

METEOROLOGICAL DEPARTMENT

August, 1952

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

Instruments and their Constants.

Station	Instrument	Compt.	Period in sec.	Static Magni- fication	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12.0	350	8:1 upto 17th Aug, 15:1 after 18th Aug.	16.0
	Milne-Shaw	E	12.0	350	3:1	8.0
	Sprengnether	E	7.0	-	-	30.0
Calcutta	Milne-Shaw	E	12.0	250	20:1	8.0
	Wood-Anderson	N	2.0	870	Critical	30.0
	Omori-Ewing	N	18.0	32		25.4
	Omori-Ewing	E	19.0	30		25.4
Chatra	Milne-Shaw	N	10.0	150	20:1	16.0
	Wood-Anderson	N	1.0	1000	22:1	60.0
	Wood-Anderson	E	1.0	1000	22:1	60.0
	Benioff	Z	To = .72 Tg = .45	-		60.0
Colombo	Milne-Shaw	E	12.0	250	15:1 upto 18th Aug. 20:1 from 19th Aug.	8.0
Dehra Dun	Omori	N	3.0	12	-	-
Hyderabad	Milne-Shaw	E	12.0	250	20:1	8.0
	Milne-Shaw	N	12.0	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8.0
Madras	Sprengnether	E	7.0	-	-	30.0
New Delhi	Milne-Shaw	N	12.0	288	20:1	8.0
	Wood-Anderson	N	4.0	1000	20:1	16.0
	Wood-Anderson	E	2.0	2000	30:1	60.0
	Omori-Ewing	E	30.0	30	1	12.0
Poona	Milne-Shaw	N	12.0	250	20:1	8.0
	Wood-Anderson	E	4.0	1100	20:1	16.0
	Sprengnether	E	To=Tg=6.6	-	-	30.0
	Benioff	Z	To = 1 sec	-	-	60.0
Shillong	Wood-Anderson	E	3.0	1000	Critical	60.0
	Wood-Anderson	E	1.5	1500		30.0

SEISMOLOGICAL BULLETIN

DATE	STATION	COMPT.	PHASE	G.	M.	T.	REMARKS.
				h.	m.	s. km.	
August 1952							
1	Poona	Z	eP	09	35	00	
1	Colombo	E	e	18	27	--	Tremor.
	Kodaikanal	E	e	18	28	05	Slight; tremor.
	Hyderabad	E	M	18	31	54	Amp = 3. Per. = 10.0 sec.

DATE	STATION	COPT.	PHASE	G.	M.	T.	△	REMARKS.
				h.	m.	s.	km.	
August 1952								
2	New Delhi	N,E	eP eS E N,E E	17	52 53 54 54 54	21 58 10 21 29	940	Slight.
	Chatra	Z	e	17	53	56		Feeble.
2	Poona	Z	eP i	22	41 42	08 48		Very feeble.
2	New Delhi	E N,E E	eP LQ eS SS i	22	41 43 43 43 44	34 35 43 55 18	1,260	Slight.
3	Shillong	E	eP? i i eS? i	12	18 18 18 18 18	10 17 24 36 57		Slight. Very near.
	Chatra	Z,N,E	e	12	18	33		Feeble.
3	Poona	Z	i	16	44	38		Tremor.
3	New Delhi	N,E E N,E E	eP eS i SS SSS Sg	23	30 31 31 31 31 31	23 18 21 29 40 43	510	Slight.
4	Bombay	N	i? e?	00	11 12	41 51		Tremor.
5	Chatra	Z	iY	21	55	46		Feeble.
	Poona	N,E Z	eY i	21	56	41		Tremor.
7	Bombay	E N	e e	22	34 35	09 14		Surface waves.
8	New Delhi	N,E E N,E E	eP PPP eS SS SSS S*	13	16 17 18 18 18 19	52 05 29 41 52 01	940	Slight.
8	Shillong	E	e e e	21	47 47 47	34 38 44		Feeble.
8	Shillong	E	e e e	22	33 33 33	21 30 40		Feeble.
12	Epc: Off the Coast of NW of Sumatra. 0 = 06h. 31m. 03s. USCGS. 50 1/4 N., 94° E. 0 = 06h. 31m. 03s. (B.C.I.S.).							
	Madras	E	iP LQ S SS SSS	06	34 37 37 38 38	48 34 41 00 06	1,720	Slight.

DATE	STATION	COMPT:	PHASE	G.	M.	T.	REMARKS.
				h.	m.	s. km.	
August 1952							
12	Hyderabad	N,E	1P	06	35	31	2,160
(Contd)			1S		39	06	
		E	SS		39	20	
	Shillong	E	e	06	35	42	Feeble, distant.
			ePP		36	01	
			e		36	33	
			eS		39	06	
			i		39	20	
			e		39	34	
	Chatra	Z	1Y	06	33	00	Feeble.
		N,E	eY				
		Z	1Y		39	56	
		N,E	eY				
	Poona	Z	1P	06	36	20	2,770 Feeble. Record very feeble in other components.
			1pP		36	32	
			1S		40	41	
			1Q		41	41	
			SS		41	56	
			SSS		42	11	
	Bombay	N,E	eP	06	36	35	2,680 Slight.
			eS		40	51	
			1Q		41	24	
			SS		41	48	
			SSS		41	56	
			1R		42	56	
	New Delhi	N,E	eP	06	36	56	3,360 Slight.
			e		37	14	
			1S		41	56	
		N	i		42	16	
			SS		43	27	
			i		44	10	
	Colombo	E	e	06	37	--	Tremor.
12	Poona	Z	i	06	53	--	Slight tremor.
13	New Delhi	N,E	eP	03	17	01	880 Slight.
		E	PP		17	16	
			P*		17	20	
		N	eS		19	00	
		N,E	SS		19	11	
		E	S*		19	28	
		N,E	M		19	59	
	Chatra	Z,N,E	e	03	18	32	Feeble.
			e		21	51	
	Hyderabad	E	e	03	22	35	
			M		26	12	Per. = 9.0 sec. μ = 5.0.
	Bombay	E	e	03	24	30	Surface waves.
			e		25	23	
			e		26	15	
	Colombo	E	e	03	28	--	Tremor.
14	Epc: 2° N., 99°5 E. in Sumatra. Δ = 16h. 1.6m. h = $\pm$ 300km BCIS.						
	Colombo	E	P	16	05	12	
			S		06	35	
			L		10	25	
			M		12	35	Amp = 1.0mm.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
August 1952					
14 (Contd)	Madras	E	1P	16 05 37	2,170 Slight.
			PP	05 57	
			iS	09 15	
			LQ	09 27	
			SS	09 43	
			SSS	09 59	
			LR	10 05	
			M	11 55	
	Kodaikanal	E	1P	16 05 50	2,390 Slight.
			iS	09 44	
			M	13 02	Per. 15 sec. $\mu = 7.3$.
	Shillong	E	eP	16 06 13	2,540 Slight.
			PP	06 44	
			eS	10 19	
			LQ	10 45	
			SS	11 01	
			SSS	11 16	
			LR	11 44	
	Hyderabad	N,E	1P	16 06 18	2,640 N - Compt.
		E	PP	06 31	Per. = 18.0 sec. $\mu = 10$.
		N,E	iS	10 31	
		E	SS	11 08	E - Compt.
			L	12 43	Per. = 20.0 sec. $\mu = 9.0$ sec
		N	M	14 10	
		E	M	14 13	
	Chatra	N	e	16 06 40	Feeble.
			eS	11 06	
	Poona	Z	eP	16 06 56	3,360 Slight.
			i	10 13	
		N	iS	11 55	
			LQ	13 28	
			SS	13 42	
			SSS	13 57	
			IR	14 59	
			M	17 42	
	Bombay	N,E	eP?	16 07 14	3,380
			eS	12 15	
		E	LQ	13 45	
		N	LQ	13 51	
		E	SS	14 01	
		N,E	SSS	14 23	
		N	LR	15 --	
			M	19 --	
	Calcutta	E	i	16 07 29	Slight, distant.
			i	10 01	
	New Delhi	N	eP	16 07 31	3,510 Slight.
			iS	12 40	
			LQ	14 15	
			LR	15 30	
			M	17 56	
14	Epc: 6°0 S., 155° E. Solomon Islands. 0 = 23h. 16m. 42s. GMT				
	USCGS.				
	Shillong	E	1P	23 27 50	7,580 Slight. Probably deep.
			PcP	28 03	
			iS	36 50	
			PS	37 13	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
August 1952						
14 (Contd.)	Colombo	E	P S	23 28 30 38 30		
	Poona	Z	iP i i	23 29 13 29 15 29 27		Recorded very feebly in N-S compt.
	Bombay	N,E	eP iS	23 29 22 39 41	9,220	Slight.
	Hyderabad	E	iS(?) M	23 38 37 58 50		Per. = 18.0 sec. μ = 6.0.
15	Epc: 36°5 N., 140°8 E. 36°0 N., 140°2 E.			h = ± 45 km, CMO, Japan. Felt. Near Honshu, Japan. Felt. O = 19h. 58m. 58s. GMT USCGS.		
	Poona	Z	i i	20 09 07 09 15		
16	Epc: In Solomon region, 5°S., 155°5 E. Mag. 6½ (Pasadena).			O = 13h. 51m. 35s. (U.S.C.G.S.). O = 13h. 51m. 47s. (B.C.I.S.).		
	Shillong	E	e e e	14 02 43 03 05 11 47		Feeble.
	Chatra	Z,N,E N	e e	14 03 10 12 30		Feeble, distant.
	Calcutta	E	e i i	14 03 37 12 13 18 23		Slight, distant.
	New Delhi	N,E N	eP e eS PS i IQ M	14 04 02 07 35 14 09 15 02 18 39 24 46 34 49	8,950	Moderate.
	Poona	Z E	eP i	14 04 08 09 25		
	Bombay	E N E	eP eS iS iS FPS SS SSS LQ	14 04 30 14 46 15 33 15 50 20 09 23 30 33 --	9,160	Slight.
	Colombo	E	e L	14 12 37 37 --		
	Hyderabad	N E	i M	14 13 43 15 02 19		Per. Rs 14.0 sec. μ = 3.0.
	Madras	E	e	14 13 48		Tremor.
17	Bombay	N,E E	eP e?	00 11 24 18 48		Surface waves.

7

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

August
1952

17 Epc: 19° S., 65° E. in Indian Ocean. 0 = 04h. 24m. 23s. (USCGS).

Poona	Z	iP	04 31 17	Slight.
	N	eS(?)	37 32	
		M	44 --	

Bombay	N,E	eP	04 31 47	Feeble.
	N	ePP	33 21	
		iS	37 43	
		M	46 --	

Shillong	E	e	04 33 32	Tremor.
Colombo	E	L	04 37 --	

		M	40 39	Amp = 0.4.
Hyderabad	N	S	04 37 38	

		L	42 37	Per. = 12.0 sec. μ = 4.0. Per. = 15.0 sec. μ = 6.0.
	E	M	44 32	
	N	M	44 42	

Kodaikanal	E	e	04 38 45	Very slight tremor.
------------	---	---	----------	---------------------

17 Epc: USCGS 30½° N., 91½° E. Mag. 7½ - 7½ (Pasadena).
0 = 16h. 02m. 05s. GMT

Poona 29°8 N., 90°3 E. near Lhasa. 0 = 16h. 02m. 26s. GMT
India Mission, Lhasa, reported severe earthquake shock felt at
Lhasa on 17th followed by aftershocks of milder intensity at 1644
GMT on 17th and at dawn on 18th. Two houses in Lhasa collapsed.
Direction of shock E to W. Shock accompanied by rumbling noise.
Mag 7.9 (Praha), 7.5 (Roma), 7½ (Strasbourg).

Shillong	E	eP	16 03 33	570 Great, near Lhasa.
		PP	03 42	
		LQ	04 20	
		eS	04 33	
		SS	04 44	
		SSS	04 53	
		M	04 53	

Chatra	Z	iP	16 03 34	600 Great.
	N	iPY	03 37	
	E	ePY		
	N,E	PP	03 44	
		PPP	03 50	
		Pg	03 58	
		LQ	04 31	
		Sg	05 18	

Calcutta	E	iP	16 04 16	850 Great. First movement East.
		Pg	04 54	
		iS	05 43	

New Delhi	N,E	iP	16 05 10	1,310 Great. First movement North and East.
		PP	05 19	
		PPP	05 28	
		iS	07 24	
		SS	07 37	
		SSS	07 50	
	N	M	08 50	

Hyderabad	N,E	iP	16 06 15	1,810
	E	PP	06 20	
		iS	09 16	
		SS	09 25	
	N	L	10 38	
		M	11 43	

Per. = 10.0 sec. μ = 431.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
August 1952					
17 (Contd)	Poona	Z	1P	16 06 45	2,050 Great.
		N	1PP	07 02	
			POP	07 17	
			1S	10 03	
			SS	10 34	
			LR	11 02	
			M	12 58	
			Mn	15 06	Per. = 9.3 secs μ = 482.
	Madras	E	1P	16 06 52	2,150 Great. Phases not clear due to overlapping of lines.
			1S	10 26	
	Bombay	N,E	1P	16 06 52	2,330 Great. Other phases not clear due to violent oscillations.
		N	eS	10 43	
			PP	07 17	
			PPP	07 26	
			M	17 --	
	Kodaikanal	E	1P	16 07 27	2,850 Great. First movement towards East.
			PcP	10 42	
			1S	11 54	
			M	16 18	Per. = 11 secs μ = 11.
	Colombo	E	P	16 07 39	L and M approximate due to large amplitude and faint trace.
			e	12 29	
			L	16 --	
			M	20 --	
17	Chatra	Z	1PY	16 42 27	600 Slight. After shock of shock at 1603 hours.
		N,E	ePY		
		Z,N,E	1Sg	44 05	
	Poona	Z	1P	16 45 41	Feeble. After shock.
			i	45 44	
17	Shillong	E	eP	18 01 34	570 Slight, after shock.
			PP	01 42	
			PPP	01 48	
			LQ	02 23	
			eS	02 34	
			LR	02 38	
			SS	02 46	
			SSS	02 55	
	Poona	Z	eP	18 04 31(?)	Slight. After shock.
			i	06 24	
			i	06 27	
			i	10 01	
	New Delhi	N,E	eP	18 44 06	1,330 Slight.
		E	PPP	44 23	
		N,E	eS	46 22	
17	Chatra	Z	1PY	19 03 07	Slight. After shock of shock at 1603 hrs.
		N,E	ePY		
		Z	1SgX	04 43	
		N,E	eSgX		
	Shillong	E	eP	19 03 09	690 Slight.
			PP	03 15	
			PPP	03 24	
			LQ	04 11	
			1S	04 21	
			LR	04 28	
			SS	04 33	
			SSS	04 42	
			M	04 56	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
August 1952						
17	Shillong	E	e	21 01 45		Slight. Possibly after-shock.
			e	02 13		
			e	02 52		
			e	03 14		
	Poona	Z	i	21 04 41		
17	Chatra	Z	iPY	21 42 33	600	Slight.
		N,E	ePY			
		Z	iSgY	44 07		
		N,E	eSgY			
	Shillong	E	eP	21 42 42	580	Slight. Aftershock.
			P*	42 51		
			PFP	42 55		
			Pg	43 02		
			LQ	43 34		
			eS	43 43		
			LR	43 47		
			S*	43 59		
			Sg	44 11		
	New Delhi	N	eP	21 44 00	1,320	Slight.
		N,E	eS	46 21		
	Poona	Z	i	21 45 45		
			e	49 33		
	Bombay	N	e	21 52 49		Tremor.
	Hyderabad	N	M	21 50 53		Per. = 11.0 secs μ = 3.
17	Chatra	Z	iPY	23 36 31	970	Slight. After shock of shock at 1603 hrs.
		N,E	ePY			
		Z,N,E	iSg	38 10		
	Shillong	E	eP	23 36 44	660	Slight.
			PP	36 50		
			P*	36 56		
			LQ	37 39		
			iS	37 53		
			IR	37 57		
			SS	38 03		
			SSS	38 14		
	Poona	Z	eP	23 39 45		
	Bombay	N	e	23 45 --		Very feeble.
18	Chatra	N,E	e	02 33 46		Feeble.
		N	e	35 18		
18	Chatra	N,E	e	05 58 16		Feeble.
18	Chatra	N,E	e	08 25 50		Feeble.
18	In Central Chile. O = 13h. 04m. 50s. (U.S.C.G.S.) Epc: 30°3 S., 71°2 W. O = 13h. 04m. 54s. (B.C.I.S.).					
	Chatra	N,E	e	13 07 52		Feeble.
18	Poona	Z	e	13 24 33		Tremor.
			e	24 41		
			e	24 43		
			e	24 53		

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
August 1952					
18	Chatra	Z N,E	i e	14 06 14 06 22	Feeble.
	Shillong	E	eP PP Pg LQ eS LR SS	14 06 16 06 23 06 43 07 20 07 28 07 31 07 41	690 Slight.
18	Chatra	Z,N,E	iP iS	14 10 58 11 07	70 Slight, near.
19	Madras	E	e	10 09 05	Tremor.
	Shillong	E	e e e e	10 09 32 09 51 15 38 15 50	Slight, distant.
	Chatra	Z N	i e	10 10 06 16 37	Feeble.
	Poona	Z	i	10 10 59	
19	Chatra	Z N	iX eX e	10 47 05 54 03	Feeble, distant.
20	U.S.C.G.S. 43° N., 127° W. Off Coast of Oregon. 0 = 15h. 24m. 59s. Epc: 43° 20' N., 126° 07' W. 0 = 15h. 25m. 00s. (B.C.I.S.). GMT. Magnitude 7 - 7½ (Pasadena), 7.3 (Roma), 6½ (De-Bilt).				
	Chatra	N	eP? e PS e	15 43 01 50 00 52 38 16 14 --	8,310 Slight. Surface waves. per = 19.0 secs.
	New Delhi	N	e e i e PS? i e	15 43 00 45 19 50 04 57 24 53 03 53 53 58 38	Distant Moderate.
	Bombay	N	e? ePPS(?)	15 43 40 55 44	Very distant.
		E	M	16 24 --	Per. = 26.0 secs μ = 9.0.
		N	M	36 --	Per. = 19.0 secs μ = 9.0.
	Poona	N	ePKP. PS PFS LR	15 43 57 54 32 55 22 11 26	9,590 Slight.
	Calcutta	E	i i i Mn	15 46 49 55 57 59 16 16 21 14	Slight distant.
	Colombo	E	e e M	15 46 20 26 20 33 00	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
<u>August 1952</u>					
20	Shillong	E	M	16 17 10	Distant.
23	Poona	Z	eP Pg Sg	11 44 08 44 13 44 48	220 Reported in press as felt near Nasik (Bombay State).
23	Shillong	E	e e e e	23 26 42 26 56 27 26 27 44	Slight; near.
24	In Bonin. O = 12h. 45m. 40s. (U.S.C.G.S.). Epc: 23 $\frac{1}{2}$ ^o N., 142 $\frac{1}{2}$ ^o E. O = 12h. 45m. 36s. (B.C.I.S.).				
	Poona	Z	i i	12 56 13 56 24	
24	New Delhi	N,E	eP PPP E N,E	18 35 17 35 32 37 24 37 32	1,240 Slight.
24	New Delhi	N,E	eP iS	19 41 28 41 45	130 Slight.
25	In Assam. Epc: 27 $\frac{1}{2}$ ^o N., 95 $\frac{3}{4}$ ^o E. O = 01h. 44m. 42s (U.S.C.G.S.). Epc: 28 $\frac{1}{2}$ ^o N., 94 $\frac{1}{2}$ ^o E. in Assam. O = 01h. 44m. 40s. (B.C.I.S.). O = 01h. 44m. 55s. GMT (Poona).				
	Chatra	Z E	iPY ePY Pg iS Sg	01 46 23 46 48 47 33 48 12	670 Slight.
	Calcutta	N	iP PP PPP LQ S M	01 46 30 46 39 46 43 47 41 47 51 48 40	780 Slight. First movement South. Times approximate due to failure of eclipse clock.
	New Delhi	N,E E N,E	eP PP PPP i LQ iS SS SSS LR M	01 48 18 48 27 48 37 48 50 50 49 50 56 51 09 51 20 51 24 52 47	1,560 Slight.
	Hyderabad	N E N	eP S SS M	01 49 03 52 21 52 29 55 32	1,990 Per. = 12.0 secs μ = 7.0.
	Madras	E	iP PP iS LQ SS LR	01 49 23 49 44 53 03 53 23 53 44 54 37	2,280 Slight.
	Poona	Z N,E	iP eP	01 49 33 49 33	2,230 Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
August 1952						
25	Poona	Z	PP	01 49 55		
(Contd)	(Contd)		PPP	50 05		
			isY	53 13		
		N	esY			
		Z	LQ	53 33		
			SS	53 47		
			SSS	54 02		
	Bombay	N,E	iP	01 49 44	2,370	Slight.
			iPP	50 12		
		E	iPPP	50 25		
		N,E	iS	53 37		
			LQ	53 48		
		E	SS	53 56		
			SSS	54 27		
		N,E	LR	54 --		
		E	M	55 33		Per. = 8.0 secs $\mu = 4$.
	Kodaikanal	E	e	01 54 16		Very slight.
	Colombo	E	e	01 54 --		Tremor.
25	Dehra Dun	N	eP	16 06 45	960	
			eS	08 15		
			e	09 13		
			M ₁	12 06		Per. = 3 secs Amp = 1.76"
			M ₂	18 51		Per. = 12 sec Amp = 1.52"
26	Chatra	Z,E	e	01 23 23		Feeble.
26	Shillong	E	e	12 14 02		Slight; near.
			e	14 47		
			e	13 17		
			e	13 55		
26	Shillong	E	iPg/F*	14 13 28	75	Slight.
			P	13 30		
			eSg	13 37		
			S/PP	13 42		
			SS	13 51		
27	Poona	Z	i	10 41 03		Slight.
27	USCGS. Epc: 55 $\frac{1}{2}$ ° N., 160° W. (Alaska).					0 = 11h. 27m. 54s. GMT h = $\pm$ 60 km.
	Mag. = 5.2 (Roma).					
	Shillong	E	e	11 39 49		Slight, near.
			e	40 04		
			e	40 14		
	Chatra	E	e	11 39 53		Feeble.
	New Delhi	N,E	iP	11 40 13	90/10	Moderate.
			i	40 29		
		N	iS?	50 49		
			M	12 14 56		
	Bombay	N	M	11 55 --		
28	USCGS. Epc: 55° N., 160° W. near South Coast of Alaska Peninsula.					0 = 10h. 52m. 41s.
	Mag. 5.3 (Roma).					
	Shillong	E	e	11 04 45		Slight; near.
			e	05 01		
			e	05 13		

13

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
August 1952					
28 (Contd)	Chatra	Z E	iY eX	11 04 52	Feeble.
	New Delhi	N,E N	iP i eS? M	11 05 09 05 25 15 43 39 56	9,560 Moderate.
	Poona	Z	i	11 05 59	
	Colombo	E	e	11 25 --	Tremor.
	Shillong	E	iP iS(?)	11 35 58 36 36	210 Slight.
	Bombay	N,E	e M	11 36 27 44 --	
	Calcutta	N	i	11 37 27	Slight.
	Hyderabad	E	M	11 48 42	Per. = 15.0 secs $\mu = 4$.
28	Chatra	Z E Z,E	iP?Y eP?Y iS?	11 36 53 38 16	800 Slight.
	New Delhi	N N,E N	eP eS SS SSS	11 38 57 41 44 42 01 42 12	1,650 Slight.
	Poona	Z	i i	11 39 31 42 58	
28	Indian Ocean. O = 14h. 21m. 49s. G.M.T. (U.S.C.G.S.) Epc: 53°5 S., 25° E. O = 14h. 21m. 45s. (B.C.I.S.) Mag. 6.1 (Roma).				
	Bombay	E N,E N	eP? e? M	14 34 46 44 32 15 02 --	
	Madras	E	e	14 44 06	Tremor.
	Hyderabad	E	e M	14 44 38 15 00 56	Per. = 15.0 secs $\mu = 4$.
	Colombo	E	e	14 52 --	Tremor.
	Kodaikanal	E	e	14 54 41	Very slight Tremor.
29	In Sumatra 6° N., 95°10 E. O = 05h. 28m. 17s. h = $\pm$ 100 km (BCIS). 5°5 N., 96°0 E. O = 05h. 28m. 07s. (Poona). Mag. 5.5 (Roma).				
	Colombo	E	P e L M	05 32 00 36 50 41 20 44 05	
	Madras	E	P pP(?) S SS	05 32 20 33 00 36 41 36 23	2,220 Slight. Possibly slightly deep.
	Calcutta	E	eP iS	05 32 30 36 01	2,130 Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
August 1952							
29	Shillong	E	iP	05 32 53	2,330		Slight.
			PP	33 10			
			PPP	33 23			
			eS	36 43			
			LQ	37 01			
			SS	37 19			
	Hyderabad	E	iP	05 32 55	2,400		
			iS	36 50			
			SS	37 33			
		N	L	39 03			
		E	M	40 28			Per. = 16 secs μ = 12.
		N	M	41 53			Per. = 15 secs μ = 8.
	Kodaikanal	E	iP	05 33 02	2,250		Slight.
			iS	36 44			
			M	39 41			
	Chatra	N	eP?	05 33 16			Slight.
			SS	37 39			
	Poona	E	iP	05 33 41	2,860		Slight.
			PP	34 17			
			iS	38 08			
			LQ	39 03			
			SSS	39 39			
			ScP	40 29			
			M	42 21			
	Bombay	N	ePY	05 33 52	2,970		Slight.
		E	iPY				
			PP	34 40			
			PPP	34 55			
		N,E	iS	38 27			
		N	LQ	39 28			
		E	LQ	39 36			
			SS	39 49			
		N	SSS	40 02			
			LR	40 47			
		E	LR	41 02			
			M	46 23			Per. = 15.0 secs μ = 4.
		N	M	49 07			Per. = 16.0 secs μ = 6.
	New Delhi	N	eP	05 34 15	3,250		Moderate.
			PP	34 59			
			iS	39 08			
			SS	40 57			
			LR	41 44			
			M	44 27			
30	Bombay	N,E	iP	06 19 38	2,350		Feeble.
		N	e?	19 53			
		E	PP	19 55			
			PPP	20 08			
		N	ePY	23 30			
		E	iS				
		N	LQ	23 39			
		E	LQ	23 48			
			LR	24 --			
30	Chatra	Z	i	20 54 59			Feeble.
		N	e	59 21			
	New Delhi	N	eP	20 56 31	2,480		Slight.
			eS	21 00 32			
			SS	01 16			
			M	03 54			

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
August 31 1952	Epc: Poona 41.5° N., 143°5 E. O = 16h. 09m. 36s. GMT. USCGS Epc: 42° N., 142° E. Near-South East Coast of Hokkaido, Japan. Felt-Hokkaido and Northern Honshu. O = 16h. 09m. 33s. GMT (USCGS) h = ± 40 km (CMO, Japan).				
	Shillong	E	iP e eS?	16 17 50 18 40 24 17	4,800
	Chatra	N	eP iS M	16 18 11 25 00 34 --	5,180 Slight. Per. = 9.5 secs.
	Calcutta	E	iP iS i	16 18 24 25 25 25 55	5,390 Slight distant.
	New Delhi	N,E	eP i iS i ScS M	16 18 57 19 17 26 30 26 55 29 13 37 53	5,830 Moderate.
	Madras	E	iP iS SS	16 19 51 28 04 28 39	4,150 Very slight.
	Poona	E	iP eS	16 19 58 28 20	6,860 Slight.
	Bombay	N,E	iP ePP ePPP iS eS PS PPS SS SS SSS LQ LR M M	16 20 04 22 23 23 54 28 29 28 41 28 50 32 38 32 48 35 25 36 11 39 -- 49 -- 48 48	6,910 Slight. Per. = 15.0 secs $\mu = 3$.
	Hyderabad	N	ePPS	16 28 13	
	Colombo	E	S M	16 28 55 51 --	M approximate, amp very small.

- : Voluntary Observer's Reports : -

The following table contains a list of earthquakes reported by Voluntary Observers from various stations for the month of August, 1952.

Place at which felt	Date	G.M.T. of earthquake	Duration in secs	Intensity R.F. Scale	No. of shocks	Remarks.
Lhasa (Tibet)	17.8.52	16 00	180	IX	1	
Lhasa (Tibet)	17.8.52	16 44	30	IX	1	
Gauhati	25.8.52	01 45	15	III	1	

JUL 28 1953

METEOROLOGICAL DEPARTMENT

September, 1952

✱
✱
✱ ✱ ✱ ✱ ✱
✱
✱

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

Instruments and their Constants.

