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## 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 Magnifi- cation	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, 85.49°E			Rock	Milne-Shaw	N	12 250	20:1		16
					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		60
Calcutta	22.32°N, 88.22°E	(1) 7		Milne-Shaw	E	12 250		20:1		8
		(2) 6		Omori-Ewing	N	2 870		Critical		30
				Alluvium	Omori-Ewing	N	15 32			25.4
					Omori-Ewing	E	21 30			25.4
Chatra	26.50°N, 87.10°E		161	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	17.25°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		8
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			50
					Sprengnether	E	To=Tg=5.3	Critical		30
					Wenner Accelerograph	ZNE	-			-
Tocklai	28.45°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

STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
			May, 1963.		
Shillong	ZNE	iP	00 39 17		Slight, distant, compression.
Shillong	ZNE	ePg iSg	00 48 34 48 58	190	Slight.
Shillong	ZNE	iP iS	01 16 36 17 47	680	Slight, compression.
Madras	E	eP eS LQ LR PCS/SCP	02 30 15 34 00 34 13 35 12 38 04	2280	Slight.
Kodaikanal	E	e	02 32 29		Slight, distant.
Shillong	ZNE	iP	02 32 52		Slight, distant, compression.
Bombay	ES	e	02 34 33		Slight.
Port Blair	NE	ePg iSg	02 46 53 46 58	45	Slight.
Dehra Dun	Z Z	e i	06 11 13 12 51		Tremor.
Chatra	Z	iP	07 33 12		Slight, distant, compression.
Delhi	ENZ ENZ	iP iS	08 11 24 13 02	940	Slight. Initial ground motion towards South East. Compression.
			Epc:- 19.0°S 169.0°E, New Hebride Islands. h = about 140 km. -H= 10 h 03 m 20.0 s (USCGS). Mag: 7 (Pas), 6 $\frac{3}{4}$ (Berk), 6.2 (CGS).		
Port Blair	NE E	iP PP i i i i iS i i	10 15 24 15 59 16 50 17 38 18 58 21 35 25 20 26 09 27 04	8710	Initial ground motion towards North West.
Tocklai	E	iP	10 15 46		
Shillong	ZNE	iP PP i PS PPS	10 15 50 19 16 26 22 27 30 28 06		Compression.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
01	Shillong(Contd.)	ZNE	SS	10 32 12		
			SSS	36 00		
			LQ	40 40		
			LR	45 32		
	Chatra	ZNE	eP	10 16 11	9890	
		NE	PP	19 50		
			PPP	21 49		
			SKS	26 30		
			S	26 58		
			PPS	28 34		
			SS	32 41		
			SSS	36 05		
			LQ	40 26		
			M	52 -		
	Calcutta	E	i	10 16 35		
	Bokaro	NE	i	10 16 46		Initial ground move- ment towards East.
		E	i	17 40		
			i	18 21		
		NE	PP	19 30		
			i	20 09		
			PPP	21 16		
			iS	26 29		
			SKS	26 38		
			SsS	26 42		
			PS	27 11		
			PPS	27 31		
	Delhi	ENZ	e	10 16 50		Initial ground motion towards South East. Rarefaction.
	Dehra Dun	Z	e	10 16 51		
		EZ	e	17 28		
		EN	i	27 15		
	Madras	E	i	10 16 55		Initial ground motion towards East.
			pP	17 41		
			PP	19 46		
			PPP	21 38		
			iS	26 42		
			PS	27 18		
			PPS	27 35		
			e	28 30		
			SS	31 46		
			SSS	35 08		
			LR	41 22		
			M	47 33		
	Poona	Z	iP	10 16 55		Initial ground moveme- nt towards South,West. Compression.
		S	PP	17 34		
			PPP	23 17		
		N	PPS	28 02		

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
01	Visakhapatnam	E	iP	10 17 01	11440	Initial ground moveme- nt towards East.
			PP	21 12		
			iS	28 30		
			PS	30 24		
			PPS	31 25		
			SS	35 47		
	Kodaikanal	E	iP	10 17 03		
			i	26 48		
			i	27 24		
			i	35 12		
	Delhi	ENZ	iP	10 17 28	8550	South East. Rarefaction.
		Z	PcP	17 38		
		Z	i	21 00		
		ENZ	i	21 28		
		E	PPP	21 40		
		ENZ	iS	27 16		
		ENZ	PS	27 58		
		Z	PPS	28 34		
		EZ	i	29 49		
		Z	i	30 36		
		Z	i	31 40		
		E	SS	31 56		
		Z	i	34 52		
		N	i	35 14		
		E	SSS	35 52		
		ENZ	i	45 02		
		Z	M	51 53		Period=54 secs.Amp.=57 mm.
	Colaba	NE	eP	10 17 33	8555	
		E	eSP	20 33		
		NE	eS	27 21		
		E	PS	28 16		
		NE	PPS	28 28		
		N	e	29 32		
01	Dehra Dun	Z	i	10 33 36		Tremor.
01	Shillong	ZNE	iP	11 21 34		Slight, local. compression.
01	Shillong	ZNE	iP	14 34 01		Slight, local.
01	Chatra	Z	eP	14 35 01	780	Slight.
		Z	eS	36 21		
01	Dehra Dun	Z	e	19 54 23		Tremor.
		E	e	58 59		
	Delhi	ENZ	eP	19 54 39	1020	Slight,rarefaction.
		ENZ	eS	56 35		
	Chatra	Z	eP	19 55 49		Slight, distant.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
<u>May, 1963.</u>						
02	Delhi	ENZ	iP iS	03 18 05 19 42	940	Slight, Northwest, rarefaction.
	Dehra Dun	Z	e	03 19 24		Tremor.
02	Shillong	ZNE	eP	05 16 39		Slight, distant.
02	Bokaro	NE	e	07 48 06		Tremor, local.
02	Bokaro	NE	iP	08 31 04		Slight, local.
02	Delhi	E	iP	18 57 51		Slight. Initial ground motion towards West.
03	Shillong	ZNE	iP	01 03 42		Slight, distant.
03	Shillong	ZNE	iP	01 17 13		Slight, distant.
03	Bokaro	NE	e	03 05 28		Slight, distant.
03	Shillong	ZNE	iP iSg	06 49 17 49 36	150	Slight.
03	Shillong	ZNE	eP iSg	57 08 57 23	130	Slight.
03	Delhi	Z	i	07 46 35		
03	Delhi	Z	eP	08 41 27		Slight, rarefaction.
03	Bokaro	NE	iP	09 26 59		Local.
03	Shillong	ZNE	iP	10 45 13		Slight, distant, compression.
	Delhi	ENZ	iP	10 49 25		Slight. Initial ground motion towards South East. Compression.
	Dehra Dun	Z	e	10 49 31		Slight.
	Shillong	ZNE	iP iS	10 51 26 55 02	2180	Slight, rarefaction.
03	Shillong	ZNE	iP i	12 08 18 09 04		Slight, near.
03	Delhi	Z	iP	15 32 20		Slight, rarefaction.
03	Shillong	ZNE	iP	19 11 10		Slight, distant, rarefaction.
03	Bokaro	NE	e	20 02 40		Tremor, local.
03	Shillong	ZNE	iP	23 18 37		Slight, distant, compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
<u>May, 1963.</u>						
04	Shillong	ZNE	iP	05 51 05		Slight, distant, rarefaction.
04	Shillong	ZNE	eP	06 07 22		Slight, distant.
04	Delhi	Z	eP	06 07 56		Slight, distant, rarefaction.
04	Delhi	E	eP	09 36 59		Slight, West.
04	Delhi	ENZ EN	eP i	11 31 01 31 38		Slight, compression.
04	Shillong	ZNE	eP	12 12 35		Slight, near.
04	Shillong	ZNE	iP	16 37 47		Slight, distant, compression.
04	Shillong	ZNE	iP i	17 47 41 48 07		Slight, distant, compression.
04	Delhi	Z	eP	19 36 49		Slight.
04	Chatra	Z	iP	21 11 18		Slight, distant, compression.
05	Shillong	ZNE	eP iSg	05 14 12 14 29	140	Slight.
05	Shillong	ZNE	iP Sg	06 17 07 17 16	100	Slight.
05	Shillong	ZNE	iP	07 56 47		Slight, distant, compression.
05	Shillong	ZNE	eP	08 28 24		Slight, distant.
05	Shillong	ZNE	eP	08 47 42		Slight, distant.
05	Shillong	ZNE	eP	10 43 02		Slight, local.
05	Shillong	ZNE	eP	11 43 47		Slight, local.
05	Shillong	ZNE	iP	12 53 32		Slight, distant, compression.
05	Delhi	ENZ	iPg Sg i	13 50 00 50 05 50 11	45	Slight, South West, compression.
05	Chatra	Z	eP	15 36 28		Slight, distant.
05	Poona	Z	iP	15 36 38		Slight, rarefaction.
05	Delhi	ENZ	i	15 36 45		
05	Delhi		iP	15 36 50		Slight. Initial ground motion towards South, West. Compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
05	Shillong	ZNE	iP i	15 27 03 37 53		Slight, distant.
05	Shillong	ZNE	iP iSg	16 00 01 00 11	100	Slight.
05	Dehra Dun	Z Z	e i	16 36 47 36 53		Slight.
05	Shillong	ZNE	iP	18 55 55		Slight, distant, rarefaction.
05	Shillong	ZNE	eP	22 06 28		Slight, distant.
06	Shillong	ZNE	eP	04 45 12		Slight, local.
06	Delhi	Z	eP	06 04 05		Slight, compression.
06	Poona	Z	eP	06 46 55		Slight.
06	Poona	Z	eP	06 53 41		Slight, compression.
06	Delhi		iP	08 09 33		Slight, compression.
06	✓ Bokaro	NE	iP	08 42 47		Slight, local.
	✓ Shillong	ZNE	iP iS	08 46 00 51 51	4190	Slight, compression.
	✓ Chatra	Z	iP	08 46 29		Slight, distant, compression.
	✓ Delhi ?	ENZ	iP i	08 47 23 47 33		Slight, compression.
	✓ Port Blair	E	i	08 50 50		
	✓ Delhi ?	NZ	e i	08 52 35 54 31		
	✓ Dehra Dun	E	e	08 54 39		Tremor.
06	Delhi	ENZ	iP i iS	09 51 53 51 55 52 12	160	Slight.
06	Chatra	Z	eP	13 00 13		Slight, distant.
06	Shillong	ZNE	iP	13 59 45		Slight, distant, rarefaction.
07	Dehra Dun	Z EN	e i	02 19 43 22 31		Tremor.
	Delhi	ENZ	iP	02 20 06		Slight, North West, rarefaction.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
7	Chatra	Z	iP	02 20 13		Feeble, distant, compression.
	Shillong	ZNE	iP	02 20 49		Slight, distant, compression.
7	Bombay	ES N	e e	02 28 58 30 00		Slight.
07	Delhi	Z N	ePg iSg	02 51 33 51 42	80	Slight, rarefaction.
07	Epc:- 36.6° S 70.8° E Hindukush region. h = about 230 km. -H= 03 h 16 m 41.4 s (USCGS) . Mag : 4.4 (CGS).					
	Dehra Dun	Z EN Z	iP eS i	03 18 41 20 09 20 19		Slight, compression.
	Delhi	ENZ	iP iS	03 18 52 20 31	960	Slight. Initial ground motion towards South- East. Compression.
	Chatra	Z	eP	03 20 26		Slight.
	Shillong	ZNE	iP	03 21 08		Slight, rarefaction.
07	Poona	Z	e	03 23 24		Slight.
07	Dehra Dun	Z Z	e i	04 52 33 54 09		Tremor.
07	Delhi	Z ENZ	eP iS	04 52 45 54 23	950	Slight.
07	Shillong	ZNE	eP	04 58 50		Slight, distant.
07	✓ Delhi	Z NZ	iP i	16 42 44 43 16		Slight, compression.
	✓ Dehra Dun	Z	eP	16 42 46		Slight.
	✓ Shillong	ZNE	eP	16 43 02		Slight, distant.
	✓ Poona	Z	eP	16 43 07		Slight.
07	Shillong	ZNE	iP i	17 15 34 16 13		Slight, near.
07	Shillong	ZNE	iP	22 50 11		Slight, distant.
08	Shillong	ZNE	eP	00 03 19		Slight, near.
08	Port Blair	NE	ePg iSg	00 38 11 38 20	80	Slight.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	Δ km.	REMARKS.
<u>May, 1963.</u>						
08	Chatra	Z	eP	05 13 24	740	Slight.
		Z	iS	05 14 42		
	Delhi	Z	iP	05 15 22		Slight, compression.
	Shillong	ZNE	iP	05 15 24		Slight, near.
08	✓ Dehra Dun	Z	e	09 02 58		Slight.
08	✓ Delhi	Z	iP	09 03 06		Slight.
08	Epc:- 35° N 141° E in East of Akya, -H= 10 h 22 m 04 s (C.S.O. Shillong).					
	Epc:- 36.6° N 141.0° E in Honshu, Japan. h = about 53 km. -H= 10 h 22 m 11.2 s (USCGS). Mag : 6.1 (CGS).					
	✓ Shillong	ZNE	iP	10 30 07	4780	Compression.
			PcP	32 00		
			PPP	32 32		
			ScP	35 45		
			iS	36 33		
			PPS	36 50		
			LQ	40 16		
			SSS	40 44		
			M	45 26		
	✓ Chatra	ZNE	iP	10 30 34	5050	Initial ground motion towards South West.
		NE	eS	37 16		
		E	M	51 52		
		N	M	51 52		Compression.
	✓ Bokaro	NE	iP	10 30 51	5310	Initial ground movement towards West.
		E	PcS	36 16		
		NE	S	37 48		
		E	PPS	38 03		
		E	i	38 24		
		E	ScS	40 41		
	✓ Port Blair	NE	eP	10 31 00	5550	
		E	PP	32 43		
			PIP	33 50		
			iS	38 11		
			i	41 13		
			SS	41 45		
			SSS	43 10		
			LR	45 15		
			M	49 00		
	✓ Dehra Dun	ENZ	iP	10 31 16	5745	Initial ground movement towards Rarefaction.
		E	iS	38 37		
		EN	i	39 05		
08	✓ Delhi	ENZ	iP	10 31 27	5890	Moderate. Initial ground movement towards South West. Compression.
		EZ	i	31 39		
		ENZ	PP	33 40		

