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Director General of Observatories

List of Seismograph stations with their Instruments and Constants



Station	Latitude	Longitude	Height n.s.l. (Metres)	Lithographic Foundation	Instrument	Compt.	Period in secs	Static Magni- fication	Damping ratio	Paper speed mm/min.	
Agra					Columbia Long Period	E	To=15	Tg=100		15	
					- do -	N	To=15	Tg=85		15	
					- do -	Z	To=15	Tg=70		15	
Bombay	18°54'N	72°40'E	6	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	20:1	16	
					Milne-Shaw	E	12	250	20:1	16	
					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)	Milne-Shaw	E	12	250	20:1	8	
					(2) 6(Omori-Ewing)	Wood-Anderson	N	2	870	Critical	30
					Alluvium	Omori-Ewing	N	16	32	-	25.4
					Omori-Ewing	E	21	30	-	25.4	
Chattru	25°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	50	
					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	535	Granite	Milne-Shaw	E	12	250	20:1	8	
					Milne-Shaw	N	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=72 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	16	
					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					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	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=0.18		60	
					Sprengnether	E	To=Tg=6.3		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	

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

September, 1961.

01 Epc: - 59 3⁰S, 27.3⁰W Sandwich Islands Region
 - H = 00 h 09 m 34.6 s, h = 131 km (USCGS)
 Mag: - 7 $\frac{1}{2}$ (Pas), 7 (Berk)

Poona Z ePKP 00 27 56 12260
 PS 37 59

Dehra Dun NE e 00 28 21
 N e 30 05
 e e 30 54
 i 35 07
 e 37 55
 e 38 59
 e 39 31
 e 41 25
 M 45 10

Shillong Z iPKP 00 28 24 Compression.
 e 30 20

Chatra ZNE iPKP 00 28 25 Compression.
 e 30 17
 e 30 40
 SKS 35 13
 e 35 30
 e 35 29
 e 39 25
 e 41 31

Kodaikanal E i 00 28 27
 i 34 27
 e 34 42
 e 39 09
 M 42 51

Madras E ePKP 00 28 33
 e 28 58
 e 04 13
 e 07 41

Bombay NE e 00 28 37 12370
 N e 29 09
 NE e 31 00
 N e 33 00
 NE i 34 22
 N SKS2 34 49
 NE e 35 21
 i 36 03
 PS 37 52
 N PPS 38 27
 NE eSS 43 58
 N SSP 44 19
 NE SES 48 00
 N e 52 03
 M 01 03 46
 E M 11 05

Period = 20 secs.,
 Gr. dis. = 4 u
 Period = 19 secs.,
 Gr. dis = 3 u.

September, 1961.

01 Hyderabad E e 00 28 43
 (Contd.) e 29 20
 i 38 07
 e 40 49
 e 44 19
 e 45 10
 e 47 34
 M 52 43

Period = 15 secs.,
 Gr. dis. = 7 u

Calcutta EN e 00 29 48
 i 30 31
 e 35 32
 i 40 23
 i 45 48

01 Tocklai E iPg 03 41 42

Slight, local.

01 Shillong Z iP 04 40 40

Slight, very distant.
 Compression.

New Delhi Z iP 04 41 35

Slight, Rarefaction.

01 New Delhi Z eP 05 01 33

Slight.

01 Shillong Z iP 07 54 43 200
 Sg 55 10

Slight, Rarefaction.

01 Shillong Z eP 09 31 20 310
 Sg 32 05

Slight.

01 Shillong Z iP 13 30 46 230
 Sg 31 18

Slight.

01 Chatra Z eP 13 31 32

Feeble, distant.

01 New Delhi Z iP 16 49 31 600
 iS 50 34

Slight.

01 Tocklai E e 18 12 43

Slight, distant.

01 Shillong Z eP 18 54 04

Slight, distant.

01 Bombay ES e 19 03 24
 E e 06 56
 E e 09 51
 NE e 10 12

Slight.

01 Shillong ZNE eP 19 07 18
 NE i 10 19
 i 14 08

Slight, distant.

Doubtful.

New Delhi Z eP 19 08 41

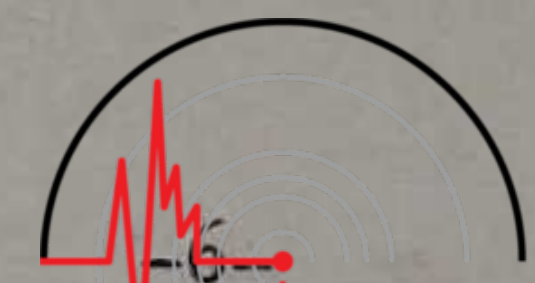
Slight, Rarefaction.

Dehra Dun NE e 19 09 50
 N i 10 22
 i 13 26
 i 13 49
 i 14 04

Slight.



DATE	STATION	COMPT.	PHASE	G.	M.	T.	△	REMARKS
				h	m.	s.	km	
<u>September, 1961.</u>								
01	New Delhi	ENZ	PKP	19	09	56		
		NZ	PP		12	36		
		EN	i		13	29		
01	Chatra	Z	eP	19	10	03		Slight, distant.
	Poona	Z	iP	19	10	12		Slight.
	Visakhapatnam	N	iP	19	10	23		Slight, distant.
		NE	i		10	59		
			i		11	09		
	Madras	E	e	19	10	39		Surface waves.
01	Shillong	Z	iP	19	23	05		Slight, distant. Compression.
01	Shillong	Z	iP	20	15	51		Slight, distant. Rarefaction.
01	Shillong	Z	iP	21	42	39	230	Slight, rarefaction.
			Sg		43	11		
	Chatra	Z	iP	21	43	28		Compression, Slight, distant.
01	Shillong	Z	ePg	22	06	55	90	Slight.
			Sg		07	05		
01	Shillong	Z	iP	22	53	46		Slight, distant. Compression.
01	New Delhi	Z	eP	23	12	05		Slight.
			i		13	23		
01	Chatra	Z	iPg	23	31	55	80	Slight.
		ZNE	Sg		32	05		
	Shillong	Z	eP	23	32	54		Slight, near.
02	Shillong	Z	iP	00	37	44		Slight, distant. Compression.
	Chatra	Z	iP	00	37	55		Slight, distant. Compression.
	New Delhi	Z	iP	00	38	14		Slight, Compression.
	Poona	Z	iP	00	39	05		Tremor.
02	Chatra	Z	e	06	48	19		Slight.
02	Shillong	Z	iPg	07	57	38		Slight local.
02	Chatra	Z	e	08	48	17		Slight, local.
02	Tocklai	E	ePg	09	31	11	90	Slight, local.
			iSg		31	26		

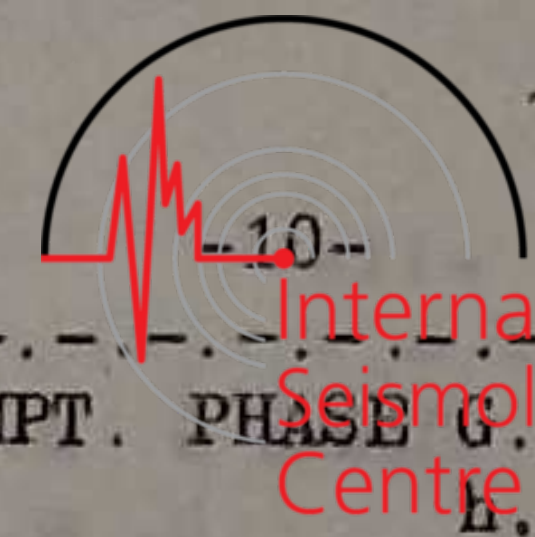


DATE	STATION	COMPT.	PHASE	G.	M.	T.	△	REMARKS
				h	m.	s.	km	
<u>September, 1961.</u>								
02	Visakhapatnam	E	e	10	44	27		Slight, distant.
			e		45	22		
			e		49	08		
02	Epc:- 2.0°S, 67.5°E, South West of Maldiva Islands, Indian Ocean, - H = 10h 50m 36,7s (USCGS). h = 132 Kms.							
	Madras	E	e	10	54	51		
	Poona	Z	iP	10	55	14		Slight.
	Bombay	NE	eP	10	55	29	2330	Slight.
			eS		59	19		
	Kodaikanal	E	e	10	56	03		
02	Dehra Dun	NE	e	10	56	59		Feeble.
02	Chatra	Z	eP	10	57	11		Feeble, distant.
02	Shillong	Z	iP	10	57	26		Slight, distant. Rarefaction.
02	Dehra Dun	N	i	11	01	52		
			i		05	00		
02	Hyderabad	E	M	11	02	13		Period = 9 secs., Gr. dis. = 3 u
02	Shillong	Z	ePg	11	12	37	130	Slight.
					12	51		
02	Shillong	Z	eP	11	39	45	140	Slight.
			Sg		39	52		
02	Chatra	Z	ePn	12	35	53	210	Slight, local.
			P*		35	54		
			Pg		35	57		
			PP		35	59		
			i		36	05		
			LQ		36	14		
			Sn		36	18		
			SS		36	28		
02	Shillong	Z	iP	15	46	13		Slight, distant. Rarefaction.
02	Shillong	Z	iP	17	59	22		Slight, distant. Compression.
	New Delhi	ENZ	i	18	07	04		
02	Tocklai	E	ePg	19	52	48		Slight, Tremor.
02	Shillong	Z	eP	21	54	13	220	Slight.

DATE	STATION	COMPT.	PHASE G M T.			REMARKS
			h.	m.	s.	
<u>September, 1961.</u>						
02	Shillong	Z	eP	23 08 31	220	Slight.
			Sg	09 02		
03	Shillong	Z	eP	00 41 34	220	Slight.
			Sg	42 05		
03	Chatra	Z	iP	01 03 21		Compression, feeble Distant
03	Shillong	Z	iP	02 12 17		Slight, distant. Compression.
03	Shillong	Z	iP	03 00 17		Slight, distant. Compression.
03	Shillong	Z	eP	09 53 09		Slight, distant.
			i	54 29		
03	Shillong	Z	eP	11 01 49	250	Slight.
			Sg	02 21		
	Chatra	Z	iP	11 02 27		Feeble, distant. Rarefaction.
			e	04 02		
03	Shillong	Z	eP	14 08 57		Slight, distant.
03	Shillong	Z	eP	14 22 05		Slight, distant.
03	Shillong	Z	eP	19 56 01		Slight, distant.
04	Shillong	Z	iP	01 03 06		Slight, distant. Compression.
04	Chatra	Z	eP	02 19 20		Feeble, distant.
			e	21 37		
	Shillong	Z	eP	02 19 30	250	Slight.
			Sg	20 02		
04	Shillong	Z	iP	03 24 30		Slight, distant. Rarefaction.
	Chatra	Z	iP	03 25 00		Slight, distant. Rarefaction.
04	Shillong	Z	iP	04 17 12		Slight, distant. Compression.
04	Shillong	Z	iP	05 02 39		Slight, distant. Compression.
	Chatra	Z	eP	05 02 52		Slight, distant.
	New Delhi	EZ	eP	05 03 28		Slight.
04	New Delhi	Z	iPKP	07 57 22		Slight.
			e	08 11 17		



DATE	STATION	COMPT.	PHASE G M T.			REMARKS
			h.	m.	s.	
<u>September, 1961.</u>						
04	Tocklai	E	Pg	08 35 41	20	Slight, Tremor.
			Sg	35 44		
04	Tocklai	E	iP	09 59 13		Slight, near, Initial ground movement towards West.
	Shillong	Z	iP	10 00 25		Slight, distant. Compression.
04	Chatra	Z	iP	10 00 39		Feeble, distant.
	New Delhi	EZ	iPKP	10 00 58		Slight, Initial ground motion towards East and Compression.
04	Port Blair	N	Pg	14 52 36		Slight.
	Shillong	Z	eP	14 04 27		Slight, distant.
			i	15 00 53		
	Chatra	Z	iP	14 54 37		Compression, Feeble, distant.
			e	58 08		
	New Delhi	N	e	14 55 23		
04	Shillong	Z	eP	15 03 52		Slight, distant.
04	Shillong	Z	iP	16 17 01		Slight, distant. Rarefaction.
04	Shillong	Z	iP	19 24 10		Slight, distant. Rarefaction.
04	Shillong	Z	eP	20 06 11		Slight, distant.
05	Shillong	Z	iP	03 35 29		Slight, distant. Compression.
05	Chatra	Z	eP	03 48 08		Slight, distant.
			i	48 09		
05	Epc:- 38.6°N, 73.3°E, Tadjik S.S.R. h = 50 Kms. - H = 06h 12m 54.8s (USCGS)					
	Dehra Dun	Z	eP	06 15 10	1010	Slight.
		N	PP	15 18		
			PPP	15 26		
			LQ	16 32		
			i	16 40		
			eS	16 54		
			SSS	17 06		
			M	17 36		
	New Delhi	ENZ	iP	06 15 17	1000	Moderate, Initial ground motion towards North, West and Rarefaction.
			PP	06 15 24		
			PPP	15 32		



DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
 h. m. s. km.