Station	Instrument	Compt.	Period in sec.	Static Magni- ficat- ion	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12.0	350	14:1	16.0
	Milne-Shaw	E	12.0	350	3:1	8.0
	Sprengnether	E	7.0	-	-	30.0
Calcutta	Milne-Shaw	E	12.0	250	20:1	8.0
	Wood-Anderson	N	2.0	870	Critical	30.0
	Omori-Ewing	N	18.0	32	-	25.4
	Omori-Ewing	E	19.0	30	-	25.4
Chatra	Milne-Shaw	N	10.0	150	20:1	16.0
	Wood-Anderson	N	1.0	1000	22:1	60.0
	Wood-Anderson	E	1.0	1000	22:1	60.0
	Benioff	Z	To=0.72sec Tg=0.45sec		-	60.0
Colombo	Milne-Shaw	E	12.0	250	20:1	8.0
Dehra Dun	Omori-Ewing	N	3.0	12	-	-
Hyderabad	Milne-Shaw	E	12.0	250	20:1	8.0
	Milne-Shaw	N	12.0	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8.0
Madras	Sprengnether	E	7.5	-	-	30.0
New Delhi	Milne-Shaw	N	12.0	288	20:1	8.0
	Wood-Anderson	N	4.0	1000	20:1	16.0
	Wood-Anderson	E	2.0	2000	30:1	60.0
	Omori-Ewing	E	30.0	30	1	12.0
Poona	Milne-Shaw	N	12.0	250	20:1	8.0
	Wood-Anderson	E	4.0	1100	20:1	16.0
	Sprengnether	E	To=Tg=6.6		-	30.0
	Benioff	Z	To = 1sec		-	60.0
Shillong	Wood-Anderson	E	3.0	1000	25:1	60.0
	Wood-Anderson	E	1.5	1500	10:1	30.0

SEISMOLOGICAL BULLETIN

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Sept. 1952					
1	Chatra	Z	e i	03 32 30 33 26	Feeble, near.
2	Chatra	Z	e i	05 52 46 54 07	Feeble, near.
2	Chatra	Z	eP P* Pg PP	06 15 02 15 04 15 07 15 09	220 Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Sept. 1952						
2	Chatra (Contd) (Contd)	Z	PPP 1S S* Sg SS SSS	06 15 15 15 28 15 30 15 33 15 37 15 48		
2	Chatra	Z	i	07 36 56		Feeble, distant.
2	Kodaikanal	E	ie?	10 31 10		Tremor.
2	Bombay	N,E	e	10 32 13		Surface waves.
	Chatra	Z	iP P* PP Pg PPP LQ LR 1S S* SS Sg SSS	18 27 03 27 07 27 10 27 14 27 16 27 32 27 40 27 42 27 43 27 51 27 56 28 03	360	Slight.
2	Poona	Z	i	20 30 31		Tremor.
4	New Delhi	N,E E N N,E N E N	iP PP i Pg 1S SS SSS S* i	09 06 36 06 44 07 05 07 10 07 58 08 09 08 19 08 22 08 26	780	Slight.
	Chatra	Z Z,N	i e	09 08 32 10 52		Feeble.
	Poona	Z	i i	09 11 38 11 49		Tremor.
4	New Delhi	N,E	eP eS	14 37 02 38 41	960	Slight.
5	Poona	Z	e	05 30 53		Tremor.
5	Poona	Z	e i	17 17 22 22 21		Tremor.
7	Bombay	N	e	03 53 00		
7	Chatra	N	e	04 51 29		
7	Chatra	Z N	i e	09 44 17 53 50		Feeble, distant.
	Poona	Z	i e	09 45 29 45 53		Tremor.
7	Poona	Z	i	22 29 14		Tremor.
8	Chatra	Z	i e	06 47 28 54 39		Feeble, distant.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Sept. 1952					
8	Poona	Z	iP i	06 48 19 48 24	Tremors.
8	Epc: $6\frac{1}{4}^{\circ}$ S. Lat. Long. 130° E. O = 14h. 59m. 16s. (B.C.I.S.) in Banda Sea.				
	Chatra	Z	i e	15 08 39 15 56	Feeble, distant.
	Poona	Z	iP i	15 09 31 09 36	Tremor.
	New Delhi	N,E N	eP iS	15 09 36 17 35	Moderate.
8	Shillong	E	ePg P* PP eSg/S* S SS	19 30 56 30 57 31 03 31 14 31 15 31 25	160 Slight.
9	Shillong	E	i e	12 59 46 13 00 04	Slight, near.
	Chatra	Z	i	13 00 18	
	New Delhi	N,E	iP	13 01 15	
	Poona	Z	iP i	13 01 19 01 45	
9	Epc: Lat $8^{\circ}5$ N., $84^{\circ}5$ W. O = 12h. 54m. 44s. h = $\pm$ km (B.C.I.S.) Mag. 6.7 (Roma) ; 6.8 (Praha). 9° N., $84^{\circ}5$ W. near Coast of Costa Rica, Felt in Panama and Coast Rica. O = 12h. 54m. 42s. G.M.T. Mag. $6\frac{3}{4}$ - 7 (Pasadena and Berkeley) (U.S.C.G.S.).				
	New Delhi	N	ePKP ₁ e PP PKS ₁ PKS ₂ PPP SKKS ₁ SKKKS SKSP PPS SKKS ₂ i SSS L M	13 14 12 16 25 17 09 17 46 17 58 20 03 23 52 24 19 27 12 29 20 30 39 37 00 40 40 58 28 14 10 13	15460 Moderate.
	Chatra	Z,N N	ePKP e SKKS ₂ (?) SS LQ	13 14 18 19 06 31 15 36 19 54 14	15780 Moderate.
9	Bombay	N,E N N,E	ePKP ₁ PKS PPP eSS	13 14 22 17 47 21 11 36 24	16030

5

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
						km.	
Sept. 1952							
9	Bombay	N	LQ	13	54	00	
(Contd)	(Contd)	E	LQ		55	00	
			M	14	16	29	
		N	M		23	37	Per. = 24 sec. μ = 8. Per. = 23 sec. μ = 15.
	Poona	Z	iPKP	13	14	23	16150 Moderate. Very distant, Phases not clear.
		N	SS		36	17	
	Shillong	E	ePKP?	13	14	25	Slight, distnat.
			e		14	54	
			e		15	30	
			e		58	41	
	Hyderabad	N	ePKP	13	14	30	
		E	ePKP		14	48	
			L		59	12	
		N	M	14	15	05	Per. = 24 sec. μ = 23.
		E	M		13	18	Per. = 27 sec. μ = 31.
	Calcutta	E	iPKP	13	14	35	16450 Moderate.
			SS		37	25	
			LQ		55	25	
			M		14	49	Per. = 26 sec. μ = 77.
	Colombo	E	eSS?	13	36	--	
			L	14	10	49	
			M		24	34	Amp = 0.4mm.
	Madras	E	PKP?	13	14	45	16670 Moderate.
			SS?		37	59	
	Kodaikanal	E	e?	13	15	00	Slight, distant. Phase not clear.
10	Epc: 12°8 N. Lat. Long 39°6 E. O = 09h. 05m. 58s. in Ethiopia (B.C.I.S.).						
	Bombay	E	ePP	09	13	21	2850 Feeble.
			S		17	52	
		N	eS		17	52	
		E	SS		19	44	
		N	M		23	27	Per. = 9 sec. μ = 2.
	Hyderabad	N	M	09	23	27	Per. = 9 sec. μ = 2.
10	Madras	N	e	17	34	13	Tremor.
10	Chatra	Z	i	17	34	56	
			i		37	58	
	Poona	Z	eP	17	34	57	1260 Slight.
			PP		35	03	
			PPP		35	11	
			P*		35	27	
			Pg		35	56	
			S		37	06	
			SS		37	19	
			S*		37	56	
			Sg		38	39	
	Bombay	NE	eP	17	35	14	1300 Feeble.
		E	PP		35	35	
			PPP		35	46	
		NE	IS		38	41	
		E	LQ		38	42	
		N	SS		39	03	

6

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Sept. 1952						
10	Bombay	E	SSS	17 39 28		
(Contd)	(Contd)	N	SSS	39 24		
			LR	39 30		
		E	LR	39 50		
	New Delhi	N	e	17 35 51	2410	Slight.
		E	PPP	36 20		
			eS	39 42		
			LQ	39 57		
			SS	40 18		
10	Chatra	Z	iY	18 54 22		Feeble. Surface waves.
		N	eY			
			e	19 11 --		Per. = 15.0 secs.
10	Poona	Z	eP	18 55 49		
			i	57 15		
	Bombay	E	iP	18 55 56	5580	Very feeble.
		N	eP	55 56		
		E	PP	57 54		
			PPP	58 54		
		NE	eS	19 03 08		
		E	PS?	03 16		
			SS	06 36		
			LQ	08 14		
			LR	10 --		
11	Epc: 4°3 S. Lat. 69°0 E. Long. 0 = 05h. 37m. 19s. (B.C.I.S.) Near 6°5 S., 70°5 E. in Indian Ocean. 0 = 05h. 37m. 01s. (Poona).					
	Kodakanal	E	eP	05 41 11		Slight. Phases not clear.
	Madras	E	iP	05 41 59	2460	Very slight.
			PP	42 26		
			PPP	43 33		
			PcP	45 34		
			iS	45 59		
			LQ	46 25		
			SS	46 41		
			LR	47 27		
			M	49 21		Per. = 14 secs.
	Poona	Z	iP	05 42 30		Slight.
			PP	42 41		
		N	LR	42 48		
	Hyderabad	N	iP	05 42 32	2730	
			eS	46 51		
			L	49 12		
			M	51 52		Per. = 9 sec. $\mu = 3$.
	Bombay	NE	iP	05 42 32	3670	Probably deep focus.
		N	eS(?)	46 53		
	Chatra	Z	iP	05 44 22	3910	Slight. Feeble surface waves.
			e	44 23		
			eS?	49 55		
			e	57 --		
11	Poona	Z	iP	08 34 02		Tremor.
			i	34 11		
			i	34 44		

7

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
Sept. 1952							
11 (Contd)	Chatra	Z N	e e	08 35 34			Feeble, distant.
	Bombay	NE	M	08 57 --			Feeble. Other phases feebly recorded.
11	O = 22h. 03m. 44s. in Celebes Sea (U.S.C.G.S.) Lat 5°5 N., Long 123°5 E. O = 22h. 03m. 46s. (B.C.I.S.).						
	Shillong	E	iP e iS	22 11 01	3950		Slight.
	Calcutta	E	iP i LR	22 11 20	4110		Moderate.
	Chatra	Z N	iPY ePY PP PP PP e S e SS M	22 11 37	4450		Slight.
	Colombo	E	P e L M	22 11 51			Amp = 0.2mm.
	Madras	E	iP PP iPP PP ScP eS? SS IQ LR M	22 11 56	4670		Moderate.
	Hyderabad	E	iP i SS	22 12 11	4960		
11	Kodaikanal	E	e?	22 12 11			Slight, distant.
	New Delhi	NE N	iP i SS	22 12 41	5420		Slight.
	Poona	Z E	iP i PP PPP e e SS	22 12 47	5512		Moderate.
	Bombay	NE E NE	iP iPP i	22 12 53			Slight. Other phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Sept. 1952						
11 (Contd)	Bombay	E	ePKP1 SKS e? M M	22 49 24 56 13 57 39 23 30 26 53 42	11610	Feeble. Per. = 19 sec. $\mu = 8$. Per. = 19 sec. $\mu = 8$.
	Chatra	N	e	23 30 --		Feeble surface waves. Per. = 21 sec $\mu = 0.5\text{mm}$.
11	Poona	Z	iP e	23 47 35 48 00		Tremor.
12	Chatra	N	eP iS	01 01 45 01 58	100	Feeble.
12	Chatra	N	eP iS	01 49 10 49 23	100	Feeble.
12	Shillong	E	iPg/P* P PP iSg SS	03 21 47 21 48 21 56 21 58 22 13	90	Felt.
	Chatra	Z N	iPY ePY PP Pg LQ LR iS S* SS Sg SS	03 22 27 22 35 22 40 22 56 23 05 23 05 23 14 23 17 23 22 23 28	370	Slight.
12	Poona	Z	eP e	03 28 47 30 30		Tremors.
	Bombay	E N	e e	03 30 57 30 --		Tremor.
12	Shillong	E	iPg iSg	17 06 43 06 45	20	Felt.
13	Shillong	E	e e e e	11 48 45 49 02 49 54 50 47		Slight, near.
	Chatra	Z NE N	iP iSY eY M	11 48 56 50 32 51 23	940	Slight.
	Poona	Z E	eP M	11 51 52 12 01 --		Tremor.
	Hyderabad	N	M	11 57 59		Per. = 11 sec $\mu = 2$.
13	Chatra	Z NE	e e	18 07 02 08 36		Feeble.
13	Poona	Z	iP	19 23 51		Feeble, Tremors.

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

Sept.
1952
14

O = 09h. 34m. 10s. G.M.T. in China. Epc: Lat 34° N., Long 93° 5 E.
(U.S.C.G.S.)
Lat 35° 0 N., Long 93° 0 E. O = 09h. 34m. 09s. (Poona)
Mag. = 5½ (Praha).

Chatra Z 1P 09 36 26 1270 Moderate.

NE PPP 36 42

P* 36 53

N P* 37 00

NE Pg 37 29

N LQ 38 18

E LQ 38 25

NE eS 38 33

N iS 38 35

NE SS 38 43

LR 38 55

S* 39 14

Sg(M) 39 45

N M 39 46

Per. = 8.5 sec. μ = 170mm.

Shillong E ePP 09 36 35 1090 Moderate.

PPP 36 52

SS 38 42

SSS 38 56

S* 39 06

i 39 20

Sg 39 44

14 Calcutta N eP 09 37 17 1390 Moderate.

iS 39 39

? 40 01

New Delhi NE 1P 09 37 38 1580 Slight. Direction of
N iS 40 17 first motion South
SS 40 33 and West.
SSS 40 46
M 42 00

Hyderabad N 1P 09 39 04 1310

iS 43 01

L 45 05

M 46 33

E M 46 38

Per. = 9 sec. μ = 17.
Per. = 9 sec. μ = 16.

Poona Z eP 09 30 21 2610

1PP 39 53

PPP 40 08

PcP 42 56

E S 43 52

SSS 44 35

LR 45 14

ScP 46 27

M 47 11

14 Bombay NE 1P 09 39 26 2620 Slight.

PP 40 03

E PPP 40 12

NE iS 43 38

E LQ 44 13

SSS 44 45

N SSS 44 51

E LR 45 17

M 49 04

N M 49 14

Per. = 11 sec. μ = 16.
Per. = 9 sec. μ = 21.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Sept. 1952					
14	Madras	E	iP	09 39 36	2770 Moderate.
(Contd)			PP	40 19	
			PPP	40 32	
			PcP	40 53	
			iS	43 57	
			LQ	44 49	
			SS	45 00	
			SSS	45 23	
			LR	45 03	
			M	47 59	
			ScS	49 07	Per. = 8.0 sec.
	Colombo	E	P	09 40 30	
			S	45 32	
			L	51 --	
			M	52 55	Amp = 0.4.
	Dehra Dun	N	e	09 41 36	
			M	42 48	Per. = 12 sec. $\mu = 0.03$.
14	Chatra	Z	iP	16 41 47	100 Slight.
			iS	42 00	
14	Chatra	Z	iP	18 17 29	100 Slight.
		NE	eP	17 29	
		E	iS	17 42	
15	Epc: 38° N. Lat: 59° E. Long: in Turkestan. O = 04h. 31m. 24s. (B.C.I.S.).				
	Bombay	NE	eP	04 36 41	2740 Very feeble.
			iS	41 --	
			LQ	41 43	
15	O = 11h. 28m. 14s. in Central Pakistan (U.S.C.G.S.) Epc: Lat 30½° N., Long 72° E. O = 11h. 28m. 06s. (B.C.I.S.).				
	Dehra Dun	N	eP	11 29 54	650
			eS	31 00	
			eL?	31 48	
			M	31 54	Amp = 0.15".
	New Delhi	NE	eP	11 29 56	730 Slight.
			PP	30 03	
			PPP	30 11	
			Pg	30 23	
			LQ	31 00	
			iS	31 12	
			SS	31 23	
			SSS	31 34	
			Sg	31 55	
	Bombay	NE	eP	11 31 13	1470 Feeble.
		E	PP	31 21	
			PPP	31 28	
		N	LQ	33 33	
		NE	iS	33 42	
		E	SS	34 01	
		N	SSS	34 04	
		E	LR	34 17	
			Mn	35 35	
	Poona	Z	iPY	11 31 14	1490 Slight.
		N	ePY		
		ZN	PP	31 24	
		Z	LQ	33 37	

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
Sept. 1952							
15	Poona	ZN	iS	11 33 45			
(Contd)	(Contd)	Z	SS	34 00			
			SSS	34 10			
		ZN	LR	34 17			
		Z	M	35 10			
	Chatra	Z	iPY	11 31 56	1850	Slight.	
		NE	ePY				
			PPP	32 21			
			eSS	35 14			
		E	SSS	35 31			
		NE	SSS	35 36			
			M	37 42			
	Madras	E	eP	11 32 51	2290	Moderate.	
			iS	36 37			
			LQ	36 55			
			SS	37 13			
			LR	37 57			
			M	39 41			Per. = 10 sec.
			ScP	40 11			
			ScS	43 41			
	Shillong	E	eP	11 32 54	2400	Moderate.	
			PP	33 16			
			eS	36 49			
			LQ	37 03			
			SS	37 27			
			SSS	37 48			
			M	40 36			
15	Calcutta	E	e	11 33 09		Moderate.	
			LQ	36 05			
15	Colombo	E	P	11 33 10			
			SS	38 20			
			L	41 25			
			M	42 50			Per. = 1.3.
	Kodaikanal	E	e	11 33 16			
	Hyderabad	N	M	11 36 07			Per. = 8 sec. $\mu = 22.$
15	Epc: 30° N. Lat:, 91 ³⁰ E. Long: 0 = 17h. 59m. 26s. (B.C.I.S.) in Tibet.						
	Shillong	E	eP	18 00 39	540	Slight.	
			PP	00 43			
			Pg	00 59			
			LQ	01 23			
			iS	01 36			
			LR	01 39			
			SS	01 46			
			SSS	01 54			
			Sg	02 00			
	Chatra	Z	iPY	18 00 50	560	Slight.	
		NE	ePY				
			Pg	01 12			
			LQ	01 36			
			iSY	01 49			
		N	ePY				
		NE	LR	01 51			
			SS	01 59			
			S*	02 03			
			SSS	02 11			

12

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Sept. 1952						
15	Chatra	N	MY			Per. = 1.5 sec μ = 4.5.
(Contd)	(Contd)	E	MY	18 02 17		Per. = 1.5 sec μ = 3.75.
	Calcutta	N	eP?	18 02 00	1044	Slight.
			iS	03 31		
			S	03 47		
			S*	04 07		
			Sg	04 29		
	New Delhi	NE	eP	18 02 30	1370	Slight.
		N	iS	04 49		
			i	04 54		
			SSS	05 16		
			M	06 19		
	Poona	Z	iPY	18 03 59	2300	Slight.
		E	ePY			
			FP	04 23		
			PPP	04 30		
			iS	07 46		
		ZE	PcP	07 51		
			IQ	07 59		
			SS	08 22		
			SSS	08 36		
			M	40 38		
	Bombay	NE	eP	18 04 07	2350	Feeble.
		E	PP	04 33		
		N	eS	07 58		
		E	iS	07 58		
			LQ	08 17		
		N	LQ	08 10		
		E	LR	09 19		
			M	10 40		
		N	M	10 40		Per. = 7 sec μ = 2. Per. = 8 sec μ = 5.
	Kodaikanal	E	eS?	18 08 56		Tremor.
	Hyderabad	E	M	18 10 07		Per. = 9 sec μ = 3.
16	Chatra	Z	iP	04 16 52	210	Feeble.
			iS	17 17		
16	Chatra	Z	i	04 35 10		Feeble, near.
16	Chatra	Z	e	06 19 00		Feeble.
		N	e	20 22		
16	New Delhi	N	eP	14 03 43	670	Slight.
		NE	eS	04 53		
		N	SS	05 04		
		NE	S*	05 13		
			Sg	05 32		
16	Chatra	Z	iPY	14 54 44	180	Feeble.
		NE	ePY			
		NEZ	iS	55 06		
16	Poona	Z	i	17 34 34		Tremors.
			i	34 49		
			i	34 53		
	Poona	Z	i	17 52 39		Tremor.
16	Poona	Z	i	23 47 40		Tremors.
			i	47 45		
			i	48 21		

13

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS.
				h. m. s.	km.	
Sept. 1952						
17	Chatra	Z NEZ	eP iS	12 06 20 06 39	160	Feeble.
17	Bombay	NE	e	13 26 46		
17	New Delhi	E NE	eP eS M	21 54 28 55 39 56 13	680	Slight.
	Poona	Z	iP i i i	21 55 45 56 10 58 58 59 20		Tremor.
18	Chatra	Z	i	06 06 56		
19	Chatra	N	e	17 59 30		Feeble Surface waves.
20	Shillong	E	e e e	06 05 44 06 13 07 03		Slight, near.
	Chatra	Z	e	06 05 55		Feeble, distant.
20	Chatra	Z N	i iX eX	10 34 43 37 42		Slight.
	Poona	Z	iP i i i i	10 34 57 35 02 38 34 39 05 39 10		Tremor, other phases not clear.
20	New Delhi	NE N	eP iS eS S* Sg	11 33 10 34 51 35 03 35 20 35 50	980	Slight.
20	Shillong	E	e e	13 10 42 20 57		Slight, distant.
20	Chatra	Z N	e e e	13 11 05 21 43 51 30		Slight, distant. Per. = 19.0 secs.
	Colombo	E	P L M	13 20 17 34 20 36 37		Amp. very small, about 0.1mm.
	Madras	E	e	13 21 05		Tremor.
	Calcutta	E	i i	13 21 16 23 29		Slight, distant.
	Hyderabad	N	M	13 41 04		Per. = 20 secs μ = 9.
	Bombay	N E	M M	13 47 28 47 38		Per.=19 secs μ = 5. Per. = 17 secs μ = 3. Distant shock, other phases not clear.
20	Bombay	E	eP PPP eS	18 44 25 45 52 49 23	3340	Very feeble.

14

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Sept. 1952					
20	Poona	Z	i	18 44 32	
			i	44 47	
			i	44 56	
			i	46 56	
	Chatra	Z	iY	18 46 15	Feeble, distant.
		N	eY		
21	O = 02h. 30m. 30s. G.M.T. Epc: 22°5 S. Lat: 65° W. Long: in Argentina - Bolivia Broder. Mag. = 7½ (Pasadena); h = ± 250 km (U.S.C.G.S.). 7.3 (Roma), 7 (Tacubaya).				
	Bombay	NE	iPKP ₁	02 49 37	15690 Distant shock.
			iPP	52 44	
		N	PKS ₁	52 59	
		E	PKS ₁	52 55	
		NE	PPP	55 52	
			SKKS ₁	59 13	
		E	PS	03 03 03	
			PPS	04 02	
			LQ	27 22	
			LR	34 12	
			M	49 --	
		N	M	55 --	Per. = 21 secs μ = 9. Per. = 18 secs μ = 8.
	Poona	ZE	PKP ₁	02 49 37	15700 Moderate, phases not clear.
21	Colombo	E	iPKP?	02 49 42	
			L	03 38 22	
			M	49 44	Amp = 0.5.
	Kodaikanal	E	eP	02 49 40	
			e	59 25	
	New Delhi	NE	iPKP	02 49 48	Moderate.
		N	PP	53 51	
			PKS	54 36	
	Hyderabad	E	iPKP	02 49 50	
			ePS	03 03 29	
			M	20 29	Per. = 15 secs μ = 10.
21	Madras	E	iPKP	02 49 52	Moderate.
			i	53 08	
			i	55 11	
			SKKS	59 51	
	Chatra	Z	iPY	02 50 02	Moderate.
		NE	ePY		
		N	PP	53 23	
		NE	PPS	03 06 12	
			SS	12 00	
21	Shillong	E	ePKP ₁	02 50 08	17610 Moderate.
			iPKP ₂	50 46	
			PP	54 27	
			PPP	58 07	
			i	03 00 49	
			e	05 16	
			PPS	07 16	
			SS	13 58	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Sept. 1952					
21 (Contd)	Calcutta	E	ePKP2 i PFS	02 50 22 03 00 44 06 07	Moderate.
21	Poona	Z	i i i	03 57 04 57 36 57 46	Tremor.
21	O = 11h. 12m. 09s. G.M.T. Epc: 33°5 N. Lat:, 142° E. Long:in Japan (U.S.C.G.S.). 33° N. Lat: 142° E. h = ± 100 (C.M.O., Japan). Mag. 6.85 (Roma).				
	Chatra	NZ	e e	11 20 43 41 15	Slight, distant. Per. = 10 secs μ = 0.5.
21	New Delhi	NE N	eP i eS	11 21 38 21 52 29 14	6010 Slight.
	Madras	E	e	11 22 14	Tremor.
	Poona	Z	iP i	11 22 29 22 38	Tremor.
	Bombay	NE E	iP PP PPP	11 22 36 24 59 26 31	7000 Slight.
		NE E	IS IPS IPPS SS SSS LQ LR	31 06 31 25 31 36 35 20 37 47 38 -- 41 --	
		N E	M M	54 28 52 --	Per. = 15 secs μ = 4.
	Colombo	E	P M?	11 22 38 55 --	Amplitude very small.
24	Poona	Z	i i	13 37 46 38 00	
24	Poona	Z	i	17 58 32	
24	Chatra	Z NE	iY eY e	20 41 27 51 23	Slight, distant.
	New Delhi	NE	iP iS	20 41 40 51 51	9040 Slight.
	Poona	Z	e	20 42 33	
25	New Delhi	E N	eP eS SS M	07 20 42 22 25 23 37 23 32	1000 Slight.
	Bombay	NE E N E	e? e? e e	07 22 -- 24 03 24 11 24 54	Tremor.

13

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Sept. 1952					
25 (Contd)	Chatra	Z NE	e e e	07 22 43 28 13 28 47	Slight, distant.
25	Shillong	E	iP P* Pg PP S/S* iSg SS	22 43 42 43 43 43 45 43 51 44 03 44 06 44 22	180 Slight.
	Chatra	NE	eP PP P* Pg LQ S LR SS S* SSS Sg	22 44 44 44 52 44 53 45 10 45 40 45 52 45 56 46 04 46 08 46 11 46 25	650 Slight.
	Bombay	N E N	e e e	22 51 50 54 13 54 34	Tremor.
26	Shillong	E	e e e	07 06 58 07 57 08 32	Slight, near.
27	Chatra	Z	i i	00 28 02 29 15	Feeble, near.
27	Epc: 50°5 N. Lat: 157° E. O = 19h. 05m. 46s. G.M.T. in Kamchatka. h = ± 100km. (U.S.C.G.S.). Mag. 6.5 (Berkeley, Praha), 6.2 (Roma). O = 19h. 05m. 46s. (Poona).				
	Shillong	E	e e e e	19 15 11 15 50 21 46 23 50	Slight, distant.
	Chatra	Z NE	iY eY e	19 15 29 23 25	Slight, distant.
	New Delhi	N	eP iS PPS ScS SS LQ M	19 15 55 24 14 24 38 25 39 28 18 31 28 39 38	6800 Moderate.
	Poona	E	eP eS e	19 17 05 26 13 26 42	7840 Slight, distant.
	Hyderabad	E N	eP iS? M	19 17 06 25 51 44 15	7280 Per. = 15 secs $\mu = 6$.

DATE	STATION	COMPT.	PHASE	G. M. T.	km.	REMARKS.
				h. m. s.		
Sept. 1952						
27 (Contd)	Bombay	NE	1P	19 17 07	7910	Slight.
		E	PPP	21 29		
		NE	1S	26 24		
			PS	26 46		
		N	PPS	27 08		
		E	PPS	27 11		
			SS	31 13		
			SSS	34 09		
			LQ	35 --		
		N	LQ	35 35		
		E	M	52 07		Per. = 7 secs μ = 3.
		N	M	52 05		Per. = 15 secs μ = 5.
27	Madras	E	e	19 26 08		Tremor.
28	New Delhi	NE	ePg	01 30 41	30	Slight.
			eSg	30 45		
28	Chatra	Z	i	23 47 09		Feeble, near.
	Shillong	E	eP	23 47 20	570	Slight.
			F*	47 30		
			Pg	47 41		
			LQ	48 08		
			eS	48 20		
			LR	48 23		
			SS	48 30		
			S*	48 35		
	Bombay	N	e	23 53 24		
		E	e	53 17		
		N	i	57 13		
30	Epc: Lat 28°0 N., Long 102°5 E. 0 = 12h. 52m. 04s. (Poona) Lat 28°5 N., Long 102° E. 0 = 12h. 52m. 00s. G.M.T. in China. Mag. 6.5 (Pasadena), 7-7½ (Praha), (U.S.C.G.S.) 6.9 (Roma), 6.5 - 6½ (Manila), 6.1/3 (Kiruna).					
	Shillong	E	eP	12 54 26	1030	Moderate.
			PP	54 32		
			F*	54 46		
			Pg	55 11		
			1S	56 12		
			SS	56 22		
			LR	56 26		
			SSS	56 31		
			S*	56 43		
			M	57 11		
	Chatra	Z	1P	12 55 14		Moderate.
		E	eP	55 16		
			PPP	55 40		
30	Calcutta	E	1P	12 55 16	1420	Great.
			PPP	55 31		
			1S	57 41		
			SS	57 55		
			LR	58 11		
			M	59 11		
	Dehra Dun	N	eP?	12 56 06	2320	
			S?	59 42		
			eL?	13 02 36		
			M	03 06		Per. = 24 secs μ = 0.6.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h. m. s.			
Sept. 1952							
30 (Contd)	New Delhi	NE	eP	12	56	56	2390 Moderate.
			PP		57	21	
		N	PPP		57	30	
			iS	13	00	50	
			SS		01	26	
			SSS		01	41	
			LR		02	03	
			M		03	50	
			Mn		05	54	Per. = 14 secs μ = 180.
	Bombay	NE	e?	12	57	--	3290 Moderate.
			iP		57	52	
			iS	13	02	47	
	Hyderabad	E	iP	12	57	25	2710
			PP		58	00	
			iS	13	01	43	
			L		03	54	
			M		05	41	Per. = 15 secs μ = 64.
	Madras	E	iP	12	57	34	2880 Moderate.
			PP		58	17	
			PPP		58	27	
			PcP	13	00	57	
			iS		02	02	
			LQ		02	57	
			LR		04	02	
			ScP		04	51	
			M		06	07	
			ScS		06	07	
	Poona	N	eP	12	57	52	3040 Moderate.
			FP		58	45	
			eS	13	02	32	
			CS		03	48	
			SSS		04	03	
			PcS		04	02	
			LR		05	09	
			M		07	03	
			ScS		08	19	
	Colombo	E	eP?	12	58	10	3330
			S	13	03	08	
			L		10	40	
			M		13	08	Amp = 1.3mm.
	Kodaikanal	E	P	12	58	12	3270 Moderate.
			PP		59	06	
			S	13	03	06	
			LQ		04	30	
			LR		05	57	
			M		08	24	Per. = 12 secs μ = 10.3.

- : Voluntary Observer's Reports : -

The following table contains a list of earthquakes reported by Voluntary Observers from various stations for the month of September, 1952.

Place at which felt	Date	G.M.T. of earthquakes		Duration in secs	Intensity R.F.Scale	No. of shocks	Remarks.
		h.	m.				
Shillong	12.9.52	03	17	60	V	1	
Shillong	12.9.52	17	05	10-15	V	1	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Sept. 1952						
30 (Contd)	New Delhi	NE	eP	12 56 56	2390	Moderate.
			PP	57 21		
		N	PPP	57 30		
			iS	13 00 50		
			SS	01 26		
			SSS	01 41		
			LR	02 03		
			M	03 50		
			Mn	05 54		Per. = 14 secs μ = 180.
	Bombay	NE	e?	12 57 --	3290	Moderate.
			iP	57 52		
			iS	13 02 47		
	Hyderabad	E	iP	12 57 25	2710	
			PP	58 00		
			iS	13 01 43		
			L	03 54		
			M	05 41		Per. = 15 secs μ = 64.
	Madras	E	iP	12 57 34	2880	Moderate.
			PP	58 17		
			PPP	58 27		
			PcP	13 00 57		
			iS	02 02		
			LQ	02 57		
			LR	04 02		
			ScP	04 51		
			M	06 07		
			ScS	06 07		
	Poona	N	eP	12 57 52	3040	Moderate.
			FP	58 45		
			eS	13 02 32		
			SS	03 43		
			SSS	04 03		
			PcS	04 02		
			LR	05 09		
			M	07 03		
			ScS	08 19		
	Colombo	E	eP?	12 58 10	3330	
			S	13 03 08		
			L	10 40		
			M	13 08		Amp = 1.3mm.
	Kodaikanal	E	P	12 58 12	3270	Moderate.
			PP	59 06		
			S	13 03 06		
			LQ	04 30		
			LR	05 57		
			M	08 24		Per. = 12 secs μ = 10.3.

- : Voluntary Observer's Reports : -

The following table contains a list of earthquakes reported by Voluntary Observers from various stations for the month of September, 1952.

Place at which felt	Date	G.M.T. of earthquakes	Duration in secs	Intensity R.F.Scale	No. of shocks	Remarks.
		h. m.				
Shillong	12.9.52	03 17	60	V	1	
Shillong	12.9.52	17 05	10-15	V	1	

JUL 28 1954

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

October, 1952

*
*
* * * * *
*
*

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

Oct.
1952

0 = 0.0h. 0.0m. 0.0s. For 5.0 h. after 0.0 h. in Indian
Ocean (B.O.I.).
Mag. of (Kina).
Kobakana E 4p 07 32 30
M 08 30
P 07 32 30
S 08 30
N 08 30
Colombo E 4p 07 32 30
S 08 30
N 08 30
Mag. = 0.0.

