The International Seismological Summary.

1937 April, May, June.

FORMERLY THE BULLETIN OF THE BRITISH ASSOCIATION SEISMOLOGY COMMITTEE.

This number contains determination of 110 epicentres, of which 22 are repetitions from shocks used earlier in the year 1937. Twenty cases of abnormal focus have been noted :—

April	2d.	5h.	8·0S.	180°	Focus at base of superficial layers.		
	16d.	3h.	20·5S.	177·5W.	Depth of focus		0·030
	29d.	18h.	54·3N.	161·5W.	,,	,,	0·005
	29d.	20h.	45·7N.	137·3E.	,,	,,	0·050
May	5d.	21h.	18·5N.	146·0E.	,,	,,	0·020
	7d.	14h.	54·3N.	161·5E.	,,	,,	0·005
	10d.	15h.	26·5S.	178·5E.	,,	,,	0·080
	12d.	2h.	4·9S.	143·8E.	,,	,,	0·020
	21d.	13h.	2·2N.	78·5W.	,,	,,	0·005
	23d.	18h.	17·1N.	93·4W.	,,	,,	0·010
	28d.	7h.	20·5N.	145·3E.	,,	,,	0·020
		15h.	17·1N.	93·4W.	,,	,,	0·010
		19h.	24·0N.	142·5E.	,,	,,	0·080
	29d.	2h.	24·0N.	142·5E.	,,	,,	0·080
	31d.	10h.	1·0N.	128·5E.	,,	,,	0·030
June	8d.	18h.	46·5N.	149·5E.	,,	,,	0·020
		20h.	39·2N.	141·9E.	,,	,,	0·010
		22h.	15·9N.	93·0W.	,,	,,	0·020
	12d.	18h.	28·7N.	144·8E.	,,	,,	0·020
	19d.	17h.	25·5S.	178·5E.	,,	,,	0·070

KEW OBSERVATORY,
RICHMOND,
SURREY.

June, 1948.

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1937 APRIL, MAY, JUNE.

April 1d. 17h. 20m. 35s. Epicentre 16°·3S 172°·8W.

$A = -·9528$, $B = -·1204$, $C = -·2789$; $\delta = +11$; $h = +5$;
$D = -·125$, $E = +·992$; $G = +·277$, $H = +·035$, $K = -·960$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		2·7	21	e 0 23	−22	i 0 43	−36	—	—
Christchurch		29·8	202	6 6	− 5	11 14	+ 7	15·9	—
Riverview		36·8	236	e 8 43	PP	—	—	e 15·7	20·7
Sydney		36·8	236	e 12 20	S	(e 12 20)	−36	18·9	21·7
Honolulu		40·1	22	—	—	e 14 37	+53	e 17·7	—
Melbourne		42·8	232	—	—	e 14 42	+16	22·2	26·2
Nagoya		69·9	319	e 7 22	?	—	—	—	—
Berkeley		71·8	41	—	—	e 20 34	−12	—	—
La Jolla	Z.	72·1	47	e 11 23	− 5	—	—	—	—
Manila		72·2	292	11 23	− 6	i 21 16	+25	—	—
Pasadena		72·2	46	e 11 22	− 7	i 20 45	− 6	e 29·4	—
Haiwee	E.	73·5	44	e 11 33	− 3	—	—	—	—
Tinemaha	Z.	73·9	43	e 11 34	− 5	—	—	—	—
Tucson		76·4	50	e 11 47	− 6	e 21 37	− 1	33·2	—
Vladivostok		77·9	322	11 52	− 9	—	—	35·4	39·1
Hong Kong		81·1	297	12 14	− 4	22 45	+17	—	42·8
College		83·1	10	—	—	e 26 44	?	e 31·5	—
Chiufeng		86·6	313	i 12 39	− 7	23 7	[− 4]	—	—
Huancayo		93·7	104	—	—	e 24 2	−25	e 44·4	—
Florissant	N.	94·3	51	—	—	e 22 42	[−75]	e 45·5	51·0
Irkutsk		98·5	322	e 16 52	PP	24 9	[−11]	47·4	—
La Paz		98·9	110	—	—	i 24 29	[+ 8]	47·4	51·8
San Juan		110·4	75	—	—	(e 22 31)	?	e 22·5	—
Tashkent		121·5	308	20 17	PP	e 26 13	[+19]	e 55·2	71·9
Sverdlovsk		123·2	328	i 20 24	PP	25 56	[− 4]	51·4	66·3
Pulkovo		133·4	344	e 22 45	PP	—	—	70·4	75·0
Baku		136·0	312	22 56	PKS	32 37	PS	66·9	75·2
Tiflis		139·0	316	e 19 50	[+21]	—	—	e 67·4	78·4
De Bilt		144·2	2	—	—	e 41 31	SS	e 74·4	85·8
Uccle		145·5	4	e 19 19	[−21]	e 41 43	SS	70·4	—
Paris		147·4	6	i 19 42	[− 1]	—	—	79·4	—
Stuttgart		147·6	358	e 19 40	[− 3]	—	—	e 79·4	—
Strasbourg		147·8	359	i 19 42	[− 1]	e 30 4	{− 2}	e 80·4	—
Ksara		148·9	309	i 19 43	[− 3]	—	—	—	83·4

Additional readings :—
Christchurch $L_gE = +13·3$m.
Honolulu e = +16m.13s.
Melbourne e = +18m.2s.
Berkeley eZ = +20m.42s., eN = +29m.11s., eE = +29m.20s.
Manila iN = +16m.41s., iE = +16m.49s.
Pasadena i = +11m.27s.
Chiufeng iSN = +23m.20s.
Huancayo eSS = +31m.0s.
Florissant eSE = +23m.55s., eSKKSN = +24m.26s.
Irkutsk SKKS = +24m.9s., ePPS = +26m.26s., eSS = +31m.7s., SSS = +36m.25s.?
Tashkent SKKS = +27m.13s., PS = +30m.22s., SKSP = +31m.5s.
Sverdlovsk e = +26m.24s., SS = +37m.19s.
Baku e = +37m.41s., SS = +39m.37s., SSS = +44m.1s.
Tiflis ePKSEN = +23m.3s., eE = +32m.17s., ePSN = +34m.59s., eSSSN = +46m.0s.
Ksara iPP = +23m.15s., eSKSP = +33m.35s., ePPS = +36m.37s.
Long waves were also recorded at Wellington, Ukiah, Perth, Bozeman, Oak Ridge, Cape Town, Scoresby Sund, Copenhagen, and Kew.

April 1d. Readings also at 2h. (Wellington), 3h. (Berkeley, Ukiah, and Tiflis), 5h. (Almata), 8h. (Tacubaya), 9h. (Santiago, La Paz, La Plata, Williamstown, and near Tananarive), 10h. (Wellington), 12h. (near Apia), 13h. (Williamstown), 15h. (Oak Ridge, Nagoya, and near Medan), 17h. (Riverview, Wellington, and near Apia), 18h. (Haiwee, Pasadena, Stuttgart, Neuchatel, Zurich, and near Apia (2)), 19h. (Mount Wilson, Pasadena, Tinemaha, and Wellington), 20h. (near Apia).

April 2d. 5h. 30m. 10s. Epicentre 8°·0S. 180°.

$A = -\cdot 9904$, $B = \cdot 0000$, $C = -\cdot 1383$; $\delta = +2$; $h = +7$;
$D = \cdot 000$, $E = +1\cdot 000$; $G = +\cdot 138$, $H = \cdot 000$, $K = -\cdot 990$.

This shock is referred to tables for a focus at the base of the superficial layers.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		9·9	126	e 2 29	+ 6	i 4 12	− 2	—	—
Wellington		33·5	188	e 7 32	?	—	—	—	—
Honolulu		36·4	37	—	—	(14 6)	SS	14·1	—
Riverview		37·0	221	e 6 48	−20	—	—	—	14·0
Sydney		37·0	221	e 5 20	?	—	—	9·6	10·8
Melbourne		43·4	222	e 8 10	+ 9	i 14 40	+13	—	—
Adelaide		46·4	229	i 12 2	?	i 15 38	+28	—	20·7
Sumoto		60·0	319	e 10 15	+ 9	—	—	—	—
Manila		62·7	291	i 10 23k	− 1	18 54	+ 5	—	—
Perth		63·9	239	i 16 40	?	—	—	—	—
Vladivostok		67·0	324	e 11 15	+23	i 20 28	+47	28·7	—
Berkeley	E.	70·5	46	—	—	i 20 35	+12	—	—
Hong Kong		71·1	298	11 18	+ 1	20 27	− 3	—	—
Pasadena		71·9	51	i 11 21k	− 1	i 20 38	− 1	—	—
Mount Wilson	Z.	72·0	51	i 11 22	0	—	—	—	—
La Jolla	Z.	72·1	52	i 11 20	− 3	—	—	—	—
Batavia		72·5	266	10 48	−37	i 19 30	−76	—	—
Haiwee	E.	72·9	49	e 11 28	0	—	—	—	—
Tinemaha		73·0	48	e 11 29	+ 1	e 20 55	+ 3	—	—
Tucson		77·0	55	i 11 43	− 8	e 21 14	−22	—	—
Medan	N.	81·9	275	11 25	−53	—	—	—	—
Irkutsk		87·6	325	16 1	PP	22 31	[−37]	e 33·8	—
Scoresby Sund		116·0	9	—	—	(35 50?)	SS	(35·8)	—
Pulkovo		123·5	342	21 5	PP	—	—	—	—
Moscow		123·9	334	e 18 27	[−33]	—	—	—	—
Tiflis		128·2	316	e 18 35	[−33]	—	—	—	—
Copenhagen		131·4	351	i 18 42	[−32]	—	—	35·8	—
Theodosia		132·1	326	i 18 35	[−41]	—	—	—	—
Simferopol		132·8	328	i 18 43	[−34]	—	—	—	—
Yalta		133·1	326	i 18 44	[−34]	—	—	—	—
Sebastopol		133·3	328	e 18 47	[−31]	—	—	—	—
Ksara		138·2	313	i 18 51k	[−37]	—	—	—	—
Chur		140·4	351	e 19 6	[−25]	—	—	—	—
Neuchatel		140·7	352	e 19 1	[−30]	—	—	—	—

Additional readings :—
Wellington i = +7m.41s.
Riverview eN = +6m.51s., i = +9m.32s.
Melbourne i = +11m.19s.
Adelaide e = +17m.50s.
Sumoto eZ = +10m.29s.
Berkeley iN = +20m.40s., eZ = +20m.43s.
Mount Wilson iZ = +13m.31s.
Tucson i = +11m.46s.
Medan PE? = +10m.17s.
Irkutsk e = +17m.13s., +18m.15s., and +26m.23s., SS = +28m.50s.
Moscow e = +21m.8s.
Tiflis eN = +18m.43s., eN = +21m.17s., eE = +22m.27s., eE = +31m.53s.
Theodosia +18m.43s.
Ksara iPP = +21m.14s., epPP = +22m.1s., e = +32m.44s.
Chur e = +19m.21s.

April 2d. Readings also at 0h. (near Santiago), 1h. (Mount Wilson and Pasadena), 5h. (Christchurch and Wellington), 6h. (Nagoya, Mount Wilson, Pasadena, and near Apia), 7h. (Tucson), 9h. (Tiflis), 13h. (near Sumoto), 16h. (Phu-Lien and Samarkand).

April 3d. 3h. Data inadequate to afford a determination of epicentre. Region of New Guinea probable.
Adelaide eP? = 56m.50s., e = 59m.37s., eS? = 63m.14s., eL? = 68m.4s., M = 71·7m.
Riverview eN = 57m.12s. and 63m.6s., eL = 64m.24s., M = 69m.46s.
Manila PZ = 58m.28s. SEN = 64m.6s.?, LN = 68m.5s., M = 71m.40s.
Christchurch eP? = 59m.40s., iSE = 66m.34s., SS = 69m.41s., L_QN = 70m.53s., L_rEZ = 73m.42s.
Sydney eP = 60m.15s., eS = 64m.20s., L = 67m.5s., M = 69m.40s.
Vladivostok eP = 61m.7s., e = 66m.55s. and 69m.0s., M = 82m.42s.
Melbourne e = 61m.25s., i = 63m.55s., e = 66m.10s., L = 68m.50s., M = 70m.54s.
Chiufeng eP?Z = 61m.49s., eSN = 69m.37s., M = 83m.18s.
Irkutsk eP = 63m.26s., S = 72m.36s., eL = 85·0m., M = 90m.36s.
Perth e = 69m.0s., eL = 71m.12s.
Pulkovo PKP = 70m.33s., S = 78m.44s., PS = 80m.45s., PPS = 81m.55s., SS = 87m.0s., SSS = 91m.24s., L = 106·0m., M = 115m.54s.
Tiflis ePZ = 70m.48s., ePPPZ = 77m.22s., eSKKS = 81m.46s., eLN = 100·0m., M = 122·3m.
Ksara ePP = 71m.18s., e = 80m.53s., ePPS = 82m.7s.
Sitka eL = 72m.48s.
Tashkent eS = 75m.33s., e = 84m.30s., eL = 91m.54s., M = 92m.12s.
Berkeley eE = 78m.11s. and 95m.18s., eZ = 99m.26s., eN = 109m.38s.
Baku e = 79m.50s. and 90m.1s., L = 101·0m., M = 111m.0s.
Scoresby Sund 82m.0s., 88m.42s., L = 108·0m.
Copenhagen 82m.18s., 93m.42s., L = 109·0m.
Sverdlovsk e = 82m.23s., L = 92·0m., M = 99m.30s.
Uccle e = 83m.30s., eL = 113m.
Stuttgart eZ = 85m., eL = 114m.
Long waves were also recorded at Wellington, Hong Kong, Honolulu, Cape Town, Moscow, and other American and Eropean stations.

April 3d. 11h. 20m. 31s. Epicentre 24°·0N. 120°·0E.

$A = -·4573$, $B = +·7921$, $C = +·4045$; $\delta = +17$; $h = +4$;
$D = +·866$, $E = +·500$; $G = -·202$, $H = +·350$, $K = -·915$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		1·7	53	0 27 a	− 4	0 52	− 2	—	1·2
Hong Kong		5·6	254	1 29	+ 2	2 40	+ 7	3·3	3·6
Zi-ka-wei	Z.	7·2	8	e 2 17	+28	—	—	—	6·0
Manila		9·4	174	2 22	+ 4	4 38	+31	6·5	—
Husan		13·6	33	e 3 14	− 3	7 53	L	(7·9)	—
Taikyu		14·0	32	e 3 15	− 7	7 57	L	(7·9)	—
Zinsen		14·6	21	e 3 34	+ 4	e 7 59	L	(e 8·0)	—
Keizyo		14·8	22	e 3 36	+ 4	e 6 32	+14	e 8·1	—
Chiufeng		16·3	350	e 3 58	+ 6	7 16	+23	e 8·2	12·1
Calcutta	N.	29·1	273	—	—	e 11 31	+35	i 17·4	24·6
Irkutsk		30·7	340	e 6 14	− 5	e 11 27	+ 6	16·5	—
Tashkent		45·4	304	—	—	e 15 29	+25	e 24·0	30·1
Sverdlovsk		53·6	324	9 24	− 1	17 5	+ 7	28·5	36·3
Tiflis		63·7	306	e 10 36	0	e 19 24	+14	35·3	44·6
Moscow		66·3	322	e 10 59	+ 7	—	—	e 38·0	41·7
Pulkovo		69·4	327	—	—	e 20 6	−12	36·5	64·2

Additional readings :—
Taihoku +55s. (alternative S).
Zi-ka-wei iZ = +4m.29s., +4m.51s., +5m.20s., and +6m.32s.
Chiufeng iZ = +7m.27s.
Tashkent i = +15m.39s., e = +19m.29s.
Long waves were also recorded at Phu-Lien, Baku, Medan, and several European stations.

April 3d. 21h. 10m. 34s. Epicentre 15°·3N. 119°·9E.

Felt in the west of Luzon. See " Seismological Bulletin " for 1937, July-December. Weather Bureau, Manila, 1938.

$A = -\cdot4811$, $B = +\cdot8365$, $C = +\cdot2622$; $\delta = -6$; $h = +6$;
$D = +\cdot867$, $E = +\cdot498$; $G = -\cdot131$, $H = +\cdot227$, $K = -\cdot965$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manila		1·2	124	i 0 32k	+ 8	i 0 50	+ 9	—	—
Taito		7·5	9	2 7	+14	—	—	—	—
Arisan		8·2	6	2 7	+ 4	3 34	− 4	—	—
Hong Kong		8·9	323	—	—	2 55	−60	3·9	5·3
Phu-Lien		13·8	295	3 18	− 1	e 5 57	+ 3	6·9	—
Nake		15·8	33	3 47	+ 2	—	—	—	—
Zi-ka-wei	Z.	15·9	5	e 4 11	+24	7 14	SSS	—	10·5
Nanking		16·7	357	e 4 1	+ 4	—	—	—	—
Kagosima		18·9	29	4 26	+ 2	—	—	—	—
Miyazaki		19·6	31	4 30	− 2	7 52	−16	—	—
Kumamoto		20·0	27	4 35a	− 2	—	—	—	—
Hukuoka B		20·5	27	4 41	− 1	e 8 26	− 1	—	—
Husan		21·4	20	e 4 50	− 1	e 8 47	+ 2	—	—
Taikyu		21·9	19	e 4 52	− 5	e 8 56	+ 2	—	—
Koti		22·0	32	4 53	− 5	8 56	0	—	—
Zinsen		22·9	13	i 5 7	+ 1	e 9 16	+ 3	—	—
Keizyo		23·1	15	e 5 8	0	e 9 18	+ 2	—	—
Siomisaki		23·1	36	5 7	− 1	—	—	—	—
Sumoto		23·3	33	e 5 16	+ 6	—	—	—	—
Wakayama		23·4	33	5 9	− 2	—	—	—	—
Kobe		23·7	33	e 5 13	− 1	i 9 27	0	—	13·8
Medan		23·9	244	e 5 13	− 3	i 9 55	+25	—	—
Osaka		23·9	33	5 18	+ 2	9 42	+12	—	—
Osaka B		23·9	33	5 18	+ 2	—	—	—	—
Hikone		24·7	33	5 24	0	—	—	—	—
Chiufeng		24·9	354	i 5 24a	− 2	9 45	− 2	e 12·9	—
Batavia		25·0	212	i 5 28k	+ 1	9 48	− 1	—	—
Nagoya		25·0	35	(5 28)	+ 1	5 28	P	—	—
Gihu		25·1	35	5 27	− 1	9 48	− 3	—	—
Hamamatu		25·1	37	5 22	− 6	—	—	—	—
Hunatu		26·3	37	4 46	−53	—	—	—	—
Nagano		26·8	33	5 53	+ 9	—	—	—	—
Ofwake		26·8	34	5 51	+ 7	—	—	—	—
Tokyo		27·0	38	5 52	+ 7	10 35	+13	—	—
Vladivostok		29·6	18	6 7	− 2	e 11 1	− 3	13·6	—
Mizusawa		30·2	34	6 10	− 4	11 8	− 5	—	—
Calcutta	N.	30·7	289	e 6 21	+ 2	11 17	− 4	14·5	22·5
Irkutsk		38·9	345	8 28	+59	e 14 19	+51	21·4	—
Kodaikanal	E.	41·6	269	e 7 26?	−25	—	—	—	—
Bombay		45·0	282	e 8 11	− 8	i 14 49	− 9	—	—
Almata		46·0	317	e 8 28	+ 1	—	—	—	—
Frunse		47·4	315	8 46	+ 8	—	—	—	—
Semipalatinsk		47·4	327	e 8 28	−10	—	—	—	—
Andijan		48·3	312	e 8 42	− 3	e 15 41	− 4	—	—
Tashkent		50·7	311	i 9 3	0	i 16 13	− 5	e 25·8	32·3
Tchimkent		50·7	313	e 9 8	+ 5	—	—	—	—
Sverdlovsk		60·7	327	i 10 11	− 4	i 18 24	− 8	28·4	—
Baku		65·1	308	e 10 44	− 1	19 27	0	32·9	42.6
Grozny		68·2	311	e 11 7	+ 3	—	—	—	—
Tiflis		68·9	309	e 11 6	− 3	20 9	− 4	e 34·9	43·5
Moscow		73·2	324	i 11 31	− 4	20 52	−10	39·9	44·9
Pulkovo		76·7	329	11 51	− 4	21 29	−12	39·4	45·7
Ksara		76·8	301	i 11 54	− 1	e 21 44	+ 2	—	—
Helwan		81·3	298	e 12 18	− 2	i 22 26	− 4	—	—
Copenhagen		87·0	327	—	—	23 18	[+ 4]	44·4	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hamburg	89·2	326	—	—	e 23 26?	[− 2]	—	—
Stuttgart	91·7	322	e 13 9	− 1	—	—	e 53·4	—
La Paz	172·2	102	i 20 14k	[+ 4]	i 32 50	{+36}	80·4	—

Additional readings :—
Nake i = +4m.3s.
Sumoto ePEN = 21h.11m.38s., ePZ = 21h.11m.43s.
Kobe eE = +6m.53s.
Medan iP = +5m.18s.
Osaka SS = +11m.2s.
Chiufeng iZ = +5m.44s., iE = +10m.7s.
Batavia SE? = +10m.33s.
Mizusawa SN = +10m.55s.
Irkutsk e = +10m.3s., +11m.8s., +17m.32s., and +19m.20s.
Tiflis eSSN = +24m.35s., eSSSN = +28m.19s., eN = +32m.38s.
Ksara ePS = +22m.25s., eSS = +26m.54s.
La Paz ipPKPZ = +21m.36s., iPPZ = +25m.29s.
Long waves were also recorded at Scoresby Sund, Kew, De Bilt, Uccle, Cheb, Strasbourg, and Prague.

April 3d. 22h. 15m. 38s. Epicentre 12°·0N. 90°·7W.

A = −·0120, B = −·9783, C = +·2066; δ = −10; h = +7;
D = −1·000, E = +·012; G = −·003, H = −·207, K = −·978.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Oaxaca	N.	7·7	311	1 58	+ 2	—	—	—
Merida	N.	9·0	8	2 21	+ 8	—	—	—
Tacubaya	N.	11·0	313	2 41	− 1	—	—	—
Balboa Heights		11·4	105	2 22?	−25	—	—	—
Little Rock		22·7	357	e 5 2	− 2	e 8 58	−11	—
San Juan		24·5	72	e 6 28	+66	—	—	—
Florissant		26·7	2	e 5 42	− 1	e 10 4	−13	e 13·3
Tucson		27·4	322	i 5 48	− 1	e 10 32	+ 4	e 13·9
Pasadena	Z.	33·3	317	e 6 43	+ 2	—	—	—
Williamstown		34·2	325	i 6 50	+ 1	—	—	—
Tinemaha	Z.	36·1	320	i 6 35	−30	—	—	—

Additional readings :—
Little Rock ePE = +5m.6s., iN = +5m.9s., iPPEN = +5m.20s., eN = +9m.13s.
Florissant iNE = +5m.56s., eZ = +6m.6s., eN = +9m.55s., eE = +10m.28s.
Tucson e = +6m.10s. and +9m.52s.
Williamstown i = +7m.5s. and +7m.28s.
Long waves were also recorded at Tashkent, Pulkovo, Scoresby Sund, Sverdlovsk, Baku, and Tiflis.

April 3d. Readings also at 0h. (Cheb, Pulkovo, Sverdlovsk, Tiflis, Irkutsk, Vladivostok, College, Pasadena, Riverside, and near Nagoya), 1h. (Sitka, Scoresby Sund, Copenhagen, Baku, Moscow, Tashkent, Ksara, Tiflis, Hong Kong, and Bombay), 2h. (Hong Kong, Irkutsk, Calcutta, Sverdlovsk, Tiflis, Tashkent, Moscow, Pulkovo), 6h. (Yalta), 7h. (Batavia, Almata, Andijan, Frunse, Samarkand, Semipalatinsk, Tchimkent, Tashkent, Sverdlovsk, Irkutsk, and San Juan), 8h. (San Fernando, Calcutta, Sverdlovsk, Irkutsk, Hong Kong, and near Taihoku), 9h. (near Mizusawa), 11h. (Phu-Lien, near Taihoku, and near Zagreb), 12h. (Andijan and Tiflis), 17h. (Tiflis and near Tananarive), 19h. (near Tananarive).

April 4d. 15h. 40m. 18s. Epicentre 45°·0N. 17°·9E.

Felt force VII at Kalinice, Rusevo (45° 19′N. 18°·00E.), Buk (45° 18′ 17°51′), Bruno (45° 01′N. 17° 54′E.). Epicentre at Kalinice (45° 03′N. 17° 53′E.). Felt in the South of Hungary at 100km. from the epicentre. See "Macroseismic Annual," Vol. XVII, 1937. Published by the Institute of Seismology of the University of Belgrade, Series A, p.10.

$A = +\cdot6752$, $B = +\cdot2181$, $C = +\cdot7047$; $\delta = +6$; $h = -4$;
$D = +\cdot307$, $E = -\cdot952$; $G = +\cdot671$, $H = +\cdot217$, $K = -\cdot709$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb		1·6	301	i 0 29	− 1	i 0 51	0	—	1·0
Belgrade		1·8	96	i 0 36	+ 4	i 1 7	S_g	—	1·5
Kecskemet		2·3	33	e 1 42	?	e 2 10	?	—	—
Budapest		2·6	18	e 0 46	+ 2	—	—	1·3	—
Laibach		2·6	294	e 0 44a	0	i 1 22	+ 5	—	1·4
Graz		2·7	321	i 0 41	− 4	i 1 3	−16	—	1·7
Stara Dala		2·9	4	e 0 48	0	e 1 28	+ 4	—	1·5
Triest		3·0	283	i 0 51a	+ 1	i 1 25	− 2	—	—
Vienna		3·4	343	e 1 1	P*	i 1 44	S*	i 1·8	2·2
Padova		4·3	277	e 1 59	+51	3 0	+60	—	—
Sofia		4·6	118	e 1 15?	+ 3	e 2 25?	S*	—	—
Prague		5·6	337	e 2 4	P_g	e 2 58	S_g	—	3·7
Bucharest	E.	5·8	93	—	—	e 3 25	S_g	4·7	—
Chur		6·1	290	e 1 34	0	—	—	—	—
Zurich		6·9	293	e 1 44	− 1	—	—	—	—
Stuttgart		7·0	305	e 1 45	− 1	e 3 0	− 8	—	4·9
Jena		7·3	327	e 1 48	− 2	—	—	i 3·6	—
Basle		7·6	293	e 1 52	− 3	—	—	—	—
Strasbourg		7·8	301	—	—	i 3 30	+ 2	e 4·9	6·2
Göttingen		8·4	324	e 2 12	+ 6	—	—	—	4·6
Jersey		14·2	294	e 3 12	−12	—	—	e 20·2	—
Pulkovo		16·6	23	3 52	− 4	6 55	− 5	9·7	—
Tiflis		19·8	90	e 4 31	− 4	e 8 30	+17	—	—

Additional readings :—
Zagreb iPP = +32s., iZ = +34s., iSP = +39s., iSZ = +53s., eSSS = +1m.45s.
Belgrade PP = +38s., PPP = +41s., i = +45s. and +1m.5s.
Kecskemet ePS = +2m.1s, eSZ = +2m.14s.
Budapest iPEN = +48s., iN = +57s.
Laibach i = +49s., +57s., and +1m.12s.
Stara Dala eP_g = +53s., iPS = +1m.18s.
Vienna iPP = +1m.5s.
Triest i = +1m.39s.
Prague ePS = +2m.30s.
Bucharest eE = +3m.50s.
Stuttgart eP*EZ = +1m.58s., eP_gEZ = +2m.18s., e = +3m.49s., eS_g = +4m.3s., e = +4m.14s. and +4m.31s.
Jena eN = +2m.0s., iN = +2m.5s. and +2m.13s., eN = +3m.0s., eZ = +3m.4s.
Strasbourg e = +3m.11s., eS* = +3m.55s., iS_g = +4m.19s.
Jersey e = +4m.42s.?
Tiflis eE = +6m.29s.
Long waves were also recorded at Uccle, Cheb, Moscow, Sverdlovsk, Copenhagen, Hamburg, De Bilt, Rathfarnham Castle, and Tashkent.

April 4d. Readings also at 1h. (Grozny and Scoresby Sund), 2h. (Almata, Frunse, Samarkand, Sverdlovsk, Tashkent, Tchimkent, Grozny, and near Andijan), 3h. (Almata, Tiflis, Grozny, and near Erevan), 4h. (Ksara, Batavia, and near Medan), 5h. (Baku, Sverdlovsk, Tashkent, Irkutsk, Kobe, Mizusawa, near Nagoya, and Sumoto), 6h. (Tiflis), 9h. (Erevan and Tiflis), 13h. (Ksara, Sverdlovsk, and Tashkent), 14h. (Tiflis, Sverdlovsk, and Tashkent), 16h. (near Mizusawa), 18h. and 19h. (near Tiflis), 20h. (Calcutta).

April 5d. 6h. 56m. 32s. Epicentre 0°·8S. 133°·5E.

Felt Force V in the N.W. of New Guinea. See Natuurkundig Tijdschrift voor Nederlansch-Indie, Alf, 3 Deel XCIX, '39, pp. 101-131.

$A = -\cdot6883$, $B = +\cdot7253$, $C = -\cdot0138$; $\delta = +1$; $h = +7$;
$D = +\cdot725$, $E = +\cdot688$; $G = +\cdot010$, $H = -\cdot010$, $K = -1\cdot000$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		8·2	6	1 57	− 6	3 28	−10	4·4	—
Manila		19·7	321	i 4 36a	+ 2	8 19	+ 9	—	—
Kosyun		25·8	333	5 34	0	10 29	+27	—	—
Taito		26·3	334	5 43	+ 4	—	—	—	—
Isigakizima		26·6	341	5 44	+ 2	10 22	+ 6	—	—
Takao		26·6	334	5 46	+ 4	10 46	+30	—	—
Tainan		27·0	334	5 47	+ 2	—	—	—	—
Arisan		27·1	333	5 53	+ 7	10 23	− 1	11·6	—
Batavia		27·1	260	i 5 48a	+ 2	i 11 8	+44	e 16·5	—
Karenko		27·2	335	5 50	+ 3	—	—	—	—
Naha		27·4	348	5 50	+ 1	11 35	+67	—	—
Taityu		27·7	333	5 54	+ 2	—	—	—	—
Giran		27·8	337	6 6	+13	—	—	—	—
Taihoku		28·2	337	e 5 45	−11	10 37	− 4	—	—
Azinkoto		28·5	338	6 25	+26	11 2	+16	—	—
Titizima		29·0	17	6 6	+ 2	—	—	—	—
Nake		29·3	353	6 21	+15	—	—	14·3	—
Hong Kong		29·7	322	6 8k	− 2	11 8	+ 2	—	15·2
Kagosima		32·3	355	6 39	+ 6	—	—	—	—
Miyazaki		32·6	357	6 33	− 2	11 50	− 1	—	—
Simidu		33·4	359	6 48	+ 6	12 3	0	14·9	—
Kumamoto		33·5	356	6 39	− 4	—	—	13·6	—
Nagasaki		33·5	355	6 29	−14	10 53	−72	14·2	—
Tomie		33·5	354	6 58	+15	11 57	− 8	—	—
Unzendake		33·5	355	6 45	+ 2	—	—	—	—
Zi-ka-wei	Z.	33·8	342	i 7 17k	+31	11 45	−25	16·2	20·0
Muroto		33·9	1	6 38	− 9	12 7	− 4	—	—
Phu-Lien		33·9	311	i 6 47	0	e 12 7	− 4	14·5	16·5
Siomisaki		34·1	5	6 48	0	12 32	+18	—	—
Koti		34·2	0	6 48	− 1	11 54	−22	—	—
Hukuoka		34·3	356	e 6 55	+ 5	e 11 18	−59	e 14·0	—
Hukuoka B		34·3	356	e 6 48	− 2	e 11 55	−22	e 16·2	—
Matuyama		34·5	359	6 49	− 3	12 14	− 6	14·6	—
Wakayama		34·9	4	6 56	+ 1	12 23	− 4	15·0	—
Sumoto		35·0	4	6 54	− 2	e 12 24	− 4	—	15·3
Medan		35·1	278	i 7 0	+ 3	i 12 40	+10	—	—
Perth		35·2	207	i 6 58	0	12 33	+ 2	17·1	20·5
Kobe	Z.	35·3	4	6 59k	0	e 12 9	−24	—	15·4
	N.	35·3	4	7 0k	+ 1	12 32	− 1	—	25·9
Okayama		35·3	0	6 41	−18	—	—	15·0	—
Osaka		35·3	4	7 0	+ 1	—	—	—	—
Osaka B		35·3	4	7 6	+ 7	—	—	—	—
Hamada		35·5	358	7 2	+ 2	12 18	−18	15·3	—
Hamamatu		35·5	7	7 6	+ 6	12 44	+ 8	—	—
Omaesaki		35·5	7	6 6	−54	—	—	—	—
Tu		35·5	5	6 51	− 9	12 9	−27	—	—
Kameyama		35·6	5	7 0	− 1	12 35	− 3	—	—
Kyoto		35·7	4	6 58	− 4	—	—	—	—
Nagoya		35·9	6	e 7 4	0	—	—	12·7	—
Hikone		36·0	5	7 0	− 5	12 34	−10	—	—
Husan		36·0	354	7 17	+12	12 40	− 4	—	—
Gihu		36·1	6	7 4	− 1	12 41	− 4	16·3	—
Ibukisan		36·1	5	6 51	−14	—	—	—	—
Misima		36·1	8	7 8	+ 3	—	—	—	—
Numadu		36·1	8	7 9	+ 4	—	—	—	—
Toyooka	N.	36·2	3	e 6 59	− 7	i 12 49	+ 2	e 17·4	—
	E.	36·2	3	7 16	+10	12 57	+10	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hunatu		36·5	8	7 11	+ 2	—	—	—	—
Yokohama		36·5	9	7 28	+19	—	—	—	—
Tokyo		36·8	9	7 21	+10	13 5	+ 9	—	—
Riverview		36·8	156	i 7 14k	+ 3	e 12 36	−20	18·6	24·2
Sydney		36·8	156	e 6 58	−13	i 12 52	− 4	18·1	24·5
Taikyu		36·8	354	7 18	+ 7	12 38	−18	—	—
Tyosi		37·0	10	7 19	+ 6	12 49	−10	—	—
Matumoto		37·1	6	7 28	+14	—	—	15·3	—
Kanazawa		37·2	5	7 0	−15	12 56	− 6	15·9	—
Kumagaya		37·2	8	7 23	+ 8	—	—	—	—
Oiwake		37·2	7	7 23	+ 8	13 2	0	16·8	—
Syuhurei		37·2	353	7 22	+ 7	13 0	− 2	—	—
Kakioka		37·4	9	7 16	0	12 52	−13	—	—
Maebasi		37·4	8	7 21	+ 5	—	—	—	—
Toyama		37·4	6	7 16	0	13 10	+ 5	15·6	—
Husiki		37·5	6	7 11	− 6	—	—	—	—
Nagano		37·5	6	7 20	+ 3	12 59	− 8	15·9	—
Mito		37·6	9	7 22	+ 4	—	—	15·6	—
Wazima		38·1	5	7 22	0	13 16	0	—	—
Melbourne		38·2	166	7 28	+ 5	13 18	+ 1	17·8	22·3
Keizyo		38·6	352	e 7 27	+ 1	e 13 18	− 5	e 16·2	—
Zinsen	E.	38·6	351	i 7 26	0	13 19	− 4	—	19·3
	N.	38·6	351	i 7 24	− 2	13 7	−16	e 17·7	—
Hukusima		38·9	9	7 31	+ 2	13 9	−19	—	—
Niigata		38·9	7	7 41	+12	—	—	17·6	—
Yamagata		39·4	9	7 39	+ 6	—	—	—	—
Sendai		39·5	9	7 32	− 2	13 33	− 4	—	—
Heizyo		40·3	351	e 7 43	+ 3	e 13 43	− 6	—	—
Akita		40·8	9	7 46	+ 1	—	—	—	—
Hatinohe		41·8	9	7 44	− 9	14 4	− 7	—	—
Aomori		41·9	8	7 58	+ 4	—	—	—	—
Yingkow		42·5	349	8 4	+ 5	14 26	+ 4	—	—
Hakodate		42·9	8	8 19	+17	—	—	—	—
Mizusawa		43·4	9	7 42	−24	14 3	−32	19·8	—
Urakawa		43·6	10	8 3	− 5	—	—	20·2	—
Chiufeng		43·7	341	i 8 8a	0	i 14 31	− 8	i 17·8	21·5
Sapporo		44·2	8	8 12	0	14 41	− 5	—	—
Obihiro		44·4	10	8 20	+ 6	—	—	—	—
Asahigawa		45·1	9	8 18	− 2	—	—	—	—
Nemuro		45·2	13	8 18	− 2	14 45	−16	—	—
Calcutta	N.	49·5	302	9 18	+24	16 27	+25	24·8	28·9
Arapuni		53·6	140	9 28	+ 3	—	—	22·5	36·5
Colombo		54·1	279	9 29	0	16 54	−11	28·3	31·6
Wellington		54·9	144	9 35	0	17 21	+ 5	26·5	33·5
Christchurch		55·0	147	i 9 32k	− 3	i 17 16	− 1	26·9	30·9
Kodaikanal	E.	56·8	284	i 9 49	+ 1	i 17 41	0	i 27·3	31·5
Hyderabad		57·1	292	9 50	0	17 59	+14	28·1	39·5
Irkutsk		58·3	340	i 9 59	0	i 18 2	+ 1	26·5	29·3
Agra	E.	60·1	303	i 10 7	− 4	i 18 15	− 9	—	—
Dehra Dun		61·1	306	10 28	+10	18 38	+ 1	24·8	26·5
Bombay		62·7	293	i 10 29	0	i 18 54	− 3	30·5	—
Almata		66·9	320	e 10 57	+ 1	19 48	− 1	—	—
Semipalatinsk		68·1	328	11 2	− 2	20 4	+ 1	—	—
Frunse		68·3	318	11 4	− 1	20 14	+ 8	—	—
Andijan		69·0	315	11 10	+ 1	20 19	+ 5	—	—
Honolulu		70·5	67	e 11 19	+ 1	e 20 33	+ 1	28·9	—
Tashkent		71·4	315	i 11 25	+ 1	i 20 41	− 1	32·3	36·7
Tchimkent		71·5	316	e 11 31	+ 7	—	—	—	—
Samarkand		72·6	312	11 32	+ 1	e 20 54	− 2	34·5	—
Sverdlovsk		81·3	329	i 12 19	− 1	i 22 23	− 7	43·1	49·0
Baku		85·6	311	12 46	+ 5	i 23 24	+11	35·5	48·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		85·9	26	12 35	− 8	e 23 1	−15	e 39·9	—
Tananarive		85·9	251	12 45	+ 2	23 14	[+ 7]	44·8	52·5
Grozny		88·9	314	e 13 2	+ 4	—	—	e 32·5	—
Tiflis		89·6	312	i 13 1a	0	23 25	[− 5]	41·2	60·9
Erevan		89·7	310	e 13 6	+ 5	—	—	—	—
Piatigorsk		90·9	315	e 13 7	+ 1	—	—	e 23·5	—
Sitka		91·3	33	e 13 6	− 3	e 23 44	[+ 4]	e 42·5	—
Sotchi		93·3	314	e 13 18	0	—	—	—	—
Moscow		94·0	325	13 19	− 2	24 28	− 2	46·5	52·3
Theodosia		96·3	315	e 13 25	− 7	e 24 9	[− 1]	39·5	
Ksara		96·8	303	i 13 33a	− 1	—	—	—	—
Simferopol		97·2	315	e 13 34	− 2	e 24 14	[+ 1]	50·2	—
Yalta		97·2	314	e 13 26	−10	e 24 14	[+ 1]	58·0	—
Pulkovo		97·3	330	13 32	− 4	24 11	[− 2]	50·5	53·4
Sebastopol		97·7	315	e 13 36	− 2	e 24 16	[+ 1]	60·5	—
Victoria		99·3	41	e 13 28	−17	i 24 13	[−10]	40·5	—
Ukiah		100·8	50	e 13 47	− 5	e 25 41	[+10]	e 41·3	—
Helwan		100·9	299	13 49	− 3	24 35	[+ 3]	—	65·4
Berkeley		101·7	52	i 13 54	− 2	e 24 33	[− 2]	—	—
Bucharest		102·9	315	—	—	(24 52)	[+11]	—	24·9
Upsala		103·4	332	i 18 18	PP	i 24 38	[− 5]	e 45·5	53·1
Tinemaha		105·0	52	e 14 25	+14	e 18 25	PP	—	—
Sofia		105·3	314	e 11 35	?	e 17 53	PP	—	—
Haiwee	E.	105·4	53	e 14 10	P	e 18 38	PP	—	—
Pasadena		105·6	55	i 14 13	P	e 18 34	PP	e 24·7	—
Riverside	E.	106·3	55	e 14 21	P	e 18 38	PP	—	—
Belgrade		106·8	316	e 18 46a	PP	e 24 43	[−15]	e 44·2	—
Stara Dala		107·3	320	e 18 52	PP	e 28 22	PS	e 52·5	65·0
Copenhagen		107·7	329	14 18	P	25 6	[+ 4]	—	—
Bozeman		108·1	41	e 28 15	PS	e 34 8	SS	e 43·8	—
Vienna		108·4	321	e 18 47	PKP	28 28	PS	e 57·2	61·5
Bergen		108·6	336	18 57	PP	—	—	53·5	66·5
Scoresby Sund		108·6	352	14 22	P	25 12	[+ 6]	51·5	—
Prague		108·9	323	e 18 58k	PP	e 28 17	PS	e 47·5	51·0
Graz		109·4	319	e 19 11	PP	e 28 27	PS	e 53·5	62·3
Zagreb		109·5	318	e 18 17	[−15]	e 25 5	[− 5]	—	—
Cape Town		110·1	233	i 19 11	PP	i 27 16	?	e 52·6	58·0
Cheb		110·1	323	e 19 12	PP	e 28 31	PS	e 54·5	59·5
Jena		110·2	324	e 19 2	PP	e 28 28	PS	e 53·5	61·0
Göttingen		110·8	326	e 19 16	PP	e 28 28?	PS	—	56·5
Triest		111·0	319	e 19 12	PP	i 28 46	PS	—	72·0
Tucson		112·0	55	e 14 38	P	e 27 4	{+45}	—	—
Padova		112·3	319	e 19 35	PP	30 5	PPS	—	68·0
Stuttgart		112·5	323	e 14 45	P	e 25 3	[−19]	e 58·5	61·1
De Bilt		113·2	328	i 19 33	PP	e 35 28	SS	e 53·5	60·9
Strasbourg		113·5	324	i 19 36	PP	i 26 26	{− 3}	—	61·8
Zurich		113·5	323	e 19 35	PP	—	—	—	—
Aberdeen		113·6	335	19 42	PP	29 24	PS	49·0	60·1
Basle		114·1	323	e 19 37	PP	—	—	—	—
Uccle		114·3	328	i 19 42a	PP	26 44	{+ 9}	e 53·5	61·2
Durham		114·9	333	19 44	PP	26 54	{+15}	—	62·0
Edinburgh		114·9	335	i 19 46	PP	i 29 20	PS	e 53·5	60·0
Besancon		115·1	324	e 21 28	?	—	—	e 62·0	—
Stonyhurst		115·9	333	i 19 50	PP	e 29 15	PS	54·5	61·6
Kew		116·3	329	i 19 54k	PP	i 36 3	SS	e 46·5	59·9
Paris		116·4	326	i 19 56	PP	—	—	56·5	62·5
Bidston		116·5	333	i 20 10	PP	i 36 23	SS	e 47·5	—
Oxford		116·6	330	e 19 50	PP	e 29 38	PS	e 50·5	60·4
Rathfarnham Castle		118·0	334	i 20 14	PP	i 29 45	PS	53·5	61·5
Jersey		118·6	328	e 20 13	PP	—	—	55·5	—
Barcelona		120·4	319	e 20 27	PP	—	—	—	—
Tortosa	N.	121·8	319	e 20 34	PP	—	—	e 59·5	67·6
Algiers		121·9	313	e 19 2	[+ 7]	e 28 32	{+66}	e 58·5	67·5
Madison		123·1	36	e 20 28?	PP	—	—	—	—
Chicago		124·9	37	e 20 50	PP	e 32 8	PS	e 50·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Florissant		124·9	41	e 18 59	[− 3]	e 26 11	[+ 6]	—	—
St. Louis	E.	125·1	41	e 21 15	PP	—	—	—	—
Toledo		125·2	320	e 19 4	[+ 1]	—	—	—	66·2
Little Rock	E.	125·5	47	e 20 52	PP	—	—	e 36·4	—
Almeria		125·8	316	e 21 0	PP	—	—	e 71·9	—
Granada		126·4	317	e 19 17	[+12]	—	—	—	—
Seven Falls		127·8	21	e 22 10	?	—	—	68·5	—
Toronto		128·2	30	e 21 12	PP	e 30 58	PS	e 60·5	—
San Fernando		128·5	318	21 24	PP	e 32 57	PPS	63·5	—
Ottawa		128·7	26	e 21 12	PP	e 31 14	PS	e 54·5	—
Ivigtut		129·7	1	20 17	[+66]	26 3	[−16]	56·5	—
Vermont		130·5	25	i 21 29	PP	i 34 15	PS	50·2	—
Pennsylvania		131·1	31	e 22 28	PP	—	—	—	—
Williamstown		131·9	26	i 19 17	[+ 2]	e 35 25	?	61·5	64·5
East Machias		132·5	20	e 21 50	PP	e 31 59	PS	e 60·6	—
Oak Ridge		132·8	25	i 19 16	[− 1]	e 27 28	[+61]	e 71·6	—
Weston		133·0	25	e 19 17a	[− 1]	e 33 38	PPS	59·1	—
Philadelphia		133·1	30	e 20 8	[+50]	e 38 32	SS	—	—
Columbia		133·8	40	e 21 46	PP	e 39 28	SS	e 54·1	—
La Plata		142·9	164	19 34	[− 2]	26 58	[+15]	65·5	—
Balboa Heights		146·1	74	19 28?	[−13]	—	—	—	—
Dakar		148·1	297	e 35 19	PPS	i 42 26	SS	—	—
Huancayo		148·6	115	i 19 49	[+ 4]	—	—	e 72·5	—
La Paz		152·6	130	i 19 56	[+ 5]	i 26 24	[−33]	77·4	91·6
San Juan		154·0	47	e 19 48	[− 5]	—	—	e 65·0	—

Additional readings :—
Kosyun PP = +6m.17s.
Arisan PPP = +6m.37s.
Batavia iE = +8m.1s.
Taihoku pP = +6m.49s., pPP = +7m.9s.
Hong Kong PP = +7m.5s., SS = +12m.28s.
Nagasaki PPP = +7m.49s.
Zi-ka-wei iN = +7m.28s., iZ = +7m.33s., PPZ = +7m.50s., iZ = +8m.57s., iZ = +11m.3s., +12m.43s., sSZ = +13m.21s., iZ = +15m.15s.
Muroto PPP = +7m.55s.
Siomisaki PPP = +7m.59s.
Wakayama PP = +8m.2s.
Sumoto PN = +6m.56s., PE = +6m.58s., eSZ = +10m.4s., eE = +12m.33s.
Perth PP = +8m.13s., PPP = +8m.28s., PPPP = +8m.50s., P_cS = +13m.5s., SS = +15m.13s., SSS = +15m.28s.
Kobe PPN = +8m.21s., PPPE = +8m.40s., eSE = +12m.34s.
Osaka B PPP = +8m.26s.
Hamada PPP = +8m.18s.
Misima PP = +8m.27s.
Toyooka ePZ = +7m.8s., iPN = +7m.13s., SSE = +15m.31s., SSNZ = +15m.34s.
Riverview iEN = +8m.41s., iSN = +12m.42s., iE = +12m.52s. and +15m.38s., iN = +15m.49s.
Taikyu iPP = +8m.38s., iE = +15m.58s., iN = +15m.12s.
Kanazawa PPP = +8m.27s.
Oiwake PPP = +8m.49s., SS = +15m.23s.
Syuhurei PP = +8m.41s.
Maebasi SS = +14m.50s.
Nagano PPP = +8m.49s.
Melbourne PP = +9m.1s., SS = +16m.11s.
Keizyo eN = +8m.59s.
Zinsen iPPZ = +9m.1s., iSSN = +15m.43s.
Hatinohe e = +7m.59s.
Mizusawa SN = +13m.40s.
Chiufeng PPE = +9m.55s., P_ePZ = +10m.8s., iN = +13m.49s.
Nemuro SS = +18m.24s.
Calcutta PPPN = +11m.56s., PSN = +17m.2s.
Wellington i = +10m.3s., PP = +11m.35s., iPPP? = +12m.59s., S_cS = +20m.0s., SS = +21m.26s., L_q = +23m.38s.
Christchurch L_qN = +23m.36s.
Kodaikanal iPPE = +11m.46s., iPPPE = +12m.58s., iPSE = +18m.21s., iSSE = +21m.28s., iSSSE = +23m.8s.
Agra iPPE = +12m.20s., PPPE = +13m.38s., iN = +18m.22s., SSE = +22m.20s.
Bombay PPN = +12m.48s., PSEN = +19m.19s., S_cSN = +20m.32s., SS = +23m.5s., SSSN = +25m.57s.
Honolulu P = +11m.23s., iP = +11m.54s., e = +20m.11s., S = +20m.38s., S_cS = +21m.38s., eSS = +23m.42s.

Continued on next page.

Sverdlovsk $L_g = +37 \cdot 4$m.
Baku PP = +16m.26s.
College PS = +24m.7s., eSS = +28m.48s.
Tananarive PP = +16m.15s., S = +23m.36s., PS = +24m.45s., eE = +35m.50s.
Tiflis PPZ = +16m.32s., PPPZ = +18m.45s., SN = +23m.53s., PPSN = +25m.5s., eN = +36m.51s.
Sitka S = +24m.5s.
Moscow PPP = +19m.15s., SKS = +23m.58s., PS = +25m.43s., SS = +31m.22s.
Theodosia e = +17m.33s. and +27m.25s.
Ksara iPP = +17m.17s., ePPS = +26m.23s.
Simferopol e = +16m.57s.
Yalta e = +17m.0s. and +17m.43s.
Pulkovo PP = +17m.26s., PPP = +20m.0s., PS = +26m.1s., SS = +31m.16s., L_q = +43·5m.
Sebastopol i = +17m.51s., e = +26m.47s.
Victoria eE = +17m.58s., i = +26m.43s., eN = +32m.18s., iE = +32m.30s.
Ukiah ePS = +27m.1s., eSS = +32m.47s.
Helwan e = +17m.6s., PP = +18m.5s., PS = +27m.18s., SS = +34m.3s.
Berkeley iE = +13m.58s., iZ = +18m.4s., eE = +18m.7s., eS = +27m.4s., iSZ = +27m.8s.
Tinemaha eSN = +18m.39s.
Pasadena eZ = +18m.23s., eEZ = +19m.42s.
Belgrade eNE = +28m.3s.
Stara Dala ePS = +29m.4s.
Copenhagen PKPZ = +17m.52s., PP = +18m.54s., PPP = +21m.13s., PKS = +21m.58s., SKKSN = +26m.22s., PS = +28m.8s., PPS = +29m.8s., ePKKSE = +32m.10s., eN = +32m.40s., SS = +34m.3s., eZ = +37m.46s., eN = +38m.22s.
Bozeman e = +38m.2s.
Vienna P_cP = +19m.19s., PS = +28m.34s., SS = +33m.9s.
Scoresby Sund PKP = +17m.58s. and +18m.40s., PP = +19m.13s., PPP = +20m.58s., eE = +25m.21s., PS = +28m.18s., PPS = +29m.29s., eN = +33m.52s., SS = +34m.16s., eE = +38m.22s., SSSN = +38m.52s.
Prague ePS = +29m.10s., eSS = +33m.58s.
Zagreb eNE = +18m.42s., +18m.50s., +20m.42s., +22m.30s., and +24m.35s., ePS = +28m.25s.
Cape Town Univ. iPPPE = +21m.39s., iSKS = +25m.33s., iPSE = +28m.32s., iPSN = +28m.35s., iE = +28m.58s., iSSN = +34m.59s., iSSSN = +38m.31s., iSSSE = +38m.38s.
Cheb e = +29m.39s.
Jena eZ = +19m.10s., iE = +19m.14s., e = +29m.28s.
Triest i = +24m.10s., +29m.50s., and +34m.28s.
Tucson iPP = +19m.22s., ePS = +28m.37s., eSS = +34m.38s.
Stuttgart ePZ = +14m.59s., iPP = +19m.30s., e = +20m.31s., +21m.41s., ePS = +28m.50s., ePPS = +30m.0s., eSS = +35m.16s.
De Bilt iPPPZ = +22m.4s., iZ = +29m.4s.
Strasbourg ePPP = +22m.0s., iS = +27m.19s., ePS = +29m.8s., iPPS = +30m.12s., iSS = +35m.40s.
Aberdeen e = +22m.1s., i = +23m.18s., e = +26m.16s. and +33m.44s., i = +39m.36s.
Uccle PPPNZ = +22m.11s., iSPZ = +29m.17s., iE = +29m.31s., iSS = +35m.49s.
Durham PS = +29m.20s., SS = +35m.53s.
Edinburgh i = +19m.54s., +29m.28s., +29m.50s., +36m.16s., and +36m.34s.
Stonyhurst i = +22m.20s., eSS? = +36m.10s., i = +39m.38s.
Kew iSPZ = +29m.33s., iPSEN = +29m.36s., iPPSZ = +30m.41s., iPPP = +36m.54s., eSSS = +41m.28s.?
Paris ePS = +30m.11s., PPS = +30m.46s.
Bidston iPS = +29m.43s., eSSS = +41m.28s.?
Oxford iE = +20m.7s.
Rathfarnham Castle i = +23m.58s., +31m.7s., and +36m.13s.
Jersey e = +23m.23s., iSS = +35m.48s.
Algiers iPP? = +20m.32s., PPS? = +32m.47s.
Chicago e = +30m.41s., eSS = +38m.6s.
Florissant ePZ = +15m.44s., eE = +19m.50s., e = +20m.44s., ePPN = +20m.49s., eSKPN = +22m.14s., eZ = +25m.32s., eN = +25m.52s., iPSE = +30m.48s.
St. Louis eSKPE = +22m.15s., iE = +29m.49s., eE = +29m.51s.
Toledo PP = +20m.55s., PS = +31m.9s.
Granada PP = +24m.14s.
Seven Falls e = +23m.22s. and +39m.22s.
Toronto e = +22m.30s., e = +38m.28s.?
Ottawa e = +22m.28s., +33m.57s., +38m.52s., and +47m.32s.
Ivigtut eZ = +21m.35s., SKKSN = +26m.58s., PSN = +30m.4s., eE = +30m.40s., PPSN = +31m.36s., SS = +36m.28s., L_g = +48·5m.
Vermont i = +22m.39s., eSS = +37m.59s., iSS = +39m.19s., eSSS = +44m.6s.
Williamstown iPKP = +22m.52s., ePP? = +23m.56s., eSKS? = +34m.41s.
Eash Machias eSKP = +22m.50s., eSS = +39m.10s., eSS = +39m.19s., eSSS = +44m.47s.

Continued on next page,

Oak Ridge ipPKPZ = +21m.34s., epPKPE = +21m.40s., iPPZ = +21m.52s., ePKSE = +22m.42s., iPKSZ = +22m.46s., iZ = +23m.32s., eN = +24m.46s. and +25m.38s., eE = +25m.50s., eN = +29m.6s., eSKKSZ = +29m.33s., eSKSP = +32m.4s., eSSN = +39m.16s.
Weston iZ = +19m.32s., eEN = +21m.40s., iPKP = +22m.47s., eSS = +39m.52s.
Philadelphia e = +21m.20s., i = +21m.32s., iPP = +22m.27s., e = +23m.51s., i = +24m.13s., iSKSP = +31m.38s., eSS = +38m.38s., i = +43m.59s.
Columbia ePP = +22m.44s., e = +24m.45s., +25m.44s., +28m.19s., eSS = +40m.12s.
La Plata PKS = +23m.16s., PPP = +25m.34s., SKKS = +29m.34s., SKSP = +32m.58s., SSS = +47m.34s.
Dakar ePPS = +50m.39s., eSS = +56m.26s.
Huancayo i = +19m.51s., iPKP$_2$ = +19m.58s., e = +20m.16s., ePP = +22m.56s.
La Paz iPKP$_2$N = +20m.22s., iZ = +20m.56s., ipPZ = +21m.23s., ipPN = +22m.12s., iSP?Z = +23m.8s., iPPZ = +23m.46s., iPPN = +24m.4s., pPPZ = +25m.0s., iSKKS = +29m.48s., iSPZ = +33m.20s., iN = +39m.8s., SSZ = +42m.18s., SSN = +43m.41s., iN = +45m.14s.
San Juan e = +20m.21s., +21m.24s., +21m.50s., and +22m.57s., ePP = +24m.8s.
Long waves were also recorded at Vladivostok.

April 5d. 23h. 37m. 53s. Epicentre 3°·2S. 143°·7E.

$A = -\cdot 8047$, $B = +\cdot 5911$, $C = -\cdot 0555$; $\delta = +2$; $h = +7$;
$D = +\cdot 592$, $E = +\cdot 806$; $G = +\cdot 045$, $H = -\cdot 033$, $K = -\cdot 999$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		13·9	319	3 20	− 1	5 59	+ 2	6·9	—
Manila		28·6	310	6 6	+ 6	12 49	SSS	19·6	—
Riverview		31·3	168	—	—	e 12 13	+42	e 18·9	21·0
Adelaide		31·9	188	i 6 34	+ 5	i 11 40	0	—	20·9
Melbourne		34·5	178	e 10 35	?	e 12 30	+10	19·7	21·2
Batavia		36·8	264	7 6	− 5	—	—	—	—
Wakayama		38·1	350	7 13	− 9	13 12	− 4	—	—
Hong Kong		38·4	313	8 48	PP	13 7	−13	16·0	17·6
Kameyama		38·5	352	7 29	+ 3	—	—	—	—
Nagoya		38·7	352	e 6 22	−65	—	—	—	—
Hikone		38·9	352	6 37	−52	—	—	—	—
Gihu		38·9	352	7 32	+ 3	—	—	—	—
Kohu		38·9	354	7 29	0	—	—	—	—
Kakioka		39·4	357	7 37	+ 4	—	—	—	—
Maebasi		39·6	355	7 40	+ 5	—	—	—	—
Oiwake		39·6	355	7 39	+ 4	—	—	—	—
Nagano		40·0	354	7 35	− 3	—	—	—	—
Zi-ka-wei	Z.	40·3	330	e 7 44	+ 4	—	—	—	—
Phu-Lien		43·5	305	7 7?	−60	—	—	—	—
Wellington		47·1	148	i 8 36	+ 1	—	—	28·1	—
Chiufeng		49·3	333	e 8 56	+ 3	16 5	+ 6	19·7	24·8
Calcutta	N.	59·8	298	e 11 7	+58	i 18 23	+ 3	—	—
Irkutsk		64·5	335	e 10 39	− 2	19 20	+ 1	31·1	—
Bombay		73·0	291	e 11 33	0	—	—	—	—
Almata		75·5	317	e 11 48	0	—	—	—	—
Semipalatinsk		75·9	325	e 11 46	− 4	—	—	—	—
Frunse		77·1	316	e 11 12	−45	—	—	—	—
Andijan		78·1	313	e 12 2	0	—	—	—	—
Tashkent		80·5	313	e 12 11	− 4	i 22 12	−10	e 35·9	41·6
Tchimkent		80·5	314	e 12 13	− 2	—	—	—	—
Sverdlovsk		88·9	327	i 12 54	− 4	23 39	− 5	36·1	—
Grozny		98·0	313	e 13 42	+ 3	—	—	—	—
Pasadena		98·5	56	i 13 44	+ 2	—	—	—	—
Mount Wilson	Z.	98·6	56	i 13 42	0	—	—	—	—
Tiflis		98·8	312	e 13 48	+ 5	e 24 20	[− 1]	e 61·8	66·2
Pulkovo		104·4	331	—	—	e 25 2	[+14]	50·1	58·9
Tucson		104·8	58	e 18 32	PP	—	—	—	—
Ksara		106·6	303	e 18 40	PP	—	—	—	—
Williamstown		128·8	34	i 19 11	[+ 2]	—	—	—	—
La Paz		143·0	123	i 19 37k	[+ 1]	—	—	74·1	—
San Juan		147·1	60	e 19 9	[−34]	—	—	—	—

For Notes see next page.

NOTES TO APRIL 5d. 23h. 37m. 53s.

Additional readings :—
Adelaide e = +7m.20s., +14m.47s., and +16m.54s.
Melbourne e = +15m.28s., i = +17m.32s.
Gihu PP = +8m.46s.
Nagano PPP = +9m.40s.
Wellington i = +10m.40s.
Chiufeng ePPN = +10m.57s.
Bombay eN = +14m.31s.
Sverdlovsk PS = +24m.47s., SS = +29m.43s.
Pasadena eE = +17m.43s.
Tiflis eZ = +17m.38s., eEZ = +21m.42s.
Pulkovo e = +33m.14s.
Ksara ePS = +28m.11s., ePPS = +29m.12s.
La Paz ipPKPZ = +20m.53s., iPPZ = +22m.47s.
San Juan e = +19m.46s.
Long waves were also recorded at Baku and Copenhagen.

April 5d. Readings also at 0h. (Sverdlovsk), 1h. (Tashkent), 4h. (near Wellington), 5h. (near Triest and Zagreb), 6h. (Mount Wilson, Pasadena (2), Tucson (2), Williamstown, Florissant, St. Louis, Little Rock, Huancayo, La Paz, Santiago, Oaxaca, Tacubaya, and near Balboa Heights), 7h. (Stara Dala, Philadelphia, and Butte), 9h. (near Santiago), 11h. (Phu-Lien, Grozny, near Manila, near Erevan, and Tiflis (2)), 12h. (Mizusawa), 13h. (Malabar, Tiflis, and Erevan), 14h. (Baku, Pulkovo, Irkutsk, Tiflis, Ksara, Chur, Mizusawa (2), Sverdlovsk, and San Javier), 15h. (Mizusawa), 16h. (Almata and Andijan), 19h. (Little Rock), 20h. (Guadalajara, Oaxaca, Bozeman, Tucson, Haiwee, La Jolla, Riverside, Mount Wilson, Pasadena, Tinemaha, and Williamstown), 21h. (Almata, Andijan, Tiflis, Tashkent, Sverdlovsk, and near Calcutta), 22h. (Tiflis, Wellington, and near Branner).

April 6d. 7h. 34m. 40s. Epicentre 45°·0N. 17°·9E. (as on April 4d.).

Belgrade gives epicentre 45°03′N. 17°53′E. Felt in the South of Hungary, force VII at Rusevo (45°19′N. 18°00′E.) and Pleternica 45°17′N. 17°48′E. See Macroseismic Annual, Vol. XVII, 1937. Published by the Institute of Seismology of the University of Belgrade. Series A, p. 11.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zagreb		1·6	301	e 0 26	− 4	i 0 49	− 2	—	1·2
Belgrade		1·8	96	e 0 43	+11	—	—	—	1·6
Kecskemet		2·3	33	e 0 38	− 2	e 1 7	− 2	—	—
Budapest		2·6	18	0 44	0	—	—	1·3	—
Graz		2·7	321	i 1 40	+55	i 2 8	+49	—	2·6
Stara Dala		2·9	4	e 0 52	+ 4	e 1 26	+ 2	—	—
Triest		3·0	283	e 0 52	+ 2	i 1 23	− 4	—	—
Vienna		3·4	343	e 1 25	+30	(1 47)	+10	i 1·9	—
Padova		4·3	277	—	—	e 1 48	−12	—	—
Prague		5·6	337	e 2 20	+53	e 3 10	S_g	—	3·7
Zurich		6·9	293	e 1 41	− 4	—	—	—	—
Stuttgart		7·0	305	e 2 11	P*	e 3 48	S_g	—	—
Jena	N.	7·3	327	—	—	e 2 49	−26	e 4·8	4·8
Strasbourg		7·8	301	—	—	e 3 31	+ 3	—	—

Additional readings :—
Zagreb iP_g = +29s., iNE = +54s.
Belgrade i = +47s., +1m.1s., and +1m.5s.
Kecskemet ePSZ = +58s., eE = +1m.10s., e = +1m.21s.
Budapest iE = +1m.5s.
Triest i = +1m.31s.
Vienna P* = +1m.27s., P_g = +1m.47s., +2m.19s., eS = +2m.56s.. S_g = +3m.0s.
Prague ePS = +2m.54s.
Strasbourg eS_gE = +4m.18s., eN = +4m.23s. and +4m.38s.

April 6d. Readings also at 3h. (Wellington), 8h. (Dakar, Mount Wilson, Pasadena, San Juan, and near Apia (2)), 10h. (Medan), 11h. (near Santiago), 13h. (near Zagreb), 16h. (Malabar), 17h. (Christchurch and near Wellington), 21h. (Ksara and Tiflis), 22h. (near Tananarive).

April 7d. 18h. 30m. 59s. Epicentre 34°·8N. 52°·1E.

A = +·5055, B = +·6494, C = +·5681; δ = −1; h = 0;
D = +·789, E = −·614; G = +·349, H = +·448, K = −·823.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		5·8	343	e 1 40	P*	2 52	S*	4·2	4·8
Erevan		8·1	314	e 2 1	− 1	i 4 17	S_g	—	—
Tiflis		9·0	322	e 2 14	+ 1	e 3 56	− 2	4·5	—
Grozny		9·8	332	e 2 25	+ 1	4 25	+ 8	—	—
Piatigorsk		11·6	326	e 2 54	+ 4	5 7	+ 6	—	—
Ksara		13·4	270	i 3 18k	+ 4	i 5 57	+12	—	—
Tashkent		15·0	59	3 27	− 8	i 6 22	− 1	i 6·9	9·1
Tchimkent		15·6	56	3 1	−42	6 30	− 7	—	—
Theodosia		16·4	314	3 58	+ 5	7 0	+ 4	12·5	—
Yalta		16·8	310	4 0	+ 2	e 7 11	+ 6	—	—
Andijan		17·1	63	4 2	0	6 54	−18	e 8·4	—
Simferopol		17·1	312	4 2	0	7 17	+ 5	—	—
Sebastopol		17·3	310	e 3 59	− 5	e 7 20	+ 4	—	—
Helwan		18·2	260	4 13	− 3	8 43	?	11·5	—
Frunse		19·3	59	4 24	− 5	8 6	+ 4	—	—
Almata		21·0	58	4 47	0	8 50	+13	11·7	—
Bucharest		22·1	304	e 5 9	+10	—	—	9·0	—
Sverdlovsk		22·8	13	e 5 1	− 4	i 9 7	− 4	15·2	15·5
Moscow		23·2	340	e 5 5	− 4	e 9 6	−12	—	18·1
Agra	E.	23·5	102	5 13	+ 1	9 21	− 2	—	—
Bombay		24·3	126	i 5 23	+ 3	i 9 46	+ 9	14·0	—
Semipalatinsk		25·7	44	e 5 32	− 1	e 10 40	+39	—	—
Pulkovo		28·8	338	6 1	− 1	10 58	+ 7	16·0	20·1
Hyderabad		29·2	120	e 6 4	− 1	10 54	− 4	16·2	20·3
Vienna		29·7	308	e 6 16	+ 6	e 10 50	−16	—	—
Triest		31·0	303	e 6 25	+ 4	i 11 21	− 5	18·4	—
Prague		31·3	312	—	—	e 13 1?	SS	—	22·5
Calcutta	N.	33·9	101	e 6 38	− 9	e 12 10	− 1	e 17·1	20·4
Chur		34·0	305	e 6 44	− 4	—	—	—	—
Copenhagen		34·2	321	6 55	+ 6	12 22	+ 6	—	—
Stuttgart		34·4	308	e 6 52	+ 1	—	—	e 19·0	—
Zurich		34·7	305	e 6 49	− 5	—	—	—	—
Hamburg		34·9	317	e 7 1	+ 6	—	—	e 18·0	25·0
Neuchatel		35·8	305	e 6 59	− 4	—	—	—	—
De Bilt		37·4	313	—	—	e 15 37	SS	e 21·0	—
Paris		38·8	307	e 8 1?	+33	—	—	25·0	—
Irkutsk		40·7	48	e 7 59	+15	e 13 41	−14	21·0	—
Chiufeng		50·1	64	—	—	e 16 10	0	e 25·7	29·4
Scoresby Sund		52·3	337	—	—	16 57	+17	29·0	—
Manila		64·6	90	—	—	e 21 41	?	—	—
Rio de Janeiro		106·9	254	e 14 1?	P	—	—	—	—

Additional readings :—
Erevan e = +2m.27s.
Tiflis eN = +4m.4s.
Ksara iS_g = +7m.34s., iP_cP = +8m.36s.
Tchimkent e = +7m.17s.
Yalta e = +8m.57s.
Helwan SS = +9m.49s.
Frunse e = +9m.39s.
Bucharest eE = +5m.21s.
Sverdlovsk L_e = +12·3m.
Agra SSE = +10m.16s.
Vienna ePP = +6m.46s., ePPP = +7m.6s,, e = +7m.16s. and +7m.50s.
Calcutta SSN = +14m.47s.
Stuttgart e = +14m.1s.?
Scoresby Sund +20m.49s., +22m.1s.
Long waves were also recorded at Colombo, Hong Kong, Cape Town, and other European stations.

April 7d. Readings also at 0h. (Cape Town), 2h. (Kobe and Tiflis), 3h. (Grozny), 4h. (Almata), 7h. (San Javier), 8h. (La Paz), 9h. (Almata, Andijan, and San Juan), 12h. (near Grozny), 14h. (Andijan, Bombay, Calcutta, Kodaikanal, Tashkent, Tchimkent, Irkutsk, Sverdlovsk, Pulkovo, New Plymouth, and near Wellington), 15h. (De Bilt), 17h. (Alicante (2) and near Manila), 19h. (Rio de Janeiro), 20h. (Wellington), 21h. (Baku, Andijan, Tashkent, Tchimkent, Sverdlovsk, Sebastopol, Theodosia, Yalta, Simferopol, and Ksara), 22h. (near Santiago and near Tananarive), 23h. (near Santiago).

April 8d. Readings at 0h. (Apia and near Branner), 1h. (Oaxaca, Tacubaya, and Tucson), 2h. (Balboa Heights, Zurich, and near Chur), 3h. (Andijan, Tchimkent (2), and La Paz), 4h. (near Algiers), 5h. (Nagoya and near Wellington), 14h. (Copenhagen, Sydney, and Tacubaya), 15h. (Christchurch, Wellington, Adelaide, Melbourne, Riverview, Perth, Bombay, Calcutta, Tashkent, Tiflis, Sverdlovsk, Ksara, and Cape Town), 16h. (De Bilt, Paris, Strasbourg, and San Fernando), 17h. (Yalta), 18h. (Stara Dala), 19h. (Malabar), 22h. (Copenhagen, Tiflis, Sverdlovsk, Pulkovo, and Irkutsk), 23h. (Almeria).

April 9d. 14h. 5m. 1s. Epicentre 23°·7N. 120°·5E.

$A = -\cdot4652$, $B = +\cdot7898$, $C = +\cdot3996$; $\delta = -12$; $h = +4$;
$D = +\cdot862$, $E = +\cdot508$; $G = -\cdot203$, $H = +\cdot344$, $K = -\cdot917$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Taihoku		1·6	35	0 29	− 1	0 55	+ 4	—	1·4
Hong Kong		6·0	258	1 29	− 3	2 28	−15	3·4	3·8
Zi-ka-wei	Z.	7·5	6	e 1 53	0	—	—	—	—
Nanking		8·4	350	e 2 7	+ 1	—	—	—	—
Manila		9·0	177	2 39	+26	4 34	S*	—	—
Husan		13·6	31	e 6 14	SS	—	—	—	—
Taikyu		14·0	28	e 6 13	SS	—	—	—	—
Zinsen	E.	14·7	20	e 6 31	SS	—	—	—	—
Keizyo		14·9	20	e 6 39	SS	—	—	—	—
Chiufeng		16·8	348	e 4 0	+ 2	7 14	+ 9	e 8·7	10·7
Calcutta	N.	29·6	274	—	—	e 11 57	+53	—	22·4
Tashkent		46·0	305	—	—	e 19 2	SSS	24·8	32·4
Sverdlovsk		54·1	324	e 9 1	−28	e 17 10	+ 5	28·0	—
Tiflis		64·2	306	e 10 53	+14	e 19 23	+ 7	e 42·0	—
Pulkovo		69·9	328	e 16 41	?	—	—	37·0	44·8

Additional readings :—
Zi-ka-wei iZ = +4m.5s., +4m.53s., +5m.3s., +5m.37s., +6m.29s., and +7m.1s.
Husan S = +7m.52s.
Zinsen eE = +7m.2s., eSE = +8m.3s.
Keizyo eSEN = +8m.33s.
Long waves were also recorded at Irkutsk, Phu-Lien, Baku, Vladivostok, Moscow, and several European stations.

April 9d. Readings also at 2h. (Mizusawa), 5h. (Sverdlovsk and near Batavia), 6h. (La Paz, Rio de Janeiro, Ksara, Baku, Moscow, Tashkent, and De Bilt), 9h. (New Plymouth, Hastings, and Wellington (2)), 11h. (Bombay, Calcutta, Sverdlovsk, and Tashkent), 15h. (Prague and near Sebastopol), 18h. (Wellington), 20h. (Malabar), 22h. (Almata, Andijan, near Semipalatinsk, Mizusawa, and near Nagoya).

April 10d. Readings at 2h. (Perth and near Batavia), 3h. (Tiflis), 4h. (near Manila), 5h. (Andijan and near Wellington), 6h. (New Plymouth and near Wellington), 7h. (near Berkeley), 8h. (New Plymouth and near Wellington), 9h. (Strasbourg, Tiflis, and near Ksara), 10h. (Uccle, near Apia, and near Berkeley), 12h. (Mount Wilson, Pasadena, Tucson, Almeria, Jena, Ksara, and near Apia), 13h. (Baku, Tiflis, Sverdlovsk, Haiwee, Mount Wilson, Pasadena, Tinemaha, Williamstown, Huancayo, and La Paz), 18h. (Strasbourg), 22h. (Manila and Strasbourg).

April 11d. 15h. 55m. 56s. I } Epicentre 23°·7N. 120°·5E.
20h. 43m. 0s. II } (as on 9d.)

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
I Taihoku		1·6	35	i 0 28	− 2	0 48	− 3	—	0·9
II		1·6	35	e 0 27	− 3	0 50	− 1	—	0·9
I Zi-ka-wei	z.	7·5	6	—	—	e 3 14	− 6	i 4·2	5·1
II	z.	7·5	6	—	—	e 3 26	+ 6	i 5·0	—
I Manila		9·0	177	0 48	?	—	—	—	—
II		9·0	177	e 2 40	+27	4 23	S*	—	—
I Chiufeng		16·8	348	e 4 0	+ 2	—	—	e 9·3	11·6
II		16·8	348	e 4 2	+ 4	e 7 20	+15	—	11·4
I Vladivostok		21·6	23	—	—	e 8 40	− 9	10·6	14·4
II		21·6	23	—	—	e 9 6	+17	11·6	—
I Tashkent		46·0	305	—	—	e 17 52	SS	e 24·6	30·5
II Sverdlovsk		54·1	324	e 9 27	− 2	—	—	28·0	—

Long waves were also recorded for Shock I at Hong Kong, Phu-Lien, Irkutsk, Pulkovo, Sverdlovsk, Strasbourg, and Paris, and for Shock II at Hong Kong, Phu-Lien, Irkutsk, and Tashkent.

April 11d. Readings also at 1h. (Irkutsk, Tashkent, Bucharest, Triest, De Bilt, Stuttgart, and Zagreb), 4h. (Arapuni, New Plymouth, Christchurch, Monowai, Wellington, Adelaide, Melbourne, Riverview, and Sydney), 5h. (La Paz, Rio de Janeiro, Huancayo, Tucson (2), Moscow, Copenhagen, Sverdlovsk, Simferopol, and Tashkent), 6h. (Christchurch, Wellington, Adelaide, Melbourne, Riverview, Sydney, Mount Wilson, Pasadena, Tiflis, Pulkovo, Strasbourg, De Bilt, Paris, Kew, and Chur), 8h. (Tucson, Mount Wilson, and Pasadena), 14h. (Zagreb and Triest), 16h. (Copenhagen, Kew, De Bilt, and Stuttgart), 20h. (Basle, Zurich, Neuchatel, Strasbourg, Jersey, and near Fresno), 21h. (Wellington).

April 12d. Readings at 1h. (Branner, Lick, and near Berkeley), 2h. (La Paz), 3h. (Tiflis), 9h. (near Nagoya, near Toyooka, Sumoto, Kobe, and near Basle), 10h. (Semipalatinsk and near Almata), 12h. (Baku, Tiflis, Sverdlovsk, and Ksara), 13h. (Williamstown, Columbia, Mount Wilson, Pasadena, Perth, Tiflis, Irkutsk, Medan, Sverdlovsk, Malabar, Hong Kong, and near Taihoku), 14h. (Bucharest, Sverdlovsk, and Irkutsk), 15h. (Bombay, Helwan, Pulkovo, Moscow, Baku, Copenhagen, Sverdlovsk, Ksara, Tiflis, and Irkutsk), 17h. (Paris), 18h. (Baku and Tashkent), 20h. (Andijan (2), Samarkand, Tashkent, Tchimkent, Kobe, Mizusawa, and Nagoya), 22h. (Phu-Lien), 23h. (Sverdlovsk and Tashkent).

April 13d. 0h. 4m. 49s. Epicentre 36°·0N. 140°·1E.
(as on 1937 Jan. 23d.).

$A = -·6221$, $B = +·5202$, $C = +·5852$; $\delta = +8$; $h = 0$.

Epicentre given by Earthquake Research Institute of Tokyo Imperial University.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Tukubasan	0·2	0	0 12	+ 2	0 19	+ 3
Tokyo	0·4	222	0 13	0	0 23	+ 2
Komaba	0·5	224	0 14	0	0 24	+ 1
Kamakura	0·8	213	0 16	− 2	0 27	− 4
Kiyosumi	0·8	175	0 19	+ 1	0 29	− 2
Koyama	1·1	234	0 19	− 3	0 32	− 7
Nagoya	2·7	252	e 0 51	P*	1 26	S*

April 13d. 5h. 8m. 33s. Epicentre 8°·8N. 82°·7W.

