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METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

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1954



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Shri S. Basu, M.Sc., F.N.I.,  
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Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	To = Tg = 7.0	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori-Ewing	N-S	18.0	32	-	25
	Omori-Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	To=0.72 Tg=0.45	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	To = Tg = 7.2	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	To=1.5 Tg=1.5	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benloff Short Period	Z	To=1.0 Tg=0.18	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30



DATE	STATION	COMPT.	PHASE	G. M. T.			/	REMARKS
				h.	m.	s.		
<u>Mar.</u>								
1954								
01	Shillong	Z	e	18	57	57		Feeble.
01	Shillong	Z	i	21	55	07		Tremor.
02	Shillong	Z	e	04	39	58		Tremor.
			i		40	12		
			e		40	45		
02	Shillong	Z	e	10	04	04		Tremor.
02	Shillong	Z	i	17	19	48		Tremor.
			i		20	07		
02	New Delhi	E N,E	eP	18	46	14	840	Slight.
			P*		46	33		
			Lq		47	28		
			iS		47	41		
			SS		47	54		
			SSS		48	04		
			S*		48	09		
Dehra Dun	N,E	eP	18	46	17	610	Slight.	
		iS		47	23			
		Lr		47	28			
		SS		47	34			
		S*		47	41			
02	Shillong	Z	i	21	34	51		Trem r.
			i		34	59		
			i		35	21		
03	Epc: $5\frac{1}{2}^{\circ}$ S, $142\frac{1}{2}^{\circ}$ E; New Guinea; O = 06h 02m 55s (U.S.C.G.S) Magnitude = $7\frac{1}{4}$ (Pasadena, Berkeley, Christ Church), 7 (Kiruna), 6.8 (Skalnate Pleso), $6\frac{3}{4}$ (Uppsala)							
Shillong	Z N N	iP	06	12	52	6360	Moderate.	
		eP						
		PcP		13	41			
		PPP		16	21			
		PcS		17	48			
		iS		20	47			
		PS		20	54			
		ScS		22	40			
		SS		24	27			
		SSS		26	55			
		Lq		27	14			
		Lr		28	44			
		M		32	29			
Calcutta	E N E N E	iP	06	13	09	6780	Moderate, first movement West and North.	
		iP		13	15			
		iS		21	27			
		iS		21	29			
		ScS		23	10			
Lq		29	27					

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
						km.	
<u>Mar.</u>							
1954							
03 Contd.	Chatra	E	aP	06	13	22	6870 Slight.
			PcP		14	05	
			PP		15	43	
			PPP		17	09	
			PcS		17	54	
			eS		21	45	
			PS		21	55	
			PPS		22	09	
			ScS		23	01	
			SS		25	47	
			SSS		28	39	
			Lq		29	01	
			Lr		32	24	
			M		37	07	
	Madras	E	iP	06	13	37	7220 Moderate.
			PcP		14	08	
			PP		16	05	
			PPP		17	38	
			PcS		18	05	
			iS		22	19	
			PS		22	46	
			PPS		22	51	
			ScS		23	32	
			SS		26	30	
			SSS		29	16	
			Lq		30	01	
			Lr		33	08	
			M		40	17	
	Kodaikanal	E	iP	06	13	50	7350 Slight.
			iS		22	38	
			PS		23	02	
			PPS		23	17	
			SS		27	02	
			SSS		30	03	
			Lq		31	11	
			Lr		34	21	
			M		39	59	
	Hyderabad	E	iP	06	13	54	
			PP		16	24	
			iS		22	45	
			PS		23	01	
			SS		27	01	
		E,N	L		34	32	
			M		40	48	
		N	M		40	57	
			M		40	57	
							Per. = 21 Secs./u = 23.
	New Delhi	N,E N	aP	06	14	19	7850 Moderate.
			PcP		14	39	
			PP		17	05	
			PcS		18	58	
			iS		23	33	
			ScS		24	30	



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS			
				h.	m.	s.				
<u>Mar.</u>										
1954										
03 Contd.	Dehra Dun	N,E	eP	06	14	20	7890 Moderate.			
			N	PcP		14		36		
			PP		17	03				
			PPP		18	40				
		N,E	iS		23	36				
			N	ScS/PS		24		12		
			PPS		24	28				
			SS		28	21				
			Lq		33	33				
			Lr		37	11				
			M		43	19				
		Poona	E	E	iP	06		14	22	7930 Moderate.
					PcP			14	33	
					PP			17	10	
PPP					18	46				
N	eS				23	40				
	E			PS		24	18			
	PPS				24	31				
	SS				28	15				
	Lq				33	24				
	M				43	02				
Bombay	N			E	eP	06	14	32	8090 Moderate. Another shock appears to be superimposed on the coda of this shock.	
		E	iP							
		E	PP		17	23				
			N	e		18	03			
		E	e		23	25				
			N,E	iS		23	58			
			PS		24	32				
		E	PPS		24	49				
		N	SS		28	37				
		E	Lq		33	29				
		N	Lq		33	35				
		E	Lr		37	32				
	M		51	22						
							Per. = 23 Secs./u = 12.			
03	Shillong	Z	eP	07	54	30	Slight.			
			e		57	19				
Chatra	E		e	07	57	58	Slight, distant.			
			e	08	04	32				
			e		19	--		Surface wave.		
	Dehra Dun	N	e	08	04	03	Tremor.			
Hyderabad	E	N	M	08	15	45	Per. = 16 Secs. /u = 6.			
			M		16	08		Per. = 16 Secs. /u = 6.		
03	Shillong	Z	e	08	31	39	Tremor.			
03	Shillong	Z	i	10	04	28	Tremor.			
03	Shillong	Z	e	10	47	04	Slight.			
			i		47	07				

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Mar.</u>								
<u>1954</u>								
03	Madras	E	iP PcP PP eS	10	47	47	7220	Slight, probably after shock of the earlier shock at 0613 hrs.
	Poona	Z	i	10	48	32		Tremor.
03	Poona	Z	i	11	08	20		Tremor.
03	Dehra Dun	N	e	12	59	23		Feeble.
03	Epc: $5\frac{1}{2}^{\circ}\text{S}$ , $142\frac{1}{2}^{\circ}\text{E}$ ; $0 = 15\text{h } 21\text{m } 27\text{s}$ (U.S.C.G.S)							
	Shillong	Z	e(P) e	15	31	27 31 34		Tremor.
	Madras	E	iP PcP PP PPP PcS eS PS PPS ScS SS Lq	15	32	10 32 41 34 36 36 11 36 36 40 55 41 15 41 34 41 56 44 57 48 41	7290	Slight, after shock of the earthquake at 0613 hrs.
	Poona	Z	i(P)	15	32	54		Tremor.
	Bombay	E	e(P) e	15	33	02 42 31		Very feeble.
	Dehra Dun	N	e	15	33	26		Feeble.
03	Shillong	Z	e	17	25	13		Tremor.
03	Shillong	Z	e	17	47	19		Tremor.
03	Shillong	Z	e	19	58	11		Tremor.
03	Shillong	Z	i i i i	20	58	19 58 28 58 34 58 38		Slight, near.
	Poona	Z	i	20	59	32		Tremor.
04	Shillong	Z	i e	22	17	19 17 29		Tremor.
05	Shillong	Z	e i e	03	42	08 42 21 43 19		Tremor.
05	Shillong	Z	i	03	51	54		Tremor.



DATE	STATION	COMPT.	PHASE	G. M. T.		△	REMARKS
				h.	m.		
<u>Mar.</u>							
1954							
05	Poona	Z	eP	04	23	50	Tremor.
	Shillong	N	M	04	38	30	Slight.
05	Dehra Dum	N	e(P) i(S)	07	54	19 55 53	910 Slight, phases not clear.
	Shillong	Z	e	07	56	49	Very feeble.
05	Epc: 3°S, 130°E; Ceram Island; 0 = 11h 17m 43s (U.S.C.G.S).						
	Poona	Z	eP	11	23	50	Tremor.
	Shillong	Z	eP i i	11	26	04 24 53	Slight.
	Madras	E	iP e eS i	11	26	58 30 55 34 03 35 10	Slight, phases not clear.
	Dehra Dum	N	e	11	28	01	Feeble.
05	Epc: Hindu Kush; 0 = 15h 07m 01s (B.C.I.S).						
	Dehra Dum	N,E	eP eQ iS SS SSS Lr M PcP	15	09	05 12 16 12 20 12 36 12 54 13 00 14 22 14 32	1640 Moderate.
	Chatra	Z	e	15	11	17	Slight, distant.
	Shillong	Z	i	15	12	05	Tremor.
	Madras	E	e	15	17	18	Slight, phases not clear.
	Poona	Z	e	15	31	37	Feeble, phases not clear.
05	Shillong	Z	i	21	58	43	Slight.
06	Epc: 24°S, 180°; Long Fiji Island; h = 550 km ca; 0 = 00h 29m 27s (U.S.C.G.S). Magnitude = 7 (Wellington), 6½ (Berkeley).						
	Chatra	Z	eP e	00	42	31 52 22	Slight, distant.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Mar.</u>								
1954								
06 Contd.	Poona	E	aP?	00	46	50		Feeble, phases doubtful.
			i		47	54		
			i		50	11		
	Bombay	N, E	e	00	48	00		Distant and deep focus.
			e		53	07		
			e		58	13		
07	Shillong	Z	iP	06	08	54		Slight.
07	Shillong	Z	iP	07	53	54		Slight.
08	Poona	Z	aP	07	54	41		Tremor.
08	Poona	Z	aP	08	26	17		Tremor.
08	New Delhi	E	aP	16	33	30	470	Slight.
			N, E	Pg		33		
		E	eS		34	20		
			Lr		34	21		
			S*		34	31		
N, E	Sg		34	44				
08	Poona	Z, E	aP	17	39	02		Feeble, phases doubtful.
08	Shillong	Z	e	19	12	28		Slight, near.
			e		12	40		
09	Shillong	Z	e	01	35	57		Beginning doubtful due poor light intensity.
09	Epc: 0.3°N, 29.8°W; St. Paul Rock Atlantic Ocean;							
	O = 02h 21m 41s (B.C.I.S).							
	1½°N, 30½°W; O = 02h 21m 43s (U.S.C.G.S).							
	Magnitude = 6½ (Kiruna), 6 (Uppsala).							
	Bombay	N	e	02	39	32		Very distant shock, feebly recorded.
			E		39	49		
			e		48	53		
			M	03	12	39		
	Poona	Z	e?	02	39	56		Tremor.
	Colombo	E	P	02	42	12		Amp. = 0.2mm.
			M	03	26	25		
	Shillong	N	e	02	44	45		Slight, distant.
			e		51	38		
			e		57	48		
			M	03	13	48		
	Kodaikanal	E	e	02	45	--		Time doubtful due failure of eclipse clock.
	Hyderabad	N	M	03	15	11		Per. = 15 Secs. /u = 3.



STATION	DEPT.	PHASE	G. M. T.			△	REMARKS
			h.	m.	s.		
05 00 00 Qinghai Province of China; 0 = 05h 30m 48s (U.S.C.G.S). 33°N, 94°E; 0 = 05h 30m 47s (B.C.I.S). 32°N, 95°E; 0 = 05h 30m 52s (Shillong).							
Shillong	Z,N,E	eP	05	32	39	790	Slight.
	N	Lq		33	53		
	Z,N,E	eS		34	01		
	N	SS		34	22		
		ESS		34	37		
		M		34	46		
Shillong	N,E	eP	05	32	51		Slight, near, phases not clear.
Shillong	N	eP	05	34	06	1610	Moderate, other phases not clear.
		e		34	11		
		Ir		34	23		
		Lq		36	36		
		eS		36	48		
		PcP		39	12		
Shillong	N,E	eP	05	34	23	1750	Slight.
	N	Lq		37	02		
		eS		37	19		
		M		39	20		
Shillong	N	P	05	35	32	2420	
		L		39	29		
		L		41	45		
		M		43	30		Per. = 8 Secs./Δ = 4.
Shillong	E	e	05	35	35		Slight, distant.
		i		37	03		
Shillong	E	eP	05	35	54	2590	Slight.
	N	eS		40	03		
		SS		40	49		
		Ir		41	15		
		M		43	23		
Shillong	N,E	eP	05	36	03	2610	Feeble.
		eS		40	14		
	E	Lq		40	47		
		Ir		41	50		
Shillong	E	i(P)	05	36	06		Slight, succeeding phases mixed up with the phases of another shock.
		e		41	39		
Shillong	E	e	05	44	47		Time uncertain due failure of eclipse clock.

DATE	STATION	COMP.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Mar.</u> 1954						
09	Epc: 50°N, 157°E. Off the South Coast of Kamchatka;					
	- H = 05h 39m 24s (U.S.C.G.S)					
	50°N, 157 $\frac{1}{4}$ °E. - H = 05h 39m 24s (B.C.I.S)					
	Magnitude = 6 $\frac{3}{4}$ (Praha), 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (Pasadena), 6 $\frac{1}{4}$ (Kiruna), 6 (Uppsala).					
	Shillong	N,Z	eP	05 49 00	6050	Moderate.
			PP	51 01		
			PPP	52 16		
			eS	56 38		
			ScS	58 39		
			SS	06 00 31		
			Lr	05 31		
			M	09 16		
	Chatra	Z	iP	05 49 14		Slight, distant.
		E	e	06 09 30		Surface waves.
	New Delhi	N,E	eP	05 49 48		
	Hyderabad	N	P	05 50 34	7800	
			eS	59 46		
			L	06 12 35		
			M	17 38		Per. = 16 Secs./u = 9.
	Poona	Z	iP	05 50 47	7870	Moderate.
		N	PcP	51 02		
			PP	53 24		
			eS	06 00 02		
			PS	00 21		
			PPS	00 47		
			SSS	07 30		
			Lq	09 24		
			M	18 34		
	Madras	E	i	05 50 48		
			Lr	06 21 14		
			M <sub>1</sub>	25 34		
			M <sub>2</sub>	29 27		
	Bombay	N,E	eP	05 50 49		Slight, phases not
		N	e	51 09		clear due to superposi-
			e	53 39		tion with that of earlier
		N,E	e(S)	06 00 26		one.
			e	01 15		
		E	M	19 03		Per. = 23 Secs./u = 5.
		N	M	19 11		Per. = 23 Secs./u = 10.
	Colombo	E	P	05 51 20		
			S	06 01 05		
			L	18 --		
			M	30 --		Amp. = 0.2mm.
09	Shillong	Z	iP	19 58 23		Slight.



DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
<u>Mar.</u>						
1954						
10	Epc: Hindu Kush;		- H =	04h 16m 38s	(Quetta).	
			- H =	04h 16m 35s	(Shillong).	
	Dehra Dun	N,E	eP	04 18 38	870	Slight.
			Lq	19 51		
			iS	20 06		
			Lr	20 15		
			SS	20 18		
			SSS	20 27		
			S*	20 29		
	New Delhi	N,E	eP	04 18 44	960	Slight.
		E	P*	19 08		
			Pg	19 28		
		N,E	eS	20 23		
			S*	20 56		
			Sg	21 23		
	Chatra	Z	eP	04 20 15		Feeble, near.
			iS	23 10		
	Shillong	Z	iP	04 20 48		Slight, near.
			PP	21 08		
			PPP	21 18		
			S	24 20		
			Lq	14 27		
			PcP	24 52		
	Poona	Z,E	e?	04 21 24		Slight shock, phases not clear.
		E	i?	22 59		
			•	25 46		
	Madras	E	eP	04 26 37		Very feeble. Other phases not clear.
10	Shillong	Z,N	Pg	05 46 41		Slight, local.
			Sg	46 49		
10	Shillong	Z	eP	08 04 55		Feeble, near.
10	Shillong	Z	iP	15 38 16		Very feeble.
10	Shillong	Z	•	21 50 37		Tremor.
10	Shillong	Z	•	22 03 38		Tremor.
10	Shillong	N,Z	eP	22 38 43		Feeble.
			eS	40 30		
			SS	40 41		
			M	41 19		
	Chatra	Z	•	22 39 20		Slight, distant.
11	Shillong	Z	•	05 15 18		Slight, near.
			•	16 21		
11	Poona	Z	eP	10 49 37		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Mar.</u>						
<u>1954</u>						
12	Madras	E	•	05 32 56		
12	Poona	Z	e?	11 31 30		
12	Shillong	Z	• •	21 51 02 51 34		Slight, near.
13	Epc: Southern Pakistan; 28.1°N, 65.6°E. 28°N, 66.5°E.			- W = 00h 58m 53s (U.S.C.G.S) - H = 00h 59m 02s (B.C.I.S) - H = 00h 59m 00s (Shillong).		
	New Delhi	N,E	iP i i	01 01 13 01 25 01 41	1000	Slight.
		N	i	01 55		
		N,E	Lq iS SS	02 48 02 56 03 08		
			Lr SSS	03 13 03 19		
		N	S*	03 30		
		N,E	i Sg	03 40 04 04		
	Dehra Dun	N,E	eP PPP P*	01 01 26 01 44 01 53	1090	Slight.
			Lq iS SS	03 09 03 18 03 32		
			Lr SSS S*	03 36 03 42 03 55		
			Sg/M	04 24		
	Bombay	N,E	eP PP	01 01 30 01 40	1150	Slight.
		E	PPP	01 46		
		N,E	Lq eS	03 17 03 39		
		N	SS	03 39		
		E	SS	03 42		
		N	M	05 --		
		E	M	05 09		Per. = 5 Secs./ $\mu$ = 10
	Poona	Z	eP	01 01 36		Slight.
		E	eS M	03 51 05 42		
	Chatra	N,E,Z	eP PP PPP	01 03 10 03 29 03 40	1960	Slight.
		N,E	iS	06 25		
		E	SS Lr M	06 48 07 22 08 44		

13

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
						km.	
<u>Mar.</u>							
<u>1954</u>							
13	Madras	E	eP	01	03	23	2190 Slight.
Contd.			PP		03	44	
			PPP		03	54	
			iS		07	00	
			Lq		07	15	
			SS		07	35	
			SSS		07	46	
			Lr		08	08	
			M		09	43	
			ScP		10	51	
	Kodaikanal	E	iP	01	03	35	2310 Slight.
			iS		07	17	
			Lq		07	31	
			M		10	17	
	Calcutta	E	eP	01	03	41	2410 Slight.
			iS		07	37	
			SS		08	12	
			Lr		09	06	
	Shillong	Z	iP	01	04	01	2500 Slight.
		N	eP		04	01	
		Z	i		04	15	
		Z,N	PP		04	27	
		Z	PPP		04	38	
		N,Z	eS		08	04	
			Lq		08	25	
		N	Lr		10	04	
			M		11	28	
	Colombo	E	P	01	04	11	
			S		08	46	
13	Shillong	Z,N,E	e	11	51	07	Slight, near.
		N,E	e		51	30	
			i		51	35	
13	Kodaikanal	E	e	17	20	48	Tremor.
13	Epc: $8\frac{1}{2}^{\circ}$ S, $117^{\circ}$ E. Sunda Island; - H = 18h 14m 45s (B.C.I.S).						
	Colombo	E	eP	18	22	20	
			S		28	20	
			M		41	05	Amp. = 0.1 mm.
	Chatra	Z	e	18	23	08	Slight, distant.
		E	e		29	54	
	Calcutta	E	e	18	24	06	Slight, distant.
			i		29	04	
			i		32	30	
	Madras	E	e	18	29	00	
			e		32	30	
			e		32	46	
			M		41	24	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Mar. 1954					
13	Hyderabad	N	M	18 42 54	Per. = 15 Secs./u = 3.
Contd.					
13	Shillong	Z	i	22 06 29	Slight, near.
		E	e	06 29	
		E,N	e	06 41	
13	Shillong	Z,N	eP	23 22 37	
		Z	i	22 39	
			i	22 44	
			i	22 53	
		N	eS	28 42	
			Lq	31 51	
			Lr	33 48	
			M	37 36	
14	Shillong	N	e	09 08 37	Slight, distant.
			i	17 18	
			e	17 52	
			e	18 22	
			i	19 07	
	Kodaikanal	E	e	09 07 48	Tremor.
	Madras	E	M	10 26 54	
14	Shillong	Z	e	15 07 00	Tremor.
14	Shillong	Z	e	15 34 42	Tremor.
14	Shillong	N,Z	e	17 47 34	Slight, distant.
			e	54 19	
		N	e	54 30	
			e	56 32	
			e	58 33	
			i	18 02 07	
			M	15 30	
	Chatra	Z	e	17 54 33	Slight, distant. Surface wave.
		E	e	18 18 --	
	Bombay	N,E	eP	17 56 06	8220 Feeble.
		N	PcP	56 20	
		N,E	eS	18 05 38	
		E	ScS	06 04	
			SS	10 26	
	Calcutta	E	e	17 56 17	Slight, distant.
			Mn	18 24 22	
	Hyderabad	E	M	18 25 35	Per. = 12 Secs./u = 3. Per. = 12 Secs./u = 2.
		N	M	26 25	
	Madras	E	M	18 31 07	



DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS	
				h.	m.	s.			km.
<u>Mar.</u>									
<u>1954</u>									
15	Poona	Z	eP	17	56	05		Probably very distant earthquake, phases doubtful.	
16	Bombay	N	e	08	56	34		The disturbance may be due to causes other than real earthquake movement.	
			e	09	02	07			
16	Epc: $11\frac{1}{2}^{\circ}\text{N}$ , $58^{\circ}\text{E}$ . - H = 14h 24m 16s (B.C.I.S)								
	Bombay	N	e	14	24	00		Slight.	
			E	i					
			E	e		26	35		
			N	e		27	17		
			E	e		27	22		
	Poona	Z	eP	14	24	04	2060	Slight.	
			E	PP		24	21		
				PPP		24	33		
				eS		27	36		
				Lq		27	42		
				SS		28	01		
				SSS		28	18		
				M		29	12		
	Kodaikanal	E	iP	14	24	42		Tremor.	
				PP		25	00		
				PPP		26	09		
				SS		27	17		
				SSS		27	33		
				Lr		27	46		
				M		29	06		
	Hyderabad	E	iP	14	24	57	2460	Per. = 10 Secs./u = 2	
				iS		28	58		
				L		30	22		
				M		32	30		
	Madras	E	iP	14	25	10	2600	Slight.	
				i		25	19		
				PP		25	36		
				eS		29	20		
				Lq		29	42		
				SS		30	06		
				SSS		30	28		
				Lr		30	48		
	M		33	25					
16	Poona	Z	e	15	38	40		Tremor.	
18	Shillong	Z	i	05	06	29		Feeble.	
18	Dehra Dun	N	e	06	05	26		Slight.	
18	Dehra Dun	N	e(P)	12	52	27	530	Feeble.	
			i(S)		53	24			

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
<u>Mar.</u>						
1954						
18	Shillong	Z,E	i	13	50 43	Slight, felt locally,
18	Shillong	Z,N	i	16	55 03	
			i		55 33	
			e		55 52	
			i		56 07	
			i		56 22	
18	Dehra Dun	N	e	17	00 35	Feeble.
	Poona	Z	eP	17	01 56	Tremor.
19	Dehra Dun	N	e	08	35 06	Slight.
			i		38 01	
19	Madras	E	M	11	14 --	Phases not clear.
19	Shillong	Z	i	16	15 35	Feeble.
19	Madras	E	P	23	39 27	Slight, short period movement, other phases not certain.
	Shillong	Z	e	23	39 47	Tremor.
	Poona	Z	eP	23	40 57	Tremor.
19	Poona	Z	i?	23	44 33	
20	Bombay	E	e	08	36 19	Feeble.
			e		37 19	
	Poona	Z	e	08	37 30	Feeble shock, phases not clear.
20	Madras	E	e	14	15 07	Slight.
			eS?		23 01	
	Poona	Z	eP	14	15 11	Tremor.
21	Shillong	Z	iP	06	19 04	Slight.
21	Shillong	Z	iP	11	09 27	Slight, local.
21	Epc:	24 $\frac{1}{2}$ <sup>o</sup> N, 95 <sup>o</sup> E. N W Burma; h = 150 km; - H = 23h 42m 05s (U.S.C.G.S)				
		24.6 <sup>o</sup> N, 95.2 <sup>o</sup> E; h = 150 km; - H = 23h 42m 09s (B.C.I.S).				
	Shillong	Z,N,E	iP	23	43 04	Great. Felt strongly. Slight damage to property. Pendulum clock stopped. Coupler overthrown in Milne-Shaw seismograph.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS			
				h.	m.	s.				
<u>Mar.</u>										
<u>1954</u>										
21	Calcutta	E	iP	23	43	45	630 From Milne-Shaw. The instrument was thrown out of adjustment after the first impulse. Great. Felt locally and over a wide area in Assam, Bengal, Bihar and Orissa.			
		N	iP		43	46				
			PP		43	47				
			P*		43	59				
		E	P*		44	00				
		N	Pg		44	13				
			iS		44	51				
		E	iS		44	52				
		Chatra	Z	iP	23	44		01	810	First movement down.
			N	iP↓		44		02		$\mu = 2.0$ . First movement South.
E	eP↓						First movement East.			
E	iP			44	02		Long Period instrument.			
N,E	iS?			45	25		First movement East. This shock was locally felt at Chatra on the morning of 22nd March, 1954 at 0515 hrs. I.S.T. People who were awake at the time only felt it. The shock was also felt at Biratnagar, Belka and Barahashetra by people who were awake. The oscillations following the primary phase had a high frequency and large amplitude. The sensitivity of recording paper was insufficient to record the trace of the shock. Wenner Accelerograph worked for the first time and recorded the tremor.			
21	New Delhi	N,E	iP	23	45	56	1710	Great. Direction of first motion South and East.		
			PP		46	07				
			PPP		46	19				
		N	i		46	35				
			Lq		48	43				
		N,E	iS		48	48				
			SS		49	06				
		N	Lr		49	32				
21	Dehra Dun	N,E	eP	23	45	56	1710	Great.		
			PP		46	09				
		E	PPP		46	17				
		N,E	Lq		48	44				
			iS		48	48				
		E	SS		49	05				
		N	SSS		49	17				
		N	Lr		49	27				
21	Hyderabad	E,N	iP	23	46	02	1780	Per. = 14 Secs. $\mu = 20$ . Per. = 12 Secs. $\mu = 16$ .		
		E	S		49	00				
			SS		49	21				
			M		52	21				
		N	M		52	21				

DATE	STATION	COMPT	PHASE	G. M. T.		/	REMARKS
				h. m. s.	km.		
Mar. 1954							
21	Madras	E	iP iS	23 46 15 49 27	1920		Great. First movement of trace corresponds to Pendulum movement towards West. Due to large movements other phases not identifiable. Shock felt over the whole of India.
21	Poona	Z N,S	iP PP eS M	23 46 43 47 56 50 24 53 02	2220		Great.
	Bombay	N	iP iS	23 46 54 50 38			Great earthquake of North Western Burma.
21	Colombo	S	iPP S L M	23 47 01 49 19 50 59 52 30			
22	New Delhi	N,E	iPg iSg	06 36 04 36 06	170		Slight.
22	Dehra Dun	N	e	09 25 38			Tremor.
22	Poona	Z	eP	16 37 58			Tremor.
22	Poona	Z	eP	17 30 16			Tremor.
22	Poona	Z	i	19 09 43			Tremor.
	Shillong	N	e	19 29 00			Slight, surface waves.
24	Madras	E	e	00 19 55			
24	Poona	Z	i	01 42 36			Tremor.
24	Dehra Dun	N	e	11 14 11			Tremor.
24	Poona	Z	i	12 38 42			Tremor.
24	Shillong	N	e	13 04 56			Slight, surface waves.
24	Poona	Z	i	17 33 13			Tremor.
	Shillong	N	e	17 53 43			Slight, surface waves.
24	Dehra Dun	N,E	eP iS S3 Lr Sg/M	18 03 37 10 10 10 23 10 25 10 59	900		Slight.



DATE	STATION	COMPT.	PHASE	G. M. T.	Z	REMARKS
				h. m. s.	km.	
<b>Mar. 1954</b>						
21	New Delhi	N,E E	eP PPP e3 S3 333 3*	18 08 50 09 05 10 18 10 32 10 40 10 45	850	Slight.
25	Epc: Probable region Pamir (B.C.I.S.) 38°N, 72°E. - H = 06h 47m 30s (Shillong).					
	Dehra Dun	N,E	eP PP Lq L3 S3 3g/m	06 49 51 50 00 51 35 51 44 51 56 52 52	1110	Moderate.
	New Delhi	N,E E  N,E N	eP PP PPP Lq e3 S3 3* 3g	06 50 35 50 15 50 23 51 52 52 02 52 15 52 45 53 16	1140	Slight.
	Poona	Z	eP	06 51 58		Tremor.
5	Poona	Z E N	e e e	06 53 51 58 07 07 00 40		Slight, phases doubtful.
25	Shillong	N	iPg iSg	07 18 25 18 28	30	Slight.
26	Dehra Dun	N	e	03 44 39		Tremor.
26	Bombay	N	e e	04 43 14 45 45		Feeble.
	Dehra Dun	N	e	04 44 50		Tremor.
	Poona	Z,E,W	e	04 45 41		Very feeble shock. Phases not clear.
26	Poona	Z	e?	09 58 54		Tremor.
26	Poona	Z	i	10 57 56		Tremor.
26	Poona	E,W,Z	eP	18 42 49		Feeble, phases doubtful.
27	Bombay	E	e e	02 05 42 09 33		Feeble.
	Poona	Z	eP	02 05 45		Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Mar.								
1954								
27	Madras	E	1P	02	06	02	2380	Slight.
Contd.			PP		06	28		
			PPP		06	43		
			eS		09	56		
			Lq		10	20		
			SSS		11	03		
			Lr		11	33		
			M		13	45		
27	Shillong	Z	e	09	26	48		Slight.
27	Shillong	Z	iPg	11	41	48	90	Slight.
			iSg		41	58		
27	Shillong	Z	i	11	46	56		Slight.
27	Poona	E,W,Z	eP	18	40	33		Slight.
New Delhi		N	eP	18	40	34	430	Slight.
		E	eS		41	21		
			SS		41	32		
			SSS		41	43		
Shillong		Z	e	18	40	46		Slight.
			e		45	27		
27	Poona	Z	e?	19	00	28		
28	Poona	Z	e?	09	16	31		Tremor.
28	Shillong	Z	eP	09	24	52	560	Slight.
			Pg		25	12		
			Lq		25	38		
			Lr		25	53		
			Sg/M		26	18		
28	Shillong	Z	e	09	43	19		Tremor.
			e		44	14		
28	Kodaikanal	E	eP	13	11	04	2450	Slight.
			eS		15	04		
			Lq		15	31		
			SS		15	49		
			SSS		16	03		
			Lr		16	37		
			M		18	25		Per. = 10 Secs./u = 14.
Madras		E	iP	13	11	39	2870	Slight.
			PP		12	09		
			PPP		12	30		
			S		16	05		
			Lq		16	43		
			SS		16	57		
			SSS		17	09		
			Lr		17	51		
			M		19	39		

DATE	STATION	COMP.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Mar. 1954						
28	Poona	Z	eP	13 12 02		Slight, phases not clear.
Contd.						
	Hyderabad	E	eP	13 12 07	3190	
		N	iS	16 56		
		E	M	20 58		Per. = 12 Secs. $\Delta$ = 9.
		N	M	21 01		Per. = 12 Secs. $\Delta$ = 4.
	Bombay	N,E	e	13 13 02		Feeble.
		E	e	17 02		
	Shillong	Z	e	13 24 03		Tremor.
28	Shillong	Z	e	17 22 27		Slight.
	Poona	Z	eP	17 23 47		Tremor.
28	Shillong	Z	e	20 14 39		
	Chatra	Z	eP	20 14 51		
28	Epc: $52^{\circ}N, 176^{\circ}E$ . Rats Island; Aleutian Island; - H = 20h 36m 22s (U.S.C. G.S.) - H = 20h 36m 20s (Uccle). Magnitude = $6\frac{1}{4}$ (Kiruna).					
	Shillong	N	1P	20 47 13	7360	Moderate.
		Z	1P	47 14		
		N	PP	49 48		
			PPP	51 05		
			PcS	51 54		
			iS	56 01		
			PPS	56 39		
			ScS	57 22		
			SS	21 00 17		
			SSS	03 00		
			Lo	03 46		
			Lr	06 39		
			M	25 45		
	Chatra	N,E,Z	eP	20 47 27	7610	Slight.
		E	PcP	47 51		
			PP	50 04		
			PPP	51 38		
			eS	56 31		
			SKS <sub>1</sub>	57 22		
			SS	21 00 50		
			Lq	05 15		
			Lr	08 31		
			M	13 08		
	New Delhi	N,E	eP	20 47 55	8040	Moderate.
		N	PcP	48 09		
			PP	50 45		
			PPP	52 30		
			iS	57 18		
			SKS	57 59		
			M	21 15 18		

DATE	STATION	COMP.	PHASE	G	M	T	Δ	REMARKS		
				h.	m.	s.	km.			
<u>Mar.</u>										
1954										
28 Contd.	Hyderabad	E,N	iP	20	48	33	9010			
		N	S		58	43				
		E	PS		59	05				
			SS	21	03	49				
		N	L		14	22				
			M		19	25				
		E	M		19	29		Per. = 15 Secs. /u = 13. Per. = 16 Secs. /u = 14.		
28	Poona	Z	iP	20	48	49	9220	Moderate.		
		N	PP		51	05				
			PPP		53	00				
			eS		59	09				
			ScS		59	15				
			PPS	21	00	27				
		E	SS		04	41				
		N	SSS		08	03				
			Lq		11	33				
			Lr		15	29				
			M	21	22	00				
			Madras	E	iP	20	48	50	10840	Moderate.
					PP		53	01		
	PPP				55	07				
	SKS				59	15				
	SKKKS				59	49				
	SKS <sub>1</sub>			21	00	05				
	S				00	13				
	PS				01	45				
	PPS				02	29				
	SS				06	38				
	SSP				06	53				
	Bombay	N,E,S	eP	20	48	51	9260	Slight.		
			PP		52	04				
		N	eS <sub>1</sub>		59	12				
		E,ES	iS <sub>1</sub>							
		E,S	i		59	37				
		N	PPS	21	00	29				
			M		22	34		Per. = 19 Secs. /u = 4. Per. = 24 Secs. /u = 7.		
E	M		22	26						
	Kodaikanal	E,W	iP	20	49	12	9350	Slight, distant.		
			PP		52	27				
			PPP		54	26				
			iS		59	38				
			PS	21	00	42				
			PPS		01	08				
			SS		05	21				
			SSS		08	45				
	M		23	45						





DATE	STATION	COMPT	PHASE	G	M	T	∠	REMARKS
				h.	m.	s.	km.	
<u>Mar.</u>								
1954								
29	Dehra Dun	N	eP	04	08	55		Slight, phases not identifiable.
Contd.								
	New Delhi	N, E	eP	04	08	58		Slight.
		N	e		14	51		
			eS		15	06		
			e		18	59		
			e		26	05		Surface waves.
	Colombo	E	eP	04	09	01		
			S		15	21		
			L		26	16		
			M		29	09		amp. = 0.2 mm.
	Poona	Z	eP	04	09	28	4950	Moderate.
		E	eP					
			PcP		10	53		
			PP		11	10		
			PPP		11	51		
			eS		16	04		
			PPS		16	15		
			Lq		20	09		
			M		26	18		
29	Bombay	N, E	eP	04	09	38	5020	Slight.
		N, E, S	PP		11	26		
		E, S	PPP		12	09		
		N, E	eS		16	18		
		N, E, S	SS		19	29		
		N	Lq		20	21		
		E, S	Lr		22	34		
		E	M		32	47		Per. = 14 Secs. /i = 3.
29	Shillong	Z	i	04	37	01		Tremor.
			i		37	27		
29	Epc: 36.9°N, 3.3°W. Near South Coast of S. h = 630 km.							
	- H = 06h 17m 06s (BCIS)							
	37°N, 3 1/2°W. h = 650 km. Ca; H = 06h 17m 05s (USCGS).							
	Magnitude = 7 1/4 - 7 1/2 (Pasadena), 7 1/4 (Tacubaya),							
	7-7 1/4 (Berkeley, Kiruna), 6.5 (Praha).							
	Felt over large area of Spain. Extensive property damage at Granada and Malaga.							
	Dehra Dun	N, E	eP	06	26	55	6520	Moderate.
			PP		27	46		
			PPP		28	05		
		iS and	PcP		34	59		
			Lq		35	26		
			SS		36	11		
			Lr		37	36		
			M		40	55		

DATE	STATION	COMPT	PHASE	G. M T			REMARKS
				h.	m.	s.	
						km.	
<u>Mar.</u>							
1954							
29 Contd.	New Delhi	N,E	iP	06	26	58	6460 Moderate. Deep focus. Direction of the first motion South and East.
			i		27	20	
		N	PP		29	35	
			iS		34	59	
			PS		35	11	
			i		35	54	
			i		39	54	
i		40	56				
Bombay	N,E	iP	06	27	08	7690 Moderate.	
		i		27	21		
	N	i		27	26		
		iS		35	23		
	E	i		36	02		
		i		36	13		
Poona	Z,E	iP	06	27	13	6700 Moderate.	
		N	PcP		28		04
	PP		29	32			
	PPP		30	43			
	PcS		31	59			
	eS		35	27			
	PS		35	34			
	PPS		35	51			
	ScS		36	55			
	SS		39	27			
	SSS		41	51			
	Lq		42	07			
	Lr		44	39			
M		49	59				
Hyderabad	N	iP	06	27	33	7210	
		E	iP		27		36
		PP		30	47		
		iS		36	15		
		SS		40	13		
	N	e		44	52		
		E	M		55		43
	N	M		57	22		
				Per. = 16 Secs.			
				/u = 10			
Chatra	E,Z	iP	06	27	47	7330 Moderate.	
		E	PcP		28		19
	PP		30	16			
	PPP		31	49			
	PcS		32	15			
	iS		36	34			
	PS		36	56			
	PPS		37	04			
	SKS <sub>i</sub>		37	34			
	SS		41	02			
	SSS		44	00			
	Lq		45	02			
	Lr		48	11			
M		53	56				

DATE	STATION	COMPT	PHASE	G	M	T	∠	REMARKS			
				h.	m.	s.	km.				
<u>Mar.</u>											
1954											
31 Contd.	Kodaikanal	E	iP	18	30	14		Phases doubtful.			
							30	41			
									30	53	
			iSS						34	11	
			SSS						34	30	
									34	47	
									35	07	
									35	34	
			M						37	20	Per. = 10.5 Secs. /u = 18
				Hyderabad	N	iP	18	30	23	2250	Great.
			iS			34	06				
			M			37	59				
	Madras	E	iP	18	30	39	2510	Great.			
			iS			34	43				
	New Delhi	N,E	iP	18	31	06	2760	Great. Direction of first motion South and West.			
			PP			31	42				
		N	PPP			31	51				
		N,E	i			32	06				
		N	PcP	34	34	39					
			iS			35	26				
			SS			36	26				
			SSS			36	41				
			Lr			37	27				
			PcS			38	29				
			M			41	17				
			Mn			43	21	Per. = 15 Secs. /u = 373			
	Dehra Dun	N,E	eP	18	31	11	2800	Great.			
			PP			31	47				
			PPP			31	57				
			PcP			34	50				
			iS			35	34				
			Lq			36	13				
			SS			36	30				
			SSS			36	42				
			Lr			37	20				
		N	M			39	32	Per. = 12.4 Secs. /u = 166.			
	Chatra	E,Z	iP	18	32	05	3550	Great.			
		N,E	eP								
		E	PP			33	10				
			PPP			33	28				
			PcP			34	58				
			iS			37	16				
			PcS			38	44				
			SSS			39	16				
			i			39	31				
			Lr			40	30				
			M			42	47	Per. = 18.0 Secs. /u =			

DATE	STATION	COMPT	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
<u>Mar.</u>								
1954								
31 Contd.	Calcutta	E	iP	18	32	06	3480	Very great. First movement East.
		N	eP		32	12		
		E	PPP		33	31		
		N	PPP		33	34		
			PcP		35	12		
			iS		37	13		
			iS		37	16		
	E	Lr	40	14				
	Shillong	N	iP	18	32	40	3970	Great.
			PP		34	00		
		**	FPP		34	18		
			SS/Lq		40	22		
			SSS		40	56		
			Lr		42	27		
			ScS		43	10		
			M		44	56		Per.=13.5 secs.
		**	iS		38	17		Δ =34.

