

Uspid JPS



Page 32. missing
possibly part of 26 d and 27 d
JPS



SEISMOLOGICAL BULLETIN

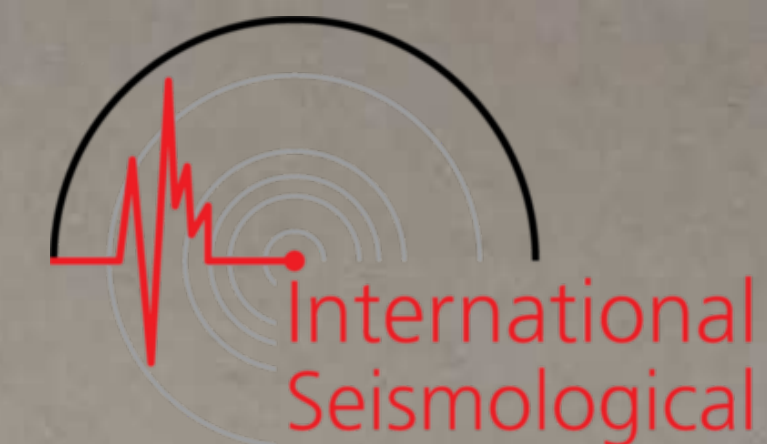
JUL 1963

**GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT**

**PUBLISHED UNDER THE DIRECTION OF
SHRI P. R. KRISHNA RAO
DIRECTOR GENERAL OF OBSERVATORIES**

List of Seismograph Stations with their Instruments and Constants

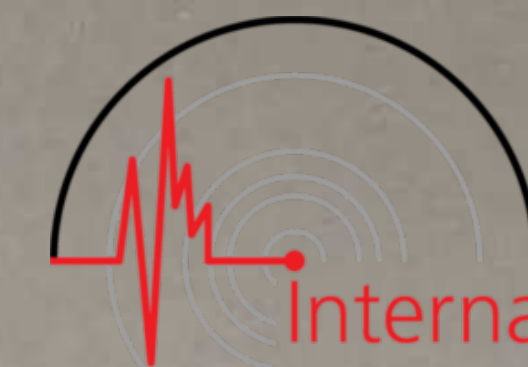
Station	Latitude	Longitude	Height a. s. l. (Metres)	Lithographic foundation	Instrument	Compt	Period in secs.	Static Magni- fication	Damping ratio	Paper speed mm/min
Agra					Columbia	E	To=15 Tg=100			15
					Long Period	N	To=15 Tg=85			15
					- do -	Z	To=15 Tg=70			15
Bombay	18.54°N	72.40°E	4	Deccan Trap	Milne-Shaw	N	12 350	13:1		16
					Milne-Shaw	E	12 350	23:1		8
					Sprengnether	E	To=Tg=7 secs			30
Bokaro	23.50°N	85.48°E		Rock	Milne-Shaw	N	12 250	27:1		15
					Milne-Shaw	E	12 250	20:1		15
					Wood-Anderson	E	0.8 950	h=0.8		60
					Wood-Anderson	N	0.8 1000	h=0.8		50
Calcutta	22.32°N	88.22°E	(1) 7	Milne-Shaw	Milne-Shaw	E	12 250	20:1		8
			(2) 5	Omori-Ewing	Wood-Anderson	N	2 870	Critical		30
				Alluvium	Omori-Ewing	N	15 12			25.4
					Omori-Ewing	E	21 30			25.4
Chatra	26.50°N	87.10°E	151	Sand Stone	Milne-Shaw	E	12 250	20:1		16
					Wood-Anderson	N	1 1000	30:1		60
					Benioff	Z	To=0 Tg=0.45 secs	Critical		60
					Wenner-Accelerograph	ZNE	-			-
Colombo	06.54°N	79.52°E	7	Beach Sand	Milne-Shaw	E	12 250	20:1		-
Dehra Dun	30.19°N	78.02°E	682	Gravel	Wood-Anderson	N	0.8 950	Critical		60
					Wood-Anderson	E	0.8 850	Critical		60
					Milne-Shaw	N	12 250	20:1		8
					Milne-Shaw	E	12 250	20:1		8
Hyderabad	17.26°N	78.27°E	536	Granite	Milne-Shaw	E	12 250	20:1		8
					Milne-Shaw	E	12 250	20:1		8
Kodaikanal	10.14°N	77.28°E	2345	Rock	Milne-Shaw	E	10 250	20:1		9
Madras	13.00°N	80.11°E	15	-	Sprengnether	E	To=Tg=7.2 secs	Critical		30
New Delhi	28.35°N	77.12°E	207	Massive Quartzite						
Poona	18.32°N	73.51°E	560	Deccan Trap	Sprengnether	Z	To=Tg=1.6	Critical		30
					Wood-Anderson	E	4 1000	20:1		15
					Milne-Shaw	N	12 280	20:1		8
Port Blair	11.49°N	92.43°E			Wood-Anderson	N	2 1000	20:1		30
					Wood-Anderson	E	0.8 1000	66:1		30
					Milne-Shaw	N	12 350	20:1		8
Sehore	23.10°N	77.08°E			Wood-Anderson	N	0.8 980	Critical		30
Shillong	25.34°N	91.53°E	1500	Quartzite Sand Stone (Shillong Quartzite)	Wood-Anderson	N	0.8 1000	h=0.8		30
					Wood-Anderson	E	0.8 1000	h=0.8		30
					Milne-Shaw	N	12 250	20:1		8
					Benioff	Z	To=1.0 Tg=18			60
					Sprengnether	E	To=Tg=5.3	Critical		30
					Wenner Accelerograph	ZNE	-			-
Tocklai	24.45°N	94.45°E		Alluvium	Wood-Anderson	E	0.8 970	h=0.8		60
Vizianagram	18.07°N	83.27°E			Wood-Anderson	E	0.8 1000	h=0.8		30
					Wood-Anderson	N	2 1000	20:1		30



DATE	STATION	COMPT	PHASE	G. M. Centre Δ h m s km	REMARKS
01	Delhi	Z	iP i	03 03 08 03 13	Feeble, compression
01	Shillong	ZNE	iP	04 16 13	Slight, distant
01	Delhi	ZNE Z	eP i	04 47 55 48 28	Slight, rarefaction
01	Shillong	ZNE	iP P* iS	07 45 34 45 37 46 09	310 Slight
01	Bokaro	NE	iP	07 56 54	Feeble, local
01	Bokaro	NE	e	08 42 20	Slight, tremor
01	Shillong	ZNE	iP	11 23 59	Slight, distant compression
01	Shillong	ZNE	eP PPP i i iS	12 23 27 28 53 39 15 39 29 39 49	690 Slight
01	<i>Epc 4.7S, 103.7E. Off south coast of Sumatra -H = 20h 19m 40.6s G.M.T. h about 91 km (USCGS)</i>				
	Shillong	ZNE	iP	20 23 02	Slight, distant rarefaction
	Chatra	Z	eP	20 26 29	Feeble, distant
	Delhi	ZNE Z	iP i	20 27 24 27 25	Slight, Initial ground motion Southeast, rarefaction
01	Delhi	ZNE	eP	20 33 35	Slight, Initial ground motion Northeast, compression
01	Shillong	ZNE	Pg Sg	20 40 21 30 40 25	Slight, Initial ground motion East, compression
01	<i>Epc 37°N, 96.1°E. Tsinghai Province, Chana -H = 21h 10m 28.5s G.M.T. h about 33 km Mag. 5.3 SD, 0.2 (CGS) (USCGS).</i>				
	Shillong	ZNE	iP	21 13 19	Distant, rarefaction
	Chatra	Z	eP	21 13 31	Feeble, distant
	Delhi	Z NE	iP i	21.14 26	Initial ground motion Northeast, compression
01	Bokaro	E	i i	21 19 33 20 45	Slight, distant
01	Dehra Dun	N	e	21 19 49	Tremor

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
01	<i>Epc 40.5°N, 153.6°E. Kurile Islands</i> <i>- H = 22h 39m 57.8s GMT. h about 69 km</i> <i>Mag 4.5 SD, 0.3 (CGS) (USCGS).</i>							
	Shillong	ZNE	iP	22	49	08		Distant, compression
	Chatra	Z	iP	22	49	27		Distant, rarefaction
	Delhi	ZNE	eP	22	50	05		Initial ground motion Southeast, compression
02	<i>Epc 43.9°N, 85.2°E. Sinkiang Province, China</i> <i>- H = 00h 15m 22.4s GMT. h about 39 km</i> <i>Mag 4.4 (CGS) (USCGS)</i>							
	Delhi	Z	eP	00	19	11		Initial ground motion South, compression
	Chatra	Z	eP	00	19	22		Distant
	Shillong	ZNE	iP	00	19	45		Distant
	Dehra Dun	E	eS	00	21	41		
			e		23	49		
02	Shillong	ZNE	iP	06	11	54		Slight, distant compression
02	Bokaro	NE	iP	09	14	13		Feeble, local
02	Shillong	ZNE	iP	09	52	37		Slight, distant, rarefaction
02	Bokaro	NE	iP	10	52	54		Feeble, local
02	Shillong	ZNE	iP	15	12	01		Slight, distant, initial ground motion Southwest, rarefaction.
02	Shillong	ZNE	iPg	13	10	13	120	Slight
			iSg		10	30		
			iS		10	32		
02	Shillong	ZNE	iP	13	25	08		Slight, distant, compression
02	Chatra	Z	ePg	21	55	52	120	Feeble
			eSg		56	03		
02	Shillong	ZNE	iP	01	12	22		Slight, distant, compression
02	Chatra	Z	eP	11	12	03		Slight, distant
		NE	e		19	48		
			i		23	58		
02	Chatra	Z	eP	14	07	13		Slight
02	Delhi	ZNE	iPg	17	45	15	40	Slight, compression
			iSg		45	20		
02	Shillong	ZNE	iPg	20	24	12	120	Slight, initial ground motion towards Northeast.
			PP		24	22		
			Sg		24	23		



International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
02	Shillong	ZNE	iPg	21	01	03	120	Slight
			Sg		01	20		
			Sn		01	23		
02	Shillong	ZNE	iP	21	37	43	390	Slight, initial ground motion South, West.
			S		38	27		
02	Chatra	Z	iP	21	52	17		Feeble, compression
02	Delhi	ZN	iP	22	39	05		Slight, rarefaction, local
02	Shillong	ZNE	iP	22	55	29		Slight, distant, compression
02	Shillong	ZNE	eP	23	44	50		Slight, distant
04	Shillong	ZNE	iP	01	04	21		Slight, distant, rarefaction
04	<i>Epc 24.4°N, 122.4°E. Near east coast of Formosa.</i> <i>- H = 06h 55m 16.8s. h about 63 km</i> <i>Mag 4.6 (CGS) (USCGS)</i>							
	Shillong	ZNE	iP	07	01	02		Distant
	Delhi	Z	iP	07	02	53		Rarefaction
04	Shillong	ZNE	ePn	07	17	35	320	Slight
			i		18	09		
			Sg		18	22		
04	Bokaro	E	iP	08	43	05		Feeble, local
04	Delhi	ZNE	iPg	10	30	35	30	Slight, initial ground motion East. Compression
			iSg		30	37		
04	<i>Epc 26.3°S, 177.7°W. Tonga Islands Region</i> <i>- H = 10h 58m 13.2s GMT. h about 158 km (USCGS)</i> <i>Mag 6½ (Pas), 6½-7 (BKS), 6.5 SD, 0.3 (CGS).</i>							
	Port Blair	ZE	iP	11	11	15		Distant, compression, initial ground motion West.
		E	i		14	26		
			i		16	08		
			i		19	51		
			i		21	31		
			i		22	58		
			i		24	34		
			Mn		52	-		Per.=19 sec, μ = 3
	Shillong	ZNE	iP	11	11	47	11500	
		N	iPP		13	59		
			iS		23	12		
			iSs		24	38		
			SKS		24	42		
			PFS		26	03		
			iSS		30	05		
	Delhi	Z	eP	11	12	46		Distant, rarefaction
			e		16	34		
			e		25	39		
04	Visakhapatnam	E	e	11	15	06		
			e		19	24		