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	Δ km.	REMARKS.
<u>May, 1963.</u>						
08	✓ Delhi (Contd.)	EZ	PPP	10 34 52		
		ENZ	iS	38 56		
			PPS	39 20		
		E	SS	42 36		
		Z	i	43 12		
		E	LQ	45 00		
		N	LR	47 56		
		EZ	i	48 42		
		Z	M			Period = 20 secs. Amp. = 48 mm.
	✓ Visakhapatnam	E	iP	10 31 37	6110	Slight, moderate.
			iS	39 18		
			PS	39 31		
			M	56 00		Period = 20.0sec. Gr. dis = 9.1 u.
	✓ Sehore	E	eP	10 31 46		
08	✓ Hyderabad	EN	iP	10 32 00	6440	Initial ground motion towards South West.
		EN	iS	40 00		
		E	PS	40 24		
		E	PPS	40 42		
		E	SS	43 42		
		E	LR	49 21		
		N	LR	49 36		
		E	M	55 03		Period = 24 secs. Gr. dis = 16 u.
		N	M	55 48		Period = 24 secs. Gr. dis = 11 u.
08	✓ Madras	E	iP	10 32 08	6590	Initial ground motion towards West.
			PP	34 12		
			PPP	35 46		
			iS	40 16		
			PS	40 27		
			PPS	40 35		
			e	41 22		
			e	42 14		
			SS	44 15		
			LQ	47 09		
			LR	49 58		
			M	55 10		
	✓ Poona	Z	iP	10 32 20	6265	Initial ground movement towards South West.
		E	eS	40 10		Compression.
	✓ Bombay	NZES	eP	10 32 25	6800	
		ES	PcP	32 35		
		NES	PP	34 59		
		ES	PIP	36 37		
		NEs	eS	40 44		
		ES	SKS	40 57		
		NEs	ScS	41 19		
		N	M	11 01 11		Period = 17 secs. Gr. dis = 5 u.
		E	M	01 47		Period = 14 secs. Gr. dis = 4 u.

DATE STATION COMPT PHASE G. M. T.  $\Delta$  REMARKS.  
h. m. s. km.

May, 1963.

08 Kodaikanal E eP 10 32 29 7060 Initial ground movement towards East.  
iS 41 02  
i 42 53

08 Epc:- 22.5° N 84.5° E in Bihar-Orissa Border.  
-H= 14 h 15 m 10 s . Mag. 6 . (New Delhi).

Epc:- 21.7° N 85.0° E in India  
-H= 14 h 15 m 03 s (USCGS).

Bokaro NE iP 14 15 43 255  
NE S 16 12

Visakhapatnam E eP 14 16 24

Chatra Z eP 14 16 27 810  
Z eS 17 51

Calcutta N i 14 16 28  
i 16 36

Shillong ZNE iP 14 16 50

Madras E eP 14 17 24 1060  
LQ 19 06  
eS 19 12  
LR 19 29  
M 20 11

Delhi ENZ iP 14 17 25  
ENZ e 19 05

Dehra Dun Z iP 14 17 37  
N eS 19 38

Poona Z eP 14 17 38

Bombay Z eP 14 17 49 1230  
E eS 19 55  
NE M 21

Hyderabad N eP 14 18 12  
N e 18 51

Sehore E eP 14 18 15  
N e 18 55  
N i 19 02

Epc:- 5.3° N 125.7° E Off coast of Mindanaoi, Philippine Islands.  
h = about 33 km.  
-H= 15 h 24 m 00.3 s (USCGS). Mag : 5.6 .

Shillong ZNE iP 15 31 15 4120 Compression.  
iS 37 02

Chatra Z iP 15 31 52 Distant.

DATE STATION COMPT PHASE G. M. T.  $\Delta$  REMARKS.  
h. m. s. km.

May, 1963.

08 Madras E iP 15 32 16 5000 Initial ground motion towards West.  
e 32 32  
iS 38 55  
e 39 18

Delhi iP 15 32 58 Slight. Initial ground motion towards South East. Rarefaction.

Dehra Dun Z iP 15 32 59 Slight, compression.  
N eP 32 59  
EN e 40 11

Poona Z iP 15 33 04 Slight, rarefaction.

08 Bombay ES e 15 40 37 Slight.  
ES M 16 00 -

08 Shillong ZNE iP 15 54 08 Slight, distant, compression.

08 Shillong ZNE iP 17 37 55 Slight, near, compression.

08 Delhi NZ iP 19 57 30 Slight. Rarefaction.  
Z i 57 50 Initial ground motion towards North.

08 Shillong ZNE iP 21 21 07 Slight, distant, rarefaction.

08 Shillong ZNE iP 21 34 57 Slight, distant, compression.

08 Delhi ENZ iP 21 36 22 Slight, East. Rarefaction.

08 Shillong ZNE iP 21 59 35 Slight, local.

08 Shillong ZNE iP 23 27 28 Slight, distant, rarefaction.

09 Shillong ZNE iP 06 20 08 Slight, distant, compression.

09 Delhi ENZ iPg 09 20 06 Slight. Initial ground motion towards South, West. Compression.  
P\* 20 08  
iSg 20

09 Shillong ZNE iP 11 31 38 Slight, distant, compression.

09 Delhi ENZ iP 11 33 05 Slight. Initial ground motion towards South, West. Rarefaction.  
Z i 33 16

09 Shillong ZNE eP 14 50 00 100 Slight.  
iSg 50 10



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
09	Shillong	ZNE	eP iSg	15 01 31 01 47	130	Slight.
09	Shillong	ZNE	iP iS	19 47 13 47 50	340	Slight, compression.
09	Shillong	ZNE	iP iSg	20 45 50 46 00	100	Slight.
09	Shillong	ZNE	iP iSg	21 00 41 00 55	120	Slight.
10	Delhi	Z ENZ	iP i	0 <sup>0</sup> 23 12 24 52		Slight, rarefaction.
10	Shillong	ZNE	iP	00 25 58		Slight, distant, rarefaction.
10	Delhi	ENZ E	iP i	00 33 39 33 45		Slight, Initial ground motion towards North, East. Rarefaction.
10	Delhi	Z	iP	01 57 51		Slight, distant, rarefaction.
10	Shillong	ZNE	iP	04 41 26		Slight, distant, rarefaction.
10	Delhi	Z	eP	06 33 36		Slight, compression.
10	Delhi	Z	iP	07 23 47		Slight, rarefaction.
10	Shillong	ZNE	eP	08 16 40		Slight, local.
10	Shillong	ZNE	iP	08 57 21		Slight, distant, compression.
	Chatra	Z Z	eP eS	08 58 21 08 59 24	600	Slight.
10	Delhi	Z	iP	09 29 32		Slight, compression.
10	Delhi	Z	iP	11 03 05		Slight, compression.
10	Delhi	N	eP	11 16 57		Slight, North.
10	Shillong	ZNE	eP iSg	11 17 22 17 30	90	Slight.
10	Delhi	N	iP	11 47 48		Slight, North.
10	Delhi	Z	iP	13 24 48		Slight, compression.
10	Chatra	Z	eP eS	14 09 19 10 00	380	Slight.
10	Shillong	ZNE	eP i	14 10 00 11 30		Slight.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
10	Shillong	ZNE	iP	15 41 17		Slight, distant, rarefaction.
10	Shillong	ZNE	ePg iSg	19 20 49 21 00	110	Slight.
10	Shillong	ZNE	iPg iSg	19 50 50 50 57	80	Slight.
10	Shillong	ZNE	iP	20 57 04		Slight, tremor.
10	Delhi	EN	iP	21 39 33		Slight. Initial ground motion towards South, East.
10	Epc:- 2.2° S 77.6° W, Ecuador. h = about 33 km. -H= 22 h 22 m 42.2 s. Felt. Mag: 6 <sup>3</sup> / <sub>4</sub> (Pas) 6 (Ber) 6 (Pal), 5.7 (CGS).					
	Dehra Dun	Z EZ N	eP e e	22 42 15 42 19 42 22		Slight.
	Delhi	Z EN Z	iPKP ePKP i	22 42 16 42 16 44 20		Slight, distant. Initial ground motion towards South, West. Rarefaction.
	Bombay	EZ E ES E E NE	eP e e e e M	22 42 24 43 11 59 43 23 04 34 07 16 57 -		Slight.
	Poona	Z	eP	22 42 25		Slight.
	Chatra	Z E N	eP M M	22 42 31 00 03 - 00 08 -		Slight, distant.
	Shillong	ZNE	PKP	22 42 33		Slight.
	Bokaro	E	eP	22 42 42		Slight, distant.
	Hyderabad	E N	i M	22 42 52 23 44 04		Period = 18 secs. Gr. dis = 7 μ.
		E	M	44 19		Period = 21 secs. Gr. dis = 7 μ.
	Madras	E	ePKP PKP <sub>2</sub> PKS <sub>2</sub> e PPP SKKS e PFS	22 43 07 43 29 46 45 48 45 50 35 53 42 57 25 59 53	16920	





DATE STATION COMPT PHASE G. M. T.  $\Delta$  REMARKS.  
 h. m. s. km.

May, 1963.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	$\Delta$ km.	REMARKS.
10	Madras (Contd.)	E	SS SSS LR M	23 06 27 12 23 35 11 46 57		
	Port Blair	N E	iPKP e i i i Mn	22 43 56 45 32 59 38 23 04 04 06 55 08 32 00 03 -		Distant.  Period = 23 secs. Gr. dis = 9 $\mu$ .
10	Kodaikanal	E	e i	22 46 31 53 17		Slight, distant.
11	Bokaro	NE	iP	07 39 23		Slight, local.
11	Epc:- 24.2°N 122.5° E, Off/coast of Formosa. h = about 33 km. -H= 17 h 49m 43.0 s Mag : 4.5 (CGS).					
	Shillong	ZNE	iP PPP e iS i	17 55 28 56 37 56 55 00 05 18 00 42	3140	
	Chatra	Z NE	iP e	17 56 05 18 00 23		Distant.
	Bokaro	E	eP	17 56 21		Distant.
	Dehra Dun	E N N	eP e e	17 57 15 18 03 12 12 07		
	Delhi	ENZ	eP i i	17 57 19 57 38 57 43		Initial ground motion towards South West. Rarefaction.
	Hyderabad	N E	M M	18 14 20 14 40		Period = 18 secs. Gr. dis = 6 $\mu$ . Period = 15 secs. Gr. dis = 4 $\mu$ .
11	Chatra	Z	eP	18 46 14	690	Slight.
12	Shillong	ZNE	eP	03 05 14		Slight, distant.
12	Delhi	ENZ	eP	03 06 34		Slight, rarefaction.
12	Dehra Dun	Z	e	05 48 59		Slight.

DATE STATION COMPT PHASE G. M. T.  $\Delta$  REMARKS.  
 h. m. s. km.