Earthquake Reports  
(Non Instrumental Reports)

The following table contains a list of earthquakes that were reported by Voluntary Observers from various stations during the month of March, 1954.

Place at which felt	Date in G.M.T.	Time in G.M.T.		Duration in secs.	Intensity R.F. scale	No. of shocks	Remarks
		h.	m.				
Sirsa	21	23	15	1	IV	-	-
Jaspur	21	23	20	5	VII	-	-
Kohima	21	23	30 (roughly)	30	VIII	-	Direction of motion South.
Naga Hills	21	23	30 (roughly)	30	VIII	-	In some streams water level raised and in some other streams water level lowered.
Midnapore	21	23	30 (roughly)	2	-	-	-



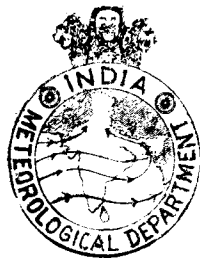
Place at which felt	Date in G. M. T	Time in G. M. T h. m.	Duration in secs	Intensity R.F. scale	No. of shocks	Remarks
Kandi	21	23 42	20	VI	-	Direction East west
Khoragpur	21	23 42	2	IV	-	-
Garhbeta	21	23 42	30	VI	-	-
Deragaon	21	23 42	90	VII	-	-
Sibsagar	21	23 42	120	VII	-	Movement from S-W direction.
Khagaria	21	23 42	3	IV	-	Motion vertical.
Bethampur	21	23 42	2	-	-	-
Nawabgunj	21	23 42	-	VI	-	-
Kalna	21	23 42	7	IV	-	-
Darjeeling	21	23 42	40	V	-	Rumbling noise heard.
Dibrugarh	21	23 42	60	VII	-	Movement from S-E corner landslips happened.
Tinsukia	21	23 42	70	IV	-	-
Naharakotia	21	23 42	-	-	-	Considerable damage to Tingrai bridge. Rumbling noise heard.
Barkagaon	21	23 43	12	VI	2	Direction from South East.
Agartola	21	23 43	60	-	1	-
Khajuha	21	23 43	10	IV	-	Direction N-S.
Saugar Islands	21	23 43	2	-	-	-
Burdwan	21	23 43	60	IV	2	-
Shillong	21	23 44	120	VII	2	Direction from East
Bagdogra	21	23 44	70	VI	2	Articles swing from E-W.
Gangajalghati	21	23 44	2	VI	-	-
Lalbag	21	23 44	90	VII	-	-
Siliguri	21	23 44	-	-	-	-
Alipore	21	23 44	25	VI	2	-
Gauhati	21	23 45	75	IV	2	-

Place at which felt	Date in G. M. T	Time in G. M. T h. m.	Duration in sec.	Magnitude	No. of shocks	Remarks
Lumding	21	23 45	56	VIII	2	-
Cuttack	21	23 45	3	VI	1	-
Chapra	21	23 45	30	V	1	-
DumDum	21	23 45	30	VI	-	Direction from East.
Forbesgunj	21	23 45	-	-	2	-
Nowgong	21	23 45	120	VII	-	-
Dalu	21	23 45	60	IV	-	Direction N-S.
Mahendragunj	21	23 45	180	-	-	-
Bi. Shum	21	23 45	20	IV	-	-
Lhasa	21	23 45	43	IV	1	Brisky movement with a swing from N to S.
Fatehpur	21	23 45	35	-	4	-
Deoghar	21	23 45	30	IV	-	-
Godda	21	23 45	3	-	-	Direction N-S.
Sahibgunj	21	23 45	30	IV	-	Direction from E-W.
Asankhali	21	23 45	-	-	-	-
Chandua	21	23 45	5	IV	-	-
Kishangunj	21	23 45	120	IV	-	-
Khirpai	21	23 45	2	V	-	Sound heard like rumbling noise. Direction East to West.
Golaghat	21	23 45	120	VII	-	Slight damage. Rumbling noise.
Jamui	21	23 45	5	-	-	Direction N to S.
Barisal	21	23 45	3	VI	2	Direction E-W.
Rajshah	21	23 45	50	VI	3	Direction S to N.
Mymensing	21	23 45	90	VII	2	Direction N to S.
Asansol	21	23 45	60	-	-	-
Latehar	21	23 45	2	-	-	-
Margherita	21	23 45	30	VI	-	Motion from South West.

Place at which felt	Date in G. M. T	Time in		Duration in secs	Intensity R.F. scale	No. of shocks	Remarks
		G. M. T	h. m.				
Gaya	21	23	46	2	-	-	-
Katwa	21	23	46	30	VIII	-	Direction from West to East.
Bermu (Ranchi)	21	23	47	-	-	2	-
Dhanbad	21	23	48	35	I	2	-
Kurseong	21	23	48	8	IV	-	-
Narayangunj	21	23	50	60	VI	2	-
Khulna	21	23	50	35	VI	4	Direction N-S.
Comilla	21	23	50	30	VII	3	-
Cox's Bazar	21	23	50	5	IV	2	Direction from North.
Rangpur	21	23	50	15	VII	2	Direction E-W.
Jorhat	21	23	50	-	VII	-	Rocked severely.
North Lakhimpur	21	23	53	-	VII	-	-
Fakiragram	21	23	54	60	IV	-	Direction N-S.
Satkhira	21	23	54	2	VI	-	Direction E-W.
Sylhet	21	23	55	120	VII	-	Knocking movement appearing from North.

GOVERNMENT OF INDIA  
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



Published under the direction of  
*Shri S. Basu, M.Sc., F.N.I.,*  
Director General of Observatories



- 2 -

Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	To = Tg = 7.0	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori-Ewing	N-S	18.0	32	-	25
	Omori-Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	To=0.72 Tg=0.45	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	To = Tg = 7.2	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	To=1.5 Tg=1.5	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benioff Short Period	Z	To=1.0 Tg=0.18	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30

 Office of the Director General of Observatories,  
 Lodi Road, New Delhi, India, 1959.



DATE	STATION	COMPT.	PHASE	G	M	T	Δ	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
01	Dehra Dun	N	i i	09	19	49 20 25		Feeble, phases not clear.
01	Shillong	N	e i	14	09	35 14 00		Very feeble.
01	Shillong	N	P/Pg Sg S	16	12	58 13 10 13 14		Local, felt.
01	Epc: 46 1/2°N, 153 1/2° E. Kurile Island; h = 60 km. - H = 18h 18m 47s (USCGS). Magnitude = 6 1/4 (Pasadena).							
	Shillong	N	iP PP PPP iS ScS SS SSS Lq Lr M	18	27	58 29 41 31 06 35 34 37 31 39 20 41 15 41 33 44 22 47 45	6020	Slight.
	Chatra	Z E	iP eP eS e	18	28	16 36 00 50 --	6170	Slight, distant.  Surface waves.
	Dehra Dun	N,E	eP i i	18	28	41 29 03 29 17		Feeble, phases not clear.
	New Delhi	N,E N	eP eS M	18	28	56 37 15 57 31	6790	Slight.
	Hyderabad	E,N E E,N E N E	iP PP iS ScS SS L M M	18	29	39 32 06 38 36 39 39 43 07 50 12 56 09 56 36	7510	Slight.   Per.=18 Secs./Δ= 7. Per.=18 Secs./Δ= 7.
	Madras	E	iP PcP PP PPP iS PS PPS SS Lr M	18	29	52 30 23 32 25 34 07 38 55 39 18 39 26 43 22 51 30 19 05 32	7630	Slight.

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u> 1954								
01	Poona	Z	eP	18	29	53	7800	Moderate.
Contd.		E	PcP		30	11		
		N	PPP		34	15		
			eS		43	05		
			SS		43	58		
			SSS		46	56		
			M		57	27		
	Bombay	N,E	eP	18	29	59	7810	Slight.
		E	PP		32	33		
		N	PPP		34	19		
		N,E	eS		39	11		
		N	PS		39	43		
		E	PS(SKS)		39	46		
			PPS		40	01		
	Kodaikanal	E	iP	18	30	18	8050	Slight.
			PP		33	00		
			PPP		34	45		
			iS		39	42		
			PPS		40	29		
			M		59	00		
01	Dehra Dun	N,E	e	20	28	54		Feeble, phases not clear.
			i		28	24		
02	Dehra Dun	N	e(P)	01	56	30	1300	Slight, other phases not clear.
			e		56	44		
			e(S)		58	42		
			SS		58	56		
			Lr		59	06		
02	Shillong	N	e	05	32	58		Slight.
			i		34	01		
			e		34	33		
	Dehra Dun	N	e	05	38	50		Feeble, phases not clear.
			i		38	56		
02	Shillong	N	P	05	42	58		Slight.
			Pg		43	03		
			Sg		43	34		
	Dehra Dun	N	e	05	48	40		Tremor.
02	Colombo	E	L	11	09	--		
			M		12	51		
02	Poona	Z	e	11	26	02		Tremor.
02	Shillong	Z	e	15	15	20		Slight.
	Poona	Z	e	15	17	02		Tremor.
	Madras	E	M	15	58	--		Other phases not clear.


DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
02	Shillong	Z	i	20	35	28		Slight.
03	Shillong	Z	e	00	14	30		Feeble.
03	Shillong	Z	i	01	30	57		Slight.
03	Shillong	Z	P	11	14	20		Slight.
			Pg		14	24		
			PP		14	27		
			S		14	43		
			Sg		14	49		
03	Bombay	E	e	20	55	35		Feeble. unclear.
			e		55	39		
	Poona	Z, E, W	e	20	55	45		Feeble.
	Madras	E, W	e	20	55	47		Feeble.
04	Epic: 42°N, 142 1/2°E. Off the South Indian coast (approx. 41°N, 142°E). - H = 23h 13m 10s (ISC) and (13). 41°N, 142°E. H = 50 min. - H = 23h 14m 01s (14. mean).							
	Shillong	Z	iP	23	23	12		Slight.
	Chhat. a	Z	iP	23	23	34		Slight. unclear.
		E	eS		29	23		
			e		42	--		Surface waves.
	Dehra Dun	N, E	eP	23	23	05		Slight. phases not clear.
	New Delhi	N, E	iP	23	23	22		Slight.
		N	iS		30	57		
	Hyderabad	E	eP	23	24	02		
		E, N	i		32	39		
		E	M		49	51		Per. = 18 Secs. A <sub>1</sub> = 2.
	Poona	Z	iP	23	24	21	6820	Slight.
		E	PcP		24	48		
			PP		26	39		
			PPP		28	12		
			PcS		28	39		
			eS		32	43		
			PPS		33	12		
			SSS		39	46		
			M?		49	10		
	Madras	E	iP	23	24	22	6610	Slight.
			PcP		24	55		
			PP		26	27		
			iS		32	31		
			PS		32	54		

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
04	Bombay	N,E	eP	23	24	24	7150	Feeble.
Contd.		N	PcP		2	43		
			PP		26	46		
		N,E,S	eS		33	02		
		E,S	PS?		33	17		
		N	PS		33	20		
	Colombo	E	eS	23	33	06		
			M		54	21		
05	Poona	Z	iP	18	1	48		Tremor.
	Dehra Dun	N,E	e	18	12	05		Feeble, not clear.
			i		12	31		
			i		12	59		
			i		13	37		
06	Shillong	N,E	e	11	59	07		Slight.
			i		59	45		
06	Dehra Dun	N	e	12	04	47		Tremor.
06	Bombay	E	e	14	39	41		Near, shock.
			e		43	27		
	Poona	Z,E	eP	14	39	53		Feeble, not clear.
		E	i?		43	45		
	Dehra Dun	N,E	e	14	40	03		Feeble, not clear.
06	Shillong	N	e	15	47	56		Slight.
			e		54	42		
07	Poona	Z	e?	16	46	40		Slight.
07	Shillong	Z	eP	21	18	26	190	Slight.
			P*		18	27		
			Pg		18	29		
			iSg		18	52		
			SS		18	59		
08	Shillong	Z	iP	07	07	48	190	Slight.
			P*		07	49		
			Pg		07	51		
			PP		07	54		
			S		08	10		
			S*		08	14		
		Z,N,E	iSg		08	17		
			SS		08	24		
08	Poona	Z	eP?	16	58	13		Distant, feeble
		E	i?	17	06	11		shock. Feeble
			i?		06	49		not clear

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
<u>1954</u>								
08 Contd.	Shillong	N	e	17	04	53		Slight, distant.
			e		23	43		
			e	18	01	21		
08	Bombay	E	M	18	03	--		Feeble.
	Hyderabad	N	M	18	05	32		Per.= 18 Secs. $\Delta$ =7.
	Madras	E	M	18	19	32		Other phases not clear.
09	Dehra Dun	N,E	e	05	15	24		Feeble, phases not clear.
09	Epc: $19^{\circ} \frac{10}{2}$ N, $121^{\circ} \frac{1}{2}$ E. Off the North Coast of Luzon, Philippines; - H = 07h 15m 03s (USCGS). Felt at Calayan (V) and Aparri (Press report from Manila).							
	Shillong	N	eP	07	20	34	3500	Slight.
			PP		21	29		
			eS		25	42		
			Lq		27	05		
			Lr		29	39		
	Chatra	Z	iP	07	21	34		Slight, distant. Surface waves.
			e		35	--		
	Poona	Z,E	iP	07	23	19		Slight.
	Bombay	E	eP	07	23	28	5060	Very feeble.
			PP		25	15		
			eS		30	11		
09	Shillong	Z	i.g	11	19	06	50	Slight.
		E,N	ePg		19	06		
		Z,E,N	iSg		19	12		
10	Shillong	Z	e	00	35	09		Tremor.
10	Poona	Z	e	02	49	22		Tremor.
10	Shillong	Z	eP	11	12	33	200	Slight.
			P*		12	35		
			PP		12	40		
			PPP		12	51		
			iSg		13	00		
11	Epc: $7^{\circ}$ S, $155^{\circ}$ E. Solomon Island; - H = 03h 03m 03s (USCGS).							
	Shillong	Z	iP	03	13	30		Feeble.
	Hyderabad	E	eP	03	15	18	8840	Slight.
			iS		25	20		
			M		50	06		
		N						Per.=15 Secs. $\Delta$ =3.



DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
11	Poona	Z	eP	03	15	42		Slight, distant.
Contd.	Madras	E	eS	03	25	10		Tremor.
11	Shillong	Z	iP	03	25	17		Tremor.
	Bombay	N,E	e	03	26	20		Very feeble.
11	Dehra Dun	N	e	05	59	44		Feeble.
11	Epc: 11°N, 57°E. Arabian Sea.			H = 10h 25m 21s		(USCGS).		
	10 1/2°N, 57°E.			H = 10h 25m 23s		(BCIS).		
	Bombay	N,E	iP	10	29	24	2000	Moderate.
			PPP		29	50		
		N	i		30	12		
		N,E	eS		32	43		
		N	Lq?		32	53		
		E	Lq		32	58		
		N	SS		33	00		
		E	SSS		33	19		
		N	Lr		33	22		
			M		36	23		Per.=13 secs. $\mu$ =43.
		E	M		41	07		Per.=13 secs. $\mu$ =85.
	Poona	Z,E	iP	10	29	32	2010	Moderate.
		N	PP		29	44		
			PPP		29	55		
			eS		32	52		
			SS		33	08		
			M		35	10		
	Kodaikanal	E	iP	10	30	04	2450	Moderate.
			PPP		30	47		
			iS		34	04		
			Lq		34	46		
			M		37	49		Per.=13 secs. $\mu$ =17.
	Hyderabad	E	iP	10	30	11	2490	
		N	iS		34	14		
		E	iS		34	18		
			SS		35	05		
		N	SS		35	21		
			M		37	10		Per.=15 secs. $\mu$ =136.
		E	M		37	41		Per.=12 secs. $\mu$ =77.
	Colombo	E	iPP	10	30	21		
			S		34	27		
			L		36	18		
			M <sub>1</sub>		38	32		
			M <sub>2</sub>		42	--		

DATE	STATION	COMPT	PHASE	G	M	T		REMARKS
				h.	m.	s.	km.	
<u>Apr.</u> 1954								
11 Contd.	Madras	E	iP	10	30	25		Great.
	Dehra Dun	N,E	e(P)	10	31	13		Moderate.
			e(PPP)		32	31		
			e(S)		36	01		
			M		41	06		
	New Delhi	N,E	PP	10	31	43	2890	Moderate.
		N	PPP		31	57		Beginning lost
			iS		35	32		within hour
			SS		36	37		mark.
			i		37	01		
			i		37	25		
			M		41	25		
	Chatra	E	eP	10	31	55	3550	Moderate.
			PP		33	00		
			PPP		33	21		
			PcP		34	45		
			eS		37	07		
			Lq		39	03		
			SSS		39	32		
			Lr		40	25		
			M		43	00		Per.=12 secs./u=19.5
	Calcutta	E	eP	10	31	55	3490	Moderate.
			PcP		34	56		
			iS		37	03		
	Shillong	Z	eP	10	32	25	3890	Moderate.
		N	PP		33	55		
			PPP		34	55		
			iS		38	01		
11	Epc: 37°N, 70 1/2° E. Hindukush; h = 60 km.							
	- H = 10h 53m 20s (USCGS).							
	Dehra Dun	N,E	eP	10	55	33	890	Moderate.
			PP		55	41		
			PPP		55	46		
			P*		55	52		
			Lq		56	55		
			eS		57	05		
			SS		57	18		
			Lr		57	20		
			SSS		57	29		
			S*		57	35		
			Sg/M		57	59		
	New Delhi	N,E	iP	10	55	45	970	Slight.
			PP		55	53		Direction of
			i		56	14		first motion
		N	Pg		56	34		South and
			i		57	06		East.
		N,E	iS		57	25		
		N	SSS		58	43		

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
11	Chatra	N	iP	10	57	19	1780	Moderate.
Contd.			PP		57	32		
			PPP		57	40		
			lq	11	00	13		
			iS		00	17		
			SS		00	33		
			SSS		00	47		
			Lr		00	58		
			M		02	22		
	Bombay	N,E	iP	10	57	29	1910	Slight.
		N	PP		57	47		
		N,E	PPP		57	53		
			iS	11	00	40		
		E	SSS		01	19		
			Lr		01	27		
			M		02	58		
	Poona	Z	iP	10	57	32	1850	Moderate.
		N,S	PP		57	40		
			PPP		57	48		
			eS	11	00	36		
			SS		00	54		
			SSS		01	09		
			Lr		01	34		
			M?		02	47		
	Hyderabad	N	iP	10	57	52	2120	
			iS	11	01	22		
	Calcutta	E	iP	10	57	59		First movement
		N	i(S)	11	01	43		East.
		E	SS		02	08		
	Shillong	Z	eP	10	58	03		
			iS	11	01	40		
13	Shillong	Z	P	04	36	37		Slight, local.
			P*		36	40		
			Pg		36	46		
			Lq		36	58		
			Sg		37	26		
13	Poona	Z	e	07	55	33		Tremor.
	Madras	E	iP	07	55	43		Slight.
	Shillong	Z	i	07	56	05		Tremor.
			i		56	48		
13	Shillong	Z	e	15	13	32		Slight.

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
					h.	m.	s.	km.
<u>Apr.</u>								
<u>1954</u>								
13	Epc: 34 $\frac{1}{2}$ ° N, 133 $\frac{1}{2}$ ° E. South Coast of Hondo;							- H = 15h 25m 48s (USCGS and BCIS).
	32°9 N, 134°4 E. h =20 km;							- H = 15h 25m 40s; Felt (CMO. Japan).
	Shillong	Z	iP	15	32	57		Slight.
		N	iS		38	43		
			PS		38	58		
			SS		42	28		
			SSS/Lq		43	23		
			Lr		45	25		
			M		50	09		
	Chatra	Z	eP	15	33	26		Slight, distant.
		E	e		50	--		Surface waves.
	Poona	Z,E	i	15	35	16		Slight, phases not clear.
	Calcutta	E	eS	15	39	37		Slight, distant.
	Hyderabad	E	M	15	59	58		Per.=15 secs. $\Delta$ = 4.
13	Shillong	Z	e	16	52	00		Tremor.
13	Dehra Dun	N,E	eP	17	04	49	900	Slight.
			P*		05	09		
			iS		06	22		
			SS		06	32		
			Lr		06	35		
			SSS		06	43		
			S*		06	49		
			Sg/M		07	12		
	New Delhi	E	eP	17	05	16	940	Slight.
			PP		05	24		
			PPP		05	31		
			P*		05	37		
			Pg		05	58		
			eS		06	53		
			SS		07	05		
			SSS		07	13		
			i		07	28		
13	Poona	Z	e	17	10	59		Tremor.
13	Shillong	Z	i	17	45	11		Tremor.
13	Shillong	Z	P	18	13	36		Local.
			Pg		13	40		
			Sg		14	04		
13	Shillong	Z	Pg	23	48	42		Local.
			Sg		48	48		

DATE	STATION	COMPT	PHASE	G	M	T	REMARKS
				h.	m.	s.	km.
<u>Apr.</u>							
<u>1954</u>							
14	Poona	Z	e	08	13	47	Tremor.
14	Dehra Dun	N	eP.	09	43	40	870 Slight.
			PP		43	46	
			P*		43	58	
			iS		45	09	
			SS/Lr		45	21	
			SSS		45	34	
			S*		45	39	
			Sg/M		46	00	
14	Epc: 10° N, 93° E. Andaman Island Region;						
	10° N, 93 <sup>1</sup> / <sub>4</sub> ° E. - H = 13h 24m 47s (USCGS)						
	10° N, 93 <sup>1</sup> / <sub>4</sub> ° E. - H = 13h 24m 46s (BCIS).						
	995 N, 93° 5' E. - H = 13h 24m 44s (Shillong).						
	Madras	E,W	iP	13	27	52	1420 Slight.
			PP		28	01	
			PPP		28	06	
			i		28	31	
			iS		30	17	
			Lq		30	19	
			SS		30	35	
			SSS		30	44	
			Lr		30	52	
			M		32	12	
	Calcutta	E	eP?	13	28	04	1600 Moderate.
		N	iP		28	04	
			iS		30	45	
		E	SS?		31	10	
	Kodaikanal	E	iP	13	28	25	2380 Slight.
			PPP		28	56	
			S		32	19	
	Shillong	Z	eP	13	28	27	Slight.
		N	PP		28	36	
			PPP		28	47	
			eS		31	17	
			Lr		31	43	
			M		32	54	
	Hyderabad	E,N	iP	13	28	34	1750
		E	eS		31	30	
			SS		31	42	
			M		34	38	Per.=16 secs. $\lambda$ = 9.
	Chatra	Z	iP	13	28	57	2010 Slight.
		E	eP				
			PP		29	16	
			PPP		29	28	
		E,Z	iS		32	17	
		E	SS		32	46	
			SSS		33	01	
			Lr		33	20	
			M		34	46	



DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
14	Poona	ZFN	iP	13	29	27	2280	Moderate.
Contd.		N,S	PP		29	48		
			eS		33	11		
			Lq		33	16		
			SS		33	37		
			SSS		33	57		
			M		35	54		
	Bombay	N	eP	13	29	40	2500	Slight.
		E	iP					
		N,E,S	PPP		30	17		
		E	PPP		30	21		
		N	PcP		33	30		
		N	eS		33	43		
		E	iS					
		N,E	Lq		34	15		
		N	SS		34	32		
		E	SSS		35	06		
		N	Lr		35	18		
	New Delhi	N,E	iP	13	30	02	2570	Slight.
			PP		30	36		
			eS		34	10		
		N	Lq		34	40		
			SS		34	54		
	Dehra Dun	N,E	eP	13	30	11	2890	Moderate.
			PP		30	52		
			PPP		31	04		
			iS		34	40		
			Lq		35	34		
			SSS		36	01		
			Lr		36	47		
			PcS		37	01		
			M		38	56		
			ScS		40	45		
14	Dehra Dun	N	e	20	11	10		Feeble, phases not clear.
14	Shillong	Z	e	21	44	47		Tremor.
15	Poona	Z	e?	03	08	31		Tremor.
15	Dehra Dun	N,E	eP	05	56	05	520	Moderate.
			PP		56	12		
			P*		56	14		
			Pg		56	24		
			iS		57	00		
			Lr		57	02		
			SS		57	09		
			S*		57	11		
			SSS		57	20		
			Sg/M		57	23		

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
15	New Delhi	E	eP	05	56	22	620	Slight.
Contd.			PP		56	30		
		N	Lq		57	14		
		N,E	iS		57	27		
			Lr		57	31		
			SS		57	37		
			S*		57	42		
			Sg		58	08		
	Shillong	Z	e	05	58	48		Tremor.
15	Shillong	Z	e	06	06	38		Slight, local.
			e		06	44		
			i		06	57		
15	Shillong	Z	e	10	13	52		Tremor.
15	Dehra Dun	N,E	e	22	01	53		Slight, phases not clear.
			i		33	48		
	New Delhi	N,E	eP	22	02	03	1090	Slight.
		E	PPP		02	30		
			P*		02	41		
			Pg		03	11		
			eS		04	05		
			Lr		04	45		
			S*		05	02		
16	Shillong	Z	e	04	58	53		Tremor.
16	Shillong	Z	i	06	11	40		Tremor.
			i		12	08		
	Poona	Z	e	06	13	51		
16	Shillong	Z	e	09	50	03		Slight, local.
			i		50	08		
16	Shillong	Z	i	10	06	52		Tremor.
16	Poona	Z	e	10	40	43		
16	Shillong	Z	P	17	37	41		Slight.
			P*		37	42		
			Sg		38	09		
			SS		38	14		
			SSS		38	25		
17	Epc: $51\frac{1}{2}^{\circ}$ N, $179^{\circ}$ W. Andreanov Island, Aleutian Island; - H = 20h 10m 37s Felt Adak (U.S.C.G.S) Magnitude = $6\frac{3}{4}$ -7 (Pasadena), $6\frac{3}{4}$ (Berkeley), 6.6 (Rome), $6\frac{1}{2}$ (Kiruna, Uppsala).							

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u> 1954								
17 Contd.	Shillong	Z N N	iP I PcP iS PS ScS SS Lq Lr M	20	21	50	7530	Moderate.
	Chatra	Z N,Z	i(P) e(S)	20	22	00		Slight.
	Dehra Dun	N,E	eP PPP iS ScS PS PPS SS SSS Lq M	20	22	16	8110	Moderate.
	Calcutta	E	eP iS SS?	20	22	18	8130	Moderate.
	New Delhi	N,E N	iP PcP iS PS PPS SSS M	20	22	28	8300	Moderate.
	Hyderabad	E  N E	iP iS SS L M M	20	23	10	9230	Moderate.  Per.=18 secs. $\Delta_1=24$ . Per.=20 secs. $\Delta_1=26$ .
	Poona	Z E	iP PP iS PS PPS SS M?	20	23	19		Moderate.

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
17	Madras	E	iP	20	23	21	9500	Moderate.
Contd.			PcP		23	27		
			PP		26	52		
			SKS		33	42		
			S		33	53		
			PS		34	56		
			PPS		35	16		
			SS		39	17		
	Bombay	N,E	eP	20	23	23	9510	Moderate.
		E	PP		26	48		
			PPP		28	47		
			e		33	41		
			iS		33	51		
		N	eSi		33	55		
		E	iSi					
		E	PS		34	51		
			PPS		35	24		
		N	M		59	00		Per.=18 secs./ $\mu$ =10
		E	M		59	00		Per.=19 secs./ $\mu$ =10
	Colombo	E	ePP	20	23	57		
			S		34	45		
			L		56	02		
			M	21	07	07		
17	Kodaikanal	E	iP	21	23	42	9850	Very slight.
			iS		34	32		
			M	22	00	14		Per.=18 secs./ $\mu$ =16.7.
17	Shillong	Z	i	22	29	10		Tremor.
18	Colombo	E	ePP	03	28	50		
			M	04	06	53		
19	Dehra Dun	N,E	eP	11	32	18	880	Slight.
			Pg		32	58		
			eS		33	49		
			SS		34	02		
			Lr		34	04		
			SSS		34	13		
			S*		34	23		
			Sg/M		34	42		
	New Delhi	N,E	eP	11	32	31	950	Slight.
		E	PP		32	39		
			PPP		32	47		
			Pg		33	15		
			Lq		33	59		
		N,E	iS		34	09		
		N	i		35	18		
		N,E	SS		34	21		
		N	SSS		34	29		
			S*		34	38		
			Sg		35	08		



DATE	STATION	COMP	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u> 1954								
19	Poona	Z	e	16	39	01		Very feeble.
19	Dehra Dun	N,E	eP	16	55	39	340	Slight.
			e		55	53		
			Pg		56	24		
			Lq		57	07		
			iS		57	17		
			SS		57	26		
			Lr		57	32		
			S*		57	49		
			Sg/M		58	11		
	New Delhi	N,E	eP	16	55	57		Slight.
			P*		55	18		
			Lq		57			
			iS		57	44		
			Lr		58	03		
			SSS		58	07		
			S*		58	20		
			Sg		58	45		
19	Bombay	E	e	17	01	50		Very feeble.
			e		03	44		
	Madras	E	eP?	17	05	16		
			S?		07	23		
21	Poona	Z	e	00	15	57		
21	Chatra	Z	e	10	04	52		Slight, distant.
21	Poona	Z	i	20	42	51		Tremor.
22	Chatra	Z	i	15	02	27		Slight.
	Poona	Z	i	15	04	01		Tremor.
	Bombay	E	i	15	04	11		Very feeble.
			i		12	27		
22	New Delhi	E	eP	23	01	50	470	Slight.
			P*		01	58		
			Pg		02	06		
			i		02	14		
			Lq		02	30		
			S*		02	52		
		N,E	Sg		03	03		
	Dehra Dun	N,E	eP	23	01	56	360	Slight.
			P*		02	02		
			PP		02	04		
			Pg		02	08		
		N	PPP		02	10		
			Lq		02	25		
			Lr		02	33		
			iS		02	35		
			S*		02	36		
			SS		02	41		
			Sg		02	45		
			SSS		02	54		



DATE	STATION	COMP	PHASE	G	H	V	REMARKS	
					h.	m.	s.	
							km.	
<u>Apr.</u>								
<u>1954</u>								
23	Dehra Dun	N,E	e i		11	06	19 07 27	Feeble, phases not clear.
23	Chatra	Z	e		13	24	37	Slight, near.
23	Calcutta	E	e i		18	27	05 29 27	Slight, near.
	Dehra Dun	N	eP PP S SS SSS PeP PeS		18	27	07 27 14 29 29 29 42 30 03 33 14 35 43	1400 Slight.
	Madras	E	e		18	27	32	Tremor.
	New Delhi	N	eS eP SSS M		19	29	15 31 45 33 39 31 51	2280 Slight.
	Hyderabad	E,E E N	eS M M		18	31	36 31 33 35 26	Per.= 9 secs./ $\lambda$ =2. Per.= 9 secs./ $\lambda$ =2.
	Bombay	N,E N,E,S	e e		18	32	13 35 18	Feeble.
24	Dehra Dun	N	e		23	15	53	Tremor.
25	Poona	Z	e?		00	40	32	Very distant, feeble shock, phases not clear.
	Bombay	E,W	e e		00	44	25 51 23	Distant and feeble.
	Kodaikanal	E,W	e?		00	44	44	Very slight, tremor.
	Madras	E,W	eP		00	45	08	Slight, phases not clear.
	Hyderabad	E	eS M		00	51	42 01 17 50	Per.=17 secs./ $\lambda$ = 6
25	Colombo	E	M		03	11	45	
25	Shillong	Z	iP		02	42	44	Slight.
25	Shillong	Z	iP P* Pg S? Sg/M		03	43	24 43 36 43 50 44 19 44 46	510 Slight, near.

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
<u>1954</u>								
25	Bombay	N	e	03	52	14		Very feeble and near shock.
		E	e		55	00		
		N	e		55	29		
25	Shillong	Z	1P	09	26	15		Feeble.
25	Shillong	Z	eP	18	13	03		Tremor.
25	Shillong	Z	eP	18	21	11		Tremor.
25	Shillong	Z	eP	22	02	03		Tremor.
26	Shillong	Z	eP	00	40	32		Tremor.
26	Shillong	Z	eP	02	19	20		Tremor.
26	Poona	Z	e?	02	29	29		Tremor.
26	Shillong	Z	eP	11	00	26	700	Slight.
			Pg		00	55		
			S		01	39		
			SSS		01	55		
			Sg		02	07		
	Dehra Dun	N	e(P)	11	02	46	1550	Slight. Phases not clear.
			PP		03	06		
			e(S)		05	22		
	Calcutta	E	e	11	03	37		Slight, near.
			i		06	14		
			i		06	59		
	Poona	E	e	11	08	27		Very distant feeble shock. Phases not clear.
	Bombay	E	e	11	08	31		Very feeble shock.
		N	e		08	45		
			e		12	20		
		E	e		13	39		
26	Shillong	Z	1Pg	16	45	50	80	Slight, local, felt.
			P		45	52		
			Sg		45	59.5		
26	Epc:	52°N, 159°E.	Off the SE Coast of Kamchatka; h = 60 km.					
			- H = 20h 24m 47s (B C I S)					
		51°N, 158½°E.	h = 60 km Ca.					
			- H = 20h 24m 44s (U S C G S)					
		52°N, 159° E.	h = 100 km Ca. - H = 20h 24m 52s (CMO. Japan).					
		Magnitude = 6½ - 6¾	(Pasadena), 6½ (Kiruna, Uppsala, Berkeley), 6.4 (Roma).					