$A = +\cdot1256$, $B = -\cdot9804$, $C = +\cdot1520$; $\delta = +6$; $h = +7$;
$D = -\cdot992$, $E = -\cdot127$; $G = +\cdot019$, $H = -\cdot151$, $K = -\cdot988$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
San Juan		18·7	58	4 23	+ 1	e 7 54	+ 6	10·8	—
Huancayo		22·0	160	e 4 57	− 1	(e 8 54)	− 2	e 8·9	—
Columbia		25·1	4	—	—	e 10 3	+14	e 12·6	—
La Paz	N.	29·0	149	6 28	+24	—	—	15·4	18·8
St. Louis	N.	30·4	349	e 6 17	+ 1	—	—	e 16·4	—
Philadelphia		31·7	12	—	—	e 11 47	+10	e 16·4	—
Weston		34·9	15	e 6 56a	+ 1	e 13 16	+49	19·0	—
Tucson		35·0	316	i 6 57	+ 1	—	—	e 20·0	—
La Jolla	Z.	39·9	312	i 7 38	+ 1	—	—	—	—
Mount Wilson		41·1	314	i 7 47	0	—	—	—	—
Pasadena		41·2	314	i 7 48	0	—	—	e 22·6	—
Haiwee	E.	42·1	316	e 7 53	− 2	—	—	—	—
Tinemaha		42·8	317	i 8 1	0	—	—	—	—
Pulkovo		93·7	28	—	—	e 25 53	PS	46·4	—
Sverdlovsk		108·0	20	e 15 22	?	e 28 21	PS	56·4	—

Additional readings:—
San Juan i = +4m.31s. and +4m.59s., S = +8m.3s.
St. Louis eN = +6m.36s. and +7m.31s.
Philadelphia e = +13m.50s.
Weston eSSE = +15m.46s.
Long waves were also recorded at East Machias, Scoresby Sund, Copenhagen, Paris, De Bilt, Uccle, Stuttgart, Tiflis, Baku, and Tashkent.

April 13d. Readings also at 0h. (Cape Town), 2h. (La Paz), 3h. (Mount Wilson and Pasadena), 4h. (near Hastings, Christchurch, Tuai, and Wellington), 5h. (Strasbourg), 6h. (Tiflis and near Wellington), 7h. (La Plata, near Santiago, and San Javier), 11h. (Irkutsk and Tiflis), 12h. (Mizusawa), 13h. (Weston), 14h. (near Nagoya (2)), 16h. (near Santiago), 18h. (Sverdlovsk, Tashkent, Pulkovo, Tiflis, and Tucson), 19h. (Tiflis, Nagoya, and near Mizusawa), 20h. (Andijan, Samarkand, and San Francisco), 22h. (Haiwee, Mount Wilson, Pasadena, Tucson, Sverdlovsk, Tashkent, Tiflis, and Ksara).

April 14d. 11h. 30m. 53s. Epicentre 36°·0N. 139°·4E.
(as given by the Earthquake Research Institute of Tokyo Imperial University).

$A = -\cdot6157$, $B = +\cdot5277$, $C = +\cdot5852$; $\delta = +1$; $h = 0$.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Titibu	0·3	266	0 20	+ 9	0 30	+12	—
Komaba	0·4	147	0 13	0	0 24	+ 3	—
Mitaka	0·4	160	0 14	+ 1	0 24	+ 3	—
Tokyo Cen. Met. Ob.	0·4	135	i 0 14a	+ 1	0 26	+ 5	0·4
Tokyo Imp. Univ.	0·4	135	0 12	− 1	0 23	+ 2	—
Tukubasan	0·6	69	0 15	0	0 25	− 1	—
Kamakura	0·7	170	0 17	0	0 29	+ 1	—
Koyama	0·7	208	0 20	+ 3	0 32	+ 4	—
Yosiwara	1·0	215	0 20	− 1	0 40	+ 4	—
Kiyosumi	1·1	143	0 20	− 2	0 35	− 4	—
Susaki	1·4	194	0 20	− 7	0 40	− 6	—
Nagoya	2·5	247	e 0 36	− 7	1 7	− 7	—

April 14d. 13h. 59m. 24s. Epicentre 27°·0N. 123°·5E.

$A = -\cdot4924$, $B = +\cdot7440$, $C = +\cdot4516$; $\delta = -6$; $h = +3$;
$D = +\cdot834$, $E = +\cdot552$; $G = -\cdot249$, $H = +\cdot377$, $K = -\cdot892$.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Hukuoka B	8·9	42	2 6	− 6	e 3 40	−15
Keizyo	10·9	15	e 2 40	0	e 5 45	S_g
Manila	12·6	192	3 3	0	5 36	+10
Chiufeng	14·4	337	e 3 36	+ 9	6 20	+11

Long waves were also recorded at Hong Kong, Tashkent, and Sverdlovsk.

April 14d. Readings also at 4h. (near Wellington), 9h. (near Santiago), 13h. (Tiflis), 15h. (Chiufeng, Hong Kong, Keizyo, Phu-Lien, Zi-ka-wei, and near Taihoku), 19h. (Tiflis, near Manila, and near Neuchatel), 21h. (Chiufeng, Phu-Lien, Hong Kong, Zi-ka-wei, Medan, Kobe, Bombay, Calcutta, Irkutsk, Almata, Agra, Andijan, Samarkand, Tashkent, Tiflis, Sverdlovsk, Pulkovo, Ksara, Moscow, Copenhagen, De Bilt, Uccle, and Fresno), 22h. (Nagoya and near Mizusawa), 23h. (Samarkand and near Andijan).

April 15d. 12h. 40m. 37s. Epicentre 37°·0N. 145°·0E.

$A = -\cdot6558$, $B = +\cdot4592$, $C = +\cdot5992$; $\delta = -2$; $h = -1$;
$D = +\cdot574$, $E = +\cdot819$; $G = -\cdot491$, $H = +\cdot344$, $K = -\cdot801$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		3·7	308	0 59	− 1	1 1 34	−11	—	—
Nagoya		6·7	256	e 1 43	+ 1	3 7	+ 7	—	3·4
Kobe		8·3	255	e 1 58	− 6	e 4 5	S*	—	—
Chiufeng		22·8	287	e 5 7	+ 2	9 12	+ 1	—	14·0
Sverdlovsk		57·1	319	i 9 49	− 1	—	—	26·9	—
Tiflis		73·1	310	e 11 36	+ 2	—	—	—	—
Mount Wilson	z.	75·2	58	e 11 47	+ 1	—	—	—	—
Pasadena	z.	75·2	58	e 11 48	+ 2	—	—	—	—
Ksara		83·5	308	e 12 34	+ 3	—	—	—	54·4

Additional readings:—
Mizusawa ePN = +1m.2s.
Chiufeng iE = +9m.15s.
Long waves were also recorded at Hong Kong, Pulkovo, and Baku.

April 15d. 20h. 12m. 32s. Epicentre 3°·0N. 97°·0E.

$A = -\cdot1217$, $B = +\cdot9912$, $C = +\cdot0520$; $\delta = -1$; $h = +7$;
$D = +\cdot993$, $E = +\cdot122$; $G = -\cdot006$, $H = +\cdot052$; $K = -\cdot999$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Medan		1·8	71	0 40	+ 8	1 1 40	+44	—	—
Batavia		13·4	134	e 3 23	+ 9	1 6 2	SS	—	—
Kodaikanal	E.	20·7	293	e 4 28?	−16	—	—	—	—
Calcutta	N.	21·2	338	e 4 58	+ 9	1 9 26	SSS	—	22·9
Manila		26·3	62	5 39	0	11 15	SS	17·5	—
Bombay	N.	28·4	305	e 5 28?	−30	—	—	—	—
Chiufeng		40·7	22	e 7 40	− 4	e 14 30	+35	—	28·0
Andijan		43·7	332	e 8 10	+ 2	—	—	—	—
Almata		43·9	340	e 8 18	+ 8	—	—	—	—
Tashkent		45·6	331	i 8 25	+ 1	e 15 27	+21	e 25·4	31·2
Tiflis		60·5	318	e 10 11	− 3	e 18 45	+16	e 40·5	—
Sverdlovsk		61·0	339	—	—	e 20 6	?	32·0	—
Ksara		64·5	306	e 10 39	− 2	e 19 1?	−18	—	41·5
Pasadena	z.	130·4	39	e 19 2	[−11]	—	—	—	—

Additional readings:—
Medan iSE = +1m.45s.
Batavia ePN = +3m.36s.
Ksara eSS = +23m.3s.?
Long waves were also recorded at Hong Kong, Phu-Lien, and Irkutsk.

April 15d. Readings also at 3h. (near La Paz and near Lick), 4h. (near Berkeley), 6h. (near Edinburgh), 7h. (Mizusawa), 8h. (Sverdlovsk, Tashkent, Almata, Tchimkent, Samarkand, Frunse, and near Andijan), 10h. (near Sumoto), 11h. (Wellington, Mount Wilson, Pasadena, and Tinemaha), 12h. (Irkutsk), 13h. (near Hukuoka B), 15h. (near Nagoya), 19h. (Bombay, Calcutta, and near Branner), 21h. (Batavia, Andijan (2), Calcutta, Samarkand, Tashkent, Sverdlovsk, Hong Kong, and near Medan), 23h. (near Tananarive).

April 16d. 3h. 1m. 26s. Epicentre 20°·5S. 177°·5W.

Determinations of the epicentre of this deep focus earthquake have been made as follows:—

New Zealand, Wellington, 20°·0S. 179°·0W.; depth 250km.
Chiufeng 10°·5S. 177°·0E.
Jesuit Seismological Association 22°·2S. 179°·0E.; depth 390km.
La Paz 21°·0S. 176°·0W.
Strasbourg 12°·0S. 177°·0W. (circa).
U.S.S.R. 12°·5S. 175°·0E.; depth 600km.
U.S. Coast and Geodetic Survey 22°·0S. 174°·0W.; depth 400km.

Felt Force II at Tolaga Bay. See Report of Transactions of the American Geophysical Union 19th Annual Meeting, 1938, pp. 115-119.

$A = -\cdot9365$, $B = -\cdot0409$, $C = -\cdot3481$; $\delta = -12$; $h = +5$;
$D = -\cdot044$, $E = +\cdot999$; $G = +\cdot348$, $H = +\cdot015$, $K = -\cdot937$.

A depth of focus of 0·030 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L	M
	°	°	m. s.	s.	m. s.	s.	m.	m.
Apia	8·6	40	i 2 11	+ 9	i 3 45	+ 8	—	—
Arapuni	18·5	198	i 4 4?	+ 2	7 13?	− 3	—	—
Wellington	21·7	197	e 4 34	0	e 8 8	− 7	—	—
Chatham Islands	23·4	178	i 4 59	+ 9	8 44	0	—	—
Christchurch	24·4	198	i 5 1k	+ 2	i 8 56	− 4	—	—
Sydney	30·7	237	e 5 46	−10	i 10 24	−17	14·2	15·6
Riverview	30·8	237	i 5 59k	+ 2	i 10 38	− 5	—	16·8
Melbourne	36·8	234	6 48	0	i 12 4	−11	—	15·4
Adelaide	41·1	240	e 6 52	−32	i 13 7	−12	16·2	19·1
Honolulu	45·8	26	e 8 6	+ 5	i 14 19	− 8	28·6	—
Palau	54·7	295	9 10	+ 2	16 30	+ 1	—	
Perth	60·1	244	9 49	+ 3	—	—	—	37·6
Titizima	61·3	319	9 54	0	—	—	—	—
Hatidyozima	67·1	322	11 32	+61	20 3	+57	—	—
Katuura	68·4	323	10 39	0	—	—	—	—
Mera	68·4	323	10 49	+10	19 12	− 9	—	—
Tyosi	68·4	325	10 46	+ 7	19 18	− 3	—	—
Yokosuka	68·8	323	10 46	+ 4	19 12	−14	—	—
Ito	68·9	323	10 44k	+ 2	19 25	− 2	—	—
Yokohama	68·9	326	10 41	− 1	19 28	+ 1	—	—
Tokyo	69·0	324	10 44	+ 1	19 26	− 2	—	—
Misima	69·1	322	10 43	− 1	19 25	− 5	—	—
Mito	69·1	325	10 44	0	19 38	+ 8	—	—
Numadu	69·1	322	10 48	+ 4	19 38	+ 8	—	—
Omaesaki	69·1	322	10 39	− 5	15 45	PPP	—	—
Tukubasan	69·2	325	10 43k	− 1	19 34	+ 3	—	—
Kakioka	69·2	325	10 43	− 1	18 16	−75	—	—
Manila	69·2	295	i 10 47k	+ 3	19 41	+10	—	—
Onahama	69·3	326	10 44	− 1	19 34	+ 2	—	—
Hunatu	69·4	322	10 45	0	19 19	−14	—	—
Hamamatu	69·5	321	10 43k	− 3	19 22	−12	—	—
Kumagaya	69·5	324	10 47	+ 1	19 36	+ 2	—	—
Kohu	69·6	324	10 47	0	19 41	+ 6	—	—
Utunomiya	69·6	325	10 47	0	19 41	+ 6	—	—
Siomisaki	69·7	320	10 46	− 1	19 30	− 6	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Maebasi		69·9	324	10 50	+ 2	19 39	0	—	—
Hukusima		70·1	326	10 49	− 1	19 31	−10	—	—
Oiwake		70·1	324	10 49	− 1	19 33	− 8	29·0	—
Aidu		70·2	326	10 49	− 1	19 41	− 1	—	—
Nagoya		70·2	322	10 52	+ 2	19 36	− 6	—	—
Tu		70·2	321	10 53	+ 3	19 33	− 9	—	—
Kameyama		70·3	321	10 46	− 5	19 37	− 7	29·7	—
Sendai		70·3	327	10 50	− 1	19 46	+ 2	—	—
Matumoto		70·4	323	10 56	+ 4	19 32	−13	—	—
Gihu		70·5	322	10 50	− 2	19 36	−10	—	—
Yagi		70·5	320	10 51	− 1	19 50	+ 4	—	—
Nagano		70·6	324	10 52	− 1	19 27	−20	—	—
Naha		70·6	308	10 42	−11	18 58	−49	—	—
Muroto		70·6	325	10 53	0	19 53	+ 6	—	—
Nake		70·6	312	10 54	+ 1	19 49	+ 2	—	—
Wakayama		70·6	320	10 53k	0	19 46	− 1	—	—
Yamagata		70·6	326	10 54	+ 1	—	—	—	—
Hikone		70·7	322	10 56	+ 3	—	—	—	—
Ibukisan		70·7	322	10 57	+ 4	—	—	—	—
Osaka		70·7	320	10 55	+ 2	19 54	+ 6	—	—
Osaka B		70·7	320	10 53k	0	19 54	+ 6	—	—
Takayama		70·7	323	10 57	+ 4	19 31	−17	—	—
Kyoto		70·8	321	11 23	+29	—	—	—	—
Miyako		70·8	329	11 12	+18	20 16	+27	—	—
Mizusawa		70·8	328	i 10 57	+ 3	i 19 48	− 1	—	—
Kobe	E.	70·9	320	10 54k	0	e 19 41	− 9	29·7	—
	N.	70·9	320	10 55k	+ 1	e 19 44	− 6	29·7	—
	Z.	70·9	320	10 54k	0	e 19 42	− 8	29·9	—
Sumoto	E.	70·9	320	10 54	0	e 18 52	−58	19·8	20·8
	N.	70·9	320	e 10 56	+ 2	e 18 54	−56	19·9	20·8
	Z.	70·9	320	10 52	− 2	—	—	19·9	20·8
Takada		70·9	324	10 54	0	19 54	+ 4	—	—
Tokusima		70·9	319	10 57	+ 3	—	—	—	—
Niigata		71·0	325	11 0	+ 5	20 33	+41	—	—
Simidu		71·0	317	10 56	+ 1	19 44	− 8	—	—
Koti		71·2	318	10 56	0	19 45	− 9	—	—
Morioka		71·2	328	10 58	+ 2	19 39	−15	—	—
Toyama		71·2	312	10 58	+ 2	19 47	− 7	—	—
Husiki		71·3	322	10 59	+ 2	19 51	− 4	—	—
Kanazawa		71·4	323	10 55	− 3	19 46	−10	—	—
Miyadu		71·5	321	11 23	+25	—	—	—	—
Miyazaki		71·5	315	10 54k	− 4	19 52	− 5	—	—
Toyooka		71·6	321	10 49	−10	19 52	− 6	e 29·2	—
Hatinohe		71·7	329	10 57	− 2	20 3	+ 3	—	—
Okayama		71·7	320	10 57	− 2	—	—	—	—
Akita		71·8	327	11 0	0	20 40	+39	—	—
Kagosima		71·8	314	11 3	+ 3	20 2	+ 1	—	—
Wazima		71·8	324	10 58	− 2	19 53	− 8	—	—
Matuyama		71·9	318	10 54	− 6	19 53	− 9	—	—
Nemuro		72·0	332	11 2	+ 1	19 54	− 9	—	—
Isigakizima		72·2	306	11 3	+ 1	20 5	0	—	—
Ooita		72·2	317	11 13	+11	19 58	− 7	—	—
Aomori		72·3	328	11 3	0	—	—	—	—
Urakawa		72·3	330	11 3	0	20 1	− 5	—	—
Hirosima		72·4	319	11 3	0	20 8	+ 1	—	—
Kumamoto		72·5	317	11 4k	0	20 1	− 7	—	—
Obihiro		72·7	330	11 12	+ 7	20 14	+ 3	—	—
Sakai		72·7	319	11 6	+ 1	20 16	+ 5	—	—
Unzendake		72·8	316	11 42	+36	20 48	+36	—	—
Hamada		73·0	319	11 4	− 3	20 13	− 1	—	—
Nagasaki		73·0	315	11 5	− 2	20 13	− 1	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hakodate		73·0	329	11 21	+14	—	—	—	—
Hukuoka		73·2	317	11 7	− 1	e 18 53	−83	—	—
Hukuoka B		73·2	317	11 7	− 1	18 51	−85	22·8	—
Kosyun		73·6	302	11 11	+ 1	20 18	− 3	—	—
Sapporo		73·7	330	11 12	+ 1	20 32	+10	—	—
Taito		73·7	303	11 9	− 2	19 58	−24	—	—
Tomie		73·7	316	11 11	0	19 28	−54	—	—
Karenko		74·0	304	11 11	− 2	20 13	−12	—	—
Arisan		74·3	304	11 16a	+ 2	20 39	+10	—	—
Giran		74·3	305	11 0	−14	20 8	−21	—	—
Takao		74·3	303	11 20	+ 6	20 44	+15	—	—
Azinkoto		74·5	306	11 24	+ 8	20 31	0	—	—
Batavia		74·5	269	i 11 13k	− 3	i 20 24	− 7	25·6	—
Tainan		74·5	303	11 17	+ 1	—	—	—	—
Haboro		74·6	331	11 18	+ 2	19 50	−42	—	—
Taihoku		74·6	305	e 11 13	− 3	20 28	− 4	—	—
Taityu		74·8	304	11 19	+ 2	—	—	—	—
Husan		75·0	317	11 13	− 5	i 20 30	− 6	—	—
Hokoto		75·3	301	11 11	− 9	20 20	−20	—	—
Taikyu		75·8	308	11 22	− 1	20 46	+ 1	—	—
Santa Barbara		77·5	46	i 11 31	− 1	i 20 56	− 7	—	—
Branner		77·6	42	e 11 33	0	e 20 59	− 5	—	—
San Francisco	E.	77·7	42	e 11 34	+ 1	e 20 58	− 7	—	—
	N.	77·7	42	e 11 31	− 2	e 20 53	−12	—	—
Berkeley		77·9	42	e 11 31	− 3	e 20 55	−12	—	—
Keizyo		77·9	318	e 11 34	0	e 21 3	− 4	—	—
Lick		77·9	42	e 11 31	− 3	e 20 55	−12	—	—
Zi-ka-wei	N.	77·9	310	e 11 30	− 4	21 2	− 5	—	—
Zinsen		78·0	317	i 11 29k	− 6	e 20 57	−12	32·4	—
Ukiah		78·1	40	e 11 37	+ 1	i 20 54	−16	e 32·4	—
La Jolla		78·3	48	e 11 33	− 4	i 21 4	− 8	—	—
Pasadena		78·3	47	e 11 33k	− 4	e 21 2	−10	i 32·5	—
Ferndale		78·4	39	e 11 35	− 2	e 21 0	−13	—	—
Mount Wilson		78·5	47	i 11 34	− 4	e 21 5	− 9	—	—
Riverside		78·8	47	e 11 35	− 4	i 21 7	−10	—	—
Fresno	N.	78·8	44	e 11 39	0	e 21 21	+ 4	—	—
Hong Kong		79·1	299	11 41a	0	(21 19)	− 1	21·3	—
Heizyo		79·5	318	e 11 44	+ 1	21 23	− 1	—	—
Haiwee	N.	79·6	45	e 11 42	− 2	i 20 38	−47	—	—
Tinemaha		80·0	44	i 11 38	− 8	i 21 20	−10	—	—
Mazatlan	E.	81·8	62	e 12 14?	+19	—	—	—	—
Dairen		82·0	316	11 56	0	21 50	0	—	—
Tucson		82·5	52	e 11 57	− 2	i 21 49	− 6	e 39·5	—
Hsinking		82·7	322	12 27	+27	22 5	+ 8	—	—
Yingkow		82·7	319	12 10	+10	22 6	+ 9	—	—
Guadalajara	N.	83·3	65	e 12 17?	+14	—	—	—	—
Victoria		83·9	33	e 12 5	− 1	i 21 55	−14	e 34·6	—
Seattle		84·0	34	e 11 34	−32	e 22 24	+14	e 38·6	—
Phu-Lien		84·8	294	e 12 9	− 1	i 21 59	−19	—	—
Sitka		84·9	22	e 12 7	− 4	e 22 7	−12	—	—
Medan		85·5	275	12 11	− 3	i 22 11	−13	e 37·6	—
Chiufeng		86·3	315	12 15k	− 3	i 21 58	[−22]	—	—
Tacubaya	N.	86·3	68	e 12 22	+ 4	—	—	—	—
Butte		88·4	39	i 12 26	− 2	i 22 34	[+ 2]	e 35·6	—
Bozeman		89·2	40	e 12 31	0	i 22 40	[+ 2]	e 35·1	—
Denver		90·3	48	e 10 43	?	—	—	—	—
Santiago		92·1	127	12 48	+ 3	22 49	[− 5]	—	—
Saskatoon		94·9	35	e 12 57	− 1	e 23 24	[+14]	—	—
Merida	N.	95·2	69	e 12 34?	−25	—	—	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Huancayo		97·0	105	e 13 11	+ 4	i 23 25	[+ 3]	—	—
Little Rock		97·6	56	e 13 9	− 1	i 23 18	[− 7]	—	—
Des Moines		98·9	49	e 13 22	+ 6	i 26 25	PS	—	—
Irkutsk		99·0	322	13 21	+ 5	i 23 15	[−16]	40·6	—
Florissant		100·4	52	e 13 19	− 4	i 23 35	[− 3]	—	—
La Plata		100·5	133	13 34	+11	23 21	[−17]	47·6	—
St. Louis	E.	100·5	52	e 13 21	− 2	i 23 34	[− 4]	—	—
Calcutta	N.	101·3	289	13 41	+14	i 24 53	+10	41·6	70·3
La Paz		101·5	112	i 13 33a	+ 5	i 23 45	[+ 2]	48·8	54·3
Madison		102·4	47	e 13 27	− 5	e 23 46	[− 1]	—	—
Chicago		103·3	49	e 14 49	+73	e 24 49	−10	e 46·6	—
Cincinnati		104·9	53	e 13 46	+ 2	i 23 52	[− 8]	—	—
Columbia		106·3	59	e 18 16	PP	e 24 7	[+ 2]	e 45·6	—
Kodaikanal	E.	107·5	274	15 30?	PP	i 24 4	[− 6]	i 54·6	63·8
Hyderabad		108·7	282	18 40	PKP	25 10	[+54]	50·2	—
Toronto		109·6	49	e 15 45	pP	i 24 4	[−15]	e 43·6	—
Buffalo		109·9	50	e 14 12	pP	i 24 14	[− 6]	—	—
Pennsylvania		110·2	52	e 24 17	SKS	(e 24 17)	[− 4]	e 49·8	—
Agra	E.	111·5	291	e 14 4	P	24 11	[−15]	—	—
Ithaca		111·5	50	e 21 34	PPP	i 26 22	S	—	—
Philadelphia		112·1	54	e 15 48	pP	i 26 7	S	—	—
Dehra Dun		112·2	295	18 54	PP	27 14	PS	30·4	34·6
Ottawa		112·5	47	e 15 58	pP	i 24 25	[− 5]	e 47·6?	—
Fordham		113·3	53	e 14 27	P	—	—	—	—
Semipalatinsk		113·3	316	e 14 24	P	i 26 26	PS	—	—
Williamstown		114·0	51	i 16 7	pP	i 28 32	?	—	—
Vermont		114·1	49	e 15 54	pP	i 26 34	S	—	—
Bombay		114·3	282	e 14 22	P	i 24 34	[− 4]	—	—
Shawinigan Falls		114·6	46	e 18 13	PKP	e 26 43	S	e 48·6	—
Almata		114·9	309	e 14 38	P	—	—	—	—
Oak Ridge		115·1	51	e 14 30	P	i 26 44	S	e 59·6	—
Weston		115·3	49	e 14 26	P	e 24 41	[− 1]	—	—
San Juan		115·7	78	e 15 59	pP	i 24 34	[− 9]	—	—
Seven Falls		116·0	46	e 18 16	PKP	i 24 35	[−10]	e 49·6	—
Frunse		116·6	307	e 14 39	P	—	—	—	—
Rio de Janeiro		118·0	131	i 19 51	PP	i 24 49	[− 2]	i 28·9	—
Andijan		118·1	305	e 14 57	P	—	—	—	—
East Machias		118·3	49	e 19 55	PP	i 24 43	[−10]	—	—
Tashkent		120·5	306	14 47	P	26 28	SKKS	—	65·0
Halifax		121·0	49	e 19 34?	?	i 24 58	[− 4]	e 36·6	—
Tananarive		121·0	231	i 29 4	PP	27 29	?	49·7	57·9
Samarkand		120·2	303	e 14 56	P	—	—	—	—
Cape Town		123·8	195	e 19 38	?	i 25 7	[− 4]	e 60·5	67·8
Sverdlovsk		124·3	325	i 15 14	P	26 48	SKKS	—	—
Ivigtut		126·3	28	18 33	PKP	25 16	[− 3]	—	—
Scoresby Sund		127·9	10	15 36	P	25 28	[+ 5]	—	—
Baku		135·2	307	16 20	P	—	—	—	—
Pulkovo		136·0	340	e 16 11	P	e 25 36	[− 6]	63·6	73·0
Moscow		136·1	332	16 13	P	25 56	[+14]	—	73·9
Grozny		137·4	312	e 18 54	PKP	—	—	—	—
Piatigorsk		139·0	314	e 19 2	PKP	—	—	—	—
Tiflis		139·0	310	e 16 21	P	—	—	e 41·6	—
Erevan		139·2	308	e 18 56	PKP	—	—	—	—
Upsala	N.	139·2	348	i 18 56	PKP	—	—	e 63·6	71·7
Bergen		140·1	358	19 2	PKP	—	—	—	64·1
Sotchi		141·4	314	e 19 3	PKP	—	—	—	—
Theodosia		143·5	319	e 19 4	[− 4]	—	—	47·6	—
Copenhagen		144·1	350	i 19 1	[− 8]	e 25 58	[+ 4]	—	—
Simferopol		144·3	320	e 19 4	[− 5]	31 23	PS	50·6	—
Edinburgh		144·4	5	e 19 9	[0]	i 40 46	SS	e 43·6	61 4

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Yalta		144·5	319	19 7	[− 3]	32 19	48	? ·1	—
Sebastopol		144·8	320	i 19 10	[0]	31 52	?	49·6	—
Durham		145·6	3	19 7	[− 5]	27 24	?	—	62·6
Lemberg		146·1	334	e 19 40	[+27]	—	—	—	—
Hamburg		146·5	352	e 19 10k	[− 4]	—	—	75·6	—
Stonyhurst		146·5	5	i 19 23	[+ 9]	i 25 37	[−21]	43·6	—
Rathfarnham Castle		146·6	9	e 19 26	[+12]	e 29 3	SKKS	41·4	61·6
Ksara		147·6	300	e 18 45	[−30]	—	—	—	—
De Bilt		148·4	356	i 19 14	[− 2]	e 29 17	SKKS	—	—
Göttingen		148·5	352	e 19 14	[− 3]	i 29 19	SKKS	—	—
Oxford		148·7	3	i 19 13	[− 4]	i 41 36	SS	—	—
Jena		148·8	348	i 19 18	[0]	i 29 14	SKKS	e 48·6	62·8
Kew		149·0	3	e 19 16	[− 2]	i 31 42	?	e 49·6	60·4
Prague		149·0	345	e 19 14	[− 4]	i 26 26	[+24]	—	88·6
Bucharest		149·1	326	e 19 23	[+ 5]	i 26 26	[+24]	45·3	56·7
Cheb		149·5	348	e 19 23	[+ 5]	e 29 25	SKKS	e 50·6	53·6
Uccle		149·7	359	e 19 16k	[− 2]	28 30	SKKS	—	53·4
Budapest	E.	149·9	337	e 19 19	[0]	30 4	SKKS	—	53·1
	N.	149·9	337	19 23	[+ 4]	30 53	SKKS	e 50·1	53·1
Stara Dala		149·9	338	e 19 24	[+ 5]	e 29 34	SKKS	e 58·6	79·6
Vienna		150·1	341	i 19 17k	[− 2]	—	—	e 52·1	66·1
Kecskemet		150·2	336	e 19 30	[+11]	26 33	[+31]	—	—
	Z.	150·2	336	e 19 17	[− 2]	26 36	[+34]	—	—
Jersey		151·1	6	i 19 26	[+ 6]	—	—	47·7	60·1
Stuttgart		151·3	350	e 19 18	[− 2]	e 42 10	SS	49·6	—
Belgrade		151·6	332	e 19 18a	[− 2]	i 29 34	SKKS	e 51·1	65·5
Paris		151·7	0	e 19 26	[+ 6]	e 29 45	SKKS	42·6	63·6
Strasbourg		151·7	352	e 19 18	[− 2]	i 29 40	SKKS	—	60·2
Helwan		152·3	294	19 22	[+ 1]	29 34	SKKS	—	89·5
Zagreb		152·4	338	e 19 5k	[−16]	i 29 25	SKKS	—	—
Basle		152·7	353	e 19 21	[− 1]	e 29 43	SKKS	—	—
Zurich		152 7	352	e 19 19	[− 3]	e 27 34	?	—	—
Chur		153·1	350	e 19 20	[− 3]	—	—	—	—
Besançon		153·2	353	e 19 40	[+17]	e 30 44	?	39·1	—
Neuchatel		153·3	352	e 19 20	[− 3]	e 29 45	SKKS	—	—
Triest		153·3	342	e 19 20k	[− 3]	i 29 40	SKKS	e 45·9	62·8
Padova		154·0	344	e 19 38	[+14]	—	—	—	—
Capodimonte	E.	157·4	336	i 19 45	[+17]	i 27 29	?	55·6	—
Barcelona		159·1	1	19 42	[+11]	—	—	e 56·0	83·2
Tortosa		159·7	3	i 19 30	[− 1]	31 58	?	48·0	61·8
Toledo		159·9	15	i 19 32	[0]	i 30 22	SKKS	—	—
Dakar		160·1	103	i 19 27	[− 5]	e 25 51	[−22]	e 71·3	109·2
San Fernando		162·4	24	19 36	[+ 2]	31 49	S	—	—
Granada		162·5	17	19 46	[+12]	—	—	—	—
Almeria		163·1	15	i 19 39	[+ 4]	e 43 46	SSS	e 58·0	—
Algiers		163·7	357	i 19 45	[+10]	27 55	SKKS	e 62·6	90·6

Additional readings :—

Apia i = +2m.30s.
Arapuni i = +5m.44s.? S_cS? = +16m.19s.?
Wellington iP = +4m.39s., pP? = +5m.7s., SP? = +5m.46s., iNZ = +6m.18s., iS = +8m.13s., pP_cP = +9m.9s., sP_cP = +9m.54s., S_cP = +11m.6s., P_cS = +11m.32s., S_cS = +15m.8s., pS_cS = +16m.25s., sS_cS = +16m.54s.
Chatham Island i = +6m.44s., +8m.24s., and +13m.14s.
Christchurch iZ = +9m.5s.
Riverview i = +6m.5s.k, iZ = +7m.24s., iNE = +7m.28s., iSE = +10m.41s., iE = +12m.53s., iN = +13m.12s., iE = +13m.23s.
Melbourne i = +6m.54s., +8m.34s., and +10m.4s., SS = +13m.58s.
Adelaide i = +7m.30s., +8m.24s., +9m.32s., +11m.24s., and +15m.25s.
Honolulu iP = +8m.8s., +8m.11s.
Palau PPP = +10m.40s.
Perth iP? = +10m.9s.
Mera pP = +12m.1s.
Ito PP = +13m.25s.
Yokohama PP = +12m.18s.
Tokyo P_cP = +10m.53s.

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Misimi $S_cS = +20m.28s.$
Mito PP = +12m.16s.
Tukubasan SP = +13m.2s.
Kohu pP = +12m.19s., PP = +12m.45s.
Oiwake PP = +13m.30s., SS = +24m.3s.
Gihu PP = +14m.0s.
Nagano PP = +13m.36s., pPP = +14m.52s., $S_cS = +20m.40s.$
Wakayama $S_cS = +20m.40s.$
Osaka $P_cP = +11m.5s.$, SP = +13m.39s., PP = +14m.40s., pPP = +15m.33s., $S_cS = +20m.46s.$
Mizusawa SN = +19m.52s.
Kobe i = +11m.4s., iZ = +11m.8s., iE = +11m.12s., iN = +11m.14s., iSE = +19m.54s., iSN = +19m.58s., $S_cSE = +20m.36s.$, $S_cSNZ = +20m.39s.$, sSN? = +21m.26s., SSE? = +21m.31s., $sS_cS?EN = +22m.14s.$, iE = +23m.3s., iN = +23m.9s., PKP,PKPZ = +38m.45s., PKP,PKPE = +38m.53s., eE = +39m.58s.
Koti $P_cP = +11m.4s.$, $S_cS = +20m.45s.$, SS = +22m.27s.
Kanazawa $P_cP = +11m.5s.$, PP = +13m.45s., pPP = +15m.1s., PS = +20m.15s., SS = +24m.35s.
Miyazaki i = +30m.2s., PKP,PKP = +38m.45s.
Toyooka iZ = +10m.59s., eSZ = +20m.14s., iE = +20m.40s.
Hatinohe $P_cP = +11m.6s.$
Okayama PPP = +15m.55s.
Kagosima SSS = +28m.23s.
Matuyama $P_cP = +11m.4s.$
Hirosima pP = +12m.43s.
Kumamoto $S_cS = +20m.44s.$
Unzendake pPP = +16m.24s.
Hamada $P_cP = +11m.14s.$, pP = +13m.6s., sS = +23m.28s., SSS = +28m.23s.
Nagasaki $P_cP = +11m.15s.$
Hukuoka e = +15m.37s.
Kosyun $P_cP = +11m.20s.$
Karenko PP = +14m.9s.
Arisan $P_cP = +11m.23s.$, SS = +23m.29s.
Takao $P_cP = +11m.34s.$
Hokoto $P_cP = +11m.29s.$
Santa Barbara iEZ = +21m.3s.
Branner iPEN = +10m.35s., iEN = +21m.12s.
San Francisco eE = +21m.13s.
Berkeley iP = +11m.35s., iZ = +13m.0s., eZ = +13m.7s., eSEN = +21m.0s., eSZ = +21m.2s., eEN = +21m.7s., eZ = +21m.15s., iEN = +21m.18s.
Keizyo ePPP? = +17m.0s.
Lick iPEN = +11m.34s., iEN = +11m.40s., iEN = +21m.17s.
Zi-ka-wei iE = +11m.38s., iN = +12m.20s., +13m.18s., iE = +21m.23s., iE = +26m.18s.
Zinsen iP = +11m.34s., $iP_cP = +11m.43s.$, epPE = +13m.22s., ipPZ = +13m.46s., iPPN = +14m.40s., iPPZ = +14m.49s., ePPPN? = +16m.42s., $iS_cSEN = +21m.12s.$, iSS = +22m.59s.
Ukiah i = +11m.45s., e = +12m.54s., +13m.12s., i = +21m.21s., e = +24m.29s.
La Jolla iPKP,PKPZ = +38m.45s., ipPKP,PKPZ = +40m.22s., eSKP,PKPZ = +41m.37s.
Pasadena iP = +11m.36s., $iP_cPEN = +11m.46s.$, ipPEZ = +13m.10s., eSEZ? = +20m.20s., iZ = +21m.16s., iEN = +21m.41s., iN = +24m.36s. and +26m.21s., iPKP,PKPZ = +38m.51s., ipPKP,PKPZ = +40m.23s., iSKP,PKPZ = +41m.36s.
Ferndale ePN = +11m.39s., iE = +12m.3s. and +21m.13s., iN = +21m.23s.
Mount Wilson ipPKP,PKPZ = +40m.22s.
Riverside iE = +21m.16s.
Hong Kong ? = +13m.54s., ? = +14m.52s., S = +16m.44s., SS = +18m.14s.
Haiwee ePKP,PKPN = +38m.36s.
Tinemaha iPKP,PKPZ = +38m.36s.
Tucson ipP = +12m.3s., ePP = +12m.58s., i = +13m.34s., e = +16m.14s., e = +17m.34s., i = +22m.3s., eSS = +23m.45s., e = +26m.44s. and +30m.48s., i = +34m.4s.
Victoria i = +13m.34s.
Seattle eP = +12m.32s., e = +14m.18s., +18m.14s., and +18m.58s.
Sitka iP = +12m.10s., i = +12m.19s., ipP = +13m.44s., iPP = +15m.48s., iS = +22m.17s., i = +24m.4s., iSS = +28m.12s., isSS = +30m.15s., e = +32m.50s.
Medan iN = +12m.24s., iE = +12m.26s.
Chiufeng $P_cPEN = +12m.25s.$, iPP = +15m.14s., iN = +22m.16s.
Butte i = +23m.42s., iSS = +28m.38s.
Bozeman epP = +13m.58s., e = +18m.14s. and +22m.24s., i = +23m.3s., eSP = +23m.49s., e = +25m.34s., iSS = +29m.4s.
Denver eE = +10m.45s., iN = +10m.53s., eE = +12m.22s., eN = +12m.42s., iN = +13m.0s., eN = +14m.49s. and +20m.51s., iE = +20m.56s., eN = +21m.14s., iEN = +21m.26s., eN = +22m.19s., iN = +22m.37s.

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Fordham i = +16m.8s., +18m.38s., and +21m.28s., iSS = +29m.5s.
Huancayo iP = +13m.16s., i = +13m.23s., e = +14m.40s., iSP = +14m.55s., i = +16m.35s., iPP = +17m.20s., i = +23m.7s.
Little Rock iEN = +13m.18s., +14m.41s., +14m.47s., +24m.18s., +24m.48s., and +25m.48s.
Des Moines isP = +15m.17s., i = +16m.46s., and +17m.12s., ipPP = +18m.30s., i = +19m.9s., e = +25m.7s., i = +25m.20s., iSP = +25m.43s., ipS = +25m.57s., i = +26m.47s., iSSS = +33m.27s.
Irkutsk SP = +16m.29s., SS = +29m.28s.
Florissant iZ = +13m.26s., iNZ = +13m.30s., eZ = +14m.47s., iZ = +14m.52s. and +15m.1s., iN = +15m.3s., iZ = +17m.23s., +17m.32s., and +17m.42s., iEN = +24m.12s. and +24m.41s., eEN = +26m.15s., iEN = +27m.5s., iE = +31m.37s., iN = +31m.40s. and +34m.0s.
La Plata +14m.28s., +16m.28s., +17m.40s., +18m.22s., +24m.4s., +24m.34s., +26m.11s., +31m.34s., +33m.58s., +38m.40s., +40m.16s., +42m.10s.
St. Louis iE = +13m.27s., +13m.30s., +14m.52s., and +17m.39s., eE = +19m.39s., iE = +24m.12s., +24m.44s., +26m.12s., +27m.12s., +27m.42s., +28m.24s. +31m.51s., and +36m.24s.
Calcutta epP?N = +15m.11s., SPN = +15m.56s., PPN = +17m.56s., eN = +18m.57s., and +19m.59s., SKSN = +23m.38s., iN = +27m.6s. and +36m.41s.
La Paz ipPZ = +14m.55s., iSPZ = +15m.51s., iPPZ = +17m.55s., iSKKS = +24m.35s., iSZ = +25m.17s., iZ = +26m.30s., iSKS = +27m.13s., isS = +28m.3s., iSSZ = +32m.13s., SSSN = +36m.4s., SSSZ = +36m.54s., iZ = +38m.4s., and +43m.48s.
Madison e = +14m.58s.
Chicago epPP = +19m.4s., e = +19m.42s., ePPP = +20m.19s., e = +21m.14s., +22m.24s., +23m.14s., and +23m.30s., eSKS = +24m.24s., eSP = +26m.14s., e = +39m.34s., e = +43m.12s.
Cincinnati ipP = +15m.13s., i = +18m.1s., iPP = +18m.14s., sPP = +20m.4s., iSKKS = +24m.40s., iS = +25m.22s.
Columbia ePP = +18m.28s., e = +20m.18s., ePS = +27m.54s., iSS = +33m.8s., eSSS = +37m.1s.
Kodaikanal iPPE = +18m.34s., eE = +20m.24s., iE = +24m.57s, +25m.34s., +26m.50s., and +28m.12s., isSPE = +29m.49s., iE = +30m.36s. and +40m.16s.
Hyderabad SKKS = +25m.52s., PS = +28m.28s., SS = +34m.10s.
Toronto eN = +17m.58s., eE = +20m.48s., i = +26m.2s., iE = +27m.53s. and +30m.8s., i = +33m.38s., iE = +36m.8s., iN = +38m.0s.
Buffalo ipP = +15m.46s., iPP = +18m.46s., ipPKP = +20m.6s., iS = +26m.4s., iPS = +27m.54s.
Pennsylvania epP = +26m.6s., ePPP = +28m.39s., eSS = +37m.54s.
Agra ipE = +14m.12s., pPE = +15m.41s., SPE = +16m.17s., PKPE = +17m.38s., PPE = +18m.33s., sPPE = +20m.44s., PPP = +21m.34s., iE = +25m.14s., PSKSE = +25m.59s., sSKSE = +26m.45s., eE = +28m.4s., SPSE = +28m.40s., SSE = +33m.50s., sSSE = +36m.12s., SSSE = +38m.15s.
Ithaca iPS = +28m.18s., esSP = +30m.30s.
Philadelphia e = +16m.37s., ePP = +18m.59s., epPP = +20m.5s., i = +25m.34s., iSP = +27m.53s., ePS = +28m.25s., i = +28m.59s., iSS = +33m.52s., i = +36m.47s., +38m.20s., +41m.39s., and +50m.38s.
Ottawa e = +19m.0s., iN = +26m.12s., iE = +26m.25s., iE = +28m.18s., iN = +29m.2s., iE = +29m.18s., +30m.34s., and +34m.20s.
Williamstown e? = +18m.10s., ePKP = +19m.13s., PP = +21m.11s., SKP? = +22m.7s., S_cS? = +26m.42s., iS? = +29m.41s., iPS = +32m.13s., eSS = +37m.17s.
Vermont iPP = +19m.11s., e = +20m.57s., i = +24m.37s., i = +25m.47s., iPS = +28m.38s., i = +30m.56s., iSS = +34m.39s., e = +37m.29s., i = +37m.34s., e = +44m.54s., i = +48m.10s., +48m.18s., e = +58m.16s.
Bombay P = +14m.34s., epP? = +16m.1s., esP? = +16m.42s., iE = +17m.43s., PPE = +19m.2s., PPN = +19m.8s., ipPP = +20m.49s., iEN = +21m.11s. and +25m.44s., ipSKS? = +26m.34s., iSKS = +27m.19s., iEN = +28m.34s., iPSE = +28m.57s., isSP = +30m.49s., iSS = +34m.34s., eEN = +48m.34s.
Shawinigan Falls e = +28m.41s. and +34m.43s.
Almata e = +19m.14s.
Oak Ridge epPZ = +15m.58s., ePKPZ = +18m.11s., ePPNZ = +19m.20s., ePPE = +19m.26s., iZ = eE = +23m.56s., eN = +24m.10s., i = +24m.40s., iE = +25m.52s., eSKKSN = +26m.24s., S?N = +26m.49s., isSKS = +27m.26s., iPKKP = +28m.39s., PPSZ = +29m.48s., PPSE = +29m.52s., eZ = +30m.36s., eEN = +31m.4s., eSSN = +34m.46s., iN = +35m.4s., iE = +35m.24s., SSSZ = +40m.56s., iSSSN = +41m.10s., iSSSE = +41m.16s., iN = +41m.40s., eZ = +46m.8s., iN = +46m.31s., eZ = +48m.38s., eE = +48m.48s., eN = +51m.8s., eZ = +51m.28s., iN = +52m.40s., +53m.30s., and +53m.56s., eN = +56m.2s.
Weston epPZ = +15m.57s., ePKPZ = +18m.15s., iPP = +19m.21s., iS = +26m.42s., i = +26m.53s., ePKKP = +28m.31s., eSP = +28m.34s., eSSS = +38m.41s.

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San Juan iPP = +19m.24s., i = +19m.34s., iPPP = +21m.33s., i = +25m.42s., iSP = +28m.44s., i = +31m.11s.
Seven Falls e = +19m.19s., i = +25m.43s. and +28m.36s.
Frunse e = +18m.39s. and +19m.31s.
Rio de Janeiro eE = +16m.9s., iSS = +26m.9s.
Andijan e = +18m.36s., +20m.17s., and +24m.47s.
East Machias e = +21m.24s., i = +26m.17s., e = +27m.2s., i = +27m.20s., iSP = +28m.58s., ePS = +29m.32s., i = +31m.33s., iSS = +36m.7s., e = +38m.2s., i = +39m.12s., e = +49m.22s. and +53m.22s.
Tashkent pP = +16m.59s., PKP = +18m.43s., PP = +19m.41s., SPP = +22m.27s., PS = +28m.37s., SS = +33m.28s.
Halifax e = +29m.34s.
Tananarive eE = +21m.28s., eEN = +30m.4s., E = +32m.1s., +35m.58s., and +41m.56s.
Samarkand e = +18m.32s., e = +20m.22s.
Cape Town Univ. ipPKPN = +20m.10s., iPP? = +20m.23s., iSKP = +21m.42s., iSKSE = +24m.57s.?, i = +26m.42s., iSKKS?E = +27m.43s., iSN = +29m.32s., iSE = +29m.37s., iPPSN? = +31m.31s., iSSE = +35m.59s., iSSN = +36m.31s., iE = +38m.53s., iSSSE = +42m.57s.?, iSSSN = +43m.8s.
Sverdlovsk PP = +17m.20s., SP = +18m.28s., iPP = +20m.12s., iSKS = +25m.1s., SP = +27m.40s., pS = +29m.27s., iSSS = +39m.16s.
Ivigtut iZ = +18m.40s., pPKPZ = +20m.18s., PP = +20m.41s., eZ = +21m.28s., pPP = +21m.59s., sPP = +23m.0s., PPP = +23m.34s., e = +24m.34s., eE = +25m.41s., pSKS = +27m.4s., sSKS = +28m.10s., SP? = +30m.10s., SPP = +31m.40s., pSP = +32m.4s., eE = +34m.0s., eS = +35m.10s., SS = +37m.10s., sSS = +39m.34s., SSSE = +42m.40s.
Scoresby Sund PKP = +18m.37s. and +18m.46s., eZ = +20m.16s. and +20m.27s., PP = +20m.53s. and +21m.32s., e = +22m.10s., eN = +23m.44s., +27m.16s., and +30m.59s., eZ = +32m.5s., eN = +32m.52s., eZ = +33m.26s., e = +37m.40s., e = +40m.4s.
Pulkovo epP = +18m.13s., e = +18m.38s., i = +19m.0s., PP = +21m.32s., PPP = +24m.40s., i = +26m.37s., SKSP = +30m.39s., PS = +31m.49s., SPS = +34m.3s., SS = +36m.55s., sSS = +40m.41s.
Baku pP = +18m.24s., e = +18m.44s., i = +19m.3s., SP = +19m.12s., PKP = +19m.46s., PP = +21m.42s.
Moscow pP = +18m.14s., e = +18m.39s., i = +19m.1s., PP = +21m.40s., SKKS = +26m.50s., PS = +31m.50s., SPP = +32m.13s., SSS = +43m.16s.
Grozny i = +22m.14s.
Piatigorsk i = +19m.9s. and +22m.17s.
Tiflis eZ = +18m.46s., iEZ = +18m.57s., iN = +21m.13s., iE = +22m.4s., eZ = +24m.10s., iE = +28m.27s., eZ = +30m.50s.
Erevan e = +22m.10s.
Upsala iN = +22m.0s., PP = +22m.41s.
Bergen ? = +22m.6s.
Sotchi e = +22m.19s.
Copenhagen i = +19m.4s., iPKP = +19m.15s., PP = +22m.33s., eE = +25m.31s., e = +27m.53s. and +28m.53s., eNZ = +32m.14s., eN = +32m.38s., eNZ = +33m.58s., eE = +36m.10s., eN = +36m.39s., EN = +40m.46s., +42m.16s., and +43m.10s.
Edinburgh i = +19m.22s., +19m.50s., +21m.4s., +23m.25s., and +24m.14s., i = +40m.54s., +42m.58s., and +43m.21s.
Yalta i = +36m.37s.
Durham ? = +19m.11s., i = +19m.17s., PP = +22m.43s., SKKS = +28m.58s.
Hamburg iZ = +21m.2s., iN = +29m.8s., eN = +53m.34s.?
Stonyhurst i = +22m.30s., iPP? = +23m.10s., i = +24m.55s., e = +31m.0s., iSS? = +41m.20s., i = +60m.49s.
Rathfarnham Castle i = +19m.50s. and +22m.58s., e = +29m.47s.
Ksara iPKP = +19m.13s., ipPKP = +22m.54s., isPKP = +21m.34s., iPP = +22m.54s., ipPP = +24m.23s., eSKSP = +32m.57s., eSPP = +35m.3s.
De Bilt iNZ = +19m.27s., iZ = +20m.51s. and +22m.56s.
Göttingen iEN = +19m.21s., i = +19m.24s., iEN = +41m.45s.
Oxford ePKPN = +19m.24s.
Jena iPEN = +19m.23s., iP = +19m.30s., eN = +20m.52s., eZ = +21m.14s., i = +22m.58s., eN = +32m.46s. and +33m.14s., iEN = +41m.52s., eE = +43m.58s.
Kew iZ = +19m.26s., iPKP$_2$N = +19m.32s., iNZ = +19m.40s., ipPKP$_2$Z = +21m.8s., iPP = +23m.6s., ipPPZ = +24m.28s., iPPPZ = +26m.40s., iPSKSZ = +33m.4s., iSP = +33m.17s., iPSZ = +34m.29s., iSS = +41m.40s., iN = +42m.17s., isSS = +43m.47s., iE = +44m.28s., iN = +45m.36s., iSSS = +47m.12s.
Prague eN = +19m.18s., i = +19m.27s., iZ = +19m.55s., +20m.15s., and +21m.1s., eEZ = +22m.4s., eNZ = +22m.58s., eZ = +25m.51s., eEN = +29m.22s., e = +29m.58s., eEN = +33m.16s., eN = +35m.10s., +37m.4s., and +38m.16s., eZ = +40m.22s., eE = +41m.40s. and +44m.4s., eN = +53m.34s.?, eZ = +61m.4s., eE = +63m.4s. and +66m.34s.?, eEN = +68m.34s.?, eE = +73m.4s.

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Bucharest eE = +19m.26s., iPKP = +19m.32s., iPKP$_3$ = +19m.43s., iE = +21m.34s., iPPE = +22m.17s., iSKPN = +22m.52s., iSKPE = +22m.56s., iE = +23m.8s., iN = +23m.14s., iEN = +29m.23s. and +30m.0s., iE = +31m.34s., PSKSN = +32m.10s., ipSKSE = +32m.15s., iE = +33m.27s., iEN = +35m.43s., +35m.58s., and +43m.4s.
Cheb ePPE = +22m.49s., ePPN = +23m.5s., i = +33m.27s., eSS = +35m.34s., e = +41m.31s.
Uccle i = +19m.27s., iPKP$_3$Z = +19m.44s., ipPKPN = +21m.5s., ipPKPZ = +21m.10s., ipPKP$_2$Z = +21m.18s., isPKPZ = +21m.31s., isPKP$_2$Z = +21m.57s., PP = +23m.6s., PPPZ = +26m.36s., eZ = +28m.22s., iSKKPN = +29m.26s., PSKSN = +33m.2s., iN = +33m.26s., iSSEN = +41m.37s., iN = +45m.36s.
Budapest E i = +19m.25s., +19m.30s., and +20m.38s., pP = +21m.13s., PKP$_2$ = +22m.4s., i = +22m.44s., e = +22m.49s., pPKP = +23m.10s., sPKP = +23m.43s., sPKP$_2$ = +24m.8s., i = +24m.43s. and +25m.13s., PP = +25m.28s., i = +26m.34s., PPP = +29m.8s., i = +29m.25s., +30m.4s. and +30m.25s., i = +33m.0s., i = +33m.34s., SKSP = +34m.24s., PSKS = +35m.24s., SPP = +37m.54s., PSP = +38m.40s., i = +42m.0s. and +42m.40s., SS = +44m.8s., i = +45m.17s. and +47m.43s.
Budapest N i = +19m.25s., +19m.32s., and +20m.19s., pP = +21m.13s., e = +21m.28s., PKP$_2$ = +22m.4s., i = +22m.26s. and +23m.6s., pPKP = +23m.17s., pPKP$_2$ = +23m.38s., e = +23m.51s., i = +24m.43s. and +24m.58s., PP = +25m.30s., pPP = +26m.36s., i = +26m.58s., PPP = +29m.4s., i = +29m.28s. and +32m.55s., SKSP = +34m.53s., PSKS = +35m.30s., i = +36m.8s., SPP = +38m.10s., PSP = +38m.40s., i = +42m.38s., SS = +43m.51s., i = +45m.17s. and +47m.47s.
Stara Dala iN = +19m.28s., e = +19m.40s., +21m.16s., +23m.16s., +38m.10s., +49m.34s.?, and +52m.34s.?
Vienna e = +19m.39s. and +20m.52s., PP = +24m.11s., PPP = +27m.13s., PS = +33m.36s.
Kecskemet eN = +19m.43s., ePKP = +19m.54s., ePKP$_2$E = +20m.23s., ePKP$_2$N = +20m.28s., ePKP$_2$Z = +20m.37s., eN = +20m.54s., eE = +20m.56s., eZ = +21m.5s., epPKPZ = +21m.40s., epPKP$_2$N = +22m.6s., esPKP?E = +22m.17s., esPKP$_2$N = +22m.44s., ePPN = +23m.54s., epPP = +25m.33s., eSPP?E = +26m.10s., ePPPN = +27m.37s.
Jersey (St. Louis) PKP$_2$? = +19m.34s., i = +19m.40s., +19m.47s., +19m.58s., and +20m.4s., iSS? = +42m.5s., +42m.12s., +43m.10s., and +44m.52s.
Stuttgart iZ = ePKPEN = +19m.28s.k, i = +19m.53s., ipPKPZ = +21m.2s., iZ = +21m.20s., iPP = +23m.16s., ePPP = +26m.43s., e = +29m.22s., eN = +33m.34s., ePS = +35m.45s., e = +37m.34s.
Belgrade P$_c$PZ = +19m.25s., iZ = +19m.33s., PPNE = +23m.20s., PPPNW = +25m.2s., i = +30m.9s.
Paris PP = +23m.16s., PS = +33m.4s.
Strasbourg iPKP$_3$ = +19m.42s., iPP = +23m.16s., eSPPZ = +25m.16s., iPPP = +26m.46s., e = +28m.58s., e = +30m.57s., eSKSP = +31m.52s., ePSKS = +32m.56s., ipSP = +35m.53s., iSS = +42m.12s., isSS = +44m.38s., iSSS = +46m.8s.
Helwan pPKP = +19m.44s., PP = +24m.18s.
Zagreb e = +19m.10s., iNW = +19m.15s., iNE = +19m.20s., iNW = +19m.23s., and +19m.27s., iNEZ = +19m.31s., i = +19m.38s., iZ = +19m.45s., i = +19m.55s. and +20m.7s., iNW = +20m.26s., i = +20m.36s., iZ = +20m.52s., iNE = +21m.12s., iZ = +21m.18s., iNE = +21m.29s., i = +21m.43s., iNE = +22m.21s., iZ = +23m.10s., i = +23m.35s., iZ = +26m.34s., eNE = +27m.46s., eZ = +30m.58s., e = +33m.27s., eZ = +36m.28s. and +39m.34s., e = +42m.16s., eNE = +45m.28s., e = +50m.34s., eNW = +62m.40s.
Basle e = +19m.48s., e = +27m.45s.
Zurich e = +23m.21s.
Chur e = +23m.2s.
Neuchatel e = +19m.30s.
Triest i = +19m.29s., ePKP$_3$? = +19m.37s., iPKP$_3$ = +19m.51s., i = +19m.55s., iPP = +23m.1s., iPSKS = +33m.40s., i = +35m.24s., +38m.28s., +42m.11s., +44m.59s., and +50m.47s.
Barcelona PP = +24m.5s.
Toledo ePKP$_3$ = +20m.12s., iPP = +24m.13s., iSKS = +26m.35s., iPPP = +28m.1s., PSKS = +34m.31s., iSS = +43m.50s., SSS = +49m.29s., i? = +58m.24s.
Dakar ePKP$_3$ = +20m.19s., ePP = +23m.45s., eSKKS = +29m.26s., ePSKS = +33m.51s., ePSP = +37m.13s., eSS = +43m.1s., eSSS = +57m.54s.
San Fernando iE = +19m.41s., iN = +19m.46s., S = +31m.55s., iSSSE = +44m.9s., iSSSN = +44m.20s.
Granada PP = +24m.15s.
Algiers iPKP$_3$ = +20m.29s., i = +21m.32s., iPP = +24m.21s., iPPP = +26m.25s., eSKSP = +30m.28s., PSKS = +32m.45s., sSP = +37m.1s., SS = +45m.10s., SSS = +50m.51s.
Long waves were also recorded at Colombo.

April 16d. Readings also at 0h. (Tiflis), 3h. (Batavia (2), Medan, and Tiflis), 4h. (Balboa Heights, Andijan, and Medan), 6h. (Batavia), 8h. (Samarkand and Andijan), 11h. (Huancayo), 16h. (near Santiago), 18h. (Riverside and near La Paz), 19h. (near Kobe, Nagoya, and Sumoto), 21h. (Sverdlovsk, Tashkent, Tiflis, Irkutsk, Agra, Calcutta, Medan, Hong Kong, and Manila), 23h. (Tucson).

April 17d. Readings at 2h. (Tiflis), 3h. (Kobe), 6h. (Jersey and near Berkeley), 8h. (Medan and near Mizusawa), 10h. (Sverdlovsk and Wellington (2)), 11h. (near Santiago and San Javier), 12h. (Sverdlovsk, Vladivostok, Paris, Mount Wilson, and Pasadena), 13h. (Baku, Irkutsk, Sverdlovsk, and Tiflis), 14h. (Tiflis), 21h. (Tiflis), 23h. (Wellington and near Berkeley).

April 18d. Readings at 4h. (Sverdlovsk, Wellington, and near Triest), 6h. (Batavia), 10h. (Oak Ridge, Ksara, Tiflis (2), Baku, Tashkent, Medan, and near Batavia), 12h. (Sumoto), 13h. (Wellington (2), Andijan, and Samarkand), 15h. (near Almeria), 18h. (Apia and near La Paz), 19h. (Mount Wilson, Pasadena, and Riverside), 20h. (near Medan), 23h. (Wellington).

April 19d. Readings at 1h. (Florissant, St. Louis, and Little Rock), 3h. (Tiflis, Kobe, Nagoya, and near Sumoto), 4h. (near Batavia), 5h. (Paris), 7h. (near Batavia), 8h. (near Tiflis), 9h. (Medan and Wellington), 10h. (Tucson), 11h. (Ksara), 12h. (Oak Ridge, Manila, Irkutsk, Tashkent, and Sverdlovsk), 14h. (Wellington), 17h. (near Santiago), 21h. (near Semipalatinsk), 23h. (near Wellington).

April 20d. Readings at 2h. (Christchurch), 3h. (near Malaga), 4h. (Ksara), 6h. (near Manila), 8h. (near Wellington), 9h. (Tiflis), 11h. (Wellington), 14h. (Yalta), 15h. (Tucson and near Taihoku), 16h. (Alicante), 17h. (Oaxaca and Tacubaya), 18h. (Tiflis, near Manila, and near Triest), 19h. (La Paz), 20h. (Weston), 21h. (Tucson), 22h. (near Christchurch, Hastings, New Plymouth Tuai, and Wellington), 23h. (Scoresby Sund, La Paz, near Santiago, and near Triest).

April 21d. 21h. 52m. 38s. Epicentre 75°·1N. 10°·3E.

$A = +\cdot2540$, $B = +\cdot0462$, $C = +\cdot9661$; $\delta = 0$; $h = -13$;
$D = +\cdot179$, $E = -\cdot984$; $G = +\cdot950$, $H = +\cdot173$, $K = -\cdot258$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Scoresby Sund	10·5	259	2 30	− 5	—	—	3·4	—
Pulkovo	17·0	144	3 56	− 5	e 7 12	+ 2	8·4	10·0
Copenhagen	19·5	177	4 30	− 1	8 12	+ 6	10·4	—
Moscow	22·1	135	5 0	+ 1	9 3	+ 5	11·9	13·6
Ivigtut	24·4	267	5 24	+ 3	—	—	12·4	—
Sverdlovsk	26·2	106	5 42	+ 4	10 24	+15	12·4	—
Tiflis	36·9	135	7 22	+10	e 13 5	+ 7	e 18·9	—
Baku	39·1	129	9 22	PP	13 46	+15	20·4	22·8
Irkutsk	41·3	68	e 9 38	PP	—	—	24·4	—
Tashkent	42·6	107	e 8 3	+ 4	e 14 28	+ 5	e 22·3	27·4
Ksara	43·2	148	e 9 45?	PP	e 17 15?	SS	—	—
Chiufeng	55·6	64	—	—	i 17 3	−22	—	—

Additional readings:—
Copenhagen +8m.20s.
Tiflis eSSE = +15m.36s.
Irkutsk e = +19m.22s.?
Ksara ePS = +17m.45s., eSS = +20m.57s.
Chiufeng e = +15m.45s., iEN = +15m.59s.

April 21d. Readings also at 0h. (Oaxaca, Tiflis, Ksara, Sverdlovsk, Irkutsk, Chiufeng, near Mizusawa, and near Berkeley), 1h. (Baku and Tashkent), 2h. (Oak Ridge), 5h. (Apia, Christchurch, Wellington, Mount Wilson, Pasadena, Tinemaha, Tucson, and Ksara), 6h. (Oak Ridge, Baku, Sverdlovsk, and Tiflis), 7h. (San Francisco, near Berkeley, Branner, and Lick), 13h. (Tiflis), 14h. (Oak Ridge and near Andijan), 15h. (Tiflis and near La Paz), 17h. (Andijan), 18h. (Mount Wilson, Pasadena, Riverside, Tucson, Almata, Tashkent, Perth, and near Andijan), 19h. (Sverdlovsk, Hong Kong, Medan, and near Batavia), 22h. (Tiflis and Malabar).

April 22d. 9h. 46m. 53s. Epicentre 40°·9N. 125°·5W.

$A = -\cdot4402$, $B = -\cdot6171$, $C = +\cdot6522$; $\delta = -5$; $h = -2$;
$D = -\cdot814$, $E = +\cdot581$; $G = -\cdot379$, $H = -\cdot531$, $K = -\cdot758$.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Ferndale		1·0	110	i 0 23	+ 2	e 0 41	+ 5
Berkeley		3·9	140	e 1 1	− 1	e 1 46	− 4
San Francisco	N.	4·0	141	e 1 1	− 3	e 1 46	− 6
Branner		4·3	142	e 1 7	− 1	e 1 56	− 4
Lick		4·6	138	e 1 13	+ 1	e 2 6	− 1
Fresno	N.	6·1	131	e 1 34	0	e 2 51	+ 6
Tinemaha		6·8	122	i 1 49	+ 5	—	—
Mount Wilson	Z.	8·9	136	i 2 12	0	e 3 50	− 5
Pasadena	Z.	8·9	137	i 2 12	0	i 3 51	− 4

Additional readings :—
San Francisco iN = +1m.4s., eN = +1m.17s., iSN = +1m.48s.
Long waves were recorded at Ukiah.

April 22d. Readings also at 0h. (near Nagoya), 2h. (Ksara), 3h. (Mount Wilson and Pasadena), 6h. (near Tiflis (2)), 7h. (near Wellington), 9h. and 10h. (Wellington), 12h. (Mizusawa), 14h. (Tiflis), 16h. (Copenhagen, Christchurch (2), and Wellington), 17h. (Christchurch), 18h. (near Manila (2)), 21h. (near New Plymouth and Wellington), 22h. (Guadalajara, Oaxaca, Tacubaya, Florissant, St. Louis, Little Rock, Tucson, Riverside, and near Branner).

April 23d. Readings at 3h. (near Andijan), 6h. (Hong Kong and near Batavia), 8h. (Ksara and Tiflis), 12h. (Mount Wilson, Pasadena, Riverside. College, Pulkovo, Tashkent, Moscow, Sverdlovsk (2), Tiflis, Irkutsk, and Manila), 13h. (Baku, Copenhagen, Scoresby Sund, and Manila), 14h. (Christchurch and Wellington), 15h. (Tacubaya and Tiflis), 16h. (Bucharest, Tiflis, and Christchurch (2)), 17h. (Christchurch, Frunse, and Samarkand (2)), 18h. (Sumoto, near Chur, and Zurich), 19h. (Andijan).

April 24d. 4h. 58m. 28s. Epicentre 10°·0S. 176°·0W.

$A = -\cdot9826$, $B = -\cdot0687$, $C = -\cdot1725$; $\delta = -2$; $h = +7$;
$D = -\cdot070$, $E = +\cdot998$; $G = +\cdot172$, $H = +\cdot012$, $K = -\cdot985$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Apia		5·6	133	i 1 27	0	2 38	+ 5	—	—
Riverview		38·3	226	e 7 25	+ 1	—	—	—	15·6
Sydney		38·3	226	e 7 22	− 2	—	—	15·5	16·5
Adelaide		48·2	231	14 56	?	e 16 9	+26	—	23·1
Pasadena		70·2	49	i 11 21	+ 4	—	—	—	—
Mount Wilson	Z.	70·3	49	i 11 21	+ 4	—	—	—	—
Riverside		70·7	49	i 11 22	+ 2	—	—	—	—
Tinemaha	Z.	71·5	46	i 12 0	+36	—	—	—	—
Tucson		75·0	53	e 11 44	− 1	—	—	—	—
Batavia	Z.	76·3	206	i 11 18	−34	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chiufeng		80·0	314	i 12 13k	0	22 20	+ 3	—	—
Irkutsk		91·6	323	—	—	e 23 32?	[−10]	—	—
Tashkent		115·1	311	i 22 32	PPP	—	—	—	59·1
Sverdlovsk		116·2	330	e 19 24	[+39]	—	—	36·5	—
Pulkovo		126·5	344	18 44	[−21]	23 36	PPP	28·5	—
Moscow		127·3	337	e 18 47	[−20]	—	—	e 28·0	—
Baku		129·4	316	e 21 22	PP	—	—	e 60·5	—
Tiflis		132·3	319	i 22 20	PP	—	—	—	—
Theodosia		135·9	328	e 19 3	[−20]	—	—	—	—
Hamburg	z.	136·3	356	i 19 8k	[−15]	—	—	—	—
Simferopol		136·6	330	e 19 5	[−19]	—	—	—	—
Yalta		136·9	329	i 19 6	[−19]	—	—	—	—
Sebastopol		137·1	330	i 19 7	[−18]	—	—	—	—
De Bilt		138·0	0	e 19 16	[−11]	—	—	e 83·5	—
Vienna		140·5	347	e 19 19	[−12]	—	—	—	—
Stuttgart	z.	141·1	355	e 19 21	[−11]	—	—	—	—
Ksara		142·4	313	e 19 11k	[−24]	—	—	—	—

Additional readings :—
Riverview eN = +7m.39s.
Pasadena iZ = +12m.11s.
Riverside iZ = +12m.10s.
Tinemaha iZ = +12m.13s.
Tucson e = +12m.32s.
Tashkent iZ = +36m.11s., e = +37m.39s.
Sverdlovsk i = +21m.11s. and +22m.41s.
Baku e = +23m.11s., +32m.25s., and +41m.47s.
Tiflis ePSZ = +24m.4s., ePPSE = +32m.52s., eE = +35m.16s.
Simferopol e = +22m.30s.
Ksara ipPKP = +20m.8s., esPKP = +20m.32s., ePP = +22m.48s., epPP = +23m.42s., PPS = +35m.44s.
Moscow e = +19m.48s., +21m.27s., and +22m.22s.
Long waves were also recorded at Copenhagen and Scoresby Sund.

April 24d. Readings also at 1h. (Wellington), 3h. (Erevan and Tiflis), 4h. (Samarkand), 6h. (Andijan and Samarkand), 7h. (Sverdlovsk, Sitka, and College), 8h. (Baku, Tashkent, Irkutsk, Tiflis, Little Rock, Philadelphia, Bucharest, East Machias, and near La Paz), 9h. (Triest and Tiflis), 11h. (Tiflis), 13h. (Andijan and Samarkand), 21h. (Sumoto (2), near Kobe, and Nagoya), 22h. (near Lick).

April 25d. 3h. 58m. 19s. Epicentre 37°·2N. 69°·3E.

Given by stations of Central Asia and U.S.S.R.

A = +·2822, B = +·7469, C = +·6020 ; δ = −10 ; h = −1 ;
D = +·935, E = −·353 ; G = +·213, H = +·563, K = −·798.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Samarkand	3·1	324	0 59	P*	1 36	S*	2·0
Tashkent	4·1	2	i 1 8	+ 3	i 2 8	S*	3·0
Andijan	4·3	33	1 8	0	1 56	− 4	2·1
Tchimkent	5·1	2	1 23	+ 3	2 27	+ 7	2·5
Almata	8·4	42	e 1 53	−13	e 3 30	−13	—
Grozny	19·0	296	3 41	−45	—	—	—
Tiflis	19·4	291	e 4 45	+15	e 8 9	+ 5	—
Sverdlovsk	20·5	346	4 25	−17	8 9	−18	—

Additional readings :—
Samarkand S_g = +1m.47s.
Andijan P_g = +1m.24s., S* = +2m.2s.
Tiflis eE = +8m.46s.
Frunse (Δ = 7°·0) P = 4h.4m.55s.

April 25d. 4h. 27m. 43s. Epicentre 38°·8N. 117°·0W.

Felt Force V at Potts (Nevada), Force IV at Carson City, Mina, Steamboat (Nevada). Epicentre 39°·0N. 117°·0W. (Pasadena). Macroseismic epicentre 39°·0′N. 118°·0′W. See United States Earthquakes, 1937. Serial No. 619, U.S.C.G.S. Washington, 1940, p. 18. Macroseismic chart, p. 13.

$A = -\cdot3547$, $B = -\cdot6962$, $C = +\cdot6240$; $\delta = -12$; $h = -1$;
$D = -\cdot891$, $E = +\cdot454$; $G = -\cdot283$, $H = -\cdot556$, $K = -\cdot781$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Tinemaha		2·0	210	i 0 36	+ 1	i 1 1	− 1	—
Fresno	N.	3·0	227	e 0 47	− 3	i 1 28	+ 1	—
Lick		3·9	249	e 1 1	− 1	i 1 48	− 2	—
Branner		4·3	252	e 1 11	+ 3	e 1 57	− 3	—
Berkeley		4·3	258	i 1 3	− 5	e 1 51	− 9	—
San Francisco		4·4	258	e 1 13	+ 3	e 1 57	− 5	—
Mount Wilson	Z.	4·6	191	e 1 22	+10	i 2 32	S_g	—
Riverside		4·7	184	e 1 35	P_g	e 2 37	S_g	—
Pasadena		4·7	192	e 1 22	P^*	i 2 34	S_g	—
Tucson		8·2	141	e 2 23	+20	—	—	i 4·7

Additional readings :—
Fresno eN = +51s., iPN = +53s., i = +1m.39s. and +1m.47s.
Lick eE = +1m.4s., eN = +1m.43s.
Branner iN = +1m.44s., iSEN = +2m.0s.
Berkeley eEN = iZ = +1m.8s., eE = +1m.10s., eN = +1m.39s., SN = +1m.53s.
San Francisco iN = +2m.0s.
Pasadena iPEZ = +1m.32s.
Tucson e = +2m.46s. and +4m.0s.
Long waves were also recorded at Ukiah.

April 25d. 10h. Pasadena attributes this shock to Mexico. Stations recording reliable P readings lie mostly in one Azimuth and the remainder are inconsistent :—

Florissant eN = 32m.16s. and 37m.24s., eE = 43m.0s., iE = 43m.18s., iN = 43m.26s., M = 53m.7s.
Tucson i = 32m.57s., e = 33m.10s., iL = 33m.13s.
Riverside ePZ = 33m.29s., iPZ = 33m.52s., iSNZ = 35m.19s.
La Jolla iP = 33m.35s., iSE = 34m.46s.
Mount Wilson ePZ = 33m.41s., eSEN = 35m.33s.
Pasadena ePZ = 33m.42s., iPZ = 34m.5s., eL = 35m.5s., iSZ = 35m.25s.
Fresno eN = 34m.18s. and 37m.7s.
Tinemaha ePEN = 35m.26s., eSEN = 37m.6s.
St. Louis eE = 36m.50s., 36m.56s., 43m.9s., and 43m.15s., iE = 45m.33s.
Little Rock ePN = 36m.52s., eSN = 41m.54s., iN = 43m.45s.
Berkeley eN = 37m.31s., eE = 38m.21s., eZ = 39m.26s.
Bozeman e = 38m.30s. and 40m.48s.
Chicago e = 44m.46s., L = 45m.13s.
Philadelphia i = 49m.19s., iL = 50m.15s.
Erevan eP = 52m.25s., e = 53m.14s.
East Machias e = 52m.30s., L = 53m.15s.
Tiflis e = 52m.51s., eE = 53m.51s.
Ksara e = 55m.34s. and 56m.30s., M = 57m.50s.
Long waves were also recorded at Ukiah, Scoresby Sund, and Paris.

April 25d. Readings also at 0h. (Yalta), 1h. (Branner), 2h. (Tiflis), 4h. (Pasadena, Tinemaha, Christchurch, and near Wellington), 6h. (Sverdlovsk, Tashkent, Almata, and Andijan), 7h. (Fresno and Manila), 10h. (Erevan (2), Tiflis, Andijan, Almata, Frunse, Tchimkent, Samarkand, near Christchurch, Hastings, and Wellington), 12h. (Tiflis, Tashkent, Sverdlovsk, and Andijan), 15h. (La Paz, La Plata, Almata, Samarkand, and near Andijan), 16h. (Tucson), 17h. (Sverdlovsk and Irkutsk), 20h. (Erevan, Tiflis (2), Ksara (2), and Tucson), 21h. (Little Rock, San Juan, Tucson, and Pasadena), 22h. (Merida, Philadelphia, Scoresby Sund, and Paris), 23h. (Wellington).

April 26d. 12h. 12m. 29s. Epicentre 35°·6N. 139°·0E.
(given by Imp. University of Tokyo).

$A = -\cdot6151$, $B = +\cdot5347$, $C = +\cdot5795$; $\delta = +7$; $h = 0$.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Koyama	0·3	183	0 44	?	0 49	?
Mitaka	0·4	82	0 13	0	0 20	− 1
Titibu	0·4	10	0 44	?	0 51	?
Kamakura	0·5	122	0 12	− 2	0 21	− 2
Komaba	0·6	85	0 17	+ 2	0 26	0
Tokyo Imp. Univ.	0·6	79	0 18	+ 3	0 27	+ 1
Kiyosumi	1·0	115	0 44	?	0 59	?
Tukubasan	1·1	55	0 24	+ 2	0 37	− 2
Nagoya	1·7	255	e 0 28	− 3	0 53	− 1

April 26d. Readings also at 1h. (near Zagreb), 3h. (Christchurch and Tucson), 4h. (Perth and near La Paz), 7h. (Tashkent, Irkutsk, Chiufeng, Keizyo, Zi-ka-wei, Hong Kong, Manila, Phu-Lien, near Taihoku, and near Tananarive), 9h. (near Mizusawa and Nagoya), 10h. (Copenhagen and Manila), 12h. and 17h. (Wellington).

April 27d. 15h. 39m. 1s. Epicentre 39°·5N. 71°·9E.

Given by U.S.S.R. Stations in Central Asia.

$A = +\cdot2404$, $B = +\cdot7354$, $C = +\cdot6335$; $\delta = -7$; $h = -1$;
$D = +\cdot951$, $E = -\cdot311$; $G = +\cdot197$, $H = +\cdot602$, $K = -\cdot774$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	1·3	16	e 0 25	0	0 41	− 3	—	0·8
Tashkent	2·7	313	i 0 45	0	i 1 15	− 4	—	1·5
Samarkand	3·8	275	e 0 56	− 5	e 1 46	− 1	—	2·1
Frunse	4·0	30	e 1 5	+ 1	1 51	− 1	—	—
Almata	5·3	43	e 1 38	P*	2 50	S*	—	3·5
Sverdlovsk	18·8	340	e 4 38	+15	e 8 1	+11	11·6	11·8

Additional readings :—
Andijan e = +28s., i = +33s.
Samarkand $P^* = +1$m.2s., $eP_g = +1$m.9s., eS = +1m.41s.
Frunse $P_g = +1$m.15s., i = +2m.3s.
Long waves were also recorded at Semipalatinsk.

