

JAN, 1954 - DEC 1955

1954
complete

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN


January, 1954.

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Published under the direction of
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Director General of Observatories.

Station	Instruments	Compt.	Period in secs	Static Magnifi- cation	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12	350	16:1	16
	Milne-Shaw	E	12	350	11:1	8
	Sprengnether	E	To = Tg = 7.2			30
Calcutta	Milne-Shaw	E	10	150	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Chatra	Milne-Shaw	N	10.0	150	20:1	16
	Milne-Shaw	E	12.0	250	20:1	16
	Wood-Anderson	N	1.0	1000	30:1	60
	Wood-Anderson	E	1.0	1000	30:1	60
	Benioff Verti- cal	Z	To=0.72 Tg=0.45	-	Es=2.3:1 Eg=Critical	60
Colombo	Milne-Shaw	E	12	250	20:1	31.5
Dehra Dun	Wood-Anderson	N	1	1000	30:1	60
	Wood-Anderson	E	1	1000	30:1	60
	Milne-Shaw	N	12	250	20:1	16
Hyderabad	Milne-Shaw	E	12	253	20:1	8
	Milne-Shaw	N	12	251	20:1	8
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8
Madras	Sprengnether micro-seismo- graph	E	To=Tg=7.4		-	30
New Delhi	Milne-Shaw	N	12	288	20:1	8
	Wood-Anderson	N	4.0	1070	20:1	16
	Wood-Anderson	E	2.0	1841	30:1	60
	Omori-Ewing	E	28	30	1	12
Poona	Sprengnether	Z	To=Tg=1.5		-	30
	Milne-Shaw	N	12	250	20:1	8
	Wood-Anderson	E	4	1100	20:1	16
Shillong	Milne-Shaw	N	12.0	250	20:1	8.0
	Wood-Anderson	N	4	1000	20:1	60.0
	Wood-Anderson	E	1.0	1000	30:1	30.0
	Wood-Anderson	N	1.0	1000	30:1	30.0
	Benioff	Z	To = 1.0 Tg = 0.18	-	-	60.0

SEISMOLOGICAL BULLETIN

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
<u>Jan.</u> 1954						
01	Shillong	Z	eP	01 22 59		

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Jan. 1954					
01	Epc: $8\frac{1}{2}^{\circ}$ S., 124° E. Flores Sea, h = 100 km ca ; O = 13h 04m 17s (U.S.C.G.S.) 9° S., $123\frac{1}{2}^{\circ}$ E., h = 100 km ca; O = 13h 04m 19s (B.C.I.S.) 8° S., 122° E., O = 13h 04m 26s (Shillong). Magnitude - $6\frac{1}{2}$ (Pasadena).				
	Colombo	E	P	13 12 32	
			S	19 16	
			L	25 30	
			M	28 03	Amp = 0.1 mm.
	Shillong	Z	iP	13 12 39	5090 Moderate.
		N	i	12 53	
			PP	14 30	
			PPP	15 04	
			S	19 13	
			PS	19 23	
			PPS	19 35	
			i	20 12	
			LQ	23 04	
			SSS	23 31	
			LR	25 27	
			M	28 38	
	Calcutta	E	eP	13 12 46	5000 Slight.
		N	iP	12 47	
		E	?	15 35	
			iS	19 25	
		N	iS	19 29	
		E	SS	22 35	
	Madras	E	iP	13 12 57	5160 Moderate.
			PcP	14 18	
			PP	14 46	
			PPP	15 35	
			ScP	18 08	
			iS	19 45	
			ScS	22 27	
			SS	23 03	
			LQ	24 16	
			e	41 35	
	Chatra	NEZ	eP	13 13 10	5460 Slight.
		NE	PcP	14 37	
			PP	15 10	
			PPP	16 04	
			PcS	18 30	
		E	iS	20 15	
			PS	20 23	
			PPS	20 29	
			ScS	22 52	
			SS	23 48	
			LQ	24 33	
			LR	27 30	
			M	31 30	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Jan. 1954 01 Contd.	Hyderabad	E	eP iS SS	13 13 19 20 30 23 01	5550	
		N	SS L M	23 08 30 08 35 48		
	Poona	Z E	iP PcP PP PPP PcS eS ScS SS LQ M	13 13 55 14 48 16 00 17 12 18 40 21 34 23 19 25 11 27 29 35 04	6078	Moderate.
	Bombay	E	eP i e PP PPP iS i iX eX i SS	13 13 57 14 20 14 28 16 13 17 38 21 46 21 52 22 22 23 30 25 34	6455	Slight.
	Dehra Dun	NE	eP i PP PcS iS PS PPS ScS M	13 14 04 14 32 16 12 18 45 21 54 22 07 22 15 23 36 35 30	6240	Moderate.
	New Delhi	NE N NE N	eP i eS PS PPS i ScS	13 14 08 14 29 21 56 22 04 22 12 23 50 24 18	6220	Moderate.
01	Dehra Dun	NE	e i	22 20 38 21 33		Slight.
02	Shillong	Z	iP	05 37 44		Tremor.
02	Shillong	Z	iP	07 09 35		Tremor.
02	Shillong	Z	eP	09 57 44		Tremor.
02	Shillong	Z	iP	11 29 26		Tremor.
02	Shillong	Z	eP	13 17 50		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Jan. 1954							
02	Shillong	Z	iP	20	29	12	
03	Shillong	Z	iP	00	43	02	Tremor.
03	Shillong	Z	i	07	05	50	Tremor.
03	Shillong	N	e(Pg)	14	33	53	Slight, local.
			i		33	55	
			i(Sg)		34	09	
			i		34	26	
04	Bombay	E	e	12	22	10	Long distance.
		N	e		22	21	
		E	e		24	42	
		N	e		28	17	
		E	e		33	42	
			e		34	11	
	Shillong	N	e	12	37	43	Slight.
			M	13	02	-	
04	Shillong	Z	i	17	16	03	Slight.
04	Shillong	Z	i	23	59	13	Slight.
05	Dehra Dun	NE	eP	08	51	41	330 Slight.
			PP		51	49	
			Pg		51	51	
			PPP		51	55	
			LQ		52	12	
			iS		52	15	
			SS		52	25	
			SSS		52	35	
	New Delhi	E	eP	08	51	54	350 Slight.
			P*		51	59	
		NE	PP		52	01	
			LQ		52	23	
			eS		52	33	
			S*		52	41	
		E	SS		52	43	
		NE	Sg		52	47	
		N	SSS		52	53	
05	New Delhi	NE	e	10	42	36	Slight.
			i		44	05	
			i		44	20	
			i		44	36	
		E	e		45	00	
			e		45	36	
		NE	i		45	44	
05	Epc: 18° N., 81.3° E. East Godavari, Andhra; 0 = 11h 39m 53s (Shillong)						
	Felt - Kothagudium (Deccan).						
	Hyderabad	E	iP	11	40	32	240
		N	iS		41	00	
		E	iS		41	02	

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Jan. 1954								
05	Poona	Z	iP	11	41	26	700	Slight.
Contd.		E	eS		42	39		
			M		43	18		
	Bombay	E	eP	11	41	45	890	Feeble, local tremor.
			e		43	01		
			iS		43	16		
		N	e		43	19		
		NE	i		43	46		
	Calcutta	N	eP?	11	42	21	1055	Slight.
			iS		44	49		
	Chatra	E	eP	11	42	25		Slight, near.
			e(S)		44	32		
	Shillong	Z	eP	11	42	49	1350	Slight.
			eS		45	06		
06	Dehra Dun	N	e	08	47	33		Slight, phases not clear.
06	Shillong	Z	i	11	00	37	20	Slight, local. Felt at Shillong.
		N	i(Pg)		00	38		
			i(Sg)			40		
06	Epc: 7 ^o .6 N., 7 ^o E. SW of Spit-zbergen ; 0 = 15h 53m 59s (U.S.C.G.S.)							
	Chatra	Z	iP	16	04	20		Slight, distant.
	Shillong	Z	iP	16	04	20		Slight, distant.
		N	eP		04	36		
			eS		13	12		
			e(M)		35	00		
	Bombay	N	iP χ	16	04	50	7370	Slight.
		E	eP χ					
			i		13	08		
			eS		13	39		
	Poona	Z	iP	16	04	53		Tremor.
07	Shillong	Z	i	00	34	31		Slight, local.
			i		34	40		
07	Shillong	Z	iP	19	30	45		Slight, near.
			i		31	28		
		N	e		31	33		
			e		31	39		
			i		32	27		
07	Shillong	N	e	19	47	25		Slight, near.
			i		48	16		
08	Shillong	Z	e	00	26	13		Slight.
08	Dehra Dun	N	e	02	29	01		Slight, phases not clear.
			i		29	59		
			i		30	10		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Jan. 1954								
08	Dehra Dun	NE	eP PP PPP iS SS and LR SSS S*	03	36	06	820	Slight.
	New Delhi	E	eP PPP	03	36	22	870	Slight.
		NE	eS LR		36	37		
	Shillong	Z	i	03	38	41		Slight.
08	Dehra Dun	NE	e e	18	14	10		Feeble.
					14	45		
09	Shillong	Z	e	00	54	02		Tremor.
09	Shillong	Z	i	01	48	08		Tremor.
09	Shillong	Z	i	05	03	01		Slight.
09	Chatra	Z E	e e	08	15	04		Slight, distant. Surface waves.
					37	--		
09	Shillong	Z NE N	iP eP PP i iS	18	08	31	220	Slight, felt.
				08	31			
					08	38		
					08	50		
					08	56		
		NE	iSg		09	02		
		N	SS SSS		09	07		
					09	18		
	Chatra	Z	i i	18	09	30		Slight, near.
					10	51		
10	Shillong	Z	iPg Sg	07	39	02		Tremor.
					39	15		
10	Dehra Dun	NE	eP PPP eS SS LR SSS S* Sg/M	13	41	09	1060	Slight.
					41	23		
					42	57		
					43	11		
					43	21		
					43	23		
					43	37		
					44	06		
	New Delhi	N E NE	eP P* eS	13	41	30	1210	Slight.
					41	58		
					43	34		
					43	46		
		E	SSS		43	56		
		NE	S*		44	18		
	Chatra	Z	e	13	42	33		Slight, distant.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Jan. 1954								
10	Shillong	Z	e	13	43	21		Slight.
Contd.	Poona	Z	eP e?	13	43	34 48 00		Slight, phases not clear.
	Bombay	N E N E	e iY eY i	13	49	12 49 27 50 06		Movements continue upto 1400 hrs.
10	Shillong	Z	iPg	16	28	45 28 57		Slight, tremor.
10	Shillong	Z	eP Sg	17	51	51 52 01		Tremor.
10	Dehra Dun	NE	iP P* PP PPP iS SSS	18	52	47 52 49 52 55 53 01 53 07 53 29	220	Slight, near.
	New Delhi	NE E NE E NE	eP PP LQ eS S* SS Sg	18	53	01 53 09 53 31 53 41 53 48 53 52 53 57	360	Slight.
10	Shillong	Z	eP Sg	20	02	52 03 25		Tremor.
10	Shillong	Z	iPg Sg	21	38	17 38 29		Feeble.
10	Shillong	Z	iPg Sg	21	52	02 52 14		Feeble.
11	Shillong	Z	Pg Sg	01	23	47 23 58	90	Slight, felt locally.
	Dehra Dun	N	e i	01	28	42 28 48		Feeble.
11	Poona	Z N	eP e? e?	16	15	49 24 51 28 48		Slight, phases doubtful.
11	Epc: 23° N., 126° E., Riu Kiu Island; 0 = 17h 09m 02s (USCGS) 22°3' N., 125½° E., 0 = 17h 09m 02s (B.C.I.S.). Mag. 6 (Kiruna, Praha).							
	Shillong	Z N	iP PPP PcP eS LQ SSS LR M	17	15	24 16 47 18 05 20 23 22 28 22 56 24 09 26 39	3357	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Jan. 1954 11 Contd.	Chatra	Z NE	iP eS e	17	16	00	3900	Slight, distant.
	Calcutta	E	e e	17	16	01		Slight.
	Dehra Dun	NE	eP	17	17	08		Feeble.
	New Delhi	E N	eP eS	17	17	11	4810	Slight.
	Hyderabad	E NE E N	iP iS SS L	17	17	20	4960	
		E	M			35 50		Per. = 18 secs μ = 5. Per. = 15 secs μ = 4.
	Bombay	NE N E	eP PP i i	17	17	54	5500	Feeble.
		NE	eS			25 01		
		E	PS			25 12		
		NE	PPS			25 17		
		E	ScS			27 14		
		N	ScS			27 24		
			SS			28 31		
		E	SS			28 36		
11	Epc: $13\frac{3}{4}^{\circ}$ N., $51\frac{1}{4}^{\circ}$ E. Gulf of Aden; 0 = 22h 45m 06s (B.C.I.S.)							
	Bombay	E	iP iX eX	22	49	49	3450	Feeble.
		N				50 00		
		NE	PP			50 16		
		E	PPP			50 27		
		NE	iS			54 54		
			LQ			55 13		
		E	SS			55 29		
			SSS			55 39		
			LR			56 15		
	Poona	Z E	eP PP eS PS SS M	22	50	02	2600	Slight.
						51 03		
						54 12		
						54 16		
						56 07		
				23	01	22		
	Hyderabad	E	eP S L M	22	51	03	2650	
						55 17		
						57 56		
						59 21		Per. = 12 secs μ = 2.
	Kodaikanal	E	e	22	55	13		Tremor, phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Jan. 1954								
12	Dehra Dun	NE	eP PPP iS SS SSS	07	50	11	170	Feeble, near.
12	Epc: 49° S., 165° E. Off Coast of South Island, New Zealand; 0 = 14h 16m 22s (U.S.C.G.S.) Magnitude - 6 $\frac{3}{4}$ - 7 (Pasadena), 6 $\frac{3}{4}$ (Kiruna), 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Praha).							
	Chatra	Z NE	ePY ePY e	14	30	22		Slight, distant Surface waves.
12	Shillong	Z N	eP S	14	34	07	10665	Slight, phase doubtful.
	Colombo	E	P SKS L M	14	33	43		Phases doubtful due to superposition of phases to the earlier shock. Amp = 1.0 mm.
	Madras	E	iP PP PPP SKS SKKS SKKKS iS PPS SS e	14	34	00	10500	Moderate, phases doubtful due to superposition of phases due to the earlier shock.
	Calcutta	E	eP SKS ₁ S? PS ? SSS SKKS ₂ ?	14	34	07	10920	Moderate.
	Hyderabad	E N E NE N	eP PP SKS iS PS SSP L M	14	34	23	11080	
		E	M	15	06	51		Per. = 18 secs μ = 23.
		E	M	15	09	39		Per. = 18 secs μ = 13.
	Bombay	E N E	iPKP ₁ ePKP ₁ PP i PPP PKS ₁ SKS	14	34	29		Moderate, phases mixed up with that of the succeeding shock.

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				h.	m.	s.		
<u>Jan.</u>								
1954								
12	Bombay	N	PS	14	44	11		
Contd.	Contd.	E	PS		44	24		
		N	e		45	13		
		E	PPS		45	24		
		N	SS		49	43		
		E	i		50	29		
		NE	SSS		54	08		
		N	LQ	15	00	51		
	Poona	Z	eP		34	46		Moderate.
		E	PP		38	18		
			SKS		45	19		
			PS		48	17		
			e		51	21		
			M	15	11	22		
	Kodaikanal	E	PP?	14	33	26		10520 Moderate.
			S		45	37		
			PPS		47	37		
			LQ	15	00	37		
			LR		01	58		
			M		12	52		
12	Bombay	E	iPKP ₁	14	33	27		Moderate, phases mixed with that of preceding shock.
		NE	PP		35	51		
			PPP		41	03		
		E	FES ₁		41	42		
		N	SES ₁		42	49		
			e		48	06		
		NE	PPS		49	03		
			SS		53	06		
		N	SSS		57	49		
			M	15	27	13		Per. = 16 secs μ = 14.
	New Delhi	N	ePP	14	39	28		12200 Moderate.
			PPP		41	47		
			SKS		45	35		
			SKKS		46	27		
			ES		48	50		
			PPS		49	57		
			S		54	59		
			M	15	20	52		
13	Epc: 49°S., 165° E. Off the South Coast of Sud Island, New Zealand;							
	0 = 00h 13m 06s (U.S.C.G.S.)							
	49°5 S., 166°0 E. 0 = 00h 13m 06s G.M.T. (B.C.I.S.)							
	Mag. - 7½ (Wellington), 7¼ (Pasadena), 7 (Praha), 6¾ - 7							
	(Hurbanovo, Strasbourg), 6¾ (Kiruna, Uppsala).							
	Colombo	E	eP	00	25	01		L and M lost while changing the chart.
			S		36	51		
	Madras	E	eP	00	25	47		10860 Moderate.
			FP		30	48		
			SKS		37	21		
			SKKS		37	46		
			is (ScS)		38	10		
			PS		39	48		
			PPS		40	33		
			SS		44	52		

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				h.	m.	s.		
Jan. 1954 13 Contd.	Calcutta	E	e(P) e e M	00	27	07 34 00 58		
	Chatra	NEZ NE	eP PP SKS ₁ SKKS ₁ eS SKS ₂ PS PPS SS SSP PKKS ₁ SSS SKKKS LQ LR M	00	27	08 21 49 13 39 56 32 05 28 47 50 50 20 24 09 09	11090	Slight. Phases doubtful.
	Hyderabad	E EN E N EN N E N	eP PP SKS iS S PS SS L L M M	00	27	19 21 42 34 44 07 29 03 20 18 20	10900	Slight. Per. = 18 secs μ = 9. Per. = 18 secs μ = 19.
	Poona	Z E	eP e e S PS e LQ M	00	27	25 54 58 17 47 02 09 03		Moderate.
	Kodaikanal	E	PP? S PPS LQ LR M	00	30	01 13 16 25 46 31	10520	Moderate. Per. = 15 secs μ = 10.
	Bombay	NE E N E NE E N NE	ePKP ₁ PP e PPP PKS SKS SKS ₁ SKKS ₁ eS PS	00	30	53 00 10 05 21 30 57 14 14 00		Moderate and distant.

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<u>Jan.</u>								
1954								
13	Bombay	N	PPS	00	41	50		
Contd.	Contd.	E	PPS		41	53		
		NE	SSP		46	44		
			SSS		49	53		
	New Delhi	N	e	00	30	59		Moderate.
			e		38	07		
			e		40	57		
			i		42	04		
			i		43	04		
			i		47	32		
13	Dehra Dun	NE	eP	13	11	38	260	Slight.
			PPP		11	51		
			iS		12	07		
			S*		12	11		
			Sg		12	15		
			SS		12	19		
			SSS		12	28		
13	Shillong	Z	eP	16	23	01		Tremor.
13	Dehra Dun	NE	eP	20	35	35	660	Slight.
			PP		35	42		
			P*		35	48		
			LQ		36	30		
			iS		36	41		
			SS		36	50		
			S*		36	58		
			SSS		37	02		
	New Delhi	NE	eP	20	35	56	770	Slight.
		E	PP		36	03		
			PPP		36	10		
			P*		36	13		
			Pg		36	30		
			eS		37	16		
			SS		37	26		
			SSS		37	36		
	Shillong	Z	iP	20	37	52		Tremor.
	Poona	Z	e(P)	20	41	21		Tremor.
13	Shillong	Z	eP	22	52	01		Tremor.
14	Shillong	Z	iP	02	18	58		Tremor.
	Poona	Z	eP?	02	20	50		Tremor.
	Bombay	E	i	02	21	05		
			i		21	32		
			e		23	18		
			i		28	44		
			i		29	02		
14	Shillong	Z	iPg	06	46	06		Feeble.
			Sg		46	14		
14	Shillong	Z	iP	10	48	09		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	\triangle	REMARKS
				h. m. s.	km.	
Jan. 1954						
14	Shillong	Z	iP	22 47 31		Slight.
15	Bombay	E	e e	23 46 35 47 27		
17	Poona	Z	eP?	03 14 14		Tremor.
17	Dehra Dun	NE	iP PP PPP and P* Pg LQ iS LR SS S* SSS Sg	08 47 41 47 48 47 56 48 10 48 40 48 52 48 58 49 03 49 12 49 14 49 30	670	Moderate.
	New Delhi	NE E NE E NE N E	eP PP PPP P* LQ iS SS SSS S* Sg	08 48 00 48 08 48 15 48 19 49 14 49 25 49 36 49 46 49 50 50 12	820	Slight.
	Poona	Z	eP	08 50 01		Slight, phases not clear.
	Bombay	NE E NE	e e e i e i i	08 50 03 50 08 53 02 53 44 54 15 54 50 56 01		
	Hyderabad	E	e i	08 54 40 55 47		
17	Poona	Z	eP	11 54 50		Tremor.
	Bombay	E	e	11 56 18		Tremor.
17	Dehra Dun	N	e	17 15 24		Feeble.
	Bombay	NE E NE	i e e	17 48 38 50 25 56 00		Probably deep.
	Poona	Z	eP	17 48 41		Slight, phases not clear.
	Kodaikanal	E	e?	17 58 58		Tremor.
	Hyderabad	E	M	18 07 16		Per. = 15 secs $\mu = 3.$

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				△			
				km.			
<u>Jan.</u>							
1954							
17	Poona	Z	eP	20	56	02	Tremor.
17	Poona	Z	eP	22	09	34	Tremor.
17	Bombay	E	e	23	03	41	Slight.
		NE	i		09	45	
		E	e		11	01	
			e		12	43	
			e		14	02	
		N	e		16	11	
		NE	e		16	49	
	Dehra Dun	N	e	23	09	16	Tremor.
	Hyderabad	E	e	23	13	38	Tremor.
18	New Delhi	NE	P	00	10	11	Begining uncertain due starting of time break.
			i		15	13	
			i		20	12	
18	Dehra Dun	N	e	03	42	07	Tremor.
18	Dehra Dun	NE	i	07	50	16	Feeble.
18	Poona	Z	eP	10	57	25	Tremor.
	Bombay	E	e	10	57	34	Feeble.
			e		58	05	
			e		59	50	
			i	11	01	44	
		N	e		03	21	
		E	e		05	28	
		N	e		05	37	
		E	i		05	48	
			e		06	18	
	Dehra Dun	N	e	10	57	38	
			e	11	24	11	
18	Shillong	Z	eP	11	18	36	Slight.
		N	eS		19	06	
18	Poona	Z	eP	14	55	26	Tremor.
	Bombay	E	e	15	05	19	Feeble.
			e		08	52	
19	Poona	Z	eP?	09	17	06	Tremor.
19	Poona	Z	eP	13	40	28	Tremor.
20	Bombay	N	e	04	36	22	Long distance.
			e		41	06	
			e		43	24	
			e		46	08	
			e		47	35	
			e		48	17	
			i		51	45	
			e		52	06	
			e		52	43	
			e		53	13	
			e		55	13	

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Jan. 1954						
20	Kodaikanal	E	e?	16 12 37		Tremor.
	Poona	Z E	eP i?	16 16 13 23 07		Slight, phases not clear.
	New Delhi	NE E NE	e e e	16 24 10 24 17 25 51 26 11		Slight, phases not clear.
21	Dehra Dun	NE	e i(S)?	23 07 40 07 59		Feeble.
22	Hyderabad	E	e	10 41 30		
22	Bombay	E NE E N	e e i i i i	11 34 25 38 05 39 19 40 43 42 30 43 00		Feebly recorded.
	Shillong	Z N	eP eS	11 35 40 36 53		Slight.
	Dehra Dun	NE	eP PP PPP Pg iS SS S* SSS Sg	11 36 11 36 18 36 25 36 43 37 30 37 32 37 51 37 53 38 07	770	Moderate.
	New Delhi	NE N NE	eP PPP S Sg	11 36 17 36 52 37 46 38 28	820	Slight.
	Poona	Z E	e e M	11 37 52 40 30 42 13		Slight.
22	Bombay	E NE E N N	eP SKS eS PS PPS e e SS	11 51 32 12 01 34 01 41 02 39 03 02 03 57 03 47 07 32	9000	
22	Epc: 20° S., 169° E. Loyalty Island; h = 100km ca; 0 = 21h 23m 04s (U.S.C.G.S.) Magnitude - 6½ ca (Wellington).					
	Poona	Z	eP	21 36 48		Distant, phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	km.
<u>Jan.</u>							
1954							
22	Bombay	E	eP	21	37	05	10855 Distant.
Contd.			e		40	55	
			PP		41	37	
		N	e		43	15	
		E	PPP		43	37	
		NE	SKS		47	25	
			SKKS		48	07	
			eS		48	28	
		E	PS		50	03	
			PPS		50	51	
			SS		55	30	
		N	e		55	35	
23	Dehra Dun	N	e	12	13	14	Tremor.
23	Dehra Dun	N	e	12	40	57	Slight.
			i		41	14	
23	Epc: $37\frac{1}{2}^{\circ}$ N., $72\frac{1}{2}^{\circ}$ E. Tadjik USSR; 0 = 16h 06m 30s G.M.T. (USCGS)						
	37° N., 74° E. 0 = 16h 06m 37s G.M.T. (Shillong)						
	Magnitude - $6\frac{1}{2}$ (Uppsala, Kiruna).						
	Dehra Dun	NE	eP	16	08	36	920 Moderate.
			PP		08	44	
			PPP		08	51	
			P*		08	57	
			Pg		09	15	
			LQ		10	00	
			iS		10	11	
			SS		10	22	
			LR		10	26	
			SSS		10	33	
			S*		10	40	
			Sg/M		11	03	
	New Delhi	NE	eP	16	08	51	990 Slight.
		E	PP		08	57	
		NE	PPP		09	04	
			iS		10	33	
			SS		10	45	
			LR		10	49	
		E	SSS		10	56	
			S*		11	06	
		NE	Sg		11	35	
	Chatra	Z	iP	16	10	15	Slight, other phases
			iS		13	17	obscure.
	Bombay	N	iPX	16	10	54	2100 Feeble.
		E	ePX				
		NE	PP		11	07	
			PPP		11	16	
		E	iS		14	19	
		NE	iS		14	22	
		N	i		14	36	
		E	SS		14	39	
		NE	SSS		14	54	
			LR		15	14	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Jan. 1954							
23	Poona	Z	eP	16	10	55	2170 Moderate.
Contd.		E	PP		11	12	
			PPP		11	23	
			eS		14	29	
			LQ		14	33	
			SS		14	45	
			LR		15	20	
			M		16	53	
	Shillong	Z	eP	16	11	09	2170 Slight.
		N	S		14	45	
			LQ		14	59	
			SSS		15	14	
			LR		16	06	
			M		16	33	
	Calcutta	E	iP	16	11	12	2170 Moderate, first move-
		N	eP		11	14	ment East.
		E	PPP		11	42	
			S		14	47	
		N	S		14	48	
		E	?		14	56	
			LR		15	49	
			M		17	24	
	Hyderabad	N	iP	16	11	12	2300 Moderate.
		NE	iS		14	59	
		E	SS		15	40	
			L		17	03	
			M		17	47	
		N	M		18	02	Per. = 8 secs μ = 11. Per. = 11 secs μ = 35.
	Madras	E	eP	16	12	06	2120 Moderate.
			PP		12	25	
			PPP		13	41	
			PcP		14	32	
			iS		16	24	
			ScP		17	53	
			LQ		18	03	
			SS		18	12	
			SSS		18	28	
			ScP		21	38	
***			M		21	52	
***			LR		19	26	Amp = 42 mm.
	Kodaikanal	E	e	16	16	10	Short distance, phases not clear.

23 Epc: $37\frac{1}{2}^{\circ}$ N., $72\frac{1}{2}^{\circ}$ E. Tadjik USSR; $0 = 17h 11m 54s$ (U.S.C.G.S.)
 37° N., 73° E., $0 = 17h 12m 00s$ G.M.T. (Shillong).

