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METEOROLOGICAL DEPARTMENT
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Instruments and their Constants.

Station	Instrument	Compt.	Period in sec.	Static Magnification	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N	12	350	7:1	16.0
	Milne-Shaw	E	12	350	3:1	8.0
	Sprengnether	E	7	-	-	30.0
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	E	12	250	20:1	8.0
Dehra Dun	Omori-Ewing	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12	250	20:1	8.0
	Milne-Shaw	N	12	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10	250	20:1	8.0
Madras	Sprengnether	E	7.5	-	-	35.0
New Delhi	Milne-Shaw	N	12	288	20:1	8.0
	Wood-Anderson	N	4	1000	20:1	16.0
	Wood-Anderson	E	2	2000	30:1	60
	Omori-Ewing	E	30	30	-	12.0
Poona	Milne-Shaw	N	12	250	20:1	8.0
	Wood-Anderson	E	4	1100	20:1	16.0
	Sprengnether Benioff	E Z	To = Tg = 6.6 - To = 1.0 Tg = .28		- Critical *	30.0 60.0
Shillong	Wood-Anderson from 16.7.53	E	1.5 upto 16.7.53	1300(?)	10:1	60.0
	-	-	1.5	1500(?)	6:1	30.0
	Wood-Anderson from 16.7.53	E	3.0 upto 16.7.53	1070	20:1	30.0
	-	-	3.0	1070	20:1	60.0



h. m. s. km.


July 1952

Mag.	Loc.	Dir.	Phase	Time	Dist.	Remarks
1	Bombay	E	e	01 11 05		Not clear in N comp. record.
1	New Delhi	N,E	eP	18 01 58		Slight, near.
		E	i	03 34		
		N	i	03 38		
3	New Delhi	N,E	eP	06 03 36	450	Slight.
		E	PP	03 44		
		N,E	iS	04 25		
			SS	04 35		
3	New Delhi	E	eP	23 00 57	810	Slight.
			iS	02 21		
			SS	02 31		
			SSS	02 39		
			S*	02 45		
		N,E	Sg	03 09		
5	Epc: $36\frac{1}{2}^{\circ}$ N., 71° E., Hindukush.					
	O = 17h. 19m. 39s. (Poona).					
	Felt at Srinagar, Gulmarg, Peshwar, Lahore, Nathiagali					
	Probable clock correction + 2 min. and Rawalpindi (Press Report).					
	Dehra Dun	N	eP	17 19 42	960?	Per. = 5 sec. $\mu = 0.04$.
			e	20 39		
			eS?	21 12		
			M	21 32		
	New Delhi	N,E	P	17 22 00	1,020	Moderate.
		N	PP	22 07		
			i	22 20		
			iP*	22 24		
			i	22 48		
			iPg	22 51		
			iQ	23 35		
			iS	23 46		
			Sg	24 53		
	Bombay	N	iP	17 23 45	1,980	Slight.
		E	eP	23 40		
		N	iS	27 02		
			PP	23 57		
		N,E	PPP	24 04		
			SS	27 20		
			SSS	27 34		
		N	M?	28 54		
		E	M?	29 19		
	Poona	E	iP	17 23 48	1950	
			PP	24 03		
			PPP	24 11		
			iS	27 02		
			SS	27 23		
			SSS	27 36		
			LR	27 55		
			PcP	28 17		
			M	29 13		
	Hyderabad	N,E	iP	17 24 10	2,210	Per. = 6 sec. $\mu = 7$.
		N	i	27 42		
		N,E	iS	27 49		
		E	L	30 02		
		N	M	32 00		

5	Shillong (Contd)	E	iP	17 24 16	2,230	Slight.
			PP	24 35		
			PPP	24 44		
			iS	27 57		
			LQ	28 07		
			SS	28 18		
			SSS	28 32		
			LR	28 56		
			M	30 36		
			ScP	31 49		
ScS	35 27					
	Calcutta	N	iP	17 24 16	2,220	Moderate.
			PP	24 34		
			iS	27 56		
			LQ?	28 05		
			?	28 12		
			SS	28 26		
	Madras	E	iP	17 24 51	3,570	Moderate.
			PP	25 11		
			PPP	25 34		
			?	25 53		
			iS	28 57		
			LQ	29 26		
			SS	29 43		
			SSS	29 56		
			LR	30 33		
			M	32 17		
	Kodaikanal	E	e?	17 26 25		Slight.
			e	30 21		
			M	33 36		
6	Shillong	E	e	20 26 56		Slight. Tremor.
			e	27 07		
			e	27 16		
7	New Delhi	N N,E	eP	01 44 44	1,320	Slight.
			LQ	42 49		
			eS	42 59		
			SSS	43 25		
			M	44 21		
9	New Delhi	N N,E	eP	11 44 45	960	
			iS	46 24		
		SS	46 34			
		E	SSS	46 45		
12	Shillong	E	P*	22 16 00	120	Slight.
			Pg	16 01		
			P	16 02		
			PP	16 08		
			S*	16 14		
			Sg	16 15		
			S	16 16		
			SS	16 26		
13	Epc: $18\frac{1}{2}^{\circ}$ S., $169\frac{1}{2}^{\circ}$ E., New Hebrides Islands;					
	H = 11h. 58m. 34s. h = about 300 kms (U.S.C.G.S.).					
Mag. 7 (Pasadena).						
	Kodaikanal	E	iS?	12 21 43		Slight.
			i	22 27		
			i	23 17		



Year	Station	Direction	Type	h	m	s	km	Intensity	Notes
1952 13 (Contd)	Shillong	E	eP	12	10	55	9,260	Moderate.	
			PP(?)			12	01		
			iSKS			20	58		
			S(?)			21	16		
			i			22	39		
			i			23	02		
	Hyderabad	E N,E N	eP	12	11	22	9,300		
			i			21	45		
			i			22	33		
			L			39	22		
			M			45	16		
							Per. = 12 sec. $\mu = 3.$		
	New Delhi	N,E N	e	12	11	56	11,920	Moderate.	
			iSKS ₁			22	04		
			iSKS ₂			22	37		
			iSKKS			22	56		
			iPS			25	12		
			PPS			26	07		
	Calcutta	E	e?	12	12	15	9,380	Moderate. Microseims	in the record.
			PPP			16	18		
			iSKS			21	11		
			iS			21	34		
			i			22	16		
			PPS			23	08		
			i			27	23		
			e			33	53		
	Poona	E	PP	12	16	05		Slight.	
			iSKS			22	09		
			iS			23	14		
			i			25	15		
	Bombay	E N N, E E N, E N N, E	e	12	16	19	11,110	Moderate.	
			e			16	25		
			e			17	43		
			PPP			18	28		
			iSKS ₁			22	13		
			e			22	54		
			iS			23	23		
			i			24	13		
			e			24	53		
			e			25	25		
e			26	10					
	Colombo	E	SKS(?)	12	21	22			
			e			27	44		
			e			39	32		
							Amp = 0.4.		
	Madras	E	iSKS	12	21	35		Moderate.	
			iS			22	13		
13	Epc:	3° S., 128° E. Ceram Sea. H = 17h. 34m. 26s. (USCGS).							
		3° S., 127° E. O = 17h. 34m. 36s. (Poona).							
		Mag. 6 $\frac{3}{4}$ - 7 (Pasadena).							
	Shillong	E	iP	17	42	44	4,840	Moderate.	
			i			42	53		
			i			45	13		
			PP			44	23		
			i			44	47		
			PPP			45	01		
			e			45	39		
			S			49	14		
			PS			49	20		

PHASE G. M. T. 
h. m. s. km.

REMARKS.

DATE	Station	Phase	G. M. T.	h. m. s.	km.	REMARKS.
July 1952	Shillong (Contd)	E PPS	17 49 27			
		i	50 24			
13 (Contd)	Shillong (Contd)	e	52 08			
		SS	52 21			
Calcutta	N	iP	17 43 03	5,020	Moderate.	
		iS	49 43			
		SS	52 54			
Colombo	E	P	17 43 15	5,220		
		S	50 07			
		L	59 47			
		M	18 03 45		Amp = 0.7mm.	
Madras	E	iP	17 43 26		Moderate.	
		PP	45 19			
		PPP	46 27			
		ScP	48 27			
		iS	50 46			
		PPS	51 06			
		ScS	53 10			
		SS	54 42			
		LR	59 23			
		M	18 04 12		Per. = 20 sec.	
Kodaikanal	E	eP	17 43 34	5,580	Slight.	
		PcS	48 48			
		eS	50 46			
		ScS	53 30			
		LR	57 54			
M	18 02 02		Per. = 21sec. $\mu = 25.$			
Hyderabad	E	iP	17 43 45	5,690		
		PP	45 53			
		iS	51 04			
	N	ScS	53 30			
		SS	55 05			
		L	58 36			
E N	M	18 04 05		Per. = 24 sec. $\mu = 24.$		
	M	05 20		Per. = 20 sec. $\mu = 17.$		
Poona	N, E	iP	17 44 17	6,070	Slight.	
		PcP	45 21			
	N E	PP	46 24			
		PPP	47 48			
	N	iS	52 01			
		iS	52 02			
	E N, E N, E N, E	PS	52 02			
		PS	52 10			
		PPS	52 16			
		ScS	53 59			
SS		55 54				
SSS		57 32				
New Delhi	N, E	LR	58 36			
		eP	17 44 18	6,260	Moderate.	
New Delhi	N, E	PP	46 39			
		PPP	48 00			
		iS	52 08			
		PPS	52 26			
		ScS	54 05			
		SS	55 45			
		SSS	58 15			
		LQ	58 49			
		LR	18 01 23			
		M	06 58			



T. PHASE G. M. T. \triangle REMARKS.

h. m. s. km.

July 1952

13	Bombay	N,E	eP	17 44 25	6,310	Moderate.
			PP	46 29		
		N	PPP	47 45		
		E	PPP	47 32		
		N,E	iS	52 18		
		N	iPS	52 32		
			PPS	52 43		
		E	PPS	52 47		
			i?	53 32		
			iScS	54 17		
		N	iScS	54 08		
		E	i?	55 34		
		N	SS	55 51		
		E	SS	56 13		
		N,E	LQ	58 00		
			LR	18 01 00		
14	New Delhi	E	eP	18 25 29	310	Slight.
			LR	26 00		
			eS	26 04		
		N,E	S*	26 10		
			Sg	26 16		
			SSS	26 26		
17	Epc: $34\frac{1}{2}^{\circ}$ N., 136° E., Southern Honshu, Japan. Many casualties and moderate property damage. H = 16h. 09m. 52s. h = about 100 km (U.S.C.G.S.). Mag. 7 (Pasadena). 35° N., 135° E* 0 = 16h.09m.50s (Poor * Japan.					
	Shillong	E	iP	16 17 11	4,120	Moderate.
			i	17 27		
			i	18 22		
			PP	18 39		
			S	22 58		
	Calcutta	N	iP	16 17 55	4,670	Moderate.
			PP	19 33		
			iS	24 09		
			ScS	28 01		
	Dehra Dun	N	e	16 17 42?		
			eS	25 12		
			eL	35 30		
			M	35 57		Per. = 22 sec. Amp = 0.05
	New Delhi	N,E	iP	16 18 37	5,410	Moderate.
		N	PP	20 33		
			iS	25 39		
			i	26 07		
			iSS	29 15		
			i	29 51		
			SSS	30 21		
			LR	32 20		
			M	35 19		
			Mn	36 48		Per. = 28 sec. μ = 96.
	Hyderabad	N	iP	16 19 04	5,920	
			iS	26 35		
			L	35 02		
			M	39 02		Per. = 23 sec. μ = 37.
	Madras	E	iP	16 19 10	6,040	Moderate.
			PcP	20 00		
			PP	21 22		
			PPP	22 28		
			iS	26 48		
			PS	27 01		
			LQ	32 43		
			M	40 08		Per. = 9 sec.

h. m. s. km.

DATE	STATION	COMP.	TIME	TIME	TIME	AMPLITUDE	REMARKS
1952							
17	Kodaikanal	E	iP	16	19	36	6,420 Slight, distant.
(Contd)			iS		27	35	
			M		40	54	
	Bombay	N,E	iP	16	19	36	6,340 Moderate.
			PP		21	45	
			PPP		23	09	
		E	i?		24	30	
		N,E	iS		27	30	
			PS		27	48	
			PPS		27	59	
			SS		31	20	
			SSS		33	31	
			LQ		34	00	
		E	LR		36	00	
		N	LR		37	00	
	Colombo	E	P	16	19	42	
			S		27	44	
			L		38	47	
			M		42	29	Amp ± 0.5 mm.
	Poona	Z	iPY	16	39	31	6,150 Moderate.
		N,E	ePY				
		E	PcP		19	53	
			PP		21	26	
		N	PP		21	30	
			PPP		21	43	
		E	PcP		23	04	
			eSY		27	16	
		N	iSY				
		E	PS		27	36	
			PPS		27	45	
		N	PPS		27	46	
		E	ScS		29	09	
			SSS		33	59	
			LR		37	31	
18	Poona	Z	e	09	01	40	
			i		01	55	
18	Hyderabad	N	M	20	04	32	Per. = 16 sec. μ = 5.
21	Epc:	35°1 N., 118°9 W., Tulare Valley, Southern California. Several killed and extensive property damage. H = 11h. 52m. 11.5s. (U.S.C.G.S.) Mag. 7½ (Pasadena).					
	New Delhi	N	ePKP	12	10	24	13,290 Great.
			iPP		11	51	
			PPP		14	23	
			i		16	27	
			SKS		17	36	
			SKKS		18	55	
			iPS		21	26	
			iPPS		22	53	
			i		25	38	
			SSP		28	27	
			SSS		32	34	
			PKP/SKS		37	29	
			LR		47	51	
			M		55	51	
			Mn	13	07	57	Per. = 17 sec. μ = 79.



Year	Station	Dir	Type	h	m	s	km	Remarks
1952 21 (Contd)	Shillong	E	ePKP	12	10	30	12,490	Great.
			PP	11	12			
			e	13	02			
			PPP	13	36			
			PKS	14	14			
			SKS	17	16			
			e	19	31			
			PS	21	15			
			PPS	22	24			
			SS	27	09			
			SSS	31	17			
			LQ	38	47			
			e	43	10			
			e	46	22			
Poona	Z N	iPKP	12	11	17	14,220	Great.	
		PP	13	07				
		PKS	14	34				
		PPP	15	55				
		SKS	18	38				
		SKKS	20	04				
		SKKS	21	48				
		PS	23	07				
		PPS	24	41				
		i	26	34				
		SS	30	21				
		SSP	31	00				
		SSS	35	20				
		LR	50	21				
		M	13	01	00			
Colombo	E	PKP	12	11	30			
		e(PPS)	26	30				
		e	57	50				
		M ₁	13	03	10			
		M ₂	06	32				
Dehra Dun	N	e	12	11	30			
		e	19	54				
		e	35	12				
		eL	50	32				
		M ₁	13	01	42			
		M ₂	07	06				
Bombay	N,E E N N,E N E N E N,E N E	ePKP	12	11	37	13,980	Moderate. Strong micro- seisms in records.	
		PP	13	26				
		PPP	15	53				
		PPP	16	00				
		SKS	18	30				
		i?	19	52				
		PS	23	17				
		PS	23	21				
		PPS	25	14				
		iSS	30	24				
		M	13	15	00			
		M	09	10				
Calcutta	E	i	12	12	18	13,340	Great. Strong microseisms in the record.	
		PPP	16	13				
		SKS ₁	19	15				
		SKS ₂	19	23				
		SKKS ₁	20	42				
		PKKP ₂ ?	22	17				
		PKKP ₁	22	42				
		e?	28	30				
		SKKKS?	32	43				
		LQ	43	20				
		LR	49	48				

Amp₁ = 2.2mm.
Amp₂ = 2.1mm.

Per. = 24 sec. Amp₁ = 0.12.
Per. = 24 sec. Amp₂ = 0.12.

Per. = 18 sec. μ = 4.
Per. = 24, sec. μ = 3.

DATE	STATION	COMP.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
July 1952						km.	
21 (Contd)	Hyderabad	N	PP	12	13	07	
			e		14	31	
			e		19	45	
		E	e		30	28	
			e		44	19	
			e		56	58	Per. = 18 sec. $\mu = 67.$
	Madras	E	PP	12	13	34	Great. Strong microseism in the record.
			i		14	44	
			i		26	40	
	Kodaikanal	E	1 (PKS)	12	14	56	13,110 Moderate.
			PPP		16	28	
			e		19	04	
			e		37	36	
			e		46	53	
			LR		52	37	
			M	13	02	38	Per. = 25 sec. $\mu = 84.$
22	New Delhi	N,E	eP	03	33	43	980 Slight.
		E	i		33	47	
			PP		33	51	
			eS		35	24	
			SSS		35	44	
			S*		35	57	
23	Hyderabad	N	M	00	02	39	Per. = 22 sec. $\mu = 10.$
23				Epc: Aftershock of earthquake shock of 21d. 11h. 52m. H = 00h. 38m. 33s. (U.S.C.G.S.). Mag. 6 (Pasadena).			
	Hyderabad	N,E	e?	00	56	10	
	Poona	Z	ePKP	00	57	33	
			i		57	49	
			i		57	59	
24				Epc: $42\frac{1}{2}^{\circ}$ N., $145\frac{1}{2}^{\circ}$ E., Off East Coast of Hokkaido, Japan. Felt: Hokkaido and Northern Honshu. H = 22h. 09m. 20s. h = about 60km (U.S.C.G.S.).			
	New Delhi	N,E	eP	22	18	52	6,050 Moderate.
		N	PP		20	57	
			PcS		23	56	
			iS		26	30	
			ScS		28	43	
			SS		30	20	
	Poona	Z	1P	22	19	53	Very feeble.
			e		20	11	
	Hyderabad	N	M	22	51	06	Per. = 18 sec. $\mu = 9.$
25	Hyderabad	N	M	15	03	14	Per. = 18 sec. $\mu = 8.$
25				Epc: 19° N., 95° E., Lower Burma. O = 14h. 26m. 45s. (Poona), Felt at Rangoon (Press Report).			
	Shillong	E	1P	14	28	33	800 Slight.
			PP		28	41	
			PPP		28	47	
			P*		28	50	
			Pg		29	07	
			LQ		29	43	
			iS		29	56	
			SS		30	09	
			SSS		30	19	
			SG		30	39	

DATE STATION COMPT. PHASE G. M. T. \triangle REMARKS.

h. m. s. km.

July 1952

26 Calcutta N 1P 14 28 38 760 Slight.
 (Contd) iS 29 56
 SS 30 07

New Delhi N,E P 14 31 03 2,080 Slight.
 PP 31 19
 PPP 31 27
 N iS 34 29
 SS 34 48
 LR 35 16

Poona N,E 1P 14 31 16 2,190 Slight.
 E PPP 31 40
 eS 34 53
 LQ 35 04
 LR 35 56

Bombay N 1(S) 14 35 08 Feeble.
 N,E i 35 57

27 Epc: 20 $\frac{1}{2}$ ° S., 179° W., Fiji Islands;
 H = 08h. 23m. 22s. (U.S.C.G.S.)
 h = about 500 kms.

Hyderabad E e 08 40 43
 iS 47 44
 i 51 20
 e 59 53
 N e 09 00 10 Per. = 15 sec. μ = 6.
 Per. = 12 sec. μ = 3.

Colombo E e 08 41 02
 e 50 10

Bombay N,E ePKP 08 41 39 12,190 Slight.
 E e 42 17
 N,E e 44 43
 i 47 13
 SKS(?) 48 25
 N e 49 14
 E e 49 19
 e 52 01
 e 53 22
 N,E e 57 40
 E e 09 02 02
 e 16 00

New Delhi N e 08 43 10 Moderate.
 e 45 47
 i 47 01
 i 48 07
 i 48 33
 i 48 55
 i 51 33

Kodaikanal E 1? 08 46 44 Slight.

Poona E i 08 47 07 Feeble.
 Z i 47 52
 E i 51 02
 e 51 43

27 Hyderabad N M 19 36 49 Per. = 18 sec. μ = 6.

27 Poona Z 1P 20 07 15
 i 07 18
 i 07 30

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
July 1952							
27	Shillong	E	Pg	20	59	23	40 Slight. Felt locally.
			Sg		59	27	
			PP/S		59	35	
			PPP		59	41	
			SS		59	45	
31	Shillong	E	Pg	17	30	04	55 Moderate. Felt locally.
			P*		30	06	
	Shillong	E	P	17	30	08	
			Sg		30	10	
			PP		30	14	
			S		30	16	
			SS		30	20	

- : Voluntary Observer's Reports : -

The following table contains a list of Earthquakes reported by Voluntary Observers from various Stations for the month of July, 1952.

Place at which felt:	Date	G. M. T. of Earth- quakes		Duration	Intensity R. F. Scale	No. of shocks	Remarks.
		h.	m.				
SriNagar	5.7.52	17	30	5	VII	3	Three shocks at an interval of one second.
Gulmerg	6.7.52	17	30	5	VII	3	Three separate shocks at an interval of one second.
Peddur	23.7.52	01	00 to 01 30	A few Secs	-	-	Slight.
Shillong	27.7.52	21	00	30	VI	1	
Gauhati	31.7.52	17	30	10	VI	1	
Shillong	31.7.52	17	31	45	VI	2 to 3	

Table with columns for station names (e.g., 40 Sitka, 25 Nobeles), magnitudes (e.g., 2.0, 2.5), and times (e.g., 17 30 00, 19 20 00).

The following table contains a list of earthquakes reported by Voluntary Observers from various districts for the month of July, 1922.

Main table with columns for District, Magnitude, Time, and Description of Earthquake (e.g., Three shocks at an interval of one second).

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

JUNE 1952

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

Instruments and their constants

Station	Instrument	Compt.	Period in sec.	Static Magnification	Damping ratio	Paper speed mm/min.
Bombay	Milne-Shaw	N	12.0	350	6:1	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	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	N	12	250	20:1	8.0
Dehra Dun	Omori-Ewing	N	30	12.0	-	-
Hyderabad	Milne-Shaw	E	12.0	249	20:1	8.0
	Milne-Shaw	N	12	249	20:1	8.0
Kodaikanal	Milne-Shaw	E	10.0	250	20:1	8.0
New Delhi	Milne-Shaw	N	12.0	288	20:1	8.0
	Wood-Anderson	N	4.0	1000	20:1	16.0
	-do-	E	2.0	2000	30:1	60.0
	Omori-Ewing	E	30	30	1	12
Poona	Milne-Shaw	N	12.0	250	20:1	8.0
	Wood-Anderson	E	4.0	1100	20:1	16.0
	Sprengnether	E	$T_0=T_g=6.0$	-	-	30.0
	Benioff	Z	$T_0=1.0$	-	-	60.0
Shillong	Wood-Anderson	E	3.0	1070	20:1	30.0
	-do-	E	1.5	1500	10:1	60.0

SEISMOLOGICAL BULLETIN

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS.
				h. m. s.	Km	
June 1952						
1	Probable epicentre lat. 28.0° N., long. 100.0° E			0=14h. 41m. 15s(Shillong)		
	Shillong	E	P	14 43 14	890	Slight
			PPP	43 29		
			LQ	44 34		
			S	44 46		
			SS	44 58		
			M(?)	45 34		
	New Delhi	N,E	eP	14 45 51	2170	Slight
			PP	46 08		
		E	i	46 21		
		N	eS	49 26		
			M	52 30		
	Bombay	N,E	eS	14 50 00		Very feeble

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	Km.	
June 1952						
2	Hyderabad	N	M	00 22 18		Per. 12Sec. $\mu = 3.0$
2	0 = 02h. 54m. 22s. Near China (U. S. C. G. S) 0 = 02h. 54m. 23s. Epc: Lat. 29° 3' N., Long. 95° 1' E., in Tibet (B.C.I.S.) 0 = 02h. 54m. 27s. Epc: Lat. 29° 0' N., Long. 95° 0' E. (Shillong)					
	Shillong	E	iP P* PPP Pg LQ iS SS S* SSS Sg	02 55 39 55 48 55 53 56 04 56 26 56 37 56 48 56 50 56 58 57 03	550	Slight
	Calcutta	N	eP iS S* Sg	02 56 46 58 25 58 59 59 27	970	Slight
	New Delhi	N,E E N,E E N,E N	eP PP PPP iS SS SSS M	02 58 09 58 20 59 26 03 01 02 01 20 01 30 03 16	1720	Slight
	Hyderabad	E	eP S	02 58 52 03 02 40	2310	
	Poona	Z Z,E Z E N	iP PP eS SS LR LR M	02 59 26 59 56 03 03 26 04 20 04 51 04 53 06 13	2460	
	Bombay	E N N,E	iP) eP) eS LQ M	02 59 37 03 03 46 04 12 06 00	2590	Slight
2	Shillong	E	iPg(?) iSg(?) i	08 16 44 16 47 17 10		Slight, felt locally
2	0 = 10h. 08m. 03s. in Tibet (B.C.I.S.) 0 = 10h. 08m. 32s. Epc: Lat. 31.5° N., 90° 0' E. (Shillong)					
	Shillong	E	eP PP P* PPP LQ S LR SS S* SSS	10 09 50 09 58 10 02 10 05 10 38 10 49 10 53 11 11 02 11 05 11 12	560	Slight

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	Km.	
June 1952 2 (Contd.)	Calcutta	N	iP iS e?	10 10 40 12 28 13 00	1060	Slight; first movement south
	New Delhi	N,E N	iP PP LQ iS SS SSS M	10 11 26 11 34 13 26 13 39 13 53 14 05 15 16	1300	Slight
	Poona	Z E N,E,Z N E Z E Z N E	iP PP PPP S SS SS LQ SSS PcP M M	10 13 05 13 23 13 35 16 46 17 22 17 26 16 56 17 06 17 16 19 31 19 37	2230	Slight
	Bombay	N,E N E	eP eS LQ M M	10 13 09 16 51 17 03 19 54 19 59	2250	Slight Per.=7sec, $\mu=10$ Per.=7sec, $\mu=4$
	Hyderabad	E	eS L M	10 16 03 17 57 19 39		Per.=9sec, $\mu=4$
	Kodaikanal	E	e(SS)	10 19 06		Tremor
2	Epc. in Tibet O= 10h. 33m. 13sec. (B.C.I.S.)					
	Shillong	E	eP PP P* LQ iS SS S* SSS	10 35 06 35 13 35 15 35 48 36 00 36 11 36 15 36 22	500	Slight
	Calcutta	N	eP iS SS SSS	10 35 51 37 28 37 40 37 51	950	Slight
	New Delhi	N,E N N,E E N	eP PPP LQ iS SS SSS M	10 36 36 36 52 38 36 38 49 39 02 39 13 40 24	1300	Slight