April 27d. Readings also at 2h. (Oak Ridge and Tiflis (3)), 5h. (Andijan), 7h. (Sverdlovsk, Tashkent, Calcutta, Hong Kong, and Phu-Lien), 12h. (Sverdlovsk, Hong Kong, Mizusawa, and near Kobe), 13h. (Baku, Tiflis, Stuttgart, near Chur, and Zurich), 16h. (near Reykjavik), 21h. (Nagoya), 23h. (Malabar and near Oak Ridge).

April 28d. 2h. 36m. 40s. Epicentre 35°·7N. 30°·8E.

$A = +\cdot6992$, $B = +\cdot4168$, $C = +\cdot5810$; $\delta = +16$; $h = 0$;
$D = +\cdot512$, $E = -\cdot859$; $G = +\cdot499$, $H = +\cdot297$, $K = -\cdot814$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	4·5	111	i 1 15	+ 4	i 2 7	+ 2	—	—
Helwan	5·8	175	1 36	+ 7	2 38	0	—	—
Sebastopol	9·1	12	e 2 13	− 1	e 3 46	−14	5·7	—
Yalta	9·1	15	i 2 16	+ 2	e 3 58	− 2	—	—
Bucharest	9·4	339	e 2 21	+ 3	5 14	L	(5·2)	6·7
Simferopol	9·5	13	i 2 20	0	e 4 3	− 7	—	—
Theodosia	9·9	18	i 2 25	0	e 4 8	−12	—	—
Belgrade	12·0	323	e 3 10a	+15	e 5 36	+25	—	7·6
Tiflis	12·4	57	e 3 0	− 1	e 5 24	+ 3	e 5·7	—
Piatigorsk	12·5	45	i 3 1	− 1	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Grozny		13·8	52	e 3 22	+ 3	e 6 49	L	(6·8)	—
Budapest	E.	14·6	327	3 38	+ 8	i 8 5	?	e 10·0	—
	N.	14·6	327	e 3 44	+14	i 8 7	?	e 10·2	—
Zagreb		15·0	317	e 3 39	+ 4	e 6 24	+ 1	—	—
Stara Dala		15·3	326	—	—	e 6 5	−25	—	8·8
Baku		15·7	67	e 3 53	+ 9	e 6 52	+13	e 9·1	10·7
Graz		16·1	320	i 3 56	+ 7	i 7 17	SSS	e 7·3	9·2
Triest		16·3	313	i 4 23	PPP	i 6 57	+ 4	—	9·0
Vienna		16·5	324	e 3 52	− 2	e 6 26	−32	—	—
Prague		18·6	326	e 3 22	−59	e 7 45	− 1	e 9·8	—
Chur		19·4	312	e 4 28	− 2	e 8 17	+13	—	—
Cheb		19·6	323	e 4 27	− 5	e 8 11	+ 3	—	11·8
Zurich		20·2	312	e 4 36	− 3	e 8 10	−11	—	—
Stuttgart		20·5	318	i 4 40a	− 2	e 8 22	− 5	e 11·2	12·1
Jena	E.	20·6	326	e 4 50	+ 7	e 8 26	− 3	—	—
	N.	20·6	326	e 4 41	− 2	e 8 23	− 6	—	—
Moscow		20·6	12	4 38	− 5	8 17	−12	10·8	15·1
Basle		20·9	312	e 4 44	− 2	—	—	—	—
Neuchatel		21·1	311	e 4 46	− 2	—	—	—	—
Strasbourg		21·3	316	e 4 48	− 2	e 8 41	− 2	e 10·4	—
Hamburg		23·0	328	e 5 4	− 3	i 9 12	− 2	13·3	—
Copenhagen		23·6	335	5 9	− 4	9 17	− 8	12·3	—
Pulkovo		24·1	0	i 5 12	− 6	e 9 21	−13	13·8	17·2
Uccle		24·3	317	e 5 19	− 1	9 33	− 4	e 12·3	—
De Bilt		24·5	322	i 5 20	− 2	—	—	e 12·3	14·0
Upsala		25·6	345	e 5 47	+15	e 10 0	+ 1	e 14·3	—
Jersey		27·5	311	e 3 35	?	e 9 31	−59	—	—
Sverdlovsk		29·1	35	5 58	− 6	e 10 42	−14	14·3	—
Tashkent		30·4	68	e 5 57	−19	11 3	−13	e 15·2	21·9
Andijan		32·8	70	e 6 35	− 2	e 11 48	− 6	—	—
Frunse		34·3	65	e 6 47	− 3	e 12 10	− 7	—	—
Almata		36·0	63	e 6 57	− 8	—	—	—	—
Williamstown		75·7	312	i 11 47	− 2	—	—	—	—

Additional readings :—
Yalta e = +4m.32s. and +7m.12s.
Bucharest eN = +3m.10s., eE = +3m.12s., eEN = +3m.22s., iSSE = +5m.40s., SSN = +5m.48s., iE = +6m.17s.
Belgrade eNW = +6m.21s.
Tiflis eE = +3m.55s.
Budapest iN = +4m.50s., iE = +5m.1s., iE = +8m.23s. and +9m.11s.
Zagreb eNE = +3m.47s. and +4m.22s., e = +8m.30s. and +8m.58s.
Triest iSS = +7m.20s.
Vienna e = +3m.58s., SS = +6m.53s., P_cP = +8m.56s.
Stuttgart e = +4m.46s., iS = +8m.31s., eSS = +8m.50s., eN = +9m.36s.
Strasbourg iPPE = +5m.9s., ePPPZ = +5m.15s., iNZ = +9m.20s., eSSE = +9m.22s.
Copenhagen +5m.28s. and +9m.25s.
Pulkovo L_q = +12·6m.
Uccle i = +9m.41s.
Jersey e = +12m.39s. and +15m.32s.
Williamstown i = +13m.36s.
Long waves were also recorded at Paris, Scoresby Sund, Kew, and Oxford.

April 28d. Readings also at 2h. (Tiflis (2), Simferopol, and Yalta), 3h. (Granada and near Santiago), 5h. (Graz and near Kecskemet), 7h. (Huancayo, La Paz, and Tucson), 13h. (Berkeley, near Branner, Lick, and San Francisco), 14h. (Christchurch, Wellington, Melbourne, Riverview, Sydney, Perth, Hong Kong, Manila, Chiufeng, Vladivostok, Kobe, Irkutsk, Baku, Tiflis (3), Moscow, Tashkent, Sverdlovsk, Pulkovo, Ksara, Copenhagen, Strasbourg, and Pasadena), 15h. (Paris), 16h. (near Manila and near Tiflis), 18h. (near Wellington and near Santiago), 20h. (Scoresby Sund (3), near Chur, and near Taihoku), 21h. (near Chur), 22h. (Fresno).

April 29d. 18h. 11m. 36s. Epicentre 56°·8N. 33°·7W.

Suggested Epicentres: St. Louis (U.S.A.), 53°·4N. 34°·0W.; Strasbourg 56°·5N. 33°·0W.; Stuttgart, 62°·0N. 32°·5W.; U.S.S.R., 57°·5N. 37°·5W.; Zurich, 54°·0N. 33°·0W.

$A = +·4577$, $B = -·3053$, $C = +·8351$; $\delta = +9$; $h = -8$;
$D = -·555$, $E = -·832$; $G = +·695$, $H = -·463$, $K = -·550$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ivigtut		8·7	307	2 6	− 4	i 3 50	0	4·4	—
Reykjavik		9·4	33	2 20	+ 2	e 4 35	S*	—	—
Scoresby Sund		14·6	16	3 29	− 1	6 32	+19	i 8·2	—
Rathfarnham Castle		16·1	91	i 4 45	+56	8 37	L	(8·6)	12·4
Edinburgh		16·9	80	3 54	− 5	i 8 4	+57	8·4	11·2
Aberdeen		17·1	76	3 10	−52	6 40	−32	8·0	9·2
Bidston		17·8	88	i 4 16	+ 5	i 7 46	+18	9·4	—
Stonyhurst		17·9	86	i 4 13	+ 1	7 46	+16	8·6	13·7
Durham		18·1	83	e 4 14	0	e 7 47	+12	—	10·4
Oxford		19·5	92	i 4 29	− 2	8 20	+14	e 9·4	11·0
Kew		20·1	92	i 4 37	− 1	i 8 32	+13	9·4	11·1
Bergen		20·4	63	4 40	− 1	e 8 28	+ 3	—	—
Jersey		20·4	98	i 4 41	0	8 39	+14	9·7	12·4
De Bilt		22·9	84	5 5a	− 1	9 20	+ 7	e 10·9	12·2
Uccle		23·0	90	5 7	0	i 9 22	+ 8	e 10·9	13·0
Paris		23·1	95	i 5 7	− 1	i 9 19	+ 3	11·4	13·4
East Machias		24·2	255	e 5 35	+16	9 47	+12	e 11·8	—
Seven Falls		24·6	264	i 5 21	− 2	i 9 54	+12	e 12·4	—
Hamburg		24·8	79	i 5 26a	+ 1	e 9 53	+ 7	e 12·4	15·4
Copenhagen		25·3	73	5 30a	0	9 57	+ 3	12·4	—
Göttingen		25·7	83	i 5 33	0	e 9 24?	−37	—	15·4
Toledo		25·7	119	i 5 35	+ 2	i 10 9	+ 8	e 12·8	14·4
Strasbourg		26·1	90	i 5 39a	+ 2	e 10 20	+13	e 12·6	16·8
Basle		26·6	92	e 5 41	− 1	—	—	—	—
Neuchatel		26·6	93	e 5 40	− 2	—	—	—	—
Upsala		26·6	62	5 40	− 2	10 16	0	e 13·4	—
Stuttgart		26·8	88	e 5 44a	0	e 10 22	+ 3	e 13·2	15·7
Jena		26·9	84	e 5 44	− 1	e 10 24	+ 4	e 13·4	16·9
Tortosa	N.	27·2	111	5 50	+ 3	e 10 43	+18	e 13·4	18·7
Zurich		27·2	93	5 47k	0	e 10 32	+ 7	—	—
San Fernando		27·4	127	5 56	+ 7	e 10 53	+25	12·9	—
Vermont		27·5	261	e 5 50	0	e 10 38	+ 8	e 13·2	—
Barcelona		27·6	108	e 5 52	+ 1	e 10 41	+ 9	e 13·9	17·9
Cheb		27·8	83	e 5 54	+ 1	e 10 42	+ 7	e 14·4	16·9
Oak Ridge		27·9	257	i 5 55	+ 1	e 10 49	+12	e 14·4	—
Weston		27·9	257	e 5 51	− 3	i 10 41	+ 4	14·0	—
Granada		28·0	121	e 6 4	+ 9	e 11 7	+29	—	—
Malaga		28·0	123	e 6 3	+ 8	e 11 10	+32	13·6	—
Chur		28·1	93	e 5 55	0	—	—	—	—
Ottawa		28·3	266	e 5 58	+ 1	10 49	+ 6	13·4	—
Williamstown		28·7	258	e 6 1	0	e 11 6	+16	14·2	17·8
Almeria		28·8	120	e 6 6	+ 4	e 10 14	−37	e 13·9	—
Prague		28·9	92	e 6 2	− 1	e 10 24	−29	e 14·4	17·4
Padova		30·2	92	e 7 14	+60	11 19	+ 6	e 17·4	—
Vienna		31·0	84	e 6 21	0	e 11 39	+13	e 20·9	—
Triest		31·1	91	i 6 22	0	i 11 29	+ 1	16·1	17·5
Graz		31·2	88	i 6 19	− 4	e 11 29	0	—	17·9
Toronto		31·4	266	e 6 24?	− 1	e 11 24	− 8	e 15·4	—
Algiers		31·6	114	e 6 9?	−17	e 11 11	−24	e 15·4	—
Philadelphia		31·7	256	i 6 30	+ 3	11 42	+ 5	e 15·4	—
Stara Dala		32·2	84	e 6 24	− 8	e 11 48	+ 3	—	15·4
Zagreb		32·2	89	e 6 32	0	e 16 51	L	(e 16·8)	—
Pulkovo		32·6	58	i 6 33	− 2	e 11 39	−12	16·4	18·3
Budapest		32·9	84	e 6 39	+ 1	i 12 7	+11	e 18·9	23·4
Belgrade	z.	35·3	87	6 50k	− 9	e 8 18	PP	e 21·0	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Moscow		37·9	61	7 20	0	e 13 23	+10	18·9	22·7
Bucharest		38·7	82	e 7 32	+ 5	—	—	23·4	—
Columbia		39·2	256	e 8 30	PP	e 12 36	−56	e 16·2	—
St. Louis		40·8	269	e 7 44	− 1	i 14 0	+ 4	e 20·8	23·2
Florissant		40·8	269	e 7 46	+ 1	i 14 0	+ 4	—	23·2
Sebastopol		42·6	77	e 8 0	+ 1	e 14 26	+ 3	e 23·4	—
Simferopol		42·7	77	8 1	+ 1	e 13 52	−32	e 24·4	—
Yalta		43·0	77	i 8 3	0	—	—	23·4	—
Theodosia		43·3	75	8 8	+ 3	e 15 6	+33	e 23·4	—
Little Rock		44·8	267	e 8 16	− 1	e 14 59	+ 4	e 21·6	—
San Juan		45·3	226	e 7 57	−24	e 15 9	+ 7	e 20·9	—
Bozeman		47·1	292	e 8 34	− 1	e 15 10	−18	e 23·7	—
Sverdlovsk		47·6	48	i 8 34	− 5	i 15 30	− 5	21·4	26·8
Butte		47·7	293	e 8 38	− 2	e 15 38	+ 2	e 24·7	—
Piatigorsk		48·0	71	8 44	+ 1	e 15 45	+ 4	e 26·4	—
College		48·8	330	—	—	e 15 46	− 6	e 24·0	—
Grozny		49·9	70	e 8 52	− 5	—	—	—	—
Tiflis		50·5	73	9 3	+ 1	16 24	+ 8	25·4	32·9
Victoria		51·3	302	e 11 6	PP	e 16 24?	− 2	e 24·4	—
Erevan		51·5	74	e 9 10	+ 1	—	—	—	—
Ksara		51·5	86	i 9 10a	+ 1	e 16 38	+ 9	—	—
Helwan		52·0	93	e 9 14	+ 1	e 16 39	+ 3	—	—
Baku		54·1	70	e 9 33	+ 4	e 17 14	+ 9	27·1	31·2
Tucson		56·8	280	e 9 48	0	e 17 52	+11	e 27·1	—
Riverside	Z.	59·0	286	e 10 2	− 2	—	—	—	—
Mount Wilson	Z.	59·2	286	i 10 3	− 2	—	—	—	—
Pasadena		59·3	286	i 10 5	− 1	i 18 20	+ 6	e 30·4	—
Semipalatinsk		60·1	43	e 10 10	− 1	—	—	—	—
Tashkent		62·9	56	i 10 29	− 1	i 18 59	− 1	e 29·9	39·8
Huancayo		76·8	222	e 12 8	+13	e 21 50	+ 8	—	—
La Paz		78·5	213	e 12 8	+ 4	—	—	—	—
Agra	E.	78·6	58	e 12 7	+ 2	i 22 7	+ 5	—	—
Chiufeng		80·2	24	e 12 11	− 3	i 22 21	+ 2	—	—
Calcutta	N.	87·2	52	—	—	i 23 42	[+27]	—	—

Additional readings :—
Ivigtut +3m.32s.
Reykjavik i = +4m.39s.
Scoresby Sund i = +3m.49s. and +3m.54s., e = +4m.36s., SN = +6m.37s., eN = +6m.54s., eE = +7m.25s.
Rathfarnham Castle PP = +5m.7s., PPP = +5m.15s.
Edinburgh i = +4m.0s.
Durham iP = +4m.16s., iS = +7m.54s.
Kew iZ = +4m.41s.
Jersey PP = +5m.4s., PPP = +5m.13s.
De Bilt iZ = +5m.9s.
East Machias ePP = +5m.51s., ePPP = +6m.4s., eS = +9m.50s.
Toledo PP = +6m.9s.
Strasbourg ePP = +6m.17s., eZ = +7m.0s.
Stuttgart iZ = +5m.52s., e = +6m.6s., e = +7m.42s., eP_cP = +8m.46s.
Weston ePPZ = +6m.28s.
Malaga e = +10m.14s.
Vienna PP = +6m.58s.
Triest iSS? = +13m.18s.
Algiers PP? = +6m.24s., e? = +8m.11s.
Philadelphia e = +10m.54s. and +12m.54s.
Zagreb ePPP = +11m.47s., e = +17m.37s.
Pulkovo PP = +7m.37s., i = +11m.8s., SS = +13m.42s.
Budapest eN = +7m.52s., iE = +7m.54s., iN = +8m.4s., eE = +15m.31s., eN = +15m.34s.
Belgrade eZ = +13m.3s.
Bucharest eEN = +8m.58s.
St. Louis ePP = +9m.20s., iSSE = +15m.7s.
Sebastopol e = +9m.41s.
Little Rock eEN = +8m.34s., ePPPN = +10m.28s., iN = +10m.55s.
San Juan ePP = +10m.10s.
Bozeman eS = +15m.32s.

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Florissant ePP = +9m.21s., iE = +17m.1s., eE = +22m.36s.
College eS = +15m.54s.
Tiflis ePcPZ = +10m.30s.
Ksara ePcP = +10m.20s., ePP = +11m.12s., ePS = +17m.26s.
Tucson e = +12m.56s.
Mount Wilson iPKP,PKPZ = +39m.46s.
Pasadena iPKP,PKPZ = +39m.49s.
Huancayo e = +35m.59s., +43m.55s., and +50m.8s.
Chiufeng ePPN = +15m.6s.
Long waves were also recorded at Berkeley and Besançon.

April 29d. 18h. 52m. 40s. Epicentre 54°·3N. 161°·5W.

A = −·5559, B = −·1860, C = +·8102; δ = +4; h = −7;
D = −·317, E = +·948; G = −·768, H = −·257, K = −·586.

A depth of focus 0·005 has been assumed.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		12·6	28	i 3 2	+ 4	5 18	0	6·1	—
Sitka		14·9	69	3 30	+ 2	6 21	+ 9	—	—
Victoria		24·3	88	i 5 19	+ 7	i 9 34	+10	i 12·1	—
Ferndale		28·3	103	e 5 54	+ 4	e 10 45	+15	e 13·0	—
Ukiah		29·9	104	e 5 56	− 8	e 10 57	+ 2	14·0	—
Berkeley		31·3	105	e 6 16	0	e 11 21	+ 4	—	—
San Francisco		31·3	105	e 6 18	+ 2	e 11 27	+10	—	—
Branner		31·6	106	e 6 24	+ 5	e 11 33	+11	—	—
Butte		31·9	83	e 6 24	+ 3	e 11 25	− 2	16·5	—
Lick		32·0	105	e 6 24	+ 2	e 11 39	+11	—	—
Saskatoon		32·2	71	e 6 20	− 4	e 10 20	−11	13·3	—
Bozeman		32·9	84	e 6 36	+ 6	e 11 49	+ 7	e 16·3	—
Honolulu		33·0	173	e 6 39	+ 8	11 51	+ 7	i 15·4	—
Fresno	N.	33·5	104	e 6 39	+ 4	—	—	—	—
Tinemaha		34·1	102	e 6 39	− 1	e 12 16	+15	—	—
Santa Barbara		35·2	106	e 6 49	− 1	i 12 24	+ 6	—	—
Nemuro		35·7	275	6 49	− 5	—	—	—	—
Mount Wilson		36·3	104	i 7 1	+ 2	e 12 43	+ 8	—	—
Pasadena		36·3	104	i 7 1a	+ 2	i 12 43	+ 8	e 16·6	—
Riverside		36·8	104	i 7 5	+ 2	e 12 50	+ 8	—	—
La Jolla		37·7	106	i 7 12	+ 1	i 13 7	+11	—	—
Sapporo		38·3	278	7 16	0	13 23	+18	19·6	—
Hakodate		39·5	277	7 35	+ 9	—	—	—	—
Denver	N.	40·1	88	e 7 33	+ 2	e 13 38	+ 6	—	22·3
Mizusawa		41·0	'273	e 7 37	− 1	e 17 41	SS	—	—
Sendai		41·7	272	7 41	− 3	—	—	20·1	—
Tucson		41·8	100	e 7 46	+ 1	13 50	− 7	e 19·7	—
Yamagata		42·0	272	7 50	+ 4	—	—	—	—
Hukusima		42·3	272	7 47	− 2	—	—	—	—
Niigata		43·0	273	7 49	− 6	—	—	—	—
Mito		43·2	271	7 54	− 2	14 14	− 4	20·3	—
Tyosi		43·4	269	7 46	−12	—	—	—	—
Kakioka		43·5	271	7 56	− 3	—	—	—	—
Vladivostok		43·8	283	i 8 1	0	14 26	− 1	21·7	26·9
Kumagaya		44·0	272	7 55	− 8	—	—	—	—
Maebasi		44·0	272	8 1	− 2	—	—	—	—
Takada		44·0	273	7 59	− 4	—	—	—	—
Tokyo		44·1	270	8 2	− 2	14 32	+ 1	21·1	—
Nagano		44·3	273	8 6	+ 1	14 36	+ 2	—	—
Yokohama		44·3	270	8 6a	+ 1	—	—	20·3	—
Oiwake		44·4	272	8 7	+ 1	14 37	+ 2	—	—
Mera		44·6	269	8 21	+13	—	—	—	—
Wazima		44·6	274	8 7a	− 1	—	—	20·1	—
Hunatu		44·8	270	8 9	0	—	—	—	—
Kobu		44·8	270	8 11	+ 2	—	—	—	—

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	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Matumoto	44·8	272	7 58	−11	—	—	—	—
Husiki	44·9	273	8 12	+ 2	—	—	—	—
Toyama	44·9	273	8 10	0	—	—	—	—
Ito	45·0	270	8 10	− 1	—	—	—	—
Misima	45·0	270	7 40	−31	—	—	—	—
Numadu	45·0	270	8 12	+ 1	—	—	—	—
Kanazawa	45·3	273	8 10	− 3	15 4	+16	—	—
Iida	45·4	271	8 21	+ 7	—	—	—	—
Omaesaki	45·8	270	7 53	−24	—	—	—	—
Hatidyozima	45·9	268	8 20	+ 2	15 0	+ 3	—	—
Hamamatu	46·0	270	8 12	− 7	13 57	−61	—	—
Gihu	46·1	272	8 18	− 1	15 2	+ 2	21·5	—
Nagoya	46·1	272	e 8 20	+ 1	—	—	—	—
Ibukisan	46·3	272	8 21	0	—	—	—	—
Hikone	46·4	272	8 24	+ 2	—	—	—	—
Kameyama	46·6	272	8 23a	0	—	—	—	—
Tu	46·7	272	8 24	0	—	—	—	—
Kyoto	46·9	272	8 28	+ 2	—	—	—	—
Madison	46·9	73	e 8 26	0	i 15 14	+ 3	—	28·3
Toyooka	47·1	273	8 26a	− 1	e 15 34	+20	20·5	25·4
Osaka	47·4	272	8 32	+ 2	15 34	+16	19·3	—
Osaka B	47·4	272	8 31	+ 1	—	—	—	—
Kobe	47·5	272	i 8 30a	0	e 15 23	+ 4	e 20·1	24·6
Wakayama	47·8	272	8 46a	+13	—	—	—	—
Sumoto	47·9	272	e 8 32	− 2	e 15 22	− 3	20·1	—
Sakai	48·0	274	8 34	0	—	—	—	—
Siomisaki	48·0	271	8 34a	0	—	—	—	—
Chicago	48·7	73	e 8 38	− 2	i 15 38	+ 2	e 21·7	—
Chicago (Loyola)	48·7	73	i 8 38	− 2	i 15 38	+ 2	—	—
Hamada	49·1	275	8 45	+ 2	15 47	+ 5	—	—
Florissant	49·2	78	i 8 43	− 1	e 15 46	+ 3	—	—
Koti	49·2	273	8 43a	− 1	15 45	+ 2	22·3	—
Matuyama	49·5	273	8 45a	− 1	—	—	—	—
Heizyo	49·9	284	e 8 48	− 1	—	—	—	—
Keizyo	50·2	281	e 8 51	0	e 16 0	+ 3	e 24·6	—
Taikyu	50·5	279	e 8 58	+ 4	—	—	—	—
Zinsen	50·5	282	i 8 52a	− 2	e 16 4	+ 3	e 22·6	—
Ooita	50·6	275	8 52	− 2	—	—	—	—
Husan	50·8	278	8 56	0	16 10	+ 5	—	—
Little Rock	50·8	83	e 8 54	− 2	e 16 9	+ 4	e 23·7	28·5
Hukuoka	51·1	275	8 55	− 3	e 13 21	?	—	—
Hukuoka B	51·1	275	8 57	− 1	16 12	+ 3	22·0	—
Kumamoto	51·4	275	8 59	− 1	—	—	23·3	—
Miyazaki	51·6	273	9 3a	+ 1	16 15	− 1	22·3	—
Unzendake	51·8	275	8 57	− 6	—	—	—	—
Nagasaki	52·0	275	9 5a	0	—	—	—	—
Toronto N.	52·0	66	e 9 2	− 3	16 22	0	e 26·3	—
Scoresby Sund	52·2	17	i 9 5k	− 1	i 16 27	+ 2	23·3	—
Irkutsk	52·2	310	i 9 4	− 2	16 24	− 1	24·3	30·5
Cincinnati	52·3	73	i 10 24	PP	i 16 33	+ 7	—	—
Kagosima	52·4	273	9 11	+ 3	—	—	—	—
Tomie	52·7	275	9 4	− 6	—	—	—	—
Ottawa	52·8	62	9 9	− 2	16 33	0	e 24·8	—
Ivigtut	53·4	34	9 14	− 1	e 16 38	− 3	23·3	—
Shawinigan Falls	53·5	59	9 13	− 3	16 41	− 1	e 27·3	—
Seven Falls	54·1	57	9 17	− 3	16 46	− 4	e 23·3	—
Chiufeng	54·6	292	i 9 22a	− 2	16 56	− 1	22·4	33·2
Vermont	54·7	61	e 9 24	− 1	e 16 50	− 8	e 23·3	—
Pennsylvania	54·8	68	i 9 44	+18	e 17 2	+ 2	e 29·3	—
Nake	55·4	272	9 32	+ 2	—	—	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	T.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Williamstown		55·9	63	i 9 32	− 2	17 18	+ 4	27·7	32·3
Philadelphia		56·8	67	e 9 34	− 6	i 17 28	+ 2	e 25·7	—
Oak Ridge		56·9	62	i 9 39	− 2	e 17 31	+ 3	e 27·8	32·3
Weston		57·1	62	i 9 41a	− 1	i 17 34	+ 4	26·8	—
East Machias		57·4	58	e 12 10	PP	e 17 32	− 2	e 28·0	—
Columbia		57·9	75	e 11 53	PP	e 17 32	− 9	e 27·2	—
Zi-ka-wei	z.	58·0	280	i 9 48k	0	17 34	− 8	28·6	33·6
Naha		58·1	272	9 50	+ 1	—	—	—	—
Tacubaya		58·4	101	i 9 40	−11	i 17 52	+ 5	—	—
Taihoku		62·6	275	10 22	+ 2	—	—	—	—
Semipalatinsk		63·6	321	e 10 22	− 4	—	—	—	—
Sverdlovsk		64·0	336	i 10 24	− 5	i 18 56	− 3	30·3	38·2
Taito		64·5	275	10 42	+10	18 58	− 7	—	—
Bergen		65·2	8	10 37	0	19 15	+ 2	—	—
Pulkovo		65·9	354	i 10 37	− 4	e 19 20	− 2	29·3	38·1
Upsala		66·2	2	i 10 40	− 3	19 22	− 3	e 27·3	36·0
Aberdeen		67·6	12	e 10 52	0	i 18 51	−51	26·9	33·8
Apia		68·4	190	e 11 4	+ 7	e 19 58	+ 6	e 31·3	—
Edinburgh		68·7	13	e 10 58	− 1	i 19 58	+ 3	28·3	46·7
Hong Kong		68·9	279	11 0k	0	20 3	+ 5	31·3	41·0
Moscow		69·2	348	11 0	− 2	e 20 0	− 1	33·8	42·3
Durham		70·0	12	11 7	0	20 15	+ 4	—	43·3
Copenhagen		70·3	3	i 11 7a	− 2	20 17	+ 3	28·3	—
Almata		70·8	319	11 11	− 1	e 20 27	+ 7	—	—
Stonyhurst		70·8	13	—	—	i 20 24	+ 4	28·3	36·7
Manila		71·0	269	i 11 13a	0	20 35	+13	34·2	—
Bidston		71·2	13	i 11 12	− 2	i 20 32	+ 7	29·3	—
Frunse		72·0	320	11 12	− 7	e 20 37	+ 3	—	—
Hamburg		72·3	5	i 11 19a	− 1	i 20 40	+ 3	e 31·6	48·3
Oxford		73·0	13	e 11 29	+ 4	i 20 48	+ 3	e 25·0	43·9
De Bilt		73·4	8	i 11 27a	0	20 55	+ 5	e 36·3	40·0
Kew		73·4	12	i 11 26	− 1	i 20 53	+ 3	29·3	37·7
Göttingen		74·3	6	i 11 29	− 3	e 20 59	− 1	—	52·3
Tchimkent		74·3	323	e 11 30	− 2	—	—	—	—
Phu-Lien		74·4	284	e 11 34	+ 1	e 21 5	+ 4	—	—
Uccle		74·6	11	i 11 33a	− 1	21 6	+ 3	e 32·3	43·6
Andijan		74·7	321	e 11 33	− 1	e 21 11	+ 7	26·3	—
Jena		75·0	5	i 11 36	0	e 21 16	+ 8	e 30·3	51·8
Tashkent		75·3	323	i 11 37	− 1	i 21 11	0	—	47·8
Jersey		75·4	15	i 11 43	+ 5	21 16	+ 4	30·3	—
Cheb		75·9	5	e 11 41	0	e 21 21	+ 4	e 37·3	43·8
Prague		76·0	4	11 39a	− 3	e 21 20	+ 1	e 31·3	37·8
Paris		76·4	12	i 11 44	0	e 21 21	− 2	33·3	39·3
Stuttgart		77·0	7	i 11 47a	− 1	e 21 24	− 5	e 33·3	51·3
Strasbourg		77·1	8	i 11 48a	0	e 21 36	+ 6	—	51·3
Samarkand		77·6	324	e 11 38	−13	21 36	0	—	—
Vienna		77·8	2	i 11 52	0	e 22 20	+42	e 51·8	—
Basle		78·1	9	e 11 54	0	e 21 44	+ 3	—	—
Stara Dala		78·2	0	11 55	+ 1	e 21 44	+ 2	e 41·3	52·3
San Juan		78·4	75	e 11 57	+ 2	i 21 47	+ 3	e 40·6	—
Zurich		78·4	8	i 11 54a	− 1	e 21 47	+ 3	—	—
Budapest		78·6	0	i 11 58	+ 2	i 22 9	+22	e 35·8	43·8
Neuchatel		78·6	9	e 11 56	0	—	—	—	—
Chur		78·9	8	e 11 58	0	e 21 55	+ 5	—	—
Graz		79·0	3	i 11 54	− 5	e 23 11	PPS	e 41·3	56·6
Piatigorsk		79·8	343	i 12 3	0	e 22 2	+ 3	e 31·3	—
Grozny		80·0	340	i 12 8	+ 4	—	—	—	—
Theodosia		80·0	349	12 3	− 1	22 1	0	e 41·3	—
Simferopol		80·2	350	i 12 4	− 1	22 7	+ 4	42·3	—
Zagreb		80·2	2	e 11 55	−10	e 22 3	0	e 27·7	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Triest		80·4	4	i 12 5a	− 1	22 0	5	39	351·2
Padova		80·5	5	e 12 11	+ 4	22 12	+ 5	—	—
Sebastopol		80·6	350	i 12 8	+ 1	22 14	+ 6	34·3	—
Yalta		80·7	349	i 12 6	− 2	22 11	+ 2	33·3	—
Sotchi		80·8	345	i 12 10	+ 2	22 13	+ 3	—	—
Belgrade		81·1	359	i 12 6k	− 4	e 22 12	− 1	e 44·9	—
Bucharest		81·5	355	e 12 11	− 1	e 22 17	0	e 38·8	46·3
Tiflis		81·7	341	i 12 13	0	e 22 28	+ 9	38·3	52·7
Baku		81·9	337	i 12 20	+ 6	i 22 52	+31	41·8	48·5
Calcutta	N.	83·0	299	12 18	− 2	22 36	+ 4	—	58·5
Erevan		83·3	341	e 12 22	+ 1	—	—	—	—
Barcelona		83·6	12	e 12 23	0	22 40	+ 2	e 40·0	47·6
Tortosa	N.	84·0	14	e 12 4	−21	23 4	+22	e 34·3	49·9
Agra	E.	84·1	309	12 21	− 4	i 22 41	− 2	39·8	53·0
Toledo		84·2	18	i 12 26	0	i 22 49	+ 5	e 40·0	47·3
Granada		86·9	18	e 12 47	+ 8	e 23 19	+ 9	—	—
San Fernando		87·1	20	12 50	+10	i 23 24	+12	39·3	—
Malaga		87·2	19	e 12 48	+ 8	e 23 16	+ 3	42·4	—
Almeria		87·4	17	e 12 50	+ 9	—	—	42·7	—
Algiers		88·3	12	i 12 47	+ 1	i 23 20	− 3	e 44·3	47·3
Ksara		91·0	346	i 12 58a	0	e 23 49	+ 1	—	—
Hyderbad		92·2	304	12 38	−26	23 28	[− 1]	41·9	51·7
Medan		92·8	280	e 13 12	+ 5	23 39	[+ 6]	e 43·3	—
Bombay		93·6	309	13 11	+ 1	24 6	− 5	e 43·3	56·7
Helwan		95·5	348	e 13 40	+21	e 24 55	+28	—	58·9
Batavia		96·0	267	13 18	− 3	—	—	e 45·3	—
Riverview		96·8	218	—	—	e 24 20	−18	e 46·0	50·4
Sydney		96·8	218	—	—	e 23 38	[−17]	52·8	54·1
Huancayo		97·4	100	i 17 46	PP	i 24 5	[+ 7]	e 38·5	—
Wellington		97·4	198	—	—	i 23 59	[+ 1]	e 43·8	47·3
Kodaikanal	E.	98·9	302	e 13 35	+ 1	e 25 2	+ 7	e 40·7	61·8
Christchurch		99·9	199	23 17	S	(23 17)	[−53]	44·9	—
Melbourne		102·7	221	—	—	i 25 42	+15	e 49·5	51·5
Dakar		104·8	35	16 45	?	—	—	—	—
La Paz	N.	105·2	96	e 15 40	?	i 24 42	[+ 7]	52·0	59·7
Perth W.A.		111·3	244	—	—	i 27 20	?	—	—
Rio de Janeiro	N.	124·7	80	e 22 0	?	e 37 41	SS	e 57·7	—
La Plata		125·1	101	11 56	?	—	—	61·2	—
Cape Town	N.	159·7	359	i 20 31	[+40]	i 24 23	PP	e 45·5	—

Additional readings :—
College i = +3m.12s., eSS = +5m.52s.
Sitka PP = +3m.56s., SS = +7m.9s.
Victoria PPE = +5m.49s., SSN = +10m.53s.
Ferndale eN = +5m.58s. and +10m.50s.
Ukiah e = +7m.49s. and +13m.38s.
Berkeley ePZ = +6m.19s., eN = +6m.21s., eE = +6m.24s., eZ = +6m.28s., eEN = +6m.31s., eE = +6m.35s., iSE = +11m.28s., eZ = +11m.41s.
Branner ePN = +6m.27s., iE = +6m.30s., eSN = +11m.36s.
Butte ePP = +7m.8s., eSS = +14m.11s.
Bozeman ePPP = +8m.21s., e = +10m.50s., +11m.30s., +11m.42s., and +12m.17s., eSS = +14m.17s.
Honolulu PP = +7m.0s., ePP = +7m.5s., iS = +11m.55s., e = +13m.5s., iSS = +14m.1s.
Pasadena iPPN = +8m.32s., iSSN = +15m.27s., iS_cSE = +17m.13s.
Denver iN = +8m.29s., eP_cPN = +9m.40s., eN = +14m.58s. and +15m.36s., eSSN = +16m.38s.
Mizusawa SN = +17m.47s.
Tucson iP = +7m.48s., iSS = +17m.12s.
Hukusima SSS = +17m.42s.
Mito PPP = +10m.25s., SS = +17m.16s.
Tokyo PP = +9m.36s., PPP = +10m.13s., i = +11m.39s.
Nagano SS = +18m.3s.
Oiwake SP = +10m.22s., SSS = +18m.5s.
Wazima PP = +10m.37s., SS = +18m.5s.
Toyama SS = +18m.6s.
Kanazawa SSS = +18m.15s.
Hamamatu SS = +18m.9s.

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Nagoya S? = +9m.58s.
Madison eSS = +18m.14s.
Osaka PPP = +11m.26s., S_cP = +13m.36s.
Kobe eE = +18m.18s., eZ = +18m.23s., S_cS = +18m.46s.
Sumoto eE = +15m.26s.
Chicago e = +16m.5s., +16m.35s., +18m.11s., eS_cS = +18m.23s. eSSS = +20m.29s.
Florissant iE = +8m.48s., ipPE = +8m.53s., iE = +9m.2s., esSEN = +16m.5s.
Keizyo eE = +18m.36s.
Little Rock ipPEN = +9m.4s., ePPPEN = +11m.31s., eN = +15m.59s., esSN = +16m.26s., iEN = +18m.42s., eN = +21m.8s.
Toronto eN = +18m.50s., SSN = +20m.8s.
Scoresby Sund iPP = +11m.26s., eN = +16m.53s., eS_cSN = +18m.38s., eE = +18m.56s. and +19m.19s., eSSN = +20m.26s., eE = +21m.14s.
Cincinnati isP = +16m.53s., iPPS = +17m.11s.
Ottawa eE = +18m.54s., SS = +20m.16s.
Ivigtut P_cPN = +10m.28s., iSEZ = +16m.43s., PS = +16m.57s., eN = +17m.21s., S_cS = +19m.2s., SS = +20m.56s.
Shawinigan Falls e = +23m.20s.?
Chiufeng P_cPZ = +10m.40s., PPEN = +11m.20s., PSEN = +17m.8s.
Vermont eP_cP = +10m.6s., iS = +17m.0s., iS_cS = +19m.11s., eSS = +20m.46s.
Pennsylvania i = +9m.51s.
Philadelphia iP = +9m.37s., i = +18m.42s., iSS = +20m.53s.
Oak Ridge iZ = +10m.24s., iPPZ = +11m.49s.
Weston iPPZ = +11m.52s., iPSE = +17m.54s., iSS = +21m.24s.
East Machias S = +17m.52s., eS_cS = +19m.21s., eSS = +21m.45s., e = +25m.33s.
Columbia eSS = +21m.42s., eSSS = +24m.16s.
Zi-ka-wei iZ = +10m.2s., +10m.8s., +18m.6s., and +20m.4s.
Upsala SS = +24m.12s.
Apia e = +21m.2s.
Hong Kong ? = +11m.39s., PS = +20m.21s.
Durham PS = +20m.39s., SS = +25m.12s.
Copenhagen +20m.56s. and +24m.32s.
Manila iE = +20m.29s., iN = +30m.38s.
Bidston iSS = +25m.32s.
Hamburg eSSN = +25m.20s., eSSSN = +29m.8s.
Oxford ePP = +15m.47s.
Kew iSS = +25m.44s.
Göttingen e = +11m.32s.
Bucharest iE = +12m.20s., +12m.38s., and +12m.53s., PPE = +15m.9s., PPPE = +16m.52s., SSE = +27m.39s.
Uccle SSN = +25m.55s.
Jersey (St. Louis) PP = +14m.20s.? ePPP? = +16m.1s., PS = +22m.7s., eSS = +26m.9s.
Stuttgart eP_cPZ = +12m.8s., ePP = +14m.25s., ePS = +22m.20s., eSS = +26m.32s.
Strasbourg iPP = +14m.40s., ePPP = +16m.32s., eSS = +26m.40s.
Vienna PP = +15m.24s., PPP = +17m.29s., PS = +23m.4s.
San Juan e = +12m.30s., ePP = +15m.14s., PS = +22m.55s.
Budapest iE = +12m.2s., i = +12m.13s., iE = +12m.47s., eN = +21m.43s., SN = +22m.17s., iN = +22m.58s.
Zagreb e = +12m.3s., eP_cP = +12m.27s.
Triest i = +22m.27s., iPS = +22m.51s., i = +23m.11s.
Belgrade iPNW = +12m.11s., eNW = +23m.11s.
Tiflis eZ = +18m.45s., eSSE = +28m.3s., eSSSZ = +31m.29s.
Baku e = +18m.38s., +29m.17s., and +33m.8s.
Calcutta PSN = +23m.22s., SSN = +28m.9s., SSSN = +31m.33s.
Barcelona PP = +15m.37s.
Agra PSE = +23m.18s., SSE = +28m.24s., SSSE? = +32m.14s.
Toledo PP = +15m.40s.
San Fernando PPE = +16m.23s., SSE = +27m.28s.
Malaga P = +12m.52s., PP = +16m.11s., e = +16m.46s., PPP = +18m.16s., e = +19m.24s., +20m.32s., and +22m.8s., SS = +23m.26s., e = +23m.55s., PS = +24m.28s., PKS = +24m.56s., SS = +29m.21s.
Algiers i = +14m.18s.
Ksara ePP = +16m.29s.? ePS = +24m.26s.
Bombay ePP = +16m.52s., eEN = +23m.52s. and +25m.55s., eSS = +30m.37s.
Riverview iE = +24m.47s. and +25m.14s., eN = +31m.32s. and +37m.26s.
Sydney iE = +25m.2s.
Huancayo i = +18m.7s., +24m.35s., +26m.48s., e = +30m.58s., i = +31m.41s., +32m.11s., and +36m.5s.
Wellington i = +24m.54s.
Kodaikanal PPE = +17m.31s., eSKSE = +24m.8s.
Christchurch SNZ = +32m.24s., L_qE = +41m.43s.
Melbourne e = +32m.42s., e = +37m.50s., e = +43m.3s., e = +43m.52s.
La Paz iSN = +26m.0s., iN = +28m.46s., iSSN = +37m.52s., L_qN = +47·0m.
Perth PS = +28m.45s., SS = +34m.45s., SSS = +39m.35s.

April 29d. 20h. 18m. 56s. Epicentre 45°·7N. 137°·3E.

Moderately felt at Hatinohe, slightly at Obihiro, Kusiro, Urakawa, Aomori, Miyako, and Morioka. Radius greater than 300km. Epicentre 45°·7N. 137°·3E., depth 370km. See Seismological Bulletin of the Central Meteorological Observatory Japan, for the year 1937. Tokyo, Japan, 1939.

$A = -\cdot5150$, $B = +\cdot4754$, $C = +\cdot7133$; $\delta = +3$; $h = -4$;
$D = +\cdot678$, $E = +\cdot735$; $G = -\cdot524$, $H = +\cdot484$, $K = -\cdot701$.

A depth of focus 0·050 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Haboro	3·4	111	0 51	−12	1 48	− 5	—	—
Sapporo	3·9	131	1 12k	+ 4	2 9	+ 7	—	—
Asahigawa	4·1	115	1 19k	+ 9	2 19	+13	—	—
Muroran	4·3	141	1 18k	+ 5	2 16	+ 6	—	—
Hakodate	4·6	147	1 26	+10	2 29	+14	—	—
Vladivostok	4·6	239	i 1 23	+ 7	e 2 23	+ 8	—	—
Sikka	5·3	46	2 14	+50	3 21	?	—	—
Urakawa	5·3	130	1 22k	− 2	2 33	+ 4	—	—
Aomori	5·5	151	1 28k	+ 2	2 34	+ 1	—	—
Hatinohe	6·0	148	1 32k	+ 1	2 41	− 2	—	—
Akita	6·3	160	1 39	+ 4	2 55	+ 6	—	—
Nemuro	6·4	109	1 36	0	2 49	− 3	—	—
Morioka	6·6	154	1 39k	+ 1	2 57	+ 1	—	—
Miyako	7·0	149	1 41k	− 2	3 4	0	—	—
Mizusawa	7·1	155	i 1 46	+ 2	i 3 6	0	—	—
Niigata	7·8	171	2 0	+ 8	3 29	+ 8	—	—
Yamagata	7·8	162	1 52k	0	3 18	− 3	—	—
Isinomaki	7·9	155	1 50	− 4	3 15	− 8	—	—
Sendai	7·9	158	1 54k	0	3 22	− 1	—	—
Hukusima	8·3	162	1 59k	+ 1	3 31	− 1	—	—
Wazima	8·3	183	2 1a	+ 3	3 36	+ 4	—	—
Aidu	8·4	164	2 14k	+14	3 47	+13	—	—
Takada	8·6	174	2 7	+ 5	3 42	+ 4	—	—
Husiki	8·9	181	2 9	+ 3	3 50	+ 5	—	—
Nagano	9·0	176	2 11k	+ 4	3 51	+ 4	—	—
Toyama	9·0	180	2 10a	+ 3	3 51	+ 4	—	—
Kanazawa	9·1	183	2 13	+ 5	3 54	+ 5	—	—
Onahama	9·1	163	2 23	+15	3 58	+ 9	—	—
Maebasi	9·4	171	2 11k	− 1	4 1	+ 5	—	—
Oiwake	9·4	174	2 16	+ 4	3 59	+ 3	—	—
Utunomiya	9·4	167	2 12	0	3 53	− 3	—	—
Matumoto	9·5	175	2 20	+ 7	4 0	+ 2	—	—
Takayama	9·5	181	2 4	− 9	4 2	+ 4	—	—
Mito	9·6	164	2 12k	− 2	3 54	− 6	—	—
Hukui	9·7	186	2 1	−14	3 39	−23	—	—
Kakioka	9·7	166	2 15	0	3 59	− 3	—	—
Kumagaya	9·7	170	2 15	0	3 50	−12	—	—
Tukubasan	9·7	168	2 14	− 1	3 58	− 4	—	—
Kohu	10·1	175	2 21k	+ 1	4 12	+ 1	—	—
Iida	10·2	178	2 25	+ 4	4 15	+ 2	—	—
Tokyo	10·2	168	2 25	+ 4	4 9	− 4	—	—
Gihu	10·3	183	2 24	+ 2a	4 17	+ 2	—	—
Hunatu	10·3	173	2 24	+ 2	4 13	− 2	—	—
Ibukisan	10·3	185	2 28	+ 6	—	—	—	—
Miyadu	10·3	190	2 24a	+ 2	4 21	+ 6	—	—
Toyooka	10·3	191	2 25a	+ 3	4 21	+ 6	—	4·7
Tyosi	10·3	164	2 21	− 1	3 51	−24	—	—
Yokohama	10·4	170	2 23a	− 1	4 15	− 2	—	—
Hikone	10·5	187	2 27	+ 2	4 23	+ 4	—	—
Nagoya	10·5	182	2 27	+ 2	4 23	+ 4	—	4·5

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Numadu		10·6	174	2 30	+ 4	4 12	−10	—	—
Sakai		10·6	196	2 26	0	4 30	+ 8	—	—
Kyoto		10·7	186	2 30	+ 3	4 32	+ 8	—	—
Heizyo		10·8	236	i 2 31a	+ 3	i 4 30	+ 4	—	—
Ito		10·8	172	2 37a	+ 9	4 23	− 3	—	—
Katuura		10·8	167	2 31	+ 3	4 22	− 4	—	—
Kameyama		10·9	186	2 30a	0	4 30	+ 2	—	—
Mera		10·9	169	2 35k	+ 5	4 22	− 6	—	—
Hamamatu		11·0	176	2 24a	− 7	4 21	− 9	—	—
Tu		11·0	185	2 18	−13	4 37	+ 7	—	—
Kobe		11·1	190	2 33a	+ 1	4 36	+ 4	—	4·8
Omaesaki		11·1	176	2 32	0	4 32	0	—	—
Keizyo		11·2	227	i 2 36a	+ 3	i 4 40	+ 6	—	4·7
Osaka		11·2	189	2 36	+ 3	4 41	+ 7	—	—
Osaka B		11·2	189	2 35a	+ 2	4 40	+ 6	—	—
Yagi		11·2	186	2 34	+ 1	4 36	+ 2	—	—
Okayama		11·3	194	2 36	+ 2	4 42	+ 5	—	—
Zinsen		11·4	228	i 2 37a	+ 1	i 4 44	+ 5	—	4·8
Hamada		11·5	203	2 40a	+ 3	4 48	+ 7	—	—
Sumoto		11·5	190	i 2 38a	+ 1	i 4 41	0	—	4·8
Wakayama		11·6	190	2 35	− 3	4 41	− 2	—	—
Tadotu		11·7	195	2 42	+ 3	4 49	+ 4	—	—
Syuhurei		11·8	220	e 2 40	0	e 4 52	+ 4	—	—
Taikyu		11·8	217	i 2 43	+ 3	4 52	+ 4	—	—
Tokusima		11·8	191	2 40	0	4 45	− 3	—	—
Hirosima		11·9	200	2 42a	0	4 55	+ 5	—	—
Yingkow		12·0	251	2 43	0	4 46	− 6	—	—
Husan		12·3	213	2 48	+ 2	5 3	+ 5	—	—
Matuyama		12·3	198	2 48a	+ 2	5 2	+ 4	—	—
Siomisaki		12·3	187	2 46a	0	4 56	− 2	—	—
Koti		12·5	195	2 49a	0	5 5	+ 2	—	—
Hatidyozima		12·7	171	2 52a	+ 1	5 1	− 6	—	—
Muroto		12·7	192	2 50a	− 1	5 8	+ 1	—	—
Uwazima		13·0	198	2 57	+ 2	5 15	+ 2	—	—
Hukuoka		13·2	206	2 57	0	5 8	−10	—	—
Hukuoka B		13·2	206	i 2 57a	0	5 21	+ 3	—	—
Ooita		13·2	202	2 54	− 3	—	—	—	—
Dairen		13·4	245	2 59	0	5 23	+ 1	—	—
Kumamoto		13·8	204	3 5	+ 1	5 31	0	—	—
Unzendake		14·0	208	2 59	− 7	5 30	− 5	—	—
Nagasaki		14·1	206	3 8	+ 1	5 39	+ 2	—	—
Miyazaki		14·5	200	3 11a	− 1	5 45	0	—	—
Tomie		14·6	209	2 51a	−22	5 50	+ 3	—	—
Kagosima		15·0	202	3 24	+ 7	—	—	—	—
Chiufeng		16·5	257	i 3 30k	− 3	i 6 22	− 2	—	—
Nake		18·3	202	4 2	+11	6 58	0	—	—
Titizima		19·0	165	3 58	0	7 16	+ 5	—	—
Zi-ka-wei	z.	19·0	225	e 3 56	− 2	i 7 18	+ 7	—	—
Irkutsk		22·5	300	i 4 29	− 3	8 8	− 3	—	—
Taihoku		24·2	216	4 54	+ 6	—	—	—	—
Hong Kong		30·0	226	6 44	+65	—	—	—	15·7
Manila		33·9	208	i 6 17k	+ 4	7 44	PP	—	—
Phu-Lien		35·3	235	e 7 37	PP	11 30	− 3	—	—
Semipalatinsk		37·6	299	i 6 40	− 4	e 12 1	− 6	—	—
Almata		42·2	289	7 21	0	13 13	− 2	—	—
Frunse		43·9	289	7 32	− 3	13 36	− 3	—	—
Calcutta	N.	45·8	256	7 45	− 5	14 0	− 6	—	—
Andijan		46·7	288	7 53	− 3	14 12	− 7	—	—
Sverdlovsk		46·8	313	i 7 52	− 5	i 14 10	−10	57·1	76·1
Tchimkent		47·5	291	8 1	− 2	—	—	—	—
Tashkent		48·2	290	i 8 6	− 2	i 14 37	− 3	—	27·0

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	E.	50·0	269	e 8 18	− 4	i 14 55	− 9	—	—
Samarkand		50·5	289	8 22	− 3	i 15 8	− 3	—	—
Medan		53·8	230	10 8	?	—	—	—	—
Batavia		58·4	215	10 34	+72	—	—	—	—
Moscow		58·6	319	i 9 19	− 4	16 49	− 9	—	26·3
Bombay		59·0	266	e 9 26	0	i 16 59	− 5	—	—
Pulkovo		59·2	326	i 9 21	− 6	i 16 56	−10	23·1	24·4
Grozny		61·7	304	i 9 45	+ 1	i 17 35	− 3	—	—
Piatigorsk		62·8	306	i 9 50	− 1	i 17 48	− 3	—	—
Scoresby Sund		63·2	353	—	—	17 48	− 8	—	—
Tiflis	Z.	63·2	303	i 9 52	− 2	e 17 49	− 7	—	—
Upsala	E.	63·9	331	e 10 3	+ 5	i 17 54	−11	e 25·1	—
Erevan		64·4	302	10 0	− 1	e 18 6	− 5	—	—
Sotchi		65·0	307	i 10 3	− 2	e 18 17	− 1	—	—
Theodosia		66·4	311	e 10 13	− 1	18 29	− 6	—	—
Simferopol		67·1	312	10 16	− 2	18 38	− 5	—	—
Yalta		67·4	311	10 18	− 2	i 18 41	− 6	—	—
Sebastopol		67·6	312	10 21	0	i 18 45	− 4	—	—
Copenhagen		68·8	330	10 27a	− 2	18 54	− 9	—	—
Berkeley		70·4	56	i 10 23	−15	—	—	—	—
San Francisco		70·4	56	e 10 37	− 1	—	—	—	—
Branner		70·7	56	e 10 39	− 1	—	—	—	—
Lick		71·1	56	e 10 41	− 1	—	—	—	—
Hamburg		71·4	330	e 10 42	− 2	i 19 27	− 6	e 65·1	69·1
Bucharest		71·6	315	—	—	20 45	?	—	—
Prague		72·5	325	—	—	i 19 39	− 6	—	—
Budapest		72·6	321	e 10 50	− 1	i 19 44	− 2	—	—
Fresno		72·6	55	e 10 52	+ 1	18 44	−62	—	—
Jena	N.	72·9	327	e 10 54	+ 1	—	—	—	—
Tinemaha		73·2	53	i 10 55	0	e 19 51	− 2	—	—
Vienna		73·2	323	e 10 54	− 1	e 19 50	− 3	e 33·6	—
Ivigtut		73·4	3	10 52	− 4	19 50	− 5	—	—
Edinburgh		73·4	338	—	—	i 19 50	− 5	—	—
Ksara		73·7	300	i 10 56k	− 2	i 19 56	− 3	—	—
Durham		74·0	336	—	—	e 19 50	−12	—	—
De Bilt		74·2	332	e 13 4	?	e 19 59	− 5	—	—
Santa Barbara		74·3	56	i 10 49	−12	—	—	—	—
Zagreb		75·2	322	e 11 5	− 1	e 20 9	− 6	—	—
Mount Wilson		75·4	55	e 11 6	− 1	i 20 15	− 2	—	—
Pasadena		75·4	55	i 11 5a	− 2	e 20 14	− 3	—	—
Stuttgart		75·6	328	e 11 6	− 3	e 20 11	− 8	—	—
Uccle		75·6	332	—	—	i 20 12	− 7	—	—
Riverside		75·9	55	i 11 8	− 2	—	—	—	—
Strasbourg		76·3	328	i 20 22	S	(i 20 22)	− 5	—	—
Triest		76·3	323	e 11 9k	− 3	i 20 18	− 9	—	81·8
Kew		76·5	335	—	—	i 20 22	− 7	e 57·1	—
Oxford		76·6	335	—	—	i 20 22	− 8	—	65·6
La Jolla		76·8	56	i 11 14	− 1	—	—	—	—
Chur		77·0	327	e 11 14	− 2	e 20 28	− 6	—	—
Zurich		77·0	328	e 11 13	− 3	e 20 28	− 6	—	—
Basle		77·2	328	e 11 15	− 2	e 20 30	− 7	—	—
Padova		77·3	324	e 20 32	S	(e 20 32)	− 6	—	—
Neuchatel		77·9	328	e 11 19	− 2	e 20 27	−17	—	—
Jersey		79·1	335	i 13 43	?	i 20 48	− 9	—	—
Helwan		79·3	301	—	—	i 20 49	−10	—	51·6
Tucson		80·9	52	i 11 35	− 2	—	—	—	—
Barcelona		84·5	328	—	—	e 21 42	−10	—	77·6
Tortosa	N.	85·6	328	e 16 4?	?	—	—	e 59·1	65·3
Florissant		85·6	36	e 11 57	− 4	e 21 46	−15	—	—
St. Louis		85·7	36	i 11 57	− 5	—	—	—	—
Williamstown		87·9	21	e 12 9	− 3	—	—	—	—
Toledo		88·0	331	e 12 11	− 1	e 22 22	− 2	—	—
Little Rock		88·2	39	e 12 12	− 1	i 23 3	+38	—	—
Oak Ridge		88·5	20	i 12 12	− 2	—	—	—	—
Granada		90·3	330	—	—	e 22 4	[−11]	—	—
La Paz	N.	144·0	44	i 18 54	[0]	—	—	—	—

For Notes see next page.

NOTES TO APRIL 29d. 20h. 18m. 56s.

Additional readings :—
Kobe iE = +3m.51s.
Zinsen ipP = +3m.1s.
Chiufeng i = +5m.4s.
Zi-ka-wei iZ = +5m.46s., +9m.22s., and +9m.44s.
Irkutsk PP = +5m.47s., eSP = +6m.12s., SS = +9m.58s.
Calcutta iPP?N = +9m.8s., iSS?N = +16m.22s., iN = +19m.30s.
Sverdlovsk ipP = +9m.9s., sP = +9m.46s., pPP = +10m.47s., sPP = +11m.35s., sS = +16m.27s., i = +17m.2s.
Batavia PZ = +10m.37s.
Moscow PP = +10m.38s., sP = +11m.17s., pS = +18m.27s., sS = +19m.5s., sSS = +23m.4s.
Bombay eEN = +19m.23s.
Pulkovo pS = +18m.28s.
Scoresby Sund +19m.5s.
Tiflis iZ = +11m.54s., eZ = +20m.32s., +21m.25s., and +26m.35s.
Upsala iN = +19m.4s., SSE = +21m.43s.
Copenhagen +11m.50s. and +12m.29s., e = +19m.42s.
Berkeley iE = +10m.25s., iZ = +10m.36s.
Hamburg iN = +20m.15s., eE = +34m.4s.
Budapest iPE = +10m.52s., eE = +18m.27s.
Vienna P_gP = +11m.44s., PP = +13m.43s., PPP = +15m.6s.
Ksara iSP = +12m.59s., ePP = +13m.54s., e = +18m.6s., esS = +22m.24s., eSS = +25m.16s.
Zagreb e = +69m.4s.?
Stuttgart e = +13m.10s., ePS = +20m.42s.
St. Louis ipPE = +12m.7s., eE = +18m.56s.
Toledo eE = +12m.22s., eHN = +12m.25s., eN = +14m.31s., and +16m.39s.
Little Rock i = +14m.38s.
Long waves were also recorded at Hyderabad and Wellington.

April 29d. Readings also at 0h. (Christchurch, Wellington, La Paz, Tiflis, Sverdlovsk, Pulkovo, Moscow, Ksara, Pasadena, Nagoya, near Kobe, and Sumoto (2)), 1h. (Christchurch, Baku, Tashkent; Copenhagen, De Bilt, Strasbourg, Stuttgart, Paris, Kew, Scoresby Sund, and near Sumoto), 2h. (Tiflis), 5h. (Nagoya), 10h. (Chicago, Mizusawa, Tashkent, and near Wellington), 11h. (Sverdlovsk and near Santiago), 13h. (Christchurch), 14h. (near Medan), 15h. (Almata, Andijan, Tashkent, and Sverdlovsk), 16h. (Semipalatinsk), 17h. (Almata, Andijan, Frunse, and Samarkand), 18h. (Calcutta, Hamburg, Jersey, Vermont, Ivigtut, Tucson, Scoresby Sund, and La Paz), 19h. (Rathfarnham Castle), 20h. (Cape Town and St. Louis), 21h. (Pasadena and near San Javier), 22h. (Pasadena, Riverside, Lick, near Berkeley, Branner, Fresno, and San Francisco).

April 30d. 19h. 32m. 55s. Epicentre 30°·0N. 81°·5E.

A = +·1282, B = +·8580, C = +·4975 ; δ = +11 ; h = +2 ;
D = +·989, E = −·148 ; G = +·074, H = +·492, K = −·868.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		3·0	276	1 5	P_g	—	—	—	—
Agra	E.	4·2	228	1 7	0	1 50	− 7	—	—
Calcutta	N.	9·6	139	2 23	+ 2	4 9	− 3	—	—
Hyderabad		12·8	193	3 5	− 1	—	—	8·5	8·7
Andijan		13·0	328	3 10	+ 1	e 6 57	L	(e 6·9)	—
Bombay	E.	13·6	218	e 3 11	− 6	e 5 40	−10	—	7·7
Almata		13·7	346	e 3 18	0	e 7 34	L	(7·6)	—
Frunse		14·0	339	e 3 15	− 7	—	—	—	—
Tashkent		15·0	322	3 29	− 6	i 6 11	−12	8·3	9·4
Samarkand		15·3	313	e 3 45	+ 6	—	—	—	—
Tchimkent		15·6	325	e 3 37	− 6	—	—	—	—
Kodaikanal	E.	20·0	193	e 4 40	+ 3	e 8 12	− 5	i 10·4	12·4
Baku		26·6	302	e 6 6	PP?	e 10 58	SS	—	—
Irkutsk		27·9	31	—	—	e 10 34	− 3	15·1	15·2
Chiufeng		29·9	61	e 6 5?	− 7	i 11 46	+37	—	17·3
Sverdlovsk		30·5	338	e 6 32	+15	—	—	16·1	—
Grozny		31·4	305	6 16	− 9	e 11 34	+ 2	—	—
Tiflis		31·7	302	e 6 28	+ 1	e 11 40	+ 3	e 15·6	—
Ksara		38·7	288	e 7 33	+ 6	e 13 47	+22	—	—
Yalta		39·8	305	e 7 38	+ 2	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Simferopol		39·9	306	e 7 36	− 1	—	—	—	—
Pulkovo		45·2	327	i 7 17	−63	e 15 2	+ 1	23·1	26·4
Copenhagen		54·2	321	—	—	17 23	+17	29·1	—

Additional readings :—
Agra $P_gE = +1m.22s.$, $S^*E = +1m.57s.$, $S_gE? = +2m.4s.$
Calcutta $P^*N = +2m.43s.$, $P_g?N = +3m.16s.$, $S^*N = +4m.46s.$, $S_gN = +5m.18s.$
Bombay $iE = +6m.20s.$, $S_gE? = +7m.13s.$
Baku $e = +11m.38s.$
Ksara $eSS = +16m.14s.$
Pulkovo $e = +10m.22s.$
Long waves were also recorded at Hong Kong, Moscow, Hamburg, Stuttgart, Prague, Strasbourg, De Bilt, and Paris.

April 30d. 20h. 3m. 24s. Epicentre 30°·0N. 81°·5E. (as at 19h.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Agra	E.	4·2	228	1 4	− 3	1 37	−20	—	—
Calcutta	N.	9·6	139	e 2 27	+ 6	4 5	− 7	—	7·8
Andijan		13·0	328	e 3 13	+ 4	—	—	e 6·8	—
Almata		13·7	346	e 2 59	−19	—	—	e 7·4	—
Tashkent		15·0	322	e 3 28	− 7	e 5 37	−46	e 7·8	9·2
Samarkand		15·3	313	e 3 42	+ 3	e 6 32	+ 2	—	—
Kodaikanal	E.	20·0	193	e 7 0	?	—	—	i 11·6	12·7
Baku		26·6	302	—	—	e 10 51	+35	—	—
Irkutsk		27·9	31	—	—	e 10 36	− 1	14·6	—
Grozny		31·4	305	e 6 26	+ 1	—	—	—	—

Additional readings :—
Agra $P_gE = +1m.22s.$, $S_gE = +1m.57s.$
Calcutta $P_gN = +3m.17s.$, $S^*N = +4m.38s.$, $S_gN = +5m.8s.$
Tashkent $e = +6m.53s.$, $i = +7m.25s.$
Kodaikanal $eE = +10m.23s.$, $iE = +10m.46s.$
Baku $e = +11m.35s.$
Long waves were also recorded at Chiufeng, Bombay, Hyderabad, Moscow, Copenhagen, and De Bilt.

April 30d. 22h. 49m. 4s. Epicentre 40°·8N. 71°·8E.

(as given by the U.S.S.R. stations of Central Asia).

$A = +·2371$, $B = +·7212$, $C = +·6509$; $\delta = +2$; $h = -2$;
$D = +·950$, $E = -·312$; $G = +·203$, $H = +·618$, $K = -·759$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	0·4	96	0 13	0	0 16	S*	—	0·4
Tashkent	2·0	285	0 49	+14	—	—	i 1·3	1·5
Tchimkent	2·3	312	0 50	P_g	1 22	S_g	—	1·4
Frunse	3·0	45	0 46	− 4	1 18	− 9	—	—
Samarkand	3·9	255	e 1 56	S	(e 1 56)	+ 6	—	—
Almata	4·6	55	1 25	P*	2 18	S*	—	2·4
Semipalatinsk	11·3	28	—	—	e 5 3	+ 9	—	—

Additional readings :—
Tchimkent $P^* = +52s.$, $P_g = +56s.$
Frunse $P_g = +50s.$
Samarkand $e = +2m.33s.$
Almata $S^* = +2m.23s.$
Long waves were also recorded at Grozny and Sverdlovsk.

April 30d. Readings also at 8h. (Andijan and Samarkand), 9h. (Baku, Bucharest, Sverdlovsk, Tashkent, Ksara (2), Tiflis, and La Paz), 11h. (Mount Wilson and Pasadena), 12h. (Sverdlovsk and near Manila), 13h. (Tiflis), 14h. (Wellington), 17h. (near Mizusawa), 18h. (Alicante), 19h. (Sverdlovsk), 23h. (Pasadena and Tucson).

May 1d. 12h. 20m. 53s. Epicentre 36°·5S. 107°·5W.

$A = -\cdot2423$, $B = -\cdot7685$, $C = -\cdot5922$; $\delta = 0$; $h = 0$;
$D = -\cdot954$, $E = +\cdot301$; $G = +\cdot178$, $H = +\cdot565$, $K = -\cdot806$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Huancayo		37·8	58	e 7 17	− 3	13 6	− 5	16·5	—
La Paz		40·1	70	i 7 41a	+ 2	i 13 47	+ 1	17·6	21·8
Rio de Janeiro		56·5	94	i 17 37	S	(i 17 37)	0	e 27·1	—
Christchurch		59·4	236	9 47	−19	e 18 27	+12	28·3	33·4
San Juan		67·1	43	e 10 51	− 6	e 19 33	−18	e 31·6	—
Tucson		68·5	357	e 10 59	− 7	—	—	e 32·7	—
La Jolla		69·6	352	e 11 12	− 1	—	—	—	—
Mount Wilson	Z.	71·0	351	i 11 19	− 3	—	—	—	—
Pasadena		71·0	351	i 11 21	− 1	e 20 36	− 1	—	—
Tinemaha	N.	73·9	351	e 11 40	+ 1	—	—	—	—
Honolulu		74·6	312	—	—	e 27 10	?	e 36·5	—
Florissant		76·6	13	i 11 54	0	e 21 34	− 6	e 33·0	41·5
Philadelphia		81·7	25	—	—	e 22 28	− 6	e 40·1	—
Weston		85·2	26	i 12 40a	+ 1	e 23 21	+12	40·6	—
Ottawa		86·4	22	—	—	e 23 19	− 2	e 29·1	—
Chiufeng		145·9	290	19 48a	[+ 8]	—	—	—	—
Simferopol		149·9	61	e 19 59	[+12]	—	—	—	—
Yalta		150·0	62	e 19 58	[+11]	—	—	—	—
Ksara		150·1	85	e 19 58	[+11]	e 29 39	PS	55·1	—
Theodosia		150·8	61	e 20 19	[+31]	—	—	—	—
Tiflis		157·9	68	e 20 11	[+13]	—	—	e 82·1	—
Sverdlovsk		158·2	17	—	—	e 47 56	?	75·1	—

Additional readings:—
Huancayo e = +7m.46s., i = +8m.7s., PP = +8m.45s., eSS = +15m.37s.
La Paz iPPZ = +9m.15s.
Christchurch PSE = +18m.56s., eL_qN = +24·6m.
San Juan e = +11m.4s., ePS = +19m.41s., eS_cS = +20m.18s.
Tucson e = +29m.45s.
Florissant eN = +21m.39s.
Philadelphia eSS = +27m.57s., e = +33m.57s.
Weston i = +12m.47s., ePP = +16m.30s., ePSN = +23m.46s.
Tiflis eZ = +24m.20s. and +29m.47s.
Long waves were also recorded at Adelaide, La Plata, Santiago, Paris, Perth, Sydney, Kew, De Bilt, Oak Ridge, Scoresby Sund, Stuttgart, Wellington, Strasbourg, Irkutsk, and Tashkent.

May 1d. 15h. 24m. 37s. Epicentre 19°·0N. 102°·5W.

$A = -\cdot2048$, $B = -\cdot9238$, $C = +\cdot3236$; $\delta = +7$; $h = +5$;
$D = -\cdot976$, $E = +\cdot216$; $G = -\cdot070$, $H = -\cdot316$, $K = -\cdot946$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo	N.	1·7	272	0 32	+ 1	—	—	—	—
Guadalajara	N.	1·9	331	0 47	+13	—	—	—	—
Tacubaya	N.	3·2	83	0 54	+ 2	—	—	—	—
Puebla	E.	4·1	90	1 5	0	—	—	—	—
Oaxaca	E.	5·8	109	1 23	− 6	—	—	—	—
Tucson		15·2	332	i 3 41	+ 3	e 6 53	+25	8·4	—
Little Rock		18·1	29	e 4 17	+ 3	e 7 41	+ 6	—	—
La Jolla		19·1	320	i 4 26	− 1	—	—	—	—
Riverside	N.	20·0	322	e 4 36	− 1	—	—	—	—
Mount Wilson	Z.	20·5	322	i 4 42	0	—	—	—	—
Pasadena		20·6	322	i 4 41a	− 2	—	—	i 12·7	—
Denver		20·7	356	i 4 12	−32	e 7 23	−68	e 8·7	10·7
St. Louis	E.	22·3	27	e 5 0	− 1	—	—	e 12·5	15·0
Florissant		22·4	27	e 5 2	0	e 8 53	−11	—	12·8
Tinemaha		22·7	327	e 5 5	+ 1	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Fresno	N.	23·3	323	e 5 11	+ 1	—	—	—	—
Berkeley		25·5	323	—	—	e 10 53	SS	—	—
Ottawa		34·4	34	—	—	e 12 47	+28	e 19·4	—
San Juan		34·4	85	(e 6 47)	− 4	—	—	e 6·8	—
Ksara		114·2	37	—	—	e 29 5	PS	71·4	79·4

Additional readings :—
Tucson e = +8m.11s.
Little Rock iE = +4m.23s., eE = +8m.11s., eN = +10m.48s., eE = +11m.3s., eN = +11m.30s., eE = +11m.52s., eN = +12m.47s., eE = +12m.52s.
Pasadena eE = +12m.11s.
Denver iPN = +4m.16s., eN = +5m.5s., and +5m.45s.
Florissant eNZ = +9m.31s., eE = +9m.36s.
Long waves were also recorded at Columbia, Bozeman, Sitka, College, Ivigtut, Tashkent, Irkutsk, Strasbourg, Scoresby Sund, De Bilt, Kew, Paris, Christchurch, Sverdlovsk, Oak Ridge, Saskatoon, Chicago, Butte, and Philadelphia.

May 1d. Readings also at 0h. (Sumoto, Batavia, Sverdlovsk, Tashkent, Ksara, near Andijan, and near Manila), 1h. (near Nagoya and Sumoto), 2h. (La Paz), 4h. (Bucharest, Samarkand, and near Andijan), 5h. (Chiufeng, Irkutsk, Vladivostok, Samarkand, Sverdlovsk, Tashkent, Mount Wilson, Pasadena, Tinemaha, and near Nagoya), 6h. (Pasadena and Tinemaha), 8h. (Christchurch, Wellington, Alicante, and near Tiflis), 9h. (Tiflis), 11h. (near Grozny and Tiflis), 14h. (Denver), 15h. (Weston), 16h. (Medan), 19h. (Tortosa), 21h. (Madison), 23h. (Cape Town, Adelaide, Perth, Wellington, Christchurch, Rio de Janeiro, La Paz, Huancayo, San Juan, Florissant, Pasadena, Tinemaha, Vladivostok, Calcutta, Bombay, Baku, Almata, Andijan, Tashkent, Tiflis, Ksara, Sverdlovsk, Irkutsk, De Bilt, Paris, Jersey, Kew, Triest, Almeria, Malaga, and San Fernando. These appear to account for several shocks).

May 2d. Readings at 0h. (Hong Kong, Scoresby Sund, Copenhagen, Stuttgart, Strasbourg, Uccle, Stonyhurst, St. Louis, and La Paz), 1h. (Perth and near Andijan), 2h. (near Triest and near Nagoya), 4h. (Rio de Janeiro, Paris, and Ksara), 6h. (Andijan and Samarkand), 9h. (Hong Kong), 10h. (Sverdlovsk, Tashkent, and near Almata), 11h. (Christchurch (3) and near Wellington (2)), 14h. (Pasadena), 15h. (La Paz), 18h. (Samarkand, Andijan, and near Wellington), 19h. (Christchurch, Wellington, Tiflis (2), and Ksara (2)), 21h. (near Tiflis), 22h. (Pasadena, Tinemaha, Sverdlovsk, Ksara, Tashkent, Chiufeng, Tiflis, Irkutsk, near Erevan, Grozny, and Piatigorsk), 23h. (Hong Kong, Bombay, Baku, Pulkovo, Copenhagen, De Bilt, Paris, Uccle, Strasbourg, Stuttgart, and Rathfarnham Castle).

May 3d. 15h. 50m. 30s. Epicentre 33°·4N. 132°·1E.
(given by the Japanese stations).

$A = -\cdot5609$, $B = +\cdot6207$, $C = +\cdot5479$; $\delta = +7$; $h = +1$;
$D = +\cdot742$, $E = +\cdot670$; $G = -\cdot367$, $H = +\cdot407$, $K = -\cdot837$.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Hukuoka		1·4	277	0 27	0	0 45	− 1	0·8
Hukuoka B		1·4	277	0 28	+ 1	1 0 46	0	—
Sumoto	N.	2·5	68	e 0 43	0	1 22	S_g	1·4
Kobe		2·9	63	e 0 48	0	1 31	S*	1·7
Husan		3·0	304	e 0 59	P_g	e 1 26	− 1	—
Toyooka		3·1	46	1 0	P_g	1 41	S_g	1·8
Taikyu		3·8	312	e 0 26	?	1 25	−22	—
Nagoya		4·4	65	e 1 9	− 1	1 55	− 7	2·9
Keizyo		5·9	316	e 2 59	S*	—	—	—
Zinsen		6·0	315	—	—	e 3 13	S_g	—

Sumoto gives also ePZ = +45s., iPEN = +47s.

May 3d. Readings also at 2h. (Merida, Erevan, Grozny, and near Tiflis), 4h. (Mount Wilson, Pasadena, Oak Ridge, near La Paz, and near Algiers), 5h. (Batavia, near Santiago, San Javier, and near Mizusawa), 7h. (Christchurch and Wellington), 9h. (Sverdlovsk, Tashkent, Irkutsk, Hong Kong, Ksara, Tiflis, and Batavia), 11h. (Christchurch), 13h. (Wellington), 14h. (Prague, Andijan, near Samarkand, and near Christchurch), 15h. (Tiflis (2) and Malaga), 18h. (Hong Kong, Irkutsk, Tashkent, Sverdlovsk, and Manila), 21h. (near Malaga (2)).

May 4d. 5h. 8m. 41s. Epicentre 59°·2N. 153°·8W.

