

I-9-251

JUL 23 1956

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. II. 1956

Part I. Seismology

No. 1.

Seismological Bulletin

January 1956

QUETTA OBSERVATORY

The following are constants of the station and the instruments:

Latitude: $30^{\circ}11'.3$ N Longitude: $66^{\circ}57'.0$ E Height: 1719 m.
 Foundation: Mountain Fan Gravels. Normal Microseism Amplitudes
 short period Sprengnether = nil.
 long period Sprengnether = 0.5 mm.

Instruments.

1. Milne Shaw E.
2. Sprengnether Series H N, E.
Sprengnether Series DH Z.
3. Sprengnether Series II N, E.
long period
4. Wilmore Z, N, E.

Constants.

Compt.	To Pend. (Sec)	T Galv. (Sec)	Vs.	Σ	Paper speed (mm/min.)	
N	2	1.8	1.8	-	Critical	60
	3	21.6	21.6	-	Critical	30
	4	1	$\frac{1}{4}$	-	Critical	53
E	1	12	-	350	20:1	16
	2	1.8	1.8	-	Critical	60
	3	22.7	22.7	-	Critical	30
	4	1	$\frac{1}{4}$	-	Critical	53
Z	2	1.8	1.8	-	Critical	60
	4	1	$\frac{1}{4}$	-	Critical	53

The Observatory is also equipped with a Sprengnether table pen recorder, driven by a $1\frac{1}{2}$ period horizontal Sprengnether and photo-electric amplifier.

Time Control.

1. Standard Electric Time Coy (Mass.) invar pendulum clock.
 2. Synchronome free pendulum clock.
- Greenwich time signals are received three to six times daily on 3.B.C. wavelengths and recorded by hand on all seismograms. Jeffreys & Bullen's 1948 tables are used unless otherwise mentioned. Except when a depth has been mentioned, interpretations assume a surface or normal focus. With effect from 1st January 1956 distance from Quetta and time of origin of earthquakes will be given when P times of at least 3 stations are known. S phase will not be used for determining H and Δ .

Milne Shaw: (M)
 Wilmore: (W)
 Long Period Sprengnether: (L)

Readings are from Sprengnether short period seismograms unless indicated as above.

QUETTA OBSERVATORY

January, 1956.

DATE	COMPT.	PHASE	GMT			Δ km.	REMARKS
			h.	m.	s.		
1	Z	e	09	08	51		USCGS: H - 09:03:50. Sinkiang Province.
1	(W)Z,Z	e	12	07	18		
1	(W)Z,Z	e	15	55	00		
1	(W)Z,Z (M)E,(L)E (L)N (L)N (W)Z,Z	eP ipP iS isS eP'P'	23	19	33 20 13 28 26 29 18 47 31		USCGS: H - 23:08:28. Depth: about 150 km. 7°S. , 129°E. Timor Island region.
2	(W)Z,Z Z	iP e	01	37	03 49		Dilatation. USCGS: H - 01:30:15. 8°N. , 95°E. Nicobar Islands region.
3	(W)Z,Z	eP	10	51	45		USCGS: H - 10:41:08. 43½°N. , 147°E. Southern Kurile Islands.
3	(W)Z,Z	eP	13	15	56		USCGS: H - 13:03:46. 51°N. , 179½°W. Andreanof Islands, Aleutian Islands.
3	(W)Z	eP	15	51	57		USCGS: H - 15:40:55. 48½°N. , 155°E. Kurile Islands.
3	(W)Z	e	21	44	59		USCGS: H - 21:33:35. Near east coast of Kamchatka.
3	(W)Z,Z	eP	23	37	32		Compression. USCGS: H - 23:24:52. 54½°N. , 163°W. Unimak Island.
4	(W)Z,Z (W)E	eP eS	03	37	14 38 31		Dilatation.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	Δ km.	REMARKS
4	(W) Z	eP	05 18 06		USCGS: H - 05:07:53. 42 $\frac{1}{2}$ $^{\circ}$ N. , 143 $^{\circ}$ E. Southern Hokkaido, Japan.
4	(W) Z	e	10 53 (13)		
4	(W) Z	e	12 06 33		USCGS: H - 11:56:38. 9 $\frac{1}{2}$ $^{\circ}$ N. , 126 $^{\circ}$ E. Mindanao Island, Phillipine Islands.
4	(W) Z, Z	eP	14 28 43		Dilatation? USCGS: H - 14:15:39. 6 $\frac{1}{2}$ $^{\circ}$ S. , 153 $^{\circ}$ E. New Britain region.
4	(W) Z, Z	eP	20 25 32		Dilatation.
5	(W) Z, Z	eP	01 13 57		
5	(W) Z	e	19 11 08		
5	(W) Z, Z	eP	22 42 06		Compression. USCGS: H - 22:31:37. Southern Kurile Islands aftershock.
6	(W) Z	eP	05 54 12		USCGS: H - 05:43:38. 36 $\frac{1}{2}$ $^{\circ}$ N. , 11 $^{\circ}$ W. Off coast of Portugal.
6	(W) Z, Z (L) N	eP eS	07 11 29 21 33		Dilatation? USCGS: H - 06:59:15. 51 $^{\circ}$ N. , 179 $\frac{1}{2}$ $^{\circ}$ W. Andreanof Islands, Aleutian Islands.
6	(W) Z	iP	12 22 32		Dilatation. USCGS: H - 12:15:40. 40 $\frac{1}{2}$ $^{\circ}$ N. , 26 $^{\circ}$ E. Greece - Turkey border.
6	(W) Z (L) N	e eS	14 59 21 15 04 16		USCGS: H - 14:52:55. Southwestern Black Sea. Near coast of Turkey.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			△ km.	REMARKS
			h.	m.	s.		
6	(W) Z, Z	iP	18	03	46		Compression. USCGS: H - 17:51:32. 51°N. , 179½°W. Andreanof Islands, Aleutian Islands.
6	(W) Z	eP	22	35	16		Compression. USCGS: H - 22:25:02. 39°N. , 142°E. Near east coast of Honshu, Japan.
7	(W) Z (L) NE	iP eS	10	28	13 38 21		Compression. USCGS: H - 10:15:59. 51°N. , 179½°W. Andreanof Islands, Aleutian Islands.
7	(W) Z	iP	10	37	42		Dilatation. USCGS: H - 10:25:08. 5°S. , 148°E. Bismarck Sea.
7	(W) Z, Z	iP	10	44	30		Compression. USCGS: H - 10:32:15. 51½°N. , 179½°W. Andreanof Islands aftershock.
7	(W) Z, Z (L) E	eP eS	11	03	56 14 01		Compression. USCGS: H - 10:51:40. 51½°N. , 179½°W. Andreanof Islands aftershock.
7	(W) Z, Z	eP	11	23	44		Compression? USCGS: H - 11:11:30. Andreanof Islands aftershock.
7	(W) Z, Z	eP	12	11	07		
7	(W) Z	e	12	18	08		
7	(W) Z	e	16	44	15		

