

说明：

该附件正文内容下载自国际地震概要（International Seismological Summary，即 ISS，<http://storing.ingv.it/ISS/>）报告，提供了 1950 年墨脱-察隅 8.6 级大地震的全球台站的到时资料和 P 波初动资料。

第一段介绍墨脱-察隅大地震的基本信息，包括发震时间和震中位置。第二段开始介绍震后受影响的地方及其烈度值。第三段介绍震后各地的地表地形变化和人员伤亡情况。第四段罗列了关于墨脱-察隅大地震的研究论文。

中间最主要的段落则给出了全球台站关于墨脱-察隅大地震的记录情况。第 1 列是台站名，第 2 列是波形分量，第 3 列△是震中距，第 4 列 Az 是方位角，第 5 列 P. 是 P 波到时（a 表示初动向下，k 表示初动向上），第 6 列 O-C. 是 P 波的观测到时与理论到时之差，第 7 列 S. 是 S 波到时，第 8 列 O-C. 是 S 波的观测到时与理论到时之差，第 9 列 Supp. 是其它补充震相的到时，第 10 列 L. 是 L 波到时。

最后的段落也是一些台站补充的其它震相到时情况。

The scanned images of the bulletins of the International Seismological Summary (ISS) have been obtained thanks to funding provided by the US National Science Foundation through grant EAR-9725140 (Villaseñor et al., 1997) and collected by SGA Storia Geofisica Ambiente (Bologna) on behalf of the Istituto Nazionale di Geofisica e Vulcanologia (Rome), in the frame of the EUROSEISMOS project.

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Aug. 15d. 14h. 9m. 30s. Epicentre 28°.7N. 96°.6E.

Intensity scale X at Sadya, Passighat, Dum Duma, Dibrugarh, North Lakhimpur, and Sibsagar; IX at Digboi and Golaghat; VIII at Tezpur, Gauhati, and Shillong; VI at Dacca, Calcutta, Dhubri, Darjeeling, and Imphal. Macroseismic area 1,794,000 sq. km., of which 49,700 sq. km. suffered great damage.

This great earthquake, destructive in Assam and Tibet, has a calculated magnitude of 8.6, and Strasbourg regards it as the most important since the introduction of seismological observing stations. Alterations of relief were brought about by many rock falls in the Mishmi Hills and destruction of forest areas. In the Abor Hills 70 villages were destroyed with 156 casualties due to landslides. Dykes blocked the tributaries of the Brahmaputra; that in the Dibang valley broke without causing damage, but that at Subansiri opened after an interval of 8 days and the wave, 7 metres high, submerged several villages and killed 532 persons.

Anders Kyale.

Seismic seiches in Norway and England during the Assam earthquake of Aug. 15d., 1950. Bull. Seismo. Soc. Amer., April, 1955, Vol. 45, No. 2, pp. 93-113 with 4 figures.

T. Akima.

On Dispersion Curves of surface waves from the great Assam earthquake of Aug. 15d., 1950. Bull. Earth Research Institute, Tokyo Univ., Vol. 30, pt. 3, Sept., 1952, pp. 237-257, with 15 figures.

"Anonymous."

Seismological report for the Assam-Tibet earthquake of Aug. 15d., 1950. Bull. Earthquake Res. Inst., Japan, 1951, Vol. 29, No. 2, p. 433.

F. Kingdon Ward.

The Assam earthquake of 1950. Geographical Journal, Vol. 119, part 2, June, 1953, pp. 169-182.

"Caught in the Assam-Tibet earthquake," National Geographical Magazine, Vol. 101, Washington, March, 1952, pp. 402-416, 11 plates and 1 map.

S. K. Pramanik and S. M. Mukherjee.

The Assam earthquake of 1950. Communication made to the Rome Congress of U.G.G.I., 1954, Sept.

M. B. Ramachandra Rao.

Symposium on the Assam earthquake of August, 1950. Indian Journal of Meteorology and Geophysics, 1950, Vol. 3, No. 4, pp. 258-263.

A compilation of papers on the Assam earthquake of Aug. 15d., 1950. Central Board of Geophysics publication No. 1, Calcutta, 1953, Vol. 1, 112 pages with maps and figures.

D. N. Wadia.

North-East Assam Earthquake of Aug. 15, 1950, Journal of Science and Industrial Research, India, 1950, Vol. IX, No. 10, p.p. 351, 352.

V. V. Sohoni.

The Great Assam Earthquake of August 15, 1950, Curr. Sci. India, 1950, Vol. XIX, No. 9, p.p. 265-268, with maps and figures.

S. L. Malurkar.

The Great Earthquake on the Assam border of Aug. 15d., 1950. Journal of Science and Industrial Research, India, 1951, Vol. X, No. 1, p.p. 21-25 with figures.

$$\begin{aligned} A &= -1010, \quad B = +8727, \quad C = +4777; \quad \delta = 0; \quad h = +2; \\ D &= +993, \quad E = +115; \quad G = -0.55, \quad H = +475, \quad K = -879. \end{aligned}$$

	Δ	Az.	P.	O-C.	S.	O-C.	Supp.	L.
			m. s.	s.	m. s.	s.	m. s.	m.
Calcutta	E.	9.7	232	i 2 20	- 2	—	—	—
Dehra Dun	N.	16.2	280	e 6 36	?	e 9 18	?	—
New Delhi		17.0	274	i 3 57 ^a	- 4	i 6 57	- 13	—
Nanking		19.4	75	i 4 28 ^a	- 2	i 8 10	+ 6	—
Hyderabad	N.	20.1	239	i 4 35	- 3	—	—	—
Przhevalsk		20.2	317	i 4 48	+ 9	—	—	—
Naryn		21.1	313	i 4 50	+ 2	—	—	—
Almata		21.5	319	i 4 55	+ 3	—	—	—
Zi-ka-wei		21.6	77	5 0	+ 6	8 58	+ 9	—
Frunse		22.7	314	i 5 8	+ 4	—	—	1

Continued on next page.

