—	—	—
Zinsen	N.	—	169·4	326	—	—	e 26 5	?	—	—
Taikyu		—	169·4	313	29 55	?	34 0	SKSP	—	—
Husan		—	169·6	309	e 22 28	PKS	e 29 54	{−136}	—	—
Nagasaki		—	170·0	295	19 0	[−64]	—	—	—	—
Hong Kong		—	172·1	146	19 6	[−59]	31 21	{− 62}	—	—
Taito		—	173·5	198	18 54	[−72]	—	—	—	—
Nanking		—	176·9	4	19 6k	[−61]	30 30	{−138}	—	—

Additional readings :—

La Paz iSE = +5m.12s., iP$_c$P? = +7m.42s., iS$_c$S = +13m.52s., isS$_c$SN = +16m.15s., isS$_c$SE = +16m.19s.
Huancayo i = +5m.32s. and +6m.23s., iSP = +6m.29s., e = +8m.0s.
Port au Prince PP = +9m.41s., SS = +16m.48s.
Dakar iPP = +11m.23s., iPS = +17m.2s., eSS = +21m.8s.
Columbia epPP = +13m.52s., iSP = +18m.38s., esS = +20m.59s., isS = +21m.6s.
Cape Town PPPEN = +13m.8s., PSE = +18m.45s., SSE = +21m.39s., SSN = +21m.42s.
Charlottesville e = +11m.12s., epP = +12m.2s., ePPP = +14m.32s., eSP = +19m.5s., eSS = +21m.38s.
Georgetown ipP = +12m.7s., e = +12m.13s. = PP + 2s. and +18m.26s., isS = +21m.56s., e = +24m.21s. = SSS − 1s., iSSS = +25m.31s.
Philadelphia iPP = +12m.12s., iSP = +19m.15s., eSS = +22m.4s., esS = +23m.8s.
Little Rock iE = +10m.38s., iSPE = +18m.58s., iE = +19m.11s., isSE = +22m.4s., iSSE = +23m.25s.
Pennsylvania i = +11m.22s., +12m.25s. = PP − 3s. and +19m.27s.
Cincinnati ipP = +12m.19s., iPP = +12m.47s., iPPP = +14m.34s., e = +18m.37s., i = +19m.3s., isP = +19m.17s., isS = +22m.29s.
Oak Ridge ipP = +12m.26s., iZ = +14m.52s. and +17m.12s., esS = +22m.30s.
St. Louis iEN = +10m.41s., ipPEN = +12m.27s., iPPE = +13m.7s., ipPPE = +14m.15s., iSPN = +19m.29s., isSEN = +22m.32s., iSSEN = +23m.21s.
Florissant ipPNZ = +12m.28s., iPPPZ = +14m.42s., i = +18m.51s., iPSE = +19m.31s., isSEZ = +22m.33s., iE = +23m.21s., iSSE = +23m.42s., iSSSE = +26m.34s.
Buffalo ipP = +12m.32s., i = +22m.4s. and +25m.10s.
Ann Arbor ipP = +12m.36s., i = +19m.36s., isS = +22m.54s.
Vermont iPP = +12m.40s., e = +19m.11s., i = +19m.46s., ePS = +22m.51s., eSS = +24m.3s., eSSS = +27m.16s.
Toronto iPP = +12m.40s., iPS = +19m.44s., SS = +23m.2s.
Chicago epP = +12m.38s., isP = +19m.42s., esS = +22m.43s.
Ottawa e = +22m.48s.
Madison ipP = +12m.50s., i = +20m.6s., isS = +23m.22s.
Tucson iP = +11m.3s., eSS = +23m.30s.
La Jolla ipPNZ = +13m.23s.
Riverside ipP = +13m.23s.
Pasadena ipP = +13m.27s., iSP = +21m.45s., eN = +24m.28s. and +25m.7s., iPKKPZ = +29m.49s., iPKPPKPZ = +37m.43s., iSKPPKPZ = +40m.19s.
Mount Wilson ipPZ = +13m.28s., iSKPPZ = +40m.16s.
San Fernando SSN = +24m.54s.
Haiwee ipPZ = +13m.36s.
Malaga e = +12m.50s. and +13m.42s., iPP = +13m.45s., e = +14m.34s., i = +22m.10s.
Tinemaha ipP = +13m.41s., eSPZ = +22m.10s., ePKKPZ = +29m.41s., ePKPPKPZ = +37m.39s., iSKPPKPZ = +40m.14s.
Granada pP = +13m.24s.
Almeria ePP = +13m.52s.
Lick iPN = +11m.46s., eN = +13m.56s., eEN = +21m.10s., eE = +22m.48s.
Berkeley eZ = +13m.57s., iN = +21m.11s., eN = +21m.17s., iN = +24m.47s.
Algiers ipP = +14m.11s., iSKS = +21m.32s., isS = +25m.57s.

Continued on next page.

Ukiah iS = +21m.47s., SP = +23m.42s., e = +24m.12s.
Ivigtut ipP = +14m.10s., eE = +14m.30s., iSKS = +21m.32s., eN = +23m.5s., eE = +23m.30s. and +24m.22s., e = +24m.39s. and +26m.0s.
Barcelona PS = +22m.17s.
Christchurch ePS = +23m.26s., eSSN = +28m.29s.
Paris pP = +14m.39s., iSKS = +22m.5s., sSP = +28m.13s.
Stonyhurst i = +23m.0s.
Edinburgh i = +23m.8s.
Uccle i = +22m.19s., iZ = +23m.16s., iE = +24m.42s., i = +26m.5s., iN = +28m.40s., e = +33m.12s.
Zurich epP = +14m.55s., eSKS = +22m.20s.
Chur epP = +14m.54s.
Strasbourg ipP = +14m.53s., iSKS = +22m.14s., iSKKS = +22m.56s., i = +26m.14s., iPS = +27m.22s., isS = +28m.46s., isSS = +33m.25s., eG = +40m.59s.
De Bilt e = +28m.52s.
Stuttgart epP = +14m.57s., iSKKS = +23m.3s., eS = +23m.30s., e = +24m.59s., +25m.36s., +28m.42s., and +34m.5s.
Triest i = +18m.40s., iE = +23m.6s., i = +23m.40s. and +25m.51s., iN = +27m.42s., i = +29m.2s., +29m.28s., and +29m.42s., iN = +34m.10s., eN = +37m.44s., iEN = +41m.22s., i = +44m.46s.
Zagreb eNW = +17m.7s., e = +17m.21s., eNW = +18m.19s., e = +18m.33s., eZ = +19m.10s., eNW = +19m.30s., e = +22m.35s., eNE = +23m.29s., eNW = +23m.49s., e = +26m.24s., +34m.18s., and +38m.12s.
Jena eN = +22m.32s., eE = +23m.21s. and +23m.50s.
Graz i = +23m.17s., e = +26m.17s.
Hamburg eE = +32m.42s.?
Scoresby Sund PP = +15m.11s., e = +19m.15s., eN = +23m.25s., PS = +25m.30s., eSSN = +29m.24s.
Prague i = +23m.22s. and +24m.0s., e = +25m.33s. and +29m.30s.
Vienna e = +17m.28s., PPS = +23m.24s.
Budapest i = +23m.37s.
Copenhagen i = +23m.40s. and +25m.52s., e = +29m.48s., +31m.42s., and +35m.24s.
Helwan i = +23m.47s., +24m.24s., +26m.12s., and +27m.2s.
Honolulu eSP = +25m.42s.
Sitka iSP = +26m.0s., e = +28m.7s.
Bucharest +23m.5s., +23m.9s., +23m.59s., +24m.4s., +26m.32s., +27m.34s., and +29m.5s.
Ksara epP = +15m.52s., iPP = +18m.27s., ipPP = +20m.21s., i = +20m.49s., SP = +27m.1s., PS = +28m.9s., SS = +32m.47s.
Sebastopol i = +24m.37s.
Yalta i = +24m.38s., e = +28m.31s.
Simferopol i = +24m.31s., e = +28m.28s.
Theodosia e = +24m.36s. and +28m.40s.
College esSS = +25m.35s., ePS = +28m.9s., eSS = +33m.2s.
Pulkovo i = +24m.45s., e = +27m.26s. and +28m.49s., i = +31m.48s., e = +32m.46s., +33m.58s., +36m.20s., +37m.25s., and +37m.46s.
Moscow e = +18m.52s., +20m.6s., and +21m.43s., i = +25m.6s. and +27m.58s., e = +28m.55s., +30m.55s., +33m.26s., +34m.45s., and +38m.27s.
Tiflis e = +19m.22s., +22m.42s., and +32m.12s.
Grozny e = +20m.1s., i = +25m.31s.
Baku e = +28m.47s. and +33m.34s.
Sverdlovsk i = +20m.25s., +20m.37s., +21m.38s., +22m.28s., +23m.50s., +36m.28s., +38m.12s., +39m.15s., and +40m.32s.
Samarkand e = +20m.55s.
Bombay iEN = +21m.58s.
Semipalatinsk e = +24m.10s.
Agra PPE = +20m.48s., PPPE = +22m.40s., PSE = +28m.18s., SSE = +31m.53s., SSSE = +35m.14s.
Calcutta PP = +21m.41s.
Vladivostok i = +25m.40s., +33m.34s., +42m.55s., and +43m.2s.
Manila iN = +19m.8s.
Chiufeng PKP_2NZ = +19m.33s., iNZ = +20m.17s. and +21m.22s., iSKPNZ = +22m.24s., iNZ = +24m.3s., SKS?Z = +25m.53s., PPPNZ = +26m.14s., iNZ = +28m.38s., SKKS = +29m.54s., SKSPN = +33m.28s., SKSPZ = +33m.37s., PPSZ = +36m.49s., PPSN = +36m.59s., SSN = +42m.39s., iNZ = +43m.13s., iE = +44m.5s., iEN = +44m.57s.
Miyazaki i = +20m.31s.
Hong Kong ? = +20m.31s. = PKP_2 − 68s. and +24m.22s., SS = +38m.6s., SSS = +42m.22s., ? = +44m.46s. and +45m.38s.
Nanking iN = +24m.42s., e = +24m.57s., eN = +26m.37s., eE = +31m.35s., iN = +33m.51s. and +44m.35s., iEN = +45m.23s., iE = +47m.17s. and +49m.5s., eN = +52m.25s.
Long waves also at San Juan.

Jan. 14d. 15h. 11m. 28s. Epicentre 36°·6N. 23°·1E. N.2.

Given by De Bilt.

A = +·7384, B = +·3150, C = +·5962 ; δ = −9 ;
D = +·392, E = −·920 ; G = +·548, H = +·234, K = −·803 ;.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Athens		1·4	19	i 0 26	+ 6	—	—	1·0	—
Capodimonte		8·1	305	e 2 1	+ 6	e 4 56	?	—	—
Bucharest		8·2	15	e 2 23	P_g	e 3 39	+10	e 3·9	6·4
Belgrade		8·4	347	e 2 6	+ 7	e 4 6	S*	e 4·6	5·1
Zagreb		10·6	332	e 2 37	+ 8	e 5 41	S_g	—	6·6
Ksara		10·8	101	e 2 19	−13	e 4 24	− 9	—	—
Sebastopol		11·2	41	e 3 20	?	—	—	—	—
Budapest		11·3	346	—	—	e 4 32?	−13	6·5	10·0
Florence		11·5	312	e 2 32	−10	4 37	−13	—	7·0
Triest		11·5	325	e 2 38	− 4	i 4 37	−13	—	6·7
Yalta		11·5	43	e 2 48	+ 6	e 9 30	?	—	—
Simferopol		11·8	41	e 2 58	+12	—	—	e 8·8	—
Graz		11·9	334	i 3 24	+37	i 5 20	S*	e 6·3	7·3
Padova		12·2	320	(e 2 49)	− 2	(5 4)	− 4	—	—
Theodosia		12·5	43	e 3 19	+24	—	—	—	—
Vienna		12·6	339	e 3 44	+48	e 6 15	S*	—	8·5
Chur		14·4	320	e 3 13	− 8	i 5 46	−15	—	—
Prague		14·8	338	—	—	e 6 5	− 5	e 8·1	9·5
Zurich		15·2	320	e 3 22	− 9	e 5 57	−23	—	—
Cheb		15·5	334	e 3 32?	− 3	—	—	—	10·5
Neuchatel		15·8	316	e 3 30	− 9	—	—	—	—
Stuttgart		15·8	325	e 3 36	− 3	e 6 12	−22	e 9·1	—
Karlsruhe		16·4	324	e 6 57	S	(e 6 57)	+ 9	e 11·1	—
Strasbourg		16·4	322	e 4 32?	+46	—	—	e 16·5	—
Besançon		16·5	315	—	—	6 32?	−18	—	—
Jena		16·5	334	e 3 15	−33	e 7 14	SS	e 8·5	11·2
Tiflis		17·5	66	e 4 6	+ 6	e 7 44	+31	10·6	—
Tortosa	N.	18·1	291	e 4 15	+ 7	—	—	—	—
Hamburg	Z.	19·3	336	e 4 32?	+10	—	—	—	—
Paris		19·3	316	e 5 35	+73	i 7 54	+ 2	11·5	13·5
Uccle		19·5	323	e 4 22	− 2	e 7 52	− 4	10·5	—
Granada		21·3	280	e 4 27	−16	e 8 18	−14	—	—
Moscow		21·5	24	e 4 49	+ 4	e 8 49	+13	e 12·8	—
Malaga		22·0	280	e 4 39	−12	—	—	—	—
Upsala		23·5	353	—	—	e 9 16	+ 2	—	—
Pulkovo		23·6	10	5 3	− 3	8 49	P_cP	12·5	14·9
Stonyhurst		24·7	323	i 6 15	?	—	—	13·5	14·5

Additional readings and note :—
Belgrade e = +2m.23s. = P* +0s., +2m.34s. = P_g −8s., +3m.1s., and +3m.10s.
Zagreb eZ = +2m.43s. and +3m.7s., eNW = +3m.11s., eNE = +3m.22s., e = +5m.21s. = S* +8s., iNW = +5m.26s., e = +5m.55s. and +6m.16s.
Triest i = +4m.51s. = S +1s., +5m.7s., +6m.29s. = S_g +15s. and +6m.35s.
Padova readings have been *diminished* by 2m.
Karlsruhe eS? = +9m.16s.
Strasbourg i = +9m.32s.? and +10m.37s.
Malaga e = +5m.5s. = PP −5s., +5m.59s. and +8m.11s.
Pulkovo e = +6m.24s. and +6m.12s.
Long waves were also recorded at Göttingen, De Bilt, Copenhagen, Bidston, and Oxford.

Jan. 14d. 17h. 41m. 11s. Epicentre 18°·1S. 167°·8E. N.2.

$A = -·9290$, $B = +·2009$, $C = -·3107$; $\delta = -6$;
$D = +·211$, $E = +·977$; $G = +·304$, $H = -·066$, $K = -·951$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		20·1	83	i 4 35	+ 4	e 8 43	PcP	—	—
Arapuni		21·1	164	e 4 49	+ 8	i 8 31	+ 3	—	9·8
New Plymouth		21·7	167	4 49?	+ 1	—	—	—	—
Riverview		21·7	221	i 4 45k	− 3	i 8 50	+10	e 10·4	12·9
Sydney		21·7	221	e 4 44	− 4	i 8 54	SS	10·8	11·4
Wellington		23·9	168	5 10	+ 1	9 21	0	11·1	12·8
Christchurch		25·8	173	e 5 27	0	e 9 43	−12	e 11·4	13·0
Melbourne		28·1	221	i 5 47	− 1	10 22	−12	12·3	14·6
Chatham Is.		29·0	158	e 5 13	−43	10 13	−35	—	—
Adelaide		30·9	231	i 6 12	− 1	i 11 15	− 3	13·6	17·2
Amboina		41·4	286	7 38	− 6	i 13 35	−22	e 23·8	—
Palau		41·6	305	7 45	0	—	—	—	—
Perth		48·6	244	8 10	−31	15 34	− 7	24·8	25·8
Honolulu		51·8	43	—	—	e 16 19	− 6	20·8	—
Manila		56·5	303	9 43a	+ 4	17 54	+24	27·3	—
Batavia		60·5	273	i 10 7	− 1	i 18 22	− 1	e 29·8	—
Miyazaki		61·0	325	10 14	+ 3	18 29	0	—	—
Oiwake		61·1	335	10 5	− 7	18 12	−18	—	—
Kobe		61·2	331	e 14 10	?	e 18 42	+10	—	32·6
Nagano		61·5	334	10 26	+11	—	—	—	—
Kumamoto		62·1	326	10 22	+ 3	—	—	—	—
Mizusawa		62·4	338	e 18 46	S	(e 18 46)	+ 1	30·1	—
Nagasaki		62·4	325	10 17	− 4	—	—	—	—
Husan		64·7	326	e 14 1	PPP	e 19 18	+ 2	—	—
Hong Kong		66·2	306	10 50	+ 3	19 40	+ 5	31·5	33·6
Zi-ka-wei	z.	66·4	318	10 49	+ 1	—	—	30·7	34·7
Nanking		68·7	317	11 4	+ 1	20 11	+ 6	30·3	36·0
Vladivostok		69·5	334	e 11 6	− 2	e 20 13	− 2	24·5	38·8
Medan		71·4	281	e 11 16	− 3	—	—	e 31·8	—
Chiufeng		75·5	322	e 11 42k	− 1	e 21 23	− 3	e 31·0	42·2
Ukiah		86·1	47	—	—	e 33 25	?	e 39·3	—
Berkeley		86·2	48	e 12 38	− 1	—	—	—	—
Lick		86·4	49	e 12 38	− 2	—	—	—	—
Calcutta		87·6	295	12 54	+ 8	23 13	[− 4]	40·0	—
Pasadena		87·6	53	i 12 41	− 5	i 23 12	[− 5]	e 39·3	—
Mount Wilson	z.	87·7	53	i 12 42	− 4	—	—	—	—
La Jolla		87·8	53	i 12 46	− 1	—	—	—	—
Riverside		88·1	53	e 12 42	− 6	e 23 14	[− 7]	—	—
Haiwee		88·5	52	i 12 48	− 2	—	—	—	—
Tinemaha		88·7	51	i 12 47	− 4	—	—	—	—
Sitka		88·8	27	—	—	i 23 17	[− 8]	e 36·3	—
College		89·6	17	—	—	e 23 21	[− 9]	e 39·4	—
Colombo		90·2	277	21 45	?	—	—	—	54·8
Victoria	E.	90·3	38	e 23 40	S	(e 23 40)	[+ 6]	e 47·3	49·5
Tucson		92·6	57	e 13 10	+ 1	e 23 41	[− 7]	e 42·4	—
Kodaikanal	E.	93·5	280	e 12 49?	−25	—	—	—	—
Bozeman		96·9	44	e 15 5	?	e 24 9	[− 1]	e 40·4	—
Agra	E.	98·0	296	e 13 35	+ 1	i 24 4	[−12]	—	—
Bombay		100·2	287	e 13 49?	− 5	i 24 19	[− 8]	—	63·0
Tashkent		108·1	309	18 55	PP	i 26 56	{+63}	e 47·5	62·6
Huancayo		110·6	111	e 18 55	PP	e 25 7	[−10]	e 45·8	—
Sverdlovsk		114·4	325	18 35	[+ 4]	25 22	[− 9]	48·8	56·8
La Paz		115·0	119	18 41	[+ 8]	i 25 31	[− 3]	53·8	63·8
Ann Arbor		115·6	51	—	—	e 37 55	?	62·2	—
Columbia		117·3	60	—	—	e 42 22	?	e 48·5	—
Toronto		118·8	50	—	—	e 26 21	[+35]	e 49·8	—
Cape Town		120·3	210	—	—	29 44	PS	58·8	68·6
Ottawa		121·3	48	—	—	e 26 7	[+13]	e 50·8	—
Philadelphia		122·0	54	—	—	e 30 49	PS	e 50·3	—
Baku		122·7	307	—	—	e 25 8	[−51]	e 53·8	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vermont		123·1	48	—	—	e 38 3	?	e 56·4	—
Grozny		125·5	310	e 19 3	[+ 5]	—	—	—	—
Tiflis		126·4	309	e 18 59	[− 1]	e 26 9	[0]	61·8	—
Moscow		127·0	327	19 3	[+ 2]	28 6	{+ 4}	61·3	72·4
Piatigorsk		127·2	312	e 18 57	[− 4]	—	—	—	—
Scoresby Sund		127·3	5	20 59	PP	—	—	60·8	—
Pulkovo		128·4	334	—	—	e 38 31	SS	58·8	75·2
San Juan		129·0	80	i 22 26	PKS	—	—	e 54·8	—
Ivigtut		130·0	22	22 28	PKS	—	—	60·8	—
Theodosia		132·3	315	e 22 36	PKS	—	—	—	—
Yalta		133·3	314	e 22 45	PKS	—	—	—	—
Ksara		134·5	299	18 53	[−21]	—	—	—	77·5
Helwan		138·8	295	e 19 31	[+11]	i 22 14	PP	—	—
Hamburg		140·6	340	e 19 25	[+ 3]	i 23 0	PKS	86·8	—
Vienna		142·0	329	e 19 27	[+ 3]	e 26 22	SKS	—	—
Cheb		142·5	334	e 20 49?	?	e 29 49?	{+10}	e 64·8	67·8
De Bilt		143·4	342	e 19 49	[+20]	e 41 37	SS	e 61·8	81·2
Zagreb		143·8	326	e 19 31	[+ 1]	—	—	—	—
Uccle		144·7	343	19 32	[− 1]	e 29 49	{− 3}	e 58·8	—
Stuttgart		144·8	336	e 19 33a	[0]	e 29 49?	{− 3}	e 71·8	—
Triest		145·0	328	i 19 32a	[− 2]	e 29 47	{− 6}	e 59·5	72·4
Kew		145·3	347	i 19 35	[0]	—	—	e 68·8	90·6
Strasbourg		145·5	337	i 19 36a	[+ 1]	e 29 49?	{− 7}	e 58·8	—
Zurich		146·1	335	e 19 35	[− 1]	—	—	—	—
Chur		146·2	335	e 19 35	[− 1]	—	—	—	—
Padova		146·2	329	19 43	[+ 7]	—	—	—	—
Paris		147·1	342	i 19 41	[+ 4]	—	—	68·8	90·8
Neuchatel	E.	147·1	336	e 19 37	[0]	—	—	—	—
Besançon		147·3	336	e 19 33	[− 5]	—	—	—	—
Florence		147·6	328	19 34	[− 4]	—	—	—	—
Capodimonte		147·9	321	e 19 19	[−20]	—	—	—	—
Almeria		159·4	338	e 20 11	[+18]	—	—	e 79·7	—
Granada		159·5	341	e 19 36	[−17]	—	—	—	—
Malaga		160·1	341	e 19 58	[+ 4]	—	—	—	—
San Fernando		160·9	345	e 19 56	[+ 1]	e 30 15	PPPP	75·3	—
Dakar		173·9	124	e 25 30	PP	e 32 14	{−18}	—	—

Additional readings :—
Apia PP = +4m.56s., sP = +5m.18s., P_cP = +8m.12s., SS = +9m.11s., S_cS = +15m.45s., sS_cS? = +16m.24s. ; T_0 = 17h.40m.49s.
Wellington pP = +5m.19s., PP = +5m.40s., SS = +10m.19s.
Christchurch ePP = +5m.57s., iSS = +10m.28s.
Chatham Is., SS = +11m.13s.
Adelaide e = +8m.0s., i = +11m.55s. and +13m.8s.
Perth P_cP = +8m.44s., PS = +15m.49s., SS = +18m.49s., ? = +19m.39s. and +22m.49s.
Kobe eN = +14m.34s.
Mizusawa SN = +25m.32s., SE = +25m.35s.
Hong Kong PP = +13m.15s., SS = +23m.56s.
Nanking eE = +15m.49s. and +21m.4s.
Medan ePN = +11m.21s.
Chiufeng PPZ = +14m.26s., ePPPZ = +16m.11s., iE = +21m.58s. = PS +7s., iN = +22m.5s.
Ukiah e = +34m.13s.
Pasadena iP = +12m.45s., eN = +36m.12s.
Riverside iPEZ = +12m.46s.
Tucson ePS = +24m.16s. = S −4s., eSS = +30m.59s., e = +38m.5s.
Bozeman ePP = +17m.42s., e = +37m.2s.
Agra ePPE = +17m.24s., PSE = +24m.44s. = SKKS +6s., SSSE = +31m.44s. = SS +10s.
Tashkent PS = +28m.59s., PPS = +30m.11s., SS = +36m.1s., SSS = +39m.31s.
Huancayo ePS = +28m.27s., eSS = +34m.37s., e = +47m.7s.
Sverdlovsk PP = +19m.39s., SKKS = +26m.29s., iS = +27m.22s., PS = +29m.12s., SS = +35m.31s.
La Paz iSKS = +29m.21s., iSZ = +30m.31s., SSN = +36m.26s.
Toronto e = +28m.1s.
Cape Town E = +30m.3s. = PS −2s., EN = +37m.15s.
Ottawa eE = +28m.25s., e = +36m.49s.?
Philadelphia e = +32m.49s., eSS = +37m.23s.

Continued on next page.

Baku PPS = +32m.2s., e = +39m.46s.
Vermont e = +51m.28s.
Tiflis e = +22m.7s., ePS = +30m.53s., e = +32m.25s.
Moscow PP = +20m.49s., e = +29m.25s., PS = +31m.18s., SS = +38m.13s., e = +40m.52s.
Scoresby Sund e = +22m.20s., +24m.43s., and +30m.7s.
San Juan eSKSP = +30m.32s., e = +32m.57s., +41m.1s., and +49m.13s.
Ksara PP = +21m.55s., PPP = +24m.59s.
Zagreb eNW = +20m.22s., +23m.20s. = PKS +3s.
Uccle eN = +23m.29s. = PKS +10s., e = +41m.19s. = SS +19s. and +47m.1s.
Stuttgart e = +21m.9s.
Triest i = +19m.42s., PP = +21m.43s., SKP? = +22m.57s., i = +23m.12s. = PKS −8s. and +29m.6s., ePPS = +33m.12s., i = +41m.35s. = SS −7s., +43m.26s., and +47m.8s. = SSS +15s.
Strasbourg eSS = +41m.49s.?
Florence i = +19m.49s.
Granada PP = +24m.31s.
Malaga i = +20m.36s. = PKP_2 −12s., e = +21m.24s., +24m.16s. = PP −4s., and +27m.36s.
San Fernando SSN = +45m.24s.
Dakar ePP = +27m.21s., ePPP = +27m.56s., iPS = +32m.20s. = SKKS −12s., eSS = +35m.38s. = SKSP −25s.
Long waves were also recorded at Madison, Oak Ridge, Copenhagen, Stonyhurst, Budapest, and Prague.

Jan. 14d. Readings also at 2h. (Medan and Wellington), 5h. (near Berkeley, Branner, Lick, San Francisco, Tucson, and near Hukuoka B), 6h. (Amboina and Huancayo), 7h. (Tiflis, Sverdlovsk, Pulkovo, Moscow, Copenhagen, Scoresby Sund, and Zagreb), 11h. (Wellington and near Sumoto), 12h. (Tucson and Almeria), 13h. (Medan), 15h. (Columbia and Dakar), 16h. (near Sumoto), 18h. (Batavia), 19h. (Montezuma and San Juan).

Jan. 15d. 14h. 43m. 34s. Epicentre 22°·0S. 170°·2E. N.2.

$A = -\cdot9137$, $B = +\cdot1578$, $C = -\cdot3746$; $\delta = +7$;
$D = +\cdot170$, $E = +\cdot985$; $G = +\cdot369$, $H = -\cdot064$, $K = -\cdot927$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		16·8	165	e 3 56	− 4	6 56	− 1	—	—
Apia		19·0	67	e 4 20	+ 1	7 59	SS	—	—
Wellington		19·7	170	4 26	0	8 2	+ 2	10·1	11·4
Riverview		20·5	231	4 38	+ 3	i 8 33	SS	e 9·9	11·9
Sydney		20·5	231	e 4 21	−14	i 8 26	+10	10·9	12·4
Christchurch		21·6	176	e 4 45	− 1	e 8 41	+ 3	e 10·6	11·7
Chatham Is.		24·5	158	—	—	i 9 59	+27	—	—
Melbourne		26·8	229	5 36	0	10 18	+ 6	13·4	16·1
Adelaide		30·5	237	e 6 28	+19	e 11 45	+33	i 13·3	17·8
Perth		49·0	247	11 6	PPP	15 51	+ 4	22·7	26·4
Manila		60·5	302	i 10 14k	+ 6	i 18 32	PS	29·1	—
Batavia		63·0	275	i 10 29	+ 4	i 19 2	PS	e 31·4	—
Hong Kong		70·3	305	11 15	+ 2	20 31	+ 6	—	36·4
Zi-ka-wei	z.	70·8	317	11 6	−10	—	—	—	45·4
Nanking		73·1	316	11 31	+ 2	i 21 0	+ 2	e 43·3	—
Vladivostok		74·0	332	e 11 34	− 1	e 21 11	+ 3	36·0	43·9
Chiufeng		79·9	321	i 12 7a	0	22 12	− 3	—	51·0
Ukiah		87·2	46	—	—	e 24 41	PS	e 40·5	—
Pasadena	z.	88·2	52	i 12 48	− 1	e 24 56	PS	e 40·1	—
Mount Wilson	z.	88·3	52	i 12 51	+ 2	—	—	—	—
Riverside	z.	88·7	52	e 12 48	− 3	—	—	—	—
Tinemaha	z.	89·5	49	e 12 55	0	—	—	—	—
Calcutta		91·3	294	e 13 12	+ 9	e 23 38	[− 2]	e 40·8	—
College		92·7	16	—	—	e 42 5	?	e 47·8	—
Kodaikanal	E.	96·3	278	11 59	−87	—	—	—	—
Bombay		103·5	285	e 13 26?	−34	—	—	—	—
Huancayo		107·3	111	e 18 43	PP	e 24 59	[− 2]	e 50·1	—
Tashkent		112·3	307	19 11	PP	25 11	[−12]	—	63·1
Ottawa		122·2	49	—	—	e 32 26?	?	e 54·4	—
Baku		126·8	304	e 22 17	PKS	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tiflis		130·6	306	e 18 53	[−15]	—	—	81·4	—
Scoresby Sund		131·0	5	21 8	PP	—	—	64·4	—
Moscow		131·5	326	21 28	PP	—	—	73·7	81·7
Pulkovo		132·9	333	21 40	PP	—	—	69·4	73·0
Yalta		137·6	312	e 23 0	PKS	—	—	—	—
Sebastopol		138·0	313	e 22 8	PP	—	—	—	—
Ksara		138·3	295	i 19 27k	[+ 8]	—	—	67·4	—
Helwan		142·4	290	e 19 26	[+ 1]	—	—	—	—
Jena	E.	146·6	334	e 19 41	[+ 4]	—	—	—	—
Göttingen		146·7	338	i 19 43	[+ 6]	—	—	—	—
De Bilt		147·8	342	i 19 45	[+ 6]	i 23 16	PP	e 73·4	81·7
Uccle		149·1	343	19 44	[+ 4]	—	—	e 63·4	—
Stuttgart		149·3	335	19 44	[+ 3]	—	—	e 67·4	—
Strasbourg		150·0	336	i 19 46	[+ 4]	—	—	e 56·4	—
Zurich		150·6	334	e 19 50	[+ 7]	—	—	—	—
Chur		150·7	334	e 19 50	[+ 7]	—	—	—	—
Paris		151·5	343	e 19 26?	[−18]	—	—	78·4	84·4
Florence		152·1	326	e 18 29	[−75]	—	—	—	—
Granada		163·9	342	19 51	[− 7]	24 42	PP	—	—

Additional readings :—
Apia PP = +4m.31s., sP = +5m.24s., SS = +8m.26s. ; T_0 = 14h.43m.26s.
Riverview iEN = +4m.41s.
Christchurch iZ = +8m.47s., eSSZ = +9m.29s.
Adelaide i = +8m.34s.
Perth P_cP = +11m.21s. = PPP +4s., P_cS = +15m.16s., SP = +16m.1s., SS = +18m.36s. = S_cS −2s., SSS = +19m.36s. = SS +28s., SSSS = +20m.16s. = SSS −3s.
Calcutta SSE = +29m.19s.
Huancayo eSKKS = +25m.50s., e = +29m.6s., eSS = +33m.48s., e = +44m.40s.
Tashkent PPP = +21m.32s., SKKS = +26m.15s., PS = +28m.32s., SS = +40m.50s.
Ottawa eE = +37m.56s.
Tiflis ePPP = +22m.38s. = PKS +2s.
Scoresby Sund PKS = +22m.38s., PS = +31m.44s., e = +34m.44s., SSS = +43m.26s.?
Moscow PKS = +22m.37s., eSS = +37m.56s.
Pulkovo PKS = +22m.43s., PS = +31m.39s., PPS = +33m.34s., SSS = +43m.14s.
Ksara PP = +22m.20s., PSKS = +32m.24s., PPS = +34m.48s.
Helwan e = +22m.42s. = PP +6s., i = +23m.12s. = PKS −2s.
Uccle ePPN = +23m.22s., eE = +42m.46s., EN = +49m.18s.
Stuttgart iPKPZ = +20m.2s. = PKP_2, ePKS = +23m.14s. = PP −2s.
Strasbourg PKP_3 = +20m.3s., eSS = +43m.26s.?
Long waves were also recorded at New Plymouth, Cape Town, La Paz, Algiers, Kew, and other American and European stations.

Jan. 15d. Readings also at 1h. (near Hukuoka B), 3h. (Amboina, Neuchatel, near Zurich, near Andijan, near Mizusawa and Nagoya), 4h. (Amboina and La Paz), 7h. (Chiufeng, Hong Kong, Phu-Lien, and Nanking), 10h. (Riverview and Wellington), 11h. (Ksara), 15h. (Tucson), 16h. (Arapuni, Wellington, Adelaide, Melbourne, Riverview, Sydney, and Manila), 17h. (Oak Ridge and Perth), 19h. (Medan), 20h. (Nanking and near Chiufeng), 22h. (near Taihoku).

Jan. 16d. Readings at 2h. (Riverview), 3h. (near Medan), 5h. (Riverview and Malabar (2)), 6h. (Andijan), 7h. (Barcelona, Adelaide, Perth, Riverview, Christchurch, and Wellington), 8h. (Tananarive, Cape Town, Andijan, Samarkand, Baku, Sverdlovsk, Ksara, and Granada), 9h. (Cape Town, La Jolla, Mount Wilson, Pasadena, and Riverside), 10h. (Copenhagen, De Bilt, Paris, Strasbourg, Stuttgart, Uccle, Granada, Baku, Sverdlovsk, and Ksara), 11h. (near Amboina), 12h. (Amboina, Wellington, Riverview, Ksara, and near Port au Prince), 13h. (La Paz), 15h. (Tiflis), 16h. (Wellington and near Alicante), 17h. (Andijan and Tacubaya), 18h. (Ksara, Sverdlovsk, Manila, Wellington, and near Gleenmuick), 19h. (Baku and Tashkent), 20h. (Medan, Sverdlovsk, Pulkovo, Grozny (2), near Erevan (2), and near Tiflis (2)), 21h. (Mizusawa, Pennsylvania, Ksara, and Samarkand), 22h. (Malaber), 23h. (near Manila).

Jan. 17d. 21h. 18m. 2s. Epicentre 36°·1N. 140°·0E. (as on 1935 Dec. 3d.). X.

A = −·6190, B = +·5194, C = +·5892; δ = +9;

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Tukubasan		0·1	35	0 3	+ 2	0 8	+ 5	—
Komaba		0·5	210	0 6	− 1	0 15	+ 2	—
Tokyo		0·5	206	0 5a	− 2	0 14	+ 1	0·2
Mitaka		0·6	220	0 7	− 2	0 16	+ 1	—
Kamakura		0·9	205	0 11	− 2	0 23	0	—
Kiyosumi		1·0	165	0 3	−11	0 17	− 9	—
Nagoya		2·7	249	e 0 40	+ 1	e 1 13	+ 4	—
Mizusawa	E.	3·0	16	e 0 49	P*	e 1 22	+ 5	—

Jan. 17d. Readings also at 0h. (Glenmuick, Grozny, near Erevan (2), near Algiers, and near Santiago), 6h. (Tiflis, Erevan, near Baku, and near Malaga), 8h. (Florence), 9h. (near San Javier), 10h. (Ksara), 11h. (Amboina, Apia, and near Samarkand), 12h. (Agra, Bombay, Calcutta, Tashkent, Chiufeng, Hong Kong, Ksara, Sverdlovsk, Pulkovo, Moscow, Copenhagen, De Bilt, and near Wellington), 13h. (Amboina), 14h. (Sverdlovsk, Tchimkent, Almata, near Andijan, Frunse, Samarkand, and Tashkent), 15h. (Alicante and near San Javier), 18h. (Ksara, Tiflis, and near Mizusawa), 19h. (Frunse, near Andijan, and Samarkand), 22h. (Granada and near Mizusawa), 23h. (Barcelona).

Jan. 18d. 1h. 20m. 0s. Epicentre 61°·7N. 154°·2W. (as on 1930 Oct. 25d.). R.2.

A = −·4268, B = −·2063, C = +·8805; δ = 0;
D = −·435, E = +·900; G = −·793, H = −·383, K = −·474.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		4·3	39	i 0 58	− 3	i 1 50	0	—	—
Sitka		10·6	108	e 2 28	− 1	e 4 32	+ 4	6·0	—
Bozeman		29·4	103	—	—	e 11 18	+23	e 15·6	—
Haiwee		34·1	121	e 6 44	+ 3	—	—	—	—
Mount Wilson	z.	35·7	123	i 6 57	+ 2	—	—	—	—
Pasadena	z.	35·8	123	i 6 56	0	—	—	—	—
Riverside	z.	36·2	123	i 7 0	0	—	—	—	—
Scoresby Sund		43·7	22	9 48	(− 6)	—	—	20·4	—
Florissant		44·4	90	e 8 5	− 3	e 14 47	+ 6	e 21·2	23·6
St. Louis		44·6	90	i 8 7	− 3	—	—	e 22·6	27·1
Toronto		45·8	78	—	—	e 15 12	+10	e 22·6	—
Ottawa		46·1	73	—	—	e 15 18	+12	e 22·0	—
Little Rock	E.	46·7	66	e 8 25	− 1	—	—	e 22·7	—
Philadelphia		50·6	77	—	—	e 19 40	SS	e 25·6	—
Sverdlovsk		58·4	339	i 9 53	0	e 17 59	+ 4	27·0	—
Pulkovo		58·5	357	e 9 57	+ 3	—	—	34·0	—
Piatigorsk		73·3	348	e 11 26	− 5	—	—	—	—
Erevan		77·0	346	e 12 9	+17	—	—	—	—
Ksara		84·1	351	i 12 29	0	—	—	50·0	—

Additional readings:—
College i = +1m.8s. = P* − 1s. and +1m.12s.
Sitka eSSS = +5m.13s. = S* + 0s.
Bozeman e = +14m.18s.
Toronto e = +18m.30s. = S_eS + 13s.
Ottawa e = +18m.24s. = S_eS + 5s.
Philadelphia e = +23m.28s. and +24m.7s.
Ksara e = +15m.25s. = PP − 13s.
Long waves were also recorded at Chiufeng, Madison, Oak Ridge, Charlottesville, Ann Arbor, Columbia, Nanking, Tashkent, Copenhagen, Ivigtut, Paris, and Strasbourg.

Jan. 18d. Readings also at 0h. (near La Paz (2)), 3h. (Andijan, Tchimkent, Frunse, Samarkand (2), Erevan, Tiflis, La Paz (2), La Plata, and near Santiago), 4h. (La Paz), 5h. (Andijan, Frunse, and Samarkand), 6h. (Amboina), 11h. (Nanking and near Taihoku), 13h. (near La Paz), 17h. (Sumoto, near Hukuoka and Hukuoka B), 18h. (Tortosa), 19h. (near Mizusawa), 20h. (near Neuchatel), 21h. (near Tiflis), 22h. (Ksara, Sverdlovsk and Tashkent).

Jan. 19d. Readings at 2h. (Samarkand and near Amboina), 3h. (Samarkand), 8h. (Andijan and Frunse), 10h. (Andijan, Frunse, Tashkent, and near Almata), 13h. (Tchimkent, Frunse, Samarkand, and near Andijan), 14h. (Tacubaya), 15h. (near Apia), 16h. (near Tananarive), 18h. (Frunse, Sverdlovsk, Tchimkent, Tashkent, Samarkand, and near Andijan), 22h. (Wellington, Riverview, Sydney, Chiufeng, Vladivostok, La Jolla, Mount Wilson, Pasadena, Sverdlovsk, Pulkovo, Ksara, and near Balboa Heights), 23h. (Christchurch, Hong Kong, Kew, Baku, Tashkent, Tiflis, Moscow, Copenhagen, Cheb, Triest, Paris, Stuttgart, Strasbourg, De Bilt, Uccle, and Granada).

Jan. 20d. 2h. 29m. 14s. Epicentre 34°·8N. 31°·3E. N.3.

A = +·7016, B = +·4266, C = +·5707 ; δ = −7 ;
D = +·520, E = −·854 ; G = +·488, H = +·296, K = −·821.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	3·9	103	i 1 20	P_g	i 2 12	S_g	—	—
Yalta	10·0	12	e 2 24	+ 3	e 4 32	+19	8·8	—
Simferopol	10·4	11	e 2 24	− 2	—	—	—	—
Theodosia	10·7	15	e 2 25	− 6	—	—	—	—
Tiflis	12·6	53	e 3 2	+ 6	e 5 24	+ 7	6·8	7·9
Grozny	14·0	48	e 3 4	−11	—	—	—	—
Baku	15·7	64	—	—	e 6 54	+23	e 9·0	—
Triest	17·2	314	—	—	e 7 8	+ 2	—	11·0
Cheb	20·6	324	e 6 46?	?	—	—	e 10·8	13·8
Moscow	21·4	9	e 4 42	− 2	e 8 20	−14	e 11·0	14·9
Stuttgart	21·5	317	e 4 50	+ 5	e 8 46	+10	e 11·9	14·5
Copenhagen	24·6	334	5 16	0	9 40	+ 6	13·8	—
Pulkovo	25·0	358	5 19	− 1	9 38	− 3	14·8	15·7
Sverdlovsk	29·6	33	—	—	e 10 59	+ 1	16·8	—

Additional readings :—
Triest e = +8m.6s., i = +9m.17s. and +9m.45s.
Sverdlovsk e = +11m.12s.
Long waves were also recorded at Tashkent and other European stations.

Jan. 20d. 8h. 5m. 26s. Epicentre 35°·5N. 13°·7E. N.2.

A = +·7910, B = +·1928, C = +·5807 ; δ = +7 ;
D = +·237, E = −·972 ; G = +·564, H = +·138, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Catania	2·3	29	i 1 39	?	i 3 3	?	—	—
Tunis	3·2	294	i 0 37	− 9	i 1 7	−15	—	—
Carloforte	5·6	312	1 39	P*	3 44?	?	—	—
Florence	8·5	348	1 57	− 3	4 34	S_g	—	6·9
Algiers	8·7	282	i 3 20	S	(i 3 20)	−21	i 5·8	8·6
Padova	10·0	353	e 4 24	S	(e 4 24)	+11	—	—
Triest	10·1	0	e 1 30	?	e 3 56	−20	e 5·0	6·0
Zagreb	10·4	9	e 2 37	+11	e 4 36	+13	e 6·0	6·7
Graz	11·6	6	e 2 44	+ 1	e 6 40	?	i 7·6	9·1
Vienna	12·9	8	—	—	e 5 26	+ 1	e 6·6	8·6
Bucharest	13·0	43	e 4 34?	?	—	—	e 12·8	—
Stuttgart	13·6	347	e 3 10	0	e 5 34	− 7	e 6·6	8·7
Granada	14·0	282	3 20	+ 5	—	—	—	—
Cheb	14·6	357	e 2 34?	−49	e 5 34?	−31	e 7·6	8·9
Prague	14·6	2	e 4 53	?	e 7 28	?	e 7·8	10·6
Malaga	14·7	281	e 5 57	S	(e 5 57)	−11	16·1	—
Jena	15·5	355	e 3 34	− 1	—	—	e 8·9	10·6
Paris	15·7	332	e 3 34?	− 4	—	—	6·6	9·6
Helwan	15·8	106	e 3 47	+ 8	6 56	+22	9·6	12·3
San Fernando	16·1	279	—	—	16 28	−13	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Uccle	16·7	339	—	—	e 6 59	+ 4	—	—
Sebastopol	17·6	53	e 4 5	+ 3	e 7 59	L	(8·0)	—
De Bilt	17·7	343	e 4 6	+ 3	e 7 26	+ 9	e 8·6	12·4
Yalta	18·0	54	e 4 10	+ 3	e 8 15	L	(e 8·3)	—
Simferopol	18·1	53	e 4 16	+ 8	—	—	—	—
Hamburg	18·3	353	e 4 11	+ 1	e 7 39	+ 8	e 9·8	12·6
Ksara	18·3	89	i 4 14k	+ 4	7 51	+20	—	—
Kew	18·8	332	—	—	e 7 44	+ 2	9·6	11·1
Theodosia	19·0	54	e 4 23	+ 4	—	—	—	—
Oxford	19·5	332	—	—	7 49	− 7	10·7	13·5
Copenhagen	20·2	358	4 28	− 4	8 17	+ 7	10·6	—
Stonyhurst	21·6	334	—	—	e 8 43	+ 5	11·6	15·2
Rathfarnham Castle	22·6	328	i 8 51	S	(i 8 51)	− 6	13·1	15·6
Edinburgh	23·4	336	—	—	e 9 14	+ 2	—	17·1
Tiflis	24·9	67	e 5 13	− 6	e 9 57	+18	e 15·6	—
Grozny	25·8	62	e 5 22	− 5	—	—	—	—
Moscow	25·9	32	e 5 28	0	e 10 5	+ 8	e 13·8	19·3
Pulkovo	26·5	19	e 6 3	PP	11 2	SS	14·6	17·6
Baku	28·8	68	e 7 9	?	e 10 58	+13	16·6	—
Dakar	34·8	241	(i 13 56)	S	(i 13 56)	SS	i 23·6	24·8
Sverdlovsk	37·8	41	7 14	+ 1	13 5	+ 2	19·3	—
Scoresby Sund	39·8	342	—	—	14 22	+49	18·6	—
Tashkent	43·2	65	e 8 40	+42	e 15 28	?	e 24·5	29·8

Additional readings :—
Algiers iS = +5m.9s.
Zagreb eNW = +2m.41s., eNE = +2m.45s., e = +2m.53s. and +5m.17s.
Bucharest eE = +7m.47s. and +9m.27s.
Granada PP = +3m.35s.
Malaga e = +13m.13s.
Ksara SS = +8m.30s.
Rathfarnham Castle i = +9m.5s., e = +9m.8s., iS = +12m.4s., i = +12m.45s.
Baku e = +12m.41s.
Dakar iS = +18m.58s., SS = +20m.38s.
Tashkent e = +11m.40s. and +18m.34s.
Long waves were also recorded at La Paz, Cape Town, Bergen, Ivigtut, and other European stations.

Jan. 20d. 16h. 56m. 19s. Epicentre 5°·9N. 126°·8E. N.1.

A = −·5959, B = +·7965, C = +·1028 ; δ = +8 ;
D = +·801, E = +·599 ; G = −·062, H = +·082, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		7·7	78	1 48	− 1	3 6	−10	—	—
Amboina		9·7	172	i 2 22	+ 5	i 4 3	− 3	—	—
Manila		10·4	327	i 2 32a	+ 6	4 44	+21	—	—
Kosyun		17·1	341	4 1	+ 6	—	—	—	—
Takao		17·8	340	4 24	+20	7 53	+33	—	—
Arisan		18·5	343	3 39	−34	7 6	−30	—	—
Karenko		18·8	345	4 23	+ 7	—	—	—	—
Taityu		19·2	343	4 49	+28	—	—	—	—
Taihoku		19·8	346	4 33	+ 6	8 16	SS	—	—
Naha		20·3	1	4 25	− 8	—	—	—	—
Hong Kong		20·4	325	4 33k	− 1	8 24	+10	10·3	—
Nake		22·6	7	4 56	− 1	8 59	+ 2	—	—
Malabar		23·2	236	e 6 12	+69	—	—	—	—
Batavia		23·3	239	i 5 4	0	i 9 48	SS	—	—
Phu-Lien		24·6	309	e 5 16	0	e 9 2	−32	9·7	16·9
Titizima		25·7	33	5 26	0	—	—	—	—
Zi-ka-wei	z.	25·8	350	i 5 21k	− 6	9 48	− 7	12·7	15·4
Kagosima		25·9	8	5 52	PP	—	—	—	—
Miyazaki		26·4	9	5 25	− 8	10 7	+ 2	—	—
Nagasaki		27·0	5	5 40	+ 2	10 19	+ 4	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Unzendake		27·0	5	5 40	+ 2	—	—	—	—
Nanking		27·2	344	i 5 35a	− 5	10 14	− 4	13·7	·16·0
Kumamoto		27·2	6	5 45	+ 5	—	—	—	—
Simidu		27·5	11	5 44	+ 1	10 30	+ 6	—	—
Hukuoka		27·9	6	e 6 24	PP	e 10 41	+11	—	—
Hukuoka B		27·9	6	e 6 13	PP	10 37	+ 7	—	—
Medan		28·1	267	5 56	+ 8	—	—	—	—
Koti		28·3	11	5 47	− 3	10 59	+22	—	—
Siomisaki		28·8	15	5 54	0	—	—	—	—
Hirosima		28·9	10	5 58	+ 3	—	—	—	—
Husan		29·3	3	e 6 52	PP	e 10 43	−10	—	—
Sumoto		29·4	15	5 58	− 3	11 5	+10	e 13·2	16·9
Wakayama		29·4	15	6 1	+ 1	11 6	+11	—	—
Kobe		29·8	15	e 6 2	− 1	—	—	e 12·9	17·3
Osaka		29·9	15	6 44	PP	12 5	SS	—	—
Kyoto		30·3	15	6 9	+ 1	—	—	—	—
Kameyama		30·3	16	6 15	+ 7	—	—	—	—
Hamamatu		30·5	18	6 26	+17	—	—	—	—
Toyooka		30·5	13	i 7 10	PP	11 29	+17	14·7	—
Omaesaki		30·6	18	6 8	− 2	—	—	—	—
Nagoya		30·7	17	e 6 14	+ 3	—	—	14·6	—
Gihu		30·9	17	5 49	−24	—	—	—	—
Misima		31·3	19	6 19	+ 2	—	—	—	—
Hukui		31·4	14	6 26	+ 9	—	—	—	—
Zinsen	N.	31·6	358	e 6 12	− 7	e 11 34	+ 5	e 15·2	—
Kohu		31·6	18	6 19	0	11 39	+10	—	—
Keizyo		31·7	0	e 6 33	+13	e 11 15	−16	e 13·7	—
Matumoto		32·0	18	6 16	− 7	11 44	+ 9	—	—
Tokyo		32·1	20	6 29	+ 5	—	—	—	—
Oiwake		32·3	18	6 39	+14	12 10	+30	—	—
Kumagaya		32·4	19	6 31	+ 5	—	—	—	—
Nagano		32·5	18	6 30	+ 3	11 48	+ 5	—	—
Kakioka		32·7	20	6 26	− 3	—	—	—	—
Mito		33·0	20	6 36	+ 4	—	—	—	—
Heizyo		33·1	358	e 11 25	S	(e 11 25)	−27	—	—
Hukusima		34·2	20	6 39	− 3	12 25	+16	—	—
Yamagata		34·6	20	6 31	−15	—	—	—	—
Chiufeng		35·5	346	i 6 48a	− 5	i 12 25	− 4	14·7	21·1
Mizusawa	E.	35·7	19	e 6 52	− 3	e 12 35	+ 3	e 16·3	—
	N.	35·7	19	e 7 0	+ 5	e 12 27	− 5	e 16·2	—
Morioka		36·2	19	7 2	+ 2	12 48	+ 9	—	—
Vladivostok		37·5	5	i 7 6	− 5	e 13 11	+12	e 18·2	37·9
Urakawa		38·9	19	7 29	+ 6	—	—	—	—
Sapporo		39·3	17	7 42	+16	13 42	+16	—	—
Perth		39·3	194	7 28	+ 2	13 21	− 5	19·7	—
Obihiro		39·7	19	7 21	− 8	—	—	—	—
Asahigawa		40·3	17	8 12	+37	—	—	—	—
Calcutta		40·6	298	7 37	0	13 45	0	19·2	21·8
Nemuro		40·9	21	7 41	+ 1	14 3	+13	—	—
Adelaide		42·3	165	i 8 0	+ 9	i 14 10	0	20·8	26·8
Riverview		45·9	151	e 8 19	− 1	15 2	− 1	e 24·9	27·6
Sydney		45·9	151	e 8 18	− 2	i 13 56	−67	18·3	19·2
Colombo		46·6	273	8 29	+ 4	15 5	− 8	23·3	33·2
Melbourne		46·9	160	e 8 31	+ 3	15 6	−11	20·8	29·3
Agra	E.	50·9	300	i 8 56	− 2	i 16 1	−12	—	—
Dehra Dun		51·8	305	8 41	−24	15 51	−34	28·0	36·7
Bombay		54·1	289	9 24	+ 2	i 16 49	− 8	25·7	—
Almata		57·5	319	e 9 49	+ 2	—	—	e 30·7	—
Frunse		58·9	317	e 10 5	+ 8	—	—	31·7	—
Semipalatinsk		59·0	327	e 9 56	− 1	—	—	e 27·7	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		59·6	314	e 9 58	− 4	—	—	32·7	—
Tashkent		62·0	314	i 10 13	− 5	i 18 34	− 8	29·2	41·3
Tchimkent		62·1	315	e 10 18	− 1	—	—	—	—
Arapuni		63·1	138	—	—	19 46	+50	—	35·7
Apia		64·0	108	e 10 45	+13	e 19 3	− 4	e 29·4	—
Christchurch		64·4	144	e 10 30	− 5	e 19 3	− 9	e 29·6	33·6
Wellington		64·4	141	10 31	− 4	18 58	−14	30·7	40·7
Chatham Ils.		71·2	140	—	—	e 19 41?	−54	—	—
Sverdlovsk		72·2	328	i 11 18	− 6	i 20 34	−13	31·3	—
Honolulu		74·3	69	e 11 38	+ 2	e 21 11	− 1	e 35·2	—
Baku		76·2	310	11 46	− 1	21 27	− 7	36·7	—
Grozny		79·4	313	e 12 6	+ 1	22 3	− 6	40·7	—
Tiflis		80·1	311	i 12 6	− 2	21 46	−31	31·7	51·8
Erevan		80·3	310	11 59	−10	22 0	−19	—	—
Piatigorsk		81·4	314	12 11	− 4	22 14	−17	—	—
Tananarive		81·8	250	e 12 7	−10	e 22 21	−14	e 39·1	44·3
College		82·7	25	e 12 16	− 6	e 22 50	+ 6	34·3	—
Sotchi		83·8	313	12 27	0	22 47	− 8	45·2	—
Moscow		84·7	325	i 12 30	− 2	22 45	[−12]	e 43·2	48·3
Theodosia		86·8	314	12 41	− 1	23 3	[− 9]	35·7	—
Ksara		87·5	302	i 12 43a	− 2	23 25	− 7	—	—
Simferopol		87·7	315	e 12 48	+ 2	23 11	[− 7]	45·7	—
Yalta		87·8	314	12 45	− 2	e 23 8	[−11]	49·7	—
Pulkovo		88·1	330	i 12 44	− 4	23 21	[0]	38·7	46·9
Sitka		89·3	32	—	—	i 24 1	+12	e 40·5	—
Sebastopol		91·8	315	12 48	−18	23 12	[−31]	36·7	—
Helwan		91·8	299	i 13 5	− 1	23 34	[− 9]	49·1	—
Bucharest		93·4	316	e 13 22	+ 9	23 46	[− 6]	—	49·7
Lemberg		93·6	321	e 18 17	PPP	—	—	—	24·5
Upsala		94·3	332	e 17 4	PP	i 24 2	[+ 5]	e 43·7	55·1
Königsberg		94·4	327	—	—	i 23 52	[− 6]	e 35·5	49·2
Budapest		97·4	320	13 36	+ 4	24 0	[−13]	e 40·7	59·2
Copenhagen		98·4	329	13 35	− 1	i 24 4	[−14]	42·7	—
Victoria		98·5	40	e 17 29	PP	e 24 31	{−11}	e 40·5	46·2
Vienna		98·8	321	e 13 36	− 2	24 29	[+ 9]	e 44·7	—
Prague		99·4	324	e 17 41	PP	e 24 31	[+ 8]	e 46·7	56·7
Seattle		99·4	40	(e 20 41)?	PPP	—	—	e 20·7	—
Bergen		99·6	335	—	—	e 24 47	{− 3}	—	—
Graz		99·9	320	e 13 41	− 2	i 24 43	{− 9}	e 47·7	57·4
Zagreb		99·9	319	e 13 42	− 1	e 24 20	[− 5]	e 48·1	58·7
Hamburg		100·6	328	e 13 47	+ 1	e 24 25	[− 4]	e 48·7	56·7
Cheb		100·7	324	e 13 47	0	e 24 45	{−13}	e 46·7	65·7
Jena		100·8	324	e 13 53	+ 6	e 24 41	[+11]	e 47·7	56·2
Scoresby Sund		100·8	351	—	—	24 23	[− 7]	—	—
Ukiah		101·5	49	—	—	e 24 44	[+11]	e 46·4	—
Triest		101·5	320	e 13 46	− 4	i 24 42	[+ 9]	e 47·0	55·2
Göttingen		101·5	326	i 13 48	− 2	i 24 38	[+ 5]	e 51·7	56·7
Berkeley	E.	102·6	50	e 18 10	PP	e 24 30	[− 8]	—	—
Padova		102·8	320	e 13 41	−15	—	—	—	—
Stuttgart		103·1	323	e 13 55	− 3	e 24 59	[+18]	e 48·7	64·7
Karlsruhe		103·5	325	24 37	S	(24 37)	[− 6]	e 53·7	—
Chur		103·7	323	e 13 56	− 5	e 24 36	[− 8]	—	—
De Bilt		103·8	328	e 14 2	+ 1	e 24 54	[+10]	e 47·7	68·7
Florence		103·8	318	18 21	PP	i 24 41	[− 3]	48·7	57·7
Strasbourg		104·0	323	e 14 0	− 2	i 24 56	[+11]	e 48·7	57·5
Zurich		104·1	323	e 14 1	− 1	e 25 0	[+15]	—	—
Uccle		104·9	328	e 14 5	− 1	i 24 57	[+ 8]	47·7	55·2
Neuchatel		105·2	323	—	—	e 25 10	[+19]	—	—
Durham		105·8	332	—	—	25 12	[+18]	—	60·7
Edinburgh		105·8	334	—	—	e 25 13	[+19]	e 50·7	62·2
Stonyhurst		106·8	333	—	—	e 25 5	[+ 7]	53·7	59·7
Pasadena		106·9	52	e 17 41	[−27]	i 25 21	[+23]	e 42·7	—
Paris		107·0	326	e 14 16	0	e 25 8	[+ 9]	49·7	56·7
Mount Wilson		107·0	52	e 14 18	+ 2	e 25 21	[+22]	—	—
Kew		107·1	329	—	—	e 25 11	[+11]	54·7	62·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bozeman		107·2	38	—	—	e 24 54	[− 6]	e 48·8	—
Bidston		107·3	332	—	—	e 25 17	[+16]	48·0	62·8
Oxford		107·4	330	—	—	e 25 4	[+ 3]	50·7	65·9
Riverside		107·6	52	e 17 51	[−19]	—	—	—	—
La Jolla	z.	108·0	54	—	—	i 29 52	?	—	—
Cape Town		108·5	237	e 17 40	[−33]	24 55	[−11]	43·4	53·1
Rathfarnham Castle		108·9	334	i 25 24	SKS	(i 25 24)	[+16]	51·1	63·3
Algiers		112·4	314	e 18 41?	[+16]	i 29 21	PS	53·7	—
Ivigtut		112·8	358	—	—	25 29	[+ 4]	50·7	—
Tucson		113·3	52	—	—	e 26 23	{− 7}	e 45·9	—
Almeria		116·2	317	e 19 58	PP	e 29 44	PS	e 59·1	—
Granada		116·8	318	19 0	[+23]	25 56	[+16]	—	—
Malaga		117·6	318	18 45	[+ 6]	e 27 4	{+ 4}	57·8	—
San Fernando		119·0	318	—	—	30 18	PS	54·7	64·7
Chicago		122·9	31	—	—	e 30 22	PS	e 51·4	—
Florissant		123·6	35	—	—	i 26 17	[+16]	e 53·7	64·3
St. Louis	N.	123·8	35	—	—	i 30 28	SKSP	e 58·9	—
Ottawa		124·9	19	e 20 41?	PP	e 27 41?	{− 8}	e 54·7	—
Toronto		125·1	23	e 20 41?	PP	e 28 3	{+13}	e 54·7	—
Philadelphia		129·9	22	—	—	e 27 9	[+50]	e 63·3	—
Charlottesville		130·2	26	—	—	e 38 53	SS	e 57·0	—
Dakar		139·0	301	i 23 28	PKS	e 27 14	PPPP	—	—
Balboa Heights		149·8	61	19 41?	[0]	—	—	—	—
San Juan		152·6	27	i 19 51	[+ 6]	e 33 41	SKSP	e 71·9	—
Huancayo		157·3	108	e 19 52	[+ 1]	i 31 14	{+10}	e 58·9	—
Rio de Janeiro		160·5	209	e 20 9	[+14]	—	—	—	—
La Paz		161·9	127	i 19 59a	[+ 3]	26 50	?	76·9	102·4

Additional readings and note :—
Taihoku ePEN = +4m.41s. =PP +2s., iEN = +5m.1s., iE = +5m.55s., iN = +6m.48s.
Hong Kong PP = +4m.54s., SS = +8m.47s.
Malabar iEN = +6m.34s.
Batavia iPEN = +5m.8s.
Zi-ka-wei iZ = +5m.24s., PPZ = +5m.59s., PPPZ = +6m.16s., iZ = +6m.43s., +7m.12s., +10m.0s., and +10m.25s., SSZ = +10m.59s., SSSZ = +11m.17s., SSSSZ = +11m.34s., iZ = +11m.52s.
Nanking pPN = +6m.5s., SE = +10m.18s., iE = +10m.28s., iEN = +16m.58s.
Sumoto eE = +6m.50s. =PP +1s., eZ = +6m.53s. =PPP −2s., eN = +6m.55s.
Kobe ePEN = +6m.10s., PPEN = +7m.1s., PPZ = +7m.5s., PPPN = +7m.22s., PPPZ = +7m.28s., iE = +8m.16s. and +8m.58s., iN = +9m.6s. =P_cP −3s.
Osaka i = +7m.19s., PP = +7m.56s., P_cP = +9m.14s.
Kameyama PP = +7m.5s.
Toyooka iE = +7m.16s. =PP +13s.
Misima i = +7m.20s. =PP +6s.
Kumagaya i = +7m.41s. =PPP +5s.
Mito i = +7m.55s. =PPP +11s.
Chiufeng iPE = +6m.51s., iNZ = +8m.57s., iSZ = +12m.39s., iS_cS = +17m.10s.
Vladivostok e = +8m.44s. =PPP −1s. and +15m.59s.
Perth ? = +7m.46s. and +8m.1s., P_cP = +8m.41s. =PP −11s., PPP = +9m.21s. =PPPP +6s., PPPP = +9m.31s. =P_cP −8s., P_cS = +12m.21s., PS = +13m.31s., SS = +16m.41s., SSS = +17m.31s. =S_cS −6s.
Calcutta i = +7m.55s., PPP = +9m.26s.
Adelaide i = +8m.15s. and +9m.6s., iPPP? = +9m.52s. =P_cP +3s., iSSS? = +17m.29s.
Riverview iEN = +8m.32s., iZ = +8m.37s., iE = +15m.24s. and +18m.24s. = S_cS +6s.
Melbourne i = +8m.51s., PPP = +10m.43s., i = +15m.37s., SSS = +18m.39s. = S_cS +15s.
Agra iE = +9m.14s. and +11m.8s., PSE = +16m.37s., SSE = +19m.20s., SSSE = +20m.30s.
Bombay PSEN = +17m.23s., SSSEN = +21m.47s.
Apia eSS = +22m.50s. ; T_e =16h.56m.53s.
Christchurch iE = +20m.51s., eSS = +23m.35s., e = +26m.21s.
Wellington S_cS = +20m.51s., SS = +23m.1s., L_g = +23m.41s.
Honolulu iP = +11m.51s., iS = +21m.31s. =PS −4s.
Grozny PP = +12m.50s.
Tiflis ePPP = +17m.24s., PS = +22m.8s. =S −9s., i = +23m.36s. =PS −14s.
Tananarive eN = +34m.39s.

Continued on next page.