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			Δ km.	REMARKS
			h.	m.	s.		
7	(W) Z	e	16	48	06		
7	(W) Z, Z	eP	16	53	35		
7	(W) Z	eP	18	49	32		
7	(W) Z, Z	iP	19	39	05		Dilatation. USCGS: H - 19:29:00. $1\frac{1}{2}^{\circ}$ N. , $122\frac{1}{2}^{\circ}$ E. Near north coast of Celebes.
7	(W) Z, Z	iP	20	07	11		Compression.
8	(W) Z, Z	ePKP	07	30	42		USCGS: H - 07:11:26. 17° N. , $99\frac{1}{2}^{\circ}$ W. Guerrero, Mexico. Mag. $6\frac{1}{2}$ (Pas.)
	(L) N	iPKS		34	08		
	(L) N	ePS		43	13		
	(L) N	eSS		50	43		
8	(W) Z, Z	eP	09	22	03		Compression?
8	(W) Z	eP	18	59	28		USCGS: H - 18:46:29. $4\frac{1}{2}^{\circ}$ S. , 153° E. New Britain region.
	(L) N	e	19	09	48		
	(L) E	iSKS			56		
8	(W) Z	ePKP	21	13	39		USCGS: H - 20:54:13. 19° S. , 70° W. Northern Chile. Mag. $7\frac{1}{4}$ (Pas.)
	(W) Z, Z	i			48		
	Z	ePP		16	39		
9	(W) Z	e	01	20	43		
9	(W) Z	ePKP	03	35	11		USCGS: H - 03:15:40. Northern Chile.
	(L) E	e		38	52		
9	(W) Z	e	04	30	54		
9	(W) Z, Z	eP	08	11	45		USCGS: H - 08:01:21. Near north coast of Hokkaido, Japan.
9	(W) Z, Z	e	08	15	08		Dilatation?
9	(W) Z, Z	eP	11	38	20		Dilatation.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	Δ km.	REMARKS
9	(W) Z, Z (W) Z, Z (W) Z, (L) E (L) E	ePKP i e i	12 23 36 41 25 04 34 01		Dilatation. USCGS: H - 12:05:53. Depth: about 650 km. Fiji Islands region. Mag. $6\frac{1}{2}$ (Pas.)
9	(W) Z	e	12 33 53		
9	Z	e	13 30 45		
9	(W) Z	eP	15 48 26		
9	(W) Z (W) Z (W) Z, Z	e epPKP e	17 20 14 21 03 23 18		USCGS: H - 17:01:23. Depth: about 200 km. 16° N. , 92° W. Chiapas, Mexico.
9	(W) Z	e	21 46 21		
10	(W) ZE (L) N (M) E (M) E (M) E	ePKP e e e e	09 10 57 13 02 14 57 18 41 23 22		USCGS: H - 08:52:36. 25° S. , 176° W. Tonga Islands region. Mag. $7\frac{3}{4}$ (Pas.)
10	(W) Z	e	09 45 43		
10	(W) Z	e	10 37 27		USCGS: H - 10:18:25. 25° S. , 176° W. Tonga Islands region.
10	(W) Z	e	12 40 18		
10	(W) Z, Z	eP	14 07 43		
10	(W) Z	e	21 45 57		
10	(W) Z (W) E	eP e(S)	22 07 17 09 26		
11	(W) Z, Z (L) N, N	iP iS	06 16 51 22 16		Dilatation. USCGS: H - 06:10:03. $7\frac{1}{2}^{\circ}$ N. , 94° E. Nicobar Islands.
11	(W) Z	eP	06 37 36		Dilatation.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			Δ km.	REMARKS
			h.	m.	s.		
11	(W)Z	eP	07	17	38		USCGS: H - 07:10:49. Nicobar Islands aftershock.
11	(W)Z (W)Z,Z (L)E	eP ipP eS	12	07	52 08 18 18 47		USCGS: H - 11:54:59. Depth: about 100 km. Solomon Islands.
11	(W)Z (L)EN	iP iS	22	16	54.7 17 23.5	2 ^o .2 240	Compression. H - 22:16:17. 31 ^o N. , 69 ¹ / ₂ ^o E. Northeast of Baluchistan. Lahore P = 22:17:25. USCGS: H - 22:16:18. Central Pakistan.
12	(W)Z	e	02	39	06		
12	(W)Z	e	05	53	50		USCGS: H - 05:46:05. 47 ¹ / ₂ ^o N. , 20 ^o E. Northern Hungary.
12	(W)Z	ePKP	06	29	20		USCGS: H - 06:10:25. 22 ¹ / ₂ ^o S. , 177 ¹ / ₂ ^o W. Tonga Islands region.
12	(W)Z (W)Z	e e	11	50	08 17		
12	(W)Z	e	12	28	15		
12	(W)Z,Z	eP	22	40	36		
12	(W)Z,Z	e	23	06	19		
13	(W)Z,Z	e	02	35	34		Compression.
13	(W)Z	e	03	21	41		
13	(W)Z,Z (L)E	eP i	03	38	17 47 58		Compression. USCGS: H - 03:27:13. 57 ¹ / ₂ ^o N. , 163 ^o E. Near east coast of Kamchatka.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			Δ km.	REMARKS
			h.	m.	s.		
19	(W) Z, Z (L) N, N	eP eS	19	53	32 46		H - 19:50:32. 29 $\frac{1}{2}$ $^{\circ}$ N. , 81 $\frac{1}{2}$ $^{\circ}$ E. Western Nepal. Lahore P = 19:52:10. USCGS: H - 19:50:34. 30 $^{\circ}$ N. , 81 $^{\circ}$ E. Nepal - Tibet border.
19	(W) Z, Z	e	22	24	55		
20	(W) Z, Z	eP	01	27	03		Compression.
20	(W) Z, Z (L) N	eP e	05	15	45 09		Compression? USCGS: H - 05:03:10. 52 $\frac{1}{2}$ $^{\circ}$ N. , 170 $^{\circ}$ W. Fox Islands, Aleutian Islands.
20	(W) Z	e	23	36	30		USCGS: H - 23:23:40. Depth: about 150 km. 5 $^{\circ}$ S. , 155 $^{\circ}$ E. Solomon Islands.
21	(W) Z	ePKP	08	28	28		USCGS: H - 08:09:00. Off coast of Guatemala.
21	(W) Z	ePKP	12	41	45		USCGS: H - 12:22:42. 23 $^{\circ}$ S. , 176 $^{\circ}$ W. Tonga Islands region.
21	(W) Z, Z	iP	13	48	36		Compression. USCGS: H - 13:37:18. Banda Sea.
21	(W) Z, Z	eP	14	02	09		
21	(W) Z, Z (W) Z, Z (L) N (L) N	eP ipP eS isS	17	41	01 17 45 18 43		Dilatation. H - 17:35:47. Depth: about 60 km. 23 $\frac{1}{2}$ $^{\circ}$ N. , 93 $\frac{1}{2}$ $^{\circ}$ E. Burma. Lahore P = 17:40:01. USCGS: H - 17:35:34. 23 $^{\circ}$ N. , 94 $^{\circ}$ E. Burma.