Dehra Dun	NE	eP	17	14	02	1000 Moderate.
		PP		14	09	
		PPP		14	17	
		P*		14	23	
		Pg		14	46	
		LQ		15	32	
		iS		15	43	
		SS		15	52	
		LR		15	57	
		SSS		16	40	

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Jan. 1954 23 Contd.	New Delhi	N	eP	17 14 18	1000	Slight.
			PPP	14 33		
		E	P*	14 37		
		N	Pg	14 58		
		NE	LQ	15 49		
			eS	16 01		
			SS	16 13		
		N	LR	16 18		
		NE	SSS	16 24		
			S*	16 35		
			Sg	17 04		
	Bombay	E	eP	17 16 20	2075	Very feeble.
		N	iPY	16 16		
		E	ePY			
		NE	PP	16 36		
			PPP	16 42		
		E	eS	19 46		
		NE	iS	19 49		
			SS	20 05		
		E	SSS	20 19		
	Chatra	Z	iP	17 15 40		Slight.
			iS	18 38		
	Poona	Z	eP	17 16 21	2180	Moderate.
		E	PP	16 38		
			eS	19 57		
			SS	20 23		
			SSS	20 35		
			LR	20 59		
			M	22 37		
	Shillong	Z	eP	17 16 34	2220	Slight.
		N	S	20 13		
			LQ	20 25		
			SSS	21 03		
			LR	21 18		
			M	22 56		
	Hyderabad	N	iP	17 16 42	2290	Slight.
		NE	iS	20 28		
		N	L	22 39		
		E	M	23 28		Per. = 12secs μ = 8.
		N	M	23 29		Per. = 12 secs μ = 9.
	Calcutta	E	i	17 20 23		Slight, near.
			i	23 12		
	Kodaikanal	E	e	17 22 05		Tremor.
23	Dehra Dun	N	e(P)	22 05 40		Slight.
24	Dehra Dun	NE	e(P)	21 01 26	920	Slight.
			iS	03 01		
	Poona	ZE	i?	21 09 06		Feeble.
25	Poona	Z	i?	02 38 11		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Jan. 1954						
25	Hyderabad	N	M	03 57 07		Per. = 15 secs μ = 4.
25	Dehra Dun	NE	e i	17 11 27 13 08		Slight, phases not identifiable.
28	Poona	Z	eP	23 41 07		Tremor.
30	Bombay	E	e e e e e e	18 42 02 42 10 52 08 52 50 53 04 53 44		Slight.
30	Poona	Z	i?	21 01 03		Tremor.
30	Bombay	E	e e e e e e e	21 48 06 49 25 51 51 52 10 52 23 22 01 13 04 51		Slight.
30	Poona	Z	i?	22 04 37		Tremor.
31	Bombay	N	e e	11 54 11 54 35		Slight.
31	Hyderabad	E NE E N	eP S L M M	11 54 49 12 04 14 19 00 24 55 25 02	8070	Slight. Per. = 14 secs μ = 5. Per. = 13 secs μ = 4.
	Bombay	E	eP e PP eS ScS PPS SSS N M	11 54 57 55 11 57 31 12 04 19 04 45 05 17 09 19 34 42	8020	Slight. Per. = 12 secs μ = 5.

Earthquake Reports
Non-Instrumental Reports

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

Place at which felt	Date	G.M.T. of earthquake h. m. s.	Duration in secs	Intensity R.F. scale	No. of shock	Remarks
Kothagudium (Deccan)	5-1-54	23-45-00	10	V	5	Sounds like blasting in the underground heard.
Shillong	6-1-54	11-00-00	8	-	1	
Gauhati	11-1-54	01-23-00	15	V	1	
Srinagar	17-1-54	08-49-00	12	IV	3	

Sarker/27.3.56

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GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

February, 1954.

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Published under the direction of
Dr. S.C. Roy, D.Sc.(Lond.), F.N.I.,
Director General of Observatories.

INSTRUMENTS AND THEIR CONSTANTS

Station	Instrument	Compt.	Period in secs	Static Magni- fication	Damping ratio	Paper speed mm/minute
Bombay	Milne-Shaw	N-S	12	350	20:1	16
	Milne-Shaw	E-W	12	350	12:1	8
	Sprengnether	E-W	To = Tg = 7			30
Chatra	Milne-Shaw	E-W	12.0	250	20:1	16
	Wood-Anderson	N-S	1.0	1000	30:1	60
	Wood-Anderson	E-W	1.0	1000	30:1	60
	Benioff short period	Z	To = 0.72 Tg = 0.45	-	Es = 2.3:1 Eg = Critical	60
Calcutta	Milne-Shaw	E-W	10	150	20:1	8
	Wood-Anderson	N-S	2	870	Critical	30
	Omori-Ewing	N-S	18	32	-	25.4
	Omori-Ewing	E-W	19	30	-	25.4
Colombo	Milne-Shaw	E-W	11.8 secs from 1.2. 54 to 15.2.54 12.0 secs from 15.2.54 to 28.2.54	250	17:1 from 1.2.54 to 15.2.54 20:1 from 15.2.54 to 28.2.54	8
Dehra D un	Wood-Anderson	N-S	1	1000	30:1	60
	Wood-Anderson	E-W	1	1000	30:1	60
	Milne-Shaw	N-S	12	250	20:1	16
Hyderabad	Milne-Shaw	E-W	12	253	20:1	8
	Milne-Shaw	N-S	12	251	20:1	8
Kodaikanal	Milne-Shaw	E-W	10.0	250	20:1	8
Madras	Sprengnether Microseismo- graph	E-W	To = Tg = 7.4 secs			30
New Delhi	Milne-Shaw	N-S	12	288	20:1	8
	Wood-Anderson	N-S	4	1070	20:1	16
	Wood-Anderson	E-W	2	1841	30:1	60
	Omori-Ewing	E-W	28	30	1	12
Poona	Sprengnether Microseismo- graph	Z	To = 1.5 Tg = 1.5			30
	Milne-Shaw	N-S	12	250	20:1	8
	Wood-Anderson	E-W	4	1100	20:1	16
Shillong	Milne-Shaw	N-S	12	250	20:1	8
	Wood-Anderson	N-S	4.0	1000	20:1	30
	Wood-Anderson	E-W	0.8	1000	h = 0.8	30
	Wood-Anderson	N-S	0.8	1000	h = 0.8	30
	Benioff seis- mograph	Z	To = 1.0 Tg = 0.18	1000	h = 0.8	60

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Feb. 1954						
01	Dehra Dun	NE	e	00 38 17		Feeble.
			i	38 35		
01	Epc:					
						24° N., 143° E.; 0 = 01h 06m 48s (U.S.C.G.S.)
						24½° N., 143½° E.; 0 = 01h 06m 53s (B.C.I.S.)
						25° N., 144° E.; 0 = 01h 06m 58s (CMO, Japan)
						22° N., 142° 5' E.; 0 = 01h 06m 56s (Shillong).
	Mag. -					7½ (Wellington), 7¼ (Pasadena), 7 (Uppsala, Kiruna, Praha, Hurbanovo), 6¾ (Strasbourg).
	Shillong	Z	eP	01 15 20	5260	Moderate.
		N	e	21 57		
			eS	22 15		
			PPS	22 27		
			SS	25 12		
			LQ	25 46		
			SSS	26 09		
			LR	27 50		
			M	31 20		
	Chatra	Z	iPY	01 15 51	5520	Slight.
		E	ePY			
			PcP	17 27		
			PP	17 50		
			?	18 15		
			PPP	18 45		
			PcS	21 11		
			iS	23 00		
			PS	23 11		
			PPS	23 23		
			ScS	25 45		
			SS	26 42		
			LQ	27 45		
			LR	30 19		
			M	34 38		
						Per. = 20 secs μ = 6.5.
	Calcutta	E	iP	01 15 56	5450	Moderate. First movement West.
			PcS	21 14		
			iS	23 01		
			ScS 1	25 48		
			LR	29 58		
			M	34 01		
			Mn ₁	37 36		
			Mn ₂	45 17		
						Per. = 20 secs μ = 105.
						Per. = 15 secs μ = 67.
	Dehra Dun	NE	eP	01 16 44	6490	Moderate.
			PcP	17 25		
			PP	18 49		
			PPP	20 25		
			PcS	21 27		
			iS	24 46		
			PS	24 56		
			PPS	25 30		
			ScS	26 20		
			SS	28 51		
			SSS	31 07		
			LQ	31 32		
			LR	34 17		
			M	39 15		
			e	16 48		
			i	17 22		
			i	17 59		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Feb. 1954						
01	New Delhi	NE	eP	01 16 50	6450	Moderate.
Contd.		E	PcP	17 57		
			PP	18 58		
		N	PPP	20 13		
		NE	iS	24 50		
		N	ScS	26 36		
			SS	28 49		
			M	38 19		
	Madras	EW	iP	01 17 05	6830	Moderate.
			PcP	17 43		
			PP	19 22		
			PPP	20 49		
			PcP	21 40		
			iS	25 15		
			PS	25 36		
			PPS	25 46		
			ScS	26 42		
			SS	29 09		
			SSS	31 45		
			LQ	32 18		
			LR	35 09		
	Hyderabad	EN	iP	01 17 05	6660	
		E	PcP	17 51		
		EN	iS	25 17		
		N	PS	25 32		
		E	SS	29 20		
			L	35 51		
			M	41 06		Per. = 21 secs μ = 30.
		N	M	41 27		Per. = 21 secs μ = 20.
	Colombo	E	P	01 17 20		
	Kodaikanal	EW	iP	01 17 28	7000	Slight.
			PP	19 46		
			PPP	21 25		
			iS	25 58		
			SS	30 13		
			LQ	33 43		
			LR	36 43		
			M	42 04		Per. = 21 secs μ = 29.
	Poona	ZE	iP	01 17 30	7000	Moderate.
		E	PcP	17 59		
			PP	19 43		
			e	21 07		
			e	25 27		
			S	26 07		
			SS	30 01		
			e	32 49		
			M	42 01		
	Bombay	NE	iP	01 17 35	7240	Great.
		E	PcP	18 05		
		N	PcP	18 13		
			i	18 29		
			i	19 05		
		NE	PP	20 05		
			PPP	21 38		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	km.
Feb. 1954							
01	Bombay	N	PcS	01	22	13	
Contd.	Contd.	NE	iS		26	18	
		E	i		26	24	
		N	i		26	31	
		NE	PS		26	41	
		N	PPS		26	47	
			ScS		27	28	
			SS		30	19	
		E	SS		30	24	
		N	SSS		33	23	
02	Epc: 80° N., 7° E. Off North East Coast of Greenland; 0 = 17h 45m 45s G.M.T. (U.S.C.G.S.) 83½° N., 3°W. 0 = 17h 45m 44s (B.C.I.S.) Mag. - 6 (Uppsala), 5½ - 6 (Kiruna).						
	Poona	E	eP(?)	17	56	29	
			e		58	49	
			e	18	00	32	
			i		06	26	
			i		09	27	
02	Hyderabad	E	M	18	28	27	Per. = 15 secs $\mu = 3.$
03	Epc: 36½° N., 70° E. Hindukush; 0 = 15h 56m 51s (U.S.C.G.S.).						
	Dehra Dun	NE	eP	15	59	04	900 Moderate.
			PP		59	12	
			PPP		59	17	
			P*		59	22	
			Pg		59	45	
			LQ	16	00	26	
			iS		00	37	
			SS		00	49	
			LR		00	50	
			SSS		01	01	
			S*		01	07	
			Sg,M		01	32	
	New Delhi	NE	iP	15	59	16	950 Slight.
			PP		59	24	
			PPP		59	31	
			iS	16	00	54	
			SS		01	05	
		N	SSS		01	16	
			i		01	35	
	Chatra	Z	eP	16	00	54	Slight, near.
			i		03	55	
	Bombay	E	eP	16	00	56	Slight.
			PP		01	11	
			PPP		01	16	
			i		01	44	
			i		02	04	
		**	e(S)		04	07	
			e		04	44	
			LR		04	52	
		**	SS		04	24	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Feb. 1954							
03	Shillong	Z	eP	16	01	43	2270 Slight.
Contd.		N	e		05	28	
	Poona	E	i	16	01	57	
			i		02	55	
			i		06	47	
	Madras	E	e	16	02	02	Slight.
			e		06	41	
03	Epc: $45\frac{1}{2}^{\circ}$ N., $148\frac{1}{2}^{\circ}$ E. Kurile Island; h = 100 km ca; 0 = 18h 23m 53s (U.S.C.G.S. and B.C.I.S.) $44\frac{1}{2}^{\circ}$ N., 149° E. h = 100 - 200 km; 0 = 18h 23m 58s (CMO, Japan).						
	Chatra	Z	iP	18	32	54	Slight, distant.
	Bombay	E	eP	18	34	43	7280 Slight.
			PcP		35	12	
			PP		37	10	
			PPP		38	46	
			PcS		39	08	
			eS		43	28	
			PS		43	48	
			PPS		44	02	
			ScS		44	18	
			i		47	08	
			SS		47	18	
			i		50	08	
			SSS		50	43	
04	Bombay	E	e	03	53	31	
			e		55	46	
			e	04	00	32	
			e		02	25	
04	Dehra Dun	NE	eP	19	06	55	300 Slight.
			P*		06	58	
			PP		07	02	
			Pg		07	03	
			LQ		07	18	
			LR		07	25	
			iS		07	29	
			S*		07	33	
			SS, Sg, M		07	39	
			SSS		07	50	
05	Epc: $4\frac{1}{2}^{\circ}$ S., 153° E. Off the Coast of New Britain; 0 = 09h 19m 42s (U.S.C.G.S.) 5° S., 153° E. 0 = 09h 19m 46s (B.C.I.S.) Mag. - 7.1 (Christchurch), $6\frac{3}{4}$ - 7 (Pasadena), $6\frac{3}{4}$ (Skalnate Pleso), 6.7 (Wellington), $6\frac{1}{2}$ - $6\frac{3}{4}$ (Kiruna), $6\frac{1}{2}$ (Praha, Berkeley).						
	Shillong	Z	iP	09	30	23	7330 Moderate.
		N	S		39	10	

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954 05 Contd.	Chatra	Z NE E	iPY ePY PcP PP PPP iS PS PPS SS SSS LQ LR M	09 31 05 31 28 33 28 35 24 40 20 40 47 40 59 44 48 47 22 49 18 52 28 58 36	7870	Slight.
	Colombo	E	(P) (S) L M	09 31 23 40 52 55 09 59 37		
	Madras	E	iP PcP PP PPP iS SKS ScS PS PPS	09 31 29 31 40 34 19 36 08 41 00 41 22 41 31 41 49 42 06	8200	Moderate.
	Hyderabad	E EN E N	iP PP iS PS SS L M M	09 31 44 34 53 41 27 41 57 46 24 56 41 10 01 23 02 03	8440	Per. = 23 secs μ = 19 Per. = 22 secs μ = 22
	Kodaikanal	EW	iP PP PPP iS SS LQ LR M?	09 31 45 34 45 36 36 41 28 46 28 52 22 56 04 10 02 34	8445	Slight. Per. = 27 secs μ = 48
	Dehra Dun	NE	eP PcP PP PPP eS and SKS ScS PS PPS SS	09 32 00 32 04 35 02 36 54 41 55 42 10 42 44 42 58 47 10	8690	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Feb. 1954						
05	Dehra Dun	NE	SSS	09 50 33		
Contd.	Contd.		LQ	53 35		
			LR	57 22		
			M	10 03 54		
	New Delhi	NE	eP	09 32 01	8690	Moderate.
		N	eS	41 56		
			SKS	42 14		
			PS	42 41		
			PPS	43 01		
			SS	47 07		
	Poona	EWZ	iP	09 32 08	8930	Moderate.
		EW	PP	35 21		
			PPP	37 06		
			eS	42 14		
			ScS	42 18		
			PS	43 03		
			SS	47 37		
			SSS	51 09		
		NS	LQ	54 13		
			LR	57 59		
			M	10 05 12		
	Bombay	N	ePY	09 32 14	9330	Great.
		E	iPY			
		NE	i	32 31		
			PP	35 26		
			PPP	37 30		
			SKS	42 23		
		N	SKS ₁	42 31		
		NE	iS	42 38		
		N	ScS	42 54		
		E	i	43 08		
		NE	PS	43 36		
			PPS	43 55		
		E	SS	48 14		
		N	SS	48 18		
			SSS	51 38		
		E	SSS	51 44		
		NE	LQ	55 --		
05	Bombay	E	i	15 31 38		Distant.
			i	37 28		
			e	40 30		
			i	56 37		
			i	16 00 32		
05	Dehra Dun	N	e	17 03 40		Feeble.
			i	03 55		
06	Bombay	E	e	04 58 09		Very feeble.
			i	58 30		
			i	05 00 10		
			e	03 50		
06	Colombo	S	M	05 03 59		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
				△			
				km.			
Feb. 1954 07	Epc: 15° S., 167½° E. New Hebrides; h = 100 km ca O = 06h 15m 21s G.M.T. (U.S.C.G.S.)						
Magnitude - 6½ - 6¾ (Berkeley), 6 (Pasadena).							
	Chatra	Z E	iP i	06 38	28 26	10	Slight, distant.
	Poona	ZE E	eP eS	06 39	28 20	55	9360 Feeble.
	Bombay	E	eP PP i N E NE E N E N E N E	06 33 33 34 35 39 39 40 40 41 41 43	29 02 02 14 09 25 51 17 19 50 55 15	02	10700 Moderate.
			SS SSS	47 50	01 33		
	Hyderabad	E	e e N E N	06 38 39 40 40	36 55 23 32 33	54	Per. = 11 secs μ = 4 Per. = 10 secs μ = 2
	Colombo	S	S M	06 45	38 01	36	
07	Dehra Dun	N	e	15	56	54	Tremor.
08	Poona	Z	eP	00	48	11	Tremor.
08	Shillong	Z	iP	05	46	01	Slight, near.
08	Shillong	Z	iP PP eSg	08 42 42	03 10 25	160	Slight.
08	Poona	Z	eP	13	01	05	Tremor.
08	Epc: 22½° S., 68° W., Chili-Bolivia Boarder; h = 150 km ca; O = 14h 19m 09s (U.S.C.G.S.)						
Damages at Calama, Chili.							
	Bombay	NE E N E N E NE E NE	ePKP1 i e PP i PPP e PS e eSS	14 39 41 41 42 45 48 52 56 15	38 05 14 47 15 07 29 28 35 00	33	15890 Distant, moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Feb. 1954								
08	Poona	Z	ePKP	14	38	34		Feeble, phases not developed.
Contd.								
	Dehra Dun	N	ePKP i	14	38	44 39 21		Slight, phases not clear.
	Chatra	Z	ePKP	14	38	54		Slight, distant.
08	Bombay	E	e e e	18	54	28 19 03 55 11 30		
08	Shillong	N	e	19	07	05		Tremor.
09	Shillong	Z	eP P* Pg eSg	11	23	42 23 46 23 50 24 26	300	Slight.
09	Epc: 53° N., 166½° W. Aleutian; h = 100 km ca; O = 17h 39m 40s (U.S.C.G.S.).							
	Chatra	Z	i	17	51	30		Slight, distant.
	Bombay	N NE N E N E	i eP eX iX e SKKS iS PS PPS	17	52	40 52 54 53 08 54 38 18 03 42 03 55 05 18 05 54	10245	Feeble.
09	Poona	Z	eP	17	53	41		Tremor.
09	Poona	Z	eP	18	12	15		Tremor.
09	Shillong	N	e M	18	19	25 25 40		Distant, slight.
09	Dehra Dun	N	e i i	19	30	58 32 27 33 37		Slight, phases not clear.
	Poona	Z	eP	19	38	08		Tremor.
09	Shillong	ZEN EN	iP iSg	23	53	41 53 49	65	Slight, felt.
10	New Delhi	NE	iP PP PPP i iS SS SSS LR M	00	35	15 35 44 35 57 36 09 39 20 40 02 40 17 41 00 42 39	2520	Moderate, direction of first motion North and East.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
<u>Feb.</u>								
<u>1954</u>								
10	Dehra Dun	NE	e i	05	26	51 28 09		Feeble, phases not clear.
	Poona	Z	e?	05	29	36		Tremor.
10	Shillong	Z	iP	17	21	23		Slight, near.
	Calcutta	N	eP LQ ? iS SS?	17	22	24 23 28 23 34 23 38 23 45	710	Slight.
	Poona	Z	eP	17	27	26		Tremor.
	Bombay	NE	e i	17	28	17 29 52		Very feeble.
11	Epc: 39½° N., 101° E. 0 = 00h 30m 13 s. Felt over the district of Lanchow (U.S.C.G.S.) 39° N., 101½° E. 0 = 00h 30m 13s (B.C.I.S.) 41° N., 100°5 E. 0 = 00h 30m 10s (Shillong). Mag. - 7½ (Hurbanovo), 7½ (Strasbourg), 7.4 - 7.5 (Shillong), 7.3 (Praha), 7½ - 7½ (Pasadena), 7½ (Skalnate Pleso), 7 - 7½ (Berkeley, Kiruna, Uppsala).							
	Shillong	ZEN NE	iP PP PPP LQ iS SS SSS M	00	33	52 34 05 34 14 36 48 37 01 37 31 37 47 38 32	1890	Moderate.
	Chatra	NEZ NE	eP PP PPP iS LQ SS SSS LR MY MY	00	34	10 34 26 34 34 37 30 37 33 37 52 38 06 38 22 39 44	2010	Great. Per. = 16 secs / u = 9
	Calcutta	E N E N E	iP eP PP iS iS LR	00	34	45 34 50 35 07 38 33 38 34 40 00	2310	Great, first movement West.
	Dehra Dun	NE	eP PP PPP PcP iS LQ SS SSS LR M	00	35	00 35 27 35 37 38 59 39 01 39 20 39 39 39 53 40 21 42 22	2490	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS	
				h.	m.	s.			
Feb. 1954									
11	Hyderabad	EN	iP	00	36	19			
Contd.		N	PP			37	55		
		EN	iS			41	08		
		E	SS			42	57		
			L			45	26		
		N	M			47	24		Per. = 15 secs $\mu = 19$
E	M			47	32		Per. = 15 secs $\mu = 28$		
	Poona	Z	iP	00	36	39	3480	Moderate.	
		EW	PP			37	38		
			PPP			37	56		
			PcP			39	25		
			eS			41	46		
			LQ			43	25		
			SSS			43	53		
			LR			44	44		
	Bombay	NE	iP	00	36	44	3550	Moderate.	
		E	PP			37	44		
		N	PPP			38	09		
		E	PPP			38	12		
		NE	iS			41	55		
		N	LQ			43	38		
			SSS			44	11		
		LR			45	07			
		M			47	--			
	Madras	EW	iP	00	36	44	3480	Great.	
			PP			37	50		
			PPP			38	07		
			iS			41	51		
	Kodaikanal	EW	iP	00	37	16	4100	Moderate.	
			PP			38	46		
			iS			43	01		
			SS			45	34		
			LR			47	22		
		M			50	25			
	Colombo	S	P	00	37	30	4210		
			S			43	22		
			L			47	17		
			M			52	02		
11	Poona	EW	M	00	47	21			
11	Shillong	Z	e	03	01	53		Slight.	
			i			02	02		
11	Shillong	Z	e	04	57	19		Slight.	
			i			57	28		
11	Shillong	Z	iP	12	18	17		Slight.	
11	Dehra Dun	NE	e	18	16	23		Slight, phases not identifiable.	
			i			17	49		
11	Poona	Z	eP	21	15	37		Tremor.	
11	Shillong	Z	e	23	40	24		Slight.	
			i			40	33		

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
<u>Feb.</u> 1954						
12	Poona	Z	eP	01 54 00		Tremor.
	Bombay	E	eP	01 54 11	3490	Slight.
			e	54 57		
			e ₁	56 14		
			e ₂	59 05		
			eS	59 19		
			i	02 01 05		
			e	04 31		
12	Epc: Off the Coast of Java; $0 = 21h 22m 30s$ (U.S.C.G.S.) $6^{\circ} S., 110\frac{1}{2}^{\circ} E.$ $0 = 21h 22m 31s$ (B.C.I.S.)					
	Chatra	Z	i	21 30 14		Slight, distant.
	New Delhi	NE	eP	21 31 10	4520	Slight.
			PP	32 48		
		N	IS	37 21		
			PPS	37 38		
			SS	40 03		
	Bombay	E	i	21 32 31		Slight.
			i	33 26		
			i(S)	36 53		
			i	39 16		
			i	39 50		
	Dehra Dun	NE	e	21 37 31		Tremor.
12	Poona	ZE	eP	22 30 43		Slight, phases not clear.
14	Bombay	E	e	04 50 03		Movement continues for some times.
			e	54 02		
			i	54 12		
	Poona	Z	i	04 50 14		Tremor.
14	Shillong	Z	Pg Sg	06 56 00 56 12	100	Slight.
14	Poona	Z	i	07 01 37		Tremor.
	Bombay	E	i	07 01 55		
			e	05 16		
			i	05 25		
14	Shillong	Z	e	09 58 19		Slight, near.
			i	59 13		
14	Shillong	Z	e	13 54 06		Slight, near.
			e	55 15		
			i	55 39		
14	Shillong	Z	e	15 40 03		Slight, near.
			e	40 56		
14	Shillong	Z	e	16 10 03		Slight, near.
			e	10 29		