College ePP = +15m.8s., eSKS = +22m.34s., e = +27m.1s., eSS = +27m.31s., e = +30m.58s.
Ksara ipP = +13m.10s., PP = +16m.2s., PPP = +18m.3s., PS = +24m.17s., SS = +29m.25s.
Sitka eSKS = +23m.11s., eSS = +29m.11s., eSSS = +33m.16s., e = +37m.6s.
Helwan P_cP = +13m.23s., pP = +13m.41s., PPP = +17m.3s., SKKS = +24m.3s., iS = +24m.24s., sS = +25m.46s.
Bucharest eE = +14m.2s., PPE = +17m.7s., SE = +24m.10s. =SKKS +8s., +24m.14s., +24m.17s. =S −11s., PSE = +25m.17s., E = +26m.2s.
Upsala i = +24m.14s. =SKKS +5s. and +24m.44 . =S +8s.
Königsberg iPPE = +16m.12s., iN = +24m.10s =SKKS +0s , iE = +24m.20s. = S −17s., iPS = +24m.42s., eN = +30m.36s. =SS −6s., eE = +32m.29s.
Budapest P_cP = +13m.52s., S_cS = +24m.31s. =SKKS −2s.
Copenhagen PP = +17m.35s., iSKKS = +24m.31s., eSN = +25m.17s., iPS = +26m.46s., i = +28m.17s., eE = +30m.35s., SS = +31m.41s.?
Vienna e = +17m.39s. =PP +5s., +21m.45s., and +25m.31s. =S +15s.
Prague e = +23m.24s.
Graz iPP = +18m.23s., iPPS = +25m.37s. =S +11s.
Zagreb ePP = +17m.51s., eZ = +22m.7s., eS = +24m.46s. =SKKS −6s., eZ = +25m.10s. =S −16s., e = +26m.18s., eNW = +37m.11s., e = +46m.41s.?
Hamburg eZ = +17m.53s. =PP +6s., iE = +24m.43s., iN = +24m.53s. = SKKS −5s., eE = +35m.17s.
Cheb ePP = +17m.56s.
Jena e = +25m.41s. =S +7s.
Scoresby Sund PP = +17m.51s., iSKKS = +24m.51s., eS = +25m.45s., PPS = +27m.58s.
Ukiah ePS = +26m.52s., eSS = +32m.5s., eSSS = +27m.41s.
Triest i = +14m.12s., iPP? = +17m.52s., i = +18m.0s., +18m.24s., +20m.8s., +20m.30s., +22m.18s., +22m.41s., iE = +24m.26s., i = +24m.37s., iS = +24m.49s., i = +25m.20s., iPS = +25m.54s., iE = +27m.20s. =PS +18s., i = +28m.15s., iE = +33m.6s., +34m.7s., and +36m.18s., i = +37m.36s., iN = +42m.18s.
Göttingen iEN = +24m.54s. =SKKS −10s., E = +25m.0s. =SKKS −4s., eN = +26m.5s.
Berkeley eE = +24m.44s., +27m.24s. =PS +11s. and +36m.54s.
Stuttgart e = +17m.3s., ePP = +18m.2s., eSKKSN = +25m.41s. =S −13s., eSN = +26m.8s., ePS = +27m.41s.; T_0 =16h.55m.50s.
Karlsruhe eS? = +27m.52s.
De Bilt ePPZ = +18m.15s.
Strasbourg ipP = +14m.26s., ePP = +18m.18s., ePPP = +20m.33s., iS = +26m.18s., iPS = +27m.32s., iPPS = +28m.26s.
Zurich ePP = +18m.35s., eS = +26m.11s.
Uccle iZ = +14m.23s., eE = +18m.14s. =PP −5s., e = +24m.11s., iN = +25m.52s., iE = +27m.50s. =PS +13s.
Neuchatel eS = +26m.23s., e = +29m.2s.
Edinburgh i = +25m.16s. =SKKS −20s.
Stonyhurst i = +25m.17s.
Pasadena iPPZ = +18m.52s., iZ = +19m.21s., eE = +25m.56s. =SKKS +12s., eSN = +26m.37s., ePSN = +27m.51s., iPPSN = +28m.56s., iPKKPZ = +29m.56s., iZ = +30m.47s., eSSN = +33m.41s., eNZ = +38m.11s.
Paris PP = +18m.54s., ePS = +28m.10s.
Mount Wilson eZ = +14m.40s., ePKPZ = +17m.43s.
Kew ePP = +18m.42s., iEN = +25m.17s.
Bozeman ePP = +18m.40s., e = +24m.10s., ePS = +28m.0s., eSS = +34m.10s., eSSS = +38m.10s., e = +44m.30s.
Bidston i = +26m.23s.
Cape Town +25m.31s., +26m.50s., SSSE = +34m.13s., SSSN = +34m.17s.
Rathfarnham Castle i = +27m.1s., ePP = +28m.15s. =PS −2s., i = +28m.29s., e = +28m.50s., iPPP = +29m.28s., e = +30m.55s. and +32m.0s., i = +34m.10s. =PP +6s., iS = +34m.40s., i = +36m.41s., SS = +39m.46s. i = +40m.50s. and +44m.27s.
Ivigtut e = +26m.47s. and +27m.6s., PS = +29m.11s., SS = +35m.17s., SSS = +39m.47s.
Tucson e = +26m.46s., ePS = +28m.57s., eSS = +35m.7s., eSSS = +39m.21s.
Almeria ePPP = +25m.44s. =SKS +6s.
Malaga e = +30m.16s.; P has been *increased* by 10m.
San Fernando PPN = +23m.6s., ? = +26m.5s., PPS = +33m.12s., SSS = +42m.19s.
Chicago eSSS = +37m.38s.
Florissant ePPZ = +19m.57s., iPPZ = +20m.5s., ePSEN = +30m.28s., eSSE = +37m.17s., iN = +37m.39s.
St. Louis iSSN = +37m.46s.
Ottawa e = +37m.41s.? =SS +5s.
Toronto i = +37m.26s. =SS −12s.
Philadelphia e = +33m.27s., eSS = +38m.49s., e = +56m.27s.
Charlottesville eSSS = +43m.37s., e = +51m.17s.

Continued on next page.

San Juan ePKP$_2$ = +20m.36s., ePKS = +23m.34s., e = +32m.16s., ePS = +34m.41s., eSS = +43m.9s., eSSS = +48m.56s.
Huancayo iPKP = +20m.6s., iPKP$_2$ = +20m.44s., e = +24m.4s. =PP +3s. and +25m.26s., iSKSP = +34m.31s., e = +43m.53s. =SS −9s., iSS = +44m.51s.
La Paz iPKP$_2$Z = +20m.21s., iPKP$_2$E = +20m.26s., iN = +20m.39s., iZ = +21m.9s., ipPKP = +21m.35s., isPKP = +22m.25s., iPP = +24m.25s., ipPP = +25m.25s., SKKS = +31m.5s., iEN = +31m.45s., iZ = +32m.43s., SKSPE = +34m.15s., SKSPN = +34m.31s., iZ = +35m.13s., PPS = +36m.2s., PPSZ = +36m.17s., iSSN = +44m.47s., iSSEZ = +44m.51s., iE = +46m.11s. and +47m.1s., iSSS = +49m.0s.
Long waves at Ann Arbor, Little Rock, and Barcelona.

Jan. 20d. Readings also at 0h. (Medan (2), Sebastopol, and Yalta), 3h. (Andijan and near Samarkand), 4h. (near Chur and Zurich), 6h. (Little Rock and Oak Ridge), 10h. (near Ksara), 12h. (near Almeria), 14h. (Carloforte).

Jan. 21d. 4h. 8m. 2s. Epicentre 13°·5N. 107°·5W. N.3.

A = −·2924, B = −·9274, C = +·2334 ; δ = +4 ;
D = −·954, E = +·301 ; G = −·070, H = −·223, K = −·972.

Very rough.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo	N.	6·3	29	1 11?	−19	—	—	—	—
Tacubaya	N.	9·9	53	—	—	(4 25?)	+14	4·4	—
Tucson		19·0	351	—	—	e 7 58	+12	e 9·8	—
Riverside	Z.	22·4	238	e 5 1	+ 6	—	—	—	—
Pasadena	Z.	22·8	238	e 4 57	− 2	—	—	e 13·8	—
Mount Wilson	Z.	22·9	238	e 5 0	0	—	—	—	—
Huancayo		40·9	128	e 12 6	?	e 16 21	SS	—	—
La Paz	E.	49·1	126	e 8 44	0	15 48	0	23·5	31·0
Triest		100·7	38	e 20 45	?	e 29 11	?	—	—
Ksara		121·2	37	20 58?	PP	—	—	54·0	—

Additional readings :—
Tucson eS = +8m.37s., e = +8m.55s.
Pasadena iZ = +5m.5s. and +6m.16s.
Mount Wilson eZ = +6m.12s.
Long waves were also recorded at Rio de Janeiro, Scoresby Sund, Strasbourg, Sverdlovsk, Tashkent, Baku, Tiflis, and Ukiah.

Jan. 21d. 4h. 54m. 31s. Epicentre 10°·1N. 104°·7W. N.3.

A = −·2498, B = −·9523, C = +·1754 ; δ = +4 ;
D = −·967, E = +·254, G = −·044, H = −·170, K = −·985.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo	N.	9·0	2	1 54?	−13	—	—	—	—
Tacubaya	N.	10·7	29	2 29	− 2	—	—	—	—
Tucson		22·9	347	e 5 6	+ 6	e 9 15	+12	e 10·7	—
La Jolla		25·6	336	e 5 28	+ 3	—	—	—	—
Riverside	Z.	26·6	336	e 5 34	− 1	—	—	—	—
Pasadena		27·0	336	5 37	+ 1	e 10 35	+20	e 13·5	—
Mount Wilson	Z.	27·1	336	e 5 37	− 2	—	—	—	—
Haiwee	Z.	28·7	338	e 5 55	+ 2	—	—	—	—
Bozeman		36·0	353	—	—	e 12 41	+ 5	e 19·6	—
Huancayo		36·7	127	—	—	e 12 37	−10	e 17·6	—
La Paz		44·9	126	e 8 12	0	14 42	− 7	22·5	27·9
Ksara		122·3	39	—	—	24 29?	PPPP	68·5	—

Additional readings :—
Tucson eSS = +10m.3s.
Pasadena iE = +8m.22s.
Mount Wilson eE = +8m.25s.
Bozeman eSS = +15m.15s.
Huancayo eSSS = +15m.54s.
La Paz iSE = +14m.55s., iSN = +14m.58s.
Long waves were also recorded at Rio de Janeiro, Philadelphia, Ukiah, Scoresby Sund, Paris, Stuttgart, Sverdlovsk, Tiflis, Baku, Tashkent, and Christchurch.

Jan. 21d. Readings also at 0h. (near Amboina), 1h. (Riverview and Wellington), 4h. (Carloforte, La Paz, Triest, and near Zagreb), 5h. (Tacubaya), 6h. (Tiflis, San Francisco, near Berkeley, Branner, Lick, near Ksara, near Kobe, Osaka, Nagoya, and Sumoto), 7h. (Batavia, Medan, Pasadena, and Tacubaya), 8h. (near Medan), 11h. (near Mizúsawa), 12h. (Tchimkent), 18h. (Christchurch and Wellington), 22h. (Andijan, Samarkand, Berkeley, near Santiago, and San Javier).

Jan. 22d. 9h. 25m. 22s. Epicentre 4°·2S. 102°·7E. **N.2.**

A = −·2193, B = +·9729, C = −·0732; δ = −1;
D = +·976, E = +·220; G = +·016, H = −·071, K = −·997.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		4·6	116	i 1 4a	− 2	i 1 48	−10	—	—
Malabar		5·8	122	i 1 22	0	i 2 20	− 8	—	—
Medan		8·8	333	e 2 22	P*	i 4 18	S*	—	—
Phu-Lien		25·3	9	4 38?	−45	—	—	—	—
Bombay		37·4	309	e 7 13	+ 3	—	—	—	—
Nanking		39·3	21	7 29	+ 3	e 13 23	− 3	—	26·1
Chiufeng		45·9	14	8 21a	+ 1	e 15 2	− 1	—	27·6
Sumoto		49·0	37	8 44	0	—	—	—	—
Nagoya		50·8	37	e 9 0	+ 3	e 16 56	+44	—	—
Almata		52·8	337	i 9 27	+15	—	—	—	—
Andijan		52·8	331	e 9 14	+ 2	e 16 40	+ 1	—	—
Frunse		53·5	334	e 9 18	0	e 16 53	+ 4	—	—
Samarkand		54·8	326	9 25	− 2	17 2	− 4	—	—
Tashkent		54·8	330	i 9 29	+ 2	i 17 5	− 1	e 36·5	37·1
Baku		65·7	318	e 11 45	+62	e 19 35	+ 6	—	—
Erevan		69·3	316	e 12 1	+55	—	—	—	—
Tiflis		69·7	317	11 8	− 1	20 15	− 3	e 42·6	—
Grozny		69·8	319	e 11 16	+ 7	—	—	—	—
Sverdlovsk		69·9	338	i 11 7	− 3	20 17	− 3	32·6	—
Piatigorsk		71·8	319	e 11 22	0	—	—	—	—
Ksara		73·4	306	i 11 32a	+ 1	20 59	− 2	—	42·1
Theodosia		77·3	318	e 11 54	0	—	—	—	—
Yalta		77·9	317	e 11 58	+ 1	—	—	—	—
Simferopol		78·1	317	e 12 1	+ 3	—	—	—	—
Sebastopol		78·4	317	e 12 20	+21	—	—	—	—
Moscow		79·8	329	i 12 6	− 1	e 22 4	−10	—	—
Pulkovo		84·9	331	12 32	− 1	22 56	[− 2]	36·6	—
Santa Barbara		130·4	47	i 19 8	[+ 1]	i 22 26	PKS	—	—
Haiwee	z.	130·9	44	i 19 7	[− 1]	i 22 27	PKS	—	—
Mount Wilson	z.	131·7	47	e 18 57	[−13]	i 22 31	PKS	—	—
Pasadena		131·7	47	e 18 55	[−15]	i 22 31	PKS	—	—
Riverside	z.	132·4	47	i 19 10	[− 1]	i 22 33	PKS	—	—
La Jolla		133·0	48	i 19 12	[0]	i 22 36	PKS	—	—
Little Rock		146·4	23	i 19 38	[+ 2]	—	—	—	—

Additional readings :—
Malabar iN = +2m.30s., iE = +2m.34s.
Medan iE = +4m.24s., iN = +4m.29s. and +4m.37s., iE = +4m.48s. = S_g +2s.
Ksara PP = +14m.11s., PS = +21m.33s.
Mount Wilson iZ = +19m.11s., eZ = +21m.26s. = PP −3s.
Pasadena iZ = +19m.1s., i = +19m.11s., iZ = +19m.26s., iZ = +22m.50s. = PKS +9s.
Little Rock iN = +19m.46s. and +19m.58s.
Long waves were also recorded at Hong Kong.

Jan. 22d. 16h. 43m. 30s. Epicentre 38°·5N. 30°·5W. (as on 1926 Aug. 24d.). X.

$A = +·6743$, $B = -·3972$, $C = +·6225$; $\delta = -5$;
$D = -·508$, $E = -·862$; $G = +·536$, $H = -·316$, $K = -·783$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Fernando	19·3	88	—	—	i 8 11	SS	—	—
Malaga	20·6	87	i 4 33	− 3	—	—	—	—
Granada	21·2	85	e 4 43	+ 1	8 45	SS	—	—
Almeria	22·2	85	—	—	e 8 58	+ 8	—	—
Stonyhurst	24·5	42	—	—	e 10 30?	SS	—	—
Kew	24·7	48	—	—	e 8 30?	−66	—	—
Edinburgh	25·1	37	—	—	e 9 30?	−13	—	—
Cheb	32·3	55	e 4 30?	?	—	—	—	18·5
San Juan	36·9	247	—	—	e 15 48	SSS	—	—
Moscow	47·2	46	—	—	e 15 24	+ 3	e 22·7	25·0
Ksara	52·6	74	e 9 11	0	e 16 15	−22	—	—
Sverdlovsk	59·2	40	10 3	+ 4	e 18 16	+11	29·5	—

Additional readings :—
Malaga i = +9m.27s., PP = +9m.32s., i = +18m.11s.
Long waves also at Bidston, Paris, De Bilt, Strasbourg, Stuttgart, Hamburg, Copenhagen, Baku, Uccle, and Tashkent.

Jan. 22d. Readings also at 0h. (Apia, Christchurch, Wellington, and Riverview), 3h. (Berkeley, Nanking, Phu-Lien, and near Mizusawa), 4h. (Medan), 5h. (Andijan), 7h. (Oak Ridge, Haiwee, Mount Wilson, Pasadena, and Riverside), 8h. (Oak Ridge), 10h. (Ksara), 12h. (La Paz), 17h. (near Balboa Heights), 21h. (near Manila), 23h. (Chiufeng and near Amboina).

Jan. 23d. 14h. 42m. 21s. Epicentre 35°·0N. 29°·5E. (as on 1926 Mar. 18d.). X.

$A = +·7130$, $B = +·4034$, $C = +·5736$; $\delta = +12$;
$D = +·492$, $E = -·870$; $G = +·499$, $H = +·282$, $K = -·819$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	5·4	101	i 1 17	0	i 2 9	− 9	—	—
Bucharest	9·7	345	—	—	e 4 52	S*	—	6·6
Sebastopol	10·1	16	—	—	e 3 50	−26	—	—
Yalta	10·1	19	—	—	e 3 41	−35	—	—
Simferopol	10·6	18	e 2 27	− 2	e 3 53	−35	—	—
Tiflis	13·7	56	e 2 58	−13	e 5 24	−20	6·8	8·6
Grozny	15·1	52	e 3 22	− 8	—	—	—	—
Triest	16·0	316	—	—	e 7 1	+23	i 9·4	10·9
Baku	17·0	65	—	—	e 6 49	−13	8·8	9·6
Chur	19·1	314	e 4 38	+18	—	—	—	—
Zurich	19·9	315	e 4 44	+15	—	—	—	—
Stuttgart	20·3	319	e 4 48	+15	e 8 50	+38	e 11·6	14·4
Strasbourg	21·0	317	e 4 39	− 1	e 8 39?	+13	e 13·6	—
Moscow	21·4	13	e 4 45	+ 1	e 8 38	+ 4	—	14·4
Pulkovo	24·7	1	5 16	− 1	9 35	− 1	15·2	16·0
Sverdlovsk	30·3	34	e 6 8	0	e 11 10	+ 1	15·6	—

Additional read ngs :—
Simferopol i = +4m.44s.
Long waves were also recorded at Tashkent, Uccle, Cheb, Paris, Copenhagen, and De Bilt.

Jan. 23d. Readings also at 0h. (Ksara and Riverview), 1h. (near Sumoto), 5h. (near Batavia and Malabar), 10h. (Adelaide, Melbourne, Riverview, Christchurch, and Ksara), 13h. (Tacubaya, Andijan, Frunse, and near Samarkand), 14h. (Amboina and near Samarkand), 15h. (near Berkeley), 16h. (near Branner, Lick, and near Sumoto), 17h. (Berkeley (2), near Branner (2), Lick (2), San Francisco (2), near Batavia, Malabar, and near Manila), 18h. (Hong Kong, Phu-Lien, Nanking, Chiufeng, Vladivostok, and Tashkent), 21h. (Sverdlovsk, Pulkovo, Copenhagen, Uccle, Paris, Strasbourg, Stuttgart, Toledo, and Malaga), 22h. (Tashkent).

Jan. 24d. 16h. 47m. 24s. Epicentre 3°·5S. 102°·5E. (as on 1931 Nov. 2d.). R.2.

$A = -\cdot2160$, $B = +\cdot9745$, $C = -\cdot0610$; $\delta = +3$;
$D = +\cdot976$, $E = +\cdot216$; $G = +\cdot013$, $H = -\cdot060$, $K = -\cdot998$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Batavia		5·1	123	i 1 11	− 2	i 2 5	− 5	—	—
Malabar		6·3	126	e 1 30	0	i 2 31	−10	—	—
Medan		8·0	332	e 2 9	P*	i 3 44	+20	—	—
Manila		25·7	45	5 30	+ 4	10 16	+23	13·6	—
Kodaikanal	E.	28·5	299	e 5 36?	−16	—	—	—	—
Bombay		36·8	308	e 8 40	PPP	—	—	—	—
Agra	E.	38·7	324	e 7 23	+ 2	—	—	—	—
Chiufeng		45·3	14	8 17a	+ 2	—	—	—	29·2
Andijan		52·1	332	9 8	+ 1	16 31	+ 1	—	—
Frunse		52·8	334	9 14	+ 2	16 42	+ 3	—	—
Tashkent		54·1	329	i 8 36	−46	—	—	26·6	32·3
Erevan		68·6	316	e 10 36	−26	—	—	—	—
Tiflis		69·1	317	11 5	0	20 9	− 1	—	—
Grozny		69·1	319	e 10 58	− 7	e 19 12	−58	—	—
Sverdlovsk		69·1	337	i 11 4	− 1	i 20 5	− 5	32·6	—
Piatigorsk		71·2	319	e 11 18	0	e 20 22	−13	—	—
Ksara		72·8	306	i 11 28	0	20 55	+ 1	—	40·6
Moscow		79·2	328	12 3	− 1	e 21 57	−10	—	—
Pulkovo		84·2	332	i 12 30	+ 1	22 49	[− 4]	47·6	—
Santa Barbara		130·1	47	i 22 25	PKS	—	—	—	—
Pasadena	Z.	131·4	47	i 19 8	[− 1]	—	—	—	—
Riverside	Z.	132·0	47	i 19 9	[− 1]	—	—	—	—

Additional readings:—
Batavia iSN = +2m.8s., iN = +2m.53s.
Malabar iE = +1m.41s. = P* −4s., iN = +1m.51s. = P_g −9s.
Medan iEN = +3m.10s.
Tashkent i = +18m.57s., e = +19m.12s. = S_cS +1s. and +23m.12s.
Ksara PP = +14m.15s.
Pasadena i = +22m.28s. = PKS −11s., iZ = +22m.58s.
Riverside iZ = +22m.32s. = PKS −10s.
Long waves were also recorded at Hong Kong, Baku, and Copenhagen.

Jan. 24d. Readings also at 0h. (near Bagnères), 1h. (near Mizusawa), 2h. (Malaga and Tacubaya), 3h. (Ravensburg, Vienna, Stuttgart (2), Basle, near Chur, Zurich, and Triest (2)), 6h. (near Samarkand), 9h. (Amboina), 15h. (Santiago), 16h. (Ksara, Nagoya, and near Santiago), 20h. (Batavia), 22h. (near Apia), 23h. (Tucson).

Jan. 25d. Readings at 4h. (near Malaga, Granada, and Toledo), 6h. (Vermont), 14h. (Drome and near Ksara), 17h. (Taikyu, near Berkeley, Branner, Lick, and San Francisco), 18h. (La Paz), 20h. (Amboina and near Sumoto), 22h. (La Paz, Taikyu, near Keizyo, and Zinsen), 23h. (Wellington, Almata, Frunse, near Andijan, and Samarkand).

Jan. 26d. Readings at 1h. (near Amboina), 8h. (La Paz), 10h. (Oaxaca and Tacubaya), 11h. (La Paz, Mount Wilson, Pasadena, Riverside, Frunse, near Andijan, and Samarkand), 16h. (Batavia and Tucson), 19h. (Rio de Janeiro), 22h. (near La Paz, Tucson, near Berkeley, Branner, and Lick).

Jan. 27d. 19h. 30m. 27s. Epicentre 44°·0N. 91°·0E. N.3.

$A = -\cdot0126$, $B = +\cdot7192$, $C = +\cdot6947$; $\delta = +2$;
$D = +1\cdot000$, $E = +\cdot017$; $G = -\cdot012$, $H = +\cdot694$, $K = \cdot719$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Semipalatinsk	9·7	315	2 52	P_g	4 39	S*	—	5·2
Almata	10·2	270	i 2 31	+ 7	4 37	+19	5·9	6·4
Frunse	12·0	270	2 49	+ 1	4 57	− 6	—	7·4
Tchimkent	15·7	271	3 37	− 1	6 45	+14	—	9·3
Tashkent	16·2	268	i 3 46	+ 2	i 7 6	+23	19·0	9·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		18·3	264	4 9	− 1	e 7 48	+17	—	—
Chiufeng		19·0	93	e 4 12	− 7	7 42	− 4	9·6	11·3
Calcutta	E.	21·6	187	5 12	PP	9 3	SS	10·8	14·5
Sverdlovsk		22·9	314	i 4 56	− 4	9 4	+ 1	12·0	—
Nanking		24·8	110	5 17	− 1	9 45	+ 8	13·0	15·5
Phu-Lien		26·6	146	—	—	e 10 38	+29	—	—
Zi-ka-wei		27·1	108	—	—	e 10 18	+ 1	16·8	17·3
Hong Kong		28·9	132	10 36	S	(10 36)	−11	—	—
Bombay		29·4	217	e 6 8	+ 8	e 11 2	+ 7	—	—
Grozny		32·3	284	6 31	+ 6	—	—	24·6	—
Tiflis		33·5	282	e 6 47	+11	e 12 7	+ 9	19·4	22·8
Piatigorsk		34·0	287	e 7 32	PP	—	—	20·6	—
Erevan		34·3	280	e 6 49	+ 6	—	—	—	—
Moscow		35·4	308	e 6 50	− 3	e 12 25	− 2	15·4	19·0
Manila		38·9	130	7 39	+16	13 28	+ 8	—	21·2
Pulkovo		39·0	316	7 20	− 4	e 13 17	− 4	19·8	22·2
Simferopol		39·7	292	e 16 46	?	e 21 39	?	—	—
Ksara		43·3	275	i 8 1	+ 2	i 14 46	+21	—	—
Lemberg		44·6	302	—	—	e 18 21	(+11)	—	24·0
Vienna		49·8	303	e 9 37	+47	—	—	e 25·9	—
Jena		51·5	307	e 9 0	− 3	—	—	27·0	28·0
Chur		54·6	304	e 9 12	−14	—	—	—	—
Zurich		54·9	305	e 9 27	− 1	—	—	—	—
Basle		55·4	305	e 9 31	− 1	—	—	—	—

Additional readings :—
Semipalatinsk PP = +3m.27s., i = +4m.19s.
Frunse i = +3m.55s.
Chiufeng SE = +7m.49s.
Calcutta SSE = +9m.48s.
Sverdlovsk iL_q = +11·2m.
Phu-Lien eS? = +14m.35s.
Hong Kong S = +15m.21s., SS = +17m.14s., SSS = +17m.43s.
Tiflis e = +10m.1s. and +13m.49s. = SS − 3s.
Ksara ePP = +9m.39s., eSS = +16m.43s., S_cS = +17m.59s.
Lemberg eN = +19m.21s.
Long waves were also recorded at Husan, Keizyo, Zinsen, Vladivostok, Kew, and other European stations.

Jan. 27d. Readings also at 1h. (Wellington), 2h. (Bucharest, Tiflis, and near Amboina), 4h. and 5h. (near Amboina), 6h. (near Samarkand), 8h. (near Malabar), 9h. (Tashkent, near Amboina (2), and near New Plymouth), 10h. (Sverdlovsk, Bombay, near Calcutta, and near Samarkand), 11h. (Oaxaca, Puebla, Tacubaya, Mount Wilson, Pasadena, Riverside, Santa Barbara, Sebastopol (3), Simferopol (3), Yalta (3), Grozny, Tiflis, and near Piatigorsk), 12h. (Tucson), 13h. (Mizusawa), 15h. (Adelaide, Christchurch, Cape Town, Huancayo, La Paz, La Plata, Sucre, Rio de Janeiro, Santiago, San Juan, La Jolla, Mount Wilson, Pasadena, Riverside, Wellington, Tucson, Sverdlovsk, Tashkent, Amboina, Ksara, and Strasbourg), 16h. (Bombay, Tiflis, Pulkovo, Copenhagen, San Fernando, Stonyhurst, Kew, Cheb, Stuttgart, De Bilt, Uccle, and Paris), 17h. (Almeria), 18h. (near Granada), 19h. (Almeria), 20h. (Kodaikanal), 21h. (Adelaide, Sydney, Christchurch, Wellington, New Plymouth, Mount Wilson, Pasadena, Riverside, and Ksara), 22h. (Baku, Sverdlovsk, Tucson, and La Paz), 23h. (near Malabar).

Jan. 28d. 1h. 37m. 51s. Epicentre 35°·7N. 134°·8E. (as on 1935 June 26d.). X.

A = −·5722, B = +·5762, C = +·5835 ; δ = −11.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Toyooka		0·2	176	e 0 2	− 1	e 0 5	0	0·1
Kobe		1·1	163	e 0 16$_s$	0	e 0 27	− 1	0·6
Sumoto	E.	1·4	177	e 0 15	− 5	e 0 38	+ 2	0·8
	N.	1·4	177	e 0 20	0	e 0 37	+ 1	0·9
Nagoya		1·8	107	e 0 30	P*	0 54	S$_s$	—

Sumoto eN = +25s.

Jan. 28d. 1h. Local European shock.

Capodimonte eP =48m.52s., eS =49m.29s.
Triest eP_g =48m.58s., i =49m.44s., iS_g =49m.47s.
Zagreb eP_g =49m.1s., iPS =49m.23s., eS =49m.32s., M =50m.3s.
Belgrade eP =49m.8s., e =49m.37s., 49m.47s., and 50m.0s.
Laibach iP_g =49m.32s., iS_g =49m.45s., M =49m.51s.
Chur eP =49m.42s.
Zurich eP =50m.

Jan. 28d. Readings also at 0h. (Mount Wilson, Pasadena, and Riverside), 1h. (near Toyooka), 2h. (Wellington), 3h. (Hong Kong, Batavia, and near Medan), 7h. (near Tananarive), 9h. (near Mizusawa), 10h. (Sumoto, Neuchatel, near Erevan, and Tiflis), 11h. (Wellington), 13h. (near Amboina), 14h. (near Wellington), 16h. (near Taihoku), 18h. (near Nagoya), 19h. (Oaxaca (2) and Tacubaya (3)), 20h. (Oaxaca (2) and Tacubaya (4)), 22h. (Tacubaya, Chur, Zurich, Florence, near Triest, and Zagreb).

Jan. 29d. 1h. 28m. 8s. Epicentre 35°·7N. 140°·4E. (as on 1934 May 9d.). R.3.

Japanese stations give 35°·9N. 140°·0E.

A = −·6257, B = +·5176, C = +·5835 ; δ = −12 ;
D = +·637, E = +·771 ; G = −·450, H = +·372, K = −·812.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Tokyo	0·5	268	0 6k	− 1	0 18	+ 5	0·3
Kiyasumi	0·6	198	0 8	− 1	0 17	+ 2	—
Tukubasan	0·6	335	0 4	− 5	0 13	− 2	—
Komaba	0·6	265	0 9	0	0 20	+ 5	—
Mitaka	0·7	267	0 10	0	0 23	+ 5	—
Kamekura	0·8	241	0 11	0	0 25	+ 4	—
Susaki	1·6	228	0 20	− 3	0 40	− 1	—
Nagoya	2·9	259	e 0 41	0	1 38	S_g	1·8
Mizusawa	3·5	9	e 0 48	− 2	1 25	− 5	—
Osaka	4·1	261	0 56	− 2	2 3	S*	2·7
Kobe	4·4	258	e 1 2	− 1	e 2 13	S*	2·5
Toyooka	4·5	259	1 15	P*	2 20	S_g	2·6
Sumoto	4·7	254	1 12	+ 5	2 27	S_g	2·6

Additional readings :—
Nagoya P_g = +52s.
Toyooka eSZ = +2m.24s.
Sumoto eSZ = +2m.32s.

Jan. 29d. 15h. 55m. 33s. Epicentre 41°·7N. 20°·6E. N.2.

Given by De Bilt.

A = +·6989, B = +·2627, C = +·6652 ; δ = −4 ;
D = +·352, E = −·936 ; G = +·823, H = +·234, K = −·747.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia		2·3	64	e 0 43	P_g	i 1 27	S_g	—	—
Belgrade		3·1	358	i 0 46	+ 2	i 1 37	S_g	—	2·4
Bucharest		4·9	54	e 1 49	+39	e 2 8	+ 3	—	3·3
Capodimonte	N.	4·9	263	e 1 15	+ 5	e 2 20	S*	—	4·4
Zagreb		5·3	323	e 1 18	+ 3	e 2 45	S_g	—	3·3
Budapest		5·9	350	1 30	+ 6	3 29	?	4·4	—
Laibach		6·2	317	1 31	+ 3	i 3 25	S_g	—	3·9
Triest		6·4	311	1 27	− 4	i 2 44	+ 1	—	3·8
Graz		6·5	327	i 1 32	0	i 3 18	S*	—	4·6
Vienna		7·2	337	e 1 58	P*	e 4 12	L	(e 4·2)	5·4

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florence	7·2	290	1 30	−12	2 59	− 5	—	4·9
Padova	7·4	303	e 1 48	+ 3	—	—	—	—
Prague	9·4	335	—	—	e 4 21	S*	—	6·0
Chur	9·5	307	e 2 11	− 3	—	—	—	—
Ravensburg	9·9	312	e 2 27	+ 8	—	—	e 5·6	—
Cheb	10·1	329	e 3 17	+55	e 5 40	S_g	—	5·9
Yalta	10·3	69	—	—	e 4 21	0	—	—
Zurich	10·3	308	e 2 21	− 4	e 4 23	+ 2	—	—
Simferopol	10·4	67	—	—	e 5 43	S_g	—	—
Stuttgart	10·7	315	e 2 50	+19	e 4 58	+27	e 6·0	7·0
Basle	11·0	307	e 2 30	− 5	e 5 13	+ 35	e 6·2	—
Neuchatel	11·1	303	e 2 32	− 4	—	—	e 6·4	—
Jena	11·1	329	e 2 57	+21	—	—	6·4	7·6
Strasbourg	11·4	312	e 5 27?	S*	—	—	—	—
Königsberg	13·1	0	—	—	e 5 59	+30	e 9·2	—
Ksara	14·4	118	e 3 15	− 6	—	—	e 7·7	11·4
Moscow	17·9	32	e 4 31	+26	—	—	e 11·2	—
Tiflis	18·0	83	e 4 17	+10	i 7 51	SS	e 11·4	—
Grozny	18·5	76	e 4 53	+40	—	—	—	—
Pulkovo	19·0	15	4 24	+ 5	8 5	SS	11·0	12·8
Baku	22·0	84	—	—	e 9 9	+23	13·8	—

Additional readings :—
Belgrade i = +54s., i = +59s. = P_g +3s., eP_g = +1m.2s., i = +1m.24s. = S +4s., iS_g = +2m.0s.
Bucharest eE = +2m.33s. = S_g −3s., eN = +3m.2s.
Zagreb eP* = +1m.28s., eP_g = +1m.36s. and +1m.43s., ePS = +1m.47s., i = +1m.59s., PS = +2m.1s., SP = +2m.38s., iSS = +2m.50s. and +2m.56s., i = +3m.10s.
Laibach i = +2m.5s. and +3m.11s.
Triest P_g = +1m.52s., i = +3m.14s. and +3m.37s.
Yalta eS_g = +5m.21s.
Strasbourg i = +6m.23s., +7m.20s., and +7m.37s.
Long waves were also recorded at Sverdlovsk and other European stations.

Jan. 29d. 18h. 27m. 32s. Epicentre 40°·8N. 142°·8E. N.2.

Given by the Japanese station.

A = −·6030, B = +·4577, C = +·6534 ; δ = +3 ;
D = +·605, E = +·797 ; G = −·520, H = +·395, K = −·757.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Miyako	1·3	208	0 18k	0	0 32	− 1
Urakawa	1·4	0	0 23	+ 3	0 37	+ 1
Aomori	1·5	271	0 23k	+ 2	0 41	+ 2
Morioka	1·7	229	0 24k	0	0 43	− 1
Mizusawa	2·1	217	i 0 30	0	i 0 52	− 2
Muroran	2·1	318	0 34	P*	0 52	− 2
Obihiro	2·2	8	0 58	S	1 24	?
Akita	2·3	242	0 39	P_g	0 57	− 2
Kusiro	2·5	29	0 25	−11	0 52	−12
Sapporo	2·6	335	0 40	P*	1 23	S_g
Sendai	2·9	210	0 41a	0	1 11	− 3
Asahigawa	3·0	354	0 44	+ 1	1 22	+ 5
Yamagata	3·1	216	1 7	+23	1 40	S_g
Nemuro	3·3	39	0 42	− 5	0 59	P_g
Hukusima	3·5	212	0 49	− 1	1 27	− 3
Mito	4·7	203	1 4	− 3	1 55	− 5
Utunomiya	4·8	209	1 8	0	1 59	− 4
Tukubasan	5·0	205	1 8	− 3	2 1	− 7
Kakioka	5·0	205	1 4	− 7	2 2	− 6
Maebasi	5·2	214	1 16	+ 2	2 14	+ 1

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Tyosi		5·2	197	1 12	− 2	2 9	− 4
Kumagaya		5·3	211	1 18	+ 3	2 12	− 3
Nagano		5·4	222	1 28	P*	2 23	+ 5
Oiwake		5·5	218	1 32	P*	2 26	+ 6
Tokyo		5·6	206	1 18	− 2	2 16	− 7
Yokohama		5·9	206	1 27	+ 3	2 25	− 6
Kohu		6·1	214	1 29	+ 2	2 30	− 6
Hunatu		6·2	212	1 28	0	—	—
Misima		6·4	209	1 38	+ 7	2 41	− 2
Nagoya		7·2	221	e 1 42	0	—	—
Gihu		7·2	223	1 47	+ 5	3 24	+20
Ibukisan		7·4	225	1 45	0	—	—

Long waves were also recorded at Tashkent, Baku, Sverdlovsk, and Pulkovo.

Jan. 29d. Readings also at 0h. (Medan), 1h. (Cape Town), 3h. (Almeria), 4h. (Nagoya), 5h. (Toledo), 12h. (Basle, Chur, Zurich, and near Neuchatel), 15h. (near Amboina), 17h. (La Paz, La Plata, Sucre, Santiago, and near Amboina), 18h. (Amboina), 19h. (Christchurch), 23h. (Hong Kong, Nanking, Manila, near Taihoku, and near Kobe).

Jan. 30d. 16h. 35m. 21s. Epicentre 40°·2N. 127°·0W. (as on 1932 March 2d.). X.

$A = -\cdot4597$, $B = -\cdot6100$, $C = +\cdot6455$; $\delta = +9$;
$D = -\cdot799$, $E = +\cdot602$; $G = -\cdot389$, $H = -\cdot515$, $K = -\cdot764$.

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Ferndale		2·1	80	e 0 39	P_g	i 0 59	S*
Berkeley		4·3	121	e 1 2	+ 1	—	—
San Francisco		4·3	123	i 1 1	0	i 1 48	− 2
Branner		4·6	125	i 1 7	+ 1	e 1 58	0
Lick		5·1	122	e 1 11	− 2	i 2 8	− 2
Santa Barbara		8·1	132	i 1 56	+ 1	i 3 27	+ 1
Pasadena		9·3	128	i 2 10	− 1	i 3 51	− 5
Riverside	z.	9·8	126	i 2 17	− 1	—	—

Additional readings :—
Berkeley iN = +1m.13s.
San Francisco iN = +1m.5s. and +1m.13s. = P* +3s.
Lick iN = +1m.23s. = P* −1s. and +1m.33s. = P_g −3s.

Jan. 30d. Readings at 0h. (Adelaide, Sverdlovsk, and Tashkent), 1h. (near Amboina) 2h. (near Samarkand), 4h. (near Mizusawa (2)), 5h. (Almeria, near Granada, Toledo, and Malaga), 6h. (Oaxaca, Tacubaya, Tucson, Little Rock, La Jolla, Mount Wilson, Pasadena, and Riverside), 9h. (near Granada, Toledo, Alicante, and Malaga), 11h. (near Hukuoka B), 12h. (Lick), 13h. (Wellington), 14h. (Tucson and near Wellington), 16h. (Oak Ridge and Zagreb), 17h. (Tucson, Bucharest, and Triest), 18h. (Berkeley, Branner, San Francisco, Lick, Tucson, and near Amboina), 19h. (Andijan), 22h. (Wellington, Sverdlovsk, Ksara, Frunse, near Andijan, Samarkand, and Tashkent), 23h. (Bucharest).

Jan. 31d. Readings at 2h. (near Santiago), 6h. (Almata, Frunse, and near Andijan), 9h. (Hong Kong, Nanking, and near Taihoku), 11h. (Batavia, Hong Kong, Sverdlovsk, Tashkent, Manila, and La Paz), 12h. (near Amboina), 14h. (Chur and Santiago), 15h. (La Plata, La Paz, Sucre, Huancayo, Mount Wilson, Pasadena, and Oak Ridge), 17h. (Oak Ridge, Frunse, near Andijan, and Samarkand), 18h. (Oak Ridge, Chiufeng, Nanking, Mizusawa, near Vladivostok, near Batavia, and Malabar) 19h. (Mount Wilson and Pasadena), 23h. (Reykjavik).

Feb. 1d. Readings at 0h. (near Berkeley and near Reykjavik), 3h. (Berkeley, Mount Wilson, Pasadena, near Reykjavik (3), and near Mizusawa), 4h. (Frunse, Tashkent, Sverdlovsk, Tchimkent, near Andijan, and near Samarkand), 5h. (Batavia), 6h. (near Wellington), 7h. (near Mizusawa), 8h. (near Reykjavik), 10h. (Wellington and near Malabar), 12h. (Amboina, near Wellington, and near Mizusawa), 14h. (Amboina), 15h. (Batavia, near Malabar, and near Amboina), 22h. (near Sumoto).

Feb. 2d. 5h. 14m. 0s. Epicentre 37°·5N. 68°·5E. N.3.

$A = +\cdot2908$, $B = +\cdot7381$, $C = +\cdot6088$; $\delta = -1$;
$D = +\cdot930$, $E = -\cdot367$; $G = +\cdot223$, $H = +\cdot566$, $K = -\cdot793$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	2·4	332	0 36	+ 2	1 18	S_g	—	2·0
Andijan	4·5	42	e 0 59	− 5	e 2 2	+ 7	3·1	—
Tchimkent	4·9	10	1 44	P_g	i 2 56	S_g	e 3·6	3·7
Frunse	7·1	39	e 1 43	+ 2	i 3 7	+ 6	—	5·0
Almata	8·6	46	2 5	+ 3	3 35	− 4	e 4·8	5·2
Grozny	18·2	296	e 4 22	+13	—	—	—	—
Tiflis	18·7	290	e 4 4	−11	e 8 10	+30	14·0	15·0
Sverdlovsk	20·0	347	4 27	− 3	8 30	SS	13·4	13·5

Additional readings :—
Samarkand $P_g = +49$s., PsPs = +53s., $S_g = +1$m.34s.
Andijan e = +2m.33s. $= S_g + 10$s.
Sverdlovsk $L_q = +11\cdot2$m.
Long waves were also recorded at Baku and Calcutta.

Feb. 2d. 17h. 8m. 24s. Epicentre 37°·5N. 38°·0E. N.3.

Given by Russian stations.

$A = +\cdot6252$, $B = +\cdot4884$, $C = +\cdot6088$; $\delta = +5$;
$D = +\cdot616$, $E = -\cdot788$; $G = +\cdot480$, $H = +\cdot375$, $K = -\cdot793$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	4·1	206	i 1 8	P*	i 2 41	?	—	—
Erevan	5·7	60	e 1 10	−11	e 2 34	+ 9	—	—
Sotchi	6·2	12	e 1 24	− 4	e 2 35	− 3	—	2·8
Tiflis	6·6	49	e 1 20	−14	2 55	+ 7	3·1	4·1
Yalta	7·5	339	e 2 4	P*	—	—	—	—
Piatigorsk	7·6	29	0 55	−53	—	—	—	—
Theodosia	7·7	346	—	—	e 2 55	−21	—	—
Sebastopol	7·8	336	e 2 13	P*	—	—	—	—
Simferopol	8·0	340	e 1 59	+ 6	—	—	—	—
Grozny	8·3	43	e 2 8	+10	—	—	—	—
Baku	9·7	69	e 2 6	−11	e 4 40	S*	5·6	6·9
Moscow	18·2	359	4 2	− 7	e 7 14	−15	—	—
Pulkovo	22·3	351	4 50	− 9	8 55	− 6	12·1	—
Chur	22·9	304	e 4 57	− 3	—	—	—	—
Zurich	23·6	304	e 4 59	− 7	—	—	—	—
Tashkent	24·3	72	i 5 8	− 5	e 9 19	− 9	14·3	16·0
Sverdlovsk	24·5	31	5 4	−11	9 24	− 8	12·6	—

Additional readings :—
Sotchi e = +1m.31s., +1m.41s. $= P^* - 2$s., +1m.53s. $= P_g - 5$s. and +2m.5s.
Tiflis i = +1m.41s.
Long waves were also recorded at Bucharest, Cheb, and Copenhagen.

Feb. 2d. Readings also at 0h. (La Paz, La Plata, and near Medan), 1h. (near Amboina, near Apia, and near Frunse), 3h. (Sumoto), 5h. (Amboina), 7h. (La Paz), 10h. (Ksara, Tiflis, and near Erevan), 11h. (near Amboina), 13h. (Lick and Amboina), 16h. (near Kobe, Nagoya, Osaka, and Sumoto), 18h. (near Mizusawa), 19h. (Amboina and near San Juan), 21h. (San Juan and near Nagoya), 22h. (near Batavia and Malabar), 23h. (La Paz).

Feb. 3d. 17h. 50m. 20s. Epicentre 40°·7N. 73°·5E. N.3.

Given by the stations of Central Asia.

$A = +\cdot2153$, $B = +\cdot7269$, $C = +\cdot6521$; $\delta = -3$;
$D = +\cdot959$, $E = -\cdot284$; $G = +\cdot185$, $H = +\cdot625$, $K = -\cdot758$.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Andijan	0·8	273	0 12	+ 1	0 24	+ 3	0·5
Frunse	2·4	21	0 35	+ 1	1 11	S*	1·2
Tashkent	3·2	281	e 0 52	P*	1 22	0	—
Tchimkent	3·4	300	e 0 58	P*	1 38	S*	—
Almata	3·6	43	e 1 6	P_g	i 1 54	S_g	1·6
Samarkand	5·1	260	e 1 14	+ 1	i 2 34	S*	3·0
Semipalatinsk	10·8	24	—	—	e 5·11	S*	—
Sverdlovsk	18·1	337	e 2 58	?	—	—	—

Additional readings :—
Andijan i = +16s.
Frunse P* = +37s., iPP = +43s. = P_g +1s.
Almata P_gS = +1m.45s.
Tashkent e = +1m.0s. = P_g +2s., i = +1m.18s.
Samarkand e = +1m.57s.
Semipalatinsk S = +5m.32s.
Sverdlovsk i = +5m.19s. and +5m.24s., e = +5m.45s., L = +6m.34s.

Feb. 3d. Readings also at 1h. (Samarkand, near Almata, Andijan, Frunse, and near Amboina), 3h. (Adelaide, Riverview, Wellington, La Paz, Sucre, Rio de Janeiro, Florence, Triest, Stuttgart, Paris, De Bilt, Uccle, Copenhagen, Tashkent, Ksara, and Sverdlovsk), 4h. (Apia, Perth, Kobe, and near Sumoto) 6h. (near La Paz (2)), 8h. (near Sumoto), 9h. (near La Paz), 10h. (Medan), 16h. (near Amboina and near Medan), 17h. (Wellington), 20h. (Oak Ridge and near Taihoku), 21h. (Haiwee, La Jolla, Mount Wilson, Pasadena, Santa Barbara, Seattle, Sitka, Bozeman, Tucson, Little Rock, Madison, Florissant, St. Louis, Chicago, Ann Arbor, Philadelphia, Columbia, Baku, Tiflis, Tashkent, Vladivostok, Sverdlovsk, Chiufeng, and Hong Kong).

Feb. 4d. 8h. 16m. 8s. Epicentre 46°·2N. 14°·6E. N.3.

Given by Laibach.

$A = +\cdot6698$, $B = +\cdot1745$, $C = +\cdot7218$; $\delta = +8$;
$D = +\cdot252$, $E = -\cdot968$; $G = +\cdot698$, $H = +\cdot182$, $K = -\cdot692$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Laibach		0·2	201	i 0 0	− 3	i 0 5	0	—	0·2
Triest		0·8	227	i 0 9k	− 2	i 0 20	− 1	—	—
Graz		1·1	33	e 0 10	− 6	—	—	i 0·5	0·6
Zagreb		1·1	112	e 0 17	+ 1	i 0 35	S*	—	0·7
Padova		2·1	253	e 0 38	P_g	e 1 4	S_g	—	—
Vienna		2·4	30	i 0 41	P_g	1 15	S_g	—	1·7
Budapest		3·3	67	1 5	P_g	1 48	S_g	2·4	—
Florence		3·4	225	1 2	P_g	—	—	—	1·9
Chur		3·5	283	e 0 52	+ 2	e 1 49	S_g	—	—
Ravensburg		3·7	297	e 1 4	P_g	e 1 53	S*	—	—
Prague		3·9	359	e 1 7	P*	e 1 58	S*	—	2·1
Cheb		4·1	341	—	—	i 2 4	S_g	—	—
Zurich		4·3	288	e 1 0	− 1	e 2 11	S_g	—	—
Stuttgart		4·4	307	e 1 7	+ 4	e 2 3	S*	e 2·6	—
Basle		5·0	288	e 1 14	+ 3	e 2 43	S_g	—	—
Jena	N.	5·1	338	e 1 13	0	e 2 10	0	e 2·5	3·0
Neuchatel		5·2	281	e 1 14	0	—	—	—	—
Göttingen		6·1	332	i 1 27	0	e 3 4	S*	—	3·5
Granada		16·2	243	—	—	e 6 39	− 4	—	—

For Notes see next page.

NOTES TO FEB. 4d. 8h. 16m. 8s.

Additional readings :—
Triest $P_g = +11s.$
Zagreb i = +20s., iE = +24s., $iP_g = +29s.$ = S +1s. and +33s., i = +47s., +1m.7s., and +1m.14s., eSS = +1m.24s., e = +2m.15s.
Vienna $P^* = +43s.?$, $iS^* = +1m.21s.$, $S_g = +1m.24s.$
Ravensburg $eS_g = +1m.58s.$
Stuttgart $eP_g = +1m.20s.$, eN = +2m.18s. = $S_g - 1s.$, $eS^* = +2m.21s.$, $eS_g = +2m.28s.$
Göttingen eE = +3m.10s. = $S_g - 5s.$
Granada e = +7m.40s.

Feb. 4d. Readings also at 0h. (Hong Kong), 3h. (Cheb), 8h. (near Tananarive), 9h. (Haiwee, La Jolla, Mount Wilson, Pasadena, and Santa Barbara), 10h. (Baku, Sverdlovsk, and Tashkent), 11h. (near Batavia and Malabar), 12h. (Agra, Bombay, Calcutta (2), Dehra Dun, Hyderabad, Kodaikanal, Samarkand, Tashkent, Sverdlovsk (2), Ksara, Vladivostok, Chiufeng, Batavia, Manila, Apia, Berkeley, Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, and Santa Barbara), 14h. (near Wellington), 15h. (La Paz), 19h. (La Paz, Stuttgart, near Basle, Chur, Neuchatel, Zurich, and near Samarkand), 21h. (Manila and near La Paz), 23h. (Wellington).

Feb. 5d. 7h. 11m. 28s. Epicentre 35°·2N. 135°·7E. N.3.

A = −·5848, B = +·5707, C = +·5764 ; $\delta = -7$;
D = +·698, E = +·716 ; G = −·413, H = +·403, K = −·817.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Osaka	0·7	194	0 7	− 3	0 14	− 4	0·3
Kobe	0·7	219	0 9k	− 1	i 0 16	− 2	0·4
Toyooka	0·8	295	0 12k	+ 1	0 23	+ 2	0·5
Nagoya	1·1	92	i 0 16	0	0 31	S*	—
Sumoto	1·1	218	0 16	0	0 30	S*	0·5
Hukuoka B	4·6	251	e 2 8	S	(e 2 8)	+10	—

Hukuoka gives S = +2m.38s.

Feb. 5d. Readings also at 6h. (Melbourne, Wellington, and near Santiago), 7h. (Riverview, Melbourne, Perth, Baku, Tashkent, Sverdlovsk, and Ksara), 9h. (near Santiago), 11h. (Amboina), 13h. (near Taihoku), 16h. (near Toyooka), 17h. (La Paz), 18h. (near Santiago), 19h. (Alicante, Granada, and Toledo), 21h. (near Granada), 22h. (Medan).

Feb. 6d. 4h. 4m. 33s. Epicentre 1°·5S. 98°·0E. N.3.

A = −·1391, B = +·9899, C = −·0262 ; $\delta = -6$;
D = +·990, E = +·139 ; G = +·004, H = −·026, K = −1·000.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		5·2	8	e 1 11	− 3	i 2 43	S_g	—	—
Batavia		10·0	118	e 2 23	+ 2	i 4 27	+14	—	—
Colombo		20·0	294	4 27	− 3	—	—	—	19·0
Kodaikanal	E.	23·6	301	i 5 8	+ 2	i 9 24	+ 8	i 11·4	—
Phu-Lien		23·9	21	e 5 9	0	9 27?	+ 6	12·4	—
Calcutta	E.	25·8	339	—	—	e 9 58	+ 3	—	25·7
Manila		27·9	54	5 42	− 4	10 46	SS	—	17·1
Hong Kong		28·6	33	6 35	PP	11 37	SS	16·1	20·4
Bombay		32·1	310	e 6 27?	+ 3	e 11 36	− 1	—	—
Agra	E.	34·5	328	—	—	e 12 4	−10	—	—
Perth		34·8	153	15 57	?	—	—	—	—
Nanking		38·9	28	—	—	e 13 23	+ 3	—	23·2
Chiufeng		44·7	20	e 8 9	− 1	e 14 36	−10	—	27·8
Andijan		48·3	333	e 8 39	+ 1	—	—	—	—
Tashkent		50·1	332	i 9 45	?	i 15 52	−10	e 31·4	38·2
Baku		60·6	319	e 14 27	?	e 18 22	− 2	40·4	—
Sverdlovsk		65·6	339	—	—	e 19 16	−11	—	—
Ksara		68·0	308	e 11 6	+ 8	e 20 36	PS	—	48·0
Pulkovo		80·3	332	—	—	e 22 11	− 8	50·4	—

For Notes see next page.

NOTES TO FEB. 6d. 4h. 4m. 33s.

Additional readings :—
Batavia iE = +3m.58s.
Kodaikanal iSSE = +10m.23s.
Chiufeng eZ = +18m.16s. = S_cS +6s.
Baku e = +22m.48s. and +32m.51s.
Sverdlovsk e = +20m.27s. = S_cS −5s.
Ksara e = +25m.53s.
Pulkovo e = +30m.55s. and +34m.16s.
Long waves were also recorded at Riverview, Hyderabad, Vladivostok, and Zi-ka-wei.

Feb. 6d. Readings also at 0h. (near Triest), 2h. (near Manila), 3h. (near Taihoku), 5h. (Frunse, near Andijan, Copenhagen, and Samarkand), 8h. (near Hukuoka B), 9h. (Haiwee, La Jolla, Mount Wilson, Pasadena, Riverside, and near Hukuoka B), 12h. (near Santiago), 17h. (near Manila), 18h. (Amboina), 20h. (Batavia, Manila, Medan, Bombay, Calcutta, Colombo, Hong Kong, Tashkent, Sverdlovsk, and Ksara), 21h. (Chiufeng, Nanking, Vladivostok, and near Nagoya), 22h. (near Berkeley).

Feb. 7d. 0h. 48m. 6s. Epicentre 19°·0S. 173°·0W. (as on 1928 Aug. 26d.). R.3.

A = −·9385, B = −·1152, C = −·3256 ; δ = +7 ;
D = −·122, E = +·993 ; G = +·323, H = +·040, K = −·946.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		5·3	13	1 10	− 5	1 47	P_g	—	—
Wellington		24·6	202	4 19	−57	9 44	+10	12·9	14·9
Chatham Ils.		25·1	187	—	—	e 9 54?	+11	—	—
Riverview		35·1	237	e 8 13	PP	—	—	e 17·4	19·0
Sydney		35·1	237	e 7 0	+10	e 12 44	+21	17·7	19·6
Melbourne		41·0	234	e 9 44	(− 1)	e 14 4	+13	19·9	25·4
Adelaide		45·5	240	—	—	i 18 18	(+ 3)	21·7	24·3
Branner	N.	74·0	40	e 11 35	0	—	—	—	—
Lick	E.	74·3	40	e 11 35	− 1	—	—	—	—
Pasadena		74·5	45	i 11 35a	− 2	e 21 21	+ 7	e 33·1	—
Tucson		78·5	50	e 12 1	+ 1	e 22 0	+ 1	e 35·9	—
Batavia		78·7	269	i 12 0	− 1	21 52	−10	—	—
Chiufeng		88·5	314	i 12 49a	− 1	23 51	−11	e 44·0	48·6
Huancayo		93·2	116	—	—	e 24 4	{+ 3}	e 43·4	—
Florissant	E.	96·3	53	—	—	e 24 15	[+ 7]	e 46·3	54·9
St. Louis	E.	96·4	53	i 15 3	?	i 20 48	PPPP	—	—
La Paz		98·0	112	18 16	?	i 24 34	{− 4}	46·3	48·2
Ottawa		108·4	47	—	—	e 28 18	PS	49·9	—
Tashkent		123·0	308	i 18 54	[+ 1]	30 35	PS	e 46·1	69·8
Sverdlovsk		125·4	327	—	—	e 30 56	PS	47·9	77·6
Pulkovo		136·0	343	19 19	[+ 3]	26 39	SKS	68·9	77·3
Moscow		136·7	335	e 19 20	[+ 3]	—	—	71·4	101·3
Baku		137·6	310	19 26	[+ 8]	29 7	{− 2}	63·2	84·1
Grozny		139·5	316	e 19 23	[+ 2]	—	—	—	—
Sotchi		143·2	320	e 19 30	[+ 2]	—	—	—	—
Theodosia		145·0	325	e 19 37	[+ 3]	—	—	—	—
Simferopol		145·7	326	i 19 38	[+ 3]	—	—	—	—
Yalta		145·9	325	e 19 38	[+ 3]	—	—	—	—
Sebastopol		146·2	326	i 19 40	[+ 4]	—	—	—	—
De Bilt		146·5	2	i 19 42	[+ 6]	—	—	e 74·9	84·3
Kew		147·1	10	i 19 41	[+ 4]	—	—	e 71·9	80·7
Göttingen		147·4	357	19 36	[− 2]	—	—	—	19·9
Jena		147·9	353	e 19 46	[+ 7]	—	—	—	—
Uccle		148·1	4	i 19 44a	[+ 5]	—	—	74·9	—
Budapest		149·9	344	19 54?	[+12]	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Paris	150·0	6	—	—	e 44 54?	?	77·9	—
Stuttgart	150·2	357	e 19 45 a	[+ 3]	—	—	e 81·9	—
Ksara	150·3	305	i 19 45 a	[+ 3]	(34 24)	SKSP	—	34·4
Strasbourg	150·4	359	i 19 51 a	[+ 9]	23 19	PKS	e 74·9	—
Basle	151·5	359	e 19 29	[−15]	—	—	—	—
Zurich	151·6	358	e 19 47	[+ 3]	—	—	—	—
Belgrade	151·9	340	e 19 47 a	[+ 3]	—	—	—	—
Chur	152·1	359	e 19 47	[+ 2]	—	—	—	—
Neuchatel	152·1	0	e 19 49	[+ 4]	—	—	—	—
Zagreb	152·2	347	e 19 52	[+ 7]	—	—	—	—
Triest	152·8	350	i 19 56 a	[+11]	—	—	—	83·7
Granada	159·6	25	i 20 11	[+18]	—	—	—	—
Malaga	159·7	27	i 20 37	[+44]	—	—	—	—

Additional readings :—
Apia P* = +1m.22s., P_g = +1m.31s. =P* +3s., e = +1m.54s., S* = +2m.4s., S_g = +2m.16s. =S +1s.
Pasadena iSKP,PKPZ = +41m.27s.
Tucson e = +26m.38s. =SS −12s.
Chiufeng eSKSN = +23m.18s.
Huancayo e = +25m.57s., +28m.54s., and +31m.2s.
Florissant eE = +27m.15s., iE = +44m.45s.
Ottawa eE = +34m.18s. =SS +21s.
Tashkent PPS = +32m.1s.
Pulkovo PKS = +22m.45s., SKKS = +29m.3s., SS = +40m.24s.
Moscow PKS = +22m.49s.
Baku PKS = +23m.9s., e = +35m.58s., SS = +40m.18s.
Stuttgart iz = +19m.59s.
Ksara iPKP$_2$ = +19m.58s., PP = +23m.29s.
Strasbourg i = +19m.59s., iPKP$_2$ = +20m.14s.
Basle e = +19m.52s.
Zurich e = +19m.53s.
Belgrade i = +19m.53s., e = +20m.10s. =PKP$_2$ +3s. and +20m.57s.
Chur e = +23m.32s. =PP +0s.
Zagreb eNW = +19m.55s., eNE = +20m.0s. =PKP$_2$ −9s., eZ = +20m.8s.
Granada PP = +24m.26s.
Long waves at Rio de Janeiro, Cape Town, Hong Kong, Bombay, Oak Ridge, Philadelphia, Ukiah, Vermont, San Juan, and other European stations.

Feb. 7d. 2h. 16m. 54s. I
12h. 26m. 38s. II
Epicentre 42°·3N. 29°·0E.
N.3.
X.

A = +·6469, B = +·3586, C = +·6730 ; δ = 0 ;
D = +·485, E = −·875 ; G = +·589, H = +·326, K = −·740.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
II Bucharest	3·0	315	—	—	e 1 22	+ 5	e 4·0	—
I Sebastopol	4·0	53	e 0 58	+ 1	i 1 39	− 3	—	—
II	4·0	53	1 0	+ 3	i 1 45	+ 3	—	—
I Yalta	4·4	58	e 1 0	− 3	i 1 47	− 6	—	—
II	4·4	58	e 1 2	− 1	i 1 48	− 5	—	1·8
I Simferopol	4·6	52	i 1 6	0	e 1 56	− 2	—	—
II	4·6	52	1 8	+ 2	i 1 58	0	—	—
I Theodosia	5·3	57	e 1 17	+ 2	e 2 10	− 5	—	—
II	5·3	57	1 14	− 1	i 2 12	− 3	—	—
II Belgrade	6·7	295	—	—	e 3 50	S_g	—	—
II Ksara	10·0	145	e 2 21	0	4 19	+ 6	—	—
II Triest	11·7	293	i 3 21	?	—	—	i 8·2	—

Additional readings to shock II :—
Simferopol i = +1m.24s., iP_g = +1m.28s., i +1m.41s.
Belgrade e = +4m.54s., +5m.5s., and +6m.31s.
Ksara SS = +4m.30s., i = +7m.37s.
Long waves were also recorded at Cheb.

Feb. 7d. 8h. 56m. 31s. Epicentre 35°·4N. 103°·2E. N.1.