Instruments and their Constants.

Station	Instrument	Compt.	Period in secs	Static Mag- nification	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12.0	350	11:1	16.0
	Milne-Shaw	E	12.0	350	3:1	8.0
	Sprengnether	E	7.0	-	-	30.0
Calcutta	Milne-Shaw	E	12.0	250	20:1	8.0
	Wood-Anderson	N	2.0	870	Critical	30.0
	Omori-Ewing	N	18.0	32	-	25.4
	Omori-Ewing	E	19.0	30	-	25.4
Chatra	Wood-Anderson	N	1.0	1000	22:1	60.0
	Wood-Anderson	E	1.0	1000	22:1	60.0
	Benioff	Z	To=0.72sec Tg=0.45sec	-	-	60.0
Colombo	Milne-Shaw	E	12.0	250	20:1	8.0
Dehra Dun	Omori-Ewing	N	30.0	12	-	-
Hyderabad	Milne-Shaw	E	12.0	250	20:1	8.0
	Milne-Shaw	N	12.0	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8.0
Madras	Sprengnether	E	7.5	-	-	30.0
New Delhi	Milne-Shaw	N	12.0	288	20:1	8.0
	Wood-Anderson	N	4.0	1000	20:1	16.0
	Wood-Anderson	E	2.0	2000	30:1	60.0
	Omori-Ewing	E	30.0	30	1	12.0
Poona	Milne-Shaw	N	12.0	250	20:1	8.0
	Wood-Anderson	E	4.0	1100	20:1	16.0
	Sprengnether	E	Tg = 3.6 To = 1.0sec	-	-	30.0
	Benioff	Z	To = 1 sec	-	-	60.6
	Sprengnether	Z	To=Tg=1.5	-	-	30.0
Shillong	Wood-Anderson	E	3.0	1000	-	60.0
	Wood-Anderson	E	1.5	1500	-	30.0

SEISMOLOGICAL PULLETIN

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
1				0 = 07h. 49m. 03s. Epc: 2°5 N. Lat: 65.5 E. Long: in Indian Ocean (BCIS). Mag. 5 $\frac{3}{4}$ (Kiruna).	
	Kodaikanal	E	iP i M	07 52 29 55 51 58 09	Slight, near. Per. = 9.0 secs μ = 6.6.
	Colombo	E	P SSS e M	07 52 35 56 05 57 40 58 25	Amp = 0.9.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
1	Madras	E	1P	07 53 05	Slight.
(Contd)			PP	53 30	
			PPP	53 43	
			1SS	56 55	
			SSS	57 10	
			i	57 25	
			M	59 54	
			ScP	08 00 23	
			ScS	04 13	
	Bombay	NE	1P	07 53 07	
		N	e	57 35	
		E	e?	08 01 05	
		N	e?	01 10	
		E	1P	03 53	
	Poona	Z	eP	07 53 07	Phases not clear.
			PP	53 27	
			PPP	53 37	
			eSS	56 11	
			SSS	57 07	
	Hyderabad	E	1P	07 53 21	
			1SS	57 21	
		N	L	59 07	
		E	M	08 00 06	Per. = 9 secs μ = 7.
			M	00 06	Per. = 10secs μ = 6.
	New Delhi	N	eP	07 54 56	Slight.
			e	55 19	
	Shillong	E	eP	07 55 49	Slight, distant.
			e	08 02 15	
1	Chatra	Z	i	08 00 29	Feeble.
		NE	e	00 30	
			e	04 45	
1	Chatra	Z	1P	08 16 32	Feeble, near.
		NE	e		
		NEZ	i	16 53	
1	Poona	Z	e	09 04 59	Phases indistinct.
		NE	e	17 30	
			e	22 30	
	Kodaikanal	E	e	09 09 17	Feeble, phases not clear.
	Colombo	E	P	09 11 35	
			L	13 --	
			M	20 50	Amp = 0.3.
	Bombay	N	M	09 29 --	Per. = 23 secs μ = 11.
		E	M	31 20	Per. = 18secs μ = 5.
	Hyderabad	E	M	09 30 07	Per. = 14 secs μ = 4.
1	O = 13h. 21m. 02s. Epc: Lat 36°5 N., Long 94° E. (B.C.I.S.)				
	O = 13h. 20m. 56s. (Poona).				
	Chatra	Z	1P	13 23 40	Surface waves. Slight.
		NE	e		
			e	23 54	
			e	21 03	
		E	e	26 36	Per. = 5.7 secs μ = 1.0.
		Z	e		Per. = 5.3 secs μ = 2.5.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
1	Shillong	E	eP eS e	13 23 54 26 09 26 55	Slight, near.
	New Delhi	NE N	eP eS ISS M	13 24 38 27 26 27 44 29 30	1670 Slight.
	Hyderabad	N	eP eS M	13 26 07 30 16 33 38	2380
		E	M	33 40	Per. = 12 secs μ = 13. Per. = 13 secs μ = 15.
	Poona	Z	iP PP PPP P* Pg eS SS SSS S* SgM	13 26 25 26 43 27 01 27 29 28 30 30 49 31 15 31 39 32 23 33 29	2820 Slight.
		NE			
	Bombay	NE N E NE E N E	iP PP PP PPP IS LQ SS SSS LR M M	13 26 30 27 11 27 16 27 26 30 57 31 49 32 10 32 16 33 -- 37 02 37 36	2860 Feeble. Per. = 8 secs μ = 6. Per. = 8 secs μ = 3.
	Madras	E	eP PP PPP eS LQ SS SSS ScP LR M ScS	13 26 43 27 33 27 47 31 21 32 33 32 48 33 03 33 23 33 56 36 04 37 07	3010 Slight.
1	Dehra Dun	N	e	13 27 18	
	Calcutta	E	e? S LR M	13 27 22 28 21 28 58 30 05	1945 Slight.
2	Chatra	Z	i	03 18 51	Feeble, near.
3	Chatra	Z NE Z	iY eY e	07 56 26 59 52	Slight.
	Poona	Z	iP	07 56 27	
3	Bombay	N	e	17 26 --	Tremor.
3	Kodaikanal	E	e	19 59 15	Tremor.

5

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct 3 1952 (Contd)	Bombay	E N	e e	20 09 -- 25 36		Tremor.
4	Chatra	Z NE	iY eX	23 45 22		Feeble, near.
4	Shillong	E	eP PP P* e e LQ eS LR SS S* SSS	23 45 34 45 40 45 44 46 09 46 19 46 26 46 38 46 42 46 43 46 55 47 01	600	Slight.
5	New Delhi	NE N	eP iS SS	11 03 32 10 23 13 22	5210	Slight.
	Poona	Z	i i	11 03 53 04 15		
	Bombay	E	e i i i	11 07 10 10 50 11 15 13 42		
5	New Delhi	NE N NE	eP i i iS SS SSS	15 00 06 00 17 00 23 00 51 01 02 01 12	410	Slight.
	Poona	Z	i	15 06 23		
5	O = 22h. 04m. 28s. Epc: Lat 37° N., 93° E. Long in China (U.S.C.G.S.) Epc: 37° N., 93° E. O = 22h. 04m. 28s. (B.C.I.S.). 37° N., 92° S E. O = 22h. 04m. 23s. (Poona).					
	Mag. 6.1/3 (Uppsala), 6½ (Kiruna), 6 (Praha).					
	Chatra	NEZ Z NE	e eY eX	22 07 14 12 --		Slight. Phases indistinct. Per. = 6.3secs u = 22. Per. = 6.5secs u = 0.5.
5	Shillong	E	eP(?) PPP e e LQ eS SS LR S* M	22 07 27 07 43 08 50 09 17 09 39 09 49 10 01 10 17 10 39 11 18	1400	Moderate.
	Calcutta	E	eP PP iS LR ? M	22 08 03 08 16 11 01 11 33 12 32 12 57	1780	Slight,

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
<u>Oot.</u> 1952						
5	New Delhi	NE	eP	22 08 11	1830	Slight.
(Contd)		N	PP	08 26		
			PPP	08 34		
			iS	11 14		
			SS	11 35		
			SSS	11 47		
			M	12 55		
			Mn	14 45		Per. = 11 secs μ = 74.
	Hyderabad	NE	P	22 09 40	2560	
			iS	13 48		
		E	M	17 24		Per. = 12 secs μ = 22.
		N	M	17 41		Per. = 12 secs μ = 27.
	Poona	NEZ	iP	22 09 54	2830	Slight.
		E	PP	10 33		
			PPP	10 46		
		NE	iS	14 19		
		E	SS	15 16		
			LR	16 23		
			M	19 27		
	Bombay	E	iP	22 09 58	2850	
			PP	10 35		
			PPP	10 55		
			iS	14 24		
			SS	15 41		
			LR	16 44		
			M	20 26		Per. = 9 secs μ = 12.
	Kodaikanal	E	e?	22 14 45		Slight, near. Phases not clear.
6	Madras	E	eP	11 15 04	2650	Slight.
			PP	15 54		
			PoP	17 03		
			eS	19 13		
			LQ	19 59		
			SS	20 20		
			SSS	20 34		
	New Delhi	NE	eP	11 58 01		Slight, near.
		E	e	59 39		
		NE	i	59 43		
6	Shillong	E	eP	20 34 02	220	Slight.
			Pg	34 05		
			PPP	34 14		
			eS	34 23		
			Sg	34 33		
			SS	34 38		
			SSS	34 49		
	Chatra	Z	i	20 35 00		Slight. Felt at Jorhat
		NE	e	35 01		in Assam.
	Poona	Z	i	22 40 22		
6	Shillong	E	iP	22 44 05	240	Slight.
			P*	44 08		
			S*	44 34		
			iSg	44 39		
			SS	44 45		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
6	Chatra	NE	eP PP P* Pg iS LR SS S* Sg	22 45 04 45 09 45 20 45 36 46 23 46 32 46 34 46 47 46 58	770	Slight. Felt at Jorhat in Assam.
	Poona	Z	i	22 47 26		Shock felt at Shillong.
7	O = 18h. 02m. 10s. in Central Tibet (U.S.C.G.S.)					
	Epc: 31.4 N. Lat., 87.5 E. Long. O = 18h. 02m. 14s. (B.C.I.S.).					
	32.0 N. Lat., 88.0 E. Long. O = 18h. 02m. 14s. (Poona).					
	Chatra	Z NE	iPY eP PP P* PPP Pg LQ iS LR SS S* SSS Sg	18 03 29 03 34 03 39 03 43 03 49 04 11 04 25 04 28 04 34 04 37 04 43 04 50	530	Slight.
7	Shillong	E	eP PP Pg LQ eS SS SSS M	18 03 58 04 05 04 31 05 03 05 19 05 31 05 41 05 56	780	Moderate.
	Calcutta	N	eP iS	18 04 29 06 15	980	Slight.
	New Delhi	NE N	eP(?) PP PPP iS i SSS S* M	18 04 33 04 41 04 48 05 21 05 27 05 41 06 59 07 27	1050	Slight.
	Poona	ZE E	iP iS SS SSS LR ScP ScS	18 06 25 09 42 10 07 10 15 11 57 33 55 17 27	1980	Slight.
	Bombay	E N NE N E	iPY ePY iS eSSY iSSY SSS LR	18 06 28 09 47 10 10 10 24 10 39	2000	Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
7	Bombay (Contd) (Contd)	N	LR	18 10 35		Per. = 11secs μ = 12.
			M	13 32		
		E	M	14 05		
	Madras	E	eP	18 06 49	2240	Slight.
			PP	07 11		
			PPP	07 22		
			iS	10 31		
			LQ	10 46		
			SS	11 04		
			SSS	11 07		
			LR	11 26		
			M	12 56		
			ScP	13 59		
			ScS	17 37		Per. = 10.2 secs.
7	Hyderabad	N	eS	18 09 41		Per. = 11 secs μ = 23.
			L	10 51		
			M	12 31		
8	New Delhi	NE	iP	04 31 37	980	Slight.
			PPP	31 54		
			S	33 13		
			i	33 25		
	Poona	Z	i	04 33 13		Tremor.
			e	37 03		
8	New Delhi	N	eP	08 44 17	960	Slight.
			iS	45 57		
			SS	46 10		
			SSS	46 20		
	Chatra	NEZ	e	08 45 55		Feeble.
	Poona	Z	e	08 46 08		Tremor.
			i	46 34		
			i	49 40		
			i	49 47		
			i	49 52		
			i	50 12		
8	O = 14h. 24m. 02s. Epc: 39° N., 113° E. in North Eastern China. Mag. 5½ (Kiruna) (U.S.C.C.S.).					
	Shillong	E	eP	14 28 57	2450	Moderate.
			PP	29 27		
			eS	32 56		
			LQ	33 15		
			M	35 45		
	Chatra	Z	i Y	14 29 24		Slight.
		NE	e X			
	Bombay	NE	eP	14 31 42	4570	Feeble.
			eS	37 56		
		E	LQ	41 24		
			M	48 41		
		N	M	49 02		Per. = 9 secs μ = 2. Per. = 11 secs μ = 3.
	Calcutta	E	e	14 32 47		Slight, distant.
			i	26 27		
			i	39 01		
			Mn	41 46		

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
8 (Contd)	Poona	Z	e	14 37 33	
		E	e	44 29	
			e	49 47	
	Hyderabad	E	M	14 44 16	
9	Kodaikanal	E	eP?	09 50 12	Per. = 12 secs. $\mu = 4$.
	Bombay	NE	e	09 50 16	Tremor.
			e	54 45	Feeble, tremor.
9	Kodaikanal	E	eP	12 23 30	Feeble, phases not clear.
	Bombay	NE	e	12 24 34	Feeble, tremor.
			e	23 39	
	Hyderabad	E	e	12 28 41	
10	Epc: 16° N., 56° E. in Arabian Sea. 0 = 13h. 06m. 00s. G.M.T. (B.C.I.S.).				
	Poona	Z	i	13 07 24	Tremor.
			i	07 27	
			i	10 09	
			i	13 30	
	Shillong	E	e	13 07 30	Tremor.
			e	07 35	
			e	10 54	
	Chatra	Z	i	13 07 56	Slight.
			e	11 49	
	Bombay	NE	eP	13 08 50	2510 Feeble.
		N	PPF	09 42	
		NE	eS	12 54	
		E	LQ	13 22	
		N	LQ	13 34	
		NE	SS	13 46	
		N	LR	14 30	
			M	18 --	
		E	M	20 --	
10	Bombay	E	ePKP ₁	16 14 24	12950 Slight, distant.
			eS	23 30	
			e	25 30	
10	Epc: 30°5 N., 69° E. 0 = 18h. 47m. 37s. G.M.T. (U.S.C.G.S.) 29°5 N., 69°5 E. in Central Pakistan (Poona). 0 = 18h. 47m. 44s. Mag. 6½ - 6½ (Roma), 6½ (Kiruna), 5.9 (Praha), 5½ (Uppsala).				
	New Delhi	N	eP	18 49 19	740 Moderate.
			PP	49 27	
			P*	49 34	
			Pg	49 50	
			LQ	50 27	
			iS	50 36	
			SS	50 47	
			S*	50 57	
			Sg	51 15	
	Dehra Dun	N	eP?	18 49 36	
			i	50 30	
			M	52 00	
	Per. = 3 secs $\mu = 18.9$ ".				

10

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS.
				h. m. s.	km.	
Oct. 1952 10	Bombay	NE	eP?	18 50 26	1390	Slight.
			PP	50 35		
			PPP	50 45		
			IS	52 47		
		E	LQ	52 44		
			SS(?)	53 07		
		N	SSS	53 15		
		E	SSS	53 19		
			M	54 25		Per. = 10 secs μ = 37.
		N	M	55 47		Per. = 15 secs μ = 84.
	Poona	Z	1Y	18 50 33	1280	Moderate.
		NE	eY			
			PP	50 41		
		E	PPP	50 51		
			IS	52 43		
			SS	53 00		
			LR	53 13		
		N	M	54 00		Per. = 17 secs μ = 95.
	Hyderabad	E	eP	18 51 14	1640	
			IS	53 59		
			e	54 33		
			M	56 32		Per. = 9 secs μ = 99.
10	Chatra	Z	1P	18 51 19	1670	Moderate.
		NE	eP	51 22		
			PP	51 33		
			PPP	51 43		
			i	52 12		
			S	54 10		
			SS	54 31		
			SSS	54 42		
			LR	54 54		
		N	MY			Per. = 2.0 sec μ = 7.0
		E	MY	56 11		Per. = 2.0 sec μ = 7.0.
	Calcutta	E	1P	18 52 02	2170	Moderate.
			PP	52 19		
			IS	53 36		
			SS	53 04		
			LR	53 38		
			M	53 08		
	Madras	E	P	18 52 12	2320	Phases not clear.
			PPP	52 44		
			ScP	56 01		
			SS	56 41		
	Shillong	E	eP	18 52 14	2290	Moderate.
			PP	52 28		
			PPP	52 44		
			eS	56 00		
			LQ	56 10		
			PcP	56 18		
			SS	56 31		
			SSS	56 49		
			LR	57 11		
			M	58 47		
	Kodaikanal	E	eP	18 52 48	2340	Moderate, short distant.
			eS	56 39		
			LR	57 50		
			M	59 30		Per. = 9.5 sec μ = 7.9.

11

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
10 (Contd)	Colombo	E	P S L M	18 53 07 57 47 00 49 03 19		
10	New Delhi	N	SP	19 17 22		Slight.
10	Shillong	E	e e	21 16 04 21 00		Tremor.
	Kodaikanal	E	e?	21 16 15		Tremor.
	Poona	Z	i i	21 16 47 16 59		
	Chatra	Z	i i	21 17 30 20 08		Slight. Probably after shock.
	Bombay	NE	e e e	21 18 27 22 39 25 22		Tremor.
10	New Delhi	N	eP Pg LQ iS S* Sg	21 43 01 48 25 49 06 49 17 49 40 49 57	730	Slight.
10	New Delhi	N	eP S* Sg	22 40 52 42 34 42 54	760	Slight.
	Bombay	E	e i	22 45 31 46 35		
	Poona	Z	i i	22 46 14 46 31		
11	O = 00h. 13m. 59s. G.M.T. Epc: 6°0 S., 149° E. in New Britain (U.S.C.G.S.).					
	Shillong	E	e e	00 24 29 32 37		Slight, distant.
	Kodaikanal	E	eP eS LQ LR M	00 25 51 35 30 45 39 49 15 55 42	8350	Long distant. Slight.
	Bombay	E NE E	eP eS PS	00 26 01 35 53 36 41	8630	
	Madras	E	e	04 53 04		Tremor.
11	New Delhi	N	eP i LQ iS S* Sg	09 10 42 11 07 11 53 12 03 12 27 12 47	780	Slight.

Per. = 24 secs μ = 11.4.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Oct. 1952					
11 (Contd)	Poona	Z	e	09 11 44	Tremor.
			i	11 55	
			i	11 59	
			i	12 05	
			i	13 44	
			e	14 24	
		E	e	15 25	
	Chatra	Z	e	09 12 39	Slight.
			i	15 40	
	Bombay	E	eP	09 13 18	1130
			LQ	15 10	
			is	15 14	
			SSS	15 38	
			M	16 --	
11	Shillong	E	e	09 13 35	Tremor.
			e	20 07	
	Madras	E	eP	09 16 38	1000 Slight.
			PP	16 48	
			FPP	16 55	
			IR	18 09	
			S	18 21	
			SSS	18 47	
			M	19 25	Per. = 8 secs.
	Calcutta	E	e	09 16 53	Slight, near.
			i	18 54	
			i	19 24	
	Kodaikanal	E	e	09 18 15	Tremor.
11	New Delhi	N	eP	10 07 00	730 Slight.
			S*	08 36	
			Sg	08 56	
	Poona	Z	i	10 08 26	Tremor.
			i	10 51	
			e	11 13	
			i	12 02	
			i	12 10	
	Chatra	Z	e	10 09 03	Feeble.
11	New Delhi	N	eP	16 34 03	800 Slight.
			eS	35 26	
			S*	35 51	
			Sg	36 14	
	Poona	Z	i	16 35 00	Tremor.
			i	35 28	
			i	38 41	
		E	e	39 19	
	Chatra	Z	e	16 36 06	Slight.
			e	38 55	
11	Shillong	E	e	16 37 01	Tremor.
			e	44 02	
	Bombay	E	e	16 38 23	
		NE	e	38 39	

13

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
11	Shillong	E	eP/P*	16 51 49	150 Slight.
			Pg	51 50	
			i	52 06	
			iSg	52 07	
			S	52 09	
11	Shillong	E	ePg/P*	18 24 16	100 Slight.
			P	24 18	
			eSg	24 27	
			S*	24 29	
			S	24 31	
12	Shillong	E	e	15 18 37	Slight, near.
			e	19 08	
12	New Delhi	N	eP	18 01 28	740 Slight.
			Pg	02 03	
			LQ	02 36	
			eS	02 45	
			SSS	03 03	
			Sg	03 33	
	Poona	Z	e	18 02 55	Tremor.
			e	05 04	
		E	e	06 21	
		Z	e	06 27	
			e	06 39	
	Bombay	NE	e	18 05 55	Feeble, Tremor.
			e	06 32	
12	Chatra	Z	iP	18 24 58	510 Feeble.
			PF	25 06	
			P*	25 09	
			PPP	25 12	
			Pg	25 17	
			LQ	25 41	
			iS	25 52	
			SS	26 03	
			S*	26 05	
			SSS	26 12	
			Sg	26 14	
13	Chatra	Z	iP	02 17 40	770 Feeble.
			PP	17 46	
			PPP	17 52	
			P*	17 56	
			Pg	18 11	
			LQ	18 49	
			iS	19 00	
			LR	19 08	
			SS	19 10	
			SSS	19 20	
			S*	19 22	
			Sg	19 44	
13	Poona	Z	e	03 59 43	Tremor.
13	New Delhi	N	eP	04 46 47	750 Slight.
			iQ	47 54	
			iS	48 05	
			SS	48 17	
			SSS	48 27	
			i	48 35	
			Sg	48 47	

14

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
Oct. 1952						km.	
13	Poona	Z	iP	04	47	54	Tremor, Very feeble.
(Contd)							
13	Chatra	Z	i	04	48	47	Feeble.
			i		51	41	
	Bombay	NE	e	04	55	11	Tremor.
			i		52	13	
13	Poona	Z	iP	07	14	53	
			i		15	16	
13	New Delhi	N	eP	12	43	32	740 Slight.
			Pg		44	02	
			iS		44	49	
			S*		45	16	
			Sg		45	34	
	Poona	Z	eP	12	44	47	Feeble.
			i		45	03	
	Chatra	Z	eP	12	45	34	1720 Slight.
			PP		45	45	
			PPP		45	54	
			LQ		46	23	
			iS		48	27	
			SS		48	44	
			SSS		48	55	
			LR		49	07	
			M		50	37	
	Bombay	E	i	12	48	15	
		NE	i		48	30	
	Calcutta	E	e	12	49	10	Slight, near.
			e		50	19	
			i		51	49	
	Madras	E	e	12	50	41	Tremor.
	Kodaikanal	E	e?	12	51	06	Tremor.
13	Poona	Z	e	16	51	14	Tremor.
13	Kodaikanal	E	e?	23	46	03	Long distance, feeble shock.
14	Bombay	E	M	00	34	--	
		N	M		35	19	Per. = 17 secs $\mu = 4$.
14	Poona	Z	eP	09	24	38	Tremor.
			i		26	17	
14	Poona	Z	i	15	28	05	Tremor.
14	Poona	Z	eP	21	34	20	Tremor.
			i		39	19	
15	Poona	Z	i	00	20	42	Tremor.
15	New Delhi	NE	iPg	13	25	13	20 Slight, felt locally.
			iSg		25	15	
15	Poona	Z	iP	19	14	36	Tremors.
			i		14	46	
			i		14	55	

15

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
Oct. 1952							
16	Poona	Z	eP	00 46 37			Tremor.
16	New Delhi	NE E	LQ eS LR SS S* SSS Sg	12 50 11 50 22 50 26 50 33 50 38 50 43 50 52	600		Slight.
	Poona	Z	eP? e	12 52 13 55 00			Tremors.
17	Poona	Z	e	01 23 28			
17	Poona	Z	iP	15 26 48			Tremors.
17	Poona	Z	e	15 45 33			Tremors.
17	Poona	Z	eP PPP eS? i S*? SgM	17 52 49 53 01 55 17 55 54 56 13 56 50	1460		Very feeble.
17	Poona	Z	eP	19 01 36			Tremor.
17	Poona	Z	iP	21 21 32			Tremor.
18	Epc: 16°0 S., 168°0 E. in New Hebrides. C = 05h. 22m. 32s. G.M.T. (U.S.C.G.S.) Mag. 6½ - 6½ (Pasadena), 6½ (Poma), 6½ (Uppsala-Kiruna).						
	Shillong	E	eP FcP FP eS ScS PS	05 35 10 35 20 38 08 45 25 45 41 46 09	9130		Slight.
	Colombo	E	P S L M	05 35 39 45 23 06 10 51 20 26			Amp = 0.3 .
	Kodaikanal	E	e	05 35 46			Slight, phases not clear.
18	Hyderabad	E	eP eS M	05 35 59 46 43 06 17 50	9790		Per. = 16 secs μ = 4.
	Poona	Z	iP PP SKS SKKS	05 36 23 40 18 46 52 47 10	10670		Slight.
	Bombay	NE E NE E NE N NE	eP e PP PPP SKS SKKS e(?) eS	05 36 30 40 24 40 45 42 50 46 58 47 18 47 50 48 08	11280		Moderate.

16

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
Oct. 1952							
18	Bombay (Contd) (Contd)	NE	PS	05 49 45			
			PPS	50 29			
		N	M	06 30 02			Per. = 18 secs $\mu = 8$.
		E	M	31 34			Per. = 15 secs $\mu = 2$.
	Madras	E	iPPP	05 41 18		10170	Slight.
			SS	52 57			
18	Bombay	E	e	12 15 41			
			e	26 32			
	Kodaikanal	E	e	12 58 30			Tremor.
18	Hyderabad	E	M	13 07 20			Per. = 16 secs $\mu = 4$.
18	O = 21h. 26m. 12s. G.M.T. Epc: 35°5 N., 71°0 E. in Hindu Kush ; h = $\pm$ 200 km (U.S.C.G.S.).						
	New Delhi	NE	iP	21 28 30		750	Slight.
			P*	28 46			
		N	lg	28 59			
		NE	i	29 16			
		N	eS	29 43			
		NE	SSS	30 09			
	Chatra	Z	iY _p ?	21 30 03			Slight.
		NE	eY				
		Z	iY _s ?	33 01			
		NE	eY				
18	Poona	Z	iP	21 30 15		1780	Very feeble.
			PP	30 37			
			PPP	30 38			
			i	31 39			
			i	32 42			
			S	33 05			
	Bombay	E	ePY	21 30 16		2120	Deep focus. Very slight shock.
		N	iPY				
		NE	LQ	33 24			
		E	iSY	33 35			
		N	eSY				
		NE	e	34 18			
18	Shillong	E	eP	21 30 44		2300	Slight.
			PP	30 59			
			iS	34 31			
			LQ	34 40			
			PcP	34 54			
			LR	35 55			
19	Chatra	Z	iP	08 08 00		210	Feeble.
			iS	08 25			
	Chatra	Z	iP	08 09 12		210	Feeble.
			iS	09 37			
19	Chatra	ZNE	iP	10 26 16		210	Slight, felt at Kata-
		NE	P*	26 18			mandu, Nepal.
			Pg	26 20			
			PP	26 24			
			PPF	26 29			
			LQ	26 36			
			iS	26 41			
			S*	26 43			

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
19	Chatra (Contd)	NE	Sg SS SSS	10 26 45 26 52 27 01		
	Poona	Z	eP	10 31 29		
	Bombay	E	e	10 32 36		Feeble, tremor.
			e	33 24		
		N	e	33 40		
		NE	e	33 49		
19	Chatra	Z	iP iS	10 39 01 39 26	210	Feeble.
19	Epc: Lat 27°8 N., Long 85°7 E. in Nepal. Felt at Katmandu. O = 10h. 44m. 23s. G.M.T. (Poona).					
	Chatra	NEZ NE	iP P* Pg iP PPP LQ LR iS S* Sg SS SSS	10 45 04 45 06 45 09 45 11 45 17 45 20 45 25 45 29 45 32 45 34 45 40 45 52	210	Slight.
19	Shillong	E	e	10 46 02		Slight, near.
			e	46 22		
			e	47 08		
			e	47 38		
	New Delhi	E NE	iP iS	10 46 30 47 49	750	Slight.
			i	47 57		
		N	Sg	48 30		
	Calcutta	N	i	10 47 03		Slight, near.
			i	47 33		
			i	47 43		
19	Poona	Z	iP PP PPP LQ eS SS SES LR S* SgM	10 47 49 48 01 48 09 50 21 50 29 50 43 50 53 51 02 51 27 52 15	1590	Feeble.
	Bombay	E N	eS M	10 50 32 52 22	1070	Feeble.
	Hyderabad	N	c M	10 50 59 52 20		Per. = 9 secs / $\mu = 3$.
19	Chatra	Z	iP iS	11 43 16 43 42	220	Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Oct. 1952					
19	Chatra	Z	iP iS	12 08 06 08 21	210 Feeble.
19	Chatra	Z	iP iS	12 14 57 15 22	210 Feeble.
19	Chatra	Z	iP iS	15 41 37 42 02	210 Feeble.
19	Shillong	E	ePg PP eSg	23 02 24 02 33 02 36	100 Slight.
	Chatra	Z	i(P)? i	23 02 58 04 17	Feeble.
20	New Delhi	NE	eP i eS	01 28 27 28 48 29 33	620 Slight.
		E	SSS	29 53	
	Poona	Z	e e	01 33 02 33 20	Tremor.
20	Bombay	NE	e e e	14 34 20 33 12 47 57	
20	Shillong	E	e	14 36 56	Tremor.
	Chatra	Z	i	14 37 26	Feeble, distant.
	New Delhi	NE N	eS SSS S* Sg	14 50 32 50 54 50 57 51 53	750 Slight.
20	Shillong	E	e	15 14 23	Tremor.
	Hyderabad	E	e M	15 16 03 24 24	Per. = 9 secs $\mu = 2$.
	Bombay	NE	e e	15 16 33 25 26	
20	Shillong	E	iP* P PP eS* S SS	23 05 48 05 49 05 56 06 04 06 06 06 16	140 Slight.
21	Chatra	Z	iP Pg LQ iS SS SSS S* Sg(M)	10 06 45 07 22 07 57 08 09 08 21 08 32 08 37 08 56	810 Feeble.
21	Chatra	Z	iP PP P* PP	21 08 41 08 47 08 51 08 56	630 Feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Oct. 1952					
21	Chatra	Z	Pg	21 09 01	
(Contd)	(Contd)		LQ	09 26	
			iS	09 33	
			LR	09 41	
			SS	09 47	
			S*	09 52	
			SSS	10 00	
			Sg	10 04	
22	O = 17h. 00m. 35s. in Turkey. (U.S.C.G.S.).				
	O = 17h. 00m. 39s. Epc: 37.1 N., 35.7 E. (B.C.I.S.).				
	Mag. 5 (Roma).				
	New Delhi	NE	eP	17 07 40	4060 Slight.
		N	eS	13 23	
			PcS	13 43	
			SS	15 39	
			M	20 37	
	Bombay	NE	eP	17 07 53	4160
			PP	09 20	
			iS	13 42	
			SS	13 25	
		E	LQ	16 41	
		NE	SSS	17 04	
		E	M	23 14	
		E	M	23 17	
					Per.=16 secs.
					Per. = 15 secs $\mu = 3$.
	Poona	Z	eP	17 08 01	Tremor.
	Chatra	Z	iY	17 08 31	Slight, distant.
		NE	eY		
		NEZ	e	15 24	
	Hyderabad	N	e	17 14 55	
			M	23 04	
					Per. = 15 secs $\mu = 4$.
	Kodaikanal	E	e	17 15 49	Feeble.
24	Chatra	Z	iY	05 23 34	Slight, distant.
		NE	eY		
		Z	e	30 03	
	Poona	Z	eP	05 24 25	Tremor.
25	Poona	Z	eP	13 03 12	Tremor.
26	O = 08h. 23m. 18s. in Central Pakistan. (U.S.C.G.S.)				
	Lat 29.1° N., Long 63.4° E. O = 08h. 23m. 18s. (B.C.I.S.).				
	New Delhi	NE	eP	08 25 22	930 Slight.
		E	PP	25 29	
			PPP	25 33	
		N	P*	25 43	
		NE	LQ	26 46	
			iS	26 58	
			SS	27 10	
			SSS	27 20	
			S*	27 27	
			i	27 40	
			Sg	27 56	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s.	km.
Oct. 1952					
26 (Contd)	Bombay	NE	eP eSSS e	08 26 06 28 53 29 26	Phases not clear.
		E	i	30 33	
	Poona	Z	iP	08 26 14	1380 Slight.
		E	ePP ePPP LQ iS eSS eSSS M	26 19 26 27 28 27 28 34 28 46 29 03 30 04	
26	Hyderabad	E	eP eSSS M	08 26 59 30 48 33 42	Per. = 8 secs $\mu = 4$.
	Chatra	Z	iPY	08 27 22	1930 Slight.
		NE	ePY		
		Z	PP PPP i(?) iSY eSY SS SSS LR PcP M	27 36 27 43 30 29 30 35 30 53 31 03 31 24 31 57 32 49	
	Madras	E	eP PP iS LQ eSS LR M ScP	08 27 55 28 18 31 48 32 27 32 43 33 14 35 03 35 21	2770 Slight.
26	Colombo	E	P e	08 28 50 37 20	
	Calcutta	N	e i i	08 31 47 33 21 33 55	Slight, near.
	Kodaikanal	E	eP?	08 32 06	Slight.
26	O = 03h. 41m. 03s. Epc: 34.5° N., 137° E. in Honshu, Japan. h = $\pm$ 300 km (U.S.C.G.S.) Epc: 34.1° N. 137.8° E. h = 280-290 km (C.M.O., Japan). Mag. 6 $\frac{1}{4}$ (Wellington), 6 (Roma), 5 $\frac{3}{4}$ - 6 (Pasadena).				
	Shillong	E	iP PP PPP eS SS LQ LR	08 48 13 49 12 49 50 53 52 55 43 56 11 57 19	4000 Slight.