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954						
14	Shillong	Z	e e	22 44 38 44 49		Slight, near.
15	Poona	Z	e	02 42 27		Tremor.
15	Bombay	E	e(P) e(PP) e	03 42 30 45 32 04 01 18		Distant shock, feeble recorded.
15	Poona	Z	e	16 00 35		Tremor.
15	Dehra Dun	NE	e e	19 08 27 09 32		Feeble.
15	New Delhi	NE	iPg iSg	19 23 40 23 45	44	Slight, direction of first movement East.
	Dehra Dun	NE	eP P* PP iS LR S* SS SSS	19 24 05 24 06 24 12 24 28 24 29 24 32 24 37 24 49	190	Slight, near.
	Shillong	Z	e	19 29 09		Feeble.
15	Bombay	E	e e e e	20 10 46 11 12 14 10 26 40		Possibly distant shock of slight intensity.
	Poona	Z	e	20 10 50		Tremor.
16	Epc:	34° N., 74 ³ / ₄ ° E.; 34° N., 74° E.;		0 = 02h 23m 32s (B.C.I.S.) 0 = 02h 23m 41s (Shillong).		
	Dehra Dun	NE	eP PP PPP Pg LQ iS LR SS S* SSS Sg	02 24 56 25 04 25 11 25 17 25 40 25 54 25 55 26 03 26 06 26 14 26 17	550	Moderate.
	New Delhi	NE E NE E NE E NE	eP PP PPP i Pg LQ iS LR SS i Sg	02 25 12 25 20 25 27 25 30 25 37 26 07 26 20 26 27 26 31 26 46 26 55	640	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954						
16	Poona	Z	eP	02 27 19		Slight.
Contd.		E	PP	27 27		
			e(S)	30 00		
			M	31 47		
	Shillong	Z	eP	02 27 40		Slight.
			eS	30 46		
	Bombay	NE	e	02 29 05		Feeble.
		E	i	30 31		
		N	e	31 28		
			i	31 37		
	Hyderabad	E	i	02 32 38		
		N	M	34 06		Per. = 9 secs μ = 2.
17	Epc: $51\frac{1}{2}^{\circ}$ N., 160° E. Off the South East Coast of Kamchatka; 0 = 01h 38m 50s (U.S.C.G.S.)					
	$52\frac{1}{2}^{\circ}$ N., 160° E. 0 = 01h 38m 52s (B.C.I.S.)					
	Magnitude - $6\frac{1}{4}$ (Kiruna, Uppsala), 6 (Roma).					
	Shillong	Z	e	01 48 42		Slight.
		N	e	56 41		
	Chatra	Z	iP	01 48 56		Slight.
		E	e	02 12 --		
	Hyderabad	E	i	01 50 13		
			i	59 31		
			e	59 45		
		N	M	02 19 15		
		E	M	19 20		
	Poona	ZE	e	01 50 27		Slight.
		E	e	59 51		
			M	02 20 54		
	Bombay	NE	i	01 50 30		Slight.
			e	50 42		
		E	e	53 23		
		NE	e	55 03		
		N	i	02 00 00		
			e	00 37		
		E	e	00 50		
		N		00 53		
			M	26 12		Per. = 15 secs μ = 3
		E	M	26 45		Per. = 15 secs μ = 3
17	Shillong	N	i	08 58 14		Tremor.
17	Epc: $51\frac{1}{2}^{\circ}$ N., 160° E., Off the South East Coast of Kamchatka; 0 = 08h 57m 54s (U.S.C.G.S.).					
	Shillong	N	eP	09 07 48		Tremor.
	Bombay	E	e(P)	09 09 39		Feeble.
			e(S)	19 09		
			PPS	20 04		
			e	23 13		
	Poona	Z	eP	09 09 35		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.			\triangle	REMARKS
				h.	m.	s.	km.	
Feb. 1954								
17	Shillong	N	i	09	30	21		Tremor.
17	Poona	Z	eP	10	37	13		Tremor.
17	Dehra Dun	N	e	11	45	07		Tremor.
	Shillong	Z	i	11	45	15		Tremor.
	Chatra	Z	i	11	45	36		Slight, distant.
	Bombay	E	iP PcP eS PS PPS LQ	11	47	19	7510	Feeble.
					47	43		
					56	17		
					56	39		
					56	53		
				12	04	39		
17	Poona	Z	eP	12	03	35		Tremor.
17	Dehra Dun	NE	e i	15	22	45		Feeble.
					22	57		
17	Shillong	Z	e	19	36	36		Tremor.
	Dehra Dun	N	e	19	38	29		Tremor.
18	Hyderabad	E EN E N	eP eS M M	00	35	31	5570	
					42	43		
					54	19		Per. = 10 secs $\mu = 2$.
					54	34		Per. = 12 secs $\mu = 2$.
	Shillong	Z	eP	00	36	37		Feeble.
	Poona	Z	eP	00	38	52		Tremor.
	Bombay	NE E NE E	eP PPP S/LQ SS SSS	00	43	16	1960	Very feeble.
					43	38		
					46	31		
					46	58		
					47	09		
	Chatra	Z	e	00	44	43		Slight, distant.
18	Poona	Z	eP	00	47	14		Distant, phases not clear.
	Bombay	NE N E	eP PP PPP eS SS SSS	00	51	39	2000	Very feeble.
					51	55		
					52	02		
					54	58		
					55	17		
					55	35		
18	Dehra Dun	N	e	04	29	45		Tremor.
18	Dehra Dun	NE	i i	06	42	26		Slight, phases not clear.
					42	35		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
<p>Feb. 1954 19</p> <p>Epc: $11\frac{1}{2}^{\circ}$ N., $87\frac{1}{2}^{\circ}$ W. Off the Coast of Nicaragua; 0 = 00h 40m 25s (U.S.C.G.S.)</p> <p>Felt at Managua. Magnitude - 7.0 (Praha), $6\frac{3}{4}$ - 7 (Pasadena), $6\frac{3}{4}$ (Roma, Strasbourg, Tacubaya).</p>							
	Chatra	Z	ePKP	01	00	01	Slight, very distant. Surface waves.
		E	e		53	--	
	Shillong	Z	ePKP	01	00	01	Slight.
		N	ePKP ₁		00	01	
			PP		03	08	
			PKS		03	48	
			PS		13	26	
			PPP ₂		15	06	
			PPS		15	15	
			SS		21	22	
			SSS		26	34	
			LQ		39	34	
			LR		46	15	
			M		58	12	
	Poona	Z	ePKP	01	00	11	Distant, phases not clear.
	Hyderabad	N	ePKP	01	00	17	Per. = 22 secs μ = 13.
		E	M	02	02	20	
	Bombay	E	1PKP ₁	01	00	21	Distant.
		N	PP		02	22	
			PKS ₂		04	16	
		E	PPP		06	53	
		N	PPP		06	56	
		E	e		10	35	
		N	e		13	17	
			PS		14	14	
			PPS		16	13	
	Colombo	E	L	02	02	22	Amp = 0.3mm.
			M		13	22	
19	Dehra Dun	NE	e	12	32	39	Slight, phases not clear.
			i		33	16	
			i		33	52	
			i		35	21	
19	Epc: 45° N., $91\frac{1}{2}^{\circ}$ E. Sinkiang China, 0 = 13h 28m 26s (USCGS) Magnitude - 6 (Kiruna, Uppsala), $5\frac{3}{4}$ (Praha).						
	Chatra	Z	e(P)	13	32	46	Slight, near.
		E	e(S)		36	09	
			e		38	56	
	New Delhi	NE	eP	13	32	59	2190 Slight.
		N	i		33	07	
			PP		33	19	
		E	PPP		33	28	
		N	i		33	34	
			1S		36	36	
			M		39	29	


DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954						
19	Shillong	Z	i	13 33 00		Slight.
Contd.		N	iS	36 38		
			LQ	39 53		
			M	42 38		
	Calcutta	E	e	13 34 34		Slight, near.
			i	37 50		
			i	41 30		
	Poona	EZ	eP	13 34 39	4110	Slight, phases
		E	e(S)	40 25		indefinite.
	Bombay	N	e	13 35 08		
			e	36 26		
		E	i	40 31		
		NE	i	41 01		
		N	e	41 24		
		E	i	41 38		
		NE	i	45 31		
	Hyderabad	N	e	13 39 29		
		E	M	45 12		Per. = 12 secs μ = 3.
		N	M	47 08		Per. = 12 secs μ = 3.
19	Hyderabad	N	M	15 01 26		Per. = 24 secs μ = 8.
19	Epc: 30° S., 178° W. Kermadec Island; 0 = 19h 07m 44s (USCGS) Felt at Raoul Island (Press report from Wellington) Mag. - 7 - 7½ (Wellington), 7 - 7¼ (Berkeley), 7.0 (Praha), 7 (Roma, Pasadena), 6¾ (Kiruna, Uppsala, Strasbourg), 7½ (Hurbanovo).					
	Shillong	Z	eP	19 21 48		Moderate.
		N	ePKP ₁	21 48		
			e	25 42		
			i	32 25		
			i	35 14		
			i	43 48		
			i	56 48		
			i	20 01 33		
			i	09 55		
			M	18 33		
	Colombo	E	(P)	19 22 01		
			(S)	32 46		
			L	55 51		
			M	20 06 06		Amp = 0.6 mm.
	Chatra	Z	eP	19 22 08		Slight, distant.
		E	e	32 41		
	Bombay	N	ePKP ₁	19 26 08		Distant.
			e	27 05		
			PP	27 21		
		E	i	27 41		
		NE	PPP	29 54		
		E	PS	37 24		
		N	e	37 25		
			e	38 48		
			M	20 18 46		Per. = 18 secs μ = 6.
		E	M	19 43		Per. = 21 secs μ = 8.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Feb. 1954 19 Contd.	Poona	E	e(P) PPP eSKS PS PPS LQ M	19 26 14 30 05 37 13 38 32 39 15 52 44 55 18	10200 Moderate. (?)
	Calcutta	E	PP SKS ₂ PS PPS SS SSP M Mn	19 26 21 32 48 35 41 36 47 41 15 41 34 20 07 53 14 21	10330 Moderate. Per. = 20 secs μ = 40.
	New Delhi	E N	ePKP e	19 26 30 37 24	Moderate.
	Hyderabad	N E N E N	PPP e e L M M	19 29 27 36 33 42 52 54 54 20 04 18 04 21	Per. = 18 secs μ = 11. Per. = 20 secs μ = 18.
19	Epc: $12\frac{1}{2}^{\circ}$ N., $87\frac{1}{2}^{\circ}$ W. Off the Coast of Nicaragua; O = 21 h 34m 41s (U.S.C.G.S.) $11\frac{1}{4}^{\circ}$ N., 88° W. O = 21h 34m 45s (B.C.I.S.) Felt at Managua and San Salvador (U.S.C.G.S.) Magnitude - 7.1 (Praha), $6\frac{3}{4}$ - 7 (Pasadena), $6\frac{1}{4}$ (Kiruna; Roma), $6\frac{1}{2}$ - $6\frac{1}{4}$ (Strasbourg), $6\frac{1}{4}$ (Uppsala, Tacubaya).				
	Shillong	Z	ePKP	21 54 10	Slight.
	Chatra	Z	ePKP	21 54 13	Slight, distant.
	Poona	Z	ePKP	21 54 20	Moderate, very distant.
	Bombay	N	e e e	21 54 24 56 50 57 42	Phases not clear.
	Calcutta	E	e	21 54 33	Slight, distant.
	Colombo	E	PKP e L M	21 54 43 22 06 21 58 51 23 08 49	Amp = 21 secs μ = 11.
	Hyderabad	E N	M M	22 50 22 50 31	Per. = 21 secs μ = 11.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954 20						Epc: 7° S., $124\frac{1}{2}^{\circ}$ E. Flores Sea; h = 600 km ca, 0 = 18h 35m 05s (U.S.C.G.S.) $6^{\circ}9$ S., $124^{\circ}5$ E., h = 600 km ca; 0 = 18h 35m 07s (B.C.I.S.) Magnitude - 7.2 (Wellington), $6\frac{3}{4}$ - 7 (Kiruna), $6\frac{3}{4}$ (Hurbanovo), $6\frac{1}{2}$ - $6\frac{3}{4}$ (Pasadena), $6\frac{1}{2}$ (Uppsala, Skalnate Pleso).
	Shillong	Z N	iP iP i iP i S isS i M	18 42 36 42 36 42 58 44 17 45 04 48 35 51 35 52 05 57 05		Moderate.
	Calcutta	E N E NE E	iP iP PP iS SS	18 42 43 42 46 44 32 48 58 51 44	4590	Moderate, first movement West and South.
	Colombo	E	iP S L M	18 42 44 47 22 50 10 52 12		Amp = 41 mm.
	Madras	E	iP PP PcP PPP ScP S SS LQ LR	18 43 01 44 39 44 47 45 13 48 30 49 17 52 16 52 50 54 51	4600	Moderate.
	Chatra	Z E	iPY ePY PP PcP PPP iS PS PPS SS LQ SSS LR M	18 43 08 44 53 45 00 45 30 49 34 49 42 49 48 52 38 53 04 53 27 55 14 59 49	4780	Moderate, probably deep focus.
	Hyderabad	EN E N E EN N E	iP i e iS iS i SS L M M	18 43 21 45 11 47 04 50 00 50 07 52 17 53 03 56 46 19 00 41 01 03	4990	Per. = 12 secs μ = 13. Per. = 11 secs μ = 9.


DATE	STATION	COMPT.	PHASE	G. M. T.	\triangle	REMARKS
				h. m. s.	km.	
Feb. 1954						
20	Dehra Dun	NE	eP	18 43 33		Moderate.
Contd.			i	44 16		
			pP	44 32		
			iS	50 56		
			e	51 26		
			e	51 56		
			e	52 24		
			e	53 05		
			e	56 12		
20	Poona	Z	iP	18 43 53	5490	Moderate.
		N	i	45 55		
			sP	46 40		
		E	PcS	48 48		
		N	eS	51 00		
		E	ScS	53 18		
			SS	54 23		
		N	LQ	55 31		
			SSS	55 39		
		E	LR	58 12		
		N	M	19 01 59		
	Bombay	NE	iP	18 44 01	6390	Moderate, and deep.
			i	44 21		
		N	PcP	45 15		
		NE	pP	45 46		
		E	PP	45 59		
			PPP	47 06		
		N	i	48 23		
			i	49 52		
		NE	iS	51 13		
			i	52 57		
		E	ScS	53 36		
		N	ScS	53 47		
		E	SSS	54 24		
		N	SSS	54 38		
			SSS(LQ)	55 56		
	New Delhi	NE	iP	18 44 05	5630	Moderate, deep focus.
		E	PcP	45 23		Direction of first
		N	pP	45 53		motion East.
			PP	46 26		
			i	48 02		
		NE	iS	51 20		
			sS	53 05		
		N	SS	54 51		
			i	55 33		
			LR	58 44		
20	Kodaikanal	E	e	19 26 30		Per. = 18 secs μ = 23.
20	Shillong	Z	iP	21 17 38		Slight.
		N	e	18 35		
20	Colombo	E	P	21 46 51		
			M	22 27 11		Amp = 0.2 mm.
	Hyderabad	E	e	21 57 13		

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954						
21	Dehra Dun	NE	eP iS S* SS SSS	06 51 41 52 06 52 08 52 16 52 23	220	Slight, other phases not clear.
21	Poona	Z	e	09 53 18		Tremor.
21	Shillong	Z	i(P) i i	11 49 09 49 26 50 48		Slight, tremor.
21	Shillong	Z	i	14 32 34		Slight.
21	Shillong	Z	iPg eSg	14 37 54 38 02	70	Slight.
21	Shillong	Z	iP i	16 20 39 20 56		Slight.
	Poona	Z	e	16 22 04		Tremor.
21	Kodaikanal	E	iP PP S SS LQ LR M	18 43 13 44 58 49 46 52 58 53 43 55 55 59 37	4890	Moderate.
21	Shillong	Z	iP	19 04 01		Slight.
21	Shillong	Z	iP	19 39 04		Slight.
21	Kodaikanal	E	e	22 22 37		Presumably after shock.
22	Dehra Dun	NE	eP PP P* Pg LQ iS SS LR SSS S* Sg/M	01 18 55 19 02 19 14 19 34 20 18 20 28 20 39 20 41 20 50 20 58 21 20	900	Moderate.
	Shillong	Z	iP	01 21 26		Slight.
22	Epc: $34\frac{1}{2}^{\circ}$ N., 141° E. Off the Coast of South Hondo, Japan; 0 = 06h 11m 26s (U.S.C.G.S.) $34^{\circ}.3$ N., $141^{\circ}.7$ E. h = 60 km ca; 0 = 06h 11m 28s . Felt (C.M.O., Japan) Magnitude - $6\frac{1}{2}$ (Roma), 6 (Kiruna, Praha).					
	Shillong	Z	eP i	06 19 28 21 19		Slight, phases not clear.
		N	e e e(L)	25 52 29 34 33 37		

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Feb. 1954						
22	Dehra Dun	N	e	06 21 34		Tremor.
Contd.	Poona	Z	e(?)	06 21 43		Tremor.
	Hyderabad	E	M	06 48 54		Per. = 24 secs u = 5.
22	Shillong	Z	iP	08 58 06		Slight.
		N	e(M)	09 26 44		
22	Shillong	Z	i	10 15 33		Slight.
	Poona	Z	e(?)	10 37 00		Tremor.
22	Shillong	Z	e	10 34 44		Slight.
			i	35 35		
		N	e	41 13		
			M	22 --		
22	Shillong	Z	iPg iSg	11 53 59 54 07	70	Slight.
22	Epc: $56\frac{1}{2}^{\circ}$ S., $26\frac{1}{2}^{\circ}$ W. Sandwich Island; 0 = 12h 03m 23s (U.S.C.G.S.) $57\frac{1}{2}^{\circ}$ S., $26\frac{1}{2}^{\circ}$ W. 0 = 12h 03m 23s (B.C.I.S.) Mag. - 6.8 (Wellington), $6\frac{1}{2}$ (Skalnate Pleso), $6\frac{1}{4}$ (Kiruna, Uppsala, Praha).					
	Poona	Z	e(P)	12 21 27		Slight, phases doubtful.
		E	e	23 10		
			e	28 19		
			e	28 22		
			e	31 34		
			M	38 26		
	Colombo	E	PP	12 21 50		Amp = 0.2 mm.
			L	48 --		
			M	57 00		
	Shillong	Z	iPKP	12 22 28		Slight.
		N	ePKP	22 29		
			e(PP)	24 23		
			e(PPP)	26 43		
			e(SKS)	29 20		
			e	31 02		
			e	34 14		
			e	40 43		
			LR	13 01 --		
			M	10 --		
	Bombay	NE	PP	12 22 40	13220 Distant.	
			SKS	28 23		
		N	e	29 25		
		NE	PS	31 57		
		N	PPS	33 12		
		E	PPS	33 15		
			e	34 22		
			SS	37 46		
			e	39 18		
		N	e	39 24		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ km.	REMARKS
				h.	m.	s.		
Feb. 1954								
22	Hyderabad	EN	PP	12	22	46	12740	
Contd.		E	SKS		28	28		
		EN	SKKS		29	32		
			PS		32	13		
			SS		38	19		
		N	M		59	33		Per. = 15 secs μ = 4.
		E	M		59	38		Per. = 15 secs μ = 5.
	Calcutta	E	e	12	23	18		Slight, distant.
			e		25	02		
			i		29	12		
			e		30	13		
			i		40	32		
22	Shillong	Z	iP	18	44	12		Slight.
22	Shillong	Z	iP	22	09	00	130	Slight.
		E	eP		09	01		
		NE	iSg		09	16		
22	Shillong	Z	eP	22	23	03		Slight.
22	Shillong	Z	e	22	57	33		Slight.
			i		58	19		
			i		58	37		
23	Shillong	Z	iPg	02	54	54	120	Slight.
			iSg		55	08		
23	Shillong	Z	eP	05	47	48		Slight.
		ZN	i		48	17		
			e		49	03		
			e		49	38		
			e		49	50		
	Poona	Z	e	05	50	41		Very feeble.
	Bombay	NE	i	05	54	44		
		N	i		56	33		
		E	iX		57	18		
		N	eX					
	Hyderabad	E	M	05	57	16		Per. = 10 secs μ = 3.
23	Epc: 27 $\frac{1}{2}$ ^o N., 91 ^o E. Bhutan; 0 = 06h 40m 30s (U.S.C.G.S.)							
	27 $\frac{3}{4}$ ^o N., 91 $\frac{1}{2}$ ^o E. 0 = 06h 40m 33s (B.C.I.S.)							
	27 ^o N., 91 ^o E. 0 = 06h 40m 41s (Shillong)							
	Mag. - 6 $\frac{1}{2}$ - 6 $\frac{1}{2}$ (Kiruna), 6 (Skalnate Pleso, Praha, Strasbourg),							
	5 $\frac{3}{4}$ (Roma), 5.6 (Shillong). Felt at Shillong, Gauhati,							
	Lakhimpur, Tezpur etc.							
	Shillong	ZN	iP	06	41	13	200	Moderate.
		N	iSg		41	40		
	Chatra	Z	iPX	06	41	39	430	Moderate.
		NE	ePX					
			iPg		41	53		
			LQ		42	12		
			iS		42	35		
			S*		42	36		
			Sg		42	47		

DATE	STATION	COMPT.	PHASE	G. M. T.	\triangle	REMARKS	
				h. m. s.	km.		
Feb. 1954							
23	Calcutta	NE	iP	06 42 07	610	Great, first movement East.	
Contd.		E	P*	42 18			
			Pg	42 27			
			iS	43 11			
			S*	43 31			
			Sg	43 46			
	Dehra Dun	NE	eP	06 43 29	1280	Moderate.	
			PP	43 37			
			PPP	43 43			
			P*	43 59			
			Pg	44 30			
			LQ	45 31			
			iS	45 39			
			SS	45 52			
			LR	46 01			
			SSS	46 04			
			S*	46 26			
			Sg/M	47 00			
	New Delhi	NE	iP	06 43 35	1380	Moderate, direction of first movement East.	
			PP	43 45			
			LQ	45 44			
			iS	45 55			
			SS	46 07			
			SSS	46 17			
			LR	46 27			
			M	47 28			
	Hyderabad	E	iP	06 44 14	1680	Per. = 15 secs μ = 100.	
		EN	iS	47 03			
		E	L	48 21			
			M	48 42			
	Madras	E	iP	06 44 45	1950	Great.	
			PP	45 02			
			PPP	45 07			
			iS	47 59			
			SS	48 18			
			SSS	48 35			
			LR	48 48			
			PcP	49 11			
			M	50 17			
			ScP	52 39			
			ScS	56 11			
	Poona	Z	iP	06 44 52	1920	Moderate.	
		E	PP	45 04			
		N	PPP	45 25			
			eS	48 04			
			SS	48 21			
		E	SSS	48 34			
		N	LR	48 50			
			M	50 19			
	Bombay	NE	iP	06 45 04	2020		Moderate.
		N	PP	45 20			
		E	PPP	45 28			
			i	46 20			

DATE	STATION	COMPT.	PHASE	G. M. T.				REMARKS
				h.	m.	s.	km.	
Feb. 1954								
23	Bombay	N	LQ	06	48	21		
Contd.	Contd.	NE	iS		48	25		
			SS		48	42		
		N	i		48	49		
		E	i(SSS)		49	34		
		N	M		50	--		
		E	M		51	--		
	Kodaikanal	E	iP	06	45	31	2540	Slight.
			PPP		46	04		
			iS		49	10		
			LQ		49	28		
			SSS		50	34		
			LR		51	07		
			M		53	10		
	Colombo	E	P	06	45	48		
			(S)		50	04		
			M		58	--		Amp = 0.6 mm.
23	Shillong	Z	iP	14	08	06	200	Slight.
			iSg		08	33		
23	Shillong	Z	e	14	57	45		Feeble.
23	Shillong	Z	eP	15	11	12	210	Feeble.
					11	40		
23	Shillong	Z	iP	16	23	20	200	Slight.
			iSg		23	46		
23	Shillong	Z	eP	16	31	45	210	Slight.
			iSg		32	14		
23	Shillong	Z	eP	18	03	39		Slight.
23	Shillong	Z	eP	18	08	37	2120	Slight.
					09	07		
23	Shillong	Z	e	18	18	38		Feeble.
23	Shillong	Z	eP	18	22	56	270	Feeble.
			eSg			37		
23	Shillong	Z	iPg	20	03	03	210	Slight.
			iSg		12	59		
23	Shillong	Z	iPg	22	52	13		Slight, local.
23	Shillong	Z	eP	23	01	17	430	Slight.
			e(S)		02	04		
			i(Sg)		02	21		
24	Dehra Dun	N	eP	00	27	16	750	Slight.
			P*		27	32		
			eS		28	33		
			LR		28	42		
			SS		28	46		
			SSS		28	55		
			S*		28	57		
			Sg/M		29	15		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Feb. 1954								
24	Shillong	Z	eP eSg	02	00	53 01 22	210	Slight.
24	Shillong	Z	e(P) iSg	02	18	55 18 24	210	Slight.
24	Shillong	Z N	iP M	06	16	40 37 --		Slight.
	Hyderabad	E N	M M	06	27	41 29 01		Per. = 12 secs $\mu = 3.$ Per. = 15 secs $\mu = 3.$
24	Shillong	Z N E Z NE	iP eP eP iSg iSg	06	44	57 44 58 45 00 45 25 45 26	200	Slight.
	Chatra	Z	eP iS	06	45	26 46 12	425	Feeble.
24	Poona	Z	eP	12	16	28		Feeble.
	Shillong	Z N	eP i	12	17	01 25 52		Slight.
24	Poona	Z	i	17	28	36		Tremor.
	Bombay	NE	e e e	17	28	36 36 28 46 --		Feeble.
	Shillong	Z N	iP i e(L)	17	30	05 39 12 50 --		Slight.
24	Poona	Z	i	17	38	04		Tremor.
	Hyderabad	E	M M	17	46	41 46 48		Per. = 15 secs $\mu = 4.$ Per. = 15 secs $\mu = 4.$
24	Shillong	Z	eP	19	45	29		Slight.
	Poona	Z	i	19	47	25		Tremor.
	Bombay	N E N	e e e	19	56	39 56 48 57 35		Feeble.
24	Shillong	Z	eP i	20	52	38 54 18		Slight.
	Poona	Z	i	20	54	48		Feeble, phases not well developed.
25	Shillong	Z	ePg i	06	28	44 28 48		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS
				h.	m.	s.		
Feb. 1954								
25	Shillong	Z	eP e	19	08	57 09 26	210	Slight.
25	Poona	Z	i	22	34	59		Tremor.
	Shillong	Z	eP	22	35	04		Slight.
25	New Delhi	NE	iPg iSg iS*	22	55	37 55 45 55 47	70	Slight, direction of first movement West.
25	Dehra Dun	NE	eP PP iS S* Sg SS SSS	22	56	01 56 08 56 24 56 25 56 29 56 32 56 44	190	Slight, near.
25	Shillong	Z N	eP e M	23	59	45 00 09 35 16 --		Slight.
26	Poona	Z	i	00	01	59		Tremor.
26	Shillong	Z	iP	03	29	51		Slight.
26	Epc: (36°5 N., 70°5 E., h = 220 km) Hindu Kush. 0 = 18h 46m 27s (B.C.I.S.) 37° N., 71½° E. 0 = 18h 46m 04s (U.S.C.G.S.) 37° N., 70° E. h = 220 km; 0 = 18h 46m 11s (Shillong). Felt at Drosh and Cherat (Press report from Quetta).							
	Dehra Dun	NE	eP PP PPP LR i iS e e M	18	48	13 48 26 48 30 49 32 49 41 49 54 50 06 50 12 50 32	850	Moderate.
	New Delhi	NE E N NE	iP PP PPP i i i S i M	18	48	26 48 41 48 45 49 13 49 16 50 06 50 18 50 37 51 03	970	Slight.
	Chatra	Z NE	i(P) i(S)	18	49	59 52 55	1670	Slight, probably deep focus.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.	km.	
Feb. 1954								
26	Bombay	NE	eP	18	50	17	1950	Deep focus.
Contd.		N	e		50	29		
		NE	i		50	51		
		E	LQ(?)		53	20		
		NE	iS		53	32		
		N	e		54	10		
	Poona	Z	iP	18	50	20	2000	Slight.
		E	PP		50	32		
			PPP		50	47		
			eS		53	39		
			LQ		53	42		
			SSS		54	22		
			M		56	07		
	Calcutta	E	eP?	18	50	47		Slight.
			PPP?		51	25		
			iS?		54	29		
			SS		55	01		
	Shillong	ZN	iP	18	50	48	2450	Moderate.
		N	pP		51	26		
			sP		51	52		
			iS		54	31		
			sS		55	24		
	Hyderabad	N	iPP	18	51	13	1900	
		E	e		54	05		
		N	S		54	23		
		E	M		56	33		Per. = 6 secs μ = 6.
		N	M		56	59		Per. = 6 secs μ = 2.
	Madras	E	eP	18	51	24		Slight.
			PP		52	08		
			PPP		52	20		
			iS		55	50		
			LQ		56	37		
			SS		56	51		
			SSS		57	08		
			LR		57	48		
			ScP		58	15		
			e	19	10	50		
	Colombo	E	eP	18	52	20		
			e		58	15		
	Kodaikanal	E	(P)	18	52	26		Slight.
			(S)		56	53		
			LQ		57	56		
			e		58	32		
			LR		59	11		
			M		01	26		
27	Dehra Dun	N	e	03	32	40		Feeble.
			i		33	08		
27	Shillong	Z	ePg	08	05	47	100	Slight.
			iSg		05	57		

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Feb. 1954						
27	Shillong	Z	e	09 13 55		Slight.
27	Shillong	Z	iPg	10 16 11		Slight, local.
27	Shillong	Z	e	11 21 18		Slight.
27	Shillong	Z	iPg iSg	13 09 25 09 35	100	Slight.
27	Dehra Dun	N	e i	15 18 49 20 27		Feeble.
27	Shillong	Z N	iP eP i	23 46 51 46 58 57 07		Slight.
	Calcutta	E	e i	23 46 56 57 27		Tremor.
28	Poona	Z	i	00 18 03		Tremor.
28	Epc: 27° N., 131° E. Riu Kiu Island; 0 = 00h 55m 22s. Felt along Southern Kiu-Shiu Japan(USCGS) 27° N., 130½° E. 0 = 00h 55m 24s (B.C.I.S.) 27¾° N., 131° E. h = 200 km; 0 = 00h 55m 35s (C.M.O. Japan). Magnitude - 5½ - 6 (Pasadena), 6 - 6½ (Uppsala), 6½ (Praha, Roma), 6½ - 6¾ (Strasbourg).					
	Shillong	Z N	iP iS LR M	01 02 16 07 44 11 13 14 17	3820	Moderate. Per. = 24 secs μ = 56.
	Chatra	Z E	iP X eP X PP PPP eS SS LQ SSS LR M	01 02 50 04 12 04 42 08 43 11 19 11 30 11 57 13 19 16 30	4220	Slight.
	Calcutta	E	eP PP iS M Mn	01 02 51 04 20 08 48 16 57 19 30	4290	Moderate. Per. = 20 secs μ = 65.
	New Delhi	N	eP iS SS LR M	01 03 56 10 45 14 04 17 40 20 50	5180	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.	\triangle	REMARKS
				h. m. s.	km.	
Feb. 1954						
28	Dehra Dun	NE	eP	01 03 56		
Contd.			PcP	05 21		
			PP	05 37		
			PPP	06 08		
			eS	10 31		
			PS	10 37		
			PPS	10 45		
			SS	13 49		
			LQ	14 39		
			SSS	14 57		
			LR	16 59		
			M	20 48		
	Colombo	E	(P)	01 04 11		
			S	12 06		
			L	21 21		
			M	27 36		Amp = 0.1 mm.
	Madras	E	P	01 04 14	5510	Moderate.
			PcP	05 24		
			PP	06 11		
			iS	11 22		
			PS	11 29		
			PPS	11 38		
	Poona	Z	iP	01 04 41	5890	Moderate.
		E	PcP	05 34		
			PP	06 46		
			PPP	07 52		
			eS	12 10		
			PS	12 15		
			PPS	12 25		
			ScS	14 07		
			SS	15 44		
			LQ	17 35		
			LR	20 12		
			M	24 45		
	Bombay	E	eP	01 04 47	5900	Phases ill defined.
			iS	12 21		
	Hyderabad	N	(S)	01 11 14		
			M	21 12		Per. = 18 secs μ = 15.
		E	M	21 14		Per. = 18 secs μ = 9.
28	Shillong	Z	i	03 45 09		Slight, local.
			i	45 29		
28	Poona	Z	i	18 57 50		Tremor.
28	Kodaikanal	E	e	23 58 12		Tremor.