$A = -\cdot1861$, $B = +\cdot7936$, $C = +\cdot5793$; $\delta = +2$;
$D = +\cdot974$, $E = +\cdot228$; $G = -\cdot132$, $H = +\cdot564$, $K = -\cdot815$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng	E.N.	11·2	62	i 2 35	− 2	4 38	− 5	5·5	8·3
Nanking		13·4	100	i 3 9	+ 2	e 5 51	+14	6·8	7·9
Phu-Lien		14·9	167	3 29?	+ 2	6 29?	+16	7·5	9·4
Dairen		15·1	71	3 31	+ 1	6 41	+24	—	—
Zi-ka-wei		15·8	100	e 3 35	− 4	6 45	+11	7·8	9·0
Yingkow		15·8	65	3 43	+ 4	—	—	—	—
Hong Kong		16·2	141	3 37k	− 7	6 49	+ 6	7·6	9·0
Fengtien		17·0	62	4 2	+ 8	7 27	+25	—	—
Calcutta	E.	18·2	229	4 5	− 4	7 41	+12	9·9	13·2
Heizyo		18·3	72	i 4 10	0	i 7 42	+11	i 10·1	15·2
Hokoto		18·5	126	4 14	+ 1	—	—	—	—
Taityu		18·8	122	4 27	+11	—	—	—	—
Sinkyo		18·9	57	4 40	+23	—	—	—	—
Taihoku		18·9	118	i 4 18	+ 1	7 56	+12	9·6	10·2
Zinsen		18·9	77	i 4 16k	− 1	i 7 58	+14	i 9·9	12·2
Keizyo		19·2	76	i 4 19k	− 2	i 7 58	+ 8	10·0	10·8
Tainan		19·3	125	4 1	−21	7 36	−16	—	—
Arisan		19·3	123	4 30	+ 8	—	—	—	—
Takao		19·6	126	4 27	+ 2	—	—	—	—
Karenko		19·6	120	4 27	+ 2	—	—	—	—
Taito		20·1	125	4 37	+ 6	—	—	—	—
Kosyun		20·3	126	4 37	+ 4	—	—	—	—
Taikyu		20·6	81	4 13	−23	8 12	− 6	10·3	—
Husan		21·0	83	i 4 39	− 1	i 8 40	+14	11·1	14·3
Isigakizima		21·2	115	4 39	− 3	8 42	+12	—	—
Tomie		21·3	89	4 44	+ 1	—	—	—	—
Almata		21·7	300	i 4 51	+ 3	8 59	+19	12·1	—
Dehra Dun		21·7	263	4 29	−19	8 19	−21	11·6	12·5
Nagasaki		22·2	89	4 56	+ 3	8 59	+ 9	—	—
Hukuoka		22·4	87	e 4 35	−20	9 11	+18	e 11·8	e 14·7
Hukuoka B		22·4	87	4 55	0	9 2	+ 9	11·8	14·2
Semipalatinsk		22·4	320	i 4 57	+ 2	9 11	+18	11·9	—
Unzendake		22·5	89	4 45	−11	9 5	+10	—	—
Kumamoto		22·8	89	4 58	− 1	9 13	+12	—	—
Naha		22·9	107	5 2	+ 2	9 5	+ 2	—	—
Agra		23·0	256	4 54	− 7	i 9 2	− 3	11·3	—
Kagosima		23·1	92	5 14	+12	—	—	—	—
Nake		23·3	100	5 5	+ 1	9 24	+14	—	—
Frunse		23·3	297	4 4	−60	e 8 29	−41	e 11·5	—
Vladivostok		23·4	63	i 5 5	0	i 9 19	+ 7	—	29·3
Ooita		23·5	87	5 10	+ 5	9 33	+19	—	—
Miyazaki		23·7	91	5 8	+ 1	9 30	+12	—	—
Hirosima		23·9	84	5 12	+ 3	9 29	+ 8	—	—
Matuyama		24·3	84	5 13	0	—	—	—	—
Simidu		24·7	87	5 15	− 2	9 45	+ 9	—	—
Koti		25·0	85	5 10	−10	—	—	—	—
Toyooka		25·6	80	5 24	− 1	10 48	SS	12·8	17·2
Tokusima		25·7	83	5 25	− 1	—	—	—	—
Sumoto		25·9	83	i 5 28	0	10 1	+ 4	13·1	16·8
Miyadu		26·0	80	5 26	− 3	—	—	—	—
Kobe	Z.	26·1	82	e 5 22	− 8	e 10 4	+ 4	—	18·0
Manila		26·2	138	i 5 33a	+ 2	i 10 22	+20	—	16·2
Wakayama		26·2	83	5 30	− 1	—	—	—	—
Osaka		26·4	82	5 33	0	10 25	+20	14·8	18·2
Yagi		26·6	82	5 31	− 4	—	—	—	—

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hikone		26·8	80	5 36	0	—	—	—	—
Siomisaki		26·8	84	5 30	− 6	10 29	+17	—	—
Tchimkent		26·9	295	e 5 39	+ 2	—	—	11·9	—
Ibukisan		26·9	79	5 35	− 2	—	—	—	—
Tashkent		27·0	293	e 5 41	+ 3	i 10 39	+24	e 16·0	—
Kanazawa		27·0	77	5 52	+14	—	—	—	—
Tu		27·1	81	5 49	+10	—	—	—	—
Wazima		27·1	75	5 37	− 2	10 35	+18	—	—
Kameyama		27·1	81	5 39	0	10 17	0	—	—
Gihu		27·2	80	5 41	+ 1	10 38	+20	—	—
Husiki		27·2	77	5 33	− 7	10 30	+12	—	—
Toyama		27·4	77	5 52	+10	10 51	+29	—	—
Nagoya		27·4	80	e 5 41	− 1	e 10 38	+16	14·6	—
Iida		28·1	79	5 55	+ 7	—	—	—	—
Nagano		28·2	77	5 50	+ 1	10 57	+22	—	—
Takada		28·2	76	5 59	+10	—	—	—	—
Hyderabad		28·4	237	5 56	+ 5	10 40	+ 2	12·2	17·2
Oiwake		28·5	77	5 30	−22	—	—	—	—
Kohu		28·6	79	5 56	+ 3	—	—	—	—
Niigata		28·7	73	6 17	+24	—	—	—	—
Samarkand		28·8	289	e 5 53	− 1	e 11 15	+30	13·5	—
Maebasi		28·9	77	5 45	−10	—	—	—	—
Misima		29·0	80	6 2	+ 6	—	—	—	—
Kumagaya		29·2	77	6 12	+14	11 23	+32	—	—
Akita		29·4	71	5 55	− 5	—	—	—	—
Hakodate		29·8	65	6 30	+27	—	—	—	—
Hukusima		29·8	74	6 8	+ 5	11 16	+15	—	—
Kakioka		29·8	76	6 1	− 2	11 3	+ 2	—	—
Tukubasan		29·8	76	5 56	− 7	—	—	—	—
Sendai		30·1	72	6 6	0	11 14	+ 8	—	—
Sapporo		30·3	62	6 27	+19	—	—	—	—
Tyosi		30·4	78	6 10	+ 1	—	—	—	—
Asahigawa		31·0	60	6 11	− 3	—	—	—	—
Bombay		31·5	247	i 6 22	+ 4	i 11 26	− 2	14·5	17·4
Obihiro		31·6	62	6 10	− 9	—	—	—	—
Medan		32·1	189	6 27	+ 3	i 12 35	+58	—	—
Sikka		32·1	51	7 20	PP	—	—	—	—
Kodaikanal	E.	34·4	230	i 6 49	+ 5	i 12 11	− 1	16·1	25·5
Colombo		35·6	222	e 6 54	0	12 28	− 2	20·8	23·4
Sverdlovsk		35·6	321	i 6 52	− 2	i 12 24	− 6	18·5	21·5
Batavia		41·7	174	i 7 47	+ 1	i 13 46	−16	23·5	—
Baku		41·7	294	7 46	0	e 14 29	+27	24·0	—
Grozny		44·2	298	8 13	+ 7	e 14 47	+ 8	23·5	—
Tiflis		45·2	296	e 8 15	+ 1	e 14 35	−19	e 23·5	29·5
Amboina		45·6	143	8 14	− 4	14 34	−25	e 17·5	—
Moscow		48·1	316	8 34	− 3	i 15 34	0	25·2	29·7
Theodosia		51·2	303	e 9 4	+ 4	e 16 9	− 9	27·5	—
Pulkovo		51·6	322	e 9 3	0	16 20	− 3	25·5	32·9
Simferopol		52·0	303	e 9 9	+ 3	e 16 18	−10	26·5	—
Yalta		52·1	302	e 9 9	+ 2	e 16 16	−14	33·5	—
Sebastopol		52·5	303	e 9 13	+ 3	e 16 25	−10	29·5	—
Ksara		54·3	288	i 9 23a	0	i 17 16	+17	—	—
Bucharest		57·6	304	—	—	e 18 11	PS	32·5	33·5
Königsberg		57·8	318	—	—	e 21 39	SS	—	36·2
Upsala		57·8	324	i 9 52	+ 3	i 17 51	+ 4	30·5	33·0
Helwan		59·4	287	e 10 2	+ 2	e 18 14	+ 6	28·9	—
Budapest		61·1	309	10 32	+20	18 29?	− 1	30·0	38·0
Belgrade		61·2	306	e 10 13a	0	e 20 4	(+ 4)	e 30·1	—
Copenhagen		61·8	321	10 16	− 1	18 43	+ 4	—	—
Vienna		62·5	311	e 10 28	+ 6	e 20 23	(+13)	e 31·6	42·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Prague		62·9	314	—	—	e 18 57	+ 3	e 31·5	42·0
Bergen		63·4	327	e 25 36	?	e 28 11	?	e 33·4	—
Zagreb		63·7	309	e 10 21	− 9	e 17 59	−65	—	41·9
Hamburg		64·0	319	e 10 31	− 1	e 19 10	+ 3	—	39·5
Cheb		64·1	315	(e 10 36)	+ 3	(e 19 33)	PS	(30·5)	(36·0)
Jena		64·2	316	e 10 29	− 5	e 18 29	−41	e 28·5	43·0
Göttingen		64·8	317	i 10 40	+ 3	e 19 17	0	e 33·5	35·5
Triest		65·2	310	—	—	e 18 23	−59	e 34·7	—
Stuttgart		66·5	315	e 10 50	+ 1	e 19 32	− 7	e 35·5	42·5
Padova		66·5	310	e 10 29	−20	e 18 58	−41	—	—
Capodimonte	N.	67·0	304	(e 10 22)	−30	(e 20 19)	+34	(40·5)	—
Scoresby Sund		67·1	343	—	—	19 52	+ 6	33·5	—
De Bilt		67·2	318	e 10 53	0	19 52	+ 5	e 32·5	48·1
Chur		67·2	311	e 10 52	− 1	—	—	—	—
Strasbourg		67·5	314	e 10 50	− 5	i 19 58	+ 7	e 33·5	42·0
Florence		67·6	308	10 27	−29	19 57	+ 5	—	37·5
Zurich		67·6	313	e 10 54	− 2	11 6	PcP	—	—
Uccle		68·3	318	e 11 2	+ 2	i 20 2	+ 1	32·5	42·7
Perth		68·4	168	—	—	e 19 49	−13	37·1	—
Neuchatel		68·7	313	e 11 6	+ 3	—	—	—	—
Edinburgh		69·4	324	—	—	i 28 9	?	e 33·5	43·2
Stonyhurst		70·2	322	—	—	e 20 35	+11	37·5	39·5
Paris		70·4	317	e 11 29?	+16	—	—	38·5	43·5
Kew		70·5	320	—	—	e 20 30	+ 3	e 31·5	43·2
Bidston		70·8	322	—	—	e 24 49	SS	—	43·1
Rathfarnham Castle		72·4	323	i 20 50	S	i 28 26	SSS	—	41·0
Sitka		75·2	29	—	—	e 21 25	+ 3	e 34·1	—
Algiers		76·6	305	e 10 29?	−80	e 21 29?	− 9	e 35·5	47·5
Adelaide		77·7	151	i 7 33	?	i 21 40	−11	—	47·9
Almeria		80·1	308	e 15 15	PP	—	—	e 33·0	54·2
Granada		80·6	309	i 11 55	−16	—	—	—	—
Malaga		81·4	309	e 11 58	−17	e 22 14	−17	43·3	—
Riverview		82·5	141	e 14 17	?	e 22 35	− 7	e 39·8	53·2
Sydney		82·5	141	e 21 59	?	(e 21 59)	−43	40·5	50·7
San Fernando		82·7	310	—	—	e 29 48	?	44·0	51·5
Melbourne		82·8	147	—	—	i 22 34	−11	48·5	—
Victoria		86·5	29	e 23 10	S	(e 23 10)	[0]	e 38·1	55·9
Ukiah		94·1	34	—	—	e 24 31	− 3	e 43·3	—
Berkeley	E.	95·5	34	—	—	e 24 9	[+ 6]	e 47·3	—
Ottawa		99·2	358	—	—	e 25 29?	+10	42·5	—
Vermont		100·1	356	—	—	e 37 10	?	e 45·1	—
Pasadena		100·4	33	e 13 52	+ 7	e 23 54	[−34]	e 47·0	—
Mount Wilson	Z.	100·4	33	i 13 49	+ 4	i 23 58	[−30]	—	—
Toronto		100·9	1	—	—	e 24 29?	[− 1]	e 43·9	—
Wellington		100·9	134	—	—	e 35 29?	SSS	43·5	—
Chicago		102·2	8	—	—	e 27 34	PS	e 44·4	—
Florissant		104·7	10	—	—	e 25 12	{−16}	e 47·9	58·9
Philadelphia		104·7	358	—	—	e 30 30	?	e 49·1	—
St. Louis	N.	104·9	10	—	—	i 26 6	− 4	e 49·9	58·2
Cape Town		105·2	239	—	—	30 2	?	50·5	58·3
Tucson		105·2	29	—	—	e 33 23	SS	52·6	—
Charlottesville		106·5	1	—	—	e 33 29	SS	e 47·8	—
Columbia		110·5	3	—	—	e 34 35	SS	e 49·4	—
San Juan		125·3	347	e 21 16	PP	e 37 21	SS	e 54·5	—
Rio de Janeiro		148·3	284	—	—	e 38 29	?	e 61·0	—
Huancayo		156·6	356	—	—	e 38 19	?	64·2	—
La Paz		159·6	334	e 20 3	[+10]	26 48	SKS	75·9	92·9

For Notes see next page.

NOTES TO FEB. 7d. 8h. 56m. 31s.

Additional readings and notes :—

Chiufeng iEN = +3m.19s.
Nanking iSE = +5m.59s., S = +6m.6s. and +6m.13s.
Zi-ka-wei iZ = +3m.55s., +4m.19s., +4m.31s., +5m.29s., +6m.57s., and +7m.14s., iN = +7m.19s.
Hong Kong PP = +3m.51s., ? = +4m.36s. and +6m.35s., SS = +7m.0s.
Agra PPE = +5m.15s., SSE = +10m.3s.
Toyooka PE = +5m.31s.
Sumoto SE = +10m.5s., SZ = +10m.11s.
Kobe ePN = +5m.25s., P = +5m.30s., iZ = +5m.35s., iN = +5m.39s., SE = +10m.7s.
Osaka PP = +6m.33s., P_cP = +8m.47s., SSS = +12m.12s.
Bombay SS?E = +12m.49s.
Medan i = +14m.52s. and +16m.12s.
Kodaikanal PPE = +7m.42s., PPP = +8m.4s., SSE = +14m.3s.
Colombo iP = +8m.25s.
Batavia iSN = +13m.49s., iSE = +14m.6s.
Ksara PP = +11m.31s.
Bucharest eEN = +13m.29s.? eE = +14m.59s.
Königsberg eE = +22m.18s., eN = +23m.38s. =SSS +1s., +27m.9s., +29m.30s., and +30m.23s., eE = +30m.41s., eN = +30m.59s., iN = +31m.24s., eZ = +32m.53s., eN = +33m.4s., iE = +33m.57s., iN = +34m.7s., iE = +34m.15s., iN = +35m.0s.
Upsala SSE = +22m.21s.
Helwan iPP = +12m.19s., iPPP = +13m.47s., PS = +18m.38s., e = +19m.42s. = S_cS −6s., SSS = +24m.16s.
Belgrade e = +12m.32s. =PP +11s. and +14m.5s. =PPPP −4s.
Copenhagen +22m.35s. =SS −2s. and +25m.35s. =SSSS −7s.
Prague e = +20m.28s. =S_cS +15s., eE = +23m.17s., e = +25m.29s. =SSS +11s.
Zagreb e = +38m.50s.
Hamburg eSSSN = +26m.35s. =SSSS +1s., iE = +31m.49s.
Cheb ePPP =(+14m.20s.) ; all readings have been *diminished* by 4m.
Göttingen eN = +26m.29s.?, eE = +32m.41s.
Triest e = +14m.38s.
Stuttgart e = +20m.34s. =S_cS −5s., eSS = +24m.29s., e = +27m.11s. = SSSS −21s.
Capodimonte all readings have been *diminished* by 2m.
Strasbourg ePS = +20m.19s., eSS = +25m.13s., eSSS = +27m.29s.?, eSSSS = +29m.38s.
Uccle SS = +24m.37s., SSS = +27m.27s.
Perth ? = +18m.29s. and +20m.19s.
Stonyhurst i = +28m.20s.
Paris e = +29m.29s.?, eSSS = +28m.33s.
Kew eSSEN = +25m.0s., iSSSE = +28m.6s., iENZ = +28m.28s., iN = +28m.36s.
Bidston i = +28m.1s. and +28m.37s.
Rathfarnham Castle e = +27m.55s.
Sitka e = +22m.29s., eSS = +24m.52s., e = +26m.29s., ePS = +27m.22s.
Adelaide i = +16m.33s. =PPP +9s. and +26m.0s., e = +33m.59s.
Granada PP = +14m.33s.
Malaga e = +12m.54s. and +20m.14s.
San Fernando ePPEN = +22m.48s. =S +4s., eSSN = +35m.13s., eSSS = +38m.44s.
Melbourne i = +28m.1s. =SS +7s., +28m.29s., +31m.19s. =SSS +3s. and +36m.29s.
Ukiah e = +35m.14s.
Ottawa eE = +29m.29s.?
Pasadena eZ = +17m.53s. =PP +7s., iZ = +18m.21s. and +18m.30s.
Mount Wilson iZ = +17m.48s. =PP +2s., eZ = +30m.19s.
Toronto iN = +26m.31s., iE = +31m.29s.?
Chicago eSS = +32m.54s., e = +34m.32s.
Florissant iSEN = +25m.57s., eE = +31m.57s. and +39m.52s.
Philadelphia eSS = +33m.25s., eSSS = +39m.20s.
Tucson e = +37m.41s.
San Juan e = +38m.31s., eSSS = +42m.0s., e = +43m.46s. and +48m.36s.
Huancayo iSS = +43m.50s., e = +53m.42s. and +58m.29s.
La Paz SSE = +44m.29s., SSSE = +50m.49s., LqE = +70m.9s.
Long waves at Malabar, Ivigtut, Erevan, Tananarive, Bozeman, Des Moines, Madison, Oak Ridge, Seattle, Little Rock, Ann Arbor, and other European stations.

Feb. 7d. Readings also at 0h. (Erevan, Grozny, Sotchi, and Tiflis), 2h. (Bucharest), 3h. (Batavia and Medan), 4h. (Hong Kong), 7h. (Amboina), 9h. (Nanking and Mizusawa), 15h. (Chiufeng, Nanking, and Phu-Lien), 17h. (Zagreb), 19h. (Sverdlovsk and Tashkent), 20h. (Tiflis and near Santiago (2)), 21h. (Andijan and near Santiago), 23h. (near Andijan and near Sumoto).

Feb. 8d. 12h. 11m. 20s. Epicentre 5°·3S. 146°·2E. N.1.

A = −·8274, B = +·5539, C = −·0924; δ = −7;
D = +·556, E = +·831; G = +·077, H = −·051, K = −·996.

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

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		−1·0	28·9	172	e 5 48	+ 2	10 58	+28	e 14·6	17·8
Sydney		−1·0	28·9	172	(e 5 40)	− 6	(i 10 40)	+10	14·9	16·3
Adelaide		−1·0	30·5	193	i 5 57	− 4	i 10 51	− 5	18·6	21·6
Manila		−1·1	31·9	309	6 40	+28	11 3	−14	13·7	—
Melbourne		−1·1	32·6	181	—	—	i 11 30	+ 2	17·1	21·0
Titizima		−1·1	32·6	354	6 40?	+22	—	—	—	—
Karenko		−1·2	37·9	322	7 6	+ 2	—	—	—	—
Taihoku		−1·2	38·7	323	e 7 12	+ 1	(13 21)	+22	13·4	—
Perth		−1·2	38·9	223	7 5	− 7	13 5	+ 3	17·8	19·7
Batavia		−1·3	39·2	267	7 12	− 2	e 16 4	?	—	—
Koti		−1·3	40·7	343	7 24	− 3	—	—	—	—
Wakayama		−1·3	40·9	347	7 26	− 3	13 20	−10	—	—
Numadu		−1·3	41·0	352	7 36	+ 7	—	—	—	—
Sumoto	E.N.	−1·3	41·1	347	e 7 28	− 2	13 37	+ 4	—	—
	Z.	−1·3	41·1	347	7 30	0	13 33	0	—	—
Osaka		−1·3	41·2	348	7 36	+ 5	13 13	−22	—	—
Kameyama		−1·3	41·2	348	7 32	+ 1	—	—	—	—
Kobe	E.	−1·3	41·3	348	e 7 32	0	13 40	+ 4	—	—
	N.	−1·3	41·3	348	e 7 30	− 2	13 40	+ 4	—	—
	Z.	−1·3	41·3	348	e 7 29	− 3	e 13 33	− 3	—	—
Nagoya		−1·3	41·4	350	e 7 18	−15	e 8 20	?	—	—
Tokyo		−1·3	41·4	353	7 41	+ 8	—	—	—	—
Kohu		−1·3	41·6	352	7 35	0	—	—	—	—
Hikone		−1·3	41·6	349	7 40	+ 5	—	—	—	—
Hukuoka B		−1·3	41·7	341	e 6 20	?	7 52	P	—	—
Hong Kong		−1·3	41·8	313	7 34	− 2	13 43	− 1	—	17·8
Tukubasan		−1·3	41·9	353	7 38	+ 1	13 44	− 1	—	—
Kakioka		−1·3	41·9	353	7 37	0	—	—	—	—
Kumagaya		−1·3	41·9	353	7 35	− 2	13 47	+ 2	—	—
Oiwake		−1·3	42·2	352	7 33	− 7	13 46	− 4	—	—
Maebasi		−1·3	42·2	352	7 41	+ 1	—	—	—	—
Toyooka	E.	−1·3	42·2	348	e 7 59	+19	—	—	—	—
	N.	−1·3	42·2	348	7 46	+ 6	13 53	+ 3	—	—
	Z.	−1·3	42·2	348	7 41	+ 1	—	—	—	—
Nagano		−1·3	42·6	352	7 43	0	13 57	+ 1	—	—
Hukusima		−1·4	43·4	355	7 49	0	14 15	+ 9	—	—
Husan		−1·4	43·5	339	e 7 50	+ 1	e 14 9	+ 1	—	—
Wazima		−1·4	43·6	350	7 46	− 4	—	—	—	—
Sendai		−1·4	43·8	355	8 14	+22	—	—	—	—
Wellington		−1·4	44·1	149	—	—	e 13 40?	−36	—	—
Taikyu		−1·4	44·4	340	7 52	− 5	e 14 9	−12	—	—
Mizusawa		−1·4	44·7	355	e 8 0	+ 1	e 14 18	− 7	20·9	—
Morioka		−1·4	45·2	355	8 3	0	14 32	− 1	—	—
Nanking		−1·4	45·6	327	8 6	0	i 14 40	+ 1	—	—
Zinsen	N	−1·4	46·5	338	e 8 14	0	e 14 50	− 2	—	—
Keizyo		−1·4	46·5	339	e 8 15	+ 1	e 14 56	+ 4	—	—
Phu-Lien	E.	−1·4	46·8	306	e 8 17	+ 1	e 14 55	− 1	—	—
Medan		−1·5	48·3	280	e 8 29	+ 2	i 15 19	+ 3	—	—
Chiufeng		−1·6	53·1	332	e 9 1	− 2	16 17	− 5	—	—
Calcutta	E.	−1·8	63·0	299	10 18	+ 5	18 38	+ 6	e 29·7	26·6
Colombo		−1·9	67·3	280	10 44	+ 3	19 26	+ 1	—	—
Kodaikanal	E.	−2·0	70·2	284	11 1	+ 2	i 20 4	+ 5	—	36·0
Hyderabad		−2·0	70·6	291	—	—	20 9	+ 5	—	—
Agra	E.	−2·0	73·3	301	11 15	− 4	i 20 30	− 7	—	39·3
Bombay	E.	−2·0	76·1	291	i 11 40	+ 5	i 21 10	0	—	—

Continued on page next.

		Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Frunse		−2·1	80·4	315	e 12 11	+12	e 21 53	− 4	—	—
Andijan		−2·1	81·4	312	e 12 5	+ 1	e 23 0	+52	—	—
Samarkand		−2·1	85·2	311	e 12 25	+ 1	e 22 40	− 8	—	—
Sverdlovsk		−2·1	92·0	327	13 11	+14	23 44	−11	40·7	49·0
Pasadena	z.	−2·2	97·6	56	e 13 23	+ 1	—	—	—	—
Mount Wilson	z.	−2·2	97·7	56	i 13 25	+ 2	—	—	—	—
Riverside	z.	−2·2	98·3	56	e 13 26	0	—	—	—	—
Tiflis		—	102·0	312	e 18 8	PP	e 24 10	[−25]	—	—
Moscow		—	104·8	326	—	—	24 18	[−31]	e 52·5	55·3
Pulkovo		—	107·4	331	e 14 24	+ 6	25 20	[+19]	51·7	60·0
Ksara		—	109·8	303	e 14 18	−12	—	—	—	60·2
Cape Town		—	117·0	228	—	—	25 24	[−17]	56·3	63·3
Copenhagen		—	117·7	333	19 59	PP	29 18	PS	54·7	—
Cheb		—	120·9	327	—	—	e 30 40?	PS	e 58·7	65·7
De Bilt		—	123·3	332	—	—	e 30 40?	PS	e 60·7	68·9
Ottawa		—	125·9	35	—	—	e 31 10	PS	54·7	—
Stuttgart		—	123·3	327	—	—	e 20 40	PP	64·7	—
Paris		—	126·7	331	—	—	e 29 40?	?	68·7	73·7
Huancayo		—	135·2	113	e 19 24	[+ 9]	—	—	e 53·9	—
Granada		—	137·8	323	—	—	e 31 40?	SKSP	—	—
La Paz	N.	—	139·6	124	e 19 32	[+11]	i 23 0	PKS	—	—
San Juan		—	145·8	64	e 19 27	[− 8]	e 28 57	{−61}	e 66·9	—
Rio de Janeiro		—	150·3	162	e 19 40	[− 2]	—	—	—	—

Additional readings and note :—
Sydney P and S have been *diminished* by 2m.
Adelaide i = +7m.0s. and +7m.15s., eP = +12m.30s., i = +14m.46s. and +16m.27s., given as a double shock.
Melbourne e = +8m.22s., i = +13m.59s.
Taihoku eS? = +10m.49s.
Perth P = +7m.20s., PP = +8m.30s., PPP = +9m.35s., P_cS = +13m.20s., SS = +15m.20s., SSS = +16m.5s., SSSS = +16m.40s.
Koti i = +8m.29s.
Osaka +9m.9s., i = +14m.26s., +15m.37s., and +19m.34s.
Hong Kong ? = +7m.51s., and +14m.20s.
Husan ePP? = +9m.52s.
Taikyu iN = +8m.10s., ePP = +10m.18s.
Nanking pPZ = +8m.24s., sS = +15m.16s., iN = +18m.12s., iSSE = +18m.48s., iE = +20m.8s. and +21m.34s.
Medan iN = +15m.37s., iE = +15m.48s. and +16m.37s.
Chiufeng ipPEN = +9m.22s., iPSE = +16m.23s., isSN = +16m.51s., iSSE = +17m.0s., S_cSN = +18m.45s., SSEN = +19m.39s.
Kodaikanal PSE = +20m.30s.
Agra ePPE = +13m.45s., PSE = +21m.0s., SSE = +25m.17s.
Sverdlovsk SKS = +23m.15s., i = +24m.57s., SS = +29m.58s.
Pasadena iENZ = +13m.45s., eZ = +17m.34s.
Mount Wilson iZ = +13m.46s.
Riverside eZ = +13m.48s.
Moscow ePP = +18m.5s., ePS = +26m.48s., PPS = +27m.33s., eSS = +32m.16s.
Pulkovo ePP = +18m.49s., PS = +27m.45s., PPS = +28m.55s., SS = +33m.4s., SSS = +37m.16s.
Ksara PP = +18m.48s., PS = +28m.10s., PPS = +29m.10s., SS = +34m.16s.
Cape Town E = +29m.23s., N = +29m.30s., E = +36m.28s.
Copenhagen SS = +35m.46s.
Ottawa e = +37m.42s., eE = +43m.40s.?
Huancayo ePP = +22m.0s., ePKS = +22m.50s., ePS = +32m.15s., e = +35m.20s., eSS = +39m.50s.
San Juan ePS = +33m.22s., eSS = +41m.42s., eSSS = +50m.37s.
Long waves at Tucson, Philadelphia, and other European stations.

Feb. 8d. Readings also at 1h. (Sumoto), 2h. (Baku and Tashkent), 3h. (Cape Town, La Paz, Rio de Janeiro, Mount Wilson, Pasadena, Riverside, Ksara, Baku, and Tashkent), 4h. (Sverdlovsk and Tiflis), 6h. (Mount Wilson, Pasadena, Riverside, Sverdlovsk, Tashkent, Mizusawa, and Vladivostok), 11h. (Andijan and Frunse), 12h. (Hong Kong and Manila), 14h. (near Nagoya), 15h. (Tashkent, Tchimkent, Samarkand, near Andijan, and Frunse), 19h. (near La Paz), 20h. (near Sumoto), 22h. (Piatigorsk, near Erevan, and Tiflis), 23h. (Frunse, Samarkand, and near Andijan).

Feb. 9d. 4h. Shock recorded in China and the Western Pacific :—
Manila P? =36m.37s., SEN =41m.50s., L =45m.30s., M =49m.
Zi-ka-wei eE =36m.48s., iN =38m.44s.
Hukuoka B eP =36m.49s., eS =39m.54s.
Nanking eP =37m.35s., eSN =38m.53s., eSE =39m.11s., L =39m.59s., M = 40m.52s.
Chiufeng ePEN =38m.34s., ePZ =38m.36s., eS =41m.44s., iN =42m.21s., M = 46m.6s.
Phu-Lien e =39m.17s.
Husan eP? =39m.52s., S? =41m.16s.
Zinsen ePE =39m.54s.
Keizyo eP =40m.23s.
Sverdlovsk e =46m.51s. and 56m.28s., L =62m., M =69·9m.
Tashkent e =49m.30s. and 54m.18s., eL =59m.30s., M =67·7m.
Long waves were recorded at Hong Kong, Vladivostok, and Baku.

Feb. 9d. Readings also at 1h. (Piatigorsk, Sotchi, near Erevan, Grozny, and Tiflis), 2h. (Almata, Andijan, Frunse, Tchimkent, near Samarkand, and Tashkent), 3h. (Nanking and near Ferndale), 4h. (Calcutta), 5h. (near Hukuoka B), 19h. (Batavia, La Paz, and Lick), 20h. and 21h. (near Malabar), 22h. (Little Rock), 23h. (near San Javier).

Feb. 10d. 18h. 5m. 34s. Epicentre 18°·7S. 177°·3W. N.2.

$$A = -\cdot 9462,\ B = -\cdot 0446,\ C = -\cdot 3206\ ;\quad \delta = +7\ ;$$
$$D = -\cdot 047,\ E = +\cdot 999\ ;\quad G = +\cdot 320,\ H = +\cdot 015,\ K = -\cdot 947.$$

A *depth* of focus 0·070 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	+0·1	7·2	49	i 1 52	+ 8	i 3 18	+12	—	—
Arapuni	−2·8	20·3	197	5 26?	+86	—	—	—	—
Wellington	−3·4	23·6	196	4 40	+ 8	7 36	−34	—	—
Christchurch	−3·8	26·2	197	7 26?	?	—	—	—	—
Riverview	−4·6	31·9	235	i 5 42	+ 1	10 18	− 2	—	—
Sydney	−4·6	31·9	235	e 5 38	− 3	—	—	10·3	10·9
Melbourne	−5·2	38·0	232	i 6 35	+ 5	11 49	+ 1	14·9	15·6
Adelaide	−5·6	42·2	238	e 4 10	?	e 12 32	−13	—	19·5
Perth	−7·0	61·0	243	18 26?	?	—	—	—	—
Hatidyozima	−7·4	66·0	322	9 54	− 1	—	—	—	—
Mera	−7·5	67·3	323	10 2	− 1	—	—	—	—
Ito	−7·5	67·8	323	10 6	− 1	—	—	—	—
Tokyo	−7·5	67·9	324	10 11	+ 4	18 23	+ 2	—	—
Misima	−7·5	68·0	323	10 8	0	—	—	—	—
Kakioka	−7·5	68·1	324	10 7	− 2	—	—	—	—
Tukubasan	−7·5	68·1	324	10 7	− 2	18 21	− 3	—	—
Omaesaki	−7·5	68·2	322	10 9	0	—	—	—	—
Kohu	−7·5	68·5	323	10 11	0	18 27	− 2	—	—
Maebasi	−7·5	68·8	324	10 13	− 1	—	—	—	—
Hukusima	−7·6	69·0	326	10 13	− 1	18 35	+ 1	—	—
Oiwake	−7·6	69·0	324	10 25	+11	—	—	—	—
Kameyama	−7·6	69·2	321	10 14	− 2	—	—	—	—
Nagoya	−7·6	69·2	322	e 10 25	+ 9	—	—	—	—
Manila	−7·6	69·3	294	i 10 15k	− 1	14 10	?	16·4	—
Nagano	−7·6	69·5	323	10 17	− 1	18 40	− 1	—	—
Ibukisan	−7·6	69·6	323	10 22	+ 4	—	—	—	—
Wakayama	−7·6	69·6	320	10 16	− 2	18 42	0	—	—
Nake	−7·6	69·7	311	10 18	− 1	—	—	—	—
Kobe	−7·6	69·9	321	10 19k	− 1	18 46	0	—	—
Niigata	−7·6	69·9	325	10 33	+13	—	—	—	—

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.
Sumoto		−7·6	69·9	320	i 10 19k	− 1	18 44	− 2	—	—
Toyama		−7·7	70·1	323	10 22	+ 1	—	—	—	—
Wazima		−7·7	70·7	323	10 24	− 1	—	—	—	—
Ooita		−7·8	71·2	317	10 24	− 4	—	—	—	—
Kumamoto		−7·8	71·6	316	10 30	− 1	—	—	—	—
Nagasaki		−7·8	72·1	316	10 31	− 3	—	—	—	—
Hukuoka B		−7·8	72·2	316	e 10 39	+ 4	13 3	?	—	—
Sapporo		−7·8	72·5	330	10 35	− 2	—	—	—	—
Asahigawa		−7·8	72·6	332	10 40	+ 3	—	—	—	—
Karenko		−7·9	73·3	304	10 40	− 1	—	—	—	—
Berkeley		−8·1	76·6	42	e 11 2	+ 1	e 20 6	+ 3	—	—
Lick		−8·1	76·7	42	e 11 2	0	e 20 8	+ 4	—	—
Keizyo		−8·1	76·9	318	e 10 59	− 4	—	—	—	—
Pasadena		−8·1	77·2	47	i 11 4a	− 1	i 20 13	+ 3	—	—
Mount Wilson		−8·1	77·3	47	i 11 6	0	e 20 17	+ 6	—	—
Vladivostok		−8·1	77·4	325	i 11 3	− 3	—	—	—	23·0
Riverside		−8·1	77·6	47	i 11 7	− 1	i 20 18	+ 3	—	—
Hong Kong		−8·1	78·5	299	11 10	− 3	20 22	− 4	—	33·7
Tinemaha		−8·1	78·7	45	i 11 13	− 1	i 20 29	+ 1	—	—
Nanking		−8·2	79·5	309	i 11 14	− 5	20 31	− 6	—	—
Tucson		−8·2	81·4	52	e 11 30	0	i 21 2	+ 3	—	—
Phu-Lien		−8·4	84·3	294	e 11 39	− 6	e 21 10	−20	—	—
Chiufeng		−8·5	85·3	315	i 11 44k	− 6	i 21 17	−24	—	—
Medan		−8·5	85·5	276	11 45	− 7	—	—	—	—
Little Rock		−8·7	96·6	55	e 14 40	+113	i 23 21	[−48]	—	—
Huancayo		−8·8	97·2	105	e 11 26	−84	i 22 38	−63	—	—
St. Louis		−9·8	99·3	52	—	—	i 22 39	−72	—	—
Florissant		−9·8	99·3	52	i 14 53k	+118	i 22 33	−78	—	—
Calcutta	E.	—	100·9	290	e 17 44	PP	22 48	[−102]	26·3	—
La Plata		—	101·4	133	—	—	(22 56)	[−97]	22·9	—
La Paz		—	102·0	112	16 2	?	i 22 59	[−96]	—	—
Toronto	N.	—	108·4	49	e 12 36	?	i 24 54	{−61}	—	—
Agra	E.	—	111·1	293	e 18 5	PP	i 23 22	[−116]	—	—
Semipalatinsk		—	112·2	318	e 20 8	?	—	—	—	—
Almata		—	114·0	310	e 18 33	PP	e 23 39	[−111]	—	—
Bombay	E.	—	114·1	283	e 18 41	PP	—	—	—	—
Frunse		—	115·7	309	e 18 34	PP	—	—	—	—
Andijan		—	117·3	306	e 17 50	[−49]	—	—	—	—
Tchimkent		—	119·4	308	e 19 6	PP	—	—	—	—
Tashkent		—	119·6	307	i 17 53	[−51]	—	—	e 43·3	52·5
Samarkand		—	121·4	305	18 6	[−43]	—	—	—	—
Sverdlovsk		—	122·9	327	i 18 0	[−52]	i 24 10	[−109]	40·4	—
Cape Town		—	125·2	196	—	—	24 26?	[−100]	—	—
Baku		—	134·3	309	e 18 24	[−50]	—	—	50·4	—
Pulkovo		—	134·4	341	e 18 20	[−54]	—	—	41·4	—
Moscow		—	134·6	333	e 18 23	[−51]	—	—	41·7	—
Grozny		—	136·3	314	18 30	[−47]	—	—	—	—
Upsala		—	137·5	350	—	—	i 22 0	PKS	—	—
Tiflis		—	137·6	312	e 18 29	[−49]	—	—	e 43·4	—
Piatigorsk		—	137·9	316	18 4	[−75]	20 48	?	—	—
Erevan		—	138·3	310	17 54	[−85]	20 44	?	—	—
Theodosia		—	142·2	322	e 18 34	[−50]	—	—	—	—
Copenhagen		—	142·3	352	18 31	[−54]	—	—	—	—
Simferopol		—	143·0	323	e 18 35	[−52]	—	—	—	—
Yalta		—	143·2	322	i 18 36	[−52]	—	—	—	—
Sebastopol		—	143·5	323	i 18 37	[−52]	—	—	—	—
Hamburg		—	144·7	353	i 18 41	[−52]	—	—	—	—
De Bilt	z.	—	146·5	358	i 18 46	[−50]	—	—	—	—
Göttingen	z.	—	146·7	353	e 18 43	[−54]	—	—	—	—
Kasra		—	146·8	303	i 18 45k	[−52]	—	—	—	—

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.
Prague	—	147·3	347	e	18	48	[−50]	—		—	—	—
Uccle	—	147·9	0	i	18	49	[−50]	—		—	—	—
Budapest	—	148·3	339	i	18	49	[−50]	—		—	—	—
Vienna	—	148·5	343	e	18	48	[−52]	—		—	—	—
Stuttgart	—	149·5	352	i	18	49k	[−52]	—		—	—	—
Strasbourg	—	149·8	354	i	18	48a	[−53]	—		—	—	—
Paris	—	149·9	1	i	18	55	[−47]	—		—	—	—
Belgrade	—	150·0	334	i	18	56	[−46]	—		—	—	—
Zagreb	—	150·7	341	e	18	51k	[−52]	—		—	—	—
Zurich	—	150·9	353	e	18	50k	[−53]	—		—	—	—
Basle	—	150·9	354	e	18	51	[−52]	—		—	—	—
Chur	—	151·3	352	e	18	51k	[−52]	—		—	—	—
Neuchatel	—	151·5	354	e	18	52	[−52]	—		—	—	—
Helwan	—	151·7	298	e	18	51	[−53]	—		—	—	—
Malaga	—	160·9	18	e	19	51	{−57}	—		—	—	—

Additional readings :—
Wellington e = +7m.1s., S_cS = +14m.38s., sS_cS = +18m.26s.
Riverview iEN = +15m.19s. and +19m.7s.
Melbourne i = +9m.6s. and +10m.29s.
Adelaide iS? = +9m.56s., i = +13m.15s.
Berkeley eZ = +12m.52s.
Lick eN = +20m.24s.
Pasadena ipPEZ = +12m.56s., isPZ = +14m.3s., iE = +20m.29s., iNZ = +20m.58s., iZ = +21m.42s., ePKP,PKPZ = +38m.13s., epPKP,PKPZ = +40m.22s.
Mount Wilson ipPZ = +12m.58s., ePKP,PKPZ = +37m.52s.
Riverside ipPZ = +12m.58s., eZ = +20m.7s.
Hong Kong PP? = +13m.56s., ? = +23m.36s.
Tinemaha ipPZ = +12m.56s.
Nanking PPE = +14m.1s., sSE = +21m.16s., iSSE = +23m.59s.
Tucson epP = +13m.19s.
Phu-Lien e = +13m.41s.
Chiufeng pPZ = +12m.13s., iZ = +13m.44s., and +14m.36s. =PP −1s., SSE = +22m.10s., iE = +25m.0s., SSZ = +25m.45s.
Medan iN = +14m.26s. =PP −13s., iEN = +15m.12s., iN = +15m.21s., iE = +15m.25s., iN = +15n.33s.
Little Rock eN = +14m.42s., iSKSEN = +22m.26s.
Huancayo ePP = +16m.56s., esP = +24m.58s.
St. Louis iEN = +23m.15s., eEN = +23m.41s.
Florissant isSEN = +23m.13s., iPSEN = +23m.41s., eSSE = +26m.7s., eN = +26m.45s., +30m.33s., and +36m.1s.
La Paz iE = +23m.42s. and +26m.58s.
Andijan e = +19m.8s. and +19m.40s.
Tashkent e = +19m.3s., i = +19m.23s., e = +20m.59s., and +22m.0s., i = +24m.3s., e = +25m.25s., +27m.49s., +29m.7s., and +30m.33s.
Samarkand e = +19m.14s.
Sverdlovsk i = +19m.41s., +22m.16s., +25m.46s., +27m.3s., +27m.56s., and +33m.16s.
Baku i = +21m.11s., e = +21m.57s., +24m.50s., +30m.34s., +35m.46s., and +43m.40s.
Pulkovo e = +20m.30s. and +21m.7s., i = +21m.50s., e = +24m.43s.
Moscow e = +20m.27s. and +20m.46s., i = +20m.57s., e = +21m.52s., +23m.42s., +24m.54s., and +35m.43s.
Grozny e = +20m.42s.
Tiflis e = +21m.19s., +22m.3s., +31m.4s., and +33m.55s.
Theodosia e = +21m.49s. and +27m.49s.
Copenhagen +21m.46s., e = +32m.2s., +37m.8s., and +43m.8s.
Simferopol e = +22m.15s. and +27m.53s.
Yalta i = +22m.19s., e = +27m.56s.
Ksara ipPKP = +20m.47s., isPKP = +21m.48s., iPP = +22m.15s., pPP = +24m.10s., sPP = +25m.8s., SPP = +34m.28s., PPS = +35m.36s.
Uccle i = +20m.53s.
Stuttgart ePKPEN = +18m.54s., epP = +20m.53s.
Strasbourg i = +18m.53s. and +19m.16s.
Belgrade iNW = +18m.59s., +19m.34s., and +20m.8s.
Zagreb ipPZ = +18m.56s., e = +19m.0s., i = +19m.10s., e = +19m.29s., ePPZ = +21m.0s., eE = +22m.18s.
Zurich iP = +18m.57s., epP = +21m.0s.
Basle ip = +18m.57s., epP = +21m.2s.
Chur iP = +18m.58s., epP = +21m.2s.
Neuchatel iP = +19m.17s., epP = +21m.2s.
Helwan e = +19m.6s.
Malaga e = +21m.17s. and +29m.14s.

Feb. 10d. 22h. 5m. 7s. Epicentre 36°·1N. 140°·3E. N.3.

Given by Tokyo.

$A = -·6217$, $B = +·5161$, $C = +·5892$; $\delta = +3$;
$D = +·639$, $E = +·769$; $G = -·453$, $H = +·376$, $K = -·808$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tukubasan		0·2	306	0 7	+ 4	0 13	+ 8	—	
Tokyo		0·6	226	0 10a	+ 1	0 21	+ 6	0·4	
Komaba		0·7	228	0 10	0	0 21	+ 3	—	
Mitaka		0·8	234	0 11	0	0 22	+ 1	—	
Kiyosumi		1·0	187	0 11	− 3	0 23	− 3	—	
Kamakura		1·0	218	0 13	− 1	0 24	− 2	—	
Susaki		1·8	217	0 24	− 2	0 43	− 3	—	
Nagoya		2·9	251	0 51	P_g	1 29	S*	—	
Mizusawa	E.	3·1	12	e 0 45	+ 1	e 1 27	+ 7	—	

Feb. 10d. Readings also at 0h. (Sverdlovsk, Pulkovo, Scoresby Sund, Mount Wilson, Pasadena, Tinemaha, Christchurch, and Wellington), 1h. (Sverdlovsk, Tashkent (2), Santa Barbara, Riverside, Tinemaha, Mount Wilson, Pasadena, and Sydney), 2h. (Baku and Ksara), 4h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Wellington, and near Apia), 5h. (Sverdlovsk, Baku, and Tashkent), 7h. (La Paz), 8h. (Tiflis), 10h. (Mount Wilson and Pasadena), 12h. (Samarkand), 13h. and 14h. (3) (near Santiago), 15h. (Manila, Wellington, and near San Javier), 18h. (Mizusawa), 21h. (Almeria and Calcutta).

Feb. 11d. 4h. 48m. 8s. Epicentre 27°·0N. 85°·0E. N.3.

$A = +·0777$, $B = +·8876$, $C = +·4540$; $\delta = -1$;
$D = +·996$, $E = -·087$; $G = +·039$, $H = +·452$, $K = -·891$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	5·4	145	1 1	−16	2 8	−10	2·5	3·2
Agra	N.	6·2	273	2 9	P_g	2 52	+14	—	—
Dehra Dun		7·0	300	2 32	P_g	3 2	+ 3	—	3·9
Hyderabad		11·3	214	2 34	− 5	4 39	− 6	5·4	6·4
Bombay		13·8	237	e 3 12	− 1	i 5 46	0	6·9	7·8
Andijan		17·3	326	e 3 52	− 7	e 7 7	− 2	—	—
Frunse		18·0	335	e 4 2	− 5	7 36	+11	—	—
Kodaikanal	E.	18·2	205	e 3 4	−65	i 7 17	−12	i 9·2	9·7
Tashkent		19·3	322	e 4 19	− 3	i 7 56	+ 4	9·7	11·3
Samarkand		19·6	315	4 27	+ 2	e 7 47	−11	—	—
Tchimkent		19·8	324	e 4 28	+ 1	—	—	—	—
Phu-Lien		20·7	103	e 4 13	−24	e 7 54	−26	—	—
Medan		26·8	149	e 5 23	−13	—	—	—	—
Chiufeng		28·9	55	e 10 19	S	(e 10 19)	−28	—	15·6
Nanking		29·7	72	5 20	−42	e 11 16	+17	i 15·3	—
Sverdlovsk		34·5	336	i 6 48	+ 3	—	—	e 15·9	—
Vladivostok		41·1	55	—	—	e 16 44	SS	e 20·3	23·3
Ksara		42·5	290	e 8 1	+ 8	e 14 26	+13	—	—
Pulkovo		49·4	327	e 9 13	+26	e 18 7	SS	25·9	—

Additional readings :—
Agra $S^*N = +3m.12s.$, $S_gN = +3m.35s.$
Bombay SSEN = +6m.8s.
Kodaikanal iSSE = +8m.2s.
Tashkent e = +4m.22s., i = +4m.52s., and +7m.42s.
Chiufeng ePiE = +10m.23s.
Long waves were recorded at Baku.

Feb. 11d. 20h. 7m. 27s. Epicentre 26°·5N. 92°·0E. (as on 1932 Nov. 9d.). X.

$A = -·0312$, $B = +·8944$, $C = +·4462$; $\delta = +2$;
$D = +·999$, $E = +·035$; $G = -·016$, $H = +·446$, $K = -·895$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	5·2	221	1 15	+ 1	2 10	− 3	2·5	2·9
Agra		12·4	276	2 49	− 5	4 49	−24	—	—
Hyderabad		15·5	237	5 58	S	7 43	?	7·9	8·2
Bombay	E.	19·2	251	e 4 25	+ 4	i 7 46	− 4	—	—
Kodaikanal	E.	21·2	225	e 4 41	− 1	—	—	—	—
Andijan		21·6	316	e 4 49	+ 3	e 9 3	SS	—	—
Frunse		21·7	323	e 5 5	PP	e 8 33	− 7	—	—
Chiufeng		24·2	50	—	—	e 9 50	+23	—	14·0
Samarkand		24·6	308	e 5 13	− 3	—	—	—	—

Additional readings :—
Calcutta $P_gE = +1$m.33s.
Agra $P_gE = +3$m.54s., $eN = +4$m.56s., $S^*E = +5$m.35s., $S_gEN = +6$m.9s.
Long waves also recorded at Sverdlovsk.

Feb. 11d. Readings also at 0h. (Samarkand, Tashkent, Tchimkent, near Andijan, and Frunse), 2h. (Belgrade, Bucharest, and Erevan), 8h. (Wellington, Frunse, Andijan, Bagnères, and near Samarkand (2)), 11h. (Piatigorsk), 15h. (Sverdlovsk, Vladivostok, and near Mizusawa), 19h. (near Sumoto), 20h. (Tashkent).

Feb. 12d. 9h. 34m. 39s. Epicentre 3°·8S. 114°·5E. N.2.

See Berlage: Provisional Catalogue of Deep Focus Earthquakes. Epicentre 6°·5 115°·5E.; depth 600km.

$A = -·4138$, $B = +·9080$, $C = -·0663$; $\delta = +9$;
$D = +·910$, $E = +·415$; $G = +·028$, $H = -·060$, $K = -·998$.

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

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		−0·2	7·7	243	i 1 54	+ 8	i 3 28	+17	—	—
Batavia		−0·3	8·0	252	i 2 0	+11	i 3 37	+21	—	—
Amboina		−1·1	13·6	90	2 39	−16	i 4 55	−20	—	—
Medan		−1·7	17·4	295	3 49	+11	6 52	+21	—	—
Manila		−1·9	19·5	19	i 4 5k	+ 3	i 6 37	−38	—	—
Phu-Lien		−2·6	25·8	343	5 8	+ 5	9 19	+11	—	—
Hong Kong		−2·6	26·1	0	5 8	+ 3	9 16	+ 2	—	12·2
Perth		−3·0	28·2	177	8 21?	?	—	—	—	—
Zi-ka-wei	Z.	−3·6	35·6	11	i 6 24a	+ 1	i 11 44	+ 9	—	—
Nanking		−3·7	36·1	6	i 6 32	+ 6	i 11 47	+ 6	—	—
Miyazaki		−4·0	39·2	23	6 52	+ 1	12 33	+ 9	—	—
Nagasaki		−4·0	39·3	21	6 52	0	—	—	—	—
Kumamoto		−4·0	39·7	22	6 54	− 1	—	—	—	—
Sinnidu		−4·0	40·6	25	7 39	+36	—	—	—	—
Titizima		−4·0	40·8	40	6 58	− 7	12 33	−15	—	—
Matuyama		−4·1	41·4	24	7 7	− 2	12 51	− 5	—	—
Sumoto		−4·2	42·7	26	7 16k	− 3	13 9	− 5	—	—
Wakayama		−4·2	42·7	26	7 17	− 2	13 10	− 4	—	—
Kobe		−4·3	43·1	26	e 7 22	0	13 17	− 1	—	—
	N.	−4·3	43·1	26	e 7 18k	− 4	e 13 12	− 6	—	—
Osaka		−4·3	43·2	26	5 27	−116	12 50	−30	—	—
Kyoto		−4·3	43·6	26	7 24	− 2	12 22	−64	—	—
Kameyama		−4·3	43·8	26	7 25	− 3	13 27	− 2	—	—
Melbourne		−4·3	43·9	144	—	—	i 12 19	−71	—	—
Chiufeng		−4·3	43·9	2	i 7 31k	+ 2	i 13 36	+ 6	—	—

Continued on next page.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Hikone		−4·3	44·1	26	7 31	+ 1	—	—	—	—
Nagoya		−4·3	44·3	26	7 11	−21	13 31	− 5	—	—
Riverview		−4·4	45·4	135	—	—	i 12 47	−64	—	22·9
Kohu		−4·4	45·4	29	7 37	− 3	—	—	—	—
Oiwake		−4·5	46·0	28	7 37	− 7	—	—	—	—
Nagano		−4·5	46·1	27	7 43	− 2	—	—	—	—
Agra	E.	−4·6	46·9	314	7 49	− 2	i 14 11	+ 1	—	—
Bombay		−4·6	46·9	300	i 7 51	0	i 14 14	+ 4	—	—
Hukusima		−4·7	48·0	28	7 55	− 4	14 21	− 4	—	—
Vladivostok		−4·8	49·5	17	i 9 56	PP	i 14 48	+ 2	—	24·7
Almata		−5·4	58·0	329	9 14	+ 3	i 16 49	+12	—	—
Andijan		−5·5	58·8	323	9 18	+ 2	16 56	+10	—	—
Frunse		−5·5	59·0	327	9 17	− 1	16 55	+ 6	—	—
Tashkent		−5·5	61·0	323	i 9 32	0	i 17 24	+ 8	—	37·4
Tchimkent		−5·5	61·4	324	9 37	+ 2	17 29	+ 8	—	—
Samarkand		−5·5	61·5	319	i 9 45	+ 9	e 17 39	+16	—	—
Baku		−5·9	73·6	314	10 47	− 9	19 48	− 5	33·4	—
Sverdlovsk		−6·0	74·6	333	i 10 51	−11	19 53	−11	—	—
Erevan		−6·1	77·4	312	e 10 31	−48	—	—	—	—
Grozny		−6·1	77·4	316	11 11	− 8	i 20 26	−11	—	—
Tiflis		−6·1	77·6	314	11 9	−11	20 24	−15	—	—
Moscow		−6·4	85·9	326	11 46	−19	i 21 41	−29	—	—
Pulkovo		−6·5	90·4	330	e 12 11	−17	e 22 20	−36	—	—
Tinemaha	z.	—	121·4	48	i 17 48	[−61]	—	—	—	—
Pasadena		—	122·5	51	i 17 49a	[−62]	—	—	—	—
Mount Wilson		—	122·6	51	i 17 49	[−63]	—	—	—	—
Riverside	z.	—	123·2	51	i 18 19	[−34]	—	—	—	—
Oak Ridge		—	140·9	6	i 18 24	[−58]	—	—	—	—

Additional readings :—
Amboina S_cS = +13m.39s.
Medan iE = +6m.41s. =SS +1s.
Hong Kong ? = +6m.40s. and +7m.41s.
Zi-ka-wei iZ = +9m.10s. and +15m.10s.
Nanking ePP = +8m.9s., PPP = +9m.10s., iSSS = +15m.9s.
Osaka P_cP = +6m.38s., PP = +7m.33s., PPP = +8m.2s., SS = +16m.24s.
Melbourne i = +15m.52s. =SS −14s.
Chiufeng pPN = +7m.51s., iZ = +8m.14s., iNZ = +10m.16s., SSEN = +14m.14s.
Riverview iN = +16m.0s.
Bombay i = +16m.39s.
Vladivostok i = +10m.58s. and +12m.50s.
Tiflis e = +22m.15s. and +24m.1s.
Moscow e = +13m.46s. and +14m.44s. =PP −16s., i = +25m.14s.
Pulkovo e = +15m.57s., +18m.47s., and +24m.51s.
Pasadena iZ = +20m.1s. and +20m.31s. =PP +5s.
Mount Wilson iZ = +19m.38s.
Riverside iZ = +19m.39s.
Long waves at Paris.

Feb. 12d. 10h. 57m. 30s. Epicentre 34°·6N. 23°·2E. N.2.

A = +·7566, B = +·3243, C = +·5678 ; δ = +1 ;
D = +·394, E = −·919 ; G = +·522, H = +·224, K = −·823.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Helwan	8·4	122	—	—	e 3 48	+14	—	—
Belgrade	10·4	349	e 3 11	?	e 5 14	S*	—	6·9
Zagreb	12·5	336	e 2 54	− 1	e 6 1	S*	—	9·0
Florence	13·0	319	e 3 0	− 2	—	—	—	8·5
Triest	13·2	330	e 3 4	− 1	5 50	+18	—	—
Budapest	13·2	348	e 6 30?	S*	—	—	e 8·0	9·0
Laibach	13·2	333	e 4 37	?	e 5 44	+12	—	—
Graz	13·3	337	e 3 15	+ 2	e 6 7	+21	e 6·5	8·8
Padova	13·3	325	e 6 24	S	(e 6 24)	S*	—	—
Vienna	14·5	342	e 3 40	+18	e 6 42	+39	e 8·5	9·5

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Chur	16·0	324	e 3 43	+ 2	e 6 59	+21	—	—
Algiers	16·5	283	e 3 46	− 2	e 6 23	−27	11·5	—
Prague	16·7	340	e 3 58	PP	e 7 4	SS	—	10·5
Zurich	16·8	324	e 3 52k	0	e 7 11	SS	—	—
Neuchatel	17·4	320	e 3 58	− 1	—	—	—	—
Stuttgart	17·5	328	e 4 0	0	e 7 47	+34	e 10·4	12·7
Erevan	17·8	66	e 4 3	− 1	—	—	—	—
Strasbourg	18·1	325	i 4 13k	+ 5	e 7 20	− 7	e 10·5	—
Tiflis	18·3	61	i 4 6	− 4	e 7 38	+ 7	9·3	—
Göttingen	19·4	335	e 4 21	− 2	—	—	e 10·7	12·2
Grozny	19·5	57	e 4 32	+ 8	e 8 24	SS	e 13·2	—
Almeria	20·9	284	e 4 39	0	—	—	—	—
Hamburg	21·1	338	e 4 36	− 5	e 9 48	+80	—	14·5
Uccle	21·2	325	e 4 40	− 2	8 48	PcP	12·5	—
De Bilt	21·7	330	e 4 59	+11	e 9 1	SS	e 12·5	16·0
Granada	21·8	285	e 4 50	+ 1	9 20	SSS	—	—
Baku	21·9	66	e 4 49	− 1	8 50	+ 6	11·5	13·4
Copenhagen	22·3	344	4 49	− 5	9 0	+ 8	11·5	—
Malaga	22·5	284	i 4 55	− 1	(8 55)	0	8·9	—
Moscow	23·3	21	5 2	− 2	9 14	+ 4	12·7	13·8
Kew	23·9	322	e 5 15	+ 6	—	—	e 14·3	—
Upsala	25·5	353	e 5 22	− 3	—	—	e 14·5	18·7
Pulkovo	25·6	9	i 5 20	− 5	10 16	+25	13·5	16·1
Bidston	26·4	323	—	—	e 21 21	?	15·8	—
Edinburgh	27·9	328	e 4 0	?	—	—	—	—
Sverdlovsk	33·6	37	i 6 27	−10	i 12 2	+ 2	14·5	—
Tashkent	36·5	65	—	—	i 12 44	0	e 15·8	24·4

Additional readings :—
Helwan e = +8m.30s.
Belgrade e = +3m.35s., +4m.50s., and +5m.45s.
Zagreb e = +4m.17s., eZ = +5m.44s., e = +7m.14s., and +8m.5s.
Triest i = +7m.34s., +8m.11s., and +9m.30s.
Laibach eNE = +8m.12s. and +8m.36s.
Padova S = +9m.39s.
Stuttgart e = +4m.12s.
Göttingen eN = +4m.24s., eE = +4m.42s.
Copenhagen +9m.18s.
Malaga i = +5m.7s., +5m.11s., +5m.25s., and +5m.48s., e = +6m.35s.
Kew eN = +14m.59s. and eEZ = +16m.39s.
Long waves were also recorded at Oxford and Cape Town.

Feb. 12d. 20h. 20m. 37s. Epicentre 22°·5N. 139°·5E. N.3.

A = −·7025, B = +·6000, C = +·3827 ; δ = −3 ;
D = +·649, E = +·760 ; G = −·291, H = +·249, K = −·924.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sumoto	12·5	342	2 58	+ 3	5 21	+ 6	—
Osaka	12·6	345	e 3 0	+ 4	5 33	+16	5·8
Kobe	12·8	343	e 3 1	+ 2	e 5 29	+ 7	—
Nagoya	12·9	350	e 3 2	+ 1	5 21	− 4	5·6
Hukuoka B	13·7	326	e 3 20	+ 9	e 5 47	+ 3	—
Mizusawa	16·7	4	e 3 31	−19	i 6 32	−23	—
Nanking	20·7	301	e 4 36	− 1	8 25	+ 5	—
Vladivostok	21·6	345	i 4 29	−17	i 8 13	−25	13·3
Chifufeng	26·5	317	e 5 54	+20	i 9 43	−24	—
Andijan	58·5	305	—	—	e 17 26	−30	—
Samarkand	62·8	304	—	—	e 18 23	−29	—

Additional readings :—
Sumoto SE = +5m.24s.
Osaka i = +3m.58s.
Kobe eSE = +5m.31s.
Nanking iSS = +9m.57s.

Feb. 12d. Readings also at 0h. (Merida and Tucson), 3n. (Samarkand, near Almata, and Frunse), 5h. (Baku, Sverdlovsk, Tashkent, Vladivostok, Chiufeng, Riverview, La Plata, La Paz, near Sucre, and near Apia), 7h. (near Triest and near Tiflis), 8h. (near Amboina), 9h. (Amboina and Andijan), 10h. (Adelaide), 11h. (near Granada), 13h. (Andijan and Samarkand), 20h. (near Hukuoka B), 22h. (near Andijan and near Sumoto), 23h. (Wellington).

Feb. 13d. Readings at 0h. (Chiufeng, Nanking, and near Taihoku), 1h. (near Hukuoka B), 2h. (Bozeman, Sumoto, Chiufeng, Andijan, Frunse, and Samarkand), 5h. (La Paz, Stuttgart, Zurich, near Basle, Chur, and Neuchatel), 6h. (near Sumoto), 8h. (near La Paz), 10h. (near Amboina (2)), 13h. (Sebastopol and Wellington), 15h. (Andijan, Frunse, and Vladivostok), 16h. (Baku, Sverdlovsk, Tashkent, Chiufeng, and Nanking), 18h. (Andijan), 19h. (near Ksara), 21h. (near Mizusawa).

Feb. 14d. Readings at 0h. (Andijan, Samarkand, Oak Ridge, Little Rock, Ukiah, Tucson, and near Victoria), 1h. (San Juan and near Sumoto), 3h. (Tashkent, Tiflis, and Ksara), 7h. (Chiufeng, Nanking, Baku, Tashkent, Sverdlovsk, Pulkovo, Moscow, Vladivostok, Copenhagen, Mount Wilson, Pasadena, Riverside, and Tinemaha), 10h. (Chiufeng, Baku, Tashkent, Sverdlovsk, Pulkovo, Moscow, Copenhagen, La Plata, and near Santiago (2)), 11h. (Amboina and near Tiflis), 12h. (Amboina (2) and near Sumoto), 14h. (Bombay, Calcutta, Sebastopol, and near Tiflis), 16h. (near Sebastopol, Simferopol, Yalta, and Theodosia), 17h. (La Paz), 19h. (near Tiflis), 23h. (Riverview, Melbourne, Wellington, Manila, Sverdlovsk, and near Amboina).

Feb. 15d. 12h. 47m. 0s. Epicentre 4°·4S. 133°·5E. N.1.