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks	
04	✓ Madras Contd.	E	e	11	24	05			
						27	02		
						27	24		
						32	41		
	✓ Dehra Dun	N	e	11	25	02			
04	Bokaro	E	iP	13	00	15		Feeble, local	
04	Shillong	ZNE	eP	13	22	02		Slight, near	
04	Shillong	ZNE	iPg Sg	13	28	09 28 20		90 Slight	
04	Shillong	ZNE	iP iS	19	13	10 13 33		220 Slight	
04	Shillong	ZNE	iPn Pg Sg	20	03	27 03 29 03 47		150 Slight	
04	Shillong	ZNE	iP	21	52	41		Slight, distant, rarefaction	
04	Delhi	ZNE	iP	21	54	21		Slight, distant, initial ground motion South, east, rarefaction	
04	✓ Shillong	ZNE	iPn Sg Sn	23	03	27 03 45 03 47		140 Slight, initial ground motion South East.	
05	Port Blair	E	Mn	00	06	-		Per. = 15 secs, $\mu = 3$	
05	Shillong	ZNE	iP	03	24	56		Slight, distant, initial ground motion North, rarefaction	
05	Chatra	Z	eP	04	43	00		Feeble	
	Shillong	ZNE	iP	04	45	15		Slight, near	
05	Bokaro	E	eP	05	22	07		Slight, distant	
✓ 05	✓ Delhi	Z	iP	06	03	03		Slight, rarefaction	
✓ 05	✓ Shillong	Z	eP	06	08	18		Slight, distant	
05	Shillong	ZNE N	iP iS Sg	07	19	19 20 17 20 23		240 Slight, initial ground motion North, East and rarefaction	
	Chatra	Z NE	eP S* Sg	07	20	22 21 31 21 37		490 Slight	
	Delhi	ZNE	iP	07	22	18		Slight, initial ground motion West, rarefaction	
05	Delhi	Z	iP	08	44	42		Slight, rarefaction	



International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
05	Epc 37.2°N, 73°E. Hindukush. - H = 13h 11m 37.5s GMT Mag 5.0 (CGS) (USCGS). h about 111 km							
	Delhi	ZNE	iP i iS	13	13	43 13 49 15 26		970 Rarefaction
	Dehra Dun	NE E	eS i	13	15	07 15 52		
	Chatra	Z	eP e	13	15	17 17 59		
	Shillong	ZNE	iP	13	16	01		
05	Epc 36.7°N, 73.0°E. Hindukush. - H = 16h 27m 27.6s Mag 4.3 (CGS) (USCGS). h about 193 km							
	Delhi	ZN	iP iS	16	29	23 31 12		960
	Chatra	Z	eP	13	30	02		
	Shillong	ZNE	iP	16	31	44		Distant
05	Chatra	Z	eP* eS*	23	11	31 11 48		140 Feeble
05	Shillong	ZNE	eP	23	25	20		Slight, near
05	Delhi	Z	eP	23	54	29		Slight, rarefaction
06	Shillong	ZNE	eP	01	02	14		Slight, distant
06	Epc 30.3°N, 99.8°E. Sinkiang Province, China. - H = 01h 01m 28.7s GMT Mag 4.9 (CGS) (USCGS) h about 33 km							
	Shillong	ZNE	iP iS Sg	01	03	32 05 05 05 58		900
	Chatra	Z	eP	01	04	14		Distant
	Delhi	Z	eP	01	05	52		Compression
06	Shillong	ZNE	eP	03	32	36		Slight, near
06	Delhi	ZN	iP i i E	05	35	45 35 48 36 27 36 42		Slight, initial ground motion North, rarefaction
	Dehra Dun	NE	e	05	35	56		Tremor
06	Bokaro	NE	iP	03	34	17		Feeble, local
06	Delhi	Z NE	iP0 eP0	13	37	59		Slight, initial ground motion West, rarefaction
06	Shillong	ZNE	iP i	15	19	25 20 54		Slight, near
06	Delhi	ZN	eP	19	51	53		Slight

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
06	Shillong	ZNE	eP	22	20	25		Slight, near
06	Shillong	ZNE	iP	22	43	17		Slight, distant
06	Shillong	ZNE	ePn P* P ₂ Sn SS	23	23	47	250	Slight
					26	19		
					26	53		
					27	16		
					27	29		
07	Shillong	ZNE	iP	00	12	09		Slight, distant, initial ground motion West, rarefaction
07	Shillong	ZNE	ePn/P ₂ S ₂	00	27	02	130	Slight
					27	17		
07	Shillong	ZNE	iP i	02	59	53		Slight, distant, compression
				03	01	14		
07	Shillong	ZNE	iP ₂ S ₂	07	09	51	100	Slight
					10	03		
07	Shillong	ZNE	iP	09	40	23		Slight, distant
07	Shillong	ZNE	iP	10	59	07		Slight, distant
07	Delhi	Z	eP	11	00	52		Slight, rarefaction
07	Shillong	ZNE	iP ₂ P* S ₂	15	41	32	70	Slight
					41	33		
					41	40		
07	Shillong	ZNE	iP	17	11	42		Slight, distant
07	Shillong	ZNE	iP ₂ S ₂	19	30	28	110	Slight
					30	41		
07	Shillong	ZNE	eP	20	59	13		Slight, near
07	Shillong	ZNE	iP i	21	05	47		Slight, near
					06	01		
07	Chatra	Z	eP eS	21	06	24	760	Feeble
					07	43		
07	Delhi	ZNE Z	eP i	21	16	34		Slight, initial ground motion North, West, rarefaction
					18	27		
07	Shillong	ZNE	iPn iSn	21	25	57	220	Slight
					26	23		
07	Shillong	ZNE	iP iS	23	34	53	630	Slight, compression
					26	00		
08	Delhi	ZE N Z	iP eP i	01	53	33		Slight, initial ground motion East, compression
					57	45		
08	Delhi	ZNE	eP	02	16	05		Slight, compression.



July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
08	Port Blair	NE	iP ₂ iS ₂	02	42	51	30	Slight
					43	58		
08	Shillong	ZNE	iPn P* Sn	06	12	23	300	Slight
					12	23		
					12	57		
08	Chatra	Z	eP eS ₂	06	12	23	220	Feeble
					12	54		
08	Delhi	E Z ZNE	eP eP i	06	20	17		Slight
					20	18		
					21	03		
08	Shillong	ZNE	iP ₂ iS ₂	06	42	03	100	Slight
					42	18		
	Delhi	Z N	iP iP	06	52	19		Slight, compression
					52	20		
08	Bokaro	NE	iP	08	12	30		Feeble, local
08	Shillong	Z	iPn P* Sn	08	18	29	230	Slight
					19	42		
					19	03		
08	Chatra	Z	eP eS ₂	08	18	53	230	Feeble
					19	23		
08	Bokaro	E	iP	09	04	29		Slight, distant
08	Chatra	Z	iP	09	50	17		Feeble, near
08	Delhi	ZNE	iP	09	53	35		Slight
08	Shillong	ZNE	eP	10	30	47		Slight, distant
08	Shillong	ZNE	iP ₂ S ₂	12	47	37	40	Slight, initial ground motion South, East, compression
					47	42		
	Chatra	Z	eP eS ₂	12	48	43	230	Feeble
					49	33		
08	Delhi	ZNE	iP	15	31	47		Slight, initial ground motion South, East, compression
08	Delhi	ZNE	iP	15	33	23		Slight, initial ground motion South, West, rarefaction.
	Chatra	Z	eP	15	33	30		Feeble, distant
	Shillong	ZNE	iP	15	34	15		Slight, distant
08	Delhi	Z	eP	16	10	18		Slight, compression
	Chatra	Z	iP	16	11	27		Feeble, distant, rarefaction
	Shillong	ZNE	eP	16	11	57		Slight, distant
08	Shillong	ZNE	iPn iS ₂ SSS	17	13	39	130	Slight
					19	03		
					19	21		

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
08	Delhi	Z	iP	13	01	27		Slight, compression
09	Delhi	ZN	iP	00	32	09		Slight, initial ground motion South, compression
09	Delhi	ZN	eP	00	45	50		Slight, initial ground motion South, compression
09	Shillong	ZNE	iP	01	09	52		Slight, distant
09	Shillong	ZNE	iP iS	01	03	45 39 13	240	Slight, initial ground motion South, east, rarefaction
09	Chatra	Z	eP eS	01	39	48 40 59	890	Slight
09	Chatra	Z	iP	03	14	12		Feeble, distant
09	Delhi	ZE N ZNE	iP eP i	03	14	49 15 01		Slight, initial ground motion West, compression
09	Shillong	ZNE	eP	04	13	09		Slight, distant
	Delhi	Z	eP	04	19	42		Slight, compression
09	<i>Epc 0.8°N, 121.5°E. Celebes. - H = 03h 10m 53.0s GMT Mag 4.9 (CGS) (USCGS). h about 142 km</i>							
	Shillong	ZNE	iP	03	23	59		Initial ground motion South, rarefaction
	Chatra	Z	iP	03	24	34		Rarefaction
	Delhi	ZE N	iP eP	03	25	39		Initial ground motion South, East, rarefaction
09	Bokaro	NE	iP	07	50	35		Feeble, local
09	Shillong	ZNE	iP Sg	08	07	17 07 59	100	Slight
	Chatra	Z	eP e	09	08	23 09 41		Feeble
09	Bokaro	NE	iP	08	35	29		Feeble, local
09	Bokaro	NE	iP	09	13	13		Feeble, local
09	Shillong	ZNE	iP	09	44	10		Slight, distant, rarefaction
09	Delhi	ZNE	eP	12	35	34		Slight, rarefaction
09	Shillong	ZNE	iP P* Sg	12	54	36 54 39 54 48	100	Slight
09	Delhi	ZNE	iP iS	13	07	02 07 47	410	Slight, initial ground motion South, west, compression
09	Dehra Dun	NE	e e	13	07	17 08 13		Tremor

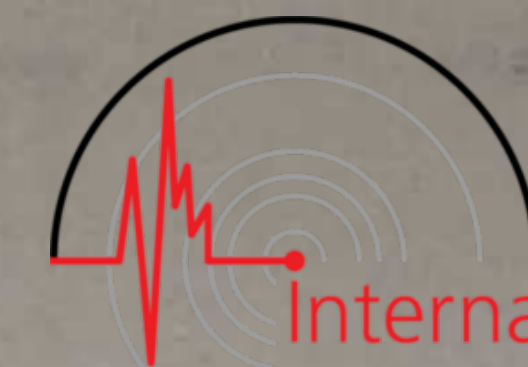


July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
09	<i>Epc 60.0°N, 154.5°W. South Alaska. - H = 17h 22m 54.7s GMT Mag 4.4 SD, 0.2 (CGS) (USCGS) h about 60 km</i>							
	Shillong	ZNE	iPKP	17	40	20		Compression
	Chatra	Z	iPKP	17	40	59		Compression
	Delhi	ZN E	ePKP iPKP	17	42	11		Initial ground motion towards East, compression
09	Delhi	Z	iP	19	16	03		Slight, rarefaction
09	Delhi	Z	eP	21	29	34		Slight
09	Delhi	Z	eP	21	40	29		Slight, compression
10	<i>Epc 36.5°N, 71.8°E. Hindukush. - H = 02h 11m 58.3s GMT Mag 4.9 (CGS) (USCGS) h about 33 km</i>							
	Dehra Dun	NE	ePn Lq iSn Lr SS SSS M	02	14	02 15 13 15 25 15 34 15 37 15 48 16 11	900	
	Delhi	ZNE	iP iS	02	14	10 15 45	920	Initial ground motion North, East, rarefaction
	Chatra	Z ZNE	iP iS	02	15	45 13 33	1050	Compression
10	<i>Epc 46.3°N, 153.4°E. Kurile Island Region. - H = 03h 14m 41.8s Mag 4.8 SD, 0.4 (CGS) (USCGS). h about 33 km</i>							
	Shillong	ZNE	iP	03	23	55		Compression
	Chatra	Z	iP	03	24	14		Compression
	Delhi	ZNE	iP	03	24	52		Initial ground motion North, East.
10	Delhi	Z	eP iSg	05	32	05 32 09	40	Slight, rarefaction
10	<i>Epc 46.3°N, 152.9°E. Kurile Islands Region. - H = 05h 22m 57.1s GMT Mag 5.8 SD, 0.5 (CGS) (USCGS) h about 33 km 46°N, 154°E. Kurile Island. - H = 05h 22m 53s GMT (Shillong)</i>							
	Shillong	ZNE	iP iS	05	32	10 39 33	5830	Initial ground motion South, compression
	Chatra	ZNE NE	eP eS i	05	32	30 40 13 42 23	6220	
	Calcutta	E	iP iS ScS M	05	32	44 40 33 42 25 53 15	6290	

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
10	Bokaro Contd.	E	iP PcP PP PPP PcS S PS SS	05	32	47	6370	Initial ground movement towards East
	Lehra Dun	ZNE Z E	iP i? PcP PP	05	32	58	6740	Initial ground motion North, East, compression
		NE N NE E NE	iS PPS ScS SS M		41	14		
	Dehli	ZNE NE N ZNE N	iP PPP eS i ScS SS Lq Lr M	05	33	07	6530	Initial ground motion South, West, rarefaction
		NE N	Lq Lr M		47	44		Per. = 28 sec, Amp. = 20 mm
	Port Blair	ZNE E	iP iS PPS SS SSS Lr M	05	33	13	6910	Initial ground movement South, West, Compression
	Sehore	E	eP	05	33	25		
	Visakhapatnam	E	eP ePP ePPP eS ePS ePPS	05	33	29	7080	
	Hyderabad	E	iP PcP PP PPP iS SS Lr M	05	33	59	7770	
					59	53		Per. = 8 sec, $\mu = 2$
	Madras	E	eP PcP PP PPP iS e	05	34	08	7830	