$A = -\cdot4617$, $B = -\cdot2272$, $C = +\cdot8574$; $\delta = -8$; $h = -9$;
$D = -\cdot442$, $E = +\cdot897$; $G = -\cdot769$, $H = -\cdot379$, $K = -\cdot515$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		6·3	23	1 37	+ 1	2 55	+ 5	3·1	—
Sitka		10·0	94	e 2 20	− 7	e 4 20	− 2	e 4·9	—
Victoria		20·8	107	4 48	+ 3	8 42	+ 9	10·8	—
Seattle		21·8	107	e 6 9	?	e 9 14	SS	10·7	—
Saskatoon		27·0	84	5 46	+ 1	10 26	+ 4	e 13·3	—
Butte		27·8	100	e 5 54	+ 1	e 10 32	− 3	e 14·5	—
Ukiah		27·9	122	e 9 1	P_gP	e 10 37	0	—	—
Bozeman		28·8	98	e 5 31	−31	e 10 33	−18	e 15·1	—
Berkeley		29·4	122	e 6 13	+ 6	e 10 49	−12	—	—
Tinemaha		31·8	118	e 6 31	+ 3	—	—	—	—
Mount Wilson		34·3	120	i 6 49	− 1	—	—	—	—
Pasadena		34·3	120	i 6 49	− 1	e 12 24	+ 7	e 14·6	—
La Jolla	Z.	35·8	121	e 6 58	− 5	—	—	—	—
Honolulu		38·0	185	e 7 39	+18	e 14 13	+59	e 18·6	—
Tucson		39·2	114	e 7 31	0	e 13 36	+ 4	e 20·8	—
Madison		41·7	82	e 7 55	+ 3	e 14 13	+ 3	e 22·3	—
Chicago		43·5	83	—	—	e 14 27	− 9	e 20·9	—
Florissant		44·4	88	i 8 15	+ 1	e 14 50	+ 1	e 21·3	23·9
St. Louis		44·6	88	e 8 14	− 2	e 14 49	− 3	e 21·6	24·0
Scoresby Sund		46·2	21	—	—	15 14	− 1	22·3	—
Toronto		46·3	75	—	—	15 23	+ 7	e 24·3	—
Little Rock		46·4	94	e 8 33	+ 3	—	—	e 24·4	24·9
Vladivostok		46·7	284	—	—	e 15 14	− 8	19·9	29·0
Ivigtut		46·9	40	8 14	−20	15 29	+ 4	22·3	—
Ottawa		46·9	70	8 37	+ 3	15 25	0	e 23·3	—
Buffalo		47·2	75	i 8 35	− 1	e 15 24	− 5	—	—
Shawinigan Falls		47·5	67	e 8 41	+ 3	—	—	e 24·3	—
Seven Falls		48·0	66	8 38	− 5	15 33	− 8	e 25·3	—
Vermont		48·8	69	—	—	e 15 51	− 1	i 25·6	—
Williamstown		50·1	70	i 8 59	0	e 19 5	SS	e 25·7	28·3
Georgetown		51·0	77	e 9 6	0	e 16 9	−13	e 29·3	—
Oak Ridge		51·1	70	i 9 6	0	e 16 25	+ 1	e 26·3	30·8
Philadelphia		51·2	75	—	—	e 16 23	− 2	e 25·8	—
East Machias		51·3	65	—	—	e 16 44	+18	e 24·6	—
Weston		51·3	70	i 9 8a	0	e 16 28	+ 2	25·6	—
Kobe	E.	51·4	274	—	—	e 16 27	− 1	—	26·6
Irkutsk		52·3	311	e 9 51	+36	e 16 29	−11	25·3	28·9
Columbia		52·8	84	—	—	e 16 43	− 4	e 25·4	—
Chiufeng		56·7	294	e 9 50	+ 2	e 17 32	− 8	i 33·1	35·0
Sverdlovsk		61·1	340	e 10 24	+ 6	18 38	+ 1	39·3	39·8
Zi-ka-wei	Z.	61·2	283	e 10 12	− 7	—	—	—	40·1
Pulkovo		61·3	358	e 10 52	+32	e 18 28	−11	26·3	36·9
Aberdeen		61·8	18	—	—	e 18 52	+ 6	e 30·7	—
Semipalatinsk		62·2	325	—	—	e 22 2	?	—	—
Edinburgh		62·8	18	—	—	e 22 19?	?	30·3	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Oxford		67·2	18	—	—	e 19 52	0	e 29·3	41·9
Kew		67·6	17	—	—	e 20 6	+ 9	e 27·3	33·9
De Bilt		67·8	14	—	—	e 20 3	+ 3	e 33·3	39·3
Uccle		68·9	15	—	—	e 20 14	+ 1	e 33·3	—
Almata		69·6	323	e 11 29	+16	—	—	—	—
Cheb		70·5	9	—	—	e 19 19?	?	e 42·3	52·3
Stuttgart		71·5	12	e 11 55	+31	e 20 49	+ 6	e 32·3	—
Hong Kong		72·1	284	19 2	?	—	—	—	43·0
Andijan		73·3	326	e 11 42	+ 7	—	—	e 40·7	—
Tashkent		73·7	328	e 9 57	?	e 20 55	−13	e 37·3	42·5
Triest		75·0	9	—	—	e 21 57	+34	e 39·2	44·7
Samarkand		75·8	330	e 11 48	− 2	—	—	—	—
Yalta		76·5	355	e 11 53	− 1	—	—	—	—
Toledo		78·1	24	e 12 2	0	—	—	40·3	—
Tiflis		78·3	346	—	—	e 22 1	+ 2	e 37·3	53·9
Baku		78·8	343	—	—	e 22 16	+12	e 42·8	51·5
Granada		80·8	25	e 12 6	−11	e 22 9	−16	—	—
Malaga		81·1	25	—	—	e 22 46	+18	41·9	—
Agra	E.	83·9	315	—	—	i 22 53	− 3	—	47·0
Calcutta	N.	84·0	305	—	—	e 36 58	?	—	52·7
Ksara		87·0	352	e 13 52	?	e 24 9	+42	—	—
Bombay	N.	93·4	317	—	—	e 24 2	−22	e 50·3	—
Huancayo		94·4	106	—	—	e 24 1	[+ 3]	e 42·9	—
Kodaikanal	E.	99·5	309	—	—	e 37 38	?	—	—
La Paz		101·8	102	31 30	SS	—	—	59·3	65·0

Additional readings :—
College e = +2m.29s.
Sitka e = +3m.51s.
Butte eSS = +12m.47s.
Bozeman eSS = +13m.1s.
Berkeley eSE = +10m.57s., eZ = +11m.4s.
Honolulu e = +7m.57s., ePP = +8m.31s., eSSS = +16m.55s.
Tucson e = +9m.38s., eSS = +16m.26s.
Madison ePP = +9m.34s., e = +17m.37s.
Florissant ePPZ = +9m.48s., eN = +9m.59s., iP_cP = +10m.8s., iPPP = +10m.13s., eEN = +14m.43s., iSS = +14m.57s., iEN = +18m.2s., eGE = +18m.7s.
St. Louis eN = +10m.1s. and +18m.3s., eE = +18m.17s.
Scoresby Sund = +18m.25s.
Toronto SS = +19m.1s.
Little Rock eE = +18m.47s., eN = +18m.59s., eE = +21m.47s., eN = +21m.53s. and +23m.25s.
Vladivostok e = +14m.4s.
Ivigtut +18m.55s.
Ottawa SS = +18m.45s.
Buffalo i = +10m.30s., e = +18m.44s.
Seven Falls SS = +19m.13s.
Vermont eSS = +19m.26s., e = +20m.52s., +21m.54s., and +24m.1s., iL_g = +25·6m.
Georgetown e = +9m.9s.
Oak Ridge eSSN = +19m.59s., eSSZ = +20m.11s.
Philadelphia iS = +16m.31s., eSS = +19m.59s., eSSS = +22m.4s., e = +23m.29s.
East Machias eSS = +19m.55s., e = +20m.20s.
Weston iP_cP = +10m.23s., ePS = +16m.49s.
Kobe eSE? = +20m.54s.
Irkutsk e = +18m.55s.
Chiufeng eZ = +12m.14s., iE = +17m.38s.
Sverdlovsk L_g = +30·8m.
Pulkovo e = +22m.32s.
Aberdeen e = +26m.52s.
Stuttgart eSS = +25m.39s.
Tashkent e = +17m.19s., +22m.42s., +24m.18s., +25m.32s., +29m.18s., +33m.26s., and +35m.6s.
Triest e = +33m.58s.
Baku e = +31m.4s.
Malaga eS = +23m.35s., e = +24m.51s., +25m.25s., and +37m.5s.
Calcutta eN = +45m.56s. and +49m.10s.
Long waves were also recorded at San Juan, Rio de Janeiro, Pennsylvania Wellington, Husan, Keizyo, Zinsen, Medan, Phu-Lien, Hyderabad, Moscow, and many European stations.

May 4d. 16h. 30m. 55s. Epicentre 36°·0N. 140°·1E. (as on 1937 April 13d.).

Strongly felt at Tukubasan, Kakioka, Kumagaya, Mito, Utunomiya, and Maebasi. Moderately at Tokyo, Hunatu, Kohu, and Hukusima. Macroseismic radius 200-300km. Epicentre 36°·1N. 140°·0E., depth of focus 50km., given by Seismological Bulletin of the Central Meteorological Observatory, Tokyo.

$A = -\cdot6221$, $B = +\cdot5202$, $C = +\cdot5852$; $\delta = +8$; $h = 0$;
$D = +\cdot641$, $E = +\cdot767$; $G = -\cdot449$, $H = +\cdot375$, $K = -\cdot811$.

	Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Kakioka	0·2	16	0 11a	+ 1	0 19	+ 3	—	—
Tukubasan	0·2	0	0 11a	+ 1	0 20	+ 4	—	—
Tokyo C.M. Obs.	0·4	222	i 0 16a	+ 3	0 24	+ 3	—	0·5
Tokyo I.U.	0·4	222	0 15	+ 2	0 22	+ 1	—	—
Komaba	0·5	224	0 13	− 1	0 21	− 2	—	—
Mito	0·5	38	0 14k	0	0 22	− 1	—	—
Kumagaya	0·6	285	0 13k	− 2	0 21	− 5	—	—
Mitaka	0·6	233	0 15	0	0 24	− 2	—	—
Utunomiya	0·6	341	0 14k	− 1	0 22	− 4	—	—
Tyosi	0·7	113	0 18	+ 1	0 27	− 1	—	—
Yokohama	0·7	213	0 18k	+ 1	0 29	+ 1	—	—
Kamakura	0·8	213	0 19	+ 1	0 32	+ 1	—	—
Katuura	0·8	175	0 20	+ 2	0 36	+ 5	—	—
Kiyosumi	0·8	175	0 26	+ 8	0 41	+10	—	—
Titibu	0·8	269	0 26	+ 8	0 34	+ 3	—	—
Maebasi	0·9	296	0 17k	− 3	0 28	− 6	—	—
Koyama	1·1	234	0 26	+ 4	0 39	0	—	—
Mera	1·1	191	0 23k	+ 1	0 49	+10	—	—
Onahama	1·1	35	0 17	− 5	0 30	− 9	—	—
Gotenba	1·2	234	0 25k	+ 1	0 42	+ 1	—	—
Hunatu	1·2	245	0 22k	− 2	0 36	− 5	—	—
Misima	1·3	227	0 24	− 1	0 43	− 1	—	—
Ito	1·3	218	0 26k	+ 1	0 44	0	—	—
Kohu	1·3	254	0 23k	− 2	0 39	− 5	—	—
Oiwake	1·3	285	0 22k	− 3	0 38	− 6	—	—
Numadu	1·4	229	0 28	+ 1	0 43	− 3	—	—
Yosiwara	1·4	234	0 26	− 1	0 43	− 3	—	—
Aidu	1·6	0	0 28k	− 2	0 45	− 6	—	—
Susaki	1·6	214	0 28	− 2	0 47	− 4	—	—
Matumoto	1·7	278	0 30k	− 1	0 48	− 6	—	—
Nagano	1·7	294	0 29k	− 2	0 48	− 6	—	—
Hukusima	1·8	10	0 31k	− 1	0 52	− 4	—	—
Iida	1·9	255	0 37k	+ 3	1 2	+ 3	—	—
Takada	1·9	307	0 28	− 6	0 52	− 7	—	—
Niigata	2·1	337	0 44	+ 7	—	—	—	—
Omaesaki	2·1	228	0 35	− 2	1 6	+ 2	—	—
Hamamatu	2·3	237	0 40	0	1 12	+ 3	—	—
Sendai	2·3	16	0 40k	0	1 7	− 2	—	—
Takayama	2·3	274	0 42	+ 2	1 10	+ 1	—	—
Yamagata	2·3	5	0 39	− 1	1 6	− 3	—	—
Toyama	2·4	286	0 39	− 2	1 13	+ 1	—	—
Hatidyozima	2·6	184	0 47	+ 3	1 23	+ 6	—	—
Husiki	2·6	288	0 32	−12	1 0	−17	—	—
Isinomaki	2·6	22	0 39	− 5	1 22	+ 5	—	—
Nagoya	2·7	252	0 43	− 2	1 12	− 7	—	1·9
Gihu	2·8	258	0 43a	− 4	1 22	0	—	—
Kanazawa	2·8	281	0 41	− 6	1 18	− 4	—	—
Hikone	2·9	257	0 49	+ 1	1 30	+ 6	—	—
Wazima	2·9	298	0 44k	− 4	1 23	− 1	—	—
Kameyama	3·2	249	0 51	− 1	1 30	− 2	—	—
Mizusawa E.	3·2	15	i 0 55	+ 3	i 1 30	− 2	—	—
N.	3·2	15	i 0 52	0	1 27	− 5	—	—
Tu	3·2	247	0 51	− 1	—	—	—	—
Akita	3·7	359	1 5	+ 5	1 51	+ 6	—	—
Kyoto	3·7	255	1 0	0	1 54	+ 9	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Morioka		3·8	12	1 2	+ 1	1 45	− 2	—	—
Miyako		3·9	21	1 9	+ 7	1 53	+ 3	—	—
Miyadu		3·9	265	1 1	− 1	1 56	+ 6	—	—
Osaka		4·0	252	1 4	0	1 45	− 7	—	—
Osaka B		4·0	252	1 12	+ 8	—	—	—	—
Kobe		4·2	254	1 7k	0	2 0	+ 3	—	2·5
Toyooka		4·3	266	1 5	− 3	2 3	+ 3	—	2·3
Siomisaki		4·4	237	1 22	P*	2 19	S*	—	—
Wakayama		4·4	248	1 7k	− 3	2 21	S_g	—	—
Sumoto		4·6	251	e 1 14	+ 2	2 15	+ 8	—	2·4
Hatinohe		4·7	14	1 11	− 3	2 5	− 5	—	—
Aomori		4·8	6	1 16	+ 1	2 21	+ 9	—	—
Tokusima		4·9	249	1 25	+ 8	2 32	S*	—	—
Okayama		5·2	257	1 38	P*	2 36	S*	—	—
Tadotu		5·5	254	1 27	+ 2	2 50	S*	—	—
Muroto		5·6	243	1 49	P_g	2 50	S*	—	—
Sakai		5·6	268	1 50	P_g	3 1	S_g	—	—
Hakodate		5·8	4	1 28	− 1	2 59	S*	—	—
Koti		5·9	248	1 54	P_g	2 47	+ 7	—	—
Muroran		6·3	5	1 34	− 2	—	—	—	—
Hirosima		6·4	258	3 1	S	(3 1)	+ 8	—	—
Matuyama		6·4	252	1 36	− 2	—	—	—	—
Urakawa		6·5	17	1 39	0	—	—	—	—
Hamada		6·6	263	3 21	S	(3 21)	S*	—	—
Sapporo		7·1	6	1 49	+ 1	—	—	—	—
Obihiro		7·3	18	1 47	− 3	—	—	—	—
Asahigawa		8·0	12	3 32	S	(3 32)	− 1	—	—
Hukuoka B		8·3	257	e 2 3	− 1	e 4 17	S*	—	—
Miyazaki		8·3	243	1 58	− 6	3 40	0	—	—
Kumamoto		8·4	251	2 13	+ 7	—	—	—	—
Nagasaki		9·1	252	3 37	S	(3 37)	−23	—	—
Vladivostok		9·5	322	e 2 20	0	e 4 12	+ 2	4·7	—
Tomie		10·0	253	4 3	S	(4 3)	−19	—	—
Chiufeng		19·3	290	e 4 18	−11	7 50	−12	—	—
Irkutsk		30·0	314	—	—	e 12 5?	+55	e 19·1	—
Andijan		52·1	297	e 9 6	− 8	—	—	—	—
Tashkent		54·2	299	—	—	e 24 47	?	e 27·6	33·3
Sverdlovsk		55·2	319	i 9 28	− 9	17 5	−15	26·1	—
Samarkand		56·4	297	e 9 9	−36	—	—	—	—
Yalta		75·6	316	e 11 41	− 7	—	—	—	—
Tinemaha		77·3	54	i 11 54	− 4	—	—	—	—
Pasadena		79·0	56	i 12 2	− 5	—	—	—	—
Mount Wilson	z.	79·1	56	i 12 2	− 6	—	—	—	—
Riverside	z.	79·7	56	i 12 5	− 6	—	—	—	—
La Jolla	z.	80·4	56	i 12 10	− 5	—	—	—	—
Ksara		80·9	305	e 12 12	− 5	—	—	—	50·1
Tucson		85·1	53	12 34	− 5	—	—	—	—

Additional readings :—
Kobe eE = +1m.13s., iE = +1m.18s., iZ = +1m.19s., SN = +2m.3s., iE = +4m.17s.
Toyooka PEN = +1m.7s.
Chiufeng iEZ = +4m.40s., iN = +8m.17s., iZ = +8m.23s.
Irkutsk e = +14m.5s.?
Long waves were also recorded at Tashkent.

May 4d. Readings also at 2h. (Merida, Wellington, and Yalta), 3h. (Mount Wilson and Pasadena), 4h. (Andijan, Samarkand, Tashkent, and Irkutsk), 7h. (Ksara, Baku, and Tashkent), 8h. and 9h. (near Andijan), 10h. (near Sumoto), 12h. (near Manila), 13h. (near Samarkand), 15h. (Chiufeng, Hong Kong, Phu-Lien, Irkutsk, Vladivostok, Medan, Samarkand, Andijan, Tashkent, Agra, and Calcutta), 16h. (Sverdlovsk), 17h. (Christchurch (2), and Wellington (3), Tucson, Mount Wilson, and Pasadena), 18h. (Almata, Andijan, and near Samarkand), 21h. (Frunse, Sebastopol, Theodosia, and Yalta).

May 5d. 21h. 15m. 35s. Epicentre 18°·5N. 146°·0E.

$A = -\cdot7868$, $B = +\cdot5307$, $C = +\cdot3154$; $\delta = +17$; $h = +5$;
$D = +\cdot559$, $E = +\cdot829$; $G = -\cdot261$, $H = +\cdot176$, $K = -\cdot949$.

A depth of focus 0·020 has been assumed.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima		9·3	338	2 13	+ 1	—	—	—	—
Mera		17·2	343	4 2	+10	7 56	+60	—	—
Ito		17·5	341	3 56	+ 1	6 57	− 6	—	—
Siomisaki		17·5	330	3 48	− 7	6 58	− 5	—	—
Misima		17·7	341	3 57	− 1	7 4	− 3	—	—
Numadu		17·7	340	3 58	0	6 59	− 8	—	—
Tyosi		17·7	346	4 3	+ 5	7 9	+ 2	—	—
Yokohama		17·8	347	3 58	− 1	7 7	− 2	—	—
Hunatu		18·1	341	4 1	− 1	—	—	—	—
Muroto		18·1	326	4 3	+ 1	7 15	− 1	—	—
Kameyama		18·3	335	4 2	− 2	7 14	− 6	—	—
Kohu		18·3	341	4 4	0	7 18	− 2	—	—
Tukubasan		18·4	347	4 17	+12	7 48	+26	—	—
Kakioka		18·4	347	4 4	− 1	7 18	− 4	—	—
Mito		18·4	347	4 0	− 5	7 14	− 8	—	—
Nagoya		18·4	337	4 5	0	7 17	− 5	—	7·6
Wakayama		18·4	331	4 2	− 3	7 15	− 7	—	—
Kumagaya		18·5	334	4 5a	− 1	7 21	− 3	—	—
Osaka		18·6	332	4 19	+12	7 22	− 4	—	—
Osaka B		18·6	332	4 7	0	—	—	—	—
Sumoto		18·6	331	e 4 4k	− 3	7 21	− 5	—	7·4
Gihu		18·7	337	4 7	− 1	7 23	− 5	—	—
Miyazaki		18·7	318	4 7a	− 1	7 28	0	—	—
Hikone		18·8	336	4 10	0	7 23	− 7	—	—
Maebasi		18·8	334	4 9	− 1	7 26	− 4	—	—
Kobe	E.	18·8	332	5 7	+57	7 20	−10	—	8·2
Oiwake		18·9	343	4 10	− 1	7 30	− 2	—	—
Matumoto		19·0	341	4 15	+ 3	7 33	− 1	—	—
Nagano		19·3	343	4 14	− 1	7 37	− 3	—	—
Takada		19·7	344	4 38	+19	7 56	+ 9	—	—
Toyama		19·7	338	4 20	+ 1	7 44	− 3	—	—
Hukusima		19·8	348	4 20	0	7 56	+ 7	—	—
Kumamoto		19·8	321	4 17	− 3	7 39	−10	—	—
Sendai		20·2	349	4 24	0	7 59	+ 3	—	—
Niigata		20·3	344	4 26	+ 1	—	—	—	—
Yamagata		20·3	348	4 25	0	—	—	—	—
Hukuoka B		20·5	321	e 5 11	+44	e 7 56	− 6	—	—
Mizusawa		21·0	350	4 32	0	i 8 15	+ 4	—	—
Akita		21·7	349	4 41	+ 2	8 29	+ 5	—	—
Aomori		22·7	350	4 49	+ 1	8 38	− 3	—	—
Hakodate		23·6	350	5 7	+10	—	—	—	—
Taito		23·6	285	4 54	− 3	—	—	—	—
Kosyun		23·9	283	5 0	0	—	—	—	—
Manila		24·3	266	5 3	− 1	8 41	−27	10·7	—
Sapporo		24·8	352	5 10	+ 2	—	—	—	—
Zi-ka-wei	Z.	25·4	306	e 5 13	− 1	—	—	—	—
Vladivostok		27·3	337	e 5 27	− 5	e 9 49	− 9	12·0	—
Chiufeng		33·5	317	6 22	− 4	11 24	−11	—	—
Irkutsk		46·8	326	8 12	− 3	e 14 43	− 9	e 18·4	—
Calcutta	N.	53·9	285	e 7 22	−107	—	—	—	—
Semipalatinsk		60·5	318	e 9 21	−34	—	—	—	—
Almata		62·4	310	e 10 8	0	e 18 17	− 3	—	—
Andijan		65·9	307	e 10 27	− 4	e 18 58	− 5	—	—
Tashkent		68·2	308	10 41	− 4	19 21	−10	e 34·4	39·1
Sverdlovsk		72·2	326	i 11 5	− 4	20 7	−10	33·4	—
Baku		82·7	310	e 12 12	+ 5	—	—	e 42·4	—
Tinemaha		83·5	54	i 12 12	+ 1	e 22 14	− 3	—	—
Mount Wilson	Z.	84·5	56	i 12 17	+ 1	—	—	—	—
Pasadena		84·5	56	i 12 17a	+ 1	e 22 20	− 7	—	—
Moscow		84·8	328	e 12 14	− 3	22 12	−18	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Riverside		85·2	56	i 12 20	+ 1	—	—	—	—
La Jolla	z.	85·6	57	i 12 24	+ 3	—	—	—	—
Tiflis		85·9	313	e 12 21	− 2	e 22 25	−16	e 43·4	—
Pulkovo		86·3	333	12 20	− 5	22 23	−22	39·4	—
Scoresby Sund		90·9	357	—	—	23 21	− 6	—	—
Tucson		90·9	56	i 12 49	+ 2	—	—	—	—
Yalta		91·9	318	e 12 50	− 1	—	—	—	—
Ksara		95·6	307	e 13 5	− 3	—	—	—	—
Zagreb		101·6	327	e 20 25?	?	—	—	—	—
La Paz	N.	147·4	91	19 27	[+ 5]	—	—	—	—

Additional readings :—
Mito i = +8m.5s.
Sumoto ePEN = +4m.6s.
Kobe eSZ = +7m.8s.
Zi-ka-wei iZ = +7m.15s., +12m.5s., and +14m.31s.
Vladivostok pP = +6m.7s., e = +11m.10s.
Chiufeng i = +12m.40s.
Sverdlovsk pP = +11m.52s., sS = +21m.32s.
Baku PS = +23m.5s., sS = +23m.32s.
Tinemaha iZ = +12m.58s. and +17m.14s.
Mount Wilson iZ = +13m.10s.
Pasadena iZ = +13m.4s. and +13m.13s.
Moscow pP = +13m.1s., e = +15m.27s. and +16m.17s., sS = +23m.44s.
Riverside iZ = +13m.8s.
La Jolla iZ = +13m.11s.
Tiflis eE = +23m.37s.
Pulkovo pP = +13m.9s., sS = +23m.57s., SS = +28m.13s.
Scoresby Sund = +24m.31s.
Tucson epP = +13m.36s., i = +13m.41s., eSP = +13m.59s., e = +15m.32s.
Ksara e = +26m.13s. and +31m.5s.
La Paz iN = +19m.38s.
Long waves were also recorded at Hong Kong, Stuttgart, and Copenhagen.

May 5d. Readings also at 0h. (Scoresby Sund and near Frunse), 2h. (near Branner), 3h. (Sverdlovsk and Tashkent), 4h. (near Frunse), 6h. (Scoresby Sund), 9h. (Tashkent, near Erevan, and Tiflis), 11h. (Christchurch and Wellington), 13h. (Sverdlovsk, Christchurch, Wellington, Mount Wilson, Pasadena, Tinemaha, and Tucson), 14h. (Scoresby Sund and near Hukuoka B), 17h. (Ksara), 19h. (Stuttgart, Alicante, Toledo, Malaga, near Algiers, near Almeria, and Granada), 20h. (Wellington), 21h. (near Sumoto and Toyooka), 22h. (Scoresby Sund), 23h. (Copenhagen, Bucharest, and near Sofia).

May 6d. 14h. 46m. 50s. Epicentre 40°·4N. 125°·1W. (as on 1937 Feb. 7d.).

A = −·4391, B = −·6248, C = +·6456 ; δ = −2 ; h = −2 ;
D = −·818, E = +·575 ; G = −·371, H = −·528, K = −·764.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Ferndale		0·6	75	e 0 17	+ 2	i 0 30	+ 4	—
Ukiah		1·9	131	e 0 33	− 1	e 0 42	−17	—
Berkeley		3·4	138	e 0 54	− 1	i 1 45	S*	—
San Francisco		3·4	140	e 0 54	− 1	e 1 42	+ 5	—
Branner		3·8	141	e 0 59	− 2	i 1 53	+ 6	—
Lick		4·1	137	e 1 4	− 1	—	—	—
Fresno	N.	5·5	129	e 1 25	0	—	—	—
Tinemaha	z.	6·3	120	i 1 38	+ 2	—	—	—
Mount Wilson	z.	8·4	134	e 2 7	+ 1	—	—	—
Pasadena		8·4	136	e 2 7	+ 1	i 3 44	+ 1	—
Riverside	z.	8·9	133	e 2 12	0	—	—	—
Tucson		14·1	121	3 27	+ 4	e 9 13	?	e 10·6

Additional readings :—
Berkeley eE = +59s., eN = +1m.9s. and +1m.14s., eE = +1m.48s.
Fresno eN = +1m.30s.
Pasadena iZ = +2m.19s.
Long waves were also recorded at Bozeman, Butte, and Scoresby Sund.

May 6d. Readings also at 0h. (Andijan and near Almata), 3h. (La Paz, Almata, Andijan, near Kobe, Sumoto, Toyooka, and Nagoya), 4h. (Tashkent, near Almata and Andijan), 7h. (Wellington), 8h. (Mount Wilson and Pasadena), 9h. (Baku, Sverdlovsk (2), Tashkent, Hong Kong, Mount Wilson, near Kobe, and Sumoto), 10h. (Hong Kong, Sverdlovsk, Tashkent (2), Irkutsk, Chiufeng, Bombay, Calcutta, and Medan), 13h. (Kobe), 15h. (Christchurch, Tiflis, and near Ksara), 16h. (near Manila), 17h. (Kobe), 18h. (Stuttgart, Copenhagen, Pulkovo, Sverdlovsk, Baku, Tiflis, Tashkent, Almata, Andijan, Semipalatinsk, Vladivostok, Keizyo, Zinsen, Chiufeng, near Husan, and near Irkutsk), 21h. (Wellington), 23h. (Baku, Sverdlovsk, Tiflis, Ksara, Tashkent, Stuttgart, Cape Town, and near Tucson).

May 7d. 14h. 11m. 0s. Epicentre 54°·3N. 161°·5W. (as on 1937 April 29d.).

$A = -\cdot5559$, $B = -\cdot1860$, $C = +\cdot8102$; $\delta = +4$; $h = -7$;
$D = -\cdot317$, $E = +\cdot948$; $G = -\cdot768$, $H = -\cdot257$, $K = -\cdot586$.

A depth of focus 0·005 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
College		12·6	28	e 3 1	+ 3	e 5 24	+ 6	6·6	—
Sitka		14·9	69	e 3 30	+ 2	e 6 10	− 2	e 7·2	—
Victoria		24·3	88	5 23	+11	9 36	+12	12·0	—
Ukiah		29·9	104	—	—	(e 9 36)	−79	e 9·6	—
Berkeley		31·3	105	—	—	e 11 30	+13	—	—
Bozeman		32·9	84	—	—	e 11 12	−30	e 16·5	—
Honolulu		33·0	173	—	—	(e 13 54)	SS	e 13·9	—
Fresno	N.	33·5	104	e 6 54	+19	—	—	—	—
Tinemaha	Z.	34·1	102	e 6 44	+ 4	i 12 59	+58	—	—
Mount Wilson	Z.	36·3	104	e 7 2	+ 3	i 13 8	+33	—	—
Pasadena		36·3	104	e 7 3	+ 4	e 12 43	+ 8	e 15·3	—
Riverside	Z.	36·8	104	e 7 7	+ 4	i 13 10	+28	—	—
La Jolla		37·7	106	e 7 15	+ 4	e 13 12	+16	—	—
Vladivostok		43·8	283	e 7 59	− 2	14 29	+ 2	21·4	36·9
Nagoya		46·1	272	e 5 17	?	8 15	P	—	—
Kobe	E.	47·5	272	e 8 13	−17	—	—	—	—
Chicago		48·7	73	—	—	e 15 29	− 7	e 22·0	—
St. Louis	E.	49·4	77	e 8 43	− 2	i 15 45	− 1	—	—
Toronto		52·0	66	—	—	e 16 36	+14	e 28·0	—
Irkutsk		52·2	310	e 8 38	−28	e 15 40	−45	27·0	32·6
Scoresby Sund		52·2	17	—	—	16 42	+17	25·0	—
Ottawa		52·8	62	—	—	e 16 34	+ 1	e 26·0	—
Seven Falls		54·1	57	—	—	e 16 40	−10	29·0	—
Chiufeng		54·6	292	i 9 24a	0	e 16 59	+ 2	—	38·0
Williamstown		55·9	63	e 9 30?	− 4	—	—	—	32·0
Philadelphia		56·8	67	—	—	e 17 25	− 1	e 27·4	—
Weston		57·1	62	i 9 42k	0	i 17 33	+ 3	27·5	—
East Machias		57·4	58	—	—	e 17 31	− 3	e 27·7	—
Zi-ka-wei	Z.	58·0	280	9 47	− 1	17 50	+ 8	29·5	39·4
Semipalatinsk		63·6	321	—	—	e 18 50	− 4	—	—
Sverdlovsk		64·0	336	i 10 26	− 3	18 51	− 8	31·0	42·0
Pulkovo		65·9	354	10 38	− 3	19 20	− 2	31·0	39·6
Edinburgh		68·7	13	—	—	e 20 0?	+ 5	—	—
Hong Kong		68·9	279	20 2	S	(20 2)	+ 4	—	41·4
Moscow		69·2	348	i 11 0	− 2	e 20 1	0	37·5	43·5
Copenhagen		70·3	3	11 5	− 4	—	—	31·0	—
Manila		71·0	269	i 11 14a	+ 1	20 35	+13	—	—
Hamburg		72·3	5	e 11 20a	0	e 20 6	−31	e 43·0	—
De Bilt		73·4	8	11 28	+ 1	20 53	+ 3	e 37·0	48·9
Kew		73·4	12	e 11 26a	− 1	—	—	e 40·0	—
Uccle		74·6	11	11 34a	0	21 6	+ 3	e 36·0	—
Andijan		74·7	321	e 11 26	− 8	e 21 58	+54	—	—
Tashkent		75·3	323	11 35	− 3	21 8	− 3	e 37·0	47·4
Paris		76·4	12	e 12 0?	+16	—	—	46·0	—
Stuttgart		77·0	7	i 11 48a	0	e 21 28	− 1	e 44·0	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Strasbourg		77·1	8	e 17 49	?	—	—	e 39·0	—
Vienna		77·8	2	e 11 49	− 3	—	—	—	—
San Juan		78·4	75	—	—	e 21 48	+ 4	e 38·8	—
Piatigorsk		79·8	343	i 12 3	0	—	—	—	—
Grozny		80·0	340	e 12 9	+ 5	—	—	—	—
Yalta		80·7	349	e 12 10	+ 2	—	—	—	—
Tiflis		81·7	341	i 12 15	+ 2	e 22 26	+ 7	37·0	53·8
Agra	E.	84·1	309	e 12 25	0	e 23 2	+19	—	—
Ksara		91·0	346	i 12 59a	+ 1	e 23 54	+ 6	—	53·7

Additional readings :—
College e = +3m.10s.
Bozeman e = +12m.12s.
Pasadena eN = +8m.57s., iZ = +13m.8s.
St. Louis esSE = +16m.5s.
Vermont e = +26m.9s. and +28m.34s.
Philadelphia e = +20m.58s., +24m.40s., and +27m.22s.
Weston ePSE = +17m.51s.
Stuttgart eNZ = +12m.0s.
Tiflis P_cPZ = +12m.32s., eE = +24m.40s.
Ksara ePP = +16m.29s., ePS = +24m.51s.
Long waves were also recorded at Christchurch, Prague, Bidston, Rathfarnham, Castle, Oak Ridge, and Vermont.

May 7d. Readings also at 1h. (Medan and near Berkeley), 5h. (near Piatigorsk), 10h. (Toledo), 12h. (Phu-Lien, Medan, Hong Kong (2), and near Manila), 17h. (Chiufeng, Hong Kong, Manila, Irkutsk, Grozny, Sverdlovsk, and near Taihoku), 18h. (Nagoya, Mizusawa, Chiufeng, Hong Kong, Zinsen, Vladivostok, Irkutsk, Agra, Tashkent, Grozny, Tiflis, Ksara, Sverdlovsk, Moscow, Pulkovo, Copenhagen, Strasbourg, Cheb, Stuttgart, Kew, De Bilt, and Uccle), 19h. (Paris), 21h. (Grozny, Piatigorsk, Tiflis, and near Santiago), 22h. (Aberdeen, Edinburgh, Bidston, Rathfarnham Castle, Stonyhurst, Scoresby Sund, Copenhagen, Kew, De Bilt, Paris, Strasbourg, Uccle, Cheb, Stuttgart, and near Taihoku), 23h. (Mount Wilson, Pasadena, near Granada, and near Manila).

May 8d. Readings also at 11h. (Wellington), 12h. (Sverdlovsk, Pulkovo, Tashkent, Tananarive, Hong Kong, and near Manila), 13h. (Andijan), 14h. (Sumoto, and near Wellington), 15h. (La Paz), 16h. (Andijan and Toledo), 19h. (Wellington), 20h. (La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, Little Rock, Oak Ridge, Florissant, St. Louis, Weston, Williamstown, Scoresby Sund, Sverdlovsk, and near Lick), 21h. (Baku and Tiflis).

May 9d. 14h. 46m. 40s. Epicentre 44°·6N. 149°·4E. (as on 1937 Feb. 26d.).

A = −·6149, B = +·3637, C = +·6998 ; δ = +10 ; h = −3 ;
D = +·509, E = +·861 ; G = −·603, H = +·356, K = −·714.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	8·2	231	e 2 8	+ 5	i 3 37	− 1	—	—
	N.	8·2	231	e 2 11	+ 8	3 41	+ 3	—	—
Nagoya		13·4	229	e 3 25	+11	—	—	9·5	—
Toyooka	N.	14·3	236	3 26	0	e 6 3	− 3	7·3	10·1
	Z.	14·3	236	e 3 23	− 3	e 6 16	+10	—	11·1
Kobe		14·7	233	3 40	PP	6 24	+ 8	e 7·5	10·4
Sumoto		15·2	232	4 1	PPP	e 6 55	SSS	7·8	10·7
Taikyu		18·1	248	e 4 4	−10	—	—	e 9·0	—
Hukuoka		18·3	238	e 2 43	?	—	—	e 7·8	—
Hukuoka B		18·3	238	e 4 32	PP	8 14	SSS	e 10·5	—
Husan		18·3	346	e 4 21	+ 4	e 8 12	SSS	e 10·4	—
Keizyo		18·3	254	e 4 18	+ 1	e 7 54	+15	e 10·3	12·6
Heizyo		18·4	261	e 4 21	+ 3	9 12	L	(9·2)	—
Zinsen		18·5	256	e 4 22	+ 3	e 8 12	SSS	e 9·8	—
Chiufeng		24·9	272	5 28a	+ 2	9 56	+ 9	12·5	15·7

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Zi-ka-wei	Z.	25·7	248	e 5 34	+ 1	10 22	+21	13·9	17·1
Nanking		26·9	253	e 5 48	+ 3	—	—	—	—
Irkutsk		30·5	301	6 18	+ 1	e 11 28	+10	17·3	—
Hong Kong		36·4	244	7 15	+ 7	12 58	+ 8	18·1	22·4
Manila		38·4	227	i 7 28	+ 3	13 28	+ 8	20·3	24·3
College		39·4	36	e 7 33	0	e 13 25	−10	e 19·3	—
Semipalatinsk		45·5	303	e 8 27	+ 4	—	—	—	—
Sitka		46·7	46	e 8 31	− 1	e 15 23	+ 1	e 23·7	—
Honolulu		49·0	100	—	—	e 15 52	− 3	22·0	—
Frunse		52·3	296	e 9 27	+12	e 16 13	−27	—	—
Sverdlovsk		53·6	317	i 9 20	− 5	16 53	− 5	33·3	64·7
Calcutta	N.	54·1	267	9 31	+ 2	17 17	+12	26·6	38·3
Andijan		54·8	295	e 9 7	−27	e 16 34	−40	—	—
Tchimkent		55·7	298	e 9 47	+ 7	—	—	—	—
Tashkent		56·4	297	i 9 44	− 1	i 17 50	+14	e 27·8	36·1
Victoria		57·0	53	—	—	e 17 28	−15	e 24·3	—
Agra	E.	58·6	277	9 59	− 2	18 11	+ 7	—	37·2
Medan		60·3	243	e 18 35	S	(e 18 35)	+ 9	e 30·3	—
Ukiah		62·3	61	—	—	e 18 32	−20	—	—
Berkeley		63·6	62	—	—	i 19 7	− 1	i 26·7	—
Butte		64·4	49	e 10 32	− 8	—	—	—	—
Moscow		64·7	324	10 44	+ 2	19 17	− 5	34·8	41·9
Pulkovo		64·7	331	10 42	0	e 19 15	− 7	32·3	35·9
Scoresby Sund		65·1	357	10 44	− 1	19 23	− 4	29·3	—
Bozeman		65·4	49	—	—	e 19 25	− 5	e 29·3	—
Tinemaha	Z.	66·6	61	i 10 52	− 2	—	—	—	—
Bombay		67·5	274	i 11 4	+ 4	i 20 11	+15	—	—
Pasadena		68·5	63	e 11 4	− 2	—	—	e 27·3	—
Mount Wilson	Z.	68·6	63	e 11 3	− 4	—	—	—	—
Upsala		68·7	336	e 11 7	0	e 20 14	+ 4	e 35·3	44·3
Baku		68·8	306	11 12	+ 4	20 20	+ 9	36·3	55·4
Riverside	Z.	69·1	63	i 11 6	− 4	—	—	—	—
Grozny		69·2	310	11 14	+ 4	e 20 32	+16	—	—
Kodaikanal	E.	70·0	265	e 11 20?	+ 5	—	—	—	—
La Jolla	Z.	70·0	63	e 11 25	+10	—	—	—	—
Piatigorsk		70·1	312	e 11 16	0	—	—	—	—
Colombo		70·6	260	20 30	S	(20 30)	− 3	—	48·3
Tiflis		70·8	310	e 11 20	0	e 20 52	+17	35·1	48·0
Bergen		71·3	342	—	—	e 20 41	0	—	—
Erevan		72·0	308	e 11 32	+ 4	—	—	—	—
Sotchi		72·2	314	e 11 34	+ 5	—	—	—	—
Theodosia		73·3	317	11 36	+ 1	e 21 19	+15	43·3	—
Ivigtut		73·6	9	11 37	0	21 3	− 4	33·3	—
Copenhagen		73·7	336	11 36	− 2	21 8	0	34·3	—
Simferopol		74·0	318	11 39	0	e 21 12	+ 1	41·0	—
Yalta		74·3	317	11 41	0	21 28	+13	45·3	—
Tucson		74·4	60	e 11 38	− 4	—	—	e 32·5	—
Sebastopol		74·5	318	e 11 46	+ 4	21 35	+18	42·3	—
Aberdeen		75·8	344	e 21 42	S	(e 21 42)	+11	—	50·6
Hamburg		76·2	337	e 11 50a	− 2	e 21 44	+ 8	e 37·3	48·3
Edinburgh		77·2	344	—	—	e 21 20?	−27	—	—
Prague		77·9	332	e 12 0	− 1	e 21 52	− 2	e 33·3	43·3
Durham		78·0	343	11 55	− 7	21 51	− 4	—	51·3
Bucharest		78·1	322	e 12 7	+ 5	22 12	+16	36·3	43·3
Jena		78·1	333	e 12 2	0	—	—	e 40·3	49·8
Riverview		78·1	178	e 16 44	PPP	e 22 2	+ 6	e 37·2	44·7
Sydney		78·1	178	e 18 20	?	—	—	35·2	60·0
Budapest		78·4	328	e 12 7	+ 3	i 22 2	+ 2	e 48·3	51·8
Stara Dala		78·4	329	e 12 9	+ 5	e 22 17	+17	—	57·8
Cheb		78·6	333	e 12 8	+ 3	e 22 12	+10	e 42·3	46·3

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vienna		78·8	330	e 12 20?	+14	22 20?	+16	e 43·8	55·8
De Bilt		78·9	338	12 9	+ 2	22 7	+ 2	e 36·3	43·2
Stonyhurst		79·0	343	—	—	e 21 50	−16	43·3	48·3
Bidston		79·6	344	—	—	22 20?	+ 8	41·3?	—
Chicago		79·9	40	—	—	e 22 9	− 7	e 37·6	—
Belgrade		80·1	325	e 12 13a	0	e 22 34	+16	e 45·2	—
Graz		80·1	330	e 12 7	− 6	e 22 27	+ 9	e 42·3	56·3
Rathfarnham Castle		80·3	345	—	—	e 22 20	0	41·5	53·3
Uccle		80·3	339	e 12 14	0	e 22 20	0	e 37·3	50·1
Sofia		80·6	322	e 12 20?	+ 4	e 22 42	+19	—	45·3
Oxford		80·7	341	12 18	+ 2	22 24	0	e 41·3	51·6
Stuttgart		80·7	335	e 12 16a	0	e 22 23	− 1	e 40·3	52·2
Kew		80·8	341	i 12 18a	+ 1	e 22 21	− 4	e 41·3	45·1
Florissant		81·0	43	i 12 18	0	e 22 26	− 1	e 41·5	44·0
Zagreb		81·0	329	e 12 19	+ 1	e 22 23	− 4	e 30·3	—
St. Louis		81·2	43	e 12 27	+ 8	e 22 25	− 4	e 37·8	47·2
Ksara		81·3	309	i 12 20a	0	22 52?	+22	—	55·0
Strasbourg		81·3	335	i 12 22	+ 2	e 22 32	+ 2	e 39·3	55·9
Seven Falls		81·6	26	—	—	e 22 24	− 9	e 36·3	—
Ottawa		81·9	30	—	—	e 22 23	−13	e 36·3	—
Triest		81·9	331	12 20	− 3	i 22 47	+11	e 40·3	47·3
Perth, W.A.		82·1	208	16 20?	?	—	—	—	—
Zurich		82·1	335	e 12 22a	− 2	e 22 55	+17	—	—
Basle		82·3	335	e 12 24	− 1	e 22 58	+18	e 48·3	—
Chur		82·3	334	e 12 23	− 2	e 22 57	+17	—	—
Paris		82·6	339	e 12 26	0	e 22 56	+13	45·3	55·3
Neuchatel		82·9	335	e 12 28	0	e 23 8	+22	—	—
Little Rock		83·2	47	e 12 26	− 3	e 22 45	− 4	e 45·9	53·8
Jersey		83·3	342	—	—	e 22 59	+ 9	e 43·5	—
Vermont		83·8	28	e 12 38	+ 6	e 22 30	−25	e 41·9	—
Williamstown		85·1	29	e 12 38	− 1	—	—	e 35·7	46·8
East Machias		85·2	25	—	—	e 23 23	+14	e 39·4	—
Oak Ridge		85·9	28	i 12 43	0	e 23 10	− 6	e 45·3	—
Weston		86·1	28	i 12 32k	−12	e 23 12	−·6	39·7	—
Philadelphia		86·8	33	—	—	e 23 7	[− 6]	e 40·5	—
Helwan		86·9	309	e 12 49	+ 1	23 10	[− 3]	—	62·8
Barcelona		89·5	336	—	—	e 24 6	+16	e 34·1	52·4
Christchurch		90·2	163	i 23 26	S	(i 23 26)	[− 8]	52·9	—
Tortosa	N.	90·5	336	—	—	e 23 49	−10	33·3	52·7
Toledo		92·6	340	e 13 14	− 1	e 24 12	− 6	e 42·6	58·9
Algiers		93·4	333	—	—	e 31 50?	?	e 52·3	—
Granada		95·0	338	e 13 41	+15	—	—	—	—
Malaga		95·5	337	—	—	e 23 44	[−20]	50·9	—
San Fernando		96·3	340	—	—	e 25 14	+25	53·3	—
San Juan		109·4	35	e 19 20	PP	e 33 38	SS	e 52·4	—
Huancayo		129·9	63	e 22 48	?	—	—	e 60·8	—
Rio de Janeiro	E.	156·1	28	—	—	e 42 20	?	—	—

Additional readings :—
Kobe ePE = +3m.45s.
Sumoto ePZ = +4m.4s.
Hukuoka e = +4m.22s.
Chiufeng PPN = +6m.7s.
Zi-ka-wei PPZ = +6m.26s., iZ = +10m.42s., SSZ = +11m.58s.
Irkutsk e = +7m.26s.
Hong Kong PP = +8m.30s., SS = +15m.40s.
College eSS = +16m.4s., eSSS = +17m.25s.
Sitka eSS = +18m.52s.
Honolulu e = +15m.30s., i = +15m.57s., iPS = +16m.6s.
Sverdlovsk L_g = +28·1m.
Calcutta N PP = +11m.36s., SS = +21m.3s.
Andijan e = +11m.39s.
Agra ePPE = +12m.18s., PSE = +18m.34s., SSE = +22m.4s.
Scoresby Sund +20m.32s. and +23m.8s.
Bombay e = +21m.10s., eE = +24m.20s. and +27m.20s.?

Continued on next page.

Upsala iN = +21m.14s.
Tiflis eE = +22m.48s., +24m.48s., and +26m.33s.
Ivigtut +21m.20s.
Copenhagen i = +11m.38s. and +21m.59s., e = +29m.26s.
Tucson e = +11m.51s.
Aberdeen e = +25m.41s., eS = +31m.16s., e = +32m.41s., +37m.37s., +43m.8s., and +45m.37s.
Hamburg ePSE = +22m.22s., eSSSN = +30m.24s.
Budapest iN = +12m.20s., iE = +12m.24s., eN = +12m.31s. and +12m.44s., iSN = +22m.18s., iSE = +22m.22s., eN = +23m.29s., +25m.40s., and +27m.27s.
Vienna P_cP = +12m.38s., PP = +15m.38s., PPP = +19m.18s., PS = +23m.3s.
Rathfarnham Castle i = +22m.33s.
Uccle e = +28m.20s. and +31m.44s.
Stuttgart e = +22m.58s., eSSSN = +31m.20s.
Kew i = +22m.30s.
Florissant eP_cPZ = +12m.21s., eNZ = +22m.14s., eEN = +22m.20s., iSN = +22m.32s.
St. Louis eE = +22m.21s. and +22m.32s.
Ksara ePP = +15m.39s., PS = +23m.44s.?
Little Rock eE = +12m.34s. and +12m.44s.
Vermont eS = +22m.43s., e = +35m.33s. and +38m.28s.
East Machias e = +23m.34s., ePS = +24m.9s., e = +24m.27s., +24m.57s., and +35m.2s.
Oak Ridge eSE = +23m.16s., eE = +24m.15s.
Weston iNZ = +12m.57s., iPSN = +23m.50s., eSSE = +28m.52s.
Philadelphia eSS = +28m.46s., e = +33m.57s.
Helwan pP = +13m.20s., e = +14m.45s., PP = +16m.55s., pPP = +17m.3s., SKKS = +23m.38s., sS = +24m.5s.
Christchurch iEN = +23m.58s., eSEZ = +34m.8s., PSEZ = +35m.6s., SS = +40m.0s., SSN = +43m.52s., L_qE = +47·1m.
Toledo ePP = +16m.46s., eSS = +29m.17s.
Algiers i = +37m.9s.
Malaga e = +47m.56s.
Huancayo e = +43m.56s.
Long waves were also recorded at Phu-Lien, Taihoku, Göttingen, Cape Town University, Almeria, Hyderabad, Columbia, Wellington, Adelaide, and Melbourne.

May 9d. Readings also at 1h. (Mount Wilson and Pasadena), 3h. (La Paz and Scoresby Sund), 5h. (Ksara and Tiflis), 6h. (Grozny, Tiflis, near Erevan, Piatigorsk, and Sotchi), 8h. (near Sumoto), 11h. (Sumoto), 12h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 17h. (Mount Wilson, Stuttgart, Bunnythorp, near Wellington, and near Branner), 19h. (Tucson and San Juan), 20h. (Philadelphia and Tucson), 21h. (Andijan, Baku, Tiflis, Sverdlovsk, Tashkent (2), Riverview, and Wellington), 22h. (Sverdlovsk and near Manila).

May 10d. 13h. 39m. 44s. Epicentre 37°·6N. 71°·6E.

(given by the stations of Central Asia).

$A = +·2507$, $B = +·7537$, $C = +·6076$; $\delta = +9$; $h = -1$;
$D = +·949$, $E = -·316$; $G = +·192$, $H = +·577$, $K = -·794$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	3·2	11	e 0 57	P*	1 44	S_g	—	1·8
Tashkent	4·1	336	e 1 5	0	1 1 47	− 8	1 2·0	2·7
Samarkand	4·1	302	e 1 0	− 5	1 49	− 6	—	2·0
Tchimkent	4·9	343	e 1 18	+ 1	2 23	+ 8	—	—
Frunse	5·8	23	e 1 43	P*	3 0	S*	—	—
Almata	7·0	35	e 2 2	P*	—	—	—	—
Grozny	20·4	294	e 4 5	−36	—	—	—	—

Additional readings :—
Tashkent e = +1m.17s.
Grozny e = +4m.27s. and +6m.55s.

May 10d. 14h. 33m. 51s. Epicentre 46°·9N. 6°·9E.

$A = +·6808$, $B = +·0824$, $C = +·7279$; $\delta = +12$; $h = -4$;
$D = +·120$, $E = -·993$; $G = +·723$, $H = +·087$, $K = -·686$.

Felt Scale IV near Lake Neuchatel. Epicentre between Saint Aubin and Cortaillod. Radius of the macroseismic area 15km.

Jahresbericht, 1937, des Schweizerischen Erdbehendisus Stes. Annales de Schweiz. Met. Zentralanstalt, 1937, Anhang 5, pp. 2 and 4.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Neuchatel	0·1	19	i 0 2	P_g	i 0 4	S_g
Basle	0·8	36	e 0 17	P_g	e 0 27	S_g
Zurich	1·3	68	e 0 23	P_g	e 0 40	S_g
Chur	1·8	92	e 0 35	P_g	i 0 59	S_g
Stuttgart	2·4	39	e 0 45	P_g	e 1 18	S_g
Vienna	6·5	75	e 0 29	?	—	—

Basle gives also i = +30s.
Vienna e = +43s.; these readings may be 1m. in error.

May 10d. 15h. 25m. 32s. Epicentre 26°·5S. 178°·5E.

$A = -·8958$, $B = +·0235$, $C = -·4438$; $\delta = -3$; $h = +3$;
$D = +·026$, $E = +1·000$; $G = +·444$, $H = -·012$, $K = -·896$.

A depth of focus 0·080 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		11·8	191	2 32	− 5	4 28?	−15	—	—
New Plymouth		13·1	195	i 3 2	+12	i 5 9	+ 2	—	—
Wellington		15·1	191	e 3 14	+ 4	e 5 47	+ 3	—	—
Apia		15·6	38	i 3 22	+ 7	i 5 54	+ 1	—	—
Christchurch		17·7	194	i 3 35	− 1	i 6 23	− 6	—	—
Riverview		24·7	245	i 4 43	+ 3	i 8 24	0	—	13·4
Melbourne		30·4	239	e 5 31	+ 1	8 51	− 2	—	—
Adelaide		35·1	246	e 6 9	0	i 10 55	−10	—	21·6
Perth		54·3	248	—	—	i 15 28?	− 6	—	—
Manila		69·2	299	i 10 13k	− 1	18 41	+ 4	—	—
Batavia		70·9	273	10 23k	− 1	18 34	−22	—	—
Tokyo Cen. Met. Ob.		71·9	328	10 31	+ 1	19 2	− 6	—	—
Oiwake		73·0	327	10 38	+ 2	19 23	+ 3	—	—
Wakayama		73·0	324	19 13	S	(19 13)	− 7	—	—
Osaka		73·2	325	10 31	− 6	19 16	− 6	—	—
Osaka B		73·2	325	19 16	S	(19 16)	− 6	—	—
Kobe	Z.	73·4	325	e 10 36	− 2	e 19 16	− 8	—	—
Nagano		73·4	328	10 37	− 1	19 19	− 5	—	—
Hong Kong		78·9	302	11 3	− 5	20 17	− 5	29·1	—
Vladivostok		81·5	328	—	—	e 20 44	− 5	26·7	—
Medan		82·5	278	e 11 17	−10	20 50	− 9	—	—
Pasadena		85·1	48	i 11 39k	− 1	—	—	—	—
Mount Wilson	Z.	85·2	48	i 11 41k	+ 1	—	—	—	—
Riverside		85·5	49	i 11 41	− 1	e 21 8	−19	—	—
Tinemaha		86·8	46	i 11 49	+ 1	i 21 18	−21	—	—
Chiufeng		88·1	317	i 11 53	− 1	i 21 21	−30	—	—
Tucson		89·1	53	i 12 0	+ 1	14 15	?	—	—
Huancayo		98·7	108	—	—	e 22 26	[− 2]	—	—
Calcutta	N.	99·9	290	e 11 26	−82	i 22 31	[+ 2]	—	27·7
Colombo		100·7	272	17 6	PP	—	—	—	27·0
Irkutsk		101·5	323	17 7	PP	—	—	e 34·9	—
La Paz	N.	102·5	116	—	—	i 22 47	[+ 1]	—	—
St. Louis	E.	106·9	55	—	—	i 23 50	[+44]	—	—
Agra	E.	110·3	292	e 18 12	PP	i 23 7	[−11]	—	—
Bombay	E.	111·8	281	e 18 28?	PP	—	—	—	—
San Juan		120·3	83	—	—	23 46	[−10]	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Tashkent	120·9	304	17 48	[− 6]	24 34	[+37]	e 44·5	59·7
Sverdlovsk	126·9	322	i 18 19	[+13]	27 16	SKKS	35·5	—
Scoresby Sund	134·4	10	20 49	PP	e 24 6	[−28]	—	—
Baku	135·5	302	e 20 28?	PP	—	—	52·5	—
Tiflis	139·3	304	e 18 18	[− 8]	—	—	—	—
Moscow	139·4	327	18 21	[− 5]	25 25	[+42]	—	—
Pulkovo	141·1	335	18 23	[− 5]	25 23	[+37]	46·5	—
Theodosia	145·2	312	18 37	[+ 1]	—	—	—	—
Simferopol	146·1	313	18 39	[+ 1]	—	—	—	—
Yalta	146·2	311	i 18 39	[+ 1]	—	—	—	—
Sebastopol	146·6	312	18 41	[+ 2]	—	—	—	—
Ksara	147·0	290	i 18 40	[0]	e 24 50	[− 5]	—	—
Copenhagen	149·1	345	18 40	[− 3]	—	—	—	—
Helwan	150·9	284	e 18 43	[− 2]	—	—	—	—
Jena	153·6	340	e 18 58	[+ 9]	—	—	—	—
De Bilt	153·9	350	e 18 49	[0]	e 41 42	SS	—	—
Stuttgart	156·2	343	e 18 51k	[− 1]	—	—	—	—
Zurich	157·7	343	e 19 29	[+35]	—	—	—	—
Chur	157·9	342	e 18 53	[− 1]	—	—	—	—
Neuchatel	158·4	344	e 19 33	[+39]	—	—	—	—

Additional readings :—
New Plymouth i = +3m.10s., +3m.19s., +5m.37s., +5m.56s., and +6m.33s.
Wellington eP = +3m.17s., iP = +3m.19s., i = +3m.22s., +3m.28s., +3m.40s., and +3m.51s., iS = +5m.50s., i = +6m.15s., +6m.34s., and +6m.43s., iP_cP = +8m.2s., iS_cS = +13m.48s.
Apia i = +5m.58s.
Christchurch ipPZ = +4m.7s., iP_cPNZ = +7m.7s., isSE = +7m.17s., iE = +7m.40s., iS_cSE = +13m.56s., iE = +14m.58s.
Riverview eN = +4m.48s.
Melbourne i = +13m.2s. and +15m.1s.
Adelaide i = +14m.30s.
Manila iN = +10m.21s.
Batavia iSEN = +18m.50s.
Osaka pP = +11m.25s., PP = +13m.11s., pPP = −14m.1s., PPP = +15m.35s.
Kobe ePE = +10m.38s., ePN = +10m.39s., SN = +19m.18s., SE = +19m.19s.
Medan iSEN = +20m.53s.
Tinemaha iZ = +13m.3s. and +14m.3s.
Pasadena iZ = +13m.52s.
Mount Wilson iZ = +13m.55s.
Riverside iZ = +13m.50s.
Chiufeng iE = +14m.3s., iEN = +15m.9s., iPSEN = +21m.46s.
Tucson e = +12m.7s., +12m.14s., +14m.3s.
Bombay eE = +20m.35s. and iE = +23m.23s.
Colombo PP = +22m.30s.
Irkutsk e = +22m.30s., PS = +26m.15s., e = +29m.5s.
St. Louis eE = +22m.54s., +26m.22s., and +28m.37s.
Tashkent PP = +19m.25s., PPP = +22m.30s., PPS = +31m.7s., SS = +37m.46s., SSS = +42m.10s.
Sverdlovsk PP = +20m.7s., PPP = +23m.5s., PPS = +31m.58s.
Scoresby Sund +21m.51s.
Tiflis ePKPZ = +21m.2s., ePPEZ = +24m.34s., ePKPSE = +34m.43s.
Moscow e = +19m.29s., PP = +21m.5s., PKS = +22m.2s., PPP = +24m.20s.
Pulkovo PP = +21m.4s., PKS = +21m.59s., PPS = +32m.58s., SS = +38m.58s.
Simferopol e = +20m.12s.
Yalta e = +20m.59s.
Copenhagen +21m.4s., e = +22m.10s.
Helwan e = +18m.48s., $ePKP_2$ = +18m.58s., e = +19m.43s., PP = +22m.28s., i = +28m.22s.
Stuttgart ePKPZ = +19m.23s., ePKS = +22m.40s., ePP = +23m.10s., eSKSP = +33m.28s.?
Ksara ipPKP = +21m.2s., sPKP = +22m.0s., PP = +22m.30s., pPP = +24m.36s., eSKKS = +27m.46s., eSKSP = +31m.31s., ePPS = +35m.50s.

May 10d. Readings also at 0h. (Sverdlovsk, Tashkent, and Zurich), 2h. (Tashkent and Sverdlovsk), 4h. (Wellington), 7h. (Kobe and near Nagoya and Mizusawa), 8h. (Baku, Sverdlovsk, and near Granada (2)), 9h. (Oak Ridge and Williamstown), 10h. (Sverdlovsk, Manila (2), Kobe, and Batavia), 12h. (Cape Town), 15h. (Sydney, Christchurch, and Wellington), 19h. (Sverdlovsk, Semipalatinsk, Tashkent, Andijan, Samarkand, Tchimkent, and near Almata).

May 11d. 16h. 2m. 17s. Epicentre 29°·5N. 57°·5E.

$A = +\cdot4684$, $B = +\cdot7353$, $C = +\cdot4899$; $\delta = +7$; $h = +2$;
$D = +\cdot843$, $E = -\cdot537$; $G = +\cdot263$, $H = +\cdot413$, $K = -\cdot872$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand		12·8	35	2 58	− 8	—	—	e 6·9	—
Tashkent		15·2	35	3 27	−11	6 17	−11	i 8·2	11·0
Tiflis	E.	16·0	324	e 3 51	+ 3	e 6 40	− 6	8·7	9·8
Tchimkent		16·1	35	3 43	− 6	—	—	—	—
Andijan		16·5	43	e 4 16	PPP	—	—	—	—
Grozny		16·7	329	e 4 6	+ 9	—	—	—	—
Ksara		18·9	287	e 4 28	+ 4	e 7 58	+ 5	—	—
Frunse		19·1	41	e 4 18	− 9	—	—	—	—
Almata		20·7	42	e 4 47	+ 3	—	—	—	—
Helwan		22·7	277	—	—	e 9 38	+29	—	16·4
Sverdlovsk		27·4	4	5 48	− 1	e 10 23	− 5	13·7	—

Additional readings :—
Andijan e = +9m.24s.
Ksara S_g = +10m.31s.
Almata e = +11m.21s.
Long waves were also recorded at Moscow, Pulkovo, Copenhagen, Baku, Irkutsk, and Calcutta.

May 11d. Readings also at 1h. (Christchurch, Wellington, and near Tananarive), 2h. (Fresno, near Branner, and Lick), 3h. (Kobe and Yalta), 4h. (Christchurch and Wellington), 5h. (Manila), 6h. (2) and 7h. (Prague), 9h. (Nagoya), 10h. (near Santiago), 12h. (Kodaikanal, Sebastopol, Yalta, Wellington, and near Balboa Heights), 15h. (Medan and Christchurch), 16h. (Perth, Mount Wilson, Pasadena, Baku, Sverdlovsk, and Tashkent), 17h. (Andijan, Frunse, Tchimkent, Tashkent, Copenhagen, and near Almata), 21h. (near Kobe and Sumoto).

May 12d. 2h. 45m. 0s. Epicentre 4°·9S. 143°·8E.

$A = -\cdot8041$, $B = +\cdot5885$, $C = -\cdot0849$; $\delta = +12$; $h = +7$;
$D = +\cdot591$, $E = +\cdot807$; $G = +\cdot069$, $H = -\cdot050$, $K = -\cdot996$.

A depth of focus 0·020 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Palau	15·3	323	3 33	+ 4	6 18	+ 4	—	—
Riverview	29·6	167	e 6 30	PP	—	—	e 14·0	19·2
Sydney	29·6	167	e 8 18	?	i 14 8	?	18·8	19·5
Manila	29·8	311	i 5 59k	+ 5	12 1	SS	—	—
Adelaide	30·3	188	e 6 0	+ 2	i 10 56	+11	16·8	20·1
Titizima	31·8	358	6 8	− 3	—	—	—	—
Melbourne	32·8	177	e 7 18	PP	i 11 43	+19	19·1	23·2
Isigakizima	34·8	328	6 38	+ 1	11 59	+ 4	—	—
Kosyun	35·0	320	6 45	+ 6	—	—	—	—
Taito	35·4	321	—	—	e 11 44	−30	—	—
Nake	35·8	339	6 47	+ 1	—	—	—	—
Karenko	35·9	323	6 51	+ 5	—	—	—	—
Tainan	36·0	321	6 50	+ 3	—	—	—	—
Batavia	36·8	266	e 6 49	− 5	—	—	—	—
Taihoku	36·8	325	e 6 57	+ 3	12 28	+ 2	—	—
Perth	37·5	220	7 0	0	12 55	+19	17·7	21·0
Hatidyozima	38·0	355	6 59a	− 5	—	—	—	—
Miyazaki	38·5	343	7 8k	0	12 32	−19	—	—
Siomisaki	38·9	350	7 9a	− 3	12 52	− 5	—	—
Kumamoto	39·5	343	7 15	− 1	—	—	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hong Kong		39·6	314	7 20	+ 3	13 9	+ 1	17·0	17·2
Nagasaki		39·7	342	7 18	0	—	—	—	—
Hamamatu		39·8	353	7 19	0	—	—	—	—
Mera		39·8	356	7 19	0	—	—	—	—
Wakayama		39·8	349	7 17a	− 2	12 59	−12	—	—
Sumoto		39·9	349	i 7 18a	− 2	e 13 7	− 5	—	—
Tomie		40·0	340	—	—	13 12	− 2	—	—
Kameyama		40·1	351	7 19	− 2	—	—	—	—
Misima		40·1	354	7 9	−12	—	—	—	—
Osaka		40·1	350	7 22	+ 1	—	—	—	—
Osaka B		40·1	350	7 20	− 1	—	—	—	—
Kobe		40·2	350	e 7 19	− 3	13 13	− 4	—	17·7
Hukuoka B		40·3	343	7 23	0	e 13 18	0	—	—
Yokohama		40·3	355	7 19	− 4	—	—	—	—
Maebasi		40·4	355	7 31	+ 7	—	—	—	—
Nagoya		40·4	352	e 7 22	− 2	e 9 35	PPP	—	—
Hunatu		40·5	354	7 23	− 2	—	—	—	—
Tyosi		40·5	357	7 25	0	—	—	—	—
Gihu		40·6	352	7 24	− 1	—	—	—	—
Hikone		40·6	351	7 23	− 2	—	—	—	—
Kohu		40·6	354	7 24	− 1	—	—	—	—
Tokyo Cen. Met. Ob.		40·6	355	7 19	− 6	13 13	−10	—	—
Kumagaya		41·0	355	7 27	− 2	—	—	—	—
Kakioka		41·1	356	7 25	− 5	—	—	—	—
Mito		41·2	357	7 28	− 2	—	—	—	—
Oiwake		41·3	355	7 31	0	11 42	?	—	—
Nagano		41·7	355	7 33	− 1	13 20	−19	—	—
Zi-ka-wei	Z.	41·8	331	i 7 36	+ 1	13 42	+ 2	—	20·5
Husan		42·1	342	e 10 58	?	—	—	—	—
Mizusawa		43·9	358	(7 53)	+ 1	7 53	P	—	—
Phu-Lien		44·5	307	e 8 2	+ 5	—	—	—	—
Keizyo		45·1	341	e 8 2	0	e 14 27	− 1	—	—
Zinsen	N.	45·1	340	i 8 1	− 1	e 13 31	−57	—	—
Wellington		45·6	147	i 8 10	+ 4	i 14 40	+ 5	e 21·0	28·0
Medan		45·8	280	e 8 17	+10	i 14 47	+ 8	—	—
Christchurch		46·1	150	i 8 10	0	i 14 46	+ 4	—	—
Sapporo		47·8	358	9 19	+56	—	—	—	—
Vladivostok		49·0	348	i 8 32	0	e 15 23	0	21·3	—
Chiufeng		51·5	333	i 8 51a	0	i 15 58	+ 1	—	—
Calcutta	N.	60·7	299	e 10 18	+21	i 17 53	− 6	—	—
Colombo		64·9	280	10 50	+26	15 20	?	18·8	19·2
Irkutsk		66·1	335	10 32	0	i 19 10	+ 4	30·0	—
Agra	E.	71·0	301	i 11 4	+ 2	i 20 3	0	—	—
Bombay		73·7	291	i 11 20	+ 2	i 20 40	+ 6	—	—
Almata		76·8	317	e 11 35	− 1	21 17	+ 9	—	—
Frunse		78·3	315	e 11 43	− 1	21 27	+ 3	—	—
Andijan		79·3	313	e 11 50	+ 1	e 20 46	−49	—	—
Tashkent		81·7	312	i 12 4	+ 2	i 22 4	+ 5	—	70·3
Tchimkent		81·7	313	e 12 6	+ 4	—	—	—	—
Samarkand		83·0	310	e 11 37	−31	—	—	—	—
Sverdlovsk		90·3	327	i 12 44	0	i 23 22	0	37·0	45·1
Baku		96·1	310	17 4	PP	—	—	39·0	51·0
Berkeley		96·1	52	e 13 11	+ 1	—	—	—	—
Lick		96·6	53	e 13 9	− 4	—	—	—	—
Grozny		99·2	313	e 13 35	+10	—	—	—	—
Tinemaha	E.	99·3	54	e 13 24	− 1	—	—	—	—
Pasadena		99·4	57	i 13 23	− 2	—	—	—	—
Mount Wilson	Z.	99·5	57	i 13 26	0	—	—	—	—
Tiflis		100·0	311	e 13 28	0	23 58	[+ 8]	e 40·0	55·7
Moscow		103·1	326	e 13 42	0	25 10	0	e 43·5	54·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Tucson		105·6	58	e 13 54	P	—	—	—	—
Pulkovo		105·9	331	e 13 53	P	i 25 29	− 5	45·0	55·8
Ksara		107·6	303	e 14 5	P	—	—	—	—
Copenhagen		116·3	332	19 34	PP	29 6	PS	57·0	—
Hamburg		118·7	331	e 19 42	PP	—	—	e 58·0	—
Cheb		119·3	327	e 20 0?	PP	e 24 20	[−50]	—	66·0
Little Rock		120·3	53	e 18 36	[+ 3]	—	—	—	—
Florissant		120·6	47	e 19 57	PP	—	—	e 63·5	—
St. Louis	E.	120·7	47	e 19 56	PP	e 29 48	PS	—	—
Triest		120·7	322	e 20 4	PP	27 47	SKKS	—	51·0
Stuttgart		121·8	326	e 20 14	PP	—	—	e 58·0	—
De Bilt		121·9	332	i 20 17	PP	—	—	e 57·0	64·5
Strasbourg		122·7	327	e 20 20	PP	e 32 32	PPS	e 55·0	—
Uccle		123·1	331	e 20 24a	PP	e 30 22	PS	e 55·0	—
Stonyhurst		124·0	337	e 21 0?	PP	—	—	—	—
Kew		124·8	334	i 20 34a	PP	e 30 8	PS	e 51·0	—
Paris		125·3	330	e 20 38	PP	—	—	e 70·0	—
Santiago		129·8	142	—	—	(30 0?)	PS	—	30·0
Williamstown		130·1	35	e 18 41	[−11]	e 30 18	PS	—	—
Philadelphia		130·5	39	e 22 18	PP	e 38 36	SS	e 50·3	—
Oak Ridge		131·2	34	i 18 57	[+ 3]	—	—	e 62·0	—
Weston		131·4	34	i 18 54k	[− 1]	—	—	58·0	—
East Machias		131·8	29	e 21 31	PP	—	—	e 58·5	—
Huancayo		137·6	114	e 22 47	PP	e 25 48	[− 9]	—	—
La Paz	N.	141·9	125	e 19 16	[+ 3]	—	—	33·8	37·2
San Juan		147·9	62	e 19 22	[− 1]	—	—	—	—
Rio de Janeiro	E.	151·6	167	—	—	e 34 30	?	—	—

Additional readings :—
Riverview eE = +6m.54s.
Manila iN = +6m.54s.
Batavia ePE = +6m.54s., i = +8m.35s.
Perth i = +10m.30s., P_cS = +14m.5s., SS = +15m.40s.
Melbourne i = +14m.0s., +15m.40s., and +18m.44s.
Hong Kong P_cP? = +9m.10s.
Wakayama PP = +8m.52s.
Sumoto iNZ = +8m.51s.
Osaka PP = +7m.45s.
Gihu PPP = +9m.4s.
Mizusawa SN = +7m.50s.
Zinsen ePPN = +9m.48s.
Wellington ipP = +8m.42s., e = +9m.10s., iP_cP? = +9m.57s., ipF_cP? = +10m.27s., ePPP = +10m.50s., epPPP = +11m.20s., esS = +15m.38s., eSS? = +18m.32s., sS_cS? = +19m.20s.
Christchurch ipPNZ = +8m.44s., isPZ? = +9m.1s., eSSNZ = +15m.48s.
Chiufeng pP = +9m.23s., iN = +16m.51s., isSE = +16m.57s., iSS?E = +19m.34s.
Calcutta epPN? = +11m.2s., ePPN = +12m.50s., iSSN = +19m.16s., SSSN = +22m.29s.
Bombay e = +12m.17s., +13m.15s., and +21m.18s.
Almata e = +14m.14s.
Sverdlovsk i = +13m.22s., iPP = +16m.23s., SS = +29m.36s.
Baku PPS = +26m.16s., e = +20m.2s., SS = +31m.12s.
Lick eE = +13m.12s.
Mount Wilson iZ = +14m.3s. and +17m.23s., eZ = +29m.19s.
Tinemaha eE = +17m.27s. and +29m.37s.
Pasadena iZ = +14m.3s., eE = +17m.27s., eZ = +29m.18s.
Tiflis PPEZ = +17m.40s., PPSE = +27m.6s., eSSE = +31m.24s.
Moscow PKP = +17m.14s., e = +18m.50s., SKKS = +24m.50s., PS = +29m.49s.
Tucson ePP = +18m.12s., e = +18m.45s., +18m.57s., and +19m.58s.
Pulkovo PKP = +17m.44s., PP = +18m.19s., PPP = +20m.34s., eSKS = +24m.20s., PS = +27m.17s., PPS = +28m.19s., SS = +43m.6s.
Ksara ePKP = +17m.44s.? iPP = +18m.37s., pPP = +19m.10s., SPP = +28m.50s.
Copenhagen SS = +35m.30s.
Little Rock eN = +19m.16s., eE = +19m.58s., eN = +22m.33s.
Florissant e = +29m.43s., eN = +29m.52s., eE = +39m.19s.
Triest e = +36m.10s.
Stuttgart e = +21m.5s., ePPP = +22m.48s.
De Bilt eZ = +22m.50s., eEN = +30m.9s.

Continued on next page.

Uccle PPZ = +23m.2s.
Williamstown iP? = +18m.52s., ipP? = +19m.31s., i = +21m.1s. and +23m.13s.
Philadelphia i = +22m.57s., ePS = +31m.6s.
Oak Ridge iZ = +19m.38s., ePP = +21m.9s., ePKSEN = +22m.20s., e = +22m.57s., iZ = +23m.20s.
Weston iZ = +19m.5s., +19m.23s., and +19m.37s., iEN = +22m.22s., +22m.59s., iZ = +23m.18s.
East Machias e = +22m.25s., +22m.40s., ePS = +31m.37s.
Huancayo ePPP = +24m.26s., S = +30m.6s., ePS = +32m.15s., e = +33m.31s.
San Juan e = +19m.36s., +19m.59s., and +20m.39s., ePPS = +36m.22s., eSSS = +49m.30s.
Long waves were also recorded at Rathfarnham Castle and Upsala.

May 12d. 9h. 10m. 33s. Epicentre 29°·5N. 57°·5E. (as on 11d.).

A = +·4684, B = +·7353, C = +·4899; δ = +7; h = +2;
D = +·843, E = −·537; G = +·263, H = +·413, K = −·872.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Baku		12·5	332	e 5 49	S	(e 5 49)	+26	e 9·4	11·0
Samarkand		12·8	35	e 3 5	− 1	—	—	e 6·8	—
Tashkent		15·2	35	e 3 29	− 9	6 8	−20	i 10·2	11·6
Tiflis		16·0	321	e 3 44	− 4	e 6 38	− 8	e 8·8	—
Tchimkent		16·1	34	e 3 45	− 4	—	—	—	—
Andijan		16·5	43	e 4 11	+17	—	—	—	—
Grozny		16·7	329	e 3 57	0	—	—	—	—
Agra	E.	18·2	92	e 4 33	+17	—	—	—	—
Ksara		18·9	287	i 4 26a	+ 2	e 7 58	+ 5	—	—
Frunse		19·1	41	e 4 27	0	—	—	e 10·6	—
Almata		20·7	42	e 4 52	+ 8	—	—	e 10·3	—
Helwan		22·8	277	e 3 51	?	e 9 15	+ 4	—	—
Sverdlovsk		27·4	4	5 52	+ 3	10 39	+11	14·4	—

Additional readings:—
Baku e = +7m.50s.
Ksara eP_cP = +8m.53s., eS_g = +10m.29s.
Long waves were also recorded at Calcutta, Moscow, Pulkovo, and Wellington.

May 12d. 13h. 8m. 21s. Epicentre 0°·0N. 98°·0E.

A = −·1392, B = +·9903, C = ·0000; δ = +7; h = +7;
D = +·990, E = +·139; 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.
Medan		3·6	8	e −0 33	?	i 1 51	S*	—	—
Batavia		10·7	125	e 2 1	−37	—	—	—	—
Colombo		19·3	290	4 28	− 1	8 8	+ 6	9·1	14·5
Phu-Lien		22·7	22	e 5 5	+ 1	e 9 20	+11	—	—
Calcutta	N.	24·3	337	5 16	− 4	i 9 52	+15	12·6	20·5
Manila		27·0	56	5 45	0	12 12	?	18·6	—
Hong Kong		27·2	34	5 49	+ 2	10 39	+14	—	20·7
Bombay		31·0	308	e 6 24	+ 3	i 11 29	+ 3	—	—
Agra	E.	33·1	326	e 6 39	− 1	i 12 2	+ 3	—	27·4
Perth		36·0	154	—	—	e 15 39	SS	16·6	—
Zi-ka-wei	Z.	38·2	33	e 7 25	+ 2	—	—	25·3	26·7
Chiufeng		43·2	19	8 6	+ 2	14 41	+ 9	e 20·4	29·4
Andijan		46·8	332	e 8 37	+ 4	—	—	—	—
Almata		47·0	339	e 8 42	+ 7	e 15 32	+ 6	—	—
Frunse		47·6	336	e 8 40	+ 1	—	—	—	—
Samarkand		48·6	327	e 8 54	+ 7	—	—	—	—
Tashkent		48·7	331	i 8 49	+ 1	i 15 53	+ 3	—	33·6
Kobe	E.	49·0	42	8 51	+ 1	16 7	+12	—	32·4
Tchimkent		49·3	332	e 8 59	+ 6	—	—	—	—
Adelaide		51·4	137	e 10 17	+68	—	—	e 23·0	28·3

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk	52·4	5	e 9 16	0	16 48	+ 6	28·6	30·1
Vladivostok	52·6	31	e 9 48	+30	e 17 16	+32	29·3	38·2
Baku	59·3	318	e 10 22	+16	18 20	+ 6	e 30·2	40·9
Riverview	60·1	130	—	—	e 23 57	?	e 31·2	32·8
Sydney	60·1	130	—	—	e 23 39	?	41·9	48·5
Tiflis	63·4	318	e 10 33	− 1	e 19 7	+ 1	39·7	44·1
Grozny	63·5	320	e 10 38	+ 4	e 19 9	+ 2	—	—
Sverdlovsk	63·5	338	10 37	+ 3	19 16	+ 9	32·7	—
Ksara	67·1	306	i 10 57	0	e 20 12	+21	—	—
Helwan	69·9	302	—	—	e 20 39	+15	—	48·2
Theodosia	71·0	318	e 11 25	+ 3	20 37	0	—	—
Yalta	71·6	317	—	—	e 20 41	− 3	—	—
Simferopol	71·8	317	e 11 29	+ 3	—	—	—	—
Sebastopol	72·1	317	e 11 32	+ 4	e 20 58	+ 8	—	—
Moscow	73·8	330	i 11 37	− 1	i 21 7	− 2	41·2	53·5
Christchurch	78·9	135	—	—	e 26 24	?	e 43·6	—
Pulkovo	78·9	332	12 4	− 3	22 1	− 4	43·6	53·5
Prague	85·9	320	—	—	e 23 17	+ 1	—	—
Copenhagen	87·5	326	12 51	0	23 31	0	51·6	—
Stuttgart	89·2	319	e 12 59	0	e 23 43	− 4	e 36·6	—
Strasbourg	90·2	318	—	—	e 23 59	+ 3	e 43·6	—
Bergen	91·3	330	—	—	e 23 49	[+ 9]	—	—
De Bilt	91·7	322	13 17	+ 7	e 24 5	− 5	e 50·6	—
Paris	93·6	318	e 15 39?	?	—	—	61·6	—
Pasadena	z. 132·0	41	e 19 22	[+ 6]	—	—	—	—

Additional readings :—
Medan iSE? = +2m.6s., iEN = +2m.17s.
Batavia PEN = +2m.20s.
Calcutta PPN = +5m.53s., SSN = +10m.59s.
Bombay eEN = +14m.9s.
Agra iSSSE? = +14m.53s.
Chiufeng S_cSEN = +18m.9s.
Tiflis eE = +20m.27s. and +30m.3s.
Ksara ePP = +13m.40s., ePS = +20m.49s., eSS = +24m.49s.
Christchurch iN = +34m.56s., eL_qN = +40m.16s.
Prague e = +24m.9s.
Stuttgart eEZ = +22m.17s.
Long waves were also recorded at Edinburgh, Zinsen, and Kew.