$A = -\cdot6863$, $B = +\cdot7232$, $C = -\cdot0767$; $\delta = -9$;
$D = +\cdot725$, $E = +\cdot688$; $G = +\cdot053$, $H = -\cdot056$, $K = -\cdot997$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		5·4	278	i 1 13	− 4	i 2 15	− 3	—	—
Manila		22·7	327	i 4 57a	− 1	i 9 4	+ 5	11·5	14·3
Batavia		26·6	265	i 5 33a	− 2	i 10 8	− 1	15·0	—
Kosyun		29·2	335	5 57	− 1	11 19	+28	—	—
Taito		29·7	336	6 0	− 2	—	—	—	—
Takao		30·0	335	6 13	+ 8	—	—	—	—
Isigakizima		30·1	344	6 27	+21	—	—	—	—
Tainan		30·3	335	6 9	+ 1	—	—	—	—
Arisan		30·5	337	6 9	0	—	—	—	—
Karenko		30·7	337	6 5	− 6	—	—	—	—
Adelaide		30·9	173	i 6 13	0	i 11 21	+ 3	i 14·0	23·1
Taityu		31·2	338	6 12	− 4	—	—	—	—
Taihoku		31·7	339	e 6 11	− 9	11 35	+ 4	—	21·1
Perth		32·1	209	i 6 25	+ 1	11 35	− 2	16·0	—
Titizima		32·6	15	6 28	0	—	—	—	—
Hong Kong		32·7	325	6 29k	0	11 52	+ 6	—	15·2
Nake		33·0	354	6 20	−12	11 55	+ 4	—	—
Riverview		33·7	153	i 6 38k	0	i 12 2	+ 1	e 14·8	25·6
Sydney		33·7	153	i 6 8	−30	i 12 18	+17	18·4	23·2
Melbourne		35·0	164	6 50	+ 1	12 23	+ 2	16·2	20·5
Medan		35·7	283	i 6 58	+ 3	i 12 29	− 3	—	—
Kagosima		36·1	355	7 2	+ 3	—	—	—	—
Miyazaki		36·4	336	7 3	+ 2	—	—	—	—
Phu-Lien		36·5	314	i 7 2	0	i 12 41	− 3	16·0	20·7
Simidu		37·2	359	7 7	− 1	12 56	+ 2	—	—
Kumamoto		37·3	356	7 9	0	—	—	—	—
Nagasaki		37·3	355	7 9	0	12 41	−15	—	—
Tomie		37·3	354	7 9	0	—	—	—	—
Unzendake		37·3	355	7 7	− 2	12 50	− 6	—	—
Zi-ka-wei	z.	37·4	343	i 7 10k	0	13 2	+ 5	19·5	19·8
Uwazina		37·6	359	7 9	− 3	—	—	—	—
Muroto		37·7	1	7 13	+ 1	12 59	− 3	—	—
Ooita		37·7	358	7 19	+ 7	—	—	—	—
Siomisaki		37·9	2	7 13	− 1	12 57	− 8	—	—
Koti		38·0	0	7 15	0	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka		38·1	356	7 17 a	+ 1	13 2	− 6	—	19·1
Hukuoka B		38·1	356	i 7 15 a	− 1	12 54	−14	16·0	18·9
Matuyama		38·2	359	7 17	0	13 9	0	—	—
Tadotu		38·7	0	7 22	+ 1	—	—	—	—
Wakayama		38·7	3	7 21	0	13 11	− 6	—	—
Hirosima		38·8	359	7 23	+ 1	13 19	+ 1	—	—
Sumoto		38·8	3	7 21 a	− 1	12 39	−39	16·3	20·3
Nanking		39·0	339	i 7 22 a	− 2	i 13 18	− 3	19·0	20·9
Yagi		39·0	3	7 24	0	—	—	—	—
Kobe		39·1	3	e 7 25 a	+ 1	e 13 9	−13	—	19·2
Ukayama		39·1	2	7 34	+10	—	—	—	—
Osaka		39·1	3	7 26	+ 2	13 29	+ 7	21·4	33·8
Tu		39·2	4	7 27	+ 2	13 33	+ 9	—	—
Hamamatu		39·3	7	7 26	0	13 25	− 1	—	—
Kameyama		39·3	4	7 27	+ 1	13 22	− 4	—	—
Kyoto		39·5	4	7 27	− 1	13 25	− 4	—	—
Husan		39·7	354	i 7 10? a	−19	13 10?	−22	16·1	18·8
Nagoya		39·7	6	7 29	0	13 29	− 3	16·6	—
Hikone		39·8	5	7 29	− 1	13 19	−14	—	—
Mera		39·8	9	7 29	− 1	—	—	—	—
Misima		39·8	8	7 29	− 1	—	—	—	—
Gihu		39·9	6	7 43	+12	—	—	—	—
Ibukisan		39·9	4	7 31	0	13 24	−11	—	—
Miyadu		40·0	2	7 31	− 1	—	—	—	—
Sakai		40·0	0	7 33	+ 1	—	—	—	—
Toyooka	E.	40·0	2	e 7 34	+ 2	13 29	− 7	—	—
	N.	40·0	2	7 31 a	− 1	13 32	− 4	19·1	22·8
Kohu		40·3	7	7 24	−11	—	—	—	—
Yokohama		40·3	9	7 34	− 1	—	—	—	—
Taikyu		40·5	354	7 37	+ 1	e 13 48	+ 4	e 17·0	—
Tokyo		40·5	8	7 34	− 2	—	—	—	—
Tyosi		40·7	11	7 37	− 1	13 38	− 9	—	—
Kumagaya		40·9	8	7 38	− 2	13 43	− 7	—	—
Matumoto		40·9	7	7 42	+ 2	—	—	—	—
Kanazawa		41·0	6	7 41	+ 1	—	—	—	—
Oiwake		41·0	8	7 41	+ 1	—	—	—	—
Maebasi		41·1	8	7 35	− 6	—	—	—	—
Kakioka		41·1	9	7 39	− 2	13 40	−13	—	—
Tukubasan		41·1	9	7 38	− 3	13 40	−13	—	—
Toyama		41·2	9	7 43	+ 1	—	—	—	—
Husiki		41·3	6	7 40	− 3	—	—	—	—
Mito		41·3	9	7 42	− 1	—	—	—	—
Nagano		41·3	7	7 42	− 1	—	—	—	—
Takada		41·7	7	7 49	+ 3	—	—	—	—
Wazima		41·9	6	7 47	− 1	14 13	+ 8	—	—
Aidu		42·4	8	8 15	+23	14 40	+29	—	—
Keizyo		42·4	352	i 7 52 a	0	14 6	− 5	17·3	27·4
Zinsen		42·4	351	i 7 49 a	− 3	i 14 7	− 4	e 17·1	23·4
Hukusima		42·6	8	7 53	0	—	—	—	—
Niigata		42·6	7	7 55	+ 2	—	—	—	—
Yamagata		43·1	9	7 40	−18	—	—	—	—
Sendai		43·2	9	7 58	0	14 19	− 5	—	—
Heizyo		44·0	351	i 8 6	+ 1	14 33	− 3	e 18·9	—
Mizusawa		44·1	9	i 8 7	+ 1	e 14 35	− 2	20·4	—
Akita		44·5	8	8 22	+13	—	—	—	—
Morioka		44·7	9	8 11	+ 1	14 49	+ 3	—	—
Aomori		45·7	8	8 20	+ 2	14 58	− 2	—	—
Yingkow		46·2	349	8 28	+ 6	15 37	+30	—	—
Hakodate		46·7	7	8 28	+ 2	—	—	—	—
Chiufeng		47·3	342	i 8 30 a	− 1	i 15 8	−15	22·3	26·2
Urakawa		47·3	11	8 36	+ 5	—	—	—	—
Vladivostok		47·5	359	i 8 32	0	i 15 22	− 4	e 18·4	21·4
Sapporo		48·0	8	8 39	+ 3	15 30	− 3	—	—
Obihiro		48·1	11	8 36	− 1	—	—	—	—
Asahigawa		48·8	10	8 43	+ 1	—	—	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sinkyo		48·9	352	9 0	+17	—	—	—	—
Haboro		49·3	9	8 33	−13	—	—	—	—
Arapuni		51·0	137	9 0	+ 1	16 30	+15	26·0	27·0
Calcutta	E.	51·7	304	9 7	+ 3	16 27	+ 3	24·8	30·0
Wellington		52·1	141	9 7	0	16 51	+21	27·0R	30·0
Apia		54·7	104	e 9 33	+ 7	e 17 26	+21	28·0	—
Colombo		54·7	283	9 28	+ 2	16 59	− 6	26·8	32·6
Kodaikanal	E.	57·7	286	i 9 48	0	i 17 41	− 5	27·3	32·9
Hyderabad		58·5	294	10 3	+ 9	17 56	0	28·0	41·5
Chatham Ils.		59·0	140	14 24	?	—	—	31·0	—
Agra		62·1	304	i 10 15	− 4	i 18 34	− 9	—	—
Dehra Dun		63·3	308	9 40	−47	18 40	−19	26·3	28·0
Bombay		64·1	293	i 10 32	− 1	i 19 3	− 6	30·0	38·3
Almata		69·7	320	12 11	+62	—	—	35·0	—
Frunse		71·0	319	e 11 16	− 1	—	—	33·0	—
Andijan		71·7	315	e 11 20	− 1	20 42	+ 1	35·0	—
Honolulu		71·9	66	e 11 22	0	i 20 50	+ 6	34·0	—
Tashkent		74·0	315	i 11 35	0	e 21 35	PS	—	—
Tchimkent		74·2	316	11 33	− 3	21 4	− 7	28·0	—
Samarkand		75·1	313	11 43	+ 2	21 15	− 6	30·0	—
Sverdlovsk		84·5	329	i 12 35	+ 4	i 22 50	[− 5]	45·4R	48·5
Tananarive		84·8	252	e 12 36	+ 4	e 22 53	[− 5]	—	44·5
Baku		88·0	311	i 12 52	+ 4	23 36	− 1	41·0	51·6
College		89·2	24	e 12 52	− 2	i 23 28	[0]	36·0	—
Grozny		91·4	314	13 12	+ 8	e 24 3	− 6	36·0	—
Tiflis		92·0	312	e 13 5	− 2	i 24 13	− 2	43·0	60·5
Erevan		92·1	310	e 12 47	−20	e 23 56	[+11]	—	—
Piatigorsk		93·4	315	e 13 0	−13	e 23 0	[−52]	e 36·5	—
Sitka		94·3	33	i 13 8	− 9	i 24 25	−11	e 36·9	—
Moscow		97·0	326	13 28	− 2	24 44	−16	46·5	58·4
Ksara		98·8	303	13 39	+ 1	i 26 38	PS	—	—
Theodosia		98·8	315	e 13 33	− 5	e 24 5	[−15]	38·0	—
Yalta		99·7	314	e 13 34	− 8	e 24 8	[−16]	36·0	—
Simferopol		99·7	315	e 13 35	− 7	e 24 12	[−12]	37·0	—
Sebastopol		100·2	315	e 13 37	− 7	e 24 18	[− 9]	38·0	—
Pulkovo		100·4	331	13 44	− 1	e 25 9	{+13}	48·5	53·9
Victoria		102·0	42	e 18 2	[+ 4]	i 25 32	−12	i 42·2	52·9
Helwan		102·7	300	13 55	− 1	i 25 43	− 7	—	68·8
Seattle		102·8	43	—	—	e 25 36	−15	e 41·3	—
Ukiah		103·1	52	—	—	e 24 32	[− 9]	e 44·1	—
Berkeley		103·9	53	e 14 4	+ 3	i 25 58	− 3	e 52·2	—
Lick	E.	104·5	53	e 18 15	PP	—	—	e 52·9	—
Bucharest		105·5	315	—	—	i 24 48	[− 4]	50·0	79·0
Upsala		106·6	332	—	—	i 24 48	[− 9]	e 48·0	61·4
Königsberg		106·7	327	i 17 56	[−11]	e 28 45	?	e 48·9	57·9
Haiwee	Z.	107·5	54	e 18 23	[+13]	—	—	—	—
Pasadena		107·6	56	e 18 29	[+19]	i 26 25	{+36}	e 44·3	—
Mount Wilson	Z.	107·7	56	i 14 28	+ 8	—	—	—	—
Cape Town		107·9	233	—	—	26 38	{+46}	51·5	52·9
Riverside		108·3	56	e 14 24	+ 1	e 26 23	{+28}	—	—
Belgrade		109·3	316	e 18 10a	[− 5]	e 28 21	PS	e 60·3	—
Budapest		109·6	319	17 44	[−32]	28 34	PS	—	74·5
Copenhagen		110·7	330	14 30	− 4	25 11	[− 5]	—	—
Bozeman		110·8	43	e 19 11	PP	e 25 20	[+ 3]	e 46·0	—
Vienna		111·1	321	e 19 7	PP	e 25 3	[−15]	e 51·0	64·0
Prague		111·7	323	e 19 5	PP	e 25 0	[−21]	e 50·0	75·0
Bergen		111·8	336	—	—	e 28 7	PS	e 51·3	71·5
Graz		112·0	319	i 19 19	PP	i 28 47	PS	e 52·0	75·3
Scoresby Sund		112·0	351	—	—	25 20	[− 2]	55·0	—
Zagreb		112·1	319	e 17 16	[−68]	29 23	PS	e 54·0	58·3
Cheb		112·9	324	e 18 35	[+ 9]	e 28 58	PS	e 59·0	65·0
Hamburg		112·9	328	e 17 48	[−38]	e 25 24	[− 2]	e 54·0	61·0
Jena		113·1	324	e 19 13	PP	(e 28 57)	PS	e 28·9	62·0
Triest		113·6	319	e 18 34	[+ 6]	i 25 19	[− 9]	—	61·5
Göttingen		113·7	326	e 18 30	[+ 1]	i 28 58	PS	e 51·0	57·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		114·0	57	—	—	e 27 6	{+31}	e 43·0	—
Padova		114·9	319	e 15 0	?	29 33	PS	—	—
Stuttgart		115·3	324	e 14 50	− 7	e 26 30	{−14}	e 53·0	73·0
Karlsruhe		115·7	324	19 40	PP	29 20	PS	60·8	—
Chur		115·9	322	e 18 41	[+ 6]	e 29 20	PS	—	—
Florence		115·9	317	e 19 30	PP	29 10	PS	—	—
De Bilt		116·1	328	e 15 0	− 1	e 25 30	[− 8]	e 54·0	81·1
Strasbourg		116·3	324	e 14 53	− 9	e 25 33	[− 5]	e 53·0	80·0
Zurich		116·3	322	e 18 38	[+ 2]	29 18	PS	—	—
Basle		116·8	322	e 19 41	PP	—	—	—	—
Uccle		117·2	327	e 19 29	[+51]	i 25 35	[− 6]	e 52·0	79·7
Neuchatel		117·5	322	e 18 44	[+ 5]	29 32	PS	—	—
Durham		118·0	333	e 19 48	PP	i 29 42	PS	—	72·0
Edinburgh		118·0	335	i 20 2	PP	i 27 4	{+ 1}	54·0	78·2
Stonyhurst		119·0	333	i 20 11	PP	i 29 51	PS	56·0	71·5
Paris		119·2	326	e 15 0?	−15	e 25 42	[− 6]	56·0	73·0
Kew		119·3	330	e 18 0?	[−44]	e 25 42	[− 6]	e 54·0	74·3
Oxford		119·6	330	i 20 14	PP	e 25 45	[− 4]	e 52·2	72·6
Bidston		119·6	333	i 20 8	PP	e 25 40	[− 9]	e 48·8	67·9
Rathfarnham Castle		121·1	334	e 16 45	?	e 32 30	?	—	72·5
Barcelona		123·0	319	e 20 35	PP	—	—	—	65·5
Ivigtut		123·2	2	—	—	27 24	{−14}	55·0	—
Algiers		124·3	313	e 16 0?	+21	e 28 52	{+65}	55·0	75·0
Tortosa	N.	124·4	318	e 19 11	[+15]	31 52	PS	e 59·0	85·4
Madison		125·8	38	—	—	e 29 2	{+67}	61·0	70·0
Tacubaya	N.	126·5	70	19 18	[+18]	—	—	—	—
Florissant		127·5	44	—	—	i 26 2	[−10]	60·4	67·7
St. Louis		127·6	44	e 19·57	[+55]	e 26 16	[+ 4]	e 49·8	69·6
Chicago		127·7	39	—	—	e 28 17	{+10}	e 39·5	—
Little Rock		127·9	49	e 19 15	[+12]	—	—	e 53·1	76·0
Almeria		128·3	315	e 19 23	[+19]	—	—	e 70·1	89·0
Granada		128·9	316	e 18 58	[− 7]	—	—	—	—
Malaga		129·7	316	19 4	[− 2]	—	—	—	—
Ann Arbor		129·7	36	e 22 36	PKS	i 38 48	SS	e 56·9	73·7
San Fernando		131·1	317	e 19 13	[+ 4]	30 14	?	63·0	78·5
Toronto	E.	131·2	32	i 22 39	PKS	i 31 36	PS	54·0	—
Ottawa		131·7	28	e 22 38	PKS	39 4	SS	54·0	—
Buffalo		132·1	32	i 22 44	PKS	e 39 20	SS	e 62·5	—
Ithaca		133·6	31	e 22 48	PKS	e 39 30	SS	e 59·0	—
Vermont		133·6	26	e 21 41	PP	e 32 1	PS	e 53·0	—
Pennsylvania		134·0	34	—	—	e 34 1	?	—	93·0
Charlottesville		135·5	37	e 21 56	PP	—	—	—	—
Philadelphia		136·0	32	e 22 48	PKS	e 26 24	[− 9]	59·0	—
Columbia		136·4	43	e 22 5	PP	e 39 51	SS	e 57·6	—
La Plata		139·2	167	22 6	PP	—	—	67·0	—
Huancayo		146·9	121	i 16 45	P	i 29 50	{−15}	e 62·2	—
Balboa Heights		146·9	80	20 0?	[+23]	—	—	—	—
Dakar		149·6	292	i 19 57	[+16]	e 36 13	?	e 81·0	86·7
La Paz		150·1	135	i 19 48k	[+ 6]	i 26 33	PPP	74·5	75·5
Sucre		150·2	143	i 19 57	[+15]	26 45	SKS	72·8	—
Rio de Janeiro		152·5	187	e 21 0	?	—	—	e 43·0	—
San Juan		156·2	53	e 17 55	?	e 30 25	{−32}	e 64·0	—

Additional readings :—
Adelaide iPP = +7m.18s., i = +7m.32s. and +11m.43s., iSS = +12m.53s., i = +13m.25s.
Taihoku eP = +6m.15s.
Perth PP = +7m.17s., PPP = +7m.35s., PPPP = +7m.51s., P_cP = +9m.0s., P_cS = +12m.35s., SS = +13m.25s., SSS = +14m.0s., SSSS = +14m.15s.
Hong Kong PP = +7m.28s., PPP = +7m.45s., ? = +8m.20s. and +10m.11s., SS = +13m.55s., ? = +15m.0s.
Melbourne i = +7m.51s. = PP − 10s., +8m.14s. = PPP − 1s., +15m.31s. and +16m.3s.
Medan iN = +8m.49s., iE = +9m.32s. = P_cP + 4s.

Continued on next page.

Zi-ka-wei iZ = +7m.39s. and +7m.58s., PPZ = +8m.34s., PPPZ = +8m.56s., PPPPZ = +9m.15s., iZ = +9m.37s. = P_cP +4s., iZ = +13m.52s., SSZ = +15m.44s., SSSZ = +16m.34s., SSSSZ = +16m.54s.
Ooita i = +8m.49s. = PPP +1s.
Siomisaki PP = +8m.44s.
Sumoto eZ = +8m.51s. = PP +4s., eE = +8m.54s.
Nanking PP = +8m.53s., PPP = +10m.6s., i = +15m.6s., iSS = +15m.44s., SSS = +16m.21s.
Kobe iZ = +7m.37s., PPN = +8m.44s., PPPN = +9m.9s., iN = +9m.56s., iZ = +9m.59s., eSZ = +12m.51s., eN = +16m.4s., iZ = +16m.12s.
Osaka PP = +9m.9s. = PPP +2s., P_cS = +12m.32s., SS = +16m.8s., S_cS = +17m.38s.
Nagoya PP = +8m.2s.
Toyooka iE = +16m.35s.
Taikyu PP = +9m.9s.
Zinsen PPZ = +9m.21s.
Mizusawa eSN = +14m.31s.
Chiufeng PPEZ = +10m.6s. = P_cP −1s., PKPE = +10m.16s. = PP +2s., PKPNZ = +10m.19s., iSSSE = +18m.56s., iSSSZ = +19m.8s.
Arapuni SS = +20m.0s.
Calcutta SSSE = +21m.21s.
Wellington pP = +9m.15s., PP = +11m.16s., i = +13m.46s., P_cS? = +15m.0s., SS = +21m.19s., L_q = +23m.0s.
Apia S_cS? = +19m.29s., SS? = +21m.18s. ; T_0 = 12h.46m.58s.
Kodaikanal PSE = +18m.13s., SSE = +21m.36s., SSSE = +23m.31s.
Agra PPEN = +12m.22s., PSE = +19m.0s., SSE = +22m.39s.
Bombay PPEN = +12m.53s., PSEN = +19m.37s., sSEN = +20m.5s., SSEN = +23m.24s., SSSEN = +25m.44s.
Honolulu iP_cP = +11m.35s.
Sverdlovsk i = +15m.48s. = PP +7s., iPP = +15m.58s., PPP = +17m.40s., i = +19m.10s. and +22m.2s., L_q = +37m.42s.
Tananarive iN = +22m.59s. = SKS +1s., PSEN = +23m.33s., SSN = +28m.26s., SSSN = +31m.54s.
College e = +15m.18s., ePP = +16m.40s., eSS = +28m.51s.
Grozny i = +16m.37s. = PP +0s.
Tiflis SKS = +23m.37s., e = +31m.8s. and +37m.0s.
Sitka iPP = +17m.0s., iSKS = +23m.58s., i = +24m.55s., iPS = +25m.50s., i = +26m.52s. and +28m.50s., iSS = +31m.0s.
Moscow PP = +17m.21s., SKS = +24m.3s., PS = +26m.12s., PPS = +27m.6s., SS = +31m.6s.
Ksara PP = +17m.39s.
Theodosia e = +16m.24s.
Yalta e = +16m.26s., i = +17m.28s. = PP −12s.
Simferopol e = +16m.28s. and +17m.28s. = PP −12s.
Sebastopol e = +16m.37s. and +17m.52s. = PP +8s.
Pulkovo e = +16m.31s., PKP = +17m.25s., PP = +17m.45s., PPP = +20m.0s., SKS = +24m.19s., PS = +26m.34s., SS = +33m.0s.
Helwan e = +16m.4s. and +22m.12s., SKS = +24m.46s., PS = +27m.15s.
Seattle ePS = +27m.30s., eSS = +33m.6s.
Ukiah eS = +25m.47s., eSS = +33m.0s.
Berkeley e = +14m.13s., iN = +44m.54s.
Lick eN = +18m.39s.
Bucharest iPPEN = +18m.33s., iE = +27m.14s. = PS −29s.
Upsala iPPE = +18m.39s., iE = +27m.50s. = PS −4s.
Königsberg ePE = +18m.31s. = PP −2s., eZ = +18m.54s., iE = +20m.48s. = PPP +6s., eE = +21m.13s., iZ = +24m.22s., iSKP = +24m.52s. = SKS −6s., eN = +25m.44s. = SKKS +1s., ePPPEZ = +25m.53s., eZ = +27m.3s., iE = +27m.52s. = PS −3s., eZ = +28m.17s., eN = +33m.58s., iZ = +41m.4s. and +47m.45s.
Pasadena ePPZ = +18m.52s., eSKSZ = +25m.12s., iPPSZ = +31m.8s., iSSN = +34m.4s.
Mount Wilson iPKPZ = +18m.31s. = PP −9s.
Cape Town PP = +18m.48s., SKS = +25m.4s., PSE = +28m.16s., PSN = +28m.33s., SSN = +34m.6s., SSE = +34m.18s., SSSN = +37m.54s., SSSE = +38m.7s.
Belgrade iNW = +19m.2s. and +20m.12s.
Budapest i = +19m.3s. = PP +9s., PKP = +21m.5s. = PPP −2s., PPP = +25m.22s. = SKS +11s., SKKS = +29m.30s., PPS = +34m.30s. = SS +17s., SS = +38m.3s. = SSS −10s.
Copenhagen PKPZ = +18m.28s., PP = +19m.8s., PPP = +21m.30s., SKKS = +26m.0s., PS = +28m.31s., SS = +34m.12s., SSS = +39m.0s.
Bozeman eSKKS = +26m.53s., ePS = +28m.40s., e = +30m.23s. and +33m.12s., eSS = +33m.40s.
Vienna e = +28m.22s. = PS −17s.
Prague e = +28m.37s. = PS −8s.
Bergen ePP = +19m.17s., PS = +28m.47s., SS = +35m.10s.

Continued on next page.

Scoresby Sund PP = +19m.12s., SKKS = +26m.26s., PS = +28m.43s., PPS = +29m.54s., SS = +35m.30s.
Zagreb e = +18m.19s. = PKP −5s. and +19m.19s. = PP +7s., i = +19m.31s., ePKP = +20m.31s., ePP = +28m.46s. = PS −2s., ePS = +31m.46s., e = +42m.0s.?
Cheb e = +19m.31s. = PP +13s., ePPP = +25m.23s. = SKS −3s.
Hamburg iZ = +19m.25s. = PP +7s. and +28m.52s. = PS −4s., iE = +28m.54s., iZ = +40m.0s.?, eN = +46m.48s.
Jena e = +19m.23s. = PP +3s., eN = +21m.29s. = PPP −8s., eE = +21m.38s., eN = +50m.0s., eE = +51m.0s.
Triest i = +19m.22s. = PP −1s., iPP = +19m.32s., i = +21m.45s. = PPP +4s., +28m.23s., +28m.56s. = PS −7s., +29m.31s., +30m.18s., +30m.36s., and +35m.9s. = SS +2s., iSS? = +38m.15s., i = +39m.15s. = SSS +2s., +44m.15s., +45m.44s., +46m.44s., and +54m.44s.; T_0 = 12h.46m.56s.
Göttingen ePKPN = +18m.48s., iPPZ = +19m.19s., iPPE = +19m.30s., ePPSEZ = +30m.42s.
Tucson ePP = +19m.39s., iPS = +29m.24s., e = +33m.18s., eSS = +35m.28s., eSSS = +39m.20s.
Stuttgart ePP = +19m.33s., i = +19m.45s., e = +21m.42s. = PPP −14s., e = +23m.54s., ePS = +29m.20s.; T_0 = 12h.46m.35s.
Florence i = +20m.0s.
De Bilt iPP = +19m.49s., i = +29m.25s. = PS −1s.
Strasbourg iPP = +19m.50s., i = +21m.56s. = PPP −9s., iPPP = +22m.49s., iPPPP = +23m.58s., eSKKS = +26m.48s., iPKKP = +29m.1s., iPS = +29m.23s., iPPS = +30m.30s., iPPPS = +31m.0s., SS = +35m.46s.
Zurich ePP = +19m.41s., ePPP = +22m.9s.
Basle e = +19m.54s. = PP +8s.
Uccle iPP = +19m.54s., iPS = +29m.34s., iSS = +36m.24s.
Durham i = +20m.3s. = PP +8s. and +37m.11s.
Edinburgh i = +20m.8s., +22m.51s., +29m.47s. = PS +3s., +29m.56s., +32m.44s., and +42m.38s.
Paris iPP = +20m.8s., ePS = +29m.54s.
Kew iPPENZ = +20m.11s., ePPPEZ = +22m.30s., iSKKSEN = +26m.59s., iPSEN = +29m.53s., iSPZ = +29m.56s., eE = +32m.9s., eSSEN = +37m.1s.
Oxford i = +27m.4s. = SKKS −10s., e = +29m.50s. = PS −9s.
Bidston e = +22m.23s. = PPP −10s., +26m.30s., and +26m.43s., i = +29m.30s., e = +31m.50s. and +36m.50s.
Rathfarnham Castle e = +21m.20s.
Barcelona SS = +37m.30s.
Ivigtut PP = +20m.29s., PPP = +23m.30s., eE = +28m.31s., PS = +30m.27s., PPS = +32m.18s., e = +33m.0s., SS = +36m.42s., SSS = +41m.48s.
Algiers e = +20m.15s., ePP = +20m.42s., PS = +30m.44s., PPS = +31m.12s., SS = +35m.51s.
Madison eSS = +38m.0s., e = +47m.0s.?53m.0s.?
Florissant iPP = +21m.2s., iSKP = +22m.26s., ePSEN = +31m.16s., iSSEN = +38m.10s., iSSSN = +42m.56s., iE = +43m.22s.
St. Louis ePPEN = +21m.2s., iSKPEN = +22m.30s., ePSN = +31m.10s., ePPSN = +32m.38s., ePPPSN = +34m.10s., eSSN = +37m.58s., eSSSN = +42m.58s.
Chicago ePP = +20m.52s., e = +21m.12s., eSS = +38m.6s.
Little Rock ePPE = +20m.58s., iSKPEN = +22m.32s., eSSEN = +39m.19s., eSSSE = +42m.49s.
Almeria iPP = +21m.9s., iPPP = +23m.31s., ePPS? = +33m.57s.
Granada iPP = +21m.15s.
Malaga iPP = +21m.12s., e = +23m.34s., +25m.54s. = PPPP +9s. and +32m.56s., SS = +38m.16s., SSS = +43m.18s., e = +63m.42s. and +66m.4s.
Ann Arbor e = +21m.30s. = PP +15m., eN = +31m.0s. = PS −29s., eN = +41m.0s., eE = +42m.12s., eN = +45m.18s. and +47m.12s., iN = +50m.42s.
San Fernando i = +21m.30s. = PP +5s., SS = +39m.3s.
Toronto eE = +21m.27s. = PP +2s., iE = +39m.0s.?
Buffalo iPP = +21m.34s., iPPP = +24m.1s., e = +53m.28s.
Pennsylvania e = +35m.20s.
Vermont iPKS = +22m.45s., eSS = +39m.25s., i = +40m.54s.
Charlottesville e = +22m.38s. = PKS −17s.
Philadelphia e = +34m.2s., iSS = +39m.59s., eSSS = +44m.48s.
Columbia ePPP = +24m.43s., eSSS = +45m.10s.
Huancayo iPKP = +19m.43s., i = +24m.24s., iPPP = +25m.55s., eSSS = +49m.32s.
Dakar eP = +22m.7s., iPP = +26m.4s., eSS = +45m.2s.
La Paz iPKP$_2$ = +20m.6s. = PKP$_2$ +7s., ipPKP = +20m.56s., isPKP = +21m.36s., iPP = +23m.26s., ipPP = +24m.46s., iSKKS = +30m.20s., iSKSP = +33m.46s., iPPS = +37m.32s., SS = +42m.40s.
Sucre PP = +23m.32s., SS = +43m.40s.
San Juan iPKP = +20m.11s., iPKP$_2$ = +20m.40s., i = +20m.55s., iPP = +24m.15s., i = +26m.30s., iPPP = +27m.43s., e = +42m.30s., iSS = +43m.25s.
Long waves at Santiago, Oak Ridge, Ferndale, Sotchi, Laibach, Hof, Besançon, and Bagnères.

Feb. 15d. Readings also at 2h. (Wellington), 3h. (near La Paz, near Andijan, Frunse, and Tashkent), 4h. (Samarkand), 6h. (Ksara), 7h. (near Bagnères and near Mizusawa), 8h. (Lick and near Amboina), 11h. (Kodaikanal), 13h. (Bucharest and near Tananarive), 15h. (Wellington), 18h. (Santiago, near Sucre, and La Paz), 19h. (Santiago, near Berkeley and Lick), 20h. (Santiago (2)), 21h. (Tucson).

Feb. 16d. 3h. 9m. 13s. Epicentre 28°·5S. 71°·5W. (as on 1926 Aug. 9d.). R.3.

$A = +\cdot2789$, $B = -\cdot8334$, $C = -\cdot4772$; $\delta = +6$;
$D = -\cdot948$, $E = -\cdot317$; $G = -\cdot151$, $H = +\cdot453$, $K = -\cdot879$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Santiago		5·0	172	1 19	P*	2 27	S*	—	—
Montezuma		6·3	22	e 1 30	0	i 2 28	−13	—	—
San Javier		7·1	181	1 50	+ 9	3 24	S*	—	—
Sucre		11·1	32	e 2 38	+ 2	i 4 39	− 2	5·7	—
La Paz		12·4	15	e 2 51	− 3	e 5 27	+14	6·2	6·8
La Plata		13·2	122	3 10	+ 5	5 34	+ 2	6·4	—
Huancayo		16·8	347	i 3 51	− 1	i 7 2	+ 5	e 10·4	—
Rio de Janeiro		26·1	84	e 4 47	−43	—	—	e 10·1	—
Tacubaya	N.	54·9	328	13 4	?	—	—	—	—
Florissant		69·6	345	i 11 3	− 5	—	—	—	—
Oak Ridge		71·0	1	i 11 13	− 4	—	—	—	—
Ann Arbor		71·7	352	—	—	e 24 53	SS	e 36·7	—
Riverside		76·1	322	i 11 45a	− 2	—	—	—	—
Mount Wilson	z.	76·6	322	i 11 49a	0	—	—	—	—
Pasadena	z.	76·6	322	i 11 49a	0	—	—	—	—
Tinemaha		78·9	324	i 12 2	0	—	—	—	—
Ksara		118·9	65	e 20 3	PP	e 36 57	SS	70·3	79·8

Additional readings :—
Montezuma e = +2m.10s., i = +2m.45s. =S +4s.
Huancayo e = +6m.51s.
Mount Wilson iZ = +11m.58s.
Pasadena iZ = +11m.58s.

Feb. 16d. 14h. 18m. 0s. Epicentre 21°·5S. 169°·0E. (as on 1932 Dec. 10d.). X.

$A = -\cdot9133$, $B = +\cdot1775$, $C = -\cdot3665$; $\delta = -5$;
$D = +\cdot191$, $E = +\cdot982$; $G = +\cdot362$, $H = -\cdot070$, $K = -\cdot930$.

A *depth* of focus 0·090 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
New Plymouth	−3·2	18·1	167	4 0?	+33	—	—	—	—
Riverview	−3·6	20·0	228	i 3 40a	− 6	i 7 35	+47	—	11·6
Sydney	−3·6	20·0	228	e 3 0?	−46	—	—	8·0	10·5
Wellington	−3·7	20·4	168	3 50	0	6 40	−15	—	—
Melbourne	−4·7	26·3	227	i 4 42	− 4	i 9 22	SS	14·5	16·6
Adelaide	−5·5	29·8	237	e 5 10	− 3	i 10 7	+39	11·8	14·9
Amboina	−7·1	43·4	289	5 44	?	—	—	—	—
Perth	−7·8	48·1	246	14 0	S	(14 0)	+19	21·8	—
Manila	−8·9	59·4	305	8 42	−13	15 42	−26	—	16·0
Batavia	−9·0	61·5	275	9 7	− 3	e 12 45	?	—	—
Hong Kong	−9·4	69·1	307	10 21	+19	18 29	+17	—	28·2
Nanking	−9·5	72·0	317	10 32	+10	18 56	+ 8	—	—
Vladivostok	−9·6	73·1	333	i 10 39	+10	i 13 11	PP	—	—
Chaufeng	−9·9	78·8	322	i 11 14k	+10	i 20 17	+ 9	—	—
Pamdeen	−10·6	88·8	53	i 11 32	−26	—	—	—	—

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.
Mount Wilson	Z.	−10·6	88·9	53	i 11 32a	−27	—	—	—	—
Riverside		−10·7	89·3	53	i 11 34a	−26	—	—	—	—
Haiwee		−10·7	89·8	51	e 11 38	−25	—	—	—	—
Tinemaha		−10·7	90·0	50	e 11 39	−25	—	—	—	—
Calcutta	E.	−10·7	90·0	294	12 19	+15	21 57	−11	—	—
Tucson		−10·8	93·5	57	(e 11 56)	−26	—	—	e 11·9	—
Agra	E.	−10·9	100·5	296	e 17 7	PP	i 22 49	[−99]	—	—
Bombay		−10·9	102·3	286	e 13 0?	− 4	—	—	—	—
Huancayo		—	108·5	112	e 17 50	PP	—	—	e 51·2	—
Tashkent		—	111·1	307	—	—	e 28 12	PS	—	50·3
La Paz	Z.	—	112·3	240	e 18 20	?	i 29 25	?	—	—
Sverdlovsk		—	117·8	324	17 11	[−89]	25 12	{−109}	45·0	—
Tiflis		—	129·4	307	e 20 32	PP	—	—	—	—
Pulkovo		—	132·0	333	18 50	[−20]	28 40	?	56·0	—
Ksara		—	137·1	296	e 18 8	[−70]	25 18	[−79]	—	—
Helwan		—	141·2	292	e 16 27	?	e 21 42	PP	—	—
De Bilt		—	147·0	341	e 18 24	[−73]	—	—	e 74·0	—
Zagreb		—	147·2	324	e 18 22	[−75]	—	—	—	—
Uccle		—	148·3	341	e 18 28	[−71]	—	—	e 41·0	—
Stuttgart		—	148·3	334	e 18 25a	[−74]	—	—	—	—
Triest		—	148·5	327	e 18 26	[−74]	—	—	—	—
Kew		—	148·9	348	e 18 0?	[−100]	—	—	—	—
Strasbourg		—	149·1	336	i 18 26	[−74]	—	—	e 40·0	—
Zurich		—	149·7	333	e 18 28	[−73]	—	—	—	—
Chur		—	149·8	331	e 18 29	[−72]	—	—	—	—
Paris		—	150·6	342	e 18 32	[−71]	—	—	42·0	—

Additional readings :—
Riverview iPEN = +3m.43s., iEN = +4m.25s., iE = +4m.51s., iN = +7m.31s., iE = +7m.41s.
Wellington i = +4m.40s., pP? = +5m.20s., i = +7m.46s., P_cP = +8m.11s., sS? = +9m.0s., S_cP = +10m.35s., P_cS? = +11m.3s., S_cS = +14m.45s.
Melbourne i = +5m.30s.
Adelaide i = +6m.17s.
Perth S = +19m.0s.
Batavia PZ = +9m.37s.
Nanking ePP = +13m.7s., iSE = +19m.45s.
Chiufeng pPNZ = +11m.33s., SSE = +20m.45s., S_cSNZ = +21m.1s., iN = +21m.24s.
Pasadena iZ = +12m.13s., eE = +23m.8s. =PS −89s.
Mount Wilson iZ = +12m.13s.
Riverside eZ = +12m.16s.
Calcutta PS = +22m.30s.
Huancayo e = +19m.15s., eSP = +26m.40s., eSS = +33m.0s.
Tashkent i = +33m.2s.
Tiflis e = +21m.46s., +26m.44s., +36m.45s., and +39m.51s.
Ksara ipPKP = +18m.47s., ipP = +21m.28s., i = +22m.37s., SKKS = +27m.20s., PPS = +33m.56s., SS = +39m.37s.
Zagreb eZ = +19m.2s.
Stuttgart i = +19m.6s., eZ = +22m.30s.
Triest e = +19m.7s.
Strasbourg i = +19m.8s. and +19m.30s.
Paris i = +19m.13s.
Long waves at Baku, Ivigtut, and Scoresby Sund.

Feb. 16d. Readings also at 0h. (De Bilt, Paris, Strasbourg, and Stuttgart), 1h. (Ann Arbor, Sverdlovsk, and Tashkent), 7h. (near Mizusawa and near San Javier), 10h. (Amboina), 12h. (near Manila), 14h. (near Piatigorsk, Grozny (2), and near Wellington), 15h. (near Reykjavik (4)), 20h. (Ksara, La Paz, and near Amboina), 21h. (Sverdlovsk and Tashkent).

Feb. 17d. Readings at 0h. (near Amboina), 1h. (near Neuchatel, near Algiers, and near Taihoku), 2h. (Wellington), 3h. (Wellington, Almata, Frunse, Samarkand, near Andijan, and near Amboina), 5h. (Little Rock, near Florissant, and St. Louis), 7h. (Amboina), 10h. (near Batavia and Malabar), 11h. (Almata, Andijan, Frunse, Samarkand, Semipalatinsk, and Tashkent), 14h. (near Andijan and Samarkand), 15h. (Belgrade, Bucharest, Padova, and Zagreb), 18h. (Tashkent, Andijan, Frunse, near Samarkand, and near Helwan), 20h. (Göttingen, Vienna, near Zurich, and near Apia), 21h. (near Sumoto), 23h. (Sverdlovsk, Tashkent, Vladivostok, Phu-Lien, Calcutta Nanking, Chiufeng, near Hong Kong, and near Taihoku).

Feb. 18d. 14h. 30m. 39s. Epicentre 30°·9N. 89°·1E. (as on 1934 Dec. 21d.). R.2.

A = +·0135, B = +·8580, C = +·5135 ; δ = +3 ;
D = +1·000, E = −·016 ; G = +·008, H = +·514, K = −·858.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	8·4	184	2 3	+ 4	3 34	0	4·2	4·9
Dehra Dun		9·6	269	2 41	+25	—	—	—	5·4
Agra	E.	10·5	252	2 21	− 7	4 13	−13	—	—
Almata		15·7	331	3 38	0	6 50	+19	—	—
Frunse		16·7	319	3 51	+ 1	7 9	SS	8·8	—
Andijan		16·8	311	3 53	+ 1	7 13	SS	—	—
Phu-Lien		18·7	119	—	—	e 7 53	+13	e 9·9	—
Tashkent		19·0	313	e 4 20	+ 1	i 7 52	+ 6	10·8	12·8
Bombay		19·0	234	e 4 24	+ 5	i 7 59	+13	10·0	12·4
Tchimkent		19·3	313	—	—	e 8 59	+67	—	—
Samarkand		20·0	302	e 4 32	+ 2	e 7 55	−11	—	—
Chiufeng		23·7	60	5 1k	− 6	9 22	+ 4	—	13·2
Hong Kong		23·9	105	9 25	S	(9 25)	+ 4	12·4	13·2
Nanking		25·2	80	e 5 21	− 1	i 9 55	+11	14·4	15·0
Zi-ka-wei		27·6	81	—	—	e 10 35	+10	i 15·1	17·2
Medan		28·8	160	5 55	+ 1	e 10 45	0	—	—
Sverdlovsk		32·6	331	e 2 4	?	—	—	16·4	18·2
Baku		33·0	300	e 9 19	(0)	e 14 13	?	17·6	18·6
Manila		33·4	112	9 15	(− 6)	15 0	?	19·9	23·4
Vladivostok		35·8	58	—	—	e 13 33	+60	e 16·4	22·6
Tiflis		36·9	301	—	—	e 14 55	SS	19·8	23·6
Moscow		43·5	321	—	—	e 18 57	?	e 24·2	29·0
Ksara		44·6	288	e 10 0	(+ 3)	e 17 48	SS	—	28·4
Pulkovo		48·1	325	e 8 38	+ 1	e 15 40	+ 6	23·5	29·0
Stuttgart		61·0	313	—	—	e 25 21?	?	e 33·4	—

Additional readings :—
Agra P_gE = +3m.23s., S_gE = +5m.28s.
Zi-ka-wei iZ = +10m.44s.
Medan eN = +21m.15s.
Long waves were also recorded at Grozny, Scoresby Sund, and other European stations.

Feb. 18d. Readings also at 1h. (Tiflis), 2h. (Kong Kong, Chiufeng, Vladivostok, Sverdlovsk, Tashkent, Pulkovo, Scoresby Sund, Oak Ridge, Bozeman, Madison, Philadelphia, Haiwee, Tucson, Mount Wilson, Pasadena, Riverside, Tinemaha, Sitka, and College), 8h. (near Granada and near Taihoku), 12h. (near Apia), 14h. (Amboina, Grozny, and near Piatigorsk), 17h. (near Ferndale and near Sumoto), 18h. (near Taihoku), 20h. (Tashkent, Sverdlovsk, Ksara, Pulkovo, Copenhagen, Scoresby Sund, Huancayo, and San Juan), 21h. (La Paz, Stuttgart, Zurich, and near Ebingen).

Feb. 19d. Readings at 4h. (Andijan, Frunse, and near Samarkand), 8h. (Amboina, Manila, Bombay, Baku, Sverdlovsk, and Tucson), 12h. (Batavia and near Medan), 13h. (Batavia), 14h. (Mount Wilson, Pasadena, and Riverside), 22h. (Oaxaca, Tacubaya, Tucson, Baku, Sverdlovsk, Ksara, Tiflis, Erevan, and Tashkent).

Feb. 20d. Readings at 0h. (Samarkand), 1h. (near Sumoto (2)), 2h. (Baku, Tashkent, Philadelphia, and near Amboina), 3h. (Calcutta), 8h. (near Amboina (3)), 9h. (near Tananarive), 10h. (near Amboina), 12h. (Amboina and Cheb), 13h. (Apia), 16h. (Malabar), 20h. (Santiago), 23h. (Manila).

Feb. 21d. 1h. 8m. 4s. Epicentre 34°·5N. 135°·7E. N.1.

Japanese stations give Epicentre as 34°31′N. 135°41′E.

A = −·5898, B = +·5756, C = +·5664 ; δ = −1 ;
D = +·698, E = +·716 ; G = −·405, H = +·396, K = −·824.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Yagi	0·1	79	−0 2k	− 3	−0 1	− 4	—	—
Osaka	0·2	318	0 2a	− 1	0 5	0	—	—
Kobe	0·5	293	i 0 3k	− 4	i 0 9	− 4	—	0·5
Kyoto	0·5	3	0 4a	− 3	0 11	− 2	—	—
Wakayama	0·5	239	0 5k	− 2	0 12	− 1	—	—
Sumoto	0·7	257	i 0 7k	− 3	0 16	− 2	—	0·6
Kameyama	0·7	61	0 8k	− 2	0 18	0	—	—
Tu	0·7	71	0 8k	− 2	0 19	+ 1	—	—
Hikone	0·9	30	0 8	− 5	0 21	− 2	—	—
Tokusima	1·0	245	0 13k	− 1	0 29	+ 3	—	—
Ibukisan	1·1	32	0 13k	− 3	0 28	0	—	—
Siomisaki	1·1	177	0 13a	− 3	0 28	0	—	—
Miyadu	1·1	338	0 16a	0	0 31	+ 3	—	—
Nagoya	1·2	57	i 0 18k	+ 1	0 34	+ 3	—	0·9
Gihu	1·3	44	0 18k	0	0 34	+ 1	—	—
Toyooka	1·3	325	0 17k	−1	0 34	+ 1	—	0·7
Okayama	1·4	276	0 20	0	0 40	S*	—	—
Tadotu	1·6	262	0 24k	+ 1	0 47	S_g	—	—
Hamamatu	1·7	83	0 22k	− 2	0 44	0	—	—
Hukui	1·7	17	0 20a	− 4	0 39	− 5	—	—
Muroto	1·8	225	0 25k	− 1	0 53	S*	—	—
Koti	2·0	242	0 29k	0	1 4	S_g	—	—
Omaesaki	2·1	87	0 29k	− 1	1 3	S_g	—	—
Iida	2·1	60	0 30k	0	0 55	+ 1	—	—
Takayama	2·1	37	0 32k	+ 2	0 58	+ 4	—	—
Kanazawa	2·2	21	0 30a	− 1	1 2	S*	—	—
Sakai	2·3	297	0 41k	P_g	1 13	S_g	—	—
Matuyama	2·5	255	0 37k	+ 1	1 19	S_g	—	—
Toyama	2·5	29	1 39	+63	3 11	?	—	—
Kohu	2·6	64	0 37k	0	1 13	S*	—	—
Matumoto	2·6	47	0 42k	P*	1 27	S_g	—	—
Husiki	2·6	26	0 40	P*	1 16	S*	—	—
Numadu	2·7	77	0 33	− 6	1 16	+ 7	—	—
Hunatu	2·7	68	0 41k	+ 2	1 22	S_g	—	—
Hirosima	2·7	268	0 37k	− 2	1 21	S_g	—	—
Simidu	2·8	233	0 47	P_g	1 30	S_g	—	—
Misima	2·8	77	0 38a	− 2	1 24	S*	—	—
Ito	2·8	81	0 39a	− 1	1 21	S*	—	—
Uwazima	2·9	244	0 41	0	1 24	S*	—	—
Nagano	3·0	43	0 44	+ 1	1 34	S_g	—	—
Hamada	3·0	278	0 43k	0	1 22	+ 5	—	—
Oiwake	3·0	52	0 49a	P*	1 36	S_g	—	—
Wazima	3·1	19	0 45a	+ 1	1 30	S*	—	—
Maebasi	3·4	55	0 49	0	1 41	S*	—	—
Takada	3·4	37	1 0k	P_g	1 45	S_g	—	—
Mera	3·4	83	0 54	P*	1 49	S_g	—	—
Kumagaya	3·4	60	0 52	+ 3	1 48	S_g	—	—
Yokohama	3·4	72	0 52a	+ 3	1 37	S*	—	—
Tokyo	3·5	70	0 53a	+ 3	1 38	S*	—	—
Ooita	3·6	250	1 5	P_g	1 55	S_g	—	—
Hatidyozima	3·7	111	0 52	− 1	1 33	− 2	—	—
Simonoseki	4·0	263	1 0k	+ 3	1 59	S*	—	—
Tukubasan	4·0	63	0 58	+ 1	1 57	S*	—	—
Utunomiya	4·0	57	1 14	P_g	3 7	?	—	—
Kakioka	4·1	63	0 58	0	1 59	S*	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Miyazaki		4·3	236	1 5	+ 4	1 59	+ 9	—	—
Niigata		4·4	37	1 24	P_g	2 28	S_g	—	—
Tyosi		4·4	73	1 4	+ 1	2 3	S*	—	—
Kumamoto		4·5	249	1 3	− 1	2 10	S*	—	—
Hukuoka		4·5	259	1 1k	− 3	2 10	S*	—	2·5
Hukuoka B		4·5	259	1 3	− 1	2 8	S*	—	2·6
Unzendake		4·8	250	1 19	P*	2 31	S_g	—	—
Onahama		4·9	58	1 18	P*	2 24	S*	—	—
Hukusima		5·1	48	1 14	+ 1	2 32	S*	—	—
Nagasaki		5·2	252	1 13a	− 1	2 36	S*	—	—
Kagosima		5·2	237	1 30	P*	2 50	S_g	—	—
Yamagata		5·3	43	1 14	− 1	2 50	S_g	—	—
Husan		5·5	278	1 23	+ 5	2 37	S*	—	3·4
Sendai		5·7	46	1 21k	0	2 37	+12	—	—
Taikyu		5·9	285	1 22	− 2	3 18	S_g	—	3·8
Mizusawa		6·4	41	e 1 36	+ 5	i 3 17	S*	—	—
Morioka		6·8	38	1 39k	+ 2	3 2	+ 9	—	—
Miyako		7·2	42	1 47	+ 5	3 22	+18	—	—
Aomori		7·5	30	1 53	+ 7	3 37	S*	—	—
Keizyo		7·7	296	e 1 49	0	e 3 22	+ 6	—	—
Zinsen	E.	7·9	295	e 1 50	− 2	e 3 26	+ 5	—	5·6
Nake		8·1	222	1 56	+ 1	3 35	+ 9	—	—
Hakodate		8·3	27	2 16	P*	—	—	—	—
Vladivostok		9·1	342	i 2 13	+ 4	—	—	e 3·7	6·0
Titizima		9·2	142	2 25	+15	—	—	—	—
Heizyo		9·2	303	e 2 47	+37	4 26	S*	—	—
Sapporo		9·7	25	2 27	+10	4 31	S*	—	—
Asahigawa		10·6	27	2 39	+10	—	—	—	—
Naha		10·8	222	2 40	+ 8	5 6	?	—	—
Zi-ka-wei	Z.	12·4	259	e 2 52	− 2	5 14	+ 1	7·8	8·1
Yinghow		12·4	304	3 7a	PP	6 12	S*	—	—
Nanking		14·3	265	3 18	− 1	6 21	SS	7·1	12·3
Taihoku		15·5	236	e 9 7	?	e 12 8	?	—	—
Karenko		16·1	233	3 47	+ 4	—	—	—	—
Chiufeng		16·5	296	i 3 49k	+ 1	7 1	SS	7·9	11·6
Hong Kong		22·4	243	5 3	+ 8	9 4	+11	11·6	15·5
Manila		23·9	217	e 5 10	+ 1	i 9 32	+11	12·6	14·6
Phu-Lien		29·0	250	—	—	10 56	+ 8	16·9	—
Calcutta	E.	42·9	267	—	—	e 13 47	−32	—	—
Frunse		47·4	299	e 8 22	−10	15 30	+ 6	25·4	—
Andijan		49·5	297	e 8 47	0	15 59	+ 5	—	—
Tashkent		51·6	299	i 9 4	+ 1	i 16 24	+ 1	e 24·4	22·5
Sverdlovsk		53·8	319	e 9 24	+ 4	16 57	+ 4	30·8R	33·0
Bombay		57·4	272	e 9 56?	+10	i 17 48	+ 6	—	37·7
Baku		65·6	304	e 10 32	−10	e 17 51	?	23·9	27·8
Moscow		66·3	323	e 10 44	− 3	i 19 34	− 2	35·2	37·1
Pulkovo		67·8	329	10 53	− 4	e 19 51	− 3	32·9	39·8
Tiflis		68·5	307	e 10 58	− 3	e 19 56	− 7	e 33·9	40·4
Copenhagen		77·7	332	—	—	27 20	?	39·9	—
Ksara		78·6	303	i 11 59	− 1	22 37	PS	—	47·4
Hamburg		80·2	331	—	—	e 21 56?	−22	e 43·9	—
Tinemaha		80·8	51	i 12 10	− 2	—	—	—	—
Haweii		81·6	52	1 12 13	− 3	—	—	—	—
Cheb		81·8	327	—	—	e 21 56?	−39	e 40·9	46·9
Mount Wilson	Z.	82·7	53	i 12 19	− 3	—	—	—	—
Pasadena		82·7	53	i 12 19a	− 3	—	—	—	—
Zagreb		83·0	322	e 12 24	+ 1	—	—	e 33·5	35·6
Riverside		83·2	53	i 12 21a	− 3	—	—	—	—
Stuttgart		84·2	328	e 12 28	− 1	e 22 50	[− 3]	e 42·9	49·5
Triest		84·3	323	e 12 32	+ 2	22 50	[− 4]	e 40·9	44·4
Florence		86·8	323	e 12 21	−21	—	—	—	45·9
San Fernando		100·7	329	e 19 22	?	—	—	54·9	—
La Paz	E.	152·1	56	19 54	[+ 9]	—	—	—	—

For Notes see next page.

NOTES TO FEB. 21d. 1h. 8m. 4s.

Additional readings :—
Hukuoka S_g = +2m.22s.
Zi-ka-wei iN = +6m.33s., +7m.1s., and +7m.4s.
Taihoku e = +9m.16s.
Chiufeng SEZ = +7m.7s.
Hong Kong PP = +5m.29s., SS = +9m.17s.
Sverdlovsk i = +9m.25s., L_q = +26m.38s.
Tiflis SKS = +20m.55s. = S_cS +1s., e = +32m.26s.
Mount Wilson iZ = +15m.29s.
Triest e = +34m.26s.
Long waves at Semipalatinsk, Scoresby Sund, Cape Town, and other European stations.

Feb. 12d. After shocks from the origin 34°·5N. 135°·7E. of 1h.8m.4s. were recorded at Osaka, Kobe, Sumoto, Nagoya, and Toyooka. The list below gives the time of P for the after shocks at each of the above mentioned stations.

Osaka	Kobe	Sumoto	Nagoya	Toyooka	Hukuoka B
h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
	1 38 46	1 38 41			
	1 46 2				
	1 46 42				
		2 5 34	2 6 2		
		2 6 45			
2 9 58	2 10 0	2 10 3	2 10 15	2 10 16	
2 16 1					
2 18 31	(M only)	2 18 37	2 19 3		
2 29 47	(M)	2 29 53	2 30 13		
2 36 46	(M)		2 37 18		
2 53 1					
3 19 56					
4 4 50	4 4 52	4 4 56	4 5 5	4 5 7	4 6 4
4 51 32					
6 38 32					
7 4 55					
9 22 40	9 22 42	9 22 45	9 23 16		
11 0 38					
15 53 59	15 55 2	15 55 6	15 55 17		
17 37 50					
18 39 9					
19 16 12	19 16 15	19 16 17	19 16 28		
19 18 18	19 18 21	19 18 33	19 18 37		
19 19 0	19 19 1	19 19 3			
21 49 1	21 49 2				
21 53 38	21 53 41	21 53 45	21 53 56	21 53 55	
23 7 41					

Feb. 21d. 6h. 20m. 47s. Epicentre 24°·0N. 96°·3E. N.3.

A = −·1002, B = +·9080, C = +·4067 ; δ = −9 ;
D = +·994, E = +·110 ; G = −·045, H = +·404, K = −·914.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	E.	7·5	260	1 47	+ 1	3 11	0	3·8	7·8
Phu-Lien		10·1	106	e 2 21	− 1	5 28	S_g	—	5·7
Hong Kong		16·5	92	3 44	− 4	7 1	+11	8·6	10·1
Agra		16·8	285	e 3 32	−20	7 14	SS	e 8·7	10·9
Dehra Dun		17·4	295	6 43	?	8 33	?	10·1	—
Hyderabad		17·9	252	—	—	(7 22)	0	—	13·5
Medan		20·6	174	3 29	− 7	10 35	L	(10·6)	—
Nanking		21·4	62	4 44	0	1 8 44	+10	11·5	14·0
Bombay		22·4	262	1 4 54	− 1	1 9 2	+ 9	11·9	16·6
Kodaikanal	E.	22·6	237	e 5 13?	PP	—	—	—	—
Kosyun		22·6	90	9 8	S	(9 8)	+11	—	—
Taihoku		22·9	81	e 8 43	P_cP	1 12 22	L	(1 12·4)	15·4
Chiufeng		23·1	40	e 5 4e	+ 2	9 21	+14	13·1	13·3
Colombo		23·3	226	9 10	S	(9 10)	0	—	23·9
Zi-ka-wei	Z.	23·4	66	—	—	e 9 11	− 1	—	14·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		25·0	325	e 5 25	+ 5	—	—	—	—
Manila		25·1	107	5 21	0	9 44	+ 1	12·4	14·5
Frunse		26·0	321	e 5 26	− 3	e 10 3	+ 5	—	—
Andijan		26·1	315	e 5 28	− 2	10 20	+20	—	—
Tashkent		28·4	314	e 6 18	+27	e 11 20	+42	15·2	18·3
Tchimkent		28·7	316	e 6 29	+36	—	—	—	—
Zinsen	N.	29·2	55	e 11 11	?S	(e 11 11)	+20	(e 16·0)	—
Samarkand		29·2	309	5 33	−25	—	—	—	—
Taikyu		30·2	59	e 13 24	SS	—	—	—	—
Husan		30·4	60	11 17	S	(11 17)	+ 7	16·7	—
Hukuoka B		31·7	64	11 23	S	(11 23)	− 8	(e 17·4)	—
Batavia		31·9	160	e 6 8	−14	14 6	?	—	—
Vladivostok		34·9	48	—	—	e 12 22	+ 2	e 15·0	21·2
Sverdlovsk		41·7	331	i 7 54	+ 8	14 8	+ 6	26·2R	27·1
Baku		42·0	304	e 8 16	+27	e 17 13	SS	28·2	—
Tiflis		46·0	305	e 10 32	?	e 19 0	?	e 31·7	35·4
Moscow		52·9	322	9 24	+11	16 55	+14	e 29·5	34·0
Ksara		53·1	295	e 9 22	+ 7	16 54	+11	—	—
Pulkovo		57·4	327	e 9 59	+13	e 17 55	+13	28·2	32·6
Scoresby Sund		76·2	343	—	—	21 42	+ 8	45·2	—

Additional readings and note :—
Hong Kong PP = +4m.1s.
Agra PPEN = +3m.54s., SSE = +7m.50s.
Hyderabad S reading has been *increased* by 9m.
Medan iSE? = +10m.45s.
Bombay SSE = +9m.57s.
Chiufeng iP = +5m.9s., PPN = +5m.34s.
Zi-ka-wei iZ = +9m.28s., SZ = +11m.58s., iZ = +12m.54s., and +13m.40s.
Husan eS = +13m.5s.
Batavia EN = +15m.53s.
Sverdlovsk eSS = +17m.19s., L_q = +22m.31s.
Long waves at Hokoto, Keizyo, Sumoto, and European and American stations.

Feb. 21d. 16h. 57m. 19s. Epicentre 5°·0S. 144°·5E. N.2.

Given in Seismological Bulletin of Weather Bureau of Tyosen, 1936, page 10.

$A = -·8110$, $B = +·5785$, $C = -·0872$; $\delta = -1$;
$D = +·581$, $E = +·814$; $G = +·071$, $H = -·051$, $K = -·996$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	16·3	274	i 3 44	− 1	7 4	+19	e 11·7	—
Riverview	29·5	169	e 6 5	+ 4	i 11 19	+23	e 14·9	17·4
Sydney	29·5	169	e 6 5	+ 4	e 10 56	0	15·7	17·7
Manila	30·4	311	6 5	− 4	10 58	−12	13·2	—
Adelaide	30·4	190	e 6 8	− 1	i 11 7	− 3	e 15·0	19·8
Titizima	32·2	357	6 27	+ 3	—	—	—	—
Melbourne	32·8	180	e 7 5	+35	e 11 56?	+ 8	15·5	22·4
Kosyun	35·6	320	7 3	+ 9	—	—	—	—
Karenko	36·6	323	7 7	+ 4	—	—	—	—
Batavia	37·5	267	7 1	−10	12 50	− 9	e 23·7	—
Perth	38·0	221	7 16	+ 1	13 11	+ 5	18·5	21·7
Miyazaki	39·0	342	7 19	− 5	13 3	−18	—	—
Simidu	39·3	346	7 19	− 7	—	—	—	—
Kumamoto	40·0	343	7 39	+ 7	—	—	—	—
Ooita	40·1	344	7 47	+14	—	—	—	—
Unzendake	40·1	342	7 44	+11	—	—	—	—
Mera	40·2	355	7 14	−20	—	—	—	—
Wakayama	40·2	349	7 26	− 8	13 31	− 8	—	—
Hong Kong	40·3	314	7 31	− 4	13 38	− 3	—	22·1
Matuyama	40·4	345	7 31	− 4	—	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sumoto		40·4	349	e 7 33	− 2	13 33	− 9	16·8	19·8
Tu		40·4	351	7 42	+ 7	—	—	—	—
Tomie		40·5	341	7 46	+10	—	—	—	—
Osaka		40·5	350	7 23	−13	13 2	−42	—	17·3
Misima		40·5	354	7 31	− 5	13 24	−20	—	—
Kameyama		40·6	351	7 39	+ 2	—	—	—	—
Kobe	E.	40·6	350	e 7 27	−10	—	—	—	—
	N.	40·6	350	e 7 25	−12	—	—	—	19·9
	Z.	40·6	350	e 7 20	−17	e 13 25	−20	—	20·0
Nagoya		40·8	353	e 7 0	−39	—	—	—	—
Hukuoka		40·8	343	e 7 20	−19	e 13 20	−28	—	—
Hukuoka B		40·8	343	7 48	+ 9	13 27	−21	16·9	—
Tokyo		40·9	355	7 54	+14	—	—	—	—
Kôhu		41·0	354	7 37	− 3	—	—	—	—
Kakioka		41·4	355	7 45	+ 1	—	—	—	—
Kumagaya		41·4	354	7 38	− 6	—	—	—	—
Tukubasan		41·4	355	7 52	+ 8	—	—	—	—
Mito		41·6	355	7 52	+ 7	13 50	−10	—	—
Oiwake		41·7	354	7 55	+ 9	14 4	+ 2	—	—
Maebasi		41·7	354	7 43	− 3	—	—	—	—
Nagano		42·1	354	7 46	− 3	—	—	—	—
Toyama		42·2	352	7 52	+ 2	—	—	—	—
Husan		42·7	341	e 8 8	+14	14 11	− 5	17·5	—
Hukusima		42·9	357	8 29	+33	—	—	—	—
Yamagata		43·4	357	8 10	+10	—	—	—	—
Sendai		43·4	357	7 58	− 2	—	—	—	—
Taikyu		43·5	342	e 8 13	+12	—	—	—	—
Arapuni		43·6	144	—	—	14 47	+17	21·7	24·7
Mizusawa		44·2	357	e 8 3	− 3	e 14 23	−16	17·7	—
Nanking		44·4	328	e 8 5	− 3	e 14 37	− 4	17·9	—
Morioka		44·8	358	8 21	+10	14 37	−10	—	—
Akita		44·9	356	8 23	+11	—	—	—	—
Wellington		45·2	148	8 7	− 7	14 46	− 8	20·0$_q$	25·7
Phu-Lien		45·2	306	e 8 10	− 4	14 41?	−13	19·7	—
Keizyo		45·6	341	e 8 28	+10	14 48	−11	18·6	—
Zinsen		45·6	340	e 8 26	+ 8	e 14 46	−13	e 18·4	—
Christchurch		45·8	152	8 15	− 4	14 36	−26	—	—
Medan		46·6	281	8 24	− 1	15 6	− 7	e 30·7	—
Hakodate		46·9	357	8 38	+10	—	—	—	—
Sapporo		48·2	358	8 53	+15	15 54	+18	—	—
Asahigawa		48·8	359	8 44	+ 2	—	—	—	—
Vladivostok		49·5	349	e 8 41	− 6	i 15 41	−13	e 17·6	28·3
Chiufeng		52·1	333	e 9 0k	− 7	16 11	−19	24·3	26·1
Calcutta	E.	61·3	299	10 15	+ 1	18 29	− 4	29·1	—
Honolulu		62·3	63	i 10 31	+11	i 18 44	− 2	28·7	—
Colombo		65·6	281	(10 37)	− 5	19 49	PS	34·1	41·0
Agra	E.	71·7	301	e 11 13	− 8	i 20 23	−18	34·1	—
Bombay		74·5	292	e 11 41?	+ 4	—	—	—	56·2
Frunse		79·0	316	e 11 57	− 6	22 3	− 2	—	—
Andijan		79·9	313	e 12 6	− 1	e 22 20	+ 5	—	—
Tchimkent		82·3	314	e 12 22	+ 2	e 22 27	[−11]	—	—
Tashkent		82·3	313	i 12 12	− 8	i 22 22	[−16]	—	45·7
Samarkand		83·7	311	e 12 16	−11	e 22 31	[−18]	—	—
College		85·3	23	e 12 45	+10	e 22 46	[−15]	e 36·9	—
Sitka		88·9	33	—	—	i 23 9	[−17]	e 40·0	—
Sverdlovsk		90·8	327	i 12 58	− 3	i 23 49	{+ 8}	40·9	49·1
Ukiah		94·9	51	—	—	e 22 16	[−104]	42·8	—
Victoria		95·2	42	e 23 45	SKS	(e 23 45)	[−17]	e 43·4	56·4
Baku		96·7	309	13 39	+11	24 19	[+10]	45·7	55·5
Tinemaha	Z.	98·8	54	e 13 33	− 5	—	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Pasadena		98·9	56	e 13 35	− 3	i 26 50	PS	e 41·4	—
Mount Wilson	z.	99·0	56	i 13 31	− 8	—	—	—	—
Riverside	z.	99·5	56	e 13 36	− 5	—	—	—	—
Tiflis		100·4	311	e 14 6	+21	e 24 9	[−19]	52·7	65·2
Moscow		103·6	326	e 14 9	+ 9	e 24 30	[−13]	52·9	62·4
Bozeman		103·7	44	—	—	e 24 27	[−17]	e 45·5	—
Tucson		105·1	58	—	—	e 24 38	[−12]	e 43·1	—
Pulkovo		106·3	331	e 14 20	+ 7	26 1	{+21}	51·7R	57·4
Ksara		108·2	303	—	—	28 9	PS	—	—
Königsberg		113·1	328	i 18 55	[+28]	e 29 6	PS	e 42·6	63·9
Scoresby Sund		113·9	355	19 38	PP	26 23	{−11}	56·7	—
Cape Town	E.	115·9	228	—	—	25 56	[+19]	55·6	65·2
Copenhagen		116·6	332	20 3	PP	27 29	{+36}	50·7	—
Budapest		117·0	321	19 41?	PP	—	—	e 60·7	—
Prague		118·6	325	—	—	e 27 41?	{+34}	e 57·7	72·7
Hamburg		119·0	331	e 20 21	PP	—	—	e 56·7	63·7
Madison		119·2	42	e 20 13	PP	e 26 5	[+17]	—	—
Cheb		119·7	327	e 20 27	PP	e 29 46	PS	e 57·7	70·7
Little Rock		119·8	53	e 20 19	PP	—	—	—	56·0
Florissant		120·1	47	i 20 21	PP	e 27 33	{+16}	—	57·7
Chicago		121·0	43	—	—	e 25 40	[−13]	54·4	—
Triest		121·1	321	e 20 27	PP	i 26 48	{−36}	e 59·0	70·2
De Bilt		122·2	331	e 20 42	PP	e 30 21	PS	e 54·7	71·1
Stuttgart		122·2	327	—	—	e 30 11	PS	e 61·7	69·8
Edinburgh		122·9	338	—	—	e 36 41?	SS	62·7	—
Strasbourg		123·0	327	i 18 41?	a [−12]	—	—	e 35·7	—
Ann Arbor		123·3	41	20 53	PP	e 36 5	SS	e 70·2	—
Uccle		123·4	331	e 20 50	PP	e 30 20	PS	e 54·7	—
Florence		123·6	321	e 20 56	PP	—	—	—	60·7
Kew		125·1	333	e 21 9	PP	e 30 53	PS	61·7	66·3
Toronto		125·4	37	e 10 11	?	i 32 20	?	51·7	—
Paris		125·6	329	e 21 6	PP	—	—	60·7	69·7
Ottawa		126·6	34	e 10 11	?	e 38 5	SS	51·7	—
Vermont		128·5	33	e 14 41	?	—	—	e 39·3	—
Philadelphia		130·1	39	i 12 44	?	e 26 38	[+19]	e 56·4	—
Oak Ridge		130·7	34	e 21 30	PP	—	—	e 64·7	—
La Plata		134·8	154	(22 11)	PP	—	—	22·2	—
Almeria		136·1	320	e 19 27	[+11]	—	—	76·1	—
Granada		136·6	322	i 19 15	[− 2]	—	—	—	—
Huancayo		136·9	114	i 22 52	PKS	e 40 12	SS	63·9	—
Malaga		137·4	322	e 23 7	PKS	—	—	—	—
San Fernando		138·6	323	e 19 59	[+39]	e 27 5	PPPP	67·7	—
La Paz		141·2	125	i 19 18k	[− 5]	—	—	68·7	78·3
San Juan		147·2	63	i 19 34	[− 4]	—	—	e 68·7	—
Rio de Janeiro		151·1	166	e 19 41	[− 2]	—	—	—	—

Additional readings and note :—
Manila iE = +8m.23s.
Adelaide i = +6m.41s., +6m.55s., +7m.8s. = PP +6s., +11m.44s., and +12m.51.
Melbourne PP = +7m.58s., i = +14m.10s.
Batavia eE = +8m.43s. = PPP −2s.
Perth PP = +8m.41s., PPP = +9m.11s., PPPP = +9m.41s. = P_cP +6s., SS = +15m.36s., SSS = +16m.31s.
Hong Kong PPP = +9m.20s., ? = +13m.52s., SS = +16m.38s., SSS = +17m.20s.
Sumoto SZ = +13m.38s.
Kobe eZ = +7m.47s., eE = +14m.2s. and +16m.37s.
Arapuni SS = +18m.17s. = SSS +6s.
Nanking iP = +8m.21s., i = +15m.3s.
Wellington PP = +10m.10s., PPP? = +10m.45s., SS = +18m.25s., S_cS? = +18m.57s.
Medan SE = +15m.12s., SN? = +15m.36s.
Chiufeng iP = +9m.18s., PPEZ = +11m.3s., PPPE = +12m.4s., iN = +16m.37s., iEN = +19m.18s., SSE = +19m.34s.
Honolulu iP_cP = +10m.47s.
Colombo P has been *increased* by 10m.
Agra ePP = +13m.53s., PSE = +21m.2s., SSE? = +24m.43s.