May, 1963.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	$\Delta$ km.	REMARKS.
12	Delhi	Z ENZ	eP i	05 49 22 49 53		Slight.
12	Shillong	ZNE	eP	08 51 11		Slight, near.
12	Shillong	ZNE	iP	09 56 39		Slight, distant, compression.
12	Chatra	Z Z	iP iS	15 11 17 11 44	230	Slight.
12	Shillong	ZNE	iP	15 29 45		Slight, distant, rarefaction.
	Chatra	Z	iP e	15 30 38 15 32 01		Slight, distant.
12	Shillong	ZNE	eP	16 20 36		Slight, near.
12	Shillong	ZNE	iP	19 32 40		Slight, distant, compression.
12	Chatra	Z	iP	19 33 09		Slight, distant, compression.
12	Dehra Dun	Z	e	19 34 03		Slight.
12	Delhi	EZ	iP	19 34 03		Slight, rarefaction.
12	Epc:- 57.4° N 153.9° W in Kodiak Island, Alaska. Mag : 5.9 (CGS) -H= 20 h 08 m 43 s (USCGS).					
	Shillong	ZNE	iP iS	20 20 48 30 51	8870	Rarefaction.
	Chatra	ZNE NE	iP iS	20 20 55 31 06	9040	Rarefaction.
	Dehra Dun	Z EN EZ ENZ	iP eP i iS	20 20 58 20 58 21 00 31 14	9132	Rarefaction.
	Delhi	Z EN Z ENZ	iP eP PcP iS ScS PS	20 21 07 21 07 21 14 31 28 31 46 32 20	9270	Initial ground motion towards North, East. Rarefaction.
		Z NZ Z	iQ M	43 31		Period = 20 secs. Amp. = 27 mm.
	Bokaro	E E E E E	iP PP SKS iS e	20 21 11 24 44 31 31 31 37 31 57	9380	



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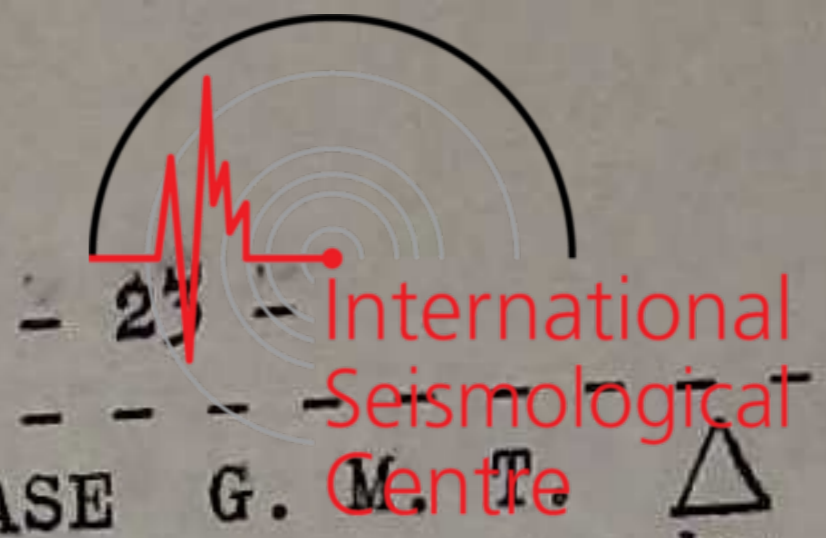
DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	$\Delta$ km.	REMARKS.
<u>May, 1963.</u>						
12	✓ Calcutta	E	eP iS	20 21 12 31 34	9290	
	✓ Port Blair	NE N E	e iS i	20 21 47 31 43 32 06		
	✓ Hyderabad	EN EN N N N N E	eP eS PS PPS LQ LR M	20 21 53 32 20 32 52 33 19 44 52 49 07 59 07	9390	Period = 18 secs. Gr.dis = 8 $\mu$ . Period = 21 secs. Gr.dis = 8 $\mu$ .
	✓ Bombay	NZ ES ES	eP eS M	20 21 55 32 58 21 08 -	10220	
	✓ Madras	E	e SKS e e e e(M)	20 26 34 32 41 33 25 35 27 44 39 58 38		
12	✓ Chatra	Z	iP	20 47 21		Slight, rarefaction.
	✓ Dehra Dun	Z	iP	20 47 36		Slight, compression.
	✓ Delhi	ENZ	iP	20 47 47		Slight. Initial ground motion towards South East. Compression.
12	Chatra	Z	e	21 03 58 04 20		Slight, distant.
12	Kodaikanal	E	e	21 09 34		Slight, distant.
13	Calcutta	E	e	00 06 46		Slight.
13	Dehra Dun	Z	e	00 24 43		Tremor.
13	Delhi	ENZ Z	iP i	00 25 49 26 16		Slight, rarefaction.
13	Epc:- 24° N 91° E in east Pakistan. -H = 01 h 05 m 06 s (New Delhi)					
13	Shillong	ZNE	iP iSg iS	01 05 41 05 55 06 05	220	Slight, local.
13	Chatra	Z NE	iP PPP	01 06 14 06 29	480	Slight, rarefaction.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	$\Delta$ km.	REMARKS.
<u>May, 1963.</u>						
13	Chatra(Contd.)	NE	eP SS Sg SSS	01 07 05 07 17 07 24 07 26		
	Tocklai	E	iP e	01 06 15 06 34		Slight.
	Bokaro	E	i	01 06 36		Slight.
13	Dehra Dun	Z	e	01 08 10		Slight.
13	Delhi	ENZ	eP	01 08 17		Slight.
13	Poona	Z	eP	01 13 20		Slight.
13	Delhi	ENZ	eP i i	02 49 02 50 08 50 34		Slight, rarefaction.
13	Port Blair	NE E	ePg iSg	04 09 24 09 34	90	Slight.
13	Delhi	ENZ	eP	06 49 32		Slight, compression.
13	Shillong	ZNE	eP iS	07 35 02 36 04	590	Slight.
13	Bokaro	NE	iP	07 51 09		Slight, local.
13	Bokaro	E E	eP i	09 24 55 30 20		Slight, distant.
13	Delhi	Z	iP	09 53 31		Slight, compression.
13	Poona	Z	iP	13 03 13		Slight, compression.
13	Shillong	ZNE	iP	13 03 16		Slight, distant, compression.
	Dehra Dun	Z	eP	13 03 17		Slight.
	Delhi	Z NE	iP eP	13 03 18		Slight. Initial ground motion towards North-East. Compression.
13	Delhi	NZ E	eP iP	13 30 00		Slight. Initial ground motion towards East. Compression.
13	Shillong	ZNE	iP	14 20 17		Slight, distant, rarefaction.
13	Shillong	ZNE	eP iS	15 13 56 14 35	270	Slight.
13	Shillong	ZNE	eP i	17 04 02 04 42		Slight.
13	Delhi	Z	eP i	18 22 51 22 55		Slight, rarefaction.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
13	Dehra Dun	Z	i	18 22 57		Slight.
	Shillong	ZNE	iP	18 23 08		Slight, distant, rarefaction.
13	Delhi	Z	iP	18 33 32		Slight, rarefaction.
13	Shillong	ZNE	iP	20 26 07		Slight, distant, compression.
13	Poona	Z	eP	20 36 29		Slight.
13	Delhi	ENZ	eP	20 38 19		Slight, compression.
13	Shillong	ZNE	iP	22 58 40		Slight, distant, compression.
13	Delhi	Z	eP	23 00 00		Slight, rarefaction.
14	Shillong	ZNE	eP	01 15 19		Slight, near.
14	Shillong	ZNE	iP	15 16 38		Slight, distant, rarefaction.
14	Delhi	ENZ Z	iP e	15 18 11 18 15		Slight. Initial ground motion towards South East. Rarefaction.
14	Delhi	ENZ	eP	15 25 44		Slight. Initial ground motion towards North East. Compression.
14	Shillong	ZNE	eP	20 52 37		Slight, near.
14	Shillong	ZNE	iP eS	23 13 46 15 07	780	Slight, rarefaction.
14	Chatra	Z Z	eP e	23 14 39 17 41		Slight, distant.
14	Shillong	ZNE	iP	23 25 30		Slight, distant, rarefaction.
14	Delhi	Z	eP	23 26 29		Slight, distant, rarefaction.
15	Shillong	ZNE	iP iS	03 02 49 11 08	6800	Slight, distant, rarefaction.
	Bokaro	E	eP	03 03 21		Slight, distant.
	Delhi	Z E	iP eP	03 04 12		Slight, distant, rarefaction.
	Dehra Dun	Z	e	03 04 12		Slight.
15	Port Blair	NE	eP iS	03 21 51 22 13	190	Slight.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
15	Shillong	ZNE	iP i	03 23 55 26 02		Slight, distant, rarefaction.
15	Chatra	Z Z	ePg Sg	03 24 35 24 45	90	Slight.
15	Shillong	ZNE	iP	04 22 55		Slight, distant, compression.
15	Delhi	Z ENZ	eP e	05 04 46 06 49		Slight.
15	Dehra Dun	Z ENZ EN EN	iP e i i	06 37 35 39 15 40 06 40 16		Slight, compression.
	Delhi	ENZ Z N E	eP i e i	06 37 53 39 47 40 52 40 56		Slight, compression. Initial ground motion towards South.
	Bokaro	E	e	06 39 30		Slight, distant.
	Shillong	ZNE	iP	06 39 46		Slight, distant, rarefaction.
15	Chatra	Z	eP Sg	06 44 05 44 24	150	Slight.
15	Bombay	ES	M	06 46 -		Near, slight shock.
15	Dehra Dun	Z	e	06 59 33		Tremor.
15	Delhi	Z	eP	07 01 38		Slight, compression.
15	Bokaro	E	e	07 09 23		Slight.
15	Bokaro	NE	i	08 00 04		Slight, local.
15	Shillong	ZNE	eP	08 29 28		Slight, local.
	Chatra	Z Z	iP eS	08 30 30 31 42	680	Slight, compression.
15	Chatra	Z Z	iPg Sg	09 25 17 09 25 29	100	Slight.
15	Delhi	Z	eP	09 57 16		Slight.
15	Delhi	Z	eP	10 23 27		Slight, compression.
15	Bokaro	NE	i	10 48 05		Slight, local.
15	Shillong	ZNE	eP eSg	11 02 17 02 30	110	Slight.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
15	Delhi	Z	iP	11 24 13		Slight, compression.
15	Chatra	Z	eP	11 25 15		Slight.
15	Dehra Dun	Z	e	12 20 29		Slight.
15	Delhi	Z	eP	12 20 31		Slight, distant, rarefaction.
15	Shillong	ZNE	eP	15 38 03		Slight, distant.
15	Chatra	Z	iP	15 38 42		Slight, distant, compression.
15	Dehra Dun	Z	eP	15 39 47		Slight.
15	Delhi	EZ N	iP eP	15 39 53		Slight, rarefaction. Initial ground movement towards East.
16	Delhi	ENZ	eP	00 06 29		Slight. Initial ground motion towards North. Compression.
16	Delhi	Z N E	eP iP i	03 31 42 33 20		Slight, compression.
16	Chatra	Z	iP	06 21 39		Slight, distant.
16	Delhi	EZ N E N	iP eP e eS	06 34 33 36 12 36 22	1060	Slight, initial ground movement towards West. Compression.
16	Chatra	Z	eP	06 36 32		Slight, distant.
16	Bokaro	E	eP	06 36 43		Slight.
16	Dehra Dun	EN	eP	06 36 52		Slight.
16	Shillong	ZNE	eP	06 37 29		Slight, distant.
16	Bokaro	E E	eP eS	06 39 08 41 04	1130	Slight.
16	Bokaro	E	eS	10 48 15		Slight, distant.
16	Shillong	ZNE	iP	13 02 06		Slight, local.
16	Chatra	Z	eP	13 02 47		Slight, distant.
16	Delhi	NZ ENZ	eP eS	14 27 32 29 17	1020	Slight, compression.
16	Dehra Dun	Z	eP	14 28 47		Slight.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
16	Visakhapatnam	E	i	15 58 52		
16	Shillong	ZNE	iP iS	16 00 08 06 57	5180	Slight, rarefaction.
16	Chatra	Z	eP	16 01 03		Slight, distant.
16	Bokaro	E	e	16 01 03		Slight, distant.
16	Madras	E	eP eS LR	16 01 11 03 14 03 37	1200	Slight.
16	Delhi	ENZ	eP	16 02 02		Slight, distant, rarefaction.
16	Dehra Dun	Z Z	eP e	16 02 03 10 50		Slight.
16	Poona	Z	iP	16 02 06		Slight, rarefaction.
16	Shillong	ZNE	iP	16 09 11		Slight, local.
16	Chatra	Z	eP	16 09 44		Slight, distant, rarefaction.
16	Delhi	EZ	eP	16 10 47		Slight, distant, compression. Initial ground motion towards East.
16	Shillong	ZNE	iP i	16 26 08 27 55		Slight, local.
16	Chatra	Z	iP	16 26 43		Slight, distant, rarefaction.
16	Madras	E	eP	16 26 54		Slight.
16	Delhi	EZ N	iP eP	16 27 45		Slight, rarefaction. Initial ground motion towards North, West.
16	Dehra Dun	Z	eP	16 27 47		Slight.
16	Poona	Z	eP	16 27 54		Slight.
16	Delhi	Z	eP	21 01 40		Slight, rarefaction.
16	Delhi	EZ N	eP iS	21 40 42 42 22	970	Slight, compression.
16	Chatra	Z	eP	22 02 37		Slight.
16	Delhi	Z	eP	22 15 11		Slight, rarefaction.
17	Delhi	ENZ	iP	03 07 20		Slight, compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
17	Dehra Dun	EN	e	03 08 28		Tremor.
17	✓ Shillong	ZNE	eP	04 15 35		Slight, distant.
	✓ Chatra	Z	iP	04 15 55		Slight, distant, compression.
	✓ Delhi	ENZ	iP	04 16 36		Slight, compression. Initial ground motion towards South-West.
17	✓ Poona	Z	iP	04 17 34		Slight, compression.
17	✓ Delhi	EN Z	iP iP	04 24 38 24 39		Slight, compression. Initial ground motion towards North-East.
17	Epc:- 15.7° N 120.1° E near west coast of Luzon, Philippine Islands. h = about 80 km. -H= 06 h 09 m 18.2 s . Mag : 5.5 (CGS).					
	✓ Port Blair	E	e i i	06 14 54 15 58 22 17		
	✓ Shillong	ZNE N NE	eP iS i	06 15 04 19 40 21 58	2990	
	✓ Chatra	Z NE N	iP i iS i	06 15 43 18 30 20 49 26 08	3470	Rarefaction.
	✓ Bokaro	E	iP	06 15 48		Slight, distant.
	✓ Visakhapatnam	E	iP i	06 16 14 17 39		
	✓ Madras	E	iP e PP PPP eS LR M	06 16 38 17 09 18 10 18 33 22 32 27 17 30 10	4230	Initial ground motion towards East.
	✓ Dehra Dun	E EN EN	eP eS e	06 16 56 22 59 26 55	4390	
	✓ Delhi	ENZ Z	iP i	06 16 57 18 55		Initial ground motion towards South, East. Rarefaction.
	✓ Poona	Z	iP	06 17 21		Slight, rarefaction.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
7	✓ Bombay	NES ES N	eP e e	06 17 28 19 18 24 03		Slight.
17	Bokaro	NE	iP	08 40 05		Slight, local.
17	✓ Shillong	ZNE	iP	12 17 10		Slight, distant, compression.
	✓ Delhi	Z EN	iP eP	12 18 21 14 30 42		Slight, compression. Slight, compression.
17	Delhi	Z	eP	14 30 42		Slight, rarefaction.
17	Delhi	Z	eP	16 23 24		Slight, distant, rarefaction.
17	Shillong	ZNE	iP	17 23 11		Slight, distant, compression.
17	Chatra	Z	iP i	17 23 51 25 33		Slight, rarefaction.
17	Delhi	Z	iP	17 24 55		Slight, rarefaction. Initial ground motion towards South-West.
17	Delhi	ENZ	iP	21 10 34		Slight, distant, compression.
17	Shillong	ZNE	iP	21 39 00		Slight, compression.
17	Delhi	Z	iP	21 40 37		Slight, compression.
17	Delhi	Z	iP	22 58 37		Slight, distant, compression.
18	✓ Shillong	ZNE	iP	00 13 03		Slight, rarefaction.
18	Delhi	Z Z	iP i	03 24 15 24 20		Slight.
18	Delhi	Z NEZ	eP i i	05 53 13 53 15 53 22		Slight, distant, compression.
18	✓ Shillong	ZNE	iP	05 53 39		Slight, distant, compression.
18	Epc:- 8.2° S 115.6° E Bali h = about 39 Km. -H= 12 h 20 m 31.9 s . Mag : 5.9 (CGS).					
	✓ Port Blair	E	i	12 28 00		
	✓ Shillong	ZNE	iP iS	12 28 12 34 22	4490	Rarefaction.
	✓ Madras	E	eP PP	12 28 15 29 54	4510	