May 12d. Readings also at 0h (Cheb, St. Louis, and Pasadena), 3h. (Lick), 4h. (Andijan), 9h. (Christchurch), 10h. (Adelaide, Riverview, Medan, and Sverdlovsk), 11h. (Tashkent), 12h. (Christchurch), 15h. (Medan and near Santiago), 16h. (Hong Kong, Samarkand, and Andijan), 17h. (Zurich), 19h. (Andijan (2), Samarkand (2), and near Hukuoka B), 22h. (Hong Kong, Andijan (2), Tashkent, Tchimkent, Tiflis, Sverdlovsk, St. Louis, Florissant, Samarkand, Mount Wilson, and Pasadena).

May 13d. 7h. 32m. 59s. Epicentre 2°·2N. 126°·9E. (as on 1937 Mar. 16d.).

A = −·6000, B = +·7991, C = +·0382; δ = +2; h = +7;
D = +·800, E = +·600; G = −·023, H = +·031, K = −·999.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	13·6	335	3 21	+ 4	7 4	?	9·0	—
Hong Kong	23·5	329	5 11	− 1	9 30	+ 7	—	15·0
Irkutsk	53·3	343	e 9 1?	−22	—	—	—	—
Sverdlovsk	75·3	329	11 44	− 3	21 20	− 6	37·0	—
Tiflis	82·6	311	e 12 29	+ 3	e 22 49	+ 6	e 55·0	—

Long waves were recorded at Baku.

May 13d. 9h. 18m. 9s. Epicentre 16°·8N. 106°·1W.

$A = -\cdot2656$, $B = -\cdot9203$, $C = +\cdot2872$; $\delta = -2$; $h = +5$;
$D = -\cdot961$, $E = +\cdot277$; $G = -\cdot080$, $H = -\cdot276$, $K = -\cdot958$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo	N.	2·8	37	1 36	+49	—	—	—	—
Tacubaya	N.	7·0	68	1 50	+ 4	—	—	—	—
Tucson		16·0	345	e 3 44	− 4	e 6 39	− 7	e 8·1	—
La Jolla		18·9	331	e 4 23	− 1	—	—	—	—
Mount Wilson	Z.	20·4	331	i 4 39	− 2	—	—	—	—
Pasadena	Z.	20·4	331	i 4 43	+ 2	—	—	—	—
Little Rock		21·7	32	e 4 52	− 3	e 8 52	+ 1	e 12·0	14·2
Tinemaha		22·9	335	e 5 9	+ 3	—	—	—	—
St. Louis	E.	25·8	29	e 5 33	− 1	e 10 0	− 2	e 13·3	—
Florissant		25·9	29	e 5 34	− 1	e 10 7	+ 3	—	13·1
Chicago		29·6	28	—	—	e 10 51	−13	e 14·2	—
Philadelphia		35·4	43	—	—	e 12 28	− 6	e 18·4	—
Williamstown		38·1	41	e 7 21	− 1	—	—	e 20·9	—
Ottawa		38·2	35	—	—	e 13 9	− 8	e 19·8	—
Weston		39·1	42	i 7 30a	− 1	e 13 32	+ 1	19·1	—
East Machias		42·8	41	e 9 59	P_cP	e 14 40	+14	e 22·0	—

Additional readings:—
Tucson ePPP = +44m.26s., e = +5m.48s.
La Jolla eZ = +5m.53s.
Mount Wilson iZ = +6m.15s.
Pasadena iZ = +6m.17s., eZ = +10m.3s. and +12m.59s.
Little Rock eN = +4m.55s., +5m.6s., +6m.27s., and +6m.33s., eE = +6m.49s., eN = +8m.56s., eE = +10m.27s.
Tinemaha eEN = +6m.46s.
St. Louis eE = +6m.3s., +6m.11s., +10m.2s., and +11m.53s.
Florissant iE = +5m.38s., iNZ = +7m.11s., eN = +9m.55s.
Williamstown e = +7m.57s.
Ottawa e = +14m.51s.?
Weston iPPP = +9m.7s., e = +17m.59s.
East Machias eS_cS = +17m.57s., e = +19m.56s.
Long waves were also recorded at Ivigtut, Bozeman, Ukiah, Strasbourg, De Bilt, Kew, Stuttgart, Paris, Copenhagen, Tashkent, Sverdlovsk, and Baku.

May 13d. 18h. 47m. 52s. Epicentre 2°·5N. 122°·0E.

$A = -\cdot5294$, $B = +\cdot8473$, $C = +\cdot0433$; $\delta = +6$; $h = +7$;
$D = +\cdot848$, $E = +\cdot530$; $G = -\cdot023$, $H = +\cdot037$, $K = -\cdot999$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m_L
Manila		12·0	355	i 3 28k	PPP	i 6 16	L	(i 6·3)	—
Batavia	Z.	17·4	240	i 3 58	− 8	—	—	—	—
Kosyun		19·4	357	4 47	+17	8 35	SS	—	—
Taito		20·1	358	4 49	+11	—	—	—	—
Tainan		20·4	356	4 59	PP	9 1	SS	—	—
Hong Kong		21·1	340	5 0	+12	9 3	+24	—	—
Medan		23·3	274	5 15	+ 5	—	—	—	—
Titizima		31·2	37	11 2	S	(11 2)	−27	—	—
Siomisaki		33·4	21	11 58	S	(11 58)	− 5	—	—
Sumoto		33·9	19	—	—	e 12 7	− 4	—	—
Kobe		34·3	20	6 50a	0	12 14	− 3	—	—
Osaka		34·4	20	6 45	− 6	12 16	− 3	—	—
Kameyama		34·9	21	6 56	+ 1	12 22	− 5	—	—
Nagoya		35·3	22	e 6 58	− 1	12 28	− 5	—	—
Oiwake		37·0	23	7 13	0	12 52	− 7	—	—
Nagano		37·1	22	7 14	0	12 54	− 7	—	—
Chuifeng		37·8	352	e 7 25	+ 5	i 13 15	+ 4	—	15·7
Calcutta	N.	38·3	304	e 8 31	+67	—	—	—	17·1
Vladivostok		41·4	11	e 7 53	+ 3	e 14 10	+ 5	—	—
Sapporo		43·9	20	9 17	PP	15 36	?	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Irkutsk		51·7	347	e 9 9	− 2	16 34	+ 2	e 26·1	—
Frunse		58·2	321	e 10 1	+ 3	e 18 6	+ 7	—	—
Andijan		58·7	318	e 10 1	− 1	e 18 9	+ 3	—	—
Tashkent		61·0	317	10 17	− 1	19 2	+27	30·6	39·6
Samarkand		62·0	314	e 10 28	+ 4	—	—	—	—
Sverdlovsk		72·6	330	i 11 28	− 3	20 46	−10	30·1	—
Grozny		78·3	314	e 11 57	− 6	e 21 48	−11	—	—
Moscow		84·8	326	e 11 33	−64	—	—	—	—
Ksara		85·4	303	i 12 34	− 6	e 22 46	[−17]	—	—
Theodosia		85·9	315	—	—	e 22 40	[−27]	—	—
Yalta		86·7	314	—	—	e 22 50	[−22]	—	—
Pulkovo		88·7	331	—	—	i 22 59	[−25]	—	—
Copenhagen		98·8	327	—	—	23 58	[−23]	—	—
De Bilt		104·1	325	—	—	e 29 8?	?	e 57·1	—
Pasadena	z.	112·8	51	i 18 22	[−16]	—	—	—	—
Mount Wilson	z.	112·9	51	i 18 23	[−16]	—	—	—	—
Little Rock		130·9	38	e 22 6	PP	—	—	—	—
Williamstown		132·9	14	i 19 2	[−16]	—	—	—	—
Weston	z.	133·7	12	i 19 5k	[−14]	—	—	—	—

Additional readings :—
Kosyun e = +5m.26s.
Osaka PP = +8m.17s., i = +13m.4s., SS = +14m.54s.
Chiufeng iEN = +8m.27s., iN = +9m.43s.
Calcutta iN = +11m.29s.
Moscow e = +12m.21s., e = +21m.40s.
Ksara epP = +13m.22s., esP = +13m.43s., isPP = +17m.11s., esS = +24m.10s., eSS = +28m.24s.
Mount Wilson eZ = +19m.13s.
Little Rock iE = +22m.19s., eN = +23m.38s., eE = +36m.43s. and +37m.12s.
Williamstown e = +21m.38s., i = +22m.13s., e = +23m.27s.
Weston iZ = +22m.19s.

May 13d. 20h. 58m. 22s. Epicentre 14°·8N. 95°·7W. (as given by Tacubaya).

A = −·0961, B = −·9624, C = +·2538 ; δ = −14 ; h = +6 ;
D = −·995, E = +·099 ; G = −·025, H = −·253, K = −·967.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Oaxaca	N.	2·4	340	0 49	+ 8	—	—	—
Puebla	N.	4·8	330	1 22	P*	—	—	—
Tacubaya	N.	5·7	323	1 32	P*	—	—	—
Merida	N.	8·4	43	2 13	+ 7	—	—	—
Little Rock		20·1	17	e 4 31	− 7	—	—	—
Tucson		22·2	324	e 4 53	− 7	e 9 6	+ 6	10·9
St. Louis	N.	24·2	10	i 5 17	− 2	i 9 36	+ 1	—
Florissant		24·4	10	e 5 18	− 3	e 9 41	+ 2	—
Pasadena		28·0	318	e 5 56	+ 1	—	—	e 15·6
Mount Wilson	z.	28·3	318	e 5 55	− 2	—	—	—
San Juan		28·6	78	e 7 2	PP	—	—	—
Tinemaha	E.	29·9	322	e 6 16	+ 4	—	—	—
Philadelphia		30·9	32	—	—	e 11 23	− 1	e 16·6
De Bilt		85·0	37	e 12 43	+ 5	e 23 10	+ 3	—
Hamburg		87·3	34	—	—	e 22 38?	−51	—
Copenhagen		87·8	32	—	—	e 23 38?	+ 4	—

Additional readings :—
Little Rock eE = +4m.38s., +7m.26s., +22m.43s., and +23m.40s., eN = +23m.43s.
Tucson iP = +5m.2s., e = +5m.8s., +5m.35s., and +5m.45s.
St. Louis iN = +5m.21s., eE = +10m.24s.
Florissant iNZ = +5m.20s., iN = +9m.45s.
Philadelphia e = +10m.26s., +13m.18s., and +14m.11s.
Long waves were also recorded at Paris, Oak Ridge, Sverdlovsk, Tashkent, Ukiah, Bozeman, and Butte.

May 13d. Readings also at 0h. (Andijan, Mount Wilson, and Pasadena), 1h. (Cheb and Kobe), 2h. (Tiflis), 4h. (Samarkand and Andijan), 7h. (near Samarkand), 8h. (Berkeley, Oak Ridge, Sverdlovsk, Manila, and near Sumoto), 9h. (near Medan), 11h. (near Wellington), 12h. (Wellington), 14h. and 16h. (Almeria), 17h. (Tashkent, Moscow, Pulkovo, Copenhagen, Sverdlovsk, Stuttgart, and near Wellington), 18h. (Irkutsk), 19h. (near Manila), 21h. (near Branner and near Kobe), 22h. (near Santiago).

May 14d. Readings at 0h. (near Zagreb), 3h. (Tiflis and near Manila), 5h. (Triest), 6h. (near Grozny and Tiflis), 8h. (Andijan and Samarkand), 10h. (Copenhagen and Tiflis), 13h. (Kobe), 15h. (Batavia), 21h. (near Berkeley (2), Branner (2), Lick (2), and San Francisco (2)), 22h. (near Kobe and Sumoto).

a 15d. 9h. 17m. 56s. Epicentre 38°·8N. 69°·7E. (Epicentre suggested by U.S.S.R. stations in Central Asia).

$A = +\cdot2711$, $B = +\cdot7328$, $C = +\cdot6240$; $\delta = -13$; $h = -1$;
$D = +\cdot938$, $E = -\cdot347$; $G = +\cdot217$, $H = +\cdot585$, $K = -\cdot781$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	2·3	292	e 0 44	+ 4	1 26	+17	—	—
Tashkent	2·5	353	e 0 46	+ 3	—	—	i 1·8	1·9
Andijan	2·8	46	0 48	+ 1	1 41	S_g	—	1·7
Tchimkent	3·5	359	1 5	P*	e 2 8	S_g	—	—
Almata	7·0	49	1 41	− 5	e 3 28	S*	—	—
Sverdlovsk	19·0	346	—	—	e 8 2	+ 7	—	—

May 15d. 12h. 22m. 54s. Epicentre 34°·8N. 139°·4E.

Felt fairly strongly at Yokosuka, moderately at Ito, Katuura Yokohama, Tokyo, and Hunatu.
Radius 200-300kms. Focus depth 80km.
See Seismological Bulletin of the Central Meteorological Observatory, Japan, for the year 1937, Tokyo, Japan, 1939, pp. 37-39 Macroseismic Chart, p. 38.

$A = -\cdot6248$, $B = +\cdot5355$, $C = +\cdot5681$; $\delta = -13$; $h = 0$;
$D = +\cdot651$, $E = +\cdot759$; $G = -\cdot431$, $H = +\cdot370$, $K = -\cdot823$.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s	m. s.	s.	m.
Ito	0·3	304	0 15a	+ 4	0 22	+ 4	—
Mera	0·4	72	0 14	+ 1	0 25	+ 4	—
Susaki	0·4	249	0 16	+ 3	0 28	+ 7	—
Misima	0·5	311	0 16a	+ 2	0 29	+ 6	—
Kamakura	0·5	13	0 15	+ 1	0 26	+ 3	—
Numadu	0·5	304	0 16a	+ 2	0 30	+ 7	—
Gotenba	0·6	324	0 18k	+ 3	0 32	+ 6	—
Katuura	0·7	61	0 16	− 1	0 29	+ 1	—
Kiyosumi	0·7	61	0 17	0	0 30	+ 2	—
Yokohama	0·7	18	0 17k	0	0 31	+ 3	—
Hunatu	0·9	324	0 20a	0	0 36	+ 2	—
Komaba	0·9	15	0 19	− 1	0 33	− 1	—
Mitaka	0·9	8	0 19	− 1	0 33	− 1	—
Omaesaki	1·0	258	0 21a	0	0 39	+ 3	—
Tokyo, C.M.Obs.	1·0	19	0 19	− 2	0 34	− 2	0·6
Tokyo, I.U.	1·0	19	0 19	− 2	0 34	− 2	—
Kohu	1·1	321	0 22	0	0 39	0	—
Titibu	1·2	348	0 17	− 7	0 35	− 6	—
Hamamatu	1·4	267	0 27a	0	0 47	+ 1	—
Kumagaya	1·4	359	0 24	− 3	0 42	− 4	—
Iida	1·5	299	0 29	+ 1	0 50	+ 1	—
Tukubasan	1·5	22	0 24k	− 4	0 42	− 7	—
Tyosi	1·5	52	0 24	− 4	0 43	− 6	—
Kakioka	1·6	24	0 24k	− 6	0 43	− 8	—
Maebasi	1·6	350	0 28	− 2	0 50	− 1	—
Oiwake	1·7	336	0 31	0	0 52	− 2	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Hatidyosima		1·8	168	0 31 a	− 1	0 51	− 5	—
Matumoto		1·8	321	0 33	+ 1	0 55	− 1	—
Mito		1·8	29	0 27	− 5	0 45	−11	—
Utunomiya		1·8	13	0 31	− 1	0 50	− 6	—
Nagano		2·0	332	0 36	+ 1	1 3	+ 1	—
Nagoya		2·1	280	e 0 36	− 1	1 2	− 2	1·3
Gihu		2·3	286	0 38	− 2	1 4	− 5	—
Kameyama		2·4	271	0 41	0	1 12	0	—
Onahama		2·4	30	0 38	− 3	0 57	−15	—
Takada		2·4	338	1 6	S	(1 6)	− 6	—
Hikone		2·6	280	0 45	+ 1	1 19	+ 2	—
Toyama		2·6	317	0 43	− 1	1 12	− 5	—
Husiki		2·7	316	0 51	+ 6	1 27	+ 8	—
Kanazawa		2·8	308	0 47	0	1 38	+16	—
Kyoto		3·0	274	0 49	− 1	—	—	—
Yagi		3·0	265	0 48	− 2	—	—	—
Hukusima		3·1	16	0 44	− 7	1 17	−12	—
Niigata		3·1	355	1 4	+13	—	—	—
Osaka		3·2	267	0 45	− 7	1 32	0	—
Osaka B.		3·2	267	0 52	0	1 27	− 5	—
Siomisaki		3·3	247	0 53	0	1 32	− 3	—
Kobe		3·5	270	0 56 a	− 1	1 29	−11	1·7
Miyadu		3·5	284	0 58	+ 1	—	—	—
Wakayama		3·5	262	0 57	0	1 40	0	—
Sendai		3·7	19	0 51	− 9	1 31	−14	—
Sumoto		3·8	265	e 0 56	− 5	1 45	− 2	1·9
Toyooka	N.	3·8	283	1 1	0	1 46	− 1	2·0
	Z.	3·8	283	e 0 59	− 2	e 1 48	+ 1	2·1
Tokusima		4·1	261	1 3	− 2	1 50	− 5	—
Mizusawa	E.	4·5	17	1 3	− 8	1 54	−11	—
Akita		4·9	6	1 18	+ 1	—	—	—
Koti		5·0	257	2 1	S	(2 1)	−17	—
Morioka		5·1	16	1 18	− 2	2 9	−11	—
Miyazaki		7·2	249	1 48	− 1	—	—	—
Kumamoto		7·5	257	1 51	− 2	—	—	—

Additional readings :—
Tokyo, C.M.Obs. i = +0m.28s.
Kobe SN = +1m.35s.

May 15d. 16h. 41m. 46s. Epicentre 2°·2N. 126°·9E. (as on 1937 May 13d.).

A = −·6000, B = +·7991, C = +·0382 ; δ = +2 ; h = +7.

	Δ	Az.	P.	P−C.	S.	O−C.	L.
	°	°	m. s.	s.	m. s.	s.	m.
Manila	13·6	335	3 15	− 2	6 9	+19	—
Nagoya	34·1	15	e 7 45	+57	—	—	—
Sverdlovsk	75·3	329	i 11 47	0	21 21	− 5	35·2
Grozny	82·0	313	e 12 25	+ 2	e 22 38	+ 1	—
Tiflis	82·6	311	e 12 24	− 2	e 22 40	− 3	—
Moscow	87·8	326	e 22 36	?	e 27 13	?	—
Pulkovo	91·4	330	e 22 23	?	e 24 5	− 2	—

Long waves were recorded at Hong Kong.

May 15d. Readings also at 2h. (Christchurch), 3h. (Christchurch, Wellington, Mount Wilson, Pasadena, Ksara, Simferopol, Sverdlovsk, and near Santiago), 7h. (Bombay and Rio de Janeiro), 8h. (De Bilt, Paris, Strasbourg, Stuttgart, Triest, Florissant, Ksara, and Kobe), 9h. (Strasbourg, Sverdlovsk, and La Paz), 10h. (Christchurch, Honolulu, Mount Wilson, Pasadena, Huancayo, Rio de Janeiro, Florissant, and Sverdlovsk), 11h. (Scoresby Sund, Ksara, Basle, Chur, Zurich, and near Neuchatel), 12h. (near Batavia), 15h. (Santiago), 16h. (Tiflis, near Grozny, and near Wellington), 17h. (Sumoto, near Kobe, Nagoya, and near Wellington), 18h. (near Branner), 21h. (near Batavia), 23h. (Mount Wilson, Pasadena, Manila, Kobe, and Sverdlovsk).

May 16d. 11h. Shock probably from vicinity of New Zealand and Fiji Islands :—

Apia e =44m.1s.
Riverview eN =43m.18s., eE =46m.18s., eL =53m.48s., M =57m.23s.
Sydney e =43m.24s., L =53m.42s., M =59m.0s.
Christchurch eP? =43m.38s., S =48m.6s., L_q =49m.8s., L_rEZ =50m.2s., S_cSN = 53m.56s.
Melbourne e =46m.33s., i =48m.13s., 51m.48s., and 56m.23s., L? =58m.43s., M =62m.24s.
Arapuni e =46m.40s. and 51m.30s.
Wellington i =48m.50s., 50m.0s., iL? =50m.30s., M =51m.
Manila PZ =50m.50s., SN =61m.10s., sSZ? =64m.28s.
Pasadena ePZ =51m.29s., iPZ =51m.34s., eN =61m.43s., eLEN =73m.
Mount Wilson ipZ =51m.35s.
Tinemaha ePE =51m.48s.
Vladivostok e =51m.50s., L =82m.12s.
Tucson iP =51m.55s., e =52m.6s., 52m.27s. and 52m.40s., eL =80m.18s.
Chiufeng PEN =52m.34s., SKSEN =63m.5s., iSEN =63m.33s.
Irkutsk e =56m.56s., 64m.7s., and 66m.45s., eL =95m.
Adelaide e =57m.19s., M =64·3m.
Sverdlovsk e =58m.32s., 62m.54s., 68m.52s., L =98·0m., M =113·9m.
Moscow e =58m.47s., 61m.45s., 62m.3s., 64m.51s., 66m.31s., 70m.15s., 72m.39s., eL =102·5m., M =125·5m.
Pulkovo e =58m.52s., 62m.32s., 64m.18s., 71m.18s., L =115·0m., M =120·8m.
Bergen e =59m.
Paris e =59m., L =123m., M =134m.
Grozny eP =59m.3s.
Copenhagen 59m.8s., 70m.12s., L =120·0m.
Hamburg eZ =59m.13s., eL =121·0m.
Theodosia e =59m.14s.
Kew ePKPZ =59m.14s., eL =120·0m.
Ksara iPKP =59m.15s., iPP =62m.59s., eSKSP =73m.18s., ePPS =76m.18s., eSS =82m.25s , M =125m.30s.
De Bilt iZ =59m.16s., eE =82m.30s., eL =123·0m., M =132m.37s.
Sebastopol e =59m.17s.
Yalta e =59m.17s.
Simferopol e =59m.18s.
Uccle eZ =59m.18s. and 63m.11s. eL =123·0m.
Stuttgart ePKPZ =59m.20s., ePKPNZ =59m.44s., ePPNZ =63m.18s., eSKSP = 73m.30s., eL =127·0m.
San Juan e =59m.22s., 64m.54s., eL =68·6m.
Strasbourg iPKP =59m.22s , ePP =63m.27s., e =67m.23s., eL =125m.
Helwan eP =59m.40s., e =70m.15s.
Rathfarnham Castle e =59m.41s., L =120m., M =133m.
Tiflis eE =60m.44s., 62m.36s., 62m.56s., and 72m.22s., eLE =122m.
College e =61m.15s., eL =67·1m.
Berkeley iPE =61m.38s., ePN =61m.41s., iN =61m.47s , eZ =62m.11s., eN = 72m.13s., iE =eN =74m.57s.
Scoresby Sund 61m.48s., L =108m.
Stonyhurst e =62m.
Baku e =62m.32s., 70m.5s., 74m.30s., 83m.13s., 86m.1s., 90m.22s., and 93m.52s., eL =107·0m., M =122·8m.
Victoria e =62m.41s., eL =82m.
Florissant eE =62m.58s., eN =65m.0s., M =92·0m.
Bombay e =63m.
Huancayo e =63m.3s., L =85m.48s.
Seven Falls e =64m.54s., 69m.0s., L =100·0m.
St. Louis eN =65m.42s., M =92m.36s.
Toronto e =68m. and 74m.30s., eL =97m.
Tashkent e =68m.16s., 70m.11s., 71m.36s., 77m.12s., 80m.4s., 82m.8s., 91m.4s., 93m.54s., 96m.18s., and 98m.24s., M =121·9m.
Philadelphia e =68m.25s., 74m.34s., 74m.48s., 79m.8s., 90m.21s., eL =94m.21s.
Ottawa e =68m.30s., eL =91m.
San Fernando eLEN =69m.0s.
Perth ? =69m.37s., L =72m., M =74m.30s.
Malaga L =71m.0s.
Chicago e =84m.56s., 88m.37s., eL =90·3m.
Long waves were also recorded at Honolulu, Hong Kong, Ukiah, Oak Ridge, East Machias, Prague, Edinburgh, and Jersey.

May 16d. Readings also at 0h. (Tiflis, Wellington, and near Santiago), 5h. (Christchurch), 6h. (Mount Wilson, Pasadena, Tinemaha, Chiufeng, Vladivostok, Irkutsk, Tashkent, Sverdlovsk, Pulkovo, and Ksara), 7h. (Baku, Tiflis, Moscow, Copenhagen, Paris, Strasbourg, and Scoresby Sund), 9h. (Malabar), 12h. (Basle, Zurich, and near Neuchatel), 14h. (Tashkent and near Andijan), 15h. (Tiflis and near Erevan), 17h. (Granada), 18h. (Tiflis), 21h. (Medan).

May 17d. Readings also at 0h. (Sverdlovsk, Tashkent, Almata, Frunse, Samarkand, near Andijan, near Williamstown, Little Rock, Oak Ridge, St. Louis, and Florissant), 8h. (near Manila), 10h. (Tiflis, near Santiago, near Triest, and Zagreb), 12h. (Andijan), 15h. (Sumoto), 19h. (near Manila), 23h. (Jena).

May 18d. 0h. 49m. 4s. Epicentre 44°·0N. 9°·0E.

Epicentre very tentative.

$A = +\cdot7128$, $B = +\cdot1129$, $C = +\cdot6922$; $\delta = -3$; $h = -3$;
$D = +\cdot156$, $E = -\cdot988$; $G = +\cdot684$, $H = +\cdot108$, $K = -\cdot722$.

	Δ	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Padova	2·5	56	e 0 41	− 2	e 1 2	−12
Chur	2·9	7	e 0 47	− 1	e 1 26	+ 2
Zurich	3·4	352	e 0 55	0	e 1 40	+ 3
Basle	3·7	344	e 1 5	P*	e 1 53	S*
Triest	3·7	64	0 57	− 3	1 49	S*
Ravensburg	3·8	5	e 1 28	P_g	—	—
Stuttgart	4·8	2	e 1 26	P*	e 2 12	0
Zagreb	5·3	67	e 1 58	P_g	e 2 41	S*
Vienna	6·6	47	—	—	e 3 37	S_g

Additional readings:—
Zurich eP_g = +1m.5s.
Basle e = +2m.10s.
Stuttgart e = +1m.57s.

May 18d. 18h. 40m. 46s. Epicentre 46°·5N. 150°·7E.

$A = -\cdot6024$, $B = +\cdot3381$, $C = +\cdot7231$; $\delta = +7$; $h = -4$;
$D = +\cdot489$, $E = +\cdot872$; $G = -\cdot631$, $H = +\cdot354$, $K = -\cdot691$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Vladivostok		13·8	262	e 3 19	0	e 5 26	−28	7·8	9·5
Chiufeng		25·8	269	e 5 35	+ 1	10 4	+ 2	e 11·6	14·7
Irkutsk		30·3	299	—	—	e 10 14?	−61	16·2	—
Sverdlovsk		52·9	317	9 20	0	e 20 15	SS	26·2	—
Tashkent		56·4	297	e 10 2	+17	—	—	e 28·3	32·2
Mount Wilson	z.	66·9	64	i 10 55	− 1	—	—	—	—
Pasadena	z.	66·9	64	i 10 56	0	—	—	—	—
Tiflis	E.	70·3	311	—	—	e 20 22	− 7	e 40·5	—
Ksara		80·8	310	e 9 19	?	e 18 48	?	—	52·2

Additional readings:—
Tashkent e = +21m.44s. and +22m.20s.
Tiflis eE = +26m.41s.
Long waves were also recorded at Baku.

May 18d. Readings also at 0h. (Ksara), 1h. (near Santiago), 2h. (Jena), 3h. (Wellington), 11h. (Toledo and near Batavia), 12h. (Florissant), 16h. (Wellington), 17h. (Christchurch and Wellington), 20h. (Balboa Heights, Almata, and near Irkutsk), 21h. (Oak Ridge), 22h. (near Santiago).

May 19d. Readings at 1h. (Zurich, Kobe, near Tiflis, and near Andijan), 7h. (near Christchurch and Wellington (2)), 8h. (near Mizusawa), 9h. (Bunnythorp, Hastings, and Wellington), 10h. (Phu-Lien), 12h. (Wellington), 15h. (Ottawa), 19h. (Berkeley), 20h. (Manila, Florissant, and St. Louis), 21h. (near Hukuoka and Sumoto), 23h. (Phu-Lien).

May 20d. 12h. 14m. 48s. Epicentre 33°·6N. 141°·5E. (anticipation of 21d. 1h.).

A = −·6532, B = +·5196, C = +·5508; δ = +4; h = +1;
D = +·623, E = +·783; G = −·431, H = +·343, K = −·835.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		4·1	294	e 1 5	0	2 10	S*	—	3·0
Kobe		5·4	287	—	—	e 2 30	+ 2	e 3·4	5·1
Mizusawa		5·5	358	e 1 27	+ 2	2 27	− 3	—	—
Sumoto		5·5	281	1 30	+ 5	—	—	—	6·2
Toyooka	z.	5·8	291	1 36	+ 7	2 56	S*	—	—
Keizyo		12·5	293	e 3 5	+ 3	—	—	e 7·6	—
Zi-ka-wei	z.	17·1	267	e 4 2	0	7 24	+12	9·6	11·5
Chiufeng		21·3	296	e 4 50	0	8 45	+ 2	10·6	13·3
Manila		26·5	229	e 5 17	−24	10 35	+21	13·7	—
Hong Kong		26·6	252	6 23	PP	10 32	+16	—	18·4
Almata		50·3	302	e 9 0	0	—	—	—	—
Agra	E.	54·4	281	e 9 24	− 7	—	—	—	—
Tiflis		73·0	309	e 11 42	+ 9	—	—	39·2	46·7
Tinemaha	E.	77·8	54	e 12 1	0	—	—	—	—
Yalta		78·1	316	e 11 59	− 3	22 5	+ 9	—	—
Pasadena		79·4	56	i 12 7	− 2	—	—	—	—
Mount Wilson	z.	79·5	56	i 12 9	− 1	—	—	—	—
Riverside	z.	80·1	56	i 11 41	−32	—	—	—	—
Ksara		83·2	306	i 12 28a	− 1	—	—	—	—
La Paz	z.	148·4	64	i 19 47a	[+ 2]	—	—	79·2	—

Additional readings :—
Kobe eEZ = +2m.37s.
Sumoto ePEN = +1m.34s., eZ = +3m.17s., eN = +4m.11s.
Toyooka ePE = +1m.41s., SEN = +3m.1s.
Chiufeng iS = +9m.5s.
Agra iE = +21m.27s.
Ksara ePP = +15m.46s., ePS = +23m.42s.
La Paz PPZ = +23m.30s.
Long waves were also recorded at Phu-Lien, Bombay, and several European stations.

May 20d. Readings also at 0h. (near Tananarive), 2h. (Triest), 3h. and 9h. (Wellington), 10h. (Tuai, Wellington, Irkutsk, Vladivostok, Tashkent, Moscow, Sverdlovsk, Pulkovo, and near Mizusawa), 14h. (Christchurch and near Wellington), 20h. (near Apia and near Mizusawa), 21h. (near Hukuoka B), 23h. (Andijan).

May 21d. 1h. 57m. 39s. Epicentre 33°·6N. 141°·5E. (as on 20d.).

A = −·6532, B = +·5196, C = +·5508; δ = +4; h = +1;
D = +·623, E = +·783,; G = −·431, H = +·343, K = −·835.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s	s.	m.	m.
Nagoya		4·1	294	e 1 23	P_g	2 10	S*	—	3·6
Kobe		5·4	287	e 1 27	+ 3	3 33	+65	—	4·8
Mizusawa		5·5	358	e 1 16	− 9	2 29	− 1	—	—
Sumoto	E.	5·5	281	1 24	− 1	e 3 19	?	—	7·4
	N.	5·5	281	e 1 17	− 8	e 3 23	?	—	6·2
	z.	5·5	281	1 27	+ 2	e 3 16	?	—	3·9
Toyooka		5·8	291	1 43	P*	3 4	S*	—	5·4
Vladivostok		12·1	325	e 2 56	− 1	e 5 18	+ 4	6·4	7·8
Keizyo		12·5	293	e 3 5	+ 3	—	—	e 7·2	—
Zinsen	E.	12·7	292	e 3 11	+ 6	—	—	e 7·4	—
Zi-ka-wei	z.	17·1	267	e 4 2	0	7 26	+14	9·6	11·5
Chiufeng		21·3	296	e 6 46	?	8 47	+ 4	10·9	15·5
Manila		26·5	229	e 5 41	0	10 47	+33	13·8	—
Hong Kong		26·6	252	6 29	−13	10 31	+15	—	18·4
Almata		50·3	302	e 9 1	+ 1	—	—	—	—
Frunse		52·1	301	e 9 14	0	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan		54·3	299	e 9 21	− 9	—	—	—	—
Agra	E.	54·4	281	e 9 26	− 5	—	—	—	—
Tashkent		56·3	301	i 9 41	− 4	i 17 45	+11	e 26·3	35·4
Sverdlovsk		57·8	321	i 9 55	0	17 56	+ 2	27·4	35·3
Moscow		70·1	325	e 11 13	− 3	20 26	− 1	36·9	37·8
Pulkovo		71·2	330	11 21	− 2	20 35	− 5	37·4	43·2
Grozny		71·6	310	e 11 25	0	—	—	—	—
Tiflis	E.	73·0	309	e 11 34	+ 1	e 20 52	− 8	39·4	46·8
Yalta		78·1	316	e 11 59	− 3	e 21 52	− 4	—	—
Sebastopol		78·4	317	e 10 44	−80	—	—	—	—
Pasadena		79·4	56	e 12 8	− 1	—	—	e 34·4	—
Mount Wilson	z.	19·5	56	i 12 11	+ 1	—	—	—	—
Riverside	z.	80·1	56	i 12 13	0	—	—	—	—
Ksara		83·2	306	i 12 29a	0	e 23 8	+19	—	—
De Bilt		86·5	335	—	—	e 23 21	− 1	e 46·3	54·0
Triest		88·0	327	e 19 19	?	e 29 25	SS	—	47·9
Bidston		88·1	340	—	—	e 23 41	+ 4	e 44·4	—
Helwan		88·7	305	—	—	e 23 21	[− 3]	—	—
Kew		88·9	337	—	—	e 23 54	+10	e 44·4	—
La Paz		148·4	64	i 19 51k	[+ 6]	—	—	79·4	83·9

Additional readings :—
Toyooka PE = +1m.49s., iN = +4m.0s.
Vladivostok e = +3m.29s., +3m.51s., and +4m.29s.
Chiufeng iEZ = +5m.3s., SN = +8m.52s.
Agra iE = +21m.26s.
Ksara ePP = +15m.47s.
Helwan e = +21m.3s.
Long waves were also recorded at Husan, Phu-Lien, Uccle, Copenhagen, Stuttgart, Paris, Berkeley, Strasbourg, Bergen, Prague, and Cheb.

May 21d. 13h. 12m. 23s. Epicentre 2°·2N. 78°·5W.

Felt Force V in Columbia. Suggested epicentre 78°·7W. 2°·5N. (Pacific Ocean). Depth 200km. See "Mapa Sismico y Tectonico de Colombia," Emilio Ramirez, S.J., Boletin Grafico No. 7, Bogata, 1947.

$A = +\cdot1992$, $B = -\cdot9792$, $C = +\cdot0382$; $\delta = -3$; $h = +7$;
$D = -\cdot980$, $E = -\cdot199$; $G = +\cdot008$, $H = -\cdot037$, $K = -\cdot999$.

A depth of focus 0.005 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		6·8	352	e 1 33	− 6	e 2 17	−39	2·8	2·8
Huancayo		14·5	167	3 23	0	4 56	−67	6·0	—
San Juan		20·2	36	i 4 26	− 6	8 8	− 2	e 11·1	—
La Paz		21·2	151	i 4 43k	+ 1	i 8 55	+26	i 10·2	13·7
Little Rock		34·9	339	e 6 46	− 1	e 12 10	− 3	—	—
Philadelphia		37·7	5	i 7 10	− 1	e 12 52	− 4	e 18·1	—
St. Louis		37·8	345	e 7 10	− 2	e 12 55	− 2	—	—
Florissant	z.	38·0	345	i 7 12	− 1	e 13 18	+17	—	—
Pennsylvania		38·4	1	e 6 25	−52	—	—	—	—
Chicago		40·4	349	e 7 46	PP?	e 12 21	−76	e 19·7	—
Weston		40·5	9	i 7 34k	0	i 13 40	+ 2	19·3	—
Oak Ridge		40·6	9	i 7 35	0	e 13 39	− 1	—	—
Williamstown		40·6	7	i 7 35	0	e 13 54	+14	—	—
La Plata		41·7	154	7 45	+ 1	—	—	22·4	—
Rio de Janeiro		42·5	127	—	—	e 17 37?	SS	—	—
Tucson		42·6	318	i 7 53	+ 2	e 14 12	+ 3	19·9	—
Ottawa		43·1	3	7 56	+ 1	14 15	− 1	e 19·6	—
East Machias		43·5	12	e 7 38	−21	e 14 39	+17	—	—
La Jolla		47·4	314	i 8 30	0	—	—	—	—
Riverside		48·1	315	i 8 35	0	—	—	—	—

Continued on next page.

		Δ °	Az. °	P. m. s.	O−C. s.	S. m. s.	O−C. s.	L. m.	M. m.
Mount Wilson		48·7	315	i 8 41a	+ 1	—	—	—	—
Pasadena		48·8	315	i 8 41a	0	e 13 53	?	e 23·4	—
Fresno	N.	51·2	317	e 9 0	+ 1	—	—	—	—
Bozeman		51·8	332	e 15 55	PPP	e 16 19	0	—	—
Lick	E.	52·8	317	e 9 11	0	—	—	—	—
Branner		53·2	317	e 9 17	+ 3	—	—	—	—
Berkeley		53·5	317	e 9 17	+ 1	i 16 50	+ 8	—	—
San Francisco	E.	53·6	317	e 9 16	− 1	—	—	—	—
Victoria		60·0	327	10 2	0	18 12	+ 4	e 27·6	—
Ivigtut		63·2	16	10 21	− 3	18 37	−12	—	—
Toledo		76·7	49	e 11 43	− 3	—	—	—	—
Paris		82·4	41	7 37?	?	—	—	—	—
De Bilt		84·4	38	—	—	e 22 47	+ 1	e 42·6	—
Bergen		85·0	29	—	—	e 22 44	− 8	—	—
Strasbourg		85·9	41	—	—	e 22 57	− 4	e 42·6	—
Stuttgart		86·8	41	e 12 38	0	e 23 0	[+ 3]	e 42·6	—
Hamburg		87·3	37	e 12 45	+ 4	e 23 3	[+ 3]	e 35·6	—
Copenhagen		88·7	34	13 4	+17	23 9	[0]	47·6	—
Triest		90·0	45	—	—	i 23 18	[+ 1]	—	—
Prague		90·2	40	—	—	e 23 27	[+ 9]	—	—
Pulkovo		97·5	29	—	—	e 23 11	[−47]	48·6	—
Moscow		102·5	32	e 18 3	PP	e 24 23	[0]	47·1	56·2
Yalta		104·4	44	e 18 20	PP	e 24 35	[+ 3]	—	—
Ksara		108·8	54	e 18 47	PP	e 35 54	?	—	—
Sverdlovsk		112·6	23	e 19 15	PP	e 25 11	[+ 5]	44·6	57·8
Tiflis		112·7	43	—	—	e 26 14	SKKS	—	—
Baku		116·7	43	e 29 37	PS	—	—	e 51·1	—
Tashkent		127·7	31	e 22 26	?	i 27 54	SKKS	e 57·6	70·1
Almata		129·6	23	e 19 17	PKP	e 23 25	PP	—	—
Manila	Z.	154·5	312	19 49	[+ 4]	—	—	—	—

Additional readings :—
Huancayo e = +3m.28s., +3m.44s., +4m.18s., and +5m.14s.
San Juan i = +4m.58s., iPPP = +5m.17s., SS = +8m.32s.
Little Rock eEN = +6m.50s., ePPPN = +8m.11s., eN = +12m.48s.
Philadelphia ePP = +8m.29s., iS = +12m.55s., e = +13m.22s., eSS = +15m.34s., eS_cS = +17m.16s.
St. Louis iN = +7m.13s., +7m.28s., ePPPE = +8m.45s., e = +13m.31s., eSSSE = +15m.58s., eN = +16m.23s., eEN = +17m.19s.
Florissant eZ = +7m.41s., eE = +9m.10s., ePPPZ = +9m.18s., iS_cPE = +12m.57s., iE = +13m.35s., eSSE = +15m.34s., eSSSZ = +15m.55s.
Chicago eSSS = +16m.24s.
Weston i = +7m.55s., iPP = +8m.58s., eSS = +16m.29s.
Oak Ridge ipP = +7m.55s., eZ = +9m.51s. and +13m.5s., eSZ = +13m.43s., esSNZ = +14m.12s., eE = +14m.35s. and +17m.37s.
Williamstown ipP = +7m.55s., isP = +8m.13s., i? = +8m.35s., e = +8m.47s., iPP = +9m.10s., iPPP = +9m.28s., esS = +14m.41s.
Tucson e = +8m.45s., +9m.0s., +9m.33s., and +14m.10s.
Ottawa SSSN = +17m.47s.
East Machias ePP = +9m.41s., ePPP = +10m.23s., e = +13m.47s., +15m.42s., +17m.47s., and +18m.5s.
Mount Wilson iZ = +11m.4s.
Bozeman e = +22m.43s.
Lick iN = +9m.15s.
Berkeley iPE = +9m.19s., eSE = +16m.54s.
San Francisco eN = +9m.21s.
Stuttgart eP_cPEZ = +12m.58s., eZ = +23m.59s.
Copenhagen +23m.30s.
Triest i = +23m.38s.
Pulkovo e = +26m.56s. and +29m.43s.
Moscow e = +18m.28s., +23m.49s., +27m.2s., and +32m.37s.
Ksara ePS = +28m.18s., eSS = +34m.28s.
Sverdlovsk e = +25m.54s., +26m.54s., +28m.56s., +34m.46s., and +36m.7s.
Tiflis eZ = +28m.38s.
Baku e = +36m.37s.
Tashkent i = +22m.58s. and +32m.33s., e = +37m.52s., i = +40m.55s., e = +46m.23s. and +49m.37s.
Manila iZ = +23m.44s., iN = +24m.37s.
Long waves were also recorded at Christchurch and Cape Town.

May 21d. 21h. 56m. 24s. Epicentre 29°·0N. 54°·0E.

$A = +\cdot5149$, $B = +\cdot7087$, $C = +\cdot4823$; $\delta = -1$; $h = +2$;
$D = +\cdot809$, $E = -\cdot588$; $G = +\cdot283$, $H = +\cdot390$, $K = -\cdot876$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Baku	11·8	344	—	—	e 5 45	?	9·1	10·6
Tiflis	14·7	332	e 3 37	+ 6	e 6 27	+11	8·1	9·6
Samarkand	15·1	42	e 3 36	0	e 6 20	− 5	—	—
Grozny	15·8	337	e 3 54	+ 9	—	—	—	—
Ksara	16·2	292	e 3 50	0	e 9 40	?	11·6	—
Tashkent	17·5	41	e 4 0	− 7	i 7 23	+ 2	e 10·1	12·0
Andijan	19·0	48	e 4 40	PP	—	—	—	—
Helwan	19·8	279	e 4 6	−29	e 8 18	+ 5	—	—
Theodosia	21·7	323	e 4 55	0	—	—	—	—
Yalta	22·1	320	e 5 0	+ 1	e 8 56	− 2	—	—
Simferopol	22·4	321	e 5 2	0	e 9 4	0	—	—
Almata	23·3	46	e 5 10	0	—	—	—	—
Sverdlovsk	28·2	8	e 5 56	0	e 10 43	+ 2	16·6	—

Additional readings :—
Baku e = +6m.17s., +7m.21s., and +8m.37s.
Ksara eP_eP = +7m.7s.
Tashkent e = +7m.38s., eSS = +8m.0s., eSSS = +8m.6s., eSSSS = +8m.12s.
Sverdlovsk e = +6m.43s.

May 21d. Readings also at 1h. (near Branner and Lick), 3h. (Medan), 4h. (Nagoya), 5h. (Nagoya, Kobe (2), near Toyooka (2), and Sumoto (2)), 7h. (Oaxaca and Tacubaya), 8h. (Mount Wilson, Pasadena, Riverside, and Nagoya), 10h. (Mount Wilson, Pasadena, and Riverside), 11h. (La Paz, Prague, and Stara Dala), 17h. (Cheb and near Manila), 18h. (Bucharest, Sofia, Andijan, and Samarkand), 20h. (near Grozny, Tiflis, and near Mizusawa), 22h. (Malaga).

May 22d. Readings at 0h. (Keizyo), 4h. (Batavia), 6h. (Pasadena, Tiflis, and near Ksara), 7h. (near Tiflis), 8h. (Sverdlovsk), 10h. (near Manila), 11h. (Wellington and Sverdlovsk), 15h. (near Grozny), 16h. (Cheb and Wellington), 17h. (Cape Town), 23h. (near Branner).

May 23d. 8h. 12m. 23s. Epicentre 2°·5S. 28°·7W.

$A = +\cdot8764$, $B = -\cdot4798$, $C = -\cdot0433$; $\delta = +\cdot16$; $h = +7$;
$D = -\cdot480$, $E = -\cdot877$; $G = -\cdot038$, $H = +\cdot021$, $K = -\cdot999$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz	z.	41·2	248	7 49	+ 1	—	—	21·2	24·2
San Juan		42·3	301	e 7 55	− 2	—	—	—	—
Huancayo		47·1	256	e 8 11	−24	e 15 4	−24	24·1	—
Paris		57·8	24	e 7 37?	?	—	—	29·6	—
Rathfarnham Castle		58·7	15	—	—	i 19 39	?	36·6	—
Kew		58·9	20	e 10 10	+ 7	i 18 18	+10	e 22·6	—
Weston		59·0	325	i 10 3a	− 1	e 18 21	+11	e 29·3	—
Oak Ridge		59·2	325	i 10 5	0	—	—	—	—
Philadelphia		59·9	321	—	—	e 18 20	− 1	e 28·0	—
Strasbourg		59·9	27	e 10 12	+ 2	e 18 22	+ 1	e 30·6	—
Uccle		60·1	23	—	—	e 18 27	+ 3	e 29·6	—
Williamstown		60·3	324	i 10 13	0	—	—	—	—
Stuttgart		60·7	28	e 10 16k	+ 1	e 18 35	+ 3	e 32·6	—
Triest		60·9	33	e 10 13	− 4	18 34	0	—	37·2
De Bilt		61·5	23	10 23	+ 2	18 49	+ 7	e 29·6	33·4

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ottawa		63·3	326	—	—	e 19 13	+ 9	e 26·6	—
Helwan		65·7	56	—	—	e 18 59	−35	—	44·3
Copenhagen		67·0	24	10 58	+ 1	19 55	+ 5	29·6	—
Florissant		69·9	313	—	—	e 20 30	+ 6	e 35·1	—
Little Rock		70·1	308	e 11 14	− 2	—	—	—	—
Ksara		70·5	54	i 11 20	+ 2	20 34	+ 2	—	—
Sebastopol		72·4	41	e 10 38	−52	—	—	—	—
Sotchi		76·3	44	e 12 25	+33	—	—	—	—
Pulkovo		77·1	27	11 56	− 1	21 47	+ 1	38·6	47·7
Moscow		79·0	32	e 12 4	− 3	e 22 0	− 6	38·1	46·0
Tiflis		79·4	47	e 12 10	+ 1	e 22 13	+ 3	—	—
Grozny		80·5	46	e 12 19	+ 4	—	—	—	—
Riverside	z.	90·3	304	i 13 3	− 1	—	—	—	—
Mount Wilson	z.	90·9	304	i 13 6	− 1	—	—	—	—
Pasadena		91·0	304	e 13 7	0	—	—	—	—
Tinemaha	E.	91·1	307	e 13 12	+ 4	—	—	—	—
Tashkent		97·6	49	e 23 4	?	24 13	[− 2]	e 49·6	65·1

Additional readings :—
La Paz ipPZ = +7m.52s., PPZ = +9m.33s.
Huancayo ePcP = +9m.25s., ePP = +10m.21s., e = +18m.57s.
Rathfarnham Castle i = +23m.37s.?
Weston ePcPZ = +10m.56s., ePKP,PKPZ = +39m.45s.
Philadelphia eScS = +20m.1s., e = +25m.7s.
Strasbourg ePP = +12m.19s., eSSN = +22m.21s.
Stuttgart eScS = +20m.13s.
Helwan i = +20m.52s.
Little Rock eN = +11m.39s.
Ksara iPP = +13m.59s., eSS = +25m.16s.
Tiflis eE = +21m.22s.
Tashkent ScS = +25m.17s., PS = +26m.13s., SS = +31m.37s.
Long waves were also recorded at Algiers, Cheb, Baku, Rio de Janeiro, Santiago, Edinburgh, and Hamburg.

May 23d. 10h. 57m. 20s. Epicentre 38°·0N. 27°·5E.

A = +·7007, B = +·3648, C = +·6131 ; δ = −5 ; h = −1 ;
D = +·462, E = −·887 ; G = +·544, H = +·283, K = −·790.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Athens	3·0	269	e 1 2	P_g	i 1 49	S_g	—	—
Sofia	5·7	327	e 1 24	− 4	e 2 48	S*	—	—
Bucharest	6·5	350	e 1 36	− 3	i 3 8	S*	4·0	—
Ksara	8·0	118	e 2 7	+ 7	e 3 41	+ 8	—	6·7
Sebastopol	8·0	32	1 53	− 7	e 3 31	− 2	—	—
Yalta	8·2	36	1 53	−10	3 25	−13	—	—
Belgrade	8·6	325	e 2 8k	− 1	e 4 2	+14	—	4·8
Helwan	8·7	159	—	—	e 4 0	+10	—	—
Simferopol	8·7	34	2 7	− 3	—	—	—	—
Theodosia	9·2	38	e 2 8	− 8	3 47	−16	—	—
Sotchi	10·8	55	e 3 30	+51	—	—	—	—
Budapest	11·3	330	e 2 50	+ 4	—	—	e 6·2	8·7
Zagreb	11·6	316	e 2 47	− 3	e 5 53	+52	e 6·4	6·8
Stara Dala	12·0	328	e 3 58	?	e 6 30	L	(6·5)	7·7
Graz	12·7	320	e 2 58	− 7	e 6 1	SSS	—	7·1
Triest	12·8	311	e 3 3	− 3	e 5 59	SSS	—	—
Vienna	13·1	325	e 3 38	+28	e 11 31	?	—	—
Piatigorsk	13·2	58	e 2 47	−24	e 6 10	SSS	—	—
Erevan	13·4	75	e 3 32	+18	e 7 26	L	(e 7·4)	—
Padova	13·8	308	e 2 40	−39	—	—	—	—
Tiflis	13·8	69	3 21	+ 2	e 5 57	+ 3	e 7·4	8·9
Grozny	14·8	63	e 3 38	+ 6	e 6 42	+24	—	—
Prague	15·3	327	e 3 43	+ 4	e 6 28	− 2	e 7·2	8·7
Cheb	16·2	323	e 3 15	−35	—	—	e 8·7	9·5
Zurich	16·7	310	e 4 4	+ 7	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Stuttgart	17·1	315	e 4 6	+ 4	e 7 16	+ 4	e 8·7	11·3
Jena	17·2	324	e 4 10	+ 7	—	—	e 9·2	12·5
Basle	17·4	309	e 4 10	+ 4	—	—	e 9·9	—
Baku	17·5	76	e 4 22	+15	e 7 25	+ 4	9·2	11·1
Strasbourg	17·8	313	i 4 18	+ 7	e 7 39	+11	e 10·0	10·2
Moscow	19·0	17	e 4 15	−11	7 45	−10	9·4	10·1
Hamburg	19·7	328	e 4 34	0	e 8 11	+ 1	e 9·7	13·7
Copenhagen	20·4	337	—	—	8 16	− 9	9·7	—
Uccle	20·8	315	e 4 50	+ 5	e 8 34	+ 1	e 10·7	—
De Bilt	21·0	321	4 51	+ 4	8 43	+ 6	e 10·7	12·0
Paris	21·0	309	e 5 40?	?	e 8 41	+ 4	11·7	11·7
Pulkovo	21·9	3	e 4 52	− 5	e 8 48	− 6	11·2	13·4
Upsala	22·8	347	e 5 5	0	e 9 3	− 8	e 11·1	13·2
Kew	23·7	314	e 5 18	+ 4	i 9 36	+ 9	12·7	—
Jersey	24·0	308	—	—	i 9 42	+10	i 12·7	—
Oxford	24·4	314	—	—	e 9 44	+ 5	12·0	14·1
Toledo	24·5	284	e 5 32	+10	—	—	12·7	—
Granada	24·6	278	e 4 10	−73	—	—	—	—
Malaga	25·3	278	e 5 34	+ 4	—	—	—	—
Stonyhurst	25·9	318	e 5 9	−26	i 10 21	+17	14·7	—
Bidston	26·1	316	—	—	i 9 30	−37	12·7	—
Bergen	26·4	336	—	—	e 11 34	SSS	—	—
Edinburgh	27·2	321	e 2 40?	?	—	—	—	20·7
Rathfarnham Castle	27·8	315	e 5 0	−53	i 9 15	?	12·3	—
Tashkent	32·1	71	e 5 28	−63	e 11 38	− 5	13·7	20·8

Additional readings :—
Bucharest iN = +1m.53s., iE = +2m.24s., iN = +2m.41s., iE = +2m.48s., iN = +2m.58s.
Ksara S_g = +4m.36s.
Sebastopol e = +3m.15s.
Belgrade eZ = +2m.43s. and +3m.13s.
Helwan i = +4m.45s.
Budapest E = +2m.54s., iE = +5m.42s.
Zagreb ePPPNE = +3m.28s., eNW = +3m.47s., +5m.45s., eZ = +5m.57s.
Triest i = +6m.46s., +7m.0s., and +7m.4s.
Vienna PPP = +6m.47s., S_eS = +12m.41s.
Cheb e = +10h.55m.
Strasbourg eN = +9m.3s. and +9m.49s., e = +10m.52s., eE = +11m.24s., e = +12m.16s.
Tashkent e = +11m.51s. and +13m.12s.
Long waves were also recorded at Kecskemet, Durham, and Göttingen.

May 23d. 18h. 38m. 56s. Epicentre 17°·1N. 93°·4W.
(presumed forerunner of shock of May 28d. 15h.).

$A = -\cdot0567$, $B = -\cdot9547$, $C = +\cdot2922$; $\delta = +5$; $h = +5$;
$D = -\cdot998$, $B = +\cdot059$; $G = -\cdot017$, $H = -\cdot292$, $K = -\cdot956$.

Depth of focus 0.010.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Merida	E.	5·2	43	(0 59)	−18	—	—	—
Tacubaya	E.	5·9	293	1 23	− 3	—	—	—
Little Rock		17·6	3	e 4 6	+ 6	e 7 37	+26	—
St. Louis		21·6	5	e 4 42	− 1	e 8 52	+21	—
Florissant		21·8	5	e 4 46	+ 1	e 9 3	+28	—
San Juan		26·0	82	e 5 10	−16	—	—	—
Mount Wilson	Z.	27·9	313	i 5 47	+ 4	—	—	—
Pasadena	Z.	27·9	313	e 5 48	+ 5	—	—	—
Tinemaha	E.	29·6	318	e 6 2	+ 4	—	—	—
Williamstown		30·8	30	i 5 58	−11	i 15 10	L	(i 15·2)
Weston		31·5	32	i 5 53a	−22	e 13 32	SS	15·2

For Notes see next page.

NOTES TO MAY 23d. 18h. 38m. 56s.

Additional readings :—
Merida readings have been increased by 1 minute.
Little Rock eN = +4m.10s., +4m.27s., +4m.47s., +7m.56s., +8m.11s., and +8m.25s.
St. Louis epP = +4m.58s., iPPN = +5m.9s., isPN = +5m.17s., esSN = +9m.21s., eSS = +9m.37s.
Florissant eZ = +5m.10s., iN = +9m.44s., iE = +9m.50s., eZ = +9m.57s.
San Juan e = 18h.39m.0s.
Williamstown i = +6m.22s., ePP = +8m.18s., ePPP = +9m.53s., e = +11m.16s., ePS = +15m.32s., e = +15m.58s., eSSS = +22m.46s.
Weston ipPNZ = +6m.38s., isPZ = +7m.5s., iPPN = +8m.6s.
Long waves were also recorded at Oaxaca.

May 23d. Readings also at 0h. (near Athens), 1h. (Sverdlovsk), 3h. (Triest), 6h. (Christchurch, Wellington, Melbourne, Riverivew, Sydney, La Jolla, Mount Wilson, Williamstown Pasadena, Riverside, Tinemaha, Ksara, near Granada, Malaga (2), and near Tananarive), 7h. (Hong Kong), 8h. (Butte), 10h. (Christchurch), 11h. (Bucharest and Moscow, and Vladivostok), 12h. (Wellington), 13h. (Medan), 14h. (Andijan, and near Neuchatel), 22h. (Mount Wilson, Pasadena, and La Paz).

May 24d. 0h. 40m. 31s. Epicentre 2°·7N. 95°·3W.

A = −·0923, B = −·9947, C = +·0468 ; δ = +14 ; h = +7 ;
D = −·996, E = +·092 ; G = −·004, H = −·047, K = −·999.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s	m. s.	s.	m.	m.
Tacubaya		17·0	347	e 4 6	+ 5	—	—	—	—
Merida	N.	18·9	18	i 2 31	?	—	—	—	—
Huancayo		24·7	127	e 5 24	0	e 9 40	− 4	e 12·5	—
Little Rock		32·0	5	e 6 27	− 3	e 11 47	+ 5	—	—
San Juan		32·6	59	e 6 29	− 6	—	—	—	—
Tucson		32·8	336	e 6 35	− 2	e 11 15	−39	e 16·2	—
La Paz	Z.	32·9	125	e 7 34	+56	—	—	16·5	22·5
Columbia		33·9	21	—	—	(e 11 35)	−36	e 11·6	—
St. Louis	N.	36·1	8	i 7 2	− 3	e 11 41	−64	—	—
Florissant		36·2	8	e 7 8	+ 2	i 12 54	+ 7	e 17·4	19·9
Riverside	Z.	37·3	329	e 7 15	− 1	—	—	—	—
Pasadena		37·8	329	e 7 25	+ 5	—	—	e 18·6	—
Mount Wilson	Z.	37·9	329	e 7 20	0	—	—	—	—
Chicago		39·6	9	e 7 30	− 5	e 13 41	+ 3	e 20·7	—
Philadelphia		41·3	24	i 7 49	0	e 13 53	−11	e 20·0	—
Toronto		43·2	17	7 59	− 5	14 36	+ 4	e 21·5	—
Williamstown		44·8	25	i 8 14	− 3	i 12 52	?	e 22·5	—
Weston		45·0	26	i 8 18k	− 1	e 14 54	− 4	22·0	—
Butte		45·7	344	e 10 5	PP	—	—	e 24·6	—
Ottawa		45·9	19	8 29	+ 3	15 15	+ 4	e 22·5	—
East Machias		48·6	26	e 9 2	+15	e 16 18	+29	e 20·1	—
Seven Falls		49·1	22	—	—	i 15 31	−25	20·5	—
Kew		91·0	39	—	—	e 23 29?	[−10]	e 27·5	—
Paris		93·1	41	—	—	e 32 29?	?	46·5	—
Christchurch		93·4	227	e 25 40	S	(e 25 40)	+76	45·5	—
Uccle		94·0	39	—	—	e 28 59	?	e 45·5	—
De Bilt		94·3	37	—	—	e 28 29?	?	e 45·5	—
Strasbourg		96·6	41	—	—	e 26 29?	?	e 46·5	—
Stuttgart		97·5	40	e 17 29?	PP	—	—	e 47·5	—
Cheb		99·2	39	e 17 29?	PP	e 24 29?	[+ 6]	49·5	52·5
Triest		101·3	43	—	—	e 23 43	[−50]	e 47·5	55·5
Ksara		121·5	47	e 19 12	[+16]	—	—	—	—

Additional readings :—
Huancayo e = +7m.20s., +9m.49s., SS = +10m.45s.
Little Rock eEN = +6m.32s., eE = +7m.50s., eN = +11m.17s., eE = +11m.53s., eN = +11m.55s.
San Juan e = +7m.54s.

Continued on next page.

Tucson e = +6m.40s., ePP = +7m.32s., e = +8m.17s., +8m.36s., and +11m.2s.
St. Louis eE = +7m.7s., iN = +7m.18s., eN = +12m.49s.
Florissant eE = +7m.10s., eN = +8m.20s. and +8m.34s., iN = eZ = +8m.37s., eN = +9m.35s., iN = +9m.54s.
Chicago e = +9m.5s., eS = +13m.22s., e = +13m.36s., +16m.39s., and +18m.5s.
Philadelphia ePP = +9m.28s., e = +17m.19s. and +18m.37s.
Williamstown i? = +8m.27s., ePP = +8m.43s., ePPP = +9m.8s., iSS = +13m.58s.
Weston iZ = +12m.51s., eSS = +18m.4s.
Butte e = +13m.47s.
Ottawa SS = +18m.29s.
East Machias e = +14m.7s.
Christchurch eS = +34m.16s., SSE = +38m.46s., L_qE = +40m.48s.
Stuttgart e = +34m.29s.?
Triest e = +27m.24s.
Ksara ePS = +28m.39s., eSKSP = +29m.56s.
Long waves were also recorded at Bozeman, Ukiah, and Copenhagen.

May 24d. Readings also at 1h. (Belgrade, near Santiago, and near Wellington), 2h. (Mount Wilson and Pasadena), 8h. (La Plata and near Santiago), 10h. (near Andijan and Samarkand), 12h. (Triest), 13h. (Taikyu), 16h. (Andijan, Samarkand, Basle, and Zurich), 18h. (Oak Ridge), 22h. (near Nagoya).

May 25d. 0h. 38m. 9s. Epicentre 35°·6N. 140°·3E.

A = −·6270, B = +·5206, C = +·5795; δ = −3; h = 0;
D = +·639, E = +·769; G = −·446, H = +·370, K = −·815.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Kiyosumi		0·5	192	0 12	− 2	0 20	− 3	—	—
Komaba		0·5	276	0 15	+ 1	0 24	+ 1	—	—
Tokyo, Cen.Met. Obs.		0·5	283	0 15k	+ 1	0 24	+ 1	—	0·4
Tokyo, Imp. Univ.		0·5	283	0 15	+ 1	0 24	+ 1	—	—
Mitaka		0·6	276	0 17	+ 2	0 26	0	—	—
Tukubasan		0·7	345	0 18	+ 1	0 27	− 1	—	—
Kamakura		0·7	245	0 17	0	0 26	− 2	—	—
Misaki		0·7	231	0 17	0	0 27	− 1	—	—
Koyama		1·1	257	0 12	−10	0 25	−14	—	—
Susaki		1·4	229	0 24	− 3	0 40	− 6	—	—
Nagoya		2·8	261	0 30	−17	1 32	S_g	—	1·7
Mizusawa		3·6	11	e 1 1	+ 3	1 45	+ 3	—	—
Kobe	E.	4·3	259	e 1 2	− 6	2 10	S*	—	2·3
	N.	4·3	259	e 1 0	− 8	2 9	S*	—	2·3
	Z.	4·3	259	e 1 10	+ 2	2 7	+ 7	—	2·3
Toyooka		4·5	271	e 1 10	− 1	2 15	S*	—	2·4
Sumoto		4·6	256	e 1 18	+ 6	e 2 6	− 1	—	2·7
Hukuoka B		8·4	259	e 2 9	+ 3	e 4 35	S_g	—	—
Vladivostok		9·9	322	e 2 27	+ 2	e 4 29	+ 9	5·4	—

Additional readings:—
Kobe eZ = +1m.23s., eE = +1m.29s.
Toyooka ePEN = +1m.22s.

May 25d. 7h. 28m. 13s. Epicentre 2°·5N. 122°·0E. (as on May 13d.).

A = −·5294, B = +·8473, C = +·0433; δ = +6; h = +7.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s	m. s.	s.	m.	m.
Manila	12·0	355	3 4	+ 9	6 2	+51	—	—
Batavia	17·4	240	3 55	−11	—	—	—	—
Hong Kong	21·1	340	4 52	+ 4	9 17	SS	—	13·8
Medan	23·3	274	5 9	− 1	9 18	− 2	—	—
Sverdlovsk	72·6	330	11 28	− 2	20 56	0	34·8	—

Long waves were also recorded at Baku.

May 25d. Readings also at 0h. (Almeria and Oak Ridge), 1h. (Oaxaca and Tacubaya), 3h. (Baku, Ksara, Tashkent, Sverdlovsk, Pulkovo, Copenhagen, and Mount Wilson), 4h. (Kobe), 5h. (Berkeley, Branner, Lick, Fresno, San Francisco, Butte, and Tucson), 6h. (Samarkand, Sverdlovsk, Nagoya, near Mizusawa, and near Andijan (2)), 7h. (Baku and near La Paz), 9h. (Baku and Ksara), 10h. (Sverdlovsk), 12h. (Graz), 13h. (Jersey), 16h. (Tacubaya and near Vienna), 19h. (near Simferopol and near Tiflis), 20h. (Bucharest and Yalta), 22h. (Bucharest, Ksara, Malaga, near Almeria, Granada, and near Simferopol), 23h. (Florissant).

May 26d. Readings at 0h. (near Andijan and Samarkand), 2h. (Fresno, near Berkeley, Branner, Lick, San Francisco, and near Andijan (2)), 3h. (Florissant, Oaxaca, and Tacubaya), 5h. (Amboina, Almata, Frunse, near Andijan, and Samarkand), 6h. (Sverdlovsk, Vladivostok, and near Taihoku), 10h. (Reykjavik), 11h. (Amboina), 14h. (Cheb, Andijan, and Samarkand), 15h. (Andijan (2), Ksara, Bucharest, and Sofia), 17h. (near Wellington), 19h. (La Paz).

May 27d. 4h. 34m. 55s. Epicentre 33°·0N. 143°·0E.

$A = -\cdot6711$, $B = +\cdot5057$, $C = +\cdot5421$; $\delta = -2$; $h = +1$;
$D = +\cdot602$, $E = +\cdot799$; $G = -\cdot433$, $H = +\cdot326$, $K = -\cdot840$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		5·4	295	1 20	− 4	3 1	+33	—	—
Mizusawa	E.	6·3	347	e 1 39	+ 3	2 42	− 8	—	—
	N.	6·3	347	e 1 43	+ 7	e 2 40	−10	—	—
Kobe		6·7	287	e 1 48	+ 6	e 3 20	+20	—	4·2
Sumoto		6·9	284	1 40	− 5	4 3	+58	—	4·5
Toyooka		7·2	293	1 55	+ 6	—	—	e 4·1	5·2
Hukuoka B		10·6	278	e 2 35	− 1	e 6 32	?	—	—
Vladivostok		13·3	322	e 3 6	− 7	e 5 37	− 5	7·1	10·6
Keizyo		13·9	293	e 3 18	− 3	e 6 3	+ 6	e 8·2	—
Zi-ka-wei	Z.	18·4	271	e 4 13	− 5	7 39	− 2	—	12·3
Chiufeng		22·7	297	e 5 3	− 1	8 59	−10	e 10·7	15·2
Manila		27·1	233	e 6 8	+22	10 56	+32	15·4	—
Hong Kong		27·6	254	—	—	10 55	+23	—	19·3
Agra	E.	55·8	282	—	—	e 17 20	− 8	—	—
Tashkent		57·7	301	e 10 30	+35	i 17 55	+ 2	e 28·1	36·9
Sverdlovsk		59·1	321	10 7	+ 3	18 9	− 2	28·1	40·1
Bombay		63·6	276	—	—	e 19 5?	− 3	e 34·1	41·6
Moscow		71·3	325	11 23	0	e 20 38	− 3	e 35·6	40·2
Baku		71·6	307	e 11 27	+ 2	e 20 55	+11	37·1	46·1
Pulkovo		72·3	331	e 11 30	+ 1	e 20 53	+ 1	35·1	46·7
Tiflis		74·4	310	e 11 42	0	e 21 14	− 2	41·6	47·4
Mount Wilson	Z.	78·7	56	e 12 19	+13	—	—	—	—
Pasadena	Z.	78·7	56	e 12 19	+13	—	—	—	—
Copenhagen		82·1	334	—	—	22 39	+ 1	43·1	—
Ksara		84·6	306	e 12 46	+10	e 23 26?	+23	—	54·1
Tucson		84·9	55	e 12 50	+12	e 18 47	?	e 42·8	—
Cheb		86·4	331	—	—	e 23 5?	[− 5]	e 46·1	57·6
De Bilt		87·6	335	e 13 30	+39	e 23 25	− 7	e 46·1	54·9
Stuttgart		88·8	332	e 13 29	+32	e 23 47	+ 3	e 48·1	—
Triest		89·2	327	—	—	e 23 38	− 9	—	48·1
Paris		91·3	335	e 16 5?	PP	—	—	52·1	—
La Paz	Z.	147·5	67	20 5	[+22]	—	—	—	—

Additional readings:—
Kobe eE = +2m.52s., eSE? = +3m.27s.
Sumoto PN = +1m.43s.
Vladivostok e = +6m.23s.
Zi-ka-wei iZ = +7m.55s.
Chiufeng iE = +5m.30s., SN = +9m.10s.
Tashkent e = +19m.13s., +24m.35s., and +25m.47s.
Moscow e = +14m.16s. and +20m.0s.
Tiflis ePPPZ = +16m.14s., ePSZ = +21m.54s.
Pasadena eZ = +11m.19s.
Ksara ePP = +16m.11s., ePS = +24m.16s.?
Tucson e = +13m.20s.
Cheb e = +29m.5s ?and +34m.5s.?
Long waves were also recorded at Uccle, Husan, Taikyu, Phu-Lien, Prague, Kew, Edinburgh, and Strasbourg.

May 27d. Readings also at 1h. (Sofia and near Bucharest), 3h. (La Plata and near Kobe), 4h. (Batavia, near Kobe, and Sumoto), 8h. (near Berkeley and Ferndale), 9h. (Kobe, Nagoya, and near Medan), 10h. (Bucharest, Tiflis, and La Paz), 11h. (Malabar), 15h. (Oaxaca, Tacubaya, Little Rock, and near Lick), 17h. (San Juan, Manila, Tashkent, Sverdlovsk, near Amboina, near Kobe, Sumoto, Toyooka, and Nagoya), 19h. (Mount Wilson, Pasadena, Riverside, and Manila), 21h. (Upsala), 22h. (Triest and Bucharest), 23h. (Hong Kong, Sverdlovsk, Manila, Tashkent, Chiufeng, near Almata, Tchimkent, Frunse, Andijan, and Samarkand).

May 28d. 7h. 11m. 52s. Epicentre 20°·5N. 145°·3E.

$A = -\cdot7707$, $B = +\cdot5336$, $C = +\cdot3481$; $\delta = -12$; $h = +5$;
$D = +\cdot569$, $E = +\cdot822$; $G = -\cdot286$, $H = +\cdot198$, $K = -\cdot937$.

A depth of focus 0·020 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Titizima		7·2	337	1 38	− 6	2 51	−13	—
Misima		15·6	340	3 34	+ 2	6 31	+11	—
Hunatu		16·0	340	3 14	−23	—	—	—
Kakioka		16·3	345	3 36	− 5	—	—	—
Nagoya		16·4	335	e 3 38	− 4	—	—	—
Gihu		16·6	335	3 34	−11	6 37	− 6	—
Kobe	E.	16·7	330	—	—	e 6 32	−13	—
Maebasi		16·8	342	3 57	+10	—	—	—
Miyazaki		16·8	315	4 13	+26	6 57	+10	—
Oiwake		16·9	341	3 51	+ 3	6 54	+ 4	—
Nagano		17·3	340	3 52	− 1	7 8	+10	—
Toyama		17·6	338	4 7	+10	7 16	+11	—
Hukusima		17·7	347	3 55	− 3	7 6	− 1	—
Kumamoto		17·9	316	3 56	− 4	6 44	−27	—
Sendai		18·1	350	4 1	− 1	—	—	—
Mizusawa		18·9	350	e 4 29	+18	7 39	+ 7	—
Hakodate		21·6	351	4 39	+ 1	—	—	—
Sapporo		22·8	353	4 53	+ 4	—	—	—
Manila		23·9	259	i 5 0k	0	10 23	SS	—
Vladivostok		25·2	337	e 5 33	+21	e 9 30	+ 7	11·1
Chiufeng		31·7	315	e 6 48	+38	i 11 4	− 3	—
Andijan		64·2	306	e 10 29	+ 9	e 18 47	+ 4	—
Tashkent		66·4	307	—	—	i 18 11	−58	—
Sverdlovsk		69·2	325	e 11 31	+40	19 52	+ 9	32·1
Grozny		82·8	313	e 12 30	+23	—	—	—
Tinemaha	E.	82·8	54	i 12 8	+ 1	—	—	—
Pasadena	Z.	83·9	56	i 12 12	− 1	—	—	—
Mount Wilson	Z.	84·0	56	i 12 12	− 1	—	—	—
Tiflis		84·1	312	e 12 58	+44	e 22 21	− 2	e 33·1
Riverside	Z.	84·6	56	i 12 16	0	—	—	—
La Jolla	Z.	85·1	57	i 12 18	− 1	—	—	—
La Paz	Z.	148·1	88	e 19 33	[+10]	—	—	—

Additional readings:—
Mizusawa SN = +7m.45s.
Chiufeng iEN = +16m.24s.
Tashkent i = +20m.5s. and +21m.10s.
Pasadena iZ = +12m.43s.

May 28d. 15h. 35m. 51s. Epicentre 17°·1N. 93°·4W. (as on 23d.).

$A = -\cdot0567$, $B = -\cdot9547$, $C = +\cdot2922$; $\delta = +5$; $h = +5$;
$D = -\cdot998$, $E = +\cdot059$; $G = -\cdot017$, $H = -\cdot292$, $K = -\cdot956$.