DATE	STATION	COMPT	PHASE	G	M	T	REMARKS
				h.	m.	s.	km.
<u>Apr.</u>							
1954							
26 Contd.	Shillong	Z	eP	20	34	25	6230 Distant, slight.
			PPP			34 47	
			S			42 14	
			ScS			42 30	
			Lq			43 21	
		M			43 56		
	Chatra	Z	eP	20	34	38	Slight, distant. Probably deep focus.
	Dehra Dun	N	e i	20	34	55 39 24	Slight, phases not clear.
	Calcutta	E	eP	20	34	58	6550 Slight.
eS					43 04		
Lq					49 39		
Lr					52 14		
	New Delhi	N,E N	iP	20	35	08	7370 Moderate.
PcP					35 32		
iS					43 57		
PS					44 16		
i					44 51		
SS					48 26		
SSS					51 14		
Lr					56 32		
M			21 02 00				
	Hyderabad	E,N N	iP	20	35	57	7600
iS					44 59		
L					58 19		
M		21	03	35	Per.=21 secs./ $\Delta$ = 13. Per.=18 secs./ $\Delta$ = 10.		
M				03 53			
	Poona	Z E	eP i	20	36	07	Very distant feeble shock. Phases not clear.
	Madras	E	iP	20	36	11	7910 Moderate.
PcP					36 18		
PP					38 54		
PPP					40 40		
iS					45 28		
SKS					45 52		
ScS					45 56		
PPS					46 07		
	Bombay	N,E E N,E E N,E E N,E E N	iP eP i	20	36	12	7950 Slight.
PP					38 56		
PPP					40 41		
eS					45 31		
PS					46 02		
PPS					46 18		
M			21	11	08	Per.=19 secs./ $\Delta$ = 8. Per.=18 secs./ $\Delta$ = 7.	
M					11 11		

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
26	Kodaikanal	E	e	20	36	35		Very slight, tremor.
Contd.	Colombo	E	P	20	36	42		
			S		46	25		
			L	21	02	50		
			M		10	35		
27	Epc: $6^{\circ}\text{N}$ , $82\frac{1}{2}^{\circ}\text{W}$ ; - H = 10h 06m 24s (U S C G S)							
	$5\frac{3}{4}^{\circ}\text{N}$ , $82\frac{1}{2}^{\circ}\text{W}$ ; H = 10h 06m 26s (B C I S)							
	Magnitude = 7 (Pasadena), $6\frac{3}{4}$ (Berkeley), 6 (Uppsala, Roma).							
	Colombo	E	e	10	24	50		Feeble.
			M	11	35	05		
	Bombay	N,E	ePKP <sub>1</sub>	10	26	08		Distant shock.
		E	e		33	09		
	Chatra	Z	e.	10	26	09		Slight, distant.
	Kodaikanal	E	e	10	31	42		Very slight, tremor.
	Poona	Z	e	10	36	11		Tremor.
	Hyderabad	E	M	11	29	13		Per.=24 secs./ $\Delta$ = 8.
27	Dehra Dun	N	e	15	30	25		Tremor.
27	Epc: $56^{\circ}\text{S}$ , $147^{\circ}\text{E}$ . Off the South Coast of Tasmania;							
	- H = 21h 21m 35s (U S C G S).							
	Shillong	N	eP	21	35	10		Moderate.
			SKS <sub>1</sub>		45	36		
			SKKS <sub>1</sub>		45	51		
			iS		46	06		
			PS		47	32		
			PPS		48	07		
			PKKP <sub>2</sub>		51	48		
			SS		52	11		
			SSP		52	41		
			e?		55	41		
			Lr	22	05	41		
			M		13	21		
	Calcutta	E	e	21	37	06		Slight, distant.
			i(SKS)		45	33		
	Bombay	E	e	21	38	10		Feeble.
			M	22	03	--		
	Kodaikanal	E	e	21	44	54		Very slight, tremor.
	Madras	E	eS	21	44	56		Slight, phases not clear.
	Hyderabad	E	SKS	21	45	27		
			M	22	05	27		Per.=15 secs./ $\Delta$ = 6.
		N	M		05	30		Per.=18 secs./ $\Delta$ =12.



DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
1954								
27	Poona	N	e	21	45	45		Slight, phases not clear.
Contd.								
28	Dehra Dun	N	e	16	08	41		Tremor.
29	Madras	E	eP	04	31	06		Moderate. Phases not clear.
29	Dehra Dun	N	e	08	36	10		Tremor.
29	Bombay	E	e	11	08	29		Distant. Moderate.
		N	e		08	44		
		E	e		10	39		
		N	e		12	22		
		E	e		12	34		
	Poona	Z	i	11	08	43		Slight, phases not clear.
	Kodaikanal	E	e?	11	33	41		Very slight, tremor.
29	Colombo	E	ePP	11	51	50		
			S	12	07	20		
			L		43	50		
			M	13	01	53		
29	Poona	Z	i	11	53	52		Moderate, long distant shock. Phases not clear.
29	Bombay	N	e	11	54	02		Distant.
		N,E,S	e		57	25		
		E,S	e		58	26		
			e	12	07	--		
		E	M		56	--		
		N	M		59	--		
29	New Delhi	N	ePKP	11	55	05	12670	Moderate.
			PP		56	07		
			PPP		58	57		
		N	SKS	12	01	45		
			SKKS		02	58		
			PS		05	49		
			PPS		07	02		
			PKKS		09	50		
			SS		11	59		
			SSS		16	10		
29	Hyderabad	N	eP	11	57	19	10010	
			S	12	08	12		
		E	SS		13	31		
			M		39	44		Per.=18 secs. $\Delta$ =24.
		N	M		40	05		Per.=18 secs. $\Delta$ =21.



DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
<u>1954</u>								
29	Calcutta	E	iPKP <sub>1</sub>	11	59	21	13780	Moderate.
			SKS <sub>2</sub>	12	06	38		
			PPS?		12	33		
			Mn		53	46		Per.=20 secs./u =72.
29	Dehra Dun	N,E	e	22	10	28		Slight. Phases not clear.
			i		10	34		
			i		10	47		
30	Poona	Z	i?	12	06	44		
30	Poona	Z	i	12	13	51		
30	Epc: 39.5°N, 22.2°E. Thessalonika Greece;							
				- H = 13h 02m 36s (B C I S).				
				39 <sup>10</sup> / <sub>2</sub> °N, 22°E. - H = 13h 02m 36s (U S C G S )				
	New Delhi	N,E	iP	13	11	04	5050	Moderate.
			PP		13	53		
			PPP		14	52		
			iS		17	46		
		N	ScS		20	23		
			SS		20	58		
			SSS		22	10		
			Lr		24	49		
			M		28	58		
	Dehra Dun	N,E	eP	13	11	06	5050	Moderate.
			PcP		12	26		
			PP		12	59		
			PPP		13	44		
			PcS		16	22		
			iS		17	58		
			PPS		18	14		
			ScS		20	32		
			SS		21	06		
			Lq		22	15		
			SSS		22	25		
			Lr		24	14		
			M		28	12		
	Bombay	N,E,S	iP	13	11	18	5310	Moderate.
			PP		13	11		
		ES	PPP		14	07		
		N,E,S	iS		18	15		
		ES	PPS		18	33		
		N,E,S	SS		21	11		
		ES	i		21	47		
			i		22	09		
		N	Lq		22	34		
			SSS		22	46		
			M		34	16		Per.=17 secs./u = 9.

DATE	STATION	COMPT	PHASE	G	M	T	$\Delta$	REMARKS
							h. m. s. km.	
<u>Apr.</u>								
1954								
30 Contd.	Poona	Z N,S	iP	13	11	25	5360	Moderate.
			PP		13	23		
			PPP		13	59		
			PcS		16	44		
			iS		18	24		
			PS		18	29		
			SS		21	19		
			Lq		22	11		
			SSS		22	30		
			Lr		24	41		
M		28	58					
	Hyderabad	E,N E E,N E N E	iP	13	11	53	5800	Per.=23 secs./h = 69. Per.=22 secs./h = 64.
			PP		13	57		
			iS		19	18		
			L		28	09		
			M		31	36		
			M		32	20		
30	Chatra	Z N,E N,E,Z	i(P)	13	12	06	Moderate, distant.	
			e(P)					
			e(S)		19	40		
	Kodaikanal	E,W	iP	13	12	25	6350	Slight.  Per.=12 secs./h = 7.
			PPP		15	53		
			PcS		17	11		
			iS		20	20		
			PPS		20	45		
			M		34	36		
	Madras	E,W	iP	13	12	26	6250	Moderate.
			PcP		13	17		
			PP		14	40		
			PPP		15	51		
			PcS		17	09		
			iS		20	16		
			PS		20	31		
			PPS		21	42		
			ScS		22	04		
			SS		23	54		
			SSS		26	22		
			Lq		26	27		
			Lr		29	30		
	Calcutta	E	iP	13	12	32	6830	Moderate. First movement west.
			PP		14	48		
			PPP		16	12		
			iS		20	53		
			ScS		24	24		
			Lq		28	07		
			PKKP <sub>1</sub>		33	23		
			M		36	08		

DATE	STATION	COMPT	PHASE	G M T			△	REMARKS	
				h.	m.	s.			
<u>Apr.</u>									
1954									
30 Contd.	Colombo	S	P	13	12	49.			
			S			21	01		
			L			36	--		
			M			42	14		
	Shillong	N	iP	13	12	55		Moderate.	
			PP			14	44		
			PPP			16	37		
			PcS			17	37		
			iS			21	06		
			ScS			22	12		
			SS			24	31		
			SSS			27	24		
			M			34	54		
30	Kodaikanal	E,W	e?	22	59	39		Very slight, tremor.	
30	Poona	Z	e	23	17	59			
30	Madras	E,W	e	23	22	36		Slight. Phases not clear.	
30	Calcutta	E	e	23	27	06		Slight, distant.	
			e			38	14		
30	Bombay	N	e	23	28	43		Distant and feeble.	
		E,S	e			28	48		
	Hyderabad	E	S	23	28	43		Per.=18 secs. $\lambda$ = 14 Per.=15 secs. $\lambda$ = 7.	
		N	L			45	18		
		E	M			52	24		
		N	M			53	02		
Colombo	S	P		23	31	16			
		L				51	49		
		M				58	51		

Earthquake Reports  
(Non Instrumental Reports)

The following table contains a list of earthquakes that were reported by Voluntary Observers from various stations during the month of April 1954.

Place at which felt	Date in		Time in		Duration in secs	Intensity R.F.scale	No. of shocks	Remarks
	G.	M.	G.	M.				
Shillong	01		h. m.		6	III	-	-
			16	15				
Srinagar	11		10	54	120	V	4	-
Khandwa	23		11	05	1	III-IV	1	-
Shillong	26		16	30(?)	15	II	1	-



18/10/68



GOVERNMENT OF INDIA  
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



Published under the direction of  
Shri S. Basu, M.Sc., F.N.I.,  
Director General of Observatories



- 2 -

Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	$T_0 = T_g$ $= 7.0$	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori-Ewing	N-S	18.0	32	-	25
	Omori-Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	$T_0=0.72$ $T_g=0.45$	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	$T_0 = T_g$ $= 7.2$	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	$T_0=1.5$ $T_g=1.5$	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benioff Short Period	Z	$T_0=1.0$ $T_g=0.18$	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30

 Office of the Director General of Observatories,  
 Lodi Road, New Delhi, India, 1959.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
01	Dehra Dun	N	e	07	43	49		Feeble, phases not clear.
	Shillong	Z	i	07	45	02		Tremor.
			e		48	41		
01	Shillong	Z	i	09	23	59		Tremor.
			i		24	06		
01	Shillong	Z	e	09	35	20		Tremor.
01	Shillong	Z	i	13	24	40		Slight, near.
			i		24	48		
			i		24	55		
01	Dehra Dun	N,E	eP	15	37	19	220	Slight, phases not clear.
			iS		37	44		
			i		37	54		
	New Delhi	E	eP	15	37	30	310	Slight.
			P*		37	33		
		N,E	PP		37	37		
		E	Pg		37	40		
			PPP		37	44		
		N,E	Lr		38	02		
		E	iS		38	05		
		N,E	S*		38	11		
			Sg		38	17		
	Shillong	Z	e	15	38	53		Tremor.
			e		40	48		
			e		40	54		
01	Shillong	Z	e	20	54	02		Tremor.
			i		54	08		
01	Shillong	Z	i	21	39	39		Tremor.
			e		45	10		
02	Shillong	Z	e	00	56	06		Tremor.
			e		56	22		
02	Shillong	Z	iPg/P*	02	59	45	100	Slight.
			P		59	47		
			iSg		59	56		
			S	03	00	01		
			SS		00	11		
02	Shillong	Z	e	04	50	01		Slight, near.
			e		50	54		
02	Dehra Dun	N	e	06	19	21		Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
02	Shillong	Z	iP	06	45	46	190	Slight.
			P*		45	47		
			Pg		45	49		
			S/S*		46	10		
			eSg		46	11		
			SS		46	18		
02	Shillong	Z	iPg	22	33	12	20	Slight.
			iSg		33	14		
02	Shillong	Z	e	20	59	29		Tremor.
			i		59	41		
02	Shillong	Z	iP	21	24	41	210	Slight.
			Pg		24	43		
			PP		24	48		
			eSg		25	10		
02	Shillong	Z	iPg	22	04	50	20	Slight.
			iSg		04	52		
03	Shillong	Z	iP	08	24	48	220	Slight.
			ePg		24	52		
			eSg		25	18		
03	Shillong	N	e	08	35	05		Distant. Phases not clear.
03	Shillong	Z	e	12	37	11		Tremor.
03	Shillong	Z	iP	18	09	31	220	Slight.
			ePg		09	37		
			eSg		10	15		
03	Poona	Z	eP	18	26	52		Tremor.
03	Shillong	Z	e	18	28	02		Distant.
04	Shillong	Z	i	01	38	57		Tremor.
			i		38	59		
04	Shillong	Z	e	14	03	42		Tremor.
			e		03	57		
04	Shillong	Z	e	15	29	02		Tremor.
04	Shillong	Z	e	16	07	21		Tremor.
04	Shillong	Z	i	18	00	08		Tremor.
04	Shillong	Z	i	21	44	09		Tremor.
04	Shillong	Z	i	23	59	01		Slight.
			e		59	39		

5

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
05	Dehra Dun	N,E N	eP PPP P* Pg Lq iS SS Lr SSS Sg/M	03	15	26	900	Moderate.
05	Shillong	Z,N N	iP iS	09	00	39	8670	Slight.
	Poona	Z,N Z	eP ?	09	02	13		Very distant feeble shock. Phases not clear.
	Colombo	E	eP S L M	09	02	39		Amp. = 0.2mm.
	Hyderabad	N	S M	09	12	12		Per. = 15 Secs./u = 7
05	Dehra Dun	N,E N	eP PP PPP P* Pg Lq iS Lr SS SSS S* Sg/M PcP	09	19	05	870	Moderate.
	New Delhi	N,E	eP PP Lq eS SS SSS M	09	19	30	860	Slight.
	Shillong	Z	e	09	21	21		
05	Dehra Dun	N	e e	09	55	58		Slight. Phases not clear.
	Shillong	Z	i	18	01	08		Tremor.
05	Shillong	Z	e	23	54	03		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
<u>Aug.</u> 1954						
06	Shillong	N	e	00 03 15		Tremor.
06	Dehra Dun	N,E	eP PP PPP Pg iS SS/Lr SSS S* Sg/M	02 56 14 56 24 56 29 56 52 57 46 57 57 58 08 58 13 58 38	890	Moderate.
	New Delhi	N,E N N,E	eP P* iS SS SSS S*	02 56 32 56 51 58 13 58 25 58 36 58 48	980	Slight.
06	Shillong	Z	i	11 43 39		Tremor.
06	Shillong	Z N,E	i i	12 39 02 39 25		Slight, local.
07	Dehra Dun	N,E N	eP PPP P* Pg iS SS/Lr SSS S* Sg/M	15 15 52 16 06 16 10 16 27 17 13 17 24 17 35 17 39 17 59	780	Moderate.
	New Delhi	N,E E N,E	iP PP P* Pg iS SS SSS Sg	15 15 57 16 04 16 16 16 38 17 37 17 48 17 58 18 32	970	Slight. Direction first motion South and East.
	Poona	Z	i	15 17 35		Tremor.
	Shillong	Z,N N	iP iS	15 18 15 21 56	2230	Slight.
07	Shillong	N	e e	18 12 38 15 05		Slight initial movement very small obscured in microseisms.
	Calcutta	E	e	18 16 19		Tremor.
	Poona	N	i?	18 21 34		---



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
07	Shillong	Z	e	18	39	11		Slight.
			e		39	41		
07	Shillong	Z	e	19	19	00		Tremor.
08	Shillong	Z	iP	11	50	35	290	Slight.
			eP*		50	40		
			aPg		50	46		
			eS		51	10		
		Z,N	eS*		51	15		
		Z	eSg		51	20		
09	Shillong	Z,N	i	00	16	54		Slight, near.
09	Shillong	Z	e	11	08	10		Tremor.
09	Shillong	Z	i	17	22	32		Tremor.
09	Shillong	Z	i	18	18	21		Tremor.
09	Epc: 53°N, 161°E. - h = 60 km Ca. Off the East Coast of Kamchatka. - H = 19h 16m 48s (U.S.C.G.S). Magnitude = 6½-6¾ (Pasadena, Skalyate Pleso), 6½ (Berkeley, Uppsala), 6¼-6½ (Praha), 6-6¼ (Kiruna).							
	Shillong	Z,N	iP	19	26	36	6240	Moderate.
			iS		34	26		
	Dehra Dun	N	eP	19	27	06	6950	Moderate.
			PcP		27	38		
			PP		29	25		
			PPP		30	55		
			eS		35	33		
			PS		35	50		
			PPS		35	57		
			ScS		36	53		
			SS		39	40		
			Lq		43	06		
			Lr		46	00		
			M		51	00		
	New Delhi	N,E	eP	19	27	19		Moderate.
			i?		37	06		
	Colombo	E	e?	19	27	19		
			S		38	39		
			L	20	01	34		
			M		07	29		
	Hyderabad	N	P	19	28	10	7800	
		E,N	eS		37	22		
		N	PS		37	56		
			L		52	17		
			M		57	14		Per.= 18 Secs./u= 21
		E	M		57	58		Per.= 18 Secs./u= 11

DATE	STATION	COMPT.	PHASE	G. M T.	△	REMARKS
				h. m. s .	km.	
<u>Aug. 7</u>						
1954						
09	Poona	Z	eP	19 28 23	8110	Slight.
Contd.		N	PcP	28 50		
			PP	31 15		
			PPP	33 02		
			iS	37 50		
			PPS	38 29		
			SS	42 24		
			M	57 18		
	Madras	E	eP	19 28 24	8130	Moderate.
			PcP	28 32		
			PP	31 14		
			PPP	33 03		
			iS	37 53		
			SKS	38 05		
			PS	38 24		
			PPS	38 55		
	Bombay	N	e(P?)	19 28 36		Moderate.
			•	37 45		
			e(S)	38 28		
			M(?)	20 24 11		Per. = 16 Secs./u = 9
	Kodaikanal	E	e(P?)	19 29 04	8180	Slight.
			iS	38 34		
	Calcutta	E	S	19 35 30		Moderate. Beginning
			M	56 40		not recorded.
09	Dehra Dun	N	•	20 55 36		
			i	55 48		
09	Shillong	Z	i	21 32 36		Tremor.
09	Shillong	Z	i	22 21 50		Tremor. Near shock.
			i	22 34		
10	Dehra Dun	N	i	01 28 31		Tremor.
10	Shillong	Z	i	08 33 11		Slight.
			i	34 00		
10	Shillong	Z	•	10 59 42		Slight.
10	Shillong	Z	iP	17 28 29		Slight.
			iSg	29 59		
10	Shillong	Z	i?	18 07 47		Slight.
10	Shillong	Z	e(Sg)	23 58 14		Slight.
11	Shillong	Z	eP	05 53 24		Slight.
			•	53 59		
11	Shillong	Z	•	07 35 18		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			$\Delta$	REMARKS
				h.	m.	s.		
Aug. 1954								
11	Shillong	Z	e	09	40	13		Slight.
11	Shillong	Z	iPg iSg	10	00	38 00 42	20	Slight.
11	Shillong	Z	e	12	56	47		Slight.
11	Shillong	Z N	e(?) eP eS L	13	00	39 00 43 01 27 01 46	400	Slight. 'Z' Component too faint for measurements
11	Shillong	Z	i	20	03	28		Slight.
	Dehra Dun	N	e	20	05	13		Tremor.
12	Shillong	Z	iP e eSg	05	07	54 08 16 08 27	230	Slight.
12	Dehra Dun	N	e	07	50	35		Tremor.
12	Shillong	Z	iP	11	45	52		Slight.
12	Epc: 2°N, 118°E. Off the East Coast of Borneo. - H = 23h 42m 32s (U.S.C.G.S). Magnitude = $5\frac{3}{4}$ -6 (Kiruna).							
	Shillong	Z	eP e eS L	23	49	25 49 32 55 06 00 00 01		Slight.
	Calcutta	E	PP iS	23	51	02 55 18		Slight, distant.
	Colombo	E	S L M	23	55	50 00 01 50 08 08		Amp. = 0.4mm.
13	Shillong	Z	i(Sg)	08	35	42		Slight.
13	Shillong	Z	iPg iSg	19	59	18 59 26	70	Slight.
13	Shillong	Z	i(Pg) i	20	38	57 38 59		Slight.
14	Shillong	Z	eP iSg SS	02	55	17 55 41 55 48	180	Slight.
14	Dehra Dun	N	e	07	59	09		Tremor.
14	Shillong	Z	i	14	32	21		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
14	Shillong	Z	e	17	02	05		Slight.
14	Shillong	Z	iP	17	28	59	210	Slight.
			i		29	02		
			iSg		29	27		
14	Shillong	Z	eP	19	53	04	450	Slight.
			iS		53	52		
			iSg		54	10		
14	Epc: Ceram Sea. - H = 22h 56m 08s (U.S.C.G.S). 3°S, 127 $\frac{1}{2}$ °E. -H = 22h 56m 08s (B.C.I.S).							
	Colombo	E	(P)	23	04	05		
			SSS		12	38		
			L		22	58		
			M		27	35		/u = 0.4mm.
	Shillong	Z	eP	23	04	28	4860	Slight.
			i		04	30		
		N	eP		04	30		
			iS		11	01		
	Madras	E	eP	23	05	06	6000	Very slight.
	Kodai anal	E	e?	23	05	48		Slight, tremor.
	Poona	Z	eP	23	06	01	6330	Slight.
		N	PP		08	16		
			PPP		09	23		
			iS		13	55		
			PS		14	07		
			PPS		14	21		
			ScS		15	46		
			SS		17	48		
			Lq		20	19		
			Lr		23	09		
			M		28	04		
	New Delhi	N,E	eP	23	06	02	6370	Moderate.
		N	iS		13	58		
	Hyderabad	N	S	23	12	55		
			M		30	57		Per. = 18 Secs./u = 5.
15	Dehra Dun	N	e	05	59	38		Tremor.
15	Shillong	Z	e(P)	06	48	34		Feeble.
			e		49	15		
15	Shillong	Z	iP	09	43	50		Slight.
15	Shillong	Z	e	18	55	24		Slight.
15	Shillong	Z	i(Pg)	20	34	15		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
16	Shillong	Z	iP	00	02	45		Slight.
		N	M		11	--		
16	Shillong	Z	•	02	37	20		Slight.
			•		37	22		
16	Shillong	Z	•	04	59	42		Slight.
			•		59	49		
			i	05	00	00		
16	Dehra Dun	N	•	08	04	15		Feeble, phases not clear.
16	Dehra Dun	N	•	09	04	45		Feeble, phases not clear.
			i		09	17		
16	Shillong	Z	iP	09	06	58		Slight.
16	Shillong	Z	i	13	10	33		Slight.
16	Shillong	Z	i(Pg)	16	07	39		Slight.
			i(Sg)		07	41		
16	Shillong	Z	iPg	20	13	46	130	Slight.
			iSg		14	01		
16	Shillong	Z	eP	20	53	15	160	Slight.
			iSg		53	35		
16	Shillong	Z	eP	21	07	01	130	Slight.
			i		07	02		
			i		07	15		
			i(Sg)?		07	17		
16	Shillong	Z	•	21	55	06		Slight.
17	Dehra Dun	N	•	10	11	18		Slight. Phases not clear.
			i		11	45		
			i		12	05		
18	Shillong	N,E	•	03	37	07		Slight.
18	Epc: 21½°S, 176°W. Tonga Island. - h = 150 km. Ca. - H = 04h 42m 20S							
	(U.S.G.G.S) Felt - Nukualofa (VI), Apia (III). (Press report from Apia).							
	Magnitude = 7½ (Wellington, Takubaya), 7¼ (Berkeley),							
	7 (Pasadena, Chihuahua).							
	Shillong	N	•	04	54	36		Moderate shock. 'P' time not absolutely accurate for absence of Benioff time.
			•		58	57		
			PP	05	00	09		
			•		01	34		
			•		02	45		
			i		03	59		
			SKS		06	20		
			SS		07	24		



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Aug.</u>									
1954									
18 Contd.	Hyderabad	E	eP	04	56	40	12360	△ from PS - SKS.	
			PP	05	01	11			
			iSKS		07	05			
			SKKS		08	03			
			iPS		10	28			
			SS		15	45			
			N	L	31	27			
			E	L	34	12			
			N	M	43	06	Per. = 15 Secs./ $\Delta$ = 4		
			E	M	43	23		Per. = 11 Secs./ $\Delta$ = 3	
	Kodaikanal	E	eP?	05	00	00		Slight shock. 'P' phase a little uncertain.	
			i		06	03			
	Dehra Dun	N	ePKP	05	00	00	5280	Moderate.	
			PP		01	52			
			SKS		07	06			
			SKKS		09	43			
			PS		11	16			
			SS		16	59			
	Calcutta	E	PP	05	00	18	4510	Moderate. First movement east.	
			SKS		06	28			
	New Dehli	N,E	ePKP	05	00	46	4900	Slight.	
			N	iSKS		07			20
				i		08			28
				PS		11			23
	Poona	Z	PKP	05	00	50		Slight shock. Phases not clear.	
			Z,E	i		01			33
			N,E	SKS		07			25
			N	i		09			23
				PS		11			23
	Bombay	E	PKP <sub>1</sub>	05	00	52	12600	Moderate, deep.	
			PP		01	35			
			N,E	SKS		07			31
			E	i		07			58
			N	•		09			30
			E	iS		09			52
				PS		11			28
			E	i <sub>1</sub>		12			21
			N	e <sub>1</sub>					
			E	SS		17			32
	Madras	E	PP	05	00	54	4390	Moderate.	
			SKS		06	30			
18	Shillong	Z	eP	18	07	58		Slight. Distant.	
18	Shillong	Z	eP	19	02	45		Slight. Distant.	
18	Shillong	Z	eP	19	17	09		Slight. Local.	

DATE	STATION	C.M.P.T.	PHASE	G. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Aug.</u>									
1954									
18	Shillong	Z	iP	20	36	23		Slight. Local.	
18	Shillong	Z	eP	20	56	11		Slight, near.	
			e		56	22			
			e		57	30			
	Calcutta	N	e		59	03		Slight. Felt at Bhagalpur at Bihar.	
			E	eP	20	57	03		330
			N	iS		57	38		
	New Delhi	E	iS		57	40		Slight.	
			eP	20	58	23	1090		
			P*		58	46			
			Pg		59	10			
			eS	21	00	15			
			SS		00	24			
			SSS		00	35			
	N,E	M		01	20				
	Shillong	N	e	20	59	03		Slight. Phases not clear.	
	Poona	Z	e	21	03	03		Tremor.	
18	Dehra Dun	N,E	e	22	31	14		Slight. Phases not clear.	
			i		31	25			
18	Epc: 39°N, 72°E. Pamir. - H = 23h 32m 06s (B.C.I.S).								
	Dehra Dun	N,E	eP	23	34	22	1170	Moderate.	
			N	PP		34	30		
			PPP		34	37			
			Lq		36	12			
			iS		36	21			
			SS		36	33			
			Lr		36	40			
			SSS		36	44			
			Sg/M		37	30			
				New Delhi	N,E	eP	23		35
E	PPP					35	14		
N,E	iS	23				37	10		
N	SS					37	22		
Lr		37				31			
M		38				35			
	Poona	Z	eP	23	36	55		Very feeble shock. Phases not clear.	
	Shillong	Z	eP	23	37	11		Slight.	
	Hyderabad	E	e	23	44	09		Slight.	

DATE	STATION	COMPT.	PHASE	G. M. T.			$\Delta$	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
19	Shillong	Z	eP	00	51	01		Slight. Local.
			e		51	05		
			e		51	51		
			e		51	56		
	Dehra Dun	N	e	00	56	50		Tremor.
20	Dehra Dun	N	e	04	12	48		Slight. Phases not clear.
20	Shillong	Z	ePg	10	17	48		Slight. Local.
			Sg		18	01		
20	Bombay	N	e	15	34	57		Slight.
			e		39	10		
	Poona	E	i	15	35	14		Faeble shock. Phases not clear.
		N	i		39	20		
	Dehra Dun	N	e	15	35	14		Slight. Phases not clear.
	Shillong	Z	e	15	37	14		Feeble. Distant.
	Calcutta	E	e	15	43	52		Slight. Distant.
			i		49	42		
20	Shillong	Z	eP	20	35	48		Slight. Distant.
21	Epc: 7°N, 126½°E. Off the East Coast of Mindanao, Phillipines.							
	- H = 06h 38m 33s (U.S.C.G.S).							
	7° .5' N, 126° .10' E. (Manila). Felt Davo (V), Dadinagas & Hinatnan (III) Butnan (III). (Press report from Manila)							
	Magnitude = 6¼ (Kiruna).							
	Colombo	E	e?	06	44	49		
			e		53	19		
	Shillong	Z	eP	06	45	54		Slight.
	Madras	E	iP	06	47	12	5150	Slight.
			PP		48	58		
			PPP		49	50		
			ScP		52	44		
			iS		54	00		
			PS		54	08		
			PFS		54	20		
			ScS		54	42		
			SS		57	22		
	Dehra Dun	N	eP	06	47	36	5440	Moderate.
			PcP		48	40		
			PP		49	12		
			PPP		50	19		
			PcS		52	26		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.	km.	
<u>Aug.</u>								
1954								
21	Dehra Dun	N	e	06	54	39		
Contd. Contd.			eS		54	45		
			PS		54	53		
			ScS		57	08		
			SSS		59	44		
			M	07	06	06		
	Poona	Z	eP	06	47	58		Slight shock.
		N	iS		55	08		Phases not clear.
	Hyderabad	N	eS	06	54	06		Slight.
21	Shillong	Z	eP	09	54	50		Slight.
			Sg		55	08		
22	Dehra Dun	N,E	eP	06	44	40	920	Moderate.
		N	PP		44	46		
			PPP		44	53		
			Lq		46	06		
			iS		46	16		
			SS		46	27		
			Lr		46	32		
			SSS		46	38		
			S*		46	46		
			Sg/M		47	12		
24	Epc: 39.5°N, 118.5°W. Nevada USA. - H = 05h 51m 31s (U.S.C.G.S). Felt: San Francisco, Oakland, Sacramento, Reno, Elko & Fallon. Magnitude = 7¼ (Skalnate Pleso), 7 (Prahá) 6¾-7 (Hurvanovo, Kiruna), 6.8 (Pasadena), 6½-6¾ (Uppsala), 6½ (Berkeley, Takubaya).							
	Madras	E	e	06	08	50		Distant shock of moderate intensity. Phases not clear.
			e		29	36		
	Shillong	N	PP	06	10	02		Moderate. Distant.
			SKS		16	44		
			PS		20	03		
			SSS		29	53		
			e(Lr)		41	46		
			e(M)		50	56		
	Poona	Z	PKP	06	10	23		Probably a long distant shock. Phases not clear.
	Bombay	E	ePKP <sub>1</sub>	06	10	30	13550	Moderate.
			e		17	07		
		N	SKS		17	37		
		E	i		20	00		
		N	SS		28	30		
		E	eSS		28	36		
			SSS		33	03		
			Lq		37	33		
			M	07	00	56		
		N	M		07	54		Per. = 19 Secs. $\mu$ = 11 Per. = 21 Secs. $\mu$ = 8

DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
<u>Aug.</u>						
1954						
24 Contd.	New Delhi	N	iPP	06 10 43	12110	Moderate.
			SKS	16 47		
			SKKS	17 53		
			PS	20 06		
			SS	26 02		
		M	50 39			
	Hyderabad	N	ePP	06 11 53		
			e	21 48		
			M	57 45		Per. = 21 Secs./u = 43
			E M	58 53		Per. = 21 Secs./u = 37
	Colombo	E	PP	06 13 05		
			SS	30 30?		
			L	52 20		
			M	07 02 30		Amp. = 3.0mm.
	Calcutta	E	SKS	06 17 04		Moderate, Distant.
			e	18 56		
			e	20 53		
			i	26 59		
			Mn	55 44		
	Kodaikanal	E	e	06 18 59		
			e	29 47		
24	Dehra Dun	N	e	23 52 40		Slight. Phases not clear.
			i	54 15		
25	Shillong	E	eP*	04 58 09	160	Slight.
			iSg	58 30		
25	Shillong	N	e	06 32 58		Slight. Near.
			e	33 06		
			e	34 22		
25	Shillong	Z	e	10 19 50		Tremor.
25	Shillong	Z	ePg/P*	17 38 59	80	Slight.
			P	39 03		
			eSg	39 08		
			S*	39 12		
25	Shillong	Z	iP	18 32 26	270	Slight.
			P*	32 29		
			Pg	32 33		
			Lq	32 44		
			S	32 53		
			iSg	33 04		
			SSS	33 13		
26	Shillong	Z	iP	06 33 10	240	Slight.
			P*	33 12		
			Pg	33 17		
			S	33 39		
			S*	33 41		
			eSg	33 45		



DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
<u>Aug. 1954</u>								
26	Shillong	Z	e	08	37	02		Slight. Near.
			i		38	12		
			i		38	16		
26	Shillong	Z	iPg	09	27	31	40	Slight.
			P*		28	33		
			iSg		28	36		
			S*		28	39		
26	Shillong	Z	iP	17	38	08	240	Slight.
			P*		38	10		
			Pg/PP		38	14		
			PPP		38	20		
			S*		38	39		
			eSg		38	44		
			SS		38	47		
26	Shillong	Z	iP	18	51	14		Slight. Near.
			i		52	24		
	Poona	Z	aP	18	52	41		Tremor.
	Dehra Dun	N	e	18	53	04		Tremor.
26	Shillong	Z	iP	19	28	15		Slight. Distant.
			i		35	11		
		N	e		37	17		
	Dehra Dun	N	e	19	30	14		Tremor.
26	Shillong	Z	e	19	54	55		Tremor.
26	Shillong	Z	iP	21	01	46		Slight.
26	Shillong	Z	i	22	23	52		Tremor.
27	Shillong	Z	iPg	06	39	49	100	Slight.
			iSg		40	00		
27	Shillong	Z	e	07	05	44		Tremor.
27	Madras	E	e	07	28	22		
27	Epc: 24°N, 143°E. South of Borin Island. h = 100 km.							
	- H = 10h 55m 00s (U.S.C.G.S).							
	Magnitude = 6.7 (Pasadena), 6½ (Berkeley, Kiruna), 6¼ (Uppsala).							
	Shillong	Z	iP	11	03	18	5030	Moderate.
		N	aP		03	18		
		Z	PcP		04	53		
		N	iS		09	59		
			PS		10	10		
			PPS		10	25		
			SS		13	09		
			SSS		14	11		
			Lr		17	08		
			M		19	47		

DATE	STATION	COMPT.	PHASE	G. M. T.	∠	REMARKS
				h. m. s.	km.	
<u>AUG.</u>						
1954						
27 Contd.	Calcutta	E	eP	11 03 47	5450	Moderate.
			S	10 52		
			?	14 59		
			Lq	15 29		
	Dehra Dun	N	eP	11 04 46	6240	Moderate.
			eS	12 35		
	New Delhi	E	eP	11 04 49	6400	Moderate.
			iS	12 47		
			ScS	14 32		
			M	26 35		
Madras	E	iP	11 05 01	6630	Moderate shock.	
		PcP	05 34			
		PPP	08 40			
		PcS	09 32			
		iS	13 11			
		PS	13 26			
		PPS	13 38			
		ScS	14 43			
		SS	17 11			
		Lr	23 15			
Hyderabad	E,N	P	11 05 11			
		iS	13 14			
		PS	13 40			
		SS	17 06			
		L	23 15			
		N	L			23 49
Colombo	E	M	28 51	11 05 24		
		M	28 56			
		P	13 41			
		L	27 --			
		M	31 03			
Kodaikanal	E	eP	11 05 27	7000	Long distance earthquake of slight intensity.	
		iS	13 57			
		f?	12 12 45			
Poona	Z	iP	11 05 31	7000	Slight.	
		N	iS			14 01
		PS	14 15			
		PPS	14 35			
		SS	18 14			
		M	30 17			
Bombay	N,E	iP	11 05 36	7420	Moderate, h = 120 km.	
		N	pP			06 12
		N,3	iS			14 13
		E	i			15 14
		N	i			15 20
27	Shillong	Z	i	11 22 31		Slight.
27	Shillong	Z	i	11 53 33		Slight.