International
Seismological
Centre

July 1963

13

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
10	Madras Contd.	E	PS SKS+ScS SS Lq Lr	05	43	42		
	Bombay	ZNE NE	eP iS PPS	05	34	09	7870	
		N	SS M		43	12		
		E	M	06	09	48		Per. = 15 secs, $\mu = 5$ Per. = 16 secs, $\mu = 4$
	Poona	N	iP PP iS PS PPS SS SSS M	05	34	12	7860	Initial ground motion South, West and compression
	Kodaikanal	E	i	05	14	40		Slight, distant
10	Delhi	ZN	iP	05	54	15		Slight, initial ground motion South, rarefaction
10	Delhi	Z	eP	11	45	25		Slight, compression
10	Delhi	ZN	iP	14	02	48		Slight, initial ground motion North, rarefaction
10	Chatra	Z	e	15	07	38		Feeble
10	Epc. = 19.2°N, 145.2°E. Mariana Islands, Region - H = 19h 52m 19.4s GMT. h about 171 km Mag 5.4 SD, 0.3 (CGS) (USCGS)							
	Shillong	ZNE	iP	20	00	54		Distant
	Chatra	Z	iP	20	01	39		Distant, rarefaction
	Delhi	Z	iP	20	02	25		Rarefaction
11	Shillong	ZNE	iP iS	00	41	45	310	Slight
	Chatra	Z	eP eS	00	42	42	730	Slight
	Delhi	ZN	iP	00	44	41		Slight, initial ground motion North, compression
11	Bokaro	NE	iP	08	20	04		Feeble, local
11	Bokaro	E	iP	08	40	41		Slight, distant
11	Shillong	ZE	iP	09	46	38		Slight, near
11	Bokaro	NE	iP	11	04	49		Feeble, local

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
11	Shillong	ZE E	iPn iSg	13	07	50	160	Slight
11	Delhi	ZNE	iP	15	58	20		Slight, first ground motion South, East, Compression
11	Dehra Dun	Z	iP	18	04	07		Tremor, rarefaction
	Delhi	ZNE	eP	19	04	34		Slight, rarefaction
11	Chatra	Z	eP e	20	02	51		Feeble
					03	12		
12	Port Blair	Z	iPq P iSg S* PP S	00	22	43	30	Slight, rarefaction
					22	51		
					22	54		
					22	56		
					22	59		
					23	01		
12	Delhi	Z ZNE	eP i	03	30	33		Tremor, rarefaction
					30	34		
12	Delhi	Z NE	iP	04	43	09		Tremor, initial ground motion South, East, compression
12	Delhi	ZE N ZNE	eP iP i	05	52	35		Slight, initial ground motion South, rarefaction.
					52	36		
12	Dehra Dun	Z	eP	03	03	40		Tremor
	Delhi	ZN	eP	03	01	03		Slight
12	Shillong	ZNE	iP	15	17	23		Slight, near
12	<i>Epc 46.8°N, 153.3°E. Kurile Islands region - H = 15h 28m 08.5s GMT. h about 33 km Mag 5-5½ (Pal), 4.8 SD 0.2 (CGS) (USCGS)</i>							
	Shillong	ZNE	iP	15	37	22		
	Chatra	Z	eP	15	37	42		
	Dehra Dun	Z	iP	15	33	00		
	Delhi	ZN ZNE	eP i	15	33	18		Compression
					33	19		
12	Delhi	ZN ZNE	iPq iSg	13	37	23	40	Slight, initial ground motion South, compression
					37	32		
12	Dehra Dun	Z	e i	19	10	00		Tremor
					10	18		
12	Dehra Dun	Z	e	21	42	40		Tremor
	Delhi	ZNE	eP	21	43	02		Slight, compression



July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
12	Delhi	Z	eP	23	51	20		Slight, distant, compression
13	Delhi	Z	eP	00	03	24		Slight
13	<i>Epc 29.6°N, 51°E. Near West Coast of Iran. - H = 08h 24m 24.7s GMT Mag 5.0 (CGS) (USCGS). h about 14 km.</i>							
	Delhi	Z NE Z N	iP eP i i	00	29	23		Initial ground motion North, East, rarefaction
					29	28		
					33	37		
	Dehra Dun	Z	iP	08	23	34		Rarefaction
	Chatra	Z	iP	08	20	49		Compression
	Shillong	ZE	iP	08	21	25		Distant, compression
13	Delhi	ZNE	eP	08	52	09		Slight, initial ground motion North
13	Delhi	Z	eP	12	02	40		Slight
13	<i>Epc 44.3°N, 148.8°E Kurile Islands. - H = 13h 58m 25.7s Mag 4.6 SD 0.3 (CGS) (USCGS) h about 33 km</i>							
	Shillong	ZE	iP	14	07	15		Distant, initial ground motion West, compression
	Chatra	Z	eP	14	07	35		Distant
	Dehra Dun	Z	iP i	14	03	00		Compression
					13	54		
	Delhi	ZNE	iP i	14	03	13		Initial ground motion South, West, compression
					03	20		
13	<i>Epc 24.3°N, 122.3°E. Ryukyu Islands. - H = 14h 06m 23.7s GMT Mag 4.9 (CGS) (USCGS). h about 33 km</i>							
	Shillong	ZE	iP	14	12	12		Distant
	Chatra	ZNE	i	14	12	50		Distant
	Delhi	ZE N	iP eP	14	14	03		Initial ground motion South, West, compression
					14	04		
	Calcutta	E	e	14	13	04		Slight
13	Port Blair	E	e	14	23	33		
13	Delhi	ZN	eP	15	22	14		Slight, initial ground motion South
13	Chatra	Z	iP e	13	33	02		Feeble, distant, rarefaction
					33	11		
13	<i>Epc 24.9°N, 70.3°E. West Pakistan. - H = 19h 03m 39.1s 24.5°N, 71°E, Sind, West Pakistan. - H = 19h 03m 40s GMT (Shillong) Mag 5.6 (New Delhi) h about 33 km (USCGS)</i>							

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
13 Contd.	Bombay	ZN	eP	19	10	15	700	Felt at New Kandla
		NE	e			29		
			e			17		
			eS			28		
	Delhi	ZNE	iPn iSh	19	10	25	770	Initial ground motion North, East, compression
	Sehore	E NE N	eP Lq iS Lr	19	10	30	980	
	Dehra Dun	Z	eP PPP P* iS S*	19	10	44	1660	
	Poona	N	eP	19	11	20		
	Visakhapatnam	E	eP eS	19	11	53	1440	Near
	Madras	E	eP PP PPP Lq iS Lr Lg M	19	12	09	1640	
	Chatra	ZNE	iP PP PPP iS SS SSS M	19	12	10	1310	Rarefaction
	Shillong	ZE	iP i iS i	19	13	05	2100	Slight, initial ground motion West, rarefaction
	Bokaro	NE	eP	19	14	19		Near
	Kodaikanal	E	e	19	13	24		Distant
	Calcutta	N	e	19	17	10		
13	Delhi	ZNE	iP	19	22	46		Slight, initial ground motion North, rarefaction
14	Port Blair	E	e	00	53	40		
14	Delhi	Z	eP	03	00	42		Slight, compression
14	Shillong	ZE	iP	03	01	04		Slight, distant



Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
14	Port Blair	Z	iP	06	01	23		Slight, distant
Contd.		E	e			32		rarefaction
14	Delhi	ZE	eP	07	51	24		Slight, rarefaction
14	Dehra Dun	Z	iP	07	51	32		Tremor, rarefaction
14	Epc: 33.1°N, 70.6°E. Hindukush. - H = 10h 51m 42.7s GMT Mag 5.1 (CGS) (USCGS). - h about 120 km 36°N, 72°E. Hindukush. - H = 10h 51m 40s GMT (Shillong)							
	Dehra Dun	Z	eP	10	53	40	980	
			PP			47		
			PPP			53		
			Lq			08		
		ZNE	iSh			21		
			SS			33		
			Lr			37		
			SSS			44		
			M			19		
	Delhi	ZNE	iP iS	10	53	52	930	Initial ground motion North, West, rarefaction
	Bombay	Z	e	10	53	53		
	Chatra	Z	eP	10	55	38	1710	
		NE	eS			20		
	Bokaro	NE	eP	10	53	03		
	Shillong	ZE	iP PPP sP iS i	10	53	20	2250	Rarefaction
						03		
						03		
						00		
						40		
	Visakhapatnam	E	eP eS	10	53	24	2340	
						14		
	Sehore	E	eS i	10	57	19		
						00		
	Poona	Z	e	10	59	38		Slight
	Madras	E	e	11	01	24		
14	Port Blair	E	iPg iSg	14	14	22	60	Compression
						23		
	Epc 30.3°N, 78.5°E. Northern India. - H = 14h 48m 28.4s GMT Mag 4.3 (New Delhi), 4.8 (CGS) (USCGS). h about 33 km							
	Dehra Dun	ZNE	iP iS	14	48	42		Initial ground movement towards South, East, Compression
						51		
	Delhi	ZNE	iPn iP*	14	49	10	220	Initial ground motion North, East, rarefaction
		N				12		
		E	iPg			15		
		ZNE	iSh			33		
		N	iS*			33		

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
14	Chatra Contd.	Z	eP eS	14	50	39	890	
	Shillong	ZE	iP iS	14	51	31	1330	
	Bokaro	NE	eP	14	52	15		Near
	Poona	Z	eP	14	53	39		
14	Shillong	ZE	iP	16	32	47		Distant, compression
14	Delhi	Z	eP	17	25	23		Slight, rarefaction
	Shillong	ZE	iP	17	27	04		Slight, distant, compression
14	Shillong	ZE	iP	19	30	58		Slight, distant, initial ground motion West, rarefaction
14	Shillong	ZE	eP	21	02	21		Slight, near
14	Shillong	ZE	eP	22	30	48		Slight, near
15	Shillong	ZE	iP	04	53	24		Slight, distant
15	Shillong	ZE	iP	05	27	18		Slight, distant
15	Shillong	ZE	iP	06	39	39		Slight, distant
15	Bokaro	NE	iP	08	51	53		Feeble, local
15	Port Blair	Z	e	11	33	52		
15	Delhi	ZNE	ePg iSg	15	31	43	50	
						31	49	
15	Port Blair	Z	iPg P iSg S* S	17	05	27	30	
						05	30	
						05	33	
						05	40	
						05	44	
15	Delhi	ZE	iPg	19	27	00		Slight, initial ground motion, West
16	Port Blair	Z	e i	01	25	20		Slight, near
						25	48	
16	Port Blair	Z	e i	01	33	59		Slight, near
						34	14	
16	Shillong	ZE	eP e e	04	29	28		Slight, near
						30	01	
						30	16	
16	Shillong	ZE	iP	03	26	02		Slight, near
16	Delhi	Z	eP	09	24	57		Slight, compression
16	Shillong	ZE	iP	13	03	24		Slight, distant, compression

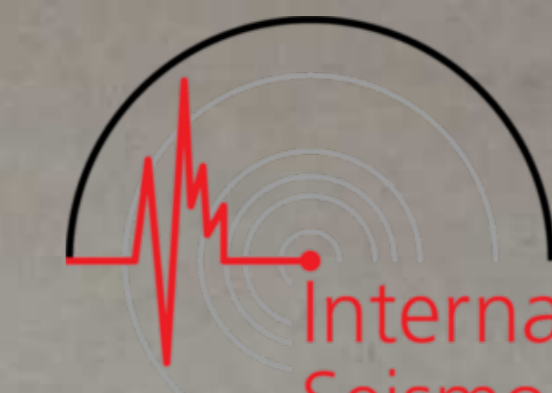


International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
16	Delhi	Z	iP	13	08	12		Slight, compression
16	Delhi	Z	iP	15	44	16		Slight, compression
16	Delhi	Z NE	iP i	15	44	13		Slight, compression
						44	43	
16	Epc 43°N, 41°E. East of Black Sea. - H = 13h 27m 11s GMT (Shillong) 43.1°N, 41.5°E. Georgia SSR. - H = 18h 27m 18.4s GMT. Mag 5.8 SD 0.3 (CGS) (USCGS). h about 33 km							
	Dehra Dun	Z NE	iP eP	18	33	40	3340	Rarefaction
						33	40	
			PP			34	47	
		N	PPP			35	03	
		E	i			35	33	
			i			36	05	
		NE	PcP			36	23	
		N	eS			38	57	
		NE	i			39	40	
			PcS			40	13	
			Lq			40	47	
			SS			40	50	
			SSS			41	13	
			Lr			42	25	
			ScS			44	10	
			M			45	10	
	Delhi	ZNE Z ZNE NE E N NE ZE Z	iP PP iS PcS, ScP Lq SS Lr ScS M	18	33	42	3480	Initial ground motion South, East, compression
						34	51	
						33	50	
						40	05	
						40	43	
						40	58	
						42	13	
						44	12	
						-	-	Per.=18secs, μ=13
	Sehore	N	iP eS	18	34	13	3980	
						39	51	
	Bombay	ZE	iP	18	34	13	4070	
			PP			35	33	
		E	PcP			36	30	
			iS			39	56	
			SS			42	37	
			SSS			43	02	
	Chatra	NE	iP	18	34	55	4460	Initial ground motion South and East
			PP			36	25	
			PPP			37	04	
			iS			41	02	
			SS			44	01	
			Lr			46	27	
		N	M			57/58		Per.=13 secs, μ = 33
		E	M			19	01/02	Per.=11 secs, μ = 9
	Bokaro	NE E	iP PP	18	35	00	4570	Initial ground movement towards West.
						36	40	
			PcP			36	54	
			PcS			40	41	
		NE	S			41	14	