Continued on next page.

College eSS = +28m.21s.
Sitka eS = +23m.21s., eSS = +28m.56s., e = +35m.41s.
Sverdlovsk i = +13m.17s. and +13m.31s., iPP = +16m.56s., SKS = +23m.23s., i = +24m.20s., PPS = +25m.5s., SS = +29m.59s., SSS = +33m.29s., SSSS = +36m.23s.
Baku PP = +17m.38s., e = +27m.6s.
Tinemaha iZ = +14m.2s., eN = +17m.59s.
Pasadena iE = +13m.53s., iENZ = +14m.1s., iE = +27m.49s.
Mount Wilson iZ = +14m.1s.
Riverside eZ = +14m.4s. and +17m.17s. = PP − 22s.
Tiflis ePP = +17m.54s., e = +26m.45s. = PS − 5s. and +33m.41s.
Moscow ePP = +18m.13s., ePPP = +20m.30s., e = +20m.43s. and +23m.4s., eSKKS = +25m.0s., PS = +27m.12s.
Bozeman ePP = +18m.25s., eSKKS = +25m.0s., eSSS = +37m.41s.
Tucson iPP = +18m.34s., e = +24m.9s., ePS = +27m.25s., eSS = +33m.11s.
Pulkovo PP = +18m.46s., SKS = +24m.39s., ePS = +27m.52s., SS = +33m.17s., L_q = +47m.41s.?
Ksara PP = +18m.49s., PPP = +21m.18s., PPS = +29m.8s.
Scoresby Sund PS = +28m.41s., SS = +34m.41s.?
Cape Town PPE = +19m.48s., PSN = +29m.11s., PSE = +29m.21s., SSEN = +36m.33s., SSSN = +39m.56s., SSSE = +40m.3s.
Copenhagen PS = +29m.23s., SS = +35m.35s.
Madison e = +29m.53s. = PS − 2s. and +36m.19s. = SS − 2s.
Florissant eE = +25m.35s. = SKS − 16s., +29m.53s. = SKSP − 2s. and +31m.17s., eEN = +36m.27s.
Chicago ePP = +20m.25s., ePS = +30m.3s., e = +35m.10s., eSS = +36m.41s.
Triest i = +20m.54s. and +28m.39s., e = +37m.10s., +47m.10s., and +47m.53s.
De Bilt iZ = +23m.17s.
Stuttgart ePP = +20m.23s., i = +20m.42s., ePPP = +23m.5s., eSS = +36m.47s.
Edinburgh e = +57m.41s.?
Strasbourg eSKP = +21m.41s.?
Ann Arbor e?N = +46m.11s.
Uccle e = +23m.26s. and +37m.9s. = SS − 7s.
Kew eE = +51m.33s.
Toronto e = +13m.26s. and +20m.56s. = PP + 10s.
Paris PP = +23m.44s.
Ottawa e = +13m.17s. and +21m.5s. = PP + 11s.
Vermont ePP = +21m.16s., ePS = +31m.20s., eSS = +38m.6s.
Philadelphia e = +16m.23s., iPP = +21m.23s., iPKS = +22m.41s., ePS = +31m.3s. = SKSP − 10s., e = +33m.2s., eSS = +38m.29s.
Oak Ridge eN = +22m.42s. = PKS + 5s., eZ = +22m.54s.
Almeria iPP = +23m.1s. = PKS + 3s.
Granada PP = +22m.12s.
Huancayo iPP = +21m.59s., e = +34m.16s., eSSS = +45m.51s., e = +54m.49s., and +63m.34s.
Malaga e = +23m.21s. = PKS + 19s., +35m.1s., and +51m.53s.
San Fernando ePP = +23m.1s. = PKS − 4s., eSS = +43m.20s.
La Paz iPPZ = +22m.41s., SSE = +42m.41s.
San Juan iPKP$_2$ = +19m.44s., i = +21m.4s., ePP = +22m.26s., e = +36m.51s. and +38m.25s., eSS = +41m.41s.
Long waves at Bergen, Ivigtut, Durham, Stonyhurst, Göttingen, Graz, Jena, Vienna, Upsala, and Tananariye.

Feb. 21d. Readings also at 0h. (Apia and Basle), 1h. (Phu-Lien and Medan), 4h. (Amboina and near Andijan), 5h. (Nagoya and Wellington), 7h. (La Paz), 8h. (Chur, Neuchatel, Zurich, and Stuttgart), 9h. (Wellington and Malaga), 11h. (Agra, Bombay, Calcutta, Hyderabad, Chiufeng, Tashkent, and Sverdlovsk), 15h. (Sverdlovsk, Tashkent, Wellington, Copenhagen, Pulkovo, Hong Kong, Chiufeng, Nanking, Phu-Lien, near Taihoku, and near Lick), 16h. (Andijan, Frunse, Samarkand, College, Sitka, Pasadena, Riverside, Mount Wilson, Tinemaha, and near Santiago), 17h. (near Ebingen, Stuttgart, and Zurich), 19h. (Sitka, Calcutta, Bombay, Agra, and near Mizusawa), 21h. (near Malabar), 22h. (Haiwee, Mount Wilson, Pasadena, Riverside, Tinemaha, Frunse (2), Samarkand, and near Andijan), 23h. (Andijan, Samarkand, Tashkent, Sverdlovsk, Ksara, Baku, Erevan, Piatigorsk, and near Tiflis).

Feb. 22d. 15h. 32m. 3s. Epicentre 49°·0S. 164°·4E. N.1.

$A = -\cdot6319$, $B = +\cdot1764$, $C = -\cdot7547$; $\delta = -1$;
$D = +\cdot269$, $E = +\cdot963$; $G = +\cdot727$, $H = -\cdot203$, $K = -\cdot656$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Monowai		3·9	35	e 0 57?	+ 1	2 7	S_g	2·8	—
Christchurch		7·9	49	1 58	+ 6	4 57?	?	—	—
Wellington		10·6	47	2 29	0	5 7	S*	5·9	6·9
Arapuni		13·6	41	3 3	− 7	6 21	+40	7·0	8·0
Chatham Ils.		14·0	76	2 27	−48	5 57	+ 6	7·5	9·0
Melbourne		17·9	301	e 4 4	− 1	7 29	+ 7	9·4	9·9
Riverview	E.	18·1	322	i 4 14	+ 6	i 7 38	SS	e 8·8	9·8
	N.	18·1	322	e 4 11	+ 3	i 7 35	SS	—	10·7
Sydney		18·1	322	i 4 17	PP	i 7 42	SS	9·4	10·6
Adelaide		23·6	297	i 5 13	+ 7	i 9 29	+13	i 11·1	14·5
Perth		39·8	278	7 32	+ 2	13 37	+ 4	19·9	—
Apia		40·3	40	i 7 37	+ 2	e 13 51	+10	e 20·9	—
Amboina		54·8	315	i 9 22	− 5	16 41	−25	e 21·0	—
Batavia		64·5	292	10 19	−16	i 19 12	− 2	e 32·9	—
Manila		73·9	317	11 30a	− 4	21 11	+ 4	—	—
Medan		77·2	292	e 11 40	−13	21 38	− 7	e 36·9	—
Honolulu		77·9	37	e 11 57	0	e 21 57	+ 4	e 38·9	—
Hong Kong		84·2	315	12 31	+ 2	22 50	[− 3]	41·1	47·8
Phu-Lien		86·6	308	e 12 41	0	e 23 11	[0]	36·9	—
Hamamatu		87·0	340	12 46	+ 3	—	—	—	—
Wakayama		87·2	338	12 42	− 2	—	—	—	—
Yokohama		87·3	340	12 57?	+12	—	—	—	—
Sumoto	E.	87·4	338	e 12 38	− 7	e 23 25	− 6	e 35·9	—
	N.	87·4	338	e 12 35	−10	e 23 13	[− 3]	e 35·9	—
	Z.	87·4	338	e 12 41	− 4	—	—	—	—
Kameyama		87·5	338	12 43	− 2	—	—	—	—
Nagoya		87·6	339	e 12 46	0	e 18 43	?	—	—
Kohu		87·7	340	12 53	+ 7	—	—	—	—
La Plata		88·0	147	12 48	0	23 15	[− 5]	41·3	—
Mito		88·0	341	12 52	+ 4	—	—	—	—
Simonoseki		88·1	333	12 39	− 9	—	—	—	—
Oiwake		88·4	339	12 58	+ 8	—	—	—	—
Toyooka	E.	88·5	337	12 50	0	23 39	− 3	—	—
	N.	88·5	337	12 51	+ 1	23 46	+ 4	—	—
Zikawei	Z.	88·9	325	e 12 52	0	i 23 44	− 2	45·6	48·6
Toyama		89·0	339	12 55	+ 2	—	—	—	—
Mizusawa	E.	90·5	343	e 13 0	0	e 19 14	?	—	—
	N.	90·5	343	12 46	−14	19 36	?	23·7	—
Nanking		90·7	323	e 12 59	− 2	23 57	− 6	—	—
Morioka		91·0	343	13 6	+ 4	—	—	—	—
Colombo		91·6	277	13 15	+10	23 37	[− 5]	42·6	47·3
Cape Town		91·7	208	13 33	+28	23 40	[− 3]	42·9	44·4
Tananarive		92·0	238	—	—	23 44	[0]	42·6	47·9
Kodaikanal	E.	95·7	279	e 13 25	+ 1	i 24 4	[0]	44·3	48·9
Vladivostok		96·4	337	e 12 26	−61	—	—	—	67·1
Calcutta	E.	98·3	296	13 53	+17	25 0	−12	45·1	57·0
Chiufeng		98·7	325	e 13 38k	0	—	—	—	—
Sucre		98·9	134	i 13 44	+ 6	i 25 24	+ 7	46·9	—
Huancayo		99·5	121	e 13 49	+ 8	i 24 20	[− 3]	i 47·1	—
La Paz	Z.	99·7	130	13 49	+ 7	i 25 52	+28	46·9	74·9
Hyderabad		100·5	285	14 6	+20	24 21	[− 7]	40·3	54·3
Rio de Janeiro		104·0	154	e 18 30	PP	—	—	—	—
Bombay		105·2	282	e 14 30	+22	24 52	[+ 1]	42·9	52·6
Pasadena		107·8	54	e 15 30	?	i 24 39	[−24]	e 58·9	—
Agra	E.	107·9	291	e 14 28	+ 7	24 52	[−12]	48·1	60·3
Riverside	Z.	108·1	54	—	—	e 23 33	?	—	—
Ukiah		108·8	52	—	—	28 25	?	e 49·0	—
Dehra Dun		110·2	294	22 57	PPPP	33 47	SS	51·6	56·9
Tucson		110·6	64	—	—	25 15	[− 1]	e 50·6	—
Victoria	N.	115·4	45	e 20 27	?	—	—	e 55·0	66·8

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sitka		117·2	32	—	—	i 25 38	[− 3]	e 47·4	—
College		119·7	21	—	—	e 25 41	[− 8]	e 47·4	—
Bozeman		119·8	53	—	—	e 25 45	[− 5]	e 62·5	—
Andijan		120·7	298	18 43	[− 4]	—	—	52·9	—
Frunse		120·9	301	e 18 57	[+ 9]	—	—	49·9	—
Tashkent		122·8	297	18 50	[− 2]	—	—	48·8	70·1
Samarkand		123·2	294	e 19 12	[+19]	—	—	57·9	—
Tchimkent		123·3	298	e 20 51	PP	—	—	—	—
Little Rock		123·6	75	—	—	e 26 2	[+ 1]	e 58·7	63·3
Florissant		127·4	72	e 19 5	[+ 3]	i 28 3	{− 2}	e 59·4	64·2
St. Louis	N.	127·4	72	—	—	e 27 47	{−18}	e 58·5	63·9
San Juan		129·3	109	i 22 33	PKS	i 31 43	PS	e 62·5	—
Columbia		130·4	82	i 22 30	PKS	e 29 21	{+57}	e 62·9	—
Madison		130·5	67	e 22 30	PKS	e 28 21	{− 4}	e 45·6	—
Chicago		130·8	70	e 21 28	PP	e 39 0	SS	61·2	—
Ann Arbor		133·5	72	i 22 45	PKS	e 32 9	PS	e 57·7	72·2
Baku		134·1	285	19 18	[+ 4]	—	—	59·9	73·4
Charlottesville		134·4	80	e 21 52	PP	—	—	e 62·7	—
Sverdlovsk		135·8	310	e 19 20	[+ 4]	28 49	{− 9}	62·1	79·7
Toronto		136·9	72	—	—	i 41 20	SS	58·9	—
Erevan		137·5	282	e 19 11	[− 7]	—	—	—	—
Philadelphia		137·7	79	e 22 38	PKS	e 26 36	SKS	e 60·6	—
Tiflis		138·1	284	e 19 32	[+13]	e 29 9	{− 3}	61·9	78·1
Ithaca		138·2	75	e 22 57	PKS	—	—	58·0	—
Grozny		138·3	286	e 19 55	[+36]	i 23 27	PKS	e 67·9	—
Ksara		139·4	267	19 22	[+ 1]	32 35	SKSP	64·9	73·6
Helwan		139·8	259	e 18 25	[−56]	—	—	66·1	77·6
Ottawa		140·1	72	19 21	[− 1]	29 17	{− 7}	58·9	—
Vermont		141·2	75	e 22 1	PP	—	—	70·6	—
Oak Ridge		141·3	79	e 19 25	[+ 2]	e 32 44	SKSP	e 66·9	—
Dakar		145·6	177	i 19 26	[− 9]	i 33 52	SKSP	e 70·9	77·5
Theodosia		145·7	283	e 19 36	[+ 1]	e 25 31	PPP	41·9	—
Yalta		146·2	281	e 19 38	[+ 2]	e 25 33	PPP	—	—
Simferopol		146·4	282	e 19 38	[+ 2]	e 25 34	PPP	—	—
Sebastopol		146·7	281	e 19 39	[+ 2]	e 25 36	PPP	—	—
Moscow		147·7	302	19 39	[+ 1]	29 59	{−10}	67·9	82·7
Bucharest		151·4	278	e 20 3	[+19]	e 26 27	PPP	—	73·9
Pulkovo		151·9	310	19 49	[+ 5]	26 47	SKS	69·4	87·6
Belgrade		155·3	273	e 19 58a	[+10]	—	—	e 90·0	—
Budapest		156·1	279	20 9	{−17}	—	—	83·9	—
Königsberg		157·3	299	e 26 14	?	—	—	e 58·1	84·5
Ivigtut		158·1	45	19 51	[− 1]	30 57	{−11}	75·9	—
Upsala		158·2	312	e 20 38	{+ 2}	—	—	e 65·9	111·1
Scoresby Sund		158·3	7	19 55	[+ 3]	26 9	?	69·9	—
Zagreb		158·5	273	e 19 58	[+ 6]	—	—	—	—
Vienna		159·0	280	e 20 25	{−15}	—	—	e 76·9	—
Graz		159·3	275	i 20 30	{−11}	i 29 51	?	e 75·9	86·6
Triest		159·9	271	e 19 47	[− 6]	25 14	?	75·4	88·8
Prague		160·6	285	e 20 45	{− 2}	e 44 27	SS	64·9	82·9
Florence		160·9	264	e 19 53	[− 1]	31 57	{+34}	—	81·4
Padova		161·1	269	e 20 0	[+ 5]	32 57	{+93}	—	—
Algiers		161·8	235	e 20 4	[+ 9]	35 39	SKSP	73·9	85·9
Copenhagen		161·8	302	19 57	[+ 2]	30 43	{−46}	69·9	—
Cheb		161·9	284	e 20 7	[+11]	e 31 20	{− 9}	e 77·9	109·9
Jena		162·5	287	e 20 46	{− 9}	—	—	e 67·9	89·5
Hamburg		163·5	296	e 19 57	[0]	—	—	e 71·9	85·9
Bergen		163·5	322	e 20 6	[+ 9]	—	—	76·1	108·9
Göttingen		163·6	289	e 20 3	[+ 6]	—	—	e 77·9	101·2
Stuttgart		163·8	279	e 19 57	[− 1]	e 27 28	?	e 79·9	101·9
Zurich		163·9	273	e 20 54	{− 8}	—	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Karlsruhe		164·3	279	20 29	[+31]	39 16	?	e 88·0	—
Almeria		164·6	223	e 20 10	[+11]	31 36	{− 7}	81·8	91·6
Basle		164·6	273	e 20 52	{−13}	—	—	—	—
Strasbourg		164·7	277	i 19 56k	[− 3]	i 35 6	SKSP	e 67·9	102·8
Neuchatel		164·8	271	e 20 51	{−15}	—	—	—	—
Malaga		165·3	218	20 0	[+ 1]	—	—	78·5	—
Granada		165·3	221	i 20 4	[+ 5]	—	—	—	—
San Fernando		165·7	212	e 20 3	[+ 3]	30 46	{−63}	73·4	90·9
Tortosa	N.	166·0	240	e 20 15	[+15]	e 37 57	?	e 76·9	91·0
De Bilt		166·5	291	i 20 4	[+ 3]	i 31 32	{−21}	e 78·9	106·7
Uccle		167·1	286	e 20 1	[0]	i 31 28	{−29}	e 67·9	101·4
Paris		168·1	276	i 20 3	[+ 1]	—	—	79·9	93·9
Durham		169·7	309	—	—	i 35 43	SKSP	—	99·9
Edinburgh		169·8	317	e 19 57?	[− 7]	i 33 15	{+64}	e 70·9	113·3
Kew		170·0	290	i 20 5	[+ 1]	i 31 59	{−13}	78·9	103·5
Oxford		170·5	293	e 21 27	{− 5}	32 7	{− 8}	e 77·4	99·7
Stonyhurst		170·5	306	e 21 28	{− 4}	i 32 5	{−10}	72·9	112·6
Bidston		171·0	304	i 21 35	{+ 1}	i 31 57	{−20}	69·1	100·9
Rathfarnham Castle		172·8	310	19 32	[−33]	e 26 44	SKS	—	—

Additional readings :—
Monowai i = +1m.27s.
Christchurch i = +3m.30s.
Wellington PP? = +3m.9s., i = +4m.12s.
Melbourne iP = +4m.10s. =PP −3s.
Riverview iE = +4m.17s., iN = +4m.21s.
Adelaide i = +5m.37s. =PP +6s., +6m.40s., +7m.16s., +9m.4s., and +10m.40s.
Perth PP = +9m.2s., PPP = +9m.39s. =P_cP −2s., PPPP = +10m.12s., P_cS = +12m.57s., PS = +13m.49s., SS = +16m.37s., SSS = +17m.32s. =S_cS −8s.
Apia ePP = +8m.54s., eSS = +15m.58s. ; T_o =15h.31m.56s.
Hong Kong PP = +15m.37s., PPP = +17m.50s., SS = +28m.8s., SSS =+34m.22s.
Sumoto eZ = +16m.13s. =PP +8s. and +18m.29s.
Zi-ka-wei iZ = +13m.4s. and +29m.39s. =SS +15s.
Nanking eNZ = +16m.36s. =PP +5s.
Cape Town PP = +16m.48s., E = +22m.33s., N = +22m.43s., SKKSN = +24m.6s., SKKSE = +24m.15s. =S +3s., +26m.11s., +26m.16s., SSN = +29m.33s., +29m.48s., and +30m.33s.
Tananarive E = +15m.23s., SKSE = +23m.49s. =SKKS −2s., SSE = +30m.23s., SSN = +30m.29s.
Kodaikanal SSE = +30m.52s., SSSE = +34m.20s.
Vladivostok PP = +16m.14s.
Calcutta SKSE = +24m.16s., PSE = +26m.3s., SSE = +31m.26s.
Sucre iSKS = +24m.19s., SS = +32m.22s.
Huancayo ePP = +17m.47s., i = +26m.53s. =PS +13s., eSS = +32m.23s., i = +41m.52s.
La Paz iPZ = +13m.57s., iPPZ = +17m.52s., iSKS = +24m.28s. and +24m.38s. =SKKS −13s., iSN = +25m.42s., PSZ = +26m.56s., SSZ = +33m.28s.
Bombay PPEN = +18m.36s., PSEN = +27m.52s., SSEN = +33m.27s., SSSEN = +37m.28s.
Pasadena ePKPZ = +18m.1s., iPPZ = +18m.46s., iE = +24m.59s. =SKS −5s. and +26m.22s., iPSZ = +27m.11s., iS_cSPN = +28m.14s. =PS +8s., iPPSN = +28m.47s., iPKKPZ = +29m.54s., eSSN = +33m.35s.
Agra ePPE = +18m.42s., PPSE = +27m.58s. =PS −9s., SSE? = +32m.44s.
Tucson ePP = +19m.9s., e = +23m.41s., ePS = +28m.43s., eSS = +34m.37s., eSSS = +38m.45s., e = +45m.13s.
Sitka ePP = +19m.45s. and +19m.53s., eSKKS = +26m.43s., iPS = +29m.39s., e = +33m.27s. and +34m.14s.
College ePP = +20m.9s., ePS = +29m.42s.
Bozeman ePP = +19m.13s., e = +20m.35s. and +30m.15s., eSSS = +41m.15s., e = +44m.45s.
Tashkent PP = +20m.19s., PKS = +20m.39s., PPP = +23m.4s., PS = +30m.18s., SS = +36m.51s., SSS = +41m.33s.
Samarkand e = +25m.12s.
Little Rock ePPE = +20m.36s., eE = +31m.34s., +34m.34s., and +38m.40s.
Florissant iEZ = +21m.1s. =PP +1s., eZ = +21m.23s., iZ = +21m.38s., iEN = +31m.3s. =PS −6s., iN = +32m.18s., eN = +38m.21s. =SS +14s., eE = +38m.53s. and +46m.38s.
St. Louis ePPEN = +21m.4s., ePSN = +30m.57s., eSSN = +38m.3s., eN = +41m.2s.
San Juan ePP = +21m.13s., iSS = +38m.39s., e = +53m.3s. and +62m.18s.

Continued on next page.

Columbia ePP = +21m.47s.
Madison e = +31m.37s.
Ann Arbor eE = +24m.15s. =PPP −11s., iE = +34m.15s., eN = +35m.3s., +42m.3s., and +44m.9s.
Baku e = +22m.46s. =PKS −4s., +40m.16s., and +45m.31s.
Charlottesville iPPP = +22m.49s. =PKS −3s., eSS = +39m.41s.
Sverdlovsk PP = +22m.12s., PKS = +22m.57s., iPPP = +25m.9s., PPS = +34m.9s., SS = +39m.45s., SSS = +44m.39s.
Philadelphia ePP = +22m.13s., e = +29m.23s. =SKKS +13s. and +35m.18s., eSS = +40m.6s., e = +57m.27s.
Tiflis e = +22m.19s. =PP +9s., +23m.10s. =PKS +6s., +32m.26s. = SKSP +12s. and +40m.27s. =SS +8s.
Ksara PP = +22m.30s., PPS = +36m.49s.
Helwan e = +23m.4s. =PKS −4s. and +23m.17s.
Ottawa PP = +22m.25s., SKP = +23m.1s., SS = +41m.13s.
Vermont eSS = +40m.27s., eSSS = +48m.37s., e = +58m.57s.
Oak Ridge iZ = +22m.52s., eE = +22m.57s., ePPPZ = +26m.14s., eE = +26m.27s., eZ = +30m.41s. and +34m.41s., e = +36m.29s., SS = +42m.21s., eE = +46m.41s., eZ = +50m.3s., +54m.52s., and +64m.37s.
Dakar iPP = +23m.39s. =PKS +18s., eSKS = +26m.32s., ePPS = +37m.4s., SS = +43m.10s.
Moscow PP = +23m.18s., SKSP = +33m.24s., SS = +42m.9s.
Bucharest iEN = +20m.28s. =PKP_2 +23s.
Pulkovo PKS = +22m.16s., PP = +23m.35s., SKKS = +30m.25s., SS = +42m.45s., SSS = +45m.33s.
Belgrade i = +20m.16s. =PKP_2 −7s., e = +23m.12s. =PKS −20s.
Königsberg eE = +26m.51s., iE = +27m.53s., eE = +33m.6s., eN = +50m.38s.
Ivigtut PP = +23m.57s., SKSP = +34m.15s., eE = +36m.3s., PPS = +37m.33s.
Scoresby Sund PKP_2 = +20m.33s., PP = +24m.10s., PPP = +27m.55s., SKKS = +30m.45s., e = +33m.7s., SKSP = +34m.27s., PPS = +37m.21s., e = +39m.21s., SS = +43m.57s.?
Zagreb e = +20m.38s. =PKP_2 +1s., +25m.36s., +36m.13s., +44m.2s. = SS −13s. and +50m.21s.
Vienna e = +24m.16s. =PP +6s.
Graz iPPP = +24m.39s. =PP +27s.
Triest PKP_2 = +20m.26s., i = +20m.40s., iPP = +24m.3s., i = +24m.25s., +24m.58s., +25m.36s., and +27m.16s., iPPP = +27m.49s. and +28m.14s., iSKKS = +31m.8s., i = +32m.17s., iPSKS = +34m.23s., iPSKS = +35m.8s., i = +35m.55s., iPPS = +37m.54s., i = +41m.2s., iSSN = +44m.14s., iE = +45m.27s., iSSS = +51m.5s., e = +64m.11s.
Prague e = +50m.57s.?
Algiers iPKP_2? = +20m.53s., PP = +24m.41s.
Copenhagen PKP_2 = +20m.47s., PP = +24m.28s., PPP = +28m.27s., eE = +31m.33s. =SKKS +4s., +32m.9s., +33m.9s., SKSP = +34m.21s., PPS = +38m.27s., SS = +44m.45s., SSS = +51m.33s.
Cheb e = +44m.57s. =SS +5s.
Jena eEN = +25m.8s.
Hamburg eZ = +24m.49s. =PP +15s., eE = +31m.3s. and +45m.28s. =SS +19s.
Göttingen eZ = +20m.51s. =PKP_2 −9s., eEN = +20m.57s.?, eEN = +44m.57s.?, iEN = +52m.1s.
Stuttgart e = +21m.2s. =PKP_2 +1s. and +22m.4s., ePKS = +23m.51s., ePP = +24m.27s., iPP = +24m.46s., iSSN = +45m.5s., eSSS = +51m.3s.
Zurich e = +24m.46s. =PP +10s.
Almeria eSS = +45m.20s.
Strasbourg iPKP_2 = +20m.58s., SKP = +23m.25s., iPP = +24m.47s., i = +25m.56s., iPPP = +28m.39s., i = +36m.39s., iSS = +45m.7s., iSSS = +51m.39s.
Malaga PKP_2 = +21m.6s., PP = +24m.46s., PPP = +28m.46s., SS = +45m.10s.
Granada PP = +24m.46s.
San Fernando iSS = +45m.36s., iSSS = +51m.28s.
Uccle ePKP_2 = +21m.10s., PP = +25m.5s., iSKPS = +35m.31s., iSS = +45m.41s., iE = +46m.53s., iSSSE = +52m.45s.
Paris iPKP_2 = +21m.18s., PP = +24m.57s., eSS = +45m.53s.
Durham e = +25m.5s. =PP +0s., i = +39m.35s., +46m.14s. =SS +2s. and +46m.37s.
Edinburgh i = +44m.13s. and +47m.7s.
Kew iPKP_2EZ = +21m.31s., eSKSPE = +35m.42s., iE = +47m.37s., iN = +47m.41s., iE = +51m.0s., iSSSEN = +53m.12s.
Oxford i = +25m.39s., +32m.48s., and +37m.39s.
Stonyhurst ePP = +25m.25s., e = +35m.43s. =SKSP −1s., i = +39m.8s., e = +45m.58s. =SS −22s. and +53m.28s.
Bidston i = +46m.23s. =SS −2s. and +52m.17s.
Rathfarnham Castle e = +23m.17s.
Long waves at Santiago, Piatigorsk, Sotchi, and Barcelona.

Feb. 22d. 19h. 22m. 53s. Epicentre 49°·0S. 164°·4E. (as at 15h.). R.3.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Monowai		3·9	35	1 7?	P*	—	—	—	—
Christchurch		7·9	49	2 42	P_g	4 28	S_g	—	—
Wellington		10·6	47	2 32	+ 3	5 21	S*	6·3	—
Arapuni		13·6	41	—	—	6 11	+30	7·1	—
Chatham Ils.		14·0	76	e 5 7?	S	7 27	S_g	8·7	9·1
Melbourne		17·9	301	4 4	− 1	7 33	+11	8·5	9·0
Riverview	E.	18·1	322	i 4 14	+ 6	i 7 42	+15	e 8·3	—
	N.	18·1	322	e 4 10	+ 2	e 7 41	+14	—	—
Sydney		18·1	322	e 4 7	− 1	i 7 35	+ 8	8·5	16·5
Adelaide		23·6	297	i 5 10	+ 4	i 9 45	SS	i 11·5	12·5
Perth		39·8	278	7 27	− 3	13 42	+ 9	20·9	21·1
Amboina		54·8	315	9 13	−14	17 18	+12	e 20·1	—
Batavia	Z.	64·5	292	10 25	−10	—	—	—	—
Manila		73·9	317	11 34	0	21 2	− 5	23·9	40·5
Medan		77·2	292	e 11 25	−28	e 20 40	−65	—	—
Hong Kong		84·2	315	12 36	+ 7	22 57	− 3	—	51·3
Phu-Lien		86·6	308	e 12 45	+ 4	23 7?	[− 4]	—	—
Nagoya		87·6	339	—	—	e 22 10	[−67]	—	—
Nanking		90·7	323	—	—	i 23 37	[0]	—	—
Colombo		91·6	277	23 27	S	(23 27)	[−15]	—	47·3
Cape Town		91·7	208	—	—	24 3	[+20]	61·1	66·1
Vladivostok		96·4	337	e 13 25	− 2	—	—	—	59·8
Calcutta	E.	98·3	279	e 13 51	+15	24 14	[− 3]	44·5	—
Chiufeng		98·7	325	13 46k	+ 8	e 24 22	[+ 3]	49·2	54·8
Huancayo		99·5	121	e 17 55	PP	e 24 12	[−11]	e 46·5	—
La Paz		99·7	130	—	—	i 25 30	+ 6	47·1	57·6
Rio de Janeiro		104·0	154	—	—	e 23 37	[−68]	—	—
Bombay		105·2	282	e 18 31	PP	i 24 52	[+ 1]	—	62·8
Pasadena		107·8	54	—	—	i 26 13	{+22}	e 55·5	—
Agra	E.	107·9	291	e 18 38	[+28]	24 52	[−12]	—	64·0
Tucson		110·6	64	—	—	e 25 13	[− 3]	e 50·2	—
Sitka		117·2	32	—	—	e 29 42	PS	e 55·1	—
Tashkent		122·8	297	20 22	PP	27 30	{− 5}	56·0	70·3
Florissant		127·4	72	e 21 9	PP	e 28 5	{ 0}	—	62·1
San Juan		129·3	109	e 22 3	PKS	—	—	e 69·0	—
Chicago		130·8	70	—	—	e 39 3	SS	63·0	—
Baku		134·1	285	19 28	[+14]	—	—	67·1	78·2
Sverdlovsk		135·8	310	i 19 27	[+11]	31 49	SKSP	65·3	80·5
Toronto		136·9	72	e 22 36	PKS	e 29 21	{+16}	65·6	—
Philadelphia		137·7	79	—	—	e 36 22	?	e 69·1	—
Tiflis		138·1	284	e 19 27	[+ 8]	—	—	e 70·1	—
Ksara		139·4	267	19 29	[+ 8]	32 59	PS	65·1	—
Helwan		139·8	259	e 22 19	PP	—	—	—	—
Ottawa		140·1	72	e 22 25	PP	e 29 19	{− 5}	68·1	—
Vermont		141·2	75	—	—	e 28 13	{−78}	e 72·4	—
Theodosia		145·7	283	e 18 57	[−38]	—	—	—	—
Yalta		146·2	281	e 19 0	[−36]	e 26 50	SKS	—	—
Simferopol		146·4	282	e 19 44	[+ 8]	—	—	—	—
Moscow		147·7	302	19 41	[+ 3]	27 0	SKS	e 67·6	86·9
Pulkovo		151·9	310	19 51	[+ 7]	33 57	SKSP	78·1	87·4
Scoresby Sund		158·3	7	20 31	{− 5}	31 31	{+22}	—	—
Triest		159·9	271	e 22 56	?	31 9	{− 9}	—	83·6
Prague		160·6	285	—	—	e 33 19	?	e 88·6	107·1
Copenhagen		161·8	302	21 1	{+ 9}	30 55	{−34}	79·1	—
Cheb		161·9	284	e 20 12	[+16]	e 31 23	{ − 6}	92·1	109·6
Hamburg		163·5	296	e 24 44	PP	e 31 31	{− 6}	e 95·1	—
Stuttgart		163·8	279	e 20 7	[+ 9]	e 28 29	PPP	e 82·1	—
Almeria		164·6	223	—	—	e 35 26	SKSP	e 105·0	—
Strasbourg		164·7	277	e 20 7?	[+ 8]	—	—	e 67·1	—
Malaga		165·3	218	—	—	(e 35 7?)	SKSP	e 35·1	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Granada		165·3	221	i 20 10	[+11]	—	—	—	—
San Fernando		165·7	212	—	—	e 35 28	SKSP	81·6	—
De Bilt		166·5	291	e 20 15	[+14]	—	—	e 78·1	122·1
Uccle	E.	167·1	286	—	—	e 31 37	{−20}	e 70·1	—
Paris		168·1	276	e 20 7?	[+ 5]	—	—	88·1	113·1
Edinburgh		169·8	317	e 25 7?	PP	—	—	e 89·1	—
Kew		170·0	290	e 20 19	[+15]	e 31 48	{−24}	e 87·1	102·1
Oxford		170·5	293	—	—	e 30 11	?	e 87·1	109·3
Stonyhurst		170·5	306	—	—	e 32 7?	{− 8}	e 90·1	—

Additional readings :—
Christchurch i = +32m.42s.
Wellington PP? = +3m.17s.
Adelaide i = +5m.24s. = PP −7s., +7m.58s., e = +9m.23s., i = +10m.15s. and +10m.52s.
Perth PP = +9m.7s., PcS = +13m.7s., PS = +13m.57s., SS = +18m.2s., SSS = +19m.23s., SSSS = +19m.57s.
Hong Kong PP = +15m.46s., SS = +28m.14s.
Cape Town +25m.23s. = PS +12s., +29m.28s., +29m.46s., N = +37m.58s., E = +36m.41s., E = +42m.58s.
Chiufeng PPZ = +17m.43s., PSZ = +26m.34s., SSZ = +31m.43s.
Huancayo ePPP = +18m.53s., e = +20m.8s., +26m.24s. = PS −16s., +32m.7s., and +39m.35s.
La Paz PPZ = +18m.26s., SKS = +24m.28s., PSE = +27m.14s., iSSE = +33m.58s.
Bombay iEN = +27m.42s. = PS +2s.
Pasadena iZ = +27m.13s.
Agra PPSE = +28m.2s.
Tucson e = +28m.43s. = PS +10s., eSSS = +35m.50s.
Sitka eSS = +33m.57s., e = +35m.55s., and +50m.37s.
Tashkent PKS = +22m.10s., PS = +30m.16s., PPS = +31m.56s., SS = +36m.31s., SSS = +44m.1s.
Florissant eE = +22m.5s., eZ = +24m.5s., eE = +31m.5s., +31m.42s., and +38m.25s.
San Juan e = +23m.58s. and +40m.56s., eSSS = +50m.53s., e = +60m.48s.
Chicago e = +51m.30s.
Baku PKS = +22m.53s., e = +30m.11s.
Sverdlovsk i = +19m.51s. and +30m.17s., PPS = +33m.59s., SS = +38m.49s., SSS = +45m.1s.
Philadelphia eSS = +39m.36s., e = +65m.42s.
Tiflis e = +22m.49s., +24m.51s., and +38m.7s.?
Helwan e = +23m.10s. = PKS +2s.
Ottawa e = +36m.37s.
Moscow SKKS = +29m.58s., SKSP = +33m.25s., SS = +42m.1s., SSS = +49m.31s.
Pulkovo PP = +23m.58s., PPP = +27m.19s., PPS = +37m.53s., SS = +42m.55s.
Scoresby Sund e = +34m.19s. = SKSP −14s.
Triest ePP = +24m.11s., i = +25m.12s., e = +32m.23s., and +34m.38s. = SKSP −5s., i = +37m.40s., SS = +44m.23s., eE = +45m.7s., e = +49m.40s., i = +52m.36s.
Copenhagen PP = +24m.37s., PPP = +28m.19s., e = +31m.55s., PPS = +37m.49s., SS = +44m.49s., SSS = +51m.7s.
Strasbourg iPP = +24m.37s.
Granada PP = +24m.54s.
San Fernando ePP = +26m.47s., ePPP = +29m.18s.
Paris e = +25m.1s. = PP +4s.
Kew eZ = +27m.13s.
Long waves at Hyderabad, La Plata, Ann Arbor, Ukiah, Madison, Bozeman, Ivigtut, Upsala, Jena, and Algiers.

Feb. 22d. Readings also at 0h. (near Amboina), 2h. (near Nagoya), 3h. (Nagoya, near Kobe and Sumoto), 5h. (near Amboina), 7h. (College, Pasadena, Riverside, Mount Wilson, and Sitka), 8h. (near Osaka), 9h. (near La Paz), 10h. (near Taihoku), 11h. (Batavia and near Amboina), 12h. (Oak Ridge, Pasadena, Riverside, Mount Wilson, Tinemaha, Haiwee, Riverview, and Malabar), 15h. (Christchurch and Monowai), 18h. (Phu-Lien), 19h. (Arapuni, Chatham Ils., Christchurch (2), Wellington, and near Osaka), 20h. (Christchurch (2)), 21h. (Chatham Ils., Christchurch, Wellington, Monowai, Riverview, Sydney, near Amboina, and near La Paz (3), 23h. (Bozeman).

Feb. 23d. 17h. 5m. 59s. Epicentre 34°·5N. 135°·7E. (as on 21d.1h.). X.

A = −·5898, B = +·5756, C = +·5664; δ = −1.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Osaka	0·2	318	0 4	+ 1	0 7	+ 2	0·1
Kobe	0·5	293	e 0 7	0	i 0 13	0	0·3
Sumoto	0·7	257	0 10	0	0 20	S*	0·4
Nagoya	1·2	57	e 0 22	+ 5	0 38	+ 7	—
Toyooka	1·3	325	—	—	0 38	S*	—

Sumoto eN = +23s.

Feb. 23d. Readings also at 4h. (Wellington), 5h. (Amboina, Almata, Frunse, and Wellington), 6h. (Santiago), 8h. (near Amboina), 9h. (Samarkand and near Amboina), 11h. (Amboina and Tiflis), 12h. (Chiufeng, Manila, Nanking, Tashkent, Sverdlovsk, Vladivostok, and Tucson), 13h. (Sverdlovsk and Tucson), 17h. (near Nagoya), 18h. (Manila and near Amboina), 20h. (College), 22h. (Berkeley, Lick, and Tucson), 23h. (Nagoya and near Mizusawa).

Feb. 24d. 7h.

Undetermined shock:
Calcutta PE = 2m.4s., SE = 3m.28s., S = 4m.23s., M = 9m.3s.
Nanking eP = 4m.6s., eSN = 8m.50s., iL = 11m.54s., M = 13m.40s.
Batavia ePZ = 4m.10s., eSZ = 15m.51s., eSN = 16m.9s.
Agra eE = 4m.13s.
Medan eP = 4m.35s., S = 11m.3s.
Bombay eEN = 5m.0s.?, iEN = 9m.30s., M = 16m.39s.
Phu-Lien e = 5m.29s., e = 5m.54s., L = 6m., M = 6m.2s.
Chiufeng eN = 5m.32s., SN = 9m.48s., M = 13m.48s.
Frunse eP = 5m.51s., e = 9m.57s.
Andijan eP = 5m.56s., eS = 10m.48s.
Manila P = 6m.25s., S = 10m.30s., M = 15m.10s.
Tashkent e = 7m.18s. and 11m.18s., eL = 15m.48s., M = 18m.36s.
Sverdlovsk P = 8m.19s., e = 14m.32s. and 17m.40s., L = 22m.12s.
Long waves were also recorded at Hong Kong, Tiflis, Vladivostok, Pulkovo, Moscow, and Copenhagen.

Feb. 24d. 16h. 29m. 31s. Epicentre 33°·5N. 48°·0E. (as on 1932 Jan. 22d.). R.3.

A = +·5580, B = +·6197, C = +·5519; δ = −1;
D = +·743, E = −·669; G = +·369, H = +·410, K = −·834.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	7·1	12	e 1 51	P*	3 13	+12	—	5·2
Erevan	7·2	338	e 1 55	P*	e 2 39	P_g	—	—
Tiflis	8·6	343	2 5	+ 3	3 54	+15	4·5	5·8
Ksara	10·1	275	e 2 30	+ 8	e 4 45	S*	—	—
Pistigorsk	11·2	342	e 2 45	+ 8	—	—	—	—
Helwan	14·6	260	e 3 23	0	—	—	e 8·6	—
Theodosia	15·1	323	e 3 29	− 1	e 6 39	SS	—	—
Yalta	15·3	320	e 3 33	+ 1	i 6 46	SS	—	—
Simferopol	15·7	321	e 3 35	− 3	6 49	SS	—	—
Sebastopol	15·8	319	e 3 37	− 2	6 53	SS	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		16·4	63	3 47	+ 1	e 6 57	SS	—	—
Tashkent		18·5	59	i 4 9	− 4	e 7 40	+ 4	10·3	12·5
Tchimkent		19·1	56	e 4 18	− 2	—	—	—	—
Andijan		20·5	64	4 36	+ 1	9 23	+67	—	—
Frunse		22·8	58	e 4 58	− 1	—	—	—	—
Moscow.		23·4	346	i 5 5	0	9 22	+10	11·0	15·5
Sverdlovsk		24·9	17	i 5 23	+ 4	e 9 55	+16	13·7	18·0
Bombay		26·5	117	e 5 29?	− 5	i 10 9	+ 2	—	—
Agra	E.	26·6	96	e 5 22	−13	i 10 7	− 2	—	—
Pulkovo		28·7	341	5 55	+ 2	e 10 47	+ 4	13·5	17·7
Triest		28·8	306	e 8 17	?	—	—	e 14·6	—
Copenhagen		33·1	323	—	—	11 29?	−23	—	—
Calcutta	E.	37·0	97	—	—	e 15 26	SS	—	—

Additional readings :—
Tiflis e = +2m.45s. = P_g and +2m.58s.
Ksara iSS = +5m.6s. and +5m.53s.
Sverdlovsk i = +10m.9s.
Long waves also at De Bilt, Uccle, Paris, Strasbourg, Stuttgart, Chiufeng, and Vladivostok.

Feb. 24d. Readings also at 0h. (Tacubaya), 1h. (Wellington, Almata, Belgrade, and Triest), 3h. (Tacubaya), 5h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Agra, Bombay, Kodaikanal, Andijan, Frunse, Samarkand, Tashkent, and Sverdlovsk), 6h. (Andijan, Frunse, Samarkand, and near Malabar), 7h. (near Santiago), 10h. (near Triest), 11h. (near Amboina and near Malabar), 12h. (Amboina, near Sumoto, and near Wellington), 13h. (near Sumoto), 14h. (near Triest), 18h. (near Osaka), 19h. (near La Paz), 21h. (near Tiflis), 22h. (near Tiflis (2) and near Port au Prince).

Feb. 25d. Readings at 1h. (Sverdlovsk, Samarkand, Tashkent, and near Andijan (2)), 2h. (Frunse, Samarkand, and near Amboina), 5h. (Frunse, Samarkand, near Andijan, and near Malabar), 6h. (near Osaka), 9h. (Malabar), 11h. (Alicante and near La Paz), 12h. (Oak Ridge and San Juan), 14h. (Baku, Sverdlovsk, Piatigorsk (2), near Erevan (2), Grozny (2), and Tiflis (4)), 15h. (Huancayo, Tucson, La Paz, Sverdlovsk, Grozny, Erevan, near Tiflis, and near Mizusawa), 16h. (Baku), 17h. (Grozny, near Erevan, and Tiflis) 20h. (Wellington), 22h. (near Erevan and Tiflis).

Feb. 26d. 17h. 40m. 49s. Epicentre 34°·0N. 134°·8E. (as on 1935 Nov. 25d.). X.

A = −·5841, B = +·5883, C = +·5592 ; δ = −3.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Sumoto	0·4	11	i 0 4k	− 2	i 0 8	− 2	0·2
Kobe	0·7	25	0 11	+ 1	i 0 20	+ 2	0·4
Osaka	0·9	38	0 11	− 2	0 20	− 3	0·6
Nagoya	2·1	57	e 0 40	P_g	1 0	S*	—

Feb. 26d. Readings also at 0h. (Batavia and near Osaka), 2h. (Manila, Medan, Bombay, Colombo, Hong Kong, Phu-Lien, Andijan, Frunse, Samarkand, Tashkent, and Sverdlovsk), 3h. (Vladivostok, Nanking, Baku, Pulkovo, Ksara, and Copenhagen), 6h. (Alicante, Toledo, near Almeria, Granada, Malaga, and near Medan), 9h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Tucson, near Balboa Heights, and near Osaka), 10h. (Stuttgart), 11h. (near Amboina), 12h. (Madison and Sumoto), 13h. (Frunse and Samarkand), 14h. (Sverdlovsk, Tashkent, and near Manila), 17h. (near Bagnères), 18h. (Strasbourg and Zurich), 22h. (near Santiago).

Feb. 27d. 10h. 4m. 14s. Epicentre 7°·7S. 127°·1E. (as on 1932 Nov. 22d.). R.1.

$A = -\cdot5976$, $B = +\cdot7901$, $C = -\cdot1360$; $\delta = -12$;
$D = +\cdot798$, $E = +\cdot603$; $G = +\cdot081$, $H = -\cdot107$, $K = -\cdot991$;

A *depth* of focus 0·0225 has been assumed.

		Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M.
			°	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		+0·1	4·2	16	i 0 56	− 5	i 1 41	− 9	—	—
Malabar		−0·9	19·4	270	i 4 15	+ 2	7 44	+ 8	—	—
Batavia		−0·9	20·2	273	i 4 7	−15	i 7 45	− 7	—	—
Manila		−1·0	23·1	345	i 5 49k	+57	i 8 49	+ 1	11·6	—
Perth		−1·2	26·4	202	5 26	+ 4	9 56	+12	13·1	—
Adelaide		−1·5	29·2	160	i 6 2?	+18	10 39?	+12	—	13·5?
Kosyun		−1·6	30·3	349	5 56	+ 3	10 40	− 3	—	—
Medan		−1·6	30·5	291	i 5 58	+ 3	i 10 45	− 2	—	—
Taito		−1·6	31·0	349	5 57	− 3	—	—	—	—
Karenko		−1·6	32·1	350	6 11	+ 2	—	—	—	—
Isigakizima		−1·7	32·2	356	5 46?	−23	—	—	—	—
Hong Kong		−1·7	32·6	337	6 15	+ 2	11 16	− 2	—	13·9
Naha		−1·7	33·9	1	6 29	+ 5	—	—	—	—
Melbourne		−1·7	34·1	154	6 29	+ 3	11 39	− 2	13·3	19·2
Riverview		−1·7	34·3	143	i 6 28a	0	i 11 40	− 5	—	18·1
Sydney		−1·7	34·3	143	e 5 46	−42	i 11 51	+ 6	17·8	19·8
Phu-Lien		−1·8	34·9	325	i 6 36	+ 3	i 11 54	+ 2	14·8	—
Zi-ka-wei	N.	−1·9	39·3	353	7 9	− 1	12 54	− 3	—	—
Kagosima		−1·9	39·4	6	7 13	+ 2	—	—	—	—
Nagasaki		−1·9	40·5	4	7 17	− 3	12 54	−21	—	—
Unzendake		−1·9	40·5	6	7 22	+ 2	13 12	− 3	—	—
Nanking		−1·9	40·6	349	7 9a	−12	i 13 14	− 3	i 16·4	—
Kumamoto		−1·9	40·7	6	7 19	− 3	13 13	− 5	—	—
Simidu		−1·9	40·9	10	7 21	− 3	13 22	+ 1	—	—
Hukuoka		−2·0	41·4	6	e 7 21	− 6	13 19	− 8	e 16·8	—
Hukuoka B		−2·0	41·4	6	i 7 25	− 2	i 13 25	− 2	16·7	—
Koti		−2·0	41·7	9	7 28	− 1	13 26	− 6	—	—
Matuyama		−2·0	41·9	8	7 31	0	13 34	− 1	—	—
Siomisaki		−2·0	42·0	13	7 24	− 8	—	—	—	—
Wakayama		−2·0	42·6	12	7 35	− 2	13 36	− 9	—	—
Sumoto		−2·0	42·7	11	e 7 32	− 6	13 43	− 4	17·0	17·4
Husan		−2·0	42·8	3	7 38	− 1	13 45	− 3	17·2	—
Hamada		−2·0	42·8	8	7 38	− 1	—	—	—	—
Okayama		−2·0	42·9	10	7 40	0	—	—	—	—
Osaka		−2·1	43·1	11	8 0	+20	14 44	+53	—	18·2
Kobe	E.	−2·1	43·1	11	e 7 35	− 5	e 13 51	0	—	—
	N.	−2·1	43·1	11	e 7 39	− 1	e 13 43	− 8	—	—
	Z.	−2·1	43·1	11	e 7 37	− 3	e 13 49	− 2	—	—
Kameyama		−2·1	43·5	13	7 43	− 1	13 55	− 2	—	—
Kyoto		−2·1	43·5	13	7 42	− 2	—	—	—	—
Hamamatu		−2·1	43·6	14	7 59	+15	—	—	—	—
Taikyu		−2·1	43·6	3	i 7 43	− 1	i 13 57	− 2	—	—
Sakai		−2·1	43·6	8	7 45	+ 1	—	—	—	—
Toyooka	E.	−2·1	43·8	11	7 55	+ 9	14 1	− 1	—	—
	N.	−2·1	43·8	11	7 51	+ 5	13 59	− 3	—	—
	Z.	−2·1	43·8	11	7 47	+ 1	—	—	—	—
Hikone		−2·1	43·8	12	7 37	− 9	13 45	−17	—	—
Nagoya		−2·1	43·9	13	e 7 46	− 1	—	—	18·0	—
Ibukisan		−2·1	44·0	12	7 48	0	14 2	− 3	—	—
Gihu		−2·1	44·0	14	7 48	0	14 3	− 2	—	—
Misima		−2·1	44·2	15	7 50	+ 1	—	—	—	—
Yokohama		−2·1	44·7	16	7 46?	− 7	—	—	—	—
Kohu		−2·1	44·7	15	7 57	+ 4	—	—	—	—
Zinsen		−2·1	45·2	0	i 7 56a	− 2	i 14 23	+ 1	—	—
Keizyo		−2·1	45·3	1	i 7 58a	0	i 14 24	0	17·6	—
Tyosi		−2·1	45·3	17	7 32	−26	—	—	—	—

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.
Kumagaya		−2·1	45·3	15	7 44	−14	—	—	—	—
Oiwake		−2·1	45·3	16	7 44	−14	14 0	−24	—	—
Toyama		−2·1	45·4	14	7 59	0	14 9	−16	—	—
Nagano		−2·1	45·6	15	7 59	− 2	14 24	− 4	—	—
Tukubasan		−2·1	45·6	16	7 56	− 5	—	—	—	—
Mito		−2·1	45·8	16	8 38	+36	—	—	—	—
Wazima		−2·2	46·0	13	8 11	+ 8	14 31	− 2	—	—
Heizyo		−2·2	46·8	359	e 8 10	0	—	—	—	—
Hukusima		−2·2	47·1	16	8 11	− 1	14 46	− 3	—	—
Calcutta	E.	−2·3	48·6	311	8 28	+ 5	15 17	+ 8	22·4	30·4
Yingkow		−2·3	48·6	357	8 22	− 1	—	—	—	—
Mizusawa		−2·3	48·6	16	e 8 21	− 2	i 15 7	− 2	—	—
Chiufeng		−2·3	48·9	349	8 24k	− 1	i 15 7	− 6	—	—
Colombo		−2·3	49·3	286	8 29	0	15 21	+ 2	28·4	31·8
Vladivostok		−2·4	51·0	6	i 8 41	0	i 15 44	+ 3	e 20·8	33·4
Sapporo		−2·4	52·4	14	8 51	0	16 1	0	—	—
Kodaikanal		−2·4	52·6	290	i 8 56	+ 3	i 16 11	+ 7	23·5	31·5
Arapuni		−2·5	53·2	133	—	—	e 17 4	+53	e 24·4	30·8
Christchurch		−2·5	53·4	140	8 58	0	16 17	+ 4	—	—
Wellington		−2·5	53·8	137	8 59	− 2	16 21	+ 2	22·8	24·8
Hyderabad		−2·5	54·2	299	9 7	+ 3	17 34	+70	26·6	38·6
Agra		−2·7	58·9	309	9 37	0	i 17 27	+ 2	27·5	—
Bombay		−2·7	59·8	297	i 9 48	+ 4	i 17 42	+ 4	—	—
Apia		−2·7	60·2	102	e 9 54	+ 7	17 55	+12	e 25·3	—
Dehra Dun		−2·7	60·5	312	9 16	−33	17 26	−21	23·8	24·8
Frunse		−2·9	69·6	322	10 48	− 2	19 40	− 1	—	—
Andijan		−2·9	69·8	319	10 52	+ 1	19 48	+ 5	—	—
Semipalatinsk		−2·9	70·8	331	10 57	− 1	19 55	− 1	—	—
Tchimkent		−2·9	72·3	319	i 11 10	+ 3	i 20 15	+ 1	—	—
Samarkand		−2·9	72·9	315	11 12	+ 1	i 20 18	− 3	—	—
Honolulu		−3·0	79·1	67	—	—	e 21 10	−23	—	—
Sverdlovsk		−3·0	84·0	329	i 12 12	− 1	i 22 16	−10	40·0	44·1
Baku		−3·0	85·4	312	i 12 20	0	i 22 31	−10	37·8	52·5
Grozny		−3·1	89·1	314	e 12 40	+ 2	i 23 16	− 2	—	—
Erevan		−3·1	89·4	311	e 12 40	0	23 17	− 3	—	—
Tiflis		−3·1	89·4	312	i 12 38	− 2	i 22 54	[−35]	45·8	51·3
Piatigorsk		−3·2	91·1	314	12 43	− 4	23 20	[−19]	—	—
College		−3·2	94·9	25	—	—	e 22 56	−76	31·8	—
Ksara		−3·2	95·3	303	i 13 4a	− 3	i 24 30	+14	—	—
Moscow		−3·2	96·1	325	e 13 5	− 6	24 2	−21	36·3	48·0
Theodosia		—	96·6	315	—	—	e 23 36	[−33]	—	—
Simferopol		—	97·5	315	—	—	e 23 38	[−36]	—	—
Yalta		—	97·5	314	—	—	e 23 35	[−39]	—	—
Helwan		—	98·8	299	e 13 24	−14	e 23 41	[−39]	—	—
Pulkovo		—	100·1	330	—	—	23 44	[−42]	39·8	56·7
Sitka		—	100·6	34	—	—	i 23 49	[−40]	e 41·3	—
Cape Town		—	100·8	233	—	—	23 57	[−33]	50·6	—
Bucharest		—	103·2	314	—	—	i 24 9	[−32]	—	—
Vienna		—	109·5	319	e 18 44	PP	—	—	—	—
Copenhagen		—	110·1	327	—	—	24 34	[−40]	—	—
Ukiah		—	110·1	51	—	—	e 24 35	[−39]	e 43·8	—
Zagreb		—	110·2	316	e 18 12	[− 6]	e 24 25	[−49]	—	—
Prague		—	110·4	321	—	—	e 37 46?	?	—	73·8
Berkeley	Z.	—	111·0	53	e 14 16	−19	—	—	—	—
Cheb		—	111·6	321	e 12 46?	?	e 24 46?	[−34]	e 57·8	64·8
Triest		—	111·7	316	i 18 54	PP	i 24 39	[−42]	—	61·7
Santa Barbara	Z.	—	113·4	56	i 18 18	[−10]	—	—	—	—
Stuttgart		—	114·0	320	e 18 19	[−11]	i 24 50	[−40]	e 60·8	—
Tinemaha		—	114·2	53	e 14 32	−19	e 24 53	[−38]	—	—
Scoresby Sund		—	114·2	349	—	—	25 46?	{−51}	—	—
Chur		—	114·3	319	e 18 18	[−12]	e 24 49	[−42]	—	—
Haiwee		—	114·6	54	i 18 18	[−13]	—	—	—	—
Pasadena		—	114·8	56	e 14 30	−24	i 24 54	[−39]	—	—
Mount Wilson		—	114·8	56	i 14 31	−24	i 24 58	[−35]	—	—
Zurich		—	114·8	319	e 18 18	[−14]	e 24 53	[−40]	—	—

Continued on next page.

		Corr. for Focus	Δ	Az.	P.	O–C.	S.	O–C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg		—	114·9	320	i 19 24k	PP	e 28 46	PS	e 45·8	—
De Bilt		—	115·3	325	—	—	e 28 46	PS	55·8	76·1
Riverside		—	115·4	56	e 14 31	−26	e 24 57	[−38]	—	—
La Jolla	z.	—	115·7	57	i 18 20	[−14]	—	—	—	—
Uccle		—	116·3	324	e 18 24	[−12]	i 28 58	PS	e 56·8	—
Bozeman		—	117·5	42	—	—	e 25 6	[−37]	—	—
Paris		—	118·1	322	e 20 2	PP	e 30 28	?	66·8	—
Tucson		—	121·1	57	e 18 32	[−16]	e 25 16	[−38]	e 50·1	—
Malaga		—	127·3	311	e 17 40	[−82]	24 20	[−112]	—	—
San Fernando		—	128·8	311	e 22 26	?	e 42 36	SSS	67·8	—
Tacubaya	N.	—	133·7	71	20 41	?	—	—	—	—
Florissant		—	134·2	42	i 18 58	[−16]	i 22 12	PKS	—	—
Little Rock		—	134·8	48	e 18 57	[−18]	i 22 25	PKS	—	—
Toronto		—	137·2	28	e 21 55	PP	e 28 21	?	60·8	—
Ottawa		—	137·5	24	e 22 18	PP	e 33 46?	?	59·8	—
Oak Ridge		—	141·5	22	i 19 5	[−18]	—	—	—	—
Philadelphia		—	142·1	27	e 19 6	[−18]	e 29 21	{−15}	e 39·0	—
Rio de Janeiro		—	147·8	198	i 19 23	[−16]	—	—	e 41·8	—
Huancayo		—	150·2	131	i 19 30	[−12]	e 29 31	{−53}	72·2	—
Sucre		—	150·6	156	19 28	[−15]	29 46	{−40}	75·8	—
La Paz		—	151·5	148	i 19 30a	[−14]	26 16	SKS	77·8	91·5
San Juan		—	163·3	49	e 19 41	[−16]	e 30 37	{−59}	e 71·8	—

Additional readings :—
Malabar iS = +7m.52s. =SS +2s.
Perth PP = +6m.1s., ? = +6m.23s. and +6m.51s., P_cP = +8m.6s., SS = +10m.11s., SSS = +10m.31s.
Adelaide i = +6m.40s.?
Medan iSE = +10m.47s., iEN = +11m.0s.
Hong Kong ? = +6m.27s., PP = +6m.53s., PPP = +7m.16s.
Melbourne i = +9m.48s. and +10m.44s.
Riverview iEN = +7m.42s., iN = +11m.43s., iE = +14m.14s.
Sydney PPP = +7m.52s., SS = +13m.26s.
Phu-Lien i = +6m.51s. and +12m.58s.
Nanking pPN = +7m.23s., isS = +13m.31s., iE = +17m.21s.
Sumoto PZ = +7m.36s., eEN = +8m.8s.
Kobe iNZ = +8m.12s., PPN = +9m.32s., PPPN = +9m.54s., eZ = +16m.49s., eEN = +17m.9s.
Taikyu iN = +7m.59s. and +8m.14s.
Zinsen iN = +8m.13s. and +8m.29s., iZ = +8m.32s.
Calcutta SSS = +9m.29s.
Chiufeng pPEN = +8m.49s., iPP = +9m.50s., PPPNZ = +11m.11s., sSE = +15m.53s., iEN = +16m.35s., iZ = +17m.3s., SSEN = +18m.0s.
Wellington S_cS? = +17m.45s.
Agra PPE = +11m.42s., PPPE = +12m.52s., PSE = +18m.30s., iSSE = +20m.25s., SSSE = +23m.27s.
Bombay iEN = +18m.42s.
Apia e = +10m.31s., pP? = +10m.44s., e = +18m.15s., =PS −10s. and +18m.55s., sS = +19m.35s., e = +19m.56s. : T_z =10h.4m.22s.
Honolulu iPS = +21m.28s.
Baku SS = +28m.34s., SSS = +32m.22s.
Tiflis e = +13m.0s., +13m.20s., and +14m.23s., i = +23m.16s. =S −4s. and +24m.18s. =PS −26s.
College ePP = +17m.16s.
Ksara ipP = +13m.42s., sP = +13m.59s., iPP = +17m.16s., sS = +25m.39s., PS = +26m.10s., sPP = +26m.46s., PPS = +27m.8s., SS = +31m.28s., sSS = +32m.28s.
Moscow PP = +16m.46s., SKS = +23m.27s., PS = +25m.18s., e = +26m.34s., SS = +30m.40s.
Pulkovo ePP = +17m.10s., i = +17m.49s. =PP +6s., S = +24m.42s. = SKKS −12s., e = +25m.42s., +26m.10s. =PS −36s. and +27m.18s., eSS = +31m.40s., eSSS = +35m.16s.
Sitka iPP = +18m.3s., ePS = +26m.16s., i = +27m.20s., iSS = +31m.43s.
Cape Town SE = +25m.4s., SN = +25m.16s., PS = +26m.7s. and +26m.12s., PPSE = +26m.50s., E = +32m.32s.
Bucharest +26m.46s.? +36m.46s.?
Copenhagen PP = +19m.1s., SKKS = +25m.33s., S = +26m.10s., PS = +27m.52s., SS = +33m.58s.
Ukiah eS = +26m.2s., PS = +27m.49s.

Continued on next page.

Zagreb e = +18m.51s. =PP −8s., eE = +24m.33s., e = +27m.10s.
Prague e = +45m.10s.
Berkeley eZ = +18m.12s. =PKP −9s.
Cheb e = +18m.46s.? =PP −23s. and +28m.46s.?
Triest i = +26m.20s., +34m.18s., and +34m.28s. =SS −14s., e = +56m.1s.
Santa Barbara eZ = +19m.29s. =PP +17s.
Stuttgart PP = +19m.19s., e = +19m.52s. and +27m.46s., eEZ = +28m.39s., ePPS = +30m.18s.
Tinemaha iPKPENZ = +18m.19s., ePKKPZ = +29m.2s.
Pasadena iPENZ = +18m.19s., iPPE = +19m.7s., ipPKPZ = +19m.14s., ipPPZ = +20m.23s., eSNZ = +26m.49s., esSEZ = +28m.30s., iPKKPZ = +28m.59s., iZ = +29m.6s. and +32m.54s.
Mount Wilson iPKPZ = +18m.19s., ipPKPZ = +19m.15s., iZ = +29m.7s.
Riverside iPKPZ = +18m.21s., ipPKPZ = +19m.19s.
La Jolla ipPKPZ = +19m.21s.
Bozeman ePP = +20m.5s., ePS = +29m.0s.
Tucson ePP = +20m.30s., eSKKS = +26m.46s., eSKSP = +29m.30s., eSS = +34m.52s.
Malaga e = +21m.6s. =PP +7s. +21m.50s., and +27m.0s.
San Fernando e? = +23m.5s., ePPS = +37m.13s.
Florissant ipPKPZ = +19m.13s., eEZ = +22m.1s., iZ = +31m.11s.
Little Rock epPPEN = +22m.12s.
Toronto e = +32m.15s. =PS −20s.
Oak Ridge i = +19m.11s., eZ = +19m.24s., iZ = +22m.30s. =PP −1s., eN = +22m.34s., eE = +22m.46s.
Philadelphia ePP = +22m.15s., eSKSP = +31m.56s., ePS = +32m.54s.
Huancayo eSKSP = +33m.26s., e = +42m.6s., eSS = +43m.6s., e = +57m.6s.
Sucre PP = +23m.2s.
La Paz iPKP$_2$ = +19m.50s., iPKP,E = +20m.2s., ipPKP = +20m.44s., isPKPN = +21m.39s., iSKP = +22m.58s., iPPN = +23m.26s., SKS = +26m.30s., SKSP = +33m.33s., iE = +34m.34s., iSSE = +43m.22s., iSSZ = +43m.52s., SSSN = +49m.42s.
San Juan e = +25m.45s., iSKSP = +35m.0s., e = +38m.42s., i = +44m.2s., eSS = +45m.12s., e = +51m.7s.
Long waves at Kew, Granada, and La Plata.

Feb. 27d. 16h. 53m. 19s. Epicentre 54°·1N. 164°·1E. (as on 1933 Feb. 20d.). R.3.