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	Δ	Az.	P.	O-C.	S.	O-C.	Supp.	L.	
	°	°	m. s.	s.	m. s.	s.	m. s.	m.	
Poona	23.1	249	i 5 6 a	- 2	i 9 18	+ 2	—	—	
Andijan	23.2	307	i 5 13	+ 4	—	—	—	—	
Fergana	23.5	307	i 5 14	+ 2	—	—	—	—	
Bombay	23.8	251	i 5 15	0	—	—	—	—	
Garm	24.0	303	5 19	+ 2	—	—	—	—	
Irkutsk	24.2	11	i 5 24	+ 5	i 9 47	+ 12	—	—	
Semipalatinsk	25.0	336	i 5 31	+ 4	i 9 56	+ 7	—	—	
Stalinabad	25.1	301	i 5 30?	+ 2	i 9 45?	- 6	—	—	
Tashkent	25.5	307	i 5 34	+ 2	i 10 4	+ 7	—	—	
Kodaikanal	E.	25.7	229	i 5 33	0	i 10 3	+ 2	—	
Samarkand	26.7	302	i 5 47	+ 4	—	—	—	—	
Colombo	E.	26.8	219	i 5 42	- 2	10 0	- 19	—	
Nagasaki	28.8	73	i 5 57 k	- 5	i 10 56	+ 5	e 7 3	PP 14.2	
Unzendake	29.1	73	5 56	- 8	e 11 2	+ 6	—	—	
Hukuoka	29.3	72	i 6 6	0	i 11 10	+ 11	12 33	SS 15.3	
Kumamoto	29.5	73	i 6 7 a	- 1	11 2	0	—	15.6	
Yakusima	29.5	79	6 4	- 4	11 34	+ 32	7 0	PP 15.8	
Miyazaki	30.2	76	i 6 13	- 1	11 25	+ 12	i 7 6	PP 13.7	
Ooita	30.3	72	i 6 17	+ 2	e 11 28	+ 13	e 7 13	PP e 14.9	
Mary	30.3	297	e 6 16	+ 1	—	—	—	—	
Hirosima	31.0	71	e 6 20	- 1	e 11 52	+ 26	—	e 17.4	
Matuyama	31.2	72	e 6 22	- 1	e 11 58	+ 29	i 9 0	PcP 15.8	
Simidu	31.4	73	6 26	+ 1	12 16	+ 44	7 26	PP 15.9	
Vladivostok	31.7	54	i 6 27	0	—	—	—	—	
Koti	31.9	72	i 6 18	- 11	e 11 29	- 11	i 7 12	PP 13.4	
Sumoto	33.0	70	i 6 39	0	i 13 0	+ 63	i 7 34	PP e 16.6	
Ashkabad	33.1	297	i 6 40	0	—	—	—	—	
Kobe	33.2	70	6 41	+ 1	e 13 2	+ 62	i 7 40	PP 21.7	
Osaka	33.5	70	i 6 44	+ 1	e 13 38	88	e 8 12	PP e 17.3	
Hikone	34.1	68	e 5 50	- 58	e 11 25	- 49	e 6 48	PP e 15.9	
Owase	34.1	70	i 6 48 k	0	i 13 16	+ 62	7 50	PP 17.4	
Kameyama	34.3	69	i 6 49	- 1	e 12 14	- 3	9 9	PPP 21.1	
Gihu	34.5	69	i 6 52	0	—	—	e 8 26	PP e 14.8	
Nagoya	34.7	69	i 6 54	0	12 31	+ 7	e 7 49	PP e 20.7	
Wazima	34.7	64	6 53	- 1	e 14 24	SS	—	— e 19.9	
Kizyl-Arvat	34.8	299	i 6 57	+ 3	—	—	—	—	
Matusiro	35.7	66	7 2	0	i 12 44	+ 5	8 59	PPP 20.4	
Nagano	35.7	66	i 7 3	+ 1	e 12 33	- 6	e 8 1	PP e 20.1	
Aikawa	35.8	63	i 7 0	- 3	e 13 6	+ 25	—	—	
Shizuoka	35.9	69	i 7 3	- 1	e 13 27	+ 45	8 5	PP 18.8	
Djakarta	36.0	162	i 7 1	- 4	e 12 44	0	—	—	
Hunatu	36.2	68	i 7 6	0	13 8	+ 21	—	18.1	
Maebashi	36.4	67	i 7 7	- 1	e 13 39	+ 49	e 8 39	PP i 21.6	
Kumagaya	36.6	67	7 8	- 2	e 14 0	+ 67	e 9 24	PcP 18.1	
Osima	36.7	70	i 7 11	+ 1	14 8	+ 64	e 7 34	PP i 24.6	
Yokohama	36.9	68	i 7 12	0	—	—	e 7 54	pP 16.4	
Bandong	37.0	160	e 7 7	- 6	e 13 42	+ 43	—	—	
Mera	37.0	70	7 12	- 1	—	—	—	—	
Tokyo	37.0	68	7 11	- 2	13 21	+ 22	8 44	PP 18.1	
Utunomiyu	37.0	66	i 7 11	- 2	e 14 10	+ 71	8 44	PP 18.1	
Tukubasan	37.2	67	i 7 14	- 1	13 36	+ 34	9 35	PcP 18.2	
Akita	37.3	62	i 7 13 a	- 3	—	—	e 15 53	PS —	
Hukusima	37.5	65	i 7 16 a	- 1	—	—	e 8 23	PP 34.8	
Mito	37.5	67	i 7 16	- 1	13 2	- 5	9 5	PPP 17.4	
Onahama	E.	37.8	66	7 19	- 1	13 31	+ 20	—	18.7
Aomori	37.9	59	7 21	+ 1	i 16 13	SSS	i 8 57	PP e 21.4	
Mori	37.9	56	7 20	0	13 35	+ 22	—	—	
Sendai	37.9	63	i 7 19	- 1	13 27	+ 14	8 58	PP 17.5	
Mizusawa	38.1	62	7 22	0	13 20	+ 4	—	16.1	
Morioka	38.1	61	e 7 24	+ 2	—	—	e 16 9	SS e 19.5	
Hatinohue	38.4	58	7 23	- 2	13 44	+ 24	8 47	PP 19.9	