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS
				h. m. s.	Km.	
June 1952						
2	Hyderabad (Contd.)	N	eP	10 37 41	2220	
		E	eS	41 21		
			L	43 10		
		N	M	44 40		
		E	M	44 47		Per.=10sec. $\mu=5$ Per.=9sec. $\mu=3$
	Poona	Z	iP	10 38 15	2200	Slight
			PP	38 43		
		Z,E	S	41 53		
		Z	LQ	42 02		
		E	LQ	42 06		
		Z	SS	42 19		
			SSS	42 41		
		E	SSS	42 42		
			LR	43 01		
		N	M	44 38		
		E	M	44 40		
	Bombay	N,E	iP	10 38 22	2250	Slight
			eS	42 03		
		N	LR	43 02		
		E	LR	43 10		
			M	45 09		
		N	M	45 09		Per.=7sec. $\mu=4$ Per.=8sec. $\mu=9$
	Kodaikanal	E	e?	10 44 21		
2	Poona	Z	iP	18 01 03		Tremor
			i	01 13		
			i	01 35		
2	0=18h.06m.43s. off the coast of Mindanao, Philippines (USCGS) 0=18h.06m.44s. Ipc: Lat.7°0 N., Long. 126°0E (BCIS)					
	Bombay	N,E	eP	18 16 11	5840	Feeble
			eS	23 37		
2	New Delhi	N,E	eP	19 03 26	1000	Slight
		E	PP	03 34		
		N,E	iS	05 09		
		N	1	05 17		
		E	1	05 26		
		N	1	05 36		
	Poona	Z	iP	19 05 22		Tremor
			i	06 38		
			i	09 51		
			i	10 04		
2	Poona	Z	1	22 48 08		
			1	48 11		
3	Poona	Z	1	00 24 08		
			1	24 12		
3	New Delhi	N,E	eP	11 23 36	970	Slight
			PP	23 49		
			1	23 53		
		N	e	24 48		
			LQ	25 03		
		N,E	iS	25 16		
		N	1	25 23		
		N,E	1	25 28		
		E	SSS	25 37		
		N	1*	25 49		
			1e	26 09		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ Km.	REMARKS
				h.	m.	s.		
June 1952								
3 (Contd.)	Poona	Z	iP	11	25	25	2040	Slight
			PP		25	31		
			PPP		25	38		
		Z	iS)					
		E	eS)		28	47		
		Z,E	SS		29	11		
		Z	SSS		29	25		
		E	SSS		29	27		
			LR		29	45		
		Z	LR		29	45		
			M		31	06		
		E	M		31	08		
3	Shillong	E	iP	12	51	43	170	Slight
			PP		51	50		
			PPP		51	56		
			iS		52	04		
			SS		52	13		
			SSS		52	24		
3	Poona	Z	i	12	59	36		
3	O=13h. 21m. 12s. Epc.off the coast of Mindanao , Hokkaido Japan (U.S.C.G.S)							
	Poona	Z	iP	13	31	33		
3	O=18h.49m.10s. Epc:- Lat.5°0S., Long.153°0E Solomon Is. h= 100Km.c.a.(U.S.C.G.S)							
	Poona	Z	iP	19	01	31		
	Bombay	N,E	eS	19	11	52		Very feeble
			ePS		12	33		
3	New Delhi	N,E	eP	23	26	44	980	Slight
		E	LQ		28	13		
		N,E	iS		28	25		
		N	SS		28	37		
			Sg		29	16		
	Poona	Z	i	23	28	32		
			i		28	36		
			i		28	59		
			i		29	10		
			i		29	15		
4	O=06h. 19m. 45s. Region frontier of Kashmir(U.S.C.G.S) O=06h. 19m. 49s. Epc:- Lat.37 ¹ / ₄ °N., Long.79°0E (B.C.I.S)							
	New Delhi	N,E	P	06	22	03	930	Slight
		N	PP		22	11		
		E	i		22	15		
		N	i		22	22		
			iS		23	39		
			SS		23	49		
			S*		24	08		
			Sg		24	37		
	Bombay	N,E	eP	06	24	17	2280	Slight
			eS		28	02		
			LR		29	16		
		E	M		31	22		Per.=8sec, $\mu=2$
		N	M		31	37		Per.=9sec, $\mu=4$

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS
				h. m. s.	Km.	
June 1952						
4	Poona	Z	1P	06 24 21	2050	Slight
(Contd.)		E	PP	24 36		
		Z	PP	24 38		
		E	PPP	24 42		
		Z	PPP	24 46		
		Z,E	S	27 44		
		E	SS	27 07		
			SSS	27 19		
		Z	SSS	27 20		
			LR	27 36		
		E	LR	27 40		
			M	30 20		
		Z	M	30 22		
	Hyderabad	N	P	06 24 25	2310	
			S	28 13		
			M	31 43		Per.=12sec. $\mu=12$
	Kodaikanal	E	eS	06 29 55		Tremor
5	Poona	Z	i	09 22 51		Tremor
			i	22 54		
			i	22 59		
5	New Delhi	E	ePg	21 35 58	18	Slight
			iSg	36 01		
7	Shillong	E	1P	01 04 05	450	Slight
			PP	04 12		
			S	04 53		
			SSS	05 12		
7	O=16h.01m.22s. Epc:- Near Hindukush h=220 Km.(B.C.I.S)					
	New Delhi	N,E	1P	16 03 26	620	Slight
		E	PP	03 44		
		N	LQ	04 33		
		N,E	eS	04 42		
			SS	04 53		
		N	S*	05 00		
		N,E	Sg	05 15		
8	New Delhi	N	eP	00 51 30		Moderate
	Shillong	E	1Pg	01 50 19	60	Slight
			iSg	50 26		
8	O=09h. 19m. 58s. Epc:- Lat. 8.0S., Long.66.0E in the Indian Ocean (B. C. I. S.)					
	Kodaikanal	E	1P	09 28 52	1170	Short distance
			iS	30 52		
	Poona	N	e	09 30 21		Tremor
			e	33 06		
	Bombay	N,E	e	09 30 42		Feeble
		E	e	36 22		
8	New Delhi	N,E	eP	12 44 51	1440	Slight
		N	LQ	47 09		
		N,E	eS	47 18		
			SS	47 34		
			SSS	47 46		
		N	M	48 57		
10	Hyderabad	N	M	09 59 20		Per.=22sec. $\mu=11$



h. m. s. km.

June
1952

10	0 = 09h. 58m. 27s. Epc: 15½° S., 178½° E. near Fiji Island (U.S.C.G.S.).						
	Mag. 6½ - 6¾ (Pasadena, Praha), 6-7 (Roma), 6½ (Wellington), 6¾ (Berkeley).						
	Bombay	N,E	e	10 16 00	12,340		Slight.
			PP	17 43			
			PS?	27 16			
	Kodaikanal	E	e?	10 16 24			Long distant.
	Colombo	E	PP	10 16 30			
			e	29 20			
			L	52 00			
			M	58 00			Amp = 0.3.
10	Poona	N	i	16 13 52			Tremor.
			i	21 00			
10	Hyderabad	N	e	23 51 21			
11	0 = 00h. 31m. 36s. G.M.T. Epc: 32° S. 67° 9 W. in the Province of San Juan, Argentina						
	0 = 00h. 31m. 32s. (B.C.I.S.).						
	Epc: 32° S., 67° 5 W. (U.S.C.G.S.).						
	Mag. 7 (Pasadena), 6¾ (Wellington), 6½ (Roma).						
	Bombay	N,E	ePKP ₁	00 51 14			Moderate.
		E	PP	54 29			
		N,E	e	55 00			
			SKKS ₁	01 01 22			
			e	04 45			
			e	07 06			
			eSS	13 13			
		E	M	56 36			Per. = 18 sec. $\mu = 5$.
		N	M	56 37			Per. = 18 sec. $\mu = 6$.
	Poona	E	iPKP	00 51 19			Tremor.
			M	01 46 00			
	Colombo	E	PKP	00 51 44			
	Colombo	E	L	01 41 19			
			M ₁	49 04			Amp = 0.5.
			M ₂	53 31			Amp = 0.5.
11	Bombay	N,E	e	17 23 00			Very feeble.
13	New Delhi	N,E	eP	21 55 11	1,370		Slight.
		N	eS	57 31			
15	Shillong	E	iPg	06 14 39	60		Slight.
			P*	14 40			
			iSg	14 46			
			S*	14 47			
15	New Delhi	N,E	iPg	07 43 49	20		Slight. Felt locally.
			iSg	43 51			
15	0 = 15h. 15m. 57s. Epc: 31° 7 N., 92° 0 E. (B.C.I.S.)						
	0 = 15h. 15m. 48s. South Eastern Tibet. (U.S.C.G.S.).						
	Shillong	E	eP	15 17 33	610		Slight.
			PP	17 40			
			P*	17 43			
			Pg	17 55			

PHASE G. M. T. Δ REMARKS.
 h. m. s. km.

June 1952								
15	Shillong (Contd) (Contd)	E	LQ iS LR SS SSS Sg	15 18 27 18 38 18 43 18 49 19 00 19 11				
	Calcutta	N	iP PP iS LR	15 18 17 18 26 19 58 20 17	990	Slight.		
	New Delhi	N,E	eP iS SSS	15 18 54 21 11 21 36	1,340	Slight.		
		N	M	22 35				
	Hyderabad	N,E	P	15 20 09	2,150			
		N	iS L	23 42 25 30				
		E	L	25 39				
		N	M	26 48			Per. = 6 sec. μ = 6.	
		E	M	27 06			Per. = 9 sec. μ = 11.	
	Poona	Z	iPX	15 20 38	2,360			
		E	ePX					
		N,Z	PPP	21 10				
		E	iSY eSY	24 30				
			LQ	24 48				
			SS	25 05				
			SSS	25 24				
		N	LR	25 40				
			M	27 11				
	Dehra Dun	N	eP eS eL M	15 20 42 22 32 23 32 24 18	1,010			Per. = 10 sec. μ = 0.05.
	Bombay	N,E	eP	15 20 43	2,380	Moderate.		
		E	PP	21 11				
		N	iSY	24 37				
		N,E	eSY					
			LQ	24 52				
			SS	25 17				
			SSS	25 30				
		E	M	29 07			Per. = 8 sec. μ = 10.	
		N	M	29 23			Per. = 8 sec. μ = 9.	
	Kodaikanal	E	eP? iS LR M	15 21 30 26 09 28 18 30 30	3,040	Slight.		Per. = 9 sec. μ = 6.4.
16	New Delhi	N,E	iPg iSg	14 33 28 33 30	20	Slight. Felt locally.		
17	O = 12h. 02m. 33s.		Epc:	132° E., 3° S.		(Shillong).		
	Calcutta	E	iP PPP iS ? SSS M	12 11 42 14 32 18 46 23 02 23 44 29 52	5,450	Slight.		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
June 1952						km.	
17 (Contd)	Hyderabad	E N	eP PP S	12 14	12 14	18 04	6,180
		E N	L M	30 34	29 55		
	Poona	N	e i	12 21	12 09	34	Per. = 13 sec. $\mu = 5.$
	New Delhi	E N	eP iS ScS SS	12 21 23 24	13 19 15 45	27	6,300 Moderate.
	Bombay	N,E	eS	12	21	00	Feeble.
19	Calcutta	E	e i Mn	08 26 28	19 12 52	36	Slight.
	Shillong	E	i(S)	08	24	37	Feeble.
	Bombay	N,E	e	08	32	38	Feeble. Tremor.
19	<p>O = 12h. 12m. 56s. G.M.T., Epc: 23° N., 100° E. in Southern Yunun Province, China. Mag. 6½ (Pasadena) (U.S.C.G.S.).</p> <p>O = 12h. 12m. 56s. Epc: 22°6' N., 100°0' E. (B.C.I.S.) Mag. 6½ (Pasadena), 6,5 (Roma), 7 (Praha).</p> <p>O = 12h. 12m. 53s. Epc: 28°6' N., 100° E. (Shillong).</p>						
	Shillong	E	iP PP P* Pg LQ S SS SSS Sg/M	12 15 15 15 16 16 16 17 17	14 04 11 22 29 37 49 03 35	50	1050 Slight. Amp = 5.
	Calcutta	E	iP PP iS LR	12 15 17 17	15 36 28 50	28	1,170 Great.
	New Delhi	N,E N	iP PP iS LQ SSS LR M Mn	12 18 21 21 22 23 24 25	17 04 35 43 35 06 32 35	42	2,370 Moderate. Per. = 13 sec. $\mu = 87.$
	Dehra Dun	N	eP iS eL M	12 21 24 25	17 30 30 42	42	2,480
	Kodaikanal	E	iP PP iS LR M?	12 18 22 24 27	18 55 46 55 11	19	2,860 Moderate. Per. = 14 sec. $\mu = 0.11.$ Per. = 12 sec. $\mu = 15.5.$

COMPT. PHASE G. M. T. \triangle REMARKS.

June 1952

19 Colombo (Contd)

Poona

Bombay

19 New Delhi

Bombay

20

Shillong

Shillong

Calcutta

E

Z,N,E

N,E

N

N,E

E

E

E

P

S

L

M

1P

PP

PP

PPP

iS

LQ

LQ

SS

SSS

LR

M

eP

PP

iS

LQ

SS

SS

LR

LR

M

M

e

i

e

e

1P

PP

iS

LQ

LR

M

ScS

1P

PPP

iS

1P

PP

PcP

iS

LQ

SSS

LR

M

Mn

12 18 20

22 50

28 05

31 07

12 18 21

18 51

18 53

19 07

22 44

23 30

23 36

23 52

24 07

24 45

27 00

12 18 31

19 08

22 56

23 00

24 00

24 44

24 52

24 54

31 13

31 30

21 27 57

45 31

22 09 37

22 06 00

05 52 01

52 23

56 41

57 35

59 10

06 01 29

02 49

05 52 10

53 05

56 53

05 52 34

53 41

55 27

57 40

59 15

59 43

06 00 22

03 22

06 17

\triangle

2,790

2,820

Per. = 11 sec. μ = 67.

Per. = 13 sec. μ = 34.

Moderate.

Feeble surface waves.

O = 05h. 46m. 20s. G.M.T., Epc: 25°5 N., 122° E. in Taipei near North Coast of Formosa. (U.S.C.G.S.).
 O = 05h. 46m. 17s. Epc: 24°3 N., 121°8 E. (B.C.I.S.).
 O = 05h. 46m. 21s. Epc: 27°0 N., 121°5 E. to the North of Formosa in the Sea (Shillong).
 Mag. 6½ (Pasadena, Berkeley, Praha), 6, 75 (Roma).

Slight. Probably a double shock.

Per. = 6 sec.

Slight.

Moderate.

Per. = 15 sec. μ = 164.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
<u>June</u>							
1952	New Delhi	N, E	iP	05	52	51	4,350 Moderate.
20		E	PP		55	23	
(Contd)		N, E	PPP		55	47	
		N	iS		59	52	
			i	06	00	34	
			SS		02	37	
			SSS		04	06	
			LR		04	41	
			M		07	39	
			Mn		12	40	
	Hyderabad	N	P	05	53	59	4,540 Per. = 14 sec. μ = 49.
			S	06	00	11	
			SS		03	28	
			L		06	05	
			M		09	47	Per. = 15 sec. μ = 32.
	Poona	E	iPY	05	54	34	4,910
		N	ePY				
		E	PP		56	24	
		N	PP		56	27	
		N, E	PPP		56	58	
			PcS	06	00	03	
			iS		01	13	
		N	PPS		01	37	
			SS		04	27	
			LQ		05	04	
		N, E	SSS		05	35	
		N	LR		07	52	
			M		10	27	Per. = 15 sec. μ = 35.
	Bombay	N, E	iP	05	54	40	5,060 Moderate.
			PP		56	53	
		E	iSY	06	01	22	
		N	eSY				
		N, E	iPS		01	30	
			PPS		01	38	
		N	SS		04	37	
		E	SS		04	45	
		N	LQ		05	22	
		E	LQ		05	30	
		N	M		14	04	
		E	M		17	45	Per. = 12 sec. μ = 11. Per. = 10 sec. μ = 7.
	Kodaikanal	E	iP?	05	54	41	
			iS?	06	01	11	
	Dehra Dun	N	eP	05	54	42	4,880
			eS	06	00	18	
			eL		08	00	
			M		08	42	
							Per. = 24 sec. μ = 0.06.
20	New Delhi	N	iP	18	47	57	660 Slight.
			Pg		48	23	
			eS		49	06	
			LR		49	12	
			Sg		49	45	
21	O = 06h. 28m. 57s. (Kuriles) Epc: 45° N., 154° E. (U.S.C.G.S.) Mag. 6 $\frac{1}{4}$ (Pasadena).						
	New Delhi	N	iP	06	39	12	5,720 Moderate.
			PcP		40	00	
			PP		41	09	
			eS		46	32	
			PEC		46	53	
			SS		49	53	

T.	PHASE	G. M. T.	△		REMARKS.
			h. m. s.	km.	
<u>June</u>					
1952					
21	Bombay	N,E	iP	06 40 16	7,780 Feeble.
	(Contd)		eP	49 26	
	Hyderabad	N	M	07 10 45	Per. = 14 sec. $\mu = 5.$
21	New Delhi	N	iP	08 49 03	1,220 Slight.
		E	PPP	49 18	
		N,E	eS	51 08	
		E	SSS	51 36	
		N,E	M	52 16	
22	O = 10h. 08m. 14s. (Kuriles) Epc: 46° N., 153° E. (U.S.C.G.S.) Mag. 6½ (Pasadena), 6-6½ (Praha).				
	New Delhi	N,E	P	10 18 29	6,670 Moderate.
		N	eS	26 41	
	Bombay	N,E	eP	10 19 40	7,810 Feeble.
		N	eS	28 52	
		E	e?	29 39	
	Hyderabad	N	M	10 46 57	Per. = 16 sec. $\mu = 8.$
22	O = 21h. 41m. 57s. Epc: 46°5 N., 155° E. (Shillong) O = 21h. 41m. 53s. G.M.T. Epc: 46° N., 155°5 E. in Kurile Island. (U.S.C.G.S.). O = 21h. 41m. 54s. Epc: 46°8 N., 153°5 E. (B.C.I.S.). Mag. 7,3 (Praha), 7½ (Wellington), 7 (Pasadena, Roma), 6½ (Strasbourg) 6½ (Berkeley).				
	Dehra Dun	N	eP	21 50 12	6,200
			eS	58 30	
			e	22 04 24	
			e	12 12	
			M ₁	15 12	Per. = 30 sec. $\mu = 0.10.$
			M ₂	18 02	Per. = 30 sec. $\mu = 0.18.$
	Shillong	E	iP	21 51 12	Moderate.
			PP(?)	53 17	
			PPP(?)	54 27	
			i	58 19	
			i	58 51	
			e	22 02 30	
			e	09 30	
			e	10 37	Per. = 16 sec.
	Calcutta	E	iP	21 51 48	6,260 Moderate.
			iS	59 38	
			ScS	22 01 36	
			LQ	05 43	
			LR	08 25	
			M	13 05	
			Mn	17 50	Per. = 15 sec. $\mu = 86.$
	New Delhi	N,E	iP	21 52 06	6,520 Moderate.
		N	PP	54 00	
			PPP	55 45	
			PcS	56 52	
			iS	22 00 10	
			PS	00 22	
			ScS	02 01	
			SS	04 09	
			i	04 44	
			SSS	06 21	
			i	07 10	
			M	14 10	
			Mn	20 24	Per. = 16 sec. $\mu = 110.$

		T.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
<u>June</u>						
<u>1952</u>						
22	Hyderabad	N	P	21 52 53	7,510	
	(Contd)		PP	55 30		
			S	22 01 50		
			SS	06 26		
			L	13 43		
			M	18 31		Per. = 19 sec. μ = 47.
Poona	N,E		iP	21 53 10	7,690	Moderate.
			PP	55 40		
	N		PcS	57 25		
	N,E		iS	22 02 16		
			PS	02 38		
	E		PPS	02 50		
			SS	06 50		
	N		SS	06 52		
			LR	14 17		
			M	20 02		Per. = 17 sec. μ = 7.0.
	E		M	20 05		Per. = 28 sec. μ = 6.0.
Bombay	N,E		iP	21 53 11	7,870	Moderate.
	N		PP	55 54		
	E		?	55 37		
	N,E		iS	22 02 26		
			PS	02 55		
			SS	07 00		
			LQ	11 12		
	N		LR	15 00		
	E		M	26 12		Per. = 15 sec. μ = 15.
	N		M	26 50		Per. = 15 sec. μ = 33.
Kodaikanal	E		iP	21 53 28	8,250	Moderate, Lond distance.
			PP	56 13		
			PPP	57 58		
			iS	22 03 01		
			PS	03 37		
			SS	07 46		
			LQ	12 58		
			LR	16 25		
			M	22 43		Per. = 2.1 sec. μ = 35.7.
Colombo	E		P	21 54 00		
			S	22 03 28		
			L	27 13		
			M	35 50		Amp = 1.3.
23	0 = 12h. 03m. 09s. G.M.T. Epc: 24°5 N., 122° E. near Formosa.					
	Mag. 5 $\frac{3}{4}$ (Pasadena) (U.S.C.G.S.).					
	0 = 12h. 03m. 10s. Epc: 24°3 N., 121°8 E. (B.C.I.S.).					
Shillong	E		iP	12 08 57		Slight.
			i	09 21		
			PP	09 46		
			e	10 42		
			iS	13 37		
			LQ	14 46		
			M	18 10		
			ScS	19 32		
Calcutta	E		iP	12 09 17		Moderate.
			i	14 38		
			e	16 37		
			e	18 17		
			e	19 38		
			M	20 58		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
<u>June 1952</u>						
23	New Delhi	N	eP PPP iS e M	12 10 47 12 38 16 48 19 44 25 02	4,350	Moderate.
	Bombay	E N N,E N N,E	eP eP eS SS SSS M	12 11 26 11 30 18 12 21 24 22 25 30 00	5,060	Slight.
	Poona	N,E N N,E N	eP PP iS PPS SS LQ SSS LR M	12 11 29 12 01 18 04 18 26 21 10 21 40 22 30 23 40 27 55	4,910	Moderate.
	Hyderabad	N	ePP S SS L M	12 12 41 17 12 20 27 22 50 26 56	4,460	Per. = 13 sec. $\mu = 9$.
24	O = 16h. 29m. 02s. Epc: $46\frac{1}{2}^{\circ}$ N., 154° E. (Kurile Island) (USCGS). Epc: $46^{\circ}5$ N., $152^{\circ}5$ E. (CMO, Japan). O = 16h. 29m. 03s. Epc: $46^{\circ}8$ N., $153^{\circ}5$ E. (B.C.I.S.).					
	Bombay	N,E	eP eS(?)	16 40 27 49 23		
25	O = 23h. 19m. 58s. Epc: $31^{\circ}5$ N., $101^{\circ}5$ E. (Shillong) O = 23h. 19m. 58s. Epc: 31° N., 101° E. in China. O = 23h. 19m. 56s. Epc: $31^{\circ}0$ N., $101^{\circ}5$ E. (B.C.I.S.). Mag. 6 (Bena -).					
	Shillong	E	iP PP PPP i i i(?) i SS LR PcP M ScP	23 22 16 22 33 22 41 24 16 25 15 25 27 25 30 25 45 26 15 26 46 27 53 31 00		Slight.
	Dehra Dun	N	eP e eL M	23 22 42 24 48 27 30 28 42		Per. = 12 sec. $\mu = 0.06$ "
	Calcutta	E	iP iS SSS LR M Mn	23 23 22 26 18 26 48 26 57 28 07 29 51	1,760	Moderate. Per. = 8 sec. $\mu = 116$.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
<u>June</u>							
1952							
25 (Contd)	New Delhi	N,E N	eP	23	24	43	2,400 Moderate.
			PP		25	10	
			PPP		25	22	
			iS		28	38	
			LQ		28	55	
			SS		29	11	
			SSS		29	27	
		M		31	44		
	Hyderabad	N	iP	23	25	17	2,890
			iS		29	46	
			L		33	05	
			M		36	19	
							Per. = 12 sec. μ = 19.
	Poona	N	eP	23	25	50	3,300
		N,E	PP		26	57	
		E	PPP		27	12	
		N,E	iS		30	46	
			LQ		32	12	
			SS		32	37	
			SSS		32	57	
		N	LR		33	38	
		N,E	M		36	26	
	Bombay	N,E	iP	23	25	54	
			iS		30	39	
			LQ		31	54	
		N	SS		32	05	
			SS		32	09	
			SSS		32	27	
		N,E	LR		33	15	
		N	M		35	30	
		E	M		40	36	
							Per. = 7 sec. μ = 10. Per. = 7 sec. μ = 6.
	Kodaikanal	E	e?	23	31	19	Slight.
	Colombo	E	S	23	31	28	
			e		37	20	
			L		43	18	
26	Shillong	E	i	00	29	26	Slight.
			i		29	35	
			i		30	01	
			i		30	09	
			i		31	59	
			i		33	37	
	Calcutta	E	i	00	29	51	Slight.
			i		32	14	
26	Bombay	N,E	e?	13	19	27	
27	G = 13h. 09m. 14s. Epc:			40°8 N., 23°7 E. (B.C.I.S.).			
	Bombay	N	eP	13	18	16	
			e?		26	52	
29	Shillong	E	eP	14	19	02	Feeble.
			iPg		19	21	
			iLQ		19	48	
			iS		19	59	
			iSg		20	25	
29	Shillong	E	i	15	45	43	Feeble.
			i		45	46	

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
June 30	Shillong	E	e	16 02 42		Feeble.
			i	03 24		
			i	03 43		
			i	03 45		
			i	03 51		

- : Voluntary Observer's Reports : -

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

Place at which felt	Date	G.M.T. of earthquakes	Duration in secs	Intensity R.F.Scale	No.of shocks	Remarks.
		h. m.				
Mandla (M.P.)	29.6.52	14 12	5	VIII	1	Mild.

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S.M.22.1.54

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN

May, 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- ficat- ion	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N	12	350	7:1	16 mm Except, 8 mm between (13th- 18th)
	Milne-Shaw Sprengnether	E	12 7	350	4:1	8.0 30.0
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omeri-Ewing	N	18	32	-	25.4
	Omeri-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw		12	250	20:1	35.9
Dehra Dun	Omeri-Ewing	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12	250	20:1	8.0
	Milne-Shaw	N	12	250	20:1	8.0
Kodaikanal	Milne-Shaw	E	10	250	20:1	8.0
New Delhi	Milne-Shaw	N	12	288	20:1	8.0
	Wood-Anderson	N	4	1000	20:1	16.0
	Wood-Anderson	E	2	2000	30:1	60.0
	Omeri-Ewing	E	30	30	1	12
Poona	Milne-Shaw	N	12	250	20:1	8.0
	Wood-Anderson	E	4	1100	20:1	16.0
	Sprengnether	E	To = Tg = 6.6 -			30.0
	Benioff	Z	To = 1.0		Critical	60.0

APT. PHASE G. M. T. \triangle REMARKS.

h. m. s. km.