-: Voluntary Observers' Report :-

The following table contains a list of earthquakes reported as felt by Voluntary Observers during February, 1954.

Station	Date	Time G.M.T. h. m. s.	Duration in secs	Intensity R.F.Scale	No. of shocks	Remarks
Tezpur	6.2.54	16 42 00	3	IV-V	1	-
Shillong	10.2.54	00 00 00	About 20	IV	1	-
Derjeeling	10.2.54	05 20 00	5	V	2	-
Srinagar	16.2.54	02 25 00	3	IV-V	1	-
Shillong	22.2.54	22 20 00	20	IV	1	-
Twang (N.E.F.A.)	23.2.54	06 30 00	60	VII	-	Many building at Monastery near and in surrounding villages demolished.
Shillong	23.2.54	06 40 00	20	IV	1	-
Tezpur	23.2.54	06 40 00	6	VII	2	-
Gauhati	23.2.54	06 42 00	30	V	1	-
North Lakhimpur	23.2.54	06 45 00	30	V	3	-
Srinagar	26.2.54	18 48 00	15	VII	5	-

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GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

MAY, 1954



PUBLISHED UNDER THE DIRECTION OF
SHRI S. BASU, M.Sc., F.N.I.,
DIRECTOR GENERAL OF OBSERVATORIES.

INSTRUMENTS AND THEIR CONSTANTS

Station	Instrument	Compt.	Period in Sec.	Static Magnifi- cation	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N-S	12.0	350	Unreliable	16.0
	Milne-Shaw	E-W	12.0	350	9 : 1	8.0
	Sprengnether	E-W	7.0	—	—	30.0
Calcutta	Milne-Shaw	E-W	10.0	150	20 : 1	8.0
	Wood-Anderson	N-S	2.0	870	Critical	30.0
	Omori-Ewing	N-S	18.0	32	—	25.4
	Omori-Ewing	E-W	19.0	30	—	25.4
Chatra	Wood-Anderson	N-S	1.0	1000	30 : 1	60.0
	Wood-Anderson	E-W	1.0	1000	40 : 1	60.0
	Benioff	Z	$T_0=0.72$ $T_g=0.45$	—	—	60.0
Colombo	Milne-Shaw	E-W	12.0	250	18 : 1	—
Dehra Dun	Milne-Shaw	N-S	12.0	250	20 : 1	16.0
	Wood-Anderson	E-W	1.0	1000	30 : 1	60.0
	Wood-Anderson	N-S	1.0	1000	30 : 1	60.0
Hyderabad	Milne-Shaw	E-W	12.0	253	20 : 1	8.0
	Milne-Shaw	N-S	12.0	251	20 : 1	8.0
Kodaikanal	Milne-Shaw	E-W	10.0	250	20 : 1	8.0
Madras	Sprengnether	E-W	7.2	—	Critically damped	30.0
New Delhi	Milne-Shaw	N-S	12.0	288	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1070	20 : 1	16.0
	Wood-Anderson	E-W	2.0	1841	30 : 1	60.0
	Omori-Ewing	E-W	28	30	1	12.0
Poona	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	E-W	4.0	1100	20 : 1	16.0
	Sprengnether	Z	$T_0=T_g=1.5$	—	—	30.0
Shillong	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1000	20 : 1	30.0
	Wood-Anderson	N-S	0.8	800	20 : 1	30.0
	Wood-Anderson	E-W	0.8	800	20 : 1	30.0
	Sprengnether	E-W	$T_0=T_g=7.5$	—	—	30.0
	Benioff	Z	$T_0=1.0$ $T_g=0.18$	—	—	60.0

SEISMOLOGICAL BULLETIN

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
				h. m. s.	km.	
May 1954						
01	Chatra	Z	i	18 13 03		Slight, distant.
	Dehra Dun	N	c	18 14 01		Tremor.
02	Shillong	Z	eP	16 42 12		Tremor.
02	Epc: 4°N., 94½° E. Off the NW Coast of Sumatra; 0=17h. 48m. 02s. (U.S.C.G.S.) 4°0 N., 95½ E. 0=17h. 48m. 03s. (B.C.I.S.) 5° N., 96° E. 0=17h. 48m. 06s. (Shillong) Magnitude — 6½ (Kiruna).					
	Colombo	E	P L M	17 51 43 57 49 01 36		Amp=1.0 mm.
	Madras	E	iP PP PPP iS SS SSS LR PcP S:P	17 52 08 52 21 52 28 55 16 55 35 55 55 56 27 56 50 18 00 26	1880	Moderate.
	Calcutta	NE E NE	eP e i	17 52 45 56 08 56 23		Moderate.
	Kodaikanal	E	iP PPP iS SS SSS LR M	17 52 48 53 24 56 15 56 39 56 54 57 12 58 39	2090	Slight. Per.=15 secs μ=13.
	Shillong	Z N	iP eP PP PPP eS SS SSS LR M PcS	17 52 49 52 49 53 04 53 16 56 32 56 49 57 07 57 39 59 01 18 00 19	3100	Moderate.
	Hyderabad	EN E EN E N	iP PP iS SS L M M	17 52 51 53 15 56 39 57 09 58 57 18 00 30 01 39	2310	Per.=12 secs μ=7. Per.=15 secs μ=9.
	Chatra	Z	eP PP PPP PcP eS LQ SS SSS LR M	17 53 15 53 53 54 01 56 51 57 33 58 11 58 24 58 47 59 13 18 01 04	2710	Slight.

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
				h. m. s.	km.	
May 1954						
02 Contd.	Poona	Z EN	iP PP PPP PcP	17 53 34 54 16 54 33 56 44	2860	Moderate.
		NS	eS LQ SSS	58 01 58 50 59 29		
		EW	LR M	18 00 17 02 27		
	Bombay	NE N	eP PP PPP	17 53 44 54 25 54 42	2920	Slight.
		NE N NE E	eS e LQ LR	56 57 58 16 58 50 59 15 18 00 37		
	New Delhi	NE	eP PP iS LQ	17 54 13 55 08 59 03 18 09 03		Moderate.
		N NE	SS SSS LR	00 33 00 53 01 35		
***	02 Shillong	Z	eP	18 36 56		Tremor.
	Poona	Z	eP	18 38 43		Tremor.
02	Shillong	Z	iP	21 48 11		Slight, local.
02	Shillong	Z	iP	21 29 03		Tremor.
02	Shillong	Z	eP	22 41 31		Tremor.
02	Shillong	Z	eP	23 26 11		Tremor.
03	Shillong	Z	e	05 34 59		Tremor.
03	Shillong	Z	e	06 46 14 47 59		Tremor.
03	Shillong	Z	eP	10 31 54		Slight, local.
03	Shillong	Z	e	10 31 54 32 31		Slight, local.
03	Shillong	Z	e	11 13 17		Tremor.
	Poona	Z	e?	11 15 05		Tremor.
03	Dehra Dun	NE N	eP PP PPP Pg iS SS S* SSS Sg	11 16 03 16 09 16 16 16 23 17 02 17 12 17 17 17 24 17 30	560	Slight.
***	02 Dehra Dun	NE	eP	17 54 22		Moderate.
03	New Delhi	NE	iP PP P* iS	11 16 35 16 32 16 41 17 40	720	Slight, direction of the first motion South and East.

Date	Station	Compt.	Phase	G.M.T.			△ km.	Remarks
				h.	m.	s.		
May 1954 03 Contd.	Bombay	NE	iP	15	41	18	8170	Slight.
		N	PcP		41	30		
		NE	PPS		51	36		
		N	SS		55	37		
			SSS		58	41		
			M	16	16	45		
		M		17	19			
	Kodaikanal	E	iP	15	41	36		Slight.
			PP		44	27		
			PPP		46	21		
			iS		51	27		
			SS		56	27		
			SSS		59	45		
			LQ	16	02	05		
			LR		06	00		
			M		12	30		
	Colombo	E	eP	15	41	38		Amp.=0.2 mm. Amp.=0.4 mm.
			S		51	40		
			L	16	08	00		
			M1		14	28		
			M2		28	03		
03	Kodaikanal	E	e?	17	19	46		
03	Shillong	Z	eP	17	32	48		Tremor.
03	Shillong	Z	i(Pg?)	18	15	11		Local.
03	Epc: 31°N., 98½°E Si-Kang China; 0=18h 20m 26s (U.S.C.G.S. and B.C.I.S) 32°N., 98° E. 0=18h 20m 36s (Shillong)							
	Shillong	Z	iP	18	22	25	840	Slight.
		NE	Pg		23	02		
			LQ		23	39		
			iS		23	52		
			LR(?)		24	01		
		E	SSS		24	15		
		NE	S*		24	19		
			Sg		24	39		
		Chatra	Z	iP	18	23		
			PP		23	14		
			PPP		23	19		
			P*		23	30		
			Pg		23	57		
			LQ		24	51		
			iS		24	59		
			?		25	07		
			SS		25	12		
			SSS	18	25	23		
			S*		25	39		
			M		26	12		
	Calcutta	N	eP	18	23	30	1290	Slight.
			iS		25	42		
		E	iS		25	40		
		N	LR		26	06		
	Dehra Dun	NE	eP	18	24	33	4550	Moderate.
		N	PP		26	12		
			PPP		26	35		
			iS		30	45		
			PS		30	48		
			PPS		31	00		
			SS		33	26		
			SSS		34	10		
			ScS		34	29		

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
May				h. m. s.	km.	
1954						
03	Dehra Dun		LR	35 30		
Contd.			M	38 40		
	New Delhi	NE	iP	18 24 46	1950	Moderate. Direction of first motion towards North and East.
		N	PP	25 02		
		NE	PPP	25 12		
		N	iS	28 01		
		NE	i	28 16		
			SS	28 23		
		N	SSS	28 36		
		NE	LR	28 54		
		N	M	30 20		
	Hyderabad	E	eP	18 25 37	2460	
			S	29 38		
			M	32 34		Per. = 12 secs $\mu=7$.
	Poona	Z	iP	18 26 00		Slight shock. phases no clear.
		E	iS	30 35		
	Madras	E	P	18 26 00	2680	Moderate shock.
			PP	26 35		
			PPP	26 45		
			iS	30 16		
			LQ	30 58		
			SS	31 13		
			ScP	33 01		
	Bombay	E	e	18 31 00		Feeble.
		N	e	31 07		
			e	32 12		
		E	e	32 38		
		NE	M	34 14		
	Kodaikanal	E	e	18 31 06		Phases not clear.
	Colombo	E	eP	18 31 28		
			L	45 00		
			M	48 03		Amp=0.1 mm.
03	Shillong	Z	i(Pg)	23 23 32		Local.
04	Shillong	Z	iP	01 39 16		Tremor.
	Poona	Z	e?	01 41 05		
04	Shillong	Z	eP	03 52 19	700	Slight.
			PP	52 25		
			Pg	52 44		
			eS	53 31		
			SS	53 41		
		ZE	S*	53 52		
			Sg	54 09		
04	Bombay	N	e	04 04 00		Feeble.
		E	e	05 33		
			e	11 27		
04	Shillong	Z	e	06 32 50		Slight, near.
			i	32 56		
04	Bombay	E	e	07 41 23		Mainly surface waves.
			e	42 49		
04	Shillong	Z	e	08 58 14		Slight, near.
04	Shillong	Z	e	09 34 26		Slight, local.
			e	35 15		
04	Shillong	Z	e	11 51 16		Tremor.
			e	51 44		

Date	Station	Compt.	Phase	G. M. T.	△	Remarks
May				h. m. s.	km.	
1954						
04	Shillong	ZNE	iPg	12 08 50	110	Slight.
			iSg	09 04		
04	Shillong	Z	e	16 53 20		Tremor.
04	Shillong	Z	i	16 55 26		Tremor.
04	Shillong	Z	i	17 44 50		Tremor.
	Poona	Z	eP	17 46 38		Tremor.
04	Shillong	Z	i	17 47 15	170	Slight.
			iSg	47 49		
04	Shillong	N	e(M?)	18 05 56		Slight, distant.
04	Shillong	Z	e	18 12 02		Tremor.
04	Shillong	Z	iP	18 21 14		Slight, near.
	Bombay	E	e(M)	18 22 07		Very feeble shock.
	Poona	Z	eP	18 22 50		Tremor.
04	Shillong	Z	e	20 43 04		Tremor.
04	Shillong	Z	e	20 56 10		Tremor.
04	Shillong	Z	e	23 54 53		Tremor.
05	Shillong	Z	i	00 40 11		Tremor.
05	Shillong	Z	e	01 04 48		Slight, near.
			e	05 16		
05	Shillong	Z	i	03 23 00		Slight, near.
	Poona	Z	e	03 24 48		
05	Shillong	Z	e	06 02 35		Slight, near.
			e	03 05		
05	Shillong	Z	e	09 05 24		Slight near.
			e	06 01		
05	Shillong	Z	iP	09 23 24	220	Slight.
		EN	Pg	23 29		
			S	23 47		
			S*	23 51		
			iSg	23 55		
05	Shillong	Z	i	11 44 23		Tremor.
	Poona	Z	iP	11 46 43		Tremor.
05	Shillong	Z	i	11 59 55		Tremor.
05	Poona	Z	i	13 29 12		Tremor.
	Shillong	N	e	13 30 26		Slight, distant.
			e	37 47		
			e	14 12 34		
05	Madras	E	L?	14 14 59		Slight shock, phases not clear.
	Kodaikanal	E	M	14 17 34		Tremor.
	Colombo	E		14 18 —		Tremor.
	Hyderabad	N	M	14 28 53		Per. = 18 sec. $\mu=12$.

Date	Station	Compt.	Phase	G.M.T.			km.	
				h.	m.	s.		
May								
1954								
05	Shillong	Z	i	17	24	37		Tremor.
	Poona	Z	eP	17	24	37		Tremor.
05	Shillong	N	e e e	17	29 32 40	47 27 55		Slight, distant.
05	Dehra Dun	N	e	19	30	55		Tremor.
05	Dehra Dun	NE	eP i(S) e	19	57 59 20	32 06 25	910	Slight, phases not clear.
	New Delhi	NE E NE N NE	eP P* LQ iS SS S* Sg	19	57 58 59 59 59 59 20	40 01 09 19 30 50 12	960	Slight.
	Shillong	Z	iP eS	19 20	59 03	57 42	2270	Slight.
05	Dehra Dun	NE	eP iS	21	38 40	17 27	1280	Slight, other phases not clear.
	Shillong		e	21	40	04		Tremor.
06	Shillong	Z	e e	00	14 15	36 03		Slight, near.
06	Dehra Dun	N	e e i	00	46 46 47	19 58 11		Slight, phases not clear.
	Shillong	Z	e i	00	47 47	42 48		
06	Epc : 50° N., 155½° E. Off the South Coast of Kamchatka ; h=100 km. Ca ; 0=09h 02m 14s (U.S.C.G.S.)							
	Shillong	ZN	iP PcP eS i S S SS	09	11 12 18 19 21 22	32 46 51 52 02 03	5700	Slight, deep.
	Chatra	Z	eP	09	11	48		Slight, distant.
	Hyderabad	EN E N E	eP S ScS SS L M M	09	13 21 22 26 34 40 40	09 58 56 55 54 24 39	7360	Slight. Per.=8 secs $\mu=3$. Per.=8 secs $\mu=2$.
	Poona	Z NS	iP PcP eS PPS M	09	13 13 22 23 40	24 45 27 09 52	7630	Moderate.
	Bombay	NE E NE	eP eS PPS	09	13 22 23	26 31 15	7670	Feeble, deep.

Date	Station	Compt.	Phase	G.	M	T.	Δ	REMARKS
May				h.	m.	s.	km.	
1954								
06	Shillong	Z	e	09	15	37		Tremor.
06	Shillong	Z	e	09	20	59		Tremor.
06	Shillong	Z	e	11	46	34		Slight, near.
			e		47	09		
06	Shillong	Z	e	17	40	24		Slight, near.
			e		40	57		
			e		41	22		
06	Shillong	Z	iP	23	53	52		Slight, near.
07	Shillong	Z	iP	00	30	12		Tremor.
07	Shillong	Z	iP	04	44	32		Tremor.
07	Shillong	Z	iP	07	41	09		Tremor.
07	Hyderabad	E	M	11	12	36		Per.=8 secs $\mu=3$.
07	Dehra Dun	NE	e	22	00	57		Feeble, phases not clear.
			e		01	01		
			i		01	12		
			i		01	20		
08	Shillong	Z	iP	04	20	24	440	Slight.
			P*/PP		20	28		
			PPP		20	37		
			iS		21	12		
			S*/SS		21	23		
08	Shillong	Z	e	06	24	02		Tremor.
			e		24	57		
08	Shillong	Z	e	07	04	08		Tremor.
			e		04	39		
08	Shillong	Z	iP	11	17	58		Slight.
08	Shillong	Z	eP	14	12	32		Slight, distant.
08	Shillong	Z	eP	14	28	24		Slight.
08	Shillong	Z	eP	15	08	33		Slight.
08	Shillong	Z	e	20	24	07		Slight, distant.
		N	e		24	15		
			e		31	56		
			e		39	00		
08	Poona	ZEN	iP	20	25	34		Feeble shock, other phases doubtful.
	Bombay	E	eP	20	25	42	6610	Slight.
			eS		33	51		
	Colombo	E		20	27	—		Tremor.
	Hyderabad	E	M	20	36	40		Per=9 secs $\mu=2$.
08	Shillong	Z	i	21	35	27		Slight, local.
08	Shillong	Z	i	22	30	44		Slight, local.
09	Shillong	ZNE NE	iP	00	02	50	210	Slight.
			P*		02	52		
			Pg		02	55		
			S*		03	17		
			iSg		03	19		
			SS		03	25		

Date	Station	Compt.	Phase	G. M. T.	△	Remarks
				h. m. s.	km.	
May 1954						
09	Shillong		SSS	03 39		
Contd.	Calcutta	N	eP iS SS	00 04 07 05 26 05 38	750	Slight.
	Dehra Dun	N	e	00 06 56		Tremor.
	Poona	Z	e	00 11 56		
09	Shillong	Z	iP	20 50 30		Tremor.
09	Shillong	Z	ep	23 21 35		Tremor.
10	Epc: New Britain Region; 0=06h 25.5m. (B.C.I.S.)					
	Shillong	Z	iP	06 36 06		Tremor.
	Poona	Z	e?	06 37 55		
10	Shillong	Z	iP	06 43 26		Tremor
	Poona	Z	e?	06 45 04		
10	Epc: Off the East Coast of Mindanao, Philippines; 0=06h 41.5 m (B.C.I.S.)					
	Shillong	Z	iP	06 48 40		Tremor
	Bombay	E	eP eS PS SS	06 48 48 57 20 57 40 07 01 22	7035	Slight.
	Madras	E	iP PeP PP PPP iS PS PPS LQ SSS LR	06 49 29 50 49 51 17 52 09 56 15 56 26 56 35 07 00 50 02 00 03 16	5121	Slight.
10	Hyderabad	E	P S M	06 49 46 56 48 07 08 39	5410	Per.=21 secs $\mu=8$.
10	Poona	Z	iP	06 50 02		Very feeble shock, phases not developed.
10	Shillong	Z	iP	08 04 58		Tremor.
10	Shillong	Z	iP	18 46 46		Local, tremor.
10	Shillong	Z	iP	19 00 37		Tremor.
12	Shillong	Z	iP	01 45 12		Local, tremor.
12	Shillong	Z	iP	04 42 36		Tremor.
12	Bombay Poona	E ZE	i eP	04 52 03 04 52 48		Feeble, local tremor. Tremor.
12	Epc: Off the East Coast of Mindanao, Philippines; 0=06h 22m. 14s. (U.S.C.G.S.) 61°N., 123½° E. 0=06h 22m 15s (B.C.I.S.) S Felt at Davao (Press report from Manila).					

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
				h. m. s.	km.	
May 1954						
12	Shillong	Z	iP	06 29 41		Tremor.
	Dehra Dun	NE	e	06 31 29		Feeble, phases not clear.
	Poona	ZE	eP	06 31 33		Tremor.
12	Bombay	E	i	09 49 00		Feeble, local tremor.
	Poona	ZE	iP	09 49 36		Tremor.
12	New Delhi	E NE	eP PPP Pg eS LR S* Sg	18 38 33 38 48 38 52 39 24 39 26 39 37 39 50	480	Slight.
	Dehra Dun	NE	e e	18 39 56 40 30		Feeble, phases not clear.
	Poona	Z E	e? i	18 41 58 42 28		Very feeble shock, phases not clear.
	Bombay	E	e e	18 42 10 42 25		Minor local tremor.
13	Epc: 17° N., 95½° W.; h=100 km ca, 0=14h 46m 38s (U.S.C.G.S.) 16°5' N., 95°9' W.; h= 80 km, 0=14h 46m 36s (B.C.I.S.) 16°46' N., 95°54' W. h= 80 km 0=14h 46m 42s (Tacubaya) Felt over Central and SE Mexico (Press report). Magnitude -6½ (Berkeley, Kiruna, Uppsala, Praha), 6½ (Tacubaya)					
	Chatra	Z	e	15 05 43		Slight, distant.
	Shillong	Z N	iPKP PP PKS ₁ PKS ₂ PS PPS SKKS ₁ SS SSP SSS LR M	15 05 55 08 41 09 29 09 47 19 14 20 48 22 02 26 48 27 25 31 39 50 47 16 02 13	15410	Slight, distant.
	Bombay	N N E N	ePKP e e e	15 06 03 10 05 10 14 28 16		Distant shock, feebly recorded (Microseisms present).
	Poona	Z	ePKP	15 06 05		Probably very distant, slight earthquake phases not clear.
	Hyderabad	N E	ePKP M	15 06 08 16 02 06 02 09		Slight. Per.=24 secs $\mu=11$. Per.=24 secs $\mu=8$.
	Dehra Dhun	N	e e	15 06 15 09 01		Slight, phases not clear.
	Kodaikanal	E	e	15 06 23		Long distance tremor.
	Madras	E	iPKP PP	15 06 25 10 52		Slight, other phases not clear.
	Colombo	E	e M	15 15 49 16 17 30		Amp=0.2 mm.



Date Station Compt. Phase G. M. T. Δ

h. m. s. km.

Date	Station	Compt.	Phase	G.	M.	T.	Δ	
May 1954								
13	Shillong	Z	iP	16	33	40		Local, tremor.
13	Dehra Dun	NE	e	17	42	56		Feeble, phases not clear.
13	Shillong	Z	iP	19	57	55		Very near.
13	Shillong	Z	iP	21	04	45		Tremor.
13	Shillong	Z	iP	21	55	55		Tremor.
14	Shillong	Z	eP	00	36	00		Tremor.
14	Dehra Dun	NE	e i	03	15 17	26 43		Feeble, phases not clear.
14	New Delhi	N NE	eP iS SS SSS	04	42 44 44 44	25 06 19 31	980	Slight.
		N	S* Sg		44 45	38 01		
	Shillong	Z	iP	04	44	44		Tremor.
	Poona	Z	eP	04	47	44		Tremor.
14	Shillong	Z	iP	07	12	12		Tremor.
14	Shillong	Z	iP	22	11	19		Tremor.

14 Epc: 36°N., 137°E. Hondo Japan; H=250 km. O=22h 39m 25s (U.S.C.G.S.)
 36°0 N., 137°4 E. h=230-240 km; O=22h 39m 27s (CMO, Japan, B.C.I.S.)
 36°N., 138°E. h=250 km. O=22h 39m 27s (Shillong).
 Magnitude—7 (Pasadena), 6 $\frac{3}{4}$ (Kiruna).

	Shillong	Z N	iP pP PP PcP iS P S eS SS LQ SSS LR	22	46 47 48 48 52 52 53 54 54 55 56	37 30 08 56 25 41 56 33 48 23 34	4520	Moderate.
	Dehra Dun	NE N	eP PcP PP PPP PcS iS PPS ScS LQ SSS LR M	22	47 49 49 50 53 54 54 57 58 58 00 04	57 24 38 18 20 39 49 43 44 55 44 40	5060	Moderate
	New Delhi	NE	iP PP PcP iS	22	48 48 49 54	02 55 33 53	5210	Moderate
14	New Delhi	N	SS i SSS i	22	56 57 59 23	30 21 34 28		

Date	Station	Compt.	Phase	G.M.T			△	
				h.	m.	s.		
May								
1954								
14	Calcutta	E	iP	22	48	05	5250	Moderate. First movement
Contd.		N	iP		48	10		West
		E	P S		53	29		
		N	PcS		53	31		
		E	iS		54	59		
		N	S		55	05		
		E	SS		58	20		
	Madras	E	P	22	48	40		Moderate.
			pP		49	34		
			S		56	11		
			Ss		58	00		
	Poona	Z	eP	22	48	56	6110	Moderate.
		E	i		49	49		
			PP		50	57		
			PPP		52	15		
			PcS		53	31		
			eS		56	37		
			PS		56	45		
			S.S?		58	13		
			LQ	23	02	57		
			LR		05	30		
			M		10	17		
	Kodaikanal	E	iP	22	49	07		Slight.
			PP		51	22		
			PPP		52	49		
			S		56	55		
			SS	23	00	55		
			LQ		03	25		
			LR		06	37		
			M		11	23		
	Hyderabad	E	iP	22	49	24	4840	Moderate.
			PP		51	24		
			iS		55	54		
			L	23	01	29		
			M		06	18		Per.=18 secs $\mu=9$.
		N	M		06	22		Per.=18 secs $\mu=10$.
	Bombay	NE	iP	22	49	54	6980	Moderate.
			PcP		50	17		
		E	PP		52	04		
			i		52	27		
			i		54	37		
		N	e		56	44		
		E	i		56	47		
		NE	iS		58	23		
		E	PS		58	47		
			M	23	16	—		Suppressed.
	Colombo	E	iP	22	49	59		
			iS		56	57		
			M	23	07	55		Amp=0.1 mm.
15	Madras	E	eP?	05	52	21		Slight, phases not clear.
	Poona	Z	eP	05	53	48		Tremor.
15	Poona	Z	eP	05	57	08		Tremor.
	Dehra Dun	NE	e	05	58	29		Feeble, phases not clear.
			i		58	36		
15	Chatra	Z	i	22	47	05		Slight, distant.
16	Epc : $36\frac{1}{2}^{\circ}$ N., $70\frac{1}{2}^{\circ}$ E. Hindukush ; h=200 km ca ; 0=20h 10m 42s (U.S.C.G.S.)							
	36.°5 N., 70.°5 E. h=220 km ; 0=20h 10m 43s (B.C.I.S.)							
	36° N., 70.°5 E. h=200 km ; 0=20h 10m 40s (Shillong)							
	Felt : Drosh, Cherat, Chakdara and Risalpur (Press report from Quetta).							

Date	Station	Compt.	Phase	G.M.T.			△	Remarks	
				h.	m.	s.			
May 1954 16 Contd.	Dehra Dun	NE N	eP PP PPP P* LQ iS SS LR SSS S* S ₂ , M	20	12	40	890	Moderate.	
	New Delhi	NE N	iP PP PPP P* Pg iS SS SSS S*	20	12	51	960	Slight.	
	Chatra	Z	iP PP PPP LQ iS SS LR M	20	14	26	1760	Slight.	
	Bombay	NE N NE E	eP e i eS i	20	14	37	1960	Slight, deep focus.	
	Poona	Z E	eP eS LR M	20	14	41	1935	Slight.	
	Shillong	Z N	iP iS	20	15	09	2280	Slight.	
	Calcutta	E	eP iS	20	15	12	2220		
	Hyderabad	E	iP iS M	20	15	54	1620	Per.=6 secs $\mu=2$.	
	Kodaikanal	E	e?	20	19	55		Tremor.	
	Madras	E	i	20	19	58		Moderate, phases not clear.	
17	Dehra Dun	NE	e	19	30	40		Tremor.	
17	Shillong	Z	i	21	09	21		Slight.	
17	Poona	Z	eP	21	14	35		Tremor.	
17	Shillong	Z	i	22	01	58		Tremor.	
17	Shillong	Z	i	23	03	01		Tremor.	
19				Epc: 31° N., 92° E. Tibet; 0=04h 21.0 m (B.C.I.S.)					
	Shillong	N	i	04	24	29		Slight.	
	Poona	Z	i	04	26	22		Tremor.	