A = −·5639, B = +·1606, C = +·8100 ; δ = −12 ;
D = +·274, E = +·962 ; G = −·779, H = +·222, K = −·586.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	21·6	236	(4 52)	+ 6	4 52	P	—	—
Nagoya		26·7	236	e 5 35	0	—	—	—	—
Sverdlovsk		52·9	319	i 9 24	+11	e 16 58	+17	25·9	—
Tinemaha	Z.	54·0	74	e 9 21	0	—	—	—	—
Mount Wilson	Z.	56·1	78	i 9 36	− 1	—	—	—	—
Pasadena		56·2	77	i 9 37	0	—	—	—	—
Riverside	Z.	56·7	77	e 9 40	− 1	—	—	—	—
Agra	E.	66·1	283	e 16 22	?	—	—	—	—
Tiflis		71·0	316	e 11 13	− 4	e 20 33	0	37·7	46·3
Ksara		81·4	318	e 12 13	− 2	—	—	—	54·7

Additional readings :—
Sverdlovsk i = +9m.32s., e = +21m.39s. =SSS −10s.
Mount Wilson iZ = +9m.46s. and +10m.3s.
Pasadena iNZ = +9m.46s.
Ksara e = +25m.25s. and +30m.30s.
Long waves were also recorded at Vladivostok, Chiufeng, Nanking, Baku, Pulkovo, Copenhagen, and Calcutta.

Feb. 27d. Readings also at 0h. (Frunse, Samarkand, near Andijan, also Haiwee, Mount Wilson, Pasadena, Tinemaha, Berkeley, Branner, and near Lick), 1h. (near Medan), 2h. (near Bagnères), 3h. (near Sumoto (2), near Kobe and Osaka), 4h. (near La Paz), 8h. (La Paz and near Ksara), 9h. (La Paz, Tacubaya, and Manzanillo), 10h. (La Paz), 11h. (La Paz, Mount Wilson, Tinemaha, and Pasadena), 13h. (Tiflis and near Erevan), 14h. (Amboina and near Ferndale), 17h. (Samarkand, Tchimkent, Frunse, and near Andijan), 18h. (Mount Wilson, Pasadena, Tinemaha, and near Tiflis (2)), 19h. (near Zagreb), 21h. (Baku and Sverdlovsk), 23h. (Nagoya, Tiflis, Frunse, Samarkand, and near Andijan).

Feb. 28d. 0h. 18m. 2s. Epicentre 33°·8N. 132°·5E. (as on 1933 Mar. 12d.). R.3.

$A = -\cdot5614$, $B = +\cdot6127$, $C = +\cdot5563$; $\delta = +4$;
$D = +\cdot737$, $E = +\cdot675$; $G = -\cdot376$, $H = +\cdot410$, $K = -\cdot831$.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Hukuoka B	1·7	263	e 0 25	+ 1	i 0 48	S*	—
Sumoto	2·1	74	0 27	− 3	e 0 58	+ 4	1·0
Kobe	2·4	68	0 32	− 2	0 59	− 3	1·2
Toyooka	2·7	48	0 42	P*	1 16	S*	1·3

Additional readings :—
Kobe eSNZ = +1m.3s.
Toyooka PEN = +52s. = P_g +4s.

Feb. 28d. 3h. 3m. 33s. Epicentre 53°·9N. 163°·7W. (as on 1933 Oct. 14d.). R.2.

$A = -\cdot5660$, $B = -\cdot1654$, $C = +\cdot8080$; $\delta = +5$;
$D = -\cdot281$, $E = +\cdot960$; $G = -\cdot776$, $H = -\cdot227$, $K = -\cdot589$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		13·6	30	e 3 0	−10	e 5 39	− 2	i 7·3	—
Sitka		16·3	67	e 3 47	+ 2	e 6 52	+ 7	e 9·9	—
Seattle		26·5	87	—	—	e 9 15	−52	—	—
Bozeman		34·2	81	—	—	e 11 56	−13	e 20·0	—
Tinemaha		35·2	100	e 6 49	− 2	e 12 25	+ 1	—	—
Haiwee	z.	36·1	100	e 7 0	+ 1	—	—	—	—
Santa Barbara	z.	36·2	104	e 7 6	+ 6	—	—	—	—
Pasadena		37·3	103	e 7 9	0	e 13 54	+58	i 16·5	—
Riverside	z.	37·9	103	e 7 13	− 1	—	—	—	—
La Jolla		38·7	104	e 7 37	+16	—	—	—	—
Vladivostok		42·4	282	e 10 53	?	(e 14 27)	+14	e 14·5	32·7
Tucson		42·9	98	e 7 59	+ 3	e 14 20	+ 1	e 19·9	—
Chicago		49·8	72	—	—	e 15 14	−44	e 23·3	—
Florissant		50·4	76	e 8 49	− 5	i 16 0	− 6	e 23·3	29·6
St. Louis		50·6	76	e 8 51	− 5	i 16 2	− 7	e 24·4	—
Toronto	N.	53·2	64	—	—	e 16 42	− 3	27·5	—
Chiufeng		53·3	291	9 17a	+ 1	e 17 2	+16	e 26·3	36·8
Ottawa		53·9	61	—	—	e 16 49	− 5	27·5	—
Nanking		57·5	282	e 9 46	− 1	17 49	+ 6	27·5	40·1
Philadelphia		58·0	64	—	—	e 17 45	− 4	e 28·4	—
Columbia		59·1	73	—	—	e 28 17	PS	e 33·7	—
Sverdlovsk		63·5	335	e 10 30	+ 1	e 19 18	PS	32·7	43·1
Pulkovo		65·8	353	—	—	e 19 41	PS	37·5	39·8
Moscow		70·0	347	—	—	e 20 49	PS	e 43·0	49·1
Frunse		71·1	319	e 11 19	+ 2	—	—	—	—
Andijan		73·8	320	e 11 33	0	—	—	—	—
Samarkand		76·8	322	e 11 33	−17	—	—	—	—
San Juan		79·6	73	—	—	i 21 58	−13	e 44·5	—
Tiflis		81·3	339	e 12 11	− 4	e 22 39	+ 9	e 43·5	55·8
Calcutta	E.	81·8	297	—	—	e 22 25	−10	—	—
Agra	E.	83·1	307	—	—	e 22 41	[− 4]	—	—
Ksara		90·6	344	i 13 0	0	e 24 8	+ 6	—	—

Additional readings :—
College e = +3m.16s. and +5m.50s. = SS +3s.
Sitka iS = +6m.57s. = SS +2s., e = +8m.7s.
Seattle e = +11m.15s. = SS +9s. and +12m.15s.
Bozeman eS_cS = +16m.43s.
Pasadena iEZ = +7m.17s.
Tucson eP = +8m.21s., eS_cS = +17m.41s.
Florissant epPZ = +9m.3s., esSE = +16m.26s.

Continued on next page.

St. Louis ipPE = +9m.4s., esSN = +16m.29s.
Ottawa e = +21m.27s.?
Nanking SN = +17m.58s.
Philadelphia e = +17m.56s. = PS +2s., eS_cS = +19m.53s., e = +24m.8s.
Sverdlovsk e = +24m.30s.
Pulkovo e = +20m.45s. = S_cS +12s., +24m.52s., and +29m.57s.
Tiflis e = +32m.45s.
Ksara i = +14m.0s., ePP = +16m.36s.
Long waves at Victoria, Madison, Ukiah, Charlottesville, Honolulu, Ivigtut, Scoresby Sund, La Paz, Hong Kong, Hyderabad, Bombay, Baku, and other European stations.

Feb. 28d. 16h. 15m. 29s. Epicentre 5°·6S. 113°·9E. N.2.

A = −·4032, B = +·9099, C = −·0976; δ = +1;
D = +·914, E = +·405; G = +·040, H = −·089, K = −·995.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		6·4	255	1 41	P*	i 3 31	S_g	—	—
Batavia		7·0	265	e 1 26	−13	i 3 5	+ 6	—	—
Amboina	N.	14·4	80	3 13	− 8	—	—	—	—
Medan		17·8	301	i 4 6	+ 2	7 40	+20	—	—
Manila		21·4	19	4 47k	+ 3	i 8 53	P_cP	11·2	13·4
Perth		26·4	176	5 46	+13	10 13	+ 8	14·5	—
Phu-Lien		27·3	345	e 5 39	− 2	e 10 21	+ 1	—	—
Hong Kong		27·9	1	5 51	+ 5	10 33	+ 3	14·6	19·5
Colombo		36·2	288	8 24	PPP	12 36	− 3	17·4	22·4
Adelaide		37·1	145	e 6 30	−37	e 13 2	+ 9	e 20·0	25·6
Zi-ka-wei	Z.	37·5	11	e 7 3	− 8	i 13 21	+22	25·2	31·6
Calcutta	E.	37·7	319	8 8	+56	15 29	SS	23·7	30·5
Nanking		37·9	6	7 14	0	i 13 5	0	e 18·0	27·7
Kodaikanal	E.	39·6	293	e 7 31	+ 2	i 13 33	+ 3	19·5	24·7
Melbourne		42·8	142	—	—	i 14 37	+19	21·5	29·9
Riverview		44·6	134	—	—	e 15 7	+ 23	e 23·6	28·7
Sydney		44·6	134	—	—	e 14 44	0	28·8	30·0
Chiufeng		45·7	2	i 8 16k	− 2	14 54	− 6	21·8	28·3
Bombay		47·3	301	e 8 34	+ 3	15 26	+ 3	22·5	28·9
Agra	E.	47·7	315	e 8 29	− 5	15 24	− 5	22·6	29·1
Dehra Dun		49·7	318	15 41	S	(15 41)	−16	30·7	34·5
Vladivostok		51·4	17	e 9 2	0	e 16 19	− 1	—	41·4
Almata		59·2	329	e 9 52	− 7	—	—	—	—
Andijan		60·0	324	e 10 8	+ 4	—	—	—	—
Frunse		60·2	327	e 10 5	− 1	—	—	—	—
Tashkent		62·1	323	i 10 17	− 2	i 18 38	− 5	e 30·0	38·2
Samarkand		62·5	320	10 20	− 2	—	—	—	—
Tchimkent		62·5	324	e 11 36	+74	—	—	—	—
Wellington		64·6	133	—	—	e 18 31?	−44	e 26·5	—
Baku		74·4	314	e 11 37	0	21 11	− 2	29·5	47·7
Sverdlovsk		75·9	333	i 11 46	+ 1	21 23	− 7	36·7	42·1
Erevan		78·2	312	e 13 1	?	—	—	—	—
Grozny		78·3	316	e 11 57	− 2	—	—	46·5	—
Tiflis		78·5	314	e 11 59	− 1	21 53	− 6	e 42·0	51·8
Piatigorsk		80·4	316	e 12 11	+ 1	e 22 6	−14	—	—
Ksara		83·3	304	i 12 27k	+ 2	22 41	[− 5]	—	—
Theodosia		85·9	315	—	—	e 23 30	+13	—	—
Helwan		86·4	300	—	—	i 23 1	[− 8]	—	—
Yalta		86·7	314	—	—	e 23 1	[−10]	—	—
Pulkovo		91·6	329	e 18 40	PPP	23 40	[− 2]	46·5	56·9
Tinemaha	Z.	123·1	49	e 18 57	[+ 4]	—	—	—	—
Pasadena		124·1	52	i 18 58	[+ 3]	—	—	—	—
Mount Wilson	Z.	124·2	52	e 19 0	[+ 5]	—	—	—	—
Riverside	Z.	124·8	52	19 3	[+ 6]	—	—	—	—
La Paz	N.	157·8	175	e 20 35	{+ 1}	—	—	—	—

For Notes see next page.

NOTES TO FEB. 28d. 16h. 15m. 29s.

Additional readings :—
Batavia iSN = +3m.18s. =S* −7s.
Amboina iPE = +3m.29s. =PP +5s.
Medan iEN = +6m.56s., iE = +7m.20s., iN = +7m.29s., iEN = +9m.37s.
Manila iEN = +4m.50s.
Perth PP = +6m.21s., PPP = +6m.31s., PPPP = +6m.41s., P_cP = +8m.26s., ? = +10m.52s. =SS −11s., SS = +11m.46s., SSS = +12m.6s., SSS = +12m.31s.
Hong Kong ? = +10m.20s., SS = +12m.18s.
Adelaide i = +15m.53s., +17m.11s., and +18m.37s.
Zi-ka-wei iZ = +7m.12s. and +8m.41s.
Nanking eE = +20m.16s. and +22m.0s.
Kodaikanal SS = +16m.37s., SSS = +17m.27s.
Melbourne i = +17m.37s. =SSS −15s. and +20m.8s.
Riverview iN = +18m.23s. =SSS −13s.
Chiufeng SE = +14m.57s.
Bombay SSEN = +18m.25s.
Agra eSSE = +18m.24s., SSS = +19m.39s.
Dehra Dun S = +23m.21s.
Tiflis i = +22m.1s., e = +34m.31s.
Ksara ePP = +15m.36s., PS = +23m.27s.
Helwan e = +24m.11s. =PS +3s. and +25m.18s.
Pulkovo eSS = +29m.55s., e = +37m.9s.
Long waves were also recorded at Keizyo, Scoresby Sund, and several European stations.

Feb. 28d. Readings also at 0h. (Nagoya), 1h. (Stuttgart, near Ebingen, and near Zurich), 2h. (Frunse, Samarkand, Tchimkent, and near Andijan), 3h. (near Mizusawa), 4h. (Oak Ridge), 11h. (near Piatigorsk), 15h. (Mizusawa), 16h. (Christchurch), 17h. (Medan and near Batavia), 19h. (Batavia (2)), 23h. (Batavia, Medan, and Tiflis).

Feb. 29d. 20h. 29m. 33s. Epicentre 5°·6S. 113°·9E. (as on 28d.). X.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Malabar		6·4	255	1 24	− 7	i 2 26	−17	—	—
Batavia		7·0	265	1 33	− 6	i 2 46	−13	—	—
Medan		17·8	301	e 4 27	+23	7 48	+28	—	—
Manila		21·4	19	5 34	+50	9 50	+76	13·0	—
Perth		26·4	176	5 17	−16	9· 7	−58	11·9	—
Calcutta	E.	37·7	319	—	—	e 13 17	+15	—	—
Tashkent		62·1	323	—	—	e 18 43	0	e 33·0	39·6
Baku		74·4	314	—	—	e 20 15	−58	e 39·0	—
Sverdlovsk		75·9	333	11 51	+ 6	21 37	+ 7	36·6	—
Tiflis		78·5	314	11 59	− 1	e 21 57	− 2	—	—
Ksara		83·3	304	i 12 25	0	e 22 49	− 1	—	—
Pulkovo		91·6	329	—	—	e 24 10	− 1	55·4	—
Tinemaha	z.	123·1	49	i 18 53	[0]	—	—	—	—
Pasadena		124·1	52	i 18 54	[− 1]	—	—	—	—
Mount Wilson	z.	124·2	52	i 18 55	[0]	—	—	—	—
Oak Ridge		142·8	6	i 19 32	[+ 5]	—	—	—	—

Additional readings :—
Perth PP = +5m.27s. =P −6s., SS = +9m.52s. =S −11s.
Tashkent e = +20m.3s. =S_cS −4s., iS = +20m.13s., e = +25m.57s.
Ksara e = +12m.45s. and +23m.39s. =PS +9s.
Tinemaha iZ = +19m.12s.
Pasadena iZ = +19m.13s.
Mount Wilson iZ = +19m.14s.

Feb. 29d. Readings also at 0h. (near Kobe, Nagoya, and Sumoto (2)), 1h. (near Osaka), 2h. (Amboina and near Sumoto), 3h. (Malaga, and near Almeria), 4h. (near Amboina), 5h. (Zurich), 7h. (Wellington), 9h. (Sverdlovsk, Pulkovo, Copenhagen, Ksara, Bucharest, Triest, Zagreb, Stuttgart, and Malaga), 10h. (La Paz, La Plata, and Santiago), 11h. (Almata, Frunse, Tashkent, and near Samarkand), 14h. (near Berkeley, Branner, and Lick). 15h. (Samarkand, Tashkent, Almata, Frunse, and near Andijan), 16h. (Mount Wilson, Pasadena, and Tinemaha), 21h. (Tiflis and near Algiers (2)), 22h. (Oaxaca and Tacubaya).

March 1d. 2h. 17m. 22s. Epicentre 39°·6N. 73°·8E. (as on 1935 July 31d.). X.

A = +·2150, B = +·7399, C = +·6374 ; δ = −4 ;
D = +·960, E = −·279 ; G = +·178, H = +·612, K = −·770.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·6	314	e 0 30	+ 7	i 0 49	S*	—	2·0
Frunse	3·4	9	e 0 48	− 1	i 1 20	− 7	—	1·4
Tashkent	3·8	295	e 1 10	P_g	—	—	e 1·6	1·9
Almata	4·4	35	e 1 6	+ 3	1 51	− 2	—	2·0
Samarkand	5·2	271	e 1 15	+ 1	e 2 17	+ 4	—	2·6

Additional readings :—
Andijan PP = +38s., i = +44s., and +58s.
Frunse eP_g = +50s., i = +1m.4s.
Tashkent e = +1m.17s.
Almata PS = +1m.27s., S_g = +1m.58s.
Long waves were recorded at Sverdlovsk.

March 1d. 10h. 21m. 56s. Epicentre 47°·7N. 147°·3E. N.1.

A = −·5663, B = +·3636, C = +·7396 ; δ = −9 ;
D = +·540, E = +·842 ; G = −·622, H = +·400, K = −·673.

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

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Sikka	+0·9	3·1	299	1 1k	+ 4	1 57	+15	—	—
Nemuro	+0·4	4·5	196	1 12	+ 2	2 9	+ 4	—	—
Kusiro	+0·3	5·1	204	1 14a	− 3	2 17	− 1	—	—
Asahigawa	+0·3	5·2	223	1 24	+ 6	2 25	+ 5	—	—
Obihiro	+0·2	5·6	213	1 28	+ 6	2 31	+ 3	—	—
Sapporo	0·0	6·2	224	1 34k	+ 6	2 47	+ 9	—	—
Urakawa	0·0	6·4	212	1 35	+ 4	2 49	+ 6	—	—
Hakodate	−0·2	7·5	221	1 52	+ 8	3 14	+ 8	—	—
Aomori	−0·3	8·3	217	1 55	+ 2	3 22	− 2	—	—
Miyako	−0·4	8·9	207	2 4	+ 4	3 29	− 7	—	—
Morioka	−0·4	9·2	211	2 5	0	3 43	− 1	—	—
Akita	−0·4	9·6	216	2 13	+ 3	3 52	− 2	—	—
Mizusawa	−0·4	9·7	210	i 2 12	+ 1	i 3 53	− 3	—	—
Yamagata	−0·6	10·7	211	2 22	0	4 13	− 3	—	—
Hukusima	−0·7	11·1	209	2 29k	+ 3	4 26	+ 3	—	—
Niigata	−0·8	11·5	214	2 33	+ 2	4 35	+ 4	—	—
Vladivostok	−0·8	11·7	252	i 2 32	− 1	4 34	− 2	e 5·5	—
Onahama	−0·8	11·7	206	3 34	+61	5 34	+58	—	—
Mito	−0·9	12·4	206	2 43	+ 1	4 53	+ 3	—	—
Takada	−1·0	12·5	214	2 49	+ 7	4 59	+ 9	—	—
Kakioka	−1·0	12·6	207	2 44	+ 1	4 56	+ 3	—	—
Tukubasan	−1·0	12·7	207	2 45	+ 1	4 57	+ 2	—	—
Maebasi	−1·0	12·8	211	2 47	+ 1	5 4	+ 6	—	—
Wazima	−1·0	12·8	220	2 47	+ 1	5 1	+ 3	—	—
Nagano	−1·0	12·9	215	2 49	+ 2	5 4	+ 4	—	—
Tyosi	−1·0	12·9	204	2 49	+ 2	5 4	+ 4	—	—
Oiwake	−1·1	13·0	213	2 54k	+ 7	5 11	+11	—	—
Kumagaya	−1·1	13·0	210	2 46	− 1	5 6	+ 6	—	—
Tokyo	−1·1	13·3	208	2 49	− 2	5 12	+ 4	—	—
Toyama	−1·1	13·3	218	2 53	+ 2	5 15	+ 7	—	—
Matumoto	−1·1	13·4	214	2 58	+ 6	5 20	+10	—	—
Yokohama	−1·1	13·5	208	2 58	+ 4	5 20	+ 7	—	—
Kanazawa	−1·1	13·7	219	3 20	+24	—	—	—	—
Takayama	−1·1	13·7	216	2 56	0	5 22	+ 5	—	—
Kobu	−1·1	13·7	211	2 58	+ 2	5 20	+ 3	—	—

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.
Iida		−1·2	14·0	213	2 44	−15	5 28	+ 6	—	—
Mera		−1·2	14·0	206	2 59	0	5 31	+ 9	—	—
Misima		−1·2	14·0	209	3 3	+ 4	5 28	+ 6	—	—
Numadu		−1·2	14·1	209	3 2	+ 1	5 29	+ 4	—	—
Hukui		−1·2	14·2	219	2 34	−28	5 10	−17	—	—
Gihu		−1·3	14·6	216	3 7	+ 1	5 38	+ 4	—	—
Ibukisan		−1·3	14·7	218	3 8	+ 1	5 41	+ 4	—	—
Nagoya		−1·3	14·7	215	e 3 7	0	5 39	+ 2	—	5·9
Hamamatu		−1·3	14·8	212	3 4k	− 5	5 42	+ 3	—	—
Omaesaki		−1·3	14·8	211	3 8k	− 1	—	—	—	—
Hikone		−1·4	14·9	217	3 10	+ 1	—	—	—	—
Kameyama		−1·4	15·2	216	3 12	− 1	5 43	− 3	—	—
Kyoto		−1·4	15·3	218	3 14	0	5 54	+ 5	—	—
Toyooka	E.	−1·4	15·3	222	3 16	+ 2	5 53	+ 4	—	6·0
		−1·4	15·3	222	3 14	0	5 55	+ 6	—	6·1
Tu		−1·4	15·3	216	3 38	+24	5 52	+ 3	—	—
Osaka		−1·4	15·7	218	3 20	+ 1	6 8	+10	—	7·8
Osaka		−1·4	15·7	218	2 53	−16	6 0	+ 2	—	—
Kobe	N.	−1·4	15·9	219	e 3 13	− 9	e 5 44	−19	—	6·2
Wakayama		−1·5	16·2	218	3 24k	− 1	6 9	+ 1	—	—
Sumoto		−1·5	16·3	219	3 22k	− 4	6 6	− 4	—	6·4
Koti		−1·6	17·5	221	3 36	− 4	6 35	− 1	—	—
Matuyama		−1·6	17·6	223	3 40	− 1	6 36	− 2	—	—
Heizyo		−1·7	17·8	249	3 39	− 4	6 42	+ 1	—	—
Keizyo		−1·7	17·9	243	e 3 41	− 3	i 6 44	+ 1	—	—
Taikyu		−1·8	18·2	236	e 3 44	− 2	6 53	+ 5	—	—
Zinsen		−1·8	18·2	244	i 3 46a	0	i 6 50	+ 2	—	—
Simidu		−1·8	18·4	221	3 48	− 1	6 53	+ 1	—	—
Siomisaki		−1·8	18·4	228	3 28k	−21	6 22	−30	—	—
Husan		−1·8	18·5	234	e 3 47	− 3	7 4	+ 9	—	—
Ooita		−1·8	18·7	225	3 58	+ 5	—	—	—	—
Hukuoka		−1·9	19·0	228	3 51	− 4	7 4	0	—	7·1
Hukuoka B		−1·9	19·0	228	3 52	− 3	7 3	− 1	—	—
Yingkow		−1·9	19·2	258	3 54	− 4	7 9	0	—	—
Miyazaki		−1·9	19·8	223	4 1k	− 4	7 19	− 3	—	—
Nagasaki		−2·0	19·9	228	4 3a	− 2	7 18	− 4	—	—
Tomie		−2·0	20·6	230	4 9	− 5	—	—	—	—
Chiufeng		−2·3	23·6	265	i 4 34k	− 9	i 8 15	−17	i 10·4	—
Zi-ka-wei		−2·5	25·7	240	e 4 51	−12	—	—	—	—
Nanking		−2·7	26·7	243	5 5	− 5	9 2	−21	11·2	—
Irkutsk		−2·9	27·6	297	5 22	+ 5	i 9 32	− 4	11·1	12·3
Hong Kong		−3·7	36·7	238	10 7	?	11 38	−13	—	—
Manila		−4·0	39·6	222	i 7 5	+11	i 12 24	− 6	—	—
Phu-Lien		−4·2	42·3	245	—	—	e 13 1	− 7	—	—
Sverdlovsk		−4·8	50·2	315	8 15	− 1	i 14 56	0	—	—
Andijan		−5·0	52·0	292	e 8 31	+ 2	—	—	—	—
Calcutta		−5·0	52·8	264	8 36	+ 1	i 15 28	− 2	—	—
Tashkent		−5·1	53·6	294	8 36	− 4	—	—	—	—
Dehra Dun		−5·2	54·6	278	15 4	S	(15 4)	−48	—	—
Samarkand		−5·3	56·0	294	8 48	− 9	—	—	—	—
Agra		−5·3	56·7	275	e 8 56	− 6	i 16 12	− 8	—	—
Pulkovo		−5·5	61·0	329	e 9 33	+ 1	i 17 15	− 1	—	—
Moscow		−5·5	61·1	323	11 3	PP	17 15	− 2	—	—
Scoresby Sund		−5·5	61·6	357	—	—	17 29	+ 5	—	—
Berkeley	z.	−5·6	63·3	62	i 9 51	+ 3	—	—	—	—
Baku		−5·7	65·6	304	10 3	− 1	18 15	0	—	—
Grozny		−5·7	65·8	309	10 8	+ 3	i 18 20	+ 3	—	—
Bombay		−5·7	65·8	272	e 10 7	+ 2	i 18 14	− 3	—	39·5
Tinemaha		−5·8	66·1	60	i 10 10	+ 3	—	—	—	—
Piatigorsk		−5·8	66·7	311	—	—	i 18 27	− 1	—	—

Continued on next page.

		Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	°	m. s.	s.	m. s.	s.	m.	m.
Haiwee		−5·8	67·0	61	i 10 16	+ 3	—	—	—	—
Tiflis		−5·8	67·5	308	e 10 16	0	i 18 36	− 2	—	—
Mount Wilson		−5·8	68·2	63	i 10 22	+ 1	—	—	—	—
Pasadena		−5·8	68·2	63	i 10 22	+ 1	i 18 50	+ 3	—	—
Erevan	•	−5·8	68·7	307	e 11 25	+60	19 56	+62	—	—
Sotchi		−5·8	68·7	312	e 10 28	+ 3	—	—	—	—
Riverside		−5·8	68·8	63	i 10 24	− 1	—	—	—	—
Kodaikanal	E.	−5·8	68·9	263	e 10 19	− 7	18 49	− 7	i 30·7	34·5
La Jolla		−5·8	69·7	63	i 10 31	0	—	—	—	—
Theodosia		−5·8	69·8	316	e 12 3	PP	e 19 2	− 5	38·1	—
Colombo		−5·8	69·8	258	18 59	S	(18 59)	− 8	—	—
Copenhagen		−5·8	69·9	335	14 34	PPP	19 6	− 3	—	—
Simferopol		−5·9	70·4	317	e 12 6	PP	e 19 10	− 4	—	—
Yalta		−5·9	70·8	316	e 12 4	PP	e 19 8	−11	—	—
Sebastopol		−5·9	70·9	317	e 12 14	PP	e 19 14	− 6	—	—
Prague		−6·0	74·1	331	—	—	e 19 53	− 5	—	—
Budapest		−6·0	74·7	327	—	—	i 20 3	− 2	—	—
Cheb		−6·0	74·8	332	e 20 7	S	(e 20 7)	0	—	—
De Bilt		−6·0	75·1	337	e 12 34	?	e 20 4	− 6	—	—
Uccle		−6·0	76·4	338	9 49	?	e 20 16	−10	—	—
Stuttgart		−6·1	76·9	333	e 12 45	?	e 20 20	−11	—	—
Strasbourg		−6·1	77·5	334	—	—	(e 21 4?)	PS	e 21·4	—
Ksara		−6·1	78·0	308	e 11 17	− 5	i 20 36	− 8	—	—
Triest		−6·1	78·2	329	—	—	i 20 32	−14	—	—
Paris		−6·1	78·8	337	e 12 56	+89	—	—	—	—
Florissant		−6·2	79·5	42	i 11 26	− 5	i 20 53	− 7	e 36·6	—
Ottawa		−6·2	79·6	29	—	—	e 20 52	− 9	—	—
St. Louis		−6·2	79·7	42	i 11 27	− 5	i 20 54	− 9	—	—
Toronto		−6·2	79·8	33	—	—	e 20 46	−18	—	—
Florence		−6·2	80·7	329	i 21 4	S	(i 21 4)	−10	—	41·3
Oak Ridge		−6·3	83·4	28	i 11 46	− 7	—	—	—	—
Helwan		−6·3	83·5	308	e 11 54	+ 1	21 22	−23	46·5	59·4
Philadelphia		−6·4	84·6	32	—	—	e 21 30	−26	—	—
San Fernando		—	92·6	339	i 22 24	SKS	(i 22 24)	[−84]	70·1	—
Huancayo		—	129·7	59	e 21 39	?	—	—	—	—
La Paz		—	137·4	54	i 18 40k	[−38]	—	—	—	—
Sucre		—	141·0	53	18 45	[−38]	—	—	—	—

Additional readings and note :—
Kobe ePZ = +3m.16s.
Sumoto SZ = +6m.16s. =SS −1s.
Chiufeng iSNZ = +8m.10s.
Zi-ka-wei iZ = +6m.2s., +11m.6s., +11m.18s., and +14m.38s.
Nanking ePP = +6m.14s.
Irkutsk pP = +6m.38s.
Hong Kong PP = +14m.1s., PPP = +15m.58s.
Sverdlovsk pP = +9m.45s., sS = +17m.21s., SS = +18m.28s.
Tashkent sP = +10m.42s., i = +16m.36s., sS = +18m.4s.
Agra iN = +16m.17s.
Pulkovo pP = +11m.1s., pPP = +13m.11s., i = +18m.35s., sS = +19m.43s.
Moscow e = +18m.36s., sSS = +24m.26s.
Scoresby Sund +20m.10s. and +21m.40s.
Baku pP = +11m.35s.
Grozny isS = +19m.20s.
Tinemaha iZ = +10m.36s.
Piatigorsk isS = +19m.35s.
Tiflis e = +11m.48s.
Mount Wilson iZ = +11m.56s.
Pasadena iZ = +11m.57s.
Sotchi ipP = +11m.58s.
Kodaikanal ePPE = +13m.4s., i = +19m.45s. =PS −38s.
Copenhagen iN = +19m.50s.
Stuttgart ePPP = +17m.15s.
Ksara ipP = +12m.49s., sP = +13m.34s., pPP = +15m.44s., sS = +23m.14s.
Florissant eE = +23m.36s.
Ottawa e = +23m.44s.
Helwan PKP = +13m.19s.
Philadelphia e = +24m.18s.
La Paz iPPZ = +21m.32s.
Sucre PP = +21m.52s., SS = +41m.59s.
Long waves also at Kew and Upsala.

March 1d. 10h. 27m. 28s. Epicentre 46°·0S. 96°·0E. N.3.

$A = -\cdot0726$, $B = +\cdot6909$, $C = -\cdot7193$; $\delta = +1$;
$D = +\cdot995$, $E = +\cdot105$; $G = +\cdot075$, $H = -\cdot715$, $K = -\cdot695$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Perth		20·7	55	4 37	0	8 32	+12	—	9·5
Adelaide		33·8	86	e 5 8	−91	i 12 10	+ 7	—	18·8
Melbourne		36·7	95	e 7 4	0	12 47	0	17·1	18·5
Batavia		40·9	17	7 26	−14	—	—	—	—
Riverview		43·1	94	e 7 55	− 3	i 14 28	+ 6	e 21·9	25·9
Sydney		43·1	94	e 7 56	− 2	i 14 32	+10	21·8	23·7
Tananarive		48·0	287	—	—	15 36	+ 3	19·0	21·4
Medan		49·6	3	8 45	− 3	i 15 51	− 4	—	—
Amboina		50·7	44	8 51	− 6	15 59	−12	—	—
Wellington		54·8	115	—	—	e 17 12	+ 6	23·0$_Q$	30·5
Colombo		54·8	340	—	—	17 2	− 4	25·9	27·9
Arapuni		57·2	113	—	—	e 16 32?	−67	26·5	28·5
Cape Town		58·2	253	9 53	+ 1	17 53	+ 1	28·0	29·8
Kodaikanal		58·7	338	—	—	17 58	− 1	—	—
Manila		64·6	27	i 10 45	+ 9	i 19 11	− 4	—	—
Hyderabad		65·4	342	10 24	−17	17 36	?	25·1	34·0
Phu-Lien		67·5	11	e 11 0	+ 5	—	—	—	—
Bombay		68·2	336	—	—	19 52	− 7	—	33·9
Calcutta		68·8	353	—	—	20 6	− 1	—	44·4
Hong Kong		70·3	18	11 35	(+ 2)	20 13	−12	35·0	47·1
Agra		74·9	344	12 20	+40	21 6	−13	—	38·4
Dehra Dun		78·0	345	—	—	21 12	−42	36·0	44·5
Zi-ka-wei	z.	80·6	22	—	—	i 23 8	+46	—	52·2
Nanking		80·7	19	12 10	− 2	22 16	− 7	—	56·2
Chiufeng		87·9	15	12 53k	+ 6	23 7	[−12]	35·9	59·1
Tashkent		90·5	340	—	—	e 24 2	+ 1	e 38·0	—
Baku		95·7	326	e 21 34	?	—	—	42·5	56·7
Tiflis		98·8	323	i 13 58	+20	24 54	{+10}	42·5	55·2
Sverdlovsk		107·0	340	—	—	e 33 34	SS	50·5	59·8
Moscow		113·0	328	e 14 44	− 1	—	—	58·0	65·6
La Paz	z.	115·9	197	19 47	PP	—	—	63·0	75·7
Triest		116·7	309	—	—	i 26 32	{−22}	e 48·5	57·6
Pulkovo		118·5	328	—	—	e 26 49	{−17}	44·0	67·3
Cheb		120·1	312	—	—	e 25 11	[−40]	e 57·5	74·5
Stuttgart		121·0	309	e 15 5	P	26 38	{−45}	57·5	73·5
Huancayo		121·4	190	—	—	e 29 2	PS	e 49·4	—
Copenhagen		123·4	317	—	—	37 13	SS	46·5	—
Uccle		124·4	309	—	—	e 37 24	SS	e 51·5	—
Hamburg		133·8	314	—	—	e 32 32	PS	63·5	70·5
Scoresby Sund		141·9	332	—	—	41 8	SS	62·5	—
San Juan		148·7	214	e 20 2	[+22]	—	—	61·5	—
Berkeley		150·7	93	e 19 44	[+ 1]	—	—	—	—
La Jolla	z.	151·4	106	e 19 45	[+ 1]	—	—	—	—
Pasadena		151·6	102	i 19 48	[+ 4]	—	—	e 73·0	—
Mount Wilson		151·7	102	i 19 49	[+ 5]	—	—	—	—
Riverside		152·0	102	19 42	[− 2]	—	—	—	—
Haiwee	E.	152·8	99	e 19 55	[+10]	—	—	—	—
Tinemaha	z.	153·1	97	e 19 50	[+ 4]	—	—	—	—
Tucson		155·2	114	e 20 8	[+20]	—	—	e 73·3	—
Philadelphia		171·2	230	e 31 47	PPPP	e 46 12	SS	e 69·6	—
St. Louis	N.	171·3	146	—	—	e 35 23	SKSP	e 47·4	—
Florissant		171·4	144	—	—	e 48 54	SS	—	85·1
Ottawa		174·3	267	—	—	e 47 12	SS	e 72·5	—
Toronto		176·0	236	—	—	e 48 9	SS	e 77·5	—

Additional readings :—
Adelaide iPP = +7m.41s., i = +11m.55s., +12m.53s., +14m.10s. = SSS − 4s., +14m.41s., and +15m.48s.
Melbourne i = +8m.20s. = PP − 2s.

Continued on next page.

Batavia iNZ = +9m.1s. =PP −8s.
Riverview eN = +8m.2s., eZ = +8m.6s.
Sydney SS = +17m.52s. =SSS −7s.
Cape Town S?N = +17m.56s., PS = +18m.16s.
Manila iN = +20m.8s. =S_cS −17s.
Hong Kong S = +15m.11s. =PPP −4s., SSS = +24m.36s., SSSS = +28m.21s.
Nanking eE = +14m.48s., iE = +34m.20s.
Chiufeng PPZ = +16m.0s., i = +24m.37s. =PS +12s.
Tashkent e = +22m.26s., +22m.42s., +30m.26s., and +36m.2s.
Tiflis e = +31m.47s. =SS +2s.
Sverdlovsk e = +37m.24s. =SSS −10s.
Moscow e = +23m.36s. =PPPP +18s.
La Paz SKSE = +19m.57s. =PP +2s., SSZ = +36m.41s.
Pulkovo e = +23m.39s., +29m.29s., +30m.59s., and +35m.55s.
Stuttgart eS = +17m.48s.
Huancayo e = +34m.32s. and +37m.12s. =SS +22s.
San Juan e = +24m.12s. =PPPP −20s. and +60m.22s.
Mount Wilson iZ = +23m.52s. =PP +22s.
Riverside i = +19m.49s.
Tucson eSS = +43m.22s.
Philadelphia e = +33m.34s., +42m.49s.
St. Louis eN = +39m.14s.
Ottawa e = +55m.2s.
Toronto eN = +17m.58s.
Long waves also at Rathfarnham Castle, Bidston, Kew, Stonyhurst, Edinburgh, Bergen, Ivigtut, Vladivostok, Grozny, Honolulu, Victoria, Sucre, and other European and American stations.

March 1d. Readings also at 1h. (near Nagoya), 4h. (Andijan, Samarkand, Tchimkent, Tashkent, and Sverdlovsk), 5h. (La Paz, Mount Wilson, Pasadena, and Tinemaha), 6h. (Apia), 7h. (near La Paz), 8h. (Nanking), 9h. (Triest), 11h. (Samarkand), 12h. (Bozeman and Stuttgart), 14h. (Almeria, Malaga, Toledo, near Granada, and near Santiago), 16h. (Andijan, Samarkand, Piatigorsk (2), Tchimkent, Erevan, near Grozny (2), and near Wellington), 19h. (Little Rock), 21h. (Grozny and Tiflis), 22h. (Alicante), 23h. (Sverdlovsk, Grozny, Erevan, Piatigorsk, Tashkent, Sotchi, and near Tiflis (3)).

March 2d. 3h. 19m. 10s. Epicentre 41°·6N. 144°·0E. N.1.

Given by the Central Meter. Obs. Japan.

A = −·6050, B = +·4395, C = +·6639 ; δ = −5 ;
D = +·588, E = +·809 ; G = −·537, H = +·390, K = −·748.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Urakawa	1·1	301	0 20	+ 4	0 32	+ 4	—	—
Kusiro	1·4	12	0 6a	−14	0 22	P_g	—	—
Obihiro	1·5	336	0 8a	−13	—	—	—	—
Nemuro	2·1	34	0 22k	− 8	1 0	S*	—	—
Muroran	2·4	288	0 32a	− 2	1 12	S*	—	—
Hakodate	2·4	274	0 41a	P_g	1 2	0	—	—
Sapporo	2·5	307	0 36a	0	1 6	+ 2	—	—
Asahigawa	2·5	331	0 26a	−10	1 2	− 2	—	—
Miyako	2·5	218	0 41a	P*	1 12	S*	—	—
Aomori	2·6	252	0 41a	P*	1 14	S*	—	—
Morioka	2·9	229	0 45a	P*	1 21	+ 7	—	—
Mizusawa	3·3	222	0 52	P*	1 31	+ 6	—	—
Akita	3·5	240	0 55	P*	1 40	S*	—	—
Yamagata	4·3	221	1 7a	P*	1 58	+ 8	—	—
Hukusima	4·7	216	1 9	+ 2	2 5	+ 5	—	—
Aldu	5·0	218	1 3	− 8	1 56	−12	—	—
Niigata	5·2	228	1 24	P*	2 29	S*	—	—
Mito	5·9	209	1 27	+ 3	2 28	− 3	—	—
Utunomiya	6·0	214	1 28	+ 3	2 35	+ 2	—	—
Kakioka	6·1	210	1 28	+ 1	2 40	+ 4	—	—

Continued on next page.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tukubasan	6·2	211	1 29	+ 1	2 38	0	—	—
Takada	6·3	227	1 36	+ 6	2 52	+11	—	—
Tyosi	6·3	204	1 35	+ 5	2 45	+ 4	—	—
Maebasi	6·4	218	1 35	+ 4	2 43	0	—	—
Kumagaya	6·5	215	1 35	+ 3	2 50	+ 4	—	—
Nagano	6·6	225	1 41k	+ 7	3 4	S*	—	—
Oiwake	6·7	220	1 41k	+ 6	2 58	+ 7	—	—
Tokyo	6·8	211	1 39	+ 2	2 56	+ 3	—	—
Wazima	6·9	235	1 42a	+ 4	3 3	+ 7	—	—
Yokohama	7·0	210	1 45	+ 6	3 2	+ 3	—	—
Kiyosumi	7·0	205	1 44	+ 5	3 0	+ 1	—	—
Matumoto	7·1	223	1 52	P*	3 12	+11	—	—
Toyama	7·2	229	1 46	+ 4	3 41	S*	—	—
Kohu	7·3	218	1 50	+ 6	3 9	+ 3	—	—
Hunatu	7·3	216	1 46	+ 2	3 12	+ 6	—	—
Mera	7·4	207	1 49	+ 4	3 38	S*	—	—
Takayama	7·5	226	1 57	+11	—	—	—	—
Kanazawa	7·6	231	1 52a	+ 4	3 53	S*	—	—
Misima	7·6	213	1 49	+ 1	3 11	− 3	—	—
Sikka	7·6	355	2 44	+56	3 24	+10	—	—
Numadu	7·6	213	1 55	+ 7	3 20	+ 6	—	—
Ito	7·7	212	1 58a	+ 9	3 18	+ 2	—	—
Iida	7·7	220	2 2k	P*	3 22	+ 6	—	—
Nagoya	8·4	223	e 2 5	+ 6	e 4 5	S*	—	4·3
Gihu	8·4	225	1 53	− 6	3 43	+ 9	—	—
Omaesaki	8·4	215	2 8	+ 9	4 8	S*	—	—
Hamamatu	8·4	218	2 5k	+ 6	3 42	+ 8	—	—
Ibukisan	8·6	226	2 5	+ 3	3 46	+ 7	—	—
Hikone	8·8	226	2 8	+ 3	4 35	S_g	—	—
Kameyama	8·9	223	2 10	+ 4	—	—	—	—
Vladivostok	9·0	284	i 2 8	+ 1	i 4 8	+19	—	—
Hatidyozima	9·1	203	2 25	+16	3 47	− 4	—	—
Miyatu	9·1	228	2 14	+ 5	—	—	—	—
Kyoto	9·2	227	2 16	+ 6	4 7	+13	—	—
Toyooka	9·4	232	e 2 15a	+ 2	4 5	+ 6	e 5·0	6·3
Osaka	9·6	227	2 4	−12	5 0	S_g	—	—
Osaka	9·6	227	2 7	− 9	4 3	0	—	5·4
Kobe	9·8	228	e 2 12	− 6	4 9	+ 1	e 5·5	7·4
Wakayama	10·1	226	2 24	+ 2	5 25	S_g	—	—
Sumoto	10·2	228	i 2 24a	0	4 35	+17	5·5	6·6
Siomisaki	10·4	221	2 27	+ 1	—	—	—	—
Okayama	10·5	232	2 27	− 1	5 51	S_g	—	—
Tokusima	10·6	227	2 12	−17	5 10	S*	—	—
Tadotu	10·9	231	2 34	+ 1	6 32	?	—	—
Muroto	11·4	226	2 43	+ 3	4 49	+ 1	—	—
Koti	11·5	229	2 43a	+ 1	5 8	+18	—	—
Hamada	11·5	238	2 44	+ 2	5 17	+27	—	—
Matuyama	11·8	232	2 45a	− 1	5 50	S*	—	—
Simidu	12·4	228	2 55k	+ 1	5 44	+31	—	—
Ooita	12·8	233	3 10	+11	—	—	—	—
Simonoseki	12·8	238	2 56	− 3	—	—	—	—
Taikyu	13·2	250	3 8	+ 3	e 5 45	+13	7·2	—
Hukuoka	13·4	238	3 9	+ 2	—	—	6·7	12·5
Hukuoka B	13·4	238	i 3 9	+ 2	e 5 44	+ 7	10·7	—
Husan	13·4	246	3 8a	+ 1	e 5 37	0	6·6	11·6
Keizyo	13·6	259	i 3 12	+ 2	e 5 57	+16	—	9·1
Kumamoto	13·7	234	3 12a	+ 1	5 50	+ 6	—	—
Miyazaki	13·9	230	3 15a	+ 1	6 18	+29	—	—
Sinkyo	13·9	286	3 50	+36	6 37	+48	—	—
Zinsen	14·0	259	i 3 15a	0	e 5 55	+ 4	e 6·9	9·2

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Unzendake		14·0	235	3 17	+ 2	7 51	L	(7·8)	—
Heizyo		14·1	266	i 3 20	+ 3	6 53	+60	e 8·1	—
Nagasaki		14·3	236	3 21	+ 2	—	—	—	—
Kagosima		14·6	231	3 30	+ 7	—	—	—	—
Titizima		14·6	187	3 25	+ 2	5 55	−10	—	—
Tomie		15·1	238	3 32a	+ 2	7 23	+66	—	—
Yingkow		16·4	274	3 44	− 2	8 9	L	(8·1)	—
Dairen		17·2	268	3 53	− 4	7 5	− 1	—	—
Nake		17·7	226	5 4	+61	8 35	+78	—	—
Naha		20·5	227	4 36	+ 1	8 21	+ 5	—	—
Zi-ka-wei		20·8	248	e 4 35	− 3	8 28	+ 6	11·9	13·0
Chiufeng		21·1	276	i 4 39a	− 2	i 8 39	+11	10·8	14·8
Nanking		22·2	253	i 4 51a	− 2	9 6	+16	i 12·0	14·8
Taihoku		24·9	235	i 5 18a	− 1	9 48	+ 9	13·6	18·3
Karenko		25·5	234	5 26	+ 1	—	—	—	—
Arisan		26·5	234	5 25	− 9	10 11	+ 4	—	—
Taito		26·9	233	5 44	+ 7	10 14	0	—	—
Kosyun		27·7	232	5 50	+ 6	10 36	+ 9	—	—
Irkutsk		28·7	306	i 6 5	+12	10 57	+14	14·8	17·2
Hong Kong		31·6	242	6 20k	+ 1	11 30	+ 1	14·6	18·5
Manila		33·6	223	i 6 38a	+ 1	12 2	+ 2	15·8	19·3
Palau		35·3	196	6 50	− 2	—	—	—	—
Phu-Lien		37·7	248	i 7 13	+ 1	13 4	+ 2	19·8	22·9
Semipalatinsk		43·6	305	8 3	+ 1	14 43	+13	23·8	—
College		44·0	35	e 8 3	− 2	e 14 26	−10	e 19·5	—
Amboina		47·5	201	8 33	+ 1	15 21	− 5	e 18·8	—
Calcutta	E.	49·9	265	8 59	+ 8	16 21	+22	24·2	34·4
Frunse		49·9	296	8 47	− 4	16 11	+12	28·3	—
Andijan		52·3	295	9 6	− 3	16 49	+16	30·3	—
Honolulu		52·5	93	—	—	i 16 43	+ 8	—	—
Sverdlovsk		52·9	317	i 9 13	0	i 16 40	− 1	28·3R	33·3
Dehra Dun		53·3	280	8 20	−56	15 30	−76	24·3	31·8
Tchimkent		53·4	297	9 16	− 1	e 17 6	+19	—	—
Tashkent		54·1	295	i 9 18	− 4	i 17 6	+ 9	28·8	34·3
Agra		55·0	277	i 9 23	− 6	17 11	+ 2	26·6	36·2
Medan		55·6	240	9 31	− 2	17 14	− 3	e 30·8	—
Samarkand		56·4	296	9 34	− 5	—	—	29·8	—
Batavia		58·6	225	i 9 55	0	i 17 56	− 1	e 32·8	—
Hyderabad		60·4	267	9 51	−16	17 58	−23	28·1	37·1
Victoria		61·7	49	e 10 20	+ 4	i 18 31	− 7	e 33·1	39·1
Seattle		62·7	49	—	—	e 17 50	−61	e 32·6	—
Bombay		63·7	272	i 9 57	−33	i 19 17	+13	31·8	41·4
Moscow		64·6	323	i 10 30	− 6	19 7	− 8	35·3	37·6
Pulkovo		65·0	330	i 10 33	− 6	19 11	− 9	31·8	42·5
Kodaikanal	E.	65·7	263	i 10 43	0	19 40	+11	31·8	44·1
Colombo		66·2	258	10 44	− 3	19 37	+ 2	35·4	46·8
Ukiah		67·0	57	—	—	19 41	− 4	e 27·0	—
Scoresby Sund		67·5	355	10 49k	− 6	19 40	−11	28·8	—
Grozny		67·8	309	10 59	+ 2	e 19 55	+ 1	37·8	—
Berkeley		68·3	58	e 10 55	− 5	—	—	—	—
Piatigorsk		68·9	311	11 0	− 4	20 2	− 6	38·7	—
Upsala		69·4	335	11 0	− 7	e 20 6	− 8	e 32·8	42·6
Tiflis		69·4	308	i 11 4	− 3	i 20 10	− 4	e 35·8	44·8
Bozeman		70·1	46	e 11 6	− 5	20 14	− 8	28·0	—
Erevan		70·5	307	11 17	+ 3	e 20 28	+ 1	38·8	—
Sotchi		71·1	312	11 17	0	20 30	− 4	40·6	—
Tinemaha		71·3	57	e 11 11	− 8	e 20 30	− 7	—	—
Santa Barbara	E.	72·1	59	e 11 20	− 3	—	—	—	—
Haiwee		72·1	57	i 11 19	− 4	e 20 38	− 8	—	—
Königsberg		72·2	330	e 11 23	− 1	i 21 1	PS	e 36·7	37·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Bergen		72·6	341	i 11 28	+ 2	e 20 50	− 2	e 34·8	41·3
Pasadena		73·2	59	i 11 25	− 5	i 20 50	− 9	e 29·0	—
Simferopol		73·2	317	11 26	− 4	20 51	− 8	38·8	—
Mount Wilson	z.	73·3	59	i 11 26	− 5	—	—	—	—
Yalta		73·5	315	11 26	− 6	e 20 50	−13	e 30·8	—
Sebastopol		73·7	317	11 30	− 3	e 20 56	− 9	38·8	—
Riverside		73·8	59	e 11 29	− 4	e 21 34	PS	—	—
Copenhagen		74·4	334	i 11 32a	− 5	21 2	−11	34·8	—
Lemberg		74·6	325	—	—	e 19 38	?	40·6	43·3
La Jolla		74·6	59	e 11 34	− 4	e 21 10	− 5	—	—
Riverview		75·5	173	e 12 14	+31	e 21 26	0	e 31·0	40·1
Sydney		75·7	173	—	—	e 19 35	?	42·3	56·4
Adelaide		76·7	185	e 11 7	−43	i 21 25	−14	e 37·4	39·2
Ivigtut		76·7	7	—	—	21 27	−12	34·8	—
Hamburg		77·0	335	i 11 48a	− 4	21 34	− 9	e 35·8	39·8
Bucharest		77·6	320	e 11 48	− 7	e 21 26	−23	42·8	45·3
Perth		78·0	204	11 55	− 2	21 40	−14	—	31·8
Prague		78·3	330	e 11 51	− 8	e 21 56	− 1	e 36·8	49·8
Budapest		78·5	326	11 58	− 2	21 53	− 6	42·2	50·8
Jena		78·6	332	e 11 50	−10	e 21 50	−10	e 35·8	49·8
Edinburgh		78·6	342	—	—	i 21 50?	−10	35·8	46·2
Göttingen		78·7	333	i 11 56	− 5	e 21 50	−12	e 38·8	44·8
Vienna		79·0	328	e 11 58	− 5	21 57	− 8	e 41·8	45·8
Cheb		79·0	331	e 11 56	− 7	e 21 56	− 9	e 39·8	46·3
Tucson		79·1	56	e 12 8	+ 5	e 21 54	−12	e 33·1	—
Melbourne		79·4	179	—	—	i 22 0	− 9	33·1	43·1
De Bilt		79·7	336	i 12 2a	− 4	22 3	− 9	e 36·8	56·4
Ksara		79·8	306	i 12 4a	− 3	22 8	− 6	40·5	47·2
Belgrade		79·9	323	e 12 3k	− 4	e 22 5	−10	e 45·7	—
Graz		80·3	327	i 12 4	− 5	22 7	−12	e 38·8	47·3
Stonyhurst		80·3	342	—	—	e 22 10	− 9	42·8	50·5
Bidston		80·9	342	—	—	i 22 26	+ 1	36·0	46·0
Zagreb		81·1	327	e 12 7	− 7	e 22 23	− 4	e 40·2	52·6
Uccle		81·1	337	i 12 10a	− 4	22 15	−12	37·8	51·8
Karlsruhe		81·3	333	12 13	− 2	22 16	−14	44·8	—
Stuttgart		81·3	332	12 11a	− 4	e 22 16	−14	e 38·8	44·8
Rathfarnham Castle		81·7	343	11 52	−25	i 22 28	− 6	—	47·1
Kew		81·9	338	i 12 15a	− 3	i 22 27	− 9	40·8	46·0
Oxford		81·9	339	12 21	+ 3	e 22 43	+ 7	38·0	54·1
Strasbourg		81·9	333	i 12 10a	− 8	i 22 22	−14	e 38·8	52·3
Triest		82·1	328	i 12 14a	− 5	i 22 26	−12	e 40·8	48·7
Madison		82·6	36	—	—	e 22 50?	+ 7	—	—
Zurich		82·7	332	e 12 17a	− 5	e 22 33	−11	—	—
Chur		82·8	332	e 12 18	− 4	e 22 35	−10	—	—
Basle		82·9	333	e 12 19	− 4	e 22 38	− 8	—	—
Padova		83·1	328	e 12 42	+18	e 23 1	+13	—	—
Paris		83·4	336	i 12 22a	− 3	i 22 42	− 9	38·8	52·8
Neuchatel		83·6	333	e 12 21	− 5	e 22 43	−10	—	—
Chicago		84·5	36	—	—	e 22 45	[−10]	e 40·3	—
Florence		84·7	328	i 13 5	+33	23 50	PS	42·8	—
Helwan		85·4	306	12 33	− 2	23 15	+ 3	46·9	57·9
Florissant		85·6	40	e 12 32	− 4	i 22 54	[− 9]	e 38·4	52·9
Grenoble		85·6	332	—	—	e 21 56	[−67]	50·4	58·0
Ann Arbor		85·7	33	—	—	e 22 56	[− 8]	e 43·4	62·9
St. Louis		85·8	40	e 12 38	+ 1	e 22 54	[−11]	e 40·2	50·2
Ottawa		86·1	27	—	—	i 23 2	[− 5]	e 38·8	—
Toronto		86·3	30	e 12 34	− 6	e 22 54	[−14]	39·8	—
Wellington		87·4	157	—	—	23 30	− 1	42·8	44·8
Vermont		87·7	25	—	—	e 23 14	[− 4]	e 45·0	—
Ithaca		88·4	29	—	—	i 23 26	[+ 3]	e 49·8	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Christchurch		88·9	159	12 57	+ 5	23 15	[−11]	—	—
Oak Ridge		90·0	26	i 12 55	− 2	i 23 42	[+ 9]	e 46·8	—
Barcelona		90·1	333	—	—	e 23 46	−11	e 46·3	53·7
Philadelphia		91·0	30	—	—	e 23 31	[− 8]	e 40·7	—
Tortosa	N.	91·2	334	—	—	e 22 50?	[−50]	e 47·8	54·2
Charlottesville		91·4	33	—	—	e 23 26	[−15]	e 40·8	—
Columbia		93·8	37	—	—	e 38 55	?	50·3	—
Algiers		93·9	330	e 12 50?	−25	—	—	47·8	52·8
Granada		95·8	336	e 13 1	−23	—	—	—	—
San Fernando		97·3	337	—	—	28 9	?	48·8	54·3
San Juan		113·8	32	—	—	e 26 46	{+12}	55·8	—
Dakar		121·2	339	e 20 29	PP	e 28 27	{+63}	e 68·3	75·4
Huancayo		134·8	62	i 22 40	PKS	e 28 38	{−14}	54·8	—
Cape Town		137·0	263	22 1	PP	—	—	68·0	82·8
La Paz		142·7	58	19 42	[+16]	i 26 30	SKS	70·7	81·6
Sucre		146·4	58	i 19 40	[+ 4]	—	—	76·8	—
Rio de Janeiro		160·3	20	—	—	e 43 50	SS	—	—

Additional readings :—
Nagoya PP = +2m.54s.
Toyooka eSZ = +4m.11s.
Kobe ePE = +2m.15s., eSZ = +4m.11s.
Zi-ka-wei iZ = +4m.46s., PPZ = +4m.57s., iZ = +5m.18s. and +5m.26s., iE = +8m.58s., SSZ = +9m.30s.
Nanking e = +8m.41s.
Hong Kong PP = +7m.55s., SS = +12m.30s.
College iS = +14m.31s., i = +14m.56s., iS_cS = +17m.53s. =SS.
Honolulu e = +22m.50s.
Sverdlovsk L_q = +26m.20s.
Agra iPPE = +11m.30s., ePPP = +12m.27s., PSE = +17m.43s., iSSE = +20m.57s., SSSE = +22m.46s.
Bombay SSEN = +23m.50s.
Kodaikanal iPP = +13m.10s., iSS = +23m.52s.
Scoresby Sund +11m.4s. = P_cP −19s. and +20m.4s. =PS −1s., SS = +24m.20s.
Berkeley eN = +10m.58s.
Upsala i = +20m.23s. =PS −7s., SS = +24m.50s.
Tiflis PS = +20m.29s., SS = +24m.56s.
Bozeman eSS = +24m.41s.
Tinemaha eN = +15m.2s.
Königsberg iE = +14m.22s., eE = +20m.29s. and +21m.20s. =PS +13s.
Bergen eSSS = +29m.43s.
Pasadena iEZ = +11m.36s., iNZ = +15m.23s., iN = +21m.36s. =PS +15s.
Copenhagen +14m.17s. =PP +1s., +21m.24s. =PS −12s., SS = +26m.20s.
Riverview eE = +20m.20s.
Adelaide i = +11m.55s., e = +13m.7s., eSS = +26m.32s., eSSS = +29m.50s., eSSSS = +31m.44s.
Ivigtut +21m.50s. =PS −17s.
Hamburg eSSSN = +31m.2s.
Bucharest eE = +11m.56s. and +12m.26s., eEN = +21m.43s.
Perth P? = +11m.25s., PP = +15m.5s., PS = +22m.10s., SS = +27m.40s.
Budapest i = +12m.8s. and +12m.14s.
Jena e = +31m.8s.
Edinburgh i = +22m.8s. and +22m.26s.
Vienna P_cP = +12m.18s., S_cS = +22m.16s.
Cheb ePP = +15m.2s.
Tucson ePS = +22m.36s., eSS = +26m.38s., eSSS = +30m.24s.
Melbourne e = +30m.30s. =SSS +11s.
Ksara PP = +15m.6s., SS = +27m.30s.
Belgrade e = +18m.50s.
Bidston i = +23m.18s., e = +28m.5s., +31m.30s., and +31m.55s.
Zagreb eP = +12m.11s., ePP = +25m.11s., ePS = +23m.17s., eSSS = +32m.2s.
Uccle PPz = +15m.13s., iN = +22m.30s., SSE = +27m.31s.
Stuttgart iP_cPz = +12m.30s., e = +14m.2s., ePP = +15m.18s., eSSS = +32m.2s.
Rathfarnham Castle i = +12m.7s. and +12m.42s., i = +26m.4s., e = +13m.56s. and +16m.2s., +27m.55s., and +32m.0s.
Kew iZ = +12m.33s., iSKS = +22m.35s., eS_cSZ = +22m.49s., iN = +23m.31s. = PS +18s., eSS = +28m.6s., eSSSN = +31m.29s., eE = +31m.49s.
Oxford i = +23m.40s.
Strasbourg ePP = +15m.21s., ePPP = +17m.7s., ePPPP = +18m.50s., iPS = +23m.28s., eSS = +28m.20s., iSSS = +31m.13s.
Triest i = +22m.43s., iPS = +23m.14s., SS = +27m.58s., SSS = +32m.3s., e = +38m.54s.

Continued on next page.

Basle e = +12m.21s.
Chicago eSS = +28m.23s.
Helwan eSKS = +22m.53s.
Florissant ePPZ = +15m.38s., iEZ = +22m.59s., isSE = +23m.17s., eSSE = +28m.21s., iE = +28m.43s., eE = +33m.36s.
Ann Arbor eN = +24m.32s.
St. Louis iPN = +12m.45s., epPE = +12m.54s., iN = +13m.1s., isSN = +23m.16s., eSSN = +28m.44s.
Toronto iPS = +23m.35s. ; T_0 = 3h.19m.22s.
Vermont iS = +23m.32s., e = +39m.10s.
Oak Ridge iPS = +25m.10s.
Barcelona S = +33m.23s.
Philadelphia iS = +23m.50s., eSS = +30m.11s., e = +32m.41s., eSSS = +33m.38s., e = +35m.56s. and +40m.2s.
Charlottesville eS = +23m.50s.
Algiers PP? = +17m.20s.
Granada PP = +17m.14s.
San Fernando PPP = +23m.59s., ? = +24m.30s. =SKKS −3s., eSS = +35m.24s.
San Juan ePP = +19m.16s., e = +24m.11s. =SKS −2s., ePS = +28m.50s., eSS = +34m.41s., e = +48m.16s.
Dakar ePPS = +33m.45s., ePP = +39m.15s.
Huancayo e = +22m.56s. =PKS +3s. and +29m.55s., eSKSP = +31m.40s., eSS = +38m.59s., eSSS = +45m.0s.
Cape Town SKP?N = +22m.11s. =PP +8s., PPS?E = +34m.53s., SS?N = +40m.28s., SS?E = +40m.45s.
La Paz iPPE = +23m.15s. =PKS +0s., iSKKS = +29m.26s.
Sucre PP = +23m.38s. =PKS +16s., SS = +41m.47s.
Long waves at Apia, Arapuni, La Plata, Baku, Besançon, Laibach, Almeria, and Malaga.

March 2d. 18h. 6m. 44s. Epicentre 34°·8N. 135°·7E. (as on 1935 May 31d.). X.

A = −·5877, B = +·5735, C = +·5707 ; δ = −1 ;

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Osaka	0·2	218	0 2	− 1	0 5	0	0·1
Kobe	0·4	254	0 6k	0	0 12	+ 2	0·3
Sumoto	0·8	236	0 9	− 2	0 18	− 3	0·4
Nagoya	1·1	71	e 0 21	+ 5	0 37	+ 9	—

March 2d. 19h. 59m. 51s. Epicentre 36°·5N. 75°·0E. (as on 1929 Sept. 24d.). X.

A = +·2081, B = +·7765, C = +·5948 ; δ = +4 ;
D = +·966, E = −·259 ; G = +·154, H = +·575, K = −·804.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		4·3	331	e 1 3	+ 2	e 2 1	S*	—	2·9
Frunse		6·4	357	e 1 29	− 2	e 2 49	+ 6	—	4·0
Tashkent		6·5	319	i 1 45	P*	i 2 4	S*	e 2·2	3·8
Samarkand		7·0	300	e 1 40	+ 1	e 2 30	−29	—	3·1
Tchimkent		7·1	326	e 2 3	P*	—	—	—	—
Agra	E.	9·7	164	—	—	e 3 24	?	—	—

Additional readings :—
Tashkent gives e = 19h.58m.4s. also +21s.
Long waves were recorded at Sverdlovsk.

March 2d. Readings also at 1h. (near Santiago), 2h. (Oak Ridge, Toledo, near Malaga, near Zurich, near Batavia, and Malabar), 3h. (Mizusawa), 4h. (Nagoya and near Mizusawa), 5h. (Erevan and near Tiflis), 6h. (near Taihoku and near Mizusawa), 8h. (Mizusawa, Erevan, and near Tiflis), 9h. (Tiflis), 10h. (near Amboina), 11h. (near Erevan), 13h. (Ann Arbor and La Paz), 15h. (Grozny, Piatigorsk, and Tiflis), 23h. (near Amboina).

March 3d. Readings at 0h. (near Amboina), 1h. (Mizusawa), 7h. (Baku, Ksara, Sverdlovsk, and Tashkent), 11h. (Mount Wilson and Riverside), 15h. (Ksara), 16h. (Nagoya, Mizusawa, and near Amboina), 17h. (Sverdlovsk, Tashkent, Tchimkent, Samarkand, and near Frunse), 18h. (Andijan), 19h. (Dannevirke, Wellington, and near Samarkand), 20h. (Sverdlovsk, Andijan, Frunse, Samarkand, Tashkent, and Tiflis), 21h. (Samarkand).

March 4d. 6h. 29m. 59s. Epicentre 4°·2S. 130°·8E. (as on 1933 Oct. 17d.). R.3.

$A = -\cdot6517$, $B = +\cdot7550$, $C = -\cdot0732$; $\delta = +10$;
$D = +\cdot757$, $E = +\cdot653$; $G = +\cdot048$, $H = -\cdot055$, $K = -\cdot997$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	2·7	281	i 0 49	P_g	i 1 29	S_g	—	—
Manila	21·2	333	i 4 48 a	+ 6	i 8 52	SS	—	13·5
Malabar	23·3	262	i 5 1	− 3	—	—	—	—
Batavia	24·0	264	i 5 1	− 9	9 1	−22	—	—
Adelaide	31·6	169	i 6 28	+ 9	e 11 51	+22	—	16·4
Medan	33·0	284	e 6 36	+ 4	i 11 43	− 8	—	—
Riverview	35·2	151	—	—	e 12 37	+13	—	—
Melbourne	36·0	161	—	—	e 11 54	−42	—	18·5
Chiufeng	46·3	345	e 8 17	− 6	15 6	− 3	—	—
Frunse	69·1	319	e 11 9	+ 4	—	—	—	—
Andijan	69·7	316	e 11 0	− 9	—	—	—	—
Semipalatinsk	69·7	329	11 1	− 8	20 5	−13	—	—
Tashkent	72·0	316	e 10 15	−68	i 20 33	−12	—	—
Samarkand	73·0	313	e 11 32	+ 3	—	—	—	—
Sverdlovsk	82·8	329	i 12 17	− 5	i 22 29	[−13]	34·0	—
Tiflis	89·8	312	—	—	e 23 8	[−23]	—	—

Additional readings :—
Adelaide i = +12m.16s., e = +13m.44s.
Medan iE = +12m.45s.
Riverview eE = +15m.13s. eZ = +15m.19s.
Chiufeng ePZ = +8m.21s.