A depth of focus 0·010 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s	m.	m.
Oaxaca	N.	3·2	269	1 3	+13	—	—	—	—
Puebla	N.	4·9	293	1 6	− 7	—	—	—	—
Merida	N.	5·2	43	1 35	+18	—	—	—	—
Tacubaya	N.	5·9	293	1 30	+ 4	—	—	—	—
Guadalajara	N.	10·0	292	2 27	+ 5	—	—	—	—
Manzanillo	N.	10·6	272	2 35	+ 5	—	—	—	—
Little Rock		17·6	3	i 4 4	+ 4	e 7 16	+ 5	—	—
Columbia		20·1	29	4 30	+ 2	e 8 12	+ 8	—	—
St. Louis		21·6	5	e 4 45	+ 2	i 8 35	+ 4	—	—
Florissant		21·8	5	i 4 46	+ 1	i 8 48	+13	e 9·4	—
Tucson		21·8	318	i 4 48	+ 3	e 8 46	+11	e 14·4	—
Chicago		25·2	8	5 16	− 2	e 9 12	−22	e 16·0	—
San Juan		26·0	82	e 5 19	− 7	e 10 49	SS	—	—
Madison		26·1	5	e 5 39	+13	e 10 15	+26	—	—
La Jolla		26·6	311	e 5 31	0	—	—	—	—
Riverside		27·3	313	i 5 36	− 1	—	—	—	—
Philadelphia		27·7	30	i 5 11	−30	9 31	−43	—	—
Mount Wilson	Z.	27·9	313	i 5 44	+ 1	—	—	—	—
Pasadena		27·9	313	i 5 43k	0	i 10 20	+ 2	—	—
Toronto		29·0	21	e 5 53	0	—	—	—	—
Fresno	N.	30·4	315	e 6 11	+ 6	—	—	—	—
Williamstown		30·8	30	i 6 10	+ 1	i 13 8	SS	—	—
Oak Ridge	Z.	31·4	32	e 6 13	− 1	—	—	e 13·1	—
Weston		31·5	32	i 6 27k	+12	e 11 13	− 2	14·5	—
Ottawa		31·9	23	e 6 17	− 1	e 11 17	− 4	e 14·6	—
Bozeman		32·1	347	—	—	e 11 22	− 2	—	—
Berkeley		32·7	315	i 12 35	S	(i 12 35)	+62	—	—
Butte		33·0	347	e 6 22	− 6	e 11 24	−14	e 14·4	—
Huancayo		34·0	148	6 38a	+ 2	i 11 54	0	e 17·7	—
Ukiah		34·0	317	e 7 33	+57	e 13 27	SS	—	—
East Machias		35·2	33	e 7 2	+15	e 12 44	+32	e 21·0	—
Seven Falls		35·3	26	—	—	e 10 12	?	16·2	—
Victoria		39·6	329	—	—	e 13 30	+11	e 17·2	—
La Paz		41·6	141	i 7 40a	0	i 13 44	− 4	17·2	19·8
Ivigtut		54·4	26	9 17a	− 2	16 45	− 3	—	—
Rio de Janeiro	N.	63·1	127	—	—	e 18 39	− 2	—	—
Rathfarnham Castle		74·8	38	—	—	e 21 10	+11	—	—
Edinburgh		76·1	35	e 11 38	− 1	i 21 13	0	—	—
Stonyhurst		76·9	37	—	—	e 21 9?	−13	—	—
Jersey		78·1	42	—	—	e 21 15	−20	—	—
Oxford		78·1	39	e 17 49	?	—	—	—	—
Kew	Z.	78·7	39	i 11 51a	− 2	—	—	—	—
Toledo		78·8	52	e 11 50	− 4	e 15 30	?	—	—
Granada		79·7	54	e 14 9?	?	28 9?	SS	—	—
Paris		81·1	42	e 12 4	− 2	e 22 8	+ 2	35·2	—
Uccle		81·7	40	12 9	0	22 13	+ 1	e 33·2	—
De Bilt		81·8	38	i 12 9	− 1	e 22 11	− 2	e 36·2	—
Hamburg		84·1	36	i 12 21a	0	e 22 28	− 8	e 46·2	—
Strasbourg		84·5	41	i 12 23a	0	e 22 30	−10	e 38·2	—
Copenhagen		84·7	33	i 12 23a	− 1	22 29	−13	—	—
Stuttgart		85·3	41	i 12 27a	0	e 22 36	−12	e 36·2	—
Cheb		86·8	38	e 14 9?	?	—	—	—	—
Prague		88·0	38	e 12 17	−23	e 23 52	+38	—	—
Triest		89·4	43	i 12 46	− 1	i 23 5	[− 1]	—	—
Zagreb		90·8	41	—	—	e 23 10	[− 5]	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Pulkovo	90·9	26	e 12 52	− 2	23 42	+ 2	38·2	—
Moscow	96·5	25	e 16 18	?	23 38	[− 8]	—	—
Sebastopol	101·9	36	—	—	e 24 8	[− 6]	—	—
Yalta	102·3	36	e 17 53	PP	e 24 8	[− 7]	—	—
Sverdlovsk	103·2	14	i 18 7	PP	i 24 16	[− 3]	40·2	—
Helwan	109·2	49	e 18 51	PP	i 24 39	[− 6]	—	—
Tiflis	109·9	32	18 52a	PP	26 0	SKKS	—	—
Ksara	110·0	45	e 14 21	P	e 24 45	[− 4]	—	—
Tashkent	119·7	15	20 5	PP	26 28	SKKS	e 52·2	75·7

Additional readings :—

Little Rock iN = +4m.7s., +4m.14s., +4m.18s., +4m.29s., +4m.42s., +4m.45s., +5m.19s., and +5m.27s., eN = +7m.13s., iEN = +7m.27s., eN = +8m.2s., iE = +8m.5s.
Columbia epP = +5m.4s. and +5m.21s.
St. Louis ipPN = +5m.4s., iPP = +5m.19s., esP = +5m.25s., iE = +5m.48s., eN = +8m.23s., iN = +8m.29s. and +8m.41s., eSSN = +9m.14s., iN = +9m.43s.
Florissant iN = +4m.52s., eSN = +8m.51s.
Tucson epP = +5m.22s., esP = +6m.1s., e = +9m.16s., sS = +9m.27s., e = +12m.35s.
Chicago pP = +5m.53s., e = +9m.38s., +9m.53s., esS = +10m.28s., e = +12m.21s.
San Juan epP = +5m.50s., ePP = +6m.14s., i = +6m.43s., e = +7m.18s. and +12m.4s., i = +16m.3s., e = +17m.13s.
Madison ePP = +6m.15s., e = +9m.57s.
La Jolla eZ = +6m;6s.
Riverside iZ = +6m.13s., iS_cPZ = +12m.18s., eS_cSNZ = +15m.33s.
Philadelphia i = +5m.49s., eSS = +10m.49s., e = +13m.0s.
Mount Wilson iZ = +6m.17s., iS_cPZ = +12m.20s.
Pasadena i = +6m.19s., iZ = +11m.39s., iS_cPZ = +12m.20s., iS_cSEN = +16m.12s.
Toronto e = +11m.20s.
Williamstown i? = +6m.30s., e? = +6m.41s., i = +7m.0s., iPP = +7m.51s., iPPP? = +8m.22s., i = +15m.10s., iSS = +15m.46s., eSSS = +16m.20s., i? = +17m.30s.
Oak Ridge eZ = +6m.37s., i = +7m.32s. and +8m.58s.
Weston iPPN = +7m.13s.
Ottawa e = +6m.53s. and +12m.21s.
Berkeley eE = +16m.2s., iN = +17m.39s., iE = +19m.40s.
Huancayo epP = +7m.15s., ePPP = +8m.25s., e = +12m.3s., sS = +12m.53s., SS = +14m.20s.
East Machias ePP = +8m.40s., ePPP = +9m.14s., e = +12m.59s., +13m.44s., SS = +15m.16s., SSS = +15m.34s., e = +17m.11s., +17m.57s., +18m.12s.
Seven Falls i = +11m.40s.
Ivigtut +9m.57s.
Rathfarnham Castle e = +22m.42s. and +23m.43s.
Jersey e = +21m.48s. and +24m.39s.
Kew epPZ = +12m.29s.
Uccle eE = +12m.50s.
De Bilt iZ = +12m.51s.
Hamburg eE = +23m.43s.
Strasbourg eZ = +13m.3s., +16m.22s., +16m.34s.
Copenhagen +13m.4s., e = +22m.42s., +23m.42s., and + 24m.7s.
Seven Falls i = +11m.40s.
Stuttgart epP = +13m.6s., e = +13m.22s., ePP = +15m.39s., epPP = +16m.23s., esS = +23m.49s.
Prague e = +24m.9s.
Triest i = +23m.23s., +24m.15s., and +24m.35s.
Zagreb e = +23m.40s. and +24m.50s.
Pulkovo PP = +16m.31s.
Moscow e = +26m.34s. and +28m.45s.
Helwan e = +19m.45s.
Tiflis PPZ = +19m.31s., eZ = +24m.46s. and +28m.10s.
Ksara PP = +18m.51s., pPP = +19m.30s., isPP = +19m.51s., ePS = +28m.9s., ePKKP = +30m.15s.
Tashkent PP = +20m.59s., SKKS = +27m.50s., PS = +30m.28s.

May 28d. 19h. 56m. 4s. Epicentre 24°·0N. 142°·5E.

Felt strongly at Titizima, slightly at Tokyo, Utunomiya, and Katuura. Radius greater than 300kms. Depth of focus 450kms. See Seismological Bulletin of the Central Meteorological Observatory, Japan, for the year 1937. Tokyo, Japan, 1939, pp. 39-41.

$A = -\cdot7256$, $B = +\cdot5568$, $C = +\cdot4045$; $\delta = +14$; $h = +4$;
$D = +\cdot609$, $E = +\cdot793$; $G = -\cdot321$, $H = +\cdot246$, $K = -\cdot915$.

A depth of focus 0·080 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Titizima	3·0	355	1 13	− 2	2 11	− 3	—	—
Hatidyozima	9·4	347	2 12k	0	3 51	− 7	—	—
Susaki	11·0	346	2 28	− 1	4 25	− 3	—	—
Mera	11·1	349	2 31	+ 1	4 28	− 2	—	—
Siomisaki	11·1	330	2 31	+ 1	4 24	− 6	—	—
Katuura	11·3	350	2 38	+ 6	4 44	+10	—	—
Kiyosumi	11·3	350	2 33	+ 1	4 34	0	—	—
Hamamatu	11·4	340	2 39	+ 6	4 56	+20	—	—
Kamakura	11·5	350	2 35	+ 1	4 35	− 3	—	—
Misima	11·5	346	2 33	− 1	4 33	− 5	—	—
Numadu	11·5	345	2 36	+ 2	4 34	− 4	—	—
Gotenba	11·7	346	2 36	0	4 39	− 2	—	—
Koyama	11·7	346	2 33	− 3	4 37	− 4	—	—
Yokohama	11·7	348	2 36k	0	4 38	− 3	—	—
Komaba	11·8	348	2 39	+ 2	4 43	0	—	—
Muroto	11·8	324	2 38	+ 1	4 41	− 2	—	—
Tyosi	11·8	352	2 41	+ 4	4 41	− 2	—	—
Hunato	11·9	346	2 40	+ 2	4 32	−13	—	—
Tokyo Cen. Met. Ob.	11·9	349	2 38	0	i 4 43	− 2	—	4·8
Tokyo I.U.	11·9	349	2 36	− 2	4 36	− 9	—	—
Tu	11·9	336	2 41	+ 3	4 38	− 7	—	—
Kameyama	12·0	336	2 41	+ 2	4 48	+ 1	—	—
Wakayama	12·0	330	2 40k	+ 1	4 45	− 2	—	—
Yagi	12·0	333	2 39	0	4 43	− 4	—	—
Iida	12·1	342	3 1	+21	5 3	+14	—	—
Kohu	12·1	345	2 40	0	4 47	− 2	—	—
Nagoya	12·1	338	2 40	0	4 49	0	—	5·0
Simidu	12·1	319	2 41	+ 1	4 47	− 2	—	—
Tokusima	12·1	328	2 43	+ 3	4 46	− 3	—	—
Osaka	12·2	332	2 44	+ 3	4 49	− 1	—	—
Osaka B	12·2	332	2 44	+ 3	4 50	0	—	—
Kakioka	12·3	353	2 43k	+ 1	4 54	+ 2	—	—
Koti	12·3	323	2 43	+ 1	4 52	0	—	—
Sumoto	12·3	329	e 2 39a	− 3	i 4 46	− 6	—	5·1
Titibu	12·3	348	2 33	− 9	4 42	−10	—	—
Tukubasan	12·3	352	2 42k	0	4 49	− 3	—	—
Gihu	12·4	338	2 43	0	4 51	− 3	—	—
Hikone	12·4	336	2 48k	+ 5	4 55	+ 1	—	—
Kobe	12·4	331	i 2 45a	+ 2	4 50	− 4	—	6·8
Kumagaya	12·4	348	2 43a	0	4 44	−10	—	—
Ibukisan	12·5	337	2 47	+ 3	4 53	− 3	—	—
Kyoto	12·5	333	2 45	+ 1	4 47	− 9	—	—
Mito	12·5	353	2 43k	− 1	4 53	− 3	—	—
Miyazaki	12·5	312	2 47k	+ 3	4 58	+ 2	—	—
Maebasi	12·7	349	e 2 46	0	4 56	− 4	—	—
Oiwake	12·7	346	2 48	+ 2	4 59	− 1	—	—
Tadotu	12·7	326	3 9a	+23	5 18	+18	—	—
Utunomiya	12·7	350	2 47	+ 1	4 57	− 3	—	—
Matumoto	12·8	344	2 45	− 2	4 57	− 5	—	—
Kagosima	13·0	308	2 53	+ 4	5 6	+ 1	—	—
Matuyama	13·0	321	2 49a	0	5 5	0	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Okayama		13·0	327	2 49	0	5 11	+ 6	—	—
Onahama		13·0	354	2 41	− 8	4 53	−12	—	—
Miyadu		13·1	333	2 50	0	—	—	—	—
Nagano		13·2	345	2 51	0	5 4	− 5	—	—
Ooita		13·2	317	2 57a	+ 6	5 13	+ 4	—	—
Toyooka		13·2	332	2 53	+ 2	5 14	+ 5	—	5·3
Kanazawa		13·4	340	3 2	+ 9	5 15	+ 2	—	—
Toyama		13·4	342	2 56	+ 3	5 21	+ 8	—	—
Hirosima		13·5	322	2 44	−10	5 2	−12	—	—
Takada		13·5	347	3 2	+ 8	5 13	− 1	—	—
Husiki		13·6	341	3 14	+19	5 22	+ 6	—	—
Kumamoto		13·6	313	2 58	+ 3	5 7	− 9	—	—
Naha		13·6	283	2 58	+ 3	5 14	− 2	—	—
Aidu		13·7	351	2 46	−10	5 4	−14	—	—
Hukusima		13·8	354	2 59k	+ 2	5 20	0	—	—
Unzendake		13·8	312	2 53	− 4	5 15	− 5	—	—
Sakai		14·0	328	3 17	+18	5 28	+ 4	—	—
Hamada		14·1	323	3 0	0	5 24	− 1	—	—
Nagasaki		14·1	311	2 59	− 1	5 21	− 4	—	—
Simonoseki		14·1	318	3 18	+18	5 40	+15	—	—
Hukuoka		14·2	315	2 57	− 4	e 5 2	−25	—	—
Hukuoka B		14·2	315	e 3 5	+ 4	5 15	−12	—	—
Sendai		14·2	351	3 3	+ 2	5 59	+32	—	—
Wazima		14·2	342	3 1	0	5 25	− 2	—	—
Isinomaki		14·4	356	3 4	+ 1	5 30	− 1	—	—
Yamagata		14·4	354	3 5	+ 2	5 33	+ 2	—	—
Mizusawa		15·1	357	i 3 12	+ 2	5 45	+ 1	—	—
Morioka		15·7	357	3 18	+ 2	—	—	—	—
Akita		15·8	354	3 40	+23	6 17	+21	—	—
Husan		16·1	316	3 22	+ 2	5 59	− 3	—	6·1
Hatinohe		16·5	358	3 51	+27	6 35	+26	—	—
Isigakizima		16·7	277	3 27	+ 1	6 13	+ 1	—	—
Aomori		16·8	356	3 30	+ 3	6 18	+ 4	—	—
Taikyu		16·8	318	3 28	+ 1	6 14	0	—	—
Hakodate		17·8	356	3 50	+14	6 42	+11	—	—
Urakawa		18·1	2	3 45	+ 6	6 34	− 2	—	—
Muroran		18·3	358	3 46	+ 5	6 43	+ 3	—	—
Palau		18·3	207	3 49	+ 8	6 48	+ 8	—	—
Giran		18·9	278	3 49	+ 2	—	—	—	—
Keizyo		18·9	319	i 3 48a	+ 1	i 6 52	+ 2	—	6·9
Obihiro		18·9	3	4 3	+16	7 4	+14	—	—
Sapporo		19·0	358	3 50	+ 2	7 1	+ 9	—	—
Karenko		19·1	275	3 56	+ 7	7 1	+ 8	—	—
Taihoku		19·1	277	e 3 51	+ 2	6 49	− 4	—	—
Zinsen		19·1	317	i 3 49a	0	i 6 55	+ 2	—	6·9
Nemuro		19·4	7	3 56	+ 4	—	—	—	—
Taito		19·6	272	3 54	0	6 59	− 3	—	—
Asahigawa		19·7	0	4 4	+10	—	—	—	—
Arisan		19·9	273	3 57	+ 1	7 3	− 3	—	—
Taityu		19·9	275	3 59	+ 3	—	—	—	—
Zi-ka-wei	z.	20·0	296	i 3 56k	− 1	6 10	−58	—	11·3
Kosyun		20·1	269	3 59	+ 1	7 7	− 3	—	—
Haboro		20·3	359	3 57	− 3	—	—	—	—
Tainan		20·4	273	3 59	− 2	7 46	+31	—	—
Takao		20·4	272	4 5	+ 4	7 12	− 3	—	—
Heizyo		20·6	320	e 4 4	+ 1	i 7 13	− 5	—	—
Vladivostok		21·0	338	i 3 59	− 7	e 7 27	+ 2	e 9·0	19·3
Manila		22·3	249	i 4 23a	+ 5	6 45	−61	—	—
Nanking		22·3	297	4 20	+ 2	—	—	—	—
Hong Kong		26·1	272	4 55	+ 3	7 17	?	8·6	8·8
Chiufeng		27·4	313	i 5 2a	− 2	i 9 2	− 5	—	i 11·7
Amboina		30·9	209	i 5 37	+ 3	i 10 2	+ 1	—	—
Phu-Lien		33·3	272	i 5 58	+ 4	e 9 58	−40	—	—
Batavia		45·9	234	i 7 38a	+ 2	i 13 44	+ 3	—	—
Medan		46·9	252	i 7 45	+ 2	i 13 56	+ 2	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Calcutta	N	49·5	280	i 8 1	− 2	i 14 30	0	—	24·5
Semipalatinsk		54·3	317	9 37	+60	17 42	PPS	—	—
Almata		56·4	308	8 53	+ 1	16 0	− 1	16·9	—
Agra	E.	57·7	288	i 9 0	− 1	i 16 10	− 8	—	—
Riverview		58·1	171	i 9 10	+ 6	i 16 34	+11	—	—
Frunse		58·2	307	9 3	− 1	16 23	− 1	—	—
Hyderabad		59·8	286	—	—	16 44	0	—	24·2
College		59·9	27	10 33	+77	16 18	−28	e 23·0	—
Andijan		60·1	304	9 16	− 1	16 45	− 3	—	—
Tchimkent		61·9	307	9 30	+ 1	17 11	+ 1	—	—
Colombo		62·2	265	9 30	0	(17 27)	+13	—	17·4
Tashkent		62·3	306	i 9 33	+ 2	i 17 12	− 3	e 29·9	37·3
Samarkand		64·3	304	9 45	+ 1	17 36	− 4	—	—
Bombay *		64·5	281	i 9 45	0	i 17 39	− 3	—	—
Sverdlovsk		65·9	324	i 9 57	+ 3	i 17 57	− 2	33·9	43·2
Christchurch		72·7	157	i 10 35a	+ 1	i 19 18	+ 2	—	—
Victoria		75·1	43	—	—	e 19 44	+ 2	e 30·9	—
Baku		76·7	309	i 11 1	+ 4	i 20 3	+ 4	e 35·9	42·5
Moscow		78·4	327	i 11 5	− 1	20 13	− 4	39·4	47·7
Grozny		78·6	313	i 11 12	+ 5	i 20 20	+ 1	—	—
Berkeley		79·6	53	e 11 17	+ 5	e 20 31	+ 1	—	—
Brønner		79·8	53	i 11 19	+ 6	—	—	—	—
Tiflis		79·8	311	i 11 15a	+ 2	e 20 31	− 1	45·9	47·5
Pulkovo		80·0	332	e 11 14	0	20 28	− 6	40·9	48·4
Piatigorsk		80·1	314	i 11 16	+ 1	i 20 32	− 3	—	—
Lick		80·2	53	i 11 19	+ 4	e 20 33	− 3	—	—
Erevan		80·6	310	e 11 20	+ 3	i 20 40	0	—	—
Fresno	N.	81·8	54	e 11 28	+ 5	e 20 56	+ 4	—	—
Butte		82·8	42	e 11 17	−11	e 21 19	+18	e 53·4	—
Tinemaha	E.	82·8	53	i 11 34	+ 6	e 20 50	−11	—	—
Mount Wilson		84·1	55	i 11 40k	+ 5	e 21 10	− 4	—	—
Pasadena		84·1	55	i 11 39k	+ 4	i 21 8	− 6	—	—
Riverside		84·7	55	i 11 42k	+ 4	e 21 10	−10	—	—
La Jolla		85·3	56	i 11 46	+ 5	i 21 18	− 7	—	—
Simferopol		85·4	318	11 43	+ 2	21 24	− 2	—	—
Yalta		85·6	317	11 43	+ 1	i 21 26	− 2	—	—
Sebastopol		85·9	318	e 11 46	+ 2	—	—	—	—
Bergen		89·0	340	—	—	e 24 6	PS	—	—
Ksara		89·6	307	i 12 3a	+ 2	e 23 20	?	—	—
Copenhagen		90·0	334	12 4	+ 1	21 39	−29	—	—
Tucson		90·4	54	i 12 10k	+ 6	e 22 3	− 9	e 44·5	—
Bucharest		90·5	320	—	—	20 56?	?	—	—
Hamburg		92·5	334	e 16 4k	PP	e 21 56	−34	e 45·9	—
Prague		93·1	329	—	—	e 22 29	− 6	e 46·9	56·9
Jena	N.	93·8	331	e 12 22	+ 2	—	—	—	—
Cheb		94·0	331	—	—	e 31 56?	?	—	57·4
Ivigtut		94·7	5	14 24	?	22 51	+ 2	—	—
Helwan		95·0	305	e 12 26	0	e 22 56	+ 5	—	—
Edinburgh		95·2	341	—	—	e 22 11	−42	—	—
Zagreb		95·3	325	e 12 27	0	e 22 47	− 7	—	—
De Bilt		95·5	335	i 12 29	+ 1	e 22 52	− 3	e 47·9	—
Stuttgart		96·4	331	e 12 33a	+ 1	e 22 59	− 4	e 51·9	—
Triest		96·5	327	e 16 33	PP	i 22 59	− 5	—	—
Uccle		96·9	335	e 12 35	+ 1	e 23 1	− 6	e 49·9	—
Strasbourg		97·2	331	e 12 36	0	e 24 33	ScS	e 49·9	—
Madison		97·9	36	—	—	e 22 42	[+19]	e 52·1	—
Kew		98·1	337	—	—	i 22 26	[+ 2]	e 47·9	—
Rathfarnham Castle		98·4	342	—	—	i 22 56	−24	31·9	—
Paris		99·2	334	e 12 46	+ 1	e 24 55	ScS	54·9	—
Chicago		99·7	36	e 13 17	+30	e 23 32	+ 2	e 49·0	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Florissant	100·3	39	e 14 51	?	e 23 40	+ 4	e 46·8	50·3
Jersey	100·6	338	e 13 52	+61	e 23 37	− 1	63·9	—
Little Rock	101·8	43	e 17 5	PP	e 22 53	[+10]	—	—
Toronto	102·5	30	—	—	e 22 48	[+ 2]	e 55·9	—
Ottawa	102·7	26	—	—	e 22 48	[+ 1]	e 28·9	—
Seven Falls	103·1	22	—	—	e 28 14	PPS	e 35·9	—
Philadelphia	107·3	29	e 17 58	PPP	e 23 9	[+ 2]	e 55·7	—
Toledo	109·2	333	—	—	e 26 22	?	—	—
Granada	111·3	332	e 14 56?	?	—	—	—	—
San Juan	129·5	35	e 20 38	PP	—	—	—	—
Huancayo	142·2	78	e 18 35	[+ 3]	—	—	e 40·0	—
La Paz	150·4	81	i 18 52	[+ 9]	28 36	?	—	—

Additional readings :—
Sumoto iP = +2m.41s., iSE = +4m.48s., S_cS = +13m.57s.
Kobe eN = +4m.36s., eZ = +4m.40s., i = +5m.3s., S_cS = +13m.58s.
Toyooka PN = +2m.56s.
Hukuoka i = +5m.24s.
Zinsen eS_cSEN = +14m.13s.
Zi-ka-wei iZ = +7m.6s., +7m.16s., +8m.56s., and +9m.32s.
Chiufeng i = +6m.27s. and +7m.31s.
Phu-Lien e = +7m.27s.
Calcutta eN = +10m.16s., iN = +16m.38s., +18m.18s., and +20m.53s.
Agra iE = +11m.40s. and +19m.19s.
College eSS = +19m.8s.
Bombay i = +12m.28s., EN = +20m.53s., iE = +21m.1s.
Christchurch epPNZ = +12m.29s., esSN? = +22m.48s.
Berkeley eZ = +13m.12s., eE = +13m.23s., eN = +18m.40s., iE = +19m.48s., iEZ = +20m.33s.
Tiflis P_cPZ = +11m.33s., PPZ = +14m.5s., eZ = +20m.37s., SKKSZ = +21m.17s.
Lick eEN = +13m.14s., eN = +20m.38s.
Fresno eN = +13m.29s.
Butte ePP = +13m.24s., +20m.59s., ePS = +21m.51s., eSS = +24m.30s.
Tinemaha epPE = +13m.29s., eSKP,PKPE = +42m.8s.
Mount Wilson ipPZ = +13m.35s., iZ = +16m.43s., iSKP,PKPZ = +41m.38s.
Pasadena ipP = +13m.34s., isPE = +14m.30s., i = +21m.1s., iEN = +21m.27s., eE = +22m.16s., eZ = +40m.23s., eSKP,PKPZ = +41m.39s.
Riverside ipPZ = +13m.38s , eSKP,PKP = +41m.27s.
La Jolla ipP = +13m.41s., iSKP,PKP = +41m.19s.
Sebastopol e = +13m.39s.
Ksara ipP = +14m.0s., isP = +14m.47s., ePP = +16m.38s., ipPP = +18m.20s., epS = +25m.38s., esS = +26m.40s., ePKKP = +27m.43s., eSS = +31m.6s., esSS = +34m.18s.
Copenhagen +15m.45s. and +23m.14s., e = +28m.14s.
Tucson iPP = +14m.8s. and +15m.53s., e = +21m.28s., S = +22m.33s.
Hamburg eE = +28m.54s.
Prague e = +21m.58s. and +29m.4s.
Jena eE = +14m.26s., eE = +16m.9s.
Ivigtut +16m.21s., e = +22m.6s.
Helwan e = +13m.21s., PP = +16m.22s., PPP = +19m.4s., e = +24m.16s., PS = +25m.56s.
Edinburgh i = +29m.38s.
Zagreb e = +16m.25s. and +18m.23s.
De Bilt iPPZ = +16m.28s., iEN = +22m.15s., eEN = +29m.35s.
Stuttgart e = +16m.34s., eEN = +22m.16s., e = +24m.24s. and +29m.46s.
Uccle e = +16m.39s., i = +22m.21s., e = +29m.51s.
Strasbourg iPP = +16m.41s.
Kew i = +23m.14s.
Rathfarnham Castle i = +22m.26s. and +24m.51s.
Chicago e = +22m.30s., +24m.57s.
Florissant eZ = +17m.5s., iEZ = +17m.7s., eE = +17m.10s., iEN = +22m.38s., eEN = +23m.15s., eE = +26m.12s., iEN = +26m.20s.
Jersey e = +19m.14s.
Little Rock eN = +17m.14s. and +17m.29s., eE = +17m.32s., eSN = +21m.44s., eN = +21m.58s., eE = +22m.45s. and +24m.51s.
Toronto eE = +31m.26s.
Ottawa e = +25m.36s.
Seven Falls i = +31m.2s.
Philadephia e = +26m.53s., +32m.23s., +36m.43s., +40m.11s., and +49m.59s.
Huancayo e = +18m.51s., PP = +21m.24s.
La Paz S?N = +23m.0s.
Long waves were also recorded at Tortosa and Honolulu.

May 28d. Readings also at 0h. (Sverdlovsk, Tashkent, and Stuttgart), 2h. (Huancayo, La Paz, San Juan, and Riverside), 3h. (Christchurch, Wellington, Hong Kong, Manila, Chiufeng, Sydney, Vladivostok, Tashkent, Andijan, Tiflis, Sverdlovsk, and Ksara), 4h. (Paris), 8h. (near Santiago), 9h. (Berkeley, Pasadena, Riverside, and La Paz), 11h. (La Paz), 13h. (Andijan, Sverdlovsk, Tiflis, Ksara, Chiufeng, Vladivostok, near Triest, Kobe, and near Mizusawa), 14h. (Paris, Stuttgart, De Bilt, Strasbourg, Prague, Copenhagen, Pulkovo, Hong Kong, near Triest, near Santiago, and San Javier), 15h. (Port au Prince and Durham), 16h. (Tacubaya and near Malaga), 18h. (Bucharest), 20h. (Guadalajara, Manzanillo, and Tacubaya, Florissant, Little Rock, Tucson, and near Wellington), 21h. (La Paz), 23h. (near College).

May 29d. 2h. 0m. 4s. Epicentre 24°·0N. 142°·5E. (as on 1937 May 28d.).

$A = -\cdot7256$, $B = +\cdot5568$, $C = +\cdot4045$; $\delta = +14$; $h = +4$.

A depth of focus 0·080 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		12·1	338	2 41	+ 1	4 46	− 3	—	5·0
Sumoto		12·3	329	e 2 45	+ 3	4 45	− 7	—	5·0
Kobe		12·4	331	—	—	e 4 47	− 7	—	5·0
Toyooka		13·2	332	—	—	5 14	+ 5	—	5·2
Hukuoka B		14·2	315	e 2 57	− 4	e 5 11	−16	—	—
Mizusawa		15·1	357	e 3 15	+ 5	i 5 45	+ 1	—	—
Husan		16·1	316	e 4 20	PPP	e 5 44	−18	—	—
Keizyo		18·9	319	e 3 47	0	e 6 44	− 6	—	—
Zinsen		19·1	317	i 3 47a	− 2	i 6 52	− 1	—	—
Zi-ka-wei	Z.	20·0	296	e 3 56	− 1	i 7 13	+ 5	—	—
Vladivostok		21·0	338	e 3 56	−10	e 7 12	−13	8·0	—
Manila		22·3	249	i 4 19a	+ 1	7 49	+ 3	—	—
Hong Kong		26·1	272	—	—	8 42	− 4	—	13·2
Chiufeng		27·4	313	e 5 0	− 4	i 8 58	− 9	—	—
Phu-Lien		33·3	272	5 56?	+ 2	—	—	—	—
Almata		56·4	308	e 8 51	− 1	15 59	− 2	—	—
Frunse		58·2	307	e 9 2	− 2	16 21	− 3	—	—
Andijan		60·1	304	e 9 13	− 4	16 44	− 4	—	—
Tashkent		62·3	306	9 44	+13	i 17 9	− 6	e 29·6	34·8
Sverdlovsk		65·9	324	i 9 55	+ 1	i 17 56	− 3	28·9	—
Baku		76·7	309	—	—	e 19 57	− 2	—	—
Tiflis	E.	79·8	311	—	—	i 20 27	− 5	—	—
Pulkovo		80·0	332	—	—	i 20 26	− 8	—	—
Tinemaha	E.	82·8	53	e 11 32	+ 4	—	—	—	—
Mount Wilson		84·1	55	i 11 38	+ 3	—	—	—	—
Pasadena		84·1	55	i 11 38a	+ 3	—	—	—	—
Riverside	Z.	84·7	55	i 11 40	+ 2	—	—	—	—
La Jolla		85·3	56	i 11 43	+ 2	—	—	—	—
Simferopol		85·4	318	—	—	e 21 13	−13	—	—
Sebastopol		85·9	318	—	—	e 21 9	−22	—	—
Ksara		89·6	307	e 13 58	?	e 23 20	SKS	—	—
Tucson		90·4	54	12 8	+ 4	e 21 44	−28	—	—

Additional readings :—
Sumoto eN = +2m.47s.
Kobe eN? = +4m.4s., eE? = +4m.8s.
Toyooka iN = +4m.26s., eZ = +4m.32s.
Zinsen iEN = +7m.48s.
Chiufeng iZ = +11m.35s., iEN = +11m.39s. and +14m.43s.
Tiflis eE = +23m.55s.
Mount Wilson iZ = +13m.35s. and +15m.1s.
Pasadena eZ = +12m.53s. and +13m.27s.
Ksara e = +18m.8s.
Tucson e = +12m.26s., S_e = +15m.51s.

May 29d. 8h. Undetermined shock :—
Semipalatinsk e = 13m.34s. and 16m.40s.
Almata eP = 14m.47s., S = 19m.23s.
Frunse eP = 14m.47s., eS = 19m.17s.
Andijan eP = 15m.35s.
Sverdlovsk iP = 15m.54s., S = 20m.3s., L = 22m.0s., M = 24m.0s.
Ksara e = 17m.22s., 19m.2s., and 21m.10s.
Chiufeng ePZ = 18m.7s., SN = 19m.37s., SE = 19m.42s., iZ = 19m.49s., M = 21m.24s.
Tiflis eZ = 18m.57s., eLZ = 29m.30s.
Tashkent e = 20m.5s. and 21m.46s., i = 22m.13s., e = 22m.30s., iS = 22m.54s., e = 23m.14s., M = 24·4m.
Vladivostok e = 23m.16s., L = 24m.12s., M = 25m.42s.
Long waves also recorded from Strasbourg, Paris, and Stuttgart.

May 29d. 15h. 22m. 40s. Epicentre 36°·3N. 30°·7E.

$A = +\cdot6946$, $B = +\cdot4124$, $C = +\cdot5894$; $\delta = -6$; $h = 0$;
$D = +\cdot511$, $E = -\cdot860$; $G = +\cdot507$, $H = +\cdot301$, $K = -\cdot808$.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara	4·9	119	i 1 16a	− 1	i 2 11	− 4	—	—
Helwan	6·5	175	1 40	+ 1	2 44	−11	—	—
Sofia	8·5	321	e 2 12	+ 5	e 4 5	+20	—	—
Sebastopol	8·6	13	i 1 37	−32	—	—	—	—
Yalta	8·6	17	i 2 8	− 1	3 46	− 2	—	—
Bucharest	8·8	338	e 2 14	+ 3	4 5	+12	5·2	—
Simferopol	9·0	16	i 2 12	− 1	i 3 50	− 8	—	—
Theodosia	9·4	21	e 2 20	+ 2	—	—	—	—
Sotchi	10·0	41	i 2 28	+ 1	—	—	—	—
Belgrade	11·5	321	e 2 51	+ 3	e 5 3	+ 4	—	7·2
Erevan	11·5	66	e 3 6	+18	—	—	—	—
Piatigorsk	12·2	47	i 2 56	− 2	—	—	—	—
Tiflis	12·2	60	i 2 57	− 1	e 4 53	−23	e 5·3	—
Grozny	13·5	54	i 3 19	+ 4	—	—	—	—
Kecskemet	13·5	326	e 3 3	−12	—	—	—	—
Budapest	14·1	326	e 3 28	+ 5	i 6 22	+20	e 7·8	—
Zagreb	14·6	315	e 3 33	+ 3	e 6 19	+ 6	e 7·7	e 8·5
Stara Dala	14·8	325	e 3 40	+ 8	e 6 32	+14	—	8·6
Graz	15·6	318	e 3 47	+ 4	e 6 48	+11	e 7·3	8·8
Triest	15·8	311	3 49	+ 4	i 6 52	+10	—	9·0
Vienna	16·0	323	e 3 51	+ 3	e 9 45	?	—	—
Padova	16·9	308	e 4 15	+16	e 7 48	+41	—	—
Prague	18·1	326	e 4 14	0	e 7 34	− 1	—	10·2
Cheb	19·2	323	e 4 20?	− 8	e 8 0	+ 1	—	—
Zurich	19·8	311	e 4 33	− 2	—	—	—	—
Jena	20·0	323	4 38	+ 1	e 8 20	+ 3	e 9·0	—
Moscow	20·0	14	i 4 30	− 7	8 8	− 9	12·8	14·6
Stuttgart	20·1	316	e 4 36	− 2	e 8 17	− 2	e 11·4	—
Basle	20·5	311	e 4 40	− 2	e 8 23	− 4	—	—
Strasbourg	20·8	315	e 4 44	− 1	e 8 32	− 1	—	—
Algiers	22·2	280	i 5 1	+ 1	e 9 0	0	—	—
Neuchatel	22·2	311	e 4 42	−18	—	—	—	—
Hamburg	22·5	327	e 5 1	− 1	e 8 46	−19	—	—
Copenhagen	23·0	334	5 7	0	9 11	− 3	12·3	—
Pulkovo	23·5	0	i 5 8	− 4	9 12	−11	11·3	—
Uccle	23·8	317	e 5 16	+ 1	e 9 24	− 4	e 12·3	—
De Bilt	24·0	321	i 5 35	+18	e 9 39	+ 7	e 12·8	—
Paris	24·1	311	e 5 35	+17	e 9 27	− 7	—	—
Upsala	25·0	345	e 5 25	− 2	e 9 36	−13	—	—
Almeria	26·6	283	e 4 59	−43	—	—	—	—
Kew	26·8	316	—	—	(e 9 20?)	−59	e 9·3	—
Samarkand	28·7	73	e 6 20	+19	—	—	—	—
Sverdlovsk	28·7	36	i 5 55	− 6	10 36	−14	13·3	—
Tashkent	30·3	69	i 6 9	− 6	i 11 3	−12	e 15·2	21·2
Andijan	32·7	70	e 6 19	−17	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Almata		35·8	64	e 7 27	+24	—	—	—	—
Williamstown		75·2	312	i 11 43	− 3	—	—	—	—

Additional readings :—
Helwan P_g = +1m.52s.
Ksara iS_g = +2m.41s.
Sofia i = +4m.20s.
Bucharest i = +2m.22s., iE = +2m.30s., iN = +2m.33s.
Simferopol i = +2m.24s. and +2m.57s.
Belgrade eNW = +5m.41s. and +6m.1s.
Piatigorsk i = +15m.36s.
Grozny i = +15m.40s.
Kecskemet e = +3m.25s.
Budapest iE = +3m.31s., +3m.47s., iN = +8m.2s. and +8m.45s.
Zagreb eZ = +3m.36s., eNE = +3m.39s., ePPPP = +3m.59s.
Vienna P_cP = +4m.19s., PP = +7m.20s., PS = +10m.26s.
Stuttgart ePP = +4m.50s., e = +4m.54s., eS = +8m.24s., eSS = +8m.50s.
Strasbourg PPZ = +5m.4s., iPPPZ = +5m.16s., eSSE = +9m.5s.
Hamburg +9m.8s. and +9m.38s.
Copenhagen +5m.23s. and +9m.38s.
Uccle i = +5m.33s. and +10m.4s.
Upsala eSN = +9m.39s.
Williamstown i = +12m.3s. and +13m.27s.

May 29d. Readings also at 0h. (near Branner and Lick), 1h. (near Lick), 2h. (La Paz), 3h. (Almata, Andijan, and Frunse), 4h. (Sumoto), 6h. (Almata, Andijan, and Frunse), 11h. (Tiflis), 14h. (near Santiago), 15h. (Simferopol, Yalta, Andijan, Samarkand, near Branner, Lick, and Fresno), 18h. (Andijan).

May 30d. Readings at 0h. (Amboina and near Tananarive), 4h. (Andijan, Samarkand, Tashkent, Tiflis, Baku, and Ksara), 10h. (Christchurch), 11h. (Sverdlovsk, Tiflis, Ksara, Tashkent, Kobe, Mount Wilson, and Pasadena), 12h. (Baku, Stuttgart, Copenhagen, Pulkovo, Paris, Strasbourg, and near Medan), 14h. (Granada and Yalta), 16h. (near Christchurch and Wellington), 18h. (Ksara and Stuttgart), 19h. (Tashkent and near Andijan), 21h. (Ksara, Tiflis, Sverdlovsk, Grozny, Andijan, and Baku), 22h. (near San Javier).

May 31d. 5h. 34m. 19s. Epicentre 29°·3N. 81°·0E.
(as given by India Weather Bureau).

A = +·1366, B = +·8627, C = +·4869 ; δ = −2 ; h = +2 ;
D = +·988, E = −·156 ; G = +·076, H = +·481, K = −·873.

		Δ	Az.	P.	O−C.	S.	Q−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Dehra Dun		2·8	292	1 11	S	(1 11)	−11	—	—
Agra		3·4	231	e 1 0	P*	1 45	S*	—	—
Calcutta	N.	9·4	134	e 2 51	+33	i 4 24	+17	—	7·8
Hyderabad		12·0	192	—	—	5 34	+23	—	8·3
Bombay		12·7	218	3 7	+ 2	5 23	− 5	—	—
Andijan		13·4	330	e 3 21	+ 7	—	—	—	—
Almata		14·3	348	e 3 32	+ 6	—	—	—	—
Tashkent		15·3	325	e 3 35	− 4	e 6 37	+ 7	e 7·7	8·6
Samarkand		15·5	315	e 3 36	− 6	e 6 41	+ 6	—	—
Kodaikanal	E.	19·3	192	e 5 38	?	e 8 17	+15	—	10·9
Baku		27·7	302	—	—	e 10 44	+11	—	—
Sverdlovsk		31·0	339	6 23	+ 2	11 24	− 2	14·7	19·3
Ksara		38·5	288	e 7 47	+21	e 14 8	+46	—	—

Additional readings :—
Agra S*E = +1m.56s.
Calcutta eN = +3m.19s. and +3m.44s., iS*N = +5m.4s., S_gN = +5m.34s.
Bombay e = +6m.5s., i = +6m.47s., e = +8m.3s.
Andijan e = +7m.17s.
Kodaikanal eSSE = +8m.41s.
Baku e = +15m.58s., +18m.16s., and +25m.41s.
Long waves were also recorded at Copenhagen, Kew, De Bilt, Vladivostok, Tiflis, Moscow, and Pulkovo.

May 31d. 10h. 38m. 33s. Epicentre 1°·0N. 128°·5E.

A = −·6224, B = +·7825, C = +·0173; δ = −1; h = +7;
D = +·783, E = +·623; G = −·011, H = +·014, K = −1·000.

A depth of focus 0·030 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina		4·7	186	i 1 7	− 5	—	—	—	—
Manila		15·4	331	i 3 20k	− 7	i 6 6	− 6	—	—
Kosyun		22·2	342	4 36	− 2	8 21	—	—	—
Batavia		22·8	251	i 4 57	+13	i 8 55	+22	—	—
Karenko		23·8	345	5 2	+ 8	—	—	—	—
Giran		24·5	345	5 1	+ 1	—	—	—	—
Taihoku		24·8	345	5 3	0	—	—	—	—
Hong Kong		25·3	328	5 7	− 1	9 8	− 7	—	—
Medan		29·9	276	e 7 4	PP	10 38	+10	—	—
Nagoya		34·9	12	e 10 19	?	11 32	−14	—	—
Oiwake		36·4	14	6 44	− 1	12 4	− 5	—	—
Chiufeng		40·5	345	7 17a	− 2	13 4	− 6	—	—
Vladivostok		42·1	4	e 7 21	−11	—	—	—	—
Almata		62·2	320	e 10 18	+18	—	—	—	—
Frunse		63·6	318	e 10 22	+13	—	—	—	—
Semipalatinsk		63·9	328	—	—	e 18 24	− 3	—	—
Andijan		64·9	315	e 10 21	+ 4	e 18 39	0	—	—
Tashkent		66·6	315	—	—	e 26 27	SSS	—	35·4
Sverdlovsk		77·2	329	i 11 36	+ 5	i 21 1	+ 1	37·5	—
Baku		80·7	311	—	—	e 21 44	+ 7	e 28·5	—
Grozny		84·0	313	—	—	i 22 15	+ 5	—	—
Tiflis		84·6	311	e 12 15	+ 6	22 17	+ 1	—	—
Moscow		89·7	326	e 17 17	?	e 23 3	− 1	—	—
Ksara		91·6	303	i 12 49	+ 6	e 23 39	+19	—	—
Pulkovo		93·3	330	—	—	i 23 8	[+ 6]	—	—
Pasadena	z.	108·6	53	i 18 13	PP	—	—	—	—
Riverside	z.	109·3	53	e 18 14	PP	—	—	—	—
Williamstown		132·3	21	i 18 57	[+ 9]	—	—	—	—

Additional readings:—
Manila iE = +5m.5s.
Medan iSN? = +10m.52s., iSE? = +11m.6s.
Tiflis P_cPZ = +12m.57s.
Moscow e = +23m.59s. and +25m.27s.
Ksara i = +13m.33s., e = +29m.59s.
Williamstown i = +22m.4s.
Long waves were also recorded at Stuttgart.

May 31d. 15h. 31m. 50s. Epicentre 6°·7S. 153°·0E.

A = −·8850, B = +·4509, C = −·1159; δ = −3; h = +7;
D = +·454, E = +·891; G = +·103, H = −·053, K = −·993.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Amboina	24·9	275	e 4 52	−34	10 22	+35	—	—
Riverview	27·1	183	e 5 46	0	i 10 25	+ 1	e 14·1	16·6
Sydney	27·1	183	—	—	i 10 20	− 4	14·7	16·5
Adelaide	31·1	203	e 6 22	0	i 11 33	+ 5	e 14·2	20·5
Melbourne	31·8	192	—	—	i 11 43	+ 5	—	—
Manila	38·1	304	e 7 29	+ 7	i 13 27	+11	19·2	—
Wellington	39·5	154	7 35	+ 1	13 22	−15	17·2	25·2
Christchurch	40·5	158	7 44	+ 2	13 36	−16	19·7	—
Perth	42·8	228	7 22	−39	—	—	22·6	25·2
Batavia	45·9	268	i 8 32a	+ 6	15 16	+ 5	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	E.	46·9	348	(e 9 35)	+61	e 9 35	P	—	—
Hong Kong		47·7	308	8 43	+ 3	15 42	+ 6	23·7	28·8
Phu-Lien		53·1	302	e 9 29	+ 8	i 17 3	+12	—	—
Vladivostok		53·2	341	e 9 20	− 2	e 16 46	− 6	23·2	27·3
Medan		55·2	279	e 9 59	+22	—	—	—	—
Honolulu		55·8	59	—	—	e 16 0	?	—	—
Chiufeng		57·8	327	i 9 52a	− 3	i 17 49	− 5	e 23·8	—
Calcutta	N.	69·6	297	i 12 26	+73	i 20 38	+17	30·9	—
Kodaikanal	E.	77·1	282	e 12 3	+ 6	—	—	—	—
Agra	E.	79·8	299	12 9	− 3	i 22 15	+ 1	—	—
Bombay		82·9	290	e 12 33	+ 5	i 22 46	0	—	—
College		83·5	21	—	—	e 22 34	−18	e 33·7	—
Almata		84·5	315	e 12 33	− 3	e 23 10	+ 8	—	—
Frunse		86·1	314	e 12 55	+11	e 23 19	+ 1	—	—
Andijan		87·3	311	13 0	+10	23 39	+10	—	—
Tashkent		89·7	311	i 12 57	− 4	i 23 50	− 2	e 38·0	54·1
Berkeley		89·9	52	i 13 48	+46	e 22 37	[−55]	—	—
Victoria		90·8	41	—	—	e 23 10?	[−27]	e 40·2	—
Pasadena		92·7	56	i 13 5a	−10	—	—	e 39·8	—
Mount Wilson		92·9	56	e 13 8	− 8	—	—	—	—
Tinemaha		93·0	54	i 13 6	−11	—	—	—	—
La Jolla		93·4	57	i 13 8	−10	—	—	—	—
Riverside		93·4	56	i 13 7	−11	—	—	—	—
Sverdlovsk		96·9	327	i 13 33	− 1	24 48	− 6	43·2	60·8
Tucson		98·7	58	e 13 32	−10	—	—	e 44·1	—
Bozeman		98·9	45	—	—	e 24 10	[−11]	e 45·3	—
Baku		104·3	311	e 18 35	PP	e 24 42	[− 5]	53·2	69·3
Tiflis		108·0	313	e 14 23	P	25 0	[− 4]	e 51·2	66·3
Moscow		109·7	328	e 19 6	PP	e 28 2	?	61·7	67·7
Pulkovo		111·8	334	e 19 17	PP	24 13	[−66]	—	—
Chicago		116·1	46	—	—	e 29 4	PS	e 49·4	—
Ksara		116·2	304	e 19 46	PP	i 29 44	PS	63·7	70·2
Copenhagen		122·0	336	19 58	PP	36 52	SS	58·2	—
Ottawa		123·0	39	—	—	e 25 40	[−20]	e 54·2	—
Seven Falls		125·0	34	—	—	e 31 10?	?	59·2	—
Philadelphia		125·7	44	—	—	e 25 52	[−16]	e 57·8	—
Williamstown		125·8	40	i 19 0	[− 4]	—	—	—	e 58·2
Oak Ridge		127·0	40	e 19 0	[− 6]	—	—	e 61·2	—
De Bilt		127·6	336	e 21 10	PP	—	—	e 58·2	63·2
Stuttgart		128·1	331	e 19 4	[− 4]	e 26 30	[+15]	e 63·2	—
East Machias		128·3	36	e 31 30	PS	e 46 22	?	e 59·7	—
Strasbourg		128·9	332	e 21 13	PP	—	—	e 70·2	78·2
Kew		130·2	339	e 32 20	?	—	—	e 57·2	—
Paris		131·2	336	e 21 10?	PP	—	—	75·2	82·2
San Juan		140·2	69	e 22 22	PP	—	—	e 63·6	—
Malaga		143·7	330	e 18 40	[−57]	—	—	—	—
San Fernando		144·8	330	e 19 22	[−17]	—	—	88·2	—

Additional readings :—
Riverview eEN = +6m.14s., iN = +10m.28s. and +10m.51s.
Adelaide e = +8m.24s.
Melbourne i = +10m.33s., +14m.7s., +14m.45s., and +15m.31s.
Wellington P_cP = +9m.42s., P_cS = +14m.46s., SS? = +16m.10s.?
Christchurch P_cP = +9m.56s., eEZ = +16m.38s., eL_qE = +16m.50s., iS_cS = +17m.7s.
Perth P_cP = +8m.25s., PP = +9m.20s., PPP = +10m.25s., ? = +13m.15s., SSSS = +18m.10s.
Hong Kong SS? = +18m.52s.
Chiufeng iEZ = +10m.17s.
Calcutta iN = +21m.8s., eN = +24m.43s.
Agra eE = +23m.2s. and +27m.55s.
Tashkent iSKS = +23m.22s., ePPS = +25m.33s., eSS = +29m.40s.
Berkeley eN = +22m.13s., eE = +39m.39s.
Victoria e = +25m.10s.? and +30m.10s.?
Tinemaha iZ = +13m.35s., eZ = +16m.34s.

Continued on next page.

Riverside iZ = +13m.41s.
Sverdlovsk iPP = +17m.33s., SKS = +23m.42s., SS = +31m.10s.
Tucson e = +13m.42s., ePP = +16m.58s.
Baku SS = +33m.52s., SSS = +38m.4s.
Tiflis ePPZ = +18m.50s., eSE = +26m.38s., eZ = +28m.20s., eSSE = +34m.0s., eZ = +35m.28s.
Pulkovo ePS = +29m.1s., ePPS = +29m.57s., SS = +34m.58s.
Chicago eSSS = +39m.10s.
Ksara iPP = +19m.57s., eSS = +36m.12s.
Ottawa e = +27m.19s. and +37m.10s.?
Seven Falls e = +38m.10s.?
Philadelphia ePS = +30m.31s., e = +32m.32s., eSS = +37m.17s., e = +45m.22s., and +51m.22s.
Oak Ridge epPKPZ = +19m.18s., ePPZ = +20m.48s.
Stuttgart ePP = +21m.12s., ePPS = +33m.10s.?
Strasbourg e = +21m.59s., e = +24m.50s.
Malaga PKP? = +19m.32s., e = +20m.25s., +23m.8s., and +23m.40s.
Long waves were also recorded at Uccle, Ivigtut, Cape Town, Upsala, Huancayo, and Sitka.

May 31d. Readings also at 0h. (Apia, Ksara, La Jolla, Mount Wilson, Pasadena, Riverside, Tinemaha, near Tucson, and Stuttgart), 2h. (near Amboina and near Sumoto (2)), 3h. (near Batavia), 6h. (near Mizusawa and Nagoya (2)), 7h. and 11h. (2) (near Mizusawa), 12h. (Amboina, Pasadena, Riverside, and Tinemaha), 14h. (near Grozny), 15h. (near Berkeley, Branner, and Lick), 17h. (Cape Town), 18h. (Baku, Ksara, and Tiflis), 19h. (Baku, Ksara, Tiflis) (2), Tashkent, and Sverdlovsk), 20h. (Sverdlovsk and Tashkent), 21h. (Berkeley and near Manila), 23h. (Yalta).

June 1d. Readings at 0h. (near Yalta), 2h. (Tiflis, Ksara, and near Helwan), 4h. (Sumoto), 6h. (Medan and near Triest), 10h. (near Mizusawa), 13h. (near Almata), 14h. (Tashkent, Tiflis, Ksara, Perth, Adelaide, Agra, Calcutta, and near Batavia), 15h. (Bombay, Hong Kong, Phu-Lien, Vladivostok, Irkutsk, Baku, Pulkovo, Sverdlovsk, Copenhagen, Kew, Rathfarnham Castle, Paris, De Bilt, and Stuttgart), 17h. (Ksara and Sumoto), 20h. (Erevan and Tiflis), 21h. (Phu-Lien, Hong Kong, Calcutta, and near Hukuoka B).

June 2d. 1h. 21m. 59s. Epicentre 56°·8N. 33°·7W. (as on 1937 April 29d.).

$A = +\cdot4577$, $B = -\cdot3053$, $C = +\cdot8351$; $\delta = +9$; $h = -8$;
$D = -\cdot555$, $E = -\cdot832$; $G = +\cdot695$, $H = -\cdot463$, $K = -\cdot550$.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Reykjavik	9·4	33	—	—	e 4 1?	− 6	—	—
Oxford	19·5	92	e 4 23	− 8	e 8 5	− 1	e 10·0	11·9
Kew	20·1	92	i 4 35	− 3	e 8 29	+10	9·0	—
Jersey	20·4	98	i 4 40	− 1	e 8 37	+12	10·5	—
De Bilt	22·9	84	5 4	− 2	9 14	+ 1	e 11·0	13·6
Uccle	23·0	90	e 5 7	0	e 9 17	+ 3	11·0	—
Paris	23·1	95	e 5 11	+ 3	e 9 19	+ 3	12·0	14·0
Hamburg	24·8	79	e 5 23	− 2	—	—	e 14·0	15·0
Copenhagen	25·3	73	5 36	+ 6	9 58	+ 4	12·0	—
Toledo	25·7	119	e 5 40	+ 7	—	—	12·0	—
Strasbourg	26·1	90	e 5 43	+ 6	e 10 31	+24	13·3	16·0
Stuttgart	26·8	88	e 5 45	+ 1	e 10 11	− 8	e 13·5	16·0
Cheb	27·8	83	e 7 1?	PPP	e 10 36	+ 1	e 14·0	17·0
Triest	31·1	91	e 5 32	−50	e 11 23	− 5	e 15·5	19·3
Pulkovo	32·6	58	—	—	e 13 35	SS	17·0	20·1
Sverdlovsk	47·6	48	—	—	15 37	+ 2	21·0	—
Tiflis	50·5	73	i 9 1	− 1	e 16 25	+ 9	e 27·5	32·8
Ksara	51·5	86	i 9 10	+ 1	e 16 43	+14	—	31·4

Additional readings :—
Strasbourg eE = +5m.53s., ePPZ = +6m.30s.
Long waves were also recorded at Rathfarnham Castle, Aberdeen, Little Rock, Prague, Stonyhurst, Ivigtut, Moscow, and Baku.

June 2d. 21h. 3m. 49s. Epicentre 18°·0N. 109°·0W. (very rough).

$A = -\cdot3098$, $B = -\cdot8999$, $C = +\cdot3071$; $\delta = +11$; $h = +5$;
$D = -\cdot946$, $E = +\cdot326$; $G = -\cdot100$, $H = -\cdot290$, $K = -\cdot952$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Manzanillo	N.	4·6	76	1 43	+31	—	—	—	—
Mazatlan	N.	5·7	26	0 25	−63	—	—	—	—
Tacubaya	N.	9·4	80	2 24	+ 6	—	—	—	—
Tucson		14·3	354	3 23	− 3	e 6 14	+ 8	8·0	—
La Jolla		16·5	335	e 3 54	0	—	—	—	—
Riverside		17·6	338	i 4 8	0	—	—	—	—
Pasadena		18·0	338	i 4 15k	+ 2	e 7 33	+ 1	e 9·2	—
Mount Wilson		18·1	338	i 4 15k	+ 1	—	—	—	—
Tinemaha	E.	20·7	340	e 4 45	+ 1	e 9 0	+29	—	—
Fresno	N.	21·0	336	e 4 48	+ 1	—	—	—	—
Berkeley		23·0	334	e 5 10	+ 3	e 9 24	+10	—	—
St. Louis		26·1	35	e 5 36	− 1	e 10 31	+24	—	13·5
Florissant		26·3	35	e 5 39	0	e 10 5	− 6	—	13·0
Bozeman		27·7	357	e 7 17	?	(e 10 17)	−16	e 10·3	—
Chicago		30·0	32	e 8 23	?	e 10 46	−24	15·3	—
Madison		30·0	29	—	—	e 10 11?	−59	—	—
Philadelphia		36·5	47	e 7 11	+ 2	e 12 39	−12	e 18·6	—
Ottawa		38·9	38	—	—	e 13 23	− 5	e 18·2	—
San Juan		40·7	82	e 7 29	−15	e 13 58	+ 3	—	—
East Machias		43·8	44	e 8 17	+ 8	—	—	e 21·8	—
Honolulu		46·0	283	e 4 30	?	e 13 10	?	e 19·8	—

Additional readings :—
Tucson e = +3m.39s., +3m.45s., eL = +6m.58s., e = +7m.25s.
Berkeley iZ = +9m.53s., eZ = +13m.0s.
St. Louis eN = +5m.56s., +6m.36s., +11m.14s.
Florissant eE = +5m.46s., and +6m.16s., iN = +6m.35s., eEN = +10m.10s., eE = +10m.38s.
Chicago e = +12m.58s. and +14m.45s.
Madison i = +14m.23s., e = +15m.11s.?
Philadelphia e = +3m.26s., +11m.47s., +15m.1s., and +16m.30s.
Ottawa e = +15m.59s.
East Machias e = +16m.47s.
Honolulu e = +6m.50s. and +16m.59s.
Long waves were also recorded at Tashkent, Butte, Des Moines, Ukiah, Stuttgart, Tiflis, Baku, Sverdlovsk, Guadalajara, De Bilt, Copenhagen, Strasbourg, Paris, Samarkand, Andijan, and Columbia.

June 2d. Readings also at 0h. (Adelaide), 5h. (Mizusawa), 9h. (near Andijan), 11h. (Ksara), 15h. (near Branner), 16h. (Tiflis), 23h. (Kobe, near Sumoto, and Nagoya).

June 3d. Readings at 0h. (Tashkent, Sverdlovsk, Triest, Berkeley, Pasadena, Melbourne, Riverview, Sydney, Arapuni, Christchurch, Wellington (2), and near New Plymouth (2)), 1h. (Baku, Tiflis, Paris, Strasbourg, Stuttgart, Riverview, Arapuni, Christchurch, near New Plymouth, and Wellington), 2h. (Hong Kong, Phu-Lien, Chiufeng, Irkutsk, Sverdlovsk, Tashkent, and La Paz), 3h. (Andijan, near Samarkand, and near Santiago), 4h. (near Nagoya), 5h. (Wellington and near New Plymouth), 6h. (Wellington and New Plymouth), 7h. (Ksara, Semipalatinsk, Medan, Sverdlovsk, Tashkent, Hong Kong, Phu-Lien, La Paz, Pasadena, and New Plymouth), 8h. (New Plymouth, Wellington, Vladivostok, and Rio de Janeiro), 9h. (Ksara, Sverdlovsk (2), Tashkent, Hong Kong, Phu-Lien, Irkutsk, and near Wellington), 10h. (Mount Wilson, Pasadena, Merida, Tacubaya, Little Rock, Tinemaha, and St. Louis), 14h. (Hastings), 18h. (Sverdlovsk, Tashkent, Irkutsk, Chiufeng, Hong Kong, and Phu-Lien), 20h. (near Santiago and San Javier), 21h. (Irkutsk, Tashkent, and Malabar), 22h. (Sverdlovsk).

June 4d. Readings at 4h. (Sebastopol, Yalta, and near Simferopol). 8h. (Wellington), 14h. (2) and 15h. (near Andijan), 16h. (La Paz, Andijan, Samarkand, and near Chiufeng), 17h. (Malabar), 18h. (near Santiago), 19h. (Strasbourg, Stuttgart, near Chur, Basle, Neuchatel (2), and Zurich), 20h. (Basle, Chur, Zurich, Neuchatel, Marseilles, Strasbourg, Ksara, Simferopol, Yalta, near Sotchi, near Theodosia, and near Batavia), 21h. (Baku, Sverdlovsk, Tashkent, and Tiflis), 22h. (Santiago), 23h. (Jena).

June 5d. Readings at 1h. (Stuttgart), 2h. (Ksara, Sverdlovsk, and Tashkent), 3h. (near Bagnères), 4h. (Amboina), 5h. and 6h. (near Nagoya), 9h. (near Berkeley, Branner, Fresno, Lick, and San Francisco), 10h. (Copenhagen, Sverdlovsk, De Bilt, Paris, Strasbourg, and Uccle), 11h. (near Sumoto), 13h. (Jena), 14h. (La Jolla, Mount Wilson, Pasadena, Riverside, and St. Louis), 15h. (La Jolla, Mount Wilson (2), Pasadena (2), Riverside (2), Tinemaha, Berkeley, Ukiah, Fresno, Tucson, Bozeman, Little Rock, Philadelphia, Oak Ridge, and East Machias), 17h. (Wellington and near Sumoto (2)), 19h. (Berkeley, Branner, Lick, Fresno, San Francisco, and near Vienna), 21h. (near Nagoya), 22h. (near Neuchatel), 23h. (Sofia).

June 6d. 17h.-18h. Readings for which no determination has been made :—

Vladivostok e = 17h.59m.23s. and 63m.25s., L = 66m.54s., M = 69m.36s.
Manila P = 59m.35s., S = 64m.31s., L = 68m.
Tiflis ePE = 64m.38s., eSE = 71m.49s., eLE = 81m.12s.
Chiufeng e = 65m.6s.
Sverdlovsk eP = 65m.47s., eS = 74m.13s., L = 86m.0s.
Pasadena ePZ = 66m.50s.
Mount Wilson ePZ = 66m.51s.
Tashkent i = 73m.28s., eL = 88m.48s., M = 96m.12s.
Baku eS = 77m.9s., e = 85m.23s., eL = 95m.30s., M = 107m.0s.
Ksara e = 81m.54s., L = 111m.
Long waves were also recorded at Hong Kong, Irkutsk, Moscow, Pulkovo, and a few European stations.

June 6d. Readings also at 0h. (La Plata, Rio de Janeiro, Pasadena, Riverside, Tinemaha, Berkeley, Wellington, Ksara, Pulkovo, Moscow, Sverdlovsk, Piatigorsk, and Tiflis), 1h. (Baku, Tashkent, Copenhagen, Paris, Strasbourg, Uccle, and Zagreb), 2h. (Andijan, Tashkent, Vladivostok, Hong Kong, Sverdlovsk, and near Taihoku), 4h. (Andijan, Frunse, near Almata, Semipalatinsk, and Samarkand), 6h. (La Paz ,near Berkeley, Branner, Lick, and near Mizusawa), 9h. (Tacubaya and near Vienna), 10h. (near San Javier), 13h. (Hastings, Christchurch, near New Plymouth, and Wellington), 18h. (Tiflis), 19h. (Vienna), 20h. (Samarkand), 21h. (Jersey).

June 7d. 1h. 25m. 15s. Epicentre 46°·9N. 6°·9E.

Felt force V on the shores of Lake Neuchatel. Epicentre in the lake between St. Aubin and Cortaillod, 46°55′N. 6°54′E.

$A = +\cdot6808$, $B = +\cdot0824$, $C = +\cdot7279$; $\delta = +12$; $h = -4$;
$D = +\cdot120$, $E = -\cdot993$; $G = +\cdot723$, $H = +\cdot087$, $K = -\cdot686$.

See special reprint of Swiss Meotorological.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Neuchatel	0·1	13	i 0 3	P*	i 0 5	S_g	—
Basle	0·8	36	e 0 17	P*	i 0 30	− 1	—
Zurich	1·2	69	e 0 24	0	e 0 41	0	—
Chur	1·8	92	e 0 33	+ 1	i 1 0	+ 4	—
Strasbourg	1·8	19	0 38	+ 6	0 59	+ 3	—
Ebingen	1·9	47	—	—	e 1 2	+ 3	1·3
Ravensburg	2·0	64	—	—	e 1 8	S_g	1·3
Stuttgart	2·4	40	e 0 47	P_g	e 1 8	− 4	1·5
Paris	3·5	304	e 1 54	S	(e 1 54)	S_g	—
Uccle	4·2	340	—	—	e 2 15	S_g	—
Triest	4·9	100	—	—	e 2 10	− 5	—
Jena	5·1	35	—	—	e 2 39	S*	—
Graz	5·8	84	—	—	e 2 52	S*	3·6

Additional readings :—
Basle i = + 26s.
Chur iP = + 36s.
Strasbourg SS = + 1m.5s., SSS = + 1m.29s.
Stuttgart eS* = + 1m.17s., iS_g = + 1m.21s. and + 1m.23s.
Triest i = + 2m.42s.
Long waves were also recorded at Göttingen and De Bilt,

June 7d. 22h. 2m. 49s. Epicentre 46°·3N. 10°·5E.

Felt scale VI at Pejo, V at Poschiavo (Switzerland), IV-V at Breno, IV at Livigno, Isoseismic Chart No. 63. Macroseismic radius 50-60km. "Attivita sismica in Italia nel Decennico 1930-1939." Commis Ital. di Studio per i problem Vol. IX Felixe le Monnier, Florence, 1940. Microseismic epicentre 46°·5N. 10°·0E. Macroseismic epicentre near 46°3N. 10°5E.

$A = +\cdot6817$, $B = +\cdot1263$, $C = +\cdot7206$; $\delta = -7$; $h = -4$;
$D = +\cdot182$, $E = -\cdot983$; $G = +\cdot709$, $H = +\cdot131$, $K = -\cdot693$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Chur		0·9	310	e 0 13	− 7	e 0 20	−14	—	—
Padova		1·3	133	e 0 33	+ 8	—	—	—	—
Ravensburg		1·6	338	e 0 30	0	i 0 51	0	—	—
Zurich		1·7	309	e 0 30	− 1	e 0 53	− 1	—	—
Ebingen		2·2	331	e 0 41	+ 3	i 1 7	+ 1	—	—
Basle		2·3	302	e 0 39	− 1	e 1 9	0	—	—
Triest		2·4	106	e 0 45	P*	i 1 24	S_g	—	—
Neuchatel		2·5	286	e 0 42	− 1	e 1 15	+ 1	—	—
Stuttgart		2·6	340	e 0 43	− 1	i 1 13	− 4	—	1·8
Strasbourg		2·9	321	e 0 56	P_g	1 32	S*	—	—
Besançon		3·2	287	i 1 11	P_g	—	—	—	—
Graz		3·5	75	i 1 6	P*	i 1 57	S_g	—	2·6
Zagreb		3·8	94	e 1 33	?	e 1 43	− 4	—	2·2
Cheb		4·0	18	e 1 6	+ 2	—	—	—	2·3
Vienna		4·5	61	e 1 36	P_g	2 27	S*	i 2·6	—
Prague		4·6	34	e 1 27	P_g	e 2 28	S_g	—	3·2
Jena		4·7	10	e 1 29	P_g	—	—	e 2·2	2·7
Göttingen		5·3	356	e 1 20	− 2	—	—	—	2·9
Stara Dala		5·5	70	—	—	e 2 47	+17	—	5·7
Uccle		6·1	320	—	—	e 2 11	−34	—	—
Hamburg	E.	7·3	356	—	—	e 3 54	S_g	e 4·5	5·4
Copenhagen		9·5	8	—	—	3 11?	−59	—	—

Additional readings :—
Ravensburg $eP_g = +33s.$, $i = +53s.$
Zurich $eP_g = +0m.34s.$
Ebingen $eP_g = +44s.$, $e = +1m.1s.$
Triest $iP_g = +49s.$
Neuchatel $i = +44s.$ and $+47s.$
Stuttgart $eP = +47s.$, $eP^* = +51s.$, $iP_g = +53s.$, $iS_g = +1m.26s.$, $iEN = +1m.29s.$
Strasbourg $PP = +1m.11s.$, $PPP = +1m.19s.$, $SS = +1m.48s.$
Zagreb $e = +1m.18s.$ and $+1m.25s.$, $eNE = +1m.50s.$
Cheb $e = +1m.20s.$
Vienna $SS = +2m.44s.$
Jena $eN = +1m.31s.$
Prague $eS = +2m.47s.$
Long waves were also recorded at Pulkovo, Paris, Moscow, Kew, and De Bilt.

June 7d. Readings also at 2h. (Basle, near Chur, Zurich, and near Neuchatel), 3h. (Tashkent, Bombay, and Kodaikanal), 4h. (Copenhagen, Baku, Moscow, Pulkovo, Sverdlovsk, Huancayo, La Paz, San Juan, Mount Wilson, Pasadena, and Riverside), 6h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 7h. (Kobe), 8h. (Tashkent, near Andijan, and Samarkand), 10h. (San Francisco, Zurich, Basle, near Neuchatel, and near Nagoya), 11h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Manila, Medan, Calcutta, Phu-Lien, Tashkent, and Ksara), 12h. (Hong Kong, Sverdlovsk, Vladivostok, Mount Wilson, Pasadena, Riverside, Tinemaha, and near La Paz), 13h. (Chifufeng, Hong Kong, Vladivostok, Tashkent, Sverdlovsk, Pulkovo, Ksara, Moscow, Copenhagen, and De Bilt), 14h. (Strasbourg and Stuttgart), 15h. (Adelaide, Melbourne, Riverview, Sydney, Perth, Christchurch, Wellington, Manila, Moscow, Sverdlovsk, and Ksara), 16h. (Moscow, Tiflis, Copenhagen, Kew, Pulkovo, Paris, Strasbourg, and Stuttgart, and Oak Ridge), 17h. (Samarkand and Sverdlovsk), 18h. (near Wellington and near Branner), 23h. (Florissant and St. Louis).

June 8d. 3h. Pacific Ocean :—

Manila eP =46m.3s., SN? =53m.21s.
Vladivostok eP =47m.43s., e =54m.27s., M =64m.18s.
Chiufeng PNZ =48m.14s., ePE =48m.16s., iSE =55m.21s., iNZ =55m.27s., eL =59m.54s., M =71m.19s.
Hong Kong P? =48m.30s., S? =53m.0s.
Irkutsk e =50m.0s., L =58m., M =58m.42s.
Tashkent eP =51m.46s., iS =61m.52s., M =86·6m.
Adelaide i =52m.5s., e =55m.32s., eL =60m.18s., M =62·5m.
Sverdlovsk P =52m.23s., PP =55m.45s., S =62m.47s., L =83·0m.
Phu-Lien 54m.
Tiflis eE =54m.27s., 63m.48s., and 78m.49s.
Sydney e =55m.24s., L =58m.36s., M =60m.36s.
Perth S? =56m.20s., L =62m.30s., M =63m.
Riverview eN =56m.24s., eL =59m.12s., MN =62m.13s.
Moscow PP =57m.8s., SKS =63m.55s., S =64m.32s., PPS =66m.28s., eL = 94m.12s., M =99m.12s.
Pulkovo e =57m.45s., SKS =64m.3s., PPS =66m.51s., L =95·0m., M =105·5m.
Calcutta iN =58m.11s., i =59m.36s.
Ksara ePP =58m.28s., ePS =68m.3s., ePPS =69m.4s.
Copenhagen 59m. and 68m.30s., L =96m.
De Bilt eZ =62m., e =69m.31s., eL =101m.
Stuttgart e =69m., eL =105m.
Long waves were also recorded at Wellington, Strasbourg, and Paris.

June 8d. 18h. 0m. 40s. Epicentre 46°·5N. 149°·5E.

Moderately felt at Kusiro. Radius greater than 300kms. Epicentre 45°·0N. 149°·0E. See Seismological Bulletin of the Central Meteorological Observatory, Japan, for the year 1937. Tokyo, Japan, 1939. Pp. 41-42.

$A = -\cdot5952$, $B = +\cdot3506$, $C = +\cdot7231$; $\delta = +6$; $h = -4$;
$D = +\cdot508$, $E = +\cdot862$; $G = -\cdot623$, $H = +\cdot367$, $K = -\cdot691$.

A depth of focus 0·020 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Nemuro	4·1	223	1 2	− 1	1 49	− 2	—	—
Ootomari	4·6	277	1 16a	+ 7	2 14	+12	—	—
Kusiro	5·0	227	0 56	−18	1 51	−21	—	—
Asahigawa	5·7	244	1 35	+11	—	—	—	—
Urakawa	6·5	230	1 32	− 2	2 41	− 7	—	—
Sapporo	6·7	243	1 41k	+ 4	—	—	—	—
Hakodate	7·8	237	2 12	+20	—	—	—	—
Hatinohe	8·3	227	1 54	− 4	3 19	−12	—	—
Aomori	8·5	231	1 59	− 2	3 26	− 9	—	—
Morioka	9·1	225	2 7	− 2	3 41	− 9	—	—
Mizusawa	9·6	223	2 12	− 3	3 46	−15	—	—
Akita	9·7	228	2 16	− 1	—	—	—	—
Sakata	10·4	226	2 28	+ 2	4 16	− 4	—	—
Sendai	10·4	221	2 22	− 4	4 8	−12	—	—
Yamagata	10·7	223	2 26	− 4	4 19	− 8	—	—
Hukusima	11·0	221	2 30	− 4	4 23	−11	—	—
Aidu	11·3	221	2 26	−12	4 25	−16	—	—
Mito	12·1	217	2 47	− 1	4 50	−10	—	—
Kakioka	12·4	217	2 47	− 5	4 56	−11	—	—
Tukubasan	12·5	217	2 49	− 4	4 57	−12	—	—
Tyosi	12·6	214	2 49	− 5	5 0	−12	—	—
Maebasi	12·7	221	2 52	− 4	—	—	—	—
Kumagaya	12·8	220	2 59a	+ 2	5 11	− 5	—	—
Nagano	13·0	225	2 59	− 1	5 23	+ 2	—	—
Oiwake	13·0	223	3 0	0	5 18	− 3	—	—
Vladivostok	13·0	260	i 2 59	− 1	e 5 23	+ 2	6·4	9·6
Tokyo Cen. Met. Obs.	13·1	218	3 0	− 1	5 13	−10	—	—
Wazima	13·1	230	2 56	− 5	—	—	—	—
Yokohama	13·3	217	3 6	+ 3	5 24	− 4	—	—
Huslki	13·4	228	2 58	− 7	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Toyama		13·4	227	3 5	0	—	—	—	—
Hunatu		13·6	220	2 53	−14	—	—	—	—
Kohu		13·6	221	3 8	+ 1	5 29	− 6	—	—
Mera		13·7	216	3 8	0	5 27	−10	—	—
Misima		13·9	219	3 12	+ 1	5 41	− 1	—	—
Numadu		13·9	219	3 17	+ 6	5 37	− 5	—	—
Gihu		14·6	225	3 20k	0	7 3	L	(7·0)	—
Nagoya		14·7	224	(3 21)	0	3 21	P	—	—
Ibukisan		14·9	226	3 22	− 2	—	—	—	—
Hikone		15·0	226	3 24	− 1	—	—	—	—
Kameyama		15·2	230	3 25	− 2	—	—	—	—
Kyoto		15·5	227	3 25	− 6	—	—	—	—
Osaka		15·9	227	3 31	− 5	—	—	—	—
Osaka B		15·9	227	3 33k	− 3	—	—	—	—
Kobe		16·0	227	3 36k	− 1	—	—	—	—
Sakai		16·4	234	3 41	− 1	—	—	—	—
Sumoto		16·4	227	e 3 20a	−22	—	—	—	—
Wakayama		16·4	226	3 41k	− 1	—	—	—	—
Tokusima		16·8	227	3 44	− 3	—	—	—	—
Hiroshima		17·7	233	3 58	0	—	—	—	—
Koti		17·7	229	3 57	− 1	—	—	—	—
Keizyo		18·9	250	e 4 13	+ 2	e 7 38	+ 6	—	—
Husan		19·2	242	4 14	0	e 7 36	− 2	—	—
Zinsen		19·2	251	e 4 16	+ 2	e 7 45	+ 7	—	—
Hukuoka B		19·4	233	4 17	+ 1	e 7 56	+14	—	—
Kumamoto		19·8	233	4 21	+ 1	7 55	+ 6	—	—
Miyazaki		20·1	230	4 25	+ 2	—	—	—	—
Nagasaki		20·4	233	3 40	−46	—	—	—	—
Nake		24·0	227	5 35	+34	—	—	—	—
Chiufeng		25·0	269	e 5 13	+ 3	9 24	+ 4	11·7	—
Irkutsk		29·6	299	e 6 42	+50	e 10 37	+ 3	13·3	—
Manila		39·8	226	7 19	0	14 24	+73	—	—
Frunse		51·5	295	e 9 0	+ 9	—	—	—	—
Sverdlovsk		52·3	317	i 9 1	+ 4	i 16 13	+ 5	26·3	—
Andijan		54·0	294	e 9 9	− 1	16 36	+ 5	—	—
Calcutta		54·3	266	—	—	e 16 38	+ 3	—	19·0
Tashkent		55·7	297	i 9 20	− 2	i 16 53	− 1	e 27·1	30·2
Samarkand		58·0	296	e 9 40	+ 2	e 17 28	+ 4	—	—
Pulkovo		63·0	330	10 10	− 2	18 25	− 3	27·3	33·7
Moscow		63·2	324	i 10 13	0	18 29	− 1	e 27·8	43·1
Tinemaha	z.	65·6	61	i 10 30	+ 1	—	—	—	—
Pasadena		67·6	63	i 10 39	− 2	—	—	—	—
Baku		67·7	306	—	—	e 19 33	+ 8	35·3	38·5
Riverside		68·2	63	i 10 42	− 2	—	—	—	—
Piatigorsk		68·9	312	e 10 50	+ 1	—	—	—	—
La Jolla	z.	69·0	64	i 10 48	− 2	—	—	—	—
Tiflis		69·6	310	10 55	+ 1	19 52	+ 5	34·3	38·2
Erevan		70·9	309	e 10 48	−14	—	—	—	—
Ivigtut		71·7	9	i 11 6a	0	—	—	—	—
Copenhagen		72·0	337	11 8	0	20 15	0	—	—
Theodosia		72·0	317	e 11 9	+ 1	i 20 58	+43	—	—
Simferopol		72·6	318	e 11 13	+ 1	i 21 3	+41	—	—
Yalta		72·9	318	e 11 14	+ 1	e 21 2	+37	—	—
Sebastopol		73·1	319	e 12 43	?	—	—	—	—
Jena	N.	76·4	334	i 11 34	+ 1	—	—	—	—
De Bilt		77·1	339	i 11 38a	+ 1	—	—	e 39·3	—
Uccle	z.	78·5	340	i 11 45	0	—	—	—	—
Stuttgart		79·0	335	i 11 48	0	e 21 44	+13	e 42·3	—
Sofia		79·2	322	e 12 20?	+31	—	—	—	—
Strasbourg		79·6	336	i 11 54a	+ 3	e 21 36	− 2	e 29·3	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara		80·2	309	e 11 49	− 5	i 21 52	+ 8	—	—
Triest		80·3	330	11 53	− 1	21 50	+ 5	—	—
Zurich		80·5	335	e 11 56a	0	—	—	—	—
Basle		80·6	335	e 11 56	0	—	—	—	—
Chur		80·6	334	e 11 57	+ 1	—	—	—	—
Paris	z.	80·8	339	i 11 57	0	—	—	—	—
Neuchatel		81·3	335	e 12 0	0	—	—	—	—
Williamstown		83·4	31	i 12 10	0	—	—	—	—
Oak Ridge		84·2	29	i 12 14	0	—	—	—	—
Weston	z.	84·4	29	i 12 15a	0	—	—	—	—

Additional readings :—
Nagoya eP = +1m.42s.
Kobe iE = +13m.9s.
Sumoto eN = +3m.25s., i = +3m.41s.
Chiufeng ePPZ = +5m.48s., iEZ = +6m.8s., iEN = +10m.40s.
Manila iE = +13m.11s., iN = +13m.19s.
Calcutta iN = +17m.36s.
Tinemaha iZ = +11m.19s.
Pasadena iZ = +11m.10s.
Baku e = +27m.11s., e = +28m.0s.
Tiflis S_cSE = +20m.43s.
Erevan eS_g = +11m.21s.
Copenhagen +20m.59s.
De Bilt ePPZ = +14m.31s.
Stuttgart ePPZ = +14m.49s., eSS = +27m.1s.
Sofia e = +19m.20s.?
Strasbourg ePPZ = +14m.52s.
Ksara ipP = +11m.57s., esS = +22m.6s.
Oak Ridge iZ = +12m.19s., +12m.55s., eZ = +14m.33s.
Weston iZ = +12m.59s. and +15m.30s.
Long waves were also recorded at Graz and Hong Kong.