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
18	✓ Madras (Contd.)	E	PPP eS LQ LR M	12 30 18 34 25 37 35 39 33 43 05		
18	✓ Bokaro	E	iP eS i	12 28 31 34 56 38 34	4730	
18	✓ Chatra	Z	eP	12 28 42		
18	✓ Poona	Z	eP	12 29 03		
18	✓ Delhi	ENZ	iP eS	12 29 37 36 58	5740	Rarefaction. Initial ground motion towards West.
	✓ Kodaikanal	E	i	12 34 34		
	✓ Dehra Dun	EN	e	12 34 49		
	✓ Bombay	NE E	eS M	12 36 29 53 -		
	✓ Hyderabad	EN E	LR M	12 38 40 51 07		
		N	M	51 55		Period = 16 secs. Gr. dis = 4 μ. Period = 18 secs. Gr. dis = 6 μ.
18	✓ Shillong	ZNE	iP	13 11 13		Slight, distant, rarefaction.
18	✓ Madras	E	eP iS	13 11 14 17 24	4510	Slight.
18	✓ Chatra	Z	eP	13 11 43		Slight, distant.
	✓ Delhi	Z ENZ	eP i	13 12 38 12 39		Slight, rarefaction.
18	✓ Dehra Dun	Z	eP	13 12 47		Slight.
18	✓ Shillong	ZNE	iP	16 48 55		Slight, distant, compression.
18	✓ Port Blair	NE	e	17 03 39		Slight, near.
18	✓ Shillong	ZNE	eP	18 16 09		Slight, near.
18	✓ Dehra Dun	Z	eP	18 22 12		Tremor.
18	✓ Delhi	NZ ENZ	eP i	18 22 25 23 30		Slight, compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
18	✓ Chatra	Z	iP	18 49 36		Tremor, distant, compression.
18	✓ Shillong	ZNE	iP	20 24 53		Slight, distant, rarefaction.
18	✓ Shillong	ZNE	iP	23 24 22		Slight, distant, rarefaction.
18	✓ Delhi	ENZ	iP	23 25 35		Slight. Initial ground motion towards South East. Compression.
18	✓ Shillong	ZNE	iP	23 56 41		Slight, distant, compression.
19	✓ Dehra Dun	Z Z EN	eP i e	00 00 50 02 36 03 14		Tremor.
19	✓ Delhi	NZ ENZ EZ	eP i eS	00 01 05 01 09 03 56	1700	Slight, rarefaction.
19	✓ Chatra	Z	eP	00 02 31		Slight, distant.
19	✓ Shillong	ZNE	iP	00 03 20		Slight, distant, rarefaction.
19	Epc:- 46.5° S 75.1° W. Coast of South Chile. h = about 33 km. -H= 01 h 03 m 04.1 s. Mag : 6.5 (CGS).					
19	✓ Bombay	N	ePKP e e	01 22 19 25 43 26 19		Pd.=26 secs. Gr. dis= 8 μ.
	✓ Poona	Z	eP	01 22 33		Initial ground movement towards East, South. Rarefaction.
	✓ Hyderabad	EN	iPKP	01 22 37		
	✓ Madras	E	ePKP	01 22 42		
	✓ Calcutta	E	i	01 22 49		
	✓ Delhi	Z	ePKP	01 22 51		Compression.
	✓ Dehra Dun	Z	iP	01 22 56		Rarefaction.
	✓ Bokaro	NE	iPKP	01 22 57		
	✓ Shillong	ZNE	iPKP	01 22 58		Compression.
	✓ Chatra	Z	ePKP	01 22 59		

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
19	✓ Visakhapatnam	EN	iPKP	01 23 22		
	✓ Kodaikanal	E	i	01 26 03		
19	Dehra Dun	Z	iP	04 09 56		Tremor, rarefaction.
19	Delhi	Z	eP	04 10 21	300	Slight, rarefaction.
		N	i	10 27		
		Z	ePg	10 31		
		ENZ	iS	10 55		
19	Dehra Dun	Z	eP	04 17 09		Tremor.
		Z	i	17 57		
	Delhi	ENZ	eP	04 17 24	630	Slight.
		Z	i	18 13		
		ENZ	iS	18 31		
19	Dehra Dun	Z	eP	04 40 05		Tremor.
		Z	i	40 53		
19	Delhi	Z	eP	04 40 22	620	Slight, rarefaction.
		E	iS	41 28		
19	Delhi	ENZ	eP	07 17 01		Slight. Initial ground motion towards North-East.
19	Shillong	ZNE	eP	08 39 38		Slight, distant.
19	Madras	E	eP	09 43 47	1790	Slight.
			PP	43 55		
			PPP	44 05		
			LQ	46 42		
			eS	46 46		
			LR	47 26		
	Shillong	ZNE	iP	09 44 13		Slight, distant, compression.
	Delhi	ENZ	iP	09 45 37		Slight. Initial ground motion towards South-East. Compression.
	Dehra Dun	Z	e	09 45 45		Tremor.
19	Shillong	ZNE	eP	09 54 41		Slight, distant.
19	Delhi	ENZ	iP	09 56 02		Slight. Initial ground motion towards North-West. Compression.
19	Delhi	EN	eP	10 02 09		Slight. Initial ground motion towards North-East.
19	Delhi	ENZ	eP	10 09 08		Slight, compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
19	✓ Chatra	Z	iP	10 10 07		Slight, distant, compression.
	✓ Shillong	ZNE	iP	10 10 32		Slight, distant, compression.
19	Delhi	Z	eP	13 28 39		Slight, compression.
19	Delhi	EZ	eP	13 30 53		Slight, West, compression.
19	Shillong	ZNE	eP	17 24 17		Slight, distant.
19	Chatra	Z	iP	17 25 07	650	Slight, rarefaction.
			iS	26 16		
			i	27 13		
	Delhi	E	iP	17 29 35		Slight, East, rarefaction.
		NZ	eP	29 36		
19	Epc:- 2.3° N 128.6° E in Halmahera region. h = about 166 km. -H= 19 h 21 m 22 s.					
	✓ Shillong	ZNE	iP	19 29 01		Slight, rarefaction.
	✓ Chatra	Z	iP	19 29 17		Slight, rarefaction.
	✓ Madras	E	iP	19 29 56	5520	Slight. Initial ground motion towards East.
			PP	31 52		
			eS	37 05		
			PS	37 13		
			PPS	37 21		
			LQ	41 41		
			LR	44 06		
	✓ Delhi	ENZ	eP	19 30 41		Slight. 1st ground motion towards North-East. Rarefaction.
	✓ Dehra Dun	Z	iP	19 30 42		Tremor, compression.
19	Dehra Dun	Z	e	21 49 58		Slight.
		E	e	54 00		
		N	e	22 01 45		
	Delhi	Z	eP	21 50 01		Slight, compression.
19	Epc:- 23.8° N 45.9° W in north Atlantic region. h = about 148 km. -H= 21 h 35 m 49.6 s. Mag : 6½ (Pas), 6¼-6½ (Berk) 6.0 (CGS).					
19	✓ Delhi	ENZ	ePKP	21 54 09		
		E	e	22 02 20		
		ENZ	i	03 14		
			e	04 14		
			e	09 13		
		EZ	e	10 51		



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
19	Poona	Z	ePKP	21 54 14		Distant.
	Bokaro	E	ePKP	21 54 28		
	Bombay	N	ePKP	21 54 30		
	Shillong	ZNE	ePKP i i PPS i	21 54 35 55 36 22 05 01 06 44 07 22		
	Chatra	Z NE NE	ePKP e e	21 54 35 22 04 38 11 02		
	Hyderabad	E	ePKP e e e	21 55 06 22 04 28 11 07 14 28		
	Madras	E	eeiPKP PP PS e	21 55 35 55 46 05 19 10 16		Initial ground motion towards East.
	Visakhapatnam	E	ePKP	21 55 39		
	Calcutta	E	ePP	21 56 06		
	Kodaikanal	E	e e i	22 03 21 11 36 15 57		
19	Poona	Z	iP	23 49 47		Slight, compression.
	Delhi	Z N Z	iP eP i	23 50 52 23 51 28		Slight, rarefaction.
	Dehra Dun	Z Z	iP i	23 50 54 54 23		Slight, compression.
20	Shillong	ZNE	iP	00 00 42		Slight, distant, compression.
20	Chatra	Z Z	eP iS	00 01 32 03 18	1030	Slight.
20	Delhi	Z	iP	00 03 22		Slight, compression.
20	Shillong	ZNE	iP	03 02 52		Slight, distant, rarefaction.
20	Delhi	ENZ	iP	03 58 35		Tremor. Initial ground motion towards North-West. Rarefaction.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
20	Dehra Dun	EN	e	09 56 52		Tremor.
20	Delhi	ENZ	eP	10 23 16		Slight.
20	Chatra	Z	iP	10 25 00		Slight, distant, compression.
20	Epc:- 30.7° S 178.3° W in Kermadec Islands region. h = about 34 km. -H= 11 h 38 m 00.9 s (USCGS). Mag : 6 <sup>3</sup> / <sub>4</sub> -7(Pas), 6 <sup>1</sup> / <sub>2</sub> (Berk), 6.2 (CGS).					
	Visakhapatnam	E	e i i i	11 50 59 51 55 12 03 06 06 07		
	Port Blair	E	iP i PP i iS PS PPS SS i LQ M Mn	11 51 20 52 11 54 37 58 52 12 01 51 02 52 03 12 07 17 08 46 14 18 24 28 36 -	9490	Initial ground motion towards West.  Period = 20 secs. Gr.dis = 90 u.
	Shillong	ZNE	iP PP PPP SKS S PS PPS	11 51 57 56 10 58 28 12 02 30 03 36 05 28 06 13	11170	Rarefaction.
	Delhi	Z Z EZ EN	iP PKPi PP i	11 52 52 56 39 57 44 12 03 24	11775	Initial ground motion towards North-West. Compression.
		Z ENZ EN Z	e PS ScS PPS i SSp	04 46 06 08 07 24 07 50 08 16 09 09 12 58		
	Chatra	Z	eP	11 55 44		
	Bokaro	E E NE	e e e	11 55 54 12 02 44 02 51		
	Hyderabad	E	e	11 56 00		