May
1952

1 Poona Z i 07 18 16
i 18 20

1 Epc: Aleutian Islands. 0 = 15h. 04m. 07s. (U.S.C.G.S.).
53° N., 175°5 E. 0 = 15h. 04m. 19s.
h = Slightly higher than normal (B.C.I.S.).

Poona Z iP 15 16 45
i 16 49
i 16 52

1 Poona Z i 17 20 07
i 20 12
i 20 17
i 20 41

2 Poona Z i 17 49 44
i 49 48

2 Poona Z i 18 26 20
i 26 23
i 26 26

3 Epc: 15° S., 76°5 W. H = 12h. 14m. 09s. (U.S.C.G.S.) and (B.C.I.S.).

Poona Z 1PKP 12 34 01
i 34 07
i 34 14
i 34 24
i 34 41

3 Poona Z i 20 59 15

4 Epc: 24°5 S., 177°5 W. H = 14h. 15m. 16s. (U.S.C.G.S.)
Mag. 6.5 (Wellington). in region of Tonga Island.

Kodaikanal E e 14 33 30

Colombo E PP 14 33 35
PPS 44 -
M₁ 12 33

Poona E PKP? 14 34 10 Distant.
PKS 37 18
1SKS 40 52
e 44 26
e 45 52

Hyderabad N M 15 18 05

5 Epc: 20° N., 103°5 E. 0 = 09h. 34m. 07s. (B.C.I.S.).
in Laos, (Indochina). Per. = 18 secs $\mu = 5$.

Calcutta N i 09 39 03
i 39 30 Slight; near.

New Delhi N,E eP 09 39 26 Slight.
i 42 17
i 42 30

Poona Z,E 1P 09 40 07 Slight.
Z i 40 26
Z,E i 40 35
E i 43 38
Z S 44 39

DATE	STATION	COMPT.	PHASE	G. M. T. \triangle			REMARKS.
				h.	m.	s.	
May 5 1952 (Contd)	Hyderabad	N	e	09	42	32	
7	New Delhi	N,E	eP	13	43	41	1,000 Slight.
			iS		45	24	
		N	i		45	30	
		N,E	SS		45	36	
		N	i		46	04	
		E	i		46	19	
	Poona	Z	iP	13	45	25	Feeble.
			i		45	38	
			i		45	27	
			i		45	37	
8	Epc: 35°5 N., 140° E. H = 00h. 58m. 40s. (U.S.C.G.S.) in Honshu, Japan. h = 60 ± km. 35°4 N. 140.2 E. h = ± 50 (C.M.O., Japan). Felt severely in Tokyo (Press Report). Mag. 6¼ - 6½ (Pasadena).						
	New Delhi	N,E	eP	01	07	54	5,810 Moderate.
		N	iS		15	19	
			SSS		18	32	
			M		26	30	
	Poona	Z,E	iP	01	08	46	6,610 Slight.
		E	PcP		09	13	
			iS		16	55	
			PS		17	11	
			PPS		17	26	
8	Epc: 2°5 N., 127° E. H = 21h. 10m. 40s. (U.S.C.G.S.) and B.C.I.S.) in Strait of Moluccas. Mag. 6.5 to 6.75 (Pasadena).						
	Calcutta	E	iP	21	18	40	4,635 Moderate; first movement East.
			PcP		20	39	
			PPP		20	51	
			?		21	18	
			iS		24	58	
			LQ		28	16	
			SSS		28	37	
			LR		30	16	
	Colombo	E	P	21	19	18	
			S		25	58	
			L		38	21	
			M		41	48	Amp = 0.4.
	Kodaikanal	E	eP	21	19	39	5,090 Slight.
			iS		26	36	
			M		37	30	Per. = 21 sec. μ = 17.85.
	Hyderabad	E	iP	21	19	39	5,330
		N,E	iS		26	37	
		E	SS		30	10	
		N	L		33	47	
			M		40	34	Per. = 15 sec. μ = 7.
	New Delhi	N,E	eP	21	20	05	5,850 Moderate.
		N	pp		22	05	
			iS		27	32	
			SS		31	04	
			i		32	33	
			M		38	49	

		PHASE	G. M. T.	△		REMARKS
				h. m. s.	km.	
May						
1952						
8	Poona	Z,E	iP?	21 20 28	5,890	Moderate.
(Contd)		E	PcP	21 11		
			PP	22 11		
			PPP	23 29		
			iS	27 37		
			PS	27 48		
			PPS	27 55		
			ScS	29 43		
			SS	31 20		
			SSS	33 04		
			LQ	33 11		
			LR	35 46		
			M	38 49		
9	Epc: Kermadec Island Region.			H = 03h. 29m. 00s.		
	27° S., 178½° W.			h = about 400 km (U.S.C.G.S.)		
	Mag. 6¾ (Wellington).			O = 03h. 29m. 01s.		
				h = 400 km (B.C.I.S.)		
	Colombo	E	PP	03 47 -		
			L	04 23 -		
			M	26 08		Amp = 0.2.
	Kodaikanal	E	e	04 23 23		Tremor.
9	Kodaikanal	E	e	15 06 05		Tremor.
9	Epc: 6°5 S. 155° E. in Salomon Islands			H = 17h. 47m. 40s. h = 60km (USCGS).		
	6¾° S., 155° E.			O = 17h. 47m. 43s.		
	Mag. 7 (Pasadena).			h = ± 60 km (B.C.I.S.).		
	Shillong	E	iP	17 58 48		Slight; distant.
			PcP	59 08		
			S	18 07 02		
	Calcutta	E	iP	17 58 59	7,780	Moderate. First move- ment West.
			iS	18 08 09		
			ScS	09 01		
			SS	12 44		
			LQ	17 11		
			?	24 03		
			M?	25 37		
			Mn	29 32		Per. = 24 sec. μ = 89.
	Kodaikanal	E	iP	17 59 44	8,735	Slight; First move- ment West.
			iS	18 09 41		
			PS	10 23		
			PPS	10 41		
			SS	14 50		
			M	30 44		Per. = 18 sec. μ = 11.
	Hyderabad	N	eP	17 59 46	8,890	
			SKS	18 09 40		
			e	15 03		
			L	22 46		
			M	32 55		Per. = 18 sec. μ = 11.
	New Delhi	N,E	eP	18 00 02	9,070	Moderate.
		N	PP	03 10		
		N,E	iS	10 14		
		N	ScS	10 36		
			PS	10 55		
			i	15 54		
			LQ	21 51		
			LR	25 33		
			M	31 54		



COMPT. PHASE G.M. T. \triangle REMARKS.

h. m. s. km.

May 1952

Time	Station	Phase	Time (h.m.s.)	Distance (km)	Remarks			
9 (Contd)	Poona	Z,E	1P 18 00 11	6,890	Moderate.			
		E	SKS 10 20					
			S 10 35					
10		O = 17h. 04m. 08s. in Strait of Moluccas (B.C.I.S.).						
	Poona	E	eP 17 13 32	6,155	Feeble.			
			PcP 14 29					
			PP 15 41					
			S 21 16					
11	New Delhi	N	eP 03 29 19	840				
		E	PP 29 28					
			PPP 29 35					
			P* 29 38					
		N,E	LQ 30 37					
			iS 30 46					
		E	SS 30 58					
		N,E	SSS 31 06					
			Sg 31 33					
	Poona	Z	1P 03 31 23	1,620				
		E	eS 34 07					
			SS 34 25					
			SSS 34 36					
			LR 34 51					
			M 35 57					
			PcP 36 23					
13	Hyderabad	E	M 20 55 55		Per. = 18 sec. μ = 8.			
	Colombo	E	P 19 51 01					
			L 20 56 -					
			Mn 21 08 34					
	Poona	E	e 19 51 06					
			e 20 01 38					
	Kodaikanal	E	e? 19 31 29					
	14	Epc: 43° N., 145°5 E. H = 00h. 36m. 59s. (U.S.C.G.S.)						
		near Coast of Hokkaido, Japan.						
		41°9 N., 145°4 E. h = ± 2 km (C.M.O.).						
Mag. 6.5 (Pasadena).								
42°1 N., 145°2 E. H = 00h. 36m. 55s. (B.C.I.S.).								
	Shillong	E	P 00 45 21		Slight.			
			PP 47 12					
	New Delhi	N,E	eP 00 46 34	6,130				
			N			iS 54 16		
						PPS 54 48		
						M 01 07 32		
	Hyderabad	E	1P 00 47 16	6,770				
			PP 49 22					
			iS 55 34					
			SS 59 31					
		N	M 01 12 02		Per. = 15 sec. μ = 4.			
			E			M 12 04	Per. = 14 sec. μ = 4.	
			Poona	N,E	1P 00 47 31	7,140	Moderate.	
					PcP 47 59			
PP 49 51								
E	eS 56 09							
	PS 56 27							

h. m. s. km.


1955

14	Poona	E	PPS	00 56 37		
	(Contd)		i	57 12		
			i	01 00 26		
			SSS	02 57		
	Kodaikanal	E	iP	00 47 47	7,465	Slight.
			iS	56 41		
	Colombo	E	P	00 47 49		
			PPP	52 01		
			Mn	57 19		Amp = 0.3.
14	New Delhi	N,E	eP	10 18 49		Slight; near.
			e	19 59		
			e	20 39		
15	Epc: Off North Coast of Luzon, Philippines Islands. H = 10h. 25m. 25s. (U.S.C.G.S.).					
	Poona	Z	iPY	10 33 40		
		E	ePY			
		Z	i	34 09		
		E	PP	35 20		
		Z	i	11 20 33		
	Calcutta	E	i	10 34 00		Slight; distant.
			i	37 16		
			i	43 50		
			Mn	48 33		
	Hyderabad	E	M	10 34 17		Per. = 12 sec. $\mu = 2.$
15	Poona	Z	i	19 03 22		
15	Epc: Northern Chile. H = 21h. 06m. 50s. h = 100 km. (U.S.C.G.S.).					
	Poona	Z	P	21 26 07		
			i	49 39		
16	Kodaikanal	E	e?	03 05 21		Tremor.
16	Poona	Z	PKP	06 01 45		
			i	01 50		
16	Calcutta	E	i	10 14 56		Slight; distant.
			i	24 14		
			Mn	30 14		
16	Epc: 6 ^o .5 N., 79 ^o W. H = 20h. 45m. 40s. (U.S.C.G.S.). Mag. 6.9 (Pasadena), 6.5 (Berkeley). Felt at Balbon Heights.					
	Kodaikanal	E	e?	21 05 12		Tremor.
	Poona	Z	iP	21 05 14		
		E	eP	05 16		
		Z	e	08 53		
		E	e	18 57		
	Hyderabad	N	i	21 05 30		
		E	M	22 07 36		Per. = 18 sec. $\mu = 5.$
		N	M	07 55		Per. = 18 sec. $\mu = 5.$
17	New Delhi	N,E	eP	06 06 55	1,010	Slight.
			iS	08 39		
		E	SS	08 51		
		N,E	Sg	09 35		

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

						km.	
May							
1952							
17	Poona	Z	iP	06	08	39	2,180 Slight.
(Contd)		E	PP		08	53	
		Z	PP		08	55	
		Z,E	PPP		09	05	
			S		12	15	
		E	LQ		12	20	
		Z	LQ		12	22	
		E	SS		12	41	
		Z	SS		12	42	
			SSS		12	55	
		E	SSS		12	56	
		Z	LR		13	16	
		E	LR		13	18	
		Z	M		14	55	
		E	M		14	50	
	Hyderabad	N	i	06	18	03	
17	Epc:	42°5 N., 144°5 E. H = 09h. 48m. 16s. (U.S.C.G.S.) near Coast of Hokkaido, Japan.					
		41°8 N., 144°2 E. h = 60 km. ± (C.M.O., Japan).					
		42.¼° N., 143.½° E. H = 09h. 48m. 14s. (B.C.I.S.).					
	Mag.	6½ - 6¾ (Pasadena).					
	Calcutta	E	e	09	56	12	6,810 Moderate.
			iS	10	04	32	
			i		05	58	
			i		11	10	
			LR		14	35	
			M		19	31	
			Mn		22	40	Per. = 12 sec. μ = 19.
	New Delhi	N,E	P	09	57	45	6,080 Moderate. (P may begin
		N	PP		59	49	trailer upto 3 secs due
			iS	10	05	24	to time mark).
			ScS		07	26	
			SS		09	08	
			M		20	05	
	Hyderabad	E	iP	09	58	23	6,740
		N	iS	10	06	39	
			SS		10	56	
		E	M		22	45	Per. = 15 sec. μ = 6.
		N	M		23	07	Per. = 15 sec. μ = 8.
	Poona	Z,E	iP	09	58	44	7,010 Moderate.
		N	PcP		59	16	
		E	PcP		59	18	
		N,E	PP	10	01	05	
		E	PPP		02	37	
		N,E	S		07	15	
			PS		07	29	
		N	PPS		07	46	
		E	PPS		07	47	
			ScS		08	21	
		N	SS		11	20	
		E	SS		14	09	
			LR		17	53	
17	Poona	Z	i	21	40	44	
			i		40	41	
18	Shillong	E	i	07	08	54	Slight; near.
			i		09	00	
			i		09	44	
18	Shillong	E	i	15	05	15	Slight.
			i		05	20	

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
May 1952						km.	
13	Shillong	E	i	15	18	08	Slight.
			i		18	12	
19				Epc: 43° N., 144° 5' E. H = 18h. 32m. 24s. (U.S.C.G.S.)			Near Coast of Hokkaido, Japan.
				42.¼° N., 143.½° E. 0 = 18h. 32m. 21s. (B.C.I.S.).			
				Mag. 6¾ (Pasadena), 6¾ - 7 (Wellington, Strasbourg).			
	Shillong	E	iP	18	40	43	5,110 Moderate. Per. = 15 sec.
			PP		42	28	
			eS		47	28	
			PPS		47	36	
			i		47	46	
			SS		50	38	
			LQ		52	00	
			M		58	26	
	Calcutta	E	iP	18	41	18	Moderate. First movement West. Per. = 15 sec. $\mu = 111.$
			PcP		42	29	
			PP		43	17	
			i		48	41	
			PS		48	49	
			PPS		48	57	
			LR		56	33	
			M	19	00	27	
			Mn		06	47	
	Hyderabad	N,E	iP	18	42	32	6,740 Per. = 15 sec. $\mu = 22.$ Per. = 16 sec. $\mu = 19.$
		N	iS		50	48	
		E	i		55	04	
			L	19	01	53	
		N	M		05	22	
		E	M		06	44	
	Poona	Z,E	iP	18	42	50	7,055 Moderate.
			PP		45	12	
		E	iS		51	23	
			PS		51	43	
			PPS		51	52	
			i		52	12	
			SS		55	50	
			i?		59	16	
			LR	19	02	36	
	Kodaikanal	E	P	18	43	09	7,580 Slight. Per. = 15 sec. $\mu = 15.63.$
			PP		45	36	
			S		52	09	
			PS		52	15	
			M	19	10	12	
	Colombo	E	i	18	52	14	Very strong microseisms. Amp = 1.0.
			L	19	10	49	
			Mn		19	04	
20	Poona	Z	i	02	19	45	
			i		22	36	
			i		23	14	
20	Poona	Z	e	08	43	20	
			i		44	35	
20	Shillong	E	e(P?)	18	36	30	856 Slight, near.
			i(P*)		36	49	
			i(Pg)		37	09	
			i(S)		37	59	
			e(PcP)		42	45	

DATE STATION PHASE G. M. T.  REMARKS.

h. m. s. km.

DATE	STATION	PHASE	G. M. T.	REMARKS
			h. m. s. km.	
May 1952 20 (Contd)	Hyderabad	N	eP 18 37 27	
			e 42 46	
			e 45 19	
	New Delhi	N,E	eP 18 37 40	Slight.
			e 40 56	
		N	e 41 27	
			M 42 56	
	Poona	Z	i 18 38 05	
			i 39 42	
		E	e 47 06	
i 47 22				
i 47 46				
i 48 50				
20	Poona	Z	i 19 02 04	
	New Delhi	E	eP 19 26 35	1,190 Slight.
i 27 55				
N,E		LQ 28 26		
		iS 28 37		
		SS 28 48		
		LR 28 53		
21	New Delhi	N,E	iP 02 33 19	740 Slight.
			P* 33 34	
		E	Pg 33 54	
			iS 34 36	
			S* 35 00	
	N,E	Sg	35 17	
	Poona	Z	e 02 34 47	
			e 35 14	
			i 35 24	
i 37 37				
i 38 14				
Hyderabad	E	i 02 40 02		
Shillong	E	i(Pg) 08 10 03	Slight; near.	
		i 10 17		
		i(Sg) 10 19		
Shillong	E	i 20 08 32	Slight; near.	
		i 08 47		
Epc: 29°5 N., 131°5 E.			H = 23h. 08m. 21s.	
			h = + 60 km. (U.S.C.G.S.).	
in Riou-Kiou Island.				
Shillong	E	iP 23 15 09	Slight; distant.	
		PP 16 42		
		PcP 17 44		
		i(M) 30 00	Amp = 15.	
New Delhi	E	eP 23 16 47	5,460 Slight. Probabl: surface	
		eS(?) 23 52	waves of another precedi	
		SS 26 38	shock.	
		SSS 27 52		
		eM 35 02		
Calcutta	E	i 23 17 23	Slight; distant.	
		i 25 22		

h. m. s. km.

 May
1952

 22 Poona
(Contd)

 Z i 23 17 36
P 17 47
i 17 57

Hyderabad E M 23 40 37

 Per. = 15 sec. $\mu = 6.$

23

 Epc: 33° N., 136° E. H = 04h. 20m. 52s.
h = \pm 60 km (U.S.C.G.S.)

Near the South Coast of Honshu and felt also at Shikoko.

 33.0° N., 135.9° E. h = \pm 40 km.
Mag. 6 (Pasadena).

 Shillong E e(P) 04 28 22
PP 29 55
S(?) 34 14
e(M) 42 46

Slight; distant.

Amp = 14.

 Calcutta E i 04 32 48
i 45 04

Slight; distant.

 24 Poona Z,E i 02 18 52
Z i 18 58
E e 19 00
i 22 14

24

 Epc: Off West Coast of Sumatra. H = 16h. 05m. 53s. (USCSS).
 $0^{\circ}0'$ N., $99^{\circ}5'$ E. O = 16h. 05m. 59s. (Poona).
 $1^{\circ}0'$ S., $98^{\circ}8'$ E. O = 16h 05m. 53s. (BCIS).
Mag. 6.5 - 6.75 (Pasadena).

 Colombo E P 16 10 46
i 14 39
L 17 31
Mn 18 04

Amp = 4.0.

 Calcutta E iP 16 11 17 2,855 Moderate. First movement
iS 15 44 West.

 Kodaikanal E iP 16 11 21 2,620 Moderate.
PP? 11 48
eS 15 33
LQ? 16 03
SSS? 16 36
M? 19 00

 Per. = 18 sec. $\mu = 109.6.$

 Shillong E iP 16 11 40
PP 12 25
i 14 49
i 16 13
LQ 17 17
LR 18 31
ScS 22 29

 Hyderabad N iP 16 11 40 3,100
PP 12 31
S 16 23
L 18 56
M 21 52

 Per. = 16 sec. $\mu = 17.$

 Poona Z,E iP 16 12 17 3,415 Moderate.
E PP 13 17
iS 17 20
i 18 34
ScP 19 14
LR 20 24

		PHASE	G. M. T.			REMARKS.
			h.	m.	s.	km.
May						
1952						
24	New Delhi	N, E N	iP	16	12 53	3,850 Moderate. First movement South.
(Contd)			PP		14 23	
			i		15 18	
			iS		18 23	
			PcS		19 21	
			i		21 28	
			LR		23 18	
			M		26 20	
	Dehra Dun	N	e	16	19 42?	
			e		27 52?	
			M ₁		33 42	Per. = 20 sec. $\mu = 0.05$.
26	Epc: Assam					H = 02h. 46m. 25s. (U.S.C.G.S.)
	28°5' N., 95° E.					O = 02h. 46m. 31s. (B.C.I.S.)
						near Assam-Tibet Frontier.
						Felt moderately at Dibrugarh, Tinsukia, Digboi, Margherita and Ledo.
	Shillong	E	iP	02	47 31	545 Moderate.
			P*		47 41	
			Pg		47 51	
			LQ		48 14	
			i		48 18	
			iS		48 29	
			LR		48 31	
			SS		48 37	
			S*		48 41	
	Calcutta	E	iP	02	48 47	1,055 Moderate. First movement West.
			iS		50 36	
			SS		50 46	
	New Delhi	E N	eP	02	50 05	1,580 Slight.
			PPP		50 25	
			i		50 40	
			iS		52 44	
			SS		53 02	
			SSS		53 13	
			M		54 37	
	Hyderabad	N	iP	02	50 48	2,110
			iS		54 17	
	Poona	Z, E E	iP	02	51 24	2,445 Moderate.
			iS		55 23	
			SSS		56 15	
			LR		56 45	
			M		58 07	Per. = 8 sec. $\mu = 4.0$.
	Kodaikanal	E	iP	02	51 57	2,710 Slight.
			S		56 15	
	Dehra Dun	N	e(S)?	02	52 12?	
			e		53 12	
			e		54 18	
			M		54 52	Per. = 9 sec. $\mu = 0.02$.
29	Epc: 36°5' N., 70°5' E.					O = 07h. 47m. 40s. (B.C.I.S.).
	Hindu-Kouch.					h = 22 km ± .
						Felt at Srinagar.
	New Delhi	N, E E	P	07	49 56	780 Slight. (P may begin 3 sec earlier due to time mark).
			PP		50 02	
			PPP		50 09	
			i		50 11	
			i		50 29	



				h.	m.	s.	km.	REMARKS.
1952								
28	New Delhi	N,E	i	07	50	48		
(Contd)	(Contd)		iS		51	17		
			i		51	36		
			i		51	41		
		N	SSS		52	01		
	Poona	Z	iP	07	51	38		Slight.
			i		56	00		
			L		56	30		
			i		56	49		
			LR		57	34		
			PcS		59	42		
	Hyderabad	N	iP	07	51	58	2,150	
		N,E	iS		55	31		
		N	M		58	04		Per. = 9 sec. $\mu = 4.$
	Shillong	E	iP	07	52	08	2,210	Slight.
			PP		52	21		
			iS		55	47		
			LQ		55	59		
			i		56	11		
			i		56	20		
			PcP		56	33		
			LR		56	56		
	Kodaikanal	E	eP	07	53	29		Slight; near.
28	Epc: 35°5 N. 136° E.		H = 07h. 59m. 09s.					
			h = 400 km \pm (U.S.C.G.S.).					
			in Central Honshu, Japan.					
			Mag. 6 $\frac{3}{4}$ - 7 (Pasadena).					
	Shillong	E	LQ	08	11	16		
			iS		11	21		
			SS		11	42		
			SSS		11	53		
			LR		12	21		
			PcS		15	25		
	Poona	Z	iP	08	08	14	5,730	
		N	PcP		09	30		
			PP		10	04		
			iS		15	35		
			PPS		15	50		
			LQ		13	07		
			SS		19	42		
			i		20	38		
	Hyderabad	E	P	08	09	10	4,560	
		N,E	i		14	57		
		E	iS		16	59		
		N	L		20	43		
			M		24	33		Per. = 14 sec. $\mu = 3.$
28	New Delhi	N,E	eP	13	07	22	4,950	Moderate; deep focus.
			iS		13	58		
		N	iS		16	09		
			SS		17	30		
			LR		19	45		
			M		24	00		
31	Hyderabad	N	M	05	42	04		Per. = 15 sec. $\mu = 4.$
31	New Delhi	N,E	eP	08	00	40	6,450	Moderate.
		N	PP		02	52		
			PPP		04	12		
			eS		08	40		

DATE	STATION	COMPT.	PHASE	G. M. T.			△	REMARKS.
				h.	m.	s.	km.	
May								
1952								
31	New Delhi	N	i	08	09	21		
(Contd)	(Contd)		i		10	25		
			SS		12	25		

- : Voluntary Observer's Report : -

The following table contains a list of Earthquakes reported by Voluntary Observer's from various stations for the month of May, 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	28.5.52	07	48	3	VI	2	Two shocks at an interval of one second.

S.M./13.1.54

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GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN

April, 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- ficat- ion	Damping ratio	Paper Speed mm/min
Bombay	Milne-Shaw	N	12	350	5:1	16
	Milne-Shaw	E	12	350	4:1	8
	Sprengnether	E	7	-	-	30
Calcutta	Milne-Shaw	E	12	250	20:1	8
	Wood-Anderson	N	2	870	Critical	30
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	E	12	250	15:1 20:1 from 24.4.52	8
Hyderabad	Milne-Shaw	E	12	250	20:1	8
	Milne-Shaw	E	12	250	20:1	8
Kodaikanal	Milne-Shaw	E	10	250	20:1	8
New Delhi	Milne-Shaw	N	12	283	20:1	8
	Wood-Anderson	N	4	1000	20:1	16
	Wood-Anderson	E	2	2000	30:1	60
	Omori-Ewing	E	30	30	1	12
Poona	Milne-Shaw	N	12	250	20:1	8
	Wood-Anderson	E	4	1100	20:1	16
	Sprengnether	E	Tg = 6.6	-	-	30
	Benioff	Z	Tg = 1.0	-	-	60

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.	
				h.	m.	s.		
<p>April 1952</p> <p>1 Epc: Andreanof Islands, Aleutian Islands. H = 03h. 44m. 36s. (U.S.C.G.S.); 51°$\frac{3}{4}$ N., 177°W. H = 03h. 44m. 25s. (B.C.I.S.).</p>								
	Poona	Z	i	03	57	07	Tremor.	
			i		57	32		
1	Poona	Z	i	05	12	07	Tremor.	
1	<p>Epc: Off the Western Coast of Sumatra; H = 18h. 21m. 03s. (B.C.I.S.).</p>							
	Colombo	E	P	18	25	36	Amp = 0.2mm.	
			S		29	21		
			L		33	16		
			M		34	48		
	Kodaikanah	E	eP	18	26	10	Short distance feeble shock.	
			eS?		30	22		
			M		34	07		
	Poona	Z	i(P)	18	27	24	Tremor.	
	Bombay	N.E	e	18	31	--	Very feeble.	
1	<p>Epc: 80°E., 36°$\frac{5}{10}$ N.; O = 20h. 36m. (Os. (Poona)). 78° E., 37° N.; H = 20h. 36m. 30s. (B.C.I.S.).</p>							
	New Delhi	N,E	eP	20	38	00	840 Slight.	
			PP		38	08		
		N	P*		38	17		
		N,E	Pg		38	36		
			eS		39	27		
			SS		39	38		
		E	SSS		39	49		
		N	S*		39	55		
		N,E	Sg		40	16		
	Calcutta	E	eP	20	39	34	1,665 Slight.	
			iS		42	22		
			SSS		42	50		
	Hyderabad	N	eP	20	40	06	2,110	
			eS		43	35		
			L		44	41		
			M		45	50	Per. = 8 sec. μ = 5.	
	Bombay	N,E	eP	20	40	07	2,035 Moderate.	
			PP		40	22		
			eS		43	29		
			SS		43	50		
			LR		44	14		
		E	M		47	26	Per. = 8 sec. μ = 10.	
		N	M		48	26	Per. = 7 sec. μ = 4.	
	Poona	Z	iP	20	40	11	1,890 Moderate.	
		E	PP		40	24		
			iS		43	20		
			LQ		43	26		
			SS		43	43		
			SSS		43	58		
			LR		44	16		
			PcP		44	24		
			M		45	43		
			ScP		47	49		
			ScS		51	20		

April
1952
1
(Contd)

	Kodaikanal	E	e	20 43 14		Short distance earthquake of slight intensity; phases not clear.
	Colombo	E	S L e M	20 47 23 51 03 54 31 56 04		Amp = 0.4.
2	Poona	Z	i	08 27 06		Temor.
2	Colombo	E	P S L M	10 38 34 44 02 49 22 55 02		
	Poona	Z,E E	iP PP iS M	10 40 54 42 26 47 01 55 25	4,455	Slight. 0 = 10h.33m.15s.
	Bombay	N,E	eP? PP eS	10 41 08 42 41 47 10	4,365?	Feeble.
	Hyderabad	E N	e N	10 41 38 53 50		Per. = 15 sec. $\mu = 4$.