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	△	Az.	P.	O-C.	S.	O-C.	Supp.	L.	
	°	°	m. s.	s.	m. s.	s.	m. s.	m.	
Sapporo	38.5	55	i 7 24	- 2	e 13 31	+ 9	e 9 38	PPP	
Miyako	38.7	61	7 26	- 1	e 13 25	0	18 36	Q	
Baku	39.8	300	i 7 39	+ 3	—	—	—	—	
Nemuro	41.6	56	7 50	- 1	14 0	- 8	—	—	
Grozny	43.0	304	8 6	+ 3	—	—	—	—	
Tiflis	43.7	302	i 8 10	+ 2	i 14 39?	0	—	—	
Erevan	43.9	299	e 8 21	+ 11	—	—	—	—	
Leninakan	44.4	301	e 8 17	+ 3	—	—	—	—	
Borzhomi	44.7	302	i 8 19	+ 3	e 15 1	+ 7	—	—	
Piatigorsk	45.0	305	e 8 19?	0	i 14 58?	0	e 9 50	PP	
Abastumanj	45.1	302	e 8 17	- 3	—	—	—	—	
Zugdidi	45.8	303	8 30?	+ 5	—	—	—	—	
Guam	47.1	99	10 4	PP	—	—	—	—	
Sotchi	47.4	305	8 36	- 2	15 32	0	—	—	
Moscow	49.4	321	i 8 56	+ 3	i 16 2	+ 2	—	—	
Theodosia	50.4	307	e 9 3	+ 2	e 16 20	+ 6	i 10 4	PeP	
Simferopol	51.4	307	9 10?	+ 1	16 26?	- 2	—	—	
Yalta	51.4	306	9 8	- 1	16 31	+ 3	—	—	
Ksara	51.5	292	i 9 9	0	16 31?	+ 2	—	—	
Pulkovo	53.8	326	i 9 28	+ 2	i 17 4	+ 3	—	—	
Kishinev	54.8	309	9 32	- 2	17 14	0	—	—	
Istanbul	55.5	302	i 9 39	0	i 17 25	+ 1	—	—	
Helwan	Z.	56.2	i 9 43?	- 1	—	—	—	—	
Helsinki	56.5	326	i 9 46	0	i 17 39	+ 2	i 14 18	PeS	
Cernauti	56.6	311	e 9 48	+ 1	i 17 43	+ 5	—	—	
Bucharest	57.1	307	i 9 51?	+ 1	i 17 48	+ 3	—	—	
Lwow	57.7	313	9 54	- 1	i 17 52	- 1	10 41	PeP	
Warsaw	59.2	317	e 10 8	+ 3	i 18 13	+ 1	i 12 14	PP	
Sofia	59.4	305	i 10 7	+ 1	i 18 14	- 1	i 11 12	PeP	
Athens	60.2	300	i 10 12?	0	i 18 22?	- 3	i 13 57	PPP	
Skalnate Pleso	60.2	313	i 10 12	0	i 18 30	+ 5	i 10 30	PeP	
Timisoara	E.	60.2	309	i 10 13	+ 1	—	—	—	
Upsala	N.	60.2	326	i 10 10?	- 2	i 18 24	- 1	i 12 12	PP
Budapest	E.	61.3	311	i 10 21	+ 1	e 18 48	+ 9	11 1	PeP
	N.	61.3	311	i 10 22	+ 2	18 39	0	12 24	PP
Raciborzu	E.	61.4	315	i 10 21	+ 1	—	—	—	
Kalossa	61.6	311	10 23	+ 1	18 43	0	10 54	PeP	
Ogyalla	61.8	312	e 10 25	+ 2	18 49	+ 3	e 12 53	PP	
Vienna	62.9	313	i 10 31	+ 1	e 19 17	+ 17	e 11 7	PeP	
Perth	63.0	161	10 32	+ 1	19 40	+ 39	13 10	PP	
Copenhagen	63.6	322	i 10 35	0	i 19 13	+ 5	—	—	
Prague	63.7	315	10 36?	0	i 19 11	+ 1	i 10 52	PeP	
Potsdam	Z.	64.0	318	i 10 40	+ 2	e 19 16	+ 3	i 12 56	PP
Collmberg	64.3	317	e 10 38	- 1	i 19 18	+ 1	e 13 4	PP	
Taranto	64.4	304	10 42	+ 2	19 21	+ 3	14 16	PPP	
Cheb	65.0	316	10 44	0	i 19 30	+ 4	e 13 50	PP	
Jena	65.3	316	e 10 45	- 1	i 19 30	+ 1	i 13 26	PP	
Triest	65.3	310	i 10 47	+ 1	i 19 29	0	20 0	PPS	
Adak	66.1	42	i 9 48	- 63	e 20 19	—	—	—	
Bergen	66.1	328	i 10 51	0	i 19 22	- 17	13 28	PP	
Messina	66.3	302	i 10 52?	0	i 19 34	- 8	i 13 21	PP	
Padova	66.9	309	i 10 56?	0	i 19 49	0	24 30	SS	
Tananarive	67.0	231	e 10 54	- 3	e 19 49	- 1	15 5	PPP	
Rocca di Papa	67.2	306	e 10 55	- 3	i 19 48	- 4	e 24 17	SS	
Bologna	67.3	310	i 11 2?	+ 3	i 19 57	+ 3	e 24 19	SS	
								e 36.1	
Rome	67.4	306	i 10 56?	- 3	i 19 54	- 1	i 13 31	PP	
Stuttgart	67.4	315	e 10 59	0	i 19 59	+ 4	i 13 39	PP	
Florence Xim	67.6	309	i 10 46	- 15	i 19 37	- 20	i 20 7	PPS	
Prato	67.7	309	i 10 1	- 60	i 19 54	- 4	—	—	
Chur	67.8	312	e 11 1	- 1	e 20 0	0	—	—	