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	Δ km.	REMARKS
21	(W)Z	e	18 13 40		USCGS: H - 17:54:15. Depth: about 100 km. 21°S. , 67½°W. Southern Bolivia.
22	(W)Z	e	20 28 54		
23	(W)Z,Z	eP	00 59 16		USCGS: H - 00:46:35. 58°N. , 154½°W. Kodiak Island region.
23	(W)Z,Z	e	03 09 55		
23	(W)Z,Z (L)N	eP eS	03 58 23 04 07 17		Compression? USCGS: H - 03:47:19. 55½°N. , 161½°E. Near east coast of Kamchatka. Mag. 6½ - 6¾ (Pas.)
23	(W)Z,Z E Z	iP i e	07 45 13 26 54		Dilatation. USCGS: H - 07:36:39. 24°N. , 122°E. Near east coast of Formosa.
24	(W)Z,Z	iP	07 46 23		Dilatation.
24	(W)Z,Z	eP	12 25 46		USCGS: H - 12:15:04. 45°N. , 150°E. Kurile Islands.
24	(W)Z,Z	eP	21 42 25		
25	(W)Z,Z	eP	05 17 00		
25	Z	ePKP	11 06 49		USCGS: H - 10:47:53. Tonga Islands region.
26	Z (L)E	eP eS	15 43 23 51 18		USCGS: H - 15:33:30. Near north coast of Mindanao, Phillipine Islands.
26	Z	eP	16 00 39		