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05	New Delhi (Contd.) (Contd.)	NZ EZN NZ	LQ iS SS SSS	06 16 51 17 00 17 12 17 23		
	Sehore	NE E	iP PP PPF S SS SSS LR M	06 16 31 16 42 16 48 19 11 19 26 19 43 19 49 21 05	1590	Slight.
	Chatra	Z N	iP i PP e LQ iS i SS e SSS e	06 16 40 16 41 16 52 17 23 19 27 19 33 19 39 19 51 20 11 20 25 20 38	1720	Moderate, Initial ground motion towards North, West and Rarefaction.
	Bombay	NE E	eP LQ eS SS	06 17 25 20 46 20 57 21 28	2140	Slight.
	Poona	Z N	iP PPP iS LQ SSS LR M PcS	06 17 25 17 52 21 02 21 11 21 45 22 01 23 38 25 20	2190	Moderate.
	Shillong	Z	eP iS	06 17 28 21 05	2190	Moderate.
	Calcutta	NE	iP S	06 17 33 21 11	2200	Slight.
	Tocklai	E	eP PP PPP iS SS PcP M	06 17 35 17 50 17 59 21 15 21 39 22 25 23 40	2220	Moderate, Initial ground motion towards East.

DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
 h. m. s. km.

September, 1961.

05	Visakhapatnam	NE	iP PP PPP PcP iS LQ SS SSS	06 17 54 18 19 18 32 21 39 21 53 22 15 22 37 22 53	2440	Moderate, First ground movement towards West.
	Madras	E	eP PP PPP i iS LQ e SSS LR M	06 18 31 19 14 19 23 22 50 23 05 23 32 23 48 24 00 24 28 26 42	2960	Moderate.
	Port Blair	N	eP	06 19 19		Slight.
	Kodaikanal	E	e	06 24 13		
05	Shillong	Z	iP	09 20 11		Slight, distant. Compression.
05	Tocklai	E	eP	11 46 36		Slight, Near.
05	Epc:- 59.8°N, 150.6°W, Kenai Peninsula -h = 44 Kms., -H = 11h 34m 37.3s (USCGS) Mag:- 6-6 $\frac{1}{4}$ (Pas)					
	Shillong	Z	iP	11 46 47		Distant, Compression.
	Chatra	Z	iP i ZN NE ScS PS N SS LQ LR M	11 46 52 47 08 49 57 57 00 57 09 57 48 17 02 33 09 04 13 56 20 -	8980	Compression.
05	New Delhi	ENZ Z ENZ	iP PcP PP iS SKS PS EN PPS ENZ SS ENZ SSS LQ LR	11 46 57 47 01 50 05 57 11 57 24 57 56 58 17 12 02 32 06 14 10 33 13 59	9110	Initial ground motion towards South, West and Compression.



DATE	STATION	COMPT.	PHASE	G.	M.	T.	REMARKS
				h.	m.	s.	km.
<u>September, 1961.</u>							
05	Dehra Dun (Contd.)	NE	e	11	47	02	
		N	PP		49	59	
			iS		56	59	
			SS	12	02	14	
			M		17	40	
	Poona	Z	iP	11	47	52	
	Port Blair	N	e	11	47	59	
	Bombay	N	e	11	51	52	
		NE	e		59	19	
	Visakhapatnam	NE	e	11	58	07	Slight.
			e		58	14	
			e		59	50	
05	Epc:- 36.4°N, 54.4°E, Northern Iran -h = 59 Km. - H = 14h 09m 55.1s (USCGS).						
	New Delhi	ENZ	eP	14	14	27	2160 Slight, initial ground movement towards West
		E	iP				
		EN	PP		14	53	
		N	PPP		15	02	
		EN	SS		18	25	
	Dehra Dun	NE	e	14	14	40	Feeble.
			e		18	09	
	Chatra	Z	eP	14	15	57	Slight, distant.
	Shillong	Z	eP	14	16	32	Slight, distant.
05	New Delhi	E	eP	16	53	28	1100 Slight.
			i		54	00	
		ENZ	iS		55	31	
	Dehra Dun	NE	e	16	55	05	Tremor.
05	Shillong	Z	eP	16	56	24	Slight, distant.
05	Shillong	Z	eP	18	12	59	Slight, distant.
05	Tocklai	E	ePg	19	11	26	90 Slight.
			iSg		11	36	
	Shillong	Z	eP	19	11	58	Slight, distant.
	Chatra	Z	eP	19	12	48	Slight, distant.
			e		14	54	
05	Shillong	Z	iP	21	39	39	Slight, distant. Compression.
05	Visakhapatnam	E	iP	21	40	06	1080 Slight, initial ground movement towards West
			PP		40	13	
			PPP		40	21	

DATE	STATION	COMPT.	PHASE	G.	M.	T.	REMARKS
				h.	m.	s.	km.
<u>September, 1961.</u>							
05	Visakhapatnam (Contd.)	E	iS	21	41	57	
			SS		42	09	
			SSS		42	24	
	Madras	E	iP	21	40	23	Slight, initial ground movement towards West.
	Shillong	Z	iP	21	40	56	Slight, distant. Compression.
	Chatra	Z	eP	21	41	44	Slight, distant.
05	Port Blair	N	ePg	22	37	36	80 Slight.
			eSg		37	46	
05	New Delhi	Z	iP	05	05	45	Slight, Rarefaction.
06	Kodaikanal	E	e	05	28	36	
06	Hyderabad	E	eP	06	18	34	1690 Moderate
			iS		21	24	
			SS		21	30	
			SSS		22	00	
			LR		22	12	
			M		22	56	Period = 6 secs., Gr. dis. = 7 u
06	Chatra	Z	iPg	06	35	38	80 Compression, Slight.
			Sg		35	48	
06	Shillong	Z	iP	08	21	48	Slight, distant. Rarefaction.
	Chatra	Z	iP	08	22	25	1010 Feeble, Rarefaction.
			S		24	09	
	New Delhi	Z	iF	08	23	25	Slight, Rarefaction.
			i		24	35	
06	Tocklai	E	iPg	10	29	45	130 Slight.
			iSg		30	01	
			SS		30	11	
06	Epc:- 36.3°N, 70.6°E, Hindukush - h = 238 Kms - H = 13 h 35 m 42.2.s (USCGS).						
	New Delhi	ENZ	iP	13	37	49	1000 Slight, initial ground motion towards North, West and Rarefaction.
			iS		39	29	
	Dehra Dun	Z	e	13	38	42	Feeble.
			e		39	21	
	Chatra	Z	iP	13	39	32	2010 Rarefaction, Feeble.
			eS		42	42	
	Poona	Z	iP	13	39	42	Slight.

DATE	STATION	COMPT	PHASE	G	M	T	REMARKS
				h.	m.	s.	km
September, 1961.							
06	Shillong (Contd.)	Z	eP	13	40	11	Slight, distant.
	Visakhapatnam	NE	e	13	44	44	Slight.
	Madras	E	e	15	46	18	Feeble.
06	Shillong	Z	iP	15	51	11	Slight, distant. Rarefaction.
06	Tocklai	E	iPg	18	06	33	Slight, local.
06	Shillong	Z	eP	22	18	47	Slight.
			S		19	57	670
	Chatra	Z	eP	22	19	33	Feeble.
			eS		21	13	970
07	New Delhi	Z	eP	07	29	33	Slight.
07	New Delhi	Z	iP	09	26	49	Slight, Compression
07	Chatra	Z	eP	15	46	39	Feeble, distant.
			i		48	05	
07	Dehra Dun	Z	e	16	29	14	Tremor.
	New Delhi	Z	iP	16	29	32	Slight, Rarefaction
		EZ	e		29	51	
	Chatra	Z	iP	16	30	51	Slight, distant.
			e		32	06	Compression.
07	Shillong	Z	eP	16	45	44	Slight.
			Sg		46	20	250
07	Shillong	Z	eP	17	31	44	Slight, distant.
07	Shillong	Z	iP	17	55	33	Slight, distant. Rarefaction.
07	Shillong	Z	eP	19	10	38	Slight, distant.
07	Shillong	Z	eP	21	30	27	Slight, distant.
07	New Delhi	Z	iP	22	30	50	Tremor, Rarefaction
07	Chatra	Z	eP	22	51	55	Feeble, distant.
07	New Delhi	Z	eP	23	29	19	Slight.
07	Shillong	Z	eP	23	51	08	Slight.
			Sg		51	37	210
08	New Delhi	Z	iP	00	17	14	Slight, Rarefaction

08 Epc:- 56.1°S, 27.3°W, Sandwich Islands Region,
 -h = 125 Kms. - H = 11 h 26 m 32.8 s (USCGS)
 Mag:- 7½-7¾ (Pas), 8 (Berk)

DATE	STATION	COMPT.	PHASE	G	M	T	REMARKS
				h.	m.	s.	km.
September, 1961.							
08	New Delhi (Contd.)	ENZ	e	11	41	46	
			i		44	54	
			i		46	53	
	Madras	E	e	11	44	42	Distant.
			e		45	28	
			e		45	57	
			e		51	23	
			e		53	02	
			e		54	45	
			e	12	00	50	
	Poona	Z	e	11	45	00	
			i		54	59	
	Calcutta	EN	ePKP1	11	45	12	13520
			PP		46	47	
			SKKS2		52	02	
			SKKS1		53	37	
			PS		56	37	
			PPS		59	07	
			SS	12	03	22	
			SSS		07	47	
	Tocklai	E	e	11	45	17	Distant.
	Bombay	E	e	11	45	17	
		NE	PP		45	43	
			PPP		47	58	
			SKS		51	23	
			SKKS		52	20	
			eS		53	11	
			PS		54	56	
			PPS		55	54	
			e		56	56	
		E	eSS	12	00	52	
		N	eSS		01	01	
		E	SSS		05	08	
		N	SSS		05	16	
		NE	LQ		11	56	
		E	LR		16	40	
		E	M		26	47	
		N	M		26	48	
	Dehra Dun	NE	eP	11	45	18	
			e		52	08	
			i		56	51	
			e	12	03	39	
			e		07	32	
			e		13	07	
			e		18	53	
			M		23	52	

Period = 19 secs.,
 Gr. dis. = 17 u
 Period = 19 secs.,
 Gr. dis. = 33 u



DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
 h. m. s. km.

September, 1961.

08 Chatra (Contd.) ZNE iPKP 11 45 21 13780 Compression.
 PP 47 12
 PKS1 48 54
 PPP 49 50
 e 52 27
 SKKS 54 03
 PS 57 04
 PPS 58 25
 SS 12 03 52
 SSP 04 07
 LQ 18 27
 LR 24 35
 E M 38 -
 N M 38 -

Period = 17 secs.,
 Gr. dis. = 35 u
 Period = 18 secs.,
 Gr. dis. = 33 u.

Shillong ✓ ZNE iP 11 45 22
 e 56 02
 e 57 15

Hyderabad ✓ E i 11 45 49
 i 51 31
 i 52 37
 i 55 19
 e 55 56
 e 56 25
 e 12 01 20
 e 08 58
 M 15 22

Period = 18 secs.,
 Gr. dis. = 24 u

Port Blair ✓ E e 11 45 55
 e 48 36
 i 55 55
 e 12 01 52
 e 05 22
 e 09 36
 e 13 34
 M 19 22

Kodaikanal ✓ E i 11 45 58
 e 51 46
 e 55 04
 M 59 40

08 Shillong Z eP 16 22 20 Slight, local.
 08 Shillong Z eP 16 37 55 Slight, local.
 08 Shillong Z eP 17 51 00 Slight, near.
 Chatra Z eP 17 52 15 750 Feeble.
 S 53 34
 08 Madras E eP 18 10 22 290 Slight.
 PP 10 29
 iS, LR 10 55

DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
 h. m. s. km.

September, 1961.