Per. = 18 Secs.  $\lambda = 7$ .  
Per. = 18 Secs.  $\lambda = 5$

Amp. = 0.4mm.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
<u>Aug</u>								
<u>1954</u>								
27	Shillong	Z	e	15	18	11		Tremor.
			e		18	30		
27	Shillong	Z	e	19	34	03		Tremor.
27	Shillong	Z	e	20	48	39		Tremor.
27	Dehra Dun	N	e	21	58	20		Feeble.
			i		58	52		
28	Shillong	Z	e	01	23	56		Slight. Near.
			e		24	08		
28	Shillong	Z	i	03	56	21		Slight. Distant.
28	Shillong	Z	i	10	01	44		Feeble.
28	Epc: 37°N, 141°E. Off the East Coast of Hondo Japan. - H = 10h 01m 20s (U.S.C.G.S). 36.7°N, 141.1°E. h = 40 km Ca. - H = 10h 01m 24s Felt (CMO Japan).							
	Shillong	Z	i	10	09	21		Slight. Distant.
			i		11	11		
		N	e		27	35		Ground waves.
	Dehra Dun	N	e	10	10	40		Feeble. Phases not clear.
	Poona	Z	iP	10	11	36		Tremor.
	Bombay	E	eP	10	11	40	7170	Feeble.
			eS?		20	19		
28	Dehra Dun	N	i	14	18	25		Feeble. Phases not clear.
28	Shillong	Z	eP	16	29	51	200	Slight.
			eSg		30	18		
28	Shillong	Z	eP	16	57	39	200	Slight.
			Pg		57	42		
			S/S*		58	02		
			eSg		58	06		
			SS		58	14		
			SSS		58	22		
28	Shillong	Z	e	21	15	45		Tremor.
28	Shillong	Z	iPg	21	29	53	30	Slight.
			iSg		29	56		
28	Shillong	Z	iP	23	24	00		Slight. Distant.
29	Kodsikanal	E	e?	14	29	44		Slight. Tremor.
29	Shillong	Z	i	16	09	14		Slight. Local.

DATE	STATION	COMPT.	PHASE	G. M. T.			∠	REMARKS
				h.	m.	s.		
Aug. 1954								
29	Colombo	E	L M	16	31	30 55		Amp. = 0.8mm.
29	Shillong	Z	iPg/P* PP iSg S* S	19	57	01 08 12 14 17	90	Slight.
29	Shillong	Z	e i	20	10	31 38		Slight. Near.
30	Shillong	Z	iP P* Pg PP S iSg SS	01	42	28 29 31 36 52 55 03	200	Slight.
30	Dehra Dun	N	aP PP Pg Lq iS SS Lr S* Sg/M	02	45	43 48 21 05 15 27 29 45 06	890	Slight.
	New Delhi	N,E	P i i	02	45	54 32 58		Slight.
30	Shillong	Z	iPg P* iSg	02	48	08 10 15	60	Slight.
30	Epic: 44°N, 147½°E. Kurile Island. h = 60 km Ca.							
	44.5°N, 147.5°E. h = 60 km. - H = 07h 57m 23s (U.S.C.G.S).							
	43.6°N, 147.8°E. h = 60 km. - H = 07h 57m 24s (B.C.I.S).							
	Magnitude = 6-6¼ (Pasadena). - H = 07h 57m 23s Felt (CMO Japan).							
	Dehra Dun	N	e	08	05	59		Slight. Phases not clear.
	Shillong	Z	iP	08	06	03	5280	Slight, compression.
		N	aP PP i eS PS SS SSS M			07 03 07 57 09 12 12 58 13 03 16 44 17 48 23 30		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS				
				h.	m.	s.			km.			
<u>Aug.</u>												
1954												
30 Contd.	New Delhi	N,E	eP i	08	07	08	6260	Moderate.				
					07	19						
	Poona	Z	eP	08	08	08	7220	Slight.				
		N	PcP		08	44						
			PP		10	29						
			PPP		12	11						
			eS		16	50						
			PS		17	05						
			PPS		17	24						
			Lr		27	36						
			M?		33	26						
			Bombay	N,E	eP	08			08	10	7370	Slight.
E	PcP				08	41						
	PP				10	36						
	PPP				12	07						
	eS				16	59						
N,E	i				17	11						
E	PPS				17	32						
	i				18	19						
	Hyderabad			E	eS	08	16	17				
				N	M		32	44				
	Colombo	E	S	08	17	41						
			L		36	51						
			M		47	01						
								Amp. = 0.5mm.				
30	Dehra Dun	N,E	eP	08	41	27	530	Slight.				
		N	PP		41	36						
			P*		41	39						
			PPP		41	42						
			Pg		41	49						
			iS		42	24						
			Lr		42	27						
			SS		42	37						
			S*		42	41						
			SSS		42	48						
			Sg/M		42	52						
			New Delhi	N,E	eP	08			41	36	620	Slight.
E	Pg				42	01						
N,E	iS				42	41						
	Lr				42	45						
	S*				42	59						
	SSS				43	03						
E	Sg				43	15						
	Shillong	Z	iP	08	41	53	800	Slight.				
			PP		41	59						
			PPP		42	06						
			iS		43	16						
			SS		43	26						
			SSS		43	38						



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
<u>1954</u>								
30	Poona	Z	eP	08	43	26	1540	Slight.
Contd.			eS		46	02		
30	Shillong	Z	•	11	48	25		Tremor.
30	Shillong	Z	eP	17	44	19	230	Slight.
			P*		44	21		
			Pg		44	25		
			S		44	44		
			S*		44	49		
			eSg		44	52		
			SS		44	58		
			SSS		45	07		
30	Dehra Dun	N	•	18	27	31		Tremor.
30	Dehra Dun	N	•	19	08	09		Tremor.
30	Shillong	Z	•	19	58	13		Slight, local.
			i		58	16		
			i		58	24		
30	Shillong	Z	iP	21	25	23		Slight. Distant.
	Poona	Z	i	21	27	16		Tremor.
30	Shillong	Z	ePg	22	35	52	20	Slight.
			iSg		35	54		
30	Shillong	Z	•	22	38	05		Slight. Near.
			•		38	12		
			i		39	18		
31	Shillong	Z	iP	05	08	18		
			PP		08	25		
			P*		08	27		
			Pg		08	37		
			Sg		09	35		
31	Shillong	Z	iP	09	44	30		Tremor.
31	Shillong	Z	iP	11	14	29		

Earthquake Reports  
(Non Instrumental Reports)

The following table contains a list of earthquake that were reported by Voluntary Observers from various station during the month of August 1954.

Place at which felt	Date	Time in		Duration in Secs.	Intensity in R.F. Scale.	No. of shocks	Remarks
		G. M. T.	h. m.				
Srinagar	16	02	50	3	V	1	The sound resembling like moving of a heavy loaded wooden cart heard.

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



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Published under the direction of

Shri S. Basu, M.Sc., F.N.I.,

Director General of Observatories  
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Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	To = Tg = 7.0	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori- Ewing	N-S	18.0	32	-	25
	Omori- Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	To=0.72 Tg=0.45	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	To = Tg = 7.2	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	To=1.5 Tg=1.5	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benioff Short Period	Z	To=1.0 <sup>s</sup> Tg=0.18	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
01	Shillong	Z	iP	14	13	50	Slight.
01	Shillong	Z	e	19	44	10	Tremor.
01	Shillong	Z	e	22	41	50	Feeble.
			e		41	52	
02	Shillong	Z	e	00	13	52	Feeble.
02	Shillong	Z	e	01	02	12	Feeble.
			e		02	14	
02	New Delhi	N,E E	eP PPP Pg iS LR SS Sg	01	21	00	690 Slight.
					21	15	
					21	28	
		N,E			22	12	
					22	18	
					22	23	
					22	48	
	Dehra Dun	N,E N	eP PP PPP LQ iS LR SS SSS M PcP PcS ScS	01	21	18	830 Moderate.
					21	21	
					21	30	
					22	31	
					22	44	
					22	54	
					23	00	
					23	07	
					23	39	
					27	51	
					31	18	
					34	49	
	Shillong	Z	e	01	23	57	Feeble.
			e		27	27	
		N	e		30	20	
	Poona	Z	e?	01	24	39	Feeble.
	Hyderabad	E	M	01	28	30	Per. = 11 secs, /u = 2.
02	Shillong	Z	e	04	25	25	Feeble, near.
			e		26	00	
02	Shillong	Z	i	06	26	24	Tremor, distant.
			e		28	18	
02	Shillong	Z	i	12	08	58	Slight, distant.
			e		11	15	Phases not clear.
02	Shillong	Z	i	12	20	03	Feeble, near.
			e		20	05	
02	Shillong	Z	i	14	36	11	Slight.
02	Shillong	Z	iP	19	03	37	Distant, slight.
			e		04	09	
		N	e		13	27	



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				km.			
Sept. 1954							
02	New Delhi	NE	eP	20	31	27	700 Slight.
		E	Pg		31	55	
		NE	eS		32	40	
		E	SSS		33	02	
		NE	Sg		33	19	
	Dehra Dun	N	e	20	31	43	Slight, phases not clear.
			e		32	57	
	Shillong	Z	e	20	34	12	Tremor, feeble.
			e		38	03	
03	Epc: Assam, Shock Felt at Dibrugarh (Shillong).						
	Shillong	ZN	iP	02	16	18	290 Slight.
		N	iS		16	51	
	New Delhi	NE	eP	02	19	12	1630 Slight.
			eS		21	57	
			M		24	05	
	Dehra dun	N	eP	02	19	13	1550 Slight.
			PPP		19	32	
			eS		21	49	
			SSS		22	15	
			LR		22	22	
			S*		22	43	
			M		23	21	
03	Shillong	Z	iP	06	56	39	Feeble, near.
			e		56	48	
03	Shillong	Z	iP	07	05	14	Very feeble.
			e		05	33	
03	Shillong	Z	e	11	20	49	Tremor.
03	Shillong	Z	e	12	21	35	Tremor.
03	Shillong	Z	e	16	13	30	Tremor.
04	Epc: 3°S., 139½°E. New Guinea; h = 60 km.						
	0 = 03h 28m 32s (U.S.C.G.S.)						
	3.2°S., 139.5°E., h = 60 km; 0 = 03h 28m 32s (B.C.I.S.)						
	Magnitude - 6½ (Kiruna, Uppsala); 6¼ (Pasadena, Praha).						
	Shillong	ZN	iP	03	37	59	5960 Moderate.
		N	PPP		41	08	
			iS		45	32	
			ScS		47	55	
			LQ		51	12	
			LR		53	33	
	Calcutta	E	e	03	38	35	Slight.
			iS		45	56	
04	Colombo	E	P	03	38	43	6580 'P' trace partially lost.
			S		46	50	
			L		55	--	
			M	04	03	02	Amp = 0.5 mm.



Sept.  
1954

04	Madras Cpntd.	E	iP PcP PP iS PPS ScS SSS LQ LR	03 38 46 39 20 41 00 47 03 47 26 48 16 53 38 54 09 56 56	6760	Moderate.
	Hyderabad	E	iP PcP e iS ScS SS L M	03 39 01 39 37 43 02 47 33 48 49 51 19 59 46 04 02 40		
		EN E				
		N	M	03 55		Per.=18 secs, /u = 5. Per.=18 secs, /u = 9.
	Kodaikanal	E	eP PP S SS SSS LQ M	03 39 25 41 35 47 29 51 35 54 11 54 50 04 03 02	6940	Long distance earthquake.
	New Delhi	NE	eP iS	03 39 29 48 22	7440	Moderate.
	Dehra Dun	NE	iP	03 39 31		Slight, phases not clear.
	Poona	Z N	eP PP eS PS PPS SS SSS LR M	03 39 33 42 01 48 24 48 44 49 00 52 41 55 40 59 43 04 05 13	7410	Slight.
	Bombay	E	eP pP PP PPP i eSI iSI PS LQ	03 39 34 39 58 42 15 43 59 45 04 48 39 49 03 58 16	7665	Slight, h = 70 km.
04	Shillong	Z	i	04 29 07		Tremor.
04	Chatra	EZ E	e e e	06 38 30 46 34 07 00 36		Slight,distant. Surface phase.



h. m. s. km.

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1954

04 Epc:  $28^{\circ}N.$ ,  $83\frac{1}{2}^{\circ}E.$ , two shocks; 01 = 06h 43m 46s  
02 = 06h 45m 14s  
(U.S.C.G.S.)

$27^{\circ}5'N.$ ,  $83^{\circ}5'E.$ ; 01 = 06h 43m 50s (Shillong)  
Magnitude I -  $6\frac{1}{4}$  (Kiruna),  
Magnitude II -  $6\frac{1}{2}$ - $6\frac{3}{4}$  (Uppsala, Kiruna).

Chatra	Z	iP	06 44 43	380	Moderate.
	E	eP			
		PP	44 51		
		PPP	44 58		
		LQ	45 11		
		LR	45 21		
		iS	45 24		
		M	45 38		
Dehra Dun	NE	eP	06 45 12	580	Moderate.
		PP	45 20		
		P*	45 23		
		PPP	45 27		
		Pg	45 35		
		LQ	46 01		
		iS	46 14		
		LR	46 19		
		SS	46 26		
		S*	46 31		
		SSS	46 37		
	Sg	46 44			
New Delhi	NE N NE N	iP	06 45 18	600	Slight.
		PP	45 28		
		Pg	45 45		
		iS	46 23		
		Sg	46 59		
Calcutta	NE E	iP	06 45 35	720	Moderate. First movement North.
		iS	46 50		
		S*	47 15		
		Sg	47 32		
Shillong	Z N	iP	06 45 40	820	Moderate.
		iS	47 04		
		e	47 53		
Hyderabad	EN  N	iP	06 46 35	2080	
		i	48 04		
		iS	50 01		
		L	51 10		
		M	52 40		
Poona	Z N	eP	06 46 57	1430	Moderate.
		PP	47 04		
		PPP	47 16		
		LQ	49 22		
		eS	49 23		
		M	50 48		

Per. = 9 secs,  
/u = 54.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
04 Contd.	Bombay	N	eP	06	47	01	1450 Slight.
			eS		49	28	
		E	M		51	11	
			M		51	28	
	Madras	E	iP	06	47	27	1650 Moderate.
			PP		47	36	
			PPP		47	43	
			iS		50	14	
			SS		50	36	
			SSS		50	48	
			LR		50	58	
04	Madras	E	M	06	52	08	
			PcP		52	19	
			PcS		55	50	
			ScS		59	17	
	Kodaikanal	E	iP?	06	50	53	Earthquake of moderate intensity.
			iS?		53	44	
			SS		53	54	
			SSS		54	11	
			LR		54	22	
			M		56	30	
							Per. = 7.5 secs, /u = 23.
04	Shillong	Z	iP	07	48	02	Slight, distant.
04	Shillong	Z	i	08	16	03	Slight.
			e		16	15	
04	Epc: $21\frac{1}{2}^{\circ}$ N., $122\frac{1}{2}^{\circ}$ E. Off the SE Coast of Formosa; O = 08h 53m 20s (U.S.C.G.S.) $21.4^{\circ}$ N., $122^{\circ}$ E., O = 08h 53m 22s (B.C.I.S.) Felt - Basco (Press report from Manila). Magnitude - $5\frac{3}{4}$ (Uppsala), 6 (Praha).						
	Shillong	Z	iP	08	59	15	3030 Compression, Moderate.
		N	PP		09	00	
			eS		03	54	
			SSS		05	18	
			LR		06	04	
			M		08	14	
	Chatra	EZ	e	08	59	54	Slight, distant.
	Calcutta	E	ePP	09	00	30	Slight.
			e		02	00	
			iS		05	48	
			SS		07	32	
			LR		08	55	
			M		11	36	
	Dehra Dun	N	eP	09	01	04	Feeble, phases not clear.
	Poona	N	i?	09	05	13	Feeble, phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				.h.	m.	s.	km.
Sept. 1954							
04	Hyderabad	N	L	09	12	41	
Contd.		E	M		15	03	
		N	M		16	41	Per. = 15 secs, /u = 4. Per. = 15 secs, /u = 6.
04	Shillong	Z	iP	09	02	28	Tremor, distant, rarefaction.
04	Shillong	Z	i	09	27	35	Tremor.
04	Shillong	Z	i	11	07	29	Tremor.
04	Shillong	Z	i e	11	55	31 56 47	Very feeble.
04	Shillong	Z	i	13	24	11	Tremor.
04	Chatra	Z E	i e	13	24	33	Slight, distant.
04	Shillong	Z	e	17	16	35	Feeble, near.
04	Shillong	Z	i	21	18	06	Tremor.
04	Shillong	Z	i	22	08	14	Tremor.
05	Shillong	Z	i e	05	31	31 31 55	Feeble.
05	Madras	E	eP	07	19	52	Distant shock of slight intensity.
05	Kodaikanal	E	e	07	42	41	Long distance earthquakes.
05	Epc: 19°S., 176°E. Fiji Island region; 0 = 07h 45m 31s (U.S.C.G.S.) Magnitude - 6½ - 6¾ (Praha, 6¾ Pasadena), 6¾ (Kiruna) (Uppsala).						
	Shillong	Z	iP	07	58	50	9780 Slight.
			PP	08	02	25	
			S		09	33	
			PPS		11	00	
			e		11	18	
			i		16	35	
05	Chatra	EZ	e	07	59	08	Slight, near.
	Hyderabad	E	eP	08	01	49	7050
			PP		03	55	
			iS		10	22	
			ScS		11	22	
		N	M		26	19	
		E	M		26	32	Per. = 16 secs, /u = 7. Per. = 12 secs, /u = 2.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	km.
<u>Sept.</u>							
<u>1954</u>							
05	Colombo	E	PP	08	03	--	
Contd.			(S)		17	20	
			L		39	20	
			M		44	50	
	Poona	Z	ep	08	04	08	6300 Slight.
		N	e		07	27	
			e(S)		12	00	
			LQ		20	52	
			M?		25	55	
	Bombay	NE	e	08	04	32	Distant shock,
			e		12	12	Feeble.
		E	e		14	01	
		NE	e		19	23	
05	Shillong	Z	i	09	41	35	Tremor.
05	Dehra Dun	N	e	10	49	12	Tremor.
05	Shillong	Z	i	17	33	04	Tremor.
05	Shillong	Z	i	19	04	48	Tremor.
05	Shillong	Z	e	19	50	42	Feeble, near.
			e		50	54	
05	Shillong	Z	i	20	59	08	Tremor.
05	Shillong	Z	i	22	23	05	Feeble, near.
			e		23	28	
06	Shillong	Z	i	04	19	05	Tremor.
06	Dehra Dun	N	e	08	41	45	Tremor.
06	Shillong	Z	i	11	19	20	Tremor.
06	Chatra	Z	i	11	31	49	Feeble, distant.
06	Chatra	Z	e	14	13	00	Feeble, distant.
		E	e		27	30	Surface waves.
							Period=15.0 sec,
							Amp=0.5 m.m.
	Calcutta	E	e	14	19	10	Slight, distant.
			i		21	49	
			i		25	31	
	Shillong	N	e	14	23	39	Slight.
	Hyderabad	N	M	14	31	38	Per.=15 secs,
							/u = 4.
06	Dehra Dun	N	e	15	54	39	Tremor.



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
06	Epc: 21°N., 121°E. Off the North Coast of Luzon, Phillipines;		0 = 16h 46m 58s (U.S.C.G.S.)				
	Magnitude - 6 (Praha), 5½ - 6 (Kiruna), 5¼ (Uppsala).						
	Calcutta	E	eP	16	53	17	3300 Slight.
			iS		58	13	
			LR	17	01	08	
			M		04	19	
	Chatra	Z	iI	16	53	24	Slight, distant.
		E	ei				Surface waves.
			e		58	37	
			e	17	07	37	Period=14.0 sec, Amp=1.7 m.m.
	Madras	E	eP	16	54	31	4540 Moderate.
			PP		56	13	
			PPP		56	35	
			ScP		59	55	
			iS	17	00	43	
	Hyderabad	E	iP	16	54	41	4520
			PP		56	21	
		EN	iS	17	00	52	
		E	SS		04	14	
			L		08	09	
		N	M		10	56	Per. = 15 secs, /u = 9.
	Poona	Z	i	16	55	13	
		N	i	17	01	46	Feeble and distant.
			i		07	28	Phases not clear.
			i		12	35	
	Bombay	N	e	16	55	45	Feeble.
			e	17	02	40	
	Shillong	N	e	16	58	47	Slight.
			e		59	44	
			e	17	02	21	
			e		03	02	
	Kodaikanal	E	e	16	59	41	Tremor.
06	Dehra Dun	N	e	17	41	06	Tremor.
06	Kodaikanal	E	e	18	39	41	Tremor.
06	Epc: 51°N., 158°E. Off the SE Coast of Kamtchatka;						
	h = 60 km ca, 0 = 18h 30m 48s (U.S.C.G.S.),						
	252°N., 157½°E., h=60 km ca; 0=18h 30m 51s (B.C.I.S.)						
	Magnitude - 6½ (Skalnate Pleso), 6½ (Pasadena, Praha),						
	6¼ (Kiruna, Uppsala, Jerusalem).						
	Shillong	N	iP	18	40	25	6000 Moderate.
			e		40	44	
			PPP		44	44	
			iS		48	00	
			e		49	37	
			SS		52	24	
			LQ		54	22	
			LR		56	56	
			M	19	02	09	



DATE STATION COMPT. PHASE G. M. T. △

h. m. s. km.

Sept.  
1954

06 Contd.	Chatra	EZ E	eP	18	40	38	6187	Slight.
			PcP		41	44		
			PP		42	52		
			PPP		44	07		
			PcS		45	30		
			eS		48	24		
			PS		48	33		
			PPS		48	48		
			LQ		54	24		
			LR		57	00		
		M	19	01	45			
	Calcutta	E	iP	18	40	52	7020	Slight. First movement East.
			PPP		44	48		
			iS		49	23		
			SKS <sub>1</sub>		50	35		
	New Delhi	N	iP	18	41	11	7190	Moderate.
			iS		49	51		
			PS		50	03		
			SKS		50	51		
			SS		54	01		
			LR	19	01	55		
			M		08	01		
	Hyderabad	EN	iP	18	42	00	7590	
			PP		44	33		
			iS		51	01		
			PS		51	26		
			SS		54	34		
		N	L	19	03	14		
			M		08	10		
					Per. = 12 secs,			
					/u = 12.			
	Poona	Z N	iP	18	42	13	7870	Moderate.
			PcP		42	33		
			PPP		46	43		
			iS		51	28		
			PS		51	59		
			PPS		52	10		
			SS		56	03		
			SSS		59	15		
			M	19	10	08		
				Bombay	N	iP		
pP		42				41		
e		46				20		
eS		51				30		
i		51				45		
PPS		52				08		
i		52				38		
M	19	17				26		
		Per. = 15 secs,						
		/u = 6.						
	Madras	E	iP	18	42	15	7870	Moderate shock.
			PcP		42	27		
			PP		44	55		
			PPP		46	40		
			iS		51	30		
			SKS		51	50		
			PPS		52	14		



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
<u>Sept.</u>							
1954							
07	Epc: 21° N., 121° E. Off the North Coast of Luzon, Philippines; 0 = 00h 08m 23s (U.S.C.G.S.) Felt = Basco (Press report from Manila).						
	Chatra	EZ	e	00	14	14	Slight, distant.
	Calcutta	E	eP	00	14	39	3590 Slight.
			eS		19	53	
			SS		21	41	
			?		22	33	
	Madras	E	eP? iS?	00	15	27	4980 Slight.
	Poona	Z	iP	00	16	37	Feeble, phases not clear.
	Shillong	N	e	00	18	07	Slight, distant.
			e		23	02	
			e		24	37	
			e		26	12	
	Kodaikanal	E	e	00	19	41	Tremor.
	Bombay	N	e	00	20	41	Feeble.
			e		26	49	
			e		27	34	
	Hyderabad	N	M	00	33	54	Per.=12 secs, /u =12.
07	Epc: 21° N., 121½° E. Off the North Coast of Luzon, Philippines; 0 = 00h 35m 13s (U.S.C.G.S.) Felt at Basco (Press report from Manila) Magnitude - 5½ - 6 (Praha).						
	Shillong	Z	e	00	41	13	Distant, Slight.
			e		50	32	
	Chatra	Z	e	00	41	38	Slight, distant.
	Madras	E	P	00	42	47	4530 Slight.
			S?		48	59	
	Poona	Z	iP	00	43	37	Tremor.
07	Shillong	Z	e	07	47	19	Slight.
07	Shillong	Z	iP	07	59	23	Slight.
07	Shillong	Z	iP	10	05	20	
07	Shillong	Z	iP	10	23	53	970 Slight, rarefaction probably deep.
			LQ		25	29	
			iS		25	38	
			SS		25	52	
			LR		25	59	
			SSS		26	13	
08	Epc: 29° N., 95½° E. China Assam Frontier; 0 = 02h 39m 49s (U.S.C.G.S.)						

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
08 Contd.	Shillong	ZN	iP	02	41	00	390 Moderate, felt at Dibrugarh.
			LQ		41	30	
			LR		41	40	
			S		41	43	
			SS		41	49	
	Chatra	Z	iP	02	41	44	220 Slight.
			PP		41	51	
			PPP		41	57	
			LQ		43	00	
			iS		43	09	
			SS		43	21	
			M		44	00	
	Shillong	ZN	Sg	02	41	54	
			SSS		42	03	
	Bombay	N	e	02	49	14	Earlier phases lost due to overlapping of record.
			e		52	02	
08	Dehra Dun	N	e	09	32	35	Tremor.
08	Shillong	Z N	iP	09	41	17	390 Slight.
			S		41	59	
			Sg		42	12	
			SSS		42	21	
08	Shillong	Z	eP	12	57	01	Slight, trace faint.
08	Shillong	Z	eP	13	22	19	Feeble.
08	Shillong	Z	e	17	54	27	Slight, local.
09	Epc: 36°N., 1½°E North Algeria; 0=01h 04m 37s (U.S.C.G.S.) 36°17' N., 1°28' E.; 0 = 01h 04m 37s (B.C.I.S.) 35° N., 0°, 0 = 01h 04m 35s (Shillong) Algerian town of Orleansville shattered. About 1000 people killed.						
	New Delhi	N	iP	01	15	07	7030 Moderate.
			PcP		15	41	
			PP		17	24	
			PPP		18	54	
			iS		23	40	
			PS		23	57	
			SKS		25	02	
			SS		28	05	
			SSS		30	49	
			LR		34	46	
			M		40	31	
	Kodaikanal	E	iP	01	15	11	9330 Earthquake of moderate intensity.
			PcP		16	29	
			PP		18	59	
			iS		25	35	
			PS		25	11	
			SS		30	17	
			LQ		35	38	
			LR		39	08	
			M		45	17	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	km.
Sept. 1954							
09 Contd.	Dehra .Dun	NE N	eP PP PPP LQ iS SS SSS LR M	01	15	17	7220 Moderate.
	Bombay	NE  E	iP PcP i eS PS PPS	01	15	18	7185 Moderate.
		E N	ScS M	01	24	52	
		E	M		48	10	Per. = 21 secs, /u = 23. Per. = 20 secs, /u = 8.
	Poona	Z N	eP PcP PP PPP iS PPS SS SSS LQ M	01	15	22	7370 Moderate.
	Hyderabad	EN N EN N	iP PP iS PS SS L M	01	15	48	7750
		E	M		45	31	Per. = 18 secs, /u = 33. Per. = 18 secs, /u = 8.
	Chatra	E	eP PP PPP eS PS PPS LR M	01	16	00	7890 Moderate.
							Per. = 11.5 secs, /amp. = 1.5 m.m.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.	km.	
Sept. 1954								
09 Contd.	Madras	E	iP PcP PP PPP iS SKS ScS *SS LQ *PS	01	16	14	8250	Moderate shock.
	Calcutta	E	iP iS	01	16	18	8130	Slight. First movement West.
	Shillong	ZN	iP PP S SKS PS LQ	01	16	27	8380	Compression, Moderate.
	Colombo	E	S L M	01	26	21		'P' trace lost. Δmp. = 2.0 mm.
09	Shillong	Z	iP	03	04	11		Rarefaction.
09	Dehra Dun	N	e i	03	32	21 51		Feeble, phases not clear.
09	Shillong	Z	e	03	33	31		Feeble.
09	Shillong	Z	iP	09	25	31		Compression.
09	Shillong	Z	Pg Sg	10	20	16 33	145	Near, Slight.
09	Dehra Dun	NE N	eP PP PPP P* Pg LQ iS LR SS SSS S* Sg; M	18	57	10 17 24 27 44 25 37 45 47 58 01 22	840	Moderate.
	Chatra	Z	e	18	58	34		Slight, distant.
	Poona	Z	eP	18	58	49		Feeble, phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
09	New Delhi	NE	eP	19	12	02	970 Slight.
Contd.			PPP		12	15	
			LQ		13	32	
			iS		13	42	
			SS		13	53	
			SSS		14	03	
			S*		14	17	
			Sg		14	42	
10	Shillong	Z	Pg	03	10	59	30 Local.
			Sg		11	03	
10	Kodaikanal	E	e	05	54	41	Tremor.
	Dehra Dun	N	e	05	54	53	Tremor.
	Poona	NZ	i	05	55	00	Slight, phases
		N	i	06	03	48	not clear.
	Madras	E	iP	05	55	52	7930 Slight shock.
			iS	06	05	10	
			SKS		05	34	
			ScS		05	38	
	Shillong	Z	iP	05	55	56	Rarefaction, slight.
	Hyderabad	N	S	06	04	32	
			M		25	28	Per.=15 secs,/u=4.
10	Shillong	Z	i	12	05	17	Tremor.
10	Shillong	ZN	P	17	32	36	2440
		N	S		36	34	
10	Shillong	Z	i	20	44	20	Other phases doubtful, local.
10	Shillong	N	e	22	20	55	Tremor.
11	Shillong	Z	iP	01	31	01	Rarefaction, phases doubtful.
12	Poona	Z	iP	00	08	01	Tremor.
12	Epc: 41°N., 143°E. Off the South Coast of Hokkaido, Japan.						
	O = 07h 43m 50s (U.S.C.G.S.)						
	40.9°N., 143.6°E. h = 20 km ca; O = 07h 43m 47s						
	Felt (C.M.O., Japan).						
	Magnitude - 6½ (Uppsala, Praha); 6¼ (Kiruna, Pasadena).						
	Shillong	Z	P	07	52	09	5060 Moderate.
		N	S		58	53	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Sept. 1954					
12	Chatr.	Z	iPI	07 52 32	5385 Slight.
Contd.		E	ePI		
		E	PcP	54 09	
			PP	54 24	
			PPP	55 11	
			PcS	57 58	
			eS	59 30	
			PPS	59 54	
			SS	08 02 47	
			LR	06 00	
			M	10 30	
					Per. = 15.0 secs, /u = 1.25 mm.
	Dehra Dun	N	eP	07 53 18	6000 Slight, phases not clear.
			i	53 36	
			i	54 17	
			i	54 30	
			i(s)	08 00 34	
	New Delhi	NE	eP	07 53 20	6000
		N	eS	08 00 55	
			ScS	03 12	
	Hyderabad	E	iP	07 54 03	6510
		EN	S	08 02 07	
		N	SS	06 07	
			M	17 47	
		E	M	19 35	
					Per. = 15 secs, /u = 6. Per. = 15 secs, /u = 2.
	Madras	E	eP	07 54 06	7020 Slight.
			PcP	55 34	
			eS	08 02 37	
			PS	02 51	
			PPS	03 01	
			ScS	08 50	
	Poona	Z	iP	07 54 18	6980 Slight.
		N	eS	02 47	
			M?	18 13	
	Bombay	NE	eP	07 54 25	7020 Slight.
		E	PP	56 54	
		NE	eS	08 02 56	
		N	PS	03 08	
			ScS	05 26	
			SS	07 09	
			M	29 51	
					Per. = 20 secs, /u = 6.
	Kodaikanal	E	e	07 54 41	Tremor.
	Colombo	E	e	08 01 32	
			e	29 10	
			e	39 50	
					Amp : 0.6 mm.



DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
<u>Sept.</u> 1954					
13	Epc: $21^{\circ}\text{S.}$ , $175\frac{1}{2}^{\circ}\text{W.}$ Tonga Island, $h = 150\text{ km.}$ O = 02h 09m 55s (U.S.C.G.S.) Magnitude - 7 - $7\frac{1}{4}$ (Wellington), $6\frac{3}{4}$ (Pasadena).				
	Colombo	E	(e) S L M	02 22 01 34 21 03 54 -- 04 07 11	Amp = 09 mm. End trace overlapping.
	Shillong	Z	P	02 23 33	Feeble.
	Kodaikanal	E	e	02 26 41	Tremor.
	Calcutta	E	e i i i i	02 27 40 27 53 28 52 34 02 37 55	Moderate, distant.
	Bombay	E NE E NE  E	ePKP <sub>1</sub> PP PPP SKS <sub>1</sub> PPS <sub>1</sub> SS(?) SSS i	02 28 01 12955 29 32 31 38 35 05 40 08 45 12 49 32 57 30	Moderate, surface wave not developed.
	Dehra Dun	N	e i	02 28 16 29 19	Feeble, phases not clear.
	Poona	Z	e	02 28 27	Slight.
	Madras	E	i	02 28 35	Moderate.
	Hyderabad	N	SKS M	02 34 36 03 07 21	Per. = 12 secs, /u = 3.
13	Chatra	EZ	e	18 19 04	Slight, distant. Surface phase.
			e	25 42	
		E	e	33 30	Per. = 14.0 secs, Amp = 0.75 mm.
	Madras	E	e	18 20 28	Tremor.
13	Epc: $21^{\circ}\text{N.}$ , $121\frac{1}{2}^{\circ}\text{E.}$ Off the North Coast of Luzon, Phillipines; O = 18h 12m 37s G.M.T. (U.S.C.G.S.) Magnitude - $5\frac{3}{4}$ (Kiruna, Uppsala).				
	Calcutta	E	e e i	18 23 57 27 35 28 26	Slight, distant.
	Kodaikanal	E	e	18 24 41	
	Colombo	E	P M	18 26 20 42 --	

DATE	STATION	COMPT.	PHASE	G.	M.	T.	△	REMARKS
				h.	m.	s.	km.	
Sept. 1954								
13 Contd.	Dehra Dun	N	e	18	26	51		Tremor.
	Poona	Z	e	18	27	31		Tremor.
	Bombay	N	eP	18	27	39	5075	Feeble, appears to be a double shock.
		E	iP					
		E	i		28	21		
		N	eS		34	22		
	Hyderabad	N	II	18	37	25		Per. = 15 secs, /u = 6.
14	Epc: 21° N., 121½° E. H = 00h 48m 18s (U.S.C.G.S.) Magnitude = 5¼ (Kiruna, Uppsala).							
	Kodaikanal	E	e	00	54	41		Tremor.
	Chatra	EZ	e	00	54	44		Slight, distant, Surface waves, Per. = 15.0 secs, Amp = 1.25 mm.
		E	e	01	09	00		
14	Madras	E	iP	00	58	56	4410	Slight shock.
			PP		57	35		
			PcP		57	50		
			PPP		58	01		
			IS	01	02	03		
			LR		48	54		
	Poona	Z	eP	00	56	31		Feeble, phases not clear.
	Bombay	N	e	00	57	36		Phases not clear.
		E	e	01	03	46		
		N	II		19	46		
	Hyderabad	N	II	01	12	20		Per. = 15 secs, /u = 9.
	Colombo	E	II	01	16	20		Amp = 0.6 mm.
14	Shillong	Z	eP	04	39	08		Very feeble.
14	Shillong	Z	eP	07	01	55		
		N	e		10	28		
			e		11	58		
			e		15	13		
	Chatra	EZ	e	07	02	38		Slight, distant.
	Calcutta	E	e	07	15	07		Slight, distant.
	Poona	N	e?	07	21	50		
	Bombay	N	e	07	22	26		Very feeble.
		E	e		23	38		
	Kodaikanal	E	e	07	24	41		Tremor.