2 Epc: $16\frac{1}{2}^{\circ}$ N., $99\frac{1}{2}^{\circ}$ W. Near Coast of Guerrero, Mexico. Felt.
H = 18h. 34m. 50s.
Mag. $6\frac{1}{4}$ - $6\frac{1}{2}$ (Pasadena), (U.S.C.G.S.)
 $16^{\circ}33'$ N., $100^{\circ}09'$ W., H = 18h. 34m. 51s. (Tacubaya).
Mag. $6\frac{1}{2}$ (Tabubaya).

	Poona	Z	i(PKP)	18 54 30		
2	Poona	Z	i i	20 57 21 57 42		
3						Epc: 25° S., 77° E., 0 = 15h. 43m. 34s.
	Colombo	E	P S L	15 50 09 56 - 16 01 19		S. Approximate.
	Kodaikanal	E	e?	15 50 30		Feeble shock at long distance. Phase not clear.
	Poona	Z E	iP i eS PS PPS LQ SSS M	15 51 43 53 44 58 14 58 19 58 23 16 01 35 02 35 08 50	4,860	Slight.
	Bombay	E	eP eS	15 52 07 53 43 58 24	4,620	Feeble, loss of record.

Epc: 52° N., $159\frac{1}{2}^{\circ}$ E., Near East Coast of Kamchatka.
H = 02h. 52m. 55s. (U.S.C.G.S.)
Mag. - $6\frac{1}{4}$ (Pasadena).

	New Delhi	N	eP PcP eS	03 03 23 03 44 12 38	7,870	Moderate.
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h. m. s. km

 April
1958

Date	Station	Phase	Time (h. m. s.)	Distance (km)	Remarks
4 (Contd)	Calcutta	E	i 03 03 36		Slight; Distance
			i 11 42		
			i 13 20		
	Hyderebad	N,E	iP 03 04 13	7,720	
		N	eS 13 21		
			PS 14 06		
			M 30 55		Per. = 18 sec. $\mu = 6.$
	Poona	Z,E	iP 03 04 25	8,770	Moderate.
		E	iPdP 04 44		
			S 14 23		
			PS 14 31		
			ScS/PPS 14 40		
			LQ 28 11		
			LR 31 43		
			M 38 48		
	Bombay	E	iP 03 04 27	8,080	Moderate, loss of record.
			PcP 04 45		
			PP 07 10		
			eS 13 52		
			PPS 14 31		
			M 40 13		Per. = 16 sec. $\mu = 3.$
	Kodaikanal	E	eP? 03 04 40		Feeble shock at long distances; phase not clear.
	Colombo	E	P 03 04 54		
			S 15 21		
			L 39 -		
			M 44 09		Amp = 0.2.
4	Epc: $23\frac{1}{2}^{\circ}$ N., 121° E., Near East coast of Formosa. H = 07h. 49m. 25s. (U.S.C.G.S.).				
	Poona	Z,E	iP 07 57 43		Feeble. Phase not clear.
	Bombay	N,E	eP 07 57 50	5,035	Feeble.
			eS 08 04 31		
4	Poona	Z	i 17 00 58		Tremor.
			i 01 11		
4	Poona	Z	i 18 26 20		Tremor.
4	Bombay	E	e 20 17 -		Very feeble.
			eS? 24 59		
4	Poona	Z	i 20 37 10		
5	Epc: 23° S., 1° E. H = 00h. 27.2m. (R.C.I.S.).				
	Poona	Z	i 00 39 39		Tremor.
5	Probable Epc: 34° N., 64° E. (Afghanistan). O = 15h. 18.3m.				
	New Delhi	N,E	eP 15 20 55	1,000	Slight.
			eS 22 38		
			SS 22 49		
	Poona	Z	eP 15 21 52		Slight. P doubtful.
		E	eS 24 53		O = 15h. 17m. 57s. (Poona).
			SS 25 28		
			LR 26 08		
			i 26 31		
			i 26 41		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
				△			
				km.			
<u>April</u>							
1952							
5	Bombay	N,E	eP	15	24	45	833 Slight.
(Contd)			LQ		25	55	
			eS		26	11	
		N	M		30	22	Per. = 7 sec. $\mu = 2.$
		E	M		30	56	Per. = 7 sec. $\mu = 1.$
	Calcutta	E	i	15	27	31	Slight. Near.
			i		30	16	
	Hyderabad	E	e	15	27	58	
	Kodaikanal	E	e?	16	28	16	Tremor.
5	New Delhi	N,E	eP	23	17	31	750 Slight.
			eS		18	49	
	Poona	Z	i	23	22	55	
6	Bombay	N,E	e	05	12	-	Very feeble.
6	New Delhi	N,E	eP	05	46	25	350 Slight.
			Pg		46	35	
		E	eS		47	04	
		N,E	Sg		47	19	
			SSS		47	25	
7	New Delhi	N,E	eP	04	29	41	210 Slight.
			iS		30	06	
			Sg		30	11	
			SS		30	16	
	Poona	Z	i	04	33	34	Feeble. Phases not clear.
			i		33	43	
7	Poona	Z	i	09	19	10	Tremor.
			i		19	18	
7	Bombay	N,E	e	13	12	-	Very feeble.
8	Epc: $53\frac{1}{2}^{\circ}$ N., 161° E., Near East Coast of Kamchatka.						
	h = about 60km.						
	H = 03h. 07m. 30s. (U.S.C.G.S.).						
	Poona	Z	i	03	18	58	Tremor.
8	Epc: Sulu Sea. H = 10h. 00m. 06s. (U.S.C.G.S.)						
	$8^{\circ}1'N.$, $123^{\circ}2' E.$ H = 10h. 00m. 39s. h = 260 km ca						
	(U.S.C.G.S.).						
	Calcutta	E	eP	10	07	15	4,010 Moderate.
			PP		08	42	
			iS		12	55	
			SS		15	15	
			SSS		15	45	
			LR		17	10	
			M		20	01	
			Mn		27	14	Per. = 16 sec. $\mu = 32.$
	Colombo	E	P	10	08	10	
			S		14	35	
			L		25	20	
			M		29	20	Amp. = 0.5mm.

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS.		
				h.	m.	s.				
<u>April</u>										
1952										
8 (Contd)	Hyderabad	E	iP	10	08	21	4,870	Per. = 15 sec. μ = 6. Per. = 18 sec. μ = 8.		
			iS		14	53				
			L		22	06				
			M		26	56				
		Kodaikanal	E	N	M	27	09			
		Kodaikanal	E	eP	10	08	27		4,950	Fairly long distant earthquake of slight intensity; initial movement of S and SS towards W. Per. = 16 sec. μ = 6.7.
	iS				15	03				
	SS				18	30				
	M									
		M	24	56						
	New Delhi	N,E N	eP	10	08	45	5,150	Moderate.		
PPP				11	09					
eS				15	32					
SS				18	43					
		M	27	08						
	Poona	Z,E E	iP	10	08	58	5,320		Moderate.	
PcP				10	11					
PP			10	49						
PPP			11	41						
iS			15	53						
PPS			16	11						
		N	ScS	18	26					
			E	ScS	18	27				
		N	SS	19	15					
			E	SS	19	19				
			SSS	20	27					
		N	LR	22	38					
			E	LR	22	43				
		M	27	04						
	Bombay	N,E	eP	10	09	07	5,480	Moderate.		
			PP		11	03				
		E	iS χ	16	13					
			N	eS χ						
		N,E	SS	19	50					
			LR	23	-					
		N	M	31	37					
	E		M	33	19					
10	Poona	H = 04h. 41.2m. (B.C.I.S.).						Per. = 15 sec. μ = 3. Per. = 15 sec. μ = 4. Other phases not clear.		
		Z χ	iP χ	04	51	32				
		E χ	eP χ							
			e	52	18					
			e	54	14					
		e	59	20						
10	Epc: 25° N., 126° E. Ryuku Islands. H = 05h. 57m. 20s. (U.S.C.G.S.). 24° N., 124°5 E. (C.M.O.).									
	New Delhi	N,E N	iP	06	05	20	4,680	Moderate. Direction of first motion east		
			1(S)		11	41				
	Colombo	E	P	06	05	48	5,190	Amp. = 0.3.		
			S		12	33				
			L		24	20				
			M		28	20				
	Kodaikanal	E	iP	06	05	54	5,240	Long distance earthquake of slight intensity. Per. = 18 sec. μ = 8.3.		
			iPP		07	22				
			eS		12	47				
			M		23	32				

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
							km.
April, 1952							
10 (Contd)	Poona	Z,E	iP χ	06	05	59	5,275 Slight.
		N	eP χ				
		E	PcP	06	15		
			PP	06	51		
			PPP	08	46		
			ScP	11	10		
		N,E	iS	12	54		
			PPS	13	16		
		N	ScS	15	15		
		E	ScS	15	18		
			SS	16	28		
			LQ	17	39		
			i	20	50		
			i	20	57		
	Bombay	N,E	eP	06	06	05	5,330 Slight.
			PP	08	01		
			eS	13	03		
			PPS	13	19		
			e	16	09		
	New Delhi	E	eP	22	35	27	980 Slight.
			eS	37	08		
			SS	37	20		
	Poona	Z	i	22	41	19	Feeble, phase not clear.
			i	41	32		
			i	41	50		
			i	42	45		
11	Bombay	N,E	e	11	42	-	Very feeble.
12	Epc: Indian Ocean. $14\frac{1}{4}^{\circ}$ S., $66\frac{3}{4}^{\circ}$ E. H = 01h. 27m. 09s. (B.C.I.S.).						
	Colombo	E	P	01	32	32	3,130
			S	37	18		
			L	42	30		
			M	43	25		
	Kodaikanal	E	eP	01	33	10	2,660 Moderate. Distant.
			eS	37	25		
			LQ	38	04		
			M	41	12		Per. = 9 sec. u = 16.
	Bombay	E	eP	01	33	40	3,920 Moderate.
			PP	35	07		
			PPP	35	30		
		N,E	eS	39	14		
		E	SS	41	44		
			SSS	42	26		
			LR	43	24		
			M	48	10		Per. = 9 sec. $\mu = 4.$
		N	M	49	36		Per. = 8 sec. $\mu = 2.$
			Poona	Z	iP χ	01	33
E	eP χ						
	PP			34	01		
	PPP			35	24		
	PcP			36	00		
	iS			39	06		
	ScP			39	29		
	LQ			41	35		
	SSS			41	59		
	LR			43	19		
	M			46	11		

STATION		COMPT.	PHASE	G. M. T.		Δ	REMARKS.
				h.	m.	s.	km.
<u>April</u>							
1952							
12	New Delhi	N,E	eP	01	35	15	4,820
(Contd)		N	S		41	44	
			M		50	59	
	New Delhi	N,E	P	09	36	41	110
			eS		36	56	
			i		37	02	
14	Bombay	N,E	e	08	02	-	
							Very feeble surface waves.
14	Epc: $3\frac{1}{2}^{\circ}$ N., $126\frac{1}{2}^{\circ}$ E., Molucca Passage. H = 23h. 49m. 45s. (U.S.C.G.S.).						
	New Delhi	N,E	e	23	57	06	
14-15	Epc: 5° N., 126° E., in the Pacific Ocean. H = 23h. 49m. 52s. (Poona). $3\frac{1}{2}^{\circ}$ N., $126\frac{1}{2}^{\circ}$ E., Molucca Passage. H = 23h. 49m. 45s. (U.S.C.G.S.P.).						
	Poona	Z,E	iP ₁	23	56	54	5,870
			iP ₂		09	12	
		E	PPF ₂	00	02	46	
			iS ₁		02	55	
			ScP ₂		04	16	
			iS ₂		06	40	
			PPS ₂		07	06	
			ScS ₂		08	51	
			SS		10	28	
			LR ₂		13	52	
			M ₂		17	35	
	Kodaikanal	E	eP	23	57	18	7,165
			iS		00	05	57
			M		21	25	
							Per. = 16 sec. $\mu = 7$.
	Colombo	E	P	23	57	28	
			S		00	05	15
			L		20	-	
							L and M not certain due to light spot drift.
	Calcutta	E	iP	23	57	40	4,590
			PP		59	18	
			PPP		59	52	
			PcS	00	03	28	
			iS		03	55	
			PS		04	07	
			PPS		04	17	
			SS		06	52	
			SSS		07	30	
			ScS		07	40	
	Hyderabad	N,E	iP	23	58	39	5,400
		E	PP		00	00	37
		N,E	iS		05	41	
		N	ScS		08	28	
		E	SS		09	39	
			L		12	10	
			M		16	52	
		N	M		18	54	
							Per. = 20 sec. $\mu = 10$. Per. = 20 sec. $\mu = 11$.
	New Delhi	N,E	eP	23	59	06	5,780
		N	iS		06	29	
		N,E	i		08	54	
		N	SSS		11	25	
			M		19	00	

DATE	STATION	COMPT.	PHASE	G. M. T.		REMARKS.
				h. m. s.	km.	
<u>April</u>						
1952						
14-15	Bombay	E	eP	23 59 19	6,080	Slight, Record lost.
(Contd)			PP	00 01 22		
			iS	06 53		
			PPS	07 19		
			ScS	09 07		
			e	11 45		
			M	28 18		Per. = 16 sec. μ = 3.
15	Epc: 43° N., 143½° E., Hokkaido, Japan. H = 05h. 59m. 53s. (U.S.C.G.S.) To the South of Urakawa (Hokkaido). 42° N., 142° 8' E. h = 30 km (C.M.O.). 42.° 1' N., 142.° 4' E. H = 05h. 59m. 50s.					
	New Delhi	N,E	i	06 09 14		Moderate.
		N	i	09 28		
			e(S)	16 45		
			i	17 11		
			i	19 23		
	Poona	Z,E	iP	06 10 13	6,836	Slight.
		E	PcP	10 32		
			iS	18 34		
			PS	19 00		
			PPS	19 09		
	Bombay	N,E	eP	06 10 16	7,000	Slight.
			PP	12 36		
	Epc: 56° S., 24° W., Sandwich Islands Region. H = 19h. 02m. 12s. (U.S.C.G.S.). 58° S., 25° 8' W. H = 19h. 02m. 11s. (B.C.I.S.).					
	Kodaikanal	E	e	19 21 13		Per. 16 sec. μ = 8.1. Slight. Very distant. Phasea not clear.
	Bombay	N,E	e	19 21 22		Slight, Distant.
			e	30 51		
		E	M	20 00 43		Per. = 18 sec. μ = 3.
		N	M	00 45		Per. = 19 sec. μ = 5.
**	Poona	E	ePPP	19 23 56		Moderate. Distant. Phase not clear.
			M	52 26		
		N	M	55 38		
	Colombo	E	L	19 45 -		A series of maxima of Amp = 0.5mm present.
16	Epc: 47° N., 154° E., Kurile Islands Region. H = 03h. 40m. 19s. (U.S.C.G.S.).					
	Poona	Z	iP	03 51 34		Tremor.
			i	51 43		
			i	52 00		
	Bombay	N	eP	03 51 35	7,850	Feeble.
		N	eSY	04 00 49		
		E	iSY			
	Hyderabad	N	M	04 21 09		Per. = 15 sec. μ = 3.
	Kodaikanal	E	e(?)	15 10 57		Tremor.
	Poona	E	M	15 17 29		Feeble. Tremor.
	Hyderabad	N	M	15 17 40		Per. = 21 sec. μ = 6.

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DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS.
				h. m. s.	km.	
<u>April</u> 1952 16				Sandwich Island. H = 16h. 45m. 41s. (B.C.I.S.).		
	Poona	E	M	17 46 27		Feeble. Tremor.
	Poona	Z	i i	19 14 33 15 27		
17				Region near Marianne Island. H = 03h. 55m. 50s. (B.C.I.S.).		
	Poona	Z	I i	04 06 25 06 55		
	New Delhi	N E N,E E	eP LQ eS SS SSS	08 39 24 40 53 41 04 41 16 41 25	960	Slight.
	Poona	Z	i i	08 25 00 45 36		
	Poona	Z	i	09 29 36		
18		Epc:		12° N., 140° E., Mariana Islands Region. H = 15h. 59m. 10s. (U.S.C.G.S.).		
	Calcutta	E	eP i	16 08 43 16 15		Slight. Distant.
	Bombay	N,E	e e	16 09 - 19 01		Feeble.
	Kodaikanal	E	e(P)	16 09 10		Tremor.
19		Epc:		7° N., 71½° W., Colombia - Venezuela border. Minor property damage. H = 09h. 58m. 53s. h = 60 km ca (U.S.C.G.S.). Mag. 6¾ - 7 (Pasadena); 6½ (Praha); 6,3 (Roma).		
	Bombay	N,E	ePKP1 ePP i	10 18 20 21 01 21 58	15,160	Slight.
	Hyderabad	N E	ePKP PKS M M	10 18 23 21 56 11 15 46 18 11		Per. = 15 sec. μ = 5. Per. = 16 sec. μ = 6.
	Poona	E	iPKP i i i i	10 18 28 21 04 21 56 26 00 27 44		Phases not clear.
	Kodaikanal	E	ePKP	10 18 32		Slight. Very distant. Phases not clear.
	Calcutta	E	iPKP iPP	10 18 33 21 58		
	Colombo	E	e	10 20 -		Trace not distant and time approximate. End merged into following shock.


h. m. s. km.

1952
19

Epc: Bismarck Sea. H = 11h. 11m. 45s. (U.S.C.G.S.).
 1 1/2° S., 150° E. H = 11h. 11m. 45s. (B.C.I.S.).

	Calcutta	E	e iS	11 22 50 31 20		Slight. Distant.
	Bombay	N,E	P	11 23 --		
	Colombo	E	PcP M	11 23 30 35 -		Times approximate Amp = 1.0mm.
	Poona	E	iPcP i i	11 23 48 26 20 24 44		Distant. Phases not clear.
	Poona	E	e i i i	20 34 05 44 10 45 03 45 14		Phases not clear.
19	New Delhi	E N	eP eS	23 13 29 14 57	840	Slight.
	Poona	E	e i	23 18 12 18 24		Phases not clear.
20	Bombay	N,E	e	10 29 -		Very feeble surface waves.
20	Poona	E	i i	17 09 01 09 13		
21	Poona	Z	i i	01 29 14 29 28		
	Poona	Z	i i i	03 49 31 49 40 49 51		
23	Bombay	N,E	e	16 23 -		Very feeble.
26	Bombay	N,E	e	12 44 -		Very feeble.
26	New Delhi	N,E	ePg iSg	22 01 12 01 13	55	Slight.
28	Bombay	N,E	e	04 20 -		Very feeble.
28	Epc: 42 1/2° N., 143° E., Hokkaido, Japan. H = 10h. 54m. 18s. (U.S.C.G.S.). Off the Coast of Urakawa (Hokkaido); 42° N., 142° 8 E. (C.M.O.). Mag. 6 1/2 (Pasadena), 6 1/4 - 6 1/2 (Wellington).					
	New Delhi	N,E N	eP eS PPS ScS SS M	11 03 41 11 16 11 35 13 48 14 59 23 37	6,000	Moderate.
	Poona	E	iP PcP PP ScP iS PS ScS	11 04 41(?) 04 52 07 09 08 27 12 26 13 52 14 13	7,290	Modetate.

DATE	STATION	COMPT.	PHASE	G. M. T.			Δ	REMARKS.
				h.	m.	s.	km.	
<u>April</u>								
1952								
28	Calcutta	E	e	11	04	42		Slight. Distant.
(Contd)			i		10	11		
			i		10	43		
	Bombay	N,E	eP	11	04	43	7,190	Slight.
			PP		07	13		
			eS		13	23		
			iPS		13	40		
			SS		17	18		
			LR		25	-		
	Kodaikanal	E	P(?)	11	05	00	7,035	Feeble. Distant.
			S		13	32		
			M		29	54		
29	Epc: 26° N., $122\frac{1}{2}^{\circ}$ E. Off North Coast of Formosa.							
	H = 02h. 35m. 00s. (U.S.C.G.S.).							
	Calcutta	E	iP	02	41	29	3,220	Moderate. First movement West.
			iS		46	20		
			SS		47	47		
	New Delhi	N,E	iP	02	42	45	4,110	Moderate, deep focus.
		N	iS		48	31		
			i		50	08		
			iSS		51	39		
			i		52	16		
			i		52	55		
	Hyderabad	N,E	iP	02	42	44	4,320	
		E	PP		44	39		
		N,E	iS		48	53		
		N	ScS		52	29		
			M		58	37		Per. = 12 sec. $\mu = 3.$
	Kodaikanal	E	iP	02	43	24	4,700	Slight. Initial movements of P, PcP and S towards West. Other phases not clear.
			iPcP		45	31		
			iS		49	46		
	Poona	E	iP	02	43	27	5,400	Moderate.
			PP		45	02		
			i		45	21		
			PPP		45	37		
			ScP		48	51		
			iS		49	45		
			PS		49	51		
			PPS		49	59		
			SS		52	51		
			LQ		53	31		
			SSS		53	51		
			LR		54	58		
			M		57	48		
	Bombay	N,E	iP	02	43	43	5,120?	Slight.
			iPP		45	27		
			iS		50	03		
			iSS		52	58		
	Colombo	E	P	02	43	48		Times approximate.
			S		50	13		End merged into following shock.

T. PHASE G. M. T.  REMARKS.

 h. m. s. km.

April
 1952
 29
 (Contd)

Epc: 15° S., 44½° E., Mosambique Channel. h = About 200km.
 H = 03h. 07m. 35s. (U.S.C.G.S.).

Bombay	N,E E N	eP iSY eSY	03 15 45 22 05	4,660	Feeble.
Poona	E	iP iS PS SSS	03 15 49 22 07 22 14 26 09		Slight.
Colombo	E	P S L	03 15 53 22 03 28 18		
Kodaikanal	E	i(S) e M	03 21 25 24 44 27 08		Slight. Per. = 21 sec. $\mu = 13.4,$
Hyderabad	N,E N,E E	iP iS M	03 16 00 22 44 32 15	5,020	Per. = 15 sec. $\mu = 4.$
Calcutta	E	i e	03 25 10 35 05		Slight. Distant.
Hyderabad	N,E N	iP iS L M	11 04 23 12 59 26 42 31 43	7,100	Per. = 13 sec. $\mu = 3.$
Kodaikanal	E	e(?)	23 09 15		Tremor.

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Epc: Region near Altyn-Tagh;
 H = 00h. 54.5m. (B.C.I.S.).

Calcutta	E	i i i	00 57 30 58 12 58 28		Slight; near.
Poona	E	iP PP eS LQ SS SSS LR M	00 58 21 58 37 01 01 47 01 55 02 12 02 31 02 46 04 21	2,080	Slight.
Bombay	E	eP eS SS M	00 58 29 01 02 22 03 02 06 40	2,360	Slight. Per. = 10 sec. $\mu = 2.$
Kodaikanal	E	e(?)	01 02 37		Tremor.
Hyderabad	N	M	01 04 39		Per. = 9 sec. $\mu = 2.$

30

Epc: Region near Altyn-Tagh.
 H = 01h. 50.4m. (B.C.I.S.).

Calcutta	E	i i M(?)	01 53 41 55 24 56 33	1,000	Slight. First movement East.
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DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS.
				h.	m.	s.		
April 1952								
30 (Contd)	Poona	E	eP	01	54	13	2,360	Slight.
			iS		58	13		
			SSS		59	55?		
			LR		59	43		
			i	02	00	32		
			M	01	01	35		
	Bombay	E	eP	01	58	24	1,510	Slight.
			LQ	02	00	50		
			iS		00	57		
			M		02	50		Per. = 7 sec. $\mu = 2.$
	Hyderabad	N	M	02	01	59		Per. = 8 sec. $\mu = 2.$
30	Bombay	N,E	e	07	44	-		Very feeble.
30	Poona	Z	iP	11	23	09		
			S*		26	47		
			Sg		27	35		
	Bombay	N,E	e	11	27	-		

- : Voluntary Observers' Reports.: -

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

Place	Date	G. M. T. of earthquake		Duration secs	Intensity R.F.Scale	No. of shocks	Remarks.
		h.	m.				
Shillong	April 7th	00	34	10	V	1	
Gauhati	18th	08	48	3.4	V	1	Mild Intensity
Gauhati Aerodrome	18th	08	53	1	V	1	
Shillong	18th	08	54	10	V	1	
Srinagar	22nd	12	30	3	VIII	2	Two shocks at an interval of one second.

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

March, 1952.

Published under the direction of
V. V. Sohoni, B.A. (Hons.), M.Sc.,
Director General of Observatories.

Instruments and their Constants.