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS.
Oct. 1952							
26 (Contd)	Chatra	Z	iPY	08 48 42	4410	Moderate.	
		NE	ePY				
			PP	50 05			
		NEZ	PPP	50 34			
		NE	eS	54 46			
			e	58 05			
	Calcutta	N	i	08 48 51		Slight, distant.	
			i	43 55			
			i	50 45			
	New Delhi	NE	iP	08 49 36	5200	Moderate.	
			PP	51 26			
			PPP	52 12			
			iS	56 27			
			i	58 23			
		N	i	58 49			
			SSS	09 01 03			
	Hyderabad	E	iP	08 50 04	5660		
			iS	57 21			
			SeS	59 13			
			SS	09 00 57			
	Poona	Z	iP	08 50 31	6040	Moderate.	
		E	ePP	51 14			
			iPP	52 42			
			iS	58 03			
			eSS	59 16			
	Bombay	NE	iP	08 50 33	6110	Slight.	
			PP	52 40			
		E	PPP	54 04			
		NE	iS	58 14			
		N	SeS	09 00 15			
			SS	01 56			
		E	SS	02 07			
		N	SSS	04 00			
	Colombo	E	P	08 50 37			
			S	58 22			
26	O = 13h. 20m. 14s. Epc: 39°N., 143°5 E. Off East Coast of Honshu, Japan (U.S.C.G.S.)						
	Epc: 39°4 N., 143°9 E. h = ± 40 km (C.M.O., Japan).						
	Shillong	E	e	13 28 33		Tremor.	
			e	35 09			
	Chatra	Z	i	13 29 00		Slight, distant.	
	Bombay	NE	eP	13 30 45	7120	Slight.	
			PP	33 14			
			eS	39 22			
		E	PS	39 45			
			PPS	39 53			
			SSS	46 13			
		N	M	14 00 21		Per. = 17 secs μ = 4.	
		E	M	01 20			
	Poona	Z	iP	13 30 47			
			M	58 38			
	Calcutta	E	i	13 36 27		Slight, distant.	
			e	49 01			
			Mn	55 42			

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
26	Shillong	E	e e M	14 38 19 44 47 55 09	Slight, distant.
	Calcutta	E	e e Mn	14 46 11 58 56 15 05 33	Slight, distant.
	Poona	Z	iP	14 55 17	
26	O = 15h. 46m. 14s. in Honshu, Japan (U.S.C.G.S.) O = 18h. 01m. 58s. G.M.T. (Poona) Epc: 39° 3 N., 144° 0 E. h = ± 40 km (Japan).				
	Shillong	E	eP PP PPP eS PPS SoS LR M	15 54 29 56 01 56 57 16 01 09 01 29 04 25 07 55 11 13	5020 Moderate.
	Chatra	Z	i	15 54 57	Slight, distant.
	New Delhi	NE N	eP M	15 55 46 16 18 01	6000 Moderate. approx.
	Poona	Z	eP	15 56 42	
	Bombay	NE	e i	15 56 44 57 06	Tremor.
	Kodaikanal	E	e?	15 57 10	Slight, distant. Phases not clear.
	Chatra	Z NE	i Y SSX e	16 01 46 08 43	5310 Slight.
26	Calcutta	E	eS ?	16 02 00 08 42	Moderate.
	New Delhi	NE N	eS e M	16 02 34 10 09 24 01	Moderate.
	Hyderabad	E	S e M	16 03 13 11 22 26 04	Per. = 18 secs μ = 12.
	Poona	Z	eS	16 03 31	Moderate.
26	Bombay	NE	eS	16 03 32	Moderate.
	Colombo	E	eS M	16 05 02 32 00	
26	O = 18h. 02m. 00s. G.M.T. Epc: 39° N., 143° E. in off East Coast of Honshu, Japan. Mag. 6.5 (Pasadena), (Roma) & (Hiroshima) (U.S.C.G.S.) Epc: 39.4 N., 144.0 E. h = ± 40 km (CMO, Japan) Mag. 6.2 (Praha), 6.5 - 6.2 (De-Bilt), 6.1 (Uppsala), 6.6 (Strasbourg).				
	Shillong	E	eP PP	18 10 18 11 48	4990 Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
26	Shillong	E	PcP	18 12 00	
(Contd)	(Contd)		ScP	15 22	
			eS	16 56	
			PS	17 04	
			PPS	17 16	
			SS	20 13	
			LR	22 40	
			M	26 23	
	Chatra	Z	iPY	18 10 43	5390 Slight.
		NE	ePY		
			eS	17 44	
		E	M	30 -	Per. = 15 secs $\mu = 0.25$.
26	Calcutta	E	eP	18 10 58	5450 Moderate.
			iS	18 02	
			ScS	20 44	
			LR	25 02	
			Mn1	35 13	Per. = 12 secs $\mu = 22$.
			Mn2	36 31	Per. = 12 sec $\mu = 25$.
	New Delhi	NE	eP	18 11 32	6070 Moderate.
		N	PP	13 36	
			iS	19 11	
			ScS	21 13	
			SS	22 49	
			M	32 23	
			Mn	37 13	Per. = 15 secs $\mu = 23$.
	Colombo	E	P	18 11 50	
			e	21 32	
			L	40 50	
			M	46 23	Per. = 0.4 secs
	Hyderabad	E	P	18 12 11	
			PP	14 20	
			eS	20 11	
			SC	24 19	
			M	36 02	Per. = 15 secs $\mu = 8$.
26	Madras	E	e	18 12 29	Tremor.
	Poona	Z	iP	18 12 30	7000 Moderate.
		E	PcP	13 03	
			PP	15 04	
			iS	21 00	
			PS	21 16	
			PPS	21 30	
			LQ	28 24	
	Bombay	NE	eP	18 12 33	Moderate.
		E	PcP	12 54	
			PP	14 56	
			PPP	16 41	
		NE	eS	21 07	
		E	PS	21 27	
			SS	25 15	
			SSS	27 50	
			LQ	28 57	
		N	M	42 20	Per. = 13 secs $\mu = 13$.
		E	M	43 09	
	Kodaikanal	E	e	18 12 38	Slight, Long distant Phases not clear.

24

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
					km.
Oct. 1952					
26	Madras	E	e	19 01 01	
26	Epc: 39°3 N., 143°3 E. h = ± 20 km (C.M.O., Japan). 38°5 N., 143°5 E. Off East Coast of Honshu, Japan. 0 = 19h. 19m. 12s. G.M.T. (U.S.C.G.S.) Mag. 6 (Pasadena, Roma), 6.5 (Praha).				
	Shillong	E	eP	19 27 31	4950 Moderate.
			PcP	29 00	
			PP	29 17	
			PPP	29 53	
			ScP	33 00	
			eS	34 01	
			PS	34 10	
			PPS	34 27	
			SS	37 26	
			SSS	38 28	
			M	44 22	
	Chatra	Z	iPY	19 27 59	5300 Slight.
		NE	ePY		
		Z	i	32 18	
		NE	eS	34 55	
		E	M	49 --	Per. = 15 secs $\mu = 0.20$.
	Calcutta	E	eP	19 28 08	5410 Moderate.
			iS	35 10	
			ScS	38 02	
			LR	42 08	
			Mn	54 32	Per. = 13 secs $\mu = 24$.
	New Delhi	NE	eP	19 28 46	6070 Moderate.
		N	eS	36 25	
			SS	40 09	
			SSS	42 07	
			M	49 09	
	Hyderabad	E	P	19 29 20	
			SS	37 47	
			L	49 20	
			M	56 17	Per. = 15 secs $\mu = 6$.
26	Poona	Z	iP	19 29 45	6950 Moderate.
		E	PP	32 08	
			PPP	33 29	
			PcS	34 13	
			iS	38 12	
			PPS	38 45	
			SS	42 10	
			LQ	45 35	
	Bombay	NE	eP	19 29 46	7060 Moderate.
		E	PcP	30 13	
		NE	PP	32 07	
		E	PPP	33 35	
		N	ePY	38 19	
		E	iPY		
		NE	PC	38 38	
			SS	42 41	
			SSS	45 27	
		E	LQ	46 --	
		N	M	59 25	Per. = 14 secs $\mu = 6$.
		E	M	59 09	Per. = 18 secs $\mu = 3$.

25

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
26 (Contd)	Colombo	E	P S L M	19 30 00 38 40 55 20 20 00 50		Amp. = 0.3.
26	Kodaikanal	E	e	19 30 04		Long distant, slight Phases not clear.
26	Epc: 39°4 N., 143°8 E. (C.M.O., Japan) 0 = 20h. 14m. 26s. Off North East Coast of Honshu, Japan (U.S.C.G.S.) 39°3 N., 143°6 E. (C.M.O., Japan).					
	Bombay	E	eP	20 28 11		Feeble.
	Shillong	E	e e M	20 35 43 42 13 54 08		Slight, distant.
26	Bombay	NE	eP eS	20 38 08 46 31	6870	Very feeble.
26	Poona	Z	eP	21 11 05		
26	0 = 22h. 00m. 38s. Epc: 40° N., 143°5 E. Off North East Coast of Japan.					
	Shillong	E	e e M	22 08 53 15 18 26 53		Slight, distant.
	Bombay	NE	eP eS	22 11 10 19 52	7220	Feeble.
27	0 = 03h. 17m. 13s. (Poona) 0 = 03h. 17m. 12s. in Honshu, Japan (U.S.C.G.S.) Epc: 39°4 N., 143°4 E. h = 50 - 60 km (C.M.O., Japan). Mag. 6½ (Pasadena, Roma, Liruna), 6½ (Uppsala), 6½ (Strasbourg).					
	Chatra	Z NE	iPY ePY eS M	03 25 54 32 50 47 --	5300	Slight. Per. = 15 secs μ = 0.4.
	Calcutta	E	eP PP iS? PPS ScS LR M? Mn	03 25 56 27 51 33 10 33 23 35 53 40 15 45 25 52 30	5610	Moderate. Per. = 13 secs μ = 30.
	New Delhi	NE N	iP iS SS SSS M	03 26 43 34 22 38 04 40 01 46 46	6070	Moderate.
	Hyderabad	N	eP ePS M	03 27 18 35 35 51 05	6750	Per. = 15 secs μ = 7. Per. = 12 secs μ = 5.
		E	M	51 10		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Oct. 1952						
27	Madras	E	1P	02 27 30	6820	Moderate.
			PcP	28 03		
			PP	29 48		
			PcS	32 05		
			iS	35 50		
			PS	36 10		
			PPS	36 22		
			SS	39 52		
			LR	43 09		
27	Poona	Z E	1P	03 27 41	6950	Moderate.
			ePcP	28 19		
			iPP	30 07		
			PPP	31 36		
			PcS	32 07		
			eS	36 08		
			PS	36 19		
			PPS	36 31		
			ScS	37 15		
			SS	39 55		
			LQ	43 35		
			M	51 56		
	Bombay	NE E NE N NE E N E	eP	03 27 43	7060	Moderate.
			PP	28 52		
			PP	30 02		
			PPP	31 23		
			eS	36 16		
			PS	36 31		
			PPS	36 43		
			ScS	37 30		
			SS	40 23		
			SSS	43 25		
			M	57 26		
			M	58 17		
27	Colombo	E	P	03 27 47		
			S	36 40		
			L	53 --		
			M	58 30		
						Amp = 0.4.
27	Shillong	E	eP	03 55 29	4880	Moderate.
			PP	56 53		
			PPP	57 36		
			ScP	04 01 03		
			eS	02 01		
			PPS	02 21		
			SS	05 14		
			LR	03 07		
			M	12 27		
27	Shillong	E	eP	06 39 11	5000	Moderate.
			PcP	40 22		
			PP	40 38		
			eS	45 50		
			PS	45 50		
			PPS	46 08		
			SS	49 10		
			SSS	50 10		
			M	56 16		
27	Shillong	E	e	09 46 00		
			i	46 31		
						Slight, local.

Per. = 15 secs μ = 10.
Per. = 16 secs μ = 6.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS.
				h. m. s. km.	
Oct. 1952					
28	Bombay	E	e(P1) e e	04 51 11 52 35 05 09 32	Distant, moderate.
28	Epc: 40° N., 144° E. 0 = 06h. 31m. 04s. (U.S.C.G.S.) 39°5 N., 144°3 E. h = ± 40 (C.M.O., Japan). 0 = 06h. 31m. 04s. (Poona).				
	Chatra	Z NE NEZ E	1PX ePX eS M	06 39 42 46 42 07 00 30	5370 Slight. Per. = 15 secs μ = 0.25.
	Calcutta	E	eP IS LP? M? Mn1 Mn2	06 39 53 46 57 53 33 59 43 07 04 14 06 27	5450 Moderate. Per. = 13 secs μ = 18. Per. = 13 secs μ = 18.
	New Delhi	NE N	eP eS M	06 40 33 48 11 07 01 22	6050 Moderate.
	Madras	E	1P PcP PP PPP PcS IS PSS ScS LQ LR	06 41 20 41 51 43 35 45 07 45 08 49 40 50 19 50 53 56 54 07 00 03	5010 Slight.
	Colombo	E	eP e	06 41 24 51 29	
	Poona	Z	1P ePP eS ePS ePPS ScS SS M	06 41 30 43 54 49 56 50 10 50 28 51 00 54 02 07 32	6920 Moderate.
28	Bombay	NE E NE N E NE E N E N	eP pp PPP S PS PPS ScS SS SSS LQ LQ LR M	06 41 31 43 55 45 40 50 06 50 18 50 33 51 04 54 09 56 44 57 36 57 -- 07 01 -- 11 18	7090 Moderate. Per. = 15 secs μ = 7.
	Kodaikanal	E	e	06 45 46	Long distant, slight.
	Hyderabad	N	e M	06 49 20 07 11 06	Per. = 12 secs μ = 3.

23

DATE	STATION	COMPT.	PHASE	C. M. T.	REMARKS
				h. m. s. km.	
Oct. 1952					
28					0 = 16h. 45m. 21s. Epc: 39° N., 143° E. Off East Coast of Honshu, Japan (U.S.C.G.S.).
					0 = 16h. 45m. 23s. (Poona).
					Epc: 39°0 N., 144°3 E. n = 60 (C.M.O., Japan).
	Shillong	E	e	16 53 38	Slight, distant.
			e	17 00 09	
			M	10 54	
	Calcutta	E	e	16 54 28	Slight, distant.
			e	17 01 20	
28	Poona	Z	eP	16 55 49	6920 Slight.
		E	PcP	56 25	
			Pp	58 17	
			PPP	59 39	
			eS	17 04 15	
			PPS	04 51	
			SSS	11 11	
	Bombay	NE	eP	16 55 53	7030 Very slight.
			PP	58 18	
			eS	17 04 25	
		E	i	04 39	
			SS	08 25	
28	Shillong	E	e	23 33 54	Slight, local.
			i	34 10	
28	New Delhi	E	eP	03 58 22	830 Slight.
		N	LQ	59 40	
			IS	59 49	
			SS	04 00 01	
			S*	00 15	
			i	00 29	
			Sg	00 56	
	Poona	Z	eP	03 59 42	Feeble, phases not clear.
			e	04 00 10	
		E	e	02 39	
	Bombay	E	e	04 00 05	Phases not clear.
			e	01 55	
			i	02 31	
			i	03 06	
		NE	i	03 23	
	Chatra	NEZ	e	04 00 26	Slight.
		NE	e	05 30	
	Calcutta	E	e	04 04 29	Slight, near.
			i	06 41	
29	Poona	Z	e	09 06 28	Feeble, phases not clear.
29	Bombay	E	e	17 14 13	Tremor.
			e	14 43	
29	Calcutta	E	iP	19 52 22	4560 Slight.
			iS	52 35	
			?	59 13	
	Colombo	E	P	19 52 44	
			S?	58 49	
			L	20 03 19	

29

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Oct. 1952						
29 (Contd)	Poona	E	i	19 53 35		Feeble, phases not clear.
			i	20 10 59		
	Bombay	E	e	19 53 54		
			i	59 28		
			e	20 03 38		
29	Bombay	E	e	21 02 23		Tremor.
	Calcutta	E	e	21 12 43		Tremor.
			e	14 17		
30	Bombay	NE	e	22 43 26		Tremor.
	Poona	E	e	22 43 56		Feeble.
30	Bombay	NE	e	23 56 10		Phases not clear.
			i	56 45		
	Poona	Z	i	23 56 20		Slight.
30	Kodaikanal	E	eP	23 56 37		Slight, near. Phases not clear.
31	Calcutta	E	i	00 03 48		Slight, distant.
			i	09 45		
31	Poona	Z	e	06 07 23		Feeble.
31	O = 16h. 37m. 14s. G.M.T. Epc: 39° N., 143° E. Off East Coast of Honshu, Japan (U.S.C.G.S.)					
	Epc: 39.2° N., 143.3° E. h = ± 60 km (C.M.O., Japan)					
	O = 16h. 37m. 15s. (Poona).					
	Shillong	E	eP	16 46 35	4940	Moderate.
			PP	47 17		
			PPP	47 53		
			eS?	52 10		
			PPS	52 24		
			SS	55 18		
			LR	58 05		
			M	17 01 33		
	New Delhi	NE	eP	16 46 48	6110	Moderate.
		N	PcP	47 54		
			PP	48 53		
			iS	54 29		
			PS	54 40		
			SS	58 22		
			SSS	59 55		
			M	17 07 12		
	Madras	E	iP	16 47 35	5060	Moderate.
			PcP	48 07		
			PP	49 52		
			PPP	51 24		
			PS	51 54		
			PPS	56 32		
			ScS	57 13		
			SS	59 37		
			SSS	17 02 12		
			LQ	02 47		
			LR	05 34		

30

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Oct. 1952						
31 (Contd)	Poona	Z E	iP PP eS ScS SS SSS LQ LR	16 47 45 50 09 56 14 57 22 17 00 20 03 08 03 59 07 00	6980	Moderate.
	Bombay	NE E N E	eP PPP eS PS PS PPS SS SSS LQ	16 47 49 51 23 56 23 56 48 56 38 57 01 17 00 46 03 14 04 --	7080	Moderate.
	Kodaikanal	E	eP	16 48 03		Slight, distant. Phases not clear.
	Hyderabad	N	e	16 55 37		
31	Epc: $34\frac{1}{2}^{\circ}$ N., $100\frac{3}{4}^{\circ}$ E. 0 = 23h. 51m. 36s. (B.C.I.S.). 0 = 23h. 51m. 37s. in China (U.S.C.G.S.). Mag. 6 (Uppsala), $6\frac{1}{4}$ (Praha).					
	Shillong	E	eP PP LQ eS LR/SSS S* M	23 54 16 54 24 56 22 56 30 56 57 57 19 57 34	1310	Moderate.
	Calcutta	N	iP eS SS SSS LR	23 55 19 58 17 58 36 58 49 58 57	1780	Moderate.
	New Delhi	NE N	iP PP PPP iS LR M	23 56 19 56 43 56 53 00 00 12 01 22 02 59	2370	Slight.
	Madras	E	iP PPP eS LQ SS ScS LR M	23 57 29 58 43 00 02 15 03 35 04 06 07 42 04 56 07 10	3140	Moderate.
31	Poona	Z	iP PP PcP eS ScP LQ SS SSS	23 57 34 58 32 00 00 22 02 29 03 58 04 08 04 18 04 44	3300	Moderate. Probably double shock.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Oct. 1952						
31	Poona	Z	LR	00 05 36		
(Contd)	(Contd)		M	07 52		
	Bombay	NE	eP	23 57 41	3230	Slight.
		N	eS	00 02 20		
		E	eS	02 33		
		N	LQ	03 43		
			SS	04 05		
		E	LQ	04 07		
			SS	04 16		
			M	10 03		
		N	M	11 25		Per. = 8 secs u = 9. Per. = 9 secs u = 18.
	Kodaikanal	E	e?	23 58 03		Slight, near. Phases not clear.
31	Poona	Z	eP	23 58 03	3300	
		E	eS	00 02 45		
			LQ	03 52		
			SS	04 08		
			SSS	04 26		
			ScS	04 43		
			LR	05 13		
			M	07 26		
			ScS	01 08 18		

- : Voluntary Observer's Report : -

The following table contains a list of
earthquakes reported by Voluntary Observer's
from various stations for the month of
October, 1952.

Place at which felt	Date	G.M.T. of earthquakes	Duration in secs	Intensity R.F.Scale	No.of shocks	Remarks
		h. m.				
Lumding	6.10.52	22 45	30	IV	1	
Srinagar	18.10.52	21 30	2	VII	2	Two shocks at an interval of about one second.
Srinagar	20.10.52	01 20	2	VI	1	

JAN 17 1956

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

November, 1952.

*
*
* * * * *
*
*

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

2

Station	Instrument	Compt.	Period in secs	Static Mag- nification	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12	350	11:1	16
	Milne-Shaw	E	12	350	3:1	8
	Sprengnether	E	7	-	-	30
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	370	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	16.0
	Milne-Shaw	E	12.0	250	20:1	16.0
	Wood-Anderson	N	1.0	1000	24:1	60.0
	Wood-Anderson	E	1.0	1000	24:1	60.0
	Benioff	Z	To = 0.72sec Tg = 0.45sec		-	60.0
Colombo	Milne-Shaw	E	12.0	250	20:1	8.0
Dehra Dun	Omori-Ewing	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12.0	250	20:1	8.0
	Milne-Shaw	N	12.0	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8.0
Madras	Sprengnether	E	7.5	-	-	30.0
New Delhi	Milne-Shaw	N	12.0	288	20:1	8.0
	Wood-Anderson	N	4.0	1000	20:1	16.0
	Wood-Anderson	E	2.0	2000	30:1	60.0
	Omori-Ewing	E	30.0	30	1	12.0
Poona	Milne-Shaw	N	12	250	20:1	8.0
	Wood-Anderson	E	4.0	1100	20:1	16.0
	Sprengnether	E	To=Tg=5.5		-	30.0
	Benioff	Z	To = 1.0		-	60.0
	Sprengnether	Z	To=Tg=1.5		-	30.0
Shillong	Wood-Anderson	E	3.0	1000	Critical	60.0
	Wood-Anderson	E	1.5	-	5:1	30.0

SEISMOLOGICAL BULLETIN

DATE	Station	COMPT.	PHASE	G. M. T.	REMARKS.
h. m. s. km.					
Nov. 1952	Shillong	E	eP	07 02 43	Slight, P not clear.
1			P*	02 49	
			PP	02 52	
			Pg	02 55	
			PPP	02 58	
			IQ	03 06	
			eS	03 17	
			S*	03 23	
			SS, Sg, M	03 28	
			SSS	03 37	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
1	Chatra	NEZ	eP	07 03 33	830 Slight.
(Contd)		Z	PP	03 40	
			PPP	03 46	
			P*	03 51	
			Pg	04 09	
			LQ	04 17	
			IS	04 59	
			SS	05 10	
			SSS	05 20	
			S*	05 25	
			Sg	05 47	
1	Shillong	E	e	15 46 32	Slight.
1	Shillong	E	e	16 47 17	
2	Kodaikanal	E	e?	00 03 28	Tremor.
	Bombay	E	e	00 04 32	Distant shock.
		N	e	11 41	
		E	e	11 57	
		i	i	15 47	
2	Epc: 36° N., 71° E. near Hindukush.			O = 15h. 29m. 00s. (Shillong)	
	Shock felt at Kashmir.				
	Chatra	NEZ	eP?	15 32 43	1710 Slight.
		Z	10?Y	15 35	
		NE	e Y		
	Poona	E	eP	15 33 05	Slight.
			PPP	33 25	
			e	33 38	
			S	35 55	
			M	37 22	
			PcP	33 13	
2	New Delhi	NE	eP	16 31 09	950 Slight.
			IS	33 47	
		N	i	33 05	
2	Shillong	E	e	17 28 56	
			e	29 25	
			e	29 49	
			e	31 03	
3	Hyderabad	E	L	08 17 37	
			M	18 50	Per. = 12 secs $\mu = 5$.
3	Epc: 32°5 N., 92° E.			O = 14h. 07m. 07s. (Shillong).	
	Shillong	E	eP	14 03 45	
			PP	03 53	
			PPP	09 10	
			Pg	09 26	
			Lq	10 13	
			eS	10 21	
			LR	10 34	
			SSS	10 46	
			M	11 01	
	Chatra	Z	1PY	14 09 35	830 Slight.
		NE	e Y		
		Z	PP	09 44	
			PPP	09 48	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
3	Chatra	Z	P*	14 09 52		
(Contd)	(Contd)		Pg	10 12		
			LQ	10 48		
			12	11 01		
			SE	11 10		
			SSS	11 20		
			S*	11 25		
			Sg	11 45		
	Calcutta	E	iP	14 12 17		Slight, near.
			iSSS	13 17		
			Mn	15 42		
	Poona	Z	eP	14 12 40	2260	Phases not clear.
			eS	16 24		
			eSSS	17 22		
	Bombay	NE	eP	14 13 11	2480	Probable time correction,
		E	eS	17 13		-30 sec.
			eSSS	17 34		
			e	18 45		
		N	e	18 49		
			e	19 21		
	Kodaikanal	E	e(S)	14 17 44		Tremor.
4	Epc: Probably in Karakoram Range. 0 = 01h. 15m. 00s.					
	New Delhi	NE	eP	01 16 26	660	Slight.
			PP	16 32		
			PPP	16 41		
			Pg	16 54		
			12	17 36		
			SS	17 47		
			S*	17 56		
			Sg	18 09		
	Chatra	NE	e	01 18 00		Slight.
			e	20 25		
	Poona	Z	eP	01 18 32	1650	
			i	18 37		
			PP	18 44		
			PPP	18 52		
			S	21 13		
			SS	21 33		
			SSS	21 46		
			LR	21 55		
			S*	22 24		
			M	23 10		
			PcP	23 37		
	Bombay	E	e	01 21 42		
		NE	i	22 50		
	Kodaikanal	E	e?	01 24 41		Tremor.
4	Epc: 34° N., 101° E. 0 = 11h. 53m. 17s. (Shillong).					
	Shillong	E	eP	11 55 35		
			PP	56 06		
			eS	58 44		
			SS	59 01		
			SSS	59 12		
			LR	59 27		
			M	12 00 39		