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	Δ	Az.	P.	O-C.	S.	O-C.	Supp.	L.
	°	m.	s.	s.	m.	s.	m.	m.
Karlsruhe	67·8	316	i 11 4	+ 2	i 20 2	+ 2	—	e 28·5
Zürich	68·2	314	e 11 4a	0	e 20 5	+ 1	—	—
Strasbourg	68·3	315	i 11 6a	+ 1	i 20 7	+ 1	i 11 23	PcP i 32·0
Pavia	68·6	311	i 11 8a	+ 1	i 20 10	+ 1	i 28 29	Q i 37·0
De Bilt	68·7	319	i 11 9a	+ 2	i 20 4	- 6	—	e 43·5
Basle	68·8	314	e 11 8	0	e 20 13	+ 2	—	—
Neuchatel	69·4	314	e 11 11	- 1	e 20 12	- 6	—	—
Besançon	69·9	314	i 11 15	0	—	—	—	—
Tunis	70·8	302	e 11 18	- 2	i 20 28	- 7	e 11 43	PcP i 36·2
Aberdeen	70·8	326	i 11 20	0	i 20 39	+ 4	i 14 14	PP 36·5
Durham	71·5	323	i 11 26	+ 2	i 20 46	+ 3	—	—
Paris	71·5	316	e 11 24	0	i 20 43	0	i 11 41	PcP e 40·5
Edinburgh	E.	71·9	325	i 11 25	- 2	e 20 45	- 3	i 11 43
Scoresby Sund	E.	72·0	343	i 11 28	0	—	—	—
Kew	E.	72·2	320	i 11 30a	+ 1	i 20 52	+ 1	i 15 4
Clermont-Ferrand	E.	72·3	313	e 11 30	+ 1	i 20 56	+ 4	i 11 48
Jersey	E.	74·1	318	i 11 41	+ 1	i 21 11	- 1	—
College	E.	74·3	24	e 11 40	- 1	e 21 9	- 6	i 22 0
Barcelona	E.	74·7	310	i 11 44	+ 1	i 21 18	- 1	—
Rathfarnham Castle	E.	74·7	323	i 11 43	0	i 21 16	- 3	i 21 28
Reykjavik	E.	75·8	338	e 11 54	+ 4	e 21 42	+ 11	i 22 19
Algiers Univ.	Z.	76·1	305	e 11 50	- 1	—	—	e 14 39
Tortosa	Z.	76·1	309	i 11 50	- 1	i 21 35	0	i 12 7
Brisbane	Z.	77·7	130	i 11 56	- 4	i 21 34	- 18	—
Alicante	Z.	77·9	307	i 12 3	+ 2	—	—	15 11
Toledo	Z.	79·6	310	i 12 11	+ 1	i 22 15	+ 3	PP
Granada	Z.	80·6	307	i 12 13k	- 3	i 22 27	+ 4	PcP i 38·2
Tamanrasset	Z.	80·6	291	i 12 15a	- 1	—	—	—
Riverview	Z.	80·8	136	i 12 17k	0	i 22 25	0	i 12 22
Malaga	N.	81·4	307	i 12 23	+ 3	i 22 31	0	i 15 29
Lisbon	Z.	83·6	311	i 12 32a	+ 1	22 45	- 8	PS 36·1
Sitka	Z.	83·9	26	i 12 35	+ 2	i 22 58	+ 2	PP i 45·8
Pretoria	Z.	85·1	238	i 12 37	- 2	e 23 42	+ 34	e 18 23 PPP e 35·5
Johannesburg	Z.	85·5	237	i 12 46	+ 5	i 23 4 [0]	—	e 37·2
Pietermaritzburg	Z.	85·8	233	i 12 42	0	—	—	e 30 32 PKKP e 40·5
Ivigtut	Z.	86·0	344	i 12 42	- 1	i 23 4 [- 3]	1 24 15	PS
Grahamstown	Z.	90·6	232	i 13 5	0	e 21 30 [?]	—	e 38·5
Lome	Z.	91·8	278	e 13 25	+ 14	e 23 44 [+ 1]	i 17 17	PP 41·6
Honolulu	Z.	92·7	64	e 12 53	- 22	i 23 49 [+ 1]	i 17 1	PP e 39·2
Victoria	Z.	95·2	25	e 13 37a	+ 10	i 24 5 [+ 3]	17 12	PP
Seattle	Z.	96·3	25	i 13 33a	+ 1	e 27 9	PPS e 18 12	PP e 41·5
Saskatoon	Z.	97·0	14	i 13 36	+ 1	24 8 [- 4]	17 43	PP
Apia	Z.	97·9	101	e 13 40a	+ 1	e 25 13 [+ 10]	e 17 45	PP e 47·5
Auckland	N.	98·1	128	e 14 2	+ 22	e 25 7 [+ 3]	i 18 40	PKP 45·6
Kaimata	N.E.	98·7	134	e 13 44	+ 2	e 24 27 [+ 6]	e 24 58	S —
New Plymouth	E.	98·7	129	e 14 33	+ 51	24 52 { + 7 }	e 17 27	PKP —
Cobb River	E.	98·8	132	e 14 55	+ 72	e 24 50 { + 4 }	e 17 25	PKP —
Arapuni	E.	99·3	128	e 16 16	? 7	e 24 48 { - 1 }	e 18 16	PP —
Christchurch	E.	100·0	134	i 13 56	+ 8	24 20 { - 7 }	e 27 15	PS —
Wellington	E.	100·3	131	i 13 54	+ 4	24 20 { - 8 }	e 17 35	PKP —
Butte	N.	101·1	20	e 13 56	+ 3	i 24 33 [+ 1]	i 18 6	PP i 49·0
Ferndale	N.	101·3	30	e 14 10	+ 16	—	18 2	PKP e 56·5
Bozeman	N.	101·8	19	e 13 53	- 3	i 24 38 [+ 2]	i 18 6	PP e 46·6
Shasta Dam	N.	102·1	29	e 13 58	0	e 25 33 - 5	e 18 7	PP —
Mineral	Z.	102·7	28	e 14 1	+ 1	e 18 21 PP	e 17 51	PKP e 49·0
Seven Falls	E.	103·7	352	e 14 10	+ 5	24 38 [- 7]	i 18 24	PP —
Berkeley	E.	104·4	30	e 14 9	+ 1	i 24 54 [+ 6]	e 18 13	PKP e 52·7
Shawinigan Falls	N.	104·5	353	i 14 14	+ 6	25 52 - 6	i 18 39	PP —
Halifax	N.	104·8	345	i 14 8	- 2	25 58 - 2	18 36	PP —
Santa Clara	N.	105·0	30	e 14 13	+ 2	i 27 33 PS	i 18 17	PP e 56·0