Station	Instrument	Compt.	Period in secs.	Static Magni- fication	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12	350	5:1	16.0
	Milne-Shaw	E	12	350	4:1	8.0
	Sprengnether	E	7	-	-	30.0
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	E	12	250	20:1	-
Dehra Dun	Omori	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12	249	20:1	8.0
	Milne-Shaw	N	12	249	20:1	8.0
Kodaikanal	Milne-Shaw	E	10	250	20:1	8.0
New Delhi	Milne-Shaw	N	12	288	20:1	8.0
	Wood-Anderson	N	4	1000	20:1	16.0
	Wood-Anderson	E	2	2000	30:1	60.0
	Omori-Ewing	E	30	30	-	12.0
Poona	Milne-Shaw	N	12	250	20:1	8.0
	Wood-Anderson	E	4	1100	20:1	16.0
	Sprengnether	E	7.2	-	-	30.0
	Benioff	Z	To = 1.0 Tg = 0.28		-	60.0



	PHASE	G. M. T.			REMARKS.
		h.	m.	s.	
<u>Mar.</u>					
1952					
1	Epc: Near North Coast of Celebes Island.				H = 06h 04m 05s (U.S.C.G.S.).
	Poona	Z	iP	06 13 44	Tremor.
		E	eP	13 46	
1	New Delhi	N,E	eP	08 10 27	
			eS	10 54	
		E	i	11 12	
	Poona	Z	i	08 15 24	Tremor.
			i	16 16	
			i	16 54	
1	Epc: Near East Coast of Hokkaido, Japan.				H = 15h 31m 02s (U.S.C.G.S.).
	Poona	Z	iPY	15 41 27	Tremor.
		E	ePY		
	Bombay	N,E	e	16 10 -	Very feeble.
1	New Delhi	N,E	eP	19 00 12	2,890 Slight.
		E	PP	00 18	
			LQ	00 35	
			LR	00 40	
		N,E	iS	00 45	
			S*	00 49	
		N	SS	00 55	
	Poona	Z	i	19 02 23	
			i	04 54	
			e	05 58	
2	Bombay	E	e	20 10 -	Very feeble.
		N		Record defective.	
3	Epc: 21½°S., 174½°W. (Tonga Island).				H = 07h 12m 39s (U.S.C.G.S.).
	Bombay	N	ePKP ₁ ?	07 31 15	12,780 Feeble, distant.
		E	ePP	32 18	
			SKS	38 24	
			PS	42 36	
	Hyderabad	N	M	08 24 29	Per. = 18 secs. $\mu = 5$.
3	Epc: 11°N., 86½°W. near the Coast of Nicaragua;				H = 17h 42m 07s; h = 100 kms (U.S.C.G.S.).
	Bombay	N,E	e	19 09 -	Very feeble.
4	Epc: 42½°N., 143½°E. near Coast of Hokkaido, Japan. Heavy casualties and extensive property damage. Seismic sea waves				H = 01h 22m 41s (U.S.C.G.S.); Mag. 8¼ (Pasadena); 8 (Berkeley).
	Calcutta	N	eP	01 32 03	5,545 Very great.
			iS	39 13	

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

						km.	

Mar.							
1952							
4	Poona	Z,N,E	iP	07	10	51	4,390 Slight.
(Contd)		N,E	PP		12	29	
		E	PcP		12	51	
		N,E	iS		16	54	
			SS		19	34	
	Bombay	N	ePY	07	11	01	4,520 Slight.
		E	iPY				
		N,E	PP		12	39	
			PPP		13	09	
			iS		17	11	
			iSS		20	05	
			LQ		20	31	
4	Poona	Z	i	11	04	42	Tremor.
4	Epc: 42°N., 145½°E. Off East Coast of Hokkaido.						
	H = 14h 19m 40s (U.S.C.G.S.).						
	Poona	Z	i	14	30	19	Tremor.
4	Epc: 43°N., 146°E. Off East Coast of Hokkaido.						
	H = 16h 31m 00s (U.S.C.G.S.);						
	O = 16h 30m 59s (Poona).						
	New Delhi	N,E	eP	16	40	37	6,190 Moderate.
		N	iS		48	23	
			PPS		48	43	
			ScS		50	03	
			M		17	01	22
	Hyderabad	E	P	16	41	14	6,800 \triangle from SN-PN.
		N	iP		41	18	
		E	PP		43	32	
		N	iS		49	38	
			SS		53	47	
			M		17	05	58
		E	M		08	04	Per. = 12 secs. μ = 4.
							Per. = 15 secs. μ = 4.
	Poona	Z,N,E	iP	16	41	31	7,200 Slight.
		E	PP		43	59	
			PPP		45	31	
			PcS		46	05	
		N,E	eS		50	13	
		E	SS		54	26	
		N	SS		54	31	
		E	SSS		57	13	
		LQ	LQ	58	58	03	
			LR	17	01	20	
	Bombay	N,E	eP	16	41	39	7,220 Slight.
			eS		50	21	
			PS		50	39	
			ScS		51	31	
			SS		54	53	
			LR	17	01	-	
		E	M		13	56	Per. = 12 secs. μ = 3.
		N	M		14	49	Per. = 12 secs. μ = 4.

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
				km.			
Mar. 1952	Epc: 42½°N., 144°E. near East Coast of Hokkaido. H = 17h 17m 57s (U.S.C.G.S.).						
4	Poona	Z	i	17	28	26	Slight. Phases not clear.
			i		28	34	
4	Poona	Z	i	18	06	52	
			i		07	02	
4	Epc: 10°S., 161½°E., Solomon Island, H = 19h 30m 28s (U.S.C.G.S.); Mag. 6¼ (Pasadena).						
	Poona	Z	i	19	43	37	
			i		43	44	
	Bombay	N,E	eP	19	43	48	10,220 Feeble. Later phases mixed up with succeeding shock.
			SKS ₁		54	18	
		E	eS ₁		54	48	
4	Epc: 42°N., 146°E. Off East Coast of Hokkaido. After shock of (March 5, 1952; H = 03h 49m 03s); H = 19h 56m 10s. O = 19h 56m 09s (Poona).						
	New Delhi	N,E	iP	20	05	53	6,190 Moderate.
		N	i		06	21	
			PcP		06	47	
			iS		13	39	
			PPS		14	05	
			ScS		15	41	
			SS		17	35	
			LR		22	47	
			M		27	53	
	Hyderabad	N,E	P	20	06	33	6,880
		N	PP		09	07	
			iS		14	57	
			SS		18	40	
			L		27	55	
			M		31	19	Per. = 15 secs. μ = 23.
		E	M		31	23	Per. = 14 secs. μ = 12.
	Poona	Z,N,E	iP	20	06	51	7,180 Slight. Aftershock.
		N,E	eS		15	31	
		E	PS		15	54	
		N,E	PPS		15	03	
			SS		20	00	
		E	SSS		22	31	
			LQ		23	29	
		N	LR		26	40	
		E	LR		26	43	
		N	M		32	00	Per. = 20 secs. Amp. = 19.0mm(?)
4	Bombay	E	ePX	20	06	55	7,220 Moderate.
		N	iPX				
		N,E	PcP		07	27	
			PP		09	20	
			PPP		11	08	
			iS		15	37	
			PPS		16	10	
			iScS		16	48	
			iSS		20	15	
			LQ		24	35	
			LR				

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
						km.	
<u>Mar.</u>							
1952							
4	Bombay	N,E	LQ	20	24	05	
(Contd)	(Contd)		LR		27	08	
		E	M		36	28	Per. = 12 secs. μ = 11.
		N	M		38	53	Per. = 15 secs. μ = 20.
	Kodaikanal	E	eP	20	07	14	7,580 Slight.
			iS		16	14	
			M		34	05	
4	Epc: Hokkaido, Japan. Aftershock. H = 20h 49m 20s (U.S.C.G.S.).						
	Poona	Z	i	20	59	54	
			i	21	00	09	
4	Epc: 43°N., 145½°E. Off East Coast of Hokkaido. H = 22h 51m 57s (U.S.C.G.S.).						
	Poona	Z	i	23	02	30	Tremor.
			i		02	38	
			i		02	43	
5	Epc: 43°N., 145½°E. Off Hokkaido. H = 01h 20m 21s (U.S.C.G.S.).						
	Poona	Z	i	01	30	55	
5	New Delhi	N,E	eP	03	27	39	Slight.
			Pg		27	50	
		E	LQ		28	09	
		N,E	iS		28	19	
			S*		28	25	
		N	SS		28	29	
			Sg		28	33	
		N,E	SSS		28	39	
	Poona	Z	eP	03	30	03	Slight.
			i		30	23	
			i		30	34	
			i		33	36	
			i		33	47	
			i		34	00	
		E	i		34	47	
	Bombay	E	e	03	33	19	Tremor.
			iX		33	48	
		N	eX				
5	O = 03h 49m 07s (Poona).						
	Kodaikanal	E	e	03	57	50	Tremor.
	New Delhi	N,E	P(?)	03	58	48	6,130 Moderate. P time may be
		N	iS	04	06	30	undertain by 3 secs. due
			PPS		06	55	to time gap.
			ScS		08	16	
			SS		10	24	
			M		21	58	
	Hyderabad	N,E	P	03	59	24	6,880 Δ from SN-PN.
		N	iS	04	07	48	
		E	S		07	54	
		N	SS		11	50	
			M		23	59	Per. = 15 secs. μ = 9.
		E	M		26	13	Per. = 15 secs. μ = 6.



	Z, E	iP	03 59 45	7,110	Slight. After shock.
	N	eP	59 45		
	N, E	iS	04 08 21		
	E	PPS	08 55		
		SS	12 25		
		LQ	16 00		
		LR	18 58		
Bombay	N, E	iP	03 59 48	7,220	Moderate.
		PcP	04 00 18		
		PP	02 14		
		iS	08 30		
		PPS	09 07		
		iScS	09 40		
		SS	12 44		
		i	13 04		
	N	LQ	16 09		
	E	M	31 36		
		M	32 06		
					Per. = 13 secs. $\mu = 6.$
					Per. = 13 secs. $\mu = 4.$
Dehra Dun	N	e	04 07 22		
Poona	Z	i	05 07 50		Tremor.
		i	48 11		
		i	48 21		
Poona	Z	i	07 42 28		
		i	42 37		
		i	42 42		

Epc: 43°N., 145½°E. Off East Coast of Hokkaido.
 H = 09h 17m 08s (U.S.C.G.S.);
 O = 09h 17m 01s (Poona).

New Delhi	N, E	eP	09 26 44	6,280	Moderate.
	N	iS	34 35		
		ScS	36 31		
Hyderabad	E	eP	09 27 23	6,880	
		iS	35 47		
	N	M	53 18		
	E	M	54 45		
					Per. = 15 secs. $\mu = 4.$
					Per. = 15 secs. $\mu = 4.$
Poona	Z	iPX	09 27 42	7,165	Slight. After shock.
	E	ePX			
		PP	30 10		
		PcP	32 11		
	N, E	iS	36 20		
	E	PS	36 39		
		PPS	36 45		
		ScS	37 25		
		SS	40 27		
Bombay	E	iP	09 27 46	7,190	Slight.
		PcP	28 14		
		iS	36 26		
		SS	40 36		
		LQ	44 27		
		LR	47 35		
	N	M	10 00 20		
					Per. = 13 secs. $\mu = 3.$
					Loss of record.

1952

5 Kodaikanal E e 09 28 05 Tremor.

(Contd) Dehra Dun N e 09 48 00

 5 Epc: 43°N., 145°E. Off East Coast of Hokkaido.
 H = 10h 50m 52s (U.S.C.G.S.).

 Poona Z i 11 01 25 Tremor.
 i 01 33

 Bombay E eP 11 01 30 Very feeble.
 e 10 36
 N Loss of record.

5 Poona Z i 11 29 39

 5 New Delhi N,E eP 14 44 35 1,200 Slight.
 eS 46 38
 N SS 46 51

 Poona Z i 14 47 06 Slight.
 i 47 13
 i 49 39
 i 49 58
 Z,E i 50 34

 Bombay E e 14 50 - Very feeble.
 N Loss of record.

 5 Epc: 43°N., 145½°E. Off East Coast of Hokkaido.
 H = 15h 54m 18s (U.S.C.G.S.);
 O = 15h 54m 17s (Poona).

 Calcutta E iP 16 03 42 5,920 Moderate. After shock.
 PP 05 45 First movement East.
 iS 11 13
 SS 14 41
 SSS 16 24
 LR 18 50
 M 23 18
 Mn 29 45

 New Delhi N,E eP 16 03 56 6,160 Moderate.
 N iS 11 40
 PS 11 54
 M 25 44

 Hyderabad E P 16 04 36 6,850
 N iS 12 58
 SS 17 13
 M 29 31
 E M 31 01
 Per. = 15 secs. μ = 7.
 Per. = 12 secs. μ = 4.

 Poona Z,E iP 16 04 54 7,110 Slight. After shock.
 E PP 07 17
 PcS 09 29
 N,E eS 13 43
 E SS 17 29
 SSS 20 21

1956							
5	Bombay	E	iP	16 04 58	7,220	Moderate.	
	(Contd)		i	05 22			
			PP	07 19			
			PPP	09 09			
			eS	13 40			
			PPS	14 14			
			ScS	14 50			
			SS	17 50			
			LQ	21 22			
			LR	24 14			
			M	36 12			Per. = 14 secs. $\mu = 6.$
		N	Loss or record.				
	Kodaikanal	E	e	16 05 11			
	Dehra Dun	N	e	16 13 02			
5	Poona	Z	i	16 33 45		Tremor.	
			i	34 29			
5	Poona	Z	i	17 26 19			
			i	26 24			
5	Poona	Z	i	18 08 18		Tremor.	
			i	08 29			
	Bombay	E	e	18 37 -		Feeble. Surface waves.	
5	Poona	Z	i	20 46 35		Tremor.	
			i	47 02			
			i	54 20			
		E	i	54 45			
	Bombay	E	eP(?)	20 46 41	6,110(?)	Feeble.	
			eS	54 22			
		N	Loss of record.				
	Kodaikanal	E	e	20 52 47			
	Hyderabad	N	SS	20 54 18			
		N	M	21 04 57		Per. = 15 secs. $\mu = 6.$	
	Calcutta	E	i	20 56 54		Tremor.	
5	Poona	E	e	21 02 49			
5	Calcutta	E	e	21 58 51		Tremor.	
			i	59 33			
5	Poona	Z	i	23 50 39(?)			
6	Epc: 34°S., 83°E., Tibet. 0 = 03h 13.6m (Poona).						
	New Delhi	N,E	eP	03 16 39	1,270	Slighh.	
		E	PP	16 47			
			PPP	16 56			
		N,E	eS	18 49			
		N	SS	19 00			



6	Calcutta	E	eS	03 18 15		Slight.
(Contd)			i	19 17		
			M	19 26		
			e	19 33		
	Poona	Z,E	iP	03 18 15	2,265	Slight.
		E	eS	21 59		
			LQ	22 06		
			PcP	22 18		
			SS	22 24		
			SSS	22 40		
			LR	23 04		
			M	24 16		
	Bombay	N,E	eP	03 18 24	2,320	Slight.
			eS	22 13		
		N	M	26 26		Per. = 9 secs. $\mu = 2.$
		E	M	25 26 28		Per. = 9 secs. $\mu = 3.$
	Hyderabad	N	M	03 24 20		Per. = 11 secs. $\mu = 4.$
6	Bombay	E	iP	04 55 25	2,310?	Feeble.
		N,E	iSS(?)	59 44		
6	Bombay	E	iP	05 07 16	2,320	Slight.
		N,E	eS	11 05		
			eSS	11 46		
		E	M	14 45		Per. = 7 secs. $\mu = 1.$
		N	M	14 49		
6	Hyderabad	N	M	05 11 07		Per. = 9 secs. $\mu = 3.$
6	Poona	Z	i	05 55 10		
			i	55 31		
6				0 = 09h 11m 22s (Poona).		
	New Delhi	N,E	eP	09 14 21	1,250	Slight.
			PP	14 31		
			PPP	14 39		
		N	eS	16 29		
		N,E	SS	16 40		
		E	SSS	16 51		
	Poona	Z,E	iP	09 15 59	2,220	Slight.
		E	PP	16 18		
			PPP	16 31		
			eS	18 39		
			LQ	18 49		
			SS	19 09		
			SSS	19 20		
			LR	19 46		
			M	22 12		
	Bombay	N,E	eP	09 16 11	2,320	Slight.
		E	PP	16 32		
		N,E	eS	20 00		
			SS	20 38		
		E	LR	21 22		
		N	LR	21 -		
		E	M	25 44		Per. = 7 secs. $\mu = 2.$
		N	M	25 47		Per. = 7 secs. $\mu = 2.$



	MPT.	PHASE	G. M. T.			REMARKS.	
			h.	m.	s.		
• <u>Mar.</u>							
1952							
6	Hyderabad	N	M	09	20	53	Per. = 10 secs. $\mu = 4$.
(Contd)							
6	Poona	Z	i	16	14	13	
			i		14	32	
			i		14	49	
6	Epc: $42\frac{1}{2}^{\circ}$ N., $145\frac{1}{2}^{\circ}$ E. Off Hokkaido.			H = 17h	56m	59s (U.S.C.G.S.).	
	Poona	Z	i	18	07	36	
6	Poona	Z	i	19	21	43	
6	Poona	Z	i	21	09	22	
			i		10	05	
6	Epc: Near 34° N., 88° E., Tibet.			O = 21h	19.9m	(Poona).	
	New Delhi	E	eP	21	22	56	1,220 Slight.
		N,E	eS		25	01	
	Poona	Z	iPY	21	24	32	2,255 Slight.
		E	ePY				
			iS		28	15	
			LQ		28	24	
			SS		28	40	
			SSS		29	00	
			M		30	53	
	Bombay	E	iP	21	24	41	2,320 Slight.
			eS		28	30	
			LR		29	-	
			M		33	25	
		N	Loss of record.				Per. = 8 secs. $\mu = 4$.
	Calcutta	E	i(S)	21	24	43	Slight, near.
			i		25	01	
			i		25	08	
			i		25	21	
	Hyderabad	N	e	21	29	29	
6	New Delhi	N,E	eP	22	03	47	950 Slight.
			eS		05	25	
			SS		05	36	
6	Poona	Z	i	23	09	58	Tremor.
7	Epc: 36° N., $136\frac{1}{2}^{\circ}$ E., Honshu, Japan.			Felt Honshu, Japan;			
				H = 07h	32m	38s (U.S.C.G.S.);	
	$38\frac{1}{2}^{\circ}$ N., 136° E.;			O = 07h	32m	35s (Poona).	
	Mag. $6\frac{1}{2}$ (Pasadena).						
	Calcutta	E	eP	07	40	49	4,845 Moderate.
			iS		47	19	
	New Delhi	N,E	eP	07	41	31	5,480 Moderate.
		N	iS		48	37	
			ScS		51	19	
			SS		52	10	
			M		59	49	

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

h. m. s. km.							

Mar.							
1952							
7	Kodaikanal	E	eP	07	42	00(?)	6,555 Slight.
(Contd)			iS		50	06	
			M	08	04	15	Per. = 15 secs. $\mu = 11.$
	Hyderabad	N,E	iP	07	42	04	5,970
		N	iS		49	38	
			ScS		51	51	
		E	SS		53	26	
		N	L		59	11	
			M	08	02	07	Per. = 18 secs. $\mu = 43.$
	Poona	N,E	iP	07	42	26	6,390 Moderate.
		N	PP		44	25	
		E	PP		44	30	
		N,E	PPP		46	01	
			iS		50	23	
			PS		50	36	
		E	SS		54	03	
		N	SS		54	10	
		N,E	SSS		57	01	
			LR		59	43	
		N	M	08	04	01	Per. = 19 secs. $\mu = 23.$
	Colombo	E	P	07	42	31	
			S		50	48	
			L	08	03	51	
			M		11	21	Amp. = 0.7mm.
	Bombay	N,E	iP	07	42	32	6,465 Moderate.
			PP		44	43	
			PcS		47	27	
			iS		50	33	
			i		51	06	
			iScS		52	07	
			SS		54	18	
		E	SSS		56	31	
		N	SSS		56	35	
		E	LR		59	29	
		N	LR		59	-	
			M	08	11	15	Per. = 13 secs. $\mu = 8.$
		E	M		11	54	Per. = 14 secs. $\mu = 10.$
	Dehra Dun	N	e	07	49	44?	
			eL	08	00	42	Per. = 12 secs. Amp = 0.5
			M ₁		02	18	Per. = 18 secs. Amp = 0.5
			M ₂		03	36	Per. = 18 secs. Amp = 0.5
7	Epc: 43°N., 146°E. Off East Coast of Hokkaido. H = 18h 16m 02s.						
	Calcutta	E	e	18	26	12	
			i		32	45	
	Bombay	N,E	eP	18	26	42	7,220 Feeble.
			PP		29	09	
			eS		35	24	
			M		57	-	
7	Epc: 43°N., 146°E. Off East Coast of Hokkaido. H = 19h 43m 58s.						
	New Delhi	N,E	eP	19	53	35	6,190 Moderate.
		N	eS	20	01	21	

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7	Bombay	N,E	eP	19 54 38	7,220	Feeble.
(Contd)		E	eS	20 03 20		
	Calcutta	E	e	20 00 24		Tremor.
7	Calcutta	E	e	22 07 32		Tremor.
			i	08 01		
	Bombay	N,E	e	22 14 -		Very feeble.
8	Epc: 3°N., 98°E., Sumatra. H = 18h 37m 34s (B.C.S.F.); O = 18h 37m 36s (Poona).					
	Colombo	E	iP	18 42 00		
			S	45 33		
			L	47 23		
			M	48 03		Amp. = 0.2mm.
	Kodaikanal	E	e(PP)	18 42 53		Tremor.
	Hyderabad	N,E	iP	18 42 54	2,580	
		N	iS	47 03		
			L	48 59		
			M	52 02		Per. = 16 secs. $\mu = 5.$
	Calcutta	E	e(PP)	18 42 54		Slight, distant.
			e	45 37		
			i	46 59		
			i	48 56		
	Poona	Z	iPX	18 43 31	3,145	Slight.
		N,E	ePX			
		E	PPP	44 41		
		N,E	PcP	46 23		
			eS	48 17		
		N	LQ	49 42		
		E	LQ	49 45		
		N	SS	49 54		
		E	SS	50 00		
		N,E	LR	51 17		
		E	ScS	53 37		
	Bombay	N,E	eP	18 43 43	3,120	Slight.
			PP	44 22		
			PcP	47 08		
			e(S)	48 28		
		N	LR	50 37		
		E	LR	50 51		
	New Delhi	N,E	eP	18 44 03	3,510	Slight.
		N	eS	49 12		
			SS	51 11		
			LR	52 42		
			M	55 37		
9	Epc: 42°N., 143½°E. near South Coast of Hokkaido. Slight property damage. H = 17h 03m 43s (U.S.C.G.S.); 41.5N., 142.5E. O = 17h 03m 43s (Poona). Mag. 7 (Pasadena).					
	Calcutta	E	iP	17 12 34	5,445	Moderate. First movement West.
			iS	19 38		

Year	Station	Code	Time	Time	Distance (km)	Remarks
1958	New Delhi	N,E	iP	17 13 12	5,990	Moderate. Direction of first movement North and East.
		N	PcP	14 22		
			PP	15 35		
			iS	20 46		
			i	21 11		
			ScS	23 16		
			SS	24 45		
			LR	28 26		
			M	32 01		
			Mn	33 10		
					Per. = 26 secs. μ = 223.	
Hyderabad	N,E	iP	17 13 51	6,580		
		E	PP			16 05
		N	S			21 59
		E	S			22 03
			PS			22 11
		N	SS			26 05
		E	L			33 17
		N	M			37 07
		E	M			38 00
Poona	Z,N,E	iP	17 14 11	6,940	Moderate.	
		N	PcP			14 39
		N,E	PP			16 29
		N	PPP			18 01
		N,E	PcS			18 29
			iS			22 38
			PS			23 05
			PPS			23 15
			SKS			23 53
			SS			26 53
			SSS			29 35
		N	LQ			30 23
			LR			33 20
			M			38 31
Bombay	E	iP	17 14 14	7,000	Moderate.	
			PcP			14 44
			PP			16 43
			PcS			18 44
			iS			22 44
			iPS			23 05
			iScS			23 42
			iSS			26 58
			LR			33 48
			M			44 04
		N				Loss of record.
Colombo	E	P	17 14 30			
		S	23 17			
		L	40 30			
		M	44 40			
					Amp. = 0.9mm.	
Kodaikanal	E	iP	17 14 35	7.135	Moderate.	
			PPP			18 35
			iS			23 12
			SS			27 36
			SSS			30 21
			LQ			31 12
			LR			34 18
	M	39 45				
					Per. = 21 secs. μ = 18.	

Date	Location	Station	Type	Time (h m s)	Magnitude	Remarks
1952						
9	Dehra Dun	N	eP	17 15 48	6,763	Probable time correction: - 2m 30s.
			eS	23 43		
			eL?	33 44		
			M ₁	35 42		Per. = 30 secs. Amp. = 0.10".
			M ₂	39 42		Per. = 24 secs. Amp. = 0.11".
9	Bombay	E	e	19 09 39		Feeble.
			M	41 -		
		N		Loss of record.		
9	Bombay	E	M	21 04 -		Feeble.
		N		Loss of record.		
10	Poona	Z	e	16 03 04		Tremor.
10	Epc: 42½°N., 144½°E. Off Hokkaido. H = 18h 00m 55s (U.S.C.G.S.).					
	New Delhi	N,E	eP	18 10 39	6,120	Slight.
		N	eS	18 21		
			PPS	18 39		
	Poona	Z	i	18 11 38		
	Bombay	E	e	18 42 -		Very feeble.
		N		Loss of record.		
11	Poona	Z	e	15 35 01		
			i	55 36		
11	Epc: 31°5N., 90°0E., Tibet. O = 20h 27m 25s (Poona).					
	New Delhi	E	eP	20 30 23	1,260	Slight.
		N	eS	32 32		
			M	34 01		
	Calcutta	E	e	20 30 30		Slight; near.
			i			
			i	31 52		
			i	32 21		
			i	32 41		
	Poona	Z,E	iP	20 32 03	2,200	Moderate.
		E	PP	32 19		
			PPP	32 32		
		Z,E	eS	35 38		
		E	LQ	35 50		
			PcP	36 07		
			SS	36 16		
			SSS	36 25		
			LR	36 48		
			M	38 27		
			PcS	39 36		
			ScS	43 15		
	Bombay	E	eP	20 32 14	2,400	Slight.
			eS	36 00		
			M	40 36		Per. = 9 secs. $\mu = 5.$
		N		Loss of record.		

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No.	Epc:	Lat.	Long.	Loc.	Dir.	Phase	Time	Dist.	Remarks
11	42°N., 145°E.			Off Hokkaido.			H = 20h 37m 20s (U.S.C.G.S.).		
	Poona	Z	i				20 47 51		Tremor.
11	Bombay	E N	e				21 15 -		Feeble, surface waves.
							Loss of record.		
12	Poona	Z	e				01 15 50		
12	New Delhi	N,E	ePg eSg				20 01 36 01 39	30	Slight.
13	27°N., 66°E.			Baluchistan.			0 = 06h 14.3m (Poona).		
	Bombay	E	eP PP LQ iS LR M				06 56 36 56 44 58 20 58 30 59 01 07 02 19	1,110	Slight. Per. = 8 secs. $\mu = 3.$
		N					Loss of record.		
	New Delhi	N,E	iP PP PPP P* iS SS SSS S* Sg				06 56 41 56 49 56 56 57 04 58 31 58 45 58 55 59 07 59 31	1,070	Slight. Direction of first movements North and East.
		N N,E N							
	Poona	Z,E E	iP LQ S SS LR M				06 56 50 58 16 58 51 59 04 59 10 59 49	1,180	Slight.
	Calcutta	E	iPP iSS e ?				06 59 02 07 03 18 04 18 05 22		Slight.
13	28½°N., 127°E.			East China Sea.			Felt Ryukyu Island, Kyushu and Shikoka, Japan. H = 13h 57m 26s ; h = 200 km (approximate) (U.S.C.G.S.).		
	Calcutta	E	iP PP eS LR				14 04 09 05 13 09 19 12 43	3,520	Moderate. First movement West.
	New Delhi	N,E N N,E N	eP pP iS sS SS i LR				14 05 16 06 16 11 21 13 09 14 40 15 04 16 10	4,540	Moderate. h = 280 kms.