Date	Station	Compt.	Phase	G.M.T.			△	Remarks
				h.	m.	s.		
May 1956	Shillong	Z	i	06	38	32		Slight.
19	Shillong	Z	iPg	15	40	04		Slight, local.
19	Shillong	Z	e	21	01	30		Tremor.
19	Shillong	Z N	i e(L)	23	18	05		Slight.
	Poona	Z	i	23	19	19		Tremor.
20	Shillong	Z	i	02	08	08		Tremor.
20	Shillong	Z	e(?) i	04	26	42		Slight.
20	Dehra Dun	NE	e i	09	41	39		Slight, phases not clear.
20	Shillong	Z	i i	17	15	49		Slight, local.
20	Shillong	Z	i i i	20	28	06		Slight, near.
21	Shillong	Z	e	04	06	20		Slight, near.
21	Poona	N	i? i i i	04	17	34		Feeble, phases not clear.
21	Shillong	Z	iPg	04	31	41		Slight, near.
21	Dehra Dun	NE	e	05	17	40		Tremor.
21	Shillong	Z N	i e e e e	05	17	52		Slight.
21	Shillong	Z N E	iPg iPg iPg	12	26	35		Slight., felt(?)
21	Shillong	Z	i	12	56	17		Slight.
21	Shillong	Z	i	16	25	27		Slight.
	Hyderabad	N	M	17	10	33		Per.=14 secs $\mu=4$.
	Poona	N	e	17	12	38		
21	Shillong	Z	i e(M)	17	52	02		Slight.
21	Shillong	Z	e	21	04	34		Slight, local.
22	Shillong	Z	i i i	04	19	44		Slight, near.
22	New Delhi	E	eP LQ SS S* Sg	08	03	49	640	Slight.
		NE	S*	05	08			
		N	Sg	05	16			
				05	33			

Date	Station	Compt.	Phase	G.M.T.			△	km.
May				h.	m.	s.		
1954								
22	Dehra Dun	NE	e	08	04	17		Slight, phases not clear.
Contd.			i		05	55		
			i		06	17		
	Poona	ZE	eP	08	08	06		Tremor,
22	Shillong	Z	i	11	41	49		Slight.
22	Dehra Dun	NE	i	11	45	25		Feeble, phases not clear.
22	Shillong	Z	i	11	47	29		Slight.
22	Shillong	Z	e	12	12	39		Slight.
22	Shillong	Z	iPg	14	39	59	80	Slight (Felt ?).
		N	iSg		40	08		
23	Shillong	Z	e	04	02	11		Slight, near.
			e		02	26		
23	Epc : 46° N., 149½° E. Kurile Island ; h=150 km ca. 0=04h 10m 27s (U.S.C.G.S.)							
	45° N., 150° E., h=160 km ; 0=04h 10m 30s—Felt (C.M.O. Japan).							
	Shillong	Z	iP	04	19	10		Slight.
			i		19	20		
23	Chatra	Z	iP	04	19	29		Slight, probably deep focus.
	Dehra Dun	NE	eP	04	19	59		Tremor.
	Poona	ZE	eP	04	21	09		Tremor.
23	Epc : 3° N., 124° E. Celebes Sea ; 0=06h 56m 42s (U.S.C.G.S.)							
	2° N., 124° E. 0=06h 56m 39s (Shillong).							
	Shillong	Z	iP	07	04	06	4230	Slight.
		N	eP		04	06		
			PP		05	35		
			iS		10	00		
	Chatra	Z	eP	07	04	41		Slight, distant.
	Madras	E	iP	07	05	00	4910	Moderate.
			PP		06	44		
			PPP		07	17		
			S P		10	20		
			eS		11	34		
			PPS		11	46		
			SS		14	46		
			LQ		15	33		
			SSS		15	47		
	Hyderabad	E	iP	07	05	16	5150	
			PP		07	06		
		EN	iS		12	04		
		E	SS		15	45		
			L		18	39		
			M		21	37		Per.=18 sec μ=5.
		N	M		22	48		Per.=18 secs μ=5.
	Kodaikanal		eP	07	05	17		Tremor.
	Poona	ZE	iP	07	05	50	5720	Moderate.
		E	PP		07	44		
			PPP		08	51		
			eS		13	10		
			FS		13	18		
			PIS		13	23		
			LR		20	34		
			M		25	05		

Date	Station	Compt.	Phase	G.M.T.			△ km.	Remarks
				h.	m.	s.		
May 1954								
23 Contd.	Bombay	E	eP	07	06	00		Feeble.
		N	iS		13	24		
			e		13	29		
	Colombo	E	S	07	11	29		
			L		21	—		
			M		27	49		Amp=0.2 mm.
23	Kodaikanal	E	e	07	49	17		Tremor.
23	Shillong	Z	iPg	12	22	40	100	Slight.
			i		22	58		
23	Shillong	Z	i	14	34	42		Slight, near.
24	Epc : 48½° N., 156° E. Kurile Is and; 0=07h 29m 59s (U.S.C.G.S.)							
	Shillong	Z	i	07	38	30		Slight, tremor.
	Poona	Z	iP	07	40	25		Tremor.
24	Shillong	Z	i	08	23	47		Slight.
24	Shillong	Z	ePg	17	11	53	120	Slight, Local.
			eSg		12	07		
24	Shillong	Z	e	18	03	57		Tremor.
24	Shillong	Z	ePg	18	25	55	110	Slight.
			iSg		26	08		
24	Shillong	Z	iP	19	07	40	230	Slight.
			i		07	50		
			iSg		08	13		
24	Shillong	Z	e	19	21	18		Slight.
24	Epc : Karakoram region; 0=22h 31.7m (B.C.I.S.) 39° N., 75° E. 0=22h 31m 51s (Shillong)							
	Dehra Dun	NE	eP	22	34	05	970	Slight.
		N	PPP		34	20		
			Pg		34	49		
			eS		35	44		
			SS		35	56		
			LR		36	01		
			SSS		36	06		
			S*		36	17		
			Sg,M		36	41		
	New Delhi	NE	eP	22	34	22	1030	Slight.
		N	i		34	34		
		E	LQ		35	57		
		NE	eS		36	08		
			SS		36	19		
			LR		36	23		
			SSS		36	31		
		N	S*		36	44		
			Sg		37	07		
	Shillong	Z	iP	22	36	14		Slight.
		N	eS		39	48		
	Poona	Z	eP	22	36	28		Slight shock, phases not clear.
			iS		40	15		
		E	i		42	32		
	Hyderabad	E	eP	22	37	25	2710	Slight.
			S		41	43		
			M		45	25		Per.=8 secs μ=3.
		N	M		45	53		Per.=8 secs μ=3.

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
				h. m. s.	km.	
May 1954						
24	Bombay	E	e	22 41 25		
Contd.			e	41 30		
			i	42 22		
	Madras	E	i	22 45 35		Moderate, phases not clear.
26	Shillong	Z	e	01 35 08		Slight.
26	Poona	Z	eP	01 54 30		Tremor.
	Bombay	N	eP	01 54 41	8150	Slight.
			eS	02 04 10		Phases lost in microseisms.
	Shillong	N	e(M)	02 14 24		Slight.
26	Shillong	Z	iP	14 48 31		Feeble.
26	Shillong	Z	eP	19 05 34		Feeble.
27	Shillong	Z	e	07 57 56		Feeble.
27	Shillong	Z	iP	16 11 04		Feeble.
27				Epc : Celebes Sea, data discordant ; 0=16h 18-0m (B.C.I.S.)		
	Shillong	Z	i	16 24 01		Feeble.
	Dehra Dun	NE	e	16 26 20		Tremor.
	Poona	ZE	eP	16 27 03		Tremor.
	Bombay	NE	e	16 34 09		
27	Poona	Z	eP	19 08 56		Tremor.
27	Shillong	Z	i	23 33 48		Feeble.
28	Shillong	Z	eP	15 49 23		Feeble.
28	Shillong	Z	e	19 29 18		Feeble.
28	Shillong	Z	e	21 05 15		Feeble.
29	Shillong	Z	e	16 28 04		Feeble.
29	Shillong	Z	e	22 49 29		Feeble.
30	Shillong	Z	iP	14 55 13		Feeble.
30				Epc : Celebes Sea ; 0=19h 46m 56s (U.S.C.G.S.) 1° N., 124½° E. 0=19h 46m 35s (B.C.I.S.)		
	Shillong	Z	iP	19 54 09		Feeble.
	Chatra	Z	iP	19 54 46		Slight, distant.
	Dehra Dun	N	e	19 55 46		Feeble, phases not clear.
			i	56 08		
			i	56 25		
	Poona	Z	e?	19 55 47		Feeble.
31	Shillong	Z	i	15 55 36		Tremor.
31				Epc : Flores Sea ; 8° S., 118½° E. h=150 km ; 0=15h 48m 48s. (U.S.C.G.S.) 8° S., 118 E. 0=15h 48m 50s (Shillong) Magnitude—6½—6½ (Pasadena), 6 (Uppsala, Praha).		
	Madras	E	iP	15 56 43	4688	Moderate.
			PP	58 23		
			PcP	58 34		

Date	Station	Compt.	Phase	G.M.T.	△	Remarks
				h. m. s.	km.	
May 1954						
31	Madras		PPP	58 54		
Contd.			ScP	16 02 16		
			iS	03 04		
			SS	05 53		
			LQ	06 31		
			LR	08 26		
			M	12 16		
	Shillong	N	iP	15 56 46	4560	Moderate.
			i(?)	57 31		
			PPP	59 09		
			S	16 03 00		
			SS	06 09		
			LR	08 46		
			M	12 16		
	Chatra	Z	e	15 56 49		Slight, distant.
			e	16 03 46		
	Kodaikanal	E	iP	15 56 51	4810	Slight.
			PP	58 36		
			PPP	59 18		
			iS	16 03 21		
			LQ	07 21		
			SSS	07 39		
			LR	09 30		
			M	13 12		Per.=12 secs $\mu=8.6$.
	Hyderabad	E	eP	15 57 06	5110	
			iS	16 03 51		
		N	M	14 42		Per.=18 secs $\mu=22$.
		E	M	14 51		Per.=18 secs $\mu=22$.
	Poona	Z	iP	15 57 42	5450	Moderate.
		E	PcP	59 03		
			PPP	16 00 25		
			eS	04 45		
			PS	04 52		
			PPS	04 57		
			ScS	07 13		
		N	SS	07 58		
		E	SSS	09 19		
		N	LR	11 28		
		E	M	15 15		
	Bombay	E	eP	15 57 49	5870	Moderate.
			PcP	58 00		
			PP	16 00 02		
			PPP	00 54		
			iS	05 17		
		N	iS(?)	05 20		
			M	24 36		Per.=15 secs $\mu=5$.
		E	M	22 00		Per.=15 secs $\mu=5$.
	New Delhi	NE	eP	15 58 00	5700	Moderate.
		N	i	16 00 17		
			eS	05 19		
			PPS	05 33		
			ScS	07 50		
			SS	08 49		
			i	09 17		
			SSS	10 19		
			i	11 33		
			LR	12 47		
			M	17 25		

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 in G.M.T.	Intensity in R.F. scale	No. of shocks	Remarks
Tezpur	2.5.54	21h. 23m.	III	1	—
Shillong	21.5.54	12h. 30m.	I	1	—
Shillong	22.5.54	14h. 40m.	III	1	—

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

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DIRECTOR GENERAL OF OBSERVATORIES.

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		16.0
	Milne-Shaw	E-W	12.0	350	9 : 1	8.0
	Sprengnether	E-W	$T_o = T_g = 7.0$	—	—	30.0
Calcutta	Milne-Shaw	E-W	10.0	150	20 : 1	8.0
	Wood-Anderson	N-S	2.0	870	Critical	30.0
	Omori-Ewing	N-S	18.2	32	—	25.4
	Omori-Ewing	E-W	19.0	30	—	25.4
Chatra	Wood-Anderson	N-S	1.0	1000	30 : 1	60.0
	Wood-Anderson	E-W	1.0	1000	40 : 1	60.0
	Benioff	Z	$T_o = 0.72$ $T_g = 0.45$	—	—	60.0
Colombo	Milne-Shaw	E-W	12.0	250	18 : 1	—
Dehra Dun	Milne-Shaw	N-S	12.0	250	20 : 1	16.0
	Wood-Anderson	E-W	1.0	1000	30 : 1	60.0
	Wood-Anderson	E-W	1.0	1000	30 : 1	60.0
Hyderabad	Milne-Shaw	E-W	12.0	250	20 : 1	8.0
	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
Kodaikanal	Milne-Shaw	E-W	10.0	250	20 : 1	8.0
Madras	Sprengnether	E-W	$T_o = T_g = 7.2$	—		30.0
New Delhi	Milne-Shaw	N-S	12.0	288	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1070	20 : 1	16.0
	Wood-Anderson	E-W	2.0	1840	30 : 1	60.0
	Omori-Ewing	E-W	28	30	—	12.0
Poona	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	E-W	4.0	1100	20 : 1	16.0
	Sprengnether	Z	$T_o = T_g = 1.5$	—	—	30.0
Shillong	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1000	20 : 1	30.0
	Wood-Anderson	N-S	0.8	800	20 : 1	30.0
	Wood-Anderson	E-W	0.8	800	20 : 1	30.0
	Sprengnether	E-W	$T_o = T_g = 7.5$	—	—	30.0
	Benioff	Z	$T_o = 1.0$ $T_g = 0.18$	—	—	60.0

SEISMOLOGICAL BULLETIN

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
June 1954						
01	Dehra Dun	NE	e i	07 48 30 49 59		Feeble, phases not clear.
	Shillong	Z	i	07 50 59		Tremor.
01	Shillong	Z	i	12 58 35		Tremor.
01	Shillong	Z	Pg Sg	17 39 42 39 47		Local.
01	Shillong	Z	Pg Sg	17 41 16 41 22		Local.
01	Shillong	Z	Pg Sg	17 59 17 59 22		Local.
01	Shillong	Z	iP Pg S S* Sg	19 05 47 06 02 06 32 06 43 06 53		Slight.
01	Poona	Z	eP	20 52 39		Tremor.
01	Shillong	Z	i	20 53 41		Tremor.
02	Poona	ZE	eP	07 10 39		Slight, phases mixed up with microseisms.
02	Shillong	Z	e	09 39 45		Tremor.
02	Poona	ZN	eP	10 49 20		Slight, phases mixed up with microseisms.
02	Shillong	Z	i i	11 02 54 03 23		Slight, local.
02	Dehra Dun	N	e	21 56 21		Tremor.
02	Shillong	Z	e i	22 14 55 15 27		Slight.
03	Shillong	Z	iP Pg S Sg SS	00 30 59 31 05 31 25 31 31 31 39		Slight, local.
03	Shillong	Z	e i	07 30 31 31 15		Tremor.
03	Shillong	Z	e	16 55 42		Tremor.
03	Shillong	Z	e	17 29 03		Tremor.
03	Shillong	Z	e	21 52 26		Tremor.
03	Shillong	Z	Pg Sg	22 26 03 26 28		Local.
04	Dehra Dun	NE	e i i	0 06 06 06 09 06 38		Feeble, phases not clear.

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
June 1954						
04						Epc: $\frac{1}{2}^{\circ}$ S., $91\frac{1}{2}^{\circ}$ W. Galapagos Island; 0=06h 50m 42s (U.S.C.G.S.) Magnitude— $6\frac{3}{4}$ —7 (Lwir), $6\frac{1}{2}$ (Pasadena), $6\frac{1}{2}$ (Tacubaya, Praha), $6\frac{1}{2}$ (Berkeley)
	Dehra Dun	Ne	e e i	07 10 32 12 34 14 09		Feeble, phases not clear.
	Chatra	Z	e	07 10 33		Slight, distant.
	Shillong	N	PKP ₁ SKS ₂ PKKP PPP SKSP SS SSS M	07 10 34 17 57 18 53 23 23 24 13 32 50 38 47 08 16 47		Slight, distant.
	Hyderabad	N	M	08 34 40		Per. = 18 secs/ μ = 6.
04	Colombo	E	eP	10 37 —		
04	Madras	E	iP	10 40 50		Earthquake of moderate intensity, phases not clear due to presence of Microseisms.
04						Epc: Java Sea; 0=10h 41m 37s (U.S.C.G.S.) 5° S., 108° E., 0=10h 41.6m. data discordant (B.C.I.S.)
	Shillong	N	iP PcP iS SS/LQ LR ScS M	10 48 39 51 07 54 14 56 10 57 05 57 53 11 00 20		Slight.
	Chatra	Z E	iP eS	10 49 05 55 05		Slight, distant.
	Bombay	NE E N NE	eP e eS e e	10 49 24 54 52 55 49 58 08 59 27		Slight, phases doubtful due to presence of microseisms.
	New Delhi	NE N	eP iS PS PPS SSS	10 50 00 56 38 56 48 56 56 11 00 35	4990	Slight
	Hyderabad	E EN	e S L	10 50 13 54 34 11 03 44		Per. = 12 secs/ μ = 3. Per. = 12 secs/ μ = 5.
	Dehra Dun	N	e e e e	10 50 13 56 52 57 30 58 08		Feeble, phases not clear.

Date	Station	Compt	Phase	G. M. T.			Δ	Remarks			
				h.	m.	s.					
June 1954							km.				
04	Kodaikanal	E	i	10	53	45	2710	Slight intensity.			
04	Dehra Dun	NE	e	16	46	49		Tremor.			
04	Dehra Dun	NE	e	18	23	53		Tremor.			
05	Dehra Dun	NE N	eP PP PPP Pg LQ iS LR SS SSS S* Sg M	12	47	53	860	Slight.			
	New Delhi	NE	iP PP	12	48	11	880	Slight.			
		E	P* Pg	48	19	48			28		
		NE	iS SS LR SSS	49	42	49			51		
		E	i	50	03	50			03		
		N	S*	50	10	50			10		
06		Shillong	Z	i	11	13			42		Tremor.
06		Epc : $3\frac{1}{2}^{\circ}$ S., $136\frac{1}{2}^{\circ}$ E. West New Guinea ; O=16h 50m 33s (U.S.C.G.S.) 3.0° S., 135.5° E. O=16h 50m 40s (B.C.I.S.) 4° S., 137° E. O=16h 50m 35s (Shillong) Magnitude—7— $7\frac{1}{2}$ (Hurbanovo), 7.1 (Praha), 7 (Pasad na, Tacubaya, Lwir), $6\frac{1}{4}$ —7 (Uppsala, De Bilt)									
		Shillong	Z	iP }	16	59			45	5890	Compression first move- ment North.
			N	iP }	17	00			04		
				PcP	02	50					
			PPP	05	04						
			PcS	06	04						
			iS	09	29						
			ScS	10	32						
			SS	12	13						
			LQ/SSS	14	36						
			LR	18	36						
	Calcutta	E	iP }	17	00	07	5865	Moderate.			
		N	iP }	00	08						
			eS	07	34						
		E	iS	11	15						
			SS	12	56						
			LQ	15	21						
			LR	19	28						
			M								
	Chatra	Z	iP }	17	00	17	6300	Moderate.			
		E	eP }	01	15						
			PcP	02	30						
			PP	03	56						
			PPP	08	09						
			iS								

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
June 1954						
06	Chatra	E	PS	17 08 15		
Contd.			PPS	08 30		
			ScS	10 11		
			SS	12 00		
			LQ	14 15		
			LR	16 52		
			M	22 00		
	Madras	E	iP	17 00 29	6440	Moderate.
			PcP	01 02		
			PP	02 40		
			PPP	04 08		
			PcS	05 08		
			iS	08 29		
			PS	08 43		
			PPS	08 49		
			ScS	10 09		
			SS	12 35		
			LR	15 37		
	Colombo	E	(P)	17 00 —		
			S	08 19		
			L	17 09		
	Hyderabad	E	iP	17 00 50	6660	
		N	iS	09 02		
		EN	ScS	10 36		
			SS	12 54		
		N	L	19 50		
		E	M	23 06		Per.=23 secs/ μ =15.
		N	M	23 54		Per.=24 secs/ μ =27.
	Poona	Z	eP	17 01 17	7130	Moderate.
		E	PP	03 39		
			eS	09 55		
			PS	10 19		
			PPS	10 27		
			ScS	10 49		
			SS	14 07		
			SSS	16 56		
			LQ	18 11		
			LR	21 31		
			M	26 56		
	Dehra Dun	NE	eP	17 01 18	7140	Moderate.
		N	PcP	01 17		
			PP	03 43		
			PPP	05 14		
			PcS	05 43		
			iS	09 56		
			PS	10 15		
			PPS	10 25		
			ScS	11 13		
			SS	14 13		
			SSS	17 03		
			LQ	17 56		
			LR	20 51		
			M	26 07		
	Bombay	E	iP	17 01 23	7310	Moderate.
		NE	PcP	01 28		
			PP	03 44		
			PPP	05 21		
			iS	10 09		

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
June 1954							km.	
06	Bombay	E	SKS ₁	17	11	09		
Contd.	Contd.	N	i		11	23		
		NE	SS		14	23		
		N	LQ		18	38		
		E	LQ		18	43		
			LR		21	13		
			M		29	07		Per. = 24 secs/μ=12.
		N	M		29	11		Per. = 23 secs μ=13.
06	Dehra Dun	NE	e	19	07	07		Slight, phases not clear
			i		08	09		
			i		08	27		
06	Shillong	Z	i	22	06	35		Tremor.
07	Shillong	Z	e	06	35	35		Tremor.
07	Shillong	Z	[e e	09	51	12 52 01		Slight.
07	Epc : 3½°S., 152½°E. New Britain Region; h=450 km ca; 0=10h 15m 33s (U.S.C.G.S.) 7°S., 153°E. h=500 km ca; 0=10h 15m 38s (Shillong) Magnitude—7 (Uppsala, Wellington) 6½ (Pasadena, Berkeley), 6½ (Lwiro).							
	Shillong	ZNE	iP pP PP i iS i sS	10	25	36 27 12 28 02 30 42 33 40 34 44 36 32	7340	Compression, first movement North and West.
	Calcutta	E N E N	iP iP iS iS	10	25	55 25 59 34 16 34 20	6835	Slight, first movement West and North.
	Chatra	EZ E	iP pP iS M	10	26	03 27 38 34 36 52 —	7890	Slight, deep focus, other phases not clear.
	Colombo	E	P S	10	26	22 35 08		Slight
	Madras	E	iP PcP pP? PP PcS iS PS PPS ScS	10	26	25 26 47 28 03 28 53 30 43 35 16 35 34 35 46 35 58	7412	Moderate.
	Hyderabad	E N E	iP e PP iS L M M	10	26	36 28 15 29 04 35 41 47 54 53 48 54 09	7660	Moderate. Per.=15 secs/μ=4. Per.=15 secs/μ=4.

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
June 1954							km.	
07	Kodaikanal	E	iP pP sP i	10	26	37 28 19 29 05 29 47		Slight.
	Dehra Dun	NE N	eP PcP PP iS PPS SS SSS LR M	10	26	51 27 08 29 37 36 07 36 59 40 51 43 41 49 16 55 23	7890	Moderate.
	New Delhi	NE N	iP pP sPi iS PS i i	10	26	53 28 35 29 34 36 09 36 41 40 21 40 50	7890	Moderate.
	Poona	Z E	iP PcP PP PPP eS SKS ₁ ScS PS PPS SS SSS M	10	26	59 27 06 29 46 31 35 36 27 36 37 36 43 37 05 37 26 41 28 44 34 57 23	8130	Moderate.
	Bombay	NE N NE E N	eP PP PPP iS i i i SS	10	27	07 29 46 31 30 36 38 39 05 39 37 39 54 41 47	8200	Moderate.
08	Dehra Dun	N	e	09	18	46		Tremor.
08	Shillong	Z	i e	11	03	33 04 09		Slight, near.
09	Shillong	Z N	i e i i	00	57	08 57 09 57 56 58 12		Slight, near.
09	New Delhi	N NE	eP eS i i	03	55	42 57 23 57 28 57 33		
	Dehra Dun	NE	e	03	57	02		
09	Shillong	Z N	iP L	10	08	47 20 —		Slight.

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
June 1954							km.	
10	Shillong New Delhi	Z NE N	iP iP eS PPS i SSS	22 22	45 46 53 54 55 58	14 43 46 01 47 31	5430	Slight. Slight.
11	Shillong	Z	i	01	01	34		Slight.
11	Shillong	Z	e	09	03	27		Tremor.
11	Shillong	Z	i	09	50	40		Slight.
11	Shillong	Z	iP e L	17	06 14 30	16 59 —		Slight.
	Chatra	Z	i	17	06	33		Slight, distant
11	Shillong	Z	e e	17	16 17	53 14		Slight, local.
11	Shillong	Z	e	19	01	51		Slight.
11	Shillong	Z	i	21	32	27		Slight.
11	Poona	Z	eP	22	47	27		Tremor.
12	Shillong	Z	i	05	34	43		Slight.
12	Shillong	Z	i	05	47	54		Slight.
12	Shillong	Z	e i	12	11 11	31 42		Slight, local.
12	Shillong	Z	i(S(g))	15	23	03		Slight.
12	Shillong	Z	i i	17	54 55	40 14		Slight.
13	Shillong	Z NE	iP ep i iSg	02	20 20 20 20	34 35 41 53	150	Slight.
13	Dehra Dun	NE	e i i	04	21 51 51	46 51 58		Slight, phases not clear.
13	Shillong	Z	e i	10	58 58	15 45		Slight.
13	Shillong	Z	e	17	10	10?		Slight.
13	Shillong	Z N	e e	17	29 35	36 46		Slight.
13	Shillong	Z	i i i	22	32 33 34	47 40 03		Slight.
13	Shillong	Z	i	23	10	46		Tremor.

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
<u>June</u>				h. m. s.				
<u>1954</u>								
14	Shillong	Z	i	06	55	25		Tremor.
14	Shillong	Z	e	07	10	48		Tremor.
14	Shillong	Z	e	08	38	02		Tremor.
14	Shillong	Z	i e	12	15	02 15 30		Slight, local.
14	Shillong	Z	i	13	35	20		Slight, trace very faint.
14	Shillong	Z	i	16	37	48		Slight.
14	Shillong	Z	ePg eSg	16	58	38 58 50	100	Slight, local.
15	Dehra Dun New Delhi	NE	e	13	40	50		Tremor.
		NE	eP	13	41	01		Slight.
			i		49	32		
			e		49	58		
15	Dehra Dun	NE	e	13	49	30		Slight, phases not clear.
			i		49	41		
			i		50	14		
	Bombay	NE	ePKP ₁	13	49	33	16780	Very distant and deep. Phases not clear due to microseisms.
		E	eSS	14	12	42		
	Poona	Z	eP	13	49	34		Other phases mixed with microseisms.
	Chatra	Z	i	13	49	39		Slight, distant.
	Shillong	N	eP	13	49	47		Slight.
		Z	eP	13	49	48		
		N	e		50	20		
			e		54	05		
			i	14	01	39		
	Calcutta	E	i i	13	50	41 57 41		Slight, distant.
	Madras	E	iP?	13	53	47		Slight shock. Phases not clear.
	Hyderabad	E	e	14	01	07		
16	Shillong	Z	e	17	45	39		Tremore.
16	Shillong	Z	i	23	32	28		Feeble.
17	Epc: 56° N., 154½° W. Off the South Coast of Kodaikanal; O=01h 42m 22s (U.S.C.G.S.) 56.8° N., 154° W. O=01h 42m 24s (B.C.I.S.) Magnitude—6¼ (Lwiro), 6½ (Pasadena, Praha, Roma, Hurbanovo).							
	Shillong	Z	iP	01	54	41		Slight, very distant
		N	eP		54	49		
			i(S)	02	04	49		

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
June 1954								
17 Contd.	Chatra	Z E E	iP } eP } eS } PS } PPS } LQ } LR } M }	01 54 49	9110		Slight.	
				02 05 03				
				05 52				
				06 11				
				16 20				
				20 39				
				27 —				
	New Delhi	NE N	eP iS PPS	01 55 00 02 05 20 06 43			Slight	
	Bombay	NE E N	eP eS i M M	01 55 28 02 06 28 06 56 37 13 42 37	10220		Moderate. Per. = 15 secs/ μ = 3. Per. = 13 secs/ μ = 3.	
	Poona	ZN N	eP i(?) i(?)	01 55 54 02 06 19 07 08			Distant shock, phases doubtful and lost in shifting.	
	Hyderabad	E N	e M M	01 55 59 02 35 53 38 05			Per. = 18 secs/ μ = 12. Per. = 18 secs/ μ = 17.	
	Calcutta	E	i i i	01 57 06 02 05 41 14 43			Slight, distant.	
	Colombo	E	i L	02 07 10 40 —				
17	Shillong	Z	iP	02 14 48			Slight.	
17	Shillong	N	i? i?	02 29 50 33 50			Slight.	
17	Kodaikanal	E	iP PPP iS LQ SSS LR M?	02 36 42 37 0 41 00 41 39 42 00 42 51 44 51	2710		Slight intensity.	
17	Shillong	Z	e i	05 46 32 47 27			Tremor.	
17	Poona	Z	eP	06 03 55			Slight shock, phases mixed up with microseism.	
17	Shillong	Z	iP iS	06 04 29 08 19	2250		Slight.	
17	New Delhi	NE N NE N NE	eP PPP P* Pg iS i SS LR S* Sg	10 02 11 02 25 02 31 02 54 03 54 04 00 04 06 04 10 04 31 04 39			Slight.	