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	Δ	Az.	P.	O-C.	S.	O-C.	Supp.	L.
	°	°	m. s.	s.	m. s.	s.	m. s.	m.
Logan	105.1	21	e 14 13	+ 2	e 24 21	[-30]	i 18 30	PP i 50.0
Ottawa	105.9	355	i 14 14a	- 1	24 58	[+ 3]	i 18 39	PP —
Fresno	106.5	29	e 14 18a	+ 1	e 25 28	[+31]	e 17 59	PKP e 53.7
Tinemaha	z. 106.8	28	e 18 26	[- 1]	i 30 40	PKKP	e 18 53	PP —
Harvard	108.3	349	i 14 27	P	—	—	i 17 59	PKP —
Weston	108.4	349	i 14 28	P	i 28 22	PS	i 19 0	PP —
Buffalo	108.6	357	i 14 28	P	i 25 4	[- 2]	i 18 30	PKP —
Overton	z. 108.9	26	e 14 30	P	—	—	e 19 6	PP —
Boulder City	109.2	26	e 14 32	P	e 24 54	[-15]	i 18 29	PKP —
Mount Wilson	z. 109.3	29	e 14 37	P	i 29 57	PKKP	e 38 20	P'P' —
Pasadena	109.4	29	i 14 31a	P	i 25 13	[+ 3]	i 19 3	PP e 45.5
Pierce Ferry	109.4	25	e 14 32	P	—	—	i 19 16	PP —
Ann Arbor	109.4	0	e 14 31	P	—	—	—	—
Crest Line	z. 109.7	28	e 14 31	P	—	—	—	—
Chicago	109.8	3	e 14 26	P	e 25 6	[- 5]	e 19 16	PP e 43.4
Cleveland	110.1	358	i 14 33	P	e 28 48	PS	i 18 17	PKP —
Pennsylvania	110.7	355	e 14 40	P	—	—	i 19 18	PP e 54.5
Philadelphia	111.3	352	e 14 40	P	e 24 51	[-26]	e 18 35	PKP i 44.0
Cincinnati	112.5	1	i 14 44	P	—	—	i 18 11	PKP —
Washington	112.5	353	e 14 44	P	i 27 1	{ +38 }	i 18 19	PKP e 47.0
Florissant	112.5	5	e 14 44	P	—	—	i 19 26	PP —
St. Louis	112.7	5	e 14 59	P	i 29 13	PS	i 19 28	PP —
Tucson	114.0	25	e 14 53	P	e 25 35	[+ 7]	e 18 53	PKP e 54.5
Bermuda	116.7	341	e 14 56	P	e 25 28	[-10]	e 19 42	PP i 58.5
Columbia	117.6	357	e 15 10	P	i 25 34	[- 8]	e 19 18	PKP e 48.6
Milton	120.9	3	i 15 42	P	—	—	—	—
Tacubaya	129.8	18	e 19 28	[+16]	i 29 51	PKKP	—	—
Roosevelt Roads	130.3	336	e 16 22	?	—	—	—	—
San Juan	130.3	337	e 19 17	[+ 4]	i 26 23	[+ 2]	e 21 37	PP e 50.2
Fort de France	131.8	330	e 16 28	?	e 29 55	PKKP	e 19 58	PKP —
Port au Prince	131.8	345	e 19 48	[+32]	22 53	PKS	e 22 8	PP 61.5
Swan Island	134.2	359	e 18 43	?	—	—	—	—
Guatemala City	136.4	8	e 22 5	PKS	—	—	—	e 68.8
Balboa Heights	142.4	352	e 19 56	[+21]	e 35 43	PPS	—	e 72.5
Bogota	145.7	343	i 19 43	[+ 3]	e 23 42	SKP	i 19 57	PKP, e 69.5
Chinchina	145.7	345	i 19 42	[+ 2]	—	—	i 19 56	PKP, e 67.5
La Plata	E. 157.5	248	20 7	PKP ₁	26 30	[-32]	24 16	PP 77.8
	N. 157.5	248	20 8	PKP ₂	38 18	PPS	28 42	PPP 75.8
	Z. 157.5	248	20 16	PKP ₃	38 48	PPS	24 24	PP 77.7
Buenos Aires	158.0	249	20 10	[+11]	30 56	{ - 6 }	20 50	PKP, 76.9
La Paz	161.4	308	i 20 6a	[+ 4]	i 26 55	[-11]	i 20 51	PKP, 71.5
Huancayo	161.8	334	i 20 7	[+ 4]	—	—	—	—
Antofagasta	167.3	290	i 20 14	[+ 6]	i 27 8	[- 2]	i 24 30	PKS 81.4
Santiago	168.1	243	e 20 31	[+23]	—	—	—	—