DATE	STATION	COMPT.	PHASE	G. L. T.			REMARKS
				h.	m.	s.	
<u>Sept.</u>							
<u>1954</u>							
14 Contd.	Shillong	Z	eP	07	26	26	Very feeble,
		N	e		34	13	
			e		34	41	
			i		36	02	
			i		39	55	
			i		41	32	
			i	42	47		
	Dehra Dun	N	e	07	28	10	Tremor.
	Bombay	N	e	07	30	14	Feeble, phases unidentifiable,
			e		36	15	
			e		38	46	
			e		47	✓✓	
	Hyderabad	N	M	07	44	24	Per. = 15 secs, /u = 7.
	Poona	N	e?	07	47	44	Feeble, phases doubtful.
14	Dehra Dun	N	e	17	07	05	Tremor.
	Shillong	Z	eP	17	07	34	Very feeble.
14	Dehra Dun	N	e	18	26	59	Tremor.
14	Shillong	Z	eP	20	13	01	280 Slight.
			Sg		13	40	
14	Shillong	Z	eP	22	22	44	280 Slight.
			PP		22	52	
			S		23	16	
			Sg		23	25	
15	Shillong	Z	ePg	12	04	47	80 Feeble, local.
			Sg		04	56	
15	Dehra Dun	N	e	13	33	27	Feeble, phases not clear.
			i		33	50	
15	Shillong	Z	1P	18	08	45	Slight, distant.
		N	eP		08	45	
			e		12	50	
			e		18	27	
			i		19	23	
			i		26	08	
	Chatra	EZ	e	18	09	02	
	Calcutta	E	i	18	13	07	Slight, distant.
			i		13	33	
			i		19	37	
			i		22	38	
			i		26	53	

DATE	STATION	COMPT.	PHASE	G. L. T.			REMARKS
				h.	m.	s.	
<u>Sept.</u>							
<u>1954</u>							
15 Contd.	Madras	E	eP	18	13	14	5540 Slight shock.
			iS		20	24	
			PS		20	32	
			PPS		20	47	
			ScS		22	41	
			SS		23	52	
			LQ		25	35	
			LR		27	59	
Dehra Dun	N	e		18	13	43	Slight. Phases not clear.
					15	07	
					21	19	
Colombo	E	eP		18	15	24	3090
			S		20	07	
			L		23	--	
			M		25	38	
							Amp = 0.4 mm.
Kodaikanal	E	e		18	17	42	Short distance shock.
Hyderabad	N	iP		18	20	39	5940
			iS		28	11	
			M		42	30	
							Per. = 15 secs, /u = 4.
Poona	N	i		18	21	22	Distant, feeble. Phases not clear.
Bombay	NE	i		18	21	39	Distant and deep.
			e		29	42	
16 Shillong	Z	iP		01	15	25	520 Slight, near.
			PP		15	31	
			Sg		13	47	
17	Epc: $4\frac{1}{2}^{\circ}$ S., $153\frac{1}{2}^{\circ}$ E.		H = 01h 13m 08s (U.S.C.G.S.)				
Shillong	Z	iP		01	24	05	Slight, not near.
Chatra	Z	iI		01	24	32	Slight, distant.
			eI				
			e		33	41	
Colombo	E	P		01	25	01	7980
			S		34	21	
			L		48	26	
			M		54	06	
							Amp = 0.3 mm.
Poona	ZE	eP		01	25	32	3870
			eS		35	35	
							Slight. Other phases not clear.
Hyderabad	N	S		01	34	46	
17 Shillong	Z	iP		05	15	21	Slight, local.
			e		15	39	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				△			
				km.			
<u>Sept.</u>							
<u>1954</u>							
17	Epc:	24 $\frac{1}{2}$ <sup>o</sup> N., 122 <sup>o</sup> E.	H =	07h	33m	21s	(U.S.C.G.S.)
		24 $\frac{1}{2}$ <sup>o</sup> N., 121 $\frac{1}{2}$ <sup>o</sup> E.	H =	07h	33m	23s	(B.C.I.S.)
	Shillong	Z	iP	07	39	11	3550 Moderate, distant.
		N	eP		39	18	
			S		41	23	
	Chatra	Z	iPI	07	39	48	2534 Slight.
		E	ePI				
			PP		40	56	
			PPP		41	17	
			PcP		42	32	
			iS		44	53	
			PcS		46	04	
			LQ		48	09	
			M		50	45	
							Per. = 7.5 secs, Amp = 1.75 mm.
	Dehra Dun	N	iP	07	40	54	4720 Moderate.
			PcP/PP		42	45	
			PPP		43	21	
			PcS		46	21	
			iS		47	17	
			PS		47	23	
			PPS		47	29	
			SS		50	13	
			ScS		50	34	
			LQ		50	43	
			SSS		51	07	
			LR		52	37	
			M		56	12	
	New Delhi	NE	eP	07	41	00	4350 Slight.
		N	PPP		43	00	
			iS		47	01	
			i		47	19	
			SS		50	01	
			LQ		50	14	
			M		55	01	
	Madras	E	iP	07	41	08	4540 Moderate shock, phases not identified.
			i		43	07	
			eS		47	20	
			e		50	48	
	Colombo	E	P	07	41	21	4980
			S		47	59	
			L		56	21	
			M	08	01	04	Amp = 0.1 mm.
	Poona	Z	eP	07	41	40	Phases not clear.
		N	i		48	42	
			i		52	05	
			i		58	10	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS	
				h.	m.	s.		
Sept. 1954								
17 Contd.	Bombay	NE	eP	07	41	48	4970 Slight.	
			ii		42	09		
			PP		43	37		
			i		44	02		
			PPP		44	23		
			iS		48	25		
			eS(?)		48	42		
			PPS		48	55		
			LQ		52	06		
			SS		52	15		
E	N	E	SSS		52	30		
			SSS		53	09		
			LR		55	22		
Hyderabad	N		i	07	43	06		
			S		47	15		
			SS		50	40		
			M		58	09		
							Per. = 15 secs, /u = 4.	
17	Shillong	Z	eP	09	02	19	110 Local, feeble.	
			Sg		02	32		
17	Shillong	Z	iP	09	10	03	Slight shock.	
17	Epc: $21\frac{1}{2}^{\circ}$ S., $176\frac{1}{2}^{\circ}$ W., $h = 250$ km ca -H = 11h 03m 14s (U.S.C.G.S.) Magnitude = $7\frac{1}{2}$ (Berkeley), $7 - 7\frac{1}{2}$ (Pasadena).							
Colombo	E	P		11	13	50		
Kodaikanal	E	e		11	14	42	Tremor.	
Shillong	ZN	E	eP	11	16	39	Moderate, long distance shock. Appears to be a considerably deep focus shock.	
			e		17	07		
			e		18	10		
			i		20	50		
			i		21	09		
			iS		26	54		
		eS		28	47			
Chatra	Z,E	E		11	17	01	Slight, distant. Very prominent.	
			ii		11	21		14
			ei					
Calcutta	E		e		27	20		
			e	11	18	38		
			e		21	01		
			i		27	08		
		i		31	03	Moderate, distant.		
Bombay	NE	E	e	11	20	14	Distant and deep. Moderate.	
			i		23	06		
			i		30	06		
			i		31	56		
			i		32	00		
			i		32	32		
			i		33	30		
		i		38	13			



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				△			
				km.			
<u>Sept.</u>							
1954							
17	DehraDun	N	eP	11	21	17	Slight
Contd.			e		21	28	
			e		21	39	
			e		22	19	
			i		22	33	
			LR		22	44	
			SSS		23	02	
			E		23	17	
			PcP		28	03	
			PcS		31	43	
17	New Delhi	NE N	eP	11	21	27	Moderate shock.
			e		23	46	
			e		27	52	
			e		30	54	
			e		31	38	
	Poona	Z N	eP	11	21	31	Slight, phases not clear.
			i		27	52	
			i		29	54	
			i		31	43	
			i		38	00	
	Madras	E	iP	11	21	34	Moderate shock.
			e		23	28	
			e		23	38	
			e		27	08	
			i		27	30	
			e		30	38	
			e		30	53	
			e		31	08	
			e		32	15	
	Hyderabad	N	P	11	21	56	Per. = 18 secs, amp. = 13 mm.
			e		29	11	
			e		43	02	
			L	12	03	05	
17	Shillong	Z	eP	12	00	23	Very feeble.
17	Shillong	Z	eP	14	53	07	Very feeble, distant.
17	Shillong	N	e	14	59	36	Very feeble, distant.
17	Shillong	Z	eP	19	21	27	Very feeble.
17	Shillong	Z	eP	19	40	13	Very feeble.
17	Shillong	Z	eP	19	56	03	Tremor.
17	Shillong	Z	eP	20	10	41	Tremor.
17	Shillong	Z	eP	20	38	51	Very feeble.
17	Shillong	Z	iP	20	41	40	Slight, near.
			e		41	58	



DATE	STATION	COMPT.	PHASE	G. M. T.			km.	
				h.	m.	s.		
Sept. 1954								
17 Contd.	Shillong	Z	iPg Sg	21	28	14 28 21	70	Slight, local.
18	Shillong	Z	iP e e	00	19	37 40 14		Slight, local.
18	Dehra Dun	N NE	e(P) S	01	09	34 11 30	1130	Feeble, phases not clear.
18	Shillong	Z	eP	01	11	51		Slight, distant.
18	Shillong	Z	eP	15	40	14		Slight, distant.
18	Dehra Dun	N	e i	15	41	57 50 16		Slight, phases not clear.
18	Poona	Z	e	15	42	12		Tremor.
18	Madras	E	e	15	49	26		Tremor.
18	Shillong	Z	eP	18	34	24		Slight.
18	Shillong	Z	cP e	19	56	42 56 56		Feeble, local.
18	Shillong	Z	iP e i i	20	27	14 27 20 27 28 27 35		Slight, local.
18	Shillong	Z	eP	22	14	09		Tremor.
19	Shillong	Z	e	02	43	49		Very feeble.
19	Shillong	Z	eP i	03	15	03 15 16		Feeble, local.
19	Shillong	Z	e	16	04	22		Feeble, distant.
19	Shillong	Z	e	17	52	00		Slight, local.
19	Shillong	Z	iP	18	21	57		Slight, local.
		ZN	i		22	04		
19	Shillong	Z	e	20	22	16		Very feeble.
20	Epc:	0°, 123° E. Celebes Island Region; H = 00h 39m 34s (Shillong) 1½° S., 120½° E., - H = 00h 39m 28s (U.S.C.G.S.)						
	Magnitude	- 6 (Kiruna, Uppsala), 5 3/5 - 6 (Pasadena, Praha).						
	Kodaikanal	E	e	00	44	41		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
20	Shillong	NZ	eP	00	46	57	4400 Slight, distant.
Contd.		N	PP		48	28	
			S		53	01	
			SS		55	45	
			LQ		55	57	
			SSS		56	25	
			M	01	01	01	Per. = 24.7 secs Amp. = 20 mm.
	Calcutta	E	eP	00	47	10	4450 Moderate.
		N	eP		47	11	
		E	iS		53	16	
			SS		56	14	
			?		57	14	
			LR		58	14	
	Madras	E	iP	00	47	30	4730 Moderate shock.
			PcP		49	03	
			PP		49	12	
			ScP		52	49	
			iS		53	56	
			PS		54	09	
		E	PPS	00	54	13	
			ScS		57	14	
			SS		57	19	
			LQ		58	02	
	Chatra	EZ	eP	00	47	33	4720 Slight.
		E	PP		49	10	
			PcP		49	20	
			PcS		53	11	
			iS		53	56	
			SS		56	47	
			LQ		57	17	
			LR		59	20	
			M	01	03	-	Suppressed.
	Hyderabad	EN	iP	00	47	51	5050
			PP		49	45	
		N	iS		52	33	
			L	01	00	45	
			M		05	51	Per. = 18 secs, Amp = 10 mm.
	Colombo	E	M	01	06	58	Amp = 1.1 mm. P, S and L trace lost.
	New Delhi	NE	eP	00	47	52	6460 Moderate.
		N	PcP		49	12	
			iS		55	53	
			ScS		57	46	
			SS		59	54	
			SSS	01	02	12	
			M		09	08	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
							△
				km.			
<u>Sept.</u>							
<u>1954</u>							
20	Poona	Z	iP	00	48	28	5520 Moderate.
		NS	PP		50	20	
			eS		55	37	
			PS		55	49	
			PPS		55	57	
			SSS	01	00	34	
			LR		02	48	
			M		06	57	
	Bombay	E	iP	00	48	35	5700 Slight. 'M' has not developed possibly deep.
		NE	PP		50	35	
		E	iS		55	54	
		NE	SS		59	36	
		E	SSS	01	01	14	
		E	LQ		03	12	
	Dehra Dun	NE	eP	00	48	45	
			PcP		49	58	
			PPP		51	30	
			PcS		53	51	
			iS		55	59	
			PS		56	03	
			PPS		56	12	
			SS		59	11	
			LQ	01	00	34	
			LR		02	48	
			M		06	31	
20	Shillong	Z	iP	10	03	06	Slight, local.
20	Shillong	Z	iP	17	55	58	Slight, near.
20	Shillong	Z	ePg	21	21	02	110 Slight, local.
			Sg		21	15	
20	Calcutta	N	eP	22	09	45	330 Slight, Felt at Table Island in the Bay of Bengal.
		E	eP		09	51	
		N	iS		11	15	
20	Shillong	Z	eP	22	10	11	Slight, distant.
20	Poona	E	e	22	12	15	Slight, phases not clear.
20	Calcutta	N	eP	22	25	11	950 Slight. Felt at Table Island in the Bay of Bengal.
		NE	iS		26	48	
20	Shillong	Z	eP	22	25	37	Slight, not clear.
21	Shillong	Z	eP	00	16	08	Slight, near.
			e		16	18	
			e		16	26	
			e		16	38	
			e		16	55	
			i		17	12	
21	Shillong	Z	e	03	48	11	Slight, near.
		Z	iS		48	56	
		H	eI				

DATE	STATION	COMPT.	PHASE	G. L. T.			REMARKS
				h.	m.	s.	
Sept. 1954						km.	
21	Shillong	Z	iP	05	03	24	Slight.
21	Shillong	Z	i	09	50	55	Slight, near.
21	Shillong	Z	i	14	59	51	Slight, near.
21	New Delhi	NE	Pg iSg	20	17	36 17 45	80 Slight, P may be earlier due to time mark.
21	Dehra Dun	NE	e i i	20	17	37 17 45 17 53	Feeble, phases not clear.
22	New Delhi	E NE	eP Pg iS S Sg	22	33	56 34 24 35 08 35 27 35 46	700 Slight.
	Dehra Dun	NE	e i	22	34	26 35 19	Slight, phases not clear.
	Shillong	Z	e e	22	36	51 40 23	Slight, distance.
23	Shillong	Z	iPg/P*01 P PP eSg S SS	44	45	44 45 44 46 44 53 44 58 45 03 45 18	110
23	Dehra Dun	N	e	10	46	07	Tremor.
23	Epc: 49° N., 156° E. Kurile Islands Region. - H = 21h 43m 36s (U.S.C.G.S.) 50° N., 156° E. - H = 21h 43m 38s (B.C.I.S.) Magnitude - 5 $\frac{1}{4}$ (Praha, Skalnaté Pleso), 6 $\frac{1}{2}$ (Pasadena, Kiruna, Uppsala).						
	Shillong	ZN N	iP PcP PP PPP iS ScS SS LQ LR M	21	53	05 21 54 04 55 09 56 15 22 00 48 02 42 04 26 07 30 09 22 13 20	6140 Moderate.
	Chatra	E For	eP PcP PP PPP PcS eS ScS SS LQ LR M	21	53	23 54 19 55 29 56 53 58 17 01 22 03 08 05 08 07 45 10 33 15 30	6420 Moderate.

Per. = 17.0 secs,  
Amp. = 3.5 mm.

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23	Calcutta	E	iP	21 53 39	6590	Moderate, First movement West.
Contd.		N	eP	53 41		
		E	iS	22 01 47		
			ScS	03 25		
			SS	05 39		
			SSS	08 03		
			M	16 57		
			Mn	22 07		Δmp = 47 mm.
	New Delhi	NE	eP	21 53 59	6950	Moderate.
		N	i	54 17		
			PcP	54 35		
			eS	22 02 26		
			ScS	03 48		
			LQ	09 40		
			LR	12 36		
			M	17 13		
	Hyderabad	EN	iP	21 54 45		
		E	PP	57 13		
		N	iS	22 04 01		
			SS	08 20		
			L	17 46		
		E	M	22 10		
		N	M	22 13		
	Madras	E	iP	21 54 58	8060	Moderate.
			PcP	55 10		
			iS	22 04 22		
			SKS	04 45		
			ScS	04 54		
			PS	05 09		
			SS	09 25		
			SSS	12 31		
	Bombay	NE	iP	21 55 01		Moderate.
			PP	57 44		
			iS	22 04 23		
		N	M	24 33		
		E	M	24 33		Per. = 13 secs, Δmp. = 18 mm. Per. = 16 secs, Δmp. = 10 mm.
	Poona	ZN	iP	21 55 01	8143	Moderate.
		N	PcP	55 19		
			PP	57 58		
			PPP	59 26		
			iS	22 04 30		
			PS	04 51		
			PPS	05 20		
			SS	09 13		
			SSS	12 11		
			LR	17 44		
			M	23 49		
	Kodaikanal	E	eP	21 55 21	9140	Long distance earthquake.
			eS	22 05 36		
			M	29 21		



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1954



From the ISC collection scanned by SISMOS

23 Contd.	Shillong	Z	iPg iSg	21 57 28 57 33	40	Slight.
24	Shillong	Z	e i	00 25 18 25 34		Slight, near.
24	Dehra Dun	NE	e	01 16 54		Slight, phases not clear.
24	Shillong	Z	eP P* S. eSg SS	16 23 08 23 10 23 32 23 36 23 43	210	Slight.
24	Shillong	Z	iP Pg iSg SS	16 23 16 23 18 23 39 23 51	180	Slight.
24	Shillong	Z	eP iSg	17 37 47 38 34	320	Slight.
25	Shillong	Z	eP PP P* PPP eS SS S*	00 48 56 48 53 49 07 49 08 49 59 50 09 50 16		Slight.
25	Shillong	Z	iPg P* iSg S*	01 45 06 45 07 45 12 45 15	50	Slight.
25	Shillong	Z	i e	07 16 26 16 59		Slight, near.
25	Shillong	Z	eP iSg	07 37 43 38 06	180	Slight.
25	Shillong	Z	iP	11 26 47		Slight, distant.
25	Poona	Z	iP	11 27 00		Slight. Other phases not clear!
25	Colombo	E	P L M	11 34 19 48 49 52 19		'P' uncertain. Amp. = 0.3 mm.
25	Hyderabad	N	M	11 55 38		Per. = 18 secs, Amp. = 0.6 mm.
25	Bombay	H	e	12 00 00		Very feeble surface waves recorded in the Milne-Show.
26	Shillong	Z	eP P* Pg S S*	04 05 21 05 22 05 26 05 47 05 50	220	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				km.			
<u>Sept.</u>							
1954							
26	Shillong		iSg	05	52		
Contd.	Contd.		SS	05	56		
			SSS	06	06		
26	Shillong	Z	eP	10	53	34	240 Slight.
			Pg		53	40	
			S		54	00	
			S*		54	03	
			iSg		54	07	
			SS		54	13	
26	Shillong	Z	e	21	08	49	Tremor.
			i		09	41	
			i		10	17	
27	Shillong	Z	eP	09	57	17	Slight, distant.
27	Poona	Z	e	15	48	39	Tremor.
27	Dehra Dun	N	e	16	46	28	Tremor.
27	Shillong	Z	iP	16	46	29	Slight, distant.
	Chatra	Z	i	16	46	53	Slight, distant.
27	Shillong	Z	e	17	26	31	Tremor.
27	Shillong	Z	e	18	07	07	Slight, near.
			e		07	24	
			e		08	01	
27	Shillong	Z	eP*	21	23	23	60 Slight.
			Pg/P		23	27	
			PPP		23	39	
			iSg/S*		23	42	
			SS		23	51	
			SSS		24	03	
27	Shillong	Z	e	22	22	03	Tremor.
			e		22	37	
28	Shillong	Z	iP	00	34	47	6330 Slight.
		N	eP				
		Z	i		41	04	
		N	eS		42	41	
			M		56	00	
28	Chatra	Z	i	00	35	03	Slight, distant.
		E	e		59	19	Surface waves. Per. = 15.0 secs, Amp. = 0.5 mm.
28	Poona	N	eP	00	46	27	Feeble shock.
			e?		57	01	Phases not clear.
			i	01	04	38	
28	Bombay	N	e	01	06	00	Feeble surface waves
		E	e		17	00	of a shock recorded.



DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
<u>Sept. 1954</u>						
28 Contd.	Shillong	N	e	13	17 16	Very feeble.
			e		18 23	
			e		19 20	
29	Shillong	Z	eP	03	13 19	Feeble, local.
		N	eP		13 21	
			e		13 23	
30	Shillong	Z	eP	17	12 18	Feeble.

Earthquake Reports  
 ( Non Instrumental Reports )

The following table contains a list of earthquakes that were reported by Voluntary Observers from various stations.

Place at which felt	Date	Time at which felt	Duration in secs	Intensity in R.F. scale	No. of shocks	Remarks
		G.M.T.				
		h. m.				
Shillong	10th Sept. 1954	18 30	5	III	1	
Along	21st Sept. 1954	00 15	-	-	1	

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



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Shri S. Basu, M.Sc., F.N.I.,

Director General of Observatories  
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Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	To = Tg = 7.0	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori- Ewing	N-S	18.0	32	-	25
	Omori- Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	To=0.72 Tg=0.45	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	To = Tg = 7.2	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	To=1.5 Tg=1.5	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benioff Short Period	Z	To=1.0 <sup>s</sup> Tg=0.18	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30

DATE STATION COMPT. PHASE G. M. T.  $\Delta$  M. S. S. S.

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01 Epic:  $11^{\circ}$ S,  $166^{\circ}$ W; epicentral distance = 550 km (I.S.S.D.).  
Magnitude =  $6\frac{1}{2}$ -7 (Stalinate Pleso, Burbanovo);  
6.8 (Pasadena);  $6\frac{1}{4}$  (Praha, Debilt);  
 $6\frac{1}{2}$ -6 (Berkeley);  $6\frac{1}{2}$  (Airuno).

STATION	COMPT.	PHASE	G.	M.	T.	$\Delta$	M. S. S. S.	
Shillong	Z	eP	03	07	46	8980	Moderate.	
		iS		17	54			
	N	SKS <sub>1</sub>		17	58			
		ScS		18	00			
			PPS		18	58		
			SS		22	58		
			SSS		26	13		
			Lq		28	58		
			Lr		32	24		
			M		35	35		
Calcutta	E	iP	03	08	08	9130	Moderate. First movement Dist.	
		iS		18	23			
		SS		23	34			
Colombo	E		03	08	30	9130	amp. = 0.6mm	
				18	50			
				44	00			
				52	00			
Madras	E	iP	03	08	33	9700	Moderate.	
		PP		12	00			
		PPP		13	59			
		SKS		18	53			
				19	03			
				S	19	16		
				ScS	19	20		
				PS	20	18		
				PPS	20	44		
		SS	25	26				
Hyderabad	E	eP	03	08	43	9700	Moderate.	
		iS		19	23			
	E,N	L		36	13			
		M		42	24			
Kodaikanal	E	P	03	08	46	9530	Slight.	
		FP		12	01			
		PPP		13	55			
		S		19	19			
		PS		20	19			
		Lq		32	22			
		Lr		36	25			
		M		43	37			



DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
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01	New Delhi	N,E	e	03	09	00	9780	Moderate.
Contd.		N	iSKS		19	37		
			iS		19	51		
			PS		20	11		
			PPS		21	24		
	Poona	Z	eP	03	09	08		Slight.
	Bombay	N,E	eP	03	09	12	10940	Moderate.
		E	i		12	10		
			PP		13	06		
		N	PP		13	12		
		E	PPP		15	00		
		N	PPP		15	34		
			e		17	28		
		N,E	SKS <sub>1</sub>		19	40		
		E	SKS <sub>1</sub>		19	52		
		N,E	SKKS <sub>1</sub>		20	16		
		E	iS		20	35		
		N	iS		20	38		
		E	PS		21	50		
		N	PS		21	54		
			Lq		37	0		
			Lr		41	--		
			M	04	08	00		Amp. = 4mm
01	Shillong	Z	eP	11	08	01	510	Slight, near.
			PP		08	07		
			S		08	56		
			M		09	17		
02	Shillong	Z	eP	04	26	01	470	Feeble
			Pg		26	21		
			S		26	51		
			S*		27	08		
			Sg/M		27	19		
02	Shillong	Z	eP	05	28	15	170	Feeble.
			Pg		28	29		
			Lq		28	37		
			S		28	44		
			S*		28	53		
			Sg/M		29	02		
02	Poona	Z	eP	10	10	16	6120	Slight.
		N	PP		12	23		
		E	PPP		13	33		
			e(?)		17	58		
		N	PS		18	08		

DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
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<u>1954</u>						
02	Shillong	E,Z	iP	11 30 20	60	Feeble.
Contd.		N	eP	30 22		
		Z	Sg	30 25		
02	Shillong	Z	iPg	21 30 04	90	Feeble, local.
			Sg	30 15		
Epc: $10^{\circ}$ S, $165\frac{1}{2}^{\circ}$ E; Santacruz Island. - H = 02h 47m 17s (USCGS)						
Magnitude = 7.2 (Skalnate Pleso), 7 (Praha, Hurbanovo),						
$6\frac{3}{4}$ -7 (Pasadena), $6\frac{3}{4}$ (Uppsala, Kiruna).						
	Shillong	Z	eP	02 59 33		Moderate, other phases not clear.
	Calcutta	E	eP	02 59 53	9250	Moderate.
			iS	03 10 13		
			PS	11 13		
			SS	15 42		
			SSS	19 28		
			M	33 28		Amp. = 136mm
	Chatra	E,Z	e	02 59 58		Slight distant. Other phases not clear.
	Colombo	E	P	03 00 00	9930	'P' approximate lost in hour mark.
			iS	10 49		Trans overlapp ng.
			L	32 58		Amp. = 1.5mm.
			M	40 06		
	Madras	E	eP	03 00 15	9660	Moderate.
			e	04 13		
			e	06 24		
			S	10 53		
			e	12 41		
			e	13 21		
	Hyderabad	E	eP	03 00 28	9728	Moderate.
		E,N	S	11 09		
		E	PS	11 31		
		N	L	28 45		
			M	34 36		Amp. = 18mm.
		E	M	35 07		Amp. = 6mm.
	Kodaikanal	E	P	03 00 31		Moderate.
			PP	03 52		
			S	11 01		
			PS	12 01		
			PPS	12 28		
			SS	16 49		
			SSS	20 13		
			Lq	24 01		
			Lr	28 13		
			M	37 10		Amp. = 9.6mm.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Oct.</u> 1954						
03 Contd.	Poona	Z N	e(P) PP PPP eS PS PPS SS SSS Lq Lr M	03 00 48 04 18 06 06 11 31 12 32 13 06 17 26 21 00 25 13 29 30 36 51		Slight, beginning doubtful.
	Bombay	N,E E N,E E N N,E N	e(P) PPP SKS <sub>1</sub> i iS PS SS SS SSS Lr M	03 01 03 07 02 11 38 12 03 12 25 13 37 18 52 18 58 22 37 32 03 55 01	10840	Moderate.          Amplitude 7mm.
	New Delhi	N	e i e i	03 05 21 11 15 11 53 13 11		Moderate, phases not well developed.
03	Poona	Z	e	09 02 44		Tremor.
03	Shillong	Z N,E N Z N Z,N N	iP i i i i i i i	10 42 07 42 17 42 20 42 50 43 02 43 11 43 20 43 39		Local, slight.
	Chatra	Z	e	10 42 49		Slight, near.
	Dehra Dun	N,E	e	10 47 01		Tremor.
	Bombay	N,E N E	e e i	10 50 09 50 34 52 42		Feeble, tremor.
	Poona	Z	e	10 50 19		Tremor.
03	Poona	Z	e	10 52 16		Tremor.

DATE	STATION	COMPT.	PHASE	G.M.T.			Δ	REMARKS
				h.	m.	s.		
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03	Epc: $60\frac{1}{2}^{\circ}$ N, $151^{\circ}$ W; Kenai Peninsula, Alaska. - h = 100 km Ca. - H = 11h 18m 46s (U.S.C.G.S). Magnitude = $6\frac{3}{4}$ -7 (Pasadena); $6\frac{3}{4}$ (Takubaya, Kiruna, Uppsala) $6\frac{1}{2}$ (Berkeley, Praha); $6-6\frac{1}{4}$ (Hurbanovo).							
	Shillong	Z N	eP eS	11 40	30 46	50 57	8980	Moderate. Time doubtful.
	Dehra Dun	N,E	e(P) e e(S)	11 32 40	30 53 57	52		Moderate, phases not clear.
	Chatra	Z E	iP eP PP iS Lq Lr M	11 34 36 41 52 56 12	30 00 00 01 07 06 03	55	8930	Slight.
	New Delhi	N,E N	eP i PP i i iS ScS PS PPS i SS	11 33 34 35 38 41 41 41 42 42 46	31 49 34 16 01 17 34 55 19 57 11	07	9020	Moderate.
	Calcutta	N,E E	eP iS PS	11 41 42	31 33 15	18	9130	Moderate.
	Hyderabad	N N,E N E N	eP PP S PS SS M M	11 35 42 44 48 12 10	31 37 19 13 58 09 01	50	9430	Moderate. Amp = 8mm. Amp = 18mm.
	Bombay	N,E N N,E E N E N N,E N	eP pP e i PP PP e i iS PS	11 32 33 34 35 35 40 42 42 43	31 32 35 29 31 42 20 23 50 23	54	10110	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS	
				h.	m.	s.			km.
<u>Oct</u>									
<u>1954</u>									
03 Contd.	Poona	Z	eP	11	31	56	9420	Slight.	
		E	FP		35	27			
		E	PPP		37	25			
		N	eS		42	24			
			PS		43	24			
			PPS		43	54			
			SS		48	05			
			SSS		51	32			
			Lq		55	09			
			Lr		59	17			
	M		12	06	30				
	Madras	E	eP	11	32	09	9590	Moderate shock.	
			SKKS		42	03			
			PS		44	11			
	Colombo	E	P	11	36	03		Amp. = 1.2mm.	
			e		47	19			
			e		12	06	--		
			M		14	31			
03	Shillong	Z	iP	12	14	55		Feeble, local.	
			e		15	05			
03	Epc:	1°S, 127½°E; - H = 23h 21m 36s (U.S.C.G.S)							
		1°S, 127½°E; - H = 23h 21m 35s (B.C.I.S).							
		Magnitude = 6½ (Kiruna), 6 (Praha).							
	Shillong	Z	eP	23	29	43	4640	Moderate.	
		N	eS		36	02			
	Calcutta	N,E	eP	23	29	59	4890	Slight.	
		E	iS		36	32			
		N	iS		36	34			
	Madras	E	iP	23	20	27	5250	Moderate.	
			eS		37	21			
	Chatra	Z	i(P)	23	30	20	5220	Slight, other phases not clear.	
		E	e						
			i(S)		37	12			
			e(M)		48	--			
	Colombo	E	P	23	30	36		Amp. = 0.5mm.	
			e		37	11			
			M		50	06			
	Hyderabad	E	eP	23	30	48	5640	Amp. = 3mm.	
			N	iS		38	04		
				L		48	05		
				M		51	04		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
<u>1954</u>								
03	Poona	Z	eP	23	31	23	6120	Slight.
			PP		35	25		
			PPP		37	24		
		N	eS		39	05		
			PS		39	16		
			PPS		39	29		
			ScS		41	16		
			SS		42	45		
			SSS		44	37		
			Lq		44	55		
			Lr		47	27		
			M		32	42		
			New Delhi	N,E	eP	23		
N	iS				3	09		
	ScS				41	22		
	SS				42	55		
	Dehra Dun	N,E	eP	23	31	27	6190	Moderate, phases not clear.
			e		32	14		
			e		32	31		
			eS		39	13		
	Bombay	E	eP	23	31	48	6280	Slight.
			PPP		34	56		
		N,E	iS		39	19		
		E	ScS		41	09		
04	Epic: 25°N, 122°E; Formosa. - H = 01h 33m 21s (U.S.C.G.S). Magnitude = 5½ - 5¼ (Uppsala).							
	Shillong	Z	eP	01	39	03		Slight.
		N	e		43	40		
			e		45	25		
			e		50	40		
	Chatra	Z	i <sub>1</sub>	01	39	43		Slight, distant.
		E	e <sub>1</sub>					
	Poona	Z	eP	01	41	40		Feeble, phases not clear.
	Bombay	E	e	01	48	15		Feeble.
			e		52	09		
04	Shillong	Z	eP	09	45	09		Feeble.
		N	i		55	05		
	Colombo	E	P	09	46	51	8150	Amp. = 0.2mm.
			S		56	26		
			L	10	19	21		
			M		25	36		



DATE	STATION	COMPT.	PHASE	G. M. T.			Δ km.	REMARKS
				h.	m.	s.		
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04	Shillong	Z	eP S S* Sg/M	11	43	08 33 36 41	220	Feeble.
04	Shillong	Z	eP	16	48	01		Very feeble.
04	Shillong	Z	eP PP S S* Sg/M	20	17	19 28 14 22 33	620	Slight.
05	Shillong	Z N	P e e e	04	17	03 05 08 15		Slight, near.
05	Shillong	Z N	P eS Lr M	04	26	16 32 09 51	4610	Slight.
05	Shillong	Z	e	04	31	54		Compression, distant, slight.
05	Shillong	Z	e	11	34	47		Compression, distant, slight.
	Chatra	Z	i	11	34	48		Slight, distant.
05	Shillong	Z	e	14	44	36		Distant, slight.
06	Shillong	Z	e	04	19	58		Tremor.
06	Shillong	Z	e	05	06	58		Tremor,
	Dehra Dun	N	e	05	07	21		Tremor.
06	Dehra Dun	N, E	eP PP iS SS SSS	05	20	52 56 06 16 27	110	Slight.
	New Delhi	E N, E	eP iS S* Sg SS	05	21	18 54 58 04 05	320	Slight.
06	Shillong	Z	eP Pg Lq S* Sg	06	30	42 03 33 00 13	600	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
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06	Shillong	Z	e	08	02	42		Slight.
			e		03	05		
			e		03	45		
			e		03	55		
			e		04	00		
			e		04	16		
06	Shillong	Z	e	08	29	58		Feeble, near.
	Shillong	Z	e	08	37	36		Distant, slight.
			e		38	06		
			e		50	01		
06	Poona	N	e?	09	09	12		Feeble.
06	Shillong	Z	e	18	26	28		Slight, near.
			e		26	38		
			e		26	56		
			e		27	07		
			e		27	18		
06	Dehra Dun	N,E	eP	19	59	03	860	Slight.
			Lq	20	00	21		
			eS		00	32		
			SS&Lr		00	43		
			SSS		00	53		
			S*		00	58		
			Sg/M		01	20		
	New Delhi	N,E	eP	19	59	07	990	Slight.
			S	20	00	49		
			SS		01	02		
		N	Lr		01	08		
			SSS		01	16		
06	Shillong	Z	e	20	01	25		Tremor, distant.
06	Shillong	Z	e	23	45	03		Tremor, distant.
07	Shillong	Z	e	02	58	25		Distant, compression, slight.
07	Epc: Chagos Island Region, Indian Ocean.							
	- H = 07h 57m 23s (U.S.C.G.S)							
	5.4°S, 68.5°E; - H = 07h 57m 21s (B.C.I.S)							
	6°S, 69°E; - H = 07h 57m 19s (Shillong)							
	Magnitude = 5 $\frac{3}{4}$ (Kiruna).							
	Colombo	E	P	07	55	50	3660	
			S	08	01	08		
			L		05	22		
			M	07	33			Amp. = 1.5mm.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
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07 Contd.	Kodaikanal	E	P	08	01	28	2950	Slight.
			S		06	01		
			Lq		07	01		
			SS		07	17		
			SSS		07	38		
			Lr		08	28		
			M		10	37		
Madras	E	iP	08	02	12	2590	Moderate.	
		PP		02	43			
		PPP		02	54			
		iS		06	21			
		Lq		06	49			
		SS		07	02			
		Lr		07	50			
		ScP		09	29			
		M		09	52			
Hyderabad	E,N	iP	08	02	40	2790	Amp. = 10mm Amp. = 3mm	
		iS		07	03			
		SS		08	34			
	E	L		09	34			
		M		10	09			
		M		12	19			
Poona	N	eP	08	02	42	2790	Slight.	
		PP		03	25			
		PPP		03	34			
		iS		07	05			
		Lq		08	05			
		SS		08	24			
		SSS		08	41			
		M		09	25			
Bombay	E	iP	08	02	45	2780	Slight.	
		PPP		03	36			
		iS		07	07			
		Lq		07	48			
		Lr		09	18			
		M		11	22			
New Delhi	N	eP	08	04	13	3870	Slight.	
		PP		05	29			
		PPP		05	47			
		eS		09	44			
		M		16	19			
Chatra	Z	i	08	04	03		Slight, distant.	
Shillong	Z	iP	08	04	43	4230	Slight, compression.	
		iS		10	37			
		e		14	50			
		M		18	22			
Calcutta	E	eS	08	09	38		Slight.	