5

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
4 (Contd)	Chatra	NE	eP eS eSSS	11 56 30 58 59 12 00 45		Slight.
	New Delhi	NE N	eP eS M	11 57 59 12 01 45 04 46	2290	Slight.
	Poona	Z	eP eS	11 59 13 12 04 12		Other phases not clear
	Hyderabad	E	eS M	12 03 23 06 57		Per. = 12 secs μ = 3.
	Bombay	E N NE	eS e e	12 04 19 04 36 03 34		
4	Epc: 52°5 N., 159° E. (Near East Coast of Kamchatka, Seismic Sea Wave). 0 = 14h. 58m. 20s. G.M.T.(USCGS). Mag. 8½ (Pasadena), 8½ (Berkeley). Epc: 52°9 N., 160°1 E. 0 = 16h. 58m. 23s. (B.C.I.S.) Mag. 8.5 (Berkeley & Praha), 8½ - 8½ (Upsala), 8½ (Pasadena, Strasbourg, Manila and Lisbon) 8 (De-Bilt), 9 (Roma).					
	Shillong	E	eP PoP PP eS PS SeS,SKS M	17 08 12 08 45 10 14 16 06 16 25 17 46 29 27	6340	Very Great.
	Chatra	NE	eP PoP PP PPP PoS IS PS PPS SS SSS EQ LR	17 08 25 09 10 10 34 11 56 13 16 16 30 16 46 16 55 20 22 22 36 22 53 25 52		
		E N	MX MX	30 45		Per. = 20 secs μ = 19. Per. = 21 secs μ = 22.
	Calcutta	N	1P ? ? PP IS	17 08 47 09 21 09 51 10 57 16 55	6660	Very great.
	New Delhi	NE	1P PoP PP PPP IS SS i LR M	17 08 57 09 30 11 19 12 48 17 31 21 39 24 39 27 55 32 50	7080	Very great.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
4	Madras	E	i	17 08 58	Very great, phases not clear, due to overlapping.
(Contd)					
	Hyderabad	N	eP	17 09 42	7740
		E	eP	09 44	
		N	iP	09 43	Com. PHASE h. m.s.
		E	iP	09 50	
			^ i s ^	^ 18 50 ^	^ E PP 17 12 50
			SS	24 00	
			L	32 31	
			M	37 12	Per. = 18 secs μ = 838.
	Bombay	NE	iP	17 09 54	8040 Great.
			PP	12 45	
			PPP	14 25	
		E	iS	19 22	
		E	iS	19 24	
			iS	19 50	
		E	iS	19 55	
			PPS	20 07	
			SS	23 50	
	Poona	Z	iP	17 09 55	8130 Very great.
		E	iS	19 26	
		N	M	35 45	
	Kodaikanal	E	iP	17 10 23	8670 Long distant. Great.
			iS	20 17	
			M	42 29	Per. = 16 secs μ = 17.5
	Colombo	E	P	17 10 30	
			S	20 50	
			L	41 40	
			M ₁	49 20	
			M ₂	50 35	
			M ₃	52 20	Amp = 72mm.
4	Chatra	NE	eP	17 46 14	6520 Moderate.
			eS	54 18	
	Poona	Z	iP	17 47 30	
4	Epc: 52°5 N., 160° E. near East Coast of Kamchatka.				
	O = 18h. 28m. 52s. G.M.T. (USCGS)				
	O = 18h. 28m. 51s. (B.C.I.S.).				
	Poona	Z	iP	18 37 06	
	Chatra	NE	eP	18 38 36	6530 Moderate.
			eS	46 41	
		E	M	59 --	Per. = 23 secs μ = 2.
	Calcutta	N	eP	18 38 53	6790 Slight.
			iS	47 12	
4	Poona	Z	iP	18 40 28	
4	Poona	Z	iP	19 02 02	
4	Poona	Z	iP	19 08 57	
4	Poona	Z	eP	19 16 16	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
4	Poona	Z	eP	19 26 30	
4	Poona	Z	eP	19 52 04	
4	Poona	Z	1P 1	20 01 01 01 33	
4	Poona	Z	eP	20 11 20	
4	Poona	Z	eP e	20 29 52 30 05	
4	Poona	Z	eP	20 40 45	
4	Epc: 50° N., 157° E. (near South Coast of Kamchatka). 50° N., 158° E. (C.M.O., Japan). Mag. 6 $\frac{1}{4}$ (Uppsala).				
	Chatra	NE	eP eS S: S E M	20 58 40 06 44 08 28 19 --	
					Per. = 22 secs μ = 1.0.
	New Delhi	NE N	eP eS M	20 59 13 21 07 53 22 45	6810 Moderate.
	Hyderabad	E	P S P: S N M E M	21 00 04 09 21 09 50 23 21 23 44	7900
					Per. = 14 secs μ = 42. Per. = 15 secs μ = 28.
	Bombay	E	eP eS	21 00 13 09 30	7820 Very slight.
	Poona	Z	eP	21 00 23	
	Colombo	E	P S L M	21 00 45 10 20 26 50 32 35	
					Amp = 0.7mm.
4	Poona	Z	1P	21 12 27	
4	Poona	Z	eP	21 27 18	
4	Poona	Z	eP	21 52 45	
4	Poona	Z	eP	22 00 00	
4	Epc: 52° N., 161° E. in Kamchatka. 0 = 22h. 12m. 54s. (USCGS) 52° N., 164° E. (C.M.O., Japan). Mag. 6 $\frac{1}{4}$ (Uppsala).				
	Shillong	E	e	22 22 51	
	New Delhi	N	eP eS M	22 23 38 32 11 47 56	7060 Moderate.
	Poona	Z	eP	22 24 05	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
						km.	
Nov. 1952							
4	Hyderabad	E	P	22	24	27	7920
(Contd)			S		33	45	
		N	M		52	06	Per. = 18 secs μ = 12.
		E	M		52	12	Per. = 17 secs μ = 14.
4	Chatra	NE	eP	22	29	30	6640 Slight.
			eS		37	41	
			M		49	--	
	Hyderabad	E	P	22	30	48	7950
			S		40	07	
		N	M		58	24	Per. = 15secs μ = 14.
		E	M		59	07	Per. = 15 secs μ = 12.
	Poona	Z	iP	22	31	00	
	Colombo	E	e	22	35	10	
			L		56	50	
			M	23	05	02	Amp = 0.5mm.
4	Poona	Z	eP	22	49	01	
4	Poona	Z	eP	22	53	05	
4	Epc: 50° N., 158° E. Off South Coast of Kamchatka. O = 23h. 23m. 58s. (U.S.C.G.S.) 51° N., 160° E. (C.M.O., Japan). Mag. 5 $\frac{3}{4}$ - 6 (Uppsala).						
	Shillong	E	e	23	38	39	
	Chatra	NE	eP	23	38	46	6520 Slight.
			eS		46	50	
	Hyderabad	E	P	23	40	14	8010
			S		49	36	
			M	00	09	19	Per. = 16 secs μ = 8.
	Poona	Z	eP	23	40	27	
			eS		50	03	
	Colombo	E	e	23	50	45	
			L	00	17	--	
			M ₁		21	--	
			M ₂		25	--	
4	Poona	Z	eP	23	52	30	
5	Poona	Z	eP	00	53	08	
5	Poona	Z	eP	00	55	38	
5	Poona	Z	e	01	35	20	
5	Poona	Z	e	01	36	52	
5	Epc: 50°5' N., 157° E. near South Coast of Kamchatka. O = 02h. 19m. 58s. (U.S.C.G.S.) 51° N., 158° E. (C.M.O., Japan). O = 02h. 20m. 06s. (BCIS). Mag. 6 (Uppsala).						
	Chatra	NE	eP	02	29	46	6530 Slight.
			eS		37	51	
			e		39	25	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
5 (Contd)	Calcutta	E	eP IS	02 30 08 38 28	6810 Slight.
	Hyderabad	N	eP IS PS L M	02 31 07 40 07 40 43 53 40 58 43	7570
	Poona	Z	iP eS	02 31 21 40 54	Per. = 16 secs μ = 10.
	Bombay	NE	eP eS PS	02 31 25 40 36 41 26	
		N	SS	45 23	
		E	SS	45 34	
		N	M	03 06 18	Per. = 17 secs μ = 7.
			M	06 24	Per. = 16 secs μ = 14.
	Colombo	E	P S L M	02 31 30 41 07 03 01 --- 06 ---	
	Kodaikanal	E	e?	02 41 14	Slight, tremor.
5	Probable Epicentre near the Himalayas. 0 = 03h. 00m. 40s.				
	Chatra	N	eP Pg PS PP IS S* SS SS SSS	03 01 11 01 15 01 18 01 24 01 36 01 38 01 40 01 43 01 56	210 Slight.
	New Delhi	NE	P IS SS SSS S*	03 02 38 04 03 04 15 04 24 04 28	820 Slight.
	Shillong	E	eP(?) iPg PP eS iSg SS	03 37 48 37 53 38 03 38 22 38 26 38 34	200 Slight, near.
5	Epc: 51° N., 160° E. (C.M.O., Japan). 0 = 03h. 29m. 50s. (BCIS) 51° N., 159° E., near South East Coast of Kamchatka. Mag. 6½ (Skalnate Pleso). 0 = 03h. 29m. 44s. (USCGS)				
	Chatra	NEZ	eP eS	03 39 39 47 39	
	New Delhi	NE N	eP eS PS PPS SSS M	03 40 13 48 41 48 52 49 03 50 03 04 03 44	6950 Moderate.

10

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
5	Calcutta	E	iP	03 40 13	6810	Moderate.
(Contd)			iS	48 33		
			M	04 03 11		
			Mn ₁	08 26		Per. = 14 secs μ = 24.
			Mn ₂	10 33		Per. = 14 secs μ = 32.
	Poona	Z	iP ₁	03 41 00		
			iP ₂	41 05		
			i	41 24		
	Hyderabad	N	eP	03 41 01	7770	
			iS	50 11		
			M	04 03 11		Per. = 14 secs μ = 13.
	Bombay	NE	eP	03 41 17	8040	Slight.
		N	PP	43 54		
			PPP	45 40		
		NE	eS	50 40		
			FPS	51 19		
		N	SS	55 23		
			M	04 17 09		Per. = 13secs μ = 13.
		E	M	17 19		Per. = 16secs μ = 6.
	Colombo	E	P	03 41 49		
			L	15 19		
			M	23 12		Amp = 0.3mm.
	Kodaikanal	E	eP	03 41 50	8670	
			eS	51 44		
5	Poona	Z	i	03 45 16		
5	Poona	Z	e	04 11 09		
5	Poona	Z	e	04 27 28		
			e	27 37		
5	Poona	Z	i	04 29 34		
			i	29 46		
5	Poona	Z	e	04 52 51		
5	Poona	Z	e	05 51 19		Tremor.
5	Epc: 49° N., 156° E. Kurile Islands. 0 = 05h. 57m. 43s. (USCGS) 49° N., 156½° E. (C.M.O., Japan).					
	Shillong	E	iP	06 07 19		
			PcP	08 06		
			PP	09 14		
			e	14 50		
			ScS	17 12		
			SS	18 41		
			M	28 23		
	Chatra	NEZ	eP	06 07 30	6520	Slight.
			eS	15 34		
			M	27 --		
	Calcutta	E	iP	06 07 48	6540	Moderate.
			iS	15 53		
			M	31 06		
			Mn	37 41		Per. = 12 secs μ = 28.

11

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
5 (Contd)	New Delhi	NE N	eP eS PPS ScS SS LQ M	06 08 08 16 30 16 55 17 57 20 41 23 45 31 19	6860	Moderate.
	Hyderabad	N NE	1P 1S L M	06 08 58 17 58 29 52 35 38	7570	Per. = 18 secs μ = 19.
	Poona	Z E	eP e eS	06 09 05 12 33 13 26	8000	
	Bombay	NE N E N E NE E N	eP eS eS PS PS SS M M	06 09 15 18 25 18 35 18 46 18 52 23 22 37 35 37 46	7980(E-W) 7780(N-S)	Moderate. Another movement of maximum amplitude noticed in N-S at 06h. 43m. and E-W at 06h. 44m. Per. = 20secs μ = 33. Per. = 23secs μ = 70.
	Kodaikanal	E	1P 1S M	06 09 32 19 08 39 05	8300	Slight. Long distance.
	Colombo	E	P S	06 09 39 19 17		
	Madras	E	1S	06 18 26		Moderate.
5	Poona	Z	1	06 25 54		Tremor.
5	Poona	Z	1	06 47 14		Tremor.
5	Shillong	E	M	07 08 14		
5	Shillong	E	M	07 12 30		
5	Poona	Z	1	07 18 59		Tremor.
5	Poona	Z	1	07 35 03		Tremor.
5	Poona	Z	1	07 46 46		Tremor.
5	Poona	Z	1	08 33 17		Tremor.
5	Poona	Z	1	08 49 55		Tremor.
5	Poona	Z	1	09 10 01		Tremor.
5	Shillong	E	M	09 11 30		
5	Poona	Z	1P	09 41 52		Tremor.
5	Hyderabad	N	M	09 49 09		Per. = 11 secs μ = 3.
5	Kodaikanal	E	e	09 49 29		
5	Poona	Z	1P 1	10 26 41 27 17		Tremor.

12

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
5	Kodaikanal	E	e?	11 54 11	Tremor.
5	Epc: 50° N., 157° E. Off South Coast of Kamchatka. 0 = 11h. 46m. 34s. (U.S.C.G.S.) 50° N., 157° E. (C.M.O. - Japan).				
	Calcutta	E	eP eS	11 56 38 12 02 09	6650 Slight.
	Poona	Z	iP	11 57 55	Tremor.
	Bombay	N	iPY	11 58 00	Tremor.
	Colombo	E	e M	12 08 09 38 --	
	Shillong	E	M ₁ M ₂	12 16 15 21 13	
	Poona	Z	iP	12 21 38	Tremor.
5	Epc: 52° N., 159° 5 E., Kamchatka aftershock. 0 = 13h. 06m. 24s. (U.S.C.G.S.) 52° N., 162° E. (C.M.O., Japan). 0 = 13h. 06m. 28s. (B.C.I.S.) Mag. 6.9 (Praha), 6.8 (Roma).				
	Chatra	NEZ	eP eS e M	13 16 25 24 29 26 00 39 --	6520 Slight.
	Calcutta	E	iP iS SSS ? M Mn	13 16 46 25 17 31 57 39 26 41 57 43 23	7010 Moderate. Per. = 15 secs, μ = 43.
	New Delhi	N	iP PcP FPP PS? e e IQ IR M	13 16 57 17 32 20 47 23 44 26 07 27 00 33 00 35 48 41 00	Moderate.
5	Hyderabad	N	iP PP iS M	13 17 43 20 20 27 02 46 31	7950 Per. = 15 secs μ = 36.
	Poona	Z	P S	13 17 57 27 26	8140 Phases not clear.
	Madras	E	iP PcP e e PS e e	13 18 00 18 10 21 11 22 48 27 44 32 56 36 16	Moderate.

13

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
5	Bombay	NE	eP	13 18 00	8180	Moderate.
(Contd)			PP	20 45		
		N	PP	22 06		
			eS	27 30		
		E	eS	27 37		
		N	PS	27 42		
			PPS	28 16		
		E	PPS	28 24		
		N	SS	32 03		
		E	SS	32 36		
			M	53 22		Per. = 15 secs μ = 14.
		N	M	54 31		Per. = 16 secs μ = 52.
	Kodaikanal	E	P	13 18 23	8870	Slight, long distance.
			S?	28 26		
			M	51 59		Per. = 13.5 secs μ = 7.8.
	Colombo	E	P	13 18 29		
			S	28 31		
			L	45 --		
			M	50 49		Amp = 0.4mm.
5	Poona	Z	e	14 13 11		Tremor.
5	Poona	Z	iP	14 21 14		Tremor.
5	Poona	Z	i	14 22 22		
5	Poona	Z	iP	14 37 41		Tremor.
5	Shillong	E	eP	14 53 43		
			Pg	53 54		
			S	54 23		
			Sg	54 36		
	Calcutta	E	e	14 56 41		Felt at Dibrugarh.
			i	57 26		
5	Epc: 50° N., 156°5 E., Off South Coast of Kamchatka. 0 = 14h. 48m. 41s. (U.S.C.G.S.) 50° N., 157° E. (C.M.O., Japan).					
	Hyderabad	E	iP	14 59 47	8550	
			e	15 09 35		
			M	32 08		Per. = 11 secs μ = 3.
	Poona	Z	iP	14 59 56	8140	Other phases not clear.
			i	15 00 53		
		E	eS	09 25		
	Bombay	N	e	15 04 20		Tremor.
		E	e	04 35		
5	Poona	Z	eP	15 18 31		Tremor.
5	Poona	Z	iP	15 32 21		Tremor.
5	Poona	Z	iP	15 49 52		Tremor.
5	Calcutta	E	e	16 15 03		Tremor.
			e	22 55		
5	Poona	Z	iP	16 15 39		Tremor.
			i	17 54		

14

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Nov. 1952						km.	
5	New Delhi	E	eP ₃ iS ₃	16	23	44	40 Slight.
					23	50	
5	Shillong	E	M	16	40	19	Slight.
5	Poona	Z	e	16	45	27	Tremor.
5	Poona	Z	iP	17	07	34	Tremor.
5	Poona	Z	iP	17	49	54	Tremor.
5	Poona	Z	iP	19	05	00	Tremor.
5	Poona	Z	iP	19	08	54	Tremor.
5	Poona	Z	iP	19	11	10	Tremor.
5	Epc: 53°5' N., 161°5' E. Off East Coast of Kamchatka. O = 19h. 08m. 26s. (U.S.C.G.S.). Mag. 6 (Skalnate, Pleso).						
	Shillong	E	e	19	18	15	
	Chatra	NE	eP e	19	18	53	6520 Slight.
					26	37	
	Calcutta	E	eP PPP e iQ iR M Mn	19	18	50	Moderate.
					22	37	
					23	43	
					34	33	
					37	43	
					42	35	
					51	07	Per. = 15 secs μ = 18mm.
	New Delhi	N	eP eS ScS M	19	18	58	7150 Moderate.
					27	36	
					28	47	
					44	36	
	Hyderabad	E	eP eS M	19	19	50	7860
					29	05	
					47	47	Per. = 12 secs μ = 5.
	Poona	Z	iP	19	20	00	8060 Slight. Other phases
		E	iS		29	26	not clear.
	Bombay	N	eP PP	19	20	05	
					22	51	
		NE	eS iS		29	36	
					30	13	
		E	PPS		30	25	
		N	IPS		30	30	
			SS		34	17	
			iQ		39	18	
			M		51	06	
		E	M		51	14	Per. = 16 secs μ = 4.
	Madras	E	iP PcP PPP iS ScS e	19	20	07	8180 Moderate.
					20	17	
					24	47	
					29	37	
					30	06	
					30	22	

15

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
5	Colombo	E	PcP S M	19 20 44 30 34 20 04 30		
	Kodaikanal	E	eS	19 30 23		Slight tremor.
5	Shillong	E	M	19 39 29		
5	Poona	Z	eP e i	19 44 45 46 12 46 30		
5	Poona	Z	iP	19 48 39		
5	Poona	Z	iP	20 15 10		
5	Poona	Z	iP	20 22 19		
5	Madras	E	e	20 30 03		Tremor.
5	Calcutta	E	e e e	20 40 43 47 11 48 21		Slight, distant.
5	Bombay	N	e(P) M	20 42 03 21 10 48		Tremor.
5	Poona	Z	iP	20 42 50		
5	Poona	Z	iP	20 49 59		
5	Poona	Z	iP i	21 19 59 20 29		
5	Epc: 49°5 N., 157°E. Off South Coast of Kamchatka. 0 = 21h. 46m. 00s. G.M.T. (U.S.C.G.S.).					
	Chatra	NE	e	21 55 50		Slight, distant.
	Calcutta	E	e i	21 56 14 04 29		Slight.
	Hyderabad	E	eP eS	21 57 09 22 06 25	7880	
	Poona	Z	iP eS	21 57 25 22 06 51	8055	
	Bombay	NE E	eP e(?)	21 57 30 22 07 00		Tremor.
5	Epc: 53°5 N., 160° E., near Coast of Kamchatka. 0 = 22h. 46m. 10s. (U.S.C.G.S.).					
	Chatra	NE	e	22 55 58		Slight, distant.
	Calcutta	E	eP eS M Mn	22 56 18 23 04 39 20 19 23 03	6840	Moderate. Per. = 17 secs μ = 30.
	New Delhi	N	eP eS i LQ M	22 56 36 23 05 10 05 43 12 44 20 55	7080	Moderate.

16

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 5 1952 (Contd)	Hyderabad	E	eP eS M	22 57 23 23 06 35 25 08	7800 Per. = 15 secs μ = 9.
	Poona	Z E	iP S	22 57 33 07 02	
	Madras	E	e	22 57 36	Tremor.
5	Kodaikanal	E	e?	23 07 58	Slight, tremor.
5	Poona	Z	iP i	23 11 57 12 12	Tremor.
	Shillong	E	M	23 16 28	
5	Shillong	E	e(?)	23 25 11	
	Colombo	E	L M	23 27 -- 32 --	
6	Poona	Z	i	01 07 28	Tremor.
6	Poona	Z	i	01 10 15	Tremor.
6	Poona	Z	iP	01 24 59	Tremor.
6	Poona	Z	iP i	02 35 17 30 11	Tremor.
6	Epc: 50° N., 150½° E. Off the South Coast of Kamchatka. 0 = 03h. 54m. 21s. (U.S.C.G.S.).				
	Poona	Z	iP	04 05 51	
	Bombay	NE N E NE E N	eP PP PP PPP eS PS M	04 05 56 08 34 08 38 10 25 15 22 16 05 35 12	8090 Slight. Per. = 21 secs μ = 5. Per. = 11 secs μ = 3.
	Hyderabad	E	M	04 36 11	
6	Poona	Z	iP	04 46 20	
6	Poona	Z	i	05 39 35	
6	Poona	Z	iP i	05 54 00 54 11	
6	Bombay	NE E N E N E	eP eS PS PPS PPS M M	05 54 04 06 03 35 04 12 04 22 04 31 28 -- 30 --	8200 Slight.
6	Poona	Z	i	06 00 24	
	Hyderabad	E	eS M	06 03 09 25 23	Per. = 15 secs μ = 6.
	Kodaikanal	E	e?	06 04 13	Slight, Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Nov. 1952						
6	Poona	Z	i	06 14 32		
	Shillong	E	e	06 14 37		Slight.
6	Poona	Z	i	06 29 47		
6	Poona	Z	e	06 40 20		
6	Poona	Z	iP i	06 52 09 52 17		
6	Poona	Z	eP	08 16 31		
6	Poona	Z	eP	11 08 42		
6	Poona	Z	e e	12 21 30 27 41		
6	Poona	Z	iP	12 30 59		
6	Poona	Z	eP i	12 53 18 53 53		
6	Poona	Z	iP	14 18 36		
6	Poona	Z	i i	14 24 09 25 22		
6	Poona	E	i	14 28 06		
6	Poona	Z	i	14 33 17		
	Calcutta	E	e e	14 40 02 40 06		Slight, distant.
6	Poona	Z	i	14 45 04		
	Hyderabad	E	M	14 52 32		Per. = 15 secs μ = 14.
	Kodaikenal	E	e?	14 52 58		Slight, tremor.
6	Poona	Z	iP	15 22 30		
6	Poona	Z	e	17 02 50		
6	Poona	Z	iP	18 01 09		
6	Epc: $51\frac{1}{2}^{\circ}$ N., $159\frac{1}{2}^{\circ}$ E. Off the South East Coast of Kamchatka. 0 = 19h. 45m. 57s. (U.S.C.G.S.) 0 = 19h. 46m. 03s. (B.C.I.S.). Mag. 6.6 (Roma), $6\frac{1}{2}$ (Skalnate Pleso).					
	Shillong	E	eP e e e e	19 55 47 56 03 57 28 57 49 57 54		Slight.
	Chatra	NE	eP PP eS SoS M	19 56 01 56 06 20 04 03 05 54 18 --	6530	Slight. Some of the movement, of this earthquake may be due to a shock having Epc: 50° S., $145^{\circ}5$ E. (North Coast of New Guinea. 0 = 19h. 47m. 20s. (USCGS). Mag. $7\frac{1}{2}$ = $7\frac{1}{2}$ (Wellington).

28

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
6	Calcutta	E	iP	19 56 17	
(Contd)	New Delhi	NE	P	19 56 34	
			e	20 05 19	
			i	08 15	
			e	08 53	
			LQ	12 24	
			M	21 19	
	Hyderabad	E	iP	19 57 18	7900
		N	iS	06 35	
		E	L	21 45	
		N	M	24 49	
		E	M	25 50	Per. = 20 secs μ = 16. Per. = 23 secs μ = 27.
	Poona	Z	iP	19 57 33	8150 Moderate.
			PcP	57 44	
		E	S	20 07 03	
			PS	07 34	
			PPS	07 54	
			SS	11 58	
			e	15 24	
			LQ	13 08	
			LR	22 00	
	Bombay	E	iP	19 57 38	8180 Moderate.
			PP	20 00 32	
			PPP	02 12	
			iS	07 06	
			e	08 06	
			e	12 02	
			LQ	17 44	
			LR	21 00	
	Kodaikanal	E	P	19 57 58	8300 Slight, long distant.
			S	20 07 34	
			M	27 19	
6	Epc: 5° S., 145° E. (North Coast of New Guinea). 0 = 19h. 47m. 20s. (U.S.C.G.S.) 3° S., 145° E. (C.M.O., Japan). Mag. 7½ - 7½ (Wellington).				
	Calcutta	E	iP	19 57 41	6570 Moderate.
			iS	20 06 04	
			SeS?	07 42	
			LQ	13 22	
			LR	16 13	
	Colombo	E	P	19 53 12	
			S	20 07 00	
			L	24 30	
			M	31 05	
	New Delhi	N	P	19 58 50	
	Bombay	E	iP	19 59 04	8300 Moderate.
			PP	20 01 54	
			PPP	03 46	
			iS	06 40	
			PS	09 20	
			PPS	09 37	
			SS	13 02	
			SSS	16 50	
			LQ	19 20	
			LR	22 52	

DATE	STATION	COMPT.	PHASE	G. M. T. 	REMARKS
				h. m. s. km.	
Nov. 1952					
6	Poona	Z	iP	20 51 45	
6	Poona	Z	eP i	20 59 34 59 43	
6	Poona	Z	e	22 43 10	
6	Poona	Z	iP	23 40 40	
6	Bombay	N NE	eP eS	23 40 42 50 13	8300 Tremor.
6	Poona	Z	iP	24 02 17	
6	Poona	Z	eP	24 06 04	
7	Poona	Z	i	01 51 48	Tremor.
7	Poona	Z	e	02 07 15	Tremor.
7	Calcutta	E	eP iS	02 52 03 40 27	6800 Slight.
7	Bombay	E	eP eS	02 33 22 42 23	7690 Tremor.
7	Kodaikanal	E	e?	03 03 53	Slight, tremor.
7	Chatra	NEZ	e e	04 05 06 14 45	Slight, distant.
7	Poona	Z	iP	04 06 41	Tremor.
7	Bombay	E	e e	04 06 56 16 03	Tremor.
7	Epc: 25° N., 94° E. (near Manipur); 0 = 04h. 34m. 07s. (Shillong). Shock felt at Imphal.				
	Shillong	E	eP P* S SSS	04 34 34 34 35 35 09 35 15	330 Slight.
	Chatra	NEZ NE	iP PP P* Pg LQ iS LR SS S* Sg	04 35 35 35 42 35 50 36 04 36 36 36 46 36 52 36 53 37 03 37 25	690 Slight.
	Calcutta	E	ePg iS	04 35 45 36 25	370 Slight.
	Poona	Z	P PP PPP S LQ SS SSS	04 38 30 38 47 39 36 41 56 41 59 42 19 42 32	

20

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
7	Poona	Z	PcP	04 42 53	
(Contd)	(Contd)		M	45 25	
7	Poona	Z	iP	06 37 21	
7	Poona	Z	e	07 00 59	
7	Bombay	E	e	07 01 01	Tremor.
			e	11 00	
7	Poona	Z	eP	07 37 34	
			i	38 02	
7	Poona	Z	iP	07 54 11	
7	Epc: 52° N., 161° E. (Off South East Coast of Kamchatka). O = 12h. 09m. 09s. (U.S.C.G.S.).				
	Poona	ZE	iP	12 20 47	8220 Moderate. Other phases
			i	20 56	not clear.
		E	S	30 19	
	Bombay	E	eP	12 20 51	8110 Slight.
			PPP	25 34	
			es	30 19	
			PS	31 02	
			PPS	31 31	
	Hyderabad	N	iS	12 29 59	
			L	42 59	
			M	48 17	Per. = 12 secs μ = 6.
	Kodaikanal	E	eS	12 30 58	Slight, tremor.
7	Epc: 52° N., 161° E. (Off the South East Coast of Kamchatka). O = 13h. 41m. 45s. (U.S.C.G.S.).				
	Poona	Z	iP	13 53 22	8140 Moderate. Other phases
			i	53 31	not clear.
			S	14 02 51	
	Bombay	E	eP	13 53 26	8130 Slight.
			eS	14 02 54	
			PPS	04 05	
			SS	07 48	
			SSS	11 08	
7	Epc: 49° N., 157° E. (Off South Coast of Kamchatka). O = 14h. 08m. 25s. (U.S.C.G.S.) Mag. 6.6 (Praha).				
	Chatra	N	eP	14 18 15	Slight.
			PS	26 20	
			ScS	23 02	
			M	33 --	
	New Delhi	NE	eP	14 18 51	6720 Moderate.
		N	PP	21 11	
			eS	27 06	
			i	29 01	
			LQ	34 23	
			M	41 58	

21

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
7 (Contd)	Hyderabad	N	eP iS L M	14 19 36 23 33 42 03 45 59	7510 Per. = 15 secs μ = 8.
	Bombay	E	eP eS PPS e M(Spr)	14 19 49 29 12 29 52 30 08 54 --	8040
	Poona	ZE	iP S(?)	14 19 50 29 02	7801 Slight.
	Kodaikanal	E	e(?)	14 20 16	Slight, tremor.
7	Poona	Z	iP	15 52 00	
7	Poona	Z	iP	17 06 16	
7	Poona	Z	e	18 33 23	
7	Poona	S	e	19 52 33	
	Madras	E	iP PoS PP PPP ST SoS SS SSS LQ	19 57 34 37 43 20 01 27 02 11 07 03 07 55 11 51 14 19 18 33	8160 Moderate.
7	Epc: 47° N., 155° E., Kurile Islands. 0 = 22h. 05m. 19s. G.M.T. (U.S.C.G.S.).				
	Shillong	E	iP	22 14 46	Slight, distant. Other phases not clear.
	Chatra	N	eP PPS M	22 14 54 22 54 35 --	Slight.
	New Delhi	NE N	eP PPS SoS M	22 15 59 24 03 25 31 35 31	6890 Moderate.
	Hyderabad	N	eP iS e SS L M	22 16 23 25 29 26 20 29 41 37 43 42 33	7680 Per. = 16 secs μ = 10.
	Poona	Z E	iP iS	22 16 57 25 53	7890 Moderate. Other phases not clear.
	Bombay	E	iP PP PPP iS PS PPS	22 16 44 19 25 21 13 26 00 26 25 26 49	7890 Slight.

22

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
7	Bombay (Contd)	E	SS SSS LQ LR M(Spr)	22 30 23 33 40 35 20 38 57 41 --		
	Kodaikanal	E	e	22 16 58		Slight, tremor.
	Dehra Dun	N	e e	22 24 02 33 42		Per. = 27 secs μ = 0.01
	Colombo	E	S L M	22 26 39 47 49 55 19		Amp = 0.4mm.
7	Epc: 31° S., 177° W. (Kermadec Islands). 0 = 23h. 12m. 04s. G.M.T. (U.S.C.G.S.). Mag. 7.1 (Wellington).					
	Poona	Z	iP i i iS(?)	23 24 35 24 51 30 51 34 11	8260	Moderate.
	Bombay	E	PP e	23 31 49 41 35		Tremor.
	Poona	Z	i	23 45 09		
	Colombo	E	S L M	23 45 49 00 06 -- 11 34		Amp = 0.2mm.
	Kodaikanal	E	e?	23 58 58		Slight, tremor.
8	Hyderabad	N	M	00 11 50		Per. = 19 secs μ = 7.
8	Poona	Z	e	00 52 12		
8	Poona	Z	e	02 26 49		
8	Poona	Z	e	03 15 29		
8	Hyderabad	N	e M	05 20 39 43 38		Per. = 12secs μ = 4.
8	Kodaikanal	E	e?	05 44 24		Slight, tremor.
8	Epc: 20° N., 82.5° E., (West Nepal). 0 = 06h. 33m. 34s. G.M.T. (Shillong).					
	Chatra	Z NE	iP eP P* Pg LQ iS S* Sg	06 34 32 34 39 34 48 35 08 35 18 35 29 35 36	420	Slight.
	New Delhi	NE E NE E	eP(?) PP? Pg iS SS	06 34 52 35 06 35 15 35 52 36 01	570	Slight.