Additional readings :—

Nagasaki PPP = 7m.30s., ePcP = 8m.1s., SS = 12m.21s.

Hukuoka e = 14m.28s.

Ootla eSS = 12m.58s.

Matuyama iE = 11m.8s., iN = 11m.38s.

Koti iPPP = 7m.43s.

Sumoto iPPZ = 8m.44s.; PP given as pP.

Kobe eEZ = 7m.54s., iEZ = 8m.1s., eE = 8m.29s., Q = 16m.50s.

Osaka e = 10m.20s., iZ = 15m.38s.

Hikone ePPP = 17m.25s., e = 9m.6s., eSS = 13m.25s.

Owase eZ = 9m.30s.

Kameyama e = 15m.18s., Q = 18m.33s.

Gihu e = 9m.38s.

Nagoya eE = 10m.9s. and 11m.15s., eQ? = 13m.25s.

Matusiro e = 18m.16s., i = 11m.0s., S? = 13m.14s., i = 14m.25s., e = 15m.13s., SS? = 16m.25s., Q = 17m.54s.

Nagano e = 9m.4s.

Shizuoka PP = 8m.45s., SS = 14m.7s.; PP given as pP.

Maebashi iPPEN = 9m.41s., SS?Z = 17m.14s.

Kumagaya e = 10m.24s. and 16m.24s.

Osima ePP? = 9m.8s., esPP = 9m.39s., ePPP? = 10m.11s., e = 14m.34s., eS₀S? = 16m.34s.,

esSS = 18m.10s., eSS? = 19m.43s., iQ = 21m.51s.