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07	Bombay	E	e	14	02	22		Tremor.
07	Shillong	Z	e	18	01	38		Feeble.
07	Shillong	Z	i	19	29	17		Slight, distant.
		N	e		38	27		
07	Bombay	E	iP	19	30	44	9440	Slight.
			PP		34	13		
			e		38	00		
			e		38	37		
			eS		41	13		
			PS		42	05		
07	Shillong	Z	e	19	57	30		Tremor, distant.
08	Shillong	Z	e	05	14	28		Tremor.
08	Shillong	Z	e	05	26	39		Tremor.
08	Shillong	Z	e	09	34	49		Tremor.
08	Shillong	Z	e	10	33	05		Tremor.
08	Shillong	Z	i	10	54	48		Slight, compression.
08	Shillong	Z	i	13	40	22		Slight, compression.
08	Shillong	Z	e	14	23	55		Feeble, near.
08	Shillong	Z	i	16	23	49		Slight, near. Compression.
			e		25	12		
			e		25	18		
08	Dehra Dun	N,E	eP	18	36	53	370	Slight.
			PP		37	00		
			Pg		37	04		
			PPP		37	06		
			Lq		37	22		
			iS		37	34		
			S*		37	39		
			SS		37	44		
			Sg		37	47		
			SSS		37	55		
08	Shillong	Z	i	21	38	20		Feeble, compression.
			e		40	14		
08	Shillong	Z	e	23	52	41		Near, feeble.
			e		58	57		
			e		59	46		
09	Shillong	Z	e	01	36	57		Distant, tremor.
	Shillong	Z	e	04	52	26		Near, feeble.
			e		52	42		
			e		53	16		
			e		53	35		
			e		53	35		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
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09	Shillong	Z	i	11	17	40		Feeble, near.
09	Shillong	Z N	i i	21	19	25 19 37		Feeble, near.
09	Dehra Dun	N,E	e i	23	08	09 08 16		Feeble, phases not clear.
10	Shillong	Z	e e e e	04	51	00 51 02 51 08 51 14		Slight, near.
10	Shillong	Z	e e e	05	21	09 21 19 21 22		Feeble, near.
10	Shillong	Z	e e	05	39	07 39 16		Feeble, near.
10	Shillong	Z	i	06	46	25		Tremor, distant.
10	Dehra Dun	N	e	08	22	19		Tremor.
10	Shillong	Z	e e	08	23	23 23 29		Feeble, near.
10	Shillong	Z	e	11	37	56		Tremor, distant.
10	Shillong	Z	e e	20	21	21 22 12		Feeble, near.
10	Shillong	Z	e	23	41	21		Tremor, distant.
10	Shillong	Z	i e	23	44	23 44 52		Feeble, near. Compression,
11	Shillong	Z	e e e e	06	25	28 25 39 26 05 26 26		Feeble, near.
11	Shillong	Z	e	08	50	04		Tremor, distant.
11	Shillong	Z	e e e	15	30	49 30 53 31 21		Feeble, near.
11	Shillong	Z N	e i e	16	21	43 29 46 43 03		Slight, rarefaction, distant.
	Chatra	Z	i	16	21	56		Slight, distant.
11	Shillong	Z	e	17	05	52		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
1954								
11	Shillong	Z	e	17	11	10		Tremor.
11	Shillong	Z	e	17	28	52		Slight.
			e		24	35		
11	Shillong	N	e		34	03		
			e					
11	Shillong	Z	i	18	08	55		Feeble, rarefaction.
			i		09	04		
11	Shillong	Z	e	19	58	42		Feeble, near.
			e		58	56		
11	Shillong	Z	e	20	01	32		Tremor.
			e		01	35		
11	Shillong	Z	e	22	10	13		Tremor.
			e		10	56		
			e		11	07		
12	Shillong	Z	Pg	05	54	57	110	
			Sg		55	10		
12	Dehra Dun	N	e	11	49	20		Tremor.
13	Poona	Z	e	19	15	19		Tremor.
13	Epc: 38°N, 70°E; Afganistan. - H= 22h 11m 45s (Shillong)							
	- H = 22h 11m 44s (Quetta)							
Data discordant (B.C.I.S).								
	Dehra Dun	N,E	eP	22	14	15	1220	Moderate.
			PPP		14	29		
			P*		14	44		
			Pg		15	12		
			Lq		16	10		
			iS		16	20		
			SS		16	22		
			Lr		16	44		
			SSS		16	47		
			Sg/M		17	37		
				New Delhi	N,E	iP	22	
PP		14				33		
N,E	PPP				14	40		
	i				15	17		
N	Lq				16	19		
N,E	eS				16	28		
	i				16	36		
N,E	SS				16	41		
	Lr				16	48		
N,E	M				17	37		
	Chatra	E,Z			e	22	15	59
			i		19	13		



DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
Oct. 1954						
13 Contd.	Bombay	N	eP	22 16 07	2090	Slight.
		E	eP	16 12		
			PP	16 26		
			iS	19 39		
		N	eS	19 43		
		E	SS	20 05		
			Lr	20 40		
		N	M	24 05		Amp. = 3mm
	Hyderabad	N	iP	22 16 36	2420	
		E,N	iS	20 33		
		N	L	23 15		
			M	25 12		Amp. = 6mm.
	Poona	N,Z,E	eP	22 16 16	2220	Slight.
		E	PP	16 36		
			PPP	16 44		
		N,E	eS	19 56		
		E	Lq	20 06		
			SS	20 25		
			SSS	20 35		
			Lr	20 56		
			M	22 34		
	Calcutta	E	eP	22 16 40	2600	Slight, time approxi- mate due to failure of time-marking clock.
	Shillong	Z	iP	22 16 45	2780	Slight, probably deep.
		N	eP	16 46		
			iS	20 48		
			Lq	21 20		
			Lr	22 22		
			M	24 20		Supressed.
	Madras	E	eP?	22 17 57	4530	
			iS	25 41		
			PS	25 56		
			SoS	27 26		
			SS	29 15		
			SSS	31 25		
	Kodaikanal	E	P	22 22 23		Slight.
			e	24 53		
			Lr	25 20		
			M	26 23		
14	Dehra Dun	N,E	eP	01 31 58	900	Slight.
			PP	32 04		
			PPP	32 11		
			Pg	32 36		
			Lq	33 18		
			iS	33 31		
			SS	33 41		
			Lr	33 43		
			SSS	33 52		
			S*	34 00		
			Sg/M	34 25		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Oct.</u>									
<u>1954</u>									
14 Contd.	New Delhi	N, E	iP	01	32	04	980	Slight.	
		E	PPP		32	18			
		N, E	iS		33	45			
		N, E	Lr		34	02			
			SSS		34	06			
		S*		34	16				
	Shillong	Z	P	01	34	32		Slight.	
14	Epc;	7°S, 128°E.	Banda Sea;	- H =	01h	35m	00s	(U.S.C.G.S)	
		7.5°S, 127.5°E.		- H =	01h	35m	01s	(B.C.IS)	
		6°S, 130°E.		- H =	01h	35m	03s	(Shillong).	
Shillong	Z		iP	01	43	43	5220	Moderate.	
		N	iP		43	44			
			PP		45	38			
			PPP		46	23			
			iS			35			
			PS		51	00			
			SSS		55	38			
			Lr		57	23			
			M		02	00			38
Madras	E		P	01	44	11	5700	Moderate.	
			PcP		45	14			
			iPP		46	12			
			PPP		47	11			
			iS		51	31			
Chatra	Z		iP	01	44	16	5800	Slight.	
		E	eP						
			eS		51	40			
		M		02	03	45			
Kodaikanal	E		P	01	44	22	7060	Long distance earthquake of slight intensity.	
			PP		46	40			
			S		47	58			
			Lq		02	00			07
			Lr		02	55			
Hyderabad	N, E		iP	01	44	33	6020		
		E	PcP		45	36			
		PP		46	33				
	E, N	iS		52	09				
	N	SS		55	57				
Poona	Z		eP	01	45	03	6560	Moderate.	
		E	PcP		45	43			
			PP		47	17			
			PPP		48	46			
			PcS		50	41			
			iS		53	09			
			PS		53	26			
			PPS		53	31			
			SS		56	57			
			Lq		02	00			00
			Lr		02	51			
			M		07	42			

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS				
				h.	m.	s.			km.			
<u>Oct.</u>												
<u>1954</u>												
14 Contd.	Bombay	N	eP <sub>0</sub>	01	45	12	6690	Slight. 'M' has not developed.				
			E	iP <sub>0</sub>								
			PP		47	21						
			PPP		48	29						
			N,E	iS		53			25			
			E	ScS?		54			31			
				SS		57			25			
				i		58			47			
			New Delhi	N,E	eP	01			45	14	6670	Moderate.
		N			PPP				48	51		
	iS			53	26							
	SS			57	27							
	Dehra Dun	N,E	eP	01	45	18	6660	Moderate.				
N			PcP		45	53						
		PP		47	23							
		PPP		48	58							
		PcS		49	45							
		iS		53	30							
		PS		53	44							
		PPS		53	58							
		ScS		54	56							
		SS		57	40							
		SSS		02	00	27						
		Lq		00	57							
		Lr		03	38							
	M		08	46								
14	Shillong	Z	Pg	17	59	57	60	Slight, local.				
			Sg	18	00	04						
15	Shillong	Z	i	03	29	13		Slight, local.				
15	Shillong	Z	P	03	47	25		Feeble				
15	Shillong	Z	P	03	47	25		Slight.				
15	Shillong	Z	P	07	02	49		Slight.				
15	Shillong	Z	i	08	17	07		Local.				
			i		17	26						
15	Shillong	Z	i	20	28	12		Very feeble.				
15	Shillong	Z	i	23	13	58		Slight, local.				
			i		14	04						
16	Shillong	Z	P	00	39	33		Feeble.				
16	Shillong	Z	P	07	28	14		Slight.				
16	Shillong	Z	e	09	48	10		Slight.				
16	Shillong	Z	P	18	09	36		Slight.				
16	Dehra Dun	N,E	e	18	23	15		Tremor.				

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Oct. 1954								
16	Shillong	Z	e i	19	38	18 38 41		Feeble.
16	Shillong	Z	P	20	24	16		Slight.
16	Shillong	Z	P	22	34	49		Slight.
17	Shillong	Z	P	19	38	44		Slight.
17	Shillong	Z	e	19	39	50		Slight.
17	Shillong	Z	e	19	42	27		Slight.
17	Dehra Dun	N,E	e	19	43	08		Tremor.
17	Shillong	Z	e e e	21	21	18 21 50 21 57		Slight.
17	Bombay	E N,E	e e	23	12	20 20 05		Long distance shock feebly recorded.
17	Shillong	Z N	PKP M	23	17	23 00 01 38		Slight, very distant.
17	Shillong	Z	Pg Sg	23	26	29 26 34	40	Local
18	Hyderabad	E	M	00	06	50		$\mu = 6\text{mm.}$
18	Shillong	Z	i e	02	03	03 03 14		Slight, local.
18	Shillong	Z	e	11	06	36		Local.
18	Shillong	Z	e	13	36	18		Feeble, time uncertain.
18	Shillong	Z	e	14	38	39		Slight.
18	Shillong	Z	e	19	52	49		Local.
18	Dehra Dun	N	e	20	03	09		Tremor.
19	Dehra Dun	Z	i	16	37	11		Slight, local.
19	Dehra Dun	Z	e	17	17	08		Slight distant.
19	Dehra Dun	Z	e	17	36	03		Tremor.
19	Shillong	Z	eP	18	00	51		Slight distant.
19	Shillong	Z	i i	23	37	02 37 14		Tremor.
19	Shillong	Z	iPg P iSg SS	23	48	28 48 30 48 32 48 49	40	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
						km.	
<u>Oct.</u> 1954							
20	Kodaikanal	E	P S SS Lq Lr M	00 19 25 26 30 31 34 38	25 42 09 49 09 19	5670	Moderate.
20	Shillong	Z	iP	05	50	34	Slight distant.
20	Shillong	Z, E E	eP eS M	14 00 05 10	27 10 52	3100	Slight.
20	Chatra	Z E	iP eP e	14	01	07 --	Slight distant.
	Bombay	E	e e e	14 03 09	07 19 31		Shock not recorded on Milne-Shaw Charts feeble, not clear.
20	Epc: 30.8°N, 142.1°E. South of Honshu, Japan. - H = 23h 41m 44s (C.M.O. Japan) 31°N, 141°E. - H = 23h 41m 43s (U.S.C.G.S)						
	Shillong	Z E	iP eP PP PPP PcS eS Lq M	23 49 51 51 52 55 56 59 00	51 26 11 27 18 48 33	4800	Slight.
	Calcutta	E	e	23	50	04	Slight, distant.
	Chatra	Z E	i e	23 00	50 13	21 --	Slight, distant surface waves. Per.=16 Secs. Amp.=0.75mm.
	New Delhi	N, E	eP eS PS ScS	23 51 59 00	19 59 07 13	6090	Slight.
	Hyderabad	E	e L M	23 00 38	51 28 38		
	Bombay	N E E N E E E	eP iP PcP PPP eS iS PS PPS	23 52 52 56 00 00 00 01	10 41 05 36 36 55 09	6930	Slight. Surface waves have not been developed.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Oct. 1954						km.	
21	Epc: 42.5°S, 81°E; South Indian Ocean - H = 00h 10m 08s (Shillong) 41°S, 81°E; - H = 00h 10m 10s (U.S.C.G.S) Magnitude = 7 (Pasadena); 6 $\frac{3}{4}$ (Kiruna); 6 $\frac{1}{4}$ (Prah).						
	Colombo	E	P	00	18	48	5420
			S		25	50	
			L		30	36	
			M		33	48	Amp. = 3.5mm.
	Madras	E	eP	00	19	41	Moderate.
			PcP		20	34	
			PP		21	43	
			PPP		23	04	
			iS		27	22	
			PS		27	35	
			PPS		27	42	
			ScS		29	25	
			SS		31	00	
			SSS		32	57	
			Lq		33	03	
	Poona	N, E N	eP	00	20	18	6590 Moderate.
			PP		22	31	
			PPP		23	50	
			iS		28	26	
			PS		28	38	
			PPS		28	48	
			SS		32	28	
			Lq		35	13	
			Lr		38	01	
			M		43	03	
	Bombay	N	iP	00	20	20	6700 Moderate.
			PP		22	34	
			PPP		24	04	
			iS		28	38	
			SS		32	32	
			Lr		38	35	
		E	M		41	34	
		N	M		44	46	
	Calcutta	N, E E	eP	00	20	47	7090 Moderate.
			iS		29	22	
			PKKP <sub>1</sub>		41	06	
			M		45	03	
			Mn		47	27	
	Shillong	Z E	iP	00	21	07	7500 Moderate.
			eP				
			iS		30	03	
			SKS		31	06	
			SS		34	40	
			Lq		38	33	
			Lr		42	13	
			M		44	55	



DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
Oct. 1954								
21 Contd.	Chatra	Z	i(P)↓	00	21	11	7590	Slight, distant.
		E	e↓					
			i(s)	30	12			
	New Delhi	N	eP	00	21	19	7690	Moderate.
		N,S	PcP		21	52		
		N,S	PP		23	57		
		N,S	iSg		30	25		
		N,S	PS		30	55		
		N,S	SS		35	01		
		N,S	SSS		38	04		
21	Shillong	Z	i	01	45	15		Tremor.
21	Shillong	Z	e	03	11	38		Slight, near.
			i		12	35		
			i		13	34		
21	Shillong	Z	i	07	14	46		Slight, distant.
		N	e	08	10	45		
21	Shillong	Z	iP	10	28	06	250	Slight.
			Px		28	08		
			Pg		28	11		
			iSg		28	42		
			SS		28	45		
21	Dehra Dun	N,E	e	19	15	57		Feeble, phases not clear.
			i		16	27		
21	Shillong	Z	i	20	22	49		Slight, distant.
			i		24	02		
22	Shillong	Z	e	02	58	08	170	Slight.
			iSg		58	30		
			e		58	36		
22	Shillong	Z,N,E	iPg	04	38	37	20	Slight.
		N,E	iSg		38	39		
22	Shillong	Z,N,E	i	04	39	51		Slight, local.
22	Shillong	Z	e	06	13	15		Slight, near.
			i		14	10		
22	Shillong	Z	ePg/Px	07	57	14	100	Slight.
			P		57	18		
			PP		57	22		
			eSg		57	26		
			S		57	29		
			SS		57	36		
22	Shillong	N	eP	14	14	59	130	Slight.
			PP		15	06		
			iSg		15	14		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
<u>1954</u>								
22	Shillong	Z	i	16	36	56		Slight, distant.
			i		38	51		
			i		42	05		
22	Shillong	Z	e	17	22	06		Tremor.
22	Shillong	Z	e	18	04	53		Slight.
23	Shillong	Z	i	00	53	45		Slight, distant.
			i		55	08		
23	Shillong	Z	e	06	34	21		Slight, tremor.
23	Shillong	Z	e	07	33	21		Slight.
23	Shillong	Z	P	11	36	22	280	Slight.
			Pg		36	28		
			S		36	52		
			e		36	58		
23	Shillong	Z	iP	18	00	19		Feeble.
23	Shillong	Z	Pg	21	05	33	20	Slight.
23	Shillong	Z	e	21	30	32		Feeble.
23	Shillong	Z	iP	23	22	42		Slight.
24	Shillong	Z	iP	05	22	23		Slight.
24	Shillong	Z	e	06	56	01		Slight.
			i		56	08		
			e		56	31		
24	Dehra Dun	N,E	e	09	32	06		Feeble, phases not clear.
	New Delhi	N,E	eP	09	32	29	640	Slight.
		E	PP		32	37		
		N,E	Pg		32	59		
		E	Lq		33	26		
		N,E	eS		33	37		
		E	Lr		33	43		
		N,E	SS		33	48		
		N,E	Sg		34	13		
	Shillong	Z	e	09	34	41		Tremor.
24	Shillong	N	e(M)	10	55	30		Slight, distant.
24	Shillong	Z	eP	16	18	29	210	Slight.
			eSg		18	59		
24	Shillong	Z	e	16	29	59		Tremor.
			i		30	20		
24	Shillong	Z	iP	17	21	47		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Oct. 1954						km.	
24	Shillong	Z	e	22	44	22	Tremor.
24	Shillong	Z	e	23	46	48	Slight, distant.
25	Shillong	Z	iP	00	19	21	Slight, distant.
25	Shillong	Z	ePx Pg/P PP eSg SS	00	34	37 38 45 52 04	120 Slight.
25	Shillong	Z	i	00	37	33	Slight, near.
25	Shillong	Z	e i i	01	03	58 27 40	Tremor.
25	Shillong	Z	e e e e	04	50	38 47 14 28	Slight, near.
25	Shillong	Z	i	06	22	58	Slight.
25	Dehra Dun	N	e	06	58	49	Tremor.
25	Shillong	Z	e i i	06	58	57 07 56	Slight.
25	Shillong	Z	iPg iSg	09	43	35 37	20 Slight.
25	Shillong	Z	i	10	45	10	Slight, local.
25	Shillong	Z	i	19	28	40	Feeble.
26	Shillong	Z	e i	00	44	55 12	Tremor.
26	Shillong	Z	eP PP S* Sg	07	13	22 29 17 23	510 Slight.
26	Shillong	Z	ePg S Sg	10	19	30 48 51	140 Feeble.
26	Shillong	Z	eP	10	43	25	Feeble.
26	Shillong	Z	eP	10	43	58	Feeble.
26	Shillong	Z	eP	18	28	04	Feeble.
26	Shillong	Z	eP	20	39	33	Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Oct. 1954								
26	Shillong	Z	eP Sg	22	37	16 37 38	170	Slight.
27	Shillong	Z	ePg Sg	03	30	49 31 04	130	Feeble.
27	Shillong	Z	eP	03	34	17		Slight.
27	Shillong	Z	eP	08	26	59		Feeble.
27	Shillong	Z	eP	10	41	07		Very feeble.
27	Shillong	Z	eP Sg	16	13	28 14 06	260	Feeble.
27	Shillong	Z	eP	16	46	59		Very feeble.
27	Shillong	Z	eP	17	31	23		Very feeble.
27	Shillong	Z	ePg Sg	17	46	31 46 47	130	Slight, local.
27	Shillong	Z	eP Sg	18	02	13 02 30	140	Slight, local.
27	Dehra Dun	N,E	e i	20	27	54 29 18		Slight, phases not clear.
	New Delhi	N,E E N,E N,E	eP e i eS Lr SS SSS	20	28	03 28 22 28 34 29 47 29 51 29 59 30 10	1010	Slight.
	Shillong	Z	eP	20	30	14		Slight, distant.
27	Epc: 40°N, 77.5°E. Sinkiang province, China.							
	- H = 21h 48m 45s (Shillong & B.C.I.S).							
	40°N, 77°E. - H = 21h 48m 41s (U.S.C.G.S).							
	Dehra Dun	N,E	eP PP PPP P* Pg Lq iS SS Lr SSS S* Sg/M	21	51	06 51 15 51 20 51 27 51 52 52 39 52 52 53 03 53 08 53 15 53 26 53 51	1020	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
Oct. 1954								
27 Contd.	New Delhi	N	iP	21	51	28	1230	Slight.
		N,E	PPP		51	52		
		N	i		52	11		
			iS		53	34		
			Lr		53	54		
	Chatra	Z	i	21	52	19		Slight, near.
		E	e		58	12		Surface waves.
	Calcutta	E	e	21	52	36		Slight, distant.
			e		57	10		
			Mn	22	03	54		Amp. = 23mm.
	Shillong	Z	eP	21	53	05	2120	Slight.
		N	eP		53	08		
		E	eS		56	35		
	Bombay	N,E	eP	21	53	36	2380	Slight.
		E	eS		57	30		
		N,E	e		57	41		
	Poona	Z	eP	21	53	37	2480	Slight.
			PP		54	06		
			PPP		54	17		
			eS		57	39		
			Lq		58	06		
			SS		58	24		
			SSS		58	37		
			Lr		59	10		
			M	22	00	57		
	Madras	E	eP	21	54	16		Tremor.
	Hyderabad	E	e	22	00	51		
			M		02	54		Amp. = 2mm.
28	Shillong	Z	eP	06	29	25		Slight.
28	Shillong	Z	eP	06	35	09		Very feeble.
28	Shillong	Z	iP	07	09	58		Slight.
			e		10	55		
			e		11	23		
28	Dehra Dun	N,E	i	07	12	10		Tremor.
28	Shillong	Z	eP	09	44	12		Very feeble.
28	Epc: 35°N, 70°E. Afganistan. - H = 14h 36m 33s (Shillong)							
	36°N, 69½°E. - h = 100 km. Ca.							
	-H = 14h 36m 28s (U.S.C.G.S).							
	Dehra Dun	N,E	eP	14	38	35	910	Moderate.
			PP		38	43		
			PPP		38	49		
			Px		38	56		
			Lq		39	59		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS	
				h.	m.	s.			
<u>Oct.</u>									
<u>1954</u>									
28 Contd.	Dehra Dun Contd.	N,E	iS	14	40	10			
			SS		40	20			
			Lr		40	23			
			SSS		40	31			
			S*		40	38			
			Sg/M		41	01			
	New Delhi	N,E	iP	14	38	44	980	Slight.	
			PP		38	52			
			Pg		39	01			
			N,E	Lq		39	29		
				iS		40	25		
				SS		40	37		
				Lr		40	44		
				SSS		40	49		
				S*		40	58		
				Sg		41	22		
	Chatra	Z	iP	14	40	23	1790	Slight.	
			PP		40	40			
			PPP		40	49			
			iS		43	22			
			SS		43	43			
			SSS		43	54			
			Lr		44	04			
			M		45	24			
	Poona	Z	eP	14	40	32	1860		
			PP		40	45			
			eS		43	38			
			SS		44	00			
			SSS		44	12			
			Lr		44	25			
			M		45	48			
	Shillong	Z	eP	14	41	10	2330	Slight.	
			E	eS		45			00
	Madras	E	e	14	46	10		Tremor.	
28	Shillong	Z	eP	15	11	16		Very feeble.	
28	Shillong	Z	eP	15	20	39	280	Feeble.	
			Sg		21	19			
28	Shillong	Z	eP	16	53	19		Very feeble.	
			e		53	31			
28	Shillong	Z	eP	18	30	15		Feeble.	
			e		30	34			
29	Shillong	Z	eP	07	52	15		Very feeble, local.	
			e		52	31			
29	Shillong	Z	eP	11	22	05		Slight, distant.	
			i		32	57			
29	Bombay	E	e	11	26	00		Distant and feeble.	
			e		28	16			
			i		33	53			



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Oct. 1954								
29	Shillong	Z	ePg Sg	18 03 21 03 26		40	Local, slight.	
29	Shillong	Z	iP Sg	18 40 36 41 07		230	Slight, local.	
29	Shillong	Z	i	19 55 53			Very feeble.	
29	Shillong	Z	iP	20 12 50			Slight.	
29	Shillong	Z	ePg Sg	20 59 04 59 21		140	Slight, local.	
29	Shillong	Z	eP	21 46 51			Slight, distant.	
29	Shillong	Z	eP P* Sg/M	22 38 06 38 09 38 59		360	Feeble.	
30	Bombay	E	e i	00 20 35 28 15			Surface waves only.	
30	Shillong	Z N,Z	iPg Sg	00 20 56 21 12		130	Slight, local.	
30	Shillong	Z	eP PP P* S Sg	05 39 56 40 02 40 06 40 51 41 21		370	Slight.	
30	Shillong	Z	iP	16 14 34			Slight.	
30	Shillong	Z	eP	16 47 51			Very feeble, distant.	
30	Shillong	Z	eP	16 59 41			Very feeble, distant.	
30	Shillong	Z	iP	18 12 15			Local, slight.	
30	Shillong	Z	eP	18 39 21			Slight, distant.	
30	Shillong	Z	eP	19 41 02			Slight, distant.	
30	Shillong	Z,E E	eP e e	19 42 29 45 39 46 41			Local, slight. Phases not clear.	
30	Shillong	Z N	eP e i	22 00 40 00 47 07 20			Slight, distant.	
30	Shillong	Z	eP	22 37 05			Feeble, distant.	
30	Poona	Z	e	23 03 30			Tremor.	

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
<u>1954</u>								
30	Shillong	Z	eP	23	51	12		Slight, distant.
30	Bombay	E	i	23	55	12		Surface waves.
31	Shillong	N,E	ePg Sg	02	21	40	70	Strong, local shock felt.
					21	52		
31	Shillong	Z	eP	04	53	41		Slight, distant.
31	Shillong	Z	eP	08	13	03		Slight, distant.
31	Bombay	E	e	09	59	45		
31	Shillong	Z	eP	23	25	46		Slight, distant.
		N	eP		25	47		
			i		36	33		
31	Colombo	E	P	23	26	03		
			e		37	21		
			e		58	21		
			M	00	05	21		Amp. = 0.4mm.
31	Bombay	E	e	23	26	56		Distant and slight.
			e		33	56		
			e		37	44		
31	Shillong	Z	eP	23	46	46		Feeble, distant.

Earthquake Reports  
(Non Instrumental Reports)

The following is the list of earthquakes as reported by the Voluntary Observers from different places during the month of October 1954.

Place at which felt	Date in G. M. T.	Time in G. M. T.	No. of Shocks	Duration of shocks in Secs.	Intensity in R.F. scale	Remarks
Shillong	09 Oct.	21 18	1	3	V	-
Shillong	22 Oct.	04 42	1	4	III	-
Gauhati	22 Oct.	14 15	1	15	V	Appeared coming from NE direction.

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GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



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Published under the direction of

Shri S. Basu, M.Sc., F.N.I.,

Director General of Observatories  
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Instruments and their constants

Station	Instrument	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N-S	12.0	350	18:1	16
	Milne-Shaw	E-W	12.0	350	9:1	8
	Sprengnether Microseismo- graph	E-W	To = Tg = 7.0	-	-	30
Calcutta	Milne-Shaw	E-W	10.0	150	20:1	8
	Wood-Anderson	N-S	2.0	870	Critical	30
	Omori- Ewing	N-S	18.0	32	-	25
	Omori- Ewing	E-W	19.0	30	-	25
Chatra	Benioff	Z	To=0.72 Tg=0.45	-	Critical	60
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	40:1	60
	Milne-Shaw	E	12.0	250	20:1	16
Colombo	Milne-Shaw	E-W	12.0	250	20:1	-
Dehra Dun	Milne-Shaw	N-S	12.0	250	20:1	16
	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	0.8	800	60:1	60
	Wood-Anderson	E-W	0.8	950	60:1	60
Hyderabad	Milne-Shaw	N-S	12.0	252	20:1	8
	Milne-Shaw	E-W	12.0	253	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismograph	E-W	To = Tg = 7.2	-	-	30
New Delhi	Milne-Shaw	N-S	12.0	288	20:1	8
	Wood-Anderson	N-S	4.0	1070	20:1	16
	Wood-Anderson	E-W	2.0	1841	30:1	60
	Omori-Ewing	E-W	28.0	30	1	12
Poona	Sprengnether Microseismograph	Z	To=1.5 Tg=1.5	-	-	30
	Wood-Anderson	E-W	4.0	1100	20:1	16
	Milne-Shaw	N-S	12.0	250	20:1	8
Shillong	Milne-Shaw	N-S	12.0	250	20:1	8
	Benioff Short Period	Z	To=1.0 <sup>s</sup> Tg=0.18	-	-	60
	Wood-Anderson	E-W	0.8	1000	-	30
	Wood-Anderson	N-S	0.8	1000	-	30
	Wood-Anderson	N-S	4.0	1120	-	30

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Nov.</u>									
<u>1954</u>									
01	Shillong	Z	eP	00	39	11		Very feeble.	
01	Shillong	Z	eP	06	04	21		Feeble, near.	
01	Shillong	Z	eP	06	09	00		Very slight, distant.	
01	Dehra Dun	N	e	11	13	53		Tremor.	
01	Dehra Dun	N	e	18	22	47		Tremor.	
01	Dehra Dun	N,E	e	21	14	21		Feeble, phases not clear.	
	Bombay	E	eP	21	15	09	2590	Feeble.	
		N	eP		15	13			
		E	eS		19	18			
	Poona	Z	eP	21	15	19	2850	Slight.	
			PP		15	59			
			PPP		16	11			
		N,E	eS		19	45			
		E	Lq		20	15			
			Lr		21	23			
	Shillong	Z	eP	21	16	44		Slight, distant.	
01	Dehra Dun	N	e	23	40	35		Tremor.	
02	Shillong	Z	iP	02	40	27	270	Slight.	
		N,E	P*		40	29			
			eS		40	58			
			S*		41	02			
			Sg		41	07			
	Dehra Dun	N	e	02	46	07		Tremor.	
02	Shillong	Z	iP	03	15	52	270	Feeble.	
			P*		15	56			
			Pg		16	01			
			S*		16	28			
			Sg		16	23			
02	Epc: 7°S, 121.5°E. In the Floris Sea.								
				- H = 08h 24m 09s (Shillong)					
				7.5°S, 119°E. - H = 08h 24m 08s (U.S.C.G.S)					
				8°S, 119°E. - H = 08h 24m 10s (B.C.I.S);					
	Colombo	E	P	08	32	00	4830		
			S		38	30			
			L		47	50			
			M		52	46		Amp. = 14.8mm.	



DATE	STATION	COMPT.	PHASE	C. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Nov.</u>									
<u>1954</u>									
02 Contd.	Shillong	Z	iP	08	32	08	4720	Moderate compression, first ground movement west.	
		N,E	PP		33	54			
			PPP		34	30			
			iS		38	31			
			PS		38	38			
			PPS		38	39			
		N	SS		42	01			
		E	SS		42	05			
			Lq		42	30			
		N	Lr		44	00			
			M		46	35			
Madras	E	F		08	32	20	5060	Moderate.	
		e		32	39				
		PcP		34	18				
		PPP		34	59				
		ScP		38	01				
		eS		39	02				
		PPS		39	19				
		SS		42	10				
		ScS		42	19				
		Lq		42	54				
		Lr		45	03				
	M		48	36					
Kodaikanal	E	iP		08	32	36	4850	Earthquake of moderate intensity.	
		PP		34	21				
		PPP		35	09				
		S		41	39				
		SS		44	51				
		Lq?		45	39				
		Lr		47	54				
		M?		51	36				
						Amp. = 8.6mm.			
Chatra	E	eP		08	32	42	5190	Great.	
		PcP		34	19				
		PP		34	30				
		PPP		35	19				
		PcS		38	11				
		iS		39	32				
		SS		42	53				
		Lq		43	35				
		Lr		45	53				
		M		50	20				
						Per. = 15mm A = 9			
Hyderabad	E,N	iP		08	32	51	5220		
		PP		32	51				
		iS		39	43				
	E	ScS		42	22				
		SS		43	35				
		L		47	40				
		M		50	29				
	N	M		51	04				
									Amp. = 89mm. Amp. = 127mm.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Nov</u>						
<u>1954</u>						
02	Poona	Z	eP	08 33 20	5700	Great shock.
Contd.		N	PcP	34 35		
			PP	35 24		
			iS	40 39		
			PS	40 47		
			PPS	40 55		
			ScS	43 03		
			SS	44 21		
			Lq	45 57		
			Lr	48 31		
			M	52 55		
	Bombay	N,E	eP	08 33 29	5930	Moderate.
		E	iP			
		N,E	PcP	34 28		Another shock
		N	PP	35 49		is mixed up with
			PPP	36 46		this shock in the
			PcS?	38 27		beginning and
			e	40 16		later it is a case
			eS	41 00		of multiple shock.
		E	iS			
		N	ScS	43 18		
			SS	44 42		
		E	e	45 19		
		N	SSS(Lq)	46 42		
			e	47 41		
			Lr?	50 30		
			i	53 08		
		E	M	56 34		Amp. = 86mm
		N	M	57 48		Amp. = 53mm.
	Dehra Dun	N,E	eP	08 33 44	6110	Moderate.
			PcP	34 38		
			PP	35 49		
			PPP	37 03		
			PcS	38 25		
			iS	41 25		
			PS	41 33		
			PPS	41 42		
			ScS	42 56		
			SS	44 58		
			SSS	47 27		
			Lq	47 32		
			Lr	50 09		
			M	54 47		
	New Delhi	N,E	eP	08 33 39	5950	Great.
		N	PP	35 39		
			PPP	36 45		
			PcS	38 46		
			eS	41 11		
			i	41 51		
			ScS	43 30		
			SS	44 32		
			i	45 10		
			i	45 50		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
<u>1954</u>								
02	New Delhi	N	SSS	08	46	07		
Contd.	Contd.		Lq		46	12		
			Lr		48	20		
			M		53	00		
	Bombay	E	i	08	37	06		Moderate shock super imposed on the preceding shock. Amp. = 59mm Amp. = 25mm.
			i		46	16		
			M		59	16		
		N	M	09	03	34		
02	Shillong	Z	i	08	46	40		Tremor.
02	Shillong	Z	iP	09	16	31	240	Feeble.
			P*		16	33		
			Pg		16	36		
			S*		16	59		
			Sg		17	04		
02	Shillong	Z	i	09	26	09		Very feeble, rarefaction.
02	Shillong	Z	e	09	52	07		Tremor.
02	Shillong	Z	e	10	09	14		Feeble.
		E	e		10	24		
			e		15	05		
	Poona	Z	eP	10	12	05		Feeble shock, phases not clear.
		N	e?		23	29		
02	Shillong	Z	i	10	29	00		Very feeble, rarefaction.
02	Shillong	Z	i	10	34	46		Very feeble. Compr- essions. Distant.
02	Shillong	Z	i	10	47	47		Feeble rarefaction. Distant.
02	Poona	Z	e	15	48	58		Tremor.
02	Shillong	Z	e	16	12	34		Tremor.
02	Dehra Dun	N	e	16	19	41		Tremor.
02	Shillong	Z	e	16	45	43		Tremor, near.
			e		46	24		
02	Shillong	Z	e	20	57	31		Tremor, near.
			e		57	33		
			e		57	42		
02	Shillong	Z	e	21	52	48		Tremor, near.
			e		53	31		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u> 1954								
02	Shillong	Z	e e	22	39	08 11		Tremor, near.
03	New Delhi	E N,E	eP? Lq iS S*	00	25	12 12 23 40	680	Slight.
	Dehra Dun	N	e	00	26	21		Tremor.
	Shillong	Z	e e	00	31	06 13		Tremor.
03	Shillong	Z	i	03	25	32		Very feeble compression.
	Poona	Z	e	03	26	36		Tremor.
03	Shillong	Z	e	04	32	16		Tremor, near.
03	Shillong	Z	eP Pg S S* Sg	07	42	18 36 09 20 30	470	Very feeble, near.
03	Shillong	Z	i	09	00	43		Compression, tremor distant.
03	Shillong	Z N	iP Sg	10	54	02 35	240	Slight, near.
	Dehra Dun	N	e	10	59	45		Tremor.
03	Dehra Dun	N	e	12	24	50		Tremor.
03	Shillong	Z	i	16	30	13		Tremor, distant.
03	Shillong	Z	e	16	16	01		Tremor, distant.
03	Shillong	Z	Pg Sg	18	33	46 56		
03	Dehra Dun	N	e	23	19	56		Tremor.
04	Shillong	Z	e	01	08	35		Tremor, distant.
	Shillong	Z	i	10	39	41 19		Near, tremor.
04	Shillong	Z	e	04	05	16		Tremor.
04	Shillong	Z	i	04	07	40		Tremor, distant.
	Shillong	Z	e	16	14	14		Tremor, distant.
04	Shillong	Z	i	19	23	47		Compression, tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
Nov. 1954								
04	Shillong	Z	i e	23	12	43 13 13		Tremor, near.
05	Shillong	Z	i e	04	11	26 11 45		Very feeble, near.
05	Shillong	Z	e	09	19	21		Tremor, near.
05	Shillong	Z	e	09	19	21		Very feeble, distant.
	Bombay	E	e e	09	20	57 49 00		Very feeble
05	Shillong	Z	e	15	45	11		Tremor, distant.
05	Shillong	Z	i	19	24	26		Tremor.
05	Shillong	Z	i	22	56	37		Feeble.
	Bombay	E	eP eS M	22	58	24 23 07 56 34 23	8220	
06	Dehra Dun	N,E	e i i	07	36	02 38 03 38 53		Slight, phases not clear.
	New Delhi	N,E E N,E E N,E	eP i PPP i iS SS Lr S*	07	36	06 36 17 36 26 37 00 37 52 38 06 38 12 38 26	1030	Slight.
	Shillong	Z	i e	07	38	27 38 35		Feeble, distant.
	Shillong	Z	i	07	52	08		Tremor
06	Bombay	E	e e	13	14	09 18 31		Very feebly recorded in Milne-Shaw N-S component.
06	Shillong	Z	iP P* S* Sg	21	02	28 02 31 02 59 03 08	280	Very feeble, near.
06	Shillong	Z	e e	21	28	48 29 35		Tremor.
06	Shillong	Z	i	21	44	10		Tremor.
06	Poona	Z	e	22	58	23		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			$\Delta$	REMARKS
				h.	m.	s.		
Nov. 1954								
06	Shillong	Z	e	23	00	13		Tremor.
			e		00	57		
			e		01	15		
06	Shillong	Z	P	23	44	10	210	Very feeble, near.
			S		44	34		
			S*		44	37		
			Sg		44	39		
07	Shillong	Z	i	00	23	19		Tremor, distant.
07	Shillong	Z	e	00	36	57		Tremor.
			e		37	33		
07	Shillong	Z	e	05	32	46		Tremor.
07	Shillong	Z	i	07	15	52		Very feeble. Comp- ression. Distant.
07	Poona	Z	e	07	17	37		Tremor.
07	Shillong	Z	i	07	27	40		Tremor. Rarefaction.
07	Dehra Dun	N,E	e	07	40	35		Feeble, phases not clear.
			i		42	06		
			i		42	09		
07	Shillong	Z	i	07	43	10		Very feeble. Compression.
07	Shillong	Z	i	08	49	19		Tremor. Rarefaction.
07	Bombay	E	e	10	58	24		Feeble.
07	Shillong	Z	e	16	38	27		Tremor.
07	Shillong	Z	e	19	49	49		Tremor.
07	Shillong	Z	i	19	59	34		Very feeble. Compression.
07	Shillong	Z	e	21	52	16		Very feeble. Distant.
07	Shillong	Z	iP	22	47	53	290	Very feeble.
			P*		47	56		
			S*		48	24		
			Sg		48	34		
07	Shillong	Z	i	23	01	09		Tremor. Compression.
07	Shillong	Z	e	23	44	56		Tremor.
			e		45	37		
08	Shillong	Z	e	05	44	20		Very feeble.
08	Dehra Dun	N	e	07	23	29		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Nov. 1954								
08	Shillong	Z	e	15	34	45		Tremor, near.
			e		35	00		
08	Shillong	Z	e	15	43	47		Tremor.
08	Shillong	Z	e	16	01	41		Tremor, near.
			e		02	21		
08	Shillong	Z	e	16	53	48		Tremor.
08	Shillong	Z	e	17	39	35		Tremor.
			e		40	06		
08	Shillong	Z	e	21	19	13		Tremor.
08	Shillong	Z	e	21	50	57		Tremor.
08	Shillong	Z	i	22	14	21		Tremor, near.
			e		14	27		
08	Shillong	Z	e	22	20	09		Tremor.
08	Shillong	Z	i	22	59	12		Tremor, distant.
08	Shillong	Z	i	23	19	27		Tremor.
09	Shillong	Z	iP	09	53	08		Slight.
09	Shillong	Z	eP	14	46	24		Feeble.
09	Shillong	Z	i	22	15	05		Near.
10	Shillong	Z	e	06	38	22		Feeble.
10	Shillong	Z	e	07	33	30		Feeble.
10	Shillong	Z	e	10	24	06		Near, slight.
			e		24	35		
10	Shillong	Z	iP	11	04	44	550	Slight.
			PP		04	58		
			S/Lr		05	42		
			M/SSS		06	06		
10	Shillong	Z	iP	11	08	55	800	Slight.
			S		10	18		
10	Shillong	Z	eP	13	38	22		Near.
10	Shillong	Z	eP	15	34	14		
			i		34	20		
10	Shillong	Z	iP	15	45	02		Feeble.
10	Shillong	Z	e	20	30	38		Feeble.