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.	
				h.	m.	s.		
<u>Mar.</u>								
1952								
13	Colombo	E	P	14	06	03		
(Contd)			?		09	06		
			L		14	36		
			M		15	33	Amp. = 0.6mm.	
	Poona	Z,E	iP	14	06	04	5,110 Moderate. Probable Epc:	
		E	PcP		07	04	South of Formosa.	
			PPP		08	37		
			S		12	49		
			PS		12	54		
			PPS		13	03		
			ScS		15	23		
			LQ		17	37		
			SSS		17	47		
			LR		19	55		
			M		24	13		
	Bombay	E	iP	14	06	10	5,555 Moderate.	
			i		07	12		
			PP		08	12		
			iS		13	01		
			sS?		14	14		
			i		14	52		
			SS		17	03		
			SSS		18	36		
			LR		20	39		
		N	Loss of record.					
	Kodaikanal	E	e	14	06	11	Slight. Phases not clear.	
13	Poona	Z	e	19	00	58		
13	Epc: Probably near 34°N., 88°E., Tibet. 0 = 23h 11.5m (Poona).							
	Calcutta	E	e(S)	23	15	58	Slight, near.	
			i		17	16		
			i(M)		17	41		
	Bombay	E	eP	23	16		Slight. Time mark absent	
			M		25	21	in the Sprengnether record.	
		N	Loss of record.					Per. = 8 secs. $\mu = 2.$
	Poona	Z,E	iP	23	16	48	2,630 Slight.	
		E	S		21	01		
			LQ		21	32		
			LR		21	45		
			M		24	31		
14	Bombay	N,E	e	07	23	-	Very feeble.	
14	Epc: 34°N., 88°E., Tibet. 0 = 13h 25.2m (Poona).							
	New Delhi	E	eP	13	28	51(?)	1300 Slight.	
		N	eS		31	04(?)		
			M		32	50		
	Calcutta	E	e(S)	13	29	28	Slight, near.	
			i		29	47		
			i		30	30		



PHASE	G. M. T.			△	REMARKS.
	h.	m.	s.	km.	

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14	Poona	Z	eP	13 30 25	2,610	Slight.
	(Contd)	E	eS	34 36		
			SSS	35 33		
			LR	36 19		
			ScP	37 21		
			M	38 26		
	Hyderabad	N	e	13 35 19		
14	Poona	Z	i	14 37 52		
14	Poona	Z	e	16 14 33		
			i	14 43		
14	Epc: 34°N., 90°E., Tibet. 0 = 18h 19.8m (Poona).					
	Calcutta	E	eP	18 22 14	1,110	Slight.
			iS	24 08		
	New Delhi	E	eP	18 22 54	1,310	Slight.
		N	eS	25 08		
			M	26 54		
	Hyderabad	N	eP	18 24 04	2,080	
			eS	27 30		
			L	29 08		
			M	30 26		Per. = 8 secs. $\mu = 4.$
	Poona	Z,E	eP	18 24 32	2,310	Slight.
		E	PP	24 50		
			S	28 20		
			LQ	28 40		
			SSS	29 12		
			LR	29 35		
			M	31 -		
	Bombay	E	eP	18 24 38	2,335	Slight.
			eS	28 20		
			SS	29 09		
			LR	30 -		
			M	34 03		Per. = 7 secs. $\mu = 2.$
		N	Loss of record.			
14	Epc: 43½°N., 145½°E., Off Hokkaido. H = 20h 55m 20s (U.S.C.G.S.).					
	New Delhi	N,E	eP	21 04 55	6,150	Moderate.
		N	eS	12 39		
	Poona	Z,E	iP	21 05 56	7,180	Slight.
		E	PcP	06 12		
			eS	14 36		
			PS	14 52		
			PPS	15 19		
	Bombay	E	eP	21 05 59		Feeble.
			e	15 04		
			M	36 35		
		N	Loss of record			

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				h.	m.	s.	
				km.			
Mar. 1952							
14	Epc: 34°N., 77°5E., Kashmir. Felt mildly at Srinagar.						
	O = 23h 27.5m (Poona).						
	New Delhi	N,E	iP iPg	23 28 37 29 10	780	Slight.	
	Poona	Z E	iP iS SS LR M	23 30 55 33 57 34 10 34 35 36 -	1,750	Slight.	
	Bombay	E	eP eS SS SSS	23 30 58 33 49 34 05 34 17	1,700	Feeble.	
		N	Loss of record.				
	Calcutta	E	i(S) i i	23 33 21 33 40 42 45		Tremor.	
15	Poona	Z	i	01 21 29			
15	Poona	Z	i	05 16 55			
	Bombay	N,E	e	05 26 -		Very feeble.	
15	Epc: 5½°S., 100½°E. Off South-West Coast of Sumatra.						
	H = 11h 15m 46s (U.S.C.G.S.);						
	O = 11h 15m 50s (Poona).						
	Colombo	E	P S(?) L M ₁ M ₂	11 21 14 25 46 30 04 31 06 35 29		Amp. = 2.5mm. Amp. = 2.6mm.	
	Kodaikanal	E	iP PP eS(?) LQ LR M	11 21 49 22 22 26 01 26 43 27 52 29 52	2,620	Slight, phases not clear. Per. = 12 secs. μ = 12.1.	
	Hyderabad	N	iP PP iS SS L M	11 22 07 23 04 27 21 28 51 31 13 33 49	3,550	Per. = 18 secs. μ = 33.	
	Poona	Z,E E	iP PP iS ScP i SS LQ SSS LR M	11 22 48 24 05 28 19 28 39 29 25 30 41 30 47 31 14 32 34 34 -	3,880	Moderate.	



				h.	m.	s.	km.		
1952									
15	Calcutta	E	ePP	11	22	53	3,165	Moderate.	
(Contd)			S		26	49			
			SSS		28	33			
	Bombay	N,E	iP	11	22	57		Moderate.	
			PP		24	24			
			PPP		24	47			
			iS		28	44			
			SS		31	23			
			SSS		31	47			
		E	LR		32	55			
		E	M		38	01		Per. = 17 secs. $\mu = 17.$	
		N	M		39	11		Per. = 19 secs. $\mu = 17.$	
	New Delhi	N,E	P	11	23	21	4,340	Moderate. Time of P un-	
		N	PP		24	54		certain up to 3 secs.	
			PPP		25	14		due to time-gap.	
			PcP		25	26			
			iS		29	21			
			LQ		32	17			
			SSS		32	40			
			LR		33	56			
			M		37	21			
	Dehra Dun	N	e	11	31	48			
			eL		39	06			
			M ₁		40	42		Per. = 30 secs. Amp = 0.04"	
			M ₂		45	39		Per. = 21 secs. Amp = 0.04"	
16	Poona	Z	i	07	00	56		Tremor.	
			i		01	07			
			i		01	13			
16	Poona	Z	i	11	13	26			
			e		13	31			
16	Poona	Z	i	19	10	50		Tremor.	
16	Epc: 42 $\frac{1}{2}$ ^o N., 144 ^o E. Off Hokkaido. H = 22h 09m 23s (U.S.C.G.S.).								
	Bombay	N	e	22	20	-		Very feeble.	
		N,E	M		50	-			
16	Poona	Z	iP	23	19	49			
			i		20	08			
18	Epc: Off Hokkaido - Coast. H = 05h 01m 45s (U.S.C.G.S.).								
	Bombay	E	e	05	31	-		Very feeble.	
		N	Loss of record.						
18	Epc: 12 ^o S., 168 ^o E., Santa Cruz Island. H = 10h 56m 27s.								
	Poona	Z	eP	11	09	58			
	Hyderabad	N,E	e	11	19	48			
19	Epc: 40 ^o N., 29 ^o E., North-West Turkey. H = 01h 27m 23s (U.S.C.G.S.).								
	Poona	Z	iP	01	35	32			
19	Poona	Z	eP	08	12	34			

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 h. m. s. km.

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 19

Epc: $41^{\circ}N., 125^{\circ}E.,$ near Korea-Manchuria Border. Felt - Seoul.
 $39.5^{\circ}N., 125.5^{\circ}E.;$ H = 09h 04m 18s (U.S.C.G.S.);
 O = 09h 04m 10s (Poona).

New Delhi N,E e 09 12 02 Slight.
 N e 18 11
 i 18 49
 i 19 32
 e 21 28
 M 26 41

Hyderabad N eP 09 12 41 5,030
 N,E S 19 22
 E SS 22 54
 N M 31 44 Per. = 14 secs. $\mu = 5.$
 E M 31 49 Per. = 15 secs. $\mu = 5.$

Poona Z iPX 09 12 59 5,490
 E ePY
 PP 14 58
 PPP 15 52
 ScP 18 12
 iS 20 06
 PS 20 13
 PPS 20 20
 ScS 22 48
 SS 23 54
 LQ 24 56
 SSS 25 08
 LR 27 05
 M 31 29

Bombay N,E eP 09 13 05 5,455 Slight.
 PP 15 09
 eS 20 10
 e 24 16
 E M 33 24 Per. = 15 secs. $\mu = 4.$
 N M 35 19 Per. = 13 secs. $\mu = 3.$

19 Epc: $9\frac{1}{2}^{\circ}N., 127^{\circ}E.,$ Off East Coast of Mindanas Island.
 H = 10h 57m 09s (U.S.C.G.S.);
 $9^{\circ}N., 126.5^{\circ}E.;$ O = 10h 57m 13s (Poona);
 Mag. $7\frac{1}{2} - 7\frac{3}{4}$ (Pasadena).

Calcutta E iP 11 04 46 4,845 Very great. First move-
 iS 10 41 ment East.

Hyderabad N,E iP 11 05 57 5,030
 N PP 07 33
 E PP 07 46
 N,E S 12 38
 E PS 12 46
 N SS 15 44
 L 18 20
 M 25 30 Per. = 20 secs. $\mu = 316.$
 E M 26 31 Per. = 16 secs. $\mu = 167.$

Kodaikanal E iP 11 06 02 5,220 Great.
 PP 07 54
 iS 12 55
 LR 19 28
 M 23 22 Per. = 18 secs. $\mu = 53.3.$

h. m. s. km.

Mar. 1952				G. M. T.			km.	REMARKS.
(19	Colombo	E	P	11	06	-		Trace overlapping at P.
(Contd)			S		12	31		
			L		24	51		
			M		28	51		Amp. = 24.5mm.
	New Delhi	N,E	eP	11	06	11	5,520	Great.
			PcP		07	26		
			PP		08	16		
		N	PPP		09	18		
			PcS		11	28		
		N,E	iS		13	20		
			PPS		13	37		
		N	ScS		16	03		
			SS		16	41		
			SSS		18	08		
			LR		20	17		
			M		24	29		
			Mn ₁		30	25		Per. = 17 secs. μ = 132.
			Mn ₂		34	35		Per. = 14 secs. μ = 178.
	Poona	Z,E	iP	11	06	25	5,750	Great.
		N	iPcP		07	11		
			PP		08	29		
			PPP		09	43		
			iS		13	47		
			PS		14	01		
			PPS		14	10		
			ScS		15	43		
			SS		17	32		
			SSS		19	44		
			LQ		19	50		
			LR		22	32		
			M		27	02		Per. = 18 secs. Amp. = 49mm.
	Bombay	N,E	iP	11	08	35	5,910	Great. Times of SS, LQ and M in North Component uncertain due to overlapping of record.
			PcP		07	43		
			PP		08	37		
			PPP		09	53		
		N	iPcS		12	35		
			iS		14	00		
		E	iS		14	05		
		N	SS		17	25		
		E	SS		17	48		
		N	LQ		19	08		
		E	LQ		19	51		
		N	i		20	40		
		E	LR		22	30		
		N	M		30	43		Per. = 13 secs. μ = 70.
		E	M		34	21		Per. = 15 secs. μ = 148.
	Dehra Dun	N	eP	11	08	45	5,749	Absolute times uncertain.
			eS		16	00		
			L		26	00		
			M		34	57		Per. = 24 secs. Amp. = 0.34".
19	Poona	Z	iP	13	33	36		
	Bombay	N,E	e	13	41	-		Surface waves.



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
<u>Mar.</u> 1952							
19	Poona	Z	iP e	14	48	22 48 31	
20	Hyderabad	N	M	19	36	31	Per. = 9 secs. $\mu = 2.$
20	Calcutta	E	e e i i	20	19	24 20 15 20 49 21 14	Slight, near.
	Poona	Z E	e e	20	20	07 24 51	Tremor.
	Bombay	N,E	ee	20	24	-	Feeble.
20	Poona	Z E	iP PcP PP ePPP eS PS PPS SSS	21	05	36 06 41 07 41 08 47 13 01 13 09 13 14 18 11	Slight.
20	Epc: 11°S., 165°E., Santa Cruz Island.			H = 23h 39m 08s; h = 60 km (U.S.C.G.S.).			
	Poona	Z	e	23	52	28	Feeble, distant.
21	Bombay	N,E E	e M	00	03	10 38 -	Feeble.
21	Poona	Z	i	00	58	31	Tremor.
21	Poona	Z	iP i	08	53	00 53 06	Tremor.
	Bombay	N,E	e	09	02	-	Very feeble.
21	Poona	Z	i i	09	52	50 53 00	
21	Epc: 11°S., 165°E., Santa Cruz Island.			H = 16h 10m 38s; h = 60 km (U.S.C.G.S.).			
	Calcutta	E	e(P) i	16	23	11 33 24	Tremor.
	Poona	Z E	eP S? i	16	24	00 29 46 34 32	
	Bombay	N,E E	e(PP) i M	16	28	- 34 40 17 10 -	Feeble, distant.
	Hyderabad	N	e	16	34	29	
21	Calcutta	E	e i	17	37	48 39 19	Slight, near.

DATE	STATION	COMP.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
<u>Mar.</u>							
1952							
21	Poona	Z	eP	17	38	29	Tremor.
(Contd)		E	M		46	06	
	Bombay	N,E	eP?	17	42	25	1,910? Feeble.
			eS		45	36	
			M		48	-	
	Hyderabad	N	M	17	45	31	Per. = 6 secs. $\mu = 2.$
21	New Delhi	N,E	eP	21	00	48	1,360 Slight.
		N	iS(?)		03	07	
			i		03	25	
	Poona	Z	e	21	02	32	Feeble.
		E	i		05	29	
			e		07	04	
			e		07	14	
			i		07	49	
22	Probable Epc: $31^{\circ}\text{N.}, 90^{\circ}\text{E.}$ (Tibet). $0 = 04\text{h } 36.7\text{m}$ (Poona).						
	New Delhi	N,E	eP	04	39	50	1,020 Slight.
			p*		40	14	
		E	Pg		40	35	
		N,E	LQ		41	23	
			eS		41	35	
			SS		41	47	
			Sg		42	35	
	Calcutta	E	i(S)	04	40	18	Slight, near.
			i		40	31	
	Poona	E	ePY	04	41	10	2,090 Slight.
		Z	iPY				
		E	eS		44	38	
			LQ		44	44	
			SS		45	06	
			SSS		45	20	
			LR		45	35	
			M		47	07	
	Bombay	E	e	04	44	09	1,165 Feeble.
		N,E	e		45	59	
			e		46	09	
		E	e		46	21	
		N,E	M		48	-	
22	Bombay	N,E	e	05	13	-	Feeble, surface waves.
22	Calcutta	E	e	14	32	28	Tremor.
			e		40	35	
	Poona	E	i	14	32	53	Tremor.
		Z	i		32	57	
		E	i		34	55	
	Bombay	N,E	e	14	33	03	Feeble.
			e?		40	33	
			M	15	01	-	



1952

DATE	STATION	COMPI.	PHASE	G. M. I.	h. m. s.	km.	REMARKS.
22	Epc: 52°N., 173°W., Andrean of Island (Aleutian Island); H = 18h 15m 43s (U.S.C.G.S.); Mag. 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Pasadena).						
	Calcutta	E	e i		18 27 50 37 37		Tremor.
	Poona	Z,E	i i i		18 28 41 39 06 39 29		Tremor.
	Bombay	N,E	eP eSKS iS		18 28 46 39 15 39 37	9,980	Feeble.
22	Poona	Z	i		19 07 19		
23	Poona	Z	iP e		00 03 54 04 02		Slight, very near.
23	Poona	Z	iP		08 05 00		
23	Epc: Andrean of Island, Aleutian Island. H = 09h 01m 26s (U.S.C.G.S.).						
	Poona	Z	iP i		09 14 22 14 34		
23	Epc: Near Sama, Philippine Island. H = 15h 21m 50s (U.S.C.G.S.); 4°N., 126.8E. near Talaur and Saugi Island in Pacific. O = 15h 21.4m (Poona).						
	Calcutta	E	e(P) i i		15 29 11 34 27 38 02		Slight, distant.
	Colombo	E	P S L M ₁ M ₂		15 29 51 36 31 43 21 47 51 51 51		Amp. = 0.2mm. Amp. = 0.3mm.
	Kodaikanal	E	e		15 30 01		Tremor.
	Hyderabad	N	e(P) eS		15 30 22 37 08		
	New Delhi	N,E N	eP eS PPS ScS		15 30 36 37 57 38 15 40 21	5,740	Moderate.
	Poona	Z Z Z E	iP iP i PcP PP PPP S PS PPS		15 30 41 30 49 31 43 32 48 33 53 38 09 38 15 38 29	5,870	Slight.

h. m. s. km.

Mar. 1952								
23	Bombay	N,E	eP	15 30 45	6,055	Slight.		
(Contd)			eS	38 23				
			SS	42 08				
24	Poona	Z	i	19 57 48		Tremor.		
			i	20 10 31				
			i	10 35				
			i	21 43 49				
25	Epc: 16 $\frac{1}{2}$ ^o S., 176 ^o W. Tonga Island Region. Felt Apia. H = 04h 08m 26s; h = 250 km (U.S.C.G.S.).							
	Bombay	N,E	e	04 31 -		Very feeble.		
25	Epc: 5 $\frac{1}{2}$ ^o S., 150 ^o E., New Britain. H = 09h 29m 42s (U.S.C.G.S.).							
	Poona	Z	i	09 41 39		Tremor.		
			i	42 17				
	Bombay	N,E	eP	09 42 01	9,335(?)	Feeble.		
			eS?	52 25				
26	Poona	Z	i	11 00 39		Tremor.		
26	Poona	Z	i	18 06 44				
26	Poona	Z	i	18 41 36				
27	Poona	Z	i	22 12 53		Tremor.		
			i	13 14				
	Bombay	N,E	e	22 23 10		Feeble, surface waves.		
	Hyderabad	N	M	22 23 13		Per. = 9 secs. $\mu = 2.$		
28	Poona	Z	i	05 52 17				
			i	52 25				
			i	53 27				
29	Poona	Z	i	09 39 28				
			i	39 46				
30	Probable Epc: Near Quetta. O = 07h 30.1m (Poona).							
	New Delhi	N,E	eP	01 31 59	880	Slight.		
			eS	33 30				
			SS	33 41				
		N	S*	33 56				
			i	34 13				
	Poona	E	ePY	01 32 51	1,410	Slight.		
		Z	iPY					
		Z,E	eS	35 15				
	Bombay	N,E	e	01 35 51		Feeble.		
	Calcutta	E	e	01 28 20		Slight. near		
			i	40 56				
	Hyderabad	N	e	01 38 42				
			M	40 30		Per. = 8 secs. $\mu = 3.$		

		PHASE	G. M. T.			Δ	REMARKS.
			h.	m.	s.	km.	
<u>Mar.</u>							
1952							
30	New Delhi	N,E N E N,E	eP PP PPP eS SS i Sg	04	10	36 43 49 18 30 57 16	990 Slight.
	Poona	Z E	iY eY eY	04	12	22 38	Feeble.
		Z	iY				
30	Poona	Z	i i i	19	13	08 19 33	
31	Epc: 2°4N., 93°4E., West of North Sumatra.						0 = 06h 16m 48s (Poona).
	Colombo	E	P	06	20	37	Times approximate due to over lapping of trace.
	Hyderabad	N,E N E N	iP S iS L M	06	21	34 28 31 40 37	Δ from SN-PN. Per. = 18 secs. $\mu = 4.$
	Poona	Z,E E	iP iS i i LQ SS SSS ScP LR M	06	22	21 44 52 02 45 00 16 55 01 15	2,790 Moderate.
	Bombay	E N N,E	iPY ePY PP iS SS	06	22	31 09 23 05	2,880 Slight.
		N E N,E	LR LR M			47 - -	
	New Delhi	N,E N	eP eS(?)	06	23	02 01	3,350 Slight.
	Calcutta	E	i i	06	24	44 54	Slight, distant.
31	Poona	Z	i	16	06	45	
	Bombay	N,E	e	16	27	-	Very feeble.

- : Voluntary Observers Reports : -

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

Place at which felt	Date	G. M. T. of earthquakes h. m.	Duration in secs.	Intensity on R.F. Scale	No. of shocks	Remarks.
Srinagar	14.3.52	23 30	3	VI	2	Two shocks at an interval of one second.

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46-1-52

JUN 18 1954

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

January, 1952.

Published under the direction of
V. V. Sohoni, B.A. (Hons.), M.Sc.,
Director General of Observatories.

Instruments and their Constants.

Station	Instrument	Compt.	Period in secs.	Static Mag- nification	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12	350	6:1	16.0
	Milne-Shaw	E	12	350	4:1	8.0
	Sprengnether	E	7	-	-	30.0
Calcutta	Milne-Shaw	E	12	250	20:1	8.0
	Wood-Anderson	N	2	870	Critical	30.0
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	E	12	250	16:1 20:1	8.0 from 18.1.52
Dehra Dun	Omori	N	30	12	-	-
Hyderabad	Milne-Shaw	E	12	249	20:1	8.0
	Milne-Shaw	N	12	249	20:1	8.0
Kodaikanal	Milne-Shaw	E	10	250	20:1	8.0
New Delhi	Milne-Shaw	N	12	288	20:1	8.0
	Wood-Anderson	N	4	1000	20:1	16.0
	Wood-Anderson	N	2	2000	30:1	60.0
	Omori-Ewing	E	30	30	-	12.0
Poona	Milne-Shaw	N	12	250	20:1	8.0
	Wood-Anderson	E	4	1100	20:1	16.0
	Sprengnether	E	7.2	-	-	30.0
	Benioff	Z	To = 1.0 Tg = 0.28		-	60.0

DATE	STATION	COMP.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	km.
Jan. 1952	Bombay	N,E	e	00	01	-	Very feeble.
1			Epc:	33°N., 84½°E., Karokorum; H = 04h 00m 45s (B.C.I.S.); 32°5N., 85°E.; 0 = 04h 00m 44s (Poona).			
	New Delhi	N,E	eP	04	02	39	830 Slight.
			PP	02	46		
			PPP	02	52		
			P*	02	54		
			Pg	03	15		
			iS	04	06		
		E	e	04	13		
		N	SS	04	16		
			SSS	04	26		
			S*	04	32		
			Sg	04	52		
	Hyderabad	N,E	P	04	04	20	1,700
		E	S	07	11		
			i	09	12		
			M	10	07		Per. = 9 secs. $\mu = 3.$
		N	M	10	27		Per. = 10secs. $\mu = 4.$
	Poona	Z	iP	04	04	36	1,810 Slight.
		E	PP	04	50		
		Z,E	iS	07	37		
		E	SS	07	58		
			SSS	08	10		
			LR	08	21		
			M	09	44		
	Bombay	N,E	eP	04	04	47	1,780 Moderate.
		E	ePP	04	59		
			iS χ	07	45		
		N	eS χ				
		N,E	SS	08	06		
		N	LR	08	25		
		E	LR	08	40		
		N	Mn	10	21		Per. = 8 secs. $\mu = 3.$
		E	Mn	10	24		Per. = 6 secs. $\mu = 3.$
	Kodaikanal	E	eS	04	09	54	Slight.
			M	12	37		
			e	12	57		
			e	14	28		Per. = 9 secs. $\mu = 5.$
1	Poona	Z	iP	08	22	17	2,590 Slight.
		E	i	22	24		
			PcP	25	54		
			eS	26	26		
			LQ	26	55		
			SS	27	19		
			SSS	27	26		
			M	29	50		
	Bombay	N,E	eS	08	26	20	Slight.
			M	29	18		
		E	Mn	31	14		Per. = 8 secs. $\mu = 1.$
	Hyderabad	E	e	08	28	19	Per. = 15 secs. $\mu = 3.$
			M	48	27		
	Kodaikanal	E	e	08	29	19	Tremor. Phases not clear.

h. m. s. km.

Jan.
1952

1	Poona	Z	e i	09 57 48 58 28		Tremor.
	Bombay	N,E	e Mn	09 58 - 10 12 -		Feeble.
1			Epc: Probably same as that of earthquake shock of 04h 00m; 0 = 10h 01.8m (Poona).			
	New Delhi	E N,E	eP eS i	10 03 36 05 03 05 10	830	Slight.
		E N	SS Sg	05 13 05 51		
1	Poona	Z	iP i(S)	10 05 37 08 32		Tremor.
1	Kodaikanal	E	eM	10 12 31		Tremor.
	New Delhi	N,E E N,E	eP e i	15 08 30 10 06 10 14		Slight. Near.
1	Poona	Z	i i	15 14 41 15 05		Tremor.
1			Epc: 24°N., 142½°E.; H = 15h 15m 16s (B.C.I.S.); Bonin Island Region; H = 15h 15m 20s (U.S.C.G.S.).			
	Poona	Z	iP	15 25 58		
1			Epc: Central Chile; H = 21h 28m 38s; h = 100 kms (U.S.C.G.S.); 35½°S., 70¾°W.; H = 21h 28m 31s; h = 100 kms (B.C.I.S.).			
	Poona	Z	i(PKP) i	21 48 20 48 27		
1	Poona	Z	iP i	23 30 18 33 41		
	Poona	Z	i ?	23 43 13 44 59		
2	Poona	E	i i	08 21 51 22 05		Tremor.
2			Probable Epc: Near 30°N., 79°E. in Himalaya; 0 = 09h 14m 16s (Poona).			
	New Delhi	N,E E N,E	iP P* PP Pg LQ iS S*	09 15 06 15 10 15 13 15 17 15 36 15 44 15 51	340	Slight.
	Poona	Z	iP PP PPP	09 17 14 17 24 17 30	1,360	Slight.