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	Δ km.	REMARKS
27	(W) Z, Z	eP	01 08 30		
27	(W) Z Z	e e	01 20 34 48		USCGS: H - 01:13:22. 37°N. , 24°E. Aegean Sea.
27	(W) Z (W) Z	iP iS	04 01 09 02 20		Dilatation. Hindukush?
27	(W) Z, Z E	eP eS	10 10 59 13 56	16°.9 1880	H - 10:06:59. 41½°N. , 83°E. Northwestern Sinkiang, China. Lahore P = 10:09:53. USCGS: H = 10:06:53. 41½°N. , 83½°E. Sinkiang Province, China.
27	(W) Z, Z	ePKP	13 57 47		USCGS: H - 13:38:45. 26°S. , 176°W. Tonga Islands region.
27	(W) Z, Z	iP	14 16 50		Dilatation.
27	(W) Z (W) Z (W) Z (W) Z	eP esP e eS	18 40 33 41 23 42 09 16	8°.95 990	H - 18:38:28. Depth: about 200 km. 37½°N. , 73½°E. Pamirs Tadzhikistan. Lahore P = 18:39:52.
28	(W) Z, Z (L) N	eP eS	05 05 47 16 57		Compression? USCGS: H - 04:52:29. 1°N. , 27°W. Mid - Atlantic Ocean.
28	(W) Z, Z (L) N	eP iS	07 55 35 08 06 21		Compression? USCGS: H - 07:42:52. Depth: about 100 km. 4½°S. , 151½°E. New Britain. Mag. 6½ (Pas.)
29	(W) Z (W) Z	eP iS	03 42 52 44 12		

12

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			Δ km.	REMARKS
			h.	m.	s.		
29	(W)Z	eP	16	43	53		USCGS: H - 16:32:53. Off southeast coast of Kamchatka.
29	(W)Z	e	19	01	54		USCGS: H - 18:49:12. Northeastern New Guinea.
29	(W)Z,Z (L)N	iP eS	22	29	44 36 51		Dilatation. USJGS: H - 22:20:53. 21°N. , 121°E. South of Formosa.
30	Z,E (L)N	ePKP ePS	09	01	59 13 35		USCGS: H - 08:43:01. 38½°S. , 177½°E. Near north coast of North Island, New Zealand. Mag. 6¾ (Pas.)
30	Z	e	10	20	54		USCGS: H - 10:01:49. New Zealand aftershock.
30	(W)Z,Z	eP	15	08	16		Compression. USCGS: H - 14:55:51. Andreanof Islands, Aleutian Islands.
30	(W)Z	e	19	12	38		
30	(W)Z,Z	ePKP	19	27	15		Dilatation. USCGS: H - 19:09:12. Depth: about 500 km. About 400 miles south of Fiji Islands.
31	Z,E	eP	05	35	24		Compression? USCGS: H - 05:24:14. Volcano Islands region.
31	(W)Z,Z (W)Z,Z E,N,(L)EN (L)N (L)N	iP ipP iSKS eS e	09	29	21 30 44 39 16 39 41 27		Dilatation. USCGS: H - 09:17:11. Depth: about 400 km. 4°S. , 152°E. New Ireland. Mag. 7 - 7¼ (Pas.)

13

January, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			△ km.	REMARKS
			h.	m.	s.		
31	(W) Z	eP	14	24	21		
	(W) Z	eS		25	42		
31	(W) Z, Z	iP	14	44	48		Dilatation.
	(W) Z	eS		45	59		

Abdul Qadir Khan.
Mohammad Idris.

The Geophysical Observatory
Post Box No. 2,
Quetta.
PAKISTAN.