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
18 Contd.	Bokaro Contd.	E	PS	18	41	24		
			i		41	37		
			M		50	16		
	Visakhapatnam	NE	iP	18	35	17	4860	Distant, first ground motion North, West.
			iPP		37	04		
			iPPP		37	38		
			eS		41	48		
			ePS		41	56		
			ePPS		42	08		
			eSS		44	58		
			eSSS		46	00		
			eLr		47	45		
M				51	29		Per.=23 secs, Amp.=2 cms	
Calcutta	E	iP	18	35	20	4920		
		iS		41	55			
		M		50	25			
Shillong	ZNE	iP	18	35	28	4950	Initial ground motion South, East, compression	
		PP/EcP		37	09			
		iS		42	02			
		SS		45	16			
		M		52	20			
Madras	E	iP	18	35	29		Initial ground motion towards West	
		e		35	58			
		PP		37	15			
		PPP		37	53			
		iS		42	10			
		PS		42	17			
		e		42	53			
		SS/ScS		45	24			
		Lq		46	00			
		SSS		46	21			
		Lr		48	14			
M		51	57					
18 Poona	ZNE N NE N	iP	18	38	15	4120	Moderate shock, initial ground movement South, West and compression	
		PP		37	38			
		PPP		38	08			
		iS		42	01			
		SSS		44	35			
		Lr		46	30			
		M		49	45			
		Port Blair	ZE E	iP	18	36	48	6090
PP				38	48			
PPP				40	03			
eS				44	23			
PPS				44	49			
SS				48	03			
SSS				49	47			
Lr				52	44			
M				53	57			
Kodaikanal	E			iS	18	42	14	
		i		46	14			
		M		-	-			



Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
16	Shillong	ZE	iP	22	19	32		Slight, distant, rarefaction
16	Delhi	N Z Z	iP	23	54	12		Slight
			eP					
			e		54	38		
17	Shillong	ZE	iPn	01	29	14	210	Slight
			Sn		29	39		
			Sg		29	44		
17	Dehra Dun	Z	eP	06	20	12		Tremor
17	Delhi	ZNE	iP	06	20	23		Slight, initial ground motion South, East, compression
17	Delhi	Z	iP	06	40	45		Tremor, rarefaction
17	Delhi	Z	eP	07	10	19		Slight, rarefaction
17	Shillong	ZE	iP	07	39	03		Slight, near, initial ground motion West, compression
17	Chatra	Z	eP	07	40	12	730	Feeble
			eS		41	29		
17	Delhi	Z	eP	07	44	51		Slight, rarefaction
	Delhi	ZE N	iP eP	12	03	31		
	Chatra	Z	eP	12	04	44		Distant
	Shillong	ZE	iP	12	05	14		Distant, compression
17	Port Blair	E	e	12	31	50		
			i		32	05		
17	Port Blair	NE	i	12	37	02		Slight, near
17	Delhi	Z	eP	12	41	08		Slight, compression
17	Port Blair	NE	e	12	50	00		Slight, near
			i		50	11		
		E	i		50	30		
17	Shillong	Z	eP	12	53	02		Slight, distant
	Chatra	Z	eP	12	53	38		Slight, distant
	Delhi	ZE N	eP eP	12	54	49		Slight, initial ground motion South, East, rarefaction
					54	50		
	Dehra Dun	Z	eP	12	54	57		Tremor
17	<i>Epc 49.9°N, 150.8°E. Sea of Okhotsk. - H = 14h 10m 31.3s GMT</i>							
	<i>Mag 3.7 (CGS) (USCGS) h about 370 km</i>							
	Shillong	ZE	iP	14	18	59		Rarefaction
	Chatra	Z	iP	14	19	17		Rarefaction

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
17	Dehra Dun	Z	iP	14	19	40		Compression
Contd.	Delhi	ZNE	eP	14	19	50		
17	Shillong	ZE	iP	15	16	44		Slight, distant, initial ground motion East, compression
17	Delhi	ZNE ZE	iP i	19	04	53 04 58		Slight, initial ground motion South, East, compression.
17	Shillong	ZE	iP	19	17	33		Slight, distant, initial ground motion West, rarefaction
17	Delhi	N ZNE	ePg iSg	19	26	36 28 41	40	Slight
17	Shillong	ZE	iP	20	53	34		Slight, distant, compression
18	Delhi	Z	eP	00	26	44		Slight
18	Delhi	Z	eP	01	09	44		Slight
18	Shillong	ZE Z ZN	iP i M	05	15	52 28 40 55 20		Slight, distant, rarefaction
18	Delhi	Z ZN ZE	eP e i	05	16	51 16 57 17 31		Slight, rarefaction
18	Dehra Dun	Z	iP	05	17	03		Tremor, rarefaction
18	Delhi	Z	iP i	05	44	42 44 45		Slight, compression
	Dehra Dun	Z	eP	05	44	44		Tremor
18	Hyderabad	N	M	05	50	15		Per.=21 secs, $\mu = 8$
18	Madras	E	eP P* iS Sg/M SS	06	44	10 44 11 44 35 44 39 44 45	210	Slight
18	Bokaro	NE	iP	08	32	18		Feeble, local
18	Shillong	ZE	iP iS	09	15	33 16 14	380	Slight
18	Shillong	ZE Z	iPn iSn Sg	13	10	35 10 29 10 54	500	Slight, initial ground motion West, compression
18	Shillong	ZE	iPn iSn Sg	17	49	22 49 49 49 54	230	Slight, rarefaction
18	Chatra	Z	eP eS	17	50	23 51 32	630	Feeble



International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
18	Shillong	ZE	iPn iSn Sg	21	38	34 38 59 39 03	210	Slight
18	Shillong	ZE	eP	23	24	10		Slight, near
19	Dehra Dun	Z	iP	00	26	21		Tremor, rarefaction
19	Dehra Dun	Z Z	eP i'	01	33	00 34 23		Tremor
	Delhi	Z ZNE	eP eS	01	33	13 34 51	950	Slight
19	Epc 43.4°N, 8.2°E. Lingurian Sea. -H = 05h 45m 28s GMT Mag 5½ (Pal), 5.5 SD 0.3 (CGS) (USCGS) h about 33 km							
	Dehra Dun	Z ZNE	eP PcP	05	55	05 55 43		Tremor ← P ₂
	Delhi	ZNE ZE	eP PcP PPP iS PPS E SS	05	55	07 55 42 58 20 06 02 50 03 28 06 40	3120	Rarefaction ← P ₂ ← S ₂
	Visakhapatnam	NE	iP e	05	55	59 06 04 50		Initial ground motion North, West
19	Bombay	ENZ EN N EN EN N	eP PcP e PP PPP PcS e eS e EN N M	05	56	09 56 32 57 39 58 28 59 54 03 00 41 04 20 04 42 06 10 08 46 09 32 35 -	7050	
	Bokaro	E	eP i i	05	56	09 56 47 06 05 25		← P ₂
	Shillong	ZNE	iP	05	56	28		Distant, compression
	Poona	Z	iP	05	53	36		Compression
	Madras	E	iP PcP PP PPP iS e SKS PS PPS	05	57	02 57 18 59 44 03 01 32 03 34 03 56 07 05 07 12 07 22	8220	Initial ground motion East. ← S ₂

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
19	Madras Contd. Contd.	E	SS Lr M	06	11	24 19 53 26 03		
	Port Blair	ZNE	iP	05	58	04		Distant, rarefaction, first ground movement North, West.
	Hyderabad	N	Lr M	06	18	21 27 15		Per.=18 secs, $\mu = 8$
19	Delhi	ZN	e	06	55	43		Slight, rarefaction
19	Shillong	ZE	iP	09	08	40		Slight, distant, initial ground motion East, compression
19	Delhi	NE Z	eP iP	09	10	00		Slight, compression
19	Shillong	Z	iP	11	59	09		Slight, near, compression
19	Shillong	ZN	iP	21	45	38		Slight, near
19	Chatra	Z NE	iP eS	21	46	26 47 47	780	Slight, rarefaction
19	Shillong	ZN	iP Sg	22	40	45 40 55	90	Slight, rarefaction
20	Shillong	Z	iP	00	23	59		Slight, distant, rarefaction
20	Delhi	ZNE	eP	00	58	20		Slight, rarefaction
20	Chatra	Z	eP	00	59	31		Feeble, distant
20	Delhi	ZNE	eP	01	01	23		Slight, compression
20	Delhi	Z	eP	02	23	41		Slight
20	<i>Epc 57.6°S, 148.5°E. Macquaries Islands Region. - H = 06h 36m 10.8s GMT Mag 6 (Pal), 5.6 (CGS) (USCGS) h about 33 km</i>							
	Port Blair	Z E	iP PP PPP iS SS SSS Lq	06	48	40 51 58 53 53 58 57 07 04 21 07 47 11 03	9180	Compression
	Bombay	NE N NE N NE N E	eP e e PP SKS1 eS e SS SSS M M	06	49	13 49 34 50 19 52 33 59 30 59 47 07 02 44 05 14 09 15 26 14 23 -	9560	
	Per.=19 secs, $\mu = 4$							



International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
20	Shillong	Z N	iP SKS S PS M	06	49	40 07 00 09 00 50 02 02 22 10	10460	
20	Delhi	Z NE	eP eS SS i	06	54	29 07 00 50 03 19 09 30	4690	
20	Madras	E	iP e e e e e	07	00	05 01 24 01 43 05 49 10 34 17 49		Initial ground motion towards East. Phases not clear due to microseismic activity
	Dehra Dun	NE N	eP e	07	01	02 04 31		Feeble, phases not clear
	Hyderabad	N	Lr M	07	06	54 20 00		Per.=24 secs, $\mu = 2$
20	Bokaro	NE	iP	07	08	45		Feeble, local
20	Delhi	ZN	iP	07	48	00		Slight, initial ground motion South, compression
20	Bokaro	NE	e	03	33	19		Slight, tremor
20	Bokaro	NE	iP	09	37	52		Feeble, local
20	Delhi	ZNE	eP	09	56	15		Slight, rarefaction
20	Chatra	Z	e	12	08	24		Feeble, near
21	Shillong	Z	eP	00	14	04		Slight, distant
21	Delhi	Z ZNE	eP i	05	30	27 34 28		Slight, rarefaction
21	<i>Epc 14.8°N, 56.1°E. Arabian Sea. - H = 06h 01m 57.3s GMT h about 33 km (USCGS)</i>							
	Bombay	ZNE NE N	iP e eS eM	06	05	44 06 21 08 24 10 13	1590	Slight
	Madras	E	eP iPPP eSS e M	06	03	51 07 19 11 22 12 17 13 32		Slight
21	Poona	Z	e	06	03	59		Slight
21	Delhi	ZNE	eP	03	07	07		Slight, initial ground motion South, East, compression.