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
20	✓ Hyderabad (contd.)	E	e	11 03 00		
		E	e	04 00		
		E	i	06 39		
	✓ Calcutta	E	e	11 56 07		
			i	12 02 36		
	✓ Madras	E	e	11 56 13		
			i	56 39		
			e	58 39		
			i	12 02 50		
			iS	06 20		
			i	11 33		
			SS	15 04		
	✓ Poona	Z	e	11 56 21		
		NE	e	12 07 15		
	✓ Bombay	E	e	11 56 25		
		E	i	12 00 16		
		NE	i	03 21		
			i	04 30		
			e	07 21		
			e	07 34		
	✓ Dehra Dun	Z	e	11 56 41		
		N	e	57 24		
		E	i	12 03 24		
		N	i	04 41		
		E	i	05 34		
		EN	i	07 31		
			i	09 07		
	✓ Kodaikanal	E	ePKP	11 56 41		Initial ground motion towards West.
			i	12 02 32		
20	Delhi	ENZ	iP	13 08 08		Tremor. Initial ground motion towards North-West. Compression.
20	Delhi	EZ	iP	13 49 59		Slight, compression.
20	Dehra Dun	Z	e	13 50 00		Tremor.
20	Shillong	ZNE	eP	15 05 57		Slight, local.
20	Chatra	Z	iP	15 58 47	200	Slight, rarefaction.
		ZNE	Sg	59 14		
	Shillong	ZNE	iP	15 59 33		Slight, distant, rarefaction.
	Bokaro	E	eP	16 00 03	445	Slight.
		E	eS	00 51		
	Dehra Dun	Z	eP	16 00 11		Slight.
			i	00 39		

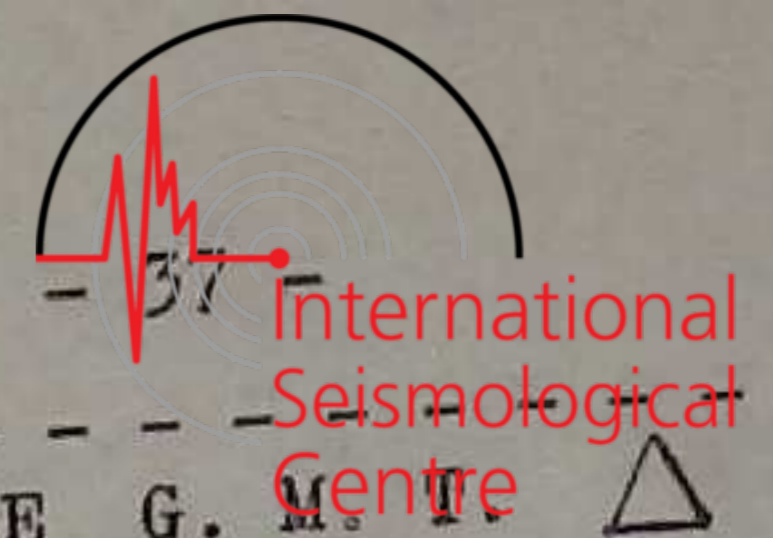


STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.					
Delhi	Z	eP	16 00 17	870	Slight, compression.
	ENZ	i	00 18		
		iS	01 47		
Dehra Dun	Z	iP	17 10 26		Tremor, compression.
Chatra	Z	iP	17 10 35		Slight, distant, rarefaction.
Shillong	ZNE	iP	17 10 36		Slight, distant, rarefaction.
Delhi	ENZ	eP	17 10 39		Slight. Initial ground motion towards South-West. Rarefaction.
Delhi	EZ	eP	21 12 36	990	Slight, rarefaction.
		eS	14 18		
Shillong	ZNE	iP	21 12 38		Slight, near, rarefaction.
Chatra	Z	iP	21 13 12		Slight, distant.
		i	14 47		
Dehra Dun	Z	iP	21 14 19		Tremor, compression.
Bokaro	NE	iP	06 32 38		Slight, local.
Shillong	ZNE	iP	12 00 38		Slight, local.
Tocklai	E	eP	12 00 50		Slight.
		i	00 57		
Chatra	Z	eP	12 01 40	720	Slight.
	Z	eS	02 55		
Delhi	Z	iP	12 03 43		Slight, rarefaction.
Shillong	ZNE	eP	14 20 58		Slight, local.
Shillong	ZNE	iP	17 42 14		Slight, distant, compression.
Chatra	Z	iP	17 42 39		Slight, distant.
Delhi	Z	eP	17 43 20		Slight, distant, compression.
Dehra Dun	Z	e	17 43 23		Tremor.
Madras	E	e	17 48 34		Slight.
		e	53 03		
Delhi	N	eP	18 27 29		Slight.
Shillong	ZNE	eP	00 00 31		Slight, local.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
22	Shillong	ZNE	eP	02 39 02		Slight, distant.
22	Shillong	ZNE	iP	05 51 25		Slight, distant, compression.
22	Epc:- 48.6° N 154.7° E in Kurile Islands Region. h = about 22 km. -H= 13 h 56 m 43.0 s (USCGS). Mag: 6½ (Pas), 6(Berk), 6.3 (CGS).					
	Epc:- 49.5° N 154° E. -H= 13 h 56 m 45 s ( Shillong).					
✓	Shillong	ZNE	iP	14 06 04	5870	Compression. South-west.
			iS	13 32		
			ScS	15 50		
			SS	17 04		
			SSS/LQ	18 52		
			LR	19 32		
			M	21 20		
✓	Chatra	ZNE	eP	14 06 20	6250	
		NE	iS	14 10		
			i	16 09		
✓	Bokaro	NE	iP	14 06 43	6500	Initial ground movement towards West.
		E	PcP	07 28		
		NE	S	14 47		
		E	i	15 16		
			ScS	16 28		
			SS	18 32		
✓	Calcutta	E	eP	14 06 43		
			i	14 31		
✓	Dehra Dun	EN	eP	14 06 51	6360	
			iS	14 59		
			i	16 34		
✓	Delhi	ENZ	iP	14 06 57	6590	Compression.
		N	PPP	11 07		
		ENZ	iS	15 05		
			PS	15 16		
		EZ	PPS	15 28		
		ENZ	ScS	16 42		
		NZ	SS	19 10		
		E	i	20 14		
		Z	i	22 26		
		EZ	LR	25 26		
		Z	M	-		
✓	Port Blair	E	eP	14 07 13	6910	
			PP	09 27		
			iS	15 38		
			PS	15 49		
			PPS	16 10		
			SS	19 39		
			M	30 50		

Period = 24 secs.  
Amp: = 40 mm.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
22	Sehore	E	eP	14 07 16		
	Visakhapatnam	E	iP	14 07 25	7000	Initial ground movement West.
			eS	13 55		
			i	16 01		
			i	16 21		
	Madras	E	eP	14 07 58	7710	
			e	08 11		
			PP	10 30		
			PPP	12 08		
			PcS/ScP	12 25		
			iS	17 05		
			PS	17 31		
			PPS	17 39		
			SKS/ScS	17 54*		
			SS	21 40		
			SSS	24 29		
			LQ	25 39		
			LR	28 58		
			M	35 05		
	Poona	Z	iP	14 07 58	7827	Initial ground movement towards South.
		ZN	iS	17 10		Compression.
	Bombay	ZNE	eP	14 08 01	7735	
		EN	PcP	08 12		
			eS	17 09		
			SKS	17 59		
		E	M	42 15		Period = 15 secs. Gr. dis = 4 μ.
		N	M	42 18		Period = 16 secs. Gr. dis = 7 μ.
22	Kohaikanal	E	iS	14 17 42		
			i	18 30		
22	Poona	Z	iP	14 52 08		Slight, compression.
22	Delhi	Z	iP	15 36 12		Slight, compression.
		N	eP			
22	Epc:- 4.3° N 127.9° E in Molacca Passage h = about 33 km. -H= 15 h 42 m 48.6 s (USCGS). Mag : 4.8 (Pas).					
	Epc:- 4.5° N 127° E (Shillong). -H= 15 h 42 m 30 s					
✓	Port Blair	E	eP	15 49 41	3860	
			i	51 13		
			iS	55 11		
			i	56 39		
			SS	57 15		
✓	Shillong	ZNE	iP	15 50 24	4410	Compression. West.
			PcP	52 20		
			iS	56 28		
			LR	59 30		



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	km.	REMARKS.
May, 1963.						
22	✓ Calcutta	E	eP iS	15 50 35 56 50	4580	
	✓ Chatra	ZNE NE	iP iS	15 51 00 57 31	4860	Compression.
	✓ Bokaro	E	eP i S	15 51 02 51 19 57 33	4860	
	✓	E	PPS	57 50		
	✓	E	ScS	16 00 59		
	✓	E	LQ	01 09		
	✓ Visakhapatnam	EN	iP i	15 51 08 51 21	5000	Distant. Initial ground motion towards west.
	✓	N	i	57 44		
	✓	E	iS	57 46		
	✓ Madras	E	iP PP PPS iS PS PPS ScS SS LQ LR M	15 51 23 53 16 54 00 58 17 58 24 58 30 16 01 19 01 37 02 34 04 40 08 36	5250	Initial ground motion towards West.
	✓ Kodaikanal	E	eP iS	15 51 37 58 45	5510	
	✓ Delhi	ENZ Z	iP i	15 52 06 52 17	5790	Initial ground motion towards South-West.
	✓	ENZ	eS	59 30		Compression.
	✓ Dehra Dun	EN	eP iS PPS	15 52 07 59 33 59 52	5836	
	✓ Bombay	ZE EN	eP iS e	15 52 19 59 59 16 00 24	6090	
22	✓ Delhi	NZ E	iP iP	16 37 58		Period= 25 secs. Slight, compression. Initial ground motion towards South.
22	Port Blair	NE	ePg iSg	17 33 16 33 21	45	Slight.
22	Epc:- 8.2°S 115.7° E in Java Sea. h = about 33 km. -H= 21 h 53 m 02.5 s (USCGS). Mag: 5.4 (CGS).					
	Epc:- 8.5°S 115.0° E. -H= 21 h 53 m 00 s (Shillong).					