June 8d. 20h. 4m. 20s. Epicentre 39°·2N. 141°·9E.

Epicentre 39°·2N. 141°·9E., very near to Mizusawa, Morioka, Miyako; felt moderately at Isinomaki and Hatinohe. Radius 200-300kms. See Seismological Bulletin of the Central Meteorological Observatory, Japan, for the year 1937, Tokyo, 1939. Pp. 42-43. Macroseismic Chart p. 44.

A = −·6115, B = +·4795, C = +·6295; δ = +12; h = −1;
D = +·617, E = +·787; G = −·495, H = +·388, K = −·777.

A depth of focus 0·010 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Miyako	0·4	8	0 18a	+ 3	0 25	− 2	—	—
Mizusawa	0·6	264	i 0 11	− 6	i 0 20	− 9	—	—
Morioka	0·8	311	0 13a	− 5	0 23	− 9	—	—
Isinomaki	0·9	211	0 13	− 6	0 26	− 8	—	—
Sendai	1·1	220	0 19	− 3	0 33	− 5	—	—
Hatinoke	1·4	348	0 20a	− 5	0 36	− 8	—	—
Akita	1·5	289	0 23	− 4	0 41	− 6	—	—
Yamagata	1·5	232	0 25	− 2	0 43	− 4	—	—
Sakata	1·6	259	0 28	0	0 49	0	—	—
Aomori	1·9	332	0 30k	− 2	0 45	−10	—	—
Hukusima	1·9	218	0 28a	− 4	0 44	−11	—	—
Onahama	2·4	199	0 41	+ 3	1 8	+ 1	—	—
Niigata	2·6	240	1 1	+20	—	—	—	—
Hakodate	2·7	341	1 11	S	(1 11)	− 3	—	—
Mito	3·0	202	0 43k	− 4	1 17	− 5	—	—
Urakawa	3·1	13	0 38	−10	1 18	− 6	—	—
Utunomiya	3·1	211	0 47	− 1	1 21	− 3	—	—
Kakioka	3·3	205	0 46	− 5	1 32	+ 3	—	—
Tukubasan	3·3	205	0 48	− 3	1 23	− 6	—	—
Kumagaya	3·6	214	0 54	− 1	1 33	− 4	—	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Maebasi		3·6	220	1 7	+12	—	—	—	—
Takada		3·6	235	0 59	+ 4	1 24	−13	—	—
Tyosi		3·6	195	0 51	− 4	1 31	− 6	—	—
Nagano		3·8	234	0 59	+ 1	1 43	+ 1	—	—
Tokyo Cen. Met. Obs.		3·9	207	0 55	− 4	1 45	+ 1	—	—
Oiwake		3·9	224	0 58	− 1	1 40	− 4	—	—
Sapporo		3·9	352	1 0	+ 1	1 45	+ 1	—	—
Kusiro		4·2	26	1 3	0	1 47	− 4	—	—
Yokohama		4·2	207	1 1	− 2	1 47	− 4	—	—
Matumoto		4·3	227	1 2	− 3	—	—	—	—
Wazima		4·3	247	1 2	− 3	—	—	—	—
Hunatu		4·4	208	1 8	+ 2	1 55	− 1	—	—
Kohu		4·4	218	1 4	− 2	1 56	0	—	—
Toyama		4·4	238	1 9	+ 3	2 8	+12	—	—
Gotenba		4·5	212	1 0	− 7	1 50	− 9	—	—
Husiki		4·5	239	1 21	+14	—	—	—	—
Asahigawa		4·6	4	1 9	0	2 9	+ 8	—	—
Mera		4·6	203	1 11	+ 2	2 16	+15	—	—
Numadu		4·8	212	1 15	+ 4	2 6	0	—	—
Iida		4·9	222	1 10	− 3	2 7	− 2	—	—
Nemuro		5·0	33	1 14	0	2 3	− 8	—	—
Gihu		5·6	229	1 5	−17	2 27	+ 1	—	—
Hamamatu		5·6	218	1 27	+ 5	—	—	—	—
Nagoya		5·6	226	1 24	+ 2	2 25	− 1	—	3·0
Kameyama		6·1	227	1 30	+ 1	2 42	+ 4	—	—
Osaka		6·8	230	1 36	− 3	3 1	+ 6	—	—
Osaka B		6·8	230	1 38	− 1	—	—	—	—
Kobe		7·0	232	e 1 40	− 2	e 3 12	+12	—	—
Wakayama		7·3	230	1 47	+ 1	—	—	—	—
Sumoto	E.	7·4	232	e 1 47	0	e 3 26	+16	—	—
	N.	7·4	232	e 1 37	−10	e 3 22	+12	—	—
Vladivostok		8·5	301	e 2 9	+ 7	e 4 45	+68	e 4·9	7·1
Sverdlovsk		53·8	318	i 9 15	0	e 16 46	+ 6	27·7	—
Grozny		68·3	309	e 10 52	− 1	—	—	—	—
Tinemaha	Z.	74·2	55	i 11 33	+ 5	—	—	—	—
Pasadena	Z.	75·9	57	i 11 55	+17	—	—	—	—
Mount Wilson	Z.	76·0	57	i 11 41	+ 3	—	—	—	—

Additional readings :—
Hakodate S = +1m.51s.
Kobe eN = +1m.43s., eZ = +2m.0s., eN = +2m.1s. and +2m.58s.
Sumoto eZ = +1m.56s.
Long waves were also recorded at Baku.

June 8d. 22h. 29m. 39s. Epicentre 15°·9N. 93°·0W.

Felt in the States of Vera Cruz, Oaxaca, Tabasco, and Chiapas. Epicentre 17°18′N. 93°16′W. given by Tacubaya, and 14°7′N. 92°6′W. by J.S.A. See Earthquake records Institute of Geology, Mexico, 1942. P. 29.

$A = -·0504$, $B = -·9609$, $C = +·2722$; $\delta = -4$; $h = +6$;
$D = -·999$, $E = +·052$; $G = -·014$, $H = -·272$, $K = -·962$.

A depth of focus 0·020 has been assumed.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	N.	3·8	287	1 9	+10	—	—	—	—
Vera Cruz	Z.	4·5	318	1 8	0	—	—	—	—
Puebla	N.	5·8	302	1 32	+ 7	—	—	—	—
Merida	N.	6·0	32	1 34	+ 6	—	—	—	—
Tacubaya	N.	6·9	302	1 46	+ 6	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Guadalajara	N.	11·0	298	—	—	i 4 48	+14	—	—
Manzanillo	N.	11·2	288	i 2 59	+23	—	—	—	—
Little Rock		18·8	2	e 4 12	+ 2	i 7 33	+ 3	—	—
Columbia		21·0	28	4 31	− 1	8 12	+ 1	e 11·4	—
St. Louis		22·8	5	i 4 49	0	i 8 46	+ 3	—	—
Florissant		22·9	5	i 4 51	+ 1	e 8 43	− 2	—	—
Tucson		23·0	319	e 4 55	+ 4	i 8 54	+ 8	e 10·8	—
Cincinnati		24·3	17	i 5 3	− 1	i 9 40	+32	—	—
Des Moines		25·6	359	e 5 54	+38	e 9 10	−20	—	—
San Juan		25·8	80	5 14	− 4	e 9 1	−32	11·0	—
Denver		25·9	339	e 5 23	+ 4	e 9 33	− 2	—	—
Chicago		26·3	9	5 18	− 4	e 9 31	−10	e 14·6	—
Georgetown		26·8	30	i 5 26	− 1	i 9 43	− 7	—	—
Madison		27·3	6	i 3 19	?	e 7 41	?	—	—
La Jolla		27·7	312	e 5 37	+ 2	e 10 9	+ 5	—	—
Pennsylvania		28·1	24	i 9 20	?	e 11 9	SS	—	—
Riverside		28·4	314	e 5 43	+ 1	i 10 22	+ 7	—	—
Philadelphia		28·6	31	i 5 41	− 2	i 10 13	− 5	—	—
Mount Wilson		29·0	314	i 5 50k	+ 3	e 10 34	+ 9	—	—
Pasadena		29·0	314	i 5 50	+ 3	i 10 33	+ 8	—	—
Buffalo		29·5	22	e 4 57	−54	—	—	—	—
Toronto		30·0	20	5 54	− 2	10 39	− 1	13·3	—
Tinemaha		30·8	318	i 6 6	+ 3	e 10 45	− 8	—	—
Fresno	N.	31·5	316	e 6 15	+ 6	e 11 12	+ 8	—	—
Williamstown		31·6	30	i 6 8	− 2	13 6	SSS	—	—
Oak Ridge		32·3	31	i 6 13	− 3	e 10 53	−23	13·3	—
Weston		32·3	31	i 6 13a	− 3	i 11 13	− 3	—	—
Huancayo		32·8	147	e 6 15	− 5	i 11 31	+ 7	e 17·4	—
Ottawa		32·8	23	6 19	− 1	11 19	− 5	13·7	—
Lick		33·1	317	e 6 28	+ 5	e 11 36	+ 7	—	—
Vermont		33·1	26	i 6 19	− 4	e 12 32	+63	e 15·4	—
Bozeman		33·3	337	—	—	e 11 28	− 4	—	—
Branner		33·5	315	e 6 32	+ 6	e 11 43	+ 8	—	—
Berkeley		33·8	317	e 6 32	+ 3	e 11 48	+ 8	—	—
San Francisco	N.	33·9	317	e 7 28	+59	e 11 47	+ 6	e 16·6	—
Butte		34·2	336	6 34	+ 2	11 47	+ 1	e 15·4	—
Shawinigan Falls		34·9	25	6 37	− 1	12 2	+ 5	14·3	—
Ukiah		35·1	317	—	—	e 12 6	+ 6	e 17·6	—
East Machias		36·0	32	e 6 32	−15	e 12 16	+ 3	e 16·3	—
Seven Falls		36·2	26	6 50	+ 1	12 17	+ 1	—	—
Ferndale	E.	36·6	319	e 6 59	+ 7	e 12 31	+ 9	—	—
Saskatoon		37·7	346	6 56	− 6	12 31	− 8	16·8	—
La Paz		40·5	140	7 30	+ 5	i 13 18	− 3	16·7	20·1
Victoria		40·9	330	7 29	+ 1	13 25	− 2	16·8	—
Sitka		51·9	333	e 8 46	− 8	16 7	+ 4	e 24·7	—
Ivigtut		55·3	25	9 15	− 4	16 39	−10	—	—
Rio de Janeiro		62·1	127	—	—	(e 18 21?)	+ 5	e 18·3	—
Rathfarnham Castle		75·5	38	i 11 50	+22	i 21 40	+46	34·3	—
Edinburgh		76·9	36	i 11 37	+ 1	i 21 24	+15	e 40·3	—
Aberdeen		77·3	34	e 10 32	−66	e 20 7	−66	—	21·6
Bidston		77·4	38	—	—	i 21 26	+12	—	—
Stonyhurst		77·6	38	e 11 42	+ 2	e 21 12	− 5	29·3	—
Durham		78·0	36	11 54	+12	21 31	+10	—	—
Jersey		78·7	42	e 11 44	− 2	i 20 21?	−67	e 27·6	—
Oxford		78·8	40	11 45	− 1	21 18	−11	—	—
Toledo		79·2	52	e 11 50	+ 1	e 21 28	− 6	—	—
Kew		79·4	40	i 11 48a	− 2	i 21 30	− 6	e 32·3	—
Granada		80·1	54	e 11 58	+ 5	e 21 59	+16	—	—
Paris		81·8	42	e 11 59	− 3	e 21 52	− 8	32·3	34·3
Tortosa	N.	82·4	50	e 13 8	+63	e 23 10	+64	e 34·3	34·6

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ucele		82·4	39	e 12 6	+ 1	i 22 1	− 5	—	35·3
De Bilt		82·5	38	i 12 5a	− 1	22 6	− 1	e 40·3	—
Hamburg		84·9	36	e 12 18	0	e 22 24	− 7	—	38·3
Strasbourg		85·2	41	e 12 18	− 1	e 22 19	[− 6]	e 34·3	—
Neuchatel		85·2	42	e 12 19	0	—	—	—	—
Basle		85·4	42	e 12 19	− 1	—	—	—	—
Copenhagen		85·5	33	12 20a	− 1	22 25	[− 2]	35·3	—
Stuttgart		86·0	40	i 12 22a	− 1	e 22 29	[− 2]	e 36·3	—
Zurich		86·1	42	e 12 23	− 1	e 23 53	PS	—	—
Jena	N.	86·7	38	i 12 57	+30	—	—	—	—
Chur		86·9	42	e 12 29	+ 1	e 24 16	PS	—	—
Cheb		87·5	38	e 12 31	0	—	—	—	24·3
Prague		88·7	38	e 12 37	+ 1	e 22 51	[+ 4]	e 35·3	39·3
Triest		90·0	42	13 27	+45	i 22 56	[+ 1]	—	—
Zagreb		91·4	42	e 13 38	+49	e 22 58	[− 6]	—	—
Pulkovo		91·9	24	e 12 49	− 2	e 23 3	[− 3]	34·3	50·4
Stara Dala		91·9	38	e 13 39	+48	e 24 21	+45	—	—
Moscow		97·4	25	e 13 15	− 1	e 23 37	[0]	e 36·8	52·5
Bucharest		98·4	38	e 17 51	PP	e 24 51	+20	42·5	45·3
Yalta		103·1	35	e 18 25	PP	—	—	—	—
Theodosia		103·4	34	e 18 46	PP	—	—	—	—
Sverdlovsk		104·3	14	e 13 51	P	25 21	+ 1	38·3	—
Vladivostok		108·3	327	19 3	PP	25 22	S	—	—
Helwan		109·7	50	e 18 41	PP	30 11	?	—	—
Grozny		110·0	30	e 19 10	PP	—	—	—	—
Irkutsk		110·5	348	18 40	PP	26 12	?	—	—
Ksara		110·6	44	e 18 50	PP	e 34 8	SS	—	—
Tiflis	Z.	110·7	32	e 18 51	PP	e 27 55	?	e 46·0	—
Baku		114·2	30	19 12	PP	26 10	?	e 49·3	57·8
Chiufeng		118·1	335	e 19 39	PP	26 27	?	—	—
Tashkent		120·7	14	20 3	PP	25 17	[+ 3]	e 56·5	71·0
Andijan		122·0	12	e 18 41	PKP	—	—	—	—
Manila		134·8	310	e 19 4	PKP	i 25 22	[−30]	—	—
Calcutta		141·8	358	e 22 18	PP	—	—	—	—

Additional readings :—
Little Rock ipPN = +4m.45s., iN = +4m.50s., +5m.0s., iE = +6m.12s., iSN = +7m.37s., iN = +7m.57s., isSE = +8m.31s., iN = +9m.15s.
Columbia e = +5m.19s., iPPP = +5m.26s., i = +5m.36s., e = +9m.2s.
St. Louis ipPN = +5m.25s., ipPPEN = +5m.43s., iN = +6m.37s., ePcPN = +8m.37s., esSEN = +9m.50s., iSSN = +9m.54s.
Florissant iN = +5m.20s., ipPEZ = +5m.28s., iPPZ = +5m.36s., ePcPZ = +8m.36s., esSEN = +9m.48s.
Tucson i = +4m.56s., e = +5m.29s., i = +9m.4s. and +9m.49s., e = +9m.57s.
Cincinnati i = +5m.31s., ipP = +5m.45s., isP = +5m.59s., isS = +10m.27s., iSS = +10m.45s.
Des Moines e = +6m.14s. and +8m.22s.
San Juan PP = +6m.2s., e = +6m.47s. and +7m.6s.
Denver eE = +5m.26s., iN = +5m.48s., ipPEN = +5m.54s., iE = +6m.4s., eN = +6m.10s., eSPN = +6m.33s., eN = +7m.9s., iN = +7m.14s., iN = +7m.27s., eN = +8m.14s., ePcPN = +8m.27s., eN = +8m.51s. and +9m.2s., eE = +9m.19s., eN = +9m.22s., eE = +9m.57s., iE = +10m.9s., eN = +10m.32s., i = +10m.58s.
Chicago ePP = +5m.54s., PPP = +6m.15s., e = +10m.33s., SS = +10m.59s., eSSS = +12m.3s.
Georgetown ipP = +6m.4s., isS = +10m.57s.
Madison ePP = +4m.5s.
La Jolla ipPZ = +6m.15s., iZ = +6m.30s.
Pennsylvania i = +12m.42s.
Riverside ipPZ = +6m.21s., isPZ = +6m.44s., iPcPZ = +8m.50s., ipPcPZ = +9m.35s.
Philadelphia e = +6m.16s., iPP = +6m.20s., ePcP = +8m.46s. and +9m.3s., e = +10m.39s., iSS = +11m.4s.
Mount Wilson ipPNZ = +6m.27s., ePcPZ = +8m.54s., ipPcPZ = +9m.40s.
Pasadena ipP = +6m.27s., esPZ = +6m.53s., iPcPZ = +8m.54s., ipPcPZ = +9m.37s., iScSN = +16m.13s.
Buffalo iP = +6m.0s., SSS = +15m.20s.
Toronto PPN = +6m.37s., SS = +11m.51s.

Continued on next page.

Tinemaha ipPZ = +6m.43s., isPPZ = +8m.20s., iP$_c$Pz = +8m.58s., ipP$_c$PZ = +9m.43s., iSEN = +11m.0s., eS$_c$SEN = +16m.19s.
Williamstown ipP = +6m.47s., isP = +7m.4s., i = +7m.28s., PP = +8m.17s., eSS = +14m.12s., i = +15m.13s., esSS = +16m.28s.
Oak Ridge iZ = +6m.16s., ePPZ = +6m.48s., eSSN = +12m.26s.
Weston ipP = +6m.52s., eSP = +7m.12s., ePPZ = +7m.20s., isS = +12m.21s., i = +13m.20s.
Huancayo ePP = +7m.12s., i = +14m.7s., iS$_c$S = +16m.33s.
Ottawa SSN = +12m.37s.
Lick ePPEN = +7m.3s.
Vermont i = +7m.12s., ePP = +7m.29s., i = +7m.38s. and +11m.28s., iSS = +13m.40s.
Bozeman eS = +11m.34s., e = +12m.32s., eSS = +14m.4s., e = +16m.3s.
Branner eN = +6m.37s., +7m.8s., and +16m.36s.
Berkeley iPE = +6m.35s., e = +7m.9s., eZ = +9m.6s., iZ = +9m.50s., iSN = +11m.50s., iSE = +11m.52s., eN = +12m.47s., eE = +12m.49s., eE = +16m.37s.
Butte PP = +7m.48s.
East Machias e = +6m.46s., ePP = +7m.45s., e = +8m.17s., eP$_c$P = +8m.57s., eSS = +13m.21s., e = +14m.36s., i = +15m.7s.
Seven Falls PPP = +8m.21s., SS = +14m.40s.
Ferndale eE = +7m.9s. and +12m.17s.
Saskatoon PPPN = +8m.27s.
La Paz i = +17m.18s.
Sitka e = +15m.58s. and +17m.17s., eS$_c$S = +18m.25s.
Ivigtut pP = +9m.59s., PPP = +12m.33s., sS = +17m.58s., eN = +22m.21s.
Rathfarnham Castle i = +12m.36s.
Edinburgh i = +21m.3s. and +21m.17s.
Jersey ipP = +12m.29s., i = +12m.47s., isP = +12m.52s., ePP = +14m.36s., eSS = +22m.39s.
Oxford i = +22m.36s. and +35m.38s.
Toledo i = +12m.31s., e = +12m.48s. and +22m.49s.
Kew ipP = +12m.33s., isPE = +12m.51s., isSE = +22m.46s.
Uccle ipPEZ = +12m.50s., ipSEN = +23m.1s., isSSE = +28m.45s., eN = +33m.50s.
De Bilt iZ = +12m.51s. and +15m.56s., e = +23m.24s.
Hamburg eZ = +13m.2s., eE = +23m.23s., iE = +23m.48s., eN = +35m.21s.?
Strasbourg ipPZ = +13m.5s., eZ = +13m.12s., isPZ = +13m.23s., eZ = +13m.32s. and +14m.17s., pPPZ = +16m.16s., pPPPz = +18m.24s., e = +19m.12s.
Copenhagen pP = +13m.7s., PP = +15m.40s., pPP = +16m.20s., S = +22m.43s., SP = +23m.36s., PS = +24m.2s., e = +24m.50s., SS = +29m.15s.
Stuttgart ipPZ = +13m.10s., isPZ = +13m.26s., ePP = +15m.46s., epPP = +16m.24s., esS = +23m.57s., e = +24m.51s., eSS = +28m.21s.
Cheb e = +15m.57s.
Prague ePS = +24m.9s.
Triest i = +16m.57s., +23m.17s., and +24m.21s.?
Zagreb e = +24m.27s.
Pulkovo PP = +16m.28s., e = +24m.21s.
Moscow e = +13m.59s., PP = +17m.5s., e = +25m.8s.
Bucharest e = +19m.2s., +20m.7s., +23m.41s., +24m.57s., and +25m.1s., SE = +26m.17s., SN = +26m.21s., i = +27m.21s.
Sverdlovsk PP = +18m.10s., SKS = +24m.13s., PPS = +28m.2s.
Vladivostok SS = +33m.37s.
Helwan pP = +19m.33s., e = +19m.56s. and +20m.56s., PP = +21m.41s., PPP = +24m.36s., e = +26m.1s. and +28m.13s., SKS = +29m.1s., SS = +31m.31s.
Irkutsk e = +28m.33s.
Ksara ipPP = +19m.34s., esPP = +20m.0s., eSP = +28m.2s.
Tiflis eEZ = +19m.33s., eZ = +21m.7s., eE = +24m.39s., eZ = +34m.9s.
Baku PS = +28m.30s.
Chiufeng i = +19m.50s., PP = +22m.22s., iZ = +23m.53s., SKKSN = +29m.28s.
Tashkent SKSP = +30m.35s., eSS = +36m.15s., eSSS = +40m.27s.
Manila iEN = +23m.28s.

June 8d. **Readings also at 0h. (Ksara, St. Louis, near Florissant, Little Rock, and near Nagoya), 3h. (Christchurch), 5h. (Moscow, Sverdlovsk, Tiflis, and Vladivostok), 6h. (La Paz and Paris), 8h. (Oak Ridge), 9h. (Amboina), 10h. (Christchurch, Adelaide, Riverview, Sydney, Wellington, and Pasadena), 11h. (Ksara), 12h. (Tiflis), 13h. (Amboina), 14h. (Grozny and Tiflis), 16h. (Andijan and Samarkand), 18h. (near Bucharest).**

June 9d. Readings at 2h. (near Medan), 5h. (Andijan and Samarkand), 7h. (near Manila), 10h. (near Kobe and Sumoto), 11h. (near Malaga), 13h. (Ksara, Tiflis, and near Baku), 14h. (Andijan and near Almata), 15h. (Erevan, Tiflis, Ksara, Sverdlovsk, and near Baku), 16h. (Andijan and Samarkand), 17h. (near Manila), 18h. (Samarkand), 19h. (La Paz), 21h. (Calcutta, Berkeley, San Francisco, and near Ferndale), 22h. (near Hukuoka B), 23h. (Wellington).

June 10d. Readings at 1h. (De Bilt, Copenhagen (2), Budapest, Prague, Kecskemet, Stara Dala, Vienna, Stuttgart, and Triest), 2h. (Bucharest, Zagreb, near Belgrade, and Triest), 5h. (Oaxaca, Tacubaya, Andijan, and near Sofia), 14h. (near Kobe (2) and Sumoto), 15h. (Baku, Tashkent, Sverdlovsk, Ksara, Moscow, Pulkovo, Copenhagen, De Bilt, Paris, Strasbourg, Stuttgart, Oak Ridge, Pasadena, Riverside, Tinemaha, and San Juan), 16h. (Chiufeng, Zinsen, near Taikyu, Heizyo, and Keizyo), 17h. (Almata, Tashkent, Sverdlovsk, Moscow, Husan, Irkutsk, Baku, Copenhagen, and Stuttgart), 19h. (Malabar), 21h. (Hong Kong, Sverdlovsk, Tashkent, near Manila, and near Sotchi), 23h. (La Paz).

June 11d. Readings at 3h. (Moscow and Pulkovo), 7h. (Mizusawa), 9h. (near Malaga), 10h. (La Paz and Pasadena), 12h. (Tashkent and Sverdlovsk), 13h. (Hong Kong, Manila, Baku, Sverdlovsk, and De Bilt), 14h. (Tiflis, Santiago (4), near Baku, near Grozny, near Granada, and Malaga), 16h. (near Malaga), 17h. (Hukuoka B), 21h. (near Santiago and San Javier).

June 12d. 18h. 8m. 6s. Epicentre 28°·7N. 144°·8E.

$A = -\cdot7179$, $B = +\cdot5064$, $C = +\cdot4777$; $\delta = +2$; $h = +2$;
$D = +\cdot576$, $E = +\cdot817$; $G = -\cdot390$, $H = +\cdot275$, $K = -\cdot879$.

Tables for focal depth 0·020 have been used.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Nagoya		9·3	316	2 16	+ 4	4 0	+ 6	—	4·3
Kobe		10·1	309	e 2 21	− 1	4 8	− 5	—	—
Sumoto		10·2	307	e 2 18	− 5	i 4 6	−10	—	4·1
Toyooka		10·9	312	2 31	− 1	4 26	− 6	—	4·5
Mizusawa		10·9	345	2 56	+24	i 5 12	+40	—	—
Hukuoka B		13·2	295	e 2 46	−16	4 50	−36	—	—
Husan		14·9	299	e 3 2	−22	e 5 26	−39	—	—
Keizyo		17·3	305	—	—	e 6 18	−40	—	—
Zinsen		17·5	305	e 2 59	−56	e 5 24	?	—	—
Vladivostok		17·8	328	e 3 51	− 8	e 7 2	− 7	10·9	12·0
Chiufeng		26·2	304	5 59a	+37	8 43	−57	—	11·0
Manila		26·2	243	e 5 26	+ 4	9 53	+13	—	—
Irkutsk		38·1	320	e 8 4	+59	e 12 5	−40	14·9	15·3
Andijan		59·2	303	—	—	e 18 43	+63	—	—
Tashkent		61·3	304	i 17 4	?	e 18 30	+24	—	33·8
Sverdlovsk		63·4	323	9 51	−24	e 19 48	+75	25·9	—
Baku		75·5	308	e 11 24	− 4	e 20 2	−52	e 38·9	—
Moscow		75·7	327	—	—	e 20 11	−45	e 41·4	43·1
Tiflis	E.	78·3	312	e 11 45	+ 1	e 20 46	−58	—	—
Tinemaha		78·3	55	i 11 45	+ 1	—	—	—	—
Mount Wilson		79·8	57	i 11 52	0	—	—	—	—
Pasadena		79·8	57	i 11 51k	− 1	—	—	—	—
Riverside	z.	80·4	57	i 11 54	− 1	—	—	—	—
La Jolla	z.	81·0	58	i 11 58	0	—	—	—	—
Ksara		88·4	308	e 13 7	+32	e 23 17	+13	—	—

Additional readings :—
Kobe eE = +3m.24s.
Chiufeng iE = +6m.47s.
Manila iNZ = +6m.19s.
Sverdlovsk i = +11m.17s.
Moscow e = +20m.39s. and +22m.40s.
Tiflis eE = +25m.47s.
Tinemaha iZ = +13m.19s.
Mount Wilson iZ = +13m.27s.
Riverside iZ = +13m.31s.
Long waves were also recorded at Hong Kong, Pulkovo, and a few other European stations.

June 12d. Readings also at 3h. (Yalta), 7h. (Amboina, Sverdlovsk, and Irkutsk), 8h. (Tacubaya, Mount Wilson, Pasadena, Tinemaha, Tiflis, and Wellington), 12h. (near Granada), 15h. (near Berkeley), 16h. (Berkeley, Lick, near Branner, and Fresno), 17h. (Andijan), 19h. (near Branner), 20h. (Andijan and Samarkand).

June 13d. 4h. 34m. 12s. Epicentre 31°·0N. 132°·4E. (as on 1937 Jan. 5d.).

$A = -\cdot5790$, $B = +\cdot6341$, $C = +\cdot5125$; $\delta = -2$; $h = +1$;
$D = +\cdot738$, $E = +\cdot674$; $G = -\cdot346$, $H = +\cdot378$, $K = -\cdot859$.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Hukuoka		3·1	327	0 23	−28	0 54	−35	1·1
Hukuoka B		3·1	327	e 0 24	−27	0 57	−32	—
Sumoto		3·9	30	e 1 7	+ 5	e 1 47	− 3	2·3
Kobe	E.	4·4	30	e 1 9	− 1	e 2 4	+ 2	2·4
	N.	4·4	30	e 1 15	+ 5	e 2 1	− 1	2·4
	Z.	4·4	30	e 1 16	+ 6	e 1 57	− 5	2·4
Husan		5·0	325	e 1 17	− 1	e 1 59	−19	—
Nagoya		5·6	41	e 1 15	−12	2 12	−21	—
Taikyu		5·8	328	e 1 32	+ 3	e 2 27	−11	—
Zinsen	N.	8·0	325	e 2 2	+ 2	e 3 35	+ 2	—

Additional readings:—
Sumoto eZ = +1m.10s.
Long waves were also recorded at Vladivostok, Stuttgart, and Tashkent.

June 13d. 23h. 23m. 45s. Epicentre 15°·2N. 98°·7W.

$A = -\cdot1460$, $B = -\cdot9544$, $C = +\cdot2606$; $\delta = +11$; $h = +6$;
$D = -\cdot988$, $E = +\cdot151$; $G = -\cdot039$, $H = -\cdot258$, $K = -\cdot965$.

Felt Scale IV at Oaxaca, III in the Federal district. Noticed in the States of Oaxaca, Guerrero, and Chiapas.
Serie seismologica tremblores registrados Enero, 1935, al Diciembre, 1939. Instituto de Geologia Mexico, 1942. P. 29.

Epicentres attributed 16°·1N. 98°·2W. Tacubaya.
15°·5N. 98°·0W. U.S.C.G.S.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Oaxaca	N.	2·6	46	0 38	− 6	—	—	—	—
Puebla	N.	3·9	6	0 25?	?	—	—	—	—
Tacubaya	N.	4·3	353	1 2	− 6	—	—	—	—
Vera Cruz	Z.	4·7	31	1 5	− 9	—	—	—	—
Manzanillo	N.	6·6	306	e 1 45	+ 4	—	—	—	—
Guadalajara	N.	7·0	321	1 47	+ 1	—	—	—	—
Merida	N.	10·3	55	—	—	i 4 19	−11	—	—
Mazatlan	N.	10·8	318	e 2 42	+ 3	—	—	—	—
Tucson		20·2	329	4 41	+ 2	e 8 25	+ 4	i 10·5	—
La Jolla		24·3	320	i 5 21	+ 1	e 9 56	+19	—	—
St. Louis	E.	24·4	16	e 5 20	− 1	e 9 37	− 2	—	16·6
Columbia		24·6	37	e 5 21	− 2	e 9 45	+ 3	e 14·8	—
Florissant		24·6	16	e 5 22	− 1	e 9 40	− 2	e 15·2	16·0
Denver		25·0	349	e 4 56	−31	e 9 26	−23	e 11·1	12·6
Riverside	Z.	25·2	322	i 5 17	−12	—	—	—	—
Mount Wilson		25·8	322	e 5 37	+ 3	e 10 16	+14	—	—
Pasadena		25·8	322	i 5 38k	+ 4	i 10 19	+17	e 12·2	—
Des Moines		26·7	9	—	—	e 8 50	?	e 14·1	—
Tinemaha		27·9	326	i 5 55	+ 1	—	—	—	—
Chicago		28·3	17	e 5 53	− 4	e 10 29	−14	e 10·9	—
Fresno	N.	28·5	322	(e 6 7)	+ 8	—	—	—	—
Madison		28·9	13	i 6 10	+ 7	e 11 1	+ 8	e 18·2	—
Lick	E.	30·0	322	e 6 19	+ 7	—	—	e 16·2	—
Berkeley		30·7	322	e 6 12	− 7	e 11 28	+ 7	e 15·3	—
San Juan		31·3	80	e 6 25	+ 1	e 11 38	+ 7	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bozeman	32·1	344	e 6 20	−11	e 11 20	−23	e 16·8	—
Ukiah	32·1	323	(e 6 33)	+ 2	—	—	e 6·6	—
Philadelphia	32·1	35	e 6 26	− 5	e 11 36	− 7	e 18·6	—
Toronto	32·8	26	6 37	0	11 54	0	17·2	—
Williamstown	35·1	34	i 6 57	0	e 12 34	+ 4	—	—
Huancayo	35·6	138	—	—	e 12 57	+19	e 18·8	—
Ottawa	35·8	28	7 3	0	12 44	+ 3	19·2	—
Oak Ridge	35·8	35	e 7 2	− 1	e 12 41	0	e 24·8	—
Weston	35·9	35	i 7 4a	0	i 12 43	+ 1	—	—
Vermont	36·3	31	e 7 7	0	e 12 51	+ 3	e 23·4	—
Saskatoon	37·4	351	e 6 12	?	—	—	18·2	—
Shawinigan Falls	38·0	29	7 23	+ 2	13 17	+ 3	22·2	—
Victoria	38·8	334	7 28	0	13 27	+ 1	19·2	—
Seven Falls	39·4	30	7 10	−23	12 54	−41	23·2	—
East Machias	39·6	35	e 7 38	+ 3	e 13 44	+ 6	e 24·6	—
La Paz N.	43·6	135	8 33	+25	15 6	+28	21·9	29·4
Honolulu	56·2	286	e 16 23	?	e 17 39	+ 6	e 30·8	—
Ivigtut	58·3	26	10 0	+ 1	18 9	+ 8	33·2	—
Rio de Janeiro	66·2	123	—	—	e 19 53	+13	e 32·2	—
Rathfarnham Castle	79·4	38	e 12 37	+28	—	—	38·2	—
Edinburgh	80·6	35	e 12 24	+ 8	e 22 27	+ 4	e 45·2	—
Aberdeen	80·9	34	e 12 23	+ 6	e 23 27	+61	—	53·0
Stonyhurst	81·5	37	—	—	e 22 35	+ 3	e 50·2	—
Durham	81·8	36	e 12 21	− 1	e 22 42	+ 7	—	—
Jersey	82·9	41	—	—	e 22 57	+11	36·5	—
Kew	83·4	39	e 12 35	+ 5	e 22 57	+ 6	e 43·2	—
Granada	84·9	54	e 12 15?	−23	e 23 15?	+ 9	—	—
Paris	85·9	41	e 12 50	+ 7	—	—	45·2	—
De Bilt	86·4	37	12 52	+ 7	e 23 30	+ 9	e 45·2	55·7
Uccle	86·4	39	e 12 50	+ 5	e 23 22	+ 1	e 43·2	—
Hamburg	88·6	35	e 13 39	+43	e 23 45	+ 3	e 49·2	—
Copenhagen	89·0	32	13 9	+11	23 51	+ 6	42·2	—
Strasbourg	89·2	40	e 13 0	+ 1	e 23 44	− 3	47·2	55·2
Stuttgart	90·0	39	e 13 10	+ 7	e 24 24	+30	e 49·2	55·2
Cheb	91·4	38	e 16 15?	PP	e 23 57	−10	—	57·2
Prague	92·6	37	e 17 15?	PP	e 24 57	+39	—	58·2
Triest	94·2	41	e 13 22	0	24 11	−20	—	52·2
Pulkovo	94·7	23	13 29	+ 5	24 7	[+ 8]	43·2	59·0
Moscow	100·4	23	—	—	e 24 20	[− 9]	e 37·8	61·6
Bucharest	102·3	36	—	—	e 24 52	[+14]	62·8	—
Sverdlovsk	106·2	11	e 18 45	PP	e 25 4	[+ 8]	49·8	—
Tiflis z.	114·1	29	e 13 51	?	e 29 19	PS	e 59·2	—
Ksara	114·8	41	e 18 44	[+ 2]	—	—	—	—
Baku	117·5	26	e 20 19	PP	e 29 58	?	e 57·2	70·6

Additional readings and notes :—
Tucson i = +4m.48s., e = +9m.50s., i = +10m.23s.
St. Louis epPE = +5m.26s., eSSE = +10m.35s. ; T_o = 23h.23m.53s.
Columbia e = +9m.53s., eSS = +10m.17s.
Florissant ipPZ = +5m.29s., ePPZ = +5m.50s., isSNZ = +9m.47s.
Denver ePPE = +5m.37s., ePPPN = +5m.44s., e = +6m.24s., eN = +10m.2s., eE = +10m.5s.
Riverside eEN = +5m.28s.
Des Moines e = +11m.11s.
Chicago e = +10m.45s., eS_oS = +16m.45s.
Fresno P is regarded as a misprint and is here reduced by 10m.
Lick eE = +7m.18s.
Berkeley eEN = +6m.24s., iN = +11m.29s., eZ = +12m.5s.
San Juan e = +4m.3s.
Bozeman e = +14m.3s.
Williamstown i = +7m.59s. and +8m.18s., eSS? = +14m.46s.
Huancayo e = +15m.37s. and +15m.57s.
Oak Ridge ePP = +8m.19s.
Weston iEZ = +7m.36s., ipPNZ = +8m.8s., esSE = +17m.34s.
Vermont iS = +12m.57s.
Victoria PPP = +9m.3s.

Continued on next page.

Seven Falls PP = +8m.12s.
East Machias ePPP = +9m.0s., eSS = +14m.45s.
La Paz SSN = +18m.27s.
Honolulu e = +25m.19s. and +26m.40s.
Edinburgh e = +15m.25s.
Kew ePPZ = +15m.48s.
De Bilt PPZ = +16m.9s., eSSE = +29m.3s.
Uccle ePPE = +16m.8s., ePSEN = +24m.17s., SSE = +28m.59s.
Copenhagen PP = +16m.33s., +23m.39s., and +29m.39s.
Strasbourg ePPZ = +16m.29s.
Stuttgart ePP = +16m.38s., eSKS = +23m.46s., eSS = +29m.51s.
Triest PS = +25m.3s.
Pulkovo PP = +17m.9s., S_cS = +25m.8s., SS = +30m.57s.
Bucharest e = +27m.18s.
Tiflis eZ = +19m.23s., +22m.7s., and +23m.49s.
Ksara ePP = +19m.42s., ePS = +29m.26s., eSS = +40m.20s.
Long waves were also recorded at Branner, Ferndale, Sitka, College, and Hong Kong.

June 13d. Readings also at 3h. (Lick, San Francisco, near Berkeley (2), and Branner (2)), 4h. (Tiflis), 6h. (Triest), 7h. (Oak Ridge, Nagoya, near Sumoto, and near Hukuoka B), 10h. (Oak Ridge and Williamstown), 11h. (Seattle), 12h. (Sverdlovsk and Tashkent), 14h. (Berkeley, Lick, and near Branner), 15h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 17h. (Fresno, near Branner, and Lick), 18h. (Oak Ridge), 20h. (Grozny, Tiflis, and near Erevan), 22h. (San Juan), 23h. (La Paz).

Jan. 14d. 12h. 30m. 46s. Epicentre 21°·0S. 169°·5E.

Foreshock of larger earthquake at 13h. from this origin.

A = −·9188, B = +·1703, C = −·3563; δ = +15; h = +4;
D = +·182, E = +·983; G = +·350, H = −·065, K = −·934.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		17·8	165	—	—	e 7 59	+31	—	—
Riverview		20·6	228	i 4 49a	+ 6	e 8 46	+17	e 10·4	12·2
Sydney		20·6	228	e 4 34	− 9	e 8 34	+ 5	12·2	13·6
Wellington		20·7	169	4 39	− 5	7 38	−53	i 11·5	13·2
Christchurch		22·6	174	i 4 52a	−11	8 57	−10	11·3	—
Melbourne		27·0	226	i 5 47?	+ 2	10 30	+ 8	13·4	15·1
Perth		48·8	246	e 19 44	?	23 29	?	25·6	—
Manila		59·3	303	e 10 16	+10	19 5	+51	—	—
Chiufeng		78·5	322	e 12 13	+ 9	i 22 9	+ 8	—	—
Berkeley		86·8	48	—	—	e 30 14	?	e 35·7	—
Pasadena		87·9	53	i 12 51a	− 2	—	—	e 40·2	—
La Jolla	z.	88·0	54	i 12 51	− 2	—	—	—	—
Mount Wilson	z.	88·1	53	i 12 52a	− 2	—	—	—	—
Tinemaha	z.	89·2	50	i 12 59	0	—	—	—	—
Irkutsk		92·3	326	—	—	e 23 14?	[−32]	45·2	—
Tucson		92·7	57	e 13 14	− 1	—	—	e 42·8	—
Tashkent		111·0	308	—	—	e 29 13	?	—	—
Oak Ridge	z.	125·0	53	i 8 5	?	—	—	—	—
Seven Falls		125·2	47	—	—	e 30 14?	?	61·2	—
Baku		125·6	306	—	—	e 28 2	{+11}	—	—
San Juan		127·8	83	e 11 38	?	—	—	—	—
Tiflis	z.	129·4	307	e 19 14	[+ 3]	e 21 35	PP	—	—
Moscow		130·3	328	e 19 22	[+10]	e 22 25	?	—	—
Pulkovo		131·7	334	e 19 22	[+ 7]	e 22 39	?	—	—
Ksara		137·2	297	e 19 26	[+ 1]	e 22 32	PP	—	—
Copenhagen		141·4	341	19 14?	[−19]	—	—	—	—
Hamburg	N.	143·9	341	—	—	e 24 38	?	—	—
Cheb		145·8	334	—	—	e 35 14?	PPS	—	—
De Bilt		146·7	343	e 19 46	[+ 4]	—	—	e 77·2	—
Zagreb		147·1	325	e 19 50	[+ 7]	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Stuttgart		148·1	336	e 19 49	[+ 5]	e 21 19	?	—	—
Strasbourg	Z.	148·8	337	e 19 52	[+ 7]	e 23 32	PP	—	—
Chur		149·5	335	e 19 54	[+ 8]	—	—	—	—
Zurich		149·5	336	e 19 51	[+ 5]	—	—	—	—
Basle		149·8	336	e 19 53	[+ 6]	—	—	—	—
Neuchatel		150·4	336	e 19 54	[+ 6]	—	—	—	—
Paris	Z.	150·4	342	e 19 58	[+10]	—	—	—	—

Additional readings :—
Riverview iEN = +4m.54s., iN = +8m.52s., iSSE = +9m.8s.
Wellington PP = +4m.44s., i = +4m.51s. and +5m.3s., PPP = +5m.16s., i = +9m.32s.
Christchurch iNZ = +9m.9s., L_qE = +9·7m., S_cSN = +15m.56s.
Perth PP = +20m.9s., P_cP = +23m.44s., SS = +24m.0s.
Irkutsk e = +37m.14s.?
Tucson eP = +13m.20s., e = +13m.36s., ePS = +25m.33s.
Tashkent e = +30m.1s., +31m.39s., +34m.47s., and +39m.13s.
Seven Falls e = +38m.14s.?
Baku e = +41m.35s.
Tiflis eZ = +23m.23s., +32m.47s., and +40m.24s.
Moscow e = +22m.39s.
Ksara e = +32m.22s. and +34m.34s.
Cheb e = +45m.14s.?
Zagreb eNE = +20m.19s.
Long waves were also recorded at Hong Kong, Ukiah, Philadelphia, and College.

Jan. 14d. 13h. 10m. 21s. Epicentre 21°·0S. 169°·5E. (as at 12h.).

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni		17·8	165	—	—	i 7 33	+ 5	—	—
Apia		19·2	72	e 4 34	+ 6	e 7 58	− 1	—	—
Riverview		20·6	228	i 4 47a	+ 4	e 8 45	+16	e 10·6	15·6
Sydney		20·6	228	e 4 44	+ 1	i 8 57	+28	10·7	13·2
Wellington		20·7	169	4 43	− 1	8 37	+ 6	i 10·6	12·6
Christchurch		22·6	174	i 5 9a	+ 6	i 9 1	− 6	—	—
Melbourne		27·0	226	i 6 44	PP	10 32	+10	13·3	16·8
Honolulu		52·8	39	e 9 55	+36	e 16 4	−43	21·3	—
Manila		59·3	303	e 10 7	+ 1	18 42	+28	—	—
Batavia	Z.	62·3	275	10 29	+ 3	—	—	—	—
Hong Kong		69·0	306	20 18	S	(20 18)	+ 4	—	36·2
Vladivostok		72·6	333	e 11 37	+ 6	—	—	35·0	41·8
Chiufeng		78·5	322	e 12 1?	− 3	22 5	+ 4	e 34·0	39·8
Pasadena	Z.	87·9	53	e 12 51	− 2	—	—	e 39·6	—
Mount Wilson	Z.	88·1	53	e 12 42	−12	—	—	—	—
Tinemaha	Z.	89·2	50	e 12 56	− 3	e 16 24	PP	—	—
Calcutta	N.	90·2	294	e 19 43	?	e 24 22	+26	—	—
Colombo		92·1	277	10 42	?	—	—	—	56·6
Irkutsk		92·3	326	e 14 39?	?	e 24 39?	+24	47·6	—
Tucson		92·7	57	e 13 11	− 4	—	—	e 41·8	—
Kodaikanal	E.	95·5	280	e 12 39?	−49	—	—	—	—
Agra	E.	100·6	296	—	—	i 25 7	−18	—	—
Huancayo		108·4	112	—	—	e 24 27	[−38]	—	—
Tashkent		111·0	308	e 14 45	P	e 21 48	PP	—	60·6
Rio de Janeiro		124·0	143	e 23 39?	PPP	—	—	—	—
Oak Ridge		125·0	53	e 16 39?	?	e 22 39?	PP	e 60·6	—
Baku		125·6	306	e 21 7	PP	e 27 54	{+ 3}	e 59·6	68·6
East Machias		127·9	50	e 17 33	?	—	—	e 49·6	—
Tiflis	Z.	129·4	307	e 18 25	[−46]	e 23 22	?	e 62·6	81·4
Moscow		130·3	328	e 21 49	PP	—	—	e 68·2	106·0
Pulkovo		131·7	334	e 19 18	[+ 3]	—	—	65·6	74·8
Ksara		137·2	297	e 19 33	[+ 8]	e 33 27	PS	—	—
Helwan		141·4	293	—	—	e 25 27	PPP	—	88·6
Bucharest		141·8	317	e 21 29	?	—	—	41·0	93·6
Aberdeen		143·4	354	e 19 52	[+16]	—	—	—	92·9

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Hamburg	143·9	341	e 19 39?	[+ 2]	—	—	—	79·6
Edinburgh	144·7	354	—	—	e 40 39?	SS	—	—
Prague	144·9	333	19 39?	[0]	—	—	—	79·6
Durham	145·6	352	e 19 42	[+ 2]	—	—	—	—
De Bilt	146·7	343	e 19 46	[+ 4]	—	—	e 76·6	80·2
Zagreb	147·1	325	e 19 49	[+ 6]	—	—	—	—
Rathfarnham Castle	147·6	356	e 21 41	?	—	—	68·6	—
Stuttgart	148·1	336	e 19 47	[+ 3]	—	—	e 66·6	—
Triest	148·4	328	e 19 42	[− 3]	i 21 45	?	—	—
Kew	148·6	348	e 19 48	[+ 3]	—	—	e 73·6	—
Strasbourg	148·8	337	e 19 51	[+ 6]	—	—	36·6	77·6
Paris	150·4	342	e 19 39?	[− 9]	e 23 39?	PP	64·6	88·6
Jersey	151·1	351	—	—	e 29 43	{−41}	84·6	—

Additional readings :—
Apia i = +5m.10s., e = +17m.50s.
Riverview i = +4m.50s., iE = +4m.56s. and +5m.5s., iEN = +6m.1s., iSE = +8m.49s., iN = +8m.56s., iE = +9m.1s., SSE = +9m.10s.
Wellington PP = +5m.3s., PPP = +5m.19s., i = +5m.39s., +6m.23s., and +7m.54s., P_cP = +8m.43s., SS = +9m.19s.
Christchurch e = +4m.51s., iZ = +9m.8s.
Melbourne i = +10m.59s.
Honolulu e = +15m.55s. and +16m.58s.
Manila iE = +10m.23s., iN = +16m.41s., iE = +19m.41s.
Hong Kong S? = +25m.29s.
Chiufeng iPSEN = +22m.33s., SSN = +27m.5s.
Calcutta iN = +24m.56s.
Irkutsk e = +30m.39s.?
Tashkent e = +29m.32s., +30m.0s., +34m.38s., and +36m.38s.
Baku e = +23m.9s.
Tiflis eZ = +35m.12s.
Moscow e = +22m.40s., +23m.39s., +25m.23s., +29m.40s., +32m.3s., +36m.15s., and +38m.15s.
Pulkovo e = +22m.38s. and +23m.32s.
Ksara ePP = +22m.39s.
Bucharest eN = +21m.53s., eE = +22m.39s., and +24m.11s., e = +27m.13s.
Stuttgart $ePKP_2$ = +20m.32s.
Strasbourg eZ = +20m.11s., ePPZ = +23m.28s.
Jersey e = +35m.30s. and +52m.55s.
Long waves were also recorded at Sitka, Bozeman, Vermont, Philadelphia, Ivigtut, Algiers, San Fernando, Copenhagen, and Hyderabad.

June 14d. Readings also at 0h. (Berkeley, near Branner (2), and Lick (2)), 1h. (Nagoya and near Mizusawa), 9h. (near Wellington), 13h. (near Wellington and near Yalta), 14h. (Kobe), 15h. (near Nagoya), 17h. (Malabar), 20h. (Alicante and near Nagoya).

June 15d. Readings also at 1h. (near Santiago), 3h. (Mizusawa), 4h. (La Paz and Wellington), 5h. (New Plymouth, Wellington, and Scoresby Sund), 10h. (Christchurch, Wellington, Riverview, Sydney, Mount Wilson, Pasadena, Tinemaha, Irkutsk, Sverdlovsk, Ksara, Paris, Stuttgart, and near Bagnères), 11h. (Tiflis), 12h. (Santiago (4)), 13h. (Santiago (2), Strasbourg, near Bagnères, and near Apia), 14h. (Adelaide), 15h. (Adelaide and near Bagnères), 18h. (Bagnères), 19h. (near Nagoya), 20h. (Kobe and near Mizusawa), 21h. (Christchurch, Riverview, Sydney, Mount Wilson, Pasadena, and Oak Ridge), 22h. (Sofia), 23h. (Copenhagen, Stuttgart, Paris, and near Sumoto).

June 16d. Readings at 0h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 1h. (Manzanillo), 5h. (Hukuoka and near Hukuoka B), 15h. (near Mizusawa and near Tananarive), 19h. (Irkutsk, Tiflis, Sverdlovsk, Mount Wilson, and Pasadena), 20h. (Baku, Moscow, and Scoresby Sund).

June 17d. 8h. 7m. 45s. Epicentre 33°·5N. 141°·0E.

$A = -\cdot6494$, $B = +\cdot5259$, $C = +\cdot5493$; $\delta = +2$; $h = 0$;
$D = +\cdot629$, $E = +\cdot777$; $G = -\cdot427$, $H = +\cdot347$, $K = -\cdot836$.

		Δ	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Nagoya		3·7	297	e 1 2	+ 2	2 1	S_g	2·2
Kobe		5·0	287	e 1 13	− 5	e 2 6	−12	—
Sumoto		5·2	282	e 1 21	0	2 17	− 5	2·7
Mizusawa		5·6	1	e 1 27	0	2 23	−10	—
Mount Wilson	z.	79·9	55	e 12 12	0	—	—	—
Pasadena	z.	79·9	55	e 12 12	0	—	—	—

Kobe gives also ePZ = +1m.18s., ePE = +1m.20s.
Mizusawa eSN = +2m.26s.

June 17d. 9h. 56m. 41s. Epicentre 48°·2N. 9°·2E.

$A = +\cdot6605$, $B = +\cdot1070$, $C = +\cdot7432$; $\delta = +6$; $h = -5$;
$D = +\cdot160$, $E = -\cdot987$; $G = +\cdot743$, $H = +\cdot119$, $K = -\cdot669$.

Felt Scale IV to V at Gauselfingen and Gammertingen. W. Hiller "Seismiche Berichte der Wurtembergischen Erdhebenwarten Jahrgang, 1937, Stuttgart, 1938." Anhang A1 to A6. Isoseismal Chart p. A2. Pietro Caloi "Caratteristiche seismiche fondamentali dell'europa centrale quali risultano dallo studio di 17 terremoti Centrale Europei." Extract "Bollettino della Societa Sismolog. Italiano," Vol. XL, No. 3-4, Anno 1942. Published at the Institute of Geophysics, Rome. Epicentre :—

Hiller 48°15′·3N. 9°12′·4E.
Caloi 48°13′·8N. ±1′·3 9°13′·5E. ±3′·0 $h = 17·6 \pm 5·7$.

Residuals below are given with respect to the tables for P_g and S_g'

		Δ	Az.	P_g.	O−C.	S_g.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ebingen		0·2	264	i 0 6	+ 2	i 0 10	+ 3	—	—
Stuttgart		0·6	0	e 0 12	0	i 0 19	− 1	—	—
Strasbourg		1·0	292	i 0 21	+ 1	i 0 35	+ 2	—	—
Zurich		1·0	206	e 0 20	0	i 0 34	+ 1	—	—
Basle		1·3	238	0 27	+ 1	i 0 44	+ 1	—	—
Chur		1·4	171	i 0 26	− 2	i 0 47	+ 1	—	—
Neuchatel		1·9	232	e 0 39	+ 1	e 1 4	+ 1	—	—
Jena	N.	3·2	29	e 2 5	?	—	—	i 2·6	2·8
Göttingen		3·4	8	—	—	e 1 36	S	—	1·9

Additional readings :—
Ebingen $i_0 = +9$s.
Stuttgart iE = +22s.
Strasbourg eN = +49s. and +58s., eSSN = +1m.10s.
Chur i = +28s.
Jena i = +2m.13s. and +2m.25s.

June 17d. Readings also at 2h. (College and Tiflis), 4h. (Lick, San Francisco, near Berkeley, and Branner), 6h. (Kobe), 10h. (Tiflis, Ksara, Medan, and Helwan), 14h. (Durham and Ksara), 15h. (Andijan and near Samarkand), 17h. (Irkutsk), 18h. (Mount Wilson, Pasadena, Riverside, Tinemaha, Sverdlovsk, and Tashkent), 19h. (Bucharest and Melbourne), 20h. (Strasbourg and Stuttgart), 22h. (Irkutsk, Sverdlovsk, and Tashkent), 23h. (Scoresby Sund and Tiflis).

June 18d. 9h. 7m. 24s. Epicentre 41°·1N. 120°·0W.

$A = -\cdot3779$, $B = -\cdot6545$, $C = +\cdot6548$; $\delta = -6$; $h = -2$;
$D = -\cdot866$, $E = +\cdot500$; $G = -\cdot327$, $H = -\cdot567$, $K = -\cdot756$.

Felt Scale V at Eagleville, Ravendale (California), and Flanigan, Lovelock, Vya, etc. (Nevada). F. Neumann: United States Coast and Geodetic Survey, 1937, Serial 618, Washington, p. 19, map p. 13. Epicentre Lower Lake Modoc County 41°·1N. 120°·0W. Macroseismic area 15,000 square miles.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ukiah		3·1	231	e 0 57	P*	e 1 37	S*	2·2	—
Ferndale	E.	3·3	261	e 1 3	P_g	e 1 48	S_g	—	—
Berkeley		3·7	212	e 0 59	− 1	e 1 48	+ 3	—	—
San Francisco	N.	3·8	210	e 1 6	P*	e 1 55	S_g	—	—
Fresno	N.	4·0	178	e 1 10	P*	i 2 22	S_g	—	—
Lick		4·0	200	e 1 3	− 1	i 1 50	− 2	—	—
Branner		4·0	205	e 1 8	+ 4	i 2 0	S*	—	—
Tinemaha		4·2	160	i 1 9	+ 2	i 2 19	S_g	—	—
Haiwee		5·2	163	e 1 25	+ 4	e 2 46	S_g	—	—
Santa Barbara	E.	6·6	176	—	—	e 3 7	+ 9	—	—
Mount Wilson		7·0	166	i 1 47	+ 1	i 3 43	S_g	—	—
Pasadena		7·1	166	i 1 47	− 1	e 3 33	S*	—	—
Butte		7·3	45	e 2 11	P*	e 3 46	S*	4·0	—
Riverside		7·4	162	e 1 52	0	e 3 47	S*	—	—
Bozeman		8·0	52	—	—	e 3 59	S*	e 4·2	—
Tucson		11·5	137	e 2 49	+ 1	e 5 2	+ 3	e 6·0	—
Florissant		22·8	87	e 5 3	− 2	e 12 6	L	(e 12·1)	14·2
St. Louis	E.	22·9	87	e 5 5	− 1	e 9 23	+10	e 12·2	—
Philadelphia		33·8	77	—	—	e 14 9	SS	e 17·2	—

Additional readings and notes:—
Ukiah e = +1m.17s., +1m.44s., and +1m.48s.
Ferndale eN = +1m.5s. and +1m.55s.
Berkeley eZ = +1m.2s. and +1m.7s., eN = +1m.19s., e = +1m.42s., en = +1m.45s., eZ = +1m.47s., iN = +1m.52s., eN = +1m.54s.
Lick eE = +1m.6s., iE = +1m.56s., iN = +1m.59s. and +2m.4s.
Tinemaha iEZ = +1m.22s.
Fresno iN = +1m.26s.
Haiwee iEZ = +1m.38s.
Bozeman e = +4m.5s.
Tucson e = +5m.25s.
Florissant eN = +11m.51s.
Long waves were also recorded at East Machias, Oak Ridge, Scoresby Sund, and Paris.

June 18d. Readings also at 0h. (Andijan), 2h. (Oak Ridge), 6h. (near College), 7h. (near Santiago), 8h. (near Nagoya), 12h. (Strasbourg), 14h. (near Sumoto), 15h. (La Paz), 16h. (near Christchurch and Wellington), 17h. (Hastings and La Paz), 18h. (near Nagoya), 19h. (La Paz), 22h. (near Sotchi).

June 19d. 17h. 7m. 15s. Epicentre 25°·5S. 178°·5E.

$A = -\cdot9034$, $B = +\cdot0237$, $C = -\cdot4281$; $\delta = -4$; $h = +3$;
$D = +\cdot026$, $E = +1\cdot000$; $G = +\cdot428$, $H = -\cdot011$, $K = -\cdot904$.

A depth of focus 0·070 has been assumed.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Arapuni	12·8	190	—	—	e 5 17	+13	—	—
New Plymouth	14·0	194	i 3 11	+10	5 38	+11	—	—
Apia	14·8	40	3 23	+14	e 5 48	+ 6	—	—
Wellington	16·1	190	i 3 23	+ 1	e 5 56	−10	—	—
Christchurch	18·6	194	i 3 42a	− 5	i 6 32	−18	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Riverview	25·1	244	e 4 45	− 2	i 8 30	− 7	—	13·2
Melbourne	30·9	239	i 5 38	0	i 9 58	−10	—	—
Adelaide	35·6	245	—	—	i 11 5	−15	e 19·5	24·0
Honolulu	51·9	29	e 8 30	+ 5	e 15 10	− 1	—	—
Perth	54·7	248	e 11 30	PP	i 15 35	−13	—	—
Manila	68·7	299	e 10 16	0	19 30	+49	—	—
Batavia	70·8	273	i 10 25k	− 4	i 18 50	−15	—	—
Misima	71·0	327	10 30	0	18 57	−10	—	—
Tokyo Cen. Met. Obs.	71·0	328	10 31	+ 1	18 58	− 9	—	—
Hunatu	71·4	328	10 19	−13	—	—	—	—
Kohu	71·6	327	10 33	− 1	19 7	− 7	—	—
Nagoya	72·0	327	e 10 37	+ 1	—	—	—	—
Oiwake	72·1	328	10 38	+ 2	19 12	− 7	—	—
Gihu	72·3	327	10 37	− 1	—	—	—	—
Hikone	72·5	326	10 41	+ 2	—	—	—	—
Kobe	72·6	325	e 10 37	− 2	e 19 15	−10	—	—
Nagano	72·6	328	10 39	0	19 16	− 9	—	—
Toyama	73·1	327	10 46	+ 4	—	—	—	—
Mizusawa	73·2	332	10 44	+ 1	—	—	—	—
Kumamoto	73·7	320	10 46	0	—	—	—	—
Wazima	73·8	327	10 51	+ 5	—	—	—	—
Sapporo	76·3	334	11 3	+ 3	—	—	—	—
Hong Kong	78·4	302	14 17	PP	20 15	−12	—	29·2
Vladivostok	80·6	328	e 11 22	− 1	e 20 45	− 5	e 25·0	—
Santa Barbara	83·6	48	e 11 39	+ 1	—	—	—	—
Branner	83·8	43	e 11 38	− 1	—	—	—	—
San Francisco N.	83·8	44	e 11 39	0	—	—	—	—
Berkeley	84·0	43	e 11 40	0	—	—	—	—
Lick	84·1	43	e 11 40	− 1	—	—	—	—
La Jolla	84·3	50	i 11 40	− 2	e 21 23	− 3	—	—
Pasadena	84·4	48	e 11 41k	− 1	e 21 24	− 3	—	—
Mount Wilson	84·5	48	i 11 43k	0	—	—	—	—
Riverside	84·9	49	e 11 43	− 1	—	—	—	—
Tinemaha	86·1	46	i 11 49	− 1	e 21 39	− 4	—	—
Chiufeng	87·3	317	i 11 55k	− 1	i 21 22	−33	—	—
Tucson	88·5	54	—	—	22 6	+ 1	—	—
Huancayo	99·1	107	—	—	e 22 25	−11	—	—
Irkutsk	100·7	322	e 17 18	PKP	e 22 42	[− 6]	34·8	—
La Paz	102·9	115	e 17 49	PKP	i 22 48	[−11]	—	—
Florissant	106·3	54	—	—	e 22 56	[−18]	—	—
Andijan	118·0	303	e 19 0	PP	—	—	—	—
Ottawa	118·5	49	—	—	e 23 45?	[−18]	43·7	—
San Juan	120·1	82	e 19 15	PP	23 50	[−18]	—	—
Tashkent	120·4	304	e 17 49	PKP	i 24 21	[+12]	e 43·3	51·4
Sverdlovsk	126·1	322	e 18 6	PKP	e 24 13	[−13]	39·7	—
Scoresby Sund	133·5	9	18 18	PKP	25 17	[+32]	—	—
Baku	135·0	302	e 20 57	PP	e 25 20	[+32]	e 51·7	—
Grozny	137·8	306	e 18 20	PKP	—	—	—	—
Moscow	138·6	327	e 18 13	PKP	e 24 49	[− 5]	—	38·7
Tiflis z.	138·7	304	e 18 18	PKP	—	—	—	—
Pulkovo	139·3	335	e 18 20	PKP	e 25 28	[+33]	29·7	36·3
Piatigorsk	139·5	308	e 18 23	PKP	—	—	—	—
Theodosia	144·5	313	18 39	[− 2]	e 27 53	SKKS	—	—
Simferopol	145·4	313	18 41	[− 1]	e 27 59	SKKS	—	—
Yalta	145·5	312	18 38	[− 4]	—	—	—	—
Ksara	146·6	291	i 18 42	[− 1]	e 27 48	SKKS	—	—
Copenhagen	148·2	345	18 44	[− 1]	—	—	46·7	—
Edinburgh	149·6	2	—	—	e 40 59	SS	—	—
Helwan	150·6	285	e 18 35	[−13]	i 25 45	[+34]	—	—
Hamburg z.	150·7	347	e 18 42	[− 6]	—	—	—	—

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Bucharest	150·8	317	e 19 7	[+19]	20 57	?	—	—
Bidston	152·1	3	—	—	e 33 2	PS	—	—
Jena	152·7	341	e 19 14	[+23]	—	—	—	—
De Bilt	153·0	350	e 18 51	[− 1]	e 36 23	PPS	—	—
Cheb	153·2	340	e 12 45?	?	—	—	—	—
Kew	154·0	358	e 18 53	[0]	e 41 47	SSS	—	—
Uccle	154·3	353	e 18 52	[− 1]	e 26 10	[+54]	—	—
Stuttgart	155·3	343	e 18 55	[0]	—	—	—	—
Strasbourg	155·8	345	e 18 55	[− 1]	e 25 19	[+ 1]	—	—
Jersey	156·3	1	—	—	(e 26 45?)	SKKS	e 26·8	—
Paris	156·5	353	e 18 56	[0]	—	—	40·7	—
Toledo	165·5	8	e 19 15	[−11]	—	—	—	—
Granada	168·2	8	e 18 45?	[−43]	—	—	—	—

Additional readings :—
Apia iS = +5m.53s.
Wellington i = +3m.35s., +6m.4s., +6m.19s., S_cS = +13m.53s.
Christchurch iEN = +14m.6s.
Melbourne i = +13m.17s.
Adelaide e = +14m.27s., i = +15m.19s.
Honolulu epP = +10m.7s., e = +16m.36s. and +17m.20s., esS = +18m.40s., eSS = +18m.55s., e = +19m.20s. and +20m.1s.
Perth ? = +11m.56s.
Batavia PEN = +10m.27s.
Oiwake PP = +13m.2s., S_cS = +19m.53s.
Kobe S_cSE = +20m.16s.
Nagano i = +13m.11s.
Mizusawa SE? = +11m.13s.
Vladivostok e = +13m.32s., +14m.48s., and +22m.30s.
San Francisco eE = +11m.44s.
Pasadena epPZ = +13m.52s., ePPZ = +15m.10s., iPKKPZ = +29m.33s.
Mount Wilson ipPZ = +13m.57s., isPZ = +14m.34s., iPPZ = +15m.12s., iPKKPZ = +29m.35s.
Tinemaha iZ = +14m.5s., eE = +21m.16s.
Chiufeng iEN = +14m.10s., iEZ = +15m.14s., iPS = +21m.48s.
Tucson e = +21m.33s.
Huancayo ePS = +26m.20s.
Irkutsk e = +26m.45s.?
Florissant eEN = +23m.53s., eN = +24m.34s., eSE = +27m.33s., eSN = +28m.43s.
Ottawa eN = +26m.21s. and +30m.27s.
Tashkent i = +19m.28s. and +19m.53s., e = +21m.31s., i = +22m.37s., e = +28m.17s., +31m.17s., and +34m.53s.
Sverdlovsk e = +20m.14s., +21m.22s., +23m.8s., +25m.58s., +28m.38s., and +36m.9s.
Scoresby Sund +20m.51s., e = +24m.9s. and +37m.51s.
Baku e = +34m.17s., +36m.15s., and +44m.11s.
Grozny e = +21m.9s.
Moscow i = +18m.26s., e = +21m.3s., +22m.34s., +24m.34s., +25m.29s., +27m.15s., +33m.48s., and +36m.3s.
Tiflis iZ = +21m.6s., eE = +22m.2s., +24m.24s., +32m.26s., eZ = +32m.56s. and +39m.42s.
Pulkovo e = +20m.57s., i = +21m.4s., e = +22m.3s., +24m.33s., and +27m.29s.
Piatigorsk e = +21m.10s.
Simferopol e = +21m.36s.
Yalta e = +21m.2s.
Ksara ipPKP = +21m.7s., isPKP = +22m.10s., epPP = +24m.35s.
Copenhagen i = +18m.48s., +18m.54s., +19m.2s., +19m.7s., +22m.14s., +23m.16s., and +26m.36s.
Helwan pP = +19m.8s., e = +21m.27s., PP = +21m.45s., pPP = +22m.37s., PPP = +23m.59s., SKS = +28m.25s., SKKS = +28m.40s., S = +29m.5s., SS = +30m.15s.
Bucharest eE = +19m.15s.
Bidston e = +41m.37s.
De Bilt eZ = +19m.15s., eE = +41m.38s.
Uccle eE = +19m.19s., eZ = +21m.39s., iE = +41m.52s.
Stuttgart ePKP = +19m.25s., e = +21m.21s., ePPNZ = +22m.48s., ePPPNZ = +26m.21s.
Strasbourg eZ = +19m.28s., epPKP = +21m.18s., eZ = +22m.49s. and +26m.28s., esSKSZ = +29m.52s.
Toledo e = +20m.11s. and +24m.3s.

June 19d. Readings also at 1h. (La Paz), 2h. (Kobe), 4h. (Zurich and near Chur), 5h. (near Nagoya), 7h. (Butte), 8h. (near Nagoya), 9h. (Triest), 12h. (Mizusawa and Nagoya), 13h. (Strasbourg), 15h. (Andijan), 16h. (Andijan and Nagoya), 17h. (Mizusawa, Nagoya, Mount Wilson, and Pasadena), 20h. (Almata, Andijan, Tashkent, Samarkand, near Hukuoka, Hukuoka B, and near Nagoya), 21h. (Sverdlovsk and near Santiago (2)).

June 20d. 18h. 28m. 36s. Epicentre 11°·1N. 126°·2E.

$A = -\cdot5797$, $B = +\cdot7921$, $C = +\cdot1913$; $\delta = +7$; $h = +6$;
$D = +\cdot807$, $E = +\cdot591$; $G = -\cdot113$, $H = +\cdot154$, $K = -\cdot982$.

Felt Scale V at Borongan. Scale IV at Calbayog. Epicentre 11°5′N. 126°10′E. W. Repetti. "Seismological Bulletin for 1937, Jan.-Dec.," Manila Weather Bureau.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Manila	6·2	305	i 1 32	− 3	2 49	+ 1	—	—
Phu-Lien	21·1	300	4 24?	−24	—	—	—	—
Chiufeng	30·2	344	e 6 11	− 3	11 3	−10	e 13·6	—
Irkutsk	44·7	340	e 8 25	+ 9	e 14 57	+ 3	e 23·4	—
Andijan	55·6	312	e 9 42	+ 2	—	—	—	—
Tashkent	58·0	312	i 9 53	− 4	e 17 42	−15	e 29·4	38·3
Sverdlovsk	67·5	328	i 11 1	+ 1	e 19 49	− 7	27·4	37·9
Baku	72·5	309	e 11 50	+20	e 21 4	+10	35·9	44·3
Grozny	75·5	312	e 11 48	0	—	—	—	—
Tiflis	76·3	311	11 52	0	e 21 47	+10	e 41·9	50·1
Piatigorsk	77·5	313	e 11 58	− 1	—	—	—	—
Moscow	80·1	325	12 11	− 2	e 15 7	PP	41·9	49·3
Pulkovo	83·4	330	12 28	− 2	e 21 42	−69	41·4	51·0

Long waves were also recorded at Hong Kong, Scoresby Sund, and some European stations.

June 20d. Readings also at 2h. (Merida), 3h. (Mount Wilson, Pasadena, Tinemaha, La Plata, La Paz, near Santiago (2), and San Javier), 4h. (near Santiago (2)), 5h. (Bagnères and Cheb), 7h. (near Santiago), 12h. (Almata, Grozny, near Erevan, and Tiflis), 13h. (Wellington), 17h. (Grozny and Belgrade), 18h. (near Nagoya and Sumoto), 20h. (near Nagoya).

June 21d. 15h. 12m. 59s. Epicentre 8°·3S. 79°·8W.

Felt the length of the West Coast of Peru; some damage at Triyillo and Chimboti; felt at Lima and in Columbia. Also felt in the sea 8°53′S. 80°13′W. Strasbourg gives 7°0S. 78°·6W. and United States Coast and Geodetic Survey gives 8°·3S. 79°·8W. See seismological notes, Bulletin of the Seismological Society of America Vol. 27, p. 257. Berkeley, 1937.