08 Madras (Contd.) (Contd.) E i 18 10 59
 i 11 03
 i 11 09
 M 11 19
 Poona Z eP 18 12 00 Slight.
 Chatra Z eP 18 12 48 Feeble, distant.
 Shillong Z eP 18 13 09 Slight, distant.
 08 Shillong Z eP 23 14 14 Slight, distant.
 Chatra Z eP 23 16 33 Feeble, distant.
 09 Shillong Z iP 07 43 46 Slight, distant.
 Rarefaction.
 09 New Delhi Z eP 07 59 56 Slight.
 09 New Delhi Z eP 09 21 29 Slight, Compression.
 Shillong Z iP 09 22 05 Slight, distant.
 Compression.
 Chatra Z iP 09 22 15 Feeble, distant,
 Compression.
 09 New Delhi Z iP 09 25 03 Slight, Compression.
 09 Tocklai E iPg 11 01 34 90 Slight.
 iSg 01 44
 09 Shillong Z iP 11 58 35 Slight, distant.
 Compression.
 09 Shillong Z eP 13 59 53 220 Slight
 Sg 14 00 23
 09 Shillong Z eP 15 35 58 Slight, distant.
 09 New Delhi Z eP 19 30 31 Slight, Compression.
 Shillong Z eP 19 30 41 Slight, distant.
 09 Shillong Z i 22 18 07 Slight, Compression.
 10 New Delhi ENZ iP 05 04 09 Slight.
 Dehra Dun NE e 05 04 10 Tremorr
 Visakhapatnam NE e 05 04 20 Tremor.
 10 Chatra Z iP 05 04 21 Feeble, local.
 Rarefaction.
 10 Shillong Z iP 05 04 26 Slight, distant.
 Rarefaction.

DATE	STATION	COMPT.	PHASE	G h	M m	T s	△ km.	REMARKS
<u>September 1961</u>								
10	New Delhi	Z	iP	05	15	01		Tremor, Rarefaction
10	Shillong	Z	eP Sg	07	30 31	33 17	300	Slight.
	Tocklai	E	iPg Sg	07	30 31	59 05	50	Slight, First ground movement towards East
10	Tocklai	E	iP Pg LQ iS/LR SS/S* SSS/Sg	08	37 37 37 38 38 38	14 32 53 04 15 25	470	Moderate.
	Shillong	Z	iP	08	37	25		Slight, Rarefaction
10	Chatra	Z ZNE	iP S	08	38 39	05 27	790	Slight, Compression.
10	Chatra	Z	eP	10	24	27		Slight, distant. Rarefaction.
10	Shillong	Z	eP	11	49	32		Slight, distant.
10	Shillong	Z	iP	16	25	59		Slight, distant. Compression.
10	New Delhi	Z	e	16	36	04		Slight.
10	Shillong	Z	eP Sg	18	11 11	25 40	130	Slight.
10	Shillong	Z	iP	21	28	23		Slight, distant. Compression.
11	Shillong	Z	iP	02	57	54		Slight, distant. Compression.
11	Epc:- 28.1°N, 88.3°E, Tibet Nepal Border. - h = 23 Km. - H = 05h 20m 40.7s (USCGS) Felt at Gangtok.							
	Chatra	ZNE	iP S	05	21 21	03 23	170	Slight, Compression.
	Shillong	ZNE E	iP P* PP PPP	05	21 21 21 21	24 27 33 40	330	Slight, Rarefaction.
		NE E	iS S* SS Sg SSS		22 22 22 22 22	01 09 11 13 24		
	Tocklai	E	eP iS	05	22 23	06 03	530	

DATE	STATION	COMPT.	PHASE	G h	M m	T s	△ km.	REMARKS
<u>September, 1961.</u>								
11	New Delhi (Contd.)	Z	iP SS	05	23 26	01 54	1530	Slight, Compression.
	Poona	Z	eP	05	24	00		Slight.
	Visakhapatnam	NE E	e e e iS SS SSS M	05	25 25 25 25 26 26 26	06 13 20 49 03 13 24	1330	Slight.
	Dehra Dun	NE	e	05	25	24		Tremor.
11	Chatra	Z NE	iP S	05	28 29	45 05	170	Feeble.
11	Shillong	Z	eP S	05	29 29	05 42	330	Slight.
11	Shillong	Z	iP	11	43	51		Slight, distant. Rarefaction.
11	Chatra	Z	eP	11	44	27		Slight, distant.
11	New Delhi	N	i	11	52	38		
11	Shillong	Z	ePg Sg	16	33 33	16 23	60	Slight.
11	Tocklai	E	eP	18	10	49		Local, Tremor.
11	Shillong	Z	iP	20	06	58		Slight, distant. Compression.
11	Shillong	Z	eP Sg	20	37 37	27 47	150	Slight.
11	Shillong	Z	eP	21	12	49		Slight, near.
11	Shillong	Z	eP	21	56	24		Slight, distant.
11	Shillong	Z	iP Sg	22	30 30	29 59	220	Slight, Rarefaction.
11	Shillong	Z	eP	22	33	57		Slight, distant.
11	Shillong	Z	iPg Sg	22	50 50	19 30	90	Slight, Rarefaction.
11	Shillong	Z	iP	23	55	49		Slight, distant. Compression.
	Chatra	Z	iP	23	56	12		Slight, distant. Compression.
12	Chatra	Z	e	02	34	36		Very weak.
12	Shillong	Z	eP	05	00	35		Slight, distant.

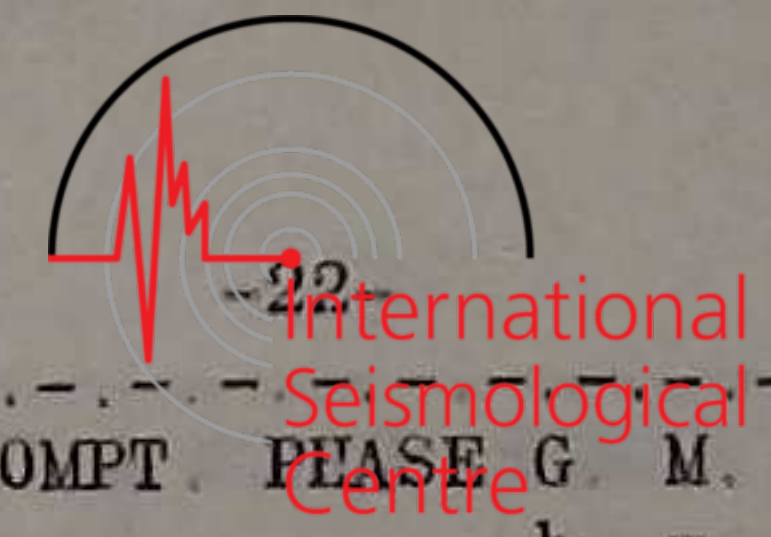
DATE	STATION	COMPT.	PHASE	G.	M.	T.	△	REMARKS
				h.	m.	s.	km.	
<u>September, 1961.</u>								
12	Shillong	Z	eP	06	25	17		Slight, local.
12	New Delhi	Z	iP	11	36	59		Tremor, Rarefaction.
12	Shillong	Z	iP	12	35	47		Slight, distant. Compression.
	Chatra	Z	eP	12	36	10		Slight, distant.
	New Delhi	Z	iP	12	36	49		Slight, Compression.
			i		36	57		
			i		37	02		
			i		37	12		
12	Chatra	Z	iP	15	28	37	180	Slight.
			S		28	55		
			Sg		28	57		
	Shillong	Z	iP	15	29	02		Slight, distant. Compression.
12	Shillong	Z	iP	16	09	35		Slight, distant. Rarefaction.
12	Poona	N	M	20	22	00		Slight.
	Madras	E	M	20	22	00		
	Bombay	E	M	20	30	00		
12	New Delhi	Z	iP	22	44	07	950	Slight.
			Pg		44	53		
			iS		45	46		
	Chatra	Z	eP	22	45	43		Slight, distant.
12	Shillong	Z	iP	23	24	52		Slight, distant. Rarefaction.
13	New Delhi	Z	iP	03	01	18		Slight.
			i		01	20		
13	Shillong	Z	iP	03	15	37		Slight, distant. Rarefaction.
	Chatra	Z	iP	03	16	08		Slight, distant. Compression.
	New Delhi	Z	iP	03	17	01		Slight, Compression.
			i		17	24		
			i		19	03		
13	New Delhi	Z	iP	03	24	11		Slight, Rarefaction.
			i		24	15		
			i		24	21		
13	New Delhi	Z	iP	06	25	05		Slight, Compression.
			i		25	09		
			i		25	21		



DATE	STATION	COMPT.	PHASE	G.	M.	T.	△	REMARKS
				h.	m.	s.	km.	
<u>September, 1961.</u>								
13	New Delhi	Z	eP	09	15	50		Slight.
13	New Delhi	Z	iP	11	31	15		Tremor, Rarefaction.
13	Shillong	Z	iP	12	34	00		Slight, distant. Compression.
13	New Delhi	Z	iP	12	47	07		Slight, Rarefaction.
	Shillong	Z	iP	12	49	03		Slight, distant. Compression.
13	New Delhi	Z	eP	14	11	08		Slight.
13	Shillong	Z	iP	14	12	10		Slight, distant. Compression.
	Chatra	Z	iP	14	12	24		Slight, distant. Rarefaction.
			i		14	44		
	New Delhi	Z	iP	14	13	15		Slight, Rarefaction.
		E	e		15	52		
		NZ	e		20	44		
	Dehra Dun	NE	e	14	13	40		Feeble.
			e		20	55		
13	Shillong	Z	iP	14	52	54		Slight, distant. Compression.
	Chatra	Z	iP	14	55	17		Slight, distant. Rarefaction.
13	New Delhi	EZ	iP	15	53	53		Slight, Initial ground motion towards West and Compression.
	Shillong	Z	iP	15	55	48		Slight, distant. Compression.
13	Madras	E	e	21	38	52		Slight.
	Poona	Z	iP	21	38	54		Tremor.
	Bombay	E	e	21	38	55		Slight, distant.
	Chatra	Z	iP	21	39	16		Slight, distant. Rarefaction.
	Shillong	Z	iP	21	39	17		Slight, distant. Rarefaction.
			i		40	00		
	Dehra Dun	NE	e	21	39	26		Tremor.
13	Shillong	Z	iP	23	25	10		Slight, distant. Compression.
	New Delhi	Z	iP	23	26	29		Tremor.

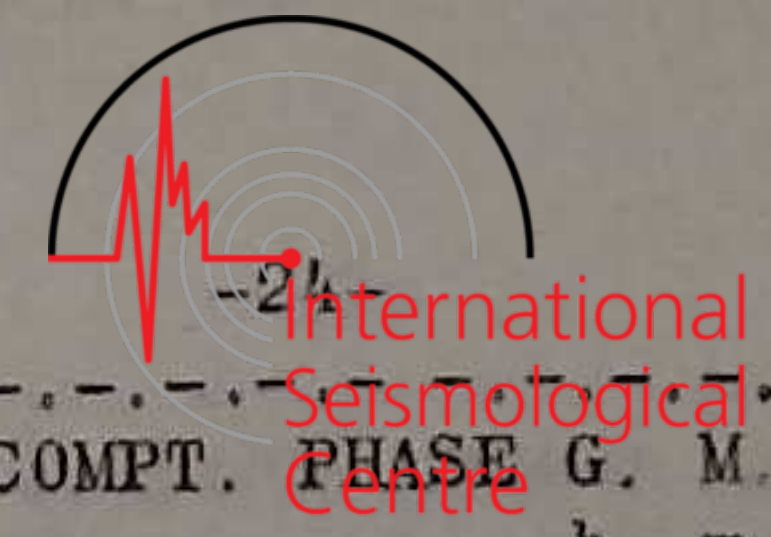
DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
14	New Delhi	Z	iP	01 42 25		Slight, Rarefaction
14	Chatra	Z	iPg Sg	01 52 25 52 35	90	Slight, Compression
14	Shillong	Z	eP Sg	03 59 57 04 00 08	90	Slight.
14	New Delhi	Z	iP	05 54 11		Slight, Rarefaction
14	New Delhi	Z	eP	06 54 01		Slight.
14	New Delhi	Z EZ	iP i	08 08 37 12 05		Slight, Rarefaction
	Chatra	Z	iP	08 09 59		Compression, Feeble distant.
	Shillong	Z	iP	08 10 29		Slight, distant. Compression.
	Dehra Dun	NE	e e	08 12 16 20 11		Feeble.
14	New Delhi	Z	eP	10 51 41		Slight.
14	New Delhi	Z	eP	10 56 23		Slight.
14	Shillong	Z	iP	11 41 25		Slight, distant. Compression.
14	Shillong	Z	eP Sg	16 31 48 32 07	150	Slight.
14	Shillong	Z	iP	18 23 08		Slight, distant. Compression.
14	Chatra	Z	eP	19 29 19		Slight, distant.
14	Shillong	Z	eP Sg	20 08 28 08 43	130	Slight.
14	Shillong	Z	iP	21 58 41		Slight, distant. Compression.
	Chatra	Z	iP	21 59 08		Slight, distant. Compression.
	New Delhi	Z	iP	21 59 56		Slight, Compression
14	Shillong	Z	iP Sg	23 24 51 25 13	160	Slight, Rarefaction
	New Delhi	Z	iP	23 27 26		Slight, Rarefaction