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2, 1956

Part I. Seismology

No. 2.

Seismological Bulletin

February 1956

QUETTA OBSERVATORY

February, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W)Z	eP	01	47	34	USCGS: H - 01:32:55. 20°S. , 169°E. Loyalty Islands.
1	(W)Z	eP	01	51	33	
1	(W)Z	eP	02	02	33	
1	(W)Z,Z (L)E (L)N (L)N	iP i iS i	13	52	30	DILATATION. USCGS: H - 13:41:44. 19°N. , 145½°E. Depth: about 350 km. Marianas Islands. Mag: 6¾ - 7 (Pas.)
1	(W)Z,Z	eP	14	19	46	
1	(W)Z,Z (W)Z (L)E	eP e e(S)	15	18	27	USCGS: H - 15:10:22. 38½°N. , 15½°E. Straits of Messina, Italy.
1	(W)Z (W)E	eP eS	23	41	13	
2	(W)Z	e	00	26	33	
2	(W)Z	eP	09	17	48	
2	(W)Z	ePKP	15	13	(32)	USCGS: H - 14:54:18. 16°N. , 98½°W. Off coast of Guerrero, Mexico.
2	(W)Z,Z	ePKP	17	13	53	USCGS: H - 16:54:32. 16°N. , 98½°W. Off coast of Guerrero, Mexico.
3	(W)Z (W)N	eP eS	08	40	09	H - 08:38:02. Depth: about 200 km. 37°N. , 74°E. Pamirs - Kashmir border. Δ = 9°.0 Lahore P = 08:39:22.

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
3	(W) Z, Z (L) NE	eP eS	13	20	10 23 27	H - 13:16:00. 36°N. , 46°E. Iraq - Iran border. $\Delta = 17^{\circ}.8$ Lahore P = 13:21:12. USCGS: H - 13:16:02. Eastern Iraq.
3	(W) Z	eP	15	35	18	
3	(W) Z, Z	eP	21	46	38	COMPRESSION.
4	(W) Z (W) E	eP eS	00	26	(05) 27 50	
4	(W) Z (W) E	eP eS	05	57	25 58 45	
4	(W) Z, Z	eP	18	51	27	USCGS: H - 18:38:22. New Ireland region.
4	(W) Z	eP	20	26	59	
4	(W) Z	eP	22	21	45	
5	(W) Z, Z	eP	05	01	20	COMPRESSION. USCGS: H - 04:50:42. 3°N. , 128 $\frac{1}{2}$ °E. Halmahera region.
5	(W) Z	eP	16	38	26	COMPRESSION?
5	(W) Z	eP	19	08	13	DILATATION.
5	(W) Z, Z (L) N, N (L) N	iP iS i	20	46	29 54 57 56 43	COMPRESSION. USCGS: H - 20:35:55. 3 $\frac{1}{2}$ °N. , 128°E. Molucca Passage.
6	(W) Z, Z	eP	13	15	58	COMPRESSION.
7	(W) Z	e	00	41	(22)	
7	(W) Z, Z (W) E, E	iP iS	13	24	37 26 04	DILATATION. H - 13:22:45. Depth: about 200 km. 37°N. , 71 $\frac{1}{2}$ °E. Hindukush. $\Delta = 7^{\circ}.8$ Lahore P = 13:24:11.

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
7	(W)Z (W)E	eP eS	17	50	33 54	H - 17:48:47. Depth: about 200 km. 37°N. , 71°E. Hindukush. $\Delta = 7^{\circ}.4$ Lahore P = 17:50:16.
9	(W)Z (W)E	eP eS	01	39	14 36	
9	(W)Z (W)E	eP eS	03	42	26 51	
9	(W)Z (W)E	iP eS	08	56	07 29	DILATATION.
9	(W)Z (L)N (L)N (M)E	ePKP iSKKS e e(SS)	14	51	29 51 45 20	USCGS: H - 14:32:38. 32°N. , 116°W. Lower California. Mag: $6\frac{3}{4}$ - 7 (Pas.)
9	(W)Z,Z	eP	22	05	41	COMPRESSION. USCGS: H - 21:55:33. 36 $\frac{1}{2}$ °N. , 139°E. Central Japan.
9	(W)Z	eP	23	10	57	
10	(W)Z,Z (W)Z (L)N	iP epP e	00	12	57 24 39	COMPRESSION. USCGS: H - 00:02:40. Depth: about 60 km. 37°N. , 142°E. Off coast of Honshu, Japan.
10	(W)Z	eP	04	01	27	
10	(W)Z (W)E	iP iS	04	02	57.8 03 07.9	
10	(W)Z (W)E	eP eS	10	37	43 57	
10	(W)Z	ePKP	12	58	14	USCGS: H - 12:38:35. 11 $\frac{1}{2}$ °S. , 79°W. Off coast of Peru.
10	(W)Z	ePKP	14	02	55	USCGS: H - 13:43:20. About 100 miles off coast of Peru.