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	km.	REMARKS.
May, 1963.						
22	✓ Port Blair	E	eP PPP iS LQ SS SSS M	21 59 13 22 00 27 04 08 05 40 05 44 06 06 09 51	3270	Slight.
	✓					
	✓ Calcutta	E	iP iS	22 00 42 06 50	4480	Slight.
	✓ Shillong	ZNE	iP PP iS LQ LR	22 00 45 02 20 06 54 10 00 12 00	4510	Rarefaction. Initial ground motion towards South-East.
	✓ Madras	E	eP e PP PPP PcP iS SS SSS ScS LR M	22 00 44 01 07 02 22 02 47 02 52 06 57 09 29 10 06 10 40 11 45 15 16	4530	
	✓ Visakhapatnam	EN	iP PP PPP iS eM	22 00 46 02 26 02 38 06 58 17 36	4530	First ground motion West.
	✓ Bokaro	NE E E NE E E E	iP PcP/ePP PPP iS PPS SS ScS SSS	22 01 05 02 46 03 20 07 33 07 45 10 34 10 49 11 24	4680	Slight.
	✓ Chatra	Z NE	iP iS	22 01 13 07 47	4910	Rarefaction.
	✓ Poona	Z Z N N	eP eS ScS M	22 01 47 08 49 11 30 20 00	5410	Initial ground movement towards North. Compression. Epicentre Bali Islands.
	✓ Bombay	ZNE NE E NE E N	eP PPP PcS eS M M	22 01 57 05 19 07 22 09 00 27 - 31 -	5425	



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
22	Delhi	ENZ	iP PP PPP iS N EN Z E E Z	22 02 09 04 13 05 10 09 29 09 40 13 11 13 38 15 07 16 25	5720	Initial ground motion towards South-East. Rarefaction.  Period = 20 secs. Amp: = 18 mm.
22	Dehra Dun	EN	eP E N	22 02 21 09 35 09 38	5610	
22	Kodaikanal	E	i i	22 07 03 10 39		
22	Delhi	EZ	eP	22 39 47		Slight, Compression. Initial ground motion towards East.
23	Shillong	ZNE	iP	00 59 21		Slight, distant, rarefaction.
23	Delhi	ENZ	iP	01 01 03		Slight. Initial ground motion towards North-East. Compression.
23	Shillong	ZNE	iP	03 47 33		Slight, distant, rarefaction.
23	Delhi	Z	eP	04 17 16		Slight, compression.
23	Shillong	ZNE	eP	05 53 02		Slight, near.
23	Shillong	ZNE	eP	07 06 02		Slight, near.
23	Delhi	Z	eP	07 07 29		Slight, rarefaction.
23	Delhi	NZ	iP	08 23 26		Slight, compression. Initial ground motion towards South.
23	Delhi	Z ENZ	iP i	11 11 12 13 28		Slight, rarefaction.
23	Dehra Dun	Z	e	11 13 02		Tremor.
23	Shillong	ZNE	iP i	15 19 17 25 11		Slight, distant, compression.
	Chatra	Z	iP	15 19 53		Slight, distant, rarefaction.
	Dehra Dun	Z	iP	15 21 02		Tremor, rarefaction.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
23	Delhi	ENZ	iP	15 21 03		Slight. Initial ground motion towards South-East. Rarefaction.
23	Chatra	Z	iP	16 37 08		Slight, distant, compression.
23	Dehra Dun	Z	iP	16 37 31		Slight, compression.
23	Delhi	ENZ	iP	16 37 46		Slight. Initial ground motion towards South-East. Compression.
23	Epc:- 33° N 77° E in Himachal Pradesh. -H = 17 h 13 m 11 s ( New Delhi )					
	Dehra Dun	Z	iP	17 14 01	390	Slight, compression.
		ENZ	P*	14 07		
		Z	PP	14 08		
		ENZ	PPP, Pg	14 15		
		ENZ	LQ	14 32		
		ENZ	LR	14 42		
		ENZ	iS	14 43		
		ENZ	S*	14 51		
		ENZ	SS	14 53		
		ENZ	Sg	14 59		
		ENZ	SSS	15 05		
	Delhi	ENZ	eP iPg* Z ENZ	17 14 16 14 26 15 05 15 17	460	Slight. Initial ground motion towards North-West. Rarefaction.
	Chatra	Z	eP eS	17 15 51 17 48	1140	Slight.
	Shillong	ZNE	eP iS	17 16 44 19 30	1690	Slight.
23	Sehore	E N	eP i	17 17 02 18 18		
	Bokaro	E E E	eP i i	17 18 15 19 47 20 28		Slight, distant.
	Bombay	E ZE N	eP eS M	17 18 20 20 29 22 01	1265	Slight.
	Visakhapatnam	E	iP e i	17 19 47 20 29 21 01		Slight, near. Initial ground movement towards West.
	Madras	E	eP PP PPP LQ	17 21 14 21 23 21 32 23 29	1410	Slight.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
23	Madras(Contd.)	E	iS LR M	17 23 38 24 07 25 08		
23	Chatra	Z	eP e	18 47 54 48 04		Slight, near.
23	Delhi	Z	eP	21 01 09		Slight, rarefaction.
24	Delhi	ENZ	i	02 56 45		Slight, rarefaction. Initial ground motion towards North.
	Shillong	ZNE	eP	02 58 56		Slight, distant.
24	Chatra	Z	e	09 42 06		Slight.
24	Delhi	ENZ	iP iS	12 24 41 26 19	950	Slight. Initial ground motion towards South East. Compression. Slight, near.
24	Shillong	ZNE	eP	12 45 54		Slight.
24	Poona	Z	eP	17 18 32		Slight.
24	Shillong	ZNE	eP	19 10 34		Slight, near.
24	Chatra	Z	ePg Sg	19 47 03 47 15	100	Slight.
24	Shillong	ZNE	iP	21 08 19		Slight, distant, rarefaction.
24	Delhi	Z	eP	21 09 39		Slight, rarefaction.
25	Delhi	Z	eP	01 43 24		Slight, rarefaction.
25	Delhi	Z	i i	08 16 21 16 23		Slight, local.
25	Bokaro	NE	iP	08 30 42		Slight, near.
25	Shillong	ZNE	eP	08 49 30		Slight.
	Chatra	Z	eP	08 50 10		Slight. Initial ground motion towards South East. Compression.
25	Delhi	ENZ	eP	08 50 34		Slight. Initial ground motion towards West-East.
25	Delhi	E	iP	08 58 24		Slight, compression.
25	Delhi	Z	eP	10 21 43		Slight.
25	Tocklai	E	iP i	10 23 45 24 03		

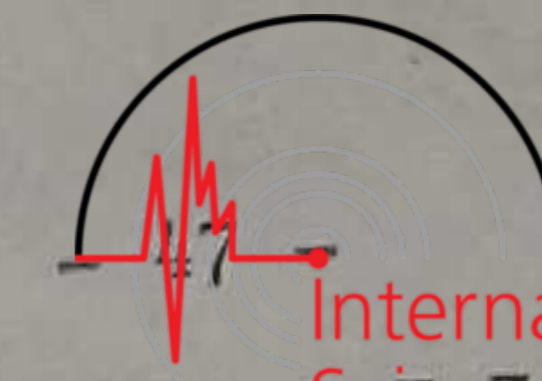
DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
May, 1963.						
25	Tocklai(Contd.)	E	i i i	10 24 13 24 35 25 05		
	Shillong	ZNE	iP	10 24 05		Slight, distant.
25	Chatra	ZNE ZNE	iP eS	10 25 00 26 37	940	Slight, rarefaction.
25	Delhi	Z	iP	10 29 53		Slight, rarefaction.
25	Bokaro	NE	iP	11 20 44		Slight, local.
25	Shillong	ZNE	eP	14 48 37		Slight, near.
	Chatra	Z	eP eS	14 49 00 49 36	320	Slight.
25	Port Blair	NE	ePg iSg	15 53 35 53 45	90	Slight.
25	Delhi	Z	eP	16 26 49		Slight, rarefaction.
25	Chatra	Z	iP	16 26 57		Slight, distant, rarefaction.
25	Shillong	ZNE	iPKP	16 27 00		Slight.
25	Delhi	EZ Z	eP eS	16 28 17 38 07	8590	Slight, West rarefaction.
	Madras	E	e e e	16 30 57 36 25 17 01 37		Moderate.
	Bombay	ES EN ES N	eP ePP eS M	16 34 58 36 33 42 37 17 08 26	6070	Period = 19 secs. Gr. dis = 4 u.
25	Shillong	ZNE	iP	16 51 30		Slight, distant.
25	Hyderabad	E N	M M	17 02 04 02 40		Period = 19 secs. Gr. dis = 6 u. Period = 18 secs. Gr. dis = 7 u.
25	Delhi	EZ	eP	20 06 47		Slight, rarefaction. Initial ground motion towards East.
25	Delhi	ENZ Z	iP i	21 27 50 28 19		Slight, compression. Initial ground motion towards South.
25	Delhi	ENZ EZ	iP iS	21 51 49 53 28	960	Slight.



DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.	DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>							<u>May, 1963.</u>						
25	Shillong	ZNE	iP	22 46 37		Slight, local.	27	Dehra Dun	Z	iP	03 39 00		Tremor, compression.
25	Shillong	ZNE	iP	23 46 46		Slight, local.	27	Shillong	ZNE	iP	04 08 28		Slight, distant, compression.
26	Shillong	ZNE	iP	00 53 58		Slight, distant.		Chatra	Z	eP	04 08 30		Slight, distant.
	Delhi	Z	iP	00 56 12		Slight, rarefaction.		Delhi	ENZ	eP eS	04 09 10 17 40	7000	Slight, compression.
26	Shillong	ZNE	iP	02 58 13		Slight, distant, rarefaction.	27	Bombay	N N N	e e M	04 19 45 21 56 04 40 15		Slight. Period = 19 secs. Gr. dis = 4 μ.
26	Delhi	Z	eP	02 59 49		Slight.			N	M	40 -		
26	Shillong	ZNE	iP	05 02 04		Slight, distant, compression.	27	Hyderabad	N	M	04 38 04		Period = 12 secs. Gr. dis = 4 μ.
26	Shillong	ZNE	eP	06 10 43		Slight, near.			E	M	38 07		Period = 15 secs. Gr. dis = 4 μ.
26	Shillong	ZNE	iP	06 50 36		Slight, distant, rarefaction.	27	Chatra	Z	ePg Sg	08 12 21 12 34	110	Slight.
26	Shillong	ZNE	iP	08 43 15		Slight, distant, compression.	27	Port Blair	NE	iPg iSg	13 43 29 43 35	55	Slight.
26	Shillong	ZNE	eP	09 09 02		Slight, near.	27	Shillong	ZNE	iP	16 28 26		Slight, distant, rarefaction.
26	Chatra	Z Z	eP eS	10 09 33 10 10	330	Slight.		Dehra Dun	Z	iP	16 30 04		Tremor, compression.
26	Delhi	Z	iP	13 03 32		Slight, rarefaction.		Delhi	Z	eP	16 30 09		Slight, rarefaction.
26	Chatra	Z	eP i	17 24 17 24 36		Slight, near.	27	Chatra	Z	eP i i	21 39 52 40 00 41 39		Slight, distant.
26	Chatra	Z	iP	18 41 58		Slight, distant.	27	Delhi	Z	eP	22 13 08 13 21		Slight, compression.
26	Delhi	EZ	eP	18 44 32		Slight, compression.	27	Delhi	Z	eP	01 25 16		Slight, compression.
26	Delhi	Z ENZ	iP e	21 09 29 09 43		Slight, rarefaction.	28	Delhi	NZ	iP	01 25 16		Slight, compression.
26	Shillong	ZNE	iP	23 16 36		Slight, distant, compression.	28	Dehra Dun	Z	iP	14 33 40		Tremor, compression.
	Chatra	Z	iP	23 16 49		Slight, distant, compression.	28	Chatra	Z Z	ePg eSg	19 10 45 19 11 09	200	Slight.
	Delhi	EZ ENZ EN	eP e eS	23 17 17 17 19 25 47	7000	Slight, compression.	28	Shillong	ZNE	eP	19 26 09		Slight, near.
	Dehra Dun	EN	eS	23 25 26		Tremor.	28	Chatra	Z	iP	21 13 30		Slight, distant, compression.
	Bombay	N N	e M	23 27 53 48 23		Slight. Period = 17 secs. Gr. dis = 3 μ.	28	Dehra Dun	Z	iP	21 13 56		Tremor, compression.
	Hyderabad	E N	e e	23 48 30 48 36		Slight. Period = 12 secs. Gr. dis = 4 μ.	28	Delhi	ENZ	iP	21 14 06		Slight. Initial ground movement towards South-West. Compression.

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
28	Shillong	ZNE	eP	21 51 17		Slight, distant.
✓ 28	✓ Shillong	ZNE	eP	22 06 06		Slight, distant.
✓ 28	✓ Delhi	ENZ	iP	22 07 38		Slight. Initial ground motion towards North East. Compression.
29	Chatra	Z	iP	00 13 58		Slight, rarefaction.
29	Shillong	ZNE	eP	00 15 40		Slight, near.
29	✓ Delhi	ENZ Z	eP i	00 52 38 52 39		Slight, rarefaction. Initial ground motion towards East.
29	Chatra	Z Z	eP i	08 12 05 12 25		Slight.
29	Poona	N	eP	08 30 51		Slight.
29	Epc:- 27.2° N 59.5° E in Southern Iran. h = about 33 km. -H= 08 h 35 m 02.9 s (USCGS). Mag : 5.4 (CGS).					
✓	✓ Bombay	ES ES NE NE E E	e PP eS SS SSS M	08 38 31 38 50 41 36 41 51 42 09 46 -	1710	
✓	✓ Delhi	EZ N EZ EZ N	iP eP i i eS SS	08 38 42 38 46 38 55 41 32 41 52	1690	Rarefaction. Initial ground motion towards East.
✓	✓ Sehore	N N N	eP PP e	08 38 53 39 10 42 30		
✓	✓ Dehra Dun	Z Z NZ N N	iP PP PPP eS i	08 38 57 39 15 39 24 42 11 45 04	1840	Compression.
✓	✓ Bokaro	E	eP	08 40 20		
✓	✓ Chatra	Z Z NE	eP i eS	08 40 24 40 40 44 44	2720	
29	✓ Madras	E	eP e e	08 40 32 40 55 44 57	2720	

DATE	STATION	COMPT	PHASE	G. M. T. h. m. s.	△ km.	REMARKS.
<u>May, 1963.</u>						
✓	✓ Kodaikanal	E	i	08 44 38		
✓	✓ Chatra	Z Z	iPg iSg	15 02 10 02 21	90	Slight, compression.
	Chatra	Z	eP e	16 29 04 29 57		
	Delhi	Z ENZ	iP i	03 07 51 08 15		Slight, rarefaction.
	Delhi	ENZ	eP	03 55 11		Slight. Initial ground movement towards South-East. Compression.
	Delhi	ENZ	P iS	04 18 50 20 26	930	Slight.
	Chatra	Z	eP iS	01 20 22 20 41	150	Slight.
	Chatra	Z	e	03 42 59		Slight.
	Shillong	ZNE	eP	03 43 32		Slight, local.
	Chatra	Z Z	iPg eSg	10 31 28 31 37	80	Slight, rarefaction.
	Shillong	ZNE	iP	17 22 04		Slight, distant, compression.
	Shillong	ZNE	eP	21 09 41		Slight, local.
	Delhi	Z ENZ	eP eS	22 07 16 08 49	900	Slight, compression.
	Shillong	ZNE	iP	22 09 41		Slight, distant, rarefaction.