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
<u>1954</u>								
11	Bombay	N,E	iP	05	18	58	2350	Slight.
		E	i		20	05		
		N,E	eS		22	50		
		E	Lq		23	10		
			SS		23	17		
			L		24	06		
	New Delhi	N,E	iP	05	19	14	2320	Slight.
		N	PP		19	38		
		N,E	PPP		19	49		
			eS		23	09		
		N	Lq		23	18		
			SS		23	35		
	Dehra Dun	N,E	e	05	19	29		Slight, phases not clear.
	Madras	E	iP	05	20	24		Slight.
			eS?		24	37		
	Shillong	Z	iP	05	21	12		Slight.
11	Shillong	Z	eP	05	57	44		Near.
11	Shillong	Z	iP	06	29	11		
11	Shillong	Z	Pg	06	59	37	160	Tremor.
			Sg		59	55		
11	Shillong	Z	e	07	43	43		Tremor.
11	Shillong	Z	e	10	46	17		Tremor.
11	Shillong	Z	eP	15	17	15	1480	Slight.
		E	iS		19	45		
			Lq		19	48		
			SS		20	06		
			M		21	36		
	Bombay	E	e	15	27	38		Surface waves in Milne-Show (N-S) also there are some surface movements.
	Madras	E	e	15	30	00		Phases not clear.
11	Shillong	Z	iP	19	38	37		Slight.
11	Shillong	Z	eP	19	57	21		Slight.
11	Shillong	Z	iP	20	31	44		Slight.
11	Shillong	Z	iP	23	32	20		Slight.
12	Shillong	Z	e	00	45	01		Tremor.
12	Shillong	Z	i	04	27	08		Near.
			i		27	47		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Nov. 1954								
12	Shillong	Z	e	07	30	07		Tremor.
12	Shillong	Z	iP	11	25	42		Slight.
12	Madras	E	iP i	11	45	15 24		Slight, very near other phases not clear.
12	Poona	Z	eP e	11	46	49 51 16		Feeble shock. Phases not clear.
12	Bombay	E	e e	13	27	00 14 10 00		Surface waves of a very distant shock.
	Kodaikanal	E	e?	13	31	43		Tremor.
	Hyderabad	E N	M M	13	42	25 42 35		Amp. = 5mm Amp. = 7mm.
	Madras	E	M	13	45	30		Distant shock. Other phases not clear.
12	Shillong	Z	e	14	13	45		Tremor.
12	Shillong	Z	i i	19	36	31 36 38		Local.
13	Shillong	Z	iP	00	34	22		Slight.
13	Shillong	Z	e	01	26	55		Slight. Probably near.
13	Dehra Dun	N	e	05	22	37		Tremor.
13	Shillong	Z	eP	13	32	40		Tremor.
13	Shillong	Z	iP	14	53	25		Slight.
13	Shillong	Z	e	18	04	56		Slight.
13	Shillong	Z	e	19	12	47		Slight.
14	Shillong	Z	Pg Sg	01	22	02 22 13	100	Local.
14	Shillong	Z	P Pg Sg	09	14	27 14 35 15 59	220	Near.
14	Dehra Dun	N, E	e	16	55	16		Tremor.
14	Shillong	Z	Pg Sg	17	13	48 13 52	40	Local felt.
14	Shillong	Z	e i	17	25	14 25 48		Near.
14	Shillong	Z	e	17	56	23		Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s		
Nov. 1954								
14	Shillong	Z	eP	18	41	45		Very feeble.
14	Shillong	Z	e	20	11	29		Slight.
15	Shillong	Z	eP	05	00	32		Slight.
15	Dehra Dun	N,E	eP	13	56	31	730	Moderate
			PP		56	38		
			PPP		56	45		
			P*		56	47		
			Pg		57	02		
			Lq		57	34		
			iS		57	48		
			Lr		57	56		
			SS		57	58		
			SSS&S*		58	09		
			Sg/M		58	30		
	New Delhi	N,E	eP	13	56	48	860	Slight.
			P*		57	06		
			eS		58	18		
			SS		58	31		
		E	SSS		58	42		
		N,E	S*		58	45		
			Sg		59	07		
	Chatra	Z	e	13	57	56		Slight, distant.
	Shillong	Z	e	13	58	43		Feeble.
	Poona	Z	eP	13	59	01	1950	Slight.
			PP		59	15		
			PPP		59	23		
			eS	14	02	15		
			Lq		02	17		
			SS		02	29		
			SSS		02	52		
			Lr		03	07		
			M		04	34		
15	Epc: $19\frac{1}{2}^{\circ}\text{N}$ , $145\frac{1}{2}^{\circ}\text{E}$ ; -h = 200km. - H = 16h 26m 44s (U.S.C.G.S).							
	$18\frac{1}{2}^{\circ}\text{N}$ , $146^{\circ}\text{E}$ ; -h = 150-200km. -H = 16h 26m 39s (B.C.I.S).							
	Shillong	Z	iP	16	35	18	5270	Slight.
		N	iS		42	13		
			SS		43	16		
			ScS		44	43		
	Chatra	Z	iP)	16	35	51	6080	Slight, depth of
		E	eP)					focus 150 kms.
			ePP		36	33		
			iS		43	12		
			PPS		43	28		
			iS		44	25		
			Lq		48	08		
			Lr		50	55		
			M		55	08		Suppressed.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS					
				h.	m.	s.							
<u>Nov.</u>													
<u>1954</u>													
15 Contd.	Dehra Dun	N,E	eP	16	36	47	6550	Moderate.					
			PcP			37			23				
			PP			38			58				
			PPP			40			17				
			PcS			40			56				
			iS			44			53				
			PS			45			02				
			PPS			45			20				
			ScS			46			07				
			SS			49			35				
			SSS			52			01				
			N	Lr		55			35				
			M		17	00			56				
	New Delhi	E	eP	16	36	50	6610	Moderate.					
			N	PcP					37	34			
			iS			44			59				
			ScS			46			16				
	Madras	E	iP	16	36	52	7110	Moderate shock.					
			PcP			37			30				
			PP			39			04				
			PPP			40			41				
			PcS			41			30				
			S			45			08				
			PS			45			29				
			i			45			58				
			ScS,SS			46			24				
			SSS			48			59				
	Hyderabad	E	eP	16	36	56	6800						
			iS			45			16				
			ScS			46			28				
			L			56			12				
			M		17	01			47				
	Poona	Z	eP	16	37	21	7140	Slight.					
			N	PP					39	50			
			PPP			41			13				
			PcS			41			31				
			iS			45			59				
			ScS			46			59				
			SS			50			20				
			SSS			53			24				
			Lq			54			35				
			Lr			57			47				
			M		17	03			36				
				Bombay	N,E	eP			16	37	27	7610	Moderate.
						pP					38		
iS						46	11						
ScS						47	04						
sS						47	27						
	Kodaikanal	E	e?	16	45	43		Tremor.					

/u = 3mm.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Nov. 1954								
15	Shillong	Z	P	19	43	30	250	Near.
			P*		43	33		
			Pg		43	37		
			S		43	59		
			Sg		44	05		
15	Shillong	Z	eP	22	51	57		Slight.
16	New Delhi	E	eP	11	05	11	9780	Slight.
			PPP		05	25		
			Pg		05	56		
		N,E	eS		06	52		
		E	SS		07	03		
			Lr		07	07		
			S*		07	26		
			Sg		07	59		
	Dehra Dun	N,E	e	11	06	22		Feeble, phases not clear.
17	Shillong	Z	e	16	23	41		Tremor.
17	Epc: 19°N, 145°E. Mariana Islands Region. - h = 600 km Ca. - H = 17h 18m 15s (U.S.C.G.S).							
	Chatra	Z	i	17	18	48		Slight distant.
		E	e		33	23		
	Shillong	Z,E	iP	17	26	16	4620	Slight.
		Z	i		27	26		
		E	PPP		28	12		
		Z,E	eS		32	33		
			PS		32	37		
		E	PPS		32	44		
			SS		35	38		
			SSS		36	28		
	New Delhi	N,E	i	17	27	44		
			i		35	21		
		N	e		36	31		
	Poona	Z	eP	17	28	15	6500	Slight.
		E	PP		30	25		
			PPP		31	52		
			iS		36	18		
			PS		36	29		
			PPS		36	41		
			SS		40	02		
			SSS		42	27		
			Lq		42	53		
			M		50	19		
	Bombay	N,E	eP	17	28	22	6610	Slight, deep.
			iS		36	31		
	Dehra Dun	E	e	17	28	41		Tremor.

DATE	STATION	COMPT.	PHASES	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
1954								
17	Shillong	Z	iP	17	30	22		Slight.
17	Dehra Dun	N,E	e	18	05	11		Tremor.
18	Shillong	Z,N	iPg Sg	00	13	25 13 29	40	Slight.
18	Dehra Dun	N,E	e i	00	48	37 50 40		Feeble. Phases not clear.
	New Delhi	E	eP P* Pg eS Lr SS S* Sg	00	48	49 49 02 49 13 49 57 50 03 50 08 50 15 50 29	650	Slight.
18	Shillong	Z	iP	05	12	17		Slight.
18	Epc: 49°N, 155°E; In Kurile Islands Region. -h= 100 km Ca. - H = 05h 20m 04s (U.S.C.G.S) 49°N, 155°E; - h = 100 km Ca. - H = 05h 20m 00s (MO.Japan) Magnitude = 6½ (Praha, Skalnaté Pleso); 6 (Kiruna).							
	Shillong	Z,E N	iP eP i PP PcP iS eS	05	29	17 29 41 30 33 32 46 36 42	5810	Slight.
		E	PS PPS SS Lr			36 53 37 06 40 42 45 47		
		N,E	M			52 03		
	Chatra	Z E	e e	05	29	34 -- 52 --		Slight, distant surface waves.
	Hyderabad	N	eP S M	05	30	56 39 47 57 51	7400	/u = 8mm
	Madras	E	iP PcP PPP iS SKS	05	31	11 31 23 35 41 40 18 40 37	7710	Slight shock.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS				
				h.	m.	s.			km.			
<u>Nov.</u>												
1954												
18 Contd.	Poona	Z	iP	05	31	13	7750	Slight.				
		E	PP		33	51						
			PPP		35	31						
		N	iS		40	21						
			PS		40	44						
			PPS		40	59						
			SS		44	53						
			SSS		47	49						
			Lq		49	49						
			Lr		52	30						
			M		58	04						
			Bombay	N,E	iP	05			31	14	7730	Moderate. Probably deep.
				N	eS <sub>1</sub>				40	22		
		E	iS <sub>1</sub>									
		N	e		41	36						
	Colombo	E	P	05	41	09		Amp. = 0.2mm.				
			L	06	00	00						
			M		10	34						
18	Shillong	Z	i	06	09	36		Tremor.				
18	Shillong	Z	e	06	40	17		Tremor.				
18	Shillong	Z	e	07	51	47						
18	New Delhi	N	eP	10	21	58	70	Slight.				
		E	iSg		22	06						
	Dehra Dun	N	i	10	22	46		Tremor.				
18	Shillong	Z	i	11	06	46		Slight, near.				
18	Shillong	Z	i	16	50	34		Slight.				
			i		50	43						
18	Shillong	Z	e	17	57	15		Feeble.				
18	Shillong	Z	e	18	00	01		Feeble.				
18	Shillong	Z	e	18	17	55		Feeble.				
18	Shillong	Z	eP	18	49	55	200	Slight.				
			P*		49	56						
			Pg		49	59						
			S		50	19						
			iSg		50	23						
			N	e		50			25			

18 Epc:  $39^{\circ}\text{N}$ ,  $142^{\circ}\text{E}$ ; - H = 20h 44m 55s (U.S.C.G.S)  
 $38.9^{\circ}\text{N}$ ,  $142.3^{\circ}\text{E}$ ; - H = 20h 44m 57s (CNO Japan & B.C.I.S).  
 Magnitude =  $6\frac{3}{4}$  (Uppsala);  $6\frac{1}{4}$  (Kiruna, Rome & Skalnate Pleso).



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
<u>1954</u>								
18 Contd.	Shillong	Z,E	iP	20	53	03	4740	Moderate.
		N	eP					
		E	PcP/PP	54	44			
			PPP	55	25			
		N,E	iS	59	27			
			PS	59	31			
			PPS	59	40			
		N	SS	21	03	27		
			SSS	04	18			
			M	08	44			
	Chatra	Z	iP	20	53	29	5150	Slight.
		E	eP					
			PP	55	15			
			eS	21	00	17		
			M	10	10			
								Per. = 15 Secs /u = 0.5mm.
	Dehra Dun	N	eP	20	54	09		Feeble. Phases not clear.
	New Delhi	N,E	iP	20	54	18	5960	Slight.
		N	i	54	34			
			eS	21	01	51		
			ScS	04	01			
			SS	05	22			
	Madras	E	iP	20	55	05	6640	Slight shock.
			PcP	55	42			
			iS	21	03	16		
			PS	03	34			
	Poona	Z	iP	20	55	15	6720	Slight.
		N	PP	57	33			
			PPP	58	59			
			iS	21	03	31		
			PS	03	44			
			PPS	03	56			
			SS	07	29			
			SSS	10	03			
			Lq	10	30			
			Lr	13	22			
			M	18	33			
	Bombay	N,E	iP	20	55	19	6890	Moderate. Somewhat deep.
		E	iS	21	03	43		
			PPS?	04	19			
18	Shillong	Z	eP	20	58	37		Slight, distant.
18	Shillong	Z	iP	21	01	22		Slight, distant.
19	Shillong	Z	e	04	57	58		Slight. Local.
			i	58	19			

19

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
						km.	
<u>Nov.</u> 1954							
19	Epc: In Sea of Japan. - h = 570 km Ca.						
							- H = 05h 56m 04s (Shillong)
							41°N, 131½°E; - h = 600 km Ca.
							- H = 05h 56m 03s (U.S.C.G.S)
							41.2°N, 131.8°E; - H = 05h 56m 00s (CMO, Japan)
							Magnitude = 6¼ (Kiruna); 6¼-6½ (Uppsala).
	Shillong	Z,N,E	iP	06	02	21	4020 Moderate.
		E	i		02	55	
			PP		03	20	
			pP		04	01	
		N	sP		04	54	
		N,E	iS		07	19	
			sS		13	10	
	Chatra	Z,E	iP	06	02	46	3700 Slight. Deep focus.
		E	PP		03	56	
			iS		08	06	
			e?		10	48	
			Lr		11	48	
			M	--	15	--	Suppressed.
	Dehra Dun	N,E	eP	06	03	25	4260 Moderate.
		N	PP		04	57	
			PPP		05	23	
			PcP		05	29	
			PcS		09	10	
			iS		09	20	
			Lq		11	55	
			SS		12	20	
			SSS		12	30	
			ScS		13	11	
			Lr		13	47	
			M		17	21	
	New Delhi	N,E	iP	06	03	36	4380 Moderate. Deep focus.
		N	pP		05	13	Direction of first
			i		05	31	motion south and west.
			iS		09	39	
			isS		12	27	
			i		14	05	
			i		15	29	
	Hyderabad	E	iP	06	04	15	1410
			iS		10	48	
		N	iS		10	53	
		E	SS		13	59	
			L		17	15	
		N	M		20	52	Amp. = 5mm.
		E	M		21	05	Amp. = 3mm.
	Madras	E	P	06	04	20	5890 Deep shock.
			pP		06	14	Moderate.
			S		11	18	
			sS		14	35	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Nov. 1954						km.	
19 Contd.	Poona	Z N	iP PP PPP iS PS PPS SS Lq SSS Lr M	06 06 07 11 11 11 14 15 15 17 21	04 06 07 11 11 11 14 15 15 17 21	36 20 07 30 37 45 49 37 52 52 39	5280 Slight.
	Bombay	N,E	iP pP iS sS	06 06 11 13	04 06 11 13	41 27 39 27	6090 Moderate.
	Colombo	E	P S L M	06 13 22 26	04 13 00 04	51 46 00 04	7480 Amp. = 0.1mm
	Kodaikanal	E	iP S	06 12	04 00	53 00	5690 Slight.
19	Hyderabad	E	iP iS	06 13	05 00	56 00	5440
19	Dehra Dun	N	e	17	50	53	Tremor.
20	Epc: 30.5°N, 82°E; Nepal—Tibet Frontier. - H = 13h 09m 25s(Shillong).						
	Dehra Dun	N,E	eP P* PP Pg PPP Lq iS S* SS Sg SSS	13 10 10 10 10 10 11 11 11 11 11	10 10 10 10 10 10 11 11 11 11 11	26 30 33 37 39 54 06 13 16 20 27	350 Slight. Amp. = 31mm.
	New Delhi	N,E E N,E	eP PP Pg Lq iS S* Sg SSS	13 10 10 10 11 11 12 12	10 10 10 11 11 11 12 12	37 44 53 18 28 39 49 52	480 Slight.
	Chatra	Z E Z,E	iP eP iS M	13 13 12 12	10 10 07 40	57 57 07 40	670 Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	$\Delta$	REMARKS
				h. m. s.	km.	
<u>Nov.</u>						
<u>1954</u>						
20 Contd.	Shillong	Z,E	iP	13 11 47	1120	Slight.
		E	PP	11 52		
			Lq	13 33		
			eS	13 42		
			Lr	14 00		
	N,E	M	14 41			
	Poona	Z	iP	13 12 39	1430	Slight.
		N	eS	15 05		
		E	SS	15 17		
			SSS	15 27		
	Bombay	E	eP	13 12 47	1480	Slight.
		N,E	Lq	15 08		
		E	eS	15 17		
			e	16 17		
			i	17 00		
			e	17 10		
	Madras	E	eP	13 16 25		Tremor.
	Hyderabad	E	eP	13 16 27		
20	Dehra Dun	N	e	16 59 25		Tremor.
20	Epc: 27.5°N, 82.5°E. India — Nepal Border - H = 19h .06m 18s (Shillong).					
	Dehra Dun	N,E	eP	19 07 02	370	Slight.
		N	P*	07 07		
			PP	07 10		
			Fg	07 14		
			PPP	07 16		
			Lq	07 32		
			Lr	07 40		
			iS	07 42		
			S*	07 48		
			SS	07 51		
			Sg	07 55		
	SSS	08 02				
	Chatra	Z	i(P)	19 07 32	670	Slight.
			i(S)	08 42		
			M	09 15		
	Shillong	Z	eP	19 08 15	940	Slight.
			PP	08 24		
			P*	08 45		
			Lq	09 50		
			eS	10 02		
			Lr	10 17		
	Poona	Z	iP	19 09 17	1410	Slight.
			PPP	09 33		
			eS	11 40		
			SS	11 54		
			M	13 13		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS	
				h.	m.	s.			km.
<u>Nov.</u>									
1954									
20 Contd.	Bombay	E	e	19	12	04		Feeble.	
			e		13	23			
			e		13	36			
		N	e		13	52			
20	Shillong	Z	e	20	06	13		Slight, local	
			e		6	24			
21	Shillong	Z	iP	04	56	36		Slight.	
21	Shillong	Z	iP	05	12	40		Slight.	
21	Dehra Dun	N	e	07	22	38		Tremor.	
21	Shillong	Z	iP	07	23	27		Slight.	
21	Shillong	Z	iP	07	31	14		Slight.	
21	Shillong	Z	iP	07	33	47		Slight.	
21	Shillong	Z	iP	07	37	16		Slight, distant.	
			e	07	54	46			
			N	e		55	42		
			e	08	02	12			
	Bombay	E	e	07	56	00		Distant shock. Feebly recorded.	
			e	08	03	09			
			e		05	41			
			e		07	06			
	Kodaikanal	E	e	07	56	24		Probably a long distant, Tremor.	
21	Shillong	Z	e	07	59	09		Feeble.	
			e		59	34			
	Poona	Z	eP	07	59	46		Slight distant shock. Phases not clear.	
21	Hyderabad	E	e	08	05	18		Amp. = 6mm. Amp. = 3mm.	
		N	M		40	01			
		E	M		43	04			
21	Colombo	E	L	08	32	00		Amp. = 0.8mm.	
			M		44	00			
21	Shillong	Z	iP	08	49	02		Slight.	
21	Madras	E	M	09	10	47		Moderate shock. Other phases not clear.	
21	Shillong	Z	eP	10	57	31		Slight, local.	
			e		57	51			

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Nov. 1954							km.	
21	Shillong	Z	iPg iSg	15	15	15	120	Slight.
					15	29		
21	Shillong	Z	iP	16	25	11		Slight.
21	Poona	Z	e	16	27	01		Tremor.
21	New Delhi	N, E E N, E N N, E	eP P* Pg Lq iS S* Sg	19	07	12	470	Slight.
					07	21		
					07	28		
					07	52		
					08	02		
					08	13		
					08	24		
21	Dehra Dun	N, E	e	19	21	05		Tremor.
	Shillong	Z	i	19	22	14		Feeble.
21	Shillong	Z	i	21	03	40		
22	Shillong	Z	e e	07	25	56		Slight, local.
					26	20		
22	Shillong	Z	e e e	09	41	37		Slight.
					41	50		
					42	49		
22	Shillong	Z	iP	15	20	55		Feeble.
22	Shillong	Z	i	17	00	10		Slight.
22	Shillong	Z	e	17	05	09		Slight.
22	Shillong	Z	ePg/P* PP eSg S	17	37	49	90	Slight.
					37	58		
					38	00		
					38	03		
22	Shillong	Z	e	17	56	7		Feeble.
22	Dehra Dun	N	e i	18	46	32		Slight.
					47	57		
	New Delhi	E  N, E E N, E  E	eP PPP P* Lq eS Lr S* i Sg	18	46	45	930	Slight.
					46	58		
					47	04		
					48	09		
					48	27		
					48	34		
					48	52		
					49	07		
					49	18		

DATE	STATION	COMPT.	PHASE	G. E. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
<u>1954</u>								
22	Shillong	E,N,E	eP	21	33	52	540	Slight.
		E	P*		34	02		
			Pg		34	12		
			i		34	29		
		N	Lq		34	38		
			iS		34	39		
		E	SS		34	52		
		E,N	Sg/M		35	23		
22	Poona	Z	e	21	37	23		Tremor.
	Bombay	N,S	i	21	37	35		Feeble, tremor.
			e		42	40		
	Dehra Dun	N	e	21	39	29		Tremor.
23	Shillong	Z	e	02	25	13		Slight, local.
			i		25	19		
			e		26	15		
		N	i		27	05		
23	Epc: 28.8°N, 94.6°E; India -- China Border							
	- H = 02h 30m 59s (Shillong).							
	29°N, 95½°E; - H = 02h 30m 48s (U.S.C.G.S).							
	Shillong	Z	iP↓	02	32	02	480	Moderate.
		N	eP↓					
			P*/PP		32	10		
			Pg		32	20		
			Lq		32	41		
			iS/Lr		32	53		
			S*/SS		33	06		
			Sg		33	19		
	Chatra	Z	iP↓	02	32	44	860	Moderate.
			eP↓					
			PP		32	52		
			Lq		34	00		
			iS		34	13		
			Lr		34	22		
			SSS		34	35		
			M		34	59		
	Dehra Dun	N,E	eP	02	34	29	1600	Moderate.
			PPP		34	49		
			Lq		37	00		
			iS		37	10		
			SS		37	22		
			SSS		37	31		
			Lr		37	42		
			M		38	59		
			PcP		39	42		
			PcS		43	12		
			ScS		46	46		



DATE	STATION	COMPT.	PHASE	G. M. T.		△	R.MARKS
				h.	m. s.		
<u>Nov.</u>							
1954							
23 Contd.	New Delhi	E	eP	02	34 34	1700	Slight.
			i		34 42		
		N,E	iS		37 25		
			i		37 37		
		N,E	SS		37 46		
			SSS		37 57		
		M		39 22			
Hyderabad	E	P	02	35 29	2100		
		S		38 57			
		L		41 03			
Madras	E	iP	02	35 39	2290	Moderate shock.	
		PP		35 59			
		PPP		36 10			
		eS		39 25			
		PcP		39 34			
		Lq		39 41			
		SS		40 00			
		M		42 45			
Poona	Z	iP	02	35 50	2320	Moderate.	
		eS		39 39			
		Lq		39 54			
		SS		40 15			
		Lr		40 50			
		M		42 41			
Bombay	N	eP	02	36 00	2610	Slight.	
		iP					
	E	PPP		36 27			
		iS		40 07			
		eS		40 11			
	N	e		40 21			
		Lq		40 37			
	E	M		43 23			Amp. = 6mm.
N							
Dehra Dun	N,E	eP	02	34 29	1600	Moderate.	
		PPP		34 49			
		Lq		37 00			
		iS		37 10			
		SS		37 31			
		Lr		37 42			
		M		38 59			
		PcP		39 42			
		PcS		43 12			
		ScS		46 44			
New Delhi	E	eP	02	34 34	1700	Slight.	
		i		34 42			
	N,E	iS		37 25			
		i		37 37			
	N,E	SS		37 46			
		SSS		37 57			
	M		39 22				

DATE	STATION	COMP.	PHASES	G. M. T.		REMARKS
				h. m. s.	km.	
<u>Nov.</u>						
1954						
23	Kodaikanal	E	iP	02 36 15		Tremor.
Contd.			S	40 15		
23	Poona	Z	iP	06 01 55		Tremor.
23	Bombay	N, E	e	10 11 14		Very feeble.
		E	e	21 01		
	Chatra	Z	i	10 27 30		
		E	e(M)	55 --		Per. = 15 /u = 0.75
	Bombay	E	eP	10 29 06	8510	Slight.
		N	eP	29 10		
		E	PP	31 48		
			eS	38 52		
		N	eS	38 58		
		E	PS	39 31		
			PPS	39 52		
			M	11 05 02		
	Poona	Z	iP	10 29 06	9270	Slight.
		N, S	PP	32 20		
			PPP	34 05		
			eS	39 27		
			ScS	39 32		
			SSS	48 17		
			Lr	55 35		
			M	11 02 42		
	Madras	E	eP	10 29 07		Tremor.
23	Epc: 52°N, 160½°E; Off South-East coast of Kamchatka. - h = 60 km. - H = 21h 12m 55s (U.S.C.G.S). 50°N, 160°E; - H = 21h 12m 36s (Shillong). Magnitude = 6½-6¾ (Uppsala), 6½ (Kiruna). 6-6¾ (Pasadena, Hurbanovo); 6 (Praha, Skalnaté Pleso).					
	Chatra	Z	i	21 22 55		Slight, distant surface waves
		E	e(M)	50 --		Per. = 15.0 /u = 2.0
	Poona	Z	iP	21 24 27	81600	Slight.
		N, E	eS	33 56		
		N	PS	34 29		
			PPS	34 51		
	Bombay	E	iP	21 24 28	8250	Slight.
		N	iP	24 30		
		E	eS	33 59		
		N	eS	34 03		
			M	22 00 29		Amp. = 2mm
		E	M	00 29		Amp. = 3mm
	Madras	E	eP	21 24 30		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
1954								
23 Contd.	Colombo	E	L	21	53	--		
			M	22	08	36		Amp. = 0.3mm
	Kodaikanal	E	e	21	57	48		Tremor.
25	Dehra Dun	N	e	04	42	56		Tremor.
25	Dehra Dun	N,E	eP	06	34	13	890	Moderate.
			PPP		34	27		
			Lq		35	31		
			iS		35	45		
			SS		35	56		
			Lr		35	58		
			SSS		36	07		
			S*		36	13		
			Sg/M		36	35		
			New Delhi	N,E	E	eP	06	34
PPP		34				57		
N,E	E	Pg			35	12		
		eS			36	08		
E	N,E	SS			36	20		
		SSS			36	30		
E	E	S*			36	43		
		Sg			37	05		
	Poona	Z	i	06	39	37		Tremor.
25	Poona	Z	i	09	19	41		Tremor.
25	DehraDun	N	i	11	34	54		Slight. Phases not clear.
			i		35	18		
			i		40	08		
			i		45	54		
Shillong	N		PP	11	35	11	11970	
			SKS		41	19		
Chatra	E		e	11	35	12		Slight, distant surface waves.
			e	12	09	30		
New Delhi	N		e	11	35	23		Distant. Moderate.
			i		38	16		
			i		41	38		
			i		44	57		
			e		45	29		
			i		45	57		
			i		45	38		
			i		51	10		
			i		54	48		
			i		58	57		
Poona	N,S		PP	11	36	43	12670	Moderate
			PS		46	24		
			PPS		47	58		
			SS		53	27		
			Lr	12	14	23		
			M		14	40		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Nov.</u>								
1954								
25 Contd.	Bombay	N,E	ePKP	11	36	46		Distant shock.
			e		46	33		Identification of
		N	e		53	34		phases not clear.
			SS?	12	02	31		
	Madras	E	iP	11	37	08	7000	Moderate shock.
			PPP		42	33		
			SKS		46	58		
			SKKS		47	19		
			ScS		47	41		
			PS		43	16		
			PPS		49	16		
			SSF		53	50		
			SSS		57	06		
	Hyderabad	E,N	eP	11	37	41	8580	
			PP		40	23		
			iS		47	31		
		E	SS		54	08		
		N	SS		54	11		
		E	M	12	17	10		Amp. = 30mm
	Colombo	E	P	11	37	50		
			S		54	52		
			L	12	09	55		
			M		19	35		Amp. = 2.0mm
25	Shillong	Z	eP	21	46	10	8240	Slight.
		N	iS		55	44		
	Chatra	E	e	21	50	30		Slight, distant.
			e		56	08		
	Poona	Z	i?	21	51	06		Feeble shock.
		N,E	i?		56	47		Phases not clear.
	Bombay	E	e	21	51	53		Long distance, deep.
			e		54	2		
			i		56	55		
	Madras	E	iS	21	56	19		Moderate shock. Phases not clear.
27	Epc: Very near to Calcutta; - H = 16h 21m 18s (Shillong). Felt at Calcutta, Burdwan, Midnapore and Krishnagar.							
	Chatra	Z	i	16	22	14		Appears to be an earlier milder movement.
	Shillong	Z	eP	16	22	15	450	Slight.
			eS		23	03		
	New Delhi	E	eP	16	24	04	1160	Slight.
			eS		26	06		
			i		26	08		
			SS		26	17		
			N,E	Lr	26	25		
		M	27	16				

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS	
				h.	m.	s.			km.
<u>Nov.</u>									
1954									
27 Contd.	Poona	Z	eP	16	24	42	1610	Slight.	
			S			27			24
			i?			28			35
	Dehra Dun	N,E	e	16	26	05		Feeble. Phases not clear.	
			i			27			37
28	New Delhi	N,E	iP	20	25	56	680	Slight.	
			Pg			26			23
			iS			27			07
			Lr			27			15
			SS			27			19
			SSS			27			29
			Sg			27			46
28	Dehra Dun	N,E	eP	21	26	07	1220	Moderate.	
			P*			26			34
			Pg			27			03
			Lq			28			00
			iS			28			11
			SS			28			22
			Lr			28			34
			SSS			28			37
			S*			28			58
			Sg/M			29			34
	Poona	Z	e?	21	29	44		Very feeble shock, phases not clear.	
	Bombay	-	e	21	30	00		Feeble, deep shock; phases not clear.	
30	Hyderabad	E	eP	21	31	22	1090	Amp. = 2mm	
			eS			33			14
			M			34			11
30	Shillong	Z	eP	22	41	56		Slight.	
			i			43			10

Earthquake Reports  
(Non Instrumental Reports)

The following is the list of earthquakes  
that were reported by Voluntary Observers from  
different places during the month of November  
1954.