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
10	(W)Z,Z	eP	18	49	44	USCGS: H - 18:40:07. Southeastern Luzon, Philippine Islands.
11	(W)Z	eP	05	45	45	USCGS: H - 05:38:38. 5°N. , 94½°E. Off north coast of Sumatra.
	(W)Z	i			59	
	N	eS	51	20		
11	(W)Z,Z	eP	06	58	10	USCGS: H - 06:45:38. 5°S. , 8½°W. Atlantic Ocean.
11	(W)E,Z	eP	16	08	33	H - 16:06:33. 37°N. , 72°E. Hindukush. △ = 8°0 Lahore P = 16:08:05.
	(W)E,E	iS		10	05	
12	(W)E,Z	iP	11	58	11	DILATATION. USCGS: H - 11:49:20. 19°N. , 119½°E. Off northwest coast of Luzon, Philippine Islands. Mag: 6¼ - 6½ (Pas.)
	(W)N	i			19	
	(L)N	e	12	00	14	
	(L)E	eS		05	13	
12	(W)E,Z	eP	12	17	38	USCGS: H - 12:08:45. 18°N. , 120°E. Luzon aftershock.
12	(W)E,Z	eP	12	26	22	
12	(W)E	eP	17	32	54	H - 17:31:21. Depth: about 200 km. 36°N. , 70½°E. Hindukush. △ = 6°4 Lahore P = 17:32:40. USCGS: H - 17:31:18. Depth: about 200 km. Hindukush.
	(W)N	eS		34	07	
12	(W)E	eP	19	49	05	USCGS: H - 19:40:20. 19°N. , 120°E. Luzon aftershock.
	(L)N	eS		56	16	
12	(W)E,Z	e	19	57	06	
12	(W)E,Z	e	20	07	57	

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
12	(W)E	e	20	14	06	
13	(W)E	e	01	51	09	
13	(W)E	e	01	55	53	
13	(W)E,Z	eP	02	21	00	USCGS: H - 02:12:00. Luzon aftershock.
13	(W)E	eP	02	52	37	
13	(W)N,Z (W)E	eP eS	03	16	18 17 36	
13	Z (L)N	eP eS	03	53	34 04 00 40	DILATATION. USCGS: H - 03:44:45. 19°N. , 120°E. Luzon aftershock.
13	(W)Z	e	06	36	37	
13	(W)Z	eP	08	15	04	
13	(W)Z,Z	eP	08	27	48	
13	(W)Z	e	09	02	49	
13	(W)Z,Z (L)E	eP eS	14	29	40 36 45	DILATATION. USCGS: H - 14:20:48. Luzon aftershock.
13	(W)Z,Z	eP	14	39	24	USCGS: H - 14:29:44. Depth: about 500 km. 51°N. , 150°E. Sea of Okhotsk.
13	(W)E	e	15	57	(33)	
13	(W)E	e	16	08	(23)	
13	(W)Z	eP	18	52	16	
13	(W)Z	eP	20	22	(12)	
13	(W)Z,Z	eP	22	48	38	USCGS: H - 22:39:50. 18½°N. , 119½°E. Luzon aftershock.
13	(W)Z,Z	e	22	57	32	

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
14	(W)Z,Z Z	iP i	01	02	58 03 11	COMPRESSION. USCGS: H - 00:52:50. 35 $\frac{1}{2}$ ^o N. , 139 $\frac{1}{2}$ ^o E. Near east coast of Honshu. Mag: 5 $\frac{3}{4}$ - 6 (Pas.)
14	Z	eP	07	47	(08)	USCGS: H - 07:38:10. Luzon aftershock.
14	Z	eP	10	02	48	USCGS: H - 09:53:26. 37 ^o N. , 1 $\frac{1}{2}$ ^o E. Near coast of Algiers.
14	(W)Z,Z E	eP eS	12	42	39 49 48	DILATATION. USCGS: H - 12:33:48. 18 $\frac{1}{2}$ ^o N. , 119 $\frac{1}{2}$ ^o E. Luzon aftershock.
14	(W)Z (L)E (L)E	eP i(PP) iS	12	43	57 45 56 51 06	
14	(W)E,Z	eP	19	04	03	USCGS: H - 18:55:12. Luzon aftershock.
14	(W)Z	eP	21	18	49	USCGS: H - 21:08:36. 42 $\frac{1}{2}$ ^o N. , 143 ^o E. Hokkaido, Japan.
14	(W)Z	e	22	02	(16)	USCGS: H - 21:50:06. Andreanof Islands, Aleutian Islands.
15	(W)Z,Z	ePKP	01	39	31	USCGS: H - 01:20:36. 31 $\frac{1}{2}$ ^o N. , 115 $\frac{1}{2}$ ^o W. Lower California, U.S.A. Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.)
15	(W)Z	eP	12	08	49	USCGS: H - 11:57:38. Kurile Islands region.
15	(W)Z	ePKP	13	09	26	USCGS: H - 12:50:12. Depth: about 150 km. 8 $\frac{1}{2}$ ^o S. , 74 $\frac{1}{2}$ ^o W. Peru.
15	(W)Z,Z (L)N	iP iS	15	52	27 54 54	DILATATION? H - 15:49:24. Southern Iran. Δ = 12 ^o .6 Lahore P = 15:53:48. USCGS: H - 15:49:27. 28 ^o N. , 53 ^o E. Southern Iran.