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
21	Dehra Dun	ZNE	eP	06	07	28		Feeble, other phases not recorded.
Contd.	Chatra	Z	iP	06	08	15		Feeble, distant, compression
21	Dehra Dun	Z	eP i	07	15 17	18 21		Tremor
	Delhi	ZNE Z ZNE	iP i i	07	15 16 17	53 57 28		Slight, initial ground motion North, West, rarefaction
21	Delhi	Z	eP	12	54	27		Slight, distant, rarefaction
21	Delhi	ZNE	eP	14	10	58		Slight, initial ground motion South, East, rarefaction
21	Shillong	ZNE	iP	14	51	39		Slight, distant, initial ground motion West, rarefaction
21	Delhi	ZE	iP	14	53	28		Slight, initial ground motion West, rarefaction
	Port Blair	E	e	15	00	58		
21	Shillong	ZNE	iP	17	07	31		Slight, distant, initial ground motion South, West, compression
21	Shillong	ZNE	iPn Sg	18	00 00	40 58	140	Slight
21	Dehra Dun	Z	e e i	18	50 51 53	39 19 21		Tremor
	Delhi	ZNE	eP	18	50	49		Slight, initial ground motion East, compression
	Shillong	ZNE	iP	18	52	14		Slight, distant, rarefaction
22	Shillong	ZNE	iP	00	29	41		Slight, distant, initial ground motion West, compression
22	Chatra	Z	eP	00	40	13		Feeble, distant
22	Delhi	ZNE	eP	00	41	04		Slight, compression
22	Shillong	ZNE	eP	01	08	13		Slight, distant
22	Delhi	ZNE	eP	01	44	42		Slight
22	Port Blair	Z ZNE	iPg iSg	07	13 13	39 43	60	Slight
22	Bombay	NE	eP eS	07	43 47	44 34	470	
22	Epc 30°N, 68½°E. West Pakistan. - H = 07h 45m 32s GMT (New Delhi)							

International
Seismological
Centre

July 1963

27

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
22	Delhi	ZNE	eP eS	07	47	29	870	Slight, initial ground motion East, compression
Contd.	Dehra Dun	Z	e i	07	47	33	900	Feeble
		NE	iS		48	48		
	Chatra	Z ZN	eP eS	07	49	36	1390	Feeble, distant
	Shillong	ZNE	iP	07	50	22		Slight, distant, initial ground motion West, rarefaction
	Bokaro	E	eP	07	52	27		Slight, near
22	Shillong	ZNE	iP	08	11	47		Slight, distant, initial ground motion South, compression
	Chatra	Z	iP	08	12	14		Feeble, distant, rarefaction
22	Dehra Dun	Z	e? i?	11	33	46		Tremor
	Delhi	ZNE	eP	11	33	57		Slight, rarefaction
22	Delhi	ZNE	eP	11	35	27		Slight, compression
22	Shillong	ZNE	iPg Sg	13	17	03	130	Slight, initial ground motion North, East, rarefaction
22	Shillong	ZNE	iP	17	18	50		Slight, distant initial ground motion South, rarefaction
22	Shillong	ZNE	iP	19	29	27		Slight, distant, initial ground motion West, compression
22	Shillong	ZNE	iPg iSg	21	31	49	80	Slight, initial ground motion South, West, rarefaction
23	Shillong	ZNE	eP i	00	00	26		Slight, near
23	Madras	E	iP P* Pg PP PPP/Lq Lr iS Sg/M	04	50 50 50 50 50 50 50 51	34 35 38 41 48 52 59 03	210	Slight, initial ground movement towards West.
23	Bombay	Z	eP e	04	53	17		Feeble, very near shock
		E	e		53	55		
23	Poona	Z	iP	04	55	13		Slight, near
23	Delhi	ZNE	eP i	04	56	05		Slight

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
23	Chatra	Z	eP e	04	57	09 58 13		Feeble, distant
23	Shillong	ZNE	eP	04	57	18		Slight, distant
23	<i>Epc 41.5°N, 141.9°E. Tsugaru Strait. - H = 06h 17m 51.5s GMT Mag 4.4 (CGS) (USCGS) h about 91 km</i>							
	✓ Shillong	ZNE	iP	03	25	53		
	✓ Chatra	Z	iP	03	23	16		Compression
23	✓ Dehra Dun	Z	eP	03	23	54		Tremor
	✓ Delhi	ZNE	iP i	03	27	04 27 07		Compression
23	Bokaro	NE	iP	03	07	32		Feeble, local
23	Bokaro	NE	iP	03	37	55		Slight, tremor
23	Bokaro	NE	iP	10	15	13		Feeble, local
23	Port Blair	Z	ePg i iSg	17	16	22 16 25 13 23	30	Slight
23	Shillong	ZNE	iPg Sg	19	36	00 33 12	100	Slight
23	Shillong	ZNE	iP	22	02	33		Slight, initial ground motion South, West, rarefaction
23	Shillong	ZNE	iP	23	23	47		Slight, distant, initial ground motion West, compression
24	Shillong	Z	iP	03	21	43		Slight, distant, compression
24	Port Blair	Z	iP Pg PP PPP iS Sg SS SSS	07	48	40 43 45 43 49 43 53 43 59 49 07 49 14 49 23	130	Slight, rarefaction
24	Delhi	ZN	eP i	08	20	12 20 35		Slight
24	Delhi	ZNE	iP	08	53	02		Slight, initial ground motion South, West, compression
24	<i>Epc 24.6°N, 122°E. Near East Coast of Formosa - H = 11h 32m 17.7s GMT h about 33 km Mag 5.3 SD, 0.3 (CGS) (USCGS) 26°N, 122°E. North Formosa. - H = 11h 32m 13s GMT (Shillong)</i>							

International
Seismological
Centre

July 1963

29

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
24	✓ Shillong Contd.	ZNE	iP iS Lr M	11	38	00 42 40 45 00 47 30	3040	Initial ground motion West, compression
	✓ Chatra	ZNE Z NE	eP PcP iS	11	38	41 41 34 43 51	3520	
	✓ Calcutta	E	iP iS M	11	38	44 43 54 49 14	3510	Per.=13 secs, μ=35
	✓ Bokaro	E	iP PPP PcP S Lr M	11	33	54 40 27 41 22 44 13 47 54 51 03	3680	Initial ground movement towards West
	✓ Visakhapatnam	E N NE	iP eP eS	11	39	26 45 11	4100	Initial ground movement East
	✓ Port Blair	E	i i i	11	39	42 45 08 50 42		
	✓ Dehra Dun	ZNE E N NE N NE N	eP PP PcP iS PcS SS ScS Lr M	11	39	45 41 15 41 56 45 47 45 53 43 28 50 03 50 33 53 42	4370	
	✓ Delhi	ZNE ZN NE	iP i eS	11	39	51 29 56 45 56	4420	
	✓ Madras	E	P PP PPP e eS Lq ScS Lr M	11	40	04 41 42 42 14 42 58 43 18 49 28 50 05 51 32 54 56	4570	
	✓ Poona	E	iP eS	11	40	33 47 15	5000	Moderate, initial ground movement East and compression. Epc. North of Formosa.
	✓ Bombay	ZNE NE	iP e PP PPP iS	11	40	41 41 09 42 35 43 26 47 34	5230	Slight

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
24 Contd/ Contd.	Bombay	E	ScS	11	50	19		
			SS		51	08		
			SSS		52	24		
			Lr		54	25		
			M		59	57		
		NE					Per. = 13 sécs, $\mu = 6$	
		N					Per. = 7 sécs, $\mu = 2$	
		E	M	12	01	27		
24	Shillong	ZNE	iPn Sg	15	14	40 15 04	180	Slight, initial ground motion East, compression
	Chatra	Z	eP eS	15	14	57 15 29	230	Feeble
	Shillong	ZNE	iPn Sg	15	14	40 15 04	180	Slight, initial ground motion East, compression
24	Shillong	ZE	eP	13	57	05		Slight, distant
24	Dehra Dun	Z	iP	17	24	41		Tremor, rarefaction
24	Shillong	ZE	iP iS S*	19	14	41 16 05 16 29	310	Slight, compression
	Delhi	ZE	iP e	19	16	13 17 13		Slight
	Dehra Dun	Z	e	19	17	15		Tremor
24	Delhi	ZNE NE Z	eP e e	21	09	21 09 49 09 52		Slight
24	Shillong	ZE	iP	21	59	08		Slight, distant, compression
	Delhi	Z	eP	22	00	22		Slight, distant, rarefaction
25	Port Blair	Z	i	02	16	25		Slight, near
25	Delhi	Z	eP i	07	23	23 26 40		Slight, distant
	Shillong	ZNE	iP	07	23	41		Slight, distant initial ground motion South, East, compression
25	Shillong	ZE	iPg Sg Sn	07	31	29 31 40 31 45	90	Slight
25	Bokaro	NE	iP	09	53	19		Feeble, local
25	Port Blair	Z	i	12	37	06		Slight, near
25	Delhi	ZN	iP i	14	47	08 47 35		Slight, rarefaction
25	Shillong	ZE	iP	15	23	22		Slight, near, initial ground motion East, rarefaction

International
Seismological
Centre

July 1963

31

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
25	Shillong	ZE	iPn P* Sn Sg	17	45	19 45 23 45 49 45 53	230	Slight
25	Delhi	ZN	eP i	18	33	03 35 27		Slight
	Shillong	ZE	eP	18	34	20		Slight, distant
25	Shillong	Z	iP	21	39	22		Slight, distant, compression
25	Delhi	ZN	eP	22	30	35		Slight
26	Epc 42.1°N, 21.5°E. Southern Yugoslavia. - H = 04h 17m 16.7s GMT h about 33 km. Estimated 200 killed and 3,000-4,000 injured at Skopje; 80% of buildings destroyed and 5-10% additional buildings damaged. Mag. 5½-5¾ (Brk), 5½ (Pal), 5.4 SD 0.3 (CGS) (USCGS) Epc 43°N, 20°E. Yugoslavia. - H = 04h 17m 06s GMT (Shillong)							
	Delhi	ZNE	iP i PP ZE ZNE Z NE ZE E ZE NE	04	25	43 25 46 27 40 28 08 29 28 31 06 32 34 32 42 33 44 34 13 35 52 39 08	5210	Initial ground motion North, West, rarefaction
	Bombay	ZE E	eP eS M	04	26	05 33 18 53 38	5580	
	Kodaikanal	E	iP	04	26	43		
	Chatra	ZNE	iP	04	23	47	6140	Initial ground motion West.
	Visakhapatnam	E	eP eS	04	27	14 35 23	6310	
	Shillong	ZE ZNE E Z	iP iS SS Lq	04	27	15 35 25 39 23 42 20	6330	
	Madras	E	eP PcP PPP eS PS PPS Lq Lr M	04	27	36 28 21 31 25 33 05 33 21 33 29 43 24 46 30 51 37	6930	
	Calcutta	E	eP	04	27	40		

Page 32 Missing
Blank

Date	Station	Compt	Phase	G M T			Δ km	Remarks
				h	m	s		
28	Bokaro	E	eP	08	03	23	4750	
Contd.			i		05	13		
			iS		09	51		
	Chatra	ZNE	eP	08	03	37		
	Port Blair	E	i	08	03	42		
			iS		06	19		
	Delhi	ZNE	iP	08	04	30	5690	Initial ground motion
			eS		11	48		South, East, rarefaction
	Poona	Z	iP	08	04	57		
28	Shillong	ZE	eP	10	14	13		Slight, near
28	Shillong	ZNE	iPn	14	33	48	270	Slight, initial ground
			Sn		34	19		motion West, compression
28	Chatra	Z	eP	14	33	05		Feeble, distant
28	Shillong	ZE	iP	14	54	09		Slight, distant, compression
28	Shillong	ZE	iP	14	59	23		Slight, distant, compression
28	Shillong	ZE	iP	13	34	10		Slight, distant, compression
28	Shillong	ZNE	iPg	13	34	27	140	Slight
			iSg		34	43		
28	Shillong	ZNE	iP	16	43	09		Slight, distant, initial ground
								motion West, compression
	Chatra	Z	eP	13	43	39		
	Delhi	ZNE	iP	13	44	28		Slight, initial ground motion
		ZE	i		44	38		South, East, rarefaction
28	Shillong	ZE	iP	17	43	58		Slight, distant, compression
28	<i>Epc 46.6°N, 153.1°E. Kurile Islands Region. -H=13h 51m 36.7s GMT</i>							
	<i>Mag 5.0 Sd 0.3 (CGS) (USCGS) h about 33 km</i>							
	Shillong	ZNE	iP	19	00	49		Initial ground motion
								South, West, compression
	Chatra	Z	iP	19	01	08		
	Delhi	ZNE	iP	19	01	46		Initial ground motion South,
								West, compression
28	Delhi	Z	iP	23	25	54		Slight, compression
29	Shillong	ZE	iP	01	17	02		Slight, distant
	Delhi	Z	e	01	13	43		
29	Shillong	ZNE	iPg	03	52	10	120	Slight, rarefaction
			Sg		52	24		

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
29	Delhi	ZNE NE Z	eP i i	04	56 58 58	34 10 12		Slight, compression
29	Shillong	Z	eP	05	38	18		Slight, distant
29	Delhi	Z	iP	05	39	38		Slight, rarefaction
29	Epc 27.8°N, 55.6°E. Southern Iran - H = 06h 10m 22.6s GMT Mag 5.2 (CGS) (USCGS) h about 37 km							
	Delhi	ZNE N	eP i	08	14 18	43 16		Initial ground motion West, compression
	Bokaro	E	iP	08	13	12		Initial ground motion West
	Poona	Z	eP	03	13	12		Compression
	Chatra	ZNE NE	iP eS	06	16 21	17 32	3610	Compression
	Visakhapatnam	E	eP eS	03	16 21	19 47	3830	
	Shillong	ZE	iP	03	16	51		
29	Shillong	ZE	ePn iSn	12	00 01	33 10	300	Slight
29	Delhi	ZE	i	14	39	05		
29	Shillong	ZNE Z ZNE	iP i iS	14	45 45 46	51 55 59	640	Slight
29	Delhi	Z ZE	eP i	16	05 07	50 40		Slight
29	Shillong	ZNE	iP	16	55	00		Slight, distant, initial ground motion South, East, rarefaction
29	Delhi	ZNE	iP	16	56	23		Slight, rarefaction
29	Delhi	Z	iP	17	03	19		Slight, rarefaction
29	Delhi	ZNE	eP	19	05	18		Slight
29	Kodaikanal	E	i i i	20 21	22 11	38 59 20		