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
June 1954								
18	Poona	Z	eP	15 50 03				Slight shock, phases not clear.
	Bombay	NE	e	15 50 15				Feeble, near tremor.
12	Epc: Soenda Starit; 0=17h 54m 40s. Felt Djakarta (U.S.C.G.S.) 6°S., 105½° E. 0=17h 54m 42s (B.C.I.S.)							
	Madras	E	iP?	18 01 07				Slight shock, phases not clear.
	Shillong	Z N	iP eP S M	18 01 29 01 34 06 53 13 45	3760		Slight.	
	Hyderabad	E EN E	eP PcP iS L M	18 01 42 04 54 07 09 11 33 14 55	3810			
	Poona	Z N	eP PP PPP eS LQ SSS M	18 02 18 03 51 04 12 08 16 11 14 11 37 16 19	4300		Slight shock.	
	Bombay	E	eP PP eS ScS i i	18 02 20 03 50 07 57 11 55 12 54 13 25	3965		Slight. Possibly deep focus.	
	New Delhi	NE	eP eS	18 02 52 09 17	4750		Slight.	
19	Epc: 30½° N., 130° E. Off the South Coast of Kiu-Shiu, Japan; 0=01h 56m 30s (U.S.C.G.S. and B.C.I.S.) 29½° N., 131½° E. H=0-10km; 0=01h 56m 22s. Felt (C.M.O. Japan). Magnitude 6½ (Strasbourg), 6 (Roma).							
	Shillong	Z N	iP e e	02 03 13 04 52 07 29				Feeble.
	Chatra	Z E	iP e	02 03 46 20 —				Slight, distant; surface waves.
	Poona	Z	eP	02 05 39				Tremor.
	Bombay	E	eP eS	02 05 44 13 07	5780		Moderate.	
	Hyderabad	E	M	02 26 05				Per. = 15 secs. μ = 4
19	Poona	Z	eP	03 24 13				Tremor.

Date	Station	Compt.	Phase	G. M. T.			△	Remarks
				h.	m.	s.		
June 1954							km.	
19	Shillong	Z	e	05	59	40		Tremor.
19	Shillong	Z	i	12	35	03		Tremor.
19	Shillong	Z	i	23	14	44		Tremor.
20	Bombay	N	e e	01	20	— 26	— —	
20	Dehra Dun	NE	e	17	42	57		Tremor.
20	Epc : 5°S., 146°E. of the Coast of New Gunniea ; h=60 km ca; 0=20h 45m 57s (U.S.C.G.S.) 4½°S., 145½°E. h=60 km ca; 0=20h 46m 00s (B.C.I.S.)							
	Shillong	Z	i	20	56	08		Tremor.
	Dehra Dun	NE	e	20	57	28		Tremor.
	Poona	Z	eP	20	57	39		Tremor.
21	Poona	Z N	e i? i i	02	08	07 59 19 01		Slight distant shock. Phases mixed with microseisms and other phases lost in shifting.
	Madras	E	e	02	08	20		Tremor.
	Shillong	Z	e	02	08	29		Tremor.
21	Shillong	Z	i	02	15	41		Tremor.
	Chatra	Z	i	02	16	10		Slight, distant.
21	Poona	Z	eP	14	36	22		Tremor.
22	Shillong	Z N	i(Sg) e	03	49	02 —		Slight, strong microseism.
22	Shillong	Z	i	17	35	01		Slight, local.
22	Shillong	Z	e i e	22	43	40 17 41		Slight.
23	Dehra Dun	NE	e i	08	01	47 29		Feeble.
24	Shillong	Z	Pg Sg	09	54	25 39		Slight.
24	Shillong	Z	Pg P* PPP Sg	10	44	41 45 55 00	170	Slight.
24	Shillong	Z	e	16	21	13		Slight.
24	Shillong	Z	P Pg P* S Sg	16	59	31 36 46 57 02	220	Slight.

Date	Station	Compt.	Phase	G. M. T.			△	Remarks
				h.	m.	s.		
June 1954								
24	Shillong	Z	Pg Sg	17	55	48		Slight, local.
	Chatra	Z	i i	17	56	40		
					58	01		
26	Shillong	Z	e	11	11	02		Tremor.
26	Shillong	Z	i	12	01	24		Tremor.
26	Shillong	Z	i	18	26	39		Slight, local.
26	Shillong	Z	Pg Sg	20	59	48		Slight.
					59	55		
26	Shillong	Z	i	21	43	47		Tremor.
27	Shillong	Z	e i	04	04	35		Slight.
					05	29		
27	Shillong	Z	e	16	24	27		Tremor.
28	Shillong	Z	e	03	33	38		Tremor.
28	Shillong	Z	P P* S Sg SSS	03	57	42		Slight.
					57	44		
					58	06		
					58	14		
					58	28		
28	Hyderabad	N	M	06	04	33		Per. = 23 secs/ μ = 10.
28	Shillong	Z	i	11	32	13		Tremor.
28	Shillong	Z	P Pg S* SS/Sg	14	33	25	300	Slight.
					33	34		
					34	02		
					34	08		
28	Shillong	Z	Pg Sg	17	57	53		Slight.
					58	03		
28	Epc : 29 $\frac{1}{4}$ °N., 86 $\frac{1}{2}$ °E South Tibet ; 0=21h 31m 44s (B.C.I.S.) 28.5°N., 86.8°E. 0=21h 31m 40s (Shillong)							
	Chatra	ZEN NE	iP Pg PP PPP iS SS SSS	21	32	13	170	Slight.
					32	15		
					32	21		
					32	26		
					32	34		
					32	44		
					32	58		
	Shillong	ZNE N	P PP LQ S/LR SSS M	21	33	03	530	Slight. Probably deep, compression. First movement South and East.
					33	05		
					33	47		
					34	00		
					34	17		
					34	28		Suppressed.
	Calcutta	EN N E	eP LQ iS iS	21	33	16	580	Slight, felt at Katmundu.
					34	03		
					34	17		
					34	20		

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
June 1954								
28 Contd.	Dehra Dun	NE N	eP PPP P* Pg LQ iS LR SS SSS S* Sg,M	21	33	35	790	Moderate.
	New Delhi	NE	iP PPP P* i Pg LQ eS SS SSS S* Sg	21	33	43	890	Slight.
	Poona	Z E	eP PP PPP eS SS SSS LR M	21	35	11	1610	Slight.
	Madras	E	eP PPP iS SS SSS PcS M	21	35	35	1950	Moderate.
	Bombay	E NE	e i i	21	35	42		Feeble, phases not clear.
	Hyderabad	N	eP S M	21	36	55	1040	Per. = 12 secs/ μ = 4.
28	Chatra	Z	iP iS	22	03	19	170	Feeble, probably after shock of shock at 2132 hrs.
30	Epc: 7° N., 37° E. South Ethiopia; 0=13h 26m 50s (U.S.C.G.S.), 6° N., 37° 2 E. 0=13h 26m 55s (B.C.I.S.) Magnitude—6½ (Kiruna); 6 (Uppsala), 5.9 (Roma), 5¼ (Praha).							
	Poona	Z N E N	iP PP PPP eS SS LR M	13	34	03	4150	Moderate.

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
June 1954								
30 Contd.	Bombay	E E N N	eP(?) iS eS LQ M	13	34	09	4070	Slight. Phases doubtful due to microseisms.
	Madras	E	eP?	13	34	50		Per. = 10 secs/14 μ = 4.
	New Delhi	N	eP? eS PS SS LQ LR M	13	35	03	4980	Slight.
	Dehra Dun	N	eP PcP e PcS iS PS SS LQ LR M	13	35	28	5000	Slight.
	Chatra	Z	eP	13	36	01		Slight, distant.
	Shillong	N	eP(?) iS SS LQ LR M	13	36	36	6090	Slight.
	Calcutta	E	i i i	13	43	35		

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 in G.M.T. h. m.	Duration in secs.	Intensity in R.F. scale	No. of Shocks	Remarks
Darjeeling	June 28	21 45	2	IV	1	—

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

JULY, 1954



PUBLISHED UNDER THE DIRECTION OF
SHRI S. BASU, M.Sc., F.N.I.,
DIRECTOR GENERAL OF OBSERVATORIES.

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	23 : 1	16.0
	Milne-Shaw	E-W	12.0	350	—	8.0
	Sprengnether	E-W	$T_o=T_g=7.0$	—	—	30.0
Calcutta	Milne-Shaw	E-W	10.0	150	20 : 1	8.0
	Wood-Anderson	N-S	2.0	870	Critical	30.0
	Omori-Ewing	N-S	18	32	—	25.4
	Omori-Ewing	E-W	19	30	—	25.4
Chatra	Milne-Shaw	E-W	12.0	250	20 : 1	16.0
	Wood-Anderson	N-S	1.0	1000	30 : 1	60.0
	Wood-Anderson	E-W	1.0	1000	40 : 1	60.0
	Benioff	Z	$T_o=0.72$ $T_g=0.45$	—	—	60.0
Colombo	Milne-Shaw	E-W	12.0	250	20 : 1	—
Dehra Dun	Milne-Shaw	N-S	12.0	250	20 : 1	16.0
	Wood-Anderson	E-W	1.0	1000	30 : 1	60.0
	Wood-Anderson	N-S	1.0	1000	30 : 1	60.0
Hyderabad	Milne-Shaw	E-W	12.0	250	20 : 1	8.0
	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
Kodaikanal	Milne-Shaw	E-W	10.0	250	20 : 1	8.0
Madras	Sprengnether	E-W	7.2	—	Critically damped	30.0
New Delhi	Milne-Shaw	N-S	12.0	300	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1070	20 : 1	16.0
	Wood-Anderson	E-W	2.0	1800	30 : 1	60.0
	Omori-Ewing	E-W	28	30	1	12.0
Poona	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	E-W	4.0	1100	20 : 1	16.0
	Sprengnether	Z	$T_o=T_g=1.5$	—	—	30.0
Shillong	Milne-Shaw	N-S	12.0	250	20 : 1	8.0
	Wood-Anderson	N-S	4.0	1000	20 : 1	30.0
	Wood-Anderson	N-S	0.8	800	20 : 1	30.0
	Wood-Anderson	E-W	0.8	800	20 : 1	30.0
	Sprengnether	E-W	$T_o=T_g=7.5$	—	—	30.0
	Benioff	Z	$T_o=1.0$ $T_g=0.18$	—	—	60.0

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
July 1954								
01	Poona	Z	iP	01	31	28		Tremor.
01	Bombay	N	e	03	24	13		Feeble Background micro-seisms.
			e		29	06		
	Shillong	N	e	03	31	15		
	Shillong		e	03	45	32		Surface wave.
01	Shillong	Z	iP	05	29	50		Slight.
	Chatra	Z	e	05	30	26		Slight.
01	Shillong	N	e	05	31	16		Slight, near.
			e		34	39		
			e		38	31		
01	Shillong	Z	iP	08	57	00		Slight, near.
	Dehra Dun	N	e	08	58	49		Tremor.
01	Shillong	Z	iP	09	35	15		Slight, near.
			e		36	13		
01	Shillong	Z	iPg	15	24	29	140	Slight.
		N	ePg		24	29		
			eP		24	35		
			iSg		24	46		
			S*		24	51		
			PP		24	55		
01	Shillong	Z	e	15	35	34		Tremor.
			e		36	12		
01	Dehra Dun	N	e	16	47	36		Feeble, phases not clear.
					49	06		
01	Shillong	Z	i	16	54	20		Slight, near.
			e		55	04		
01	Shillong	Z	iP	19	37	33		Slight, near.
					38	10		
02	Epe : 13° N., 124½° E. South East Luzon, Phillipine							
	0=02h 45m 08s (U.S.C.G.S.)							
	13° N., 124.°2 E. 0=02h 45m 09s (B.C.I.S.)							
	12° N., 125° E. 0=02h 45m 04s (Shillong)							
	Magnitude—7½ (Berkeley), 7 (Prah), 6½—7 (Strasbourg, Uppsala),							
	6½ (Pasadena, Tacubaya, Kiruna, Hurbanovo).							
	Shillong	ZN	iP	02	51	42	3650	Moderate.
			PP		52	44		
			iS		56	59		
			PcS		58	15		
			LQ		58	38		
			SSS		59	08		
			LR	03	00	25		
			ScS		02	12		
			M		04	09		

Date	Station	Compt.	Phase	G.M.T.			Δ	Remarks	
				h.	m.	s.			
July 1954									
02	Calcutta	E	iP	02	52	11	4110	Great. First movement West.	
Contd.			PP		53	37			
			SS	03	00	23			
	Chatra	EZ	eP	02	52	21	4250	Slight.	
		E	PP		53	53			
			PPP		54	16			
			PcS		54	38			
			e?		56	42			
			iS		58	16			
			SS	03	00	38			
			LQ		00	50			
			SSS		01	08			
									Rest of the phases lost while changing chart.
	Madras	E	i	02	53	12		Moderate. Record of beginning lost while changing chart.	
			PP		54	50			
	Hyderabad	E	iP	02	53	17	5140	Moderate.	
			PP		55	01			
			iS	03	00	04			
			ScS		02	29			
			SS		03	23			
			L		07	40			
		N	M		12	36			
		E	M		13	17			
									Per. = 22 secs μ = 41.
									Per. = 21 secs μ = 27.
	Colombo	E	P	02	53	21		S approximate. Beginning lost in hour mark.	
			S	03	00	—			
			L		11	21			
	Kodaikanal	E	iP	02	53	32	5220	Moderate.	
			PP		55	17			
			PPP		56	11			
			iS	03	00	20			
			SS		03	26			
			LQ		05	02			
			LR		07	17			
			M		11	20			
									Per. = 15 secs μ = 49.
	New Delhi	NE	eP	02	53	35	5250	Moderate.	
		N	PP		55	26			
			iS	03	00	29			
			iS		00	35			
			SS		03	50			
			i		04	13			
			LQ		04	50			
			M		11	17			
	Dehra Dun	N	eP	02	53	38	5280	Moderate.	
			P P		54	59			
			PP		55	31			
			PcS		58	43			
			iS	03	00	33			
			PS		00	39			
			PPS		00	53			
			S S		03	29			
			SS		03	59			
			LQ		05	00			
			SSS		05	15			
			LR		07	13			
			M		11	14			

Date	Station	Compt.	Phase	G.M.T.	Δ	Remarks.
				h. m. s.	km.	
July 1954						
02	Poona	Z	eP	02 53 50	5510	Moderate.
Contd.		N	PP PPP eS PPS SS M	55 27 56 31 03 00 58 01 16 12 31 14 45		
	Bombay	N E NE E NE E N	eP } iP } PcP PP PPP iS PS PPS i	02 54 05 55 14 56 06 57 04 03 01 26 01 31 01 36 02 00	5750	Moderate, surface waves not well developed.
02	Shillong	NE Z	SS e i	04 58 05 59 59 06 00 05		Slight, near.
02	Shillong	Z	e e	07 52 18 52 35		Tremor.
02	Shillong	Z	iP	09 55 52		Slight.
02	Poona	Z	eP	14 23 06		Tremor.
02	Shillong	Z	iP i	14 23 40 24 15		Slight, near.
02	Shillong	N	e e	14 29 54 34 50		Slight, distant.
02	Shillong	Z	i	15 00 09		Tremor.
02	Shillong	Z N	iPg } ePg } eP iSg SS	15 51 52 51 56 52 17 52 25	220	Slight.
02	Shillong	Z	e	21 14 56		Tremor.
02	Shillong	Z	i	22 28 41		Tremor.
02	Shillong	N	e	22 43 49		Tremor.
03	Shillong	Z	i	00 43 52		Tremor.
03	Epc: 3½° S. 29° E Tanganyika, Congo; 0 = 00h 32m 53s (USCGS) 3°24' S., 29°07' E. 0 = 00h 32m 57.5 s. (I.R.S.A.C.) Felt - Lwiro, Astrida, Uvira, Degats (Press report from Lwiro) Magnitude - 5½ (Praha)					
	Hyderabad	E	e e L M	00 47 15 53 12 58 25 01 01 17	4280	Per.=20 secs μ=8.
	Shillong	N	eS e e	00 52 42 01 02 29 06 26		Slight, distant.

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
July 1954						
03	Shillong	Z	e e	07 29 50 29 53		Tremor.
03	Shillong	Z	e	10 17 38		Tremor.
03	Shillong	Z	eP Pg P* S* eSg SSS	10 51 05 51 10 51 19 51 47 51 52 51 58	330	Slight.
03	Epc: 19½° N., 121½° E. Off the Coast of Luzon, Phillipines; 0=21h 15m 00s (U.S.C.G.S.) 19°40' N., 121°35' E., (Manila). Felt—Calapyan, Aparri (Press report) Magnitude—5½—5¾ (Kiruna), 5½ (Upsala)					
	Shillong	Z N N	eP i eP eS eSS e e(M?)	21 20 52 20 57 21 03 25 33 26 40 28 48 30 55		Slight.
	Calcutta	E	e(S) e i	21 26 36 28 47 35 14		Slight.
	Hyderabad	N	M	21 46 28		Per.=12 secs μ=3.
03	Epc: 6½° S., 105½° E. h=100 km ca Off the South West Coast of Java; 0=22h 31m 25s G.M.T. Felt—Djakarta; Magnitude—7 (Pasadena, Praha, Kiruna), 6½ (Uppsala, Hurbanovo); 6½ (Tacubaya)					
	Madras	E	iP PP PcP iS	22 37 47 38 57 40 25 42 50	3380	Moderate. Other Phases not clear due to overlapping of traces.
	Kodaikanal		iP PP PPP iS LQ and SS SSS LR M	22 37 55 38 58 39 16 43 10 45 19 45 46 46 43 49 37	3610	Moderate.
	Calcutta	E N E N E	iP iP iS iS SS SSS ScS?	22 38 00 38 03 43 18 43 22 45 14 45 41 48 17	3665	Great. First movement West and South.

Date	Station	Compt.	Phase	G	M	T.	Δ	Remarks
				h.	m.	s.	km.	
July 1954								
03 (Contd.)	Shillong	ZN N	iP PP PPP PcP iS PcS LQ SS LR M	22	38	09	3660	Moderate, compression.
	Hyderabad	EN E EN N E N E	iP PP iS SS L L M M	22	38	22	3950	Great. Per.=24 secs $\mu=97$. Per.=21 secs $\mu=43$.
	Chatra	EZ	iP PP PPP PcP eS PcS LQ SSS iScS M	22	38	35	3920	Moderate.
	Bombay	E	iP PP PPP PcP iS SS LQ SSS ScS LR M	22	33	40	4110	Moderate.
	Poona	Z E N	iP PP PPP iS PS PPS SS LQ SSS LR M	22	38	55	4253	Great.
	New Delhi	NE N	iP PP PPP PcS iS PS PPS i	22	39	30	4850	Moderate. Direction of first movement South and East.

Date	Station	Compt.	Phase	G	M	T.	Δ	Remarks
				h.	m.	s.	km.	
July 1954								
03	New Delhi	N	LQ	22	49	41		
Contd.	Contd.		LR M		51	45		
	Dehra Dun	NE N	eP PcP PP PPP PcS iS PS PPS SS ScS LQ SSS LR M	22	39	38	4910	Moderate. Per.=21 secs $\mu=115$.
	Dehra Dun	NE	e i i	00	56	52		Feeble, phases not clear.
	Shillong	Z	e	00	59	19		Tremor.
	Shillong	Z	e e i	06	48	19		Slight, near.
	Dehra Dun	NE	i i	13	40	43		Tremors.
	Shillong Dehra Dun	Z NE	i e	15	35	22		Tremor. Feeble, phases not clear.
	Shillong	Z	e e	17	46	53		Slight, near.
	Shillong	Z	e	20	02	07		Tremor.
	Shillong	Z	iP e	20	55	10		Slight, near.
	Shillong	Z	i	21	08	40		Tremor.
	Dehra Dun	N	i i	09	57	53		Feeble, phases not clear.
	Shillong	Z	iPg eSg	11	37	48	90	Slight.
	Shillong	Z	e e e	12	04	25		Slight.
	Dehra Dun	N	e i	12	24	34		Feeble, phases not clear.
	Shillong	Z	e	12	26	33		Tremor.
	Shillong	Z	iP	14	01	43		Tremor.
	Shillong	N	e	14	21	33		Ground wave.

Date	Station	Compt.	Phase	G. M. T.			△	Remarks
				h.	m.	s.		
July 1954								
05	Shillong	Z	e	16	27	11		Tremor.
05	Shillong	Z	i	16	35	20		Tremor.
05	Dehra Dun	NE	e	19	31	59		Feeble, phases not clear.
			i		32	07		
06	Shillong	Z	i		32	21		Tremor.
			e		19	33	05	
06	Shillong	Z	iP	04	10	36		Slight.
			N		18	54		
			e		19	31		
06	Dehra Dun	N	e	06	19	50		Tremor.
06	Shillong	Z	e	08	08	42		Tremor.
06	Epc: 46½° N., 153½° E. Kurile Island; h=100 km ea; 0=08h 04m 42s (U.S.C.G.S.)	ZN	iP	08	13	48	5920	Moderate.
			e		14	42		
06	Magnitude—7(Praha, Tacubaya), 6½—7 (Pasadena, Kiruna), 6½—6¾ (Berkeley, Uppsala, Hurbanovo).	N	PcP		15	11		
			PP		15	52		
			iS		21	19		
			SS		25	01		
			LR		28	—		
			M		32	19		
					32	19		
06	Chatra	EZ	iP	08	14	07	6180	Slight.
			E		15	00		
			PcP		16	09		
			PP		17	24		
			PcS		19	07		
			iS		21	52		
			PS		22	05		
			PPS		22	19		
			ScS		23	35		
			SS		25	42		
			LQ		27	54		
			LR		30	31		
			M		35	20		
06	Calcutta	E	iP	08	14	22	6370	Moderate, first movement West.
			iS		22	18		
06	Dehra Dun	NE	eP	08	14	34	6520	Moderate.
			N		15	12		
			PcP		16	39		
			PP		18	10		
			PPP		18	10		
			cS		22	38		
			PS		22	54		
			PPS		23	04		
			ScS		24	05		
			SS		26	37		
			SSS		28	39		
			LQ		29	45		
			LR		32	21		
			M		37	34		

Date	Station	Compt.	Phase	G. M. T.			△	Remarks
				h.	m.	s.		
July 1954								
06	Colombo	E	e	08	14	49		
			S		25	39		
			L		50	—		
06	New Delhi	NE	M		55	07		Moderate. Uncertain due starting of the phase within time break.
			N		14	50	6700	
			P		17	08		
06	Hyderabad	EN	PP		18	38		Moderate.
			PPP		23	04		
			eS		23	16		
			PS		24	37		
			ScS		26	35		
			SS		29	05		
			SSS		36	13		
			M		36	13		
06	Madras	E	iP	08	15	25	7550	Per.=16 secs μ=15. Per.=15 secs μ=10.
			PP		18	01		
			iS		24	24		
			iS		24	28		
			SS		28	58		
			L		37	46		
			M		41	19		
06	Poona	Z	M		42	06		Moderate shock, phases not clear due to presence of large microseisms.
			E		15	42	7780	
			PcP		15	58		
			PP		18	30		
06	Bombay	N	iS	08	15	46	7800	Moderate.
			PP		18	14		
			PPP		19	54		
			PcP		20	21		
			iS		24	57		
			PS		25	21		
			PPS		25	50		
			SS		29	39		
			LQ		33	55		
			M		43	10		
			06	Kodaikanal	Z	iP	08	
e		17				07		
PP		18				24		
iS		25				03		
PS		25				36		
06	Shillong	Z	i		26	27		Tremor.
			e		08	15	59	
06	Shillong	Z	iP	09	03	51		Slight.
			e		10	23	22	
06	Shillong	Z	iP	10	23	22		Slight.
			e		10	24	06	
06	Shillong	Z	iP	10	56	06		Slight.
			e		11	20	54	
06	Shillong	Z	iP	11	20	54		Slight, distant.
			i		11	21	13	
			e		11	21	41	
06	Shillong	Z	e		1	32	22	Tremor.
			e		41	44		
			e		52	—		

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
July 1954						
06 Contd.	Hyderabad	E	M	12 20 05		Per.=20 secs $\mu=14$.
06	Shillong	Z	e	16 49 15		Tremor.
06	Dehra Dun	N	e	18 01 36		Tremor.
06	Shillong	Z	i	19 23 44		Slight.
06	Shillong Hyderabad	N E	e M	23 03 — 23 19 16		Slight. Per.=20 secs. $\mu=8$.
07	Shillong	Z	i	01 31 00		Slight.
07	Shillong	Z	e(?) i	13 17 15 18 03		Slight.
08	Shillong	Z	i	14 45 17		Slight, local.
08	Shillong	Z N	i e(L)	15 28 55 30 24		Slight.
08	Shillong	Z	e	16 55 53		Tremor.
08	Shillong	Z	e	17 27 36		Tremor.
08	Shillong	Z	i	19 15 00		Slight.
09	Shillong	Z N	e e(L)	12 34 23 45 —		Tremor.
09	Shillong	Z	i	14 51 10		Slight.
09	Shillong	Z N	i e(M)	15 46 57 16 06 —		Slight.
09	Shillong	Z	i i	18 36 14 41 33		Slight.
	Chatra Poona	Z Z	i eP	18 36 39 18 38 28		Slight, probably deep focus. Tremor.
09	Shillong	Z	eP iSg	20 20 20 20 48	200	Slight.
10	Dehra Dun	N	e i i l	18 37 17 37 17 37 36 38 20		Feeble, phases not clear.
10	Epc. 37° N., 70½° E. Hindukush; h=200 km ca; 0=22h 56m 53s (U.S.C.G.S.) 36°·5 N., 70°·5 E. h=220 km; 0=22h 56m 57s (B.C.I.S.) 37° N., 72° E. 0=22h 56m 45s (Shillong) Felt—Hengu, Drosh (Press report from Quetta).					
	Dehra Dun	NE N	eP PP P* PPP Pg	22 58 53 59 02 59 08 59 13 59 36	900	Moderate.