		PHASE	G. M. T.			△	REMARKS.
			h.	m.	s.	km.	
<u>Jan.</u>							
1952							
2	Poona	Z	09	19	32		
(Contd)	(Contd)	SS		19	43		
		SSS		19	57		
		S*		20	22		
		M/Sg		20	57		
	Bombay	N,E	09	21	16		Feeble; near.
	Hyderabad	N	09	22	10		Per. = 10 secs. μ = 2.
3	Epc: 40 $\frac{1}{2}$ °N., 41 $\frac{1}{2}$ °E., Erzurum Province, Turkey; H = 06h 03m 52s (U.S.C.G.S.); Heavy casualties and extensive proper damage; 39°39'N., 41°40'5E. (Istanbul); 39.5N., 40.5E., Northern Turkey; O = 06h 03m 50s (Poona); Mag. 5.6 (Roma).						
	New Delhi	N,E	06	10	13	3,550	Slight.
				11	19		
		N		15	25		
		PcS		16	35		
		i		16	55		
		SSS		17	40		
		LR		18	50		
		M		21	29		
	Bombay	E	06	10	43	3,735	Moderate.
		N					
		E		12	04		
				16	05		
		N					
		N,E		18	28		
				20	16		
		N		25	31		Per. = 18 secs. μ = 3.
		E		25	40		Per. = 17 secs. μ = 4.
	Poona	Z	06	10	46	3,790	Moderate.
		E		12	10		
		PPP		12	33		
		eS		16	23		
		ScP		16	40		
		LQ		18	59		
		SSS		19	21		
		M		23	-		
	Hyderabad	N,E	06	11	17	4,210	
		N		12	50		
				17	09		
		E		26	13		Per. = 18 secs. μ = 14.
		N		26	24		Per. = 18 secs. μ = 11.
	Kodaikanal	E	06	16	00		Slight. Phases not clear.
				18	31		
		e(S)					
		e(PPS)		18	41		
	Colombo	E	06	19	14		Amp = 0.5mm.
				30	29		
		M		32	59		
3	Epc: 16°N., 99°W., Off South Coast of Mexico. Felt; H = 10h 05m 05s (U.S.C.G.S.); 16°42'N., 98°12'W.; H = 10h 05m 15s (Tacubaya); 17°2N., 98°3W.; H = 10h 05m 17s (B.C.I.S.).						
	Poona	Z	10	24	51		

1952

3	New Delhi	N,E	eP	12 59 52	1,080	Slight.
			eS	13 01 42		
		N	i	01 52		
			E	SS	01 55	
		N,E	SSS	02 04		
			E	S*	02 20	
	Poona	Z	i	20 47 23		
4	Epc: 22°S., 169½°E., Loyalty Islands; H = 05h 47m 31s (U.S.C.G.S.); 21°S., 169°2E.; H = 05h 47m 32s (B.C.I.S.).					
	Bombay	E	e(PKP)	06 03 30		Feeble; Distant.
ePPP			05 53			
N,E		ePPS	15 11			
		M	56 -			
Colombo	E	PPP	06 03 36		Amplitude very small.	
		M	37 18			
Poona	E	Mn	06 55 28		Slight; distant.	
5	Probable Epc: Within 30 miles of 29½°N., 77¾°E. Felt slightly New Delhi and Meerut.					
	New Delhi	N,E	iPg(?)	06 33 58		Slight; near. Felt locally. First movement North.
i			34 03			
Sg(?)		34 15				
Bombay	E	e(S)?	06 38 05		Feeble.	
		e	39 05			
	N,L	i	39 14			
Poona	Z	i(S)?	06 38 10		Slight.	
		e	39 01			
		e	39 14			
		e	39 31			
		e	39 48			
	Epc: North of Trebizon (Turkey); H = 18h 31.9m (B.C.I.S.).					
Poona	Z	iP	18 45 06	3,555	Slight.	
		eS	50 18			
		ScP	51 18			
		i	51 38			
		LQ	52 17			
		SS	52 25			
		i	53 26			
Bombay	N,E	e	18 51 -		Feeble; Surface waves.	
6	Epc: 27½°N., 97°E., Assam; Tibet Border Region; H = 00h 06m 49s (B.C.I.S.); 31°N., 97°E.; 0 = 00h 06m 46s (Poona).					
	Calcutta	E	iS	00 12 08	1,280	Slight. Δ from SSS-S.
SSS			12 33			
M			13 38			
PcP			15 43			
PcS			19 08			
ScS			22 31			



PHASE G. M. T. Δ REMARKS.

h. m. s. km.

Jan.
1952

6	New Delhi	E	eP	00 10 51	1,890	Slight.
			PP	11 05		
			PPP	11 12		
	N,E		LQ	13 58		
			eS	14 00		
			SS	14 21		
	Hyderabad	N,E	P	00 11 25	2,300	
		N	eS	15 12		
			M	18 34		Per. = 9 secs. $\mu = 2.$
		E	M	19 17		Per. = 11 secs. $\mu = 2.$
	Poona	Z	iP	00 11 58	2,630	Moderate.
		E	PPP	11 47		
			eS	16 11		
			LQ	16 41		
			SSS	17 12		
			LR	17 40		
			ScP	19 15		
	Bombay	E	iPY	00 12 06	2,700	Moderate.
		N	ePY			
		E	PPP	12 58		
			iSY	16 23		
		N	eSY			
		E	LR	18 09		
		N	Mn	20 09		Per. = 5 secs. $\mu = 3.$
		E	Mn	20 12.		Per. = 5 secs. $\mu = 2.$
7	Bombay	N,E	e	03 40 -		Very feeble. Surface waves.
7	Bombay	E	e	18 11 -		Very feeble. Surface waves.
		N		Congestion of lines.		
10	Hyderabad	Epc:	18°05', 12°W., in the Atlantic Ocean; H = 00h 11m 24s (B.C.I.S.).			
	Kodaikanal	E	e(?)	00 56 03		Tremor. Phases not clear.
	Bombay	N,E	e	00 59 -		Very feeble; surface waves.
11		Epc:	7°S., 145½°E., Eastern New Guinea; H = 04h 00m 35s (U.S.C.G.S.); 7.2S., 145.5E.; H = 04h 00m 34s (B.C.I.S.).			
	New Delhi	N,E	iP	04 12 16	8,020	Moderate. Deep focus.
			i	12 41		First movement South and East.
			iS	21 38		
		N	PS	22 10		
			i	22 51		
			SS	26 23		
	Poona	E	iP	04 12 21	8,055	Slight.
			PcP	12 26		
			PP	15 00		
			iS	21 44		
			SKS	22 03		
			ScS	23 11		
			PS	23 26		
			SS	26 33		
			LQ	31 50		



	OMPT.	PHASE	G. M. T.			REMARKS.			
			h.	m.	s.				
					km.				
<u>Jan.</u>									
<u>1952</u>									
11	Bombay	E	iPY	04	12	29	8,220	Slight.	
	(Contd)	N	ePY						
		N,E	eS		22	01			
			PS		22	27			
	Hyderabad	E	e	04	22	58			
11	Epc: 45°N., 149°E., Kurile Islands;								
	H = 07h 03m 00s; h = 100 kms (U.S.C.G.S.);								
	42.6N., 148.3E.; h = 80 kms (CMO, Japan);								
	45.3N., 148.5E.; H = 07h 03m 01s;								
	h = 80 kms (B.C.I.S.).								
	New Delhi	N,E	eP	07	12	46		Slight.	
	Poona	Z	iP	07	13	46		Tremor.	
			i(pP)		14	20			
11	New Delhi	N,E	eP	07	41	04	980	Slight.	
		E	PP		41	12			
		N,E	iS		42	45			
		N	i		42	50			
			SSS		43	08			
			S*		43	18			
	Poona	Z	e	07	42	34		Tremor. Phases not clear.	
			i		42	50			
			i		43	05			
			i		43	26			
			i		46	36			
			i		46	48			
12	New Delhi	N,E	eP(?)	03	18	48	400	Slight.	
			Pg		19	01			
			i		19	04			
			LQ		19	21			
			iS		19	32			
		E	Sg		19	47			
		N,E	i		20	02			
	Poona	Z	e	03	22	04		Slight.	
			e		24	50			
		E	i		25	02			
		Z	e		25	20			
			i		26	06			
	Bombay	E	iY	03	25	00		Tremor.	
		N	eY						
12	Epc: 10°S., 117°E.;								
	H = 05h 59m 36s (B.C.I.S.).								
	Bombay	E	eP	06	09	04	6,155	Feeble.	
			iSY		16	48			
		N	eS\						
		N,E	LR		25	-			
	Poona	Z	iP	06	09	00		Tremor.	
			i		09	42			
			i		10	35			
12	New Delhi	N,E	eP	11	07	57	400	Slight.	
		N	i		08	07			
			i		08	13			
		N,E	eS		08	41			
			i		08	54			
			SSS		09	05			

PHASE G. M. T. \triangle REMARKS.

h. m. s. km.

Jan. 1952							
12	Poona	Z	i	11 12 32			
	(Contd)		i	13 05			
			i	14 33			
			i	15 06			
12		Epc:	53°N., 167°W., Fox Islands, Aleutian Islands; H = 20h 11m 38s (U.S.C.G.S.); 53.8°N., 167.2°W.; H = 20h 11m 38s (B.C.I.S.); Mag. 6½ (Pasadena); 6.25 (Rome); 6 ca (Praha).				
	New Delhi	N,E N	eP	20 23 55	9,250	Moderate.	
			PP	27 08			
			SKS	34 06			
			iS	34 15			
			PS	35 05			
			PPS	35 27			
			SS	39 57			
			LQ	46 12			
			LR	50 12			
			M	58 07			
	Calcutta	E	iP	20 23 56	9,555	Moderate. First movement East.	
			SKS ₁	34 17			
			iS	34 30			
			PS	35 21			
			PKKP ₁	41 47			
			SSS	43 40			
			PKKS ₁	45 20			
			LQ ₁	47 23			
			SKKS ₂	48 52			
			M	58 32			
			Mn	21 05 50		Per. = 16 secs. μ = 16.	
	Hyderabad	N	P	20 24 45	9,440		
			PP	27 54			
		N,E	iS	35 14		Per. = 18 secs. μ = 12.	
		E	M	58 31		Per. = 18 secs. μ = 12.	
		N	M	58 42			
	Poona	Z	eP	20 24 47	10,860	Slight.	
			PP	28 34			
			PPP	30 53			
			ScS	35 29			
			SKKS	35 45			
			PS	37 39			
			PPS	38 17			
			SS	42 37			
			SSP	42 53			
	Bombay	N,E	eP	20 24 52	10,165	Moderate.	
			ePP	28 33			
			eSKS	35 23			
			SKKS	35 36			
			iS	35 50			
		E	Mn	21 10 18		Per. = 17 secs. μ = 6.	
		N	Mn	11 18		Per. = 19 secs. μ = 4.	
	Dehra Dun	N	e	20 33 39			
	Kodaikanal	E	e	20 35 51	6,445?	Slight; Distant.	
			e	43 51			
			e	57 31		Per. = 21 secs. μ = 13.	

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Station	Dir.	Phase	h	m	s	km	Remarks
Epc: 22°N., 124½°E., Off East Coast of Formosa. Felt Ryukyu Islands; H = 04h 03m 37s (U.S.C.G.S.); 25°N., 126½°E., Eastern Sea near Ryukyu Islands; O = 04h 03m 40s (Poona); Mag. 7¼ (Pasadena); 7 ca (Praha); 6,9 (Rome).							
Calcutta	E	iP	04	10	34	3,780	Moderate. First movement West.
		PPP		12	09		
		iS		15	59		
		PcS?		17	04		
		SS		18	06		
		SSS		18	42		
		M		23	09		
		Mn1		25	24		
		Mn2		29	06		Per. = 15 secs. μ = 179. Per. = 13 secs. μ = 140.
New Delhi	N,E N	eP	04	11	43	4,760	Moderate.
		PP		13	29		
		PPP		14	01		
		PcS		17	23		
		iS		18	08		
		SS		21	26		
		LR		24	29		
		M		27	45		
Hyderabad	E	iP	04	11	54	4,880	Per. = 19 secs. μ = 42. Per. = 20 secs. μ = 57.
		iS		18	27		
		SS		22	01		
	N	L		25	38		
		M		29	11		
		M		30	04		
Colombo	E	P	04	12	13	5,180	Amp. = 0.8mm.
		S		19	03		
		L		27	18		
		M		30	35		
Kodaikanal	E	iP	04	12	23	5,310	Moderate. Distant. Initial movements of P and PPP towards East. Per. = 21 secs. μ = 45.
		PPP		14	20		
		iS		19	20		
		LR		25	53		
		M		29	33		
Poona	Z,E	iP	04	12	24	5,455	Slight.
		PP		14	17		
		PPP		15	05		
		ScP		17	38		
		iS		19	24		
		PS		19	40		
		ScS		22	00		
		SS		22	52		
		SSS		24	28		
Bombay	N,E	iP	04	12	33	5,490	Moderate. Per. = 20 secs. μ = 22. Per. = 20 secs. μ = 20.
		PP		14	25		
		PPP		15	36		
	E	iS χ		19	40		
		eS χ					
	N,E	PPS		19	56		
		SS		23	24		
		i		24	02		
	N	LQ		24	55		
		Mn		32	45		
		E	Mn		32		

h. m. s. km.

Jan.

1952

Station	Direction	Phase	Time (h. m. s.)	Distance (km.)	Remarks
13 Dehra Dun	N	eS	04 17 54	4,700	Amp. = 0.2".
		e	24 24		
		M	28 02		Per. = 18 secs.
13 Poona	Z	i	16 03 19		Tremor.
		i	03 25		
		i	03 41		
Hyderabad	N	M	16 20 31		Per. = 18 secs. $\mu = 4.$
Bombay	N,E	e	16 23 -		Very feeble.
14	Epc: Near East Coast of Kamchatka; H = 00h 00m 20s (U.S.C.G.S.).				
Poona	Z	iP	00 11 41		Tremor.
		i	11 47		
Bombay	N,E	e	00 41 -		Very feeble; surface waves.
15	Epc: Central Burma; H = 02h 31m 25s (U. S. C. G. S.); 24°5'N., 95°1'E.; H = 02h 31m 26s (B.C.I.S.); 23°5'N., 94°E.; O = 02h 31m 37s (Poona). Felt at Gauhati, Shillong, Karimganj, Silchar, Tezpur and Imphal.				
Calcutta	E	iP	02 33 01	625	Moderate. First movement West.
		iS	34 06		
New Delhi	N,E	eP	02 35 19	1,710	Slight.
		PP	35 29		
		PPP	35 37		
	E	i	35 58		
	N,E	LQ	38 06		
		iS	38 11		
		SS	38 29		
	N	SSS	38 42		
	N,E	LR	38 52		
		M	40 11		
Hyderabad	N	iP	02 35 24	1,650	
		iS	38 11		
		L	39 29		
	E	M	40 22		Per. = 10 secs. $\mu = 11.$
	N	M	40 27		Per. = 8 secs. $\mu = 17.$
Poona	Z,E	iP	02 36 05	2,110	Moderate.
	E	PP	35 25		
		iS	39 34		
		LQ	39 40		
		i	39 44		
		SS	40 02		
		SSS	40 16		
		PcP	40 21		
		LR	40 33		
		M	40 00		
		PcS	43 45		
		iScS	47 15		

PHASE G. M. T . Δ REMARKS.

h. m. s. km.

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 20
 (Contd)

Epc: 17°N., 63½°E., Arabian Sea;
 H = 14h 42m 38s (B.C.I.S.);
 20°5N., 61°5E.; O = 14h 43m 10s (Poona).

Station	Direction	Phase	h	m	s	km	Remarks
Bombay	N,E	eP	14	45	44	1,165	Slight.
		E	PP	45	51		
	E	P*	46	18			
		eS	47	44			
		LR	48	17			
		Mn	50	36	Per. = 15 secs. μ = 5.		
Poona	Z	iPY	14	45	59	1,270	Slight.
	E	ePY					
	Z	PP	46	08			
	E	PP	46	09			
	Z	PPP	46	15			
		P*	46	29			
		Pg	47	01			
		LQ	48	00			
		LQ	48	01			
	Z,E	eS	48	10			
	Z,E	SS	48	24			
	Z	SSS	48	35			
	E	SSS	48	36			
Z	S*	48	59				
E	M	49	32				
	PcP	51	44				
New Delhi	N,E	e?	14	47	03		Slight; near. Phases not clear.
		i	47	12			
	N	e	50	33			
		i	50	45			
		i	51	01			
		i	52	03			
Hyderabad	E	P	14	47	05	1,930	Per. = 15 secs. μ = 10. Per. = 12 secs. μ = 4.
		S	50	18			
		SS	50	44			
		L	51	50			
	N	M	52	31			
		M	53	11			
Kodaikanal	E	eP?	14	47	25	2,310	Slight; near. Phases not very clear due to congestion of lines. Per. = 14 secs. μ = 4.
		eS?	51	13			
		LR	52	24			
		M	54	13			
Colombo	E	P	14	48	13		Strong Microseisms. Amp = 0.5mm.
		M	55	23			
Calcutta	E	iP	14	48	48	2,855	Slight; first movement West.
		eS	53	15			
		LR?	55	15			
		PcS	56	01			
Dehra Dun	N	eS?	14	51	18	2,367	Per. = 12 secs. Amp = 0.02".
		e	55	39			
		M	56	54			
Poona	Z	i	18	37	04		
		i	37	12			
		i	37	25			
		i	37	41			
		i	41	22			

DATE	STATION	COMPT.	PHASE	G.	M.	T.	REMARKS.
				h.	m.	s.	km.
Jan. 1952 21		Epc:	53°N., 166½°W., Fox Islands, Aleutian Islands; H = 03h 43m 04s; h = about 60 kms (U.S.C.G.S.); Mag. 6¼ (Pasadena); 6¼ (Rome); 6.3 (Berkeley).				
	Calcutta	E	eP eS i Mn	03 55 20?	8,820		Slight, distant. Micro-seisms in record.
	New Delhi	N,E N	iP PP SKS iS PS SS M	03 55 17 58 28 04 05 26 05 37 06 23 11 13 29 28	9,250		Moderate.
	Hyderabad	N N,E N E	P SKS S L M M	03 56 04 04 06 32 07 03 26 40 31 54 32 06	9,900	△ from SKS-P.	Per. = 16 secs. $\mu = 5$. Per. = 15 secs. $\mu = 6$.
	Poona	Z,N,E N E N E N E N E N E N E	iP PKP PKP SKS ₁ SKS SKS ₂ SKS ₂ SS ₂ SS SSS? SSS? LQ LR LR	03 56 07 59 50 59 57 04 06 34 06 39 07 15 07 17 15 45 15 48 19 20 19 23 28 03 30 03 31 00	10,000		Moderate.
	Bombay	N,E E N N,E N E	iP iSKSY eSKSY iSY eSY LR Mn Mn	03 56 10 04 06 41 07 20 27 - 40 26 41 26	10,090	△ from SKS-P.	Per. = 16 secs. $\mu = 2$. Per. = 17 secs. $\mu = 4$.
	Kodaikanal	E	e(SKS)	04 07 00			Slight. Distant. Phases not clear.
21	Poona	Z	i i	20 11 52 34 18			
23							A severe rock burst at the Kolar Gold Fields. Buildings within a radius of one mile damaged (Press report).
	Kodaikanal	E	i	01 35 09			Shock recorded by Seismograph due to rock burst at Kolar Gold fields, Oorgaum.
	Bombay	E N	eP? iSY eSY	01 35 53 37 41	1,055?		Tremor.



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Epc: Northern Kansu Province, China;
H = 03h 29m 30s (U.S.C.G.S.);
41 $\frac{1}{2}$ ^oN., 95 $\frac{1}{2}$ ^oE.; Gobi desert;
H = 03h 29m 27s (B.C.I.S.);
41^oN., 94^oE., Sinkiang Province, China;
O = 03h 29m 28s (Poona).

Station	Dir.	Phase	h.	m.	s.	km.	Remarks
Calcutta	E	eP	03	33	37	2,110	Moderate.
		iS		37	06		
		SSS		37	47		
		M		39	47		
		Mn		43	42		
						Per. = 7 secs. μ = 29.	
New Delhi	N,E	iP	03	33	41	2,080	Slight.
		PP		33	57		
		iS		37	07		
		SS		37	32		
		SSS		37	45		
		LR		38	00		
		M		39	26		
Hyderabad	N N,E N E N	iP	03	35	08	2,930	
		S		39	40		
		L		43	09		
		M		45	10		
		M		45	33		
						Per. = 8 secs. μ = 6.	
						Per. = 8 secs. μ = 9.	
Poona	Z,E N E N,E	iPY	03	35	19	3,000	Moderate.
		ePY					
		i		35	40		
		PcP		38	22		
		e		39	30		
		iS		40	03		
		LQ		41	12		
		SS		41	27		
		SSS		41	46		
		LR		42	38		
M		44	57				
Bombay	N,E E N N,E N E N E N E	iP	03	35	25	3,110	Moderate.
		PP		36	15		
		iSY		40	09		
		eSY					
		LQ		41	03		
		SS		41	23		
		SS		41	33		
		LR		42	20		
		LR		42	47		
		Mn		47	30		
Mn		47	47				
						Per. = 9 secs. μ = 9.	
						Per. = 9 secs. μ = 6.	
Kodaikanal	E	e?	03	51	29		Slight. Phases not clear.

24

Epc: 53^oN., 166 $\frac{1}{2}$ ^oW., Fox Islands, Aleutian Islands;
H = 09h 14m 08s (U.S.C.G.S.).

Poona	Z	iP	09	27	17		Tremor.
		i		27	23		
		e		27	29		
Bombay	N,E	e(S)	09	38	-		Very feeble. Distant.

PT. PHASE G. M. T. \triangle REMARKS.Jan.
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		h. m. s.			km.	
24	New Delhi	E	eP	18 54 54	260	Slight.
(Contd)			P*	54 46		
			PP	55 02		
			PPP	55 09		
			iS	55 23		
			i	55 28		
			Sg	55 30		
			SS	55 34		
			SSS	55 44		
	Poona	Z	e	18 57 33		
			e	59 14		
			i	59 43		
			e	19 00 50		
27			Epc:	North Central China; H = 09h 15m 48s (U.S.C.G.S.); 40°N., 119°E.; H = 09h 15m 57s (B.C.I.S.).		
	Bombay	N,E	e(S)	09 28 -		Feeble. Surface waves.
29			Epc:	Near Negros, Philippine Islands; H = 00h 55m 30s (U.S.C.G.S.); 9½°N., 122½°E.; H = 00h 55m 29s (B.C.I.S.).		
	Colombo	E	P(?)	01 03 57		Amp = 0.3mm.
			S	09 50		
			L	19 -		
			M	23 02		
	Hyderabad	E	eP	01 03 43	4,660	
			PP	05 45		
			eS	10 03		
			L	16 14		
			M	20 46		Per. = 15 secs. $\mu = 3.$
	Poona	Z,E	iP	01 04 13	5,220	Slight.
		E	PP	06 05		
			iS	11 05		
			PS	11 17		
			PPS	11 23		
			SS	14 28		
			LR	18 19		
	Bombay	E	iPY	01 04 35	5.180	Slight.
		N	ePY			
		N,E	PP	06 28		
			iS	11 24		
		E	SS	14 39		
			LR	18 23		
		N	LR	18 -		
30	Bombay	N,E	e	22 40 -		Very feeble.
30	New Delhi	N,E	eP	23 36 42	1,250	Slight.
		E	PP	36 51		
			PPP	36 59		
			LQ	38 39		
			eS	38 50		
		N,E	SS	39 03		
		E	M	40 11		
31	Poona	Z	i	07 13 24		
			i	13 46		

DATE	STATION	COMPT.	PHASE	G. M. T.	△	REMARKS.
				h. m. s.	km.	
Jan. 1952						
31 (Contd)		Epc:	23°N., 142½°E., Bonin Islands Region; h = 300 kms (CMO, Japan). 23°N., 144°E.; H = 08h 05.4m (B.C.I.S.).			
	Poona	Z	iP	08 16 08		
31	Poona	Z	e	20 23 37		
31		Epc:	15½°N., 93½°W., Near Coast of Chiapas, Mexico, Felt; H = 20h 16m 43s; h = about 60 kms (U.S.C.G.S.); 15°25'N., 93°48'W.; H = 20h 16m 47s (Tacubaya).			
	Poona	Z	iPKP	20 36 17		Tremor.
		Epc:	4°S., 30½°E., Ruanda-Urandi, Tanganyika Border; H = 20h 55m 12s (U. S. C. G. S.).			
	Poona	Z	iP	21 04 00		Moderate.
		E	eP	04 01		
			PP	05 50		
			PPP	06 51		
		N,E	iS	11 03		
		E	PPS	11 23		
		N	SS	14 25		
		E	SS	14 49		
		N	LR	17 32		
		E	LR	18 01		
			M	21 32		
	Bombay	E	iPY	21 04 05	5,255	Moderate.
		N	ePY			
		N,E	PP	06 06		
		E	iSY	10 59		
		N	eSY			
		E	SS	14 26		
		N	SS	14 34		
		E	LR	17 09		
		N	LR	17 23		
		E	Mn	22 45		Per. = 20 secs. μ = 12.
		N	Mn	23 13		Per. = 19 secs. μ = 7.
	Kodajkanal	E	iP	21 04 13	5,365	Slight. Distant. Initial movement of P and PP East.
			iPP	06 04		
			iS	11 13		
			LR	17 46		
			M	21 46		Per. = 15 secs. μ = 11.
	Colombo	E	P	21 04 18		Amp = 0.6mm.
			S	11 38		
			L	20 -		
			M	22 28		
	Hyderabad	E	P	21 04 33	4,330	
			PP	06 32		
			S(?)	10 33		
			L	15 53		
		N	M	20 57		Per. = 16 secs. μ = 12.
		E	M	22 16		Per. = 16 secs. μ = 10.
	New Delhi	N,E	eP	21 04 53	6,190	Moderate.
		E	PcP	05 54		
		N	PP	06 59		
			iS	12 39		
			i	15 49		
			SS	16 28		
			LR	21 30		
			M	26 31		

DATE	STATION	COMPT.	PHASE	G. M. T.			\triangle	REMARKS.
				h.	m.	s.	km.	
<u>Jan.</u>								
1952								
31	Calcutta	E	iP	21	05	51	7,165	Moderate. First movement East.
(Contd)			PPP		09	47		
			eS		14	30		
			SKS ₁		15	40		
			SS		18	42		
			LQ		22	04		
			LR(?)		25	07		
			PKKP ₁ (?)		25	52		
			M		30	12		
			Mn ₁		31	03		Per. = 20 secs. μ = 35.
			Mn ₂		33	18		Per. = 18 secs. μ = 24.
	Dehra Dun	N	e(S)	21	14	45		

Earthquake Reports
(Non-Instrumental Reports).