23

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
8	New Delhi	N	S*	06 36 05	
(Contd)	(Contd)	E	SSS	36 12	
			Sg	36 21	
	Poona	Z	iP	06 36 24	1360 Slight.
			FP	36 30	
			PPP	36 40	
			i	36 45	
			P*	37 03	
			Pg	37 36	
		ZE	S	38 52	
			S*	39 44	
			Sg/M	40 20	
	Bombay	E	e	06 36 51	2230
			e	40 34	
		EE	e	40 32	
		E	e	41 06	
			e	41 52	
	Calcutta	E	i	06 37 52	Slight, near.
	Hyderabad	N	e	06 39 33	
			M	40 43	Per. = 9 secs $\mu = 4$.
	Madras	E	e	06 39 52	Tremor.
	Kodaikanal	E	e?	06 42 51	Slight, tremor.
8	Epc: 30° N., 83° E. (North of Nepal). 0 = 07h. 06m. 11s. (Quetta) h = $\pm$ 50 km. 20° N., 82° 5 E. (West Nepal). 0 = 07h. 06m. 08s. (Shillong).				
	Chatra	Z	iPY	07 07 02	420 Slight.
		NE	ePY		
			P*	07 10	
			Pg	07 20	
			LQ	07 36	
			iS	07 48	
			S*	08 00	
			Sg	08 07	
	New Delhi	E	eP	07 07 23	570 Slight.
		NE	P*	07 32	
		E	PP	07 36	
		NE	Pg	07 43	
		N	i	07 51	
		NE	iS	08 23	
		E	SS	08 34	
		NE	SSS	08 43	
			Sg	08 53	
	Calcutta	E	eP	07 08 22	Moderate.
			i	09 35	
			e	09 58	
			e	10 14	
	Poona	Z	P	07 09 04	1370 Moderate.
			PP	09 13	
			i	09 16	
			PPP	09 21	
			P*	09 36	
			Pg	10 10	
			e	11 05	
			Sg	11 18	
			M	11 59	

DATE	STATION	COMPT.	PHASE	G. M. T. 			REMARKS
				h.	m.	s.	
Nov. 1952							
8 (contd)	Bombay	NE	eP eS SS	07	09	13	1390
8	Epc: 28° N., 82° 5 E. (West Nepal). 0 = 07h. 09m. 50s. (Shillong).						
	Chatra	NE	eP P* Pg LQ iS S* Sg	07	10	51	420 Slight.
	Hyderabad	E	e M	07	12	03	Per. = 8 secs μ = 4.
	Kodaikanal	E	e	07	13	39	1200 Slight, near.
8	Poona	Z	iP	08	16	29	
8	Poona	Z	iP	09	01	15	
8	Poona	Z	iP	10	07	07	
8	Epc: 28° N., 82° 5 E. (West Nepal). 0 = 10h. 41m. 53s. (Shillong).						
	Chatra	NE	eP P* Pg LQ iS S* Sg	10	42	54	420 Slight.
	New Delhi	E NE	eP P* Pg i iS Sg	10	43	14	560 Slight.
	Calcutta	E	e eS S* Sg	10	44	21	Slight.
	Hyderabad	N	iP iS M	10	44	39	1960
	Bombay	E NE E	eP PP e SS SSS	10	44	50	Per. = 9 secs μ = 8. Slight.
	Poona	Z	P PP i PPP P* S i Sg M	10	44	57	1350 Slight.

25

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
8 (Contd)	Shillong	E	i	10 46 05		Other phases not identifiable due to overlapping.
8	Epc: 28° N., 82°5 E. (West Nepal) (Shillong).					
	Chatra	NE	eP	10 49 37	420	Slight.
			Pg	49 53		
			LQ	50 12		
			iS	50 23		
			S*	50 34		
			Sg	50 40		
	New Delhi	NE	iS	10 50 51	580	Slight.
			S*	51 06		
			SSS	51 12		
			Sg	51 22		
	Kodaikanal	E	e?	10 51 15		Slight, tremor.
	Hyderabad	N	M	10 55 46		Per. = 9 secs μ = 3.
8	Calcutta	E	i	17 14 46		Slight, distant.
			M	38 06		
	Poona	Z	e	17 15 51		
			i	16 09		
8	Bombay	NE	e	17 16 10		
		E	e	24 40		
	Kodaikanal	E	e	17 16 36		
	Shillong	E	M	17 16 46		
	Hyderabad	N	M	17 43 41		Per. = 18 secs μ = 7.
8	Poona	Z	iP	18 06 52		
8	Poona	Z	iP	18 45 28		
8	Poona	Z	iP	19 21 08		
8	Epc: 48°5 N., 156° E. (Kurile Island). 0 = 19h. 33m. 18s. (U.S.C.G.S.)					
	49°5 N., 157° E. (C.M.O., Japan).					
	Shillong	E	e	19 42 51		
	Chatra	NE	eP	19 43 08	6590	Slight.
			eS	51 16		
			M	20 04 --		
	Calcutta	E	eP	19 43 28	6650	Moderate.
			PcP	44 11		
			e	47 11		
			iS	51 39		
			M	20 06 52		
			Mn	11 54		
	New Delhi	NE	eP	19 43 42	6920	Moderate.
		N	PcP	44 13		
			iS	52 03		
			PPS	52 32		
			ScS	53 21		
						Per. = 15 secs μ = 32.

26

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Nov. 1952						
8	New Delhi	N	SS	19 56 31		
(Contd)	(Contd)		SSS	59 19		
			M	20 07 20		
	Hyderabad	N	eP	19 44 29		
			iPS	53 45		
			e	54 32		
			L	20 06 53		
			M	11 46		Per. = 15 secs μ = 9.
	Poona	Z	iP	19 44 43	7960	Moderate.
		E	PcP	44 56		
			PS	47 20		
			PFS	49 04		
			S	54 03		
			ScS	54 30		
			LR	55 33		
			PFS	56 00		
			SS	58 42		
			LQ	20 04 50		
	Bombay	N	ePY	19 44 46	8050	Moderate.
		E	iPY			
		N	PP	47 22		
		NE	eS	54 10		
			PS	54 41		
			PFS	54 57		
			SS	58 43		
		N	SSS	20 01 46		
		E	SSS	02 02		
			LQ	04 19		
			M	14 01		
		N	M	14 16		Per. = 17 secs μ = 33.
	Kodaikanal	E	iP	19 45 07		Slight, long distant.
			i	55 13		
			M	20 27 57		Per. = 15 secs μ = 7.3.
	Colombo	E	S	19 54 17		
			L	20 20 20		
			M	30 05		Amp = 0.4mm.
8	Poona	Z	i	20 02 27		
	Dehra Dun	N	e	20 07 36		Per. = 30 secs μ = 0.02.
8	Poona	Z	i	20 26 25		
8	Poona	Z	iP	22 37 51		
8	Poona	Z	i	22 46 24		
8	Poona	Z	i	23 39 34		
9	Bombay	N	e	00 03 46		
9	Poona	Z	i	00 04 26		
9	Calcutta	E	i	00 31 13		Slight, distant.
			i	47 23		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
9	Hyderabad	N	iP	00 33 25		
(Contd)			M	01 01 02		Per. = 15 secs μ = 5.
		E	M	05 00		Per. = 14 secs μ = 6.
	Bombay	NE	iP	00 33 45	8020	Slight.
			cS	43 07		
	Kodaikanal	E	e	00 34 06		Slight, tremor.
9	Hyderabad	N	M	00 38 36		Per. = 15 secs μ = 8.
9	Poona	Z	iP	01 29 09		
	Calcutta	E	i	01 36 29		
			M	53 44		
			Mn	57 59		
	Bombay	E	e	01 38 51		Feeble.
	Kodaikanal	E	e	01 39 29		
9	Poona	Z	iP	01 48 04		
	Shillong	E	e	01 48 48		
9	Poona	Z	iP	01 51 38		
	Hyderabad	E	M	01 57 45		Per. = 17 secs μ = 9.
		N	M	57 45		Per. = 14 secs μ = 5.
9	Poona	Z	P	04 31 29		
			i	31 39		
9	Epc: 49° N., 158° E. Off South Coast of Kamchatka. 0 = 04h. 30m. 05s. G.M.T. (U.S.C.G.S.) 49° N., 158° E. - (C.M.O., Japan).					
	Calcutta	E	i	04 44 49		Slight, distant.
			i	53 24		
			M	05 03 27		
	Chatra	NEZ	eP	04 44 54	6560	Slight.
			eS	53 00		
	New Delhi	N	eP	04 45 40		Moderate.
			e	55 50		
			M	05 03 45		
	Hyderabad	E	eP	04 46 18	7900	
			cS	55 35		
			M	05 13 39		Per. = 15 secs μ = 7.
	Poona	Z	eP	04 46 30	8040	Other phases not clear.
			i	49 39		
		E	S	55 54		
	Bombay	NE	eP	04 46 39	8000	Feeble.
		E	FP	49 20		
			PPP	51 00		
		N	PPP	51 06		
		NE	eS	55 00		
		E	PPS	55 40		
			SS	05 00 39		
		N	SS	01 00		
		E	SSS	03 33		

28

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Nov. 1952						
9	Bombay (Contd)	E	LQ LR M	05 05 14 08 49 15 12		Per. = 19 secs μ = 19. Per. = 9 secs μ = 4.
		N	M	15 15		
	Kodaikanal	E	e?	05 16 24		Slight, tremor.
9	Poona	Z	e i	05 28 28 28 37		
9	Kodaikanal	E	e?	05 42 15		Slight, tremor.
	Hyderabad	E	M	05 47 45		Per. = 15 secs μ = 7.
9	Epc: 49° N., 157° E. Off South Coast of Kamchatka. O = 05h. 56m. 54s. G.M.T. (U.S.C.G.S.) 49°5 N., 157°5 E. (C.M.O., Japan).					
	Hyderabad	N	eP i3 M	06 08 06 17 09 35 54	7630	Per. = 12 secs μ = 4. Per. = 12 secs μ = 4.
		E	M	35 56		
	Poona	Z	iP	06 08 19		
	Bombay	NE	eP eS	06 08 23 17 45	8020	Very feeble.
	Kodaikanal	E	e?	06 33 30		Slight, tremor.
9	Poona	Z	iP	06 52 52		
9	Poona	Z	i	09 32 00		
9	Poona	Z	e	12 34 26		
9	Shillong	E	e e	14 32 34 40 11		
	Poona	Z	i	15 20 23		
	Bombay	E	i	15 33 22		Tremor.
9	Hyderabad	E	eP	15 34 09	7990	
		N	S	43 30		
		E	M	16 01 49		Per. = 15 secs μ = 5.
		N	M	02 11		Per. = 14 secs μ = 6.
	Poona	ZE	P i	15 34 19 35 27		
9	Epc: 45° N., 151°5 E. Kurile Islands. O = 15h. 31m. 06s. G.M.T. (U.S.C.G.S.) 43° N., 151° E. h = 50 km ± (C.M.O., Japan).					
	New Delhi	NE	iP	15 41 12	6520	Moderate.
		N	i3 PS	49 16 49 27		
	Poona	ZE	P i	15 42 10 42 21		

29

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	km.	
Nov. 1952						
9 (Contd)	Bombay	NE	eP	15 42 14	7940	Slight.
		E	PP	44 55		
		NE	eS	51 31		
		E	SS	56 07		
			SSS	59 21		
			LQ	16 01 11		
			LR	04 52		
		N	M	09 44		
		E	M	10 11		Per. = 7 secs μ = 2.
9	Poona	Z	iP	15 59 20		
9	Kodaikanal	E	e?	16 07 12		Slight, tremor.
9	Poona	Z	iP	18 24 53		
9	Kodaikanal	E	e?	18 55 26		Slight, tremor.
	Hyderabad	E	M	18 55 55		Per. = 12 secs μ = 4.
9	Shillong	E	iP	20 08 54	220	Slight, near.
			P*	08 55		
			Sg	09 23		
9	Hyderabad	N	M	21 22 26		Per. = 10 secs μ = 3.
	Kodaikanal	E	e?	21 24 38		Slight, tremor.
10	Probable Region, near Sumatra. 0 = 00h. 29m. 30s. (B.C.I.S.).					
	Poona	Z	iP	00 36 35		
			i	36 52		
	New Delhi	NE	eP	00 37 12	4900	Slight.
			eS	43 46		
	Kodaikanal	E	e?	00 43 23		Slight, tremor.
10	Poona	Z	eP	01 06 12		
10	Poona	Z	iP	01 06 32	8060	Slight, Other phases not clear.
			eS	15 56		
	Bombay	NE	eP	01 06 36	8060	Feeble.
		E	PP	09 26		
			PPP	11 02		
		NE	eS	16 00		
		E	PS	16 26		
		N	PS	16 32		
		E	SS	20 35		
			SSS	23 48		
			LQ	25 55		
	Hyderabad	N	M	01 35 12		Per. = 13 secs μ = 5.
	Kodaikanal	E	e?	01 37 20		
10	Poona	Z	i	05 37 01		Tremor.
			i	37 08		
10	Poona	Z	e	06 17 23		Tremor.
			i	17 28		
	Hyderabad	E	M	06 44 13		Per. = 13 secs μ = 5.
	Kodaikanal	E	e?	06 46 23		Tremor.

30

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
10	Poona	Z	i e	09 51 39 52 01		Tremor.
10	Poona	E	e e e e	15 16 27 16 55 17 39 18 01		Phases not clear.
	Hyderabad	E	M	15 18 23		Per. = 7 secs u = 3.
10	Epc: 53° 9 N., 160° E., near East Coast of Kamchatka. 0 = 20m. 26m. 40s. (U.S.C.G.S.).					
	Calcutta	E	i i M	20 37 00 45 32 21 02 09		Slight, distant.
	Hyderabad	E	eP eS M	20 38 01 47 31 21 07 20	8170	Per. = 15 secs u = 6.
	Poona	Z	iP PeP	20 38 15 38 30	8060	Slight. Other phases not clear.
		E	eS PS PPS	47 39 48 19 48 57		
	Bombay	NE N E	eP PP PP	20 38 16 41 01 41 06	8180	Slight.
			PPP	43 00		
		NE	eS	47 46		
		E	PS	48 27		
		NE	PPS	48 33		
		E	SS	52 40		
		N	SSS	55 25		
		E	LQ	58 20		
		N	M	21 09 50		
		E	M	03 25		
	Kodaikanal	E	e?	20 48 26		Slight, tremor.
	New Delhi	N	eP eS M	21 37 13 45 46 22 01 23	7050	Moderate.
	Poona	Z	i i i	22 05 37 05 45 05 55		Tremor.
11	Kodaikanal	E	e?	01 36 47		Slight, tremor.
	Hyderabad	E	M	01 37 29		Per. = 15 secs u = 4.
11	Poona	Z	i	03 30 44		Tremor.
11	Poona	Z	e	08 30 44		Tremor.
11	Poona	Z	e	08 30 54		Tremor.
11	Poona	Z	i	11 28 48		Tremor.
11	Poona	Z	i	16 25 33		Tremor.

31

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
11	Chatra	NEZ	eP eS M	19 30 49 38 54 51 --	6530	Slight. Per. = 20 secs μ = 13.
	Poona	Z E	iP eS	19 32 21 41 43	8080	Slight, other phases not clear.
	Bombay	NE	eP eS	19 32 23 41 55	8220	
11	Kodaikanal	E	e?	20 06 25		Slight, tremor.
11	Poona	Z	i i	20 12 29 12 35		
12	New Delhi	NE E NE	eP PP iS S*	12 52 57 53 04 53 33 53 41	340	Slight.
		E	SS SSS	53 47 53 53		
	Poona	Z	e i i	12 58 03 58 31 58 43		Tremor.
12	Poona	Z	i i	13 48 54 50 15		Tremor.
12	Chatra	Z	eP? eS eLQ? e	15 50 29 55 10 56 56 59 --	3070	Slight.
	Poona	Z	e i i i i	15 51 24 52 17 52 41 53 44 54 05		
	Bombay	NE	e	15 52 53		
	Calcutta	E	e i	15 53 46 55 54		Slight, near.
	Hyderabad	E	i	15 55 01		
	Kodaikanal	E	e?	15 56 34		Slight, tremor.
12	Chatra	N	eP eS M	16 52 10 17 00 15 14 --	6530	Slight.
	Bombay	NE E NE E	eP PP eS PS SS	16 53 41 55 25 17 03 02 03 33 07 42	8000	Feeble.
	Madras	E	e	16 57 20		
	Calcutta	E	e M	17 01 10 21 33		Slight, distant.
	Kodaikanal	E	e?	17 20 13		

32

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

Nov.
1952
13

Epc: 50°5 N., 157°E. South Coast of Kamchatka.
0 = 07h. 58m. 45s. G.M.T. (U.S.C.G.S.)
51° N., 157° E. (C.M.O., Japan).

Shillong	E	e M(?)	08 08 25 25 33	Slight.
Chatra	Z N	iPY ePY PcP PP PPP PcS eS ScS SS SSS LQ LR M	08 08 36 09 47 10 51 12 10 13 36 16 25 18 47 20 10 21 32 21 51 25 00 29 45	6240 Slight. Per.= 22.5 secs $\mu = 2.5$.
New Delhi	NE N	iP PPP iS PPS ScS e LR M	08 09 11 12 59 17 28 17 55 18 47 25 36 28 10 32 25	6760 Moderate.
Hyderabad	E	eP iS PS L M	08 09 57 18 57 19 48 32 03 36 36	Per.= 18 secs $\mu = 20$.
Madras	E	iP PcP PP PPP iS ScS PS SS SSS LQ	08 10 10 10 24 12 57 14 37 19 30 20 08 20 15 24 14 27 32 29 36	7980 Moderate.
Poona	Z NE NE N	iPY ePY eP PPS SS SSS LR	08 10 11 19 23 20 09 24 01 27 12 32 13	7810 Moderate.
Bombay	NE E N E N E N E	eP PP PPP eS eS PS PS PPS PPS	08 10 12 13 03 14 45 19 27 19 33 20 02 20 15 20 16 20 31	7870 Moderate. (N-S) 8000 (E-W)

33

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952					
13	Bombay (Contd) (Contd)	E	SS SSS	08 24 09 27 33	
	Kodaikanal	E	P PS	08 10 37 20 13	8300 Long distance. Slight.
	Colombo	E	P S e M ₁ M ₂	08 10 47 20 20 37 35 48 05 51 20	Amp = 0.5 mm. Amp = 0.5 mm.
13	Bombay	E	PKP ₁ PP PPP PSS ₁ SKS SKS ₁ PS PPS ₁ SS	08 34 15 34 47 37 01 37 42 40 26 41 21 Superimposed by the max ^m of the preceding shock. 49 52	11960 Moderate.
13	Probable Epc: West of Kurile, 0 = 15h'. 22m. 06s. (Shillong).				
	Calcutta	E	e i Mn	15 32 20 41 38 16 01 48	Slight, distant.
	Chatra	N	eP eS M	15 32 52 41 00 54 15	6590 Slight. Per. = 16 secs μ = 0.75.
	New Delhi	NE N	eP eS ScS M	15 33 23 41 37 43 19 58 50	7090 Moderate.
	Poona	Z NE NE	iPY ePY eS	15 34 24 43 55	8200 Slight. Other phases not clear.
	Bombay	NE E N	eP iSY eSY	15 34 25 43 59	8260 Feeble.
	Hyderabad	E	iS M	15 43 31 16 02 57	Per. = 15secs μ = 6.
	Madras	E	e	15 44 02	Tremor.
13	New Delhi	NE E NE E NE	eP PP i Pg LQ iS SS SSS Sg	15 48 29 48 36 48 50 49 06 49 41 49 53 50 04 50 15 50 38	810 Slight.
13	Shillong	E	e	15 55 33	Slight.
13	Kodaikanal	E	e?	16 01 55	Slight, tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
13	Poona	Z	i i	17 48 29 48 40		Tremor.
13	Epc: 50° N., 158° E. Off South Coast of Kamchatka. O = 22h. 25m. 34s. G.M.T. (U.S.C.G.S.).					
	Chatra	N	eP eS M	22 35 31 43 30 56 22	6420	Slight. Per. = 19 secs μ = 0.5.
	Calcutta	E	e i	22 35 52 44 06		Slight, distant.
	New Delhi	NE N	eP eS M	22 36 04 44 28 23 00 06	6890	Moderate.
	Hyderabad	E	eP eS M	22 36 51 45 59 23 04 59	7730	Per. = 12 secs μ = 5.
	Poona	Z E	iP eS	22 37 05 46 30	8080	Slight. Other phases not clear.
	Bombay	NE E	eP PP PPP eS	22 37 03 39 52 41 39 46 31	8040	Feeble.
	Kodaikanal	E	e?	23 08 18		Slight, tremor.
13	Shillong	E	e M(?)	23 35 15 56 33		
14	Poona	Z	i i i	00 36 07 36 17 36 40		
14	Chatra	Z NE	iPY ePY eS	04 47 56 48 42	420	Feeble.
	New Delhi	E NE	e i i e i	04 48 24 48 41 49 14 49 36 49 46		Slight, near.
	Bombay	E	e e	04 52 52 53 53		Tremor.
14	Epc: 31° N., 70° E. O = 08h. 52m. 58s. (Quetta) in B.C.I.S.					
	New Delhi	NE E NE	eP P* iS iR SSS	08 54 47 55 03 56 07 56 15 56 27	770	Slight.
14	Bombay	E NE	e e e i	08 56 21 58 00 58 55 59 55		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
14 (Contd)	New Delhi	NE	S* i Sg	08 56 32 56 43 56 54		
	Chatra	NEZ Z	e i	08 56 47 59 46		Slight.
	Kodaikanal	E	e?	09 02 06		Slight, tremor.
14	Poona	Z	eP i i	09 55 59 58 35 59 31		
15	Poona	Z	i i	04 22 18 23 40		
15	Chatra	Z N	i e	05 13 00 22 38		Slight, distant.
	Chatra	Z N	iPY ePY eS M	05 33 09 41 19 55 50	6630	Slight. Per. = 15 secs/u = 8.
	Poona	ZE E	iP eS	05 34 41 44 17	8300	Slight.
	Bombay	NE E N	eP eS FP SS SSS	05 34 43 37 32 44 12 48 51 52 11	8160	Very feeble.
	Shillong	E	e	05 59 59		Tremor.
	Kodaikanal	E	e?	06 02 15		Slight, tremor.
15	Poona	Z	i i	08 30 00 30 08		
15	Kodaikanal	E	e	14 49 12		Slight, tremor.
	Cclombo	E	L M	14 49 48 56 31		Amp = 0.3mm.
	Bombay	E	e e	14 52 21 52 27		
16	Chatra	Z N	iPY ePY eS M	04 20 31 28 34 43 45	6500	Slight. Per. = 15 secs/u = 4.
	Poona	Z	e e	04 22 05 22 48		Tremors.
	Bombay	E	eP	04 22 06	7960	Very feeble.
16	Kodaikanal	E	e	07 50 08		Slight, tremor.
	Poona	Z E	e e	07 50 34 59 25		Tremor.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
16	Bombay	E	e	07 50 39		
(Contd)		NE	e	51 33		
			e	08 00 53		
16	Kodaikanal	E	e?	07 59 35		Slight, tremor.
16	Kodaikanal	E	e	08 21 26		Slight, tremor.
	Shillong	E	eP	15 34 19		
			PPP	34 25		
			iS	34 57		
17	Poona	Z	eP	06 52 49		Tremor.
17	Poona	Z	iP	09 46 52		Tremor.
17	Poona	Z	e	12 15 48		Tremor.
17	Poona	Z	e	13 32 11		Tremor.
17	New Delhi	NE	eP	14 17 26	930	Slight.
		E	PPP	17 41		
			P*	17 45		
		NE	iS	19 02		
		E	i	19 08		
		NE	SS	19 12		
			SSS	19 24		
		N	Sg	19 55		
	Poona	Z	eP	14 17 54		Very feeble.
			eS(?)	19 56		
	Chatra	Z	e	14 19 24		Feeble, near.
			e	22 32		
	Bombay	NE	e	14 20 30		Tremor.
			e	21 05		
		E	e	23 10		
			e	24 49		
	Calcutta	E	i	14 25 00		Slight, near.
			i	25 13		
			i	28 13		
17	Shillong	E	eP	16 29 02	560	Slight, near.
			Pg	29 24		
			S	30 01		
			LR	30 04		
17	Poona	Z	iP	20 45 18		Tremor.
18	Chatra	Z	iPY	07 52 53	6580	Slight.
		N	ePY			
			eS	08 01 00		
			M	16 --		
	Poona	Z	iP	07 54 24		
			i	54 35		
18	Epc: 49°5 N., 156°5 E. Off South Coast of Kamchatka. 0 = 08h. 13m. 25s. (U.S.C.G.S.)					
	Chatra	NZ	eP	08 23 18	6530	Slight.
		N	eS	31 23		

37

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
18	Chatra (Contd) (Contd)	N	e M	08 33 03 44 03		Per. = 19 secs μ = 26.
	Poona	Z	iP i	08 24 54 25 04		
	Bombay	NE E	e e	08 24 56 35 02		Distant shock.
	Kodaikanal	E	eP	08 25 19		Slight, tremor.
18	Poona	Z	eP	08 53 50		Tremors.
18	Shillong	E	e	13 27 44		Tremor.
19	Poona	Z	iP i	06 26 51 27 03		
19	Epc: 29°5 N., 86°5 E. in South Tibet. 0 = 10h. 23m. 28s. G.M.T. (U.S.C.G.S.) 28°5 N., 86°5 E. 0 = 10h. 23m. 34s. Felt at Katmandu (Shillong)					
	Chatra	NE	eP P* Pg PPP LQ LR iS S* SgX E NE SSS	10 24 20 24 23 24 28 24 33 24 43 24 51 24 54 24 58 25 06 25 06 25 15	300	Slight. Amp = 34.0mm. Amp = 16.0mm.
	Shillong	E	iP PP P* Pg LQ iS LR SS S* Sg	10 25 02 25 09 25 16 25 41 26 04 26 16 26 25 26 27 26 37 26 55	670	Moderate.
	Calcutta	E	eP iS SS Sg	10 25 24 26 44 26 56 27 29	690	Moderate.
	New Delhi	NE E N NE E E E E E	eP i PPP i Pg LQ iS SS LR SSS S* Sg	10 25 35 25 40 25 49 26 12 26 15 27 02 27 13 27 25 27 28 27 34 27 42 28 09	950	Slight.

38

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952 19 (Contd)	Hyderabad	E	eP i L M	10 26 55 29 22 31 01 32 30	1440 Per. = 12 secs μ = 41.
	Poona	Z E	iP PP PPP LQ S SS SSS LR M	10 27 15 27 26 27 33 30 07 30 09 30 31 30 41 30 57 32 09	Slight.
	Bombay	NE N E NE N E N E N	eP PP PP PPP eS SS SS LR SS LR M M	10 27 21 27 30 27 32 27 38 30 14 30 26 30 30 30 43 30 33 31 02 34 42 35 47	Per. = 8 secs μ = 23. Per. = 7 secs μ = 13.
	Madras	E	iP PP PPP iS SS PcP M ScP ScS	10 27 38 27 53 28 14 30 41 31 18 32 16 32 46 35 45 39 14	1830 Moderate.
	Dehra Dun	N	eP eS M ₁	10 28 42 29 36 30 06	570
	Kodaikanal	E	eP eS M PcS	10 28 43 32 13 34 46 35 31	2120 Slight, near.
19	Poona	Z	iP	11 22 10	
19	Poona	Z	iP	11 53 00	
20	Poona	Z	eP	05 34 44	
20	Poona	Z	iP i S	11 37 16 37 30 46 37	
	Bombay	E	e(P) e(S)	11 37 21 46 43	

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Nov. 1952 20	Epc: 12°5 N., 88° W. (Off Coast of Nicaragua). 0 = 15h. 37m. 17s. G.M.T. (U.S.C.G.S.) h = 60 km ± . Mag. 6½ (Pasadena), 6¾ (Berkeley), 6 (Roma).				
	New Delhi	N	ePKP ₁	15 56 38	15070 Moderate.
			PP	59 19	
			PKS	16 00 15	
			PPP	02 15	
			SKS ₂	03 52	
			SKKKS	06 50	
			PS	09 35	
			PPS	11 30	
			e	12 43	
			SSS	22 53	
	Chatra	Z	PKP	15 56 43	Distant.
	Poona	Z	iPKP	15 56 49	15890 Moderate.
		N	PKS ₁	16 00 29	
			PKS ₂	01 14	
			PPP	03 55	
			e	09 33	
			e	11 11	
			SKKKS ₁	12 25	
			SKKKS ₂	14 36	
			SS	19 32	
			SSP	20 06	
			SSS	25 21	
			LR	40 32	
			M	17 00 21	
	Calcutta	E	i	15 57 04	Slight, distant.
			e	16 00 47	
	Madras	E	PKP	15 57 15	Moderate.
			e	16 00 01	
	Kodaikanal	E	e	15 57 36	Slight, tremor.
	Bombay	N	e	15 58 48	Long distance. Phases not clear.
	Colombo	E	L	17 14 --	
			M	22 --	
20	Poona	Z	iP	18 10 15	Tremor.
			i	10 26	
21	Poona	Z	iP	02 39 33	Tremor.
			i	39 44	
21	Poona	Z	iP	03 30 43	Tremor.
	Bombay	E	e	03 30 45	Mild.
			e	40 05	
21	Poona	Z	iP	07 37 38	Tremor.
22	Poona	Z	iP	05 30 50	Tremor.
22	Poona	Z	iP	09 12 14	Tremor.
22	Poona	Z	eP	16 24 58	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
23	New Delhi	NE	eP	10 13 24	310	Moderate.
		E	P*	13 27		
		NE	Pg	13 54		
		E	PPP	13 40		
		NE	LR	13 55		
			iS	13 59		
			S*	14 03		
			Sg	14 09		
23	Poona	Z	eP	10 15 41		Tremor.
	Bombay	E	e	10 18 00		
			i	19 30		
23	Shillong	E	iP	16 07 30	110	Slight, felt locally.
			eS	07 42		
23	Poona	Z	iP	20 15 35		Tremor.
23	Poona	Z	eP	21 07 46		Tremor.
			i	09 04		
23	Poona	Z	iP	22 31 29		Tremor.
23	Poona	Z	iP	23 32 46		Tremor.
24	Poona	Z	eP	00 25 18		Tremor.
24	Poona	Z	iP	02 24 57		Tremor.
24	Poona	Z	iP	07 59 53		Tremor.
24	Poona	Z	iP	22 26 46		Tremor.
25	Poona	Z	i	11 59 06		Tremor.
25	Poona	Z	i	14 26 02		Tremor.
26	O = 13h. 25m. 18s. in Kamchatka (B.C.I.S.).					
	Calcutta	E	i	13 33 49		Slight, distant.
			Mn	14 05 39		
	Chatra	Z	iPY	13 35 22	6470	Slight.
		NE	ePY			
			eS	43 23		
			M	58 12		Per. = 15 secs $\mu = 0.75m$
	Poona	Z	iP	13 36 51	8070	
			iS	46 16		
	Bombay	NE	eP	13 36 55	8200	Feeble.
		E	PP	39 40		
			eS	46 20		
		N	eS	46 26		
	Hyderabad	E	e	13 45 59		
26	Kodaikanal	E	e?	14 08 05		Slight, tremor.
26	Poona	Z	i	16 28 54		Tremor.
			i	29 06		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
26	New Delhi	N	eP	22 09 11	480	Slight.
		NE	PPP	09 25		
			Pg	09 29		
		N	es	10 02		
			SS	10 12		
		E	i	10 19		
		NE	Sg	10 25		
	Poona	Z	eP	22 11 25		Other phases not clear.
26	Poona	Z	e	23 17 30		Tremors.
27	Poona	Z	iP	00 03 02		Tremor.
27	Epc: 37° N., 70° E. in Northern Afghanistan. C = 07h. 20m. 13s. G.M.T. (U.S.C.G.S.) 36°5 N., 70°5 E., h = 200 in Hindukush. C = 07h. 20m. 34s. G.M.T. (B.C.I.S.) 36°5 N., 70°5 E., h = 150 km Hindukush. C = 07h. 20m. 39s. G.M.T. (Shillong).					
	Dehra Dun	N	e	07 22 42		
			i	24 12		Per. = 3 secs μ = 0.08.
	New Delhi	NE	iP	07 22 49	1020	Moderate.
			PP	22 57		
			PPP	23 04		
			LQ	24 24		
			is	24 34		
	Chatra	Z	iPY	07 24 24	1830	Moderate.
		NE	ePY			
			PP	24 37		
			PPP	24 43		
			LQ	27 25		
			is	27 26		
			SS	27 43		
			SSS	27 55		
			LR	28 11		
			M	29 14		
	Bombay	NE	iP	07 24 39	1890	Very slight.
		E	PP	24 46		
			PPP	24 50		
		NE	is	27 33		
		E	SS	27 56		
			SSS	28 15		
	Poona	Z	iP	07 24 34	1940	Moderate.
		E	PP	24 50		
			PPP	25 00		
			S	27 47		
			SS	28 04		
			SSS	28 22		
			LR	28 33		
			M	29 38		
			ScP	32 24		
			ScS	36 18		
	Hyderabad	E	eP	07 25 02		
			i	28 26		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
27	Calcutta	N	iP	07 25 08	2250	Moderate.
(Contd)			PP	25 30		
			iS	28 50		
			SS	29 20		
	Shillong	E	iP	07 25 10		
			PP	25 30		
			PPP	25 43		
			S	28 58		
			LQ	29 10		
			SS	29 31		
			SSS	29 42		
			IR	08 00 10		
			M	01 34		
	Madras	E	eP	07 25 42	2300	Moderate.
			PP	26 07		
			PPP	26 13		
			eS	29 29		
			PeP	29 34		
			LQ	29 39		
			SS	30 03		
			SSS	30 19		
			IR	30 46		
			M	32 33		
			ScP	33 09		
			ScS	36 24		
	Kodaikanal	E	e	07 26 37		Slight, near.
			eS	30 15		
			M	33 03		
	Colombo	E	i	07 27 22		
			e	32 45		
			L	36 20		
			M	37 52		Amp = 1.0mm.
27	Poona	Z	i	15 28 43		Tremor.
28	Epc: 25.5° N., 94.0° E. in Naga Hills, Assam.					
	O = 05h. 34m. 21s. G.M.T., Assam Burma Border					
	(U.S.C.G.S.)					
	O = 05h. 34m. 25s. G.M.T. (Shillong)					
	Felt at Shillong and Lunglei.					
	Shillong	E	eP	05 35 13		Moderate.
			PPP	35 26		
			S	35 43		
	Calcutta	N	iP	05 36 08	640	Slight.
			iS	37 14		
	Chatra	Z	iP	05 36 14	780	Slight.
			PP	36 22		
			P*	36 30		
			Pg	36 48		
			LQ	37 23		
			iS	37 35		
			LR	37 43		
			SS	37 47		
			SSS	37 57		
			S*	37 59		
			Sg	38 16		

Per. = 18 secs $\div$ 2 = 9.
Per. = 18 secs.