Date	Station	Compt.	Phase	G.M.T.	Δ	Remarks
				h. m. s.		
July 1954						
10	Dehra Dun	N	LQ	23 00 16		
Contd.	Contd.		iS SS LR SSS S* Sg/M	00 26 00 38 00 40 00 48 00 57 01 17		
	New Delhi	NE	eP PP P* Pg i i iS SS M	22 59 06 59 13 59 28 59 54 00 18 00 30 00 52 01 04 01 48	1030	Slight. Direction of first movement North.
	Chatra	Z NE	iP eP PP PPP LQ iS SS SSS LR M	23 00 38 00 49 00 58 03 34 03 36 03 57 04 08 04 22 05 43	1780	Slight, probably deep focus.
	Poona	Z E	eP PPP eS SS SSS LR M	23 00 58 01 23 04 20 04 42 04 50 05 05 06 37	2030	Slight.
	Bombay	N	i e i(S)	23 01 10 01 43 04 07		Slight, probably deep focus. Phases not clear.
	Calcutta	E	iP iS	23 01 19 04 54	2160	Slight.
	Shillong	N	iP i	23 01 21 05 00		Slight.
	Madras	E	eP PP PPP PoP iS LQ SS SSS LR ScP M	23 01 54 02 29 02 42 05 30 06 05 06 43 07 00 07 03 07 50 09 05 09 41	2610	Moderate.
	Hyderabad	N	e iS L	23 02 18 04 45 06 00		Slight.

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks.
				h. m. s.	km	
July 1954						
10 Contd.	Hyderabad Contd.	E N	M M	23 07 00 07 11		Per. = 7 secs $\mu = 5$. Per. = 8 secs $\mu = 3$.
11	Chatra	Z	e i	07 30 14 31 35		Feeble, near.
11	Chatra	Z	e	17 15 42		Slight, near.
	Dehra Dun	E	e	21 05		Surface waves.
	Shillong	N N	e e(?) i	17 17 13 17 17 39 18 21		Tremor. Slight.
12	Dehra Dun	N	e	17 42 15		Tremor.
12	Dehra Dun	N	e e	17 55 00 57 18		Feeble, phases not clear.
12	Shillong	N	e(M)	18 52 --		Tremor.
12	Dehra Dun	N	e	23 16 37 16 49		Feeble, phases not clear.
13	Shillong	Z	eP	04 03 44		Feeble.
13	Shillong	Z	iP	05 54 47		Feeble.
13	Epc: 3° S., 151° E. New Britain Region; 0=08h 04m 44s (U. S. C. G. S.) Magnitude - 6½ (Kiruna).					
	Shillong	Z N	iP eP	08 15 19 15 26		Slight.
	Chatra	Z	eP	08 15 48		Slight, distant.
	Colombo	E	P S L M	08 16 20 25 39 40 30 46 30		
	Madras	E	e	08 16 24		Tremor.
	Calcutta	E	e i	08 16 51 24 31		Slight, distant.
	Poona	ZE	eP	08 16 51		Slight, distant shock, phases not clear.
	Bombay	E	e e e NE	08 17 09 17 37 26 16 27 54		Feeble.
	Hyderabad	N	M	08 45 52		Per. = 18 secs $\mu = 5$.
13	Dehra Dm	N	e	14 20 12		Tremor.
13	Shillong	Z	eP	20 07 17		Feeble.
13	Shillong	Z	iP	22 17 11		Feeble.
13	Shillong	N	e e?	22 38 33 41 28		Feeble.

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.	km.	
July 1954						
14	Shillong	Z	eP	06 48 41		Tremor.
14	Shillong	Z	eP	11 52 07		Feeble.
14	Shillong	Z	iP	23 23 44		Feeble.
14	Shillong Poona	Z Z	iP eP	23 53 39 23 55 33		Feeble. Tremor.
15	Shillong	ZNE	iP iS Sg	16 23 06 23 41 23 43		Local, Slight, felt.
	Chatra	Z	i i	16 24 02 25 24		Slight, near.
	Calcutta	N	i	16 24 41		Slight, very near.
16	Shillong	ZNE E	iP Sg	00 24 55 25 14		Local, Slight, felt.
16	Shillong	Z	iP	02 59 04		Feeble.
16	Shillong	Z	eP	07 39 14		Tremor.
16	Shillong Chatra Poona	Z Z Z	iP e e	12 50 01 12 50 27 12 52 13		Feeble. Slight, distant. Tremor.
16	Dehra Dun	N	e i	15 33 47 35 20		Feeble, phases not clear.
16	Shillong	Z	eP	20 04 57		Very feeble.
16	Shillong	Z	iP	22 56 21		Feeble.
17	Shillong	Z	eP	00 44 28		Feeble.
18	Shillong	N	eP	05 21 30		Feeble.
18	Dehra Dun	NE	e i	05 56 18 56 36		Feeble, phases not clear.
18	Shillong Chatra Poona	Z Z ZN	eP e eP	06 44 33 06 44 44 06 46 16		Tremor. Slight, distant. Very feeble, phases not developed.
18	Shillong	N	eP	07 05 32		Feeble.
18	Hyderabad	N E	M M	07 20 39 20 43		Per. = 14 secs $\mu = 5$ Per. = 15 secs $\mu = 4$.
18	Epc: 35½° N., 140½° E. Off the East Coast of Hondo, Japan; 0=09h 07m 44s (U.S.C.G.S.) 35° 5' N., 141° 1' E. h=40 km ca; 0=09h 07m 36s Felt (C.M.O., Japan). Magnitude—7 (Wellington), 6½ (Pasadena, Roma), 6½—6½ (Praha), 6½ (Kiruna), 6—6½ (Uppsala).					
	Shillong	ZN	iP	09 15 35	4720	Moderate.

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
July 1954								
18 Contd.	Shillong. Contd.	ZN	PP iS PS PPS SS LQ SSS LR M	09	17	01		
	Chatra	Z E	iP eP PP PPP PcP eS PPS SS LQ LR M	09	16	02	5080	Slight.
	Calcutta	E	iP PcS iS SS	09	16	12	5450	Moderate.
	New Delhi	NE N NE N	eP PP eS PPS M	09	16	57	5870	Moderate.
	Hyderabad	EN E EN E N E	iP PP iS SS L M M	09	17	27	6360	Per.=21 secs μ=13. Per.=22 secs μ=14.
	Madras	E	iP PcP PPP iS PS PPS ScS SS	09	17	36	6480	Moderate.
	Poona	N E N	eP PP PPP eS PS PPS SS SSS LQ LR M	09	17	50	6780	Slight.

Date	Station	Compt.	Phase	G.M.T.			Δ	Remarks
				h.	m.	s.		
July 1954								
18 Contd.	Bombay	NE	iP PcP PPP eS PS PPS SS	09	17	55		Moderate. Surface waves not prominent.
	Colombo	N	e S L M	09	21	—		
18								Epc : 20° N., 120° E. Off the North Coast of Luzon, Phillipines ; 0=10h 57m 30 s(B.C.I.S.) Magnitude—5½ (Kiruna).
	Shillong	Z	eP eS M(?)	11	03	10		Feeble.
	Chatra Calcutta	Z E	e eS i i	11	03	49		Slight, distant. Slight, distant.
	Hyderabad	N E	M M	11	22	41		Per.=12 secs μ=3. Per.=12 secs μ=3.
18	Chatra Shillong	Z Z	e eP	14	52	11		Slight, distant. Very feeble.
18	Dehra Dun	N	e	19	34	39		Feeble, phases not clear.
18	Shillong	Z	eP	22	10	27		Very feeble.
18	Dehra Dun	N	e	22	55	40		Tremor.
19	Shillong	Z	eP	14	03	30		Feeble.
19	Shillong	Z	eP	15	57	24		Feeble.
19	Shillong	Z	eP	17	18	26		Feeble.
19	Poona	E	eP	19	10	20		Tremor.
19	Dehra Dun	N	e	20	10	16		Feeble.
19	Shillong	Z	iP	21	35	35		Feeble.
20	Dehra Dun	N	e	01	52	49		Tremor.
20	Shillong	Z	i i	08	52	33		Tremor.
20	Shillong	Z	P Pg PP Sg	18	52	20		Very feeble
20	Shillong	Z	i	20	02	53		Slight.

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
July 1954								
20	Dehra Dun	NE	e	20	15	21		Tremor.
20	Shillong	Z	P Pg PPP S S* Sg	20	46	46 46 58 47 02 47 28 47 30 47 36		Slight.
20	Shillong	Z N	eP eP PPP eS SSS/M	23	40	25 27 42 15 35		Slight.
20	Chatra	Z	e	23	40	45		Slight, near.
	Calcutta	E	e	23	41	15		Slight, near.
	Poona	N	i e*	23	48	38		Tremor.
21	Dehra Dun	N	e	00	45	14		Tremor.
21	Shillong	Z	Pg Sg	04	11	02 16		Tremor.
21	Epc: 27½° N., 101° E. Szechwan Province China; 0=04h 38m 51s (U.S.C.G.S.) 27° N., 101 E. Yunnan Province China; 0=04h 38m 50s (Shillong).							
	Shillong	Z N	iP eS LR M	04	40	57 31 15 53		Slight.
	Chatra	Z	i	04	41	51		Slight, near.
	Dehra Dun	NE N	eP PP PPP iS PcP LQ SS SSS LR M PcS ScS	04	43	33 55 08 19 31 35 56 09 34 24 08 06	2290	Moderate.
	New Delhi	NE N NE N	eP PP eS LQ PcP SSS LR M	04	43	41 03 22 32 48 03 19 32	2230	Slight.

Date	Station	Compt.	Phase	G. M. T.			Δ km.	Remarks
				h.	m.	s.		
July 1954								
21	Hyderabad	N	eP	04	43	56	2700	Slight.
Contd.			iS L M i		48	13 33 56 01		Per.=11 secs $\mu=5$. Slight.
	Calcutta	N	i	04	44	01		
	Bombay	N	eP PPP eS LQ SS SSS LR M	04	44	41 48 26 35 56 11 51 01	3120	Slight, doubtful due micro-seisms. Per.=7 secs $\mu=4$.
21	Shillong	Z	i	07	15	31		Tremor.
21	Shillong	Z	i	14	54	25		Tremor.
21	Shillong	Z	e	16	46	35		Tremor.
21	Shillong	Z	iP	17	44	31		Slight.
21	Shillong	Z	i	22	07	22		Tremor.
22	Shillong	Z	i i	04	10	46 48		Slight, local.
22	Shillong	Z	i	06	03	57		Tremor.
22	Shillong	Z	i	07	48	26		Tremor.
22	Shillong	Z	e i	07	57	29 58		Tremor.
22	Shillong	Z	i	10	47	39		Slight.
22	Shillong	Z	i	12	24	23		Tremor.
22	Shillong	Z	e	12	46	16		Tremor.
22	Shillong	Z	i	14	54	27		Slight, rarefaction.
22	Shillong	Z	i	18	28	59		Tremor.
23	Bombay	E	i i	04	53	09 28		Unidentifiable phases of a very distant shock.
	Poona	Z	iP	04	53	09		Feeble shock. Phases lost.
	Shillong	Z	PKP	04	53	32		Slight compression. Other phases not clear.
23	Epc: 34½° N., 69½° E. Eastern Afghanistan; 0=14h 45m 16s (U.S.C.G.S.) 35° N., 69° E. 0=14h 45m 15s (Shillong).							
	New Delhi	NE N NE	iP PP PPP	14	47	21 29 35	360	Slight. Direction of first motion South and East.

Date	Station	Compt.	Phase	G.M.T.			Δ	Remarks
				h.	m.	s.		
July 1954								
28	Shillong	Z	iP P* Pg eS Sg	22	26	41	710	Slight.
28	Shillong	Z	iP PP P* Pg LQ eS SS S* Sg	22	30	54	690	Slight.
29	Shillong	Z	eP P* eSg	00	40	01	210	Slight.
29	Shillong	Z	e e	01	09	53		Tremor.
29	Epc: 49½° N., 158° E. Off the South Coast of Kamchatka; 0=03h 34m 20s (U.S.C.G.S.) Magnitude—6½—6½ (Berkeley), 6 (Pasadena), 6½ (Kiruna), Uppsala, Tacubaya), 6—6½ (Praha).							
	Dehra Dun	N	e i i i i	03	43	25		Slight, phases not clear.
	Shillong	ZN	iP i PoP iS PS PPS LR M	03	44	00	6180	Moderate.
	Calcutta	E	eP iS	03	44	30	6800	Slight.
	New Delhi	NE N	eP eS	03	44	51		Moderate.
	Hyderabad	E	iP iS M	03	45	36	7750	Per.=15 secs μ=5.
	Poona	ZN	eP PP eS SS SSS M	03	45	51	8030	Moderate.
	Kodaikanal	E	eP	03	45	53		Tremor.

Date	Station	Compt.	Phase	G. M. T.			Δ	Remarks
				h.	m.	s.		
July 1954								
29	Bombay	NE N E N E	iP eS iS M M	03	45	54	8070	Moderate.
29	Shillong	Z	i i	04	14	48		Per.=19 secs μ=5. Per.=23 secs μ=10.
29	Shillong	Z	iP eS eSg SS	04	16	05	180	Tremor.
29	Shillong	Z	i i	06	17	24		Slight.
29	Shillong	Z	e e	06	17	43		Tremor.
29	Shillong	Z	e e	06	48	00		Tremor.
29	Shillong	Z	e e	08	32	10		Tremor.
29	Shillong	Z	e e	08	48	43		Tremor.
29	Shillong	Z	i i	08	34	33		Tremor.
29	Shillong	Z	i i	14	03	27		Tremor.
29	Shillong	Z	e i	14	03	40		Tremor.
29	Shillong	Z	e i	14	29	00		Tremor.
29	Shillong	Z	i i	14	48	59		Slight, local.
29	Shillong	Z	e e	22	25	03		Tremor.
30	Shillong		e	00	04	16		Tremor.
30	Shillong	Z	iPg	07	23	16		Slight.
30	Epc: 35½° S., 97½° , South Pacific; h=100 km ca; 0=08h 46m 11s (U.S.C.G.S.) Magnitude—6½ (Pasadena, Kiruna), 6½ (Tacubaya), 6 (Uppsala)							
	Colombo	E	e e e	09	04	25		
	Bombay	E NE E N E NE	PKP PP i e i	09	06	06		Very distant shock, feebly recorded.
	Poona	Z N	PKP i i	09	06	09		

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
				h. m. s.		
July 1954						
30 Contd.	Shillong	N	PKP ₁ PP e(SKKS ₁) e(SKKS ₂) PPS SS SSS LQ LR M	09 07 08 12 15 18 48 21 59 25 52 32 47 44 37 57 37 05 29 13 38	18580	Moderate, Beginning in Benioff Vertical mixed with traffic disturbance.
	Kodaikanal	E	e	09 10 57		Tremor.
	Hyderabad	E N	M M	10 08 32 10 14		Per.=21 secs $\mu = 6$. Per.=22 secs $\mu = 15$.
30	Shillong	Z	i	11 30 21		Tremor.
30	Shillong	Z	eP Pz eSg SS SSS	17 33 26 33 28 33 49 33 58 34 06	170	Slight.
31	Epc: 39° N., 104° E. Ningsia Province China; 0=00h 59m 57s (U.S.C.G.S.) 39° 5 N., 104° E. 0=00h 59m 56s (B.C.I.S.). 38° N., 105° E. 0=00h 59m 57s (Shillong). Magnitude - 7½ (Hurbanovo, De Bilt), 7.2 (Praha), 7-7.1 (Shillong), 7 (Roma), 6½ (Kiruna, Uppsala, Jerusalem), 6½ (Pasadena).					
	Shillong	ZN E N	iP } ep } PP PPP LQ iS SS SSS LR M PcS ScS	01 03 47 03 58 04 17 06 38 06 49 07 06 07 17 07 27 08 45 12 28 15 00	1810	Great.
	Chatra	Z	i	01 04 15		Moderate, Near; phases unidentifiable from vertical compt. record alone.
	Calcutta	E N E	iP iP PPP iS LR M	01 04 48 04 52 05 29 08 46 10 18 11 42	2430	Great. First movement West and South.

Date	Station	Compt.	Phase	G.M.T.	Δ	Remarks
				h. m. s.	km.	
July 1954						
31 Contd.	Dehra Dun	NE N	eP PP PPP PcP iS LQ SS SSS LR PcS M ScS	10 05 07 05 29 05 42 08 41 09 21 10 04 10 27 10 38 11 11 12 14 13 09 15 52	2650	Moderate.
	New Delhi.	N	iP PP iS i LQ SS SSS LR PcS M	01 05 17 05 47 09 38 09 52 10 24 10 37 10 49 11 32 12 26 13 36	2760	Moderate, direction of first movement North.
	Hyderabad	E	i P iS SS L M	01 06 14 06 30 11 26 12 31 15 34 16 31	3300	Great. Per.=9 secs $\mu = 176$.
	Poona	ZN	eP PP PPP iS SS SSS LR M	01 06 36 07 40 08 09 11 58 14 03 14 17 15 35 17 50	3732	Great.
	Madras	E	iP PcP iS LQ SSS LR	01 06 41 09 03 12 08 14 29 15 03 16 19	3810	Moderate.
	Bombay	NE N	iP PP PPP i iS i i LQ SS SSS LR M	01 06 43 08 02 08 20 10 54 12 07 12 34 13 07 14 16 14 28 14 39 15 56 17 00	3770	Great. (beginning)

Date	Station	Compt.	Phase	G. M. T.	Δ	Remarks
July 1954				h. m. s.	km.	
31 Contd.	Kodaikanal	E	iP PP PPP iS LQ SSS LR	01 07 22 08 40 09 04 13 01 15 28 16 00 17 13	4000	Earthquake of moderate intensity.
	Colombo	E	P S L M1 M2	01 07 33 13 18 19 30 22 42 30 50		
31	Shillong	Z	iP	01 18 56		After shock of previous shock.
31	Shillong	Z	iP	01 26 11		After shock of previous shock.
31	Shillong	Z	i i	02 02 49 02 55		Tremor.
31	Shillong	Z	i	02 09 24		Tremor.
31	Shillong	Z	e e e	06 06 45 07 21 07 28		Slight, local. Begining doubtful due merging with traffic disturbance.
31	Shillong	Z	ePg eSg	06 10 19 10 33	120	Slight.
31	Shillong	Z	e	06 21 41		Tremor.
31	Shillong	Z	e	12 30 53		Tremor.
31	Shillong	Z	e e	13 52 35 53 53		Slight, near. Traces faint due to drop in voltage.
31	Dehra Dun	N	e i	15 45 38 46 12		Feeble.
31	Shillong	Z	e	17 08 07		Tremor.
31	Dehra Dun	N	e i	17 57 24 59 01		Slight, phases not clear.
	Shillong	Z	e(P)	17 59 58		Slight, near.
31	Shillong	Z	iPg eSg	19 06 10 06 24	120	Slight.
31	Shillong	Z	iP	20 23 37		Slight.
31	Shillong	Z	eP	22 20 13		Slight.

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 in G.M.T.	Duration in secs	Intensity R.F. scale	No. of shocks	Remarks
		h. m.				
Shillong	July 1	15 25	1-2	II	1	—
Srinagar	July 10	23 —	30	V	2	Sound rumbling, cracking of walls heard.
Shillong	July 15	16 25	3	II-III	1	—
Shillong	July 16	00 25	3	II-III	1	—
SARKER						
28.1.56						

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GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

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Shri S. Basu, M.Sc., F.N.I.,
Director General of Observatories

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
	Benloff 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

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.	km.	
<u>Mar.</u> 1954								
03 Contd.	Dehra Dun	N,E N	eP PcP PP PPP N,E iS N ScS/PS PPS SS Lq Lr M	06	14	20	7890	Moderate.
	Poona	E N E	iP PcP PP PPP eS PS PPS SS Lq M	06	14	22	7930	Moderate.
	Bombay	N E E N E N,E E N E N E	eP iP PP e e iS PS PPS SS Lq Lq Lr M	06	14	32	8090	Moderate. Another shock appears to be superimposed on the coda of this shock.
								Per. = 23 Secs./u = 12.
03	Shillong	Z	eP e	07	54	30		Slight.
	Chatra	E	e e e	07	57	58		Slight, distant.
				08	04	32		Surface wave.
	Dehra Dun	N	e	08	04	03		Tremor.
	Hyderabad	E N	M M	08	15	45		Per. = 16 Secs. /u = 6.
						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 i	10	47	04		Slight.
						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.	Δ	REMARKS
				h. m. s.	km.	
<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; $0 = 11\text{h } 17\text{m } 43\text{s}$ (U.S.C.G.S).					
	Poona	Z	eP	11 23 50		Tremor.
	Shillong	Z	eP i i	11 26 04 26 24 26 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; $0 = 15\text{h } 07\text{m } 01\text{s}$ (B.C.I.S).					
	Dehra Dum	N,E	eP eQ iS SS SSS Lr M PcP	5 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; $0 = 00\text{h } 29\text{m } 27\text{s}$ (U.S.C.G.S). Magnitude = 7 (Wellington), $6\frac{1}{2}$ (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 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		
	N	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		
		PoP		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>						
<u>1954</u>						
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 ₁	25 34		
			M ₂	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.	Δ	REMARKS
				h. m. s.	km.	
<u>Mar.</u>						
1954						
10	Epc: Hindu Kush;		- H =	04h 16m 38s	(Quetta).	
	36°N, 71.5°E.		- 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
		E	i?	22 59		not clear.
			•	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 Lq	01 55 02 48		
		N,E	iS SS Lr SSS	02 56 03 08 03 13 03 19		
		N	S*	03 30		
		N,E	i Sg	03 40 04 04		
	Dehra Dun	N,E	eP PPP P* Lq iS SS Lr SSS S* Sg/M	01 01 26 01 44 01 53 03 09 03 18 03 32 03 36 03 42 03 55 04 24	1090	Slight.
	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./ μ = 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.	
Mar. 1954							
13 Contd.	Madras	E	eP	01	03	23	2190 Slight.
			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 N,E	e	11	51	07	Slight, near.
			e		51	30	
			i		51	35	
13	Kodaikanal	E	e	17	20	48	Tremor.
13	Epc: $8\frac{1}{2}^{\circ}$ S, 117° E. Sunda Island; - H = 18h 14m 45s (B.C.I.S).						
	Colombo	E	eP	18	22	20	Amp. = 0.1 mm.
			S		28	20	
			M		41	05	
	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	
			e	19 07	
			i	22 10	
	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	
			e	07 26	
			M	15 30	
	Chatra	Z	e	17 54 33	Slight, distant.
		E	e	18 18 --	Surface wave.
	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.
		N	M	26 25	Per. = 12 Secs./u = 2.
	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: $11\frac{1}{2}^{\circ}$ N, 58° 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.	
Mar. 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 $\frac{1}{2}$ ^o N, 95 ^o E.	N W Burma;	h = 150 km;	- H = 23h 42m 05s		(U.S.C.G.S)
		24.6 ^o N, 95.2 ^o 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.	km.				
<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. $\mu = 2.0$. First movement South.
			N	iP↓			44 02		
E	eP↓								
E	iP		44 02						
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					
	M	50 39							
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					
			Lr	49 27					
	M	50 40							
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.		
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 08 37 10 10 10 23 10 25 10 59	900		Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.		Z	REMARKS	
				h. m. s.	km.			
Mar. 1954								
21	New Delhi	N,E	eP	18	08	50	850 Slight.	
			PPP		09	05		
			e3		10	18		
		N,E	33		10	32		
			333		10	40		
			3*		10	45		
25 Epc: Probable region Pamir (B.C.I.S.) 38°N, 72°E. - H = 06h 47m 30s (Shillong).								
	Dehra Dun	N,E	eP	06	49	51	1110 Moderate.	
			PP		50	00		
			Lq		51	35		
			13		51	44		
			33		51	56		
			3g/m		52	52		
	New Delhi	N,E	eP	06	50	35	1140 Slight.	
			PP		50	15		
			PPP		50	23		
			Lq		51	52		
		N,E	e3		52	02		
			33		52	15		
			N	3*		52		45
				3g		53		16
	Poona	Z	eP	06	51	58	Tremor.	
5	Poona	Z	e	06	53	51	Slight, phases doubtful.	
			E		58	07		
			N		07	00		40
25	Shillong	N	iPg	07	18	25	30 Slight.	
i3g		18	28					
26	Dehra Dun	N	e	03	44	39	Tremor.	
26	Bombay	N	e	04	43	14	Feeble.	
			e		45	45		
	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	02	05	42	Feeble.	
			e		09	33		
	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. s
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 ₁	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 ₁			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 ₁		59	12				
		E,ES	iS ₁							
		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. I.; 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			
	Chatra	E,Z	iP	06	27		47	7330 Moderate.
			E	PcP			28	
PP			30	16				
PPP			31	49				
PcS			32	15				
iS			36	34				
PS			36	56				
PPS			37	04				
SKS _i			37	34				
SS			41	02				
SSS			44	00				
Lq			45	02				
Lr			48	11				
M		53	56					

Per. = 16 Secs.
/u = 10
Per. = 15 Secs.
/u = 9

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.	km.	
<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		
		E	iS		37	13		
		N	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	-	-	-

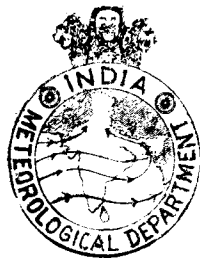
Place at which felt	Date in G. M. T	Time in G. M. T h. m.	Duration in secs	Intensity R.F. scale	No. of shocks	Remarks
Kandi	21	23 42	20	VI	-	Direction East west
Khoragpur	21	23 42	2	IV	-	-
Garhbeta	21	23 42	30	VI	-	-
Deragaon	21	23 42	90	VII	-	-
Sibsagar	21	23 42	120	VII	-	Movement from S-W direction.
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 G. M. T		Duration in secs	Intensity R.F. scale	No. of shocks	Remarks
		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
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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 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>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 $1/2^{\circ}$ N, 153 $1/2^{\circ}$ 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 Ocean ridge.							
	- H = 23h 13m 10s (ISC) and (SIS).							
	41°59' N, 142°08' E. h = 50 km.							
	- H = 23h 14m 01s (SIS) (1/20. 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 ₁ = 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	Δ	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. Δ =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			
			M		31	33			
	Chatra	Z	iP	07	21	34		Slight, distant. Surface waves.	
		E	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° S, 155° E. Solomon Island; - H = 03h 03m 03s (USCGS).								
	Shillong	Z	iP	03	13	30		Feeble.	
	Hyderabad	E	eP	03	15	18	8840	Slight.	
			N	iS		25	20		
			M		50	06			Per.=15 Secs. Δ =3.

DATE	STATION	COMPT	PHASE	G	M	T	Δ	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. μ =43.
		E	M		41	07		Per.=13 secs. μ =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. μ =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. μ =136.
		E	M		37	41		Per.=12 secs. μ =77.
	Colombo	E	iPP	10	30	21		
			S		34	27		
			L		36	18		
			M ₁		38	32		
			M ₂		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	Δ	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	Δ	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
<u>1954</u>								
13	Epc:		34 $\frac{1}{2}$ ^o N, 133 $\frac{1}{2}$ ^o E.	South Coast of Hondo;				
			32 ^o 9 N, 134 ^o .4 E.	- H = 15h 25m 48s (USCGS and BCIS).				
				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. Δ = 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 ¹ / ₄ ° E. - H = 13h 24m 47s (USCGS)						
	10° N, 93 ¹ / ₄ ° 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. λ = 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° 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	Δ	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u> 1954								
17	Shillong	Z	iP	20	21	50	7530	Moderate.
Contd.		N	I					
		N	PcP		22	10		
			iS		30	53		
			PS		31	02		
			ScS		31	39		
			SS		35	16		
			Lq		39	07		
			Lr		43	41		
			M		47	22		
	Chatra	Z	i(P)	20	22	00		Slight.
		N,Z	e(S)		31	14		
	Dehra Dun	N,E	eP	20	22	16	8110	Moderate.
			PPP		26	49		
			iS		31	42		
			ScS		32	14		
			PS		32	22		
			PPS		33	25		
			SS		36	35		
			SSS		39	44		
			Lq		41	47		
			M		51	27		
	Calcutta	E	eP	20	22	18	8130	Moderate.
			iS		31	46		
			SS?		36	45		
	New Delhi	N,E	iP	20	22	28	8300	Moderate.
		N	PcP		22	41		
			iS		32	04		
			PS		32	31		
			PPS		32	47		
			SSS		39	44		
			M		50	45		
	Hyderabad	E	iP	20	23	10	9230	Moderate.
			iS		33	30		
			SS		38	59		
			L		51	00		
		N	M		54	52		Per.=18 secs. μ =24.
		E	M		55	11		Per.=20 secs. μ =26.
	Poona	Z	iP	20	23	19		Moderate.
		E	PP		28	45		
			iS		33	48		
			PS		34	52		
			PPS		35	18		
			SS		39	41		
			M?		58	17		

DATE	STATION	COMPT	PHASE	G	M	T	Δ	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./ μ =10
		E	M		59	00		Per.=19 secs./ μ =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./ μ =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	Δ	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	COMPT	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	13	27	05 29 27	Slight, near.
	Dehra Dun	N	eP PP S SS SSS PeP PeS	13	27	07 27 14 29 29 29 42 30 03 33 14 35 43	1400 Slight.
	Madras	E	e	13	27	32	Tremor.
	New Delhi	N	eS SS SSS M	13	29	15 31 45 33 39 31 51	2280 Slight.
	Hyderabad	E,E E N	eS M M	13	31	36 31 33 35 26	Per.= 3 secs./ λ =2. Per.= 9 secs./ λ =2.
	Bombay	N,E N,E,S	e e	13	32	13 35 13	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./ λ = 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. 1954</u>								
25	Bombay	N E N	e e e	03	52	14 55 00 55 29		Very feeble and near shock.
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 Pg S SSS Sg	11	00	26 00 55 01 39 01 55 02 07	700	Slight.
	Dehra Dun	N	e(P) PP e(S)	11	02	46 03 06 05 22	1550	Slight. Phases not clear.
	Calcutta	E	e i i	11	03	37 06 14 06 59		Slight, near.
	Poona	E	e	11	08	27		Very distant feeble shock. Phases not clear.
	Bombay	E N E	e e e e	11	08	31 08 45 12 20 13 39		Very feeble shock.
26	Shillong	Z	1Pg P Sg	16	45	50 45 52 45 59.5	80	Slight, local, felt.
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).							