- : Voluntary Observer's Reports : -

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

Place at which felt	Date	G. M. T. of earthquake	'Duration' secs.	'Intensity' R.F. Scale	No. of 'shocks'	'Remarks.
		h. m.				
Ghaziabad	5.1.52	06 25	1	-	-	-
Gauhati	15.1.52	02 28	15	VI	1	-
Tezpur	15.1.52	02 30	10	V	1	Slight intensity.
Gauhati (Aerodrome)	15.1.52	02 32	25	VI	1	-
Shillong	15.1.52	02 32	10.0	V	2	Two shocks at 30 secs interval.
Shillong	15.1.52	02 33	First = 15.0 Second = 25.0	VI	2	Two separate shocks at an interval of 30 se
Tezpur	15.1.52	12 41	20.0	VI	1	-
Gauhati (Aerodrome)	15.1.52	12 43	8.0	VI	1	-
Gauhati	15.1.52	12 50	10.0	VI	1	-

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S.M.
20.8.53

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT

SEISMOLOGICAL BULLETIN

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Director General of Observatories.

Instruments and their Constants.

Station	Instrument	Compt.	Period in secs.	Static Mag- nification	Damping ratio	Paper Speed mm/min.
Bombay	Milne-Shaw	N	12	350	6:1	16
	Milne-Shaw	E	12	350	4:1	8
	Sprengnether	E	7	-	-	30
Calcutta	Milne-Shaw	E	12	250	20:1	8
	Wood-Anderson	N	2	870	Critical	30
	Omori-Ewing	N	18	32	-	25.4
	Omori-Ewing	E	19	30	-	25.4
Colombo	Milne-Shaw	E	12	250	15:1 20:1 from 18.2.52	8
Dehra Dun	Omori-Ewing	N	32	12	-	-
Hyderabad	Milne-Shaw	E	12	250	20:1	8
	Milne-Shaw	E	12	250	20:1	8
Kodaikanal	Milne-Shaw	E	10	250	20:1	8
New Delhi	Milne-Shaw	N	12	288	20:1	8
	Wood-Anderson	N	4	1000	20:1	16
	Wood-Anderson	E	2	2000	30:1	60
	Omori-Ewing	E	30	30	1	12
Poona	Milne-Shaw	N	12	250	20:1	8
	Wood-Anderson	E	4	1100	20:1	16
	Sprengnether	E	7.2	-	-	30
	Benioff	Vertical	To=1 sec. Tg=0.28 sec.	-	-	60



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T. PHASE G. M. T. Δ REMARKS.

h. m. s. km.

Feb.
1952

1	New Delhi	E	eP PP LQ iS SS SSS	07 16 11 16 19 18 11 18 20 18 34 18 44	1,270	Slight.
	Poona	Z	i i i	07 19 09 19 12 19 16		Feeble.
2	Epc: Lat. 51 ^o .5N., Long. 179 ^o W.; H = 10h 20m 06s; h = 100 kms (U. S., C. G. S.).					
	Hyderabad	N	M	11 12 14		Per. = 16 secs. $\mu = 3.$
	Poona	Z, E E	iP SKS SKKS SKKKS ePS	10 32 36 42 56 43 28 43 36 44 00		Slight.
	Bombay	N, E	eP ePP iS? M	10 32 37 36 00 43 07 11 13 -	9,465?	Slight.
2	Epc: Lat 11 ^o S., Long 165 ^o E.; H = 22h 59m 45s; h = 100 kms (U.S.C.G.S.).					
	Poona	Z	i(P)	23 13 08		
	Bombay	N, E	e	23 24 -		Very feeble.
3	Epc: Lat 35 ^o .5N., Long 94 ^o E.; H = 01h 16m 10s (B.C.I.S.); H = 01h 16m 05s (U.S.C.G.S.).					
	New Delhi	N, E N	eP eS M	01 19 35 22 27 24 30	1,710	Slight.
	Hyderabad	N	eP iS M	01 20 54 24 58 28 29	2,510	Per. = 7 secs. $\mu = 3.$
		E	M	28 29		Per. = 9 secs. $\mu = 2.$
	Poona	Z, E E	iP eS LQ SS M	01 21 15 25 27 26 03 26 19 31 14	2,620	Moderate.
	Calcutta	E	i i i	01 21 16 22 33 22 50		Slight; near.
	Bombay	N, E N E	eP eS M M	01 21 21 25 43 31 45 32 30	2,780	Slight. Per. = 7 secs. $\mu = 2.$ Per. = 7 secs. $\mu = 1.$
3	Poona	Z	i	23 17 43		Tremor.
	Bombay	N, E	e	23 25 32		Very feeble.

DATE	STATION	COMPT.	PHASE	G. M. T.	Δ	REMARKS.
				h. m. s.	km.	
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4	Epc: Southern Gulf of California (U.S.C.G.S.); H = 19h 09m 30s.					
	Calcutta	E	e	19 32 16		Slight; near.
	Bombay	N,E	e	19 36 -		Very feeble.
4				O = 22h 51.4m.		
	New Delhi	N,E	eP	22 52 13	250	Slight.
		E	P*	52 15		
			Pg	52 19		
		N,E	PP	52 22		
			eS	52 43		
			S*	52 47		
			Sg	52 51		
			i	52 59		
			SSS	53 05		
	Poona	Z	iP	22 54 32	1,210	Slight.
			PP	54 44		
			PPP	54 51		
			LQ	56 50		
			iS	56 56		
			SS	57 12		
			SSS	57 30		
			S*	57 54		
			Sg	58 36		
5	Poona	Z	e	08 32 50		
5	Epc: Near North Coast of Mindanao, Philippine Island;					
				H = 16h 50m 44s (U.S.C.G.S.);		
				Lat 9°5N., Long 124°5E.; H = 16h 50m 44s (B.C.I.S.).		
	Calcutta	E	iP	16 58 15	4,280	Slight. First movement East.
			PP?	59 53		
			PPP	17 00 11		
			iS	04 11		
			SSS	07 21		
	Hyderabad	E	P	16 58 16	5,450	
			PP	17 00 09		
			eS	05 21		
			SS	08 53		
			L	12 58		
			M	16 53		Per. = 16 secs. $\mu = 4$.
	Colombo	E	e	16 59 01		
			e	17 06 21		
	Bombay	N,E	iP	16 59 41	5,545?	Feeble.
			eS	17 06 51		
		N	LQ	11 32		
		E	LQ	11 45		
	New Delhi	N,E	eP	16 59 41	5,360	Moderate.
		N	PP	17 01 40		
			eS	06 41		
			SS	10 49		
			SSS	12 30		
			M	19 04		

DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS.
				h.	m.	s.		
<u>Feb.</u>								
1952								
5	Poona	Z,E	iP	16	59	52		Slight.
(Contd)		E	PcP	17	00	43		
			PP		01	46		
			PPP		02	58		
			e		07	14		
			PS		07	28		
			PPS		07	41		
			SS		11	28		
5	Bombay	N,E	e	18	29	-		Very feeble; surface waves.
5			0 =	23h	26.5m.			
	New Delhi	E	P	23	28	29	890	Slight.
			PP		28	36		
			PPP		28	42		
			P*		28	49		
			Pg		29	09		
			LQ		29	52		
		N,E	eS		30	02		
			SS		30	15		
		N	SSS		30	25		
		E	S*		30	31		
	Poona	Z	i	23	30	24		Feeble.
		E	e		33	45		
			e		34	45		
			e		35	48		
6	Epc: Off the Coast of N. Island (New Zealand); H = 00h 50.1m (B.C.I.S.)							
	Poona	Z	i	00	58	24		
6	Epc: Kansu Province, China; H = 05h 27m 10s (U.S.C.G.S.); Lat 41.5N., Long 95.5E. (Gobi desert); H = 05h 27m 13s (B.C.I.S.); Lat 39.5N., Long 96.5E. (Poona).							
	New Delhi	N,E	eP	05	31	29	2,020	Slight.
			PP		31	45		
		N	iS		34	50		
			SS		35	16		
			LR		35	47		
			M		37	32		
	Calcutta	E	eP	05	31	30	2,035	Moderate.
			iS		34	52		
			SSS		35	33		
			PcP		36	12		
	Poona	Z	iPχ	05	33	03	3,380	Slight.
		E	ePχ					
			PP		34	05		
			PPP		34	22		
			iS		38	04		
			SS		39	54		
			SSS		40	18		
			ScS		43	18		
			M		43	52		
	Hyderabad	N	P	05	32	55	2,890	
		E	e		33	06		
			S		37	24		
			M		42	47		
		N	M		42	56		
								Per. = 7 secs. $\mu = 3.$
								Per. = 8 secs. $\mu = 6.$

				h. m. s.			km.	
<u>Feb.</u>								
<u>1952</u>								
6	Bombay	N,E	eP	05	33	13	3,335	Moderate.
			eS		38	11		
		N	SS		39	49		
		E	SS		40	01		
		N	LR		40	43		
		E	LR		41	12		
		N	M		45	17		Per. = 11 secs. $\mu = 5.$
		E	M		45	19		Per. = 10 secs. $\mu = 3.$
	Dehra Dun	N	e	05	35	18		
	Colombo	E	e(S)	05	39	50		Tremor.
	Kodaikanal	E	e	05	41	14?		
6	New Delhi	N,E	eP	05	40	41	980	Slight.
			iS		42	22		
			SS		42	34		
6	Epc: Kermadec Island;			H = 06h 54m 45s (U.S.C.G.S.);				
	Lat 30°S., Long 179°W.;			H = 06h 54.8m (B.C.I.S.).				
	Bombay	N,E	e	07	26	-		Very feeble.
6	Epc: 34°5N., 95°E.;			H = 11h 25m 30s.				
	New Delhi	E	e(P)	11	29	12		Slight.
			e		29	30		
		N	e		31	57		
			e(S)		32	16		
			M		33	51		
	Calcutta	E	e	11	30	15		Slight; near.
			i		31	47		
	Hyderabad	E	eP	11	30	22	2,340	
			eS		34	13		
			L		36	25		
			M		39	27		Per. = 8 secs. $\mu = 2.$
	Poona	Z	iP	11	30	41	2,665	Slight.
		E	eP		30	40		
			iS		34	55		
			LQ		35	14		
			SS		35	37		
			LR		36	33		
			ScP		38	-		
	Dehra Dun	N	e	11	31	06		
	Bombay	N,E	eP	11	35	08	1,735	Moderate.
		E	ePP		35	20		
		N,E	PPP		35	27		
			eS		38	02		
			SS		38	24		
			SSS		38	38		
			LR		38	53		
		E	M		40	46		Per. = 8 secs. $\mu = 3.$
		N	M		41	20		Per. = 8 secs. $\mu = 3.$
	Kodaikanal	E	e	11	35	59		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
Feb. 1952						km.	
6	New Delhi	E	eP	22	47	04	990 Slight.
			PPP		47	18	
			P*		47	26	
		N,E	eS		48	48	
			SS		48	58	
			S*		49	17	
	Poona	Z	iP	22	49	58	Phases not clear.
		E	e		52	46	
			e		52	57	
7	Epc: Provisional: 126°E., 05°S.; H = 14h 39.8m (Poona).						
	Bombay	N,E	e	14	44	-	Feeble.
			e		49	43	
	Colombo	E	e	14	47	01	L and M not well defined
			e		55	26	
	Calcutta	E	e	14	48	08	Tremor.
			i		54	40	
	Poona	Z	iPY	14	49	24	6,180 Feeble.
		E	ePY				
			PcP		50	19	
			PP		51	29	
			ScP		54	13	
			eS		57	09	
			PPS		57	32	
			ScS		59	07	
	New Delhi	E	eP	14	49	25	6,190 Slight.
		N	eS		57	11	
	Hyderabad	E	e	14	56	06	
7	Calcutta	E	e	17	54	21	Tremor.
	Bombay	N,E	e	17	55	-	Very feeble.
8	Epc: 1,000 km West of Macqnarie Island; H = 18h 21.4m (B.C.I.S.).						
	Poona	Z	i(P)	18	34	57	Feeble.
		E	e		19	06	
	Colombo	E	e	18	43	51	L and M approximate due to small amplitude.
			L		57	-	
			M ₁		19	01	
	Bombay	N,E	M?	19	00	-	Feeble.
	Hyderabad	N	M	19	05	19	Per. = 16 secs. $\mu = 5.$
9	Poona	Z	i	01	10	20	
			i		02	10	28
			i		10	38	
11	Epc: Lat 6°S., Long 110°E.; H = 07h 01m 04s; h = 700 km (USGCS); Lat 5°5S., Long 109°8E.; H = 07h 01m 05s; h = 700 km (BCIS); Lat 7°S., Long 110°E.; O = 07h 01m 12s; h = 700 km (Poona); Mag. 7 (Pasadena).						
	Colombo	E	P	07	06	51	Wave of largest amplitude taken as M.
			S		11	19	Amp = 1.5mm.
			Mn		15	03	

DATE	STATION	COMPT.	PHASE	G. M. T.			km.	REMARKS.
				h.	m.	s.		
Feb. 11 (Contd)	Calcutta	N	iP PP PcP iS SS LR	07	07	14	3,280	Moderate. First movement South.
	Kodaikanal	E	iP PP PPP iS LQ LR M	07	07	15		
	Hyderabad	N,E E N E N	iP e iS SS L M M	07	07	39	3,540	Per. = 11 secs. $\mu = 3$. Per. = 13 secs. $\mu = 5$.
	Poona	Z,N,E N,E N N,E E N E	iP PP PPP PcP iS ScP SS LQ SSS SSS ScS LR	07	08	15	4,045	Moderate.
	Bombay	E N	iP i pP iS i sS	07	08	21	4,890	Moderate. Loss of record.
	New Delhi	N,E N	iP PPP ipP iS SS	07	08	36	4,270	Moderate.
11	Poona	Z	e e	14	05	21 30		
11	Epc: $120^{\circ}5E.$, $03^{\circ}S.$; $O = 16h 29m 02s$; $h = 100$ km (poona).							
	Colombo	E	P S L	16	34	39 43 11		
	Calcutta	E	iP PP PPP iS PcS SS	16	34	51	3,635	Slight. First movement West.



DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
Feb.							
1952							
11	Kodaikanal	E	e	16	34	57	
(Contd)	Hyderabad	E	iP	16	35	07	4,940
			PP		37	23	
			iS		41	43	
			SS		45	08	
			L		49	10	
			M		55	15	Per. = 15 secs. $\mu = 2.$
	Poona	Z,E	iP	16	35	44	5,290 Deep focus.
		E	PcP		36	59	
			i		37	07	
			ScP		40	52	
		Z,E	iS		42	40	
		E	PS		42	45	
			ScS		45	19	
			SS		46	03	
			SSS		47	31	
	New Delhi	N,E	eP	16	35	47	5,450 Moderate.
			i(pP)		36	13	
		N	PP		38	13	
			PPP		39	03	
			iS		42	51	
			i(sS)		43	25	
			SS		46	55	
	Bombay	E	iP	16	35	51	5,490 Slight.
			ePP		37	39	
			iS		42	58	
			iPPS		43	21	
			SS		46	43	
			SSS		47	45	
			LR		50	01	
		N					Loss of record.
11	Poona	Z	e	00	17	07	
			e		17	43	
			e		20	30	
12	Epc: Solomon Island. Lat 8°S . Long $156^{\circ}.5\text{E}$.; H = 05h 38m 41s (U.S.C.G.S.).						
	Bombay	N,E	e	06	02	22	Very feeble.
12	Poona	Z	i	09	06	33	Felt at Gauhati.
			i		06	05	
12	Epc: Solomon Island.; H = 10h 10m 50s (U.S.C.G.S.).						
	Bombay	N,E	e	10	34	12	Very feeble.
			e		34	25	
12	Epc: Bismark Sea.; H = 20h 15m 30s; h = 100 km ca (U.S.C.G.S.). Lat $4^{\circ}.75\text{S}$. Long 150°E .; H = 20h 15m 37s; h = 100 km ca (B.C.I.S.).						
	New Delhi	N,E	eP	20	27	18	Moderate.
			i		36	31	
		N	i		36	49	
	Poona	Z,E	iP	20	27	26	Slight. Probably deep.
		E	PcP		27	40	
			PP		30	07	
			PPP		31	49	
			e		36	45	

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				h.	m.	s.	km.
<u>Feb.</u>							
<u>1953</u>							
12	Poona	E	PS	20	37	15	
(Contd)	(Contd)		PPS		37	31	
			SS		41	27	
	Bombay	N,E	eP	20	27	30	8,135 Feeble.
		E	iS		36	58	
14	Epc: Lat 8°S., Long 125°E.; H = 03h 38m 06s (U.S.C.G.S.); Lat 7°7'S., Long 126°5'E.; H = 03h 38m 15s (B.C.I.S.); 8°S., 126°5'E.; 0 = 03h 38m 15s (Poona); Mag. 7.25 (Pasadena; Strasbourg).						
	Calcutta	E	iP	03	46	53	5,310 Great; First movement East.
			PP		48	45	
			iS		53	50	
			SS		57	11	
	Colombo	E	P	03	47	-	P approximate due to loss of trace.
			S		53	57	
			L	04	05	07	
			M		09	37	Amp = 9.0.
	Dehra Dun	N	eP	03	47	30	6,537
			eS		55	30	
			M	04	06	30	Per. = 36 secs. $\mu = 0.25$.
	Hyderabad	N,E	iP	03	47	33	5,990
		E	PP		49	37	
		N,E	iS		55	08	
		E	SS		58	38	
			L	04	04	42	
			M		10	19	Per. = 16 secs. $\mu = 44$.
		N	M		13	07	Per. = 18 secs. $\mu = 57$.
	Poona	Z,N,E	iP ₁	03	48	14	6,335 Probably a double shock.
			iP ₂		51	53	
		N	PP ₁		50	08	
			PP ₂		54	03	
			S ₁		56	09	
			S ₂		59	32	
			PS ₁		56	26	
			PPS ₂	04	00	26	
			LQ ₁		02	17	
			LQ ₂		06	00	
			SSS ₁		02	32	
			LR ₁		05	20	
			SS ₂		03	40	
			SSS ₂		06	32	
	New Delhi	N,E	eP	03	48	16	6,450 Moderate.
			PP		50	34	
			PPP		51	52	
		N	i		54	38	
			iS		56	16	
			PS		56	34	
			PPS		56	47	
			ScS		57	53	
			SS		59	55	
			LQ	04	03	11	
			LR		05	51	
			M		10	58	

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				h.	m.	s.	
Feb. 1952							
14	Bombay	N,E	iP	03	48	17	6,500 Moderate.
(Contd)		N	PPP		51	45	
		E	PPP		52	07	
		N	iS		56	20	
		E	iS		56	31	
		N	PS		56	31	
		E	PS		56	44	
		N	LR	04	05	22	
		E	LR		07	20	
		N	M		15	25	Per. = 11 secs. $\mu = 19.$
		E	M		16	32	Per. = 17 secs. $\mu = 34.$
14	Bombay	N,E	eP	12	31	31	6,635 Feeble.
			eS?		39	41	
	New Delhi	N,E	eP	12	31	34	6,560 Slight.
			eS		39	40	
14	Bombay	N,E	e	22	22	-	Feeble; surface waves.
16	Bombay	N,E	e	00	05	-	Very feeble ; surface waves.
16	Bombay	E	iX	13	48	38	Very feeble.
		N	eX				
16	Epc: Probably SW of Australia (B.C.I.S.).						
	Poona	Z	iPX	21	14	45	6,555 Slight; other phases not clear.
		E	ePX				
			eS		22	52	
	New Delhi	N,E	eP	21	15	02	6,570 Slight.
		N	eS		23	09	
16	Epc: $30^{\circ}8N.$, $96^{\circ}3E.$; $O = 21h 43m 53s$ (Poona).						
	New Delhi	N,E	eP	21	47	50	1,890 Slight.
		N	eS		50	55	
			M		53	04	
	Calcutta	E	e	21	48	09	Slight.
			i		49	21	
			i		50	00	
	Poona	Z	eP	21	49	07	2,665 Slight.
		E	PPP		49	53	
			eS		53	21	
			LQ		53	57	
			SSS		54	32	
			LR		55	07	
			ScP		56	11	
	Hyderabad	N	M	21	54	30	Per. = 11 secs. $\mu = 3.$
	Bombay	N	eP	21	49	13	2,680 Slight.
		N,E	eS		53	29	
		N	M		58	17	Per. = 9 secs. $\mu = 2.$
		E	M		58	18	Per. = 9 secs. $\mu = 3.$
18	Bombay	N,E	e	09	32	-	Very feeble.
20	Epc: Lat $16^{\circ}S.$ Long $74^{\circ}W.$; H = 09h 10m 06s; h = 150 km ca (U.S.C.G.S.); Lat $16^{\circ}2S.$ Long $74^{\circ}2W.$; H = 09h 10m 03s; h = 150 km ca (B.C.I.S.).						
	Poona	Z	i	09	29	39	Tremor.



DATE	STATION	COMPT.	PHASE	G. M. T.			△ km.	REMARKS.
				h.	m.	s.		
<u>Feb.</u>								
1952								
20	Poona	Z	e	13	30	09		Tremor.
20	Poona	Z	e	18	24	34		Tremor.
21	Calcutta	E	e	12	36	54		Slight, near.
			i		37	19		
			i		38	38		
	Bombay	N,E	e	12	43	-		Feeble.
21	Poona	Z	i	18	15	24		Tremor.
			i	20	16	44		
22	Poona	Z	i	23	58	22		Felt at Shillong.
			i	00	00	27		
23	Poona	Z	i	12	22	01		Tremor.
24	Bombay	E	iX	03	28	54		Feeble.
			eX					
	Colombo	E	L	03	31	30		Amp. = 0.2.
			Mn		33	22		
	Kodaikanal	E	e	03	32	09		
24	Poona	Z	e	11	41	58		Tremor.
			e		42	16		
	Bombay	N,E	e	11	44	-		Tremor.
24	Felt strongly at Shillong and Cauhati. Duration at Shillong was about a minute.							
	Epc: Neighbourhood Tura Hills; $\theta = 13h\ 13.3m$.							
	Calcutta	N	eP	13	33	07	470	Slight.
			Pg		33	16		
			iSg		33	57		
	Poona	Z	iP	13	36	20	1,710	
			PP		36	33		
			PPP		36	40		
			LQ		39	07		
			e		39	12		
			SS		39	31		
			SSS		39	43		
			LR		39	56		
			M		40	52		
	Bombay	N,E	e	13	41	-		Tremor.
24	Bombay	N,E	e	17	29	-		Feeble.
24	Epc: Lat $17^{\circ}5N$. Long $144^{\circ}5E$.; $H = 22h\ 55m\ 52s$; $h = 200\ km\ ca.$ (U.S.C.G.S.). Mariamus Island.							
	Poona	Z	i	23	06	39		Tremor.
			i		07	10		
25	Epc: Lat $17^{\circ}S$. Long $173^{\circ}5W$.; $H = 01h\ 17m\ 00s$ Tonga Island (U.S.C.G.S.); $18^{\circ}1S$. Long $172^{\circ}8W$.; $H = 01h\ 17m\ 02s$ (B.C.I.S.). Mag. 7 (Wellington, Praha); 6.92 (Rome); 6.9 (Pasadena); 6.75 (Strasbourg).							
	Kodaikanal	E	e	01	35	04		

DATE	STATION	COMPT.	PHASE	G. M. T.			REMARKS.
				h.	m.	s.	
Feb. 1952						km.	
25 (Contd)	Calcutta	E	iPP? (PPS)	01	35	33	Slight; First movement West.
	Bombay	E	ePKP ₁	01	35	38	13,110 Moderate.
		N	ePKP ₁		35	48	
		E	iPP		37	01	
		N	ePP		37	07	
		E	SKS ₁		42	38	
		N	SKS ₁		42	44	
			PS ₁		46	37	
		E	i		46	57	
			eSS		53	03	
		N	eSS		53	15	
		N,E	LR	02	11	-	
		N	M		29	35	Per. = 19 secs. $\mu = 7$.
		E	M		29	46	Per. = 18 secs. $\mu = 6$.
	New Delhi	N,E	e	01	35	47	Moderate. Very distant.
		N	e		44	15	
			e		46	31	
			e		52	27	
			e		15	01	
	Poona	Z	i	01	35	49	Tremor.
		E	i		36	53	
			i		39	21	
			i		42	43	
		Z	i		46	22	
25	Bombay	N,E	e	03	22	-	Feeble.
25	Poona	Z	e	07	53	29	Tremor.
25	Calcutta	N	i	14	47	05	Slight, near.
			i		47	19	
	Poona	Z	e	14	52	08	
			iX		53	35	
		E	iX				
25	Epc: Lat 236°2N. Long 141°3E.; H = 18h 41m 23s; h = 40 km ca (CMO, Japan).						
	Poona	Z	iP	18	51	35	
			i		51	48	
26	Epc: Lat 15°S. Long 69°W.; H = 11h 30m 54s; h = 250 km ca. (U.S.C.G.S.);						
	14°1S. 69°9W.; H = 11h 31m 04s; h = 250 km ca. (B.C.I.S.).						
	Mag. 7.5 (Pasadena); 7.25 (Berkeley).						
	Bombay	N,E	ePKP ₁	11	50	10	15,730 Moderate.
			pPKP ₁		51	15	
			PP ₁		53	29	
			pPP		54	29	
			i		55	24	
		N	PS	12	04	14	
		N,E	iSS		11	48	
			SSP		12	20	
			ipSS		13	36	
			LQ		31	23	
		E	LR		38	22	
		N	LR		38	41	

 DATE STATION COMPT. PHASE G. M. T. Δ REMARKS.

 h. m. s. km.

Feb.
 1952
 26 Poona Z PKP₁ 11 50 14 15,770 Moderate.
 (Contd) N SKKS₁ 56 57
 PKP₂ 12 01 03
 PS 01 15
 SKKS 06 57
 SKKS₂ 08 16
 PcS 09 01
 SS 11 40
 LR 24 27
 M 34 40

New Delhi N,E ePKP₁ 11 50 18 16,220 Very distant.
 N e 55 38
 i 12 00 03
 e 01 33
 e 03 59
 i 12 01
 i 13 34
 i 14 05
 e 15 28
 e 16 49

Kodaikanal E ePKP 11 50 20
 Colombo E PKP 11 50 23
 L 12 40 -
 Mn 56 21 Amp. = 0.3.

Hyderabad E ePKP 11 50 32
 M 12 48 02 Per. = 15 secs. $\mu = 3$.

Calcutta E ePKP 11 51 37 Slight; distant.
 i 56 16
 i 12 00 46
 i 08 11
 i 10 26

26 Epc: Lat 11°N. Long 86°W.; H = 15h 39m 23s; h = 100 km ca. (U.S.C.G.S.).
 Mag. 6.28 (Rome); 6.00 (Pasadena); 6.5 (Praha).

Calcutta E e 15 59 02 Slight; distant.
 Bombay N,E e 16 58 - Feeble surface waves.
 Poona Z i 16 58 54 Tremor.
 i 59 03
 Kodaikanal E e 17 00 35
 Hyderabad E M 17 05 43 Per. = 16 secs. $\mu = 4$.

26 Epc: Santa Cruz Island.
 Lat 12°5S. Long 166°E.; H = 21h 06m 49s (U.S.C.G.S.).

Poona Z i 21 42 48