29 Epc 29.7°S, 177°W. Kermadec Islands. - H = 20h 16m 36.9s GMT
Mag 5.5 SD, 0.2 (CGS) (USCGS) h about 33 km

Delhi	Z	ePKP	20	29	04	14840
		ePP		31	36	
		PPP?		33	56	
	ZNE	e		39	38	
		e		40	54	

I = 14m shock
II = 16m shock



July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
29	Delhi	ZNE	PS(?) PPS e	20	42	08 28 08		Contd. Contd.
	Shillong	Z ZNE	i iSKS	20	30	36 43	11220	
			iPS			41 14		
		ZE	i			42 30		
	Port Blair	E	i i i i i Mn	20	30	38 07 16 12 37 21		Per.=17 secs, μ = 17
	Madras	E	ePKP PP PPP SKS SKKS e PS PPS e SS Lr M	20	32	24 17 43 08 08 38 47 55 45 43 24 36	12530	
	Delhi	Z	eP e	20	32	47 17		
	Chatra	E NE	e iS	20	32	48 07		
	Bombay	Z NE N NE	e ePKP e e e e SKS1 SKKS1 S PKKP1 PPS PKKS1 e SSP SKKKS Lq Lr M	20	37	17 21 16 47 11 41 20 09 42 12 13 45 42 29 43 31 39 28 24 24	12730	Per.=17 secs μ = 4 Per.=19 secs, -
		E	M			26 34		
	Bokaro	E	i	20	39	05		

✓ Bokaro

I

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
29	Dehra Dun	NE	e	20	39	39		
Contd.	Poona	NE	eP	20	41	03		
	Delhi	Z	iP	20	42	38		
29	Shillong	ZNE	iP	23	48	50		Slight, distant, compression
29	Delhi	ZNE	iP	23	50	21		Slight, compression
29	Dehra Dun	Z	eP	23	50	23		Tremor
29	Dehra Dun	Z	eP	23	56	14		Tremor
			i		58	26		
			e		57	30		
			i		57	42		
	Delhi	ZNE	eP	23	57	12		Slight
			e		58	32		
30	Delhi	Z	iP	03	37	33		Slight, compression
30	Shillong	Z	iP	05	59	50		Slight, distant
			i	03	04	04		
	Port Blair	ZE	eP	06	00	11	8490	Moderate
		E	PPP		04	33		
			eS		09	53		
			SSS		17	43		
			M		30	03		
	Madras	E	eP	06	04	47	8020	Moderate
			PcP		05	05		
			PP		07	33		
			PPP		09	16		
			eS		14	09		
			Lq		23	24		
			Lr		26	53		
			M		32	32		
	Delhi	Z	eP	06	05	37	8450	Slight, compression
		ZE	e		11	22		
		E	e		12	40		
		ZNE	eS		15	20		
		E	e		22	08		
			e		25	44		
	Chatra	NE	e	03	10	53		Slight, distant
	Bokaro	E	i	03	14	03		Slight, distant Beginning not clear
	Dehra Dun	NE	e	03	15	28		Feeble, phases could not be identified.
	Bombay	ZNE	e	03	15	28		Slight
		NE	e		16	51		
			e		20	35		
			e		25	43		
			e		31	42		

International
Seismological
Centre

July 1963

Date	Station	Compt	Phase	G h	M m	T s	Δ km	Remarks
30	Bombay	NE	e	06	34	28		
Contd.	Contd.	Z	e		34	53		
		E	e		38	42		
			e		41	37		
			e		42	21		
		N	M		55	29		Per.=19 secs, $\mu = 4$
		E	M	07	03	21		Per.=19 secs, $\mu = 4$
	Kodaikanal	E	i	06	23	31		Slight, distant, phases not clear
			e		39	46		
30	Hyderabad	E	M	03	45	08		Per.=21 secs, $\mu = 8$
30	Shillong	Z	iP	07	01	58		Slight, distant, compression
30	Delhi	Z	eP	08	33	42		Slight, compression
30	Shillong	Z	eP	09	54	33		Slight, distant
30	Delhi	Z	iPg	10	23	25	20	Slight, compression
			iSg		23	23		
30	Shillong	Z	iPg	13	19	45	80	Slight
			Sg		19	54		
30	Dehra Dun	Z	eP	14	10	52		Tremor
	Chatra	Z	eP	14	10	57		Feeble, distant
	Shillong	Z	iP	14	10	59		Slight, distant, rarefaction
		ZNE	M		51	-		Per.=38 secs.
30	Port Blair	Z	i	16	18	59		Slight, near, rarefaction
30	Delhi	Z	eP	17	50	33		Slight, compression
30	Shillong	ZE	iP	23	59	29		Slight, distant
31	Dehra Dun	Z	iP	01	33	58		Tremor, compression
			i		34	14		
	Delhi	N	iP	01	34	26		Slight, initial ground motion North.
		E	i		34	54		
31	Chatra	Z	iP	02	48	03	110	Feeble, compression
			eSg		48	18		
	Delhi	ZNE	iP	07	08	44	980	Slight, initial ground motion South, East, compression
			iS		10	25		
31	Delhi	ZN	iP	11	03	03	770	Slight, rarefaction
		E	iS		04	28		
31	Epc 41.9°N, 142.4°E. Near South Coast of Hokkaido, Japan. - H = 11h 29m 20.4s. h about 33 km Mag 4.5 SD, 0.3 (CGS) (USCGS).							
	Shillong	ZNE	iP	11	37	30		Rarefaction

July 1963

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station Madras</i>				
10	00	1	1.6	5.9
		3	0.4	2.7
	03	1	1.4	5.7
		3	0.3	2.7
	06	...	Earthquake	
	12	1	1.3	5.5
		3	0.3	2.9
	18	1	1.2	5.4
		3	0.3	2.8
11	00	1	1.1	5.3
		3	0.3	2.7
	03	1	1.0	4.7
		3	0.3	2.7
	06	1	1.0	4.7
		3	0.3	2.7
	12	1	1.0	4.9
		3	0.3	2.9
	18	1	0.9	4.7
		3	0.3	2.9
12	00	1	0.9	4.7
		3	0.4	2.9
	03	1	0.9	4.7
		3	0.3	2.7
	06	1	0.9	4.7
		3	0.3	2.7
	12	1	0.8	4.6
		3	0.3	2.7
	18	1	0.8	4.4
		3	0.3	2.5
13	00	1	1.0	4.7
		3	0.3	2.5
	03	1	0.9	4.9
		3	0.2	2.5
	06	1	0.8	4.8
		3	0.2	2.7
	12	1	1.0	4.9
		3	0.2	2.5
	18	1	0.9	4.9
		3	0.1	1.7
14	00	1	0.9	4.8
		3	0.2	2.3
	03	1	0.9	4.9
		3	0.2	2.3
	06	1	1.0	5.0
		3	0.2	2.3
	12	1	0.9	4.7
		3	0.1	2.3
	18	1	0.9	5.0
		3	0.1	2.2
15	00	1	0.9	5.0
		3	0.1	2.1
	03	1	1.0	5.2
		3	0.2	2.2
	06	1	1.0	5.3

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station Madras</i>				
15	06	3	0.2	2.3
	Contd. 12	1	0.9	5.0
		3	0.2	2.4
	18	1	0.9	5.4
		3	0.2	2.1
16	00	1	0.9	5.2
		3	0.3	2.3
	03	1	0.1	1.7
		3	0.3	4.9
	06	1	0.3	2.7
		3	0.5	2.7
	09	1	0.9	5.0
		3	0.5	2.9
	12	1	0.8	4.7
		3	0.4	2.7
	18	1	0.8	4.9
		3	0.3	2.7
17	00	1	0.8	5.1
		3	0.2	2.5
	03	1	0.8	4.8
		3	0.3	2.3
	06	1	0.8	4.9
		3	0.3	2.7
	12	1	0.3	5.0
		3	0.2	2.4
	18	1	0.9	4.9
		3	0.2	2.3
		3	0.1	1.7
18	00	1	0.8	4.9
		3	0.3	2.6
	03	1	0.9	4.7
		3	0.3	2.6
	06	1	0.8	4.7
		3	0.3	2.7
	12	1	0.8	4.7
		3	0.2	2.5
	18	1	0.8	4.8
		3	0.2	2.4
19	00	1	0.9	4.9
		3	0.2	2.3
	03	1	0.9	5.0
		3	0.2	2.5
	06	1	0.8	4.9
		3	0.2	2.4
	12	1	1.0	5.0
		3	0.2	2.6
	18	1	1.1	5.1
		3	0.3	2.7
20	00	1	1.1	5.2
		3	0.2	2.7
	03	1	1.1	5.2
		3	0.2	2.8
	06	1	1.1	5.1
		3	0.2	2.6



International Seismological Centre

July 1963

41

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station Madras</i>				
20	12	1	1.0	5.1
	Contd.	3	0.2	2.5
	18	1	0.9	5.2
		3	0.2	2.8
21	00	1	0.9	5.3
		3	0.3	2.8
	03	1	0.9	4.9
		3	0.4	2.7
	06	1	0.9	5.3
		3	0.3	2.8
	12	1	0.9	5.1
		3	0.3	2.7
	18	1	1.0	5.2
		3	0.3	2.6
22	00	1	1.0	5.5
		3	0.3	2.6
	03	1	0.9	5.2
		3	0.2	2.6
	06	1	1.0	5.2
		3	0.2	2.7
	12	1	1.1	5.4
		3	0.3	2.7
	18	1	1.0	5.2
		3	0.3	2.7
23	00	1	0.9	5.3
		3	0.2	2.6
	03	1	1.0	5.1
		3	0.3	2.7
	06	1	1.1	5.2
		3	0.2	2.5
	12	1	1.0	5.3
		3	0.3	2.6
	18	1	1.0	5.4
		3	0.3	2.7
24	00	1	1.0	5.2
		3	0.3	2.6
	03	1	1.0	5.1
		3	0.4	2.6
	06	1	1.0	5.2
		3	0.4	2.6
	12	...	Earthquake	
	18	1	1.1	5.3
		3	0.4	2.3
25	00	1	1.1	5.1
		3	0.4	2.8
	03	1	1.0	5.4
		3	0.3	2.5
	06	1	1.0	5.3
		3	0.3	2.6
	12	1	1.1	5.2
		3	0.4	2.7
	18	1	1.0	5.3

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station Madras</i>				
25	18	1	0.7	3.6
	Contd.	3	0.3	2.3
26	00	1	0.9	5.2
		3	0.3	4.1
	03	1	1.0	4.8
		3	0.8	4.1
	06	1	1.1	4.3
		3	0.4	2.9
	12	1	1.1	4.5
		3	0.4	2.9
	18	1	1.0	4.7
		3	0.3	2.5
27	00	1	1.1	4.8
		3	0.3	2.3
	03	1	1.1	4.8
		3	0.4	2.7
	06	1	1.1	4.8
		3	0.4	2.3
	12	1	1.2	5.0
		3	0.4	2.7
	18	1	1.2	5.2
		3	0.4	2.7
28	00	1	1.2	5.1
		3	0.4	2.7
	03	1	1.2	4.9
		3	0.4	2.7
	06	1	1.2	5.0
		3	0.4	2.8
	12	1	1.3	5.1
		3	0.4	2.7
	18	1	1.3	5.4
		3	0.4	2.7
29	00	1	1.2	5.3
		3	0.4	2.9
	03	1	1.2	5.1
		3	0.4	2.9
	06	1	1.2	5.3
		3	0.4	2.8
	12	1	1.2	5.4
		3	0.3	2.7
	18	1	1.3	5.5
		3	0.3	2.8
30	00	1	1.2	5.2
		3	0.3	2.7
	03	1	1.2	5.3
		3	0.3	2.7
	06	...	Earthquake	
	12	1	1.1	5.4
		3	0.3	2.6
	18	1	1.2	5.3
		3	0.1	1.9

July 1963

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station. Madras</i>				
31	00	1	1.2	5.3
		3	0.2	2.0
	03	1	1.0	5.4
	06	1	1.1	5.5
	12	1	1.0	5.4
	18	1	1.1	5.3
<i>Station. Bokaro</i>				
01	00	1	0.6	4.6
	03	3	0.5	4.7
	12	3	0.5	4.7
	18	3	0.6	5.0
02	00	3	0.5	4.9
	03	3	0.7	5.0
	12	3	0.8	5.2
	18	3	1.0	5.1
03	00	3	0.9	5.5
	03 to 18	...	-	-
04	00	...	-	-
	03	3	1.5	5.1
	12	...	-	-
	18	3	1.1	4.5
05	00	3	1.3	5.1
	03 to 18	...	-	-
06	00	...	-	-
	03	3	1.2	4.7
	12	3	1.1	5.1
	18	3	1.3	5.3
07	00	3	1.1	5.2
	03	3	1.0	5.0
	12	3	1.2	5.0
	18	3	1.1	5.0
08	00	3	1.2	5.3
	03	3	1.1	5.5
	12	3	1.0	5.0
	18	3	1.2	6.0
09	00	3	1.1	5.3
	03	3	1.0	3.0
	12	3	1.0	5.0
	18	3	1.1	6.0
10	00	3	0.8	5.2
	03	...	-	-
	12	3	0.8	5.5
	18	3	0.5	4.5