March 4d. Readings also at 1h. (Amboina, Grozny, and Tiflis (2)), 3h. (near Amboina and near Santiago), 4h. (Mount Wilson, Pasadena, Tinemaha Bucharest, and near Budapest), 5h. (Lick and Malabar), 6h. (Amboina), 7h. (Frunse and near Andijan (2)), 11h. (Tashkent, Tchimkent, Andijan, Frunse, and near Samarkand), 12h. (Rathfarnham Castle), 13h. (near Amboina), 15h. (Mount Wilson, Pasadena, Tinemaha, Sverdlovsk, Tashkent, Tiflis, Pulkovo, Copenhagen, Stuttgart, Bucharest, De Bilt, Paris, San Fernando, Granada, Vladivostok, Chiufeng, Mizusawa, and Cape Town), 16h. (near Zagreb), 17h. (Nanking, Hong Kong, Husan, Huknoka B, Zi-ka-wei, Irkutsk, Vladivostok, Tashkent, Pulkovo, Sverdlovsk, Copenhagen, Strasbourg, Stuttgart, and De Bilt), 18h. (Merida, Mount Wilson, Pasadena, Riverside, Tinemaha, and near Victoria), 20h. (Drome, Granada. and near Lick), 21h. (Granada), 22h. (La Paz (2)), 23h. (Wellington).

March 5d. 6h. 5m. 56s. Epicentre 9°·2S. 109°·3W. N.3.

$A = -\cdot3263$, $B = -\cdot9317$, $C = -\cdot1599$; $\delta = +10$;
$D = -\cdot944$, $E = +\cdot331$; $G = +\cdot053$, $H = +\cdot151$, $K = -\cdot987$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Huancayo		33·5	98	i 6 37	+ 1	11 49	− 9	i 14·7	—
La Paz		40·7	105	7 36k	− 2	i 13 48	+ 1	19·3	23·0
Tucson		41·5	358	e 7 57	+13	e 14 2	+ 3	e 17·0	—
La Jolla	N.	42·7	350	e 7 33	−21	—	—	—	—
Riverside		43·9	350	e 8 5	+ 1	—	—	—	—
Mount Wilson	Z.	44·2	350	e 8 7	+ 1	—	—	—	—
Pasadena		44·2	350	e 8 9	+ 3	—	—	e 18·8	—
Little Rock	N.	46·8	19	e 8 25	− 2	e 15 12	−4	—	—
Tinemaha	Z.	47·1	350	e 8 30	+ 1	—	—	—	—
Ukiah		50·0	346	—	—	15 52	− 9	e 22·2	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan	50·8	57	e 14 14	?	e 15 56	−16	e 20·5	—
Columbia	50·8	30	—	—	e 16 5	− 7	e 25·2	—
St. Louis	51·0	19	e 8 59	0	e 16 8	− 7	e 24·9	—
Florissant	51·1	19	e 8 58	− 2	e 16 12	− 4	e 23·7	—
Honolulu	56·6	304	—	—	e 18 4	+33	e 28·0	—
Philadelphia	58·4	31	—	—	e 17 34	−21	e 28·1	—
Ottawa	62·4	26	—	—	e 18 40	− 7	e 31·0	—
Rio de Janeiro	64·5	110	—	—.	e 19 4	−10	e 32·6	—
Christchurch	75·1	227	17 59	?	25 59	SS	e 35·2	e 39·2
Ksara	139·7	47	e 19 48	[+27]	i 28 0	?	—	—
Baku	143·8	28	e 22 56	PP	e 32 58	SKSP	68·1	80·6
Tashkent	147·9	3	e 20 1	[+22]	—	—	e 67·6	85·6

Additional readings :—
Huancayo iRP = +7m.14s.
La Paz iPZ = +7m.39s., iPPE = +9m.6s., iSSE = +16m.40s., iSSN = +16m.45s.
Pasadena eZ = +9m.52s.
Ukiah eSSS = +21m.16s.
Columbia e = +20m.2s.
Florissant eE = +21m.22s.
Honolulu e = +26m.20s.
Ksara e = +22m.35s. and +40m.14s.
Baku e = +37m.50s. and +41m.36s.
Tashkent e = +20m.25s., +20m.41s., +32m.39s., and +50m.34s.
These readings may be associated with the local shock recorded by Russian stations of Central Asia.
Long waves were also recorded at Chiufeng, Santiago, La Plata, Bozeman, Oak Ridge, Wellington, Calcutta, Nanking, Sverdlovsk, Irkutsk, and Vladivostok.

March 5d. Readings also at 2h. (near Santiago), 4h. (near Belgrade), 5h. (Samarkand), 6h. (Andijan, Frunse, Tchimkent, and near Samarkand), 7h. (Medan), 8h. (Andijan (3), Frunse, and Samarkand (2)), 9h. (Andijan and Samarkand), 10h. (near Amboina), 12h. (near Almeria, Granada, and Malaga), 15h. (Lick and near Zagreb), 17h. (Christchurch), 18h. (Huancayo, La Paz, Tacubaya, Manzanillo, Tucson, Philadelphia, Mount Wilson, Pasadena, Riverside, Tinemaha, College, and near Amboina), 19h. (Amboina, Baku, Sverdlovsk, Tashkent, Irkutsk, Malaga, and Tacubaya), 22h. (Oaxaca and Tacubaya), 23h. (Hong Kong, Manila, Nanking, Irkutsk, Tashkent, Sverdlovsk, Kobe, Sumoto, near Nagoya and Toyooka).

March 6d. 12h. 14m. 40s. Epicentre 40°·0N. 78°·0E. (as on 1927 March 29d.). X.

A = +·1593, B = +·7493, C = +·6428 ; δ = +2 ;
D = +·978, E = −·208 ; G = +·134, H = +·629, K = −·766.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		3·3	347	e 0 52	P*	i 1 24	− 1	—	1·7
Frunse		3·9	320	0 48	− 8	i 1 31	− 9	—	—
Andijan		4·3	282	1 1	0	i 1 49	− 1	—	2·0
Tashkent		6·7	284	e 1 55	P*	e 2 21	P_g	e 2·8	4·4
Tchimkent		6·7	293	e 1 45	+10	—	—	—	—
Samarkand		8·5	271	e 1 41	−19	e 2 31	P*	—	—
Agra	E.	12·9	180	—	—	e 5 34	+ 9	e 6·8	—
Calcutta	E.	19·6	150	—	—	e 8 4	+ 6	—	—
Sverdlovsk		20·2	332	e 5 22	+50	e 8 32	+22	e 10·3	—
Irkutsk		21·7	47	—	—	e 9 9	SS	e 12·3	—
Moscow		30·7	315	—	—	e 12 32	SS	—	—

Additional readings :—
Almata P_g = +58s., S_g = +1m.33s.
Frunse P* = +53s., P_g = +58s., iS_g = +1m.41s.
Andijan P_g = +1m.11s., i = +1m.58s.
Irkutsk e = +11m.42s.
Long waves were also recorded at Baku, Semipalatinsk, Tiflis, Pulkovo, and Copenhagen.

March 6d. 14h. 25m. 37s. Epicentre 21°·1S. 174°·4W. (as on 1933 May 20d.). R.2.

$A = -\cdot9285$, $B = -\cdot0910$, $C = -\cdot3600$; $\delta = -1$;
$D = -\cdot098$, $E = +\cdot995$; $G = +\cdot358$, $H = +\cdot035$, $K = -\cdot933$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		7·7	19	e 1 47	− 2	e 3 6	−10	e 3·6	—
Wellington		22·2	202	4 57	+ 4	8 49	− 1	10·8	—
Christchurch		24·9	203	i 5 21	+ 2	e 9 25	−14	—	13·2
Riverview		33·0	240	—	—	e 12 35	+44	e 17·4	19·2
Sydney		33·0	240	e 6 39	+ 7	—	—	16·9	19·9
Melbourne		38·8	235	e 8 57	PP	e 13 44	+26	21·4	22·9
Adelaide		43·3	241	—	—	e 12 33	?	—	35·9
Perth		62·4	244	—	—	e 18 58	+11	—	30·4
Manila		72·8	294	11 24	− 4	(21 0)	+ 6	21·0	—
Santa Barbara	z.	76·0	44	e 11 44	− 2	—	—	—	—
Branner		76·4	40	e 11 50	+ 2	—	—	—	—
Berkeley	z.	76·7	39	e 11 49	− 1	—	—	—	—
La Jolla	z.	76·7	46	e 11 48	− 2	—	—	—	—
Pasadena		76·9	44	i 11 50	− 1	e 21 38	− 4	e 37·7	—
Mount Wilson	z.	77·1	44	i 11 49	− 4	—	—	—	—
Riverside	z.	77·3	44	e 11 51	− 3	—	—	—	—
Batavia		77·4	268	11 34	−20	22 26	+39	—	—
Haiwee		78·2	42	e 11 58	0	—	—	—	—
Tinemaha		78·6	41	e 11 59	− 1	e 21 53	− 7	—	—
Tucson		80·8	49	e 11 59	−13	e 22 22	− 2	e 40·1	—
Vladivostok		80·9	323	e 12 12	− 1	e 22 35	+10	—	46·9
Hong Kong		82·1	297	22 45	S	(22 45)	+ 7	—	43·9
Nanking		83·1	308	e 12 27	+ 3	e 23 21	PS	40·4	—
Bozeman		88·0	39	—	—	e 36 38	?	—	—
Chiufeng		89·0	314	12 53a	0	23 32	[+ 6]	—	57·8
Huancayo		93·9	105	—	—	i 23 57	[+ 2]	e 43·7	—
La Paz		98·5	110	e 18 3	?	i 24 11	[− 7]	50·2	54·1
Philadelphia		110·2	54	—	—	e 28 31	PS	e 53·6	—
Ottawa		110·8	46	—	—	e 28 53	PS	e 56·4	—
Tashkent		123·2	307	20 50	PP	25 53	[− 7]	e 58·9	74·4
Sverdlovsk		126·4	326	19 1	[+ 1]	26 10	[+ 1]	51·4	72·7
Scoresby Sund		128·0	12	22 29	PP	—	—	64·4	—
Pulkovo		137·5	341	19 22	[+ 4]	—	—	73·4	80·6
Baku		137·9	308	19 31	[+12]	—	—	64·4	82·7
Tiflis		141·2	311	e 19 23	[0]	—	—	e 79·4	87·9
Copenhagen		145·0	351	19 34a	[0]	—	—	70·4	—
Theodosia		145·8	322	e 19 38	[+ 2]	—	—	—	—
Simferopol		146·5	322	e 19 39	[+ 2]	—	—	—	—
Yalta		146·8	322	e 19 38	[+ 1]	—	—	—	—
Sebastopol		147·1	322	e 19 42	[+ 5]	—	—	—	—
De Bilt		149·0	1	e 19 49	[+ 9]	—	—	e 77·4	97·6
Kew		149·3	7	e 19 48	[+ 7]	—	—	e 79·4	—
Uccle		150·3	2	e 19 49	[+ 7]	—	—	e 79·4	—
Ksara		150·4	300	i 19 43	[+ 1]	—	—	—	87·4
Vienna		151·5	345	e 20 1	[+17]	—	—	—	—
Paris		152·2	4	e 19 23?	[−21]	—	—	80·4	—
Stuttgart		152·2	355	e 19 53	[+ 9]	—	—	e 85·4	—
Strasbourg		152·5	357	i 20 1k	[+16]	—	—	e 66·4	—
Zagreb	z.	153·8	343	e 19 46	[− 1]	—	—	—	—
Granada		162·0	24	e 20 25	[+29]	—	—	76·4	—

Additional readings:—
Apia e = +4m.30s. and +5m.27s., i = +6m.9s., +9m.29s., and +10m.32s.
Wellington SS = +10m.7s.
Adelaide e = +15m.41s. and +17m.53s.
Manila S? = +16m.45s.
Tucson ePS = +22m.45s., eSS = +27m.41s., e = +35m.3s.
Hong Kong S? = +28m.38s.
Chiufeng eSKSE = +23m.18s.
Huancayo eSS = +31m.3s.

Continued on page next.

Philadelphia eSS = +34m.51s., e = +48m.31s.
Tashkent e = +26m.53s., eSS = +37m.53s.
Sverdlovsk PP = +21m.1s., PKS = +22m.18s.
Pulkovo i = +19m.52s., PP = +22m.8s., PPS = +22m.59s., PPP = +25m.21s., PS = +32m.43s., SS = +40m.29s.
Baku PP = +22m.11s., e = +50m.59s.
Tiflis e = +22m.23s. and +64m.23s.?
Ksara PP = +23m.26s., SKSP = +33m.42s.
Zagreb eN = +20m.5s., eZ = +20m.9s.
Long waves were also recorded at Arapuni, Cape Town, Honolulu, Ukiah, College, San Juan, Ivigtut, Bidston, Moscow, Cheb, Prague, San Fernando, and Florence.

March 6d. Readings also at 0h. (near Berkeley), 1h. (Mount Wilson, Riverside, Tinemaha, and Tacubaya), 3h. (near Branner and Lick), 4h. (Pasadena, Mount Wilson, Tinemaha, Baku, Nanking, Chiufeng, Nagoya, and near Mizusawa (2)), 5h. (Batavia, Medan, Vladivostok, and Sverdlovsk), 6h. (Oak Ridge, Tacubaya, and near Manila), 7h. (near Lick), 8h. (near Christchurch, Greymouth, New Plymouth, and Wellington), 9h. (Riverview), 11h. (near Sumoto), 12h. (near Berkeley, Branner, and Lick), 13h. (Andijan, Frunse, Tchimkent, and near Samarkand), 20h. (Oak Ridge).

March 7d. Readings at 1h. (Sumoto, near Berkeley, Branner, and Lick), 2h. and 3h. (Samarkand), 4h. (Mizusawa), 5h. (near Husan), 7h. (Amboina and Christchurch), 13h. (Tacubaya and near Ksara), 14h. (Grozny, Tiflis, near Erevan, and near Lick), 17h. (near Nagoya), 18h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Sverdlovsk, and Tashkent), 19h. (Sverdlovsk, Copenhagen, Piatigorsk, Ksara, near Erevan, Grozny, Tiflis, and near Baku), 20h. (Huancayo, San Juan, Tucson, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, La Paz, Copenhagen, Pulkovo, and near Sumoto), 21h. (Granada, Stuttgart, Sverdlovsk, Tashkent, and near Tiflis), 22h. (Agra, Amboina, Sverdlovsk, and Tashkent).

March 8d. 0h. 27m. 52s. Epicentre 24°·2N. 122°·3E. (as on 1935 March 26d.).

A = −·4874, B = +·7710, C = +·4099 ; δ = +2.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		1·1	319	i 0 17k	+ 1	0 31	S*	—	1·2
Zi-ka-wei		7·0	353	—	—	e 2 52	− 7	—	—
Hong Kong		7·7	258	1 47	− 2	2 50	−26	3·2	3·7
Nanking		8·4	339	1 57	− 2	e 3 59	S*	4·4	4·8
Manila		9·7	188	2 19	+ 2	4 21	+15	—	—
Chiufeng		16·7	343	e 3 55	+ 5	e 7 4	SS	i 8·7	12·3
Vladivostok		20·5	20	—	—	e 7 28	−48	e 8·5	14·7
Calcutta	E.	31·1	274	—	—	e 10 28	−53	—	—
Tashkent		46·9	305	e 8 53	+25	i 15 9	− 8	e 24·9	31·3
Sverdlovsk		54·5	324	i 9 20	− 5	e 16 57	− 5	25·1	—
Ksara		74·0	300	e 10 43	−52	e 20 47	−21	—	49·1
Granada		100·2	320	e 16 8?	?	—	—	—	—

Additional readings :—
Taihoku iP = +20s., S = +34s.
Zi-ka-wei iZ = +4m.4s., +4m.8s., +5m.4s., and +7m.35s.
Tashkent e = +15m.20s.
Long waves also at other Russian and European stations.

March 8d. 9h. 35m. 24s. Epicentre 7°·5N. 116°·0E. (as on 1930 July 21d.). X.

$A = -·4346$, $B = +·8911$, $C = +·1305$; $\delta = -3$;
$D = +·899$, $E = +·438$; $G = -·057$, $H = +·117$, $K = -·991$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	8·6	35	i 2 2	0	4 25	S*	—	—
Hong Kong	14·9	354	4 20	+53	7 46	+93	—	—
Batavia	16·5	214	e 3 47	− 1	8 6	L	(8·1)	—
Nanking	24·7	4	e 5 14	− 3	9 50	+14	12·7	—
Tashkent	53·4	319	—	—	e 14 51	?	e 31·0	35·6
Sverdlovsk	65·3	330	e 10 48	+ 7	20 5	(−25)	30·6	—
Tiflis	71·0	311	e 11 55	+38	e 21 35	PS	—	—
Pulkovo	81·4	329	e 12 13	− 2	e 22 35	+ 4	42·4	—

Additional readings :—
Hong Kong SS? = +8m.20s.
Tashkent e = +18m.3s. and +28m.30s.
Pulkovo S = +22m.46s.
Long waves were also recorded at Baku and Copenhagen.

March 8d. Readings also at 0h. (near Sumoto), 1h. (Chiufeng, Manila, Tashkent, Sverdlovsk, near Mizusawa, and near Sumoto (2)), 2h. (Copenhagen and Pulkovo), 4h. (Kobe and Sumoto), 5h. (Andijan, Frunse, Samarkand, Tashkent, and Sverdlovsk), 8h. (near Amboina), 10h. (Pasadena, Mount Wilson, Tinemaha, and near Tiflis), 12h. (Andijan), 13h. (Merida, Oaxaca, Tacubaya, Little Rock, La Jolla, Mount Wilson, Pasadena, Riverside, and Tinemaha), 14h. (near La Paz), 15h. (Riverview, Wellington, Mount Wilson (2), Pasadena (2), Riverside (2), Tinemaha (2), Sebastopol, Simferopol, Theodosia, Yalta, Ksara, and near La Paz), 16h. (near Sumoto), 17h. (Tiflis), 20h. (near Amboina), 21h. (near Erevan and near Wellington), 22h. (Tacubaya).

March 9d. 6h. 57m. 40s. Epicentre 47°·6N. 7°·1E. N.3.

Given by Zurich.

$A = +·6691$, $B = +·0833$, $C = +·7385$; $\delta = +2$;
$D = +·124$, $E = -·992$; $G = +·733$, $H = +·091$, $K = -·674$.

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Basle		0·3	99	e 0 3	− 1	e 0 12	+ 4
Neuchatel		0·6	190	e 0 8	− 1	i 0 15	0
Besançon		0·8	245	—	—	e 0 23	+ 2
Zurich		1·0	103	e 0 16	+ 2	e 0 30	S*
Strasbourg		1·1	24	—	—	e 0 29	+ 1
Ebingen		1·4	65	—	—	e 0 40	S*
Ravensburg		1·7	84	—	—	e 0 50	S_g
Stuttgart		1·8	50	—	—	e 0 56	S_g
Uccle	N.	3·6	331	—	—	e 2 2	S_g

Additional readings :—
Neuchatel eS_g = +21s.
Strasbourg iS = +35s.

March 9d. 8h. 42m. 19s. Epicentre 35°·5N. 139°·7E. (as on 1931 July 7d.). X.

Near suggested Epicentre.

$A = -·6209$, $B = +·5266$, $C = +·5807$; $\delta = +4$.

	△	P.	O−C.	S.	O−C.
	°	m. s.	s.	m. s.	s.
Kamakura	0·2	0 5	+ 2	0 14	+ 9
Mitaka	0·3	0 4	0	0 13	+ 5
Kiyosumi	0·5	0 5	− 2	0 14	+ 1

Komaba (△ = 0°·1) gives P at 8h.42m.

March 9d. Readings also at 1h. (Port au Prince), 6h. (Besançon), 8h. (Tiflis and Zurich), 9h. (Erevan, near Tiflis, and near Medan), 10h. (Mount Wilson and Pasadena), 11h. (Merida), 12h. (Zurich), 13h. (Basle and Zurich), 14h. (near Branner and Lick), 15h. (near Berkeley, Branner, and Lick), 16h. (Tiflis), 18h. (near Nagoya), 20h. (Agra, Bombay, Tashkent, and Sverdlovsk), 21h. (near Malaga), 22h. (Mount Wilson, Pasadena, Riverside, Tinemaha, San Juan, and La Paz), 23h. (near Nagoya and Tokyo).

March 10d. 2h. 26m. 58s. Epicentre 36°·0N. 139°·3E. X.
(as on 1934 July 15d. and near the position 36°·0N. 139°·5E. given by stations).
$A = -·6133$, $B = +·5276$, $C = +·5878$; $\delta = +1$.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Komaba		0·5	138	0 12	+ 5	0 20	+ 7
Tokyo		0·5	134	0 7	0	0 16	+ 3
Kamakura		0·7	163	0 12	+ 2	0 23	+ 5
Tukubasan		0·7	74	0 10	0	0 18	0
Kiyosumi		1·2	140	0 16	− 1	0 30	− 1
Mitaka		1·3	149	0 8	−10	0 15	−18
Susaki		1·4	191	0 18	− 2	0 36	0
Nagoya		2·0	245	e 0 42	+13	e 1 3	S_g
Mizusawa	E.	3·4	24	e 0 54	P*	e 1 33	+ 6

March 10d. 8h. 15m. 27s. Epicentre 0°·0 18°·0W. (as on 1929 Jan. 18d.). X.
$A = +·9511$, $B = -·3090$, $C = +·0000$; $\delta = +7$;
$D = -·309$, $E = -·951$; $G = ·000$, $H = ·000$, $K = -1·000$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Paris	51·9	17	—	—	e 15 33?	−54	26·6	27·6
La Paz	52·1	251	e 9 13	+ 6	17 0	+30	26·6	27·0
Uccle	54·2	19	—	—	e 16 57	− 1	e 26·6	—
De Bilt	55·6	19	e 9 34	+ 1	17 21	+ 4	e 27·6	—
Ksara	60·7	50	i 10 7	− 2	e 19 12	+47	32·6	37·0
Copenhagen	60·9	20	—	—	18 29	+ 1	32·6	—
Yalta	64·1	39	—	—	e 19 41	+32	—	—
Tiflis	70·0	45	e 11 8	− 3	e 20 19	− 2	e 38·0	—
Pulkovo	70·4	24	—	—	e 20 23	− 3	37·6	—
Tashkent	88·0	50	—	—	i 23 31	− 6	e 47·8	56·8
Nanking	128·1	48	—	—	e 32 53	?	—	—

Additional readings:—
La Paz iPPE = +11m.32s.
Ksara ePP = +12m.42s., SS = +23m.58s.
Long waves were also recorded at Algiers, Granada, San Fernando, Florence, Strasbourg, Stuttgart, Kew, and Baku.

March 10d. 12h. 5m. 8s. Epicentre 51°·8N. 171°·0W. (as on 1930 Oct. 19d.). R.2
$A = -·6108$, $B = -·0969$, $C = +·7859$; $\delta = +7$;
$D = -·156$, $E = +·988$; $G = -·776$, $H = -·123$, $K = -·618$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		17·7	34	e 4 4	+ 1	e 7 35	SS	e 11·6	—
Sitka		21·1	62	—	—	e 8 52	SS	—	—
Honolulu		32·2	156	—	—	e 13 58	SSS	—	—
Ukiah		35·1	91	—	—	e 12 44	+21	—	—
Vladivostok		38·5	279	—	—	e 13 9	− 5	20·4	—
Tinemaha	z.	39·4	90	i 6 55a	−32	—	—	—	—
Pasadena		41·4	93	i 7 42a	− 2	—	—	—	—
Mount Wilson		41·4	93	i 7 42a	− 2	—	—	—	—
La Jolla		42·8	94	e 7 55	0	—	—	—	—
Tucson		47·2	89	e 8 30	0	—	—	e 21·6	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng		49·8	287	e 8 49	− 1	16 0	+ 2	—	—
Nanking		53·5	277	—	—	16 48	− 1	—	36·5
Scoresby Sund		55·7	12	—	—	17 34	+15	30·9	—
Tacubaya	N.	63·7	91	18 31	S	(18 31)	−33	—	—
Pulkovo		67·1	349	e 10 49	− 3	e 19 54	+ 8	36·9	41·6
Copenhagen		72·5	358	—	—	21 7	PS	36·9	—
Tashkent		73·2	317	i 11 36	+ 6	20 59	0	e 37·4	46·8
De Bilt		76·0	2	e 11 46	0	e 21 35	+ 3	e 45·9	—
Uccle		77·3	3	e 11 53	− 1	e 21 49	+ 3	e 45·9	—
Paris		79·2	5	e 12 4	0	—	—	47·9	—
Stuttgart		79·4	0	e 12 5	0	e 22 10	+ 1	e 54·9	—
Strasbourg		79·6	1	—	—	(e 21 52?)	−19	e 21·9	—
Piatigorsk		79·7	336	e 12 0	− 6	—	—	—	—
Grozny		79·7	333	e 12 10	+ 4	—	—	—	—
Theodosia		80·5	341	e 12 14	+ 4	—	—	—	—
Simferopol		80·9	342	e 12 13	0	—	—	—	—
Baku		81·3	330	12 29	+14	e 22 27	− 3	42·9	53·0
Yalta		81·3	342	e 12 14	− 1	—	—	—	—
Tiflis		81·5	333	e 12 15	− 1	e 22 29	− 3	e 45·9	60·8
Triest		82·5	357	e 12 3	−18	e 22 39	[− 1]	—	—
Sebastopol		82·5	343	e 12 24	+ 3	e 22 29	[−11]	—	—
Erevan		83·0	333	e 13 24	+61	—	—	—	—
Florence		84·4	359	12 12	−18	—	—	—	—
Granada		90·3	10	e 16 20	PP	—	—	54·9	—
Ksara		91·1	337	e 13 6	+ 3	e 24 14	+ 8	—	—
Huancayo		102·9	93	—	—	e 29 58	?	—	—

Additional readings :—
College e = +9m.39s.
Ukiah e = +15m.14s.
Chiufeng eE = +8m.53s.
Triest i = +22m.36s. =S +4s.
Ksara PS = +25m.14s., SS = +30m.36s.
Long waves at Edinburgh, Kew, Irkutsk, Samarkand, and Wellington.

March 10d. 20h. 35m. 57s. Epicentre 42°·0N. 144°·4E. (as on 1930 Aug. 26d.). R.1

A = −·6043, B = +·4326, C = +·6691 ; δ = +2 ;
D = +·582, E = +·813 ; G = −·544, H = +·389, K = −·743.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		3·8	223	i 0 55	+ 1	i 1 36	− 1	—	—
Nagoya		8·9	224	2 13	+ 7	4 18	S*	—	4·4
Vladivostok		9·2	281	i 2 10	0	i 4 10	+16	—	—
Osaka		10·0	226	2 20	− 1	4 5	− 8	4·9	7·9
Kobe		10·3	228	e 2 21	− 4	e 4 38	+17	—	6·3
Sumoto		10·7	227	2 27	− 4	5 30	S*	—	6·6
Taikyu		13·6	249	e 3 16	+ 6	—	—	e 7·2	—
Husan		13·8	245	3 12	− 1	—	—	7·4	—
Hukuoka B		13·9	237	e 3 14	0	e 7 29	L	(7·5)	—
Keizyo		14·0	257	e 3 17	+ 2	—	—	e 7·0	—
Zinsen		14·4	258	e 3 12	− 9	—	—	e 7·0	—
Chiufeng		21·3	276	e 4 40	− 3	8 34	+ 2	10·5	13·6
Zi-ka-wei	Z.	21·3	247	e 4 44	+ 1	8 46	+14	13·0	13·9
Nanking		22·6	253	4 54k	− 3	i 8 59	+ 2	i 12·0	13·7
Irkutsk		28·7	305	6 0	+ 7	10 44	+ 1	17·1	—
Hong Kong		32·0	242	6 29	+ 6	11 40	+ 5	15·2	18·6
Manila		34·1	224	6 43	+ 2	12 7	− 1	17·1	—
Semipalatinsk		43·8	305	e 8 4	+ 1	e 14 51	+18	—	—
Frunse		50·0	296	e 8 53	+ 2	e 16 13	+12	e 30·1	—
Calcutta	E.	50·2	266	9 0	+ 7	16 19	+15	—	34·3
Andijan		52·4	295	9 10	+ 1	e 17 4	+30	—	—
Sverdlovsk		52·8	317	i 9 14	+ 2	i 16 41	+ 2	28·4	35·8
Tchimkent		53·5	298	9 25	+ 7	e 17 9	+20	—	—
Tashkent		54·2	297	i 9 27	+ 4	—	—	29·8	33·9
Bombay		64·0	273	e 10 31	− 1	—	—	—	41·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Moscow		64·4	323	10 34	− 1	19 10	− 2	33·6	37·8
Pulkovo		64·8	329	10 36	− 1	19 15	− 2	32·1	38·4
Scoresby Sund		67·1	357	—	—	19 39	− 7	36·1	—
Baku		67·1	305	e 10 52	0	e 20 7	PS	36·1	39·5
Grozny		67·8	310	10 55	− 2	—	—	—	—
Piatigorsk		68·9	312	e 10 53	−11	—	—	—	—
Upsala		69·2	336	—	—	e 20 8	− 3	35·1	40·9
Tiflis		69·3	308	11 6	0	e 20 8	− 5	37·1	49·4
Erevan		70·5	307	e 12 13	+59	—	—	—	—
Tinemaha		70·9	58	e 11 14	− 2	—	—	—	—
Theodosia		72·4	316	e 11 25	0	—	—	—	—
Mount Wilson	z.	72·8	60	i 11 27	− 1	—	—	—	—
Pasadena		72·8	60	i 11 31	+ 3	—	—	—	—
Simferopol		73·1	317	11 31	+ 2	e 20 54	− 4	46·1	—
Yalta		73·4	316	e 11 31	0	20 52	− 9	43·1	—
Sebastopol		73·6	317	e 11 32	0	—	—	—	—
Copenhagen		74·2	335	11 36a	0	21 5	− 6	36·1	—
La Jolla		74·2	60	e 11 41	+ 5	—	—	—	—
Hamburg		76·7	335	e 11 51	+ 1	—	—	e 39·1	48·1
Prague		78·1	331	—	—	e 21 47	− 8	e 38·1	50·1
Edinburgh		78·3	343	—	—	e 22 3?	+ 6	e 43·1	—
Budapest		78·3	326	—	—	e 21 54	− 3	e 42·6	49·6
Cheb		78·8	332	e 12 25	+24	e 21 58	− 5	e 40·1	50·4
De Bilt		79·5	337	i 12 6	+ 1	e 22 11	+ 1	39·1	56·4
Ksara		79·8	307	i 12 7a	0	i 22 37	PS	—	—
Zagreb		80·9	327	e 12 14	+ 1	e 22 22	− 3	—	46·7
Uccle		80·9	337	e 12 25	+12	e 22 27	+ 2	e 40·1	—
Stuttgart		81·1	333	e 12 14	0	e 22 18	− 9	e 41·1	45·1
Rathfarnham Castle		81·4	344	i 22 55	S	(i 22 55)	+24	—	47·1
Kew		81·6	339	e 12 16	0	—	—	e 40·1	46·0
Strasbourg		81·7	333	—	—	e 22 3?	−31	e 29·1	—
Triest		81·9	328	e 12 18a	0	22 27	− 9	e 39·1	45·9
Paris		83·2	337	e 12 3?	−21	—	—	43·1	47·1
Florence		84·5	329	12 18	−13	—	—	—	48·1
Ottawa		85·6	28	—	—	e 23 3?	[0]	e 40·1	—
Granada		95·6	336	e 13 56	+33	—	—	54·1	—

Additional readings :—
Osaka PP = +2m.24s., SS = +4m.16s.
Kobe ePN = +2m.25s.
Chiufeng PPEZ = +5m.1s., SZ = +8m.38s., iSSE = +9m.8s.
Nanking iP = +4m.59s.
Calcutta PPE = +10m.53s.
Tashkent e = +12m.59s., i = +18m.18s., e = +20m.57s., and +21m.21s.
Baku SS = +24m.45s.
Upsala eN = +20m.28s. = PS +1s.
Tiflis e = +20m.15s., ePS = +20m.35s., SKKS = +21m.30s.
Tinemaha iZ = +11m.28s.
Pasadena i = +11m.39s.
Copenhagen +14m.20s. = PP +5s., i = +21m.27s. = PS − 7s.
Ksara PP = +15m.8s.
Zagreb ePcPE = +13m.15s., eE = +14m.44s., ePPE = +15m.9s., ePSE = +23m.17s.
Uccle e = +28m.39s.
Stuttgart e = +32m.3s.
Rathfarnham Castle iS = +31m.27s.
Triest PS = +23m.13s.
Long waves at Toyooka, Phu-Lien, Sitka, Philadelphia, Wellington, Algiers, Cape Town, Stonyhurst, and other European stations.

March 10d. Readings also at 0h. (Hong Kong), 1h. (Sumoto), 2h. (near Keizyo and Zinsen), 3h. (near Tananarive), 5h. (La Paz, San Juan, Huancayo, and Tacubaya), 6h. (near Nagoya), 10h. (Tiflis), 14h. (near La Paz), 17h. (Sydney), 19h. (Malaga), 20h. (near Tiflis), 22h. (near Santiago), 23h. (Granada and near Sumoto).

March 11d. 0h. 43m. 59s. Epicentre 39°·7N. 143°·0E. (as on 1933 April 2d.). R.2.

A = −·6145, B = +·4630, C = +·6388 ; δ = +4 ;
D = +·602, E = +·799 ; G = −·510, H = +·384, K = −·769.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		1·6	249	i 0 25	+ 2	i 0 50	S_g	—	—
Nagoya		6·6	228	1 38	+ 4	3 15	S*	—	4·0
Toyooka		7·7	240	1 50	+ 1	3 36	S*	—	—
Osaka		7·8	232	1 52	+ 1	3 38	+19	—	4·6
Kobe		8·0	233	e 1 54	+ 1	e 3 33	+ 9	e 3·8	4·5
Sumoto		8·4	232	e 1 57k	− 2	3 54	+20	—	4·9
Vladivostok		8·9	295	i 2 8	+ 2	i 4 2	+16	—	—
Hukuoka B		11·8	242	e 2 45	− 1	e 5 31	S*	—	—
Husan		12·0	252	2 49	+ 1	e 4 48	−15	7·0	—
Taikyu		12·0	256	i 2 56	+ 8	4 22	−41	e 6·9	—
Keizyo		12·6	265	e 3 2	+ 6	—	—	e 6·3	—
Zinsen		13·0	265	e 3 4	+ 2	e 5 22	− 5	e 6·8	—
Zi-ka-wei	z.	19·4	251	e 4 24	+ 1	7 45	− 9	12·1	13·9
Chiufeng		20·5	280	4 33a	− 2	8 26	+10	10·6	12·9
Nanking		21·0	256	4 37	− 3	8 37	+11	11·4	12·6
Irkutsk		29·2	309	e 5 49	− 9	e 10 49	− 2	17·0	18·8
Frunse		50·1	298	e 8 44	− 8	—	—	—	—
Andijan		52·3	296	e 9 9	0	e 15 5	−88	—	—
Sverdlovsk		53·7	318	i 9 19	0	16 55	+ 3	31·0	33·8
Tashkent		54·3	297	i 9 18	− 5	—	—	—	35·2
Samarkand		56·6	297	e 9 36	− 4	15 31	?	—	—
Moscow		65·6	324	e 10 39	− 3	e 19 27	0	34·5	42·1
Pulkovo		66·3	330	10 42	− 5	19 36	0	35·0	39·5
Baku		67·5	305	e 10 54	− 1	e 20 5	PS	35·0	43·2
Grozny		68·4	310	10 58	− 3	—	—	44·7	—
Piatigorsk		69·6	312	e 11 4	− 4	—	—	—	—
Tiflis		69·9	308	11 9	− 1	e 20 14	− 6	e 36·0	49·9
Erevan		71·0	307	e 12 13	+56	—	—	—	—
Tinemaha		73·0	56	i 11 24	− 5	—	—	—	—
Theodosia		73·3	316	e 11 28	− 3	e 21 13	+13	—	—
Haiwee		73·8	56	e 11 26	− 7	—	—	—	—
Simferopol		74·0	317	e 11 33	− 2	e 21 18	+10	—	—
Yalta		74·3	316	e 11 33	− 3	e 21 4	− 8	—	—
Sebastopol		74·6	317	e 11 34	− 4	e 21 23	+ 8	—	—
Mount Wilson		74·9	58	e 11 41	+ 1	—	—	—	—
Pasadena		74·9	58	i 11 35k	− 5	—	—	—	—
Copenhagen		75·8	334	11 41a	− 4	21 26	− 3	40·0	—
La Jolla	N.	76·3	59	e 11 54	+ 6	—	—	—	—
Hamburg		78·3	334	e 11 59	0	—	—	e 41·0	—
Cheb		80·3	331	—	—	e 22 18	− 1	e 41·0	48·3
Ksara		80·4	306	12 8	− 2	22 58	PS	—	—
De Bilt		81·2	336	12 29	+15	e 22 28	0	41·0	56·6
Zagreb		82·2	326	e 12 16	− 3	—	—	e 49·0	52·0
Uccle		82·5	336	e 12 32	+11	e 22 37	[− 3]	e 43·0	—
Stuttgart		82·6	332	e 12 19	− 2	e 22 25	[−16]	e 44·0	55·3
Strasbourg		83·2	333	—	—	e 22 1?	[−44]	e 43·0	—
Triest		83·3	327	e 12 21	− 4	e 23 0	+10	—	e 46·3
Granada		97·2	334	e 13 36	+ 5	—	—	—	—
San Fernando		98·7	336	—	—	e 34 37	?	56·0	—

Additional readings :—
Toyooka PEN = +1m.55s., SN = +3m.43s.
Kobe eSZ = +3m.39s.
Sumoto eSZ = +3m.59s.
Chiufeng PPZ = +4m.59s.
Tashkent i = +9m.36s., e = +14m.55s., +15m.25s., +19m.51s., +21m.7s., and +26m.25s.
Theodosia e = +14m.24s.
Pasadena iENZ = +11m.43s.
Copenhagen +14m.31s. = PP + 3s.
Ksara PP = +15m.10s.
Granada PP = +17m.37s.
Long waves at Hong Kong, Phu-Lien, Bidston, and other European stations.

March 11d. 8h. 40m. 52s. Epicentre 57°·7N. 113°·5E. N.3.

A = −·2131, B = +·4900, C = +·8453 ; δ = +4 ;
D = +·917, E = +·399 ; G = −·337, H = +·775, K = −·534.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		7·5	228	1 25	−21	3 5	− 6	—	—
Chiufeng		17·7	173	e 3 59	− 4	e 7 6	−11	—	10·3
Vladivostok		18·6	134	e 4 15	+ 1	e 7 51	+13	11·0	—
Semipalatinsk		20·6	265	e 4 36	0	—	—	e 10·4	—
Sverdlovsk		27·9	291	e 5 47	+ 1	e 10 55	+25	i 18·4	18·5
Frunse		28·4	256	e 6 17	+26	—	—	e 14·3	—
Andijan		31·1	255	e 7 40	+85	—	—	e 15·9	—
Tashkent		32·2	260	—	—	e 12 27	+49	16·2	18·7
Samarkand		34·7	260	e 6 45	− 1	—	—	e 17·2	—
Moscow		39·5	201	—	—	e 14 36	+67	e 19·6	25·2
Baku		43·2	275	—	—	e 19 52	?	e 23·7	—
Ksara		55·6	280	—	—	e 22 16	SSS	—	36·8

Additional readings :—
Sverdlovsk iL_q = +15·5m.
Tashkent e = +14m.6s. and +15m.36s.
Long waves were also recorded at Phu-Lien, Nanking, Tchimkent, Tiflis, and European stations.

March 11d. 10h. 58m. 40s. Epicentre 20°·0N. 101°·5E. (as on 1934 Feb. 12d.) X.

A = −·1873, B = +·9208, C = +·3420 ; δ = −8 ;
D = +·980, E = +·199 ; G = −·068, H = +·335, K = −·940.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Phu-Lien		4·8	82	e 1 23	P*	—	—	—	2·8
Hong Kong		12·1	77	5 43	S	(5 43)	S*	6·7	6·8
Calcutta	E.	12·5	284	5 22	S	(5 22)	+ 7	9·4	10·4
Manila		19·4	103	4 30	+ 7	8 16	SS	—	—
Nanking		19·6	48	e 4 25	0	e 8 24	SS	i 10·8	12·3
Zi-ka-wei	Z.	21·1	54	—	—	e 8 47	SS	—	13·0
Agra	E.	22·6	293	e 4 43	−14	i 8 53	− 4	—	—
Chiufeng		23·7	29	—	—	e 9 29	+11	—	15·1
Batavia	E.	26·7	168	e 12 1	?	—	—	—	—
Bombay		27·0	273	—	—	i 10 22	+ 7	—	—
Tashkent		34·6	317	e 9 32	(+ 8)	e 14 14	SS	e 18·5	20·2
Sverdlovsk		47·5	332	e 8 25	− 7	e 15 29	+ 3	23·3	—

Additional readings :—
Phu-Lien PP = +1m.45s., SS = +2m.45s.
Hong Kong S = +6m.23s.
Calcutta S = +8m.17s.
Chiufeng eZ = +9m.36s.
Long waves were also recorded at Vladivostok, Medan, Pulkovo, and Copenhagen.

March 11d. Readings also at 0h. (Calcutta, Bombay, Hong Kong, Medan, Batavia, and Phu-Lien), 1h. (Amboina, near Mizusawa, and Nagoya), 2h. (Amboina, Mizusawa, and near Nagoya), 3h. (near Mizusawa, near Kobe, and Sumoto), 5h. (Amboina and Mizusawa), 8h. (Hukuoka, Taikyu, Zinsen, and near San Juan), 9h. (Tashkent, Tchimkent, Tiflis, near Andijan, and Samarkand), 10h. (Irkutsk and Sverdlovsk), 13h. (Scoresby Sund, near Berkeley, Branner, Lick, and San Francisco), 15h. (Baku, Tiflis, Pulkovo, Sebastopol, Simferopol, Copenhagen, Yalta, Ksara, Triest, De Bilt, Prague, Strasbourg, and Stuttgart), 16h. (Christchurch, Sverdlovsk, Tiflis, Granada, and near La Paz), 17h. (Wellington, Melbourne, Riverview, Adelaide, Perth, Tashkent, Baku, Sverdlovsk, Granada, Mount Wilson, and Pasadena), 18h. (Paris, Pulkovo, Stuttgart, Tiflis, Copenhagen, Ksara, Merida, and Tacubaya), 19h. (Apia, Frunse, Samarkand, and near Andijan), 20h. (Tiflis, Branner, and near Lick).

March 12d. Readings at 1h. (Nanking and Sumoto), 5h. (La Paz, La Plata, Santiago, near Mizusawa, and Nagoya), 8h. (near Nagoya and near Sumoto), 9h. (Medan), 10h. (Samarkand, Frunse, and near Andijan), 12h. (Tchimkent, Samarkand, Frunse, and near Andijan), 13h. (near Wellington), 16h. (Wellington), 17h. (near Santiago and near Sumoto), 20h. (Granada, Nanking, Ksara, Mount Wilson, Pasadena, Tinemaha, Baku, Sverdlovsk, Tashkent, Irkutsk, Vladivostok, near Taihoku, and near Tiflis), 21h. (San Juan and near Tiflis), 22h. (De Bilt, Andijan, Samarkand, Tashkent, Sverdlovsk, and Paris).

March 13d. Readings at 1h. (Amboina, Vladivostok, Hong Kong, Nanking, Tashkent, Sverdlovsk, and near Manila), 2h. (Amboina), 4h. (Nanking, Vladivostok, Hong Kong, Tashkent, Sverdlovsk, Batavia, Medan, Chiufeng, Irkutsk, Bombay, Grozny, Tiflis, and Ksara), 5h. (near Santiago), 7h. (Amboina), 10h. (Pasadena and near Santiago), 11h. (near Santiago), 13h. (Helwan and near Amboina), 14h. (Alicante), 15h. (La Plata), 16h. (Tacubaya), 19h. (near Santiago), 20h. (Andijan and Frunse), 22h. (Erevan, Grozny, and near Tiflis (2)).

March 14d. Readings at 5h. (Amboina and Medan), 6h. (Amboina), 8h. (Apia and Nanking), 9h. (Wellington, Melbourne, Riverview, Sydney, Perth, Honolulu, Tucson, La Jolla, Mount Wilson, Ukiah, Pasadena, Tinemaha, Vladivostok, Tashkent, Tiflis, Pulkovo, Ksara, De Bilt, Copenhagen, Uccle, Paris, Stuttgart, Huancayo, La Paz, near Santiago, and San Javier), 10h. (Edinburgh, Granada, and Scoresby Sund), 14h. (Alicante, Victoria, Amboina, Tiflis, Erevan, Grozny, and near Baku), 15h. (near Lick), 16h. (Mount Wilson, Pasadena, and Tinemaha), 17h. (Frunse, Samarkand (2), near Andijan, near Triest and Zagreb (2)), 20h. (near Tiflis), 21h. (near St. Louis), 22h (near Samarkand), 23h. (near Ferndale).

March 15d. 1h. 25m. 55s. Epicentre 47°·6N. 9°·7E. N.2.

$A = +\cdot6647$, $B = +\cdot1136$, $C = +\cdot7385$; $\delta = +11$;
$D = +\cdot168$, $E = -\cdot986$; $G = +\cdot728$, $H = +\cdot124$, $K = -\cdot674$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ravensburg	0·3	343	i 0 0	− 4	i 0 3	− 5	—	—
Chur	0·7	189	e 0 11	+ 1	i 0 26	+ 8	—	—
Zurich	0·8	153	i 0 10	− 1	e 0 18	− 3	—	—
Ebingen	0·8	320	e 0 9	− 2	i 0 18	− 3	—	—
Stuttgart	1·1	344	e 0 18	+ 2	e 0 35	S*	—	—
Basle	1·4	268	e 0 20	0	e 0 39	S*	—	—
Karlsruhe	1·7	329	0 46	S	1 0	+16	—	—
Strasbourg	1·7	307	e 0 26	+ 2	i 0 45	+ 1	—	—
Neuchatel	1·9	252	i 0 27	− 1	e 0 54	S*	—	—
Triest	3·4	124	—	—	e 1 30	+ 3	—	—
Jena	3·6	20	1 5?	P_g	i 1 47	S*	i 1·9	2·0
Göttingen	4·0	3	i 1 8	P_g	i 2 2	S_g	—	—
Vienna	4·5	80	—	—	e 2 5?	S*	—	—
Uccle	4·8	315	—	—	e 2 29	S_g	—	—
Puy de Dôme	5·0	250	e 1 30	P_g	e 2 38	S_g	—	—

Additional readings :—
Chur iP_g = +14s.
Ebingen e = +11m. and +16m., iE = +21s.
Basle i = +22s.
Stuttgart eE = +24s., eN = +33s.
Neuchatel i = +30s.
Triest i = +1m.53s.
Jena eP_gE = +1m.16s., iE = +1m.29s.
Göttingen iN = +1m.12s. and +1m.15s.

March 15d. Readings also at 3h. (La Plata), 4h. (Tacubaya), 6h. (Grozny and Tiflis), 8h. (near Amboina), 9h. (near Nagoya), 11h. (Irkutsk, Almata, Andijan, Semipalatinsk, Tashkent, near Frunse, and near Amboina), 13h. (La Paz), 14h. (Ksara and Tiflis), 19h. (near Manila), 21h. (near Branner), 22h. (Tiflis).

March 16d. 10h. 4m. 56s. Epicentre 36°·1N. 5°·2W. N.3.

Given by the Spanish stations.

$A = +\cdot8047$, $B = -\cdot0732$, $C = +\cdot5892$; $\delta = +6$;
$D = -\cdot091$, $E = -\cdot996$; $G = +\cdot587$, $H = -\cdot053$, $K = -\cdot808$.

		△	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Malaga		0·9	45	i 0 14	+ 1	—	—
San Fernando		0·9	294	i 0 15	+ 2	i 0 32	+ 9
Granada		1·7	50	i 0 29	P_g	i 0 53	S_g
Almeria		2·3	71	i 0 33	0	i 1 4	S*
Toledo		3·9	14	1 5	P*	—	—
Alicante		4·4	58	1 26	P_g	—	—
Tortosa	z.	6·5	42	e 1 30	− 2	2 46	0

March 16d. Readings also at 0h. (Alicante and Granada), 1h. (Ksara and Tiflis), 2h. (Amboina), 4h. (Amboina and Batavia), 5h. (La Plata and near Santiago), 15h. (near Amboina), 16h. (Drome), 17h. (Tinemaha). 18h. (Sverdlovsk and Tashkent), 20h. (Tacubaya).

March 17d. 19h. 49m. 28s. Epicentre 0°·0 98°·3E. N.2.

$A = -\cdot1444$, $B = +\cdot9895$, $C = \cdot0000$; $\delta = -4$;
$D = +\cdot990$, $E = +\cdot144$; $G = \cdot000$, $H = \cdot000$, $K = -1\cdot000$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		3·6	8	i 0 55	+ 4	i 1 47	S*	—	—
Batavia		10·5	126	e 2 28	0	5 1	S*	—	—
Colombo		19·6	291	4 22	− 3	7 58	0	9·1	13·2
Phu-Lien		22·3	22	e 4 54	0	e 8 52	0	11·5	—
Kodaikanal		23·1	297	e 5 2	0	i 9 13	+ 6	11·2	13·2
Calcutta	E.	24·5	337	5 24	+ 9	9 34	+ 2	e 11·6	—
Manila		26·8	56	5 40	+ 4	10 35	+23	15·0	17·8
Hong Kong		27·1	34	5 42	+ 3	10 34	+17	13·9	19·1
Bombay		31·4	308	e 6 26	+ 9	i 11 21	− 5	—	25·0
Agra	E.	33·4	326	e 6 26	− 9	11 48	− 9	16·9	26·5
Perth		36·0	154	15 32	?	—	—	—	—
Nanking		37·4	29	—	—	e 17 23	(− 3)	i 22·3	26·1
Chiufeng		43·2	20	i 7 55a	− 3	14 25	+ 1	e 21·1	30·6
Tashkent		48·9	331	i 8 38	− 5	i 15 39	− 6	e 25·7	35·3
Irkutsk		52·5	5	—	—	16 42.	+ 7	32·5	34·1
Baku		59·6	318	e 14 25	?	—	—	e 25·5	—
Tiflis		63·6	317	e 10 32	+ 3	e 18 58	− 4	26·5	45·7
Sverdlovsk		64·3	338	i 10 27	− 7	19 3	− 8	32·5	37·4
Ksara		67·4	306	e 10 53	− 1	e 19 48	− 2	—	41·0
Theodosia		71·2	318	—	—	e 20 24	−11	—	—
Yalta		71·9	317	e 8 5	?	e 20 28	−16	—	—
Simferopol		72·1	318	—	—	e 20 34	−12	—	—
Sebastopol		72·3	317	—	—	e 20 36	−12	—	—
Moscow		74·0	328	e 11 39	+ 4	e 20 53	−15	40·0	45·7
Christchurch		78·7	134	e 24 11	?	e 31 49	SSSS	e 41·0	45·5
Pulkovo		79·1	332	e 12 12	+ 9	e 21 59	− 7	42·5	50·0
Cheb		87·4	320	—	—	e 23 7	[− 9]	e 54·5	58·5
Copenhagen		87·7	326	—	—	23 19	[+ 1]	46·5	—
Strasbourg		90·4	319	—	—	e 24 2	+ 2	e 50·5	—
De Bilt		91·9	323	—	—	e 24 0	−14	e 50·5	—
Uccle		92·5	321	—	—	e 24 5	−14	e 53·5	—
Paris		93·8	318	—	—	e 33 32?	?	58·5	—
Kew		95·4	321	—	—	e 38 32?	?	60·5	—
Tinemaha	z.	129·8	38	e 19 11	[+ 5]	—	—	—	—
Pasadena	z.	131·7	41	e 19 15	[+ 5]	—	—	—	—
La Paz		158·7	218	e 29 37	?	—	—	53·1	56·0

For Notes see next page.

NOTES TO MARCH 17d. 19h. 49m. 28s.

Additional readings :—
Medan iE = +1m.23s., iSN = +1m.58s.? = S_g +5s.
Batavia iE = +3m.44s., SE = +5m.18s. = S* +8s.
Hong Kong SS = +11m.53s.
Bombay iEN = +13m.36s.
Agra SSE = +13m.46s.
Perth e = +17m.32s. = S_cS +14s.
Irkutsk e = +12m.28s., +18m.54s. = S_cS −7s. and +20m.56s.
Tiflis SKS = +20m.21s. = S_cS +3s., eSS = +23m.12s.
Ksara ePS = +20m.21s.
Yalta e = +10m.43s.
Moscow e = +27m.56s.
Cheb e = +31m.33s.
Tinemaha eZ = +22m.24s.
Pasadena eZ = +22m.30s. = PP +2s.
Long waves at Zi-ka-wei, Wellington, Capetown, Edinburgh, Vladivostok, Scoresby Sund, Granada, and Stuttgart.

March 17d. Readings also at 0h. (La Paz, San Juan, Sumoto, and near Medan), 1h. (near Berkeley, Branner, Lick, and San Francisco), 9h. (Ksara and Tiflis), 10h. (near Branner and Lick), 11h. (La Paz and Riverview), 12h. (La Paz, Haiwee, Mount Wilson, Pasadena, and Tinemaha), 13h. (near Erevan, Tiflis, and Samarkand), 14h. (Mizusawa), 15h. (Tashkent, Tiflis, Erevan, and Ksara), 16h. (Sverdlovsk), 18h. (Sverdlovsk, Tashkent, Medan, Batavia, Bombay, and Hong Kong), 19h. (Batavia, Medan, and Hong Kong), 20h. (La Plata), 21h. (Amboina), 23h. (Triest).

March 18d. 11h. 48m. 33s. Epicentre 14°·6S. 168°·4E. N.2.

A = −·9479, B = +·1946, C = −·2521 ; δ = −6 ;
D = +·201, E = +·980 ; G = +·247, H = −·051, K = −·968.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		24·8	216	e 5 19	+ 1	9 46	+ 9	e 13·1	17·3
Sydney		24·8	216	e 5 49	PP	(9 51)	+14	9·9	12·9
Wellington		27·3	170	e 9 27?	(+25)	—	—	i 19·8	—
Christchurch		29·2	174	e 5 53	− 5	11 5	+14	14·8	17·4
Melbourne		31·1	217	e 6 18	+ 3	e 11 0	−21	—	23·4
Adelaide		33·6	227	e 6 36	− 1	i 12 14	+14	—	21·1
Manila		55·2	299	i 9 29k	− 1	17 46	+34	26·4	—
Batavia	z.	61·0	271	10 9	− 2	—	—	—	—
Hong Kong		64·7	304	—	—	(19 37)	+21	—	19·6
Medan		71·4	279	11 27	+ 8	—	—	—	—
Chiufeng		73·1	321	i 11 26	− 3	i 21 39	PS	—	—
Ukiah		83·3	47	—	—	23 33	+43	e 38·0	—
Santa Barbara	z.	83·9	53	e 12 37	+ 9	—	—	—	—
Pasadena	z.	85·0	53	e 12 34	+ 1	—	—	38·5	—
Mount Wilson	z.	85·1	53	i 12 34	0	—	—	—	—
La Jolla	z.	85·3	54	e 12 34	− 1	—	—	—	—
Haiwee	z.	85·9	51	e 12 36	− 2	—	—	—	—
Tinemaha	z.	86·0	51	e 12 39	+ 1	—	—	—	—
Calcutta		86·6	294	19 3	PPPP	(23 49)	+26	—	23·8
Kodaikanal	E.	93·5	280	e 12 15	−59	—	—	—	—
Agra	E.	96·9	297	e 15 25	?	i 24 1	[− 9]	—	—
Bombay		99·8	287	e 16 27?	?	—	—	—	—
Tashkent		106·3	310	—	—	e 25 5	[+ 9]	e 45·6	57·4
Huancayo		111·5	109	—	—	e 28 57	PS	e 54·5	—
Sverdlovsk		111·9	326	—	—	e 28 44	PS	49·5	—
Ottawa		118·4	46	—	—	e 26 27?	[+42]	e 54·5	—
Tiflis		124·6	311	e 20 41	PP	—	—	e 73·4	—
San Juan		127·8	78	e 22 27	?	—	—	—	—
Theodosia		130·2	318	e 22 27	PKS	—	—	—	—
Yalta		131·2	317	e 22 35	PKS	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sebastopol		131·5	318	22 41	PKS	—	—	—	—
Ksara		133·1	302	19 9	[− 3]	—	—	—	80·5
De Bilt		140·2	345	e 19 22	[0]	—	—	e 74·5	—
Stuttgart		141·8	338	e 19 27	[+ 4]	—	—	e 82·5	—
Paris		143·9	345	e 19 18	[−13]	—	—	77·5	—
Florence		144·9	331	e 19 34	[+ 1]	—	—	—	—
Granada		156·3	345	i 19 54	[+ 5]	—	—	77·5	—

Additional readings :—
Riverview eEN = +5m.22s., iEN = +5m.32s., iSN = +9m.51s., iE = +10m.59s.
Melbourne i = +15m.7s., e = +19m.38s., i = +23m.15s.
Adelaide i = +8m.3s., +14m.7s. =SSS −2s., +16m.15s. and +17m.31s.
Manila iN = +9m.34s.
Chiufeng iEZ = +15m.49s.
Pasadena eZ = +15m.26s.
Mount Wilson eZ = +15m.28s.
Haiwee eZ = +15m.37s.
Tinemaha iZ = +15m.34s.
Tashkent e = +19m.16s., i = +25m.41s. =SKKS +2s. and +27m.46s. =PS −5s., e = +33m.23s. =SS −5s.
Ottawa eE = +36m.27? =SS +16s.
Ksara iPP = +21m.41s.
De Bilt eZ = +22m.26s.
Stuttgart ePP = +22m.33s.
Paris PP = +22m.46s.
Long waves at Kew, Pulkovo, San Fernando, and Uccle.

March 18d. 22h. 23m. 29s. Epicentre 2°·4N. 98°·1E. N.3.

A = −·1408, B = +·9892, C = +·0419 ; δ = +10 ;
D = +·990, E = +·141 ; G = −·006, H = +·041, K = −·999.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		1·4	26	i 0 30	+10	—	—	—	—
Batavia		12·2	134	3 17	+26	e 6 43	L	(e 6·7)	—
Colombo		18·8	284	4 17	+ 1	8 7	+26	9·7	12·1
Phu-Lien		20·2	24	e 4 31	− 1	e 8 12	+ 2	—	—
Kodaikanal	E.	21·9	293	i 4 52	+ 2	i 8 52	+ 8	11·0	13·6
Calcutta	E.	22·2	336	e 4 49	− 4	8 46	− 4	e 10·6	—
Hong Kong		25·3	38	—	—	10 3	+17	—	16·4
Manila		25·7	60	(5 21)	− 5	(9 33)	−20	—	—
Bombay		29·8	306	e 6 31?	+28	—	—	—	—
Agra	E.	31·3	325	—	—	e 11 42	+18	—	—
Chiufeng		41·0	22	—	—	i 13 54	+ 3	—	27·9
Samarkand		46·8	327	e 9 6	+39	—	—	—	—
Tashkent		46·8	331	—	—	e 15 25	+ 9	—	27·1
Tiflis		61·7	318	e 10 15	− 1	e 19 37	+59	e 36·0	—
Grozny		61·8	320	e 10 18	+ 1	—	—	—	—
Sverdlovsk		62·1	338	e 10 42	+23	—	—	24·5	38·0
Ksara		66·1	306	—	—	e 19 31	− 3	—	40·5
Theodosia		69·3	319	e 11 6	0	—	—	—	—
Simferopol		70·2	318	e 11 51	+39	—	—	—	—
Tinemaha	Z.	128·0	37	e 19 14	[+11]	—	—	—	—
Pasadena	Z.	130·0	39	i 19 24	[+17]	—	—	—	—

Additional readings and note :—
Manila readings have been *diminished* by 1m.
Chiufeng eN = +17m.9s. =SSS +0s.
Ksara e = +27m.23s.
Long waves also at Nanking, Vladivostok, Baku, De Bilt, and Paris.

March 18d. Readings also at 1h. (near Medan), 3h. (Kodaikanal, Nagoya, and near Osaka), 4h. (near Santiago and San Javier), 5h. (Amboina and Batavia), 9h. (Lick), 10h. (Haiwee, Mount Wilson, Pasadena, Tinemaha, Tacubaya, and Medan), 13h. (Adelaide, Melbourne, Riverview, Hong Kong, Manila, Nanking, Phu-Lien, Chiufeng (2), Calcutta, Sumoto, Mount Wilson, and Pasadena), 14h. (Paris, De Bilt, Uccle, Kew, Pulkovo, Sverdlovsk, Irkutsk, Tashkent, Sebastopol, Simferopol, Theodosia, Yalta, Erevan, Grozny, Tiflis (2), near Piatigorsk, and Sotchi), 17h. (Tiflis), 18h. (Tortosa), 19h. (near Manila), 22h. (Irkutsk), 23h. (Santiago).

March 19d. Readings at 0h. (Lick and near Mizusawa), 1h. (Bombay), 4h. (Medan and near Apia), 6h. (Helwan), 7h. (Tiflis), 9h. (Haiwee, Mount Wilson, Pasadena, Tinemaha, near Santiago, and San Javier), 12h. (Calcutta, Chiufeng, Hong Kong, Nanking, Phu-Lien, Medan, Haiwee, Mount Wilson, Pasadena, and Tinemaha), 13h. (Sverdlovsk and Tashkent), 18h. (Sverdlovsk, Tashkent (2), Almata, Frunse, near Andijan, and Samarkand), 20h. (near Branner), 22h. (Amboina and Tiflis).

March 20d. 17h. 48m. 37s. Epicentre 18°·5N. 62°·0W. N.3.

$A = +\cdot4452$, $B = -\cdot8373$, $C = +\cdot3173$; $\delta = -5$;
$D = -\cdot883$, $E = -\cdot469$; $G = +\cdot149$, $H = -\cdot280$, $K = -\cdot948$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		3·9	268	i 0 53	− 3	—	—	i 1·7	—
Philadelphia		24·3	336	—	—	e 9 12	−16	e 11·8	—
Little Rock		31·4	306	i 6 18	+ 1	—	—	—	—
St. Louis		31·7	315	i 6 21	+ 1	e 12 44	SS	—	—
Florissant		31·9	315	e 6 24	+ 2	e 12 48	SS	e 16·4	—
Huancayo		33·3	205	e 7 53	PP	e 12 8	+13	e 18·7	—
La Paz		35·5	189	e 6 53	0	—	—	20·4	22·2
La Jolla		51·2	298	i 9 1k	+ 1	—	—	—	—
Riverside		51·4	299	i 9 2k	0	—	—	—	—
Haiwee		52·0	302	i 9 6	0	—	—	—	—
Mount Wilson		52·0	299	i 9 7k	+ 1	—	—	—	—
Pasadena		52·0	299	i 9 7k	+ 1	—	—	—	—
Tinemaha		52·3	303	i 9 9k	0	—	—	—	—
Copenhagen		66·1	37	—	—	19 35	+ 1	32·4	—
Ksara		86·1	57	e 9 22	?	e 20 2	?	—	53·4
Tiflis		89·6	46	e 12 55	− 1	e 23 15	[−15]	e 52·4	—
Sverdlovsk		90·8	28	e 13 3	+ 2	e 25 10	PS	40·4	—
Tashkent		105·1	37	—	—	e 33 41	SS	e 57·2	59·7

Additional readings :—
San Juan i = +1m.3s., +1m.8s., and +1m.23s.
Philadelphia e = +9m.38s.
Little Rock iE = +6m.26s., eN = +13m.15s., iEN = +13m.49s.
St. Louis ipPEN = +7m.14s., esSN = +14m.16s.
Florissant iE = +7m.17s.
Huancayo e = +13m.38s.
Tiflis ePS = +23m.54s.
Long waves were also recorded at Edinburgh, Kew, Stonyhurst, De Bilt, Cheb, Pulkovo, Baku, Uccle, Paris, and Stuttgart.

March 20d. 18h. 46m. 34s. Epicentre 11°·0N. 84°·2W. (as on 1931 Dec. 20d.) R.3.