15 Epc:- 35.1°N, 33.9°E Cyprus
- h = 25 km., - H 01h 46m 08.4s (USCGS).



DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
15	New Delhi	ENZ	iP	01 53 17	4070	Moderate, Initial ground movement towards South, Compression.
	(contd.)	N	PP	54 40		
		ENZ	PPP	55 01		
			PcP	55 38		
			iS	59 00		
		EN	SS	02 01 30		
		ENZ	SSS	01 58		
		EN	LR	03 11		
	Bombay	NE	eP	01 53 29	4230	Slight.
			PPP	55 00		
			eS	59 23		
	Poona	E	iP	01 53 37	4270	Slight.
		N	PP	55 10		
			PPP	55 40		
			i	59 53		
			LQ	02 02 32		
			SSS	02 46		
			M	07 30		
	Hyderabad	E	eP	01 54 13	4700	Slight.
			PcP	55 54		
			iS	02 00 35		
			LQ	04 07		
			LR	06 24		
	Chatra	ZNE	iP	01 54 34	5030	
			S	02 01 15		
	Madras	E	eP	01 54 42		Slight.
			M	02 11 56		
	Shillong	Z	iP	01 55 04	5540	Slight, Compression.
		E	iS	02 02 14		
	Calcutta	E	i	02 02 03		Slight.
			e	04 04		
			e	12 31		
			e	17 31		
15	Chatra	Z	iP	04 51 43		Slight, distant. Compression.
	New Delhi	Z	iP	04 52 10		Slight, Compression.
15	Shillong	Z	eP Sg	08 47 44 48 16	230	Slight.
15	Shillong	Z	eP Sg	09 15 19 15 40	170	Slight.
15	Chatra	Z	iP	09 20 29		Slight, distant. Rarefaction.
15	Shillong	Z	eP Sg	10 38 11 38 43	230	Slight.
	Chatra	Z	iP S	10 39 11 40 29	740	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>September, 1961.</u>						
15	New Delhi	Z	iP	17 31 13		Slight, Compression
15	New Delhi	Z	iP	17 32 56		Slight, Rarefaction
15	Shillong	Z	iP	21 31 50		Slight, distant, Rarefaction.
	Chatra	Z	iP	21 32 19		Slight, distant, Compression.
	New Delhi	Z	iP	21 33 59		Slight, Compression
15	Chatra	ZN ZNE	iPg Sg	22 03 49 03 57	70	Slight, Compression
	Shillong	Z	eP	22 04 50		Slight, near.
16	Shillong	Z	iP	04 59 04		Slight, distant, Compression.
	Chatra	Z	iP	05 00 13		Slight, distant, Compression.
	New Delhi	Z	eP	05 01 09		Slight, Compression
16	New Delhi	Z	iP	09 11 07		Tremor, Rarefaction
16	Shillong	Z	iP	12 16 33		Slight, distant, Rarefaction.
	Chatra	Z	iP	12 17 36		Slight, distant, Rarefaction.
	New Delhi	Z	iP	12 18 19		Slight, Rarefaction
16	Shillong	Z	iP	12 21 15		Slight, distant, Rarefaction.
16	Shillong	Z	eP Sg	14 55 32 56 04	230	Slight.
16	New Delhi	Z	iP	15 41 28		Slight, Compression
16	Shillong	Z	ePg Sg	16 16 08 16 15	60	Slight.
16	Shillong	Z	eP Sg	19 45 27 45 51	180	Slight.
	New Delhi	Z	iP i	19 49 51 51 35		Slight, Rarefaction
16	New Delhi	Z	iP	20 21 08		Slight, Compression
16	New Delhi	Z	iP	20 23 30		Slight, Compression



DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>September, 1961.</u>						
16	New Delhi	Z	eP	21 23 10		Slight, Compression.
	Shillong	Z	iP	21 23 14		Slight, distant, Compression.
	Chatra	Z	e	21 23 34		Slight, distant.
17	Shillong	Z	iP	01 19 39		Slight, distant, Compression.
	Chatra	Z	iP	01 02 48		Slight, distant, Compression.
17	New Delhi	Z	eP	05 34 11		Slight.
17	Epc:- 23.9°N, 122.2°E, Off Coast of Formosa. -h = 35 Km. - H = 08h 41m 53.6s (USCGS).					
	Tocklai	E	eP e	08 47 24 49 04		Slight.
	Shillong	ZNE NE	iP eS i	08 47 40 52 20 52 36	3040	Moderate, Compression.
	Chatra	ZNE	iP PP PPP PcP S SS e M	08 48 21 49 23 49 44 51 12 53 29 55 09 56 23 59 -	3490	Compression, Slight.
	Visakhapatnam	E	eP e e e e	08 49 04 50 23 52 33 55 52 59 45 09 01 06		Moderate.
	New Delhi	EZ Z EN N EN N	iP i PPP iS SS LR	08 49 17 49 34 51 18 55 21 58 06 09 00 13	4230	Slight, Compression.
	Dehra Dun	NE N	eP PP iS SSS LR M	08 49 30 51 03 55 29 58 32 59 45 09 03 02	4320	Slight.
	Madras	E	e e e	08 49 42 51 29 52 06		Slight.

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

September, 1961.

17	Madras (Contd.)	E	e	08 56 19		
			e	09 00 34		
			e	02 40		
			M	07 32		
	Poona	Z	eP	08 50 12		Slight.
	Bombay	NE	eP	08 52 09	6660	Slight.
			eS	09 00 21		
	Hyderabad	E	i	08 59 48		Period = 15 secs Gr. dis. = 5 u
			M	09 06 24		
17	New Delhi	Z	eP	11 43 25		Slight.
			i	45 00		
17	Shillong	Z	iP	23 32 25		Slight, distant, Compression.
	Chatra	Z	e	23 32 48		Slight, distant.
	New Delhi	Z	iP	23 33 41		Slight, Rarefact
		EZ	i	34 03		
18	Shillong	Z	eP	00 01 16		Slight, distant.
18	Chatra	Z	e	00 01 23		Slight, distant.
18	New Delhi	Z	iP	05 16 35		Slight, Rarefact
18	Chatra	Z	iP	06 05 15		Slight, distant, Compression.
18	Shillong	Z	eP	06 34 50		Slight, distant.
	New Delhi	Z	eP	06 36 03		Slight.
18	Shillong	Z	eP	09 26 32		Slight.
	Chatra	Z	eP	09 27 02		Slight, distant.
18	Epc:- 40.8°N, 50.1°E, Caspian Sea. -h = 31 Km. - H = 11h 01m 00.08s (USCGS).					
	New Delhi	ENZ	iP	11 06 25	2780	Slight, initial movement towards West, Rarefaction
		EN	i	06 45		
		E	PP	07 02		
		EN	PPP	07 12		
		ENZ	iS	10 47		
		EZ	LQ	11 25		
		EN	SS	11 42		
		EZ	LR	12 18		
	Dehra Dun	NE	eP	11 06 28	2880	Slight.
		N	iS	10 56		
			LQ	11 33		
			SS	11 56		
			SSS	12 20		
			LR	13 13		
			M	14 57		

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

September, 1961.

18	Poona (Contd.)	Z	iP	11 07 13		Slight.
	Chatra	Z	iP	11 07 43		Slight, distant, Rarefaction.
			i	13 00		
	Visakhapatnam	E	e	11 08 08		Slight, distant.
	Shillong	Z	iP	11 08 15		Slight, distant, Compression.
	Tocklai	E	eP	11 08 24		Slight, near.
	Bombay	NE	e	11 12 18		Slight.
18	New Delhi	Z	iP	11 14 09		Slight, Rarefaction.
18	Shillong	Z	iP	11 32 30		Slight, distant, Rarefaction.
	Chatra	Z	eP	11 33 00		Slight, distant.
18	New Delhi	Z	iP	18 58 56		Slight, Rarefaction.
	Shillong	Z	iP	18 59 21		Slight, distant, Compression.
18	Shillong	Z	iP	19 10 47		Slight, distant, Compression.
19	Chatra	Z	iP	02 17 59		Slight, near, Compression.
19	Poona	Z	eP	02 44 07		Slight.
	Dehra Dun	Z	e	02 44 21		Tremor.
	New Delhi	EZ	iP	02 44 22		Slight, initial ground motion towards West and Rarefaction.
			i	47 10		
	Madras	E	iP	02 44 23		Slight.
			i	44 30		
	Chatra	Z	e	02 44 35		Slight.
		NE	e	47 00		
	Visakhapatnam	NE	eP	02 44 35		Slight, near and dist mixed shock.
			i	44 42		
			e	44 49		
			i	46 45		
		E	e	47 00		
			i	47 13		
19	Shillong	Z	eP	02 44 39		Slight, distant.
	Bombay	E	e	02 47 11		Slight.
		NE	e	50 02		
19	Chatra	Z	eP	02 54 27		Slight, local.



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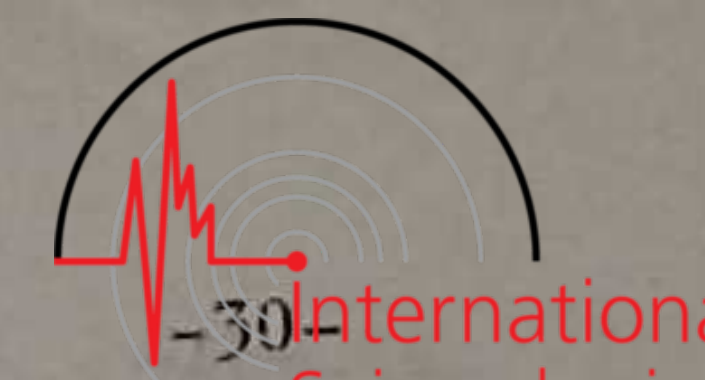
DATE	STATION	COMPT.	PHASE	G.	M.	T.	△ km.	REMARKS
				h.	m.	s.		
September, 1961.								
19	Hyderabad	E	M	02	57	21		Period = 9 sec Gr. dis. = 3
19	Shillong	Z	eP	06	19	05		Slight, near.
	Chatra	Z	iP	06	19	37		Slight, distant Compression.
	New Delhi	Z	eP	06	20	36		Slight.
19	New Delhi	Z	iP	08	42	36		Slight, Compression.
19	Chatra	Z	i	09	22	51		Slight.
			i		23	28		
19	Shillong	Z	eP	09	26	27		Slight, distant.
	Chatra	Z	eP	09	27	03		Slight, distant.
19	New Delhi	Z	iP	09	28	07		Slight, Compression.
19	New Delhi	N	e	09	35	27		
19	New Delhi	NZ ZN	iP e	09	40	48		Slight, initial motion towards and Rarefaction.
					48	27		
19	Chatra	Z	eP	09	49	32		Slight, distant.
	Poona	N	M	09	52	00		Slight.
19	New Delhi	Z	eP	10	05	33		Slight.
			e		08	45		
	Chatra	Z	eP	10	05	55		Slight, distant.
	Poona	Z	iP	10	05	59		Slight.
	Shillong	Z	iP	10	06	00		Slight, distant Compression.
19	Chatra	Z	i	10	51	50		
19	Shillong	Z	iP	13	52	06		Slight, distant Compression.
	Chatra	Z	iP	13	52	37		Slight, Rarefaction.
	New Delhi	Z	iP	13	53	43		Slight, Rarefaction.
			i		54	51		
19	Chatra	Z	eP	14	18	57		Slight, distant.
19	New Delhi	ENZ	iP	16	08	35		Slight, initial motion towards West, Rarefaction.
			i		09	01		
			i		10	13		
		EZ	i		11	08		

DATE	STATION	COMPT.	PHASE	G.	M.	T.	△ km.	REMARKS
				h.	m.	s.		
September, 1961.								
19	Dehra Dun	NE	e	16	10	15		Tremor.
(Contd.)	Chatra	Z	eP	16	10	49	1450	Slight.
	Poona	Z	eP	16	13	00		Slight.
	Shillong	Z	iP	19	24	53		Slight, Rarefaction, near.
19	New Delhi	Z	iP	20	10	44		Slight, Rarefaction.
	Chatra	Z	eP	20	11	55		Slight, distant.
19	New Delhi	Z	eP	21	53	28		Slight, Rarefaction.
	Chatra	Z	eP	21	53	35		Slight, distant.
	Shillong	Z	iP	21	53	40		Slight, distant Rarefaction.
19	New Delhi	Z	iP	22	43	27		Slight, Compression.
			i		44	07		
	New Delhi	Z	iP	22	52	11		Slight, Compression.
19	Shillong	Z	eP	23	48	27	240	Slight.
			Sg		49	02		
20	New Delhi	Z	eP	00	43	55		Slight, Compression.
20	New Delhi	Z	eP	01	30	41		Slight.
			i		31	01		
20	Chatra	Z	ePg	05	05	02	70	Slight.
			Sg		05	10		
20	Shillong	Z	eP	14	49	24	150	Slight.
			Sg		49	43		
20	Tocklai	E	iPg	16	24	51	40	Slight, Tremor.
			iSg		24	56		
20	New Delhi	Z	iP	16	58	42		Slight, Rarefaction.
			e		58	47		
20	Epc:- 3.6°S, 150.9°E, New Britain. -h = 30 Km., -H = 19h 03m 37.1s (USCGS) Mag:- 6½ (Berk).							
	Tocklai	E	e	19	14	03		
	Shillong	Z	iP	19	14	11	7080	Compression.
			iS		22	45		
	Port Blair	E	eP	19	14	17		
	Calcutta	E	eP	19	14	29	7440	
			e		14	54		
			e		16	31		

DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
h. m. s. km.