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station. Bokaro</i>				
11	00	3	0.7	4.9
	03	3	0.4	4.2
	12	3	0.4	4.8
	18	3	0.4	4.4
12	00	3	0.5	4.5
	03	3	0.5	1.8
	12	3	0.6	3.8
	18	3	0.4	4.0
13	00	3	0.4	4.0
	03	3	0.4	5.0
	12	3	0.4	4.4
	18	3	0.5	4.2
14	00	3	0.4	4.9
	03	3	0.4	5.0
	12	3	0.5	4.5
	18	3	0.5	4.6
15	00	3	0.5	5.3
	03	3	0.4	4.8
	12	3	0.4	5.0
	18	3	0.4	4.8
16	00	3	0.5	4.9
	03	3	0.4	5.1
	12	3	0.5	1.8
	18	3	0.4	4.8
17	00	3	0.4	5.2
	03	3	0.3	4.9
	12	3	0.3	4.6
	18	3	0.4	4.6
18	00	3	0.4	4.6
	03	3	0.3	4.7
	12	3	0.4	4.3
	18	3	0.4	5.2
19	00	3	0.4	4.5
	03	...	-	-
	12	3	0.4	5.0
	18	3	0.4	4.8
20	00	3	0.5	5.2
	03	3	0.5	5.2
	12	3	0.4	4.0
	18	3	0.5	5.3
21	00	3	0.4	4.4
	03	3	0.4	5.0
	12	3	0.5	5.0
	18	3	0.4	4.5
22	00	3	0.4	5.5
	03	3	0.5	5.1



July 1963

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station. Bokaro</i>				
22	12	3	0.4	4.7
Contd. 18	3	3	0.5	5.0
23	00	3	0.5	5.2
	03	3	0.3	5.2
	12	3	0.4	5.2
	18	3	0.4	5.0
24	00	3	0.4	4.7
	03	3	0.3	5.0
	12	...	-	-
	18	3	0.4	4.8
25	00	3	0.5	5.5
	03	3	0.4	5.0
	12	3	0.5	5.0
	18	3	0.4	4.5
26	00	3	0.4	4.8
	03	3	0.4	4.6
	12	3	0.5	4.7
	18	3	0.4	4.7
27	00	3	0.5	4.7
	03	3	0.5	4.8
	12	3	0.5	5.5
	18	3	0.5	5.0
28	00	3	0.5	4.8
	03	3	0.5	5.4
	12	3	0.5	4.9
	18	3	0.5	5.3
29	00	3	0.5	5.5
	03	3	0.5	5.5
	12	3	0.4	5.6
	18	3	0.5	5.6
30	00	3	0.5	5.0
	03	3	0.5	4.0
	12	3	0.4	5.1
	18	3	0.5	5.0
31	00	3	0.5	5.0
	03	3	0.6	5.3
	12	3	0.5	5.0
	18	3	0.6	4.9
<i>Station. Bombay (Colaba)</i>				
01	00	3	1.5	4.0
			0.5	2.0
	03	3	2.0	4.0
			0.6	2.0
	12	3	1.8	4.0
			0.5	2.0
	18	3	1.8	4.3
			0.4	1.5

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
<i>Station. Bombay (Colaba)</i>				
02	00	3	1.8	4.2
			0.4	1.5
	03	3	2.2	4.8
			0.7	2.0
	12	3	2.1	4.9
			0.6	1.9
	18	3	2.2	4.9
			0.4	1.5
03	00	3	2.2	4.7
			0.8	2.0
	03	3	2.5	5.0
			2.3	4.0
	12	3	2.6	4.0
			1.7	3.0
	18	3	3.2	4.2
			2.6	3.1
04	00	3	3.6	4.6
			0.6	2.0
	03	3	3.0	3.0
			3.7	4.0
			1.7	2.1
	12	3	4.0	4.0
			1.8	2.1
	18	3	3.2	4.0
			2.0	2.1
05	00	3	3.5	4.0
			2.0	2.0
	03	3	3.0	4.0
			1.8	2.2
	12	3	2.8	4.0
			2.0	2.2
	18	3	2.5	3.9
			1.5	2.2
06	00	3	2.9	3.6
			1.6	2.3
	03 to 18	.	.	.
07	00	.	.	.
	03	3	2.9	2.7
			2.7	4.0
	12	3	2.7	4.0
			1.7	2.5
	18	3	3.0	4.0
			1.7	2.6
08	00	3	2.9	4.0
			2.0	2.6
	03	3	2.9	4.1
			2.1	2.8
			1.0	2.0
	12	3	2.6	4.2
			1.5	2.7
	18	3	3.0	4.0
			1.2	2.0

July 1963

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
------	----------	---	----------------------	----------------

Station. Bombay (Colaba)

09	00	3	3.2	4.0
			1.7	2.4
	06	3	3.2	4.2
			1.4	2.1
	12	3	2.0	4.0
			1.4	2.3
	18	3	2.7	4.0
			2.0	2.2
10	00	3	2.5	1.0
			1.5	2.9
	06	.	.	.
	12	3	2.6	3.9
			1.9	2.5
	18	3	2.3	4.0
			2.1	2.3
11	00	3	2.0	3.9
			1.7	2.7
	06	.	.	.
	12	3	2.3	4.0
			1.7	2.8
	18	3	2.5	4.0
			1.7	2.3
12	00	3	2.6	4.0
			1.6	2.6
	06	3	1.7	3.9
			0.7	2.1
	12	3	2.1	3.9
			1.0	2.0
			1.6	3.0
	18	3	2.0	4.0
			1.9	2.9
			0.7	2.0
13	00	3	1.8	4.0
			1.7	2.8
	03 to 18		Record defective due to sticking of galvanometer	
14	00		Record defective	
	03	3	2.0	4.0
			0.8	2.0
	12 to 13		Record is defective	
15	00		Record defective	
	06	3	1.3	4.7
			0.6	2.3
	12	.	.	.
	18	3	1.2	4.9
			0.4	1.5
13	06 to 18		Record defective	
17	03 to 18		Record defective	

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
------	----------	---	----------------------	----------------

Station. Bombay (Colaba)

18	00		Record ineffective	
	06	3	1.7	4.9
			0.5	2.0
	12	3	1.3	4.6
			0.4	1.5
	18	3	1.6	4.9
			0.4	1.5
19	00	3	1.5	4.6
			0.4	1.5
	06	.	.	.
	12	3	1.3	4.2
			0.4	1.5
	18	3	1.4	4.7
			0.6	2.0
20	00	3	1.2	4.1
			0.6	2.0
	06	3	1.3	4.2
			0.6	2.2
	12	3	1.3	4.0
			1.0	2.2
	18	3	1.3	4.0
			0.6	2.0
21	00	3	1.4	3.9
			0.5	2.0
	06	3	1.5	4.1
			1.1	2.1
	12	3	1.8	4.0
			1.1	2.1
	18	3	1.6	3.8
			0.5	1.8
22	00	3	1.8	4.4
			0.9	2.0
	06	3	1.8	4.5
			1.0	2.0
	12	3	1.9	4.8
			1.0	2.0
	18	3	2.0	4.9
			1.0	2.3
23	00	3	2.0	4.8
			0.4	1.5
	06	3	1.9	4.9
			0.5	2.0
	12	3	1.9	4.8
			0.4	1.4
	18	3	1.9	4.9
			0.5	2.0
24	00	3	1.7	4.9
			0.4	2.0
	06	3	1.5	5.0
			0.4	1.3

Date	Hour GMT	K	Mean Amplitude in mm	Period in secs
------	----------	---	----------------------	----------------

Station. Bombay (Colaba)

24	18		Defective record	
Contd.				
25	00	3	1.5	5.0
			0.4	2.0
	06	3	1.8	5.0
			0.4	1.5
	12	3	1.6	5.0
			0.4	1.4
	18	3	1.8	5.0
			0.3	1.4
26	00	3	1.9	5.0
			0.4	1.4
	06	3	1.8	4.8
			0.4	1.4
	12	3	1.4	4.2
			0.4	2.0
	18	3	1.7	4.1
			0.4	1.4
27	00	3	1.6	4.5
			1.0	2.0
	06	3	1.5	3.9
			1.0	2.0
	12	3	1.8	4.6
			0.5	2.0
	18	3	1.9	4.4
			0.6	2.0
28	00	3	2.0	4.2
			0.7	1.8
	06	3	2.0	4.6
			0.5	1.8
	12	3	2.0	4.7
			0.4	1.5
	18	.	.	.
29	00 to 18		Faint record	
30	00	.	.	.
	06	3	1.7	4.9
			0.5	1.9
	12	3	1.7	4.7
			0.5	2.0
	18	3	2.0	4.8
			0.5	1.9
31	00	3	1.7	5.0
			1.0	2.6
	06	3	1.8	4.1
			0.8	1.9
	12	3	1.7	4.0
			0.7	1.9
	18	3	2.0	4.9
			0.9	2.5



International Geophysical Centre

July 1963

Date	Hour GMT	K	Mean Amplitude (Micron)	Period in secs
------	----------	---	-------------------------	----------------