Place	Date in	Time in	Duration	Number	Intensity	Remarks
	G. M. T.	G. M. T.	of shocks	of	in R.F.	
		h. m.	in secs	shocks	scale	
Shillong	02	02 40	2	1	III	
Srinagar	02	11 03	10	3	IV	
Sheo (DT. Barmar)	03	00 30	5	1	-	Direction of motion Eastwest.
Tezpur	05	04 08	2	1	VI	
Tezu	23	02 30	30	1	-	
Mohanbari	23	02 33	5	1	-	
Gusar (NEFA)	23	02 30	-	-	-	
Krishnanagar	27	16 28	10	3	V	
Baburbag (Burdwan)	27	16 15	2	2	IV	
Dum Dum	27	16 20	5	1	V	
Alipore (Calcutta)	27	16 21	3	2	III	

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



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Shri S. Basu, M.Sc., F.N.I.,

Director General of Observatories  
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DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u> 1954								
01	Shillong	Z,E N N,E	iP eP iS	01	58	59	190	Slight. Felt at Goalpara
	New Delhi	E  N,E E N,E	eP PP i Lq iS SSS M	02	01	12	1270	Slight
	Bombay	E N N,E	e e e	02	06	06		Tremor
01	Shillong	Z	i	18	27	29		Slight
01	Shillong	Z N E N E	iP eP eP i iSg iSg	23	17	18	230	Slight
	New Delhi	E	eP Lq iS Lr	23	19	55	1450	Slight
	Dehra Dun	N,E	i	23	22	04		Tremor
	Poona	Z	e	23	24	44		Tremor
	Bombay	E N,E	e i	23	25	37		Local. Tremor
02	Shillong	Z	iP iSg	03	57	00	220	Slight
02	Shillong	Z	iP iSg	03	59	39	200	Slight
02	Shillong	Z N	iP i	06	40	49		Slight
02	Shillong	Z	i	08	23	30		Slight
02	Shillong	Z	iP iSg	16	54	11	210	Slight
02	Shillong	Z	e	17	24	48		Slight
02	Shillong	Z	e	18	39	47		Slight
02	Shillong	Z	e	23	32	56		Slight



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.	km.	
<u>Dec.</u>								
1954								
03 Contd.	Shillong	Z	iP	21	43	01	1730	Slight
		N	eP					
		E	eP		43	02		
			eS		46	55		
		N	eS		46	57		
			M		52	--		
	Bombay	N,E	eP	21	43	17	2590	Slight
		N	PP		43	43		
			PPP		44	03		
		E	iS		47	26		
		N,E	eS					
		E	Lq		47	54		
		N	Lr		49	02		
		E	i		50	24		
		N	M		52	33		
	Poona	Z	iP	21	43	20	2580	Slight
		E	PP		43	51		
			PPP		44	05		
			iS		47	29		
			Lq		47	59		
			SS		48	24		
			SSS		48	33		
			PcS		50	29		
			M		50	52		
			ScS		54	05		
	Hyderabad	N	P	21	43	36	2570	
			iS		47	45		
			SS		48	39		
		E	L		50	00		
		N	M		52	36		
								Per. = 12 Secs /u = 8
	Madras	E	eP?	21	43	42	3510	Moderate
			eS		49	51		
			Lq		51	35		
			SS		51	40		
			Lr		53	16		
			M		55	48		
	Kodaikanal	E	eP	21	50	56	1860	Slight
			eS		54	02		
			M		57	11		
								Per. = 6 Secs /u = 4.1
03	Shillong	Z	iP	22	13	17		Slight
03	Shillong	Z	eP	22	18	54		Slight
03	Shillong	Z	iP	22	38	05		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
04	Epc: $21^{\circ}$ N, $88^{\circ}$ E; Bay of Bengal. - H = 03h 08m 17s (Shillong).							
	Shillong	Z	e	03	09	32		Slight
			iP		09	35		
		E	PP		09	41		
			Lq		10	15		
			S/Lr		10	21		
			SS		10	42		
			SSS		10	52		
			M		11	25		
	Chatra	Z	i	03	09	55		Slight. Near
	New Delhi	N,E	eP	03	11	29	1430	Slight
		N	eS		13	55		
			SSS		14	19		
			M		15	28		
	Poona	Z	iP	03	11	45	1550	Slight
		E	PP		11	53		
			PPP		12	00		
		Z,E	eS		14	21		
		E	SS		14	36		
			SSS		14	45		
			M		16	03		
	Bombay	E	eP	03	11	58	1670	Feeble
			eS		14	46		
	Dehra Dun	N	iS	03	14	02		Slight. Phases not clear
			i		14	28		
			i		1	42		
			i		15	06		
			i		16	00		
			i		17	14		
04	Epc: $5^{\circ}$ S, $152\frac{1}{2}^{\circ}$ E. New Britain Region. - H = 07h 00m 29s (U.S.C.G.S.) - H = 07h 00m 32s (B.C.I.S.) $7^{\circ}$ S, $151\frac{1}{2}^{\circ}$ E; - H = 07h 00m 32s (Shillong). Magnitude = $6\frac{1}{2}$ (Pasadena, Praha); $6\frac{1}{4}$ (Kiruna) 6.2 (Roma).							
	Shillong	Z,E	iP	07	11	22	1550	Compression.
		E	Pc		11	47		Slight. First
		N	PP		13	49		movement west.
			PPP		15	14		
			iS		20	09		
			PS		20	21		
			PPS		20	27		
			ScS		21	16		
			SS		24	16		
			SSS		26	39		
			Lr		30	50		
			M		36	31		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
04 Contd.	Chatra	Z,E E	eP	07	11	48	7810	Slight
			PP		14	31		
			PPP		16	10		
			eS		21	00		
			PS		21	28		
			PPS		21	43		
			SS		25	49		
			Lq		30	17		
			M		40	--		
							Amp. = 0.3mm	
	Madras	E	iP	07	12	11	8200	Moderate
			PcP		12	24		
			PP		14	57		
			PPP		16	40		
			iS		21	42		
			SKS		21	54		
			ScS		22	02		
			PS		22	18		
			PPS		22	36		
				Kodaikanal	E	eP		
eS		22				05		
PPS		23				05		
M		42				17		
	New Delhi	N,E N	eP	07	12	40	8710	Moderate
			eS		22	36		
	Poona	Z,E E	iP	07	12	43	8960	Moderate
			PcP		12	55		
			PP		15	51		
			PPP		17	42		
			eS		22	56		
			ScS		23	03		
			PS		23	39		
			SS		28	07		
			M		45	51		
	Dehra Dun	N	eP	07	12	46	8590	Feeble. Phases not clear
			i		13	21		
			i		14	34		
			iS		22	34		
	Bombay	N,E E N,E N E N,E E	eP	07	12	53	9070	Moderate (Some- what deep)
			PP		16	11		
			iS		23	05		
			e		23	43		
			PS		23	51		
			PPS		24	10		
			SS		28	27		
			SSS		31	48		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
04 Contd.	Colombo	E	e	07	20	00		Trace overlapping
			e		40	--		
			e		40	06		
	Hyderabad	N	M	07	39	40		Per. = 20 Secs. /u = 7
04	Poona	Z	iP	18	50	14		Slight. Distant. Phases not clear
	Bombay	E	PKP <sub>1</sub>	18	50	15	14020	Slight. Distant
		N,E	PP		52	02		
			eSS	19	09	06		
	Chatra	Z	e	18	50	22		Slight. Distant
	Shillong	Z	ePKP	18	50	24		Slight. Other phases not clear
		E	iPKP		50	28		
	Colombo	E	e	18	51	52		
			e		35	--		
			e		43	22		
	Madras	E	i	18	52	05		Slight
	Kodaikanal	E	e	18	53	58		Tremor
	Hyderabad	E	M	20	05	31		Per. = 25 Secs /u = 12
04	Shillong	Z	P	22	44	19	200	Slight
			Sg		44	45		
05	Shillong	Z	eP	00	34	25		Very feeble
	Chatra	Z	i	00	35	03		Slight. Distant
06	Shillong	Z N	eP	03	02	20	7200	Slight
			iS		11	01		
			PPS		11	34		
			SS		14	56		
			Lq		18	41		
			Lr		21	41		
			M		27	55		
	Poona	Z	iP	03	03	52		Tremor
	Bombay	E	e	03	03	59		Feeble
			e		10	35		
			e		14	15		



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
<u>1954</u>								
06	Shillong	Z	eP	15	52	16		Slight
06	Shillong	Z	e	18	34	45		Feeble
06	Shillong	Z	iP	23	58	05		Slight. Rarefaction
07	Shillong	Z	iP	06	33	29		Slight
07	Shillong	Z	iP	13	49	45		Slight. Probably near. Phases not identifiable.
07	Shillong	Z	e	14	49	49		Very feeble.
07	Epc: $3\frac{1}{2}^{\circ}$ N, $125\frac{1}{2}^{\circ}$ E; Celebes Sea Region. - H = 14h 48m 30s; - h = 100 km (U.S.C.G.S) Felt at Mambajao (Manila Press). Magnitude = $5\frac{3}{4}$ (Kiruna).							
	Shillong	Z	iP	14	55	51	4300	Compression. Probably deep.
		N	PP		57	25		
			iS	15	01	49		
		E	sS		02	50		
	Chatra	Z	iP	14	56	29		Slight. Distant.
		E	eP					
			e	15	02	52		
	Madras	E	iP	14	56	50	5110	Moderate
			PcP		58	05		
			PP		58	42		
			iS	15	03	35		
			PPS		03	53		
			SS		06	58		
			Lq		08	10		
	Colombo	E	P	14	56	51	4860	
			S		15	03		
	Hyderabad	E	iP	14	57	06	5280	L & M Merged.
			PP		58	44		
		N,E	iS	15	04	02		
		E	SS		07	44		
	Kodaikanal	E	eP	14	57	07	5220	Slight
			eS	15	03	59		
			M		14	47		
	Poona	Z,E	iP	14	57	39	5840	Moderate
		E	PcP		58	27		
			PP		59	40		
			PPP	15	00	50		
		N,E	iS		05	05		
		E	PS		05	18		
			PPS		05	23		
			Lq		10	56		
			M?		19	--		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.	km.	
<u>Dec.</u>								
<u>1954</u>								
07	Bombay	E	iP	14	57	49	5910	Slight. Deep.
Contd.			i		58	25		
			PP	15	00	03		
		N,E	iS			19		
		E	PPS		05	35		
07	Shillong	Z	i	15	07	40		Ne r.
07	Shillong	Z	eP	22	14	01		Slight
			iP		14	03		
07	Dehra Dun	N,E	e	23	20	23		Tremor.
08	Poona	Z	e	00	19	31		Tremor.
08	Dehra Dun	N	e	02	42	59		Tremor.
08	Shillong	Z	eP	06	10	51	200	Slight
			Pg		10	56		
			Sg		11	20		
08	Dehra Dun	N,E	i	08	48			Tremor.
08	Shillong	Z	i	13	48	52		Slight.
09	Poona	Z	iP	14	33	27		Tremor
09	Shillong	Z	P	14	39	29		
10	Hyderabad	E	M	14	17	38		Per. = 15 Secs /u = 1
11	Poona	Z	e	03	45	11		Tremor.
11	Hyderabad	E	M	04	23	52		Per. = 16 Secs /u = 3
	Colombo	E	L	04	17	--		P & S indistinct.
			M		30	40		Amp. = 0.5mm
11	New Delhi	N	iPg	05	32	41	450	Slight.
		N,E	iSg		32	46		
11	Dehra Dun	N,E	e	12	09	11		Tremor
11	Epc:	52½° N, 32° W; North Atlantic Ocean.						
		- H = 12h 57m 07s (U.S.C.G.S)						
		52.8° N, 31.7° W; - H = 12h 57m 08s (B.C.I.S)						
		Magnitude = 6.7 (Roma); 6½ - 6¾ (Jerusalem);						
		6¾ (Pasadena, De Bilt, Kiruna); 6.4 (Praha);						
		6¼ (Skalnate Pleso).						

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS			
				h.	m.	s.					
<u>Dec.</u>											
1954											
11 Contd.	New Delhi	N,E N	eP	13	09	13	6610	Moderate			
			PP		12	11					
			eS		19	04					
			PS		19	44					
			SS		24	03					
			Lr		34	34					
		M		41	37						
	Bombay	E	eP iS	13	09	45	9350	Slight			
	Chatra	Z E	iP	13	09	47		Slight. Distant.			
e e				20	12						
	Poo na	Z N	iP	13	09	46	9490	Moderate.			
PP				13	04						
PPP				15	01						
SKS <sub>1</sub>				20	04						
eS				20	17						
PS				21	09						
PPS				21	37						
SS				25	52						
Lq				33	01						
Lr				37	13						
		M		44	27						
	Shillong	Z E	iP	13	10	03	10330	Rarefaction. Moderate.			
PP				13	15						
PPP				15	33						
SKS				20	29						
S				20	52						
PS				22	00						
PPS				22	32						
SS				27	38						
SSS				29	46						
				M		46			12		
			Hyderabad	E N	eP	13			10	09	9680
PP		13			36						
SKS		20			36						
eS		20			48						
SS	N,E			26	36						
		L		40	03						
M	N	45		42	Per. = 16 Secs /u = 6						
M	E	45		42		Per. = 14 Secs /u = 5					
	Colombo	E	eP	13	19	50		Amp. = 0.5mm			
M				14	57	38					
11	Shillong	Z	Pg Sg	17	16	04 16	20	Slight. Local			

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
<u>1954</u>								
12	Shillong	Z	iP	01	09	59	160	Feeble
			PP		10	07		
			eS		10	18		
			Sg		10	20		
12	Shillong	Z	eP	03	18	58	130	Slight
			Sg		19	14		
12	Shillong	Z	eP	04	28	11	730	Slight
			P*		28	23		
			Pg.		28	35		
			S		29	27		
			Sg		29	41		
12	Shillong	Z	iP	17	21	52		Distant. Rarefaction
12	Shillong	Z	e	18	32	04		Earlier movement feebly recorded. Beginning uncertain. Feeble.
12	Shillong	Z	e	22	48	12		
			i		48	19		
12	Shillong	Z	iP	21	07	02		Slight. Compression.
12	Shillong	Z	iP	23	42	53		Slight. Compression.
13	Shillong	Z	P	09	28	30		
13	Shillong	E	eP	13	17	08	860	Slight
			PP		17	17		
			P*		17	30		
		N	eS		18	37		
		E	SSS		18	58		
		N,E	M		19	23		
	Poona	Z	eP	13	17	57	720	Slight
		E	PP		18	05		
			PPP		18	16		
			Lq		19	01		
			eS		19	12		
			SS		19	25		
			SSS		19	33		
			M		19	42		
	Bombay	N	e	13	18	17		Surface waves.
		E	i		18	32		
	Dehra Dun	N,E	eP	13	19	37	490	Slight. Other phases not clear.
			iS		20	29		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
<u>1954</u>								
13	Hyderabad	N	M	13	20	51		Per. = 8 Secs /u = 2
Contd.								
13	Shillong	Z	P S	20	39	30 40 00	270	
13	Poona	Z	e	20	42	01		Tremor
13	Dehra Dun	N	e	20	44	59		Tremor.
13	Bombay	N	e	20	46	24		Feeble
			e			48 14		
13	Shillong	Z	r	22	46	29		
13	Poona	Z	e	22	48	12		Tremor
14	Shillong	Z	iSg	04	40	44	120	Slight
		Z,N	iSg			40 59		
14	Shillong	Z	iP	06	12	07		Slight. Distant.
		N	e			19 28		
			e			29 37		
14	Colombo	E	L M	06	15	36 19 41		Amp. = 0.7mm
14	Shillong	Z	e	09	14	46		Slight. Near.
			e			15 38		
14	Shillong	Z	e	19	42	48		Slight. Near
			e			43 46		
14	Shillong	Z	i	19	49	16		Feeble.
14	Shillong	Z	e	22	40	0		Slight. Local
			e			40 41		
14	Shillong	Z	e	22	52	21		Slight. Local
			e			52 55		
15	Shillong	Z	i	00	27	24		Slight.
15	Shillong	Z	e	03	53	21		Slight.
15	Dehra Dun	N,E	e	04	04	52		Tremor
15	Dehra Dun	N,E	e	05	54	40		Tremor.
15	Shillong	Z	e	08	15	45		Slight.
15	Shillong	Z	e	08	31	19		Slight. Near.
		E	e			32 07		
		N,E	e			33 10		
15	Shillong	Z	i	14	00	11		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
15	Shillong	Z	e	14	47	03		Feeble
15	Shillong	Z	e	16	36	56		Feeble
15	Poona	Z	e?	19	10	50		Tremor
15	Shillong	Z	i	19	11	54		Slight
15	Chatra	Z,E	e	21	19	31		Slight. Near
	Shillong	Z	eP	21	19	33	640	Slight
		E	P*		19	51		
			Pg		20	02		
			Lq		20	33		
		N,E	eS		20	41		
			S*		21	09		
			Sg.		21	18		
	Bombay	N	e	21	29	19		Slight
		E	e		29	41		
			i		32	46		
15	Shillong	Z	e	21	53	15		Feeble
15	Shillong	Z	e	23	46	06		Slight
16	Shillong	Z	e	05	26	53		Slight
16	Shillong	Z	e	06	29	36		Slight. Near.
			i		29	50		
			e		29	58		
16	Shillong	Z	e	07	11	56		Slight.
16	Shillong	Z	e	07	15	29		Feeble.
16	Shillong	E	e	07	22	17		Slight. Near.
16	Shillong	Z	e	10	34	40		Feeble
16	Epc: 39.3° N, 118° W; near Fallon, Nevada. - H = 11h 07m 10s (U.S.C.G.S). Moderate property damage. Felt at Pasadena, Los Angeles. Magnitude = 7½ (Praha, De Bilt); 7.4 (Pasadena); 7¼ (Hurbanovo); 7.2 (Takubaya) 7-7¼ (Skalnate Pleso); 7 (Roma, Kiruna, Uppsala); 6¼ (Berkeley, Mt. Hamilton).							
	Shillong	Z,N,E	e(P)	11	21	32	12140	Moderate.
		Z,N	PP		26	06		
		N	PPP		27	53		
			SKS <sub>1</sub>		31	28		

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
<u>Dec.</u> 1954						
16	Shillong	N	e(S)	11 32 54		
Contd.	Contd.		PS	33 53		
			PPS	34 47		
			SS	40 51		
			SSS	44 45		
			SKKKS <sub>1</sub>	46 32		
			Lq	50 00		
			Lr	55 45		
			M	12 02 08		
	Chatra	Z	e	11 21 46		Slight. Distant.
	Poona	Z	PKP <sub>1</sub>	11 26 07	13500	Great.
		Z,N	PP	27 43		
		N	PPP	30 08		
			SKS <sub>2</sub>	33 18		
			SKKKS <sub>2</sub>	34 44		
			PS	37 39		
			PPS	39 02		
			PKKS <sub>1</sub>	40 17		
			SKKS <sub>1</sub>	43 52		
			SS	44 25		
			SSS	49 08		
			Lr	12 04 38		
			M	14 14 05		
	Dehra Dun	N	eP	11 26 19		Moderate.
			e	26 50		
			e	27 08		
			e	29 38		
			i	30 41		
			e	31 24		
			e	31 50		
			e	32 02		
			e	32 36		
			e	33 18		
			M	34 28		
			ScS	36 56		
	New Delhi	N	PP	11 26 25	13220	Moderate.
			i	27 33		
			PPP	28 43		
			iSKS	32 20		
			i	33 33		
			i	34 25		
			PS	35 50		
			i	37 25		
			i	38 54		
			i	40 13		
			SSS	46 20		
			e	12 00 25		
			i	03 30		
			M	08 24		



DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
16 Contd.	Bombay	N,E	eP	11	26	33	13270	Moderate. Phases mixed up with another shock probably from the same origin.
			e		34	40		
			i		35	23		
			e		39	07		
		E	iSS		44	13		
	Hyderabad	E	e	11	27	43		Per. = 21 Secs. /u = 57
M			12	07	49			
	Madras	E	e	11	28	19		Distant shock. Phases not identifiable.
i				32	50			
e				45	36			
e				51	37			
	Kodaikanal	E	ePP?	11	29	04		Initial phase not clear. Long distance shock of moderate intensity. Per. = 24 Secs /u = 46.5
ePS				38	37			
SS				44	52			
Lq				57	40			
M			12	03	10			
	Colombo	E	P	11	29	57	9590	'S' uncertain
S				40	32			
L			12	08	--			
M				18	10			
								Amp. = 4.9mm
17	Shillong	Z	i	00	55	29		Slight
17	Shillong	Z	e	04	35	28		
17	Shillong	Z	e	17	27	48		Slight. Near.
17	Shillong	Z	iP	18	00	28	210	Slight
			eSg		00	57		
17	Shillong	Z	eP	19	04	03	280	Slight.
			P*		04	05		
			Pg.		04	10		
			S		04	36		
			S*		04	39		
			eSg.		04	44		
17	Shillong	Z	i	23	31	00		Slight. Local
18	Shillong	Z	iP	01	45	01	170	Slight
			eSg		45	23		
18	Dehra Dun	N,E	e	08	38	39		Tremor
18	Dehra Dun	N,E	e	09	22	38		Tremor
18	Shillong	Z	P	14	48	50		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
1954								
18 Contd.	Chatra	Z	iP	14	49	53	840	Slight.
			PP		50	01		
			PPP		50	06		
			Lq		51	19		
			iS		51	27		
			Lr		51	39		
			SSS		51	50		
			M		52	18		
	Poona	Z	e?	14	52	55		Tremor
	Bombay	E	eP	14	53	02	2500	Feeble
			eS		57	05		
	Dehra Dun	N,E	e	14	54	44		Tremor
	Madras	E	iS	18	13	27		Moderate
	Dehra Dun	N,E	eP	18	17	15	870	Slight
			PPP		17	29		
			Pg		17	56		
			Lq		18	37		
			iS		18	45		
			SS/Lr		18	57		
			SSS		19	07		
			S*		19	13		
	Sg/M.		19	34				
	New Delhi	E	eP	18	17	35	890	Slight
			iS		19	07		
			SS		19	19		
			SSS		19	31		
			S*		19	38		
18	Hyderabad	E	e	18	35	43		Per. = 12 Secs /u = 2
			M		43	20		
18	Bombay	E	i	20	13	02		Feeble and near.
	Hyderabad	E	P	20	13	35	2450	Per. = 15 Secs /u = 4
			iS		17	35		
			L		19	20		
			M		20	20		
19	Shillong	Z	i	03	30	29		Slight
19	Shillong	Z	i	05	20	01		Slight
19	Shillong	Z	e	05	55	30		Local. Slight.
			e		55	41		
19	Shillong	Z	e	07	13	00		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
						km.		
Dec. 1954								
19	Shillong	Z	e	10	12	39		Slight.
19	Epc: 30° N, 94.3° E. Sikang, China. - H = 10h 27m 24s (Shillong). Felt at Dibrugarh and Shillong.							
	Shillong	Z	iP	10	28	11	310	Moderate
		N,E	eP					
			P*		28	15		
			PP		28	19		
			Pg		28	21		
			PPP		28	25		
			Lq		28	35		
			S		28	44		
			S*		28	51		
			iSg/SS		28	57		
			SSS		29	07		
	Dehra Dun	N,E	eP	10	30	50		Feeble. Phases not clear.
			i		33	16		
	New Delhi	E	eP	10	30	53	1470	Slight
		N,E	eS		33	22		
			SS		33	37		
			SSS		33	50		
		E	Lr		33	57		
	Poona	Z	eP	10	32	08		Moderate
			e		33	42		
			e		33	59		
			e		34	10		
		E	e		38	12		
			e		38	20		
			e		38	27		
			e		42	50		
			e		46	10		
	Bombay	E	eS	10	36	08		Moderate
			e		40	17		
			i		45	54		
			i		52	28		
	Hyderabad	E	e	10	36	49		
			e		38	07		
			e		42	59		
			e		53	37		
19	Poona	Z	i	10	42	49		Probably after shock of previous day's shock.
			i		46	10		
			i		54	22		
	Colombo	E	P	10	42	50	8590	'S' uncertain
			S		52	40		
			M	11	41	38		Amp. = 0.8mm

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u>								
<u>1954</u>								
19	Dehra Dun	N,E	e	10	42	58		Feeble. Phases not clear.
			i		43	25		
			i		44	20		
			i		45	00		
			i		46	23		
	New Delhi	N,E N	ePP	10	43	02		Moderate.
			i		43	33		
			i		52	53		
	Madras	E	iP	10	43	03	8610	Moderate.
			PcP		43	12		
			PP		46	03		
			PPP		46	58		
			iS		52	54		
			ScS		53	09		
			PS		53	42		
	Shillong	Z N	ePKP	10	43	14		Slight. Distant.
			e		47	42		
			e		54	03		
			e		57	45		
			e	11	07	30		
			e		13	09		
			e		30	23		
	Chatra	Z,E E	e	10	43	57		Slight. Distant.
			e		53	42		
	Hyderabad	E	eP	10	44	01	7440	Per. = 12 Secs /u = 2
			PP		46	22		
			iS		52	54		
			SS		56	43		
			L	11	05	24		
			M		10	55		
19	Shillong	Z	eP eSg	16	06	55 07 26	220	Slight.
19	Shillong	Z	e	16	10	56		Slight.
19	Shillong	Z	e	16	51	48		Feeble.
19	Shillong	Z	e	16	41	29		Slight.
19	Shillong	Z	i	17	01	32		Slight.
19	Shillong	Z	e	18	30	12		Slight. Near.
			e		31	09		
19	Shillong	Z	e	18	57	44		Feeble.
19	Shillong	Z	e	20	28	06		Feeble.

DATE	STATION	COMP.	PHASE	P. T. T.		Δ	REMARKS
				h. m. s.	km.		
<u>Dec. 1954</u>							
20	Shillong		e	00	29	08	Slight. Local.
20	Shillong		e	01	33	08	Slight.
20	Shillong		e	01	54	08	Slight. Local.
			e		54	11	
20	Shillong		e	01	56	07	Slight.
20	Shillong		e	02	13	08	Slight.
20	Shillong		e	20	37	22	Slight.
20	Shillong		e	20	48	15	Slight.
20	Shillong		e	23	01	32	Slight.
21	Shillong		e	00	17	37	Slight.
21	Shillong		e	01	23	10	Slight.
21	Dehra Dun	N, E	e	06	53	39	Tremor.
21	Epc: $3\frac{1}{2}^{\circ}$ S, $145\frac{1}{2}^{\circ}$ E. - H = 11h 57m 19s (U.S.C.G.S). Magnitude = $6\frac{1}{4}$ (Kiruna).						
	Chatra	E	e	12	07	57	Slight. Distant.
			e		16	31	
	Dehra Dun	N	eP	12	08	53	Slight. Phases not clear.
			i		18	18	
	Poona	Z	eP	12	08	56	8240 Slight.
		N	PP		11	43	
			PPP		13	31	
			eS		18	30	
			PS		19	05	
			PPS		19	17	
			SSS		26	33	
			Lq		23	17	
			M		33	07	
	Bombay	E	iP	12	09	04	8300 Slight. Possibly deep focus.
			i		09	48	
			PP		11	49	
			PPP		13	21	
			iS		18	40	
			PS		19	13	
			PPS		19	23	
			SS		23	24	
	Colombo	E	P	12	17	01	
			M		44	31	Amp. = 0.3mm
21	Dehra Dun	N	e	16	27	22	Tremor.

21

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS	
				h.	m.	s.		
				km.				
<u>Dec.</u>								
1954								
21	Epc: 40.9° N, 123.9° W. Humboldt Cainty, California. - H = 19h 56m 27s (U.S.C.G.S). Felt at Sanfrancisco. Several injured and extensive property damage. Magnitude = 6 $\frac{3}{4}$ - 7 (Hurbanovo); 6 $\frac{1}{4}$ (Kiruna); 6.7 (Takubaya); 6 $\frac{1}{2}$ - 6 $\frac{1}{4}$ (Uppsala, Praha, Roma); 6.6 (Pasadena).							
	Shillong	N,E	e	20	15	03		
	Dehra Dun	N	e	20	15	16	Slight. Phases not clear.	
			i		22	13		
	Poona	Z	e	20	15	16	Probably distant. Phases not clear.	
	New Delhi	N	eP	20	15	28	Moderate. 11550	
			PPP		17	25		
			SKS		21	36		
			SKKS		22	13		
			PS		24	36		
			SKKP		26	20		
			SS		30	10		
			SSS		34	12		
	Bombay	N	e	20	16	23	Moderate. Distant.	
				e		33		38
				e		34		30
	Hyderabad	E	iP	20	16	37	Per. = 17 Secs /u = 10	
				e		26		27
				e		26		58
				e		33		05
				e		44		11
				M		52		49
	Colombo	E	P	20	18	16	Amp. = 1.1mm	
				e		34		41
				e	21	01		51
				M		20		31
	Kodaikanal	E	e?	20	18	39	Slight. Distant. Phases not clear.	
	Chatra	E	i	20	22	42	Slight. Distant. Surface waves.	
				e		53		00
21	Shillong	Z	P	22	12	58		
22	Shillong	Z	P	04	29	19		
	Poona	Z	e	04	30	41	Very feeble. Phases not clear.	
22	Dehra Dun	N	e	06	12	22	Tremor.	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1954						
22	Poona	Z	eP	16 36 12		Very feeble Phases not clear.
23	Shillong	Z	P	16 37 02		
24	Shillong	Z	iP	10 30 07		Feeble.
24	Poona	Z	e	11 34 43		Feeble shock. Phases not clear.
	Shillong	Z	eP	11 35 38		Feeble.
24	Shillong	Z	eP	11 42 16		Slight.
24	Hyderabad	N	M	11 53 49		Per. = 16 Secs /u = 3
		E	M	55 07		Per. = 16 Secs /u = 2
25	Shillong	Z	eP	05 01 12		Slight. Local. Phases doubtful.
25	Shillong	Z	ePg iSg	17 32 17 32 26	78	Slight.
25	Shillong	Z	eP	18 09 03		Slight.
25	Shillong	Z	eP	18 39 09		Slight.
25	Shillong	Z	iP	21 16 17		Slight. Distant. Phases doubtful.
26	Shillong	Z	eP	03 48 54		Moderate. Phases not clear.
	Poona	Z,E	e	03 51 09		Slight. Phases not clear.
26	Bombay	N	e	04 00 37		Slight. Deep.
26	Hyderabad	N	M	09 49 52		Per. = 12 Secs /u = 2
27	Shillong	Z,N,E	iP iSg	01 36 55 37 21	200	Slight. Felt locally.
27	Epc: $5\frac{1}{2}^{\circ}$ S, $130^{\circ}$ E. In Banda Sea. - H = 06h 47m 23s (U.S.C.G.S).					
	Shillong	Z	eP	06 56 09		Moderate. Phases not clear.
	Chatra	Z	i	06 56 42		Slight. Distant.



DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Dec.</u> 1954								
27 Contd.	Madras	E	iP	06	56	45	5490	Slight.
			eS	07	03	52		
	Poona	Z	iP	06	57	37		Slight. Phases not clear.
		E	i	07	05	32		
			i		06	05		
	New Delhi	N,E	iP	06	57	41	6430	Moderate
			iS	07	05	40		
	Dehra Dun	N,E	e	06	57	44		Slight. Phases not clear.
	Bombay	N	eP	06	57	46	6430	Slight. Deep
			iS	07	05	45		
27	Poona	Z	eP	07	29	44		Tremor.
27	Poona	Z	e	14	30	55		Tremor.
28	Epc: 3° S, 153° E. In New Britain Region. - H = 01h 00m 46s (Shillong). 5° S, 152½° E; - H = 01h 00m 37s (U.S.C.G.S) 4¾° S, 153° E; - H = 01h 00m 40s (B.C.I.S) Magnitude = 6½ (Kiruna).							
	Shillong	Z,N,E	iP	01	11	30	7220	Moderate.
			PP		13	48		
			PPP		15	30		
			eS		20	25		
			SS		24	30		
			Lq		28	15		
	Chatra	Z	e	01	12	00		Slight. Distant.
	Bokaro	N,E	e	01	12	14		
			e		13	14		
	Colombo	E	P	01	12	20		Amp. = 0.6mm
			L		36	--		
			M		47	48		
	Madras	E	eP	01	12	21	7910	Slight. Phases not clear.
			eS		21	38		
	Hyderabad	E	eP	01	12	33	8640	
			eS		22	26		
			SS		26	50		
			L		38	34		
			M		45	48		
								Per. = 18 Secs /u = 5

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
<u>Dec.</u>							
<u>1954</u>							
28 Contd.	Kodaikanal	E	iP	01	12	38	8570 Slight.
			iS		22	27	
			Lq		32	57	
			Lr		36	36	
			M		42	57	
New Delhi	N,E N		eP	01	12	51	8710 Moderate.
			eS		22	47	
			PS		23	20	
			i		24	05	
Poona	Z E		iP	01	12	59	9050 Moderate.
			PP		16	00	
			PPP		17	55	
			SKS <sub>1</sub>		23	04	
			eS		23	12	
			ScS		23	22	
			PS		24	09	
			PPS		24	39	
			SS		28	38	
			SSS		32	05	
			Lq		34	29	
			M		46	06	
Bombay	N E N		eP	01	13	05	9450 Slight to moderate. Somewhat deep. Fol- lowed by after shocks.
			iP				
			i		13	22	
			PPP		18	23	
			SKS <sub>1</sub>		23	12	
	E N E		eSt				
			iS		23	34	
			e		24	11	
			e		29	01	
28	Poona	Z	e	02	26	35	Tremor.
28	Dehra Dun	N,E	e	03	12	46	Slight. Phases not clear.
			i		22	49	
28	Shillong	Z	eP	06	10	31	Slight. Phases doubtful.
28	Shillong	Z	iP	07	26	58	Slight. Phases not clear.
28	Shillong	Z	eP	09	53	09	Slight.
28	Shillong	Z	eP	10	30	07	Slight.
29	Bokaro	N,E	e	11	52	21	
			e	12	03	53	
			e	14	36		
Poona	Z,E	eP	11	53	11	Feeble. Phases not clear.	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Dec.</u>						
1954						
29	Shillong	Z	eP	19 28 58		Slight.
30	Dehra Dun	N,E	e i	01 56 22 58 10		Feeble. Phases not clear.
30	Dehra Dun	N,E	e	11 13 36		Tremor.
30	Epc: 53° N, 168° W; Fox Islands in Ale tians. - H = 11h 32m 28s (U.S.C.G.S). Felt at Unalaska. Magnitude = 6½ - 6¾ (Pasadena).					
	Dehra Dun	N,E	e	11 42 37		Tremor.
	Shillong	Z	iP	11 44 05	8400	Slight.
	Chatra	Z	i	11 44 18		Slight. Distant.
		E	e	54 00		
			e	12 15 00		Per. = 22.0 Secs Amp. = 0.3mm.
	New Delhi	N,E	eP	11 44 39	8890	Moderate.
		N	eS	54 43		
	Poona	Z,E	eP	11 45 29	10010	Moderate.
		E	PP	49 08		
			PPP	51 11		
			SKS <sub>1</sub>	55 38		
			eS <sub>1</sub>	56 22		
			PPS	58 27		
		M?	12 24 59			
	Bombay	N,E	eP	11 45 31	10150	Slight. Somewhat deep.
		N	eS <sub>1</sub>	56 28		
		E	iS <sub>1</sub>			
	Bokaro	N,E	iS	11 54 18		
			e	54 33		
			e	54 48		
			i	12 19 56		
	Hyderabad	N	M	12 18 08		Per. = 15 Secs
		E	M	19 58		/u = 4 Per. = 18 Secs /u = 3
31	Dehra Dun	N,E	e	17 18 38		Tremor.



Earthquake Reports  
(Non Instrumental Reports)

The following is the list of earthquakes that were reported by Voluntary Observers from various places during the month of December 1954.

Place	Date in G. M. T	Time in G. M.T. h. m.	Duration of Shocks	Number of Shocks	Intens- ity in R. F. Scale	Remarks
<u>Dec.1954</u>						
Sapla(N.E.F.A)	01	23 17	-	-		No damage.
Charduar (N.E.F.A)	01	-- --	-	-		Tremor.
Dirang-Dzong (N.E.F.A)	01	-- --	-	-		Slight damage of a kitchen only.
Shillong	09	15 28	5	1	IV	
Dhanbad	09	21 37	3	1	V	Direction E-W.
Tezu	10	01 42	30	-	-	
Shillong	13	20 41	10	-	III	
Abu	15	02 48	50	-	IV	
Abu	15	17 00	30	-	IV	
Dibrugarh	19	10 30	1	-	IV	

INDIA METEOROLOGICAL DEPARTMENTCENTRAL SEISMOLOGICAL  
OBSERVATORY, MEATH HOME,  
SHILLONG.

Dated, 1st February, 1960.

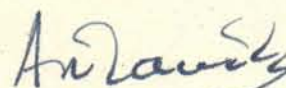
Dear Colleague,

I regret much that due to certain unavoidable circumstances the printing of the monthly Seismological bulletins of the Indian Seismological Stations had been interrupted for a considerable period. These difficulties have now been overcome and I am forwarding herewith the seismological bulletins of Indian Stations for the period March, 1954 to December, 1954. We hope that in future our bulletins will be reaching you regularly.

May I take this opportunity of thanking you for the invaluable data of your station which are being received regularly.

Assuring you of our co-operation at all times,  
and with kind regards,

Yours faithfully,



(A. N. TANDON)  
Seismologist.

\*\*\*\*\*

\*Bisht\*  
1/2/60.

JUL 18 1960





*Handwritten signature or name, possibly 'A. ...'*