44

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Nov. 1952						
28 (Contd)	Shillong	E	e	08 43 03		
	Hyderabad	N	M	08 44 34		Per. = 12 secs μ = 4.
		E	M	44 42		Per. = 14 secs μ = 3.
28	Shillong	E	e	14 47 14		
	Chatra	Z	i	14 47 52		Slight.
			i	53 12		
		E	e	54 22		
	Poona	Z	iP	14 49 03		Moderate, other phases not clear.
28	Epc: 6°5 S., 155°5 E. (Solomon Islands).			O = 21h. 01m. 27s. G.M.T. h = 100 km ±. (USCGS).		
	Shillong	E	P	21 12 34		
			i	13 00		
	Chatra	Z	iX	21 13 02		Slight, distant.
		E	eX			
			e	22 15		
	Calcutta	E	i	21 13 02		Slight, distant.
			i	22 42		
	New Delhi	NE	eP	21 13 02	8910	Moderate.
		N	IS	23 56		
			PPS	24 53		
			SS	29 05		
	Poona	Z	iP	21 13 56		Phases indistinct.
			i	14 23		
			S(?)	24 05		
29	Epc: 53° N., 160° E. (near East Coast of Kamchatka).			O = 08h. 22m. 34s. (U.S.C.G.S.)		
	Mag. 7 (Pasadena), 7½ (Berkeley).					
	Shillong	E	eP	08 32 28	6220	
			e	33 36		
		S and PcP		40 14		
			LQ	40 48		
			SS	41 23		
			M	45 52		
	Chatra	E	eP	08 32 38	6500	Moderate.
			PcP	33 49		
			PP	34 56		
			PPP	36 11		
			PcS	37 45		
			IS	40 41		
			PS	40 57		
			SeS	42 22		
			SS	44 34		
			SSS	46 38		
			LQ	47 04		
			LR	49 41		
			M	54 45		Per. = 13.5 secs μ = 94.

45

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Nov. 1952						
29 (Contd)	New Delhi	N	eP PcP eS iScS SS i M Mn	08 33 11 33 52 41 30 43 00 45 36 49 03 55 48 57 31	6800	Moderate. Per. = 23 secs μ = 17.
	Hyderabad	NE N NE	iP PP iS	08 34 03 36 36 43 12	7750	
	Poona	Z ZE	iP PP e S ScS PS PPS SS SSS LR M	08 34 08 36 25 38 16 43 25 44 00 44 06 44 20 48 20 52 26 53 13 09 03 36	8000	Moderate.
	Bombay	N E N E NE N E NE N E NE N E NE N E	ePY iPY PP PP PPP eSY iSY PS PPS SS SSS LQ M M	08 34 15 36 58 37 00 38 43 43 38 44 07 44 22 48 12 51 32 51 37 53 40 09 04 03 04 15	8040	Per. = 17 secs μ = 31.
	Kodaikanal	E	e	08 44 16		Slight, phases not clear.
	Dehar Dun	N	e M ₁	08 52 39 59 12		
	Hyderabad	N	L M	08 56 11 09 00 11		Per. = 18 secs μ = 81.
29	Colombo	E	e L M ₁ M ₂	09 43 20 10 06 20 12 37 15 35		Amp = 1.4. Amp = 1.5.
29	Epc: 56° N., 155° W. (Off South Coast of Alaska Peninsula). O = 23h. 46m. 25s. G.M.T. (U.S.C.G.S.) Mag. 6½ (Pasadena), 7-7½ (Berkeley), 7 (Tacubaya, De Bilt), 6½ (Praha, Hurbanovo, Roma, Kiruna), 6.5 (Strasbourg).					
	Shillong	E	e?	23 58 43		Other phases not clear.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Nov. 1952					
29	Chatra	Z	1PY	23 58 51	9240 Moderate.
(Contd)		E	ePY		
			PP	00 02 04	
			PPP	04 00	
			is	09 11	
			S ₂ S	09 26	
			PS	10 04	
			PPS	10 26	
			SS	14 34	
			SSS	18 00	
			LQ	21 34	
			LR	26 19	
			M	33 30	Per. = 20.5 secs μ = 133.
	New Delhi	NE	P	23 59 05	9240 Moderate.
			PP	00 02 15	
			PPP	04 12	
			is	09 25	
		N	PPS	10 29	
			SSS	14 52	
			e	19 43	
			M	33 25	
			Mn	40 56	Per. = 16 secs μ = 67.
	Calcutta	E	eP	23 59 07	9340 Moderate.
			PP?	00 02 32	
			is	09 33	
			PS	10 30	
			PPS	10 49	
			PKLP ₁	17 07	
			SKKS ₂	21 07	
			M	30 47	
			Mn	40 32	Per. = 15 secs μ = 96.
	Poona	Z	iP	23 59 54	9560 Moderate.
		E	PP	00 03 24	
			PPP	05 18	
			SKS	10 02	
			S	10 28	
			PS	11 44	
			PPS	12 10	
			SSP	16 33	
			SSS	20 16	
	Bombay	NE	eP	23 59 54	Moderate.
			PP	00 03 44	
			PPP	05 53	
			S	10 28	
		N	SKKS ₁	10 43	
		NE	i	11 12	
			e	12 37	
			e	17 42	
		N	e	21 43	
			LR	31 --	
			M	47 09	Per. = 17 secs μ = 37.
		E	M	47 41	Per. = 17 secs μ = 14.
	Hyderabad	E	iP	23 59 54	9410
		N	PP	00 03 33	
		NE	S	10 22	
			M	36 41	Per. = 14 secs μ = 19.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS
				h.	m.	s.	
Nov. 1952						km.	
29	Dehra Dun	N	e	00	07	06	
			e		36	06	
			M ₁		38	30	Per. = 24 secs μ = 0.18.
	Kodaikanal	E	e	00	10	58	Slight, phases not clear.
	Colombo	E	L	00	40	36	
			M		51	36	Amp = 1.4mm.
30	Epc: 52°5' N., 159° E. (near East Coast of Kamchatka). 0 = 19h. 28m. 44s. G.M.T. (U.S.C.G.S.)						
	Chatra	Z	eP	19	38	46	6560 Slight.
			eS		46	52	
			e		48	34	
			M	20	01	45	Per. = 14 secs μ = 6.
	Calcutta	E	e	19	47	18	
			e	20	03	06	Slight, distant.
30	Shillong	E	e	20	00	31	
			M		04	25	Distant.
30	Bombay	NE	e	21	10	--	

- : Voluntary Observer's Reports :-

The following table contains a list of earthquakes reported by Voluntary Observers, from various stations for the month of November, 1952.

Place at which felt	Date	G.M.T. of earthquakes		Duration in secs	Intensity R.F.Scale	No. of shocks	Remarks
		h.	m.				
Srinagar	2-11-52	15	30	1	IV	2	
Srinagar	4-11-52	01	15	1 1	VI	3	
Srinagar	4-11-52	21	02	-	VI	2	
Mohanbari	5-11-52	15	00	30	✓	1	
Imphal	7-11-52	04	34	10	V	1	
Lumding	17-11-52	04	40	4	V	1	
Shillong	28-11-52	05	30	10	V	1	
North-Lakhimpur	28-11-52	05	35	3	V	1	

S .M./20.5.1954

@@@@*@@*@@*@@*@@*@@*@@*@@*

JAN 17 1955

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

December, 1952

*
*
* * * * *
*
*

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

Instruments and their Constants.

Station	Instrument	Compt.	Period in secs	Static Mag- nification	Damping ratio	Paper Speed mm/min.
Bombay	Milneshaw	N	12	350		16
	Milneshaw	E	12	350		8
	Sprengnether	E	7			30
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omori-Twing	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	24:1	60
	Wood-Anderson	E	1.0	1000	24:1	60
	Benicoff	Z	To = 0.72 Tg = 0.45	-	Es = 2.3:1 Eg = Critical	60
Colombo	Milne-Shaw	E	12	250	15:1	30.0
Dehra Dun	Omori-Ewing	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12	249	20:1	8
	Milne-Shaw	N	12	249	20:1	8
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8
Madras	Sprengnether	E	7.5	-	-	30
New Delhi	Milne-Shaw	N	12	288	20:1	8
	Wood-Anderson	N	4	1000	20:1	16
	Wood-Anderson	N	2	2000	30:1	60
	Omori-Ewing	N	30	30	1	12
Poona	Milne-Shaw	N	12.0	250	20:1	8
	Wood-Anderson	E	4.0	1100	20:1	16, 30
	Sprengnether	E	Tg=To=6.6	-	-	30
	Sprengnether	Vertical	Tg = 1.0	-	-	30
	Benicoff	Z	To = 1.0	-	-	60
Shillong	Wood-Anderson	E	3.0	1000		60
	Wood-Anderson	E	1.5	1500		30
	Wood-Anderson	N	1.0	700		30

SEISMOLOGICAL BULLETIN

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Dec. 1952						
1	Chatra	Z	1P 1P PPP 13 SS SSS	08 11 23 11 27 11 33 11 43 11 51 12 03	170	Feeble.
1	Poona	Z	1 1 1 1	13 09 43 09 50 11 46 11 53		Tremor.

3

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
1	O = 14h. 32.8m. Off the East Coast of Kamchatka (B.C.I.S.).					
	Poona	Z	i i	14 44 12 44 20		Tremor.
1	New Delhi	NE	eP iS SS	18 55 33 57 17 57 28	1010	Slight.
		E	SSS	57 38		
1	Poona	Z	i i	19 31 29 32 17		Tremor.
1	Shillong	E	eP P ₃ IQ eS SS S ₂ SSS	21 45 35 45 51 46 08 46 21 46 31 46 41 46 43	430	Feeble.
	Chatra	Z	i i	21 46 19 47 57		Feeble, near.
2	Shillong	NE	e e e	08 37 10 37 20 37 24		
	Chatra	Z	i i	08 37 23 39 01		Feeble, near.
2	O = 19h. 14.9m. Epc: Near Kamchatka (B.C.I.S.).					
	Chatra	Z	e	19 24 14		Slight, distant. Surface waves. Per. = 12.5 secs μ = 3.
2	New Delhi	NE E NE E NE E	eP P* P ₂ PPP IQ IK iS S* Sg	20 29 10 29 14 29 19 29 22 29 33 29 41 29 45 29 50 29 56	310	Slight.
	Poona	Z	eP iS	20 31 26 33 46	1380	Feeble.
3	Chatra	Z NE	iY eY i	06 04 48 05 12		Feeble, near.
3	Chatra	ZE E	e e e	22 36 01 44 06 23 00 30		Slight, distant. Surface waves. Per. = 15 secs μ = 3.
3	Bombay	E	e	22 47 01		Tremor.

4

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Dec. 1952					
4	Epc: 52° N., 178° E. 0 = 03h. 51m. 25s. (U.S.C.G.S.) 52° N., 178° E. h = 100 km ca (Shillong). Mag. 6 (Berkeley).				
	Chatra	Z	SPY	04 02 39	7560 Slight.
		E	ePY		
			PcP	03 16	
			PP	05 16	
			PcS	07 10	
			eS	11 38	
			PS	11 55	
			PFS	12 16	
			KS ₁	12 31	
			SS	12 16	
			SSS	19 02	
			LQ	20 27	
			LR	23 27	
			M	28 35	Per. = 14 secs μ = 3.
	Shillong	E	e	04 03 02	Slight, tremor.
			e	11 13	
4	New Delhi	N	eP	04 03 06	7890 Moderate.
			S	12 22	
			PS	12 52	
			PFS	13 07	
			SS	16 59	
			M	30 26	
	Poona	Z	iP	04 03 58	8940 Slight.
			i	04 33	
			i	04 41	
			eS	14 04	
4	Bombay	NE	e	04 04 01	Long distance shock.
			e	04 56	
		E	iY	13 09	
		N	eY		
		NE	e	13 58	
	Hyderabad	E	e	04 13 49	
4	Shillong	E	e	07 12 46	Tremor.
			e	12 57	
	Chatra	Z	iPY	07 13 20	3590 Slight.
		E	ePY		
			eS	18 34	
			PcS	19 31	
			LR	22 16	
			M	25 00	Per. = 11 secs μ = 3.
4	Bombay	E	e	07 15 15	
	Poona	Z	i	07 15 15	Tremor.
			i	15 41	
4	Bombay	E	e	10 57 01	Long distance shock.
			e	11 06 35	
			e	25 30	
	Chatra	E	e	11 20 00	Surface waves. Per. = 21 secs μ = 6.

5

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
5	Shillong	E	e	03 42 09		Tremor.
5	Shillong	E	e	10 43 28		Feeble.
			e	44 03		
			e	44 23		
5	Shillong	E	e	11 10 13		Tremor.
			e	10 57		
5	New Delhi	N	eP	17 51 00	1010	Slight.
		E	pe	51 21		
			Pg	51 46		
		NE	10	52 44		
			SS	52 57		
			SSS	53 03		
		N	lg	53 46		
	Chatra	ZE	e	17 52 23		Slight. Surface waves.
		E	e	55 25		
			e	18 01 25		
	Poona	Z	i	17 52 55		Tremor.
			i	53 13		
			i	56 07		
			i	56 35		
5	Bombay	E	e	17 56 31		Tremor.
			e	57 59		
6	O = 03h. 34m. 20s. Off South Coast of Kamchatka (B.C.I.S.).					
	Poona	Z	iPY	03 45 30		Slight.
		E	ePY			
		Z	i	45 50		
			e	47 42		
		E	eS	54 43		
6	Bombay	E	e	03 45 35		Feeble.
			e	45 47		
			e	54 49		
			e	55 51		
6	Epc: 8.5 S., 153° E. ; O = 10h. 41m. 18s. (Shillong) 8° S., 157° E. in Solomon Island. O = 10h. 41m. 14s. (USCGS) Mag. = 7.5 (Roma), 7½ (Manila, De Bilt), 7.4 (Praha), 7½ - 7½ (Berkeley), 7½ (Strasbourg, Hurbanova), 7 (Pasadena), 6½ - 6½ (Wellington).					
	Madras	E	i	10 52 24.3	8640	Great shock.
			iS	11 02 17.3		
	Shillong	EN	eP	10 52 37	7860	Moderate.
			PcP	52 41		
		E	PP	55 19		
			PPP	56 33		
		NE	eS	11 01 51		
			ScS	02 25		
			PR3	02 34		
			SS	03 26		
		E	SSS	09 35		
			LQ	10 52		
			LR	15 03		
			M	19 53		
						Per. = 22 secs / u = 100.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Dec. 1952					
6	Calcutta	N	eP	10 53 00	8200
(Contd)			iS	11 02 31	Moderate. Epc: in the Sea to the SE of Britis New Guinea, Lat 11° S. and 154° E.
	Chatra	Z	iPY	10 53 04	8380
		NE	ePY		Moderate. O.T. 10h.
		E	PcP	53 16	41m. 17s. G.M.T.
			PP	55 55	
			PPP	58 03	
			iS	11 02 44	
			SKS ₁	03 01	
			SS	03 14	
			PPS	03 41	
			SS	07 45	
			SSS	11 02	
			PKP ₁	11 45	
			LQ	13 15	
			PKKS ₁	15 13	
			LR	17 26	
			SKKS ₂	19 05	
			M	23 57	Per. = 19 secs μ = 74.
	Colombo	E	P	10 53 19	
			iS	11 03 09	
			L	17 00	
			M	24 29	Amp = 1.2.
	Hyderabad	E	iP	10 53 38	8970
			PP	55 47	
			i	58 28	
			iS	11 03 46	
			SS	09 59	
			L	12 53	
			M	27 09	Per. = 18 secs μ = 10.
	Kodaikanal	E	iP	10 53 41	8710
			i	11 03 37	Slight. Long distant.
			SS	08 41	
			SSS	11 59	
			LQ	14 37	Per. = 18 secs μ = 28.3.
	New Delhi	NE	eP	10 53 52	9330
		N	PP	57 08	Moderate.
			PPP	59 02	
			iS	11 04 16	
			PPS	05 36	
			i	07 43	
			SS	09 59	
			SSS	13 08	
			LQ	16 22	
			LR	20 33	
			M	26 24	
			Mn	31 55	Per. = 19 secs μ = 67.
6	Poona	ZNE	iP	10 53 58	5450
		NE	PP	57 34	Moderate.
			PPP	59 16	
		E	SKS	11 04 10	
			SKKS	04 21	
		NE	eC	04 23	
			P3	05 16	
			PPS	05 44	
			SS	10 15	
			SSS	13 32	

7

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Dec.</u> 1952						
6	Bombay	E	iP	10 54 07	9670	Great.
		N	eP	54 --		
		E	PP	57 42		
		NE	PPP	59 38		
			iS	11 01 45		
		N	SKS	04 19		
		NE	SKKS ₁	04 33		
			PS	05 57		
		E	PPS	06 37		
		N	SS(?)	10 53		
		E	SS(?)	10 59		
			SSS	14 33		
		N	SSS	14 33		
			LQ	20 10		
		E	LQ	20 --		
6	Dehra Dun	N	e	11 04 43		Per. = 30 secs $\mu = 0.15$.
			M ₁	17 42		Per. = 36 secs $\mu = 0.20$.
6	Shillong	E	e	16 20 43		Tremor.
			e	21 43		
			e	23 07		
6	Shillong	E	e	19 12 41		Feeble.
			e	15 29		
			e	16 41		
	Chatra	Z	e	19 13 42		Slight, distant.
	Calcutta	E	e	19 16 12		Slight, distant.
			i	18 12		
6	Bombay	N	e	19 20 14		Feeble.
			e	20 51		
		E	i	21 00		
		N	e	26 26		
		E	e	26 37		
6	Epc: 8° S., 157° E. Solomon Island; 0 = 20h. 50m. 35s. (USCGS).					
	Shillong	E	e	21 01 52		Tremor.
			e	02 28		
	Calcutta	E	e	21 02 09		Slight, distant.
			i	11 45		
	Chatra	Z	iPY	21 02 22	8510	Slight.
		E	ePY			
			eS	12 03		
			SeS	12 40		
			PPS	13 15		
			M	32 00		
	Madras	E	iP	21 02 40.4	8730	Moderate.
			PP	05 44.4		
			PPP	07 32.4		
			iS	12 26.9		
			PFS	13 48.4		
	Hyderabad	E	e	21 02 48		

8

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
6 (Contd)	Kodaikanal	E	iP iS M	21 02 56 13 02 35 41	8940	Feeble, long distance.
	Poona	Z E	iP eS	21 03 16 13 39		Slight.
6	Bombay	NE E NE N E	iP SKS iS PS PS PPS e SSS	21 03 22 03 28 14 00 15 07 15 16 15 58 17 06 24 17		Feeble.
8	Epc: 53° N., 172½° E., Near Islands, Aleutian Isles. 51° N., 177° E., Aleutian Island. 0 = 00h. 50m. 12s. (U.S.C.G.S.) 51° N., 177° E., Aleutian Island. 0 = 00h. 50m. 16s. (Shillong) Mag. 6,5 (Strasbourg, Praha); 6½ (Pasadena, De Bilt).					
	Shillong	NE	eP PcP PP eS PS M	01 01 01 01 24 03 28 09 43 09 59 25 14	7220	Slight.
7	Chatra	EZ NE E	iPY ePY PcP PP PPP eS PS PPS SS SSS LQ LR M	01 01 14 01 38 04 04 05 23 10 17 10 34 10 55 14 38 17 38 19 16 22 45 26 53	7630	Moderate.
	Calcutta	N	e e	01 01 34 10 54		Per. = 16 secs μ = 28. Slight, distant.
	New Delhi	N	iP PP PPP eS PPS LQ M	01 01 43 04 17 06 06 11 01 11 38 19 43 27 34	7930	Moderate.
7	Hyderabad	E	iP PP iS M	01 02 27 05 29 12 30 34 58	8860	Per. = 15 secs μ = 6.
	Poona	Z E	iP eS	01 02 36 12 47	8940	Slight.

9

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Dec. 1952					
7 (Contd)	Madras	E	1P SES IS PS M	01 02 41 12 44 12 57 13 55 35 03	9090 Moderate.
7	Bombay	NE N E N E N NE E	1P PP PPP eSY ISY PS SS SSS LQ LR M	01 02 42 05 49 07 40 12 52 13 54 18 22 21 23 24 -- 26 -- 39 --	9020 Moderate.
	Kodaikanal	E	1P PP PPP IS LQ LR M	01 03 03 06 24 08 12 15 26 25 02 30 09 37 12	9310 Slight, long distance. Per. = 22 secs μ = 22.
	Colombo	E	L M	01 38 50 47 35	Amp = 0.4. A.S. 0.4.
7	Chatra	Z	1P Pg PP IS Sg SS	09 58 32 58 34 58 38 58 53 58 55 59 02	180 Feeble.
7	Epc: Lat $51\frac{1}{2}^{\circ}$ N., Long 159° E. in Off South East Coast of Kamchatka O = 16h. 33m. 10s. (U.S.C.G.S.).				
	Chatra	NE E N	eP eS MX MX	16 43 11 51 17 17 06 00	6560 Slight. Per. = 15 secs μ = 3. Per. = 15 secs μ = 8.
7	Poona	Z E	1P e	16 44 45 54 13	Slight.
7	Bombay	NE N E N N	eP eS FPS PPS M M	16 44 50 54 30 55 30 55 35 17 21 23 22 37	8380 Slight. Per. = 13 secs μ = 1. Per. = 26 secs μ = 5.
	Calcutta	E	e	16 51 52	Slight, distant.
	Kodaikanal	E	e?	16 17 00	Tremor.
7	Poona	Z	i	19 52 24	Tremor.
7	O = 20h. 20m. 02s. Solomon Island (U.S.C.G.S.).				
	Chatra	NE	e e	20 31 38 41 15	Slight, distant.

10

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
7 (Cond)	Poona	Z E	iP eS	20 32 42 43 01	9220	Slight.
8	Poona	Z	e	03 49 49		Tremor.
8	Poona	Z	eP	04 32 16		Tremor.
8	Poona	Z	eP	04 54 54		Tremor.
8	Epc: 23° N., 99½° E. in China - Burma Border.					
	O = 15h. 09m. 30s. (U.S.C.G.S.)					
	24° N., 100° E. O = 15h. 03m. 30s. (Shillong).					
	Shillong	EN E	eP P* S	15 11 22 11 43 12 56		Slight.
		EN E	e SS SSS S* M	13 07 13 16 13 25 13 39 14 04		
	Calcutta	E	eP ? IS SSS LR M Mn	15 12 21 14 04 14 31 14 57 15 03 15 54 19 41	1280	Moderate.
						Per. = 10 secs μ = 124.
	Chatra	NE E	eP IQ eS SS LR MX MX	15 12 23 14 23 14 35 14 49 15 11 16 11	1300	Slight.
		N				Per. = 9 secs μ = 36. Per. = 7.5 secs μ = 34,
	Madras	E	iP FP PPP IS IQ IR M	15 14 15.5 14 44.8 14 53.5 18 13.5 18 41.5 18 41.5 21 31.0	2430	Moderate.
	Hyderabad	E	iP PP S i M	15 14 16 14 38 17 30 18 21 23 11		Per. = 11 secs μ = 10.
	New Delhi	NE N	eP PP PPP IS SS SSS LR M	15 14 17 14 41 14 50 18 06 18 35 18 45 19 17 21 31	2320	Slight.

11

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS
				h. m. s.	km.	
Dec. 1952						
8 (Contd)	Colombo	E	P S L M	15 14 50 19 23 23 25 27 50		Amp = 0.4.
	Poona	Z E	iP PcP iS LQ SSS LR ScP M	15 14 53 18 14 19 12 20 00 20 32 21 13 21 48 23 12	2660	Slight.
	Bombay	NE N E NE	eP eSY iSY i LQ SS	15 14 59 19 25 19 42 20 12 20 23	2850	Slight.
8	Kodaikanal	E	eP? iS	15 15 00 19 27	2860	Slight. Short distance.
8	Poona	Z	iP	16 13 23		Tremor.
9	Poona	Z	eP	06 07 17		Tremor.
9	Poona	Z	e	07 31 41		Tremor.
9	Shillong	E	i	09 27 48		Tremor. First movement West.
	Chatra	Z NE	iY eY e	09 28 11 38 23		Slight, distant.
9	Shillong	E	e	09 37 52		Tremor. First movement West.
9	Bombay	E N	i e	09 39 21 39 29		
9	Chatra	Z	i	18 33 41		Slight, distant.
9	Chatra	Z	e	21 20 56		Slight, distant.
10	Epc: 71° N., 7° W. Island Jan Mayen O = 05h. 58m. 06s. (USCGS) Mag. 6½ - 6¾ (Strasbourg); 6, 5 (Roma); 5¾ (Skolnate, Pleso); 5½ (Prha).					
	New Delhi	NE N	eP eS SS SSS LR M	06 08 25 16 46 20 49 23 27 23 55 30 34	6830	Moderate.
	Chatra	Z NE	iPY ePY eS M	06 08 57 17 45 34 00	7360	Slight.

12

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
<u>Dec.</u> 1952						
10	Bombay	NE	eP eS E PPS NE SS E LQ	06 09 15 13 17 13 53 23 42 24 --	7600	Slight to Moderate.
	Poona	Z	iP	06 09 20		Tremor.
10	Hyderabad	E	e M	06 18 50 47 35		Per. = 12 secs μ = 3.
	Kodaikanal	E	e?	06 19 07		Tremor.
10	New Delhi	NE E NE E SSS S* NE	eP PPP iS LR SSS S* M	07 40 11 40 25 42 06 42 24 42 30 43 41 43 11	1120	Slight.
	Poona	Z	e	07 45 20		Tremor.
11	Epc: 49° N., 155° E. Kurile Island. 0 = 08h. 53m. 18s. h = 60 km Ca (U.S.C.G.S.) Mag. 6,5 (Rome); 6½ (Uppsala; Kiruna); 6 (Pasadena).					
	Shillong	E	eP e(S) M	09 07 34 14 49 25 14	5740	Feeble, distant. First movement West.
	Chatra	Z NE	iP eP PcP PP PPP PcS eS PPS ScS SS SSS LR MY MY	09 07 53 09 00 09 52 11 23 12 52 15 34 16 00 18 00 19 19 21 15 24 00 29 38	6110	Slight.
		E N	MY MY	29 38		Per. = 19 secs μ = 27. Per. = 17 secs μ = 140
	New Delhi	N	eP e S PPS ScS i LQ M	09 08 28 12 42 13 40 17 33 18 15 19 35 23 42 31 01	6660	Moderate.
	Hyderabad	E	iP iS PS ScS L M	09 09 15 18 09 18 30 19 02 30 51 37 36	7460	Per. = 15 secs μ = 5.