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DATE	STATION	COMPT	PHASE	G	M	T	REMARKS
				h.	m.	s.	km.
<u>Apr.</u>							
1954							
26	Shillong	Z	eP	20	34	25	6230 Distant, slight.
Contd.			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	20	34	55	Slight, phases not clear.
			i		39	24	
	Calcutta	E	eP	20	34	58	6550 Slight.
			eS		43	04	
			Lq		49	39	
			Lr		52	14	
	New Delhi	N,E	iP	20	35	08	7370 Moderate.
		N	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	iP	20	35	57	7600
		N	iS		44	59	
			L		58	19	
			M	21	03	35	Per.=21 secs./ Δ = 13.
		E	M		03	53	Per.=18 secs./ Δ = 10.
	Poona	Z	eP	20	36	07	Very distant feeble shock. Phases not clear.
		E	i				
	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	iP	20	36	12	7950 Slight.
		E	eP				
		N,E	PP		38	56	
		E	PPP		40	41	
		N,E	eS		45	31	
		E	PS		46	02	
		N,E	PPS		46	18	
		E	M	21	11	08	Per.=19 secs./ Δ = 8.
		N	M		11	11	Per.=18 secs./ Δ = 7.

DATE	STATION	COMPT	PHASE	G	M	T	△	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°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 ₁	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./ Δ = 8.
27	Dehra Dun	N	e	15	30	25		Tremor.
27	Epc: 56°S , 147°E . Off the South Coast of Tasmania;							
	- H = 21h 21m 35s (U S C G S).							
	Shillong	N	eP	21	35	10		Moderate.
			SKS ₁		45	36		
			SKKS ₁		45	51		
			iS		46	06		
			PS		47	32		
			PPS		48	07		
			PKKP ₂		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./ Δ = 6.
		N	M		05	30		Per.=18 secs./ Δ =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. Δ =24.
		N	M		40	05		Per.=18 secs. Δ =21.

DATE	STATION	COMPT	PHASE	G	M	T	△	REMARKS
				h.	m.	s.	km.	
<u>Apr.</u>								
<u>1954</u>								
29	Calcutta	E	iPKP ₁	11	59	21	13780	Moderate.
			SKS ₂	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 ¹⁰ / ₂ °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	Δ	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 ₁		33	23		
			M		36	08		

DATE	STATION	COMPT	PHASE	G M T			△	REMARKS	
				h.	m.	s.			km.
<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. λ = 14 Per.=15 secs. λ = 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		16	15	6	III	-	-
Srinagar	11		10	54	120	V	4	-
Khandwa	23		11	05	1	III-IV	1	-
Shillong	26		16	30(?)	15	II	1	-

10/10/72

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



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

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

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		

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 41 45 07 48 59 10 12 21 51	900	Moderate.
05	Shillong	Z,N N	iP iS	09	00	39 33	8670	Slight.
	Poona	Z,N Z	eP ?	09	02	13 06		Very distant feeble shock. Phases not clear.
	Colombo	E	eP S L M	09	02	39 -- 19 09		Amp. = 0.2mm.
	Hyderabad	N	S M	09	12	12 17		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 12 18 21 44 21 35 46 48 59 02 24 51	870	Moderate.
	New Delhi	N,E	eP PP Lq eS SS SSS M	09	19	30 38 48 59 10 21 55	860	Slight.
05	Shillong	Z	e	09	21	21		
05	Dehra Dun	N	e e	09	55	58 03		Slight. Phases not clear.
05	Shillong	Z	i	18	01	08		Tremor.
05	Shillong	Z	e	23	54	03		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	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 not recorded.
			M	56 40		
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.			△	REMARKS
				h.	m.	s.		
<u>Aug.</u> 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'
			•		58	57		time not absolutely
			PP	05	00	09		accurate for absence
			•		01	34		of Benioff time.
			•		02	45		
			i		03	59		
			SKS		06	20		
			SS		07	24		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS	
				h.	m.	s.			
Aug. 1954									
18 Contd.	Hyderabad	E	eP	04	56	40	12360	Δ 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./ Δ = 4		
			E	M	43	23		Per. = 11 Secs./ Δ = 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 ₁	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 ₁	12	21			
			N	e ₁					
			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			
	Shillong	N	SSS		00	35		Slight. Phases not clear.	
			M		01	20			
	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.	
			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	00	1280	Slight.	
			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.			Δ	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 ₁	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. μ = 11 Per. = 21 Secs. μ = 8

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	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		
		E	M	57 45		Per. = 21 Secs./u = 43
			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.</u>								
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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			
	N	SS	17 06			
		L	23 15			
		L	23 49			
Colombo	E	M	28 51	11 05 24	Per. = 18 Secs. Δ = 7. Per. = 18 Secs. Δ = 5	
		M	28 56			
		P	11 05 24			
Kodaikanal	E	S	13 41	7000	Long distance earthquake of slight intensity.	
		L	27 --			
		M	31 03			
		Amp. = 0.4mm.				
Poona	Z	eP	11 05 27	7000	Slight.	
		iS	13 57			
Bombay	N,E	f?	12 12 45	7420	Moderate, h = 120 km.	
		iP	11 05 31			
		iS	14 01			
		PS	14 15			
		PPS	14 35			
		SS	18 14			
Shillong	Z	M	30 17	11 22 31	Slight.	
		iP	11 05 36			
		pP	06 12			
		iS	14 13			
Shillong	Z	i	15 14	11 53 33	Slight.	
		i	15 20			

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 07 09 12 13 16 17 23		
						03 57 12 58 03 44 48 30		

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS
				h.	m.	s.		
<u>Aug.</u>								
1954								
30 Contd.	New Delhi	N,E	eP	08	07	08	6260	Moderate.
			i		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



Published under the direction of

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

Director General of Observatories

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 ^s 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.	
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. Amp = 0.5 mm.
			S		46	50	
			L		55	--	
			M	04	03	02	



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.
		N E NE E				
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.

Sept.
1954

04 Epc: 28°N., 83½°E., two shocks; 01 = 06h 43m 46s
02 = 06h 45m 14s
(U.S.C.G.S.)

27°55'N., 83°5' E.; 01 = 06h 43m 50s (Shillong)
Magnitude I - 6¼ (Kiruna),
Magnitude II - 6½-6¾ (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.

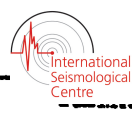
DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Sept. 1954						km.	
04	Bombay	N	eP	06	47	01	1450 Slight.
Contd.			eS		49	28	
			M		51	11	
		E	M		51	28	
	Madras	E	iP	06	47	27	1650 Moderate.
			PP		47	36	
			PPP		47	43	
			iS		50	14	
			SS		50	36	
			SSS		50	48	
			LR		50	58	
04	Madras	E	M	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; $21^{\circ}.4$ N., 122° E., 0 = 08h 53m 20s (U.S.C.G.S.) 0 = 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	11	55	31	Very feeble.
			e		56	47	
04	Shillong	Z	i	13	24	11	Tremor.
04	Chatra	Z	i	13	24	33	Slight, distant.
		E	e				
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	05	31	31	Feeble.
			e		31	55	
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.

10.

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

DATE	STATION	COMPT.	PHASE	G.	M.	T.	km.		
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 ₁		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
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	18	42	14
			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, Phillipines; O = 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, Phillipines; O = 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; O = 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	320 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.

15.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	km.
<u>Sept.</u>							
<u>1954</u>							
09	Madras	E	iP	01	16	14	8250
Contd.			PcP		16	24	
			PP		19	01	
			PPP		20	57	
			iS		25	48	
			SKS		26	01	
			ScS		26	09	
			*SS		30	48	
			LQ		36	36	
			*PS		26	20	
	Calcutta	E	iP	01	16	18	8130
			iS		25	46	
	Shillong	ZN	iP	01	16	27	8380
			PP		19	17	
			S		26	07	
			SKS		26	20	
			PS		26	44	
			LQ		36	46	
	Colombo	E	S	01	26	21	
			L		43	--	
			M		48	05	
							'P' trace lost.
							Δmp. = 2.0 mm.
09	Shillong	Z	iP	03	04	11	
							Rarefaction.
09	Dehra Dun	N	e	03	32	21	
			i		32	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	10	20	16	145
			Sg		20	33	
							Near, Slight.
09	Dehra Dun	NE N	eP	18	57	10	840
			PP		57	17	
			PPP		57	24	
			P*		57	27	
			Pg		57	44	
			LQ		58	25	
			iS		58	37	
			LR		58	45	
			SS		58	47	
			SSS		58	58	
			S*		59	01	
			Sg; M		59	22	
	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 not clear.
		N	i	06	03	48	
	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.
<u>Sept.</u>							
1954							
13	Epc: 21°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)	02	22	01	
			S		34	21	
			L	03	54	--	
			M	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	02	27	40	Moderate, distant.
			i		27	53	
			i		28	52	
			i		34	02	
			i		37	55	
	Bombay	E	ePKP ₁	02	28	01	12955 Moderate, surface wave not developed.
		NE	PP		29	32	
		E	PPP		31	38	
		NE	SKS ₁		35	05	
			PPS ₁		40	08	
			SS(?)		45	12	
		E	SSS		49	32	
			i		57	30	
	Dehra Dun	N	e	02	28	16	Feeble, phases not clear.
			i		29	19	
	Poona	Z	e	02	28	27	Slight.
	Madras	E	i	02	28	35	Moderate.
	Hyderabad	N	SKS	02	34	36	
			M	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°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	18	23	57	Slight, distant.
			e		27	35	
			i		28	26	
	Kodaikanal	E	e	18	24	41	
	Colombo	E	P	18	26	20	
			M		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			
	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. Per. = 13 secs, /u = 3.	
			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	iP	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	Slight, distant.
	Calcutta	E	i	18	13	07	Slight, distant.
			i		18	38	
			i		19	37	
			i		22	38	
			i		26	53	

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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	iP	01	24	32	Slight, distant.					
								E	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					
			NE	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.			
Sept. 1954							
17	Epc:	24 $\frac{1}{2}$ ^o N., 122 ^o E. 24 $\frac{1}{2}$ ^o N., 121 $\frac{1}{2}$ ^o E.		H = 07h 33m 21s (U.S.C.G.S.) 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.	
			i		42	09		
			PP		43	37		
			E	i		44		02
			N	PPP		44		23
			E	iS		48		25
			N	eS(?)		48		42
			E	PPS		48		55
			N	LQ		52		06
			E	SS		52		15
E	SSS		52	30				
N	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	eP	11	16	39	Moderate, long distance shock. Appears to be a considerably deep focus shock.	
			E	e		17		07
				e		18		10
				i		20		50
				i		21		09
				iS		26		54
		eS		28	47			
	Chatra	Z,E	-	11	17	01	Slight, distant. Very prominent.	
			Z	i	11	21		14
			E	e		27		20
	Calcutta	E	e	11	18	38	Moderate, distant.	
			e		21	01		
			i		27	08		
			i		31	03		
	Bombay	NE	e	11	20	14	Distant and deep. Moderate.	
			E	i		23		06
			NE	i		30		06
			E	i		31		56
			E	i		32		00
			E	i		32		32
			N	i		33		30
	N	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 19 40 20 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		54	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	i		48	56	
		H	e				

DATE	STATION	COMPT.	PHASE	G. L. T.			REMARKS
				h.	m.	s.	
Sept. 1954							
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 PcP50 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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1954

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



Published under the direction of

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

Director General of Observatories

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 ^s 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. Δ M. S. S. S.

Oct.
1954

01 Epic: 11°S, 166°E; near Cruz del Sur.
 - 500 km S of Rio (U.S.G.D.).
 Magnitude = 6 $\frac{1}{2}$ -7 (Stalinate Pleso, Burbanovo);
 6.8 (Pasadena); 6 $\frac{1}{4}$ (Praha, Debilt);
 6 $\frac{1}{2}$ -6 $\frac{1}{4}$ (Berkeley); 6 $\frac{1}{2}$ (Airuno).

STATION	COMPT.	PHASE	G.	M.	T.	Δ	M. S. S. S.		
Shillong	Z	eP	03	07	46	8980	Moderate.		
		iS		17	54				
	N	SKS ₁		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		17		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	22				
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.		
<u>Oct.</u>								
1954								
01 Contd.	New Delhi	N,E N	e	03	09	00	9780	Moderate.
			iSKS		19	37		
			iS		19	51		
			PS		20	11		
			PPS		21	24		
	Poona	Z	eP	03	09	08		Slight.
	Bombay	N,E E	eP	03	09	12	10940	Moderate.
i				12	10			
PP				13	06			
N		PP		13	12			
		PPP		15	00			
		PPP		15	34			
E		e		17	28			
		SKS ₁		19	40			
		SKS ₁		19	52			
N,E		SKKS ₁		20	16			
		iS		20	35			
		iS		20	38			
E		PS		21	50			
		PS		21	54			
		Lq		37	0			
N	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.	Δ	REMARKS
				h. m. s.	km.	
<u>Oct.</u>						
<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 ₁ 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.		
Oct. 1954								
03	Epc: $60\frac{1}{2}^{\circ}$ N, 151° 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 30 50 40 46	8980		Moderate. Time doubtful.	
	Dehra Dun	N,E	e(P) e e(S)	11 30 52 32 53 40 57			Moderate, phases not clear.	
	Chatra	Z E	iP eP PP iS Lq Lr M	11 30 55 34 00 36 00 41 01 52 07 56 06 12 03 30	8930		Slight.	
	New Delhi	N,E N	eP i PP i i iS ScS PS PPS i SS	11 31 07 33 49 34 34 35 16 38 01 41 17 41 34 41 55 42 19 42 57 46 11	9020		Moderate.	
	Calcutta	N,E E	eP iS PS	11 31 18 41 33 42 15	9130		Moderate.	
	Hyderabad	N N,E N E N	eP PP S PS SS M M	11 31 50 35 37 42 19 44 13 48 58 12 09 59 10 01	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 31 54 32 32 33 35 34 29 35 31 35 42 40 20 42 23 42 50 43 23	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.			km.	
<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	N	eP			23	31
iS						3	09			
ScS						41	22			
SS						42	55			
Dehra Dun	N,E	N	eP	23	31	27	6190	Moderate, phases not clear.		
			e			32			14	
			e			32			31	
			eS			39			13	
Bombay	E	N,E	eP	23	31	48	6280	Slight.		
			PPP			34			56	
			iS			39			19	
			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	N	eP	01	39	03		Slight.		
			e			43			40	
			e			45			25	
			e			50			40	
Chatra	Z	E	iP	01	39	43		Slight, distant.		
			eP							
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.		
			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.		
<u>Oct.</u> 1954								
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.		
<u>Oct.</u>								
<u>1954</u>								
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.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
<u>1954</u>								
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.	

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
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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		
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.		
<u>Oct.</u> 1954								
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.
		N	e		24	35		
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
			Z		19	13		

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DATE	STATION	COMPT.	PHASE	G. M. T.	△	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	Bombay	N	eP	01	45	12	6690	Slight. 'M' has not developed.
Contd.		E	iP					
			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 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 50 57		Slight.
17	Bombay	E N,E	e e	23	12	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	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 ₁		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.			△	REMARKS
				h.	m.	s.		
<u>Oct.</u>								
<u>1954</u>								
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			

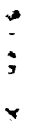
DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS
				h.	m.	s.		
Oct. 1954								
29	Shillong	Z	ePg Sg	18 03 21 03 26		40	Local, slight.	
29	Shillong	Z	iP Sg	18 40 36 41 07		230	Slight, local.	
29	Shillong	Z	i	19 55 53			Very feeble.	
29	Shillong	Z	iP	20 12 50			Slight.	
29	Shillong	Z	ePg Sg	20 59 04 59 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. 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.
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 N	eP eP i	23	25	46		Slight, distant.
31	Colombo	E	P e e M	23	26	03		
						37 21		
						58 21		Amp. = 0.4mm.
				00	05	21		
31	Bombay	E	e e e	23	26	56		Distant and slight.
						33 56		
						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.



GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN



Published under the direction of

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

Director General of Observatories

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 ^s 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.			Δ	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.	Δ	REMARKS
				h. m. s.	km.	
<u>Nov.</u> 1954						
11	Bombay	N,E E N,E E	iP i eS Lq SS L	05 18 58 20 05 22 50 23 10 23 17 24 06	2350	Slight.
	New Delhi	N,E N N,E N	iP PP PPP eS Lq SS	05 19 14 19 38 19 49 23 09 23 18 23 35	2320	Slight.
	Dehra Dun	N,E	e	05 19 29		Slight, phases not clear.
	Madras	E	iP eS?	05 20 24 24 37		Slight.
	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 Sg	06 59 37 59 55	160	Tremor.
11	Shillong	Z	e	07 43 43		Tremor.
11	Shillong	Z	e	10 46 17		Tremor.
11	Shillong	Z E	eP iS Lq SS M	15 17 15 19 45 19 48 20 06 21 36	1480	Slight.
	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 i	04 27 08 27 47		Near.

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		
<u>Nov.</u>								
<u>1954</u>								
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°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 N	eP	16	36	50	6610	Moderate.	
			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			/u = 3mm.
	Poona	Z N	eP	16	37	21	7140	Slight.	
			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			15
			iS			46			11
			ScS			47			04
			sS			47			27
	Kodaikanal	E	e?	16	45	43		Tremor.	

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.		
Nov. 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.		
<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 ₁		40	22		
		E	iS ₁					
		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		

18 Epc: 39°N , 142°E ; - H = 20h 44m 55s (U.S.C.G.S)
 38.9°N , 142.3°E ; - H = 20h 44m 57s (CMO 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.							
Nov. 1954													
18 Contd.	Shillong	Z,E N E N,E N	iP	20	53	03	4740	Moderate.					
			eP										
			PcP/PP			54 44							
			PPP			55 25							
			iS			59 27							
			PS			59 31							
			PPS			59 40							
			SS	21	03	27							
			SSS			04 18							
			M			08 44							
			Chatra	Z E		iP			20	53	29	5150	Slight.
						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 N		iP	20	54	18	5960	Slight.					
			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 N		iP	20	55	15	6720	Slight.					
			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 E		iP	20	55	19	6890	Moderate. Somewhat deep.					
			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	04	36	5280 Slight.
	Bombay	N,E	iP pP iS sS	06	04	41	6090 Moderate.
	Colombo	E	P S L M	06	04	51	7480 Amp. = 0.1mm
	Kodaikanal	E	iP S	06	04	53	5690 Slight.
19	Hyderabad	E	iP iS	06	05	56	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	26	350 Slight. Amp. = 31mm.
	New Delhi	N,E E N,E	eP PP Pg Lq iS S* Sg SSS	13	10	37	480 Slight.
	Chatra	Z E Z,E	iP eP iS M	13	10	57	670 Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
<u>Nov.</u> 1954						
20 Contd.	Shillong	Z,E E	iP PP Lq eS Lr	13 11 47 11 52 13 33 13 42 14 00	1120	Slight.
		N,E	M	14 41		
	Poona	Z N E	iP eS SS SSS	13 12 39 15 05 15 17 15 27	1430	Slight.
	Bombay	E N,E E	eP Lq eS e i e	13 12 47 15 08 15 17 16 17 17 00 17 10	1480	Slight.
	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 N	eP P* PP Pg PPP Lq Lr iS S* SS Sg SSS	19 07 02 07 07 07 10 07 14 07 16 07 32 07 40 07 42 07 48 07 51 07 55 08 02	370	Slight.
	Chatra	Z	i(P) i(S) M	19 07 32 08 42 09 15	670	Slight.
	Shillong	Z	eP PP P* Lq eS Lr	19 08 15 08 24 08 45 09 50 10 02 10 17	940	Slight.
	Poona	Z	iP PPP eS SS M	19 09 17 09 33 11 40 11 54 13 13	1410	Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.			△	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								
21	Shillong	Z	iPg iSg	15	15	15 15 29	120	Slight.
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 07 21 07 28 07 52 08 02 08 13 08 24	470	Slight.
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 26 20		Slight, local.
22	Shillong	Z	e e e	09	41	37 41 50 42 49		Slight.
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 37 58 38 00 38 03	90	Slight.
22	Shillong	Z	e	17	56	7		Feeble.
22	Dehra Dun	N	e i	18	46	32 47 57		Slight.
	New Delhi	E N, E E N, E E	eP PPP P* Lq eS Lr S* i Sg	18	46	45 46 58 47 04 48 09 48 27 48 34 48 52 49 07 49 18	930	Slight.

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	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		

25

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).					
	6-6¼ (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.		
Nov. 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.			Δ km.	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



Published under the direction of

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

Director General of Observatories

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.		
<u>Dec.</u>								
<u>1954</u>								
03	Dehra Dun	N	i	08	51	51		Tremor
03	Shillong	Z	eP	10	17	15	250	Slight
		N,E	iSg		17	51		
03	Shillong	Z	e	15	20	05	220	Slight
			e		22	36		
03	New Delhi	E N,E	eP	19	13	42	780	Slight
			Lq		14	53		
			eS		15	03		
			SS		15	13		
			Sg		15	50		
03	Epc: 41° N, 75° E; Kirgiz (U.S.S.R).							
	- H = 21h 38m 15s (Shillong)							
	41½° N, 74½° E; - H = 21h 38m 12s (U.S.C.G.S)							
	41¼° N, 75¼° E; - H = 21h 38m 11s B.C.I.S)							
	Magnitude = 6 (Kiruna); 5¼-6 (Prahá).							
	Dehra Dun	N,E	eP	21	40	59	1220	Moderate
			PP		41	09		
			PPP		41	14		
			P*		41	27		
			Pg		41	54		
			Lq		42	52		
			iS		43	03		
			SS		43	15		
			Lr		43	23		
			SSS		43	27		
			S*		43	42		
			Sg/M		44	12		
	New Delhi	N,E N	eP	21	41	16	1380	Slight
			PP		41	26		
			Lq		43	28		
			iS		43	26		
			SSS		43	58		
			M		45	05		
	Chatra	Z,E	eP	21	42	19	1960	Slight
			PP		42	37		
		E	PPP		42	43		
			iS		45	34		
		Z E	eS					
			SS		45	54		
			Lr		46	28		
			M		48	09		
							Per. = 9.0 Secs	
							Amp. = 2.25mm	

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° N, 88° 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° 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° 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.			Δ	REMARKS
				h.	m.	s.	km.	
<u>Dec.</u>								
1954								
04	Chatra	Z,E	eP	07	11	48	7810	Slight
Contd.		E	PP		14	31		
			PPP		16	10		
			eS		21	00		
			PS		21	28		
			PPS		21	43		
			SS		25	49		
			Lq		30	17		
			M		40	--		Per. = 18.0 Secs 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	07	12	23	8350	Slight
			eS		22	05		
			PPS		23	05		
			M		42	17		
	New Delhi	N,E	eP	07	12	40	8710	Moderate
		N	eS		22	36		
	Poona	Z,E	iP	07	12	43	8960	Moderate
		E	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	eP	07	12	53	9070	Moderate (Some- what deep)
		E	PP		16	11		
		N,E	iS		23	05		
		N	e		23	43		
		E	PS		23	51		
		N,E	PPS		24	10		
		E	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 ₁	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		
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	13	09	45	9350	Slight			
			iS		20	10					
	Chatra	Z E	iP	13	09	47		Slight. Distant.			
			eP								
			e		20	12					
	Poo na	Z N	iP	13	09	46	9490	Moderate.			
			PP		13	04					
			PPP		15	01					
			SKS ₁		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					
	N,E	SS			26	36					
		L			40	03					
		N		M		45			42		
		E		M		45			42		
	Colombo	E	eP	13	19	50		Amp. = 0.5mm			
			M		14	57			38		
11	Shillong	Z	Pg	17	16	04	20	Slight. Local			
			Sg		16	06					

Per. = 16 Secs
/u = 6
Per. = 14 Secs
/u = 5

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.	△	REMARKS
				h. m. s.	km.	
<u>Dec.</u> 1954						
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 48 14		Feeble
13	Shillong	Z	r	22 46 29		
13	Poona	Z	e	22 48 12		Tremor
14	Shillong	Z Z,N	iSg iSg	04 40 44 40 59	120	Slight
14	Shillong	Z N	iP e e	06 12 07 19 28 29 37		Slight. Distant.
14	Colombo	E	L M	06 15 36 19 41		Amp. = 0.7mm
14	Shillong	Z	e e	09 14 46 15 38		Slight. Near.
14	Shillong	Z	e e	19 42 48 43 46		Slight. Near
14	Shillong	Z	i	19 49 16		Feeble.
14	Shillong	Z	e e	22 40 0 40 41		Slight. Local
14	Shillong	Z	e e	22 52 21 52 55		Slight. Local
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 N,E	e e e	08 31 19 32 07 33 10		Slight. Near.
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 ₁		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 ₁	46 32		
			Lq	50 00		
			Lr	55 45		
			M	12 02 08		
	Chatra	Z	e	11 21 46		Slight. Distant.
	Poona	Z	PKP ₁	11 26 07	13500	Great.
		Z,N	PP	27 43		
		N	PPP	30 08		
			SKS ₂	33 18		
			SKKKS ₂	34 44		
			PS	37 39		
			PPS	39 02		
			PKKS ₁	40 17		
			SKKS ₁	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.
			N	e	34	40		
			E	i	35	23		
			N	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			
			L	12	03	10		
			M	12	40			
	Colombo	E	P	11	29	57	9590	'S' uncertain
			S	40	32			
			L	12	08	--		
			M	18	10			
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 N,E	iP eP P* PP Pg PPP Lg S S* iSg/SS SSS	10 28 11 28 15 28 19 28 21 28 25 28 35 28 44 28 51 28 57 29 07	310	Moderate
	Dehra Dun	N,E	eP i	10 30 50 33 16		Feeble. Phases not clear.
	New Delhi	E N,E	eP eS SS SSS	10 30 53 33 22 33 37 33 50	1470	Slight
		E	Lr	33 57		
	Poona	Z	eP e e e E e e e e	10 32 08 33 42 33 59 34 10 38 12 38 20 38 27 42 50 46 10		Moderate
	Bombay	E	eS e i i	10 36 08 40 17 45 54 52 28		Moderate
	Hyderabad	E	e e e e	10 36 49 38 07 42 59 53 37		
19	Poona	Z	i i i	10 42 49 46 10 54 22		Probably after shock of previous day's shock.
	Colombo	E	P S M	10 42 50 52 40 11 41 38	8590	'S' uncertain 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	COORD.	MAG.	P. S. 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	
			H		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° 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 ₁		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 ₁		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 ₁	55 38		
			eS ₁	56 22		
			PPS	58 27		
		M?	12 24 59			
	Bombay	N,E	eP	11 45 31	10150	Slight. Somewhat deep.
		N	eS ₁	56 28		
		E	iS ₁			
	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.

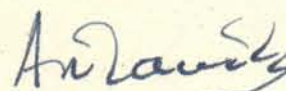
Dear Colleague,

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. ...'