$A = +\cdot0992$, $B = -\cdot9766$, $C = +\cdot1908$; $\delta = -1$;
$D = -\cdot995$, $E = -\cdot101$; $G = +\cdot019$, $H = -\cdot190$, $K = -\cdot982$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		5·0	113	e 1 9	− 2	i 2 6	− 2	—	2·2
Tacubaya	N.	16·7	302	e 3 52	+ 2	—	—	—	—
San Juan		19·0	65	i 4 26	PP	i 7 56	SS	e 13·3	—
Columbia		23·2	7	—	—	e 9 18	+10	e 12·1	—
Huancayo		24·7	158	i 5 19	+ 2	e 9 26	−10	i 9·7	—
Little Rock		24·9	344	i 5 19	0	i 9 44	+ 5	—	—
St. Louis		28·2	350	i 5 51	+ 2	e 10 35	0	e 13·7	—
Florissant		28·4	350	e 5 51	0	(e 10 36)	− 2	e 10·6	12·4
Philadelphia		30·0	14	—	—	e 10 57	− 7	e 15·2	—
Chicago		30·9	354	—	—	e 13 26	?	e 17·3	—
Ann Arbor		31·3	2	—	—	e 11 32	+ 8	e 13·8	—
La Paz		31·8	149	e 6 54	PP	—	—	i 13·2	17·0
Madison		32·4	353	—	—	e 11 39	− 2	e 14·0	—
Tucson		32·4	315	e 6 46	PP	—	—	e 18·2	—
Toronto		32·9	6	—	—	e 11 56	+ 7	e 17·4	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ottawa		35·1	10	—	—	e 12 26?	+ 3	e 17·4	—
Riverside	z.	38·0	312	e 7 12	− 3	—	—	—	—
Mount Wilson	z.	38·6	312	i 7 20	0	—	—	—	—
Pasadena		38·6	312	e 7 15	− 5	—	—	e 19·4	—
Haiwee	z.	39·5	316	e 7 25	− 3	—	—	—	—
Tinemaha	z.	40·2	317	e 7 30	− 4	—	—	—	—
Rio de Janeiro		52·5	130	e 16 26	S	(e 16 26)	− 9	e 25·4	—
Kew		77·6	39	—	—	e 27 26?	?	e 36·4	—
De Bilt		81·0	38	—	—	e 23 26?	PS	e 33·4	—
Stuttgart		84·0	41	—	—	e 23 26?	+28	e 37·4	—
Copenhagen		84·6	34	—	—	23 2	− 2	37·4	—
Cheb		85·7	39	e 20 26?	?	—	—	e 38·4	47·4
Pulkovo		92·3	27	—	—	e 24 46	+29	38·4	49·3
Sverdlovsk		106·2	19	—	—	e 34 29	?	46·4	—
Ksara		107·6	50	e 18 21	[+11]	e 27 37	PS	51·4	—
Tiflis		109·5	38	e 23 56	?	e 35 6	?	51·4	63·5
Tashkent		122·3	23	—	—	e 41 14	SSS	e 53·7	67·1

Additional readings :—
San Juan e = +6m.36s. and +10m.26s.
Columbia e = +10m.43s.
Huancayo e = +7m.0s.
Little Rock iPPE = +5m.51s., iSSE = +10m.41s.
St. Louis iPPPN = +6m.53s., eSSN = +11m.58s., iSS = +12m.6s.
Florissant eSE? = +8m.38s.
Philadelphia e = +12m.58s., i = +13m.38s.
Tucson e = +7m.36s., eSS = +12m.56s., e = +14m.32s.
Copenhagen +23m.44s.
Long waves were also recorded at Merida, Bozeman, Charlottesville, Ivigtut, Scoresby Sund, Cape Town, Irkusk, and other European stations.

March 20d. 23h. 53m. 12s. Epicentre 13°·8S. 173°·2W. N.2.

A = −·9643, B = −·1150, C = −·2385 ; δ = −2 ;
D = −·118, E = +·993 ; G = +237, H = +·028, K = −·971.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		1·4	90	i 0 26	P_g	—	—	—	—
Arapuni		26·2	201	—	—	10 48?	+46	—	—
Wellington		29·4	200	e 5 48?	−12	—	—	14·2	16·8
Christchurch		32·1	200	6 5a	−19	10 37	0	e 13·1	14·5
Riverview		38·0	232	—	—	e 13 0	− 6	15·8	20·4
Sydney		38·0	232	e 7 28	+13	e 12 54	−12	17·5	20·8
Melbourne		44·1	229	i 7 58	− 8	i 14 43	+ 6	20·8	—
Santa Barbara		70·0	46	i 11 12	+ 1	—	—	—	—
Berkeley		70·3	41	e 11 13	0	—	—	—	—
Ukiah		70·5	39	—	—	e 20 36	+ 9	e 31·9	—
La Jolla		70·9	48	i 11 16	0	—	—	—	—
Pasadena		70·9	46	i 11 16k	0	—	—	e 32·8	—
Mount Wilson		71·1	46	e 11 17	0	—	—	—	—
Riverside	z.	71·4	46	i 11 18	− 1	—	—	—	—
Haiwee		72·1	45	i 11 27	+ 4	—	—	—	—
Tinemaha		72·5	44	i 11 26	0	—	—	—	—
Tucson		75·3	51	e 11 42	0	e 21 29	+ 5	e 34·5	—
Vladivostok		75·8	322	e 11 46	+ 1	e 21 33	+ 4	e 33·5	39·2
Victoria		76·3	32	i 21 52	S	(i 21 52)	PS	35·0	—
Zi-ka-wei	z.	77·1	307	e 11 52	− 1	—	—	—	37·6
Nanking	z.	79·5	307	e 10 8	?	e 22 4	− 6	37·8	44·5
College		81·0	10	—	—	e 22 28	+ 2	37·3	—
Chiufeng		84·7	314	i 12 30	− 2	e 22 51	[− 6]	e 39·7	—
Florissant		93·2	51	i 13 28	+16	i 23 45	[− 6]	e 43·8	54·3
Philadelphia		104·9	52	—	—	e 24 41	[− 8]	e 49·7	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ottawa	105·0	46	—	—	e 24 48?	[− 2]	e 48·8	—
Rio de Janeiro	118·8	126	—	—	26 48	{−20}	—	—
Tashkent	119·6	310	e 18 45	[+ 1]	—	—	e 53·1	65·5
Sverdlovsk	120·9	329	—	—	e 25 44	[− 9]	47·8	75·1
Samarkand	121·6	308	e 26 18	S	(e 26 18)	[+23]	—	—
Pulkovo	130·9	345	19 26	[+18]	26 11	[−11]	64·8	72·9
Moscow	131·8	337	22 35	PKS	31 13	SKSP	62·3	73·3
Baku	134·0	314	22 41	PKS	—	—	65·8	74·5
Tiflis	136·9	318	e 19 16	[− 2]	—	—	63·3	82·3
Copenhagen	137·9	355	19 36	[+17]	—	—	60·8	—
De Bilt	141·7	1	e 19 36	[+13]	—	—	68·8	83·6
Kew	141·9	7	i 22 57	PKS	—	—	e 65·8	79·3
Uccle	142·9	2	19 40	[+13]	e 32 48?	SKSP	67·8	—
Cheb	143·4	352	e 14 48?	?	—	—	e 72·8	87·3
Vienna	144·7	348	e 19 35	[+ 2]	—	—	—	—
Paris	144·8	5	i 19 35	[+ 2]	—	—	69·8	82·8
Stuttgart	145·0	357	e 19 31	[− 3]	e 33 6	SKSP	e 68·8	80·8
Strasbourg	145·2	358	e 13 48?	?	—	—	e 61·8	—
Basle	146·2	358	e 19 37	[+ 1]	—	—	—	—
Zurich	146·4	358	e 19 34	[− 2]	—	—	—	—
Ksara	146·9	311	i 19 37k	[0]	e 33 29	SKSP	72·8	82·8
Chur	146·9	357	e 19 36	[− 1]	—	—	—	—
Zagreb	147·1	348	e 19 39	[+ 2]	—	—	e 78·8	—
Triest	147·6	350	i 19 41a	[+ 3]	e 29 58	{−11}	e 69·8	78·5
Florence	149·8	352	19 46	[+ 5]	—	—	75·3	78·8
San Fernando	154·5	25	e 19 23	[−24]	e 34 27	SKSP	79·8	—
Granada	154·8	20	i 20 2	{−18}	—	—	—	—

Additional readings :—
Melbourne i = +9m.55s. = P_cP +0s.
Nanking eN = +22m.8s., e = +26m.34s., eSS = +27m.30s.
College e = +31m.1s.
Chiufeng iPSN = +23m.26s.
Florissant iSE = +24m.21s., ePPSE = +25m.47s.
Philadelphia ePS = +27m.42s.
Ottawa eN = +33m.30s. = SS +19s.
Tashkent e = +28m.5s., eSS = +36m.18s., e = +39m.48s. and +49m.48s.
Sverdlovsk iPP = +20m.18s., i = +20m.34s., eSKKS = +27m.43s., SS = +36m.54s.
Pulkovo PP = +21m.25s., PKS = +22m.32s., SKKS = +28m.16s., PS = +31m.36s., SS = +39m.24s.
Moscow PP = +21m.35s., SS = +38m.36s., SSS = +43m.48s.
Baku PPS = +33m.29s., SS = +39m.48s.
Tiflis e = +19m.36s., +22m.11s. = PP +9s., +22m.50s. = PKS −10s., +25m.12s., and +33m.48s. ?
Copenhagen i = +22m.18s. = PP +10s., iZ = +22m.54s. = PKS −9s., eN = +23m.13s.
De Bilt eZ = +22m.56s. = PKS −17s.
Uccle PPN = +23m.1s., eN = +40m.48s. ?
Paris PKP = +19m.46s., PP = +23m.14s. = PKS −5s.
Stuttgart ePKP = +19m.44s., eN = +19m.52s., eSKKSN = +29m.48s.
Zurich e = +19m.50s.
Ksara iPKP = +19m.55s., PP = +23m.19s. = PKS −4s., ePPS = +36m.29s., eSS = +42m.39s.
Zagreb eP = +19m.45s., e = +19m.58s.
Triest eN = +23m.32s. = PKS +8s., eSS = +42m.21s., e = +52m.14s.
San Fernando ePP = +24m.10s., eSS = +44m.3s.
Granada SKP = +23m.56s. = PP +8s.
Long waves at Honolulu, Hong Kong, Sitka, Madison, Perth, Irkutsk, Ivigtut, Scoresby Sund, Cape Town, Algiers, and other European stations.

March 20d. Readings also at 1h. (Christchurch), 2h. (Tiflis), 7h. (La Plata), 10h. (Amboina), 11h. (near Sumoto), 12h. (Alicante, San Juan, near Berkeley, Branner, Lick, and San Francisco), 13h. (near Sumoto), 19h. (near Berkeley), 20h. (Helwan and Tiflis), 21h. (Nagoya, Tacubaya, and near San Javier), 22h. (Tiflis), 23h. (Amboina and Strasbourg).

March 21d. 1h. 52m. 11s. Epicentre 17°·0S. 66°·5E. N.2.

$A = +·3813$, $B = +·8770$, $C = -·2924$; $\delta = +2$;
$D = +·917$, $E = -·399$; $G = -·117$, $H = -·268$, $K = -·956$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tananarive		18·2	261	i 4 7a	− 2	e 7 34	+ 5	—	9·2
Colombo		27·3	30	5 40	− 1	10 25	+ 5	11·2	15·8
Kodaikanal	E.	29·3	22	e 6 6	+ 7	e 10 56	+ 3	i 13·6	15·7
Bombay		36·4	10	e 7 17	+16	i 12 49	+ 7	—	21·2
Hyderabad		36·4	20	8 25	PP	12 43	+ 1	14·7	19·4
Medan		37·9	59	e 7 13	− 1	e 15 46	SSS	—	—
Batavia	Z.	40·9	79	7 38	− 2	—	—	e 18·8	—
Agra	E.	45·5	15	e 8 15	− 2	14 52	− 5	21·3	24·0
Cape Town		46·1	239	15 3	S	(15 3)	− 3	20·0	24·1
Perth		46·9	118	e 18 24	SS	—	—	—	22·8
Helwan		57·8	324	—	—	e 17 54	+ 7	e 24·4	—
Andijan		58·0	6	e 9 53	+ 3	—	—	—	—
Tashkent		58·4	3	e 9 52	− 1	i 17 53	− 2	e 24·3	33·6
Ksara		58·6	330	10 11	+16	—	—	—	32·2
Baku		59·4	346	i 10 4	+ 4	18 21	PS	26·8	32·6
Frunse		60·3	8	e 10 1	− 6	—	—	—	—
Erevan		60·7	341	e 11 5	(+ 9)	—	—	—	—
Hong Kong		61·0	52	18 31	S	(18 31)	+ 2	—	34·4
Tiflis		62·0	342	e 10 19	+ 1	e 18 47	+ 5	e 27·8	30·7
Manila		62·3	63	19 13	S	(19 13)	+27	26·8	—
Grozny		63·3	343	e 10 33	+ 6	—	—	—	—
Piatigorsk		64·7	342	e 10 21	−16	—	—	—	—
Yalta		68·2	335	—	—	e 20 0	+ 1	—	—
Simferopol		68·6	335	—	—	e 19 59	− 5	—	—
Nanking		70·1	46	11 10	− 1	20 22	0	26·2	40·3
Chiufeng		73·4	37	11 32k	+ 1	21 4	+ 3	e 34·5	42·6
Sverdlovsk		74·0	357	i 11 33	− 2	e 21 0	− 8	29·8	45·7
Irkutsk		76·6	23	e 11 49	0	—	—	34·8	41·7
Moscow		76·7	344	—	—	e 21 32	− 7	33·3	38·1
Triest		78·7	325	e 12 1	0	i 21 59	− 3	e 33·8	—
Florence		79·0	322	e 11 49	−14	—	—	20·8	27·8
Prague		81·2	329	—	—	e 22 29	+ 1	—	30·8
Cheb		82·2	328	e 22 41	S	(e 22 41)	+ 2	e 47·8	50·8
Pulkovo		82·2	342	12 28	+ 9	e 22 43	+ 4	33·8	40·5
Stuttgart	Z.	83·1	326	e 12 29	+ 5	—	—	—	—
Strasbourg		83·7	326	(e 12 49?)	+22	(e 23 49?)	+55	(e 33·8)	—
Almeria		84·3	311	—	—	e 22 51	[− 3]	—	—
Vladivostok		84·8	42	e 12 33	+ 1	—	—	—	—
Granada		85·3	311	e 12 52	+17	—	—	42·6	—
Copenhagen		85·7	333	—	—	i 23 17	+ 2	37·8	—
Uccle		86·8	325	—	—	i 23 28	+ 3	e 35·8	—
De Bilt		87·1	327	—	—	23 32	+ 4	e 35·8	36·4
Kew		89·7	325	—	—	e 23 54	+ 1	36·8	—
Tinemaha	Z.	159·5	11	e 19 59	[+ 6]	e 24 18	PP	—	—
Haiwee	Z.	160·5	11	e 20 3	[+ 8]	—	—	—	—
Pasadena	Z.	162·3	13	e 20 1	[+ 5]	—	—	—	—
Riverside	Z.	162·7	11	e 20 0	[+ 3]	—	—	—	—

Additional readings :—
Tananarive eEN = +8m.6s.
Agra SSE = +17m.45s., SSSE = +18m.40s.
Cape Town PE = +15m.10s., S = +18m.22s., E = +18m.49s.
Ksara SS = +21m.46s.
Hong Kong S? = +23m.27s., SS? = +25m.32s.
Tiflis e = +25m.31s.
Manila SN = +24m.15s.
Grozny i = +11m.25s.
Chiufeng SN = +21m.39s., eSSEN = +25m.38s.
Irkutsk ePP = +14m.49s., ePS = +21m.33s., eSS = +26m.13s.

Continued on next page.

Triest i = +12m.29s., e = +31m.56s.
Cheb eS = +31m.34s.
Pulkovo PP = +16m.30s.
Strasbourg readings have been *increased* by 6m.
Vladivostok e = +14m.8s. and +15m.51s.
Copenhagen +28m.49s.
Tinemaha eZ = +24m.18s.
Long waves were recorded at La Paz, Tortosa, Edinburgh, Scoresby Sund, and Philadelphia.

March 21d. Readings also at 2h. (Rio de Janeiro), 3h. (2) and 7h. (near Amboina), 9h. (Nanking), 17h. (Guadalajara, Mazatlan, Tacubaya, San Juan, Mount Wilson, Pasadena, Riverside, Santa Barbara, Tinemaha, Alicante, and near Tiflis), 19h. (Andijan, Frunse, Samarkand, Tashkent, and Sverdlovsk), 23h. (Nanking and near Manila).

March 22d. 12h. 16m. 9s. Epicentre 8°·8S. 157°·4E. (as on 1933 Aug. 5d.). R.2.

$A = -\cdot9123$, $B = +\cdot3798$, $C = -\cdot1530$; $\delta = -5$;
$D = +\cdot384$, $E = +\cdot923$; $G = +\cdot141$, $H = -\cdot059$, $K = -\cdot988$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview		25·6	192	e 5 26	+ 1	i 9 55	+ 4	e 12·1	17·0
Sydney		25·6	192	e 6 27	+62	i 10 3	+12	11·8	13·4
Palau		28·0	305	5 48	+ 1	9 47	+15	—	—
Melbourne		31·1	199	i 6 19	+ 4	11 21	0	14·5	16·4
Adelaide		31·3	210	i 6 17	0	i 11 21	− 3	14·9	20·4
Wellington		36·0	158	7 1	+ 3	12 31	− 5	17·8	21·8
Christchurch		37·2	162	i 7 10a	+ 2	12 58	+ 4	—	—
Manila		43·0	302	i 7 52a	− 5	i 14 21	0	20·3	24·5
Perth		44·9	233	(8 16)	+ 4	(14 51)	+ 2	(21·4)	(26·8)
Siomisaki		47·0	335	8 23	− 6	—	—	—	—
Misima		47·2	339	8 26	− 4	—	—	—	—
Miyazaki		47·7	329	8 31	− 3	—	—	—	—
Kagosima		47·8	328	8 35	0	—	—	—	—
Kohu		47·9	339	8 33	− 2	—	—	—	—
Kameyama		47·9	337	8 31	− 4	—	—	—	—
Wakayama		47·9	335	8 30	− 5	15 18	−13	—	—
Tukubasan		47·9	341	8 30	− 5	—	—	—	—
Kamagaya		48·0	339	8 37	+ 1	—	—	—	—
Nagoya		48·0	338	e 8 33	− 3	—	—	—	—
Osaka		48·1	336	(8 45)	+ 8	(15 49)	+15	(26·9)	(27·6)
Sumoto		48·1	335	8 31	− 6	e 19 31	SSS	e 20·8	—
Koti		48·1	332	8 31	− 6	15 25	− 9	—	—
Kobe	N.	48·3	335	e 8 32k	− 6	14 55	−42	—	25·9
Gihu		48·3	338	8 34	− 4	—	—	—	—
Hikone		48·4	337	8 33	− 6	—	—	—	—
Maebasi		48·4	340	8 40	+ 1	—	—	—	—
Oiwake		48·5	339	8 40	0	—	—	—	—
Matuyama		48·6	332	8 30	−11	—	—	—	—
Nagano		48·9	340	8 40	− 3	—	—	—	—
Nagasaki		49·1	329	8 41	− 3	—	—	—	—
Toyooka	Z.	49·2	336	8 41	− 4	—	—	—	—
Toyama		49·3	340	8 49	+ 3	—	—	—	—
Hukuoka B		49·5	330	8 43	− 4	e 15 50	− 4	—	—
Hamada		49·8	332	e 8 45	− 5	15 53	− 5	—	—
Batavia		50·1	268	8 49	− 3	15 48	−14	—	—
Mizusawa		50·3	343	17 30	?	24 22	?	27·2	—
Husan		51·4	330	9 9	+ 7	—	—	—	—
Taikyu		52·3	330	e 9 4	− 5	—	—	—	—
Hong Kong		52·5	307	9 8	− 2	16 32	− 3	23·9	27·3
Zinsen		54·5	330	i 9 20a	− 5	e 16 58	− 4	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nanking		55·0	319	i 9 24k	− 5	i 17 8	− 1	28·7	—
Vladivostok		56·8	338	—	—	e 17 31	− 3	—	—
Phu-Lien		58·0	301	e 9 46	− 4	17 51?	+ 2	—	—
Medan		59·8	280	12 51?	PP	—	—	—	—
Chiufeng		62·0	325	i 10 12a	− 6	i 18 35	− 7	e 30·1	37·4
Calcutta	E.	74·4	296	11 38	+ 1	21 12	− 1	35·5	—
Irkutsk		76·0	329	11 36	−10	e 21 21	−11	32·8	—
Colombo		78·8	278	12 0	− 1	21 56	− 7	—	55·2
Kodaikanal	E.	81·8	282	i 12 15	− 2	i 22 25	−10	—	—
College		84·1	20	—	—	e 22 47	[− 5]	e 25·0	—
Agra	E.	84·7	298	12 27	− 5	i 22 47	[−10]	41·2	—
Ukiah		87·5	50	—	—	e 28 21	SS	—	—
Bombay		87·8	289	12 49	+ 2	23 17	[− 2]	—	—
Semipalatinsk		88·7	321	e 12 53	+ 2	—	—	—	—
Victoria		89·6	41	i 23 48	S	(i 23 48)	− 4	e 41·2	46·2
Pasadena	Z.	90·4	55	i 12 52	− 7	—	—	e 40·8	—
Mount Wilson		90·5	55	i 12 50	−10	—	—	—	—
Tinemaha		90·8	53	i 13 2	+ 1	—	—	—	—
Frunse		90·8	313	e 13 5	+ 4	e 24 51	PS	48·8	—
Riverside		91·0	55	e 13 1	− 1	—	—	—	—
Andijan		92·0	310	e 13 6	− 1	e 24 5	−10	—	—
Tashkent		94·4	311	e 13 14	− 4	24 24	−13	e 40·2	54·5
Tucson		96·2	58	—	—	e 36 36	?	e 39·4	—
Sverdlovsk		101·0	326	i 13 45	− 3	i 25 19	−16	42·3	56·9
Baku		109·0	310	—	—	28 19	PS	52·8	60·2
Tiflis		112·7	311	e 14 20	−24	—	—	e 56·8	—
Pulkovo		115·6	334	—	—	e 27 7	{+21}	53·9	64·9
Scoresby Sund		118·3	0	—	—	30 1	PS	49·9	—
Theodosia		118·6	317	e 20 11	PP	—	—	—	—
Simferopol		119·5	317	e 20 11	PP	—	—	—	—
Yalta		119·6	316	e 20 11	PP	—	—	—	—
Sebastopol		120·0	317	e 20 8	PP	—	—	—	—
Ksara		120·9	303	e 18 58	—	30 9	PS	—	—
Ottawa		121·7	41	—	—	e 25 51?	[− 5]	e 52·9	—
Cape Town		122·2	220	—	—	e 35 16	?	60·7	65·4
Huancayo		123·6	110	—	—	e 31 11	PS	57·9	—
Helwan		125·5	300	e 20 51	PP	—	—	—	—
Copenhagen		125·6	337	20 44	PP	26 33	[+26]	55·8	—
Hamburg	Z.	128·1	336	e 20 51?	PP	—	—	72·9	—
La Paz		128·3	119	i 19 11a	[+ 7]	i 26 23	[+ 9]	61·9	64·6
Prague		128·6	330	—	—	e 38 21	SS	60·9	69·9
Cheb		129·6	331	e 17 5	?	e 27 5	[+47]	e 63·9	74·9
Edinburgh		130·4	346	—	—	e 36 51	?	65·8	—
Zagreb		130·4	324	e 19 21	[+14]	—	—	—	—
De Bilt		131·1	338	e 21 51?	PP	—	—	e 57·8	78·2
Triest		131·7	327	e 18 55	[−15]	—	—	e 62·9	71·0
Stuttgart		132·0	333	e 21 29	PP	—	—	e 60·9	—
Strasbourg		132·8	334	e 21 51?	PP	—	—	e 29·9	—
Florence		134·3	326	19 16	[+ 2]	23 51?	?	—	73·9
Paris		134·8	337	e 21 51?	PP	—	—	68·9	71·9
San Juan		136·8	71	i 22 43	PKS	—	—	e 63·6	—
Rio de Janeiro		142·4	147	—	—	e 28 51	{−47}	—	—
Granada		146·8	334	19 38	[+ 1]	—	—	—	—

Additional readings :—
Riverview eZ = +5m.34s., iEN = +6m.8s. =PPP +6s., iE = +9m.58s., iN = +10m.3s.
Adelaide i = +7m.42s., +8m.42s., +11m.58s., +12m.51s. =SS −7s. and +13m.24s.
Wellington PP = +8m.25s. =PPP +0s., PPP = +8m.41s., SS = +15m.11s., L_g = +14m.51s.
Christchurch ipP = +8m.41s. =PPP +0s., PP = +9m.1s., SP = +13m.38s., isS = +15m.42s. =SSS +5s., SS = +16m.49s., sSS = +19m.31s.
Manila iN = +7m.58s., iE = +10m.52s.

Continued on next page.

Perth PKP = (+9m.51s.), PP = (+9m.56s.), PPP = (+10m.46s.), PKS = (+13m.46s.), PS = (+15m.6s.), SS = (+18m.11s.), SSS = (+19m.16s.), ? = (+19m.51s.); all readings have been *diminished* by 1h.1m.
Osaka; all readings have been *increased* by 2m.
Kobe iPN = +8m.39s.
Toyooka PN = +8m.47s.
Batavia iPE = +8m.51s.
Mizusawa PE = +17m.42s.
Hong Kong SS? = +20m.31s., ? = +22m.25s.
Nanking SSE = +19m.31s., SSSE = +21m.0s.
Huancayo eSS = +37m.56s., e = +52m.1s. and +59m.41s.
Vladivostok e = +19m.29s. = S_cS − 1s., +26m.24s., +29m.49s., and +31m.54s.
Chiufeng SKSE = +20m.0s. = S_cS − 6s., SKSN = +20m.4s., SSN = +22m.29s.
Irkutsk e = +13m.18s., +14m.22s. = PP − 8s. and +25m.54s.
Kodaikanal SSE = +27m.56s., SSSE = +31m.15s.
Agra SSE = +28m.32s., SSSE = +32m.13s.
Pasadena iEZ = +13m.1s.
Tashkent SKS = +23m.51s., PS = +25m.44s.
Sverdlovsk PP = +17m.47s., SKS = +24m.24s., SS = +31m.39s.
Baku PP = +18m.55s., SS = +34m.33s.
Tiflis e = +18m.6s. = PKP − 20s.
Pulkovo ePP = +19m.36s., PS = +29m.38s., SS = +35m.51s.
Ksara iPP = +20m.18s., PPP = +22m.53s., PKKP = +29m.26s.
Ottawa eN? = +31m.51s.?, eE = +36m.51s.? = SS − 3s.
Cape Town iPP = +37m.33s., +41m.32s., E = +47m.38s., N = +48m.12s., iSS = +49m.41s., e = +53m.30s.
Copenhagen SS = +37m.9s., SSS = +42m.51s.?
La Paz iPPZ = +21m.15s., iPPPZ = +24m.7s.
Zagreb ePP = +21m.39s., eSKP = +22m.30s.
Triest iPP = +22m.32s. = PKS − 9s.
San Juan i = +23m.28s., e = +57m.31s.
Granada PP = +23m.0s.
Long waves at Kew, Apia, Arapuni, Honolulu, Ivigtut, Moscow, and other European and American stations.

March 22d. 22h. 57m. 8s. Epicentre 50°·8N. 176°·4W. N.3.

A = −·6308, B = −·0397, C = +·7749; δ = −5;
D = −·063, E = +·998; G = −·773, H = −·049, K = −·632.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		20·4	35	e 4 34	0	e 8 18	+ 4	e 12·0	—
Tinemaha	z.	42·8	85	i 7 55	0	—	—	—	—
Pasadena	z.	44·7	88	e 8 20	+10	—	—	—	—
Mount Wilson	z.	44·8	88	i 8 3	− 8	—	—	—	—
Riverside	z.	45·3	88	e 8 17	+ 2	—	—	—	—
Irkutsk		46·8	304	—	—	e 18 10	SS	22·9	—
Chiufeng		46·9	284	8 29a	+ 1	e 15 15	− 2	e 22·7	27·8
Nanking		50·3	273	8 53	− 1	16 5	0	—	—
St. Louis		58·9	66	i 9 53	− 4	i 17 50	−11	—	—
Sverdlovsk		62·6	329	e 10 20	− 2	18 44	− 6	29·9	40·5
Pulkovo		67·3	346	e 7 50	?	—	—	34·9	41·6
Tashkent		71·6	314	e 13 28	PP	—	—	e 35·7	44·7
Tiflis		80·8	330	e 12 6	− 6	e 19 25	?	e 39·9	54·3
Ksara		90·7	334	e 13 6	+ 5	e 25 16	PS	—	—

Additional readings:—
College e = +10m.37s.
Tinemaha iZ = +9m.46s.
Mount Wilson iZ = +8m.22s. and +9m.54s.
St. Louis ipPEN = +10m.13s., iEN = +10m.20s.
Tashkent e = +3m.46s.
Ksara ePP = +16m.31s.
Long waves were also recorded at Triest, Scoresby Sund, Baku, Copenhagen, Strasbourg, and Granada.

March 22d. Readings also at 0h. (Hong Kong), 1h. (Sumoto), 2h. (Tiflis), 4h. (La Paz, Rio de Janeiro, San Fernando, Triest, Strasbourg, Stuttgart, Cheb, Uccle, Helwan, Ksara, Florence, Sverdlovsk, Andijan, Frunse, and near Almata), 5h. (Bergen, Tashkent, Tiflis (2), Pulkovo, Copenhagen, Kew, De Bilt, Paris, and Kobe), 6h. (Chiufeng, Nanking, Irkutsk, near Hukuoka B, Sumoto, and near Lick), 7h. (Copenhagen, Pulkovo, Sverdlovsk. and Tashkent), 11h. (Drome), 14h. (Edinburgh, Andijan, Frunse, Stuttgart (2), and near Ebingen (2)), 18h. (Samarkand, Frunse, and Andijan), 22h. (Stuttgart).

March 23d. 1h. 42m. 59s. Epicentre 34°·4N. 137°·8E. (as on 1933 Sept. 6d.). X.

A = −·6112, B = +·5542, C = +·5650 ; δ = −7 ;
D = +·672, E = +·741 ; G = −·419, H = +·380, K = −·825.

	△	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Nagoya	1·0	318	e 0 14k	0	0 23	− 3	0·6
Osaka	1·9	278	0 28	0	0 49	0	1·0
Kobe	2·2	277	e 0 45	P_g	i 1 3	S*	1·1
Sumoto	2·4	269	e 0 48	P_g	1 14	S_g	1·4
Toyooka	2·7	295	e 0 37	− 2	1 2	− 7	1·1
Hukuoka B	6·2	264	—	—	3 12	S_g	—

March 23d. 19h. 46m. 22s. Epicentre 39°·0N. 42°·0E. N.3.

A = +·5775, B = +·5200, C = +·6293 ; δ = −8 ;
D = +·669, E = −·743, G = +·468, H = +·421, K = −·777.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Erevan	2·3	58	0 33	0	i 0 55	− 4	—	1·0
Tiflis	3·5	37	0 47	− 3	—	—	i 1·2	—
Sotchi	4·9	340	e 1 25	P*	i 2 4	− 1	—	—
Piatigorsk	5·1	9	1 13	0	i 2 12	+ 2	—	2·3
Grozny	5·2	32	e 1 26	P*	i 2 18	+ 5	—	—
Baku	6·2	75	—	—	e 3 34	S_g	e 4·6	—
Ksara	7·1	226	e 2 58	S	(e 2 58)	− 3	—	—
Yalta	8·0	316	e 3 35	S	(e 3 35)	+11	—	—
Simferopol	8·3	318	—	—	e 4 16	S*	—	—
Tashkent	20·9	75	(e 5 32)	+53	—	—	e 5·5	—
Pulkovo	22·1	344	e 4 58	+ 6	e 9 13	SS	12·6	—

Additional readings :—
Erevan iP_g = +35s., i = +37s., iPP = +42s., i = +49s.
Tiflis e = +57s., +1m.2s., and +1m.9s.
Sotchi i = +2m.16s.
Piatigorsk iP_g = +1m.24s., i = +1m.53s. and +1m.56s.
Grozny e = +1m.41s., i = +2m.5s.
Ksara eS = +3m.55s., SS = +4m.59s.

March 23d. Readings also at 1h. (Wellington), 2h. (near Hukuoka B, near Santiago, and near Zagreb), 4h. (near Tananarive), 8h. (near Belgrade and Triest), 10h. (La Paz), 11h. (near Apia), 12h. (near Lick), 13h. (College, Granada, and Sverdlovsk), 14h. (Medan), 15h. and 16h. (Nagoya), 18h. (Sverdlovsk), 19h. (Simferopol and Yalta), 20h. (near Reykajavik), 22h. (Tiflis and near Manila), 23h. (near La Paz and near Tiflis).

March 24d. 16h. 36m. 12s. Epicentre 41°·3N. 49°·5E. N.3.
Given by the Russian Stations.

A = +·4879, B = +·5713, C = +·6600 ; δ = +3 ;
D = +·760, E = −·649 ; G = +·428, H = +·502, K = −·751.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	1·0	162	0 12	− 2	i 0 31	S*	—	1·0
Grozny	3·4	306	0 50	+ 1	i 1 42	S_g	—	—
Tiflis	3·5	277	0 43	− 7	(e 1 32)	+ 2	e 1·5	—
Erevan	4·0	254	e 1 0	+ 3	2 0	S*	—	2·1
Piatigorsk	5·4	302	e 1 20	+ 3	2 23	+ 5	—	3·4
Sotchi	7·5	291	e 1 56	P*	—	—	—	—
Ksara	13·1	240	e 3 24	+21	—	—	e 6·5	—
Tashkent	14·8	84	e 1 42	?	i 6 16	+ 6	e 7·8	12·0
Moscow	16·4	335	e 3 47	+ 1	6 51	+ 3	—	—
Sverdlovsk	17·1	21	i 3 55	0	e 7 0	− 4	8·8	—
Andijan	17·2	84	—	—	e 7 42	+36	—	—
Pulkovo	21·9	334	4 45	− 5	e 8 45	+ 1	12·0	16·2

For Notes see next page.

NOTES TO MARCH 24d. 16h. 36m. 12s.

Additional readings :—
Grozny $iP_g = +57s.$, $i = +1m.1s.$
Tiflis $e = +47s.$
Erevan $e = +1m.11s.$ and $+1m.15s.$, $i = +1m.50s.$
Piatigorsk $e = +2m.6s.$, $i = +2m.14s.$
Tashkent $e = +6m.40s.$ and $+7m.6s.$
Long waves were also recorded at Copenhagen, Irkutsk, and Simferopol.

March 24d. Readings also at 0h. (Manzanillo and Tacubaya), 1h. (near La Paz), 2h. (Ksara, Tiflis, and near La Paz), 3h. (Tiflis and Ksara), 4h. (Andijan, Frunse, near Samarkand, and near Almeria (2)), 5h. (Santiago), 6h. (near Santiago and San Javier), 8h. (La Paz), 10h. (Malaga), 12h. (Frunse, Tiflis, and near Andijan), 14h. and 15h. (Tiflis), 16h. (Tiflis, Malaga, and Grozny), 17h. (Malaga, Tashkent, Sverdlovsk, Manila, near Sumoto, Osaka, Kobe, and Nagoya), 21h. (Chiufeng, Manila, Hong Kong, Nanking, Nagoya, Sverdlovsk, and near Apia), 22h. (Kew, Tiflis, Ksara, Tashkent, Cheb, Paris, Strasbourg, Uccle, De Bilt, Stuttgart, Triest, Copenhagen, Pulkovo, Baku, Irkutsk, Vladivostok, Calcutta, and Batavia), 23h. (Baku, Sverdlovsk, Tiflis, Tashkent, Irkutsk, Granada, Edinburgh, Batavia, and near Amboina).

March 25d. 8h. 41m. 48s. Epicentre 57°·9N. 31°·5W. (as on 1932 April 14d.). R.3.

$A = +·4531$, $B = -·2777$, $C = +·8471$; $\delta = 0$;
$D = -·522$, $E = -·853$; $G = +·722$, $H = -·443$, $K = -·531$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Reykjavik	7·8	32	1·47	− 4	e 3 38	+19	—	—
Rathfarnham Castle	14·9	97	e 3 30	+ 3	i 7 8	S*	—	8·5
Edinburgh	15·5	85	e 3 32	− 3	e 7 14	+47	—	11·5
Bidston	16·5	94	e 3 52	+ 4	e 7 38	+48	8·6	9·1
Stonyhurst	16·7	91	3 50	0	7 18	+23	8·2	10·2
Bergen	18·8	67	—	—	e 7 42	0	e 13·2	—
Kew	19·0	96	e 4 21	+ 2	e 8 5	SS	9·2	10·4
De Bilt	21·6	90	4 45	− 1	e 8 57	+19	e 9·7	15·4
Uccle	21·8	96	e 4 51	+ 2	8 59	+17	e 10·2	—
Paris	22·0	100	e 2 12?	?	—	—	10·2	13·2
Hamburg	23·4	83	e 5 3	− 2	—	—	e 9·2	14·2
Copenhagen	23·7	76	5 10	+ 3	9 26	+ 8	11·2	—
Stuttgart	25·5	93	e 5 30	+ 5	e 10 12	+22	e 13·7	—
Cheb	26·4	86	—	—	e 9 12?	−53	e 14·2	16·2
Granada	27·6	126	e 5 37	− 7	10 27	+ 2	—	—
Florence	29·9	99	6 2	− 2	e 13 42	L	(e 13·7)	—
Triest	29·9	94	e 6 36	+32	—	—	—	17·1
Pulkovo	30·9	60	6 11	− 2	11 18	0	16·2	17·3
Bucharest	37·2	84	—	—	e 13 12	+18	—	—
Sverdlovsk	45·7	48	e 10 5	(+ 4)	e 15 6	+ 6	20·2	—
Ksara	50·1	87	e 8 53	+ 1	16 17	+15	24·4	—
Helwan	50·8	95	—	—	e 16 18	+ 6	—	—

Additional readings :—
Reykjavik $e = +1m.58s.$, $+2m.4s.$, $+2m.35s.$ $= P_g + 5s.$, $+2m.55s.$, and $+3m.28s.$, $i = +3m.34s.$
De Bilt $iZ = +5m.15s.$
Florence $i = +18m.12s.$
Bucharest $eE = +13m.54s.$
Sverdlovsk $e = +18m.36s.$ $= S_cS + 19s.$
Ksara $ePP = +10m.49s.$
Long waves at Algiers, Graz, Göttingen, Jena, Prague, Strasbourg, San Fernando, Scoresby Sund, Ivigtut, Philadelphia, Charlottesville, Chicago, Columbia and Oak Ridge.

March 25d. 8h. 58m. 53s. Epicentre 57°·9N. 31°·5W. (as at 8h. 41m.). R.1.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Reykjavik		7·8	32	i 1 52	+ 1	i 3 42	S*	—	—
Ivigtut		9·0	298	1 57	−10	—	—	4·1	—
Scoresby Sund		13·2	14	3 1	− 4	—	—	6·1	—
Rathfarnham Castle		14·9	97	i 3 30	+ 3	i 6 43	+30	—	8·5
Edinburgh		15·5	85	i 3 33	− 2	i 6 51	+24	—	11·3
Bidston		16·5	94	i 3 37	−11	i 7 22	+32	8·0	9·0
Stonyhurst		16·7	91	i 3 50	0	7 10	+15	8·1	10·1
Durham		16·8	88	3 55	+ 3	7 15	+18	—	10·1
Oxford		18·3	97	i 4 11	+ 1	7 47	+16	e 8·9	12·3
Bergen		18·8	67	i 4 15	− 1	i 7 55	+13	9·5	13·6
Kew		19·0	96	i 4 22	+ 3	i 8 6	SS	9·1	10·7
De Bilt		21·6	90	i 4 49a	+ 3	i 8 59	+21	e 10·6	15·9
Uccle		21·8	96	i 4 50a	+ 1	i 8 58	+16	10·7	12·3
Paris		22·0	100	i 4 53	+ 2	e 8 52	+ 6	10·1	12·1
Hamburg		23·4	83	e 5 6k	+ 1	e 9 23	+11	11·6	13·1
Copenhagen		23·7	76	5 10k	+ 3	9 30	+12	11·1	—
Puy de Dôme		24·1	105	i 5 17	+ 6	10 19	SS	—	—
Göttingen		24·4	86	i 5 15a	+ 1	i 9 39	+ 9	e 12·1	16·1
Upsala		24·9	65	i 5 20	+ 1	9 44	+ 5	e 12·1	14·8
Strasbourg		24·9	95	5 17a	− 2	i 9 59	+20	e 12·1	15·6
Karlsruhe		24·9	93	5 20	+ 1	10 13	SS	e 14·6	—
Basle		25·4	96	e 5 26	+ 2	e 10 5	+17	—	—
Stuttgart		25·5	93	5 28a	+ 3	e 10 11	+21	e 12·4	15·9
Jena		25·6	87	e 5 26	+ 1	9 34	−17	e 12·1	16·1
Zurich		26·0	96	e 5 31	+ 2	e 10 6	+ 8	—	—
Cheb		26·4	86	—	—	e 10 16	+11	12·1	16·5
Tortosa	N.	26·5	116	e 5 43	+ 9	—	—	13·1	17·5
Chur		26·8	96	e 5 38k	+ 2	e 10 22	+10	—	—
Barcelona		26·9	112	e 5 41	+ 4	e 9 40	−34	e 14·2	17·2
Prague		27·5	85	e 5 44	+ 1	e 10 32	+ 8	e 13·7	17·1
Granada		27·6	126	i 5 49	+ 5	10 43	+18	—	—
Malaga		27·6	128	e 5 56	+12	10 47	+22	12·9	—
Königsberg	E.	28·3	74	e 5 52	+ 2	e 10 28	− 9	e 15·9	—
	N.	28·3	74	i 5 56	+ 6	e 10 42	+ 5	e 16·0	—
Almeria		28·4	125	e 5 50	− 1	e 9 24	P_cP	e 14·1	—
Padova		29·0	95	6 7	+11	—	—	—	—
Ottawa		29·5	264	e 5 57	− 4	e 10 55	− 1	14·1	—
Vienna		29·7	88	e 6 1	− 1	e 11 0	+ 1	e 16·1	18·1
Florence		29·9	99	i 7 37	?	—	—	—	18·6
Triest		29·9	94	i 6 6a	+ 2	i 11 11	+ 8	15·4	18·8
Graz		29·9	90	i 6 5	+ 1	e 11 15	+12	e 16·1	19·1
Pulkovo		30·9	60	i 6 13	0	11 22	+ 4	15·4	16·8
Zagreb		31·0	89	e 6 17	+ 3	e 11 9	−11	e 16·8	18·9
Algiers		31·0	115	i 5 54	−20	—	—	13·1	19·1
Budapest		31·6	87	e 6 21	+ 2	11 41	+12	18·1	20·6
Philadelphia		33·0	255	e 6 31	− 1	e 11 33	−18	18·1	—
Belgrade		34·0	89	e 6 41a	+ 1	—	—	e 21·9	—
Ann Arbor		35·8	267	e 7 7	+11	e 12 43	+10	e 17·9	20·0
Charlottesville		36·1	258	e 6 47	−12	e 12 42	+ 4	e 16·7	—
Moscow		36·2	62	e 6 59	− 1	e 12 45	+ 6	16·5	25·5
Bucharest		37·2	84	e 7 7	− 1	e 13 7	+13	23·1	—
Chicago		38·2	270	—	—	e 13 12	+ 3	21·0	—
Madison		38·2	273	e 10 7?	?	—	—	—	—
Columbia		40·6	256	—	—	e 13 45	0	20·5	—
Simferopol		41·1	78	e 7 48	+ 7	—	—	—	—
Yalta		41·4	79	e 7 40	− 4	—	—	—	—
Theodosia		41·7	76	e 8 21	+35	—	—	—	—
Florissant		41·8	270	i 7 47	0	i 14 6	+ 3	i 21·3	23·9
St. Louis		41·9	270	i 7 48	0	i 14 9	+ 4	e 21·1	—
Sotchi		44·9	76	e 8 32	+20	—	—	—	—
Sverdlovsk		45·7	48	i 8 17	− 1	i 15 6	+ 6	24·5R	25·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Little Rock		45·9	267	e 8 18	− 2	e 15 6	+ 3	e 19·4	24·7
Piatigorsk		46·3	73	e 8 7	−16	—	—	—	—
San Juan		47·0	227	—	—	e 15 27	+ 8	e 21·9	—
Bozeman		47·7	291	e 8 38	+ 4	e 15 18	−11	e 25·2	—
Grozny		48·2	72	e 8 43	+ 5	—	—	e 27·6	—
College		48·2	329	—	—	e 15 36	0	e 25·6	—
Tiflis		48·9	74	e 8 43	0	15 56	+11	24·1	34·2
Ksara		50·1	87	i 8 53	+ 1	i 16 20	+18	23·9	29·5
Sitka		50·1	316	—	—	e 16 7	+ 5	e 25·6	—
Helwan		50·8	95	—	—	e 16 22	+10	—	—
Victoria	N.	51·5	301	e 10 38	(+16)	—	—	e 26·5	30·4
Baku		52·5	71	9 13	+ 3	16 22	−13	25·6	34·1
Tucson		57·6	280	e 9 47	0	e 17 43	− 1	e 28·7	—
Tinemaha	Z.	57·7	289	e 9 46	− 2	—	—	—	—
Tashkent		61·1	58	i 10 10	− 2	—	—	18·3	19·4
Irkutsk		64·1	28	10 25	− 8	e 20 25	(+ 3)	e 32·1	—
Agra	E.	76·8	59	e 11 48	− 2	i 21 44	+ 3	—	—
Chiufeng		78·4	25	e 11 55	− 4	e 21 56	− 2	—	56·8
Huancayo		78·6	223	—	—	e 32 7	SSSS	e 37·6	—
La Paz		80·3	215	e 12 7	− 2	i 22 19	0	37·1	52·3
Bombay		81·4	68	e 12 7?	− 8	—	—	—	—

Additiona. readings :—
Reykjavik PP = +1m.55s., i = +2m.9s. =P* −1s. and +2m.12s., e = +2m.39s. = P_g +9s., +2m.59s., +3m.33s., and +3m.38s., i = +3m.45s.
Edinburgh i = +3m.39s. and +8m.11s.
Bergen PP = +4m.35s., PPP = +4m.41s., SS = +8m.34s.
Kew iZ = +8m.14s.
De Bilt iZ = +5m.18s.
Uccle iS = +9m.3s.
Paris iPS = +9m.16s. =SS +0s.
Hamburg iZ = +5m.7s.
Copenhagen +5m.58s. and +9m.38s.
Göttingen iSN = +9m.46s.
Basle eSE = +9m.37s.
Cheb e = +8m.34s.
Malaga i = +5m.58s., +6m.4s., and +6m.8s., e = +9m.42s.
Königsberg eE = +6m.40s. =PPP +0s. and +7m.31s., eN = +14m.42s.
Triest iPP = +6m.46s., iPPP = +7m.7s., i = +7m.18s., +11m.35s., and +12m.26s., iSS = +12m.42s., i = +13m.39s.
Zagreb e = +11m.28s.
Algiers PPP = +7m.7s.
Philadelphia e = +7m.10s., +11m.47s., and +13m.0s., eSS = +13m.41s., e = +14m.52s., +15m.56s., and +16m.18s.
Belgrade e = +8m.8s.
Ann Arbor e = +8m.25s.
Charlottesville iS = +12m.46s.
Bucharest eE = +7m.47s., +8m.31s. =PP +3s., and +9m.7s., eEN = +10m.41s. and +13m.7s.
Chicago ePP = +8m.40s., e = +17m.22s. =S_cS −9s.
Columbia eSS = +16m.17s.
Florissant ipPZ = +9m.24s., ipPE = +9m.29s., esSN = +17m.2s.
St. Louis iPP = +9m.29s., eSSN = +17m.26s.
Sverdlovsk L_q = +21m.55s.
Little Rock iPN = +8m.20s., iPPEN = +10m.8s., eE = +17m.49s.
San Juan e = +19m.35s.
Bozeman e = +24m.18s.
College ePP = +10m.36s., eSS = +19m.17s.
Tiflis PP = +10m.36s., e = +20m.37s.
Ksara eP_cP = +10m.12s., iPP = +10m.49s., iSS = +19m.57s.
Victoria ePE = +10m.51s.
Tucson e = +16m.7s. and +16m.41s.
Tashkent i = +10m.58s. =P_cP +0s.
Irkutsk e = +12m.48s., +13m.47s., +18m.48s., +22m.41s., and +24m.27s.
Agra PSE = +22m.23s., eSSE = +26m.54s.
Chiufeng ePN = +11m.58s.
La Paz PPE = +15m.31s., PSE = +23m.31s.
Long waves at Besançon, San Fernando, Ukiah, Oak Ridge, Pasadena, and Cape Town.

March 25d. 11h. 33m. 7s. Epicentre 57°·9N. 31°·5W. (as at 8h.). R.3.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Reykjavik	7·8	32	1 51	0	e 3 44	S*	—	—
Rathfarnham Castle	14·9	97	e 2 28	−59	e 6 6	− 7	—	7·9
Bergen	18·8	67	—	—	e 7 53?	SS	—	—
Kew	19·0	96	e 4 20	+ 1	—	—	9·9	—
De Bilt	21·6	90	e 4 47	+ 1	e 8 59	SS	e 10·4	15·4
Uccle	21·8	96	—	—	e 9 2	SS	e 10·9	—
Paris	22·0	100	e 4 46	− 5	e 8 53?	+ 7	10·9	14·9
Hamburg	23·4	83	e 5 5	0	—	—	e 14·9	—
Copenhagen	23·7	76	5 10	+ 3	9 35	+17	10·9	—
Strasbourg	24·9	95	—	—	(e 8 53?)	PcP	e 8·9	—
Stuttgart	25·5	93	e 5 23	− 2	—	—	e 13·9	—
Cheb	26·4	86	—	—	e 7 53?	?	e 13·9	16·4
Granada	27·6	126	—	—	e 11 38	SS	—	16·2
Pulkovo	30·9	60	e 6 10	− 3	e 11 20	+ 2	16·4	18·4
Sverdlovsk	45·7	48	e 8 18	0	e 15 8	+ 8	20·9	—
Tiflis	48·9	74	e 10 29	PP	e 15 57	+12	e 29·9	—
Ksara	50·1	87	e 8 53	+ 1	e 16 19	+17	—	29·4
Tashkent	61·1	58	—	—	e 25 11	?	e 32·2	36·3

Additional readings :—
Reykjavik e = +2m.4s., i = +2m.31s.
Pulkovo e = +13m.12s.
Ksara PP = +10m.53s., eSS = +19m.55s.
Long waves were also recorded at Ivigtut, Scoresby Sund, Baku, and European stations.

March 25d. Readings also at 1h. (Oak Ridge, Riverside, Tinemaha, and Wellington), 2h. (Arapuni, Christchurch, Glenmuick), Wellington (2), Adelaide, Riverview, Sydney, Tiflis, and Ksara), 3h. (Sverdlovsk and Tashkent), 4h. (near Taihoku), 7h. (Sverdlovsk, Tashkent, Pulkovo, Copenhagen, De Bilt, and Paris), 9h. (Christchurch), 10h. (Tiflis), 11h. (Medan), 14h. (Agra, Bombay, Calcutta, Sverdlovsk, Irkutsk, and near Amboina), 17h. (Erevan, Piatigorsk, Sotchi, Tiflis, near Grozny, near Baku, and near Mizusawa), 18h. (Riverside, Pasadena, Tucson, Huancayo, and La Paz), 19h. (Seattle), 20h. (Chiufeng, Vladivostock, Irkutsk, Sverdlovsk, Baku, Pulkovo, Ksara, Tiflis, and Copenhagen), 21h. (Granada and near Mizusawa), 23h. (Lick, Ivigtut, Scoresby Sund, Edinburgh, Stonyhurst, Kew, De Bilt, and Reykjavik).

March 26d. 3h. 7m. 56s. Epicentre 37°·1N. 23°·2E. (as on 1930 Sept. 13d.). X.

$A = +\cdot7331$, $B = +\cdot3142$, $C = +\cdot6032$; $\delta = +1$;
$D = +\cdot394$, $E = -\cdot919$; $G = +\cdot554$, $H = +\cdot238$, $K = -\cdot798$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bucharest	7·6	16	e 1 46	− 2	3 4	−10	—	3·5
Belgrade	8·0	346	e 1 53	0	i 3 20	− 4	—	4·1
Zagreb	10·2	330	e 2 26	+ 2	e 4 32	+14	—	6·6
Budapest	10·8	345	e 2 47	+15	5 16	S*	—	6·6
Triest	11·1	323	3 11	?	4 19	−22	—	—
Yalta	11·1	45	—	—	e 5 29	S*	—	—
Florence	11·2	311	5 44	S*	—	—	—	7·6
Simferopol	11·3	43	—	—	e 5 13	+28	—	—
Theodosia	12·1	46	—	—	e 5 6	+ 1	—	—
Cheb	15·1	332	e 6 4?	S	(e 6 4?)	−13	e 7·9	9·1
Tiflis	17·2	68	e 2 46	−71	—	—	e 10·1	—
Pulkovo	23·1	9	e 3 50	−72	e 8 55	−12	11·6	13·2

Additional readings :—
Bucharest eEN = +2m.42s.
Belgrade e = +2m.6s. and +2m.18s.
Zagreb e = +3m.4s. and +3m.40s.
Triest e = +5m.9s., i = +5m.34s., +5m.47s., +6m.1s., and +7m.47s.
Long waves were also recorded at Ksara, Sverdlovsk, Moscow, Copenhagen, and other European stations.

March 26d. Readings also at 0h. (Bidston, Cheb, De Bilt, Paris, Uccle, Strasbourg, Stuttgart, Florence, Triest, Granada, Copenhagen, Pulkovo, Ksara, Sverdlovsk, and Tiflis), 1h. (Malaga, Tiflis, and near Erevan), 2h. (Tashkent), 3h. (Almeria), 7h. (Amboina and San Juan), 8h. (Oaxaca, Puebla, and Tacubaya), 9h. (Scoresby Sund, Kew, Edinburgh, Copenhagen, Granada, De Bilt, Paris, Strasbourg, Stuttgart, Pulkovo, and Tashkent), 10h. (Sverdlovsk), 11h. (La Paz and Wellington), 12h. (La Paz and Alicante), 15h. (Wellington), 17h. (Medan, Oak Ridge, and San Juan), 20h. (San Juan), 21h. (Andijan, Frunse, and Samarkand), 22h. (near Berkeley, Branner, Lick, San Francisco, and near Santiago).

March 27d. Readings at 0h. (Amboina), 1h. (Arapuni, Christchurch, Wellington, and La Paz), 2h. (Cape Town, Rio de Janeiro, Perth, Sitka, Huancayo, Samarkand, Baku, Sverdlovsk, Ksara, Tiflis, Pulkovo, Copenhagen, and Triest), 3h. (Kew, Edinburgh, Scoresby Sund, Paris, De Bilt, Strasbourg, Stuttgart, Florence, Uccle, and Granada), 4h. (near Tiflis), 6h. (Santiago and near San Javier), 8h. (La Paz, Rio de Janeiro, Ksara, Cape Town, and near Glenmuick), 9h. (Paris, Strasbourg, Stuttgart, Nagoya, and near Mizusawa), 10h. (Chiufeng), 13h. (near La Paz), 15h. (Wellington), 18h. (near Almeria, Malaga, and Granada), 20h. (Santiago, Baku, Sverdlovsk, Phu-Lien, Nanking, Piatigorsk, Tashkent, near Erevan, Grozny, and near Tiflis (2)), 21h. (Malabar), 22h. (near Tiflis and near Santiago).

March 28d. Readings at 1h. (Taikyu, near Batavia and Malabar), 4h. (Scoresby Sund), 5h. (Taikyu), 6h. (Amboina), 8h. (near Santiago and San Javier), 9h. (Phu-Lien), 12h. (near Santiago and San Javier), 13h. (Branner and La Paz), 14h. (Chiufeng and near Nanking), 17h. (Branner, Mount Wilson, Tinemaha, Sverdlovsk, Tchimkent, Frunse, Graz, Tashkent, near Andijan, and Samarkand), 18h. (Tashkent, Samarkand, near Amboina, near Andijan and Frunse), 19h. (near San Javier), 21h. (Phu-Lien).

March 29d. 21h. 27m. 14s. Epicentre 42°·2N. 20°·7E. R.2.

(epicentre as on 1931 March 22d., and given by De Bilt).

$A = +\cdot6930$, $B = +\cdot2619$, $C = +\cdot6717$; $\delta = +2$;
$D = +\cdot353$, $E = -\cdot935$; $G = +\cdot628$, $H = +\cdot237$, $K = -\cdot741$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Sofia		2·0	76	e 0 31	+ 2	i 1 0	S_g	—	—
Belgrade		2·6	356	i 0 35 a	− 2	i 1 18	S*	—	1·6
Bucharest		4·5	59	e 1 10	P*	2 7	S*	—	3·4
Zagreb		4·9	318	e 1 9	− 1	—	—	—	3·2
Budapest		5·4	348	1 15	− 2	2 16	− 2	2·9	—
Laibach		5·8	313	e 1 41k	P*	i 2 55	S*	—	3·6
Graz		6·1	324	i 1 23	− 4	i 2 51	S*	i 3·1	3·6
Triest		6·1	307	1 27	0	2 35	− 1	—	—
Vienna		6·8	335	i 1 48	P*	i 3 34	S_g	—	—
Florence		7·1	286	1 36	− 5	2 56	− 5	—	4·3
Padova		7·1	300	e 1 44	+ 3	3 44	S_g	—	—
Chur		9·2	304	e 2 8	− 2	e 3 49	− 5	—	—
Ravensburg		9·6	310	e 2 17	+ 1	e 4 26	+23	—	5·2
Cheb		9·7	327	e 2 46?	+29	—	—	—	5·8
Zurich		10·0	305	e 2 19	− 2	e 4 44	S*	—	—
Yalta		10·0	72	—	—	e 4 44	S*	—	—
Simferopol		10·1	69	—	—	e 4 26	+10	—	—
Stuttgart		10·4	313	e 2 28	+ 2	e 4 50	+27	—	6·8
Jena	N.	10·7	327	—	—	e 3 29	−62	—	6·0
Basle		10·7	305	e 2 27	− 4	e 5 45	S_g	—	—
Neuchatel		10·9	301	e 2 28	− 5	e 4 40	+ 4	e 5·9	—
Theodosia		11·0	70	e 2 42	+ 7	4 31	− 7	—	—
Strasbourg		11·1	311	e 2 58	+22	—	—	—	5·8
Hamburg		13·4	332	—	—	e 5 46?	+ 9	—	7·8
De Bilt		14·4	319	e 3 23	+ 2	—	—	e 7·8	9·9

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Copenhagen	14·5	341	—	—	6 23	+20	7·8	—
Ksara	14·6	120	e 3 21	− 2	e 6 17	+12	—	—
Kew	17·0	310	—	—	e 7 46?	+44	—	—
Moscow	17·4	33	e 3 56	PP	e 7 19	+ 8	e 9·5	10·2
Tiflis	17·9	83	e 4 2	− 3	e 7 36	+14	e 9·8	—
Pulkovo	18·5	15	e 4 12	− 1	e 7 43	+ 7	9·8	11·0
Granada	19·3	263	4 20	− 2	7 55	+ 3	—	—
Malaga	20·1	263	e 4 26	− 5	—	—	—	—
Sverdlovsk	29·2	46	e 5 58	0	e 13 1	?	14·8	—
Samarkand	34·6	79	e 6 40	− 6	—	—	—	—

Additional readings :—
Belgrade i = +39s., iP_g = +44s., i = +50s. and +1m.2s.
Bucharest eEN = +1m.26s. and +1m.48s., eN = +1m.51s., eE = +1m.57s.
Zagreb eP*Z = +1m.17s., eP_g = +1m.23s., e = +1m.31s., and +1m.42s., i = +1m.53s., +2m.10s., +2m.35s., and +2m.50s.
Budapest i = +1m.19s.
Triest i = +1m.43s., iP_g = +1m.46s., i = +2m.4s., +2m.37s., +2m.41s., and +2m.49s., iS_g = +3m.12s.
Simferopol i = +5m.36s.
Stuttgart eNZ = +5m.11s., eE = +5m.28s., e = +5m.55s.
Jena eE = +3m.33s., e = +3m.52s., eE = +4m.59s.
Strasbourg e = +4m.23s., +4m.55s., and +5m.6s., iE = +5m.17s. and +5m.23s.
Ksara eSS = +6m.45s.
Long waves were also recorded at Paris, Uccle, Göttingen, Tashkent, Edinburgh, Bidston, and San Fernando.

March 29d. Readings also at 0h. (Oak Ridge), 2h. (La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Tucson, Oaxaca, and Tacubaya), 3h. (Stuttgart, Strasbourg, Paris, De Bilt, Uccle, Almeria, Alicante, Toledo, near Granada, Malaga, and San Fernando, Frunse, near Andijan, and Samarkand), 6h. (Sverdlovsk, Nanking, Phu-Lien, Manila, and Amboina), 7h. (Triest), 8h. (Nanking and near Taihoku), 9h. (La Paz), 10h. (near Tiflis), 11h. (Ksara), 12h. (Mizusawa), 15h. (Amboina), 17h. (Tiflis), 19h. (Tiflis and near La Paz), 20h. (Perth, Sverdlovsk, and Tashkent), 22h. (Triest), 23h. (Copenhagen, Simferopol, Theodosia, Yalta, and near Sumoto).

March 30d. Readings at 2h. (near Sumoto), 3h. (Tiflis), 6h. (Tiflis), 7h. (Oaxaca and Tacubaya), 8h. (Oaxaca, Tacubaya, and Lick), 11h. (Almata), 12h. (near Almata, Andijan, Frunse, and Samarkand (2)), 13h. (near Tiflis), 14h. (Jena), 15h. (Mizusawa and near Nagoya), 16h. (Tiflis), 17h. (Triest), 20h. (Amboina, Pasadena, Riverside, Tinemaha, and near La Paz), 21h. (near Malabar), 22h. (near Apia), 23h. (near Triest).

March 31d. 3h. 33m. 9s. Epicentre 21°·8N. 143°·5E. N.2.

A = −·7464, B = +·5523, C = +·3714 ; δ = +9 ;
D = +·595, E = +·804 ; G = −·299, H = +·221, K = −·928.

A depth of focus 0·035 has been assumed.

	Corr. for Focus	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya	−0·9	14·6	338	e 3 18	+ 7	5 51	+ 7	—	6·2
Sumoto	−0·9	14·6	331	3 16	+ 5	5 54	+10	—	6·1
Osaka	−0·9	14·7	333	3 13	0	6 5	+19	8·0	—
Kobe	−0·9	14·8	332	e 3 14k	0	—	—	—	—
Hukuoka	−1·0	16·5	318	3 37	+ 2	6 33	+ 6	—	—
Hukuoka B	−1·0	16·5	318	3 38	+ 3	6 34	+ 7	—	—
Mizusawa	−1·1	17·4	354	e 3 50	+ 5	i 6 58	+13	—	—
Husan	−1·3	18·4	320	3 54	− 1	(7 6)	+ 2	7·1	—
Taikyu	−1·3	19·1	320	e 4 7	+ 3	i 7 23	+ 3	—	—
Manila	−1·6	22·6	255	i 4 37a	− 3	8 29	+ 3	—	—

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.
Vladivostok		−1·7	23·4	338	e 4 44	− 4	8 40	0	—	—
Nanking		−1·7	24·2	300	4 51	− 5	8 44	−11	e 12·4	—
Hong Kong		−2·0	27·1	277	6 22	+61	9 31	−12	11·2	11·6
Chiufeng		−2·3	29·6	315	e 6 45	+64	10 8	−12	—	—
Phu-Lien		−2·6	34·3	275	—	—	10 51?	−40	—	—
Batavia		−3·2	45·5	236	i 7 51	0	i 14 5	− 5	—	—
Tashkent		−4·2	64·2	307	e 12 46	?	i 18 17	+ 1	e 33·4	38·0
Sverdlovsk		−4·3	68·0	325	i 10 32	+ 2	—	—	26·8	—
Baku		−4·5	78·7	309	11 35	− 1	21 6	− 5	e 38·8	—
Moscow		−4·6	80·6	326	e 11 44	− 2	e 21 22	−10	e 43·8	46·0
Tiflis		−4·6	81·8	312	11 50	− 3	21 34	−11	e 40·8	—
Erevan		−4·7	82·6	310	e 11 48	− 9	e 21 26	−27	—	—
Tinemaha	z.	−4·7	83·2	53	i 11 59	− 1	—	—	—	—
Haiwee		−4·7	83·8	53	i 12 4	+ 1	—	—	—	—
Pasadena		−4·7	84·4	55	i 12 5	− 1	—	—	—	—
Mount Wilson	z.	−4·7	84·5	55	i 12 6	− 1	—	—	—	—
Riverside	z.	−4·7	85·1	55	i 12 8	− 2	—	—	—	—
La Jolla	z.	−4·7	85·6	56	i 12 12	− 1	—	—	—	—
Ksara		−4·8	91·5	308	e 12 34	− 8	e 22 42	−42	—	—
Copenhagen		−4·8	92·1	335	22 36	?	24 31	+61	44·8	—
De Bilt		−5·0	97·6	336	—	—	e 25 26	+66	e 53·8	—
Stuttgart		−5·0	98·5	332	—	—	e 23 9	−79	e 53·8	—
Triest		−5·0	98·6	328	—	—	i 23 15	−74	—	—
Strasbourg		−5·0	99·3	333	—	—	(e 22 51?)	?	e 22·8	—
Granada		—	113·4	333	e 20 18	PP	—	—	65·0	—
La Paz	z.	—	149·7	85	e 19 19a	[−22]	—	—	—	—

Additional readings :—
Osaka PP = +3m.33s., SS = +6m.38s., PcS = +11m.28s.
Kobe ePN = +3m.17s., P = +3m.21s., eE = +4m.29s., eN = +4m.37s., eZ = +6m.1s., eE = +6m.18s., eN = +6m.31s., eE = +6m.50s.
Nanking pPE = +5m.42s., iEN = +6m.22s., isS = +9m.56s., SS = +10m.20s.
Hong Kong ? = +6m.54s.
Chiufeng i = +7m.13s., sP = +7m.21s., sS = +10m.37s., SSE = +10m.56s.
Tashkent e = +22m.8s. and +25m.54s.
Sverdlovsk e = +12m.35s.
Tiflis eSS = +26m.59s.
Tinemaha iZ = +13m.16s.
Copenhagen SS = +29m.39s.
Triest e = +24m.6s. and +27m.47s.
La Paz iN = +19m.28s.
Long waves were also recorded at Paris and Uccle.

March 31d. Readings also at 2h. (near Amboina), 5h. (La Paz), 6h. (near Triest (2) and Zagreb), 7h. (near Manila (2)), 8h. (Branner), 12h. (Frunse, Samarkand, and near Andijan), 13h. (Almatà, Erevan, Frunse, Samarkand, near Andijan, near Drome and Puy de Dôme), 14h. (La Paz), 16h. (near Nagoya), 18h. (Wellington and near Dannyvirke), 19h. (Berkeley and Branner).

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