Station. Port Blair

01	00	1	1.2	3
	06	1	1.2	3
	12	1	1.2	4
	18	1	1.6	4
02	00	1	1.6	4
	06	1	1.2	4
	12	1	0.8	4
	18	1	1.2	4
03	00	1	1.2	4
	06	3	1.2	3
	12	3	1.2	3
	18	...	-	-
04	00	3	1.2	3
	06	3	1.2	3
	12	...	-	-
	18	3	1.2	3
05	00	...	-	-
	06	3	2.0	3
	12	3	2.0	4
	18	3	2.0	4
06	00	3	2.0	4
	06	3	2.0	4
	12	3	2.0	4
	18	3	2.0	5
07	00	3	1.3	5
	06	3	1.6	5
	12	3	1.2	3
	18	3	1.2	3
08	00	3	1.2	3
	06	3	1.6	4
	12	3	1.2	3
	18	3	0.8	3
09	00	3	0.8	3
	06	3	0.8	3
	12	3	0.8	3
	18	3	0.9	3
10	00	3	0.8	3
	06	...	-	-
	12	1	0.4	3
	18	1	0.4	3
11	00	1	0.4	3
	06	1	0.4	3
	12	1	0.4	3
	18	1	0.4	3
12	00 to 18	1	0.4	3

~~~~~

July 1963

| Date                | Hour GMT | K   | Mean Amplitude (Micron) | Period in secs |
|---------------------|----------|-----|-------------------------|----------------|
| Station. Port Blair |          |     |                         |                |
| 13                  | 00       | 1   | 0.4                     | 3              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 14                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 15                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 03       | 3   | 0.2                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 12       | 3   | 0.2                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 18       | 3   | 0.2                     | 3              |
|                     |          |     | 0.8                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 16                  | 00       | 3   | 0.2                     | 3              |
|                     |          |     | 0.8                     | 6              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 6              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 18       | 3   | 0.8                     | 3              |
| Station. Port Blair |          |     |                         |                |
| 17                  | 00       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 03       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 12       | 1   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 18       | 3   | 0.8                     | 3              |
|                     |          |     | 0.4                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 18                  | 00       | 1   | 0.4                     | 3              |
|                     | 03       | ... | -                       | -              |
|                     | 12       | 1   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 3              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.2                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 19                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 03       | ... | -                       | -              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 20                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 1.2                     | 3              |

| Date                | Hour GMT | K   | Mean Amplitude (Micron) | Period in secs |
|---------------------|----------|-----|-------------------------|----------------|
| Station. Port Blair |          |     |                         |                |
| 20                  | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 1.2                     | 9              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 1.2                     | 9              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 1.2                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 21                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 1.2                     | 7              |
|                     | 03       | ... | -                       | -              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 22                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 03       | 3   | 0.8                     | 3              |
|                     |          |     | 1.2                     | 7              |
|                     | 12       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 18       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 23                  | 00       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 24                  | 00       | 3   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
|                     | 12       | ... | 0.4                     | 7              |
|                     | 18       | 3   | 0.8                     | 3              |
| Station. Port Blair |          |     |                         |                |
| 25                  | 00       | 3   | 0.8                     | 3              |
|                     |          |     | 0.4                     | 3              |
|                     | 03       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 3              |
|                     | 12       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 3              |
|                     | 18       | 3   | 0.4                     | 3              |
|                     |          |     | 0.4                     | 7              |
| Station. Port Blair |          |     |                         |                |
| 26                  | 00       | 3   | 0.4                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 03       | 1   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 12       | 1   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 18       | ... | -                       | -              |
| Station. Port Blair |          |     |                         |                |
| 27                  | 00       | 1   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 03       | 1   | 0.8                     | 3              |
|                     |          |     | 0.8                     | 3              |
|                     | 12       | 1   | 0.8                     | 3              |
|                     |          |     | 1.2                     | 3              |
|                     | 18       | 1   | 1.2                     | 3              |
| Station. Port Blair |          |     |                         |                |
| 28                  | 00       | 1   | 1.2                     | 3              |
|                     |          |     | 1.2                     | 3              |
|                     | 03       | 1   | 1.2                     | 3              |
|                     |          |     | 1.2                     | 3              |
|                     | 12       | 1   | 1.2                     | 3              |
|                     |          |     | -                       | -              |
|                     | 18       | ... | -                       | -              |

| Date                   | Hour GMT | K   | Mean Amplitude in mm | Period in secs | Date                   | Hour GMT | K                        | Mean Amplitude in mm   | Period in secs |
|------------------------|----------|-----|----------------------|----------------|------------------------|----------|--------------------------|------------------------|----------------|
| Station. Port Blair    |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 29                     | 00       | 1   | 1.2                  | 3              | 08                     | 00       | 3                        | 1.2                    | 5.2            |
|                        |          |     | 1.2                  | 3              |                        |          |                          | 1.1                    | 4.9            |
|                        | 03       | 1   | 1.2                  | 3              |                        | 03       | 3                        | 1.4                    | 5.6            |
|                        |          |     | 1.2                  | 3              |                        |          |                          | 1.1                    | 5.5            |
|                        | 12       | 1   | 0.8                  | 3              |                        | 12       | 3                        | 1.3                    | 5.9            |
|                        | 18       | 1   | 0.4                  | 3              |                        |          |                          | 1.1                    | 4.9            |
| Station. Port Blair    |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 30                     | 00       | 3   | 0.8                  | 3              | 09                     | 00       | 3                        | 1.3                    | 5.9            |
|                        |          |     | 0.4                  | 7              |                        |          |                          | 1.1                    | 4.9            |
|                        | 03       | ... | -                    | -              |                        | 03       | 3                        | 1.3                    | 5.9            |
|                        |          |     | 0.4                  | 3              |                        |          |                          | 1.2                    | 4.9            |
|                        | 12       | 3   | 0.8                  | 7              |                        | 12       | 3                        | 1.0                    | 5.5            |
|                        |          |     | 0.4                  | 3              |                        |          |                          | Earthquake in progress |                |
|                        | 18       | 3   | 0.4                  | 3              |                        | 03       | 2                        | 0.8                    | 4.9            |
|                        |          |     | 0.8                  | 7              |                        |          |                          | 0.8                    | 4.7            |
| Station. Port Blair    |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 31                     | 00       | 3   | 0.2                  | 3              | 10                     | 00       | 3                        | 1.0                    | 5.5            |
|                        |          |     | 0.4                  | 3              |                        |          |                          | Earthquake in progress |                |
|                        |          |     | 0.2                  | 3              |                        | 03       | 2                        | 0.8                    | 4.9            |
|                        |          |     | 0.4                  | 7              |                        |          |                          | 0.8                    | 4.7            |
|                        | 06       | 3   | 0.2                  | 3              | 11                     | 00       | 2                        | 0.7                    | 4.4            |
|                        |          |     | 0.4                  | 7              |                        |          |                          | 1.3                    | 4.3            |
|                        | 12       | 3   | 0.2                  | 3              |                        | 03       | 2                        | 0.8                    | 4.3            |
|                        |          |     | 0.4                  | 7              |                        |          |                          | 0.5                    | 4.4            |
|                        |          |     | 0.4                  | 7              |                        | 12       | 2                        | 0.4                    | 4.0            |
|                        | 18       | 3   | 0.2                  | 3              |                        |          |                          | 0.4                    | 4.0            |
|                        |          |     | 0.4                  | 7              |                        | 03       | 2                        | 0.4                    | 3.5            |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 01                     | 00       | 2   | 0.5                  | 3.5            | 12                     | 00       | 2                        | 0.4                    | 4.0            |
|                        |          |     | 0.5                  | 3.5            |                        |          |                          | 0.4                    | 4.0            |
|                        | 03       | 2   | 0.5                  | 3.5            | 12                     | 03       | 2                        | 0.4                    | 3.5            |
|                        |          |     | 0.7                  | 3.7            |                        |          |                          | 0.6                    | 4.3            |
|                        | 12       | 2   | 0.6                  | 4.0            | 12                     | 2        | 0.6                      | 4.3                    |                |
|                        |          |     | 0.6                  | 4.0            |                        |          |                          | 0.4                    | 4.3            |
|                        | 18       | 2   | 0.6                  | 4.0            | 18                     | 2        | 0.4                      | 4.3                    |                |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 02                     | 00       | 2   | 0.6                  | 3.8            | 13                     | 00       | 2                        | 0.4                    | 4.2            |
|                        |          |     | 0.3                  | 4.5            |                        |          |                          | 0.6                    | 4.8            |
|                        | 03       | 3   | 1.0                  | 5.0            | 12                     | 03       | 2                        | 0.6                    | 4.8            |
|                        |          |     | 1.2                  | 4.9            |                        |          |                          | 0.6                    | 4.5            |
|                        | 12       | 3   | 1.2                  | 4.9            | 12                     | 2        | 0.5                      | 4.2                    |                |
|                        |          |     | 1.2                  | 4.9            |                        |          |                          | 0.5                    | 4.2            |
|                        | 18       | 3   | 0.8                  | 4.5            | 18                     | 2        | 0.5                      | 4.2                    |                |
|                        |          |     | 1.3                  | 4.3            |                        |          |                          | 0.5                    | 4.2            |
|                        | 12       | 3   | 1.3                  | 4.4            | 14                     | 00       | 2                        | 0.5                    | 4.8            |
|                        |          |     | 1.4                  | 5.3            |                        |          |                          | 0.5                    | 3.9            |
|                        | 18       | 3   | 1.4                  | 5.3            | 12                     | 2        | 0.5                      | 3.4                    |                |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 03                     | 00       | 3   | 0.8                  | 4.5            | 18                     | 0,0      | Microseisms very feeble. |                        |                |
|                        |          |     | 1.3                  | 4.3            |                        |          |                          |                        |                |
|                        | 12       | 3   | 1.3                  | 4.4            | 15                     | 00       | 0,0                      | -                      | -              |
|                        |          |     | 1.4                  | 5.3            |                        |          |                          | 0.8                    | 5.1            |
|                        | 18       | 3   | 1.4                  | 5.3            | 12                     | 2        | 0.4                      | 4.3                    |                |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 04                     | 00       | 3   | 1.3                  | 4.5            | 18                     | 2        | 0.6                      | 5.0                    |                |
|                        |          |     | 1.4                  | 4.3            |                        |          |                          |                        |                |
|                        | 03       | 3   | 1.4                  | 4.3            | 16                     | 00       | 2                        | 0.5                    | 4.5            |
|                        |          |     | 1.4                  | 4.3            |                        |          |                          | 0.6                    | 5.2            |
|                        | 12       | 3   | 1.4                  | 4.3            | 12                     | 2        | 0.5                      | 3.7                    |                |
|                        |          |     | 1.4                  | 4.3            |                        |          |                          | 0.5                    | 3.7            |
|                        | 18       | 3   | 1.4                  | 4.3            | 18                     | 0,0      | -                        | -                      |                |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 05                     | 00       | 3   | 1.5                  | 5.4            | 17                     | 00       | 0,0                      | -                      | -              |
|                        |          |     | 1.4                  | 5.2            |                        |          |                          | 0.4                    | 3.6            |
|                        | 03       | 3   | 1.4                  | 5.2            | 12                     | 2        | 0.5                      | 4.6                    |                |
|                        |          |     | 1.5                  | 5.4            |                        |          |                          | 0.4                    | 4.3            |
|                        | 12       | 3   | 1.5                  | 5.4            | 18                     | 2        | 0.4                      | 4.3                    |                |
|                        |          |     | 1.6                  | 5.0            |                        |          |                          |                        |                |
|                        | 18       | 3   | 1.6                  | 5.0            | 18                     | 00       | 2                        | 0.3                    | 3.7            |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 06                     | 00       | 3   | 1.3                  | 4.7            | 03                     | 2        | 0.3                      | 3.1                    |                |
|                        |          |     | 1.1                  | 4.3            |                        |          |                          | 0.4                    | 3.9            |
|                        | 03       | 3   | 1.1                  | 4.3            | 12                     | 2        | 0.4                      | 3.9                    |                |
|                        |          |     | 1.1                  | 4.5            |                        |          |                          | 0.4                    | 3.5            |
|                        | 12       | 3   | 1.1                  | 4.5            | 18                     | 2        | 0.4                      | 3.5                    |                |
|                        |          |     | 1.2                  | 4.8            |                        |          |                          |                        |                |
|                        | 18       | 3   | 1.2                  | 4.8            | 19                     | 00       | 2                        | 0.3                    | 3.3            |
| Station. Visakhapatnam |          |     |                      |                | Station. Visakhapatnam |          |                          |                        |                |
| 07                     | 00       | 3   | 1.4                  | 4.2            | 03                     | ...      | Earthquake in progress   |                        |                |
|                        |          |     | 1.2                  | 5.0            |                        |          |                          |                        |                |
|                        | 03       | 3   | 1.2                  | 5.0            |                        |          |                          |                        |                |
|                        |          |     | 1.2                  | 5.1            |                        |          |                          |                        |                |
|                        | 12       | 3   | 1.2                  | 5.1            |                        |          |                          |                        |                |
|                        |          |     | 1.4                  | 4.8            |                        |          |                          |                        |                |
|                        | 18       | 3   | 1.4                  | 4.8            |                        |          |                          |                        |                |







| Date | Hour GMT | K | Mean Amplitude in mm | Period in secs | Date | Hour GMT | K | Mean Amplitude in mm | Period in secs |
|------|----------|---|----------------------|----------------|------|----------|---|----------------------|----------------|
|------|----------|---|----------------------|----------------|------|----------|---|----------------------|----------------|

Station. Visakhapatnam

Station. Visakhapatnam

|        |    |                        |     |     |    |          |                                                    |     |     |
|--------|----|------------------------|-----|-----|----|----------|----------------------------------------------------|-----|-----|
| 19     | 12 | 2                      | 0.5 | 4.5 | 26 | 00       | 2                                                  | 0.4 | 3.3 |
| Contd. | 13 | 2                      | 0.4 | 2.7 |    | 03       | 2                                                  | 0.6 | 3.5 |
|        |    |                        |     |     |    | 12       | 2                                                  | 0.6 | 4.0 |
| 20     | 00 | 2                      | 0.5 | 4.3 |    | 13       | 2                                                  | 0.5 | 4.0 |
|        | 03 | 2                      | 0.4 | 3.1 | 27 | 00       | 2                                                  | 0.5 | 4.3 |
|        | 12 | 2                      | 0.2 | 2.3 |    | 03       | 2                                                  | 0.6 | 4.4 |
|        | 18 | 2                      | 0.4 | 3.4 |    | 12       | 2                                                  | 0.5 | 3.9 |
| 21     | 00 | 2                      | 0.4 | 4.7 |    | 13       | 2                                                  | 0.5 | 4.0 |
|        | 03 | 2                      | 0.6 | 3.9 | 28 | 00       | 2                                                  | 0.4 | 3.7 |
|        | 12 | 2                      | 0.2 | 2.0 |    | 03       | 2                                                  | 0.6 | 4.6 |
|        | 18 | 2                      | 0.4 | 3.9 |    | 12       | 2                                                  | 0.6 | 4.9 |
| 22     | 00 | 2                      | 0.4 | 4.9 |    | 18       | 2                                                  | 0.5 | 4.3 |
|        | 03 | 2                      | 0.5 | 4.4 | 29 | 00       | 2                                                  | 0.6 | 5.1 |
|        | 12 | 2                      | 0.5 | 4.8 |    | 03       | 2                                                  | 0.5 | 4.7 |
|        | 18 | 2                      | 0.6 | 4.5 |    | 12       | 2                                                  | 0.6 | 4.9 |
| 23     | 00 | 2                      | 0.5 | 5.2 |    | 13       | 2                                                  | 0.6 | 4.8 |
|        | 03 | 2                      | 0.3 | 5.1 | 30 | 00       | 2                                                  | 0.5 | 4.9 |
|        | 12 | 2                      | 0.5 | 4.5 |    | 03       | Earthquake in progress                             |     |     |
|        | 18 | 2                      | 0.6 | 5.1 |    | 12       | No record due to qrtly calibration of seismograph. |     |     |
| 24     | 00 | 0,0                    | -   | -   |    | 18       | 2                                                  | 0.5 | 4.8 |
|        | 03 | 2                      | 0.5 | 4.5 | 31 | 00       | 2                                                  | 0.5 | 4.5 |
|        | 12 | Earthquake in progress |     |     |    | 03 to 12 | No record due to qrtly calibration of seismograph. |     |     |
|        | 18 | 2                      | 0.6 | 4.8 |    | 18       | 2                                                  | 0.5 | 5.0 |
| 25     | 00 | 0,0                    | -   | -   |    |          |                                                    |     |     |
|        | 03 | 2                      | 0.6 | 4.7 |    |          |                                                    |     |     |
|        | 12 | 2                      | 0.6 | 4.9 |    |          |                                                    |     |     |
|        | 18 | 2                      | 0.5 | 4.2 |    |          |                                                    |     |     |