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Tokyo iEN = 7m.54s., iZ = 9m.20s., PPPZ = 9m.45s., i = 12m.51s. and 14m.19s., QEN = 15m.54s., SS = 16m.50s., ScS?E = 17m.3s.
Utunomiya e = 8m.7s., PPP = 9m.40s., e = 13m.17s.
Tukubasan PPP = 10m.31s., Q = 16m.49s.
Hukusima e = 10m.32s., 16m.48s., and 21m.46s., Q = 31m.57s.
Mito PPEN = 9m.27s.
Sendai P_cP = 12m.38s., Q = 15m.49s.
Mizusawa PN = 7m.26s.
Hatinohé PPP = 9m.26s., SS = 16m.46s.
Sapporo iQ = 16m.34s.
Theodosia IPP = 11m.8s.
Helsinki iSeS = 19m.19s., iSS = 21m.21s.
Bucharest iSE = 17m.52s.
Lwow ePP = 12m.2s.
Warsaw e = 10m.24s. and 10m.40s., i = 11m.19s., iPPP = 13m.47s., i = 16m.5s., 19m.25s. and 19m.49s., iSS = 22m.13s.
Sofia i = 10m.26s., 11m.48s., 19m.32s., and 22m.16s.
Athens e = 11m.2s. and 12m.38s., ePPS = 18m.51s., iSS = 22m.20s.?, e = 25m.35s., i = 29m.11s.
Skalnate Pleso i = 10m.25s., iE = 11m.16s., e = 12m.40s., ePP = 12m.51s., ePPP = 13m.56s., eE = 14m.30s., eN = 14m.53s., e = 15m.36s., eN = 17m.1s., eE = 17m.30s., iN = 17m.42s., eSS = 22m.42s.
Upsala iN = 11m.9s., 12m.41s., 18m.4s., and 21m.11s., iSSSN = 24m.14s., eQN = 25m.24s.
Budapest P_cPN = 10m.53s., PPE = 12m.21s., iE = 12m.57s., PPPN = 13m.57s., PPPE = 14m.1s., P_cSE = 15m.2s., P_cSN = 15m.5s., PSE = 19m.3s.
Raciborzu ePN = 10m.24s.
Kalossa P_cPE = 11m.8s., PPE = 12m.18s., PPN = 12m.21s., PPPN = 13m.53s., PPPE = 14m.0s., P_cSN = 15m.0s., PSN = 18m.59s., PSE = 19m.4s. and other unidentified readings.
Ogyalla ePPP = 14m.5s., ePS = 19m.16s., eSS = 23m.30s. and other unidentified phases.
Vienna PP = 12m.54s.?, eSS = 23m.42s.
Perth PPP = 14m.28s.
Prague PPZ = 13m.18s., PPPZ = 14m.43s., ePS = 19m.30s.?, SS = 23m.40s., SSS = 26m.26s. and other unidentified e and i readings.
Potsdam iPPP?E = 14m.54s., iPPP?N = 14m.59s., iP_cSE = 15m.26s., iE = 18m.15s., iSE = 19m.20s., iPPSE = 19m.53s., iPPSN = 19m.59s., E = 22m.24s., iSSN = 23m.29s.?
Collmberg ePPPE = 14m.49s., eSSN = 24m.6s., eSSSN = 26m.48s. and other unidentified phases.
Taranto i = 11m.12s.
Cheb eN = 10m.51s., ePPPN = 15m.3s.
Jena iPN = 10m.54s., iP = 11m.2s., iPPN = 13m.30s. and 13m.35s.?, iPPPE = 14m.46s., iPPPN = 15m.6s., iSZ = 19m.50s., iSSN = 23m.45s. and 24m.26s., iSSSEN = 27m.30s., iSSSNZ = 27m.40s.
Triest i = 11m.20s., eSS = 24m.22s.?
Bergen PPPE = 15m.22s., eEN = 16m.14s., SN = 19m.27s., PSN = 19m.36s., SSN = 24m.30s.?
Messina i = 11m.11s. and 15m.1s., iPS = 20m.3s., i = 23m.32s.
Padova i = 11m.4s.
Tananarive IP = 11m.3s., e = 19m.40s., ePPS = 20m.29s.
Rocca di Papa i = 12m.13s., SSS = 25m.45s.
Bologna iZ = 11m.8s., i = 20m.52s., e = 21m.10s., eSSS = 26m.38s., e = 27m.24s.
Rome i = 11m.24s., PPP? = 14m.51s., iPS = 20m.24s., SS = 24m.27s., SSS = 25m.56s.
Stuttgart iPPP = 15m.50s., iSS = 24m.30s., iSSN = 26m.54s., iQ = 28.5m.
Florence Xim i = 11m.23s.
Strasbourg iPP = 13m.42s., iPPP = 15m.16s., iPS = 20m.38s., iScS = 20m.56s., iSS = 24m.32s., iSSN = 27m.23s. and other unidentified i readings.
Tunis iPP = 13m.55s. and 14m.4s., iPPP = 15m.34s., iS = 20m.38s., iPS = 20m.59s., iSeS = 21m.40s. and other unidentified i readings.
Aberdeen iPPPN = 15m.12s., iSSN = 25m.46s., iSSSN = 28m.37s.
Paris i = 11m.33s., 12m.1s. and 13m.49s., iPP = 14m.16s., i = 21m.59s., iSS = 24m.53s., ePKP, PKP = 39m.21s.
Edinburgh PPE = 14m.8s., PPPE = 15m.51s., SKSE = 21m.23s., SSE = 25m.26s.
Kew i = 12m.34s., ePPP = 16m.52s., iEN = 20m.26s., iPSZ = 21m.10s., eZ = 23m.8s., eSSZ = 27m.34s., ePKP?Z = 30m.32s.
Clermont-Ferrand iPP = 14m.18s.
Jersey iE = 17m.26s.
College iPKKP = 29m.36s., iPKP, PKP = 38m.44s.
Rathfarnham Castle iPP = 15m.24s., ePPP = 17m.13s., iZ = 19m.37s.
Reykjavik iEN = 12m.12s., 12m.50s. and 13m.11s., eEN = 17m.45s., eE = 18m.35s., eSE = 21m.48s., iPS?N = 22m.52s., iE = 23m.9s., eEN = 30m.54s., eE = 33m.54s.
Algiers Univ. ePPPZ = 16m.27s.
Tortosa PPN = 14m.44s., PPPN = 16m.35s., ScSE = 21m.58s., PPSN = 22m.36s., SSE = 26m.42s., SSSE = 29m.53s.
Toledo PPPZ = 17m.2s., PSZ = 22m.59s., SSZ = 27m.24s., SSSZ = 32m.42s.
Granada iPP = 15m.11s., PPP = 16m.34s., PS = 22m.44s., PPS = 23m.34s., iSS = 27m.59s., SSS = 30m.31s., Q = 32.5m.