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
15	(W)Z	e	19	10	34	
15	(W)Z,Z	e	20	57(01)		USCGS: H - 20:36:03. 13 $\frac{1}{2}$ ^o S. , 111 $\frac{1}{2}$ ^o W. Pacific Ocean.
16	(W)Z,Z	iP	00	28	49	COMPRESSION. USCGS: H - 00:17:53. Depth: about 100 km. 22 $\frac{1}{2}$ ^o N. , 143 ^o E. Marianas Islands region.
	(L)N	eS		37	41	
17	Z	e(PKP)	10	10(59)		USCGS: H - 09:53:55. 47 ^o S. , 15 ^o W. South Atlantic Ocean.
	Z	e		14	49	
	(L)E, (M)E	e		18	56	
	(L)E	i		22	03	
18	(W)Z	eP	07	43	48	DILATATION. USCGS: H - 07:34:16. Depth: about 450 km. 30 ^o N. , 137 $\frac{1}{2}$ ^o E. South of Honshu, Japan.
	Z	ipP		45	27	
	(M)E, (L)N	iS		51	26	
18	(W)Z,Z	eP	08	12	45	
	(W)E	e		15	05	
18	(W)Z,Z	eP	08	27	17	DILATATION. H - 08:25:39. Depth: about 200 km. 36 ^o N. , 71 ^o E. Hindukush. $\Delta = 6^{\circ}.8$ Lahore P = 08:26:59. S = 27:59.
	(W)E	iS		28	34	
18	(W)Z	e	11	52	38	
18	(W)Z	e	12	45	46	
19	Z	eP	02	31	38	USCGS: H - 02:18:00. 52 ^o N. , 131 $\frac{1}{2}$ ^o W. Queen Charlotte Islands. Mag: 6 $\frac{3}{4}$ (Pas.)
	(W)Z,Z	e		32	54	
	(L)N	ePP		35	43	
	(L)N	eSKS		42	23	
	(M)E, (L)E	eS		43	02	
	(L)E, (M)E	eSS		49	43	
19	(W)Z,Z	eP	04	25	56	USCGS: H - 04:13:16. 58 $\frac{1}{2}$ ^o N. , 154 ^o W. Alaska Peninsula.
	(L)E	eS		36	17	

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
19	(W) Z, Z	e	04	47	39	
19	(W) Z	ePKP	05	59	(23)	USCGS: H - 05:40:22. 23°S. , 176°W. Tonga Islands.
19	(W) Z	eP	20	12	54	Felt at Dinajpur. (East Pakistan).
20	(W) Z	eP	07	11	09	USCGS: H - 07:00:10. Off south coast of Kamchatka.
20	Z	eP	08	06	37	USCGS: H - 07:57:38. 24°N. , 124°E. Ryukyu Islands.
	Z	ePcP	07	59		
	(L) E	ePP	08	33		
	(L) N	eS	13	51		
	(L) E	iScS	16	31		
	(L) N	eSS	17	12		
20	Z	eP	20	37	58	USCGS: H - 20:31:35. 39½°N. , 30½°E. Turkey.
	(L) E, (M) E	iPP	39	07		
	(L) N	i(PcP)	41	01		
	(L) E, (M) E	i	43	44		
21	(W) Z	eP	07	24	41	
21	(W) Z	eP	20	47	28	
21	(W) Z	ePKP	20	50	41	USCGS: H - 20:32:55. Depth: about 650 km. 22°S. , 179°W. Fiji Islands region.
21	(W) Z	e	21	00	52	
21	(W) Z	eP	23	08	40	USCGS: H - 22:59:24. 73½°N. , 8°E. Arctic Ocean foreshock.
22	Z	eP	00	16	53	USCGS: H - 00:07:37. 73½°N. , 8°E. Arctic Ocean foreshock.
22	Z	eP	05	34	00	
22	Z	eP	08	05	07	COMPRESSION.
	(L) E	i	08	57		
22	(W) Z	e	09	57	(12)	