$A = +\cdot1753$, $B = -\cdot9740$, $C = -\cdot1434$; $\delta = -3$; $h = +7$;
$D = -\cdot984$, $E = -\cdot177$; $G = -\cdot025$, $H = +\cdot141$, $K = -\cdot990$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Huancayo		5·8	131	i 1 32	+ 3	—	—	—	—
La Paz		14·0	127	i 3 20	− 2	i 6 20	+21	—	19·2
Balboa Heights		17·2	1	e 4 7	+ 4	e 7 27	+13	—	—
Montezuma		17·7	145	i 4 5	− 5	i 7 22	− 4	e 9·5	—
Santiago		26·4	164	5 17	−23	10 1	−11	—	—
San Juan		29·8	27	i 6 10	− 1	i 11 4	− 3	—	—
Merida	N.	30·6	342	e 6 14	− 4	—	—	—	—
Vera Cruz	E.	31·7	330	i 6 42	+15	—	—	—	—
La Plata		33·2	146	6 42	+ 2	11 55	− 5	13·8	—
Tacubaya	E.	33·5	325	i 6 45	+ 2	—	—	—	—
Manzanillo	N.	36·4	319	e 7 24	+16	—	—	—	—
Guadalajara	N.	37·0	321	i 7 17	+ 4	—	—	—	—
Rio de Janeiro		38·0	116	i 7 19	− 2	i 13 9	− 5	i 17·2	21·2
Mazatlan	N.	40·7	321	e 7 57?	+13	—	—	—	—
Columbia		42·1	359	7 56	+ 1	e 13 57	−19	e 22·0	—

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		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Georgetown		47·0	4	i 8 36	+ 1	i 15 27	+ 1	—	—
St. Louis	N.	47·7	350	i 8 39	− 1	i 15 32	− 4	—	27·1
Florissant		47·9	350	i 8 41	− 1	i 15 35	− 4	i 22·9	27·2
Philadelphia		48·2	7	i 8 44	0	e 15 38	− 5	e 23·4	—
Pennsylvania		48·9	2	i 8 57	+ 7	e 15 45	− 8	—	30·1
Fordham		49·2	7	i 8 53	+ 1	i 15 59	+ 1	i 25·0	29·8
Tucson		50·0	326	i 8 59a	+ 1	e 16 7	− 2	i 25·8	—
Ann Arbor		50·5	357	9 1	− 1	i 16 19	+ 3	e 22·5	—
Chicago		50·5	352	e 8 51	−11	i 16 7	− 9	e 24·1	—
Buffalo		51·0	1	i 9 5	− 1	i 16 21	− 1	—	—
Weston		51·0	9	e 9 5a	− 1	e 16 19	− 3	e 24·2	—
Oak Ridge		51·1	9	i 9 7	+ 1	e 16 16	− 8	e 31·0	—
Williamstown		51·1	8	i 9 5	− 1	e 16 17	− 7	e 24·9	30·4
Madison		51·9	351	i 9 10	− 2	i 16 25	−10	i 20·6	—
Vermont		52·9	6	i 9 17	− 3	—	—	—	—
Denver		53·1	336	i 9 21	0	e 16 49	− 2	e 20·7	28·9
Ottawa		53·6	4	i 9 23	− 2	i 16 53	− 5	27·0	—
East Machias		54·0	11	i 9 35	+ 7	17 10	+ 7	e 22·9	—
La Jolla		54·3	321	i 9 29	− 1	e 17 8	+ 1	—	—
Shawinigan Falls		55·0	7	9 34	− 1	17 15	− 2	26·0	—
Riverside		55·1	322	i 9 35	− 1	e 17 18	0	—	—
Mount Wilson		55·7	322	i 9 41a	+ 1	e 17 22	− 4	—	—
Pasadena		55·7	322	i 9 40a	0	i 17 25	− 1	e 24·0	—
Seven Falls		55·8	8	9 38	− 3	17 23	− 5	25·0	—
Haiwee		56·9	324	i 9 46	− 3	e 17 41	− 1	—	—
Santa Barbara		56·9	321	i 9 47a	− 2	e 17 40	− 2	—	—
Tinemaha		57·8	324	i 9 55a	0	e 17 53	− 1	—	—
Fresno	N.	58·4	323	e 9 58	− 2	—	—	—	—
Lick		59·9	322	e 10 10	0	e 18 18	− 3	—	—
Branner		60·3	322	e 10 13	0	e 18 26	0	—	—
Bozeman		60·6	336	10 14	− 1	e 18 29	− 1	e 28·5	—
Berkeley		60·7	322	e 10 12	− 3	e 18 31	− 1	e 22·6	—
San Francisco		60·7	322	e 10 15	0	e 18 33	+ 1	—	—
Butte		61·5	335	10 19	− 2	18 39	− 3	e 31·1	—
Ukiah		62·0	323	10 23	− 1	i 18 50	+ 2	e 29·7	—
Ferndale		63·6	324	e 10 37	+ 2	e 19 10	+ 2	—	—
Saskatoon		64·4	342	10 31	− 9	19 13	− 5	28·0	—
Victoria		68·2	331	11 5	+ 1	20 9	+ 5	34·0	—
Ivigtut		73·6	16	11 55a	+18	21 3	− 4	30·0	—
Sitka		79·3	333	e 12 5	− 4	22 7	− 2	e 38·2	—
Averroes		80·1	55	e 12 17	+ 4	e 22 19	+ 1	e 34·0	40·0
San Fernando		81·9	52	i 12 26	+ 3	i 22 41	+ 5	40·0	—
Honolulu		82·0	293	e 12 7	−16	e 22 40	+ 3	36·9	—
Malaga		83·4	52	12 2	−28	e 22 16	−35	40·4	—
Granada		84·1	52	i 12 37	+ 3	i 22 55	− 3	—	—
Toledo		84·5	49	i 14 37	?	i 22 54	− 8	39·8	47·6
Almeria		84·9	52	e 12 37	− 1	i 23 3	− 3	e 43·5	51·5
Rathfarnham Castle		86·9	35	i 12 29	−19	i 22 43	[−30]	37·0	43·0
Scoresby Sund		87·6	17	i 12 52k	+ 1	23 36	+ 4	—	—
Tortosa		88·1	49	12 47	− 7	23 28	− 9	37·2	54·2
Bagnères		88·3	46	e 12 53	− 2	e 23 18	[− 4]	e 38·0	41·0
Jersey		88·3	40	i 12 55	0	i 23 16	[− 6]	29·6	50·4
College		88·4	337	12 49	− 6	23 14	[− 8]	e 38·6	—
Bidston		88·8	36	i 12 59	+ 2	e 23 26	[+ 1]	38·0	46·3
Algiers		89·2	53	e 12 56	− 3	23 26	[− 2]	37·0	49·0
Barcelona		89·4	48	e 12 50	−10	23 21	[− 8]	e 40·5	51·7
Edinburgh		89·4	34	i 12 59	− 1	i 23 43	− 6	e 39·0	48·7
Oxford		89·4	37	14 0k	+60	e 23 17	[−12]	e 41·5	52·6
Kew		89·9	37	i 13 3a	+ 1	e 23 29	[− 3]	38·0	45·8
Apia		90·0	255	i 13 3	0	e 23 35	[+ 2]	e 41·5	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Durham		90·0	34	13 4	+ 1	23 55	+ 1	—	59·0
Aberdeen		90·3	32	i 13 7	+ 3	i 23 33	[− 1]	45·1	53·3
Paris		91·1	41	i 13 8a	0	i 23 34	[− 5]	38·0	40·0
Marseilles		92·1	46	e 13 31?	+19	e 24 43	+30	41·7	55·0
Cape Town		92·2	124	i 13 14	+ 1	i 23 35	[−11]	e 44·8	51·3
Uccle		92·7	38	i 13 16a	+ 1	i 24 18	0	e 40·0	49·0
De Bilt		93·4	37	i 13 19a	+ 1	i 23 52	[0]	e 46·0	48·3
Neuchatel		93·8	43	e 13 20	0	e 23 34	[−20]	—	—
Strasbourg		94·5	41	i 13 24a	+ 1	i 23 54	[− 4]	i 48·1	53·5
Bergen		94·7	29	13 25	+ 1	23 57	[− 2]	—	53·2
Zurich		94·9	42	e 13 26a	+ 1	e 23 56	[− 4]	—	—
Chur		95·5	42	e 13 28	0	e 24 1	[− 3]	—	—
Stuttgart		95·5	41	i 13 29a	+ 1	e 24 3	[− 1]	e 41·0	66·8
Wellington		96·0	226	i 13 31	+ 1	e 25 26	+39	44·8	48·0
Göttingen		96·3	38	e 13 31	− 1	i 24 8	[0]	e 49·3	62·0
Hamburg		96·5	36	i 13 33a	+ 1	i 24 7	[− 2]	e 41·0	58·0
Christchurch		96·8	224	i 13 30k	− 4	23 45	[−26]	45·0	51·9
Padova		97·0	45	i 13 31	− 4	24 4	[− 8]	e 50·0	—
Jena		97·2	39	e 13 37	+ 1	i 24 13	[0]	e 42·0	56·0
Cheb		97·7	40	e 13 40	+ 2	e 24 17	[+ 2]	e 46·0	56·0
Copenhagen		98·1	34	i 13 40	0	24 13	[− 4]	48·0	—
Triest		98·3	44	i 13 41a	0	i 24 16	[− 2]	—	51·9
Laibach		98·9	44	—	—	e 25 18	+ 7	e 62·9	—
Prague		99·0	40	13 45	+ 1	24 20	[− 2]	e 41·0	51·0
Graz		99·6	43	i 13 27	−19	i 24 3	[−22]	e 39·0	54·9
Zagreb		99·9	44	e 13 49	+ 1	i 24 25	[− 1]	e 42·0	52·0
Vienna		100·2	42	i 13 51a	+ 2	24 24	[− 4]	e 48·5	60·0
Upsala		100·9	30	13 53	+ 1	i 24 24	[− 7]	e 43·0	56·2
Stara Dala		101·5	42	e 13 55	0	e 24 27	[− 7]	e 44·0	58·0
Budapest		102·1	43	e 14 1	+ 3	i 24 33	[− 4]	e 44·5	59·0
Kecskemet	z.	102·5	42	e 12 58	−62	e 24 12	[−26]	e 50·1	57·0
Belgrade		103·1	46	e 14 3a	+ 1	i 24 42	[+ 1]	e 48·5	72·6
Sofia		105·2	48	e 14 1?	P	e 24 39	[−13]	e 37·5	67·1
Bucharest		107·1	46	e 14 21	P	i 24 58	[− 1]	42·1	74·5
Pulkovo		107·2	29	14 20	P	e 26 19	0	46·0	58·0
Moscow		112·1	31	14 43	P	27 4	{+45}	56·5	68·9
Sebastopol		112·3	44	e 18 29	[− 9]	e 28 20	?	45·0	—
Helwan		112·4	61	e 18 15	[−23]	25 16	[+15]	—	63·7
Simferopol		112·7	44	18 41	[+ 3]	e 29 38	?	43·2	—
Yalta		112·8	45	e 17 59	[−39]	e 25 15	[+12]	—	—
Theodosia		113·6	44	18 43	[+ 3]	e 29 18	PS	e 39·0	—
Ksara		115·9	56	e 19 23	[+38]	e 29 53	PS?	—	—
Riverview		116·1	225	i 19 48	PP	e 36 4	SS	e 53·5	62·1
Sydney		116·1	225	i 19 1	[+16]	36 49	SS	58·2	63·5
Sotchi		116·9	44	e 18 52	[+ 6]	—	—	—	—
Melbourne		118·0	219	e 19 24	[+35]	i 26 1	[+18]	54·8	61·5
Piatigorsk		119·1	43	e 18 51	[0]	—	—	e 39·0	—
Tiflis		121·0	46	e 15 14	P	e 25 52	[− 1]	49·0	80·6
Grozny		121·2	43	e 19 3	[+ 8]	—	—	e 35·0	—
Tananarive		121·5	117	e 20 37	PP	37 22	SS	e 56·0	71·0
Sverdlovsk		122·6	24	15 33	P	i 26 0	[+ 2]	61·6	74·2
Adelaide		123·8	217	i 22 37	?	i 32 45	PPS	e 52·0	64·0
Sapporo		130·1	321	19 14	[+ 2]	—	—	—	—
Hakodate		131·1	320	19 23	[+ 9]	—	—	—	—
Hatinohe		131·2	318	19 13	[− 1]	—	—	61·8	—
Morioka		131·9	319	21 33	PP	—	—	—	—
Mizusawa		132·2	317	e 19 16	[0]	22 45	?	—	—
Akita		132·6	318	19 17	[0]	—	—	—	—
Sendai		132·8	315	19 22	[+ 5]	—	—	—	—
Sakata		133·2	317	19 26	[+ 8]	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mito		134·0	313	19 24	[+ 4]	—	—	—	—
Tyosi		134·0	312	19 14	[− 6]	—	—	62·1	—
Kakioka		134·2	314	19 21	[+ 1]	—	—	—	—
Niigata		134·2	317	19 30	[+10]	—	—	—	—
Tukubasan		134·3	314	19 20	[0]	—	—	—	—
Kumagaya		134·8	314	19 24	[+ 3]	—	—	—	—
Tokyo Cen. Met. Ob.		134·8	314	19 16	[− 5]	25 43	[−47]	—	—
Semipalatinsk		134·9	17	e 19 21	[0]	—	—	—	—
Yokohama		135·0	313	19 24	[+ 3]	—	—	—	—
Oiwake		135·3	314	19 24	[+ 2]	—	—	—	—
Nagano		135·4	315	19 24	[+ 2]	44 59	SSS	—	—
Hunatu		135·6	312	19 24	[+ 2]	—	—	—	—
Misima		135·6	312	19 23	[+ 1]	—	—	—	—
Vladivostok		135·6	326	19 24	[+ 2]	26 42	[+11]	41·5	84·0
Kohu		135·7	312	19 25	[+ 3]	—	—	—	—
Irkutsk		136·0	356	19 35	[+12]	29 2	{+ 5}	60·0	78·4
Wazima		136·0	317	19 26	[+ 3]	—	—	—	—
Toyama		136·1	316	19 26	[+ 3]	—	—	—	—
Kanazawa		136·6	316	19 18	[− 6]	44 9	?	—	—
Hamamatu		136·7	313	19 27	[+ 3]	—	—	—	—
Tchimkent		136·7	32	e 19 30	[+ 6]	—	—	—	—
Samarkand		136·9	38	e 19 29	[+ 4]	—	—	—	—
Nagoya		137·0	314	e 19 28	[+ 3]	—	—	—	—
Gihu		137·1	314	19 15	[−10]	—	—	—	—
Tashkent		137·2	34	19 8	[−17]	31 36	?	53·6	89·9
Perth		137·3	199	22 21	PP	—	—	69·3	—
Kameyama		137·5	314	19 31	[+ 5]	—	—	—	—
Osaka		138·3	314	19 28	[0]	—	—	—	—
Osaka B		138·4	314	20 36	[+68]	—	—	—	—
Toyooka		138·4	316	e 22 11	PP	—	—	65·4	—
Kobe		138·5	314	19 29a	[0]	—	—	e 62·7	71·9
Wakayama		138·8	314	19 27	[− 2]	—	—	—	—
Frunse		138·9	28	e 19 32	[+ 3]	—	—	—	—
Sumoto		138·9	314	19 29	[0]	—	—	e 66·7	—
Andijan		139·3	32	e 19 33	[+ 4]	—	—	e 66·6	—
Almata		139·6	25	e 19 14	[−16]	—	—	39·0	—
Hamada		140·6	316	19 6	[−25]	—	—	—	—
Matuyama		140·7	315	19 34	[+ 3]	—	—	—	—
Taikyu		142·3	321	19 20	[−14]	—	—	67·5	—
Zinsen		142·4	326	e 19 34	[0]	—	—	41·0	90·0
Hukuoka B		142·5	316	19 41	[+ 7]	e 29 11	{−25}	e 40·4	—
Husan		142·5	319	19 33	[− 1]	—	—	—	—
Kumamoto		142·7	315	19 30	[− 5]	—	—	—	—
Miyazaki		142·7	313	19 29a	[− 6]	30 33	{+56}	67·5	—
Unzendake		143·1	316	19 35	[− 1]	—	—	—	—
Kagosima		143·5	314	19 39	[+ 3]	—	—	—	—
Tomie		144·1	316	19 37	[0]	—	—	—	—
Chiufeng		145·3	339	i 19 39a	[0]	26 12	[−35]	62·1	90·1
Nake		145·9	310	19 43	[+ 3]	—	—	—	—
Palau		146·0	271	19 44	[+ 3]	—	—	70·2	—
Amboina		149·7	248	19 39	[− 8]	—	—	—	—
Dehra Dun		149·8	39	20 1	[+14]	—	—	—	87·0
Bombay		151·4	65	i 19 51	[+ 2]	i 30 21	{− 5}	e 65·0	90·5
Agra		151·8	44	19 43	[− 7]	30 13	{−15}	—	96·0
Karenko		154·3	310	20 9	[+16]	—	—	—	—
Hyderabad		157·0	63	20 3	[+ 6]	—	—	67·0	85·4
Manila		158·7	289	i 20 1k	[+ 2]	—	—	71·0	—
Colombo		159·8	91	20 3	[+ 3]	—	—	82·8	88·8
Hong Kong		160·6	317	20 4	[+ 3]	28 46	?	44·8	52·8
Calcutta	N.	161·8	36	e 20 28	[+26]	27 20	[+14]	e 79·1	100·8
Batavia		164·2	205	i 20 7a	[+ 2]	—	—	e 76·0	—
Phu-Lien		166·1	334	e 20 9?	[+ 2]	45 53	SS	e 81·2	98·8
Medan		175·1	162	19 7	[−65]	i 31 38	{−49}	e 77·0	—

For Notes see next page.

NOTES TO JUNE 21d. 15h. 12m. 59s.

Additional readings :—
Huancayo i = +7m.59s.
Balboa Heights i = +4m.25s., eSS = +8m.11s., e = +8m.21s.
Montezuma iSS = +8m.49s.
San Juan i = +6m.13s. and +6m.41s., PP = +7m.3s., i = +8m.2s., iP_cP = +9m.17s.
Rio de Janeiro iPP = +8m.49s., iSS = +15m.28s.
Columbia e = +8m.9s., ePP = +9m.37s., eSS = +17m.5s., eSSS = +17m.41s.
Georgetown PP = +10m.26s., PPP = +11m.9s., sSS = +18m.23s.
St. Louis iN = +8m.52s. iP_cPN = +9m.24s., ePPN = +10m.33s., eN = +13m.29s., eSS = +18m.44s., isSSN = +19m.21s.
Florissant ipPNZ = +8m.50s., iP_cP = +10m.25s., iPP = +10m.36s., iPPP = +11m.27s., iPPPP = +11m.51s., iS_cP = +14m.9s., isS = +15m.51s., iSP = +15m.54s., iSS = +18m.47s., isSS = +19m.23s.
Philadelphia ePP = +10m.33s., i = +10m.53s., e = +12m.24s., +13m.30s., and +16m.49s., eS_cS = +18m.39s., i = +19m.52s.
Pennsylvania i = +9m.39s., e = +19m.55s.
Tucson i = +9m.22s., iS = +16m.11s., eS_cS = +18m.41s., e = +19m.8s., eSS = +19m.47s., e = +20m.7s.
Ann Arbor sSS = +20m.13s.
Chicago iP = +18m.59s., e = +12m.55s., and +15m.46s., iPS = +16m.22s., S_cS = +18m.48s., SS = +20m.14s., e = +22m.11s.
Buffalo iPPP = +10m.3s., i = +12m.29s., +17m.45s., and +19m.5s., iSSS = +20m.48s.
Oak Ridge iSN = +16m.20s.
Williamstown PP? = +10m.55s., PPP? = +11m.45s.
Weston ipPN = +9m.20s., iP_cPN = +10m.10s., iPPZ = +11m.10s., iSSEZ = +19m.54s., iPKP,PKPZ = +40m.3s.
Denver epPE = +9m.37s., ipPN = +9m.39s., eN = +9m.50s., eE = +10m.26s., eN = +10m.54s. and +12m.55s., eE = +13m.3s., eSN = +16m.55s., iE = +17m.2s., esSN = +17m.20s.
Ottawa PP = +11m.27s., SSN = +21m.1s., eE = +23m.7s.
East Machias e = +13m.2s., S_cS = +19m.6s.
La Jolla ePKP,PKPZ = +39m.22s.
Mount Wilson iZ = +10m.0s., ePKP,PKPZ = +39m.27s., iPKP,PKPZ = +39m.49s.
Pasadena iZ = +10m.0s., and +10m.10s., iP_cPZ = +10m.40s., eZ = +11m.11s., eSSN = +21m.26s., iPKP,PKPZ = +39m.48s.
Haiwee iP_cPZ = +10m.40s.
Santa Barbara iE = +10m.9s., iPKP,PKPNZ = +39m.50s.
Tinemaha iPKP,PKPZ = +39m.45s.
Fresno ePKP,PKPN = +39m.47s.
Lick ePKP,PKPEN = +39m.44s.
Branner ePKP,PKPN = +39m.59s.
Bozeman e = +10m.28s., eS_cS = +20m.4s., eSS = +21m.57s.
Berkeley ePN = +10m.14s., iPEZ = +12m.15s., eSN = +18m.33s., eSEZ = +18m.34s., PKP,PKPEZ = +39m.43s., ePKP,PKPN = +39m.45s.
Butte e = +10m.39s., PP = +12m.32s., e = +18m.51s., +19m.8s., and +19m.24s., SS = +22m.34s., SSS = +24m.18s.
Ukiah eSS = +22m.51s.
Victoria SS = +25m.19s.
Ivigtut +21m.36s. and +25m.43s.
Sitka iP = +12m.7s., SS = +27m.19s., eSSS = +31m.8s.
Averroes e = +12m.45s., ePP = +15m.21s., ePPPP? = +18m.47s.
Honolulu e = +13m.12s., ePP = +15m.4s., PP = +15m.43s., e = +21m.48s., PS = +22m.57s., SSS = +31m.40s., e = +35m.58s.
Malaga e = +14m.7s., PS = +23m.0s., PPP = +32m.1s., e = +35m.15s.
Toledo PP = +15m.48s., PPP = +17m.38s., SS = +28m.28s.
Rathfarnham Castle i = +12m.40s., +23m.26s., and +31m.1s.?
Scoresby Sund eZ = +13m.5s., eN = +14m.4s., eZ = +15m.52s., eN = +16m.14s., eZ = +16m.27s., eEN = +16m.36s., eZ = +18m.7s., eN = +19m.34s., eEN = +22m.16s., SKS = +23m.13s., eZ = +23m.20s., PSEZ = +24m.32s., SSEN = +29m.13s., eZ = +29m.55s.
Torotsa SE = +23m.15s.
Bagnères iE = +12m.59s., eE = +17m.25s., eS = +23m.38s.
Jersey PP = +16m.43s., PS = +24m.1s.? SS = +28m.46s.
College S = +23m.34s., e = +28m.11s., eSS = +28m.47s., e = +29m.43s.
Bidston i = +13m.11s., iS = +23m.47s.
Algiers PS = +24m.25s.
Edinburgh i = +13m.11s., +18m.56s., +23m.26s., +24m.5s., +24m.56s., +25m.38s., and +29m.50s.
Oxford i = +23m.44s.
Kew i = +13m.15s., iS = +23m.52s., iSPZ = +25m.1s., iSSE = +30m.8s., iZ = +30m.28s.
Apia ePP = +16m.22s., iS = +24m.9s., PS = +25m.27s., eSS = +30m.1s.?

Continued on next page.

Aberdeen e = +39m.0s.
Paris eSKKS = +24m.8s., e+ =27m.6s.
Marseilles eN = +14m.5s., iE = +14m.55s., eSSE = +30m.37s.
Cape Town iPPE = +16m.49s., iPS?E = +25m.24s., iPS?N = +25m.35s., iSKSN = +23m.49s., iSSN = +30m.29s., iSSE = +30m.34s., iE? = +38m.18s., iN? = +38m.28s., iE = +41m.57s.
Uccle PPE = +16m.58s., iSKSE = +23m.46s., iPSE = +25m.31s., iSSE = +30m.44s., iSSS = +34m.41s.
De Bilt eN = +24m.25s.
Strasbourg PPE = +17m.12s., PPPN = +19m.37s., SKKS = +24m.31s., PSN = +26m.9s.
Bergen PP? = +17m.15s.
Zurich eS = +25m.21s.
Stuttgart ePcP = +13m.41s., e = +14m.48s., ePPEZ = +17m.28s., e = +21m.16s., eSN = +24m.37s., ePSEZ = +25m.55s., eSS = +31m.1s., eSSS = +35m.1s.
Wellington PP = +17m.21s., PS? = +26m.11s., SS = +32m.41s., e = +41m.41s.
Hamburg ePPE = +17m.6s.? iPPPE = +19m.42s., ePSE = +26m.13s., eSSN = +31m.13s., iN = +31m.36s., eSSSE = +36m.55s.
Christchurch PPEZ = +17m.23s., SKKSEN = +24m.29s., iSN = +25m.2s., iPSE = +26m.20s., iPSNZ = +26m.25s., iPPSE = +27m.7s., iSS = +31m.42s., L_qN = +39·6m.
Jena eN = +17m.7s., eEZ = +17m.37s., eE = +26m.13s., eEN = +31m.31s.
Cheb ePP = +17m.18s., eSS = +31m.34s.
Copenhagen e = +13m.51s., PPZ = +17m.23s., and +17m.34s., eE = +17m.43s., eN = +21m.38s., iSN = +25m.7s., PS = +26m.28s., SSN = +31m.37s., eE = +31m.58s., SSSE = +37m.13s., L_q = +42·0m.
Triest iPP = +16m.26s., iE = +16m.44s., iS = +25m.3s., iPS = +26m.23s., i = +26m.30s. and +26m.53s., iSS = +31m.25s. and +31m.56s.? eGN = +41m.53s.
Laibach eNE = +28m.32s. and eNW = +36m.0s.
Prague ePS = +25m.13s., eSS = +31m.1s.
Zagreb ePePNW = +13m.57s., ePSNW = +25m.21s., eZ = +26m.41s., eNE = +27m.29s., +31m.51s., eNW = +32m.27s.
Vienna PPP = +20m.5s., SS = +31m.18s.
Upsala PPE = +17m.57s., iSN = +25m.26s., SS = +32m.19s.
Budapest eSN = +24m.38s., iPSN = +25m.24s., iN = +25m.56s.
Kecskemet eZ = +14m.14s., ePPZ = +17m.5s., eZ = +23m.5s., ePKKSZ = +33m.5s.
Belgrade PZ = +17m.30s., eZ = +18m.19s., eNE = +27m.25s.
Sofia ePP = +18m.19s.? e = +27m.43s., eSSS = +32m.31s.
Bucharest iPE = +14m.25s., iPP = +18m.51s., iE = +28m.19s., SSS = +33m.47s.
Pulkovo PKP = +18m.3s., PP = +18m.38s., PPP = +21m.3s., SKS = +24m.55s., PS = +28m.3s., SS = +33m.43s.
Moscow PKP = +18m.44s., PP = +19m.21s., SKS = +25m.17s., PS = +28m.53s., PPS = +30m.1s., SS = +35m.13s.
Helwan e = +19m.13s., PP = +19m.31s., PPP = +22m.1s., SKKS = +26m.23s., PS = +28m.59s.
Yalta e = +19m.5s. and +38m.43s.
Ksara e = +30m.53s.
Riverview eNE = +29m.38s.
Sydney i = +29m.46s.
Melbourne i = +20m.18s., +27m.11s., +29m.43s., +31m.2s., and +36m.16s.
Tiflis ePZ = +15m.24s., iPKPZ = +18m.56s., ePPZ = +19m.58s., eSKKSE = +27m.20s., ePSE = +29m.56s., eSSZ = +36m.21s., eZ = +45m.14s.
Tananarive ePSE = +30m.27s., PSN = +30m.40s., SSSEN = +42m.1s.?
Sverdlovsk iPKP = +19m.0s., PP = +20m.23s., PPS = +32m.0s., SS = +36m.55s., SSS = +41m.37s., L_q = +53·8m.
Adelaide i = +24m.7s. and +39m.43s.
Sapporo PKS = +22m.37s.
Hatinohe PKS = +22m.33s.
Mizusawa ePE = +19m.20s.
Mito PKS = +22m.49s.
Kakioka PKS = +22m.49s.
Tukubasan PKS = +22m.50s.
Tokyo PP = +22m.43s., i = +22m.55s., PPP = +25m.12s., i = +51m.1s., +62m.50s., +70m.37s., and +82m.21s.
Semipalatinsk e = +22m.47s.
Yokohama PKS = +22m.55s.
Oiwake i = +20m.3s., SKP = +22m.1s., PKS = +22m.51s.
Nagano SKP = +22m.4s., PP = +22m.47s., SP = +32m.7s., i = +35m.18s.
Vladivostok PP = +22m.0s., PKS = +22m.53s., PS = +32m.7s.
Irkutsk PP = +22m.13s., PPS = +34m.43s., SS = +39m.43s.
Toyama PKS = +22m.51s.
Kanazawa PS = +34m.43s.
Hamamatu PKS = +23m.2s.

Continued on next page.

Tchimkent e = +23m.1s.
Samarkand e = +23m.10s.
Nagoya S? = +20m.18s.
Gihu PPP = +25m.35s.
Tashkent PP = +20m.54s., SKKS = +34m.4s., PS = +36m.4s., SS = +40m.13s.
Perth P = +23m.1s., e = +43m.51s.
Osaka SP = +19m.59s., i = +21m.1s., PKS = +23m.27s., i = +25m.40s.
Toyooka ePZ = +22m.17s.
Kobe eN = +19m.45s. and +19m.52s., eZ = +21m.56s., PKPN = +23m.2s., PKPE = +23m.7s., PKPZ? = +34m.19s.
Wakayama PP = +22m.22s.
Frunse e = +23m.1s.
Sumoto PKPE = +23m.1s., PKPN = +23m.3s., eE = +46m.17s., eN = +46m.23s.
Andijan e = +23m.10s.
Almata e = +22m.51s.
Taikyu e = +23m.12s.
Zinsen ePKPZ = +19m.35s., eN = +22m.53s.
Husan e = +22m.31s. and +31m.55s.
Miyazaki PKS = +23m.15s., SSS = +46m.23s.
Chiufeng PPNZ = +23m.5s., iSKKSEN = +29m.48s., $P_cPPKS?N$ = +31m.14s., SKSP = +33m.8s., PPSN = +35m.48s., SSE = +41m.50s.
Amboina iP = +19m.45s., i = +20m.46s.
Bombay PP = +23m.23s., iE = +33m.29s., iEN = +34m.16s., eE = +35m.26s. and +36m.51s., SS = +42m.36s., SSS = +48m.28s.
Agra eN = +19m.52s., PKP_2E = +19m.55s., SKP = +23m.17s., PPS = +36m.38s., SS = +43m.3s., SSS = +48m.53s.
Manila $iPKP_2$ = +20m.38s., iEN = +22m.26s., iZ = +24m.17s., iE = +25m.34s., PSKS = +35m.1s., SS? = +43m.1s., SSS = +50m.46s.
Colombo SS? = +45m.20s.
Hong Kong ? = +24m.21s., SSN = +34m.9s., SSE = +34m.43s.
Calcutta PKP_2N = +21m.23s., SKP = +24m.1s., PPN = +28m.57s., SKKS = +31m.41s., SSN = +45m.43s., SSSN = +52m.33s.
Batavia iN = +20m.43s.
Phu-Lien PP = +24m.58s.
Medan iN = +24m.38s., iE = +24m.48s.
Isuka PKP = +19m.19s., pPP = +24m.28s., W = +67m.40s.
Long waves were also recorded at Besançon, Stonyhurst, and Keizyo.

June 21d. 19h. 5m. 57s. Epicentre 44°·6N. 149°·4E. (as on 1937 May 9d.).

A = −·6149, B = +·3637, C = +·6998; δ = +10; h = −3;
D = +·509, E = +·861; G = −·603, H = +·356, K = −·714.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa		8·2	231	e 2 2	− 1	3 25	−13	—	—
Vladivostok		12·7	269	e 3 4	− 1	—	—	6·6	8·4
Nagoya		13·4	229	e 3 21	+ 7	5 51	+ 6	—	—
Chiufeng		24·9	272	i 5 25a	− 1	e 9 54	+ 7	—	15·4
Irkutsk		30·5	301	—	—	(10 3?)	−75	10·0	10·6
Almata		50·6	296	e 8 53	− 9	—	—	—	—
Sverdlovsk		53·6	317	9 26	+ 1	—	—	29·0	34·6
Mount Wilson	z.	68·6	63	e 11 18	+11	—	—	—	—
Grozny		69·2	310	e 11 13	+ 3	—	—	—	—
Piatigorsk		70·1	312	e 11 23	+ 7	—	—	—	—
Tiflis		70·8	310	11 20	0	e 20 44	+ 9	39·0	47·8
Theodosia		73·3	317	e 11 34	− 1	—	—	—	—
Yalta		74·3	317	e 11 35	− 6	—	—	—	—
Sebastopol		74·5	318	e 11 52	+10	—	—	—	—
Stuttgart		80·7	335	e 12 15	− 1	—	—	e 47·0	—
Strasbourg		81·3	335	e 12 17	− 3	—	—	—	—

Additional readings:—
Mizusawa ePN = +2m.5s.
Mount Wilson eZ? = +11m.42s.
Long waves were also recorded at Hong Kong, Copenhagen, Tashkent, Hamburg, and De Bilt.

June 21d. 22h. 11m. 57s. Epicentre 44°·6N. 149°·4E. (as at 19h.).

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Mizusawa	8·2	231	e 2 2	− 1	3 27	−11	—	—
Vladivostok	12·7	269	e 2 38	−27	—	—	6·6	8·2
Chiufeng	24·9	272	e 5 25	− 1	e 10 1	+14	e 10·2	15·6
Irkutsk	30·5	301	—	—	(e 9 3)?	?	9·0	10·8
Sverdlovsk	53·6	317	—	—	e 20 58	SS	28·0	34·6
Tashkent	56·4	297	e 11 33	PP	e 14 6	?	28·0	35·6
Tiflis	70·8	310	11 22	+ 2	e 20 55	+20	42·6	47·6

Irkutsk gives also e = 22h.11m.
Long waves were also recorded at Pulkovo, Moscow, Copenhagen, Paris, Strasbourg, Stuttgart, and Scoresby Sund.

June 21d. Readings also at 0h. (Andijan and La Paz), 1h. (Ksara), 2h. (Tashkent, Tiflis, Sverdlovsk, De Bilt, Uccle, Stuttgart, Paris, and Scoresby Sund), 7h. (Batavia and Medan), 8h. (Hong Kong), 12h. (Arapuni), 14h. (Adelaide, Melbourne, Perth, Riverview, Sydney, Manila, Chiufeng, Irkutsk, Sverdlovsk, Tashkent, Grozny, Tacubaya, Mount Wilson, Pasadena, and Tinemaha), 15h. (New Plymouth and near Wellington), 18h. (near Hukuoka B and near Andijan), 19h. (La Paz and La Plata), 20h. (Almata, Mount Wilson, Pasadena, and near Nagoya), 22h. (Hamburg), 23h. (Sverdlovsk and Tashkent).

June 22d. 5h. 31m. 15s. Epicentre 40°·6N. 71°·5E.

A = +·2416, B = +·7221, C = +·6482; δ = −4; h = −2;
D = +·948, E = −·317; G = +·206, H = +·615, K = −·761.

	△	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Andijan	0·6	77	0 16	+ 1	0 26	0	—	0·5
Tashkent	1·9	293	i 0 30	− 4	i 0 54	− 5	i 1·0	1·1
Tchimkent	2·2	320	0 41	+ 3	1 7	+ 1	—	1·2
Frunse	3·2	45	e 0 58	+ 6	1 43	S_g	—	—
Samarkand	3·6	256	e 1 0	+ 2	1 49	S*	—	2·2
Almata	4·9	54	e 1 13	− 4	2 8	− 7	—	—
Sverdlovsk	17·7	340	e 4 8	− 2	e 7 38	+12	10·4	10·6

Additional readings:—
Tchimkent P_g = +43s., i = +45s.
Samarkand P_g = +1m.13s., S_g = +2m.3s.; the reading entered as S is given as S*.
Sverdlovsk L_q = +9·2m.
Long waves were also recorded at Tiflis, Pulkovo, Semipalatinsk, Moscow, Copenhagen, Kew, and Scoresby Sund.

June 22d. Readings also at 3h. (Seattle), 5h. (Oak Ridge, Mount Wilson, Pasadena, Tinemaha, San Juan, Huancayo, Rio de Janeiro, and La Paz), 6h. (Sverdlovsk, Tashkent, and near Nagoya), 10h. (Andijan), 16h. (Andijan, Sverdlovsk, Irkutsk, Vladivostok, Mizusawa, and Toledo), 17h. (San Juan), 21h. (near Hukuoka B and Sumoto).

June 23d. 2h. 7m. 55s. Epicentre 31°·0N. 132°·4E. (as on 1937 June 13d.).

A = −·5790, B = +·6341, C = +·5125; δ = −2; h = +1;
D = +·738, E = +·674; G = −·346, H = +·378, K = −·859.

		△	Az.	P.	O−C.	S.	O−C.	M.
		°	°	m. s.	s.	m. s.	s.	m.
Hukuoka		3·1	327	—	—	1 2	−27	—
Hukuoka B		3·1	327	0 36	−15	1 5	−24	—
Sumoto	E.	3·9	30	e 1 19	P_g	2 14	S_g	2·5
	N.	3·9	30	e 1 17	P_g	2 13	S_g	2·5
	Z.	3·9	30	e 1 39	+37	2 17	S_g	2·4
Kobe		4·4	30	e 1 46	+36	e 2 27	S_g	2·9
Husan		5·0	325	e 1 18	0	2 11	− 7	—
Nagoya		5·6	41	e 1 52	P_g	3 34	+61	—
Zinsen		8·0	325	—	—	e 3 43	+10	—

Additional reading:—
Kobe eSN = +2m.30s.

June 23d. 20h. 41m. 32s. Epicentre 31°·0N. 132°·4E. (as on June 23d.2h.).

$A = -\cdot5790$, $B = +\cdot6341$, $C = +\cdot5125$; $\delta = -2$; $h = +1$;
$D = +\cdot738$, $E = +\cdot674$; $G = -\cdot346$, $H = +\cdot378$, $K = -\cdot859$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Hukuoka		3·1	327	0 43k	− 8	1 13	−16	—	1·4
Hukuoka B		3·1	327	i 0 45a	− 6	1 13	−16	—	1·6
Sumoto		3·9	30	i 1 10a	+ 8	i 2 21	+31	—	2·6
Kobe		4·4	30	e 1 14	+ 4	e 2 27	S_g	—	2·8
Husan		5·0	325	e 1 13	− 5	2 21	+ 3	—	2·4
Toyooka	E.	5·0	23	1 26	+ 8	e 2 53	+35	—	3·1
	N.	5·0	23	1 27	+ 9	2 48	S_g	—	3·0
Nagoya		5·6	41	1 37	+10	3 40	+67	—	—
Taikyu		5·8	328	e 1 29	0	2 46	+ 8	—	—
Keizyo		7·9	327	e 1 53	− 6	e 3 53	S*	—	—
Zinsen		8·0	325	e 2 0	0	i 4 3	S*	—	4·2
Vladivostok		12·1	358	e 2 57	0	—	—	3·1	5·9
Chiufeng		16·0	309	i 3 40a	− 8	e 6 32	−14	e 7·8	10·7
Tashkent		51·0	300	e 9 23	+17	—	—	e 27·5	32·4
Sverdlovsk		54·8	321	9 30	− 4	e 17 26	+12	26·5	—
Tiflis		68·5	307	e 11 4	− 2	e 19 52	−16	e 39·0	43·4

Additional readings :—
Sumoto SE = +2m.24s.
Kobe PN = +1m.16s., eE = +2m.23s.
Toyooka ePZ = +1m.39s.
Zinsen iSZ = +4m.6s.
Chiufeng eSZ = +6m.46s.
Tashkent PP = +11m.43s., e = +24m.5s. and +26m.7s.
Long waves were also recorded at Moscow, Pulkovo, Copenhagen, De Bilt, Stuttgart, Strasbourg, and Hong Kong.

June 23d. Readings also at 1h. (Berkeley, Ferndale, Ukiah, Mount Wilson, Pasadena, Riverside, and Tucson), 2h. (Andijan), 3h. (Tiflis), 5h. (Manila), 6h. (Erevan and near Tiflis), 7h. (Berkeley, Mount Wilson (2), Pasadena, Riverside, Tinemaha, La Paz, Vienna, Christchurch, and Wellington), 8h. (Stuttgart), 10h. (near Helwan), 12h. (Neuchatel, Strasbourg, near Basle, and Zurich), 13h. (Amboina), 15h. (Florissant, St. Louis, Zurich, and near Triest), 16h. (Mount Wilson, Pasadena, Riverside, and Tinemaha), 17h. (Tiflis), 18h. (Almata, Samarkand, near Andijan, and near Mizusawa), 19h. (near Santiago (2), La Plata, and San Javier), 20h. (Basle and near Neuchatel), 21h. (near Hukuoka), 23h. (near New Plymouth and Wellington).

June 24d. 3h. Earthquake recorded West Coast America :—
Tacubaya iN = 28m.55s.
Tucson eP = 29m.32s., iP = 29m.37s., i = 29m.43s., eL = 32m.38s.
La Jolla ePZ = 30m.7s.
Riverside ePZ = 30m.20s.
Mount Wilson eP = 30m.27s.
Pasadena ePZ = 30m.28s., iP = 30m.33s., eLN = 34m.50s.
Haiwee ePN = 30m.46s.
Tinemaha iP = 30m.58s.
Madison e = 36m.13s.
Honolulu e = 36m.19s., 37m.3s., and 37m.44s., eS = 42m.6s., e = 43m.48s., L = 48m.12s.
Florissant eN = 36m.21s., eZ = 37m.36s., eN = 39m.6s.
St. Louis eE = 36m.33s. and 39m.43s.
Columbia e = 37m.24s., eL = 42m.24s.
Philadelphia eS = 39m.5s., eSS = 41m.35s., eL = 45m.7s.
East Machias e = 43m.12s. and 49m.43s.
Long waves were also recorded at Sitka, Ukiah, Oak Ridge, Chicago, Scoresby Sund, Paris, De Bilt, Copenhagen, Pulkovo, Moscow, Tashkent, Sverdlovsk, and Tiflis.

June 24d. 13h. 11m. 36s. Epicentre 8°·1N. 84°·2W.

$A = +\cdot1001$, $B = -\cdot9851$, $C = +\cdot1400$; $\delta = +4$; $h = +7$;
$D = -\cdot995$, $E = -\cdot101$; $G = +\cdot014$, $H = -\cdot139$, $K = -\cdot990$.

The smaller of two shocks whose phases are much confused. Additional readings are in general referred to the larger shock occurring 1m.52s. later.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Balboa Heights		4·7	79	i 1 12	− 2	e 2 2	− 8	—	2·4
Merida	E.	13·8	338	i 3 39	+20	—	—	—	—
Tacubaya	N.	18·4	310	i 4 24	+ 6	—	—	—	—
San Juan		20·3	58	e 4 39	− 1	—	—	—	—
Huancayo		21·9	156	i 4 59	+ 2	i 9 6	+12	—	—
Columbia		25·9	5	e 5 33	− 2	e 9 56	− 8	e 12·7	—
La Paz		29·2	146	6 8	+ 3	i 10 59	+ 1	—	—
St. Louis		30·9	350	e 7 15	PP	e 11 53	+29	e 15·4	—
Florissant	Z.	31·1	350	i 6 20	− 2	e 11 28	0	—	—
Georgetown		31·3	11	i 6 24	0	e 11 31	0	—	—
Philadelphia		32·7	13	i 6 36	0	i 11 51	− 1	16·3	—
Fordham		33·9	16	i 6 46	− 1	—	—	—	—
Tucson		34·5	318	e 6 52	0	—	—	e 18·2	—
Buffalo		35·0	7	i 6 54	− 2	i 11 34	?	17·4	—
Madison		35·1	353	e 6 34	−23	—	—	—	—
Weston		36·0	17	i 7 3a	− 2	e 12 41	− 3	e 17·3	—
Vermont		37·5	13	i 7 16	− 1	—	—	18·4	—
East Machias		39·4	19	e 7 17	−16	e 13 25	−10	—	—
Riverside	Z.	40·0	315	i 7 40	+ 2	—	—	—	—
Mount Wilson	Z.	40·6	315	i 7 47	+ 4	—	—	—	—
Pasadena		40·6	315	i 7 46a	+ 3	—	—	—	—
Haiwee	Z.	41·5	317	e 7 53	+ 3	—	—	—	—
Tinemaha	Z.	42·3	318	i 8 3	+ 6	—	—	—	—
Fresno	N.	43·1	316	i 8 11	+ 7	—	—	—	—
Lick		44·7	316	e 8 21	+ 5	—	—	—	—
Butte		45·0	333	e 8 16	− 3	e 14 46	−12	e 21·1	—
Berkeley		45·4	316	i 8 25	+ 3	—	—	—	—
La Plata		49·5	151	8 57?	+ 3	—	—	30·9	—
Ivigtut		59·3	20	10 4	− 2	18 12	− 2	24·4	—
College		71·7	337	—	—	e 20 49	+ 4	e 32·2	—
Malaga		77·0	54	11 54	− 2	21 46	+ 1	—	—
Toledo		77·3	51	i 11 57a	− 1	e 21 47	− 1	—	—
Granada		77·7	54	12 2	+ 2	e 21 47	− 5	—	—
Edinburgh		78·3	35	—	—	e 21 24?	−35	—	—
Kew		79·9	39	i 12 11a	− 1	—	—	—	—
Tortosa	N.	80·8	50	12 36	+19	—	—	e 39·4	46·4
Paris		81·8	42	e 12 20	− 2	—	—	—	—
Uccle		82·9	40	e 12 26	− 2	—	—	—	—
De Bilt	Z.	83·3	38	i 12 28	− 2	—	—	—	—
Neuchatel		84·9	43	e 12 37	− 1	—	—	—	—
Basle		85·3	43	e 12 39	− 1	—	—	—	—
Strasbourg		85·3	42	i 12 38a	− 2	—	—	—	—
Hamburg		86·0	36	e 12 41a	− 2	—	—	—	—
Zurich		86·0	43	e 12 41	− 2	—	—	—	—
Stuttgart		86·2	42	i 12 44a	0	—	—	—	—
Copenhagen		87·1	34	12 48	− 1	22 30	[−44]	36·4	—
Cheb		88·1	40	—	—	e 23 25	]+ 4]	—	53·9
Triest		89·8	44	e 12 47	−15	i 23 55	+ 2	—	—
Zagreb		91·3	44	e 13 8	− 1	—	—	—	—
Pulkovo		95·0	27	e 13 12	−14	e 23 10	[−51]	—	—
Moscow		100·3	29	—	—	e 26 16	+53	—	—
Yalta		103·8	41	e 14 40	+35	—	—	—	—
Helwan		107·5	56	—	—	e 25 24	[+23[	—	—
Grozny		111·6	37	e 19 15	PP	—	—	—	—
Tiflis		111·9	38	e 19 13	PP	—	—	—	—
Vladivostok		119·4	330	e 19 12	PP	—	—	—	—
Almata		126·1	16	e 18 51	[−13]	—	—	—	—
Andijan		126·8	22	e 20 3	PP	—	—	—	—
Chiufeng		128·5	341	e 19 11	[+ 2]	—	—	—	—
Manila	Z.	146·4	312	i 19 49k	[+ 7]	—	—	—	—

For Notes see next page.

NOTES TO JUNE 24d. 13h. 11m. 36s.

Additional readings :—
San Juan iP = +4m.42s., iPP = +4m.45s.
Huancayo iPP = +5m.4s., e = +5m.33s., i = +9m.11s.
Columbia e = +10m.7s., eSS = +11m.10s.
St. Louis iE = +14m.17s. ; T_0 = 13h.11m.36s.
Florissant ePPZ = +7m.16s.
Philadelphia SS = +13m.40s., eSSS = +14m.27s.
Tucson eSS = +14m.18s.
Madison e = +4m.52s.
Weston ePP = +8m.29s., eSS = +15m.0s.
Fresno eN = +9m.2s.
Berkeley eN = +8m.31s.
Toledo e = +12m.8s.
Long waves were also recorded at Chicago.

June 24d. 13h. 13m. 28s. Epicentre 8°·1N. 84°·2W.
(repetition from epicentre of the shock at 13h.11m.).

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Merida	N.	13·8	338	i 3 36	+17	—	—	—	—
Port au Prince		15·5	47	i 3 32	−10	e 6 27	− 8	e 10·9	—
Tacubaya	N.	18·4	310	i 4 26	+ 8	—	—	—	—
San Juan		20·3	58	i 4 40	0	i 8 27	+ 4	—	—
Huancayo		21·9	156	i 5 2	+ 5	(i 8 52)	− 2	i 8·9	—
Columbia		25·9	5	e 5 35	0	e 10 5	+ 1	—	—
La Paz		29·2	146	6 7	+ 2	—	—	—	18·5
St. Louis	E.	30·9	350	e 6 19	− 1	e 11 27	+ 3	—	—
Florissant		31·1	350	i 6 1	−21	e 11 28	0	—	—
Georgetown		31·3	11	e 6 25	+ 1	11 33	+ 2	—	—
Philadelphia		32·7	13	i 6 36	0	i 11 53	+ 1	—	—
Chicago		33·8	354	—	—	e 11 46	−24	e 22·0	—
Fordham		33·9	16	—	—	12 13	+ 2	—	—
Tucson		34·5	318	i 6 56	+ 4	e 12 37	+17	e 18·1	—
Buffalo		35·0	7	i 6 57	+ 1	i 12 22	− 6	—	19·4
Toronto		35·7	6	7 0	− 2	12 32	− 7	—	—
Weston		36·0	17	i 7 4a	− 1	i 12 43	− 1	e 17·5	—
Vermont		37·5	13	—	—	13 4	− 3	—	—
Ottawa		37·9	9	7 19	− 1	13 10	− 3	—	—
La Jolla		39·3	314	e 7 36	+ 4	—	—	—	—
East Machias		39·4	19	e 7 34	+ 1	e 13 33	− 2	e 16·4	—
Riverside	Z.	40·0	315	i 7 41	+ 3	—	—	—	—
Seven Falls		40·5	14	7 44	+ 2	13 54	+ 2	19·5	—
Mount Wilson		40·6	315	i 7 47	+ 4	—	—	—	—
Pasadena		40·6	315	i 7 47a	+ 4	i 13 59	+ 5	e 17·3	—
Haiwee		41·5	317	i 7 55	+ 5	—	—	—	—
Santa Barbara	Z.	41·8	314	i 7 52	− 1	—	—	—	—
Tinemaha		42·3	318	i 8 4	+ 7	e 14 35	+16	—	—
Fresno	N.	43·1	316	e 8 9	+ 5	e 10 18	?	—	—
Bozeman		44·0	333	e 8 12	+ 1	(e 17 44)	SS	e 17·7	—
Lick		44·7	316	e 8 21	+ 5	—	—	—	—
Butte		45·0	333	e 8 19	0	—	—	—	—
Berkeley		45·4	316	i 8 26	+ 4	i 15 12	+ 8	—	—
Ukiah		46·7	318	—	—	e 15 32	+10	e 20·5	—
Rio de Janeiro		50·6	128	e 9 2	0	i 16 12	− 5	e 24·0	—
Victoria		52·0	328	9 14	+ 1	16 43	+ 7	24·5	—
Ivigtut		59·3	20	10 4	− 2	18 8	− 6	—	—
Sitka		62·8	332	e 10 32	+ 2	—	—	e 33·2	—
College		71·7	337	e 11 31	+ 5	e 20 37	− 8	e 32·7	—
Averroes		74·6	57	e 11 43	0	e 21 17	− 1	e 36·5	51·5
San Fernando		75·6	55	11 51	+ 3	21 27	− 2	35·5	—
Malaga		77·0	54	11 57	+ 1	e 21 55	+10	37·7	—
Toledo		77·3	51	i 11 57	− 1	e 21 49	+ 1	—	36·0
Bidston		78·3	37	—	—	i 21 56	− 3	33·5	—
Edinburgh		78·3	35	—	—	i 21 54	− 5	e 39·5	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Stonyhurst		78·6	37	—	—	e 21 57	− 5	39·5	47·0
Almeria		78·6	54	e 12 21	+16	e 21 59	− 3	e 37·2	—
Jersey		78·8	41	i 12 5	− 1	i 22 9	+ 5	36·5	—
Aberdeen		79·0	33	i 12 15	+ 8	e 22 8	+ 2	41·0	51·2
Kew		79·9	39	i 12 10	− 2	i 22 11	− 5	33·5	47·6
Oxford		80·9	39	—	—	i 22 6	−20	e 30·1	47·0
Paris		81·8	42	i 12 22	0	e 22 32	− 3	37·5	39·5
Uccle		82·9	40	i 12 27	− 1	i 22 43	− 3	e 34·5	—
De Bilt		83·3	38	i 12 29	− 1	e 22 48	− 2	e 38·5	42·8
Strasbourg		85·3	42	i 12 39	− 1	e 23 6	− 4	e 36·5	—
Hamburg		86·0	36	i 12 43a	0	e 23 20	+ 3	e 46·5	—
Zurich		86·0	43	e 12 42	− 1	—	—	—	—
Stuttgart		86·2	42	i 12 44a	0	e 23 11	[+ 3]	e 39·5	—
Copenhagen		87·1	34	12 49	0	23 20	[+ 6]	—	—
Jena	N.	87·4	39	e 12 55	+ 5	—	—	—	—
Cheb		88·1	40	e 12 50	− 4	—	—	—	52·0
Prague		89·4	39	e 13 0	0	e 23 50	+ 1	e 33·5	46·5
Triest		89·8	44	i 13 0	− 2	i 23 30	[− 2]	e 46·6	54·9
Vienna	Z.	91·0	41	e 13 22	+15	—	—	—	—
Zagreb		91·3	44	e 13 7	− 2	e 23 40	[0]	e 43·5	—
Stara Dala		92·3	41	e 12 32	−41	—	—	—	46·0
Pulkovo		95·0	27	e 13 24	− 2	e 24 0	[− 1]	40·5	50·4
Bucharest		98·5	42	—	—	e 24 2	[−18]	43·5	52·5
Moscow		100·3	29	—	—	e 25 24	+ 1	47·0	61·6
Helwan		107·5	56	—	—	e 25 2	[0]	—	—
Sverdlovsk		109·1	19	e 14 26	P	e 25 10	[+ 2]	44·5	60·9
Piatigorsk		109·6	37	e 18 54	PP	—	—	—	—
Tiflis		111·9	38	e 19 21	PP	e 26 21	[+61]	e 56·5	69·8
Vladivostok		119·4	330	e 20 21	PP	—	—	63·4	71·6
Tashkent		125·1	24	e 19 1	[− 1]	i 25 35	?	—	67·0
Samarkand		125·5	27	e 18 48	[−15]	—	—	—	—
Chiufeng		128·5	341	19 13	[+ 5]	—	—	—	69·6
Manila		146·4	312	i 19 50	[+ 9]	—	—	—	—

Additional readings :—
Port au Prince iPNE = +3m.43s.
San Juan e = +5m.12s., i = +8m.0s.
Huancayo i = +6m.21s.
La Paz iN = +7m.3s.
Florissant ePPZ = +7m.8s. ; T_0 = 13h.13m.29s.
Chicago e = +13m.2s.
Buffalo iPPP = +8m.26s.
Toronto SSE = +15m.38s.
Weston ePPP = +8m.35s., eSSS = +15m.18s.
Vermont +9m.35s.
Ottawa PP = +8m.21s., SS = +15m.56s.
East Machias eS_cS = +15m.40s.
Riverside iP_cPZ = +9m.45s.
Seven Falls SSS = +16m.56s.
Mount Wilson iP_cPZ = +9m.48s.
Pasadena iP_cPZ = +9m.47s.
Tinemaha iZ = +8m.57s., iP_cPZ = +9m.57s.
Berkeley iN = +15m.18s.
Sitka ePPP = +12m.50s., eS_cS = +18m.38s.
Averroes ePN = +11m.47s., eN = +12m.3s. and +12m.32s.?
San Fernando ePN = +11m.57s., ePSN = +22m.41s.
Malaga e = +18m.20s.
Aberdeen e = +27m.3s.
Kew iZ = +12m.22s.
Stuttgart eSS = +29m.8s.
Copenhagen +23m.32s.
Triest iPS = +23m.51s., e = +34m.28s.
Pulkovo e = +17m.7s. and +25m.44s.
Moscow e = +32m.23s.
Helwan e = +25m.52s. and +37m.50s.
Sverdlovsk e = +18m.55s., +26m.48s., and +33m.10s.
Tiflis eE = +28m.55s. and +29m.40s., eZ = +29m.59s.
Tashkent i = +20m.51s., +28m.52s., and +34m.57s., e = +36m.26s., +37m.32s., and +40m.0s.
Chiufeng ePKSEN? = +20m.41s., iEN = +22m.34s.
Manila iE = +19m.54s., PP? = +21m.15s.
Long waves were also recorded at Christchurch, Honolulu, Cape Town, Balboa Heights, Madison, Scoresby Sund, Kobe, and Kodaikanal.

June 24d. 14h. 57m. 18s. Epicentre 7°·8S. 80°·3W.

A = +·1670, B = −·9767, C = −·1348; δ = 0, h = +7;
D = −·986, E = −·168; G = −·023, H = +·132, K = −·991.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
La Paz		14·7	127	3 31	0	i 6 2	−14	7·5	8·2
Tucson		49·3	326	i 8 53	0	—	—	e 24·9	—
Weston		50·6	9	i 9 2a	0	e 16 21	+ 4	e 24·7	—
Oak Ridge	z.	50·7	9	i 9 2	− 1	—	—	—	—
La Jolla		53·6	322	i 9 24	− 1	—	—	—	—
Riverside		54·4	323	i 9 30	− 1	—	—	—	—
Mount Wilson		55·0	323	i 9 35a	0	—	—	—	—
Pasadena		55·0	323	i 9 35a	0	—	—	—	—
Haiwee		56·2	324	e 9 43	− 1	—	—	—	—
Tinemaha		57·1	324	i 9 52a	+ 2	—	—	—	—
Lick		59·3	323	e 10 4	− 2	—	—	—	—
Toledo		84·5	49	e 12 32	− 4	—	—	—	—

Additional readings:—
Tucson e = +20m.22s.
Weston iZ = +9m.14s., eSSSN = +22m.42s.
Mount Wilson iZ = +10m.33s. and +10m.56s.
Pasadena iZ = +10m.33s.
Long waves were also recorded at Rio de Janeiro, De Bilt, Paris, Stuttgart, Copenhagen, Pulkovo, Tashkent, and Tiflis.

June 24d. 19h. 59m. 58s. Epicentre 35°·7N. 35°·6W.

A = +·6618, B = −·4738, C = +·5810; δ = +3; h = 0;
D = −·582, E = −·813; G = +·472, H = −·338, K = −·814.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Averroes	23·3	88	e 5 9	− 1	e 9 23	+ 3	11·0	—
San Fernando	23·7	81	5 16	+ 2	9 31	+ 4	12·0	—
Malaga	25·1	78	5 31	+ 3	10 4	+13	12·8	—
Toledo	25·2	71	e 5 28	− 1	e 9 56	+ 4	—	—
East Machias	25·7	299	e 5 39	+ 6	e 10 3	+ 2	e 14·0	—
Granada	25·7	77	e 5 36	+ 3	e 10 31	+30	—	—
Almeria	26·7	78	e 5 39	− 4	e 10 13	− 4	e 13·3	—
Ivigtut	26·7	346	5 44	+ 1	10 27	+10	12·0	—
Jersey	27·9	50	i 5 52	− 2	e 10 43	+ 6	14·3	—
Weston	28·4	294	i 5 58k	0	i 10 26	−19	e 13·0	—
Seven Falls	28·5	304	6 1	+ 2	10 58	+12	14·0	—
Oak Ridge	28·6	294	i 6 0	0	e 11 2	+14	e 14·0	—
Tortosa	28·7	69	e 6 46	PP	10 56	+ 6	12·6	13·8
Bidston	28·8	42	—	—	i 11 2?	+11	—	—
Oxford	29·2	47	6 4a	− 1	i 10 58	0	e 12·3	16·1
Stonyhurst	29·3	42	e 6 6	0	11 1	+ 2	14·0	15·4
Kew	29·7	47	i 6 10a	0	i 11 4	− 2	15·0	16·2
Edinburgh	29·9	38	e 6 11	− 1	i 11 14	+ 5	—	16·8
Vermont	29·9	299	e 6 9	− 3	e 11 7	− 2	e 14·2	—
Barcelona	29·9	67	e 6 6	− 6	—	—	e 14·8	18·2
Durham	30·2	40	—	—	11 17	+ 4	—	17·0
Paris	30·8	53	i 6 20	0	e 11 24	+ 1	14·0	17·0
Aberdeen	31·0	36	e 6 27	+ 6	e 11 32	+ 6	14·6	16·1
Philadelphia	31·4	289	e 6 25	0	e 11 38	+ 6	e 15·0	—
Ottawa	31·7	300	6 28	+ 1	11 42	+ 5	15·0	—
San Juan	32·0	245	i 6 29	− 1	e 11 48	+ 6	e 15·4	—
Uccle	32·3	50	6 32	− 1	i 11 49	+ 3	e 14·5	—
De Bilt	33·1	48	6 39	− 1	12 2	+ 3	e 14·5	16·1
Basle	34·0	56	e 6 46	− 2	—	—	—	—
Strasbourg	34·2	54	i 6 50	+ 1	e 12 24	+ 8	—	18·8

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Toronto		34·3	297	6 49	− 1	12 23	+ 6	16·0	—
Zurich		34·6	56	e 6 52	− 1	—	—	e 17·3	—
Stuttgart		35·1	54	e 6 56k	− 1	e 12 27	− 3	e 16·0	18·7
Scoresby Sund		35·6	8	7 3	+ 2	12 46	+ 8	16·0	—
Bergen		35·9	33	7 31	+27	—	—	21·3	—
Hamburg		36·3	46	e 7 5k	− 2	i 12 53	+ 5	—	19·0
Columbia		37·1	281	7 14	0	e 13 5	+ 4	—	—
Cheb		37·3	51	e 7 16	0	e 13 3	− 1	e 20·0	22·0
Copenhagen		38·1	43	7 22	0	13 18	+ 2	17·0	—
Triest		38·2	59	i 7 23k	0	i 13 17	0	—	21·4
Prague		38·6	52	e 7 26	0	e 13 29	+ 6	e 16·0	22·0
Zagreb		39·7	59	e 7 34	− 2	e 17 52	?	—	—
Chicago		40·5	295	e 7 43	+ 1	e 13 56	+ 4	—	—
Stara Dala		41·1	56	e 7 49	+ 2	e 14 17	+16	—	25·5
Madison		41·6	297	i 5 50	?	e 12 6	?	e 20·0	—
Upsala		41·6	38	—	—	e 13 59	− 9	e 19·0	25·1
Belgrade		43·0	60	e 8 3a	0	e 15 23	+54	e 31·4	—
St. Louis	E.	43·1	291	i 8 3	− 1	e 14 32	+ 2	e 20·8	—
Florissant		43·2	291	i 8 3	− 1	e 14 33	+ 1	e 21·2	22·8
Sofia		45·4	63	e 8 14	− 8	e 14 56	− 8	—	—
Bucharest		47·0	59	e 8 34	− 1	15 26	0	—	27·4
Pulkovo		48·0	38	8 42	− 1	15 42	+ 1	23·0	26·5
Sebastopol		52·1	58	i 9 15	+ 1	e 16 27	−11	—	—
Moscow		52·2	43	9 15	0	e 16 44	+ 5	25·5	34·2
Simferopol		52·4	57	e 9 18	+ 2	—	—	—	—
Yalta		52·6	58	e 9 17	− 1	e 16 45	+ 1	—	—
Helwan		55·6	76	e 9 46	+ 6	i 17 24	− 1	—	—
Bozeman		56·1	305	e 9 44	+ 1	e 17 26	− 6	e 25·7	—
Ksara		57·5	71	e 9 51	− 2	e 17 55	+ 5	—	—
La Paz		60·4	216	i 10 13k	0	i 18 31	+ 3	31·0	34·7
Grozny		60·9	66	e 10 20	+ 3	e 18 43	+ 9	—	—
Tiflis		60·9	58	10 15	− 2	i 18 40	+ 6	27·0	39·2
Tucson		61·0	291	e 10 18	0	e 18 50	+15	e 28·2	—
Victoria		63·0	312	10 31	0	19 16	+15	31·0	—
Sverdlovsk		64·1	37	i 10 38	0	i 19 18	+ 4	28·0	39·6
Tinemaha		64·4	298	e 10 39	− 1	—	—	—	—
Haiwee		64·6	297	e 10 43	+ 2	—	—	—	—
Riverside	Z.	65·2	295	i 10 44	− 1	—	—	—	—
Mount Wilson		65·6	295	i 10 48	0	—	—	—	—
Pasadena		65·7	295	i 10 47	− 1	e 20 2	+28	e 34·8	—
Sitka		65·7	324	e 10 46	− 2	e 19 8	−26	e 32·6	—
College		66·8	335	e 11 5	+ 9	—	—	e 27·2	—
Berkeley		66·9	301	e 10 54	− 2	—	—	—	—
Tashkent		77·0	49	i 11 55	− 1	i 21 48	+ 3	e 37·0	45·7
Chiufeng		100·2	22	18 2	PP	25 34	+12	—	59·2

Additional readings :—
Averroes iPPE = +5m.36s., PE = +5m.46s., eN = +5m.52s., eSN = +9m.27s., eN = +9m.56s.
San Fernando PN = +5m.21s., PPPN = +6m.20s.
Malaga PP = +6m.4s., PPP = +6m.15s., P_cP = +9m.16s., SS = +11m.28s.
Toledo i = +5m.32s. and +11m.59s.
East Machias e = +10m.47s.
Ivigtut +6m.14s.
Weston iEZ = +6m.7s., iPPE = +6m.26s., iZ = +8m.27s.
Seven Falls SS = +12m.26s.
Kew iE = +12m.54s., iEN = +13m.24s., iN = +13m.39s.
Edinburgh i = +14m.11s.
Vermont P = +6m.12s., e = +9m.31s. and +11m.17s.
Ottawa PP = +7m.19s.
San Juan ePP = +7m.20s., e = +7m.35s., ePPP = +7m.46s., eSS = +13m.56s.
Strasbourg iPPZ = +8m.14s.
Toronto PPP = +8m.15s.
Stuttgart ePP = +8m.12s., eSSS = +15m.2s.
Scoresby Sund +8m.24s. and +9m.9s., e = +15m.32s.
Hamburg ePPPZ = +8m.39s., eSSN = +15m.26s.

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Columbia ePP = +8m.27s., e = +11m.42s., eSS = +15m.9s., eScS = +17m.14s.
Cheb ePP = +8m.43s.
Copenhagen +8m.48s.
Triest iPPP? = +9m.9s., iN = +17m.41s.
Prague ePP = +9m.2s.?
Zagreb ePPPNE = +13m.42s., e = +20m.56s.
Chicago ePP = +9m.20s.
Madison ePP = +7m.20s.
Upsala eE = +17m.23s
St Louis ePPE = +9m.43s., iPcPE = +9m.53s., eSSE = +17m.41s.
Florissant iPPZ = +9m.44s., iPcPZ = +9m.54s., iPcPE = +9m.57s., ePPPZ = +10m.17s., eZ = +10m.20s., eScPE = +13m.42s., eSSN = +17m.42s.
Bucharest PP = +10m.8s., PPP = +11m.2s., SN = +15m.28s., SSSE = +18m.30s.
Helwan e = +31m.47s.
Tiflis eE = +19m.39s.
Victoria PPP = +14m.17s.
Tinemaha ePPZ = +12m.36s.
Riverside ePPZ = +13m.2s.
Mount Wilson iPPZ = +13m.8s.
Pasadena iZ = +11m.49s., ePPZ = +13m.10s., ePPPZ = +15m.7s., iZ = +18m.0s.
Sitka e = +12m.13s., ePP = +13m.7s., SS = +24m.3s.
Berkeley iE = +11m.2s., eEN = +34m.57s.
Long waves were also recorded at Ukiah, Kodaikanal, Hong Kong, and Vladivostok.

June 24d. Readings also at 1h. (Neuchatel and Philadelphia), 2h. (Mount Wilson and Tinemaha), 4h. (Berkeley), 5h. (Strasbourg), 6h. (near Basle, Neuchatel, Zurich, and near Mizusawa), 7h. (near Batavia), 9h. (near Mizusawa), 12h. (near Sumoto), 14h. (Batavia and Hong Kong), 15h. (near Granada and near Taihoku), 17h. (College and Zagreb), 18h. (Barcelona, Averroes, near Malaga, Granada, and near Grozny), 19h. (Rio de Janeiro and near Grozny), 21h. (Göttingen, Graz, Mount Wilson, Pasadena, and Riverside), 23h. (Tashkent, Sverdlovsk, and Scoresby Sund).

June 25d. Readings at 2h. (near Andijan), 7h. (near Batavia), 8h. (Andijan, near Almata, and near Nagoya), 13h. (Kobe and near Sumoto), 16h. (Bucharest, Sofia, and Triest), 17h. (Scoresby Sund, Basle, Zurich, near Marseilles, and near Sumoto), 19h. (Hong Kong, Irkutsk, Andijan, and Tashkent), 20h. (Scoresby Sund), 21h. (Alicante, Scoresby Sund, and near Mizusawa), 22h. (Andijan, Samarkand, Ksara, Sverdlovsk, and Tashkent), 23h. (Irkutsk).

June 26d. 3h. 28m. 7s. Epicentre 35°·8N. 140°·1E.
(given in Seismo Report, Tokyo Imp. Univ.).

A = −·6237, B = +·5215, C = +·5823; δ = +4; h = 0;
D = +·641, E = +·767; G = −·447, H = +·374, K = −·813.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Tokyo I.U.		0·3	253	0 14	+ 3	0 24	+ 6
Komaba		0·4	246	0 12	− 1	0 22	+ 1
Tukubasan		0·4	0	0 14	+ 1	0 23	+ 2
Mitaka		0·5	253	0 15	+ 1	0 26	+ 3
Kiyosumi		0·7	174	0 20	+ 3	0 33	+ 5
Kamakura		0·7	223	0 18	+ 1	0 29	+ 1
Misaki		0·7	211	0 18	+ 1	0 31	+ 3
Koyama		1·0	244	0 20	− 1	0 33	− 3
Yosiwara		1·3	241	0 20	− 5	0 39	− 5
Susaki		1·5	219	0 24	− 4	0 43	− 6
Nagoya		2·7	256	e 0 49	+ 4	1 30	S_g
Mizusawa	E.	3·4	13	—	—	e 1 39	+ 2

June 26d. 19h. 19m. 31s. Epicentre 34°·7N. 32°·7E.

Slight damage at Platres, 55km. N.W. of Limassol. Felt Force IV at Limassol and at Paphos. Epicentre in the sea near 34°·0N. 34°·0E.

See P. Stahl. Macroseismic signals. Annales de l'Institute de Physique du Globe de Strasbourg, 1937, Tome II, Le Partie Sismologie, Mende, 1940, pp. 113-115.

$A = +\cdot6934$, $B = +\cdot4451$, $C = +\cdot5667$; $\delta = +7$; $h = 0$;
$D = +\cdot540$, $E = -\cdot842$; $G = +\cdot477$, $H = +\cdot306$, $K = -\cdot824$.

		△	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Ksara		2·8	109	i 0 47	0	i 1 24	+ 2	—	—
Helwan		4·9	193	1 17	0	2 11	− 4	—	—
Yalta		9·8	6	e 2 25	+ 1	e 4 27	+10	—	—
Sebastopol		9·9	3	e 2 25	0	e 4 17	− 3	—	—
Simferopol		10·3	6	e 2 28	− 4	e 4 34	+ 4	—	—
Theodosia		10·5	11	e 2 52	+17	4 40	+ 5	—	—
Tiflis	E.	11·8	50	e 2 52	− 1	e 5 18	+12	e 6·6	8·2
Piatigorsk		12·3	38	e 2 58	− 1	—	—	—	—
Triest		18·1	313	e 4 12	− 2	i 7 36	+ 1	—	—
Cheb		21·4	322	—	—	e 7 29?	?	—	—
Zurich		22·1	313	e 7 42	?	—	—	—	—
Stuttgart		22·4	317	e 5 3	+ 1	e 8 59	− 5	e 12·0	—
Strasbourg		23·1	316	e 5 13	+ 5	e 9 14	− 2	12·5	—
Uccle		26·1	317	—	—	e 9 29?	−38	e 13·5	—
De Bilt		26·2	322	—	—	e 9 59	−10	e 13·5	—
Sverdlovsk		29·1	32	e 6 10	+ 6	e 11 4	+ 8	15·5	—
Tashkent		29·4	66	e 5 32	−35	e 12 17	SS	e 17·5	21·3

Additional readings:—
Ksara $S_g = +1$m.47s. and $+2$m.9s., $ePcP = +8$m.31s.
Helwan $P_g = +1$m.38s., $i = +1$m.44s., $S^* = +2$m.27s., $i = +2$m.53s.
Tiflis $ePPEZ = +3$m.2s.
Triest $i = +10$m.31s.
Tashkent $e = +5$m.47s.
Long waves were also recorded at Copenhagen, Paris, Kew, and Scoresby Sund.

June 26d. Readings also at 0h. and 1h. (near Neuchatel), 2h. (Andijan), 9h. (Tiflis and near Sumoto), 10h. (Andijan and Samarkand), 13h. (Kobe Sumoto, and near Toyooka), 15h. (Scoresby Sund), 17h. (Almata, Andijan, and Frunse), 18h. (Ivigtut and Scoresby Sund), 20h. (near Branner).

June 27d. Readings at 1h. (near Nagoya), 3h. (Tiflis, Neuchatel, Kobe, and near Hukuoka B), 4h. (Berkeley, Branner, San Francisco, Lick, and near Fresno), 5h. (Huancayo, La Paz, La Plata, Rio de Janeiro, Santiago, Montezuma, Oak Ridge, Mount Wilson, Pasadena, and Tinemaha), 7h. (near Batavia), 12h. (Neuchatel), 14h. (Sverdlovsk and Irkutsk), 15h. (La Paz), 19h. and 21h. (Tiflis), 22h. (Santiago).

June 28d. Readings at 0h. (Amboina), 1h. (Andijan and near Zagreb), 2h. (Kobe and Sumoto), 4h. (near Santiago), 5h. (Wellington, Phu-Lien, Zi-ka-wei, Hong Kong, Keizyo, near Manila, and near Taihoku), 7h. (near Sumoto), 9h. and 11h. (near Tananarive), 12h. (Erevan), 16h. (near Kobe, Nagoya, Sumoto, and near Lick), 19h. (Ksara, De Bilt, Paris, Stuttgart, Tashkent, Weston, Berkeley, Tucson, College, Vladivostok, Huancayo, San Juan, Honolulu, Melbourne, Riverview, Christchurch, Wellington, and near Apia), 20h. (Sverdlovsk, Irkutsk, Pulkovo, Copenhagen, Uccle, Cheb, Kew, Ivigtut, Scoresby Sund, Oak Ridge, Rio de Janeiro, La Paz, and Philadelphia), 21h. (Amboina and Sydney), 22h. (Andijan and Malabar), 23h. (Arapuni, Christchurch, Wellington, Riverview, Sydney, Lick, and near Fresno).

June 29d. 18h. 4m. 36s. Epicentre 37°·2N. 69°·3E. (as on 1937 April 25d.).

$A = +\cdot2822$, $B = +\cdot7469$, $C = +\cdot6020$; $\delta = -10$; $h = -1$;
$D = +\cdot935$, $E = -\cdot353$; $G = +\cdot213$, $H = +\cdot563$, $K = -\cdot798$.

Stations of Central Asia give origin 37°·3N. 70°·0E. The epicentre above is given for reference, but the various stations are discordant.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Samarkand	3·1	324	e 1 1	+10	i 1 41	+12	—	—
Tashkent	4·1	2	i 1 2	− 3	i 1 50	− 5	i 2·0	2·6
Andijan	4·3	33	e 0 51	−17	1 34	−26	—	2·1
Almata	8·4	42	e 1 9	−57	e 3 4	−39	—	—
Semipalatinsk	15·4	27	e 3 15	−25	e 6 8	−24	—	—
Grozny	19·0	296	e 5 34	+68	e 10 20	L	(e 10·3)	—
Tiflis	19·4	291	4 35	+ 5	e 8 25	+21	e 10·8	—
Erevan	19·6	286	e 5 33	+61	—	—	—	—
Sverdlovsk	20·5	346	i 5 8	PP	e 8 23	− 4	10·4	—
Piatigorsk	21·0	298	e 4 50	+ 3	e 8 51	+14	—	—

Additional readings:—
Andijan e = +1m.19s., eS* = +1m.37s. and +1m.56s.
Semipalatinsk eP = +1m.42s.
Tiflis eE = +5m.11s.

June 29d. Readings also at 7h. (Tiflis and near Batavia), 8h. (Oak Ridge, near Hukuoka B, and Sumoto), 10h. (St. Louis and near Mizusawa), 15h. (Cheb Mount Wilson, Pasadena, and Riverside), 16h. (near New Plymouth and Wellington), 20h. (Mizusawa), 23h. (Scoresby Sund, near Reykjavik, and near San Javier).

June 30d. 13h. 58m. 32s. Epicentre 7°·2N. 126°·3E.

$A = -\cdot5874$, $B = +\cdot7997$, $C = +\cdot1245$; $\delta = +6$; $h = +7$;
$D = +\cdot806$, $E = +\cdot592$; $G = -\cdot074$, $H = +\cdot100$, $K = -\cdot992$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
		°	°	m. s.	s.	m. s.	s.	m.	m.
Palau		8·2	88	1 51	−12	3 6	−32	—	—
Manila		9·0	325	i 2 31k	PPP	i 4 44	+46	—	—
Hong Kong		19·0	324	4 38	+12	6 55	−60	8·3	11·4
Phu-Lien		23·3	308	e 5 18	+ 8	—	—	—	—
Batavia		23·6	236	i 5 12	− 1	9 30	+ 5	—	—
Zi-ka-wei	Z.	24·3	350	e 5 22	+ 2	9 48	+11	—	19·0
Medan		27·6	264	e 5 59	+ 8	—	—	—	—
Wakayama		28·1	15	5 57	+ 2	—	—	—	—
Sumoto	E.	28·2	15	e 5 54	− 2	—	—	—	—
Osaka		28·7	16	6 5	+ 4	—	—	—	—
Gihu		29·7	18	6 9	− 1	11 1	− 5	—	—
Hunatu		30·4	20	5 11	−65	—	—	—	—
Kohu		30·4	20	5 35	−41	—	—	—	—
Oiwake		31·1	19	6 23	+ 1	11 24	− 4	—	—
Maebasi		31·3	19	6 20	− 4	—	—	—	—
Nagano		31·3	17	6 14	−10	—	—	—	—
Hukusima		33·0	21	6 38	− 1	11 54	− 3	—	—
Chiufeng		34·0	346	6 48	0	12 15	+ 2	—	—
Sapporo		38·1	18	7 35	+13	13 18	+ 2	—	—
Perth		40·2	193	8 28?	+48	—	—	—	—
Kodaikanal	E.	48·3	278	—	—	e 15 28?	−17	—	—
Bombay		53·2	288	—	—	e 18 28?	?	—	—
Almata		56·2	318	e 9 43	− 1	—	—	—	—
Andijan		58·4	314	e 10 0	0	e 18 7	+ 5	—	—
Tashkent		60·7	313	e 10 12	− 3	18 31	− 1	—	38·6

Continued on next page.

	Δ	Az.	P.	O−C.	S.	O−C.	L.	M.
	°	°	m. s.	s.	m. s.	s.	m.	m.
Sverdlovsk	70·8	328	i 11 20	0	i 20 34	− 1	32·5	42·0
Grozny	78·2	313	e 12 5	+ 2	e 22 12	+15	—	—
Tiflis	78·9	311	e 12 7	0	e 22 7	+ 2	e 42·5	50·7
Moscow	83·4	326	12 31	+ 1	22 50	− 1	46·0	51·5
Theodosia	85·6	315	12 43	+ 2	23 12	− 1	—	—
Ksara	86·4	303	e 12 46	+ 1	e 23 32	+11	—	—
Yalta	86·5	314	12 45	− 1	e 23 7	−15	—	—
Pulkovo	86·8	330	e 13 10	+23	i 23 7	[− 6]	48·5	55·1
Sebastopol	87·0	315	e 12 59	+11	e 23 24	− 3	—	—
Strasbourg	102·8	324	—	—	e 30 48	?	60·5	—

Additional readings :—
Manila iZ = +4m.40s., iEN = +5m.44s.
Hong Kong ? = +4m.59s.
Sumoto eN = +5m.14s., eZ = +5m.56s., eN = +6m.13s.
Kohu i = +6m.16s.
Chiufeng S_eSEN = +17m.9s.
Tiflis eE = +22m.23s.
Pulkovo e = +23m.23s.
Strasbourg eN = +55m.58s.
Long waves were also recorded at Paris, Stuttgart, De Bilt, Kew, Copenhagen, and Scoresby Sund.

June 30d. 17h. 49m. 59s. Epicentre 35°·4N. 140°·7E.
Given by the Earthquake Research Institute, Tokyo (local time July 1d.2h.).

A = −·6322, B = +·5174, C = +·5767 ; δ = −4 ; h = 0 ;
D = +·633, E = +·774 ; G = −·446, H = +·365, K = −·817.

	Δ	Az.	P.	O−C.	S.	O−C.	M.
	°	°	m. s.	s.	m. s.	s.	m.
Kiyosumi	0·5	239	0 21	+ 7	0 28	+ 5	—
Tokyo Imp. Univ.	0·8	293	0 21	+ 3	0 33	+ 2	—
Kamakura	0·9	265	0 22	+ 2	0 34	0	—
Komaba	0·9	287	0 20	0	0 32	− 2	—
Tukubasan	1·0	329	0 23	+ 2	0 35	− 1	—
Mitaka	1·0	286	0 23	+ 2	0 35	− 1	—
Koyama	1·4	268	0 21	− 6	0 37	− 9	—
Titibu	1·4	294	0 21	− 6	0 40	− 6	—
Yosiwara	1·7	262	0 21	−10	0 45	− 9	—
Nagoya	3·1	266	(e 0 55)	+ 4	(1 29)	0	(2·2)
Kobe	4·6	262	(e 1 38)	+26	(e 2 15)	+ 8	(2·4)

Kobe eZ = (+1m.41s.) ; all readings for Kobe and Nagoya have been increased by 1m.

June 30d. Readings also at 0h. (Reykjavik), 1h. (Grozny, Tiflis, and Malabar), 3h. (near Almata), 6h. (Branner, near Fresno (3), and Lick (2)), 8h. (Fresno and Zurich), 9h. (Weston and near Oak Ridge), 11h. (Scoresby Sund), 12h. (near Branner), 13h. (Tiflis and near Ksara), 16h. (near San Javier), 17h. (near Mizusawa, Scoresby Sund, and near Reykjavik), 18h. (Berkeley, Sverdlovsk, Samarkand, near Almata, Andijan, Tashkent, and near Sotchi (2)), 19h. (Calcutta), 20h. (near Branner).

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