International  
Seismological  
Centre

Date Hour K Mean simple amplitude in m.m. Mean period in sec. Date Hour K Mean simple amplitude in m.m. Mean period in sec.

Station : Madras. May, 1963.

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
01	00	2	0.4	5.0
		3	0.3	2.8
		3	0.1	1.4
	03	2	0.4	5.1
		3	0.2	2.8
	06	3	0.2	2.6
	12	3	0.3	2.8
	18	2	0.3	4.8
		3	0.3	2.7
02	00	2	0.4	4.6
		3	0.2	2.7
	03	2	0.3	4.9
		3	0.2	2.6
	06	3	0.2	2.6
	12	3	0.2	2.6
	18	2	0.4	5.6
		2	0.4	4.4
		3	0.2	2.7
03	00	2	0.3	5.3
		3	0.1	1.4
	03	2	0.3	4.3
		3	0.2	2.6
		3	0.1	1.2
	06	2	0.3	4.4
		3	0.2	2.6
		3	0.1	1.2
	12	3	0.2	2.7
	18	2	0.4	4.9
		3	0.2	2.5
		3	0.1	1.5
04	00	2	0.3	4.9
		3	0.1	2.3
		3	0.1	1.4
	03	2	0.3	4.4
		3	0.1	2.3
	06	2	0.3	4.8
		3	0.1	2.0
	12	3	0.1	2.0
	18	2	0.2	4.4
		3	0.1	1.6
05	00	2	0.2	4.3
		3	0.2	1.9
	03	3	0.2	2.0
	06	3	0.2	2.2
	12	3	0.2	2.3
	18	3	0.2	2.3
06	00	3	0.2	2.4
	03	3	0.2	2.2
	06	3	0.2	2.3
	12	3	0.2	2.5
	18	2	0.4	4.4
		3	0.2	2.6

Station : Madras(Contd.) May, 1963.

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
07	00	2	0.4	4.5
		2	0.4	2.7
	03	2	0.5	2.9
	06	2	0.5	2.9
	12	2	0.5	3.2
		2	0.4	2.6
	18	2	0.5	3.3
		2	0.5	2.7
08	00	2	0.5	3.6
		2	0.5	2.8
	03	2	0.5	2.9
	06	2	0.5	3.1
	12	2	0.4	3.1
	18	2	0.4	2.9
09	00	2	0.5	2.9
	03	1	0.5	2.8
	06	1	0.5	2.9
	12	1	0.5	2.9
	18	1	0.6	2.9
	21	1	1.1	2.9
10	00	1	1.3	2.7
	03	1	1.0	2.7
	06	1	0.7	2.7
	12	1	0.4	2.7
	18	3	0.3	2.8
		2	0.3	4.3
11	00	3	0.2	2.6
	03	3	0.4	4.6
		3	0.2	2.6
	06	3	0.3	2.7
	12	3	0.2	2.3
	18	2	0.4	4.9
		3	0.2	2.3
12	00	2	0.4	5.1
		3	0.3	2.7
	03	2	0.4	4.8
		3	0.3	2.8
	06	2	0.4	4.9
		2	0.3	2.9
	12	2	0.5	4.8
		2	0.3	3.0
	18	2	0.5	5.6
		2	0.3	3.1
13	00	2	0.5	5.5
		2	0.3	2.9
	03	2	0.4	5.1
		2	0.3	2.8
	06	2	0.4	5.4
		2	0.2	2.7
	12	2	0.2	2.5
	18	2	0.4	5.2
		2	0.2	2.2

Station : Madras(Contd.) May, 1963.

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
20	12	2	0.4	5.7
		1	0.3	3.3
	18	2	0.4	5.4
		1	0.4	3.5
21	00	2	0.4	5.2
		1	0.4	3.5
		2	0.4	4.9
	03	1	0.4	3.5
		3	0.3	2.8
	06	1	0.4	3.8
		3	0.3	2.8
	12	1	0.5	4.1
		3	0.2	2.6
	18	1	0.4	3.7
		3	0.3	2.7
22	00	1	0.4	3.9
		3	0.3	3.0
	03	1	0.4	3.9
		3	0.3	2.9
	06	1	0.4	4.1
		3	0.3	2.8
	12	1	0.5	4.5
	18	1	0.7	5.8
23	00	1	0.7	6.3
	03	1	0.6	6.2
		3	0.3	2.8
		3	0.3	6.0
	06	1	0.7	6.0
		3	0.4	3.3
	12	1	0.7	5.9
		3	0.4	3.3
	18	1	0.7	5.5
		1	0.5	4.2
24	00	1	0.6	5.6
		1	0.5	4.2
		1	0.3	2.9
	03	1	0.6	4.5
		3	0.3	2.8
	06	1	0.6	4.5
		3	0.3	2.7
	12	1	0.7	4.5
		3	0.4	2.6
	18	1	0.6	4.3
		1	0.4	2.9
25	00	1	0.9	4.1
		1	0.5	2.9
	03	1	1.1	3.9
	06	1	1.2	3.9
	12	1	1.0	3.6
		1	0.7	2.7
	18	1	1.2	4.1

... Earthquake.



Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
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Station : Madras (Contd.)

May, 1963.

26	00	1	1.4	4.1
	03	1	1.8	4.2
	06	1	1.9	4.3
	12	1	2.2	4.4
	18	1	2.2	4.5
27	00	1	2.2	4.5
	03	1	2.1	4.2
	06	1	2.2	4.4
	12	1	2.3	4.5
	15	1	2.6	4.8
	18	1	2.8	4.9
	21	1	2.8	4.9
28	00	1	2.7	4.7
	03	1	2.7	4.8
	06	1	2.7	4.8
	09	1	2.9	4.9
	12	1	2.9	4.9
	15	1	2.6	4.9
	18	1	2.3	4.9
29	00	1	2.1	4.7
	03	1	2.0	4.7
		1	0.5	2.6
	06	1	1.8	4.6
		1	0.6	2.7
	12	1	1.7	4.6
		1	0.5	2.8
	18	1	1.4	4.6
		3	0.4	2.6
30	00	1	1.2	4.5
		3	0.6	2.7
	03	1	1.3	4.4
		1	0.9	2.6
	06	1	1.2	4.5
		1	1.3	2.8
	12	1	1.1	4.3
		1	0.9	2.8
	18	1	0.8	4.1
		1	0.6	2.7
31	00	1	0.7	3.8
		1	0.5	2.7
	03	1	0.7	3.8
		1	0.5	2.9
	06	1	0.6	3.9
		1	0.5	2.9
	12	1	0.7	4.0
		1	0.4	2.8
	18	1	0.7	3.9
		1	0.4	2.7

Station : Bombay.

01	00	3	0.5	5.4
			0.6	2.5
	06	3	0.5	5.1
			0.5	2.5
	18	1	1.0	2.6
	21	1	0.8	2.6
02	00	1	0.8	2.7
	03	1	0.9	2.7
	06	3	0.5	6.6
			0.5	2.7
	12	3	0.5	4.9
			0.6	2.6
	18	3	0.5	5.5
			0.4	2.5
03	00	3	0.6	5.3
			0.5	2.5
	12	3	0.4	5.6
			0.5	2.5
	18	3	0.5	5.2
			0.6	2.5
04	00	3	0.5	4.5
			0.6	2.5
	06	1	0.6	3.0
	09	1	0.7	2.9
	12	1	0.7	2.9
		1	0.6	2.1
	15	1	0.5	2.9
	18	3	0.6	2.7
			0.5	5.0
			0.4	1.8
05	00	3	0.6	2.3
			0.5	5.0
	06	3	0.4	1.8
			0.6	2.4
	12	3	0.3	1.8
			0.4	1.7
			0.4	5.5
			0.6	2.1
	18	3	0.7	2.6
			0.4	1.8
			0.5	5.6
06	00	3	0.5	1.8
			0.8	2.5
	06	3	0.8	2.5
			0.6	2.0
	12	3	0.4	1.7
			0.5	5.0
	18	3	0.4	2.0
			0.8	2.9

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
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Station : Bombay (contd.)

13	00	1	0.7	2.5
	06	3	0.6	6.0
			0.6	2.4
	12	3	0.6	5.6
			0.4	2.0
	18	3	0.4	1.7
			0.7	5.4
			0.5	2.4
14	00	3	0.5	2.2
			0.6	5.0
	06	3	0.5	2.0
			0.7	6.0
	12	3	0.5	1.6
			0.6	6.5
	18	3	0.7	6.5
			0.4	2.0
15	00	3	0.6	7.0
			0.4	3.0
	06	3	0.7	7.5
			0.4	1.6
	12	3	0.7	7.0
			0.4	1.8
	18	3	0.5	2.0
			0.9	7.0
16	00	3	0.5	2.0
			0.9	7.0
	06	3	0.5	2.2
			0.8	7.0
	12	3	0.5	2.0
			1.0	7.0
	18	3	0.7	2.0
			0.6	5.5
17	00	3	0.7	2.2
			1.2	6.3
	06	3	0.4	2.0
			0.7	7.0
	12	3	0.8	7.6
			0.4	1.6
	18	3	0.5	2.0
			0.8	7.5
18	00	3	0.5	2.0
			0.7	7.0
	06	3	0.8	7.0
			0.4	2.4
	12	3	0.7	2.0
			0.8	7.0
19	00	3	0.7	2.1
			1.0	6.8





Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.	Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
Station: Bombay (Contd.)									
19	06	3	1.0	6.7	25	12	3	0.9	4.0
			0.7	2.4				0.6	2.0
	12	3	1.0	6.7		18	3	1.1	6.0
			0.6	2.0				0.6	2.1
	18	3	0.6	2.0					
			1.0	7.1	26	00	3	1.5	5.0
20	00	3	0.5	2.1				0.6	2.0
			0.9	6.5		06	3	1.3	4.5
	06	3	0.8	2.6				0.6	2.5
			0.6	6.0		09	1	1.9	5.0
	12	3	.	.		12	1	2.0	5.0
	18	3	0.7	2.5		15	1	2.0	5.0
			1.0	5.0		18	1	2.0	5.0
21	00	1	0.8	3.0		21	1	2.1	5.0
	03	1	0.8	2.7					
	06	1	0.8	2.8	27	00	.	.	.
	09	1	0.8	2.7		03	1	2.2	5.0
	12	3	0.6	3.0		06	1	2.2	5.0
			0.5	2.5		09	1	2.5	5.0
			0.4	1.5		12	1	2.6	5.0
	18	3	0.7	2.5		15	1	2.7	5.0
			1.0	7.0		18	1	2.7	5.0
			0.6	1.8		21	1	2.9	5.0
22	00	3	0.9	5.6	28	00	1	2.6	5.0
			0.4	1.8		03	1	3.0	5.0
			0.5	3.0		06	1	3.3	5.0
	06	3	0.8	3.0		09	1	3.3	5.0
			1.0	4.1		12	1	3.3	5.0
			0.4	1.6		15	1	3.5	5.0
	12	3	0.8	2.9		18	1	3.4	5.0
			0.8	6.3		21	1	3.3	5.0
			0.4	1.6					
	18	3	0.9	2.6	29	00	1	2.5	4.8
			0.9	6.0		03	1	2.2	4.3
23	00	3	1.0	7.0		06	1	2.0	4.2
			0.9	3.0		09	1	1.8	4.5
	06	3	0.9	6.0		12	1	1.9	4.2
			0.6	2.4		15	1	2.0	4.4
	12	3	0.9	6.0		18	1	2.0	4.2
			0.4	1.4		21	1	1.6	4.0
	18	3	1.0	5.0					
			0.5	1.9	30	00	1	1.5	4.0
24	00	3	1.1	5.0		03	1	1.5	3.9
			0.4	1.9		06	1	1.5	4.0
	06	3	0.9	4.9		09	1	1.1	4.0
			0.6	3.0		12	1	1.0	3.9
			0.5	1.8		15	1	1.1	4.0
	12	3	0.9	4.5		18	1	1.2	4.0
			0.5	2.0		21	1	1.2	4.0
	18	3	0.9	4.9					
			0.7	2.0	31	00	1	1.1	4.0
25	00	3	0.9	5.0		03	1	1.0	4.0
			0.7	2.5		06	1	1.0	3.9
	06	3	0.9	4.0		09	1	0.8	4.0
			0.5	2.0					