September, 1961.

DATE	STATION	COMPT.	PHASE	G.	M.	T.	Δ km.	REMARKS
20	Calcutta (Contd.)	E	eS	19	23	22		
			PS		23	51		
			e		26	29		
	Chatra	ZNE	iP	19	14	45	7590	Compression.
			PcP		14	59		
			PP		17	19		
			PPP		19	01		
			S		23	46		
			e		24	16		
	Visakhapatnam	NE	eP	19	14	51	7860	
		E	PP		17	35		
			PPP		19	16		
		NE	iS		24	05		
			PS		24	45		
			PPS		24	58		
		E	SS		28	46		
			SSS		31	49		
	Hyderabad	E	eP	19	14	57		
			e		24	22		
			LR		38	36		
			M		44	12		
	Madras	E	eP	19	15	04	8040	
			iS		24	28		
	New Delhi	EZ	iP	19	15	29	8630	Slight, initial motion towards Rarefaction.
			PT		18	24		
		ENZ	PPP		20	09		
			iS		25	21		
		EN	ScS		25	35		
		E	PS		25	59		
		EN	SS		30	16		
			SSS		33	31		
		N	LQ		36	15		
		EN	LR		39	33		
	Dehra Dun	NE	eP	19	15	30	8650	
		N	PP		18	25		
			iS		25	23		
			SS		28	51		
			SSS		33	30		
			LQ		36	08		
			M		46	41		
	Poona	Z	eP	19	15	40	8780	
		N	iS		25	39		
			ScS		25	49		
			PS		26	14		
			PPS		26	37		
			SS		30	41		
			SSS		33	59		
			LR		40	31		
			M		47	04		



DATE STATION COMPT. PHASE G. M. T. Δ REMARKS
h. m. s. km.

September, 1961.

DATE	STATION	COMPT.	PHASE	G.	M.	T.	Δ km.	REMARKS
20	Bombay (Contd.)	NE	e	19	16	09		
			e		25	47		
		E	e		26	09		
20	Chatra	Z	eP	19	43	01		
20	New Delhi	Z	iP	20	22	07		Slight, Rarefaction.
			i		24	06		
20	Shillong	Z	iP	21	30	10		Slight, distant. Compression.
21	Shillong	Z	eP	04	13	56	190	Slight.
			Sg		14	22		
	Chatra	Z	iP	04	14	58	720	Rarefaction, Slight.
			eS		16	14		
	Shillong	Z	iP	05	30	05		Slight, distant. Compression.
21	Shillong	Z	iP	06	03	35		Slight, distant.
21	New Delhi	Z	eP	07	21	13		Slight, Compression.
21	Shillong	Z	iP	07	57	45		Slight, distant. Compression.
21	Shillong	Z	ePg	10	03	08	110	Slight.
			Sg		03	20		
21	Chatra	Z	iP	17	06	12	120	Slight, Rarefaction.
		NE	eS		06	25		
	Shillong	Z	eP	12	06	56		Slight.
			S		07	56		
21	New Delhi	Z	iP	14	19	16		Slight, Rarefaction.
21	Port Blair	E	eP	15	41	44		Slight.
21	New Delhi	Z	eP	17	12	00	890	Slight.
			iS		13	32		
			i		14	41		
			i		15	17		
21	Dehra Dun	NE	e	17	12	53		Tremor.
21	Shillong	Z	eP	17	25	28		Slight, distant.
21	New Delhi	Z	iP	18	39	10		Slight, Rarefaction.
			i		39	19		
21	Shillong	Z	eP	18	47	31		Slight, distant.
			i		48	51		
21	Tocklai	E	e	19	47	24		Slight.
			e		47	44		

DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
22	Tocklai	E	iPg iSg SSS	05 50 37 50 44 51 12	60	Slight, initial movement toward
22	Kodaikanal	E	e	06 42 58		
22	Shillong	Z	eP	07 30 43		Slight, local.
22	Chatra	Z	ePg Sg	08 23 37 23 53	130	Slight, Rarefact
	Shillong	Z	eP i	08 24 14 25 01		Slight.
	Dehra Dun	NE	e	08 57 08		Tremor.
22	New Delhi	Z	iP i i	08 56 50 56 59 57 26		Slight, Rarefact
22	Shillong	Z	iP Sg	09 05 47 06 27	270	Slight, Compress
22	Chatra	Z	eP	14 23 24		Slight, distant.
22	Chatra	Z	eP S	18 43 47 44 06		Slight.
22	Tocklai	E	iP/P* Pg iS/S* Sg SSS	22 19 59 20 00 20 23 20 25 20 44	200	Slight.
	Chatra	Z	iP e	22 21 25 22 36	680	Slight, Rarefacti
22	New Delhi	Z	iP	23 25 52		Slight, Rarefacti
23	Shillong	Z	iP	03 08 34		Slight, Distant. Compression.
23	New Delhi	Z	iP	03 56 06		Slight, Rarefacti
23	New Delhi	Z	iP	07 00 31		Slight, Compressi
23	Shillong	Z	iP	08 00 51		Slight, distant. Compression.
23	Chatra	Z	iP P* PP(Pg) PPP LQ LR S S*	11 28 14 28 18 28 22 28 27 28 34 28 40 28 04 28 48	260	Slight, Rarefacti



DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
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September, 1961.						
23	New Delhi	Z	iP EZ E	11 42 58 44 42 44 54 46 16	1010	Slight, Rarefaction.
	Chatra	Z	eP e e	11 44 30 47 25 47 29		Slight, distant.
	Shillong	Z	eP	11 45 17		
23	Shillong	Z	ePg Sg	15 36 10 36 20	90	Slight.
23	Shillong	Z	eP Sg	20 59 12 59 51	270	Slight.
24	Shillong	Z	eP	05 51 17		Slight, distant.
24	Chatra	Z	iP S	05 52 24 53 42	760	Slight, Rarefaction.
24	Shillong	Z	eP	16 53 35		Slight, distant.
24	New Delhi	Z	iP	18 15 21		Slight, Compression.
24	New Delhi	Z	iP EN	19 23 44 27 13		Slight, Rarefaction.
	Shillong	Z	eP	19 23 47		Slight, distant.
24	Chatra	Z	eP	19 26 28		Slight, distant.
24	New Delhi	Z	eP iS	19 33 21 33 55	300	Slight.
24	Epc:- 33.3°N, 141.3°E, South of Honshu, Japan. - h = 93 Km. - H = 21h 40m 58.8s (USCGS).					
	Shillong	Z	iP	21 48 59		Slight, distant. Compression.
	Chatra	Z	iP	21 49 24		Slight, distant. Compression.
	New Delhi	Z	iP EN N EN N	21 50 17 50 17 57 49 57 57 22 00 01	5940	Slight, Compression.
	Dehra Dun	NE	eP e	21 50 37 57 37		Slight.
	Poona	Z	iP	21 51 10		Slight.
	Bombay	E	eP eS PPS	21 51 15 59 34 22 00 02	6790	Slight.



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DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
<u>September, 1961.</u>						
24	Shillong	Z	eP Sg	22 24 25 24 59	240	Slight.
25	New Delhi	Z	eP	01 42 13		Slight.
25	Shillong	Z	iP	02 39 07		Slight, distant. Compression.
	Chatra	Z	iP	02 39 14		Slight, distant. Rarefaction.
	New Delhi	Z	iP	02 39 18		Slight, Compression.
25	New Delhi	EN	e	05 54 04 55 02		Slight, distant.
		ENZ	i	57 48		
		Z	i	57 48		
25	Shillong	Z	eP	06 11 55		Slight, near.
	Chatra	Z	iP iS	06 12 30 13 09	350	Slight, Rarefact.
25	New Delhi	Z	iP	08 16 32		Slight, Rarefact.
25	Chatra	Z	iP eS	09 09 46 10 11	210	Slight, Compression.
25	Shillong	Z	iP	10 51 57		Slight, distant. Rarefaction.
	New Delhi	Z EN	eP e	10 53 11 57 43		Slight.
25	Shillong	Z	eP	14 31 18		Slight, near.
25	Shillong	Z	eP Sg	14 35 05 35 24	150	Slight.
25	New Delhi	Z	iP	14 55 06		Slight, Rarefact.
25	Shillong	Z	iP	16 39 33		Slight, distant. Compression.
25	New Delhi	Z	iP	21 22 15		Slight, Rarefact.
25	Shillong	Z	eP Sg	22 00 58 01 21	180	Slight.
26	Chatra	Z NZ	iPg Sg	04 09 29 09 41	100	Slight, Rarefact.
26	Shillong	Z	eP	04 11 12		Slight, distant.
	New Delhi	Z	iP	04 48 48		Slight, Compression.
26	New Delhi	Z	iP	11 41 30		Slight, Rarefact.
26	Shillong	Z	eP Sg	14 27 47 28 25	260	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
<u>September, 1961.</u>						
26	Chatra	Z	e	16 23 04		Slight.
26	New Delhi	Z	eP	16 40 34		Slight.
26	Shillong	Z	iP	18 37 52		Slight, distant. Compression.
26	New Delhi	Z ENZ E	iP iS e e	21 08 43 10 24 10 38 12 28	980	Slight, Rarefaction.
	Chatra	Z	iP S	21 10 03 12 42	1570	Slight.
	Shillong	Z	iP	21 10 44		Slight, distant. Compression.
26	Shillong	Z	eP Sg	23 35 53 36 09	130	Slight.
26	Chatra	Z	e	23 43 47		Slight.
27	Shillong	Z	eP Sg	00 41 13 41 47		Slight.
27	Chatra	Z NZ	iP S	01 40 25 40 45	150	Slight, Rarefaction.
27	New Delhi	Z	iP	01 47 25		Slight, Rarefaction.
27	Shillong	Z	iP	06 46 38		Slight, distant. Rarefaction.
27	Chatra	Z	eP	06 50 28		Slight, distant.
27	Poona	Z	eP	06 51 00		Tremor.
27	Shillong	Z	eP	11 32 32		Slight, distant.
	Chatra	Z	eP	11 32 42		Slight, distant.
	New Delhi	Z ENZ N	iP i e	11 32 58 33 03 43 23		Slight, Rarefaction.
27	Shillong	Z	eP Sg	12 02 30 02 44	120	Slight.
27	Shillong	Z	eP Sg	12 07 59 08 13	120	Slight.
27	New Delhi	Z	iP i i	12 26 15 27 47 33 11		Slight, Compression.
	Chatra	Z	iP	12 26 25		Slight, distant. Rarefaction.

DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	km.	REMARKS
September, 1961.						
27	Bombay	N	e	12 32 40		Slight, distant
		E	e	34 17		
			M	13 06 -		
	Dehra Dun	NE	e	12 33 21		Slight.
	Poona	N	M	13 00 00		Slight.
	Kodaikanal	E	e	13 00 19		
	Madras	E	e	13 00 44		
27	Epc:- 52.5°N, 168.7°W, Fox Island Aleutian Islands. -h = 42 Km. - H 1 19h 20m 48.6s (USCGS).					
	Shillong	Z	iP	19 32 30		Slight, distant Rarefaction.
	Chatra	Z	iP	19 32 41		Slight, distant Rarefaction.
	New Delhi	ENZ	iP	19 32 57		Slight, initial motion towards Compression.
	Poona	Z	iP	19 33 53		Slight.
27	Epc:- 52.2°N, 168.7°W, Fox Islands, Aleutian Islands. -h = 22 Km. - H = 19h 27m 00.7s (USCGS).					
	Shillong	Z	iP	19 38 46		Slight, distant Compression.
	Dehra Dun	NE	eP	19 39 10	9000	Slight.
			iS	49 19		
	New Delhi	Z	iP	19 39 14		Slight, distant
			i	49 30		
	Poona	Z	eP	19 40 07		Slight.
	Bombay	NE	e	19 51 02		Slight, distant
27	Shillong	Z	eP	20 18 39		Slight, distant
27	Shillong	Z	iP	21 13 03		Slight, distant Compression.
	Chatra	Z	iP	21 13 40		Compression, sl distant.
	New Delhi	Z	iP	21 14 47		Slight, Rarefac
		EN	i	20 55		
27	Shillong	Z	eP	21 23 27	290	Slight.
			Sg	24 09		
27	Shillong	Z	eP	21 44 50		Slight.



DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	km.	REMARKS
September, 1961.						
28	Epc:- 3.9°S, 102.0°E, Sumatra -h = 78 Km. - H = 01h 23m 59.6s (USCGS)					
	Madras	E	iP	01 29 44		Moderate, initial ground movement towards West.
			i	30 39		
			e	30 52		
	Shillong	Z	iP	01 30 12		Slight, distant. Compression.
	Tocklai	E	iP	01 30 16		Slight, initial ground movement towards East.
	Chatra	ZNE	iP	01 30 41	3660	Slight, Compression.
			PP	31 49		
			PPP	32 10		
			PcP	33 14		
			S	35 59		
			PcS	36 53		
			LQ	38 17		
			SSS	38 23		
			e	38 40		
			ScS	40 49		
			M	42 -		
	Poona	Z	iP	01 30 56	3900	Slight.
		N	eS	36 29		
	Bombay	NE	eP	01 31 06	4060	Slight.
		E	e	32 34		
			eS	36 49		
	New Delhi	ENZ	iP	01 31 32	4410	Slight, initial ground motion towards North, West, Compression.
			PP	33 07		
		Z	PPP	33 30		
		EZ	iS	37 36		
		E	i	37 53		
		EN	i	38 04		
			LQ	40 30		
			SSS	40 55		
		E	ScS	41 34		
		E	i	41 57		
	Dehra Dun	NE	eP	01 31 42	4460	Slight.
		N	PP	33 07		
			iS	37 49		
			SSS	41 17		
			e	42 38		
			LR	45 32		
28	Epc:- 30.5°N, 141.3°E, South of Honshu, Japan. -h = 125 Km. - H = 03h 24m 43.4s (USCGS).					
	Shillong	Z	iP	03 32 40		Slight, distant. Rarefaction.
	Chatra	Z	iP	03 33 11		Compression, Slight, distant.

DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
28	New Delhi (Contd.)	ENZ Z	iP i	03 34 06 37 53		Slight, initial motion towards Compression.
	Bombay	NE	eP eS PPS	03 34 59 43 26 43 56	6940	Slight.
		E N E	M M M	04 04 - 06 -		
	Dehra Dun	NE	e e	03 35 37 42 04		Slight.
28	Shillong	Z	iP	03 43 46		Slight, distant Compression.
	New Delhi	Z	iP	03 44 14		Slight, Compression.
28	Poona	N	e	04 00 00		Slight.
28	New Delhi	Z	iP	04 28 37		Slight, Rarefaction.
28	Epc:- 36.5°N, 70.7°E, Hindukush -h = 233 Km., -H = 05h 00m 43.0s (USCGS).					
	Dehra Dun	NE	e e	05 02 52 04 19		Feeble.
	New Delhi	ENZ	iP iS	05 02 54 04 33	950	Slight, First motion towards West. Rarefaction.
	Sehore	NE	eP PPP S SSS e	05 04 01 04 13 06 27 06 41 06 47	1430	Slight.
	Chatra	Z NE	iP S	05 04 31 07 37	1850	Slight, Compression.
	Poona	Z E	iP eS	05 04 43 08 02	2000	Slight.
	Bombay	E N NE	e e e	05 04 55 05 33 07 51		Slight, near.
	Visakhapatnam	NE	e e e	05 05 26 10 01 11 20		Slight.
	Madras	E	e	05 10 39		Slight, distant.
28	New Delhi	Z	iP iS	05 31 12 32 27	720	Slight, Rarefaction.



DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
28	Tocklai	E	iPg iSg	17 27 36 27 40	30	Slight.
	Chatra	Z	iP S	17 28 04 28 51	430	Slight, Rarefaction.
28	Bombay	E	e e	22 40 23 43 35		Slight.
28	New Delhi	ENZ	eP PP iS	22 40 29 40 45 43 55	2030	Slight.
	Poona	Z	iP	22 40 42		Slight.
	Dehra Dun	NE	e e	22 40 55 44 10		Feeble.
	Chatra	Z	iP	22 42 04		Slight, distant. Rarefaction.
29	Shillong	Z	iP	03 14 19		Slight, distant. Rarefaction.
29	Chatra	ZNE	iP	05 32 32		Slight, distant.
29	Port Blair	N	ePg eSg	07 31 23 31 29	50	Slight.
29	New Delhi	Z	iP	08 38 51		Slight, Compression.
29	Epc:- 13.8°N, 94.0°E, Andaman Islands. -h = 133 Km. -H = 08h 45m 26.9s (USCGS) -H = 14°N, 93°E, 08h 45m 35s (Shillong).					
	Visakhapatnam	NE	eP PP PPP iS SS SSS	08 47 57 48 03 48 12 49 47 50 02 50 15	1070	Slight.
	Shillong	Z	iP	08 48 10		Slight, distant. Compression.
	Madras	E	iP PP PPP LQ iS SS SSS LR M	08 48 31 48 37 48 44 50 41 50 50 51 04 51 12 51 16 52 27	1370	Slight, initial group motion towards East.
	Chatra	Z	iP PP PPP	08 48 47 48 57 49 05	1500	Slight, Compression.

DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
29	Chatra (Contd.) (Contd.)	Z	LQ S SS SSS M	08 51 14 51 19 51 37 51 47 53 -		
	Poona	Z	iP iS	08 49 52 53 17	2060	Slight.
	Bombay	E NE	eP eS LQ	08 50 09 53 44 54 03	2170	Slight.
	New Delhi	Z ENZ	iP i i iS	08 50 10 50 12 50 21 54 01	2360	Slight, Compression
	Sehore	NE	iP	08 52 54		Slight, distant
	Dehra Dun	NE	e	08 54 10		Feeble.
	Madras	E	e e e e	09 00 38 01 12 01 32 01 46		Slight, near.
29	Shillong	Z	eP	14 05 46		Slight, distant
	Chatra	Z	eP S	14 06 25 08 56	1470	Slight.
29	Epc:- 42.9°N, 145.4°E Near East Coast of Hokkaido, Japan. -h = 37 Km. - H = 16h 50m 32.9s (USCGS).					
	Shillong	Z	iP	16 59 01		Slight, distant Compression.
	Chatra	Z	iP	16 59 24		Slight, distant
	Poona	Z	iP	17 01 08		Tremor.
	New Delhi	ENZ Z	iP i i iS	17 00 09 00 20 00 35 07 59	6250	Slight, initial motion towards West, Compression
29	Shillong	Z	iP	17 37 41		Slight, distant Rarefaction.
29	New Delhi	Z	iP i	18 26 41 27 43		Slight, Rarefac
29	New Delhi	Z	iP	18 42 20		Slight, Compression

29 Epc:- 0.5°N, 122.4°E, Northern Celebes.
- h = 110 Km. - H = 19h 06m 13.4s (USCGS).



DATE	STATION	COMPT.	PHASE	G. M. T. h. m. s.	△ km.	REMARKS
September, 1961.						
29	Chatra (Contd.)	Z	iP	19 13 02		Slight, distant. Compression.
	Calcutta	E	e e e i	19 13 16 14 05 15 28 19 36		Slight.
	Tocklai	E	iP	19 13 21		Slight, initial ground movement towards East.
	Visakhapatnam	NE	iP PP PPP iS SS SSS	19 13 53 15 35 16 10 20 14 23 23 24 17	4890	Moderate, initial ground movement towards South and East.
	Madras	E	iP i e PP e iS PS e SS LQ LR M	19 14 08 14 36 15 48 16 03 16 30 20 35 21 07 21 42 23 51 24 05 26 22 29 02	4900	Moderate, initial ground movement towards West.
	Hyderabad	NE E	iP i PP PPP	19 14 31 15 01 16 15 16 43	5280	Slight.
		EN E	iS PS SS M	21 15 21 34 24 46 30 16		Period = 8 sec., Gr. dis. = 3 u.
	Sehore	NE	eP	19 14 53		Slight, distant.
	Poona	Z N	iP i	19 15 02 22 15		Moderate.
	New Delhi	ENZ EN	iP i i	19 15 06 15 34 17 35	5780	Slight, First ground motion towards North West, Compression.
		ENZ EN	iS PS	22 17 22 25		
		E EN E EN	ScS SS SSS LR	24 50 25 49 27 19 29 52		

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

September, 1961.

29	Dehra Dun (Contd.)	NE N	eP PPP iS SS SSS LQ M	19 15 10 18 02 22 22 25 53 27 05 29 28 34 14	5790	Slight.
	Bombay	NE E	eP i e e	19 15 12 15 42 17 44 18 50	5820	Moderate.
		NE NE E	iS PS i e	22 26 22 56 23 40 25 25		
29	Epc:- 28.2°N, 87.9°E Southern Tibet. -h = 76 Km. - H = 22h 36m 25.2s (USCGS) Felt at Darjeeling, Jalpaiguri, Gangtok.					
	Chatra	ZNE	iP PP PPP S	22 36 53 37 00 37 07 37 13	160	Slight, Compr
	Shillong	Z	iP iS	22 37 19 38 05	420	Slight.
	Calcutta	EN	iP iS	22 37 48 38 47	550	Slight.
	Tocklai	E	iP iS M	22 37 51 38 48 39 15	530	Moderate.
	Dehra Dun	Z N	eP LQ iS SS&LR SSS M	22 38 34 39 54 40 05 40 17 40 28 40 57	880	Slight.
	New Delhi	EZ E	iP PPP LQ	22 38 37 38 53 40 05	980	Moderate, First motion Westward Compression.
		EZ EN	iS SSS	40 18 40 41		
	Sehore	NE E	iP LQ S SS	22 38 57 40 52 40 56 41 08	1170	Slight.
	Visakhapatnam	NE	e iS i i	22 39 04 40 57 41 12 41 28		Slight.



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

September, 1961.

29	Poona (Contd.)	Z	iP iS	22 40 04 42 54	1690	Moderate.
	Bombay	E NE	e e e	22 40 07 43 17 45 25		Slight.
	Madras	E	eP PPP LQ iS e SS LR M	22 40 15 40 32 43 06 43 10 43 24 43 31 43 54 45 27	1740	Slight.
30	New Delhi	Z	iP	00 31 10		Slight, Compression.
30	Chatra	Z	iP	01 43 18		Compression, Slight, distant.
	New Delhi	Z	eP	01 44 27		
30	Shillong	Z	eP	04 25 18		Slight, near.
30	Chatra	Z	iP	13 21 40		Slight, distant. Rarefaction.
	New Delhi	Z	iP	13 22 29		Slight, Compression.
30	New Delhi	Z	iP i	16 51 07 52 15		Slight, Compression.
30	New Delhi	Z	eP	20 48 15		Slight, Compression.
30	Shillong	Z	eP	21 46 54		Slight, near.
	Chatra	Z	eP S	21 47 34 48 29	520	Slight.
30	New Delhi	Z	iP i	22 21 11 21 21		Slight, Rarefaction.

Earthquake Reports
(Non-Instrumental Reports)

The following is the list of earthquakes that are reported by the voluntary observers from different stations during the month of September, 1961.

Place at which felt.	Date in G. M. T.	Time in G. M. T. h. m.	No. of Shocks	Duration of shock in sec.	Intensity in R.F. Scale	Remarks
Gangtok (Sikkim)	11.9.61	05 26	One	6 sec.	IV	South to North.
Bagdogra	29.9.61	22 37	Three	40 secs.	IV	-
Gangtok (Sikkim)	29.9.61	22 37	One	6 sec.	IV	-
Lachen (N.Sikkim)	29.9.61	22 38	Two	35 secs.	IV	-

MICROSEISMIC TABULATION



Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
G.M.T.					G.M.T.				