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Riverview iE = 12m.50s., iN = 13m.11s., iE = 13m.15s., 13m.31s., 14m.2s., and 14m.10s.,
iN = 14m.19s., iEN = 22m.35s., iSN = 22m.47s., iE = 23m.11s., iN = 24m.4s., iE =
24m.17s., iN = 24m.24s. and 24m.39s.
Malaga iPPPN = 17m.28s.
Lisbon P = 12m.52s., iSN = 22m.57s., PSEN = 23m.35s., QE = 35m.26s.
Sitka ePPS = 24m.0s.
Pretoria iZ = 30m.46s.
Pietermaritzburg iZ = 30m.51s.
Ivigtut i = 14m.37s., 22m.11s., and 22m.46s.
Grahamstown e = 13m.28s.
Lome i = 14m.47s. and 17m.46s., ePPP = 19m.2s., i = 19m.46s., iSKKS = 23m.55s., iS =
24m.11s., iPS = 25m.33s., ePPS? = 26m.27s., ePKKS? = 27m.47s., eSS = 30m.20s.,
e = 30m.30s., iSSS = 33m.21s., iSSS? = 36m.16s., eQ = 38.0m.
Honolulu ePP = 16m.54s., eSKS = 23m.23s., iPS = 25m.8s., iPPS? = 25m.24s., eSS =
30m.30s.
Victoria i = 14m.21s. and 22m.52s., PKKP = 30m.23s., SS = 39m.48s.
Seattle e = 16m.52s., 17m.7s., 18m.46s., and 19m.35s., ePPP = 20m.35s., ePPS = 28m.0s.
Apia eP = 13m.44s., eN = 14m.41s., e = 18m.42s., eE = 20m.6s., eEN = 31m.46s., eE =
41m.15s.
Auckland ePN = 14m.20s., eSN = 26m.53s., ePKKPN = 30m.50s.
New Plymouth eE = 21m.13s. and 22m.19s., eSKKS?E = 25m.51s.
Cobb River ePPE = 18m.21s.
Arapuni e = 19m.11s. and 31m.48s.
Christchurch i = 14m.41s. and 15m.34s., iEN = 18m.54s., e = 23m.15s., eSSZ = 32m.30s.
Wellington e = 14m.15s., ePP = 18m.12s., SKKS = 24m.56s.
Butte eSN = 24m.3s., iPPS?N = 28m.18s., iN = 30m.44s. and 33m.53s., ePKP,PKP?N =
39m.1s.
Ferndale eE = 21m.42s., eN = 29m.20s., eE = 34m.44s.
Bozeman ePPP = 21m.13s., eS = 26m.11s., i = 27m.31s., ePSPS = 33m.45s.
Shasta Dam eSKS = 24m.24s., ePKKP? = 30m.8s., ePKP,PKP = 38m.27s., ePKP,
PKP,PKP? = 59m.58s.
Mineral eZ = 14m.16s., iZ = 14m.54s., eZ = 19m.38s.
Seven Falls iE = 19m.11s., PPPE = 20m.54s., eE = 23m.45s., SKSE = 24m.58s., SKKSE =
26m.1s., PSE = 27m.0s., PPSE = 28m.36s., SSE = 34m.12s.
Berkeley iEN = 15m.9s., eE = 35m.8s., and 45m.5s.
Shawinigan Falls PPPN = 20m.44s., SKSN = 24m.45s., PSN = 27m.39s., SSN = 33m.36s.
Halifax SKS = 24m.48s., PS = 27m.56s., PPS = 28m.48s.
Santa Clara eN = 51m.4s.
Logan i = 15m.8s. and 17m.25s., e = 24m.11s., iPS = 27m.7s., iSS = 33m.12s.
Ottawa SKKS = 25m.45s., PS = 27m.48s., PPS = 28m.42s., PKKP = 30m.6s.
Fresno eZ = 15m.14s. and 16m.22s., eE = 18m.36s., iPPNZ = 18m.44s., eE = 20m.8s.,
iZ = 29m.14s., eZ = 43m.0s., eE = 53m.42s.
Boulder City iPP = 19m.7s., iScS = 21m.43s., eSKKS = 26m.9s., ePS? = 28m.50s., i =
31m.4s., ePKP,PKP = 39m.0s.
Mount Wilson iZ = 30m.38s.
Pasadena ePKPZ = 18m.13s., ePPPZ = 21m.30s., eSKS = 24m.54s., ePSN = 28m.12s.,
ePKPZ = 29m.48s., iZ = 30m.42s. and 31m.3s., eSSN = 34m.54s., iPKP,PKPZ =
38m.28s.
Pierce Ferry i = 15m.33s.
Chicago ePPP = 21m.36s., eS = 26m.56s., iS = 27m.6s., eSS = 34m.6s., e = 35m.16s. and
37m.36s., eSSS? = 38m.2s.
Cleveland ePE = 14m.46s., iPP = 18m.55s., iN = 19m.20s., eE = 19m.33s.
Pennsylvania eE = 15m.1s.
Philadelphia ePP = 19m.13s., iPPP = 21m.29s., i = 22m.23s., iS = 26m.53s., i = 27m.52s.,
iPS = 29m.3s., iPPS = 30m.18s., iSS = 35m.42s., iPSPS = 39m.27s.
Cincinnati iPP = 19m.12s., i = 19m.29s.
Washington iPP = 19m.36s., iPPP? = 22m.3s., i = 24m.35s., iPS = 28m.56s., iPSPS =
35m.49s.
Florissant i = 23m.55s., and 24m.15s.
St. Louis i = 19m.53s., 20m.22s., 20m.53s., 22m.45s., 23m.41s. and 27m.49s., iPPS = 30m.6s.
Tucson ePP = 19m.26s., iPP = 19m.41s., i = 19m.52s., iPS? = 22m.30s., e = 30m.18s.,
i = 42m.36s.
Bermuda iPP = 20m.11s., iSKKS = 26m.46s., iS = 27m.51s.
Columbia ePP = 20m.0s., ePPP = 22m.0s., e = 26m.20s., eS = 27m.34s., e = 28m.35s.,
ePS? = 29m.28s., iPS = 29m.55s., ePPS = 31m.14s., eSS = 35m.56s., eSSS = 40m.20s.
Milton e = 17m.18s.
San Juan i = 22m.35s., eSKS? = 25m.55s., ePS = 32m.8s., eSS = 38m.17s., eSSS =
43m.24s.
Fort de France i = 20m.30s.
Port au Prince i = 20m.53s., PPP = 25m.8s.
La Plata e. PKP? = 20m.12s., ePKP = 20m.38s.?, SKKS = 31m.54s., SKSP = 34m.42s.,
PPS = 37m.48s., SS = 43m.54s., PSS = 45m.42s., SSS = 50m.48s., Q = 60m.6s.
La Plata N. PKP = 20m.19s., SS = 44m.2s., PSS = 45m.11s., SSS = 50m.30s., Q = 65.3m.
La Plata Z. PSS = 45m.54s. Other phases are recorded at La Plata without phase.
Buenos Aires PP = 24m.28s., PPP = 28m.14s., PPS = 37m.50s., SSS = 51m.4s.
La Paz iPPZ = 24m.41s., iSKKS = 31m.30s., iPPS = 36m.48s., iSS = 44m.55s., iSSP =
45m.54s., iSSS = 51m.8s.
Antofagasta ePeP.PKS? = 32m.27s., eSKSP? = 33m.38s., ePPS? = 36m.56s., iPPPS? =
39m.31s., iPPS = 45m.16s., eSSS = 53m.20s., Q = 71.6m. with several other uniden-
tified phases.