13

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
11 (Contd)	Madras	E	1P PP PPP iS	09 09 29.1 12 05.2 13 52.0 18 34.1	7670	Slight.
	Poona	Z E	1P PcP eS PS PFS SKS M	09 09 30 09 51 18 36 18 59 19 23 19 49 37 54	7690	Moderate.
11	Bombay	E N E N E N E NE E N N E	1P 1P PcP PcP PP PPP eS iS PS PPS PPS M M	09 09 33 09 30 09 43 09 47 12 08 14 07 18 40 18 45 19 10 19 30 19 34 43 24 43 31	7820	Per. = 16 secs μ = 16. Per. = 17 secs μ = 5.
	Kodaikanal	E	eP eS M	09 09 52 19 19 39 16	8110	Slight, long distance.
	Colombo	E	P S L M	09 09 57 29?29? 39 19 45 29		Amp = 0.4.
11	New Delhi	E	ePg iSg	12 44 48 44 56	70	Slight.
11	Poona	Z	1P	13 23 12		Tremor.
11	Shillong	E	e	17 58 11		Tremor.
11	Poona	Z	1P	18 00 50		Tremor.
11	Chatra	Z	1P Pg PP PPP iS Sg SS SSS	23 27 00 27 03 27 08 27 12 27 22 27 24 27 31 27 41	190	Slight.
12	Epc: Off the South Coast of Kodaik, Alaska. 0 = 00h. 47m. 56s. (U.S.C.G.S.) Mag. 5 $\frac{1}{2}$ - 5 $\frac{1}{2}$ (Kinuna).					
	Chatra	NEZ NE	eP eS M	01 00 18 10 32 33 00	9110	Slight.
12	Bombay	E	e	01 10 55		

14

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
12	Kodaikanal	E	e?	01 43 56		Tremor.
(Contd)	Hyderabad	E	M	01 43 56		Per. = 12 secs $\mu = 3$.
12	Poona	Z	eP	07 06 06		Tremor.
12	Poona	Z	eP	12 15 44		Tremor.
12	O = 20h. 32m. Region near Kamtchatka (B.C.I.S.)					
	Chatra	NEZ	e	20 41 45		Surface waves.
		E	eY	21 03 23		Per. = 19 secs $\mu = 3$.
		N	eY			Per. = 20.5 secs $\mu = 14$.
	Poona	Z	iP	20 43 19		Tremor.
12	Bombay	N	M(?)	21 12 44		Presumably a long distance shock.
12	Shillong	EN	iPg	22 33 25	80	Slight, Felt locally.
		E	P	33 27		
		NE	eSg	33 34		
			S	33 40		
			SS	33 48		
12	Poona	Z	eP	23 10 33		Tremor.
14	Poona	Z	iP	04 58 27		Tremor.
14	New Delhi	NE	ePg	10 21 05	90	Slight.
			iSg	21 16		
14	Poona	Z	iP	11 16 05		Very feeble.
			i	16 07		
14	Shillong	E	e	14 55 39		Tremor.
			i	56 46		
14	New Delhi	NE	iPg	23 57 25	90	Slight. Direction of first motion South and East.
			iSg	57 36		
	Poona	Z	eP	23 59 34		Tremor.
15	Epc: $51\frac{1}{2}^{\circ}$ N., $160\frac{1}{2}^{\circ}$ E. Off the East Coast of Kamchatka. O = 09h. 45m. 12s. (U.S.C.G.S.) Mag. $5\frac{1}{2}$ (Kiruna).					
	Bombay	E	e	09 41 23		
			e	42 23		
	Chatra	Z	e	09 55 18		Slight, distant. Feeble, surface waves.
		NE	e	10 18 00		
	Poona	Z	iP	09 56 49		Long distant shock.
	Kodaikanal	E	e?	10 28 09		Tremor.
16	Chatra	Z	i	05 25 00		Feeble, Near.
			i	25 14		
16	Shillong	E	e	23 47 47		Slight.
			e	48 17		
			e	48 34		

15

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
17	New Delhi	NE	ePg iSg	04 01 31 01 59	70	Slight.
17	New Delhi	NE	iPg iSg	14 13 47 13 57	80	Slight. Direction of first motion South and West.
17	Madras	E	e	18 03 21		Tremor.
	Poona	Z	e i	18 09 37 11 26		Tremor.
	Hyderabad	N	i	18 10 12		
17	Epc: $34\frac{1}{2}^{\circ}$ N., 24° E. in Near South Coast of Crete Island. O = 23h. 03m. 58m. (U.S.C.G.S.) $34\frac{3}{4}^{\circ}$ N., $24\frac{3}{4}^{\circ}$ E. O = 23h. 03m. 55s. (B.C.I.S.) Mag. $6\frac{3}{4}$ (Pasadena); 6,4 (Praha); 6 - $6\frac{1}{2}$ (Strasbourg); 6 (M' Bour).					
	New Delhi	NE N NE N	iP PP iS PPS	23 12 15 14 06 18 51 19 06	4950	Moderate. Direction of first motion North and West.
			SS LQ M	22 05 22 35 23 51		
	Bombay	NE E N NE	iP PP PPP PPP iS PPS	23 12 23 14 00 14 46 14 52 19 01 19 16	5040	Slight to Moderate.
			SS LQ LQ SSS SSS LR	22 14 22 54 23 44 23 10 23 55 26 --		
	Poona	ZE E	iP PeP PP PPP iS SS M	23 12 31 13 52 14 22 15 12 19 18 22 30 33 02	5160	Moderate.
	Hyderabad	NE E NE E N	iP PP iS SSS SS L M	23 13 01 15 04 20 16 22 47 24 26 29 19 35 06	5630	
		E	M	35 11		Per. = 22 secs μ = 14. Per. = 20 secs μ = 11.
	Chatra	EZ NE	iPY ePY PeP PP PPP PeS eS	23 12 25 14 25 15 21 16 25 18 28 20 54	5920	Moderate.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Dec 1952					
17	Chatra (Contd) (Contd)	NE	PS PPS ScS SS LQ LR M	23 21 02 21 17 23 10 24 45 26 10 29 00 33 05	
	Kodaikanal	E	eP iS M	23 13 26 21 03 33 27	6040 Slight. Long distance.
	Madras	E	iP PcP FP PPP iS PS PPS ScS SS LR	23 13 30.7 14 21.7 15 31.7 16 47.7 21 07.4 21 15.7 21 27.7 23 07.7 24 43.7 29 35.7	6040 Moderate.
	Calcutta	E	iP iS ScS LR	23 13 45 21 34 23 31 30 11	6250 Moderate.
	Shillong	EN E NE E	iP i ScP eS SS	23 13 53 14 20 18 41 21 45 25 28	6300 Slight. First movement West.
18	Epc: Region Solomon Island. 0 = 08h. 34m. 50s. (U.S.C.G.S.).				
	Shillong	E	e	08 46 11	Feeble, tremor.
18	Epc: 53½° N., 162° E. in Off East Coast of Kamchatka. 0 = 09h. 20m. 23s. (U.S.C.G.S.) Mag. 6 (Kiruna).				
	Chatra	NEZ NE E NE E N	eP PcP PP PPS PcS eS PS PPS ScS SSS LQ LR MX MX	09 30 40 31 32 33 00 34 13 35 37 38 54 39 00 39 11 40 28 44 43 45 32 48 15 54 15	6700 Moderate.
	New Delhi	N	eP PcP eS SS M	09 31 09 31 41 39 48 44 04 57 04	7170 Moderate.
					Per. = 13.5 secs μ = 9. Per. = 13.5 secs μ = 10.

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
18 (Contd)	Hyderabad	EN N E	iP iS M M	09 31 55 41 21 10 01 55 01 46	8030	Per. = 14 secs μ = 9. Per. = 14 secs μ = 3.
	Poona	Z E	iP eS	09 32 00 41 43	8250	Slight. Distant.
	Bombay	NE E NE E N N NE E	eP PP PPP eS SKS PS PS PPS SS	09 32 11 35 07 36 50 41 48 42 03 42 23 42 29 42 43 46 47	8310	Moderate.
	Kodaikanal	E	eP eS SS M	09 32 32 42 32 42 53 10 04 34	8800	Slight, long distance. Per. = 15 secs μ = 4.8.
	Colombo	E	eP S	09 32 50 42 50		
	Calcutta	E	e M Mn	09 34 45 59 31 10 07 13		Slight, distant.
	Shillong	E	e M	09 52 54 55 07		Feeble, distant.
18	EpatraOff the SouthEast Coast of Ramchatka. 0 = 10h. 30.7m. (USCGS). (B.C.I.S.)					
	Chatra	NEZ NE	eP eS M	10 41 00 49 20 11 05 00	6810	Slight.
	Hyderabad	N EN N	eP iS M	10 42 19 51 42 11 11 30	8030	Per. = 14 secs μ = 6.
	Bombay	NE E NE E	eP PP PPP eS PS PPS SSS	10 42 41 45 29 47 17 52 09 52 31 53 03 59 55	8130	Slight.
18	Shillong	E	e M	11 02 59 05 14		Feeble, distant.
18	Chatra	Z	i i	19 57 40 58 04		Feeble, near.
19	New Delhi	E	ePg eog	01 52 25 52 29	30	Slight.
19	Shillong	EN	eP P* Pg	14 41 10 41 11 41 14	200	Slight.

18

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
19	Shillong (Contd) (Contd)	EN	1FP eP iSg SS	14 41 23 41 33 41 36 41 44		
19	Bombay	NE	e	19 33 05		
20	Shillong	E	e e e	00 57 23 58 15 58 56		Tremor.
20	Chatra	Z E	1PY ePY P* Pg PPP LQ LR iS S* Sg SS SSS	04 01 20 01 21 01 25 01 32 01 33 01 44 01 48 01 51 01 55 01 57 02 09	240	Slight.
	Bombay	E NE E	e e i	04 04 37 06 16 10 27		Tremor.
	New Delhi	NE E NE	eP PPP LQ iS SS	04 02 30 03 12 04 31 04 43 04 55	1010	Slight.
20	Shillong	EN E NE	1P LQ iS i S* Sg	04 31 21 32 06 32 17 32 19 32 23 32 27	320	Slight.
20	Felt locally at Shillong by a few persons.					
	Shillong	NE E N E NE	1Pg i i i i iSg	21 36 28 38 32 38 34 38 38 38 38 38 40	100	Slight.
21	Epc: 6 $\frac{1}{2}$ ° S., 128° E. Banda Sea. 0 = 05h. 51m. 08s. (B.C.I.S.). 0 = 05h. 51m. 06s. (USCGS).					
	Chatra	NEZ NE	eP eS	06 00 22 07 45		Slight. Feeble surface waves.
	Madras	E	1P iS	06 00 22.7 07 42.0	5710	Slight.
	Hyderabad	E N	eP iS SS	06 00 45 08 29 12 22	6150	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
21 (Contd)	Poona	Z E	1P 1S PS PPS SS	06 01 16 09 25 09 42 09 54 13 32		
	Bombay	E NE	eP PP PPP 1S PS PPS	06 01 23 03 44 05 17 09 43 10 07 10 19	6820	Slight.
		E N	SS SS SSS	13 56 14 07 16 32		
		E NE	SSS LQ	16 34 17 --		
	New Delhi	NE N	eP PP CS 1PS SS SSS	06 01 23 03 32 09 26 09 33 13 19 15 39	6500	Moderate.
	Kodaikanal	E	e?	06 08 13		Tremor.
21	New Delhi	NE E NE	eP PP PPP PS 1S SS LR SSS S*	08 12 25 12 32 12 39 13 04 14 02 14 12 14 16 14 25 14 34	940	Slight.
		E	i	14 43		
	Poona	Z	1P	08 14 21		Tremor.
21	Poona	E	i(S)?	17 45		
22	Bombay	Z N	1P e e e	14 14 03 10 16 29 20 32 26 11		Tremor. Long distance shock.
22	Chatra	N	e	10 22 32		Feeble. Surface waves.
22	Epc: 54° N., 160½° E. in near East Coast of Kamchatka. O = 22h. 24m. 42s. (U.S.C.G.S.) Mag. 6½ (Pasadena); 6 (Kiruna, Uppsala).					
	Chatra	NE	eP? eS? i(ScS?) e	22 34 44 42 48 44 29 57 07	6520	Slight, distant.
	Hyderabad	N	eP 1S M	22 36 11 45 16 23 05 15	7660	
		E	M	05 28		Per. = 14 secs u = 6. Per. = 12 secs u = 3.

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s.	km.
Dec. 1952					
22 (Contd)	Poona	Z E	iP PcP PP PPP eS ScS PS PPS SS SSS LQ	22 36 17 36 33 39 05 40 53 45 41 46 17 46 23 46 37 50 31 53 46 55 32	8060 Moderate.
	Bombay	N NE N	eP eS PPS SS M	22 36 19 45 41 46 22 50 17 23 15 32	Per. = 19 secs $\mu = 5$.
	New Delhi	N	PcS eS ScS SSS LQ M	22 39 42 43 31 44 52 50 25 51 19 59 21	7000 Moderate.
	Calcutta	E	i e e i	22 44 48 50 50 57 58 23 01 40	Slight, distant.
23	Poona	Z	iP	23 09 53	Tremor.
24	Shillong	E	e	08 14 25	Feeble.
24	Epc: 51° S., 151° E. (New Britain). 0 = 08h. 33m. 25s. (USCGS). Mag. 7 ca (Wellington).				
	Chatra	NEZ NE	eP e	08 44 33 54 09	Slight. Feeble surface waves.
24	Kodaikanal	E	eP eS	08 45 00 54 42	8420 Feeble, long distant.
	New Delhi	NE N	P eS PS PPS SS	08 45 29 55 18 55 56 56 13 09 00 20	8570 Moderate.
	Poona	Z	iP	08 45 34	Tremor.
	Bombay	NE N E NE L N E N	eP PPP PPP eS ScS PS PS SSS	08 45 43 50 35 50 45 55 43 55 53 56 25 56 33 09 04 36	8800 Slight.
24	Poona	Z	iP	09 12 26	Tremor.

21

DATE	STATION	COMPT	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Dec. 1952					
24	Epc: 29° N., 130° E. Riou-Kiou Island. 0 = 14h. 27m. 21s. 29° N., 131° E. (C.M.O., Japan). (U.S.C.G.S.)				
	Chatra	Z	iY	14 34 43	Slight, distant. Surface waves. Per. = 15 secs μ = 12.
		N	eY		
			e	52 00	
	Poona	Z	iP	14 36 35	Tremor.
	Kodaikanal	E	e	14 44 00	Tremor.
24	Poona	Z	iP	16 00 52	
24	Epc: 5½° S., 151½° E. in New Britain; 0 = 18h. 39m. 33s. G.M.T. 5.9° S., 151.2° E. 0 = 18h. 39m. 6 (B.C.I.S.). (U.S.C.G.S.). Mag. 7 - 7½ (Strasbourg, Wellington); 7.1 (Praha); 5 (Pasadena, Uppsala, Kiruna).				
	Shillong	E	eP(?)	18 50 24	Slight.
			e	51 24	
			e	59 14	
	Calcutta	E	i	18 50 43	7250 Moderate. First movement East.
			PcS	55 20	
			IS	59 26	
			PPS	59 58	
			SKS ₁	19 00 40	
			LQ	07 23	
			LR	10 18	
			PKKP ₁	11 00	
			M	15 56	
	Chatra	Z	iPY	18 50 51	7910 Moderate.
		E	ePY		
			PcP	51 18	
			PP	53 47	
			PPP	55 28	
			eS	19 00 08	
			PS	00 28	
			PPS	00 43	
			SS	04 17	
			SSS	07 32	
			LQ	09 24	
			LR	12 51	
			M	17 40	
					Per. = 19 secs μ = 24.
	Kodaikanal	E	eP	18 51 33	8800 Slight, long distant.
			e	19 01 33	
			LQ	13 22	
			LR	17 00	
			M	23 40	Per. = 21 secs μ = 13.4.
	New Delhi	NE	eP	18 51 44	8780 Moderate.
		N	PP	54 35	
			eS	19 01 43	
			ScS	02 03	
			PS	02 32	
			SS	06 49	
			SSS	10 29	
			LQ	12 47	
			LR	16 13	
			M	22 48	

22

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

Dec

1952

24
(Contd)

Poona

Z
E

1P
SKC,S
PS
PPS
SS
SSS

18 51 49
19 01 53
02 47
03 11
07 13
10 37

8920 Moderate.

24

Bombay

NE
E
NE
E
N
E
NE
E
N

eP
PP
PPP
eS
ScS
PS
PP3
PP3
SS
SSS
LQ
M
M

18 52 03
55 12
57 12
19 02 13
02 28
02 53
03 22
03 28
07 32
11 02
13 55
21 30
- -

9020 Moderate to Great.

Per. = 34 sec μ = 30.

24

Epc: $5\frac{1}{2}^{\circ}$ S., $151\frac{1}{2}^{\circ}$ E. New Britain. 0 = 21h. 37m. 05s. (USCGS)
Mag. $6\frac{1}{2}$ (Wellington).

Chatra

EZ
E

eP
eS
SS
M

21 48 23
57 39
22 02 15
15 06

7890 Slight.

New Delhi

NE
N

eP
e
e
i
e

21 49 16
59 02
59 13
22 05 14
06 28

Distant.

24

Bombay

N
E
NE
N
E

ePY
iPY
PP
e(?)
eS
PS
PS

21 49 28
52 49
59 05
59 33
22 00 30
00 38

25

Epc: $5\frac{1}{2}^{\circ}$ S., $151\frac{1}{2}^{\circ}$ E. in New Britain. 0 = 02h. 28m. 39s. (USCGS).
Mag. $6\frac{1}{2}$ (Wellington).

Calcutta

E
e
i

02 39 41
43 09
49 12

Slight, distant.

Chatra

EZ
E

eP
eS
PPS
SS
M

02 39 57
49 09
49 45
53 45
03 10 00

7800 Slight.

Kodaikanal

E

e

02 40 25

Tremor.

Bombay

E

eP
PP
eS
e(?)
PS
i(?)

02 41 00
44 15
51 09
51 32
52 07
53 05

9000 Slight.

23

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
25	Bombay	E	eP eS e	15 09 04 19 14 19 30	9020	Feeble.
25	Kodaikanal	E	e	17 02 01		Tremor.
25	Shillong	E	eP i i	18 38 47 40 10 40 45		Slight.
25	Epc: 29° N., 69½° E. in Central Pakistan; 0 = 22h. 22m. 42s. (USGGS) Mag. 5½ (Kiruna, Uppsala).					
	New Delhi	NE	eP PP Pg i iS S* Sg	22 24 22 24 29 24 53 25 04 25 34 25 54 26 12	690	Slight.
	Dehra Dun	N	e e M ₁	22 24 42 25 42 26 42		Per. = 18 secs μ = 0.54.
25	Bombay	NE E	eP PP PPP LQ	22 25 18 25 28 25 38 27 08	1390	
		NE E	iS SS	27 39 27 43		
		N E	SSS M M	27 56 29 56 31 17		Per. = 20 secs μ = 41. Per. = 9 secs μ = 46.
	Poona	Z E	iP PP PPP S e SSS e M e	22 25 26 25 46 25 48 27 51 27 55 27 57 28 10 29 33 30 33		Moderate.
	Hyderabad	N	iP i L M	22 26 03 29 04 29 47 31 17		Per. = 10 secs μ = 112.
	Chatra	NEZ NE	eP e PP i? iS SS SSS LR	22 26 19 26 36 26 47 29 02 29 33 29 51 30 06 30 17	1950	Moderate.
		E N	MY MY	31 29		Per. = 6 secs μ = 327. Per. = 6.5 secs μ = 357.

24

DATE	STATION	COMPT.	PHASE	G. M. T.	REMARKS
				h. m. s. km.	
Dec 1952					
25	Calcutta	E	eP	22 27 02	Moderate.
(Contd)			PP	27 15	
			i	30 00	
			S	30 17	
			i	30 30	
	N	JS		30 33	
	E	M		31 52	
	N	M		32 03	
	Madras	E	iP	22 27 07	Moderate.
			PP	27 26	
			PPP	27 36	
			i	30 47	
			S	30 59.8	
			e	31 12.8	
			SSS	31 19	
			e	31 52	
			M	33 19.8	
	Shillong	E	eP	22 27 18	Moderate.
	NE	e		30 37	
		e		30 43	
	E	i		30 48	
		(S)		30 53	
	NE	e		31 12	
	E	e		31 24	
	N	e		31 27	
		e		31 41	
	NE	LR		31 43	
	E	M		33 17	
	N	M		33 20	
	Kodaikanal	E	eP	22 27 22	Moderate.
		e		31 10	Per. = 7 secs μ = 9.6.
	Colombo	E	P	22 28 06	
		e		33 31	
		L		33 03	
		M		33 03	Amp = 8.6.
25	Poona	Z	iP	23 20 00	Tremor.
26	Epc: $11^{\circ}30'$ N., $121^{\circ}30'$ E. (Philippines); O = 04h. 03m. 26s. (BCIS).				
	Poona	Z	iP	04 11 54	Tremor.
	Bombay	E	e	04 12 --	Tremor.
		N	e	18 54	
	Kodaikanal	E	e?	04 13 24	Tremor.
27	Epc: 53° N., 160° E. in East Coast of Kamchatka. O = 01h. 28m. 54s. (U.S.C.G.S.).				
	Shillong	E	iP	01 35 32	Tremor.
	Chatra	Z	iX	01 35 48	Slight, distant.
		NE	eX		
			e	43 52	
			e	02 00 30	
	Calcutta	E	e	01 36 02	Slight, distant.
			i	44 47	
			Mn	02 06 42	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
27 (Contd)	Poona	Z E	1P S	01 37 20 46 48	8130	Slight.
	Bombay	NE E	1P PP PPPP eS SKS PS PPS	01 37 22 40 04 41 59 46 49 47 07 47 22 47 44	8110	Feeble.
		N E	M M	02 13 31 13 32		Per. = 13 secs μ = 6. Per. = 13 secs.
	Kodaikanal	E	eP e M	01 37 40 43 03 02 11 18	9310	Slight. Long distance. Per. = 15secs μ = 48.
27	Epc: 31. 0 = 18h. 35m. 38s. (U.S.C.G.S.) Epc: 31°2 N., 78°8 E., West Punjab; 0 = 18h. 45m. 40s. (BCIS) 31° N., 78°5 E. 0 = 18h. 45m. 45s. (Shillong).					
	New Delhi	NE N E NE N	1P P* PP Pg PPP LQ 1S	18 46 38 46 43 46 46 46 49 46 53 47 06 47 17	360	Slight. Direction of first motion North and West.
	Dehra Dun	N	1Pg 1Sg M ₁	18 46 01 48 37 48 46	360	First motion South. Per. = 2 secs μ = 0.02.
	Chatra	Z NE	1PY ePY PP PPP LQ 1S SS SSS M	18 48 30 48 40 48 55 50 29 50 39 50 51 51 06 52 30	1270	Slight.
	Bombay	NE E NE 1Q E	eP PP PPP LQ 1S SS LR	18 48 39 48 43 48 56 50 44 50 52 51 08 51 18	1270	Feeble.
	Poona	Z E	1P PP PPP LQ S SS SSS M PcS ScS	18 48 39 48 48 48 58 50 48 50 53 51 12 51 24 52 26 57 24 19 00 49	1310	Moderate.

26

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec. 1952						
27	Hyderabad	N	eP	18 48 59	1450	
(Contd)			eS	51 27		
			L	52 33		
			M	53 11		Per. = 8 secs, u = 6.
	Calcutta	E	eP	18 49 15	1680	Slight.
		N	iP	4 49 13		
		E	?	51 45		
			iS	52 02		
		N	iS	52 02		
	Shillong	NE	eP	18 49 23	1640	Slight.
			SP(?)	49 32		
			PPP	49 43		
			LQ	52 12		
			eS	52 17		
			SS	52 29		
			SSS	52 44		
			LR	52 56		
		E	M	53 01		
	Madras	E	eP	18 49 57.0		Slight.
			L	53 14.4		
			SS	53 40.3		
			SSS	53 51.3		
			LR	54 07.0		
			PcP	54 19.0		
			M	55 37.0		
	Kodaikanal	E	e?	18 54 03		Slight. Short distant.
28	Epc: 65½° N., 167½° W.; 0 = 04h. 55m. 06s. (U.S.C.G.S.).					
	Chatra	Z	iX	05 06 34		Slight, distant. Feeble
		NE	eX			surface waves.
			e	34 00		
	Poona	Z	iP	05 07 45		Tremor.
	Bombay	E	e	05 13 12		Long distance shock.
		N	e	13 32		
		E	e	26 35		
28	Chatra	Z	i	05 21 26		Feeble, near.
			i	22 04		
	Kodaikanal	E	e?	05 32 25		Tremor.
28	Chatra	Z	i	06 39 11		Feeble, very near.
		NE	i	39 18		
28	Chatra	Z	iX	14 09 21		Slight, distant. Surface
		E	eX			waves.
			e	23 00		
28	Epc: 6° N., 127° E. Off the East Coast of Mindanao, Philippines C = 14h. 49m. 14s. (U.S.C.G.S.).					
	Shillong	EN	eP	14 56 39	5	Slight, distant.
		E	e	33 14		
			eS	15 02 28		
		EN	e	09 43		
			e	10 17		

DATE	STATION	COMPT.	PHASE	G. M. T.	h. m. s.	km.	REMARKS
<u>Dec</u> 1952							
28	Shillong	EN	e	14 14 41			
(Contd)	(Contd)		e	18 52			
			e	21 03			
			M	24 21			
28	Calcutta	E	eP	14 56 58		4670	Moderate.
			PcP	58 48			
			PcS	15 02 48			
			SS	06 12			
			LR	08 58			
			Mn	30 42			Per. = 16 secs μ = 48.
	Chatra	Z	i(P)	14 57 16			Slight, distant.
	Madras	E	iP	14 57 45		5360	Moderate.
			PP	59 35			
			eS	15 04 44			
			SS	08 03			
			SSS	09 47			
			LQ	09 30			
			M	16 35			
	Colombo	E	P	14 57 50			
			SCS	15 09 52			
			L	27 20			
			M	34 23			Amp = 0.6.
	Kodaikanal	E	P	14 58 04			Slight, long distant.
							Per. = 19 secs μ = 23.6.
	New Delhi	NE	P	14 58 24		5840	Moderate.
		N	PPP	15 01 30			
			PcS	03 31			
			eS	05 50			
			ScS	08 03			
			LQ	12 24			
			LR	14 27			
			M	18 09			
	Poona	Z	iP	14 58 35			Moderate.
		E	e	15 06 15			
	Bombay	NE	eP	14 58 43		6160	Slight.
		E	PP	15 00 48			
			PPP	01 56			
		NE	eS	03 27			
			PS	03 34			
			PPS	06 42			
			SS	10 11			
			SSS	12 10			
28	Calcutta	N	i	15 00 32			Slight, very near.
28	Epc: 6°5 N., 127°0 E. Off the East Coast of Mindanao.						
				0 = 15h. 01m. 20s. (B.C.I.S.)			
				6° N., 127° E. 0 = 15h. 01m. 19s. (U.S.C.G.S.)			
				Mag. 6½ (Kiruna), 6½ (Uppsala).			
	Poona	Z	iP	15 10 40		6090	Moderate.
		E	S(?)	13 19			
28	Bombay	N	e(P)	15 11 54			Slight.
			e(S)	19 22			

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

Dec
1952
28

Epc: 25° N., 63° E. 0 = 18h. 40m. 20s. (U.S.C.G.S.)
 26° N., 63° E. 0 = 18h. 40m. 23s. (B.C.I.S.)
 0 = 18h. 40m. 08s. (Shillong).

Bombay	NE	eP	18 42 56	1260 Feeble to Slight.
	E	PP	43 07	
	NE	LQ	44 57	
		eS	45 04	
		SS	45 16	
		SSS	45 31	

Poona	Z	1P	18 43 11	1390 Slight.
	E	PP	43 22	
		PPP	43 30	
		LQ	45 26	
		S	45 33	
		SS	45 48	
		SSS	46 00	
		M	47 00	

New Delhi	NE	eP	18 43 55	1400 Slight.
	N	PP	43 34	
		LQ	45 39	
		iS	45 47	
		SS	46 01	
		LR	46 14	
		M	47 30	

Madras	E	1P	18 44 56.2	2280 Slight.
		iS	48 40.7	

Kodaikanal	E	1P	18 44 58	2290 Slight, short distant.
		iS	48 44	
		M	51 30	

Per. = 13 secs μ = 4.7.

Chatra	Z	1PY	18 45 15	2510 Slight.
	NE	ePY		
		PP	45 26	
		PcP	48 52	
		iS	49 19	
		SS	50 08	
		SSS	50 30	
		LR	51 05	
		M	52 56	

Colombo	E	P	18 45 36	
---------	---	---	----------	--

Calcutta	E	eP	18 45 37	2750 Slight.
		iS	49 57	

Shillong	E	e	18 45 56	Tremor.
----------	---	---	----------	---------

29 Epc: 49° N., 158° W. Off South Coast of Kamchatka.
 0 = 02h. 09m. 13s. G.M.T. (U.S.C.G.S.)
 Mag. 6 $\frac{1}{4}$ (Kiruna).

Chatra	Z	1PY	02 19 12	6500 Slight.
	NE	ePY		
		eS	27 15	
		M	30 00	

Shillong	E	e	02 19 15	Tremor.
----------	---	---	----------	---------

Poona	Z	1P	02 20 45	8110 Slight.
	E	S	03 30 12	

29

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	km.	
Dec 1952						
29 (Contd)	Bombay	NE	iP	02 20 49	8130	Slight.
		N	PP	23 32		
		NE	PPP	25 24		
			iS	30 17		
		E	PS	30 45		
		N	PS	30 53		
		NE	SS	35 04		
			SSS	38 15		
			LQ	40 11		
		N	M	49 37		Per. = 23 secs $\mu = 10.$
		E	M	50 32		
29	Bombay	N	e	09 22 --		Presumably long distance shock.
			e	24 43		
			e	34 29		
	Chatra	Z	iY	09 25 48		Slight. Surface waves.
		NE	eY			
			e	30 53		
			e	39 45		
	Poona	Z	iP	09 27 14		Tremor.
	Kodaikanal	E	e	09 27 55		Tremor.
29	Poona	Z	iP	12 23 40		Tremor.
29	Bombay	NE	e	17 42 00		Tremor.
			e	46 11		
30	Chatra	Z	i	09 00 16		Feeble, very near.
			i	00 28		
30	Poona	Z	iP	12 26 47		Tremor.
30	Bombay	E	e	13 00 22		Tremor.
		NE	e	10 14		
31	New Delhi	NE	iP	08 12 09	950	Slight.
		E	PPP	12 26		
		N	P*	12 29		
			Pg	12 53		
		NE	LQ	13 59		
			iS	13 47		
		N	SS	13 59		
		NE	SSS	14 10		
		N	S*	14 20		
	Poona	Z	eP	08 17 30		Tremor.
31	Poona	Z	iP	12 23 03		Tremor.
31	Poona	Z	iP	14 57 02		Tremor.
31	Poona	Z	eP	17 27 05		Tremor.
31	Chatra	Z	iY	21 53 38		Slight, distant.
		E	eY			
			e	22 03 53		Per. = 22 secs $\mu = 6.$
			e	16 38		
	Poona	Z	iP	21 55 12		Tremor.

30

- : Voluntary Observer's Reports : -

The following table contains a list of earthquakes reported by Voluntary Observers from various station from the month of December, 1952.

Place at which felt	Date	G.M.T. of Earthquake		Duration in secs	Intensity R.F. Scale	No. of shock	REMARKS
		h.	m.				
Shillong	13.12.52	10	30	4	VI	3	
S hillong	21.12.52	09	30	5	IV	1	

S.M./4.6.1954

@@*@*@*@*@*@*@*@*@*@*@*@*@*@*@*