Station : Shillong September, 1961 Component : E-W.

01	00	...	-	-	12	00	1	0.4	4.8
	06	...	-	-		03	1	0.5	5.0
	12	...	-	-		06	1	0.7	5.2
	18	...	-	-		09	1	0.8	5.1
						12	1	0.7	5.0
02	00	...	-	-		15	1	0.6	5.0
	06	3	0.2	4.4		18	1	0.6	4.9
	12	...	-	-		21	1	0.5	5.0
	18	3	0.2	4.8					
					13	00	1	0.5	5.0
03	00	3	0.2	4.6		06	1	0.5	4.8
	06	3	0.2	4.7		12	1	0.5	5.0
	12	3	0.3	5.0		18	1	0.5	4.9
	18	3	0.2	4.6					
					14	00	1	0.5	5.0
04	00	3	0.2	4.7		06	3	0.7	5.2
	06	3	0.2	4.6		12	3	0.6	5.0
	12	3	0.3	4.9		18	3	0.5	5.0
	18	3	0.3	4.8					
					15	00	3	0.5	5.1
05	00	3	0.2	4.6		06	3	0.5	5.0
	06	3	0.2	4.7		12	3	0.5	4.8
	12	...	-	-		18	3	0.4	5.0
	18	3	0.3	5.0					
					16	00	3	0.4	5.0
06	00	3	0.3	4.9		06	...	-	-
	06	3	0.3	5.1		12	1	0.5	5.1
	12	3	0.3	5.0		18	1	0.4	5.2
	18	3	0.3	4.8					
					17	00	1	0.4	5.0
07	00	3	0.3	4.7		06	3	0.2	4.1
	06	3	0.2	4.5		12	3	0.2	4.0
	12	3	0.3	4.7		18	3	0.3	4.2
	18	3	0.3	4.6					
					18	00	3	0.3	4.3
08	00	3	0.3	4.7		06	1	0.5	5.1
	06	...	-	-		12	1	0.4	5.0
	12	3	0.2	4.7		18	1	0.3	4.8
	18	3	0.3	4.8					
					19	00	3	0.3	4.6
09	00	3	0.3	4.7		06	3	0.3	4.4
	06	1	0.3	4.7		12	3	0.3	4.7
	12	1	0.3	5.0		18	3	0.2	4.3
	18	1	0.3	5.0					
					20	00	3	0.2	4.0
10	00	1	0.3	4.8		06	...	-	-
	06	1	0.3	4.7		12	0,0	-	-
	12	1	0.2	4.5		18	0,0	-	-
	18	1	0.3	4.7					
					21	00	0,0	-	-
11	00	1	0.3	4.8		06	3	0.2	4.1
	06	1	0.3	4.7		12	3	0.2	4.0
	12	1	0.3	4.8		18	3	0.2	3.8
	18	1	0.4	5.0					

Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
G.M.T.					G.M.T.				

Station : Shillong September, 1961 Component : E-W.

22	00	3	0.2	3.7	02	00	3	1.2	3.5
	06	1	0.2	3.8		06	3	1.0	2.3
	12	0,0	-	-		12	3	1.5	3.5
	18	1	0.2	3.6		18	3	0.9	2.0
23	00	3	0.2	3.5		12	3	1.5	3.7
	06	...	-	-		18	3	1.0	1.8
	12	3	0.2	3.5					
	18	3	0.2	3.4					
					03	00	3	1.4	3.3
24	00	1	0.3	3.7		06	...	-	-
	06	1	0.3	3.6		12	3	1.5	3.4
	12	1	0.3	3.5		18	3	0.9	2.2
	18	1	0.2	3.3					
25	00	0,0	-	-		18	3	1.6	3.2
	06	...	-	-				1.0	1.8
	12	...	-	-	04	00	3	1.6	3.4
	18	...	-	-		06	...	-	-
						12	3	1.3	3.6
26	00	...	-	-		18	3	0.8	2.0
	06	0,0	-	-				1.5	3.5
	12	3	0.2	4.2		18	3	1.5	2.2
	18	3	0.2	4.0				1.0	
					05	00	3	1.1	3.8
27	00	3	0.2	4.0		06	...	-	-
	06	1	0.3	4.7		12	...	-	-
	12	1	0.4	5.0		18	...	-	-
	18	1	0.4	5.0					
					06	00	...	-	-
28	00	1	0.4	5.2		06	...	-	-
	06	...	-	-		12	...	-	-
	12	...	-	-		18	3	1.7	3.7
	18	...	-	-				0.9	2.0
					07	00	3	1.3	3.0
29	00	...	-	-		06	...	-	-
	06	...	-	-		12	3	1.3	3.5
	12	...	-	-		18	3	0.8	2.2
	18	...	-	-				1.7	3.8
								0.8	2.3
					08	00	3	1.8	3.8
						06	3	0.7	2.3
30	00	...	-	-		12	...	-	-
	06	...	-	-		18	3	1.4	3.7
	12	...	-	-				0.7	2.0
	18	...	-	-				1.6	3.7
								0.7	2.2
					01	00	3	1.4	3.5
						06	3	0.6	2.2
								1.2	3.7
								0.9	2.2
								1.5	3.6
								0.9	2.3
								1.3	3.1
								0.7	2.3

Station : Bombay (Colaba)



Date Hour K Mean Mean Date Hour K Mean
 G.M.T. amplitude period G.M.T. amplitude
 in m.m. in sec. in m.m.

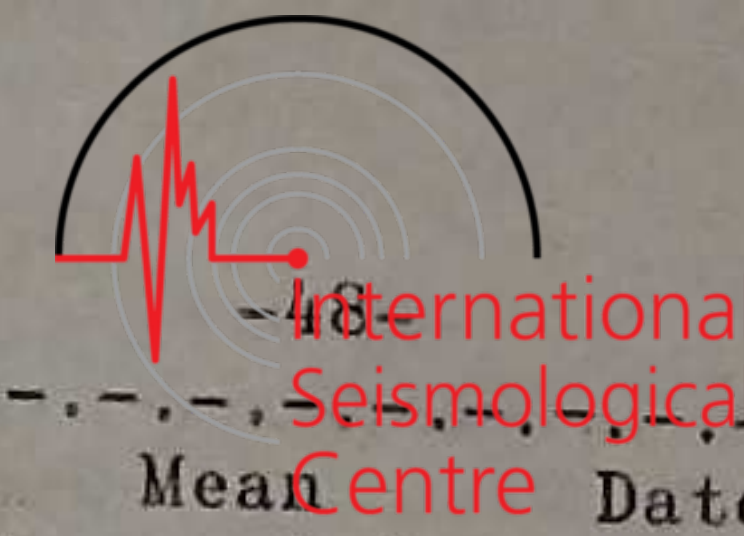
Station : Bombay (Colaba) September, 1961 Component : E-W.

Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
09	00	3	1.7	3.8	17	00	3	1.7	3.9
			0.9	2.0				0.7	2.4
	06	...	-	-		06	...	-	-
	12	...	-	-		12	3	1.8	3.8
	18	...	-	-		18	3	0.8	2.0
10	00	...	-	-		18	3	1.5	4.0
	06	...	-	-				0.6	2.0
	12	...	-	-	18	00	3	1.4	4.2
	18	...	-	-				0.7	2.3
11	00	...	-	-		06	...	-	-
	06	...	-	-		12	...	-	-
	12	...	-	-		18	...	-	-
	18	...	-	-	19	00	...	-	-
12	00	...	-	-		06	...	-	-
	06	...	-	-		12	...	-	-
	12	...	-	-		18	...	-	-
	18	...	-	-	20	00	...	-	-
13	00	...	-	-		06	...	0	-
	06	3	1.3	4.3		12	3	0.8	4.5
			0.7	2.2				0.4	2.0
	12	3	1.5	4.0		18	3	0.6	4.1
			0.6	2.0				0.4	2.3
	18	3	1.3	4.0	21	00	3	0.6	4.4
			0.7	2.0				0.4	1.8
14	00	3	1.6	3.8		06	3	0.8	4.1
			0.6	2.0				0.5	2.2
	06	3	1.2	4.0		12	3	0.8	4.3
			0.8	2.0				0.5	2.0
	12	3	1.5	3.9		18	3	0.8	4.1
			0.6	2.2				0.5	2.2
	18	3	1.3	3.7	22	00	3	0.7	4.5
			0.7	1.9				0.5	2.0
15	00	3	1.5	3.8		06	3	0.6	4.1
			0.8	1.8				0.4	2.2
	06	3	1.5	3.7		12	3	0.6	4.2
			0.7	2.3				0.3	2.0
	12	3	1.8	3.7		18	3	0.6	4.1
			0.7	1.8				0.3	2.0
	18	3	1.6	4.1	23	00	3	0.7	4.1
			0.9	2.0				0.2	2.0
16	00	3	1.7	4.0		06	2	0.8	4.0
			0.9	2.5				0.8	4.3
	06	3	1.7	3.9		12	2	0.8	4.0
			0.7	2.0		18	2	0.7	4.0
	12	3	1.8	4.2	24	00	2	0.6	4.2
			0.6	2.3				0.8	4.0
	18	3	1.6	4.0		06	2	0.8	4.2
			0.6	2.1				0.8	4.3
						12	2	0.8	4.3
						18	3	0.8	2.3
								0.3	

Date Hour K Mean Mean Date Hour K Mean Mean
 G.M.T. amplitude period G.M.T. amplitude period
 in m.m. in sec. in m.m. in sec.

Station : Bombay (Colaba) September, 1961 Component : E-W.

Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
25	00	3	0.6	4.1	01	00	3	0.3	2.6
			0.2	2.3		03	1	0.5	2.6
	06	3	0.6	3.9		06	1	0.6	2.6
			0.3	2.4		12	1	0.5	2.7
	12	3	0.6	3.9		18	1	0.5	2.7
			0.5	1.8					
	18	...	-	-	26	00	...	-	-
26	00	...	-	-		06	...	-	-
	06	...	-	-		12	3	1.2	3.1
	12	3	1.2	3.1				0.6	1.7
			0.6	1.7		18	3	1.3	3.1
	18	3	1.3	3.1				0.6	1.8
			0.6	1.8	27	00	3	1.2	3.2
27	00	3	1.2	3.2				0.7	1.8
			0.7	1.8		06	3	1.2	3.3
	06	3	1.2	3.3				0.7	1.8
			0.7	1.8		12	3	1.2	3.0
	12	3	1.2	3.0				0.6	1.8
			0.6	1.8		18	3	1.2	3.4
	18	3	1.2	3.4				0.4	1.7
			0.4	1.7	28	00	3	1.3	3.7
28	00	3	1.3	3.7				0.5	1.8
			0.5	1.8		06	3	1.3	3.7
	06	3	1.3	3.7				0.5	2.0
			0.5	2.0		12	3	1.4	3.9
	12	3	1.4	3.9				0.5	1.9
			0.5	1.9		18	3	1.4	3.8
	18	3	1.4	3.8				0.4	1.8
			0.4	1.8	29	00	3	1.2	3.8
29	00	3	1.2	3.8				0.6	1.7
			0.6	1.7		06	3	1.1	3.7
	06	3	1.1	3.7				0.6	2.0
			0.6	2.0		12	3	1.0	3.9
	12	3	1.0	3.9				0.4	1.8
			0.4	1.8		18	3	1.0	3.7
	18	3	1.0	3.7				0.4	1.7
			0.4	1.7	30	00	3	0.8	4.1
30	00	3	0.8	4.1				0.4	2.0
			0.4	2.0		06	3	1.0	3.5
	06	3	1.0	3.5				0.4	2.0
			0.4	2.0		12	...	-	-
	12	...	-	-		18	3	0.6	3.8
	18	3	0.6	3.8				0.4	2.0
			0.4	2.0	06	00	3	0.6	3.9
06	00	3	0.6	3.9				0.4	2.6
			0.4	2.6		03	3	0.7	4.0
	03	3	0.7	4.0				0.4	2.8
			0.4	2.8		06	3	0.7	3.9
	06	3	0.7	3.9				0.3	2.7
			0.3	2.7		12	3	0.6	3.8
	12	3	0.6	3.8				0.4	2.7
			0.4	2.7		18	3	0.6	3.9
	18	3	0.6	3.9				0.4	2.8
			0.4	2.8					



Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
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Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
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Station : Madras September, 1961 Component : E-W.

Station : Madras September, 1961 Component : E-W.