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.	Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
Station: Bombay (Contd.)									
May, 1963.									
31	12	1	0.8	3.9	10	12	1	0.7	3.5
	15	1	0.9	4.0		18	1	0.3	3.1
	18	1	0.9	4.0					
	21	1	0.7	3.8	11	00	.	.	.
						06	2	0.2	3.0
						12	0	.	.
						18	.	.	.
Station: Visakhapatnam.									
01	00	.	.	.	12	00	0	.	.
	06	2	0.3	3.0		06	1	0.2	2.2
	12	2	0.3	3.1		12	1	0.2	8.0
	18	2	0.3	3.5		18	-	-	-
02	00	.	.	.	13	00	.	.	.
	06	2	0.3	3.2		06	2	0.3	3.8
	12	2	0.3	3.4		12	2	0.3	3.9
	18	2	0.3	3.7		18	2	0.3	4.0
03	00	-	-	-	14	00	2	0.3	4.2
	06	2	0.3	3.3		06	2	0.3	4.2
	12	2	0.3	3.1		12	2	0.3	4.3
	18	2	0.3	3.3		18	2	0.3	4.1
04	00	.	.	.	15	00	2	0.3	4.3
	06	2	0.3	3.4		06	2	0.3	4.3
	12	2	0.3	3.5		12	2	0.3	4.6
	18	2	0.3	3.1		18	2	0.3	4.5
05	00	2	0.2	2.8	16	00	.	.	.
	06	2	0.2	3.1		06	2	0.3	4.5
	12	1	0.2	2.9		12	2	0.3	5.1
	18	1	0.2	2.8		18	0	.	.
06	00	2	0.2	3.0	17	00	.	.	.
	06	1	0.2	2.9		06	.	.	.
	12	2	0.2	2.8		12	2	0.2	2.9
	18	2	0.3	3.2		18	2	0.3	4.8
07	00	2	0.3	3.3	18	00	2	0.3	4.9
	06	2	0.2	3.2		06	2	0.3	4.8
	12	2	0.3	3.3		12	.	.	.
	18	2	0.3	3.5		18	1	0.2	2.8
08	00	2	0.3	3.3	19	00	1	0.2	2.8
	06	1	0.4	3.2		06	1	0.2	2.9
	12	1	0.3	2.9		12	0	.	.
	18	1	0.3	3.1		18	2	0.3	3.2
09	00	1	0.3	3.1	20	00	2	0.3	3.1
	06	.	.	.		06	2	0.3	3.8
	12	1	0.6	4.1		12	.	.	.
	18	1	1.5	4.2		18	2	0.3	4.1
10	00	1	1.5	4.0	21	00	2	0.3	3.9
	06	1	1.7	3.4		06	2	0.3	3.4

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
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Station: Visakhapatnam(contd.)

May, 1963.

21	12	2	0.3	3.9	01	06	3	0.3	5.3
	18	2	0.3	4.0		12	3	0.3	5.3
						18	3	0.2	4.7
22	00	2	0.3	4.0	02	00	3	0.2	4.8
	06	2	0.3	3.2		06	3	0.2	5.0
	12	2	0.3	3.9		12	3	0.2	4.5
	18	2	0.3	4.0		18	3	0.3	3.0
23	00	.	.	..	03	00	3	0.2	5.0
	06	2	0.3	3.9		06	3	0.2	5.0
	12	2	0.3	3.9		12	3	0.3	4.3
	18	2	0.3	3.2		18	1	0.4	2.6
24	00	.	.	..	04	00	3	0.3	2.5
	06	2	0.3	4.1		06	3	0.3	5.2
	12	2	0.3	4.4		12	3	0.2	2.3
	18	2	0.3	4.3		18	1	0.5	2.8
25	00	.	.	..	05	00	1	0.5	2.9
	06	2	0.3	3.9		06	1	0.4	3.1
	12	2	0.3	4.2		12	3	0.4	3.0
	18	2	0.3	4.2		18	3	0.3	2.6
26	00	1	1.0	5.1	06	00	3	0.3	2.5
	06	1	1.5	5.1		06	3	0.3	4.5
	12	2	1.4	5.1		12	3	0.3	4.4
	18	.	.	..		18	1	0.7	3.0
27	00	1	1.7	5.0	07	00	1	0.7	3.0
	06	.	.	..		06	1	0.8	3.2
	12	.	.	..		12	1	0.5	3.3
	18	.	.	..		18	3	0.3	2.8
28	00	.	.	..	08	00	3	0.3	3.4
	06	3	4.7	5.1		06	3	0.3	3.8
	12	3	3.8	5.8		12	3	0.2	3.5
	18	3	3.6	5.3		18	3	0.4	2.5
29	00	3	3.8	5.2	09	00	1	0.6	2.8
	06	3	2.9	5.1		06	3	0.4	3.0
	12	1	1.5	5.1		12	1	0.8	3.2
	18	1	1.3	5.0		18	3	0.5	3.5
30	00	1	0.7	4.8	10	00	3	0.4	3.0
	06	1	0.7	4.5		06	3	0.4	3.5
	12	1	0.5	4.2		12	3	0.2	4.0
	18	1	0.5	4.7		18	3	0.2	4.4
31	00	1	0.4	4.1	11	00	...	-	-
	06	1	0.4	3.9		06	3	0.2	-
	12	1	0.4	3.2		12	3	0.3	3.2
	18	2	0.3	3.2		18	...	-	6.0

Station : Bokaro.

01	00	3	0.4	5.5
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International Seismological Centre

Date	Hour GMT	K	Mean simple amplitude in m.m.	Mean period in sec.
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Station: Bokaro(Contd.)

May, 1963.

13	00	3	0.2	5.0	24	00	3	0.3	4.8
	06	3	0.3	5.0		06	3	0.3	4.4
	12	3	0.3	5.0		12	3	0.3	5.5
	18	3	0.3	5.0		18	3	0.3	5.0
14	00	3	0.3	5.0	25	00	3	0.3	4.0
	06	3	0.2	5.2		06	3	0.4	4.2
	12	3	0.3	6.5		12	3	0.3	4.5
	18	3	0.2	6.0		18	3	0.3	4.2
15	00	3	0.3	5.2	26	00	3	0.4	4.6
	06	3	0.3	5.6		06	3	0.7	4.4
	12	3	0.3	5.0		12	3	1.0	5.6
	18	3	0.3	6.0		18	3	1.2	5.0
16	00	3	0.3	6.0	27	00	3	1.2	5.0
	06	3	0.3	6.2		06	3	2.4	4.8
	12	3	0.3	6.5		12	1	2.4	4.8
	18	3	0.3	5.7		18	1	3.5	5.0
17	00	3	0.3	6.0	28	00	1	3.5	4.7
	06	3	0.3	6.0		06	1	4.1	5.0
	12	3	0.3	6.7		12	1	5.9	4.7
	18	3	0.3	6.2		18	1	6.4	5.2
18	00	3	0.3	6.0	29	00	1	2.5	4.8
	06	3	0.3	6.8		06	2	1.2	5.0
	12	3	0.3	6.5		12	2	1.0	4.0
	18	3	0.4	6.4		18	2	0.7	4.3
19	00	3	0.4	6.5	30	00	2	0.5	4.0
	06	3	0.3	6.0		06	2	0.4	3.0
	12	3	0.3	6.0		12	2	0.3	5.0
	18	3	0.4	6.7		18	2	0.3	4.3
20	00	3	0.3	6.0	31	00	2	0.4	3.6
	06	3	0.3	5.5		06	3	0.2	3.2
	12	...	-	-		12	3	0.3	3.5
	18	3	0.3	3.8		18	3	0.2	3.0
21	00	3	0.3	5.0	.....				
	06	3	0.3	4.5	Date	Hour GMT.	K	Mean simple amplitude in micron	Mean period in sec.
	12	3	0.2	5.0	-----				
	18	...	-	-	Station : Port Blair.	May, 1963.			
22	00	3	0.2	5.0	01	00	1	0.8	7
	06	3	0.3	4.7		06	1	0.4	6
	12	3	0.3	4.7		12	...	-	-
	18	3	0.3	4.7		18	1	0.4	7
23	00	3	0.4	6.0					
	06	3	0.3	4.7					
	12	3	0.3	4.8					
	18	3	0.3	5.5					

Date	Hour GMT	K	Mean simple amplitude in micron.	Mean period in sec.	Date	Hour GMT	K	Mean simple amplitude in micron.	Mean period in sec.
Station : Port Blair(Contd.)					<u>May, 1963.</u>				
02	00	1	0.8	6	13	00	1	0.4	7
	06	1	0.4	7		06	1	0.4	6
	12	1	0.8	7		12	1	0.4	6
	18	1	0.4	7		18	1	0.4	6
03	00	1	0.8	7	14	00	1	0.4	6
	06	1	0.8	7		06	1	0.4	6
	12	1	0.4	7		12	1	0.4	7
	18	1	0.8	7		18	1	0.4	7
04	00	1	0.4	7	15	00	1	0.8	7
	06	1	0.4	7		06	1	1.2	6
	12	1	0.4	7		12	1	1.2	7
	18	1	0.4	7		18	1	1.2	7
05	00	1	0.2	7	16	00	1	1.2	7
	06	1	0.2	7		06	1	2.0	7
	12	1	0.2	7		12	1	2.0	7
	18	1	0.2	7		18	1	1.2	7
06	00	1	0.2	7	17	00	1	1.6	7
	06	1	0.2	7		06	1	1.6	7
	12	1	0.4	6		12	1	1.6	7
	18	1	0.4	6		18	1	1.6	7
07	00	3	0.2	7	18	00	1	2.0	7
	06	1	0.4	3		06	1	1.2	7
	12	1	0.4	3		12	1	1.6	7
	18	...	-	-		18	1	1.6	7
08	00	...	-	-	19	00	...	-	-
	06	1	0.4	3		06	1	1.2	7
	12	1	0.2	3		12	1	0.8	7
	18	3	0.2	3		18	...	-	-
			0.4	6	20	00	...	-	-
09	00	3	0.2	3		06	1	0.8	7
			0.4	7		12	...	-	-
	06	1	0.2	3		18	1	0.8	7
	12	1	0.4	3	21	00	1	0.8	7
	18	1	0.4	3		06	1	0.8	7
10	00	1	0.4	3		12	1	0.8	7
	06	1	0.2	3		18	1	0.8	7
	12	1	0.2	3	22	00	1	0.8	6
	18	1	0.2	3		06	1	0.8	6
11	00	1	0.4	3		12	1	0.8	7
	06	1	0.4	3		18	1	0.8	6
	12	1	0.2	3	23	00	1	0.8	5
	18	...	-	-		06	1	0.8	5
12	00	1	0.4	7		12	1	0.8	7
	06	1	0.4	6		18	3	0.2	2
	12	1	0.4	7				0.4	5
	18	1	0.4	7					

Date	Hour GMT	K	Mean simple amplitude in micron	Mean period in sec.	Date	Hour GMT	K	Mean simple amplitude in micron	Mean period in sec.
Station: Port Blair(Contd.)					<u>May, 1963.</u>				
24	00	3	0.4	3	28	00	2	8.0	5
	06	1	0.4	2		06	2	7.2	5
	12	2	0.4	2		12	2	5.6	5
	18	3	0.8	2		18	2	4.4	5
			1.6	4	29	00	2	3.6	5
25	00	2	2.0	4		06	2	3.2	5
	06	2	2.0	4		12	2	2.8	5
	12	2	2.4	4		18	2	2.4	6
			0.4	2	30	00	2	2.4	6
	18	3	4.0	5		06	2	2.0	6
			0.8	3		12	2	1.6	6
26	00	3	4.4	5		18	...	-	-
	06	2	5.6	5	31	00	2	0.8	4
	12	2	6.4	5		06	2	0.8	3
	18	...	-	-		12	2	0.8	3
27	00	2	7.2	5		18	2	0.8	2
	06	...	-	-					
	12	...	-	-					
	18	2	8.0	5					