07	00	3	0.7	4.0	13	00	3	0.5	3.6
		3	0.4	2.7			3	0.4	1.4
	03	3	0.7	4.2		03	3	0.7	3.7
		3	0.3	2.5			3	0.4	2.7
	06	3	0.7	3.8			3	0.1	1.5
		3	0.4	2.8		06	3	0.4	2.9
	12	3	0.6	3.8		12	3	0.6	3.7
		3	0.4	2.9			3	0.6	2.9
	18	3	0.6	4.0		18	3	0.7	3.8
		3	0.5	2.8					
					14	00	3	0.5	3.6
08	00	3	0.5	2.8		03	3	0.6	3.5
	03	3	0.6	3.9		06	1	0.7	3.2
		3	0.5	2.8		12	1	0.7	3.3
	06	3	0.7	3.8		18	1	0.7	3.4
	12	...	-	-					
	18	3	0.5	3.9	15	00	3	0.7	3.4
						03	3	0.6	3.4
09	00	3	0.4	3.9		06	3	0.6	3.4
	03	3	0.4	3.9		12	3	0.7	3.5
	06	3	0.5	4.0		18	3	0.7	3.5
	12	3	0.5	4.1			3	0.5	2.9
	18	...	-	-					
					16	00	3	0.7	3.6
10	00	3	0.5	3.8			3	0.5	2.8
	03	3	0.6	3.9		03	1	0.9	3.8
		3	0.5	2.7		06	1	0.9	3.8
	06	3	0.7	4.0		12	1	0.9	3.7
		3	0.5	2.7		18	1	0.9	3.7
	12	3	0.7	3.9					
		3	0.5	2.8	17	00	1	0.9	3.9
	18	3	0.7	3.8		03	1	0.8	3.9
		3	0.5	3.0		06	1	0.8	3.9
						12	1	0.8	4.0
11	00	3	0.6	4.0		18	1	0.8	4.2
		3	0.3	2.7					
	03	3	0.7	4.0	18	00	1	0.9	4.3
		3	0.4	2.7		03	1	0.8	4.2
	06	3	0.7	3.9		06	3	0.7	4.3
		3	0.3	2.6		12	3	0.6	4.2
	12	3	0.6	3.9		18	3	0.7	4.3
		3	0.3	2.4					
	18	3	0.7	4.0	19	00	3	0.3	1.9
		3	0.3	2.4		03	3	0.3	2.3
						06	3	0.3	2.3
12	00	3	0.6	3.8		12	3	0.3	2.7
		3	0.3	2.6			3	0.3	2.7
		3	0.1	2.0		18	3	0.4	3.7
	03	3	0.6	3.7			3	0.3	2.8
		3	0.4	2.7			3	0.4	3.6
	06	3	0.5	3.7	20	00	3	0.3	2.1
		3	0.4	2.6		03	...	-	-
						06	3	0.3	-
	12	3	0.6	3.8		12	3	0.3	2.3
		3	0.4	2.7		18	3	0.3	2.6
	18	3	0.7	3.7			3	0.4	2.7
		3	0.3	2.6					

21	00	3	0.4	2.9	28	06	3	0.7	3.5
	03	1	0.5	2.4	(Contd.)	12	1	0.7	3.6
	06	1	0.5	2.9		18	1	0.7	3.7
	12	1	0.6	2.9			3	0.2	1.7
	18	1	0.5	2.7					
					29	00	1	0.7	3.6
22	00	1	0.5	2.8		03	1	0.7	3.4
	03	1	0.5	2.9		06	3	0.7	3.7
	06	1	0.5	2.8		12	3	0.7	3.6
	12	1	0.5	2.8		18	3	0.6	3.9
	18	1	0.4	2.9					
					30	00	3	0.6	3.6
23	00	1	0.4	2.8			3	0.5	2.9
	03	1	0.4	2.8		03	3	0.5	3.1
	06	3	0.3	2.7			3	0.6	3.6
	12	...	-	-		06	3	0.5	2.8
	18	...	-	-			3	0.5	3.5
						12	3	0.5	3.0
							3	0.6	3.6
24	00	...	-	-		18	3	0.5	3.0
	03	3	0.3	2.8			3	0.6	3.6
	06	...	-	-					
	12	3	0.4	2.9					
	18	3	0.4	3.1					
		3	0.3	2.3					
		3	0.1	1.3					
					Station : Port Blair.				
25	00	1	0.5	3.1	01	00	3	0.4	7.2
		3	0.1	1.4		06	...	-	-
	03	1	0.6	2.9		12	3	0.4	7.2
	06	1	0.6	2.9		18	3	0.4	7.2
	12	1	0.5	2.9	02	00	3	0.4	7.2
	18	1	0.6	3.1		06	...	-	-
						12	...	-	-
26	00	1	0.6	3.1		18	...	-	-
		1	0.5	2.6					
	03	1	0.6	3.1	03	00	...	-	-
		1	0.5	2.6		06	...	-	-
	06	1	0.7	3.0		12	3	0.4	7.2
	12	1	0.8	2.9		18	3	0.4	7.2
	18	1	0.7	3.0					
		1	0.5	2.6	04	00	3	0.4	7.2
						06	0,0	-	-
27	00	1	0.6	3.1		12	0,0	-	-
		1	0.5	2.7		18	0,0	-	-
	03	1	0.6	2.8					
		1	0.7	3.5	05	00	0,0	-	-
	06	1	0.5	2.9		06	...	-	-
		3	0.5	3.4		12	0,0	-	-
	12	1	0.7	2.9		18	0,0	-	-
		3	0.7	3.5					
	18	1	0.7	2.9	06	00	0,0	-	-
		3	0.6	3.3		06	...	-	-
						12	3	0.4	7.5
28	00	3	0.5	3.1		18	3	0.4	7.3
		3	0.5	3.5					
	03	3	0.4	2.8	07	00	3	0.4	7.2
		3	0.6	3.5		06	...	-	-
						12	...	-	-
						18	3	0.4	7.2

Date	Hour	K	Mean amplitude in micron	Mean period in sec.	Date	Hour	K	Mean amplitude in micron	Mean period in sec.
					Station : Port Blair				

Station : Port Blair

September, 1961

Component : E-W.

08	00	3	0.4	7.2	19	00	3	1.2	7.2
	06	0,0	-	-		06	...	-	-
	12	0,0	-	-		12	3	0.8	7.2
	18	0,0	-	-		18	3	0.8	7.2
09	00	0,0	-	-	20	00	3	0.8	7.2
	06	3	0.4	3.2		06	0,0	-	-
	12	3	0.4	3.2		12	0,0	-	-
	18	3	0.4	3.2		18	0,0	-	-
10	00	3	0.4	3.2	21	00	0,0	-	-
	06	2	0.8	3.3		06	...	-	-
	12	...	-	-		12	0,0	-	-
	18	2	1.2	3.4		18	0,0	-	-
11	00	2	1.2	3.3	22	00	0,0	-	-
	06	2	1.2	3.2		06	0,0	-	-
	12	2	1.2	3.2		12	0,0	-	-
	18	2	1.2	3.4		18	0,0	-	-
12	00	2	1.2	3.3	23	00	0,0	-	-
	06	...	-	-		06	...	-	-
	12	3	0.8	3.4		12	3	0.4	3.3
	18	3	0.8	3.3		18	3	0.4	3.2
13	00	3	0.8	3.2	24	00	3	0.4	3.2
	06	3	0.4	3.2		06	...	-	-
	12	3	0.4	3.2		12	3	0.4	3.2
	18	3	0.4	3.2		18	3	0.4	3.2
14	00	3	0.4	3.2	25	00	3	0.4	3.2
	06	3	0.4	3.2		06	...	-	-
	12	3	0.4	3.3		12	...	-	-
	18	3	0.4	3.2		18	...	-	-
15	00	3	0.4	3.2	26	00	...	-	-
	06	3	0.4	3.2		06	...	-	-
	12	3	0.4	3.2		12	3	0.8	3.3
	18	3	0.4	3.2		18	3	0.8	3.3
16	00	3	0.4	3.2	27	00	3	0.8	3.4
	06	...	-	-		06	...	-	-
	12	3	0.4	7.2		12	3	0.8	3.4
	18	3	0.4	7.2		18	3	0.4	3.2
17	00	3	0.4	7.2	28	00	3	0.4	3.2
	06	3	0.8	7.5		06	3	0.4	3.2
	12	3	1.2	7.3		12	2	0.4	3.2
	18	3	1.2	7.2		18	2	0.4	3.3
18	00	...	-	-	29	00	2	0.4	3.3
	06	...	-	-		06	...	-	-
	12	...	-	-		12	...	-	-
	18	3	1.2	7.2		18	...	-	-
					30	00	...	-	-
						06	0,0	-	-
						12	0,0	-	-
						18	...	-	-

Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour	K	Mean amplitude in m.m.	Mean period in sec.
					Station Visakhapatnam				

Station Visakhapatnam

September, 1961

Component : E-W.

01	00	2	0.5	3.4	12	00	1	0.6	3.9
	06	1	0.7	3.2		06	1	0.7	3.6
	12	1	0.7	3.7		12	1	0.6	3.6
	18	1	0.6	3.7		18	1	0.8	3.5
02	00	1	0.7	3.4	13	00	1	0.6	3.8
	06	1	0.7	3.2		06	3	0.7	3.3
	12	1	0.7	3.5		12	3	0.7	3.4
	18	1	0.6	3.4		18	3	0.6	3.5
03	00	1	0.6	3.3	14	00	3	0.6	3.5
	06	1	0.6	3.3		06	1	0.7	4.2
	12	1	0.7	3.5		12	1	0.7	4.1
	18	2	0.5	3.4		18	1	0.8	3.8
04	00	2	0.6	3.1	15	00	1	0.6	3.8
	06	2	0.6	3.2		06	1	0.6	3.7
	12	2	0.5	3.5		12	1	0.6	4.1
	18	2	0.4	3.0		18	3	0.7	4.0
05	00	2	0.5	3.4	16	00	3	0.6	3.9
	06	2	0.6	3.1		06	2	0.7	4.4
	12	...	-	-		12	2	0.6	4.0
	18	2	0.6	3.7		18	2	0.6	3.8
06	00	2	0.5	3.5	17	00	2	0.5	3.5
	06	2	0.5	3.3		06	2	0.6	3.9
	12	2	0.6	3.5		12	2	0.6	4.7
	18	2	0.6	3.7		18	2	0.6	4.1
07	00	2	0.6	3.4	18	00	2	0.5	4.5
	06	...	-	-		06	2	0.5	4.2
	12	...	-	-		12	2	0.5	4.1
	18	...	-	-		18	2	0.6	4.1
08	00	...	-	-	19	00	2	0.6	3.5
	06	...	-	-		06	2	0.4	3.1
	12	...	-	-		12	2	0.5	3.5
	18	...	-	-		18	2	0.4	3.9
09	00	...	-	-	20	00	2	0.5	3.5
	06	...	-	-		06	2	0.4	3.2
	12	...	-	-		12	2	0.4	3.3
	18	...	-	-		18	2	0.4	3.6
10	00	...	-	-	21	00	2	0.6	3.6
	06	2	0.5	3.5		06	3	0.5	3.2
	12	2	0.5	3.6		12	3	0.5	3.4
	18	2	0.7	3.8		18	3	0.6	3.4
11	00	2	0.6	3.8	22	00	3	0.5	3.9
	06	1	0.8	3.6		06	2	0.7	3.5
	12	1	0.6	3.9		12	2	0.5	3.2
	18	1	0.7	4.2		18	2	0.7	3.4



Date	Hour G.M.T.	K	Mean amplitude in m.m.	Mean period in sec.	Date	Hour G.M.T.	K	Mean amplitude in m.m.	Mean period in sec.
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Station : Visakhapatnam September, 1961 Component : E-W.

23	00	2	0.5	3.4	27	00	1	0.6	3.5
	06	2	0.5	3.3		06	1	0.9	3.8
	12	2	0.5	3.3		12	1	0.5	3.7
	18	2	0.6	3.6		18	1	0.7	3.6
24	00	2	0.4	3.5	28	00	1	0.5	3.3
	06	...	-	-		06	1	0.6	3.9
	12	2	0.4	3.4		12	1	0.6	3.5
	18	2	0.5	4.0		18	1	0.5	3.6
25	00	2	0.4	3.1	29	00	3	0.6	4.1
	06	2	0.5	3.4		06	3	0.6	3.5
	12	2	0.4	3.1		12	3	0.4	3.6
	18	1	0.8	2.5		18	3	0.4	3.3
26	00	3	0.6	3.9	30	00	3	0.4	3.3
	06	1	0.7	3.9		06	3	0.4	3.6
	12	1	0.6	3.7		12	3	0.4	3.5
	18	1	0.7	3.4		18	3	0.4	3.7

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