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
22	(W) Z, Z Z (L) E	eP e iS	10	06	14 26 43	DILATATION. USCGS: H - 09:59:24. 5°S. , 67°E. Chagos Islands region.
22	Z	eP	11	57	23	
22	Z	e	22	41	(33)	
22	Z (L) N	eP i(S)	23	45	37 05	
23	(W) Z, Z (L) N (L) N	eP eSKS eS	01	34	05 42 57	USCGS: H - 01:21:03. 31°N. , 42°W. North Atlantic Ocean.
23	(W) Z, Z (W) E	eP eS	15	17	15 38	
23	(W) Z, Z	eP	17	34	40	USCGS: H - 17:31:30. Southern Iran.
24	(W) Z	eP	01	55	18	
24	(W) Z	e	02	53	(37)	
24	(W) Z (W) E	eP e(S)	03	36	24 18	
24	(W) Z	ePKP	09	37	52	USCGS: H - 09:19:01. 32°S. , 179½°E. Kermadec Islands region.
25	(W) Z (W) N	eP e(S)	21	27	13 40	
26	(W) Z, Z (L) NE	eP eS	13	44	02 47	
26	(W) Z	e	13	52	00	
27	(W) Z, Z	eP	08	50	14	COMPRESSION. USCGS: H - 08:37:02. Depth: about 100 km. 52°N. , 174°W. Andreanof Islands, Aleutian Islands.
28	E	e	11	32	(50)	USOCS: H - 11:13:20. 23°S. , 70°W. Northern Chile.

February, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
28	(W) Z	eP	22	23	21	
	(W) E	e(S)		25	18	
28	(W) Z	eP	23	49	20	
	(W) E	eS		50	49	
29	(W) Z	eP	04	00	18	
	(W) E	eS	05	01	36	
29	(W) Z	eP	07	08	26	USCGS: H - 06:57:52. 29 $\frac{1}{2}$ ^o N. , 141 ^o E. South of Honshu, Japan.
29	(W) Z	eP	20	56	44	DILATATION. H - 21:51:22. Depth: about 60 km. 23 $\frac{1}{2}$ ^o N. , 94 ^o E. Burma - India border. Δ = 25 ^o .0 Lahore P = 20:55:43. USCGS: H - 20:51:18. Depth: about 60 km. 23 $\frac{1}{2}$ ^o N. , 94 $\frac{1}{2}$ ^o E. Burma - India border.
	(W) Z	epP			53	
	(W) N	e(S)	21	01	10	
29	(W) Z	eP	21	31	23	H - 21:26:07. Depth: about 60 km. 23 $\frac{1}{2}$ ^o N. , 94 ^o E. Burma - India border. Δ = 24 ^o .4 Lahore P = 21:30:23. USCGS: H - 21:25:58. 23 $\frac{1}{2}$ ^o N. , 94 $\frac{1}{2}$ ^o E. Depth: about 60 km. Burma - India border aftershock.
	(W) Z	i(pP)			38	
	(W) N	e(S)			36 06	

Abdul Qadir Khan.
S. Abul Hassan Naqvi.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 3.

Seismological Bulletin

March 1956



	(W) Z, Z E	iP e(S)	00 10 01 18 58	Dilatation.
1	(W) Z (W) Z	eP eS	05 46 29 48 15	
1	(W) Z, Z E	iP iS	12 14 33 17 31	Dilatation.
1	Z (W) Z (W) E, E	eP iP eS	12 50 56 57 53 18	Dilatation? H - 12:47:58. Southern Iran. $\Delta = 12^{\circ}.2$ Lahore P = 12:52:18. USCGS: H - 12:47:56. Southern Iran.
1	(W) Z, Z	eP	14 12 59	USCGS: H - 14:01:56. 52°N. , 159°E. Near southeast coast of Kamchatka.
1	(W) Z, Z E	eP eS	15 56 49 59 04	Dilatation.
1	(W) Z	eP	18 12 38	
2	(W) Z (W) Z (W) E	eP isP eS	04 56 57 57 25 58 15	
2	(W) Z, Z (L) N	iP eS	12 08 44 18 57	Dilatation. USCGS: H - 11:56:20. 63½°N. , 149½°W. Alaska.
2	(W) Z, Z E	eP epP	14 59 50 15 00 09	Compression? USCGS: H - 14:49:18. Depth: about 100 km. 45½°N. , 149½°E. Kurile Islands.
2	(W) Z (W) N	eP iS	19 30 53 32 08	

3	(W)Z (W)E,E	eP eS	07 03 09 05 24	
3	(W)Z E (L)N	eP epP eS	10 19 08 25 23 27	USCGS: H - 10:13:44. Depth: about 60 km. 23 $\frac{1}{2}$ ^o N. , 94 $\frac{1}{2}$ ^o E. Burma - India Border aftershock.
3	(W)Z	iP	18 00 36	Dilatation.
3	(W)Z	e	19 52 19	
4	(W)Z	e	03 27 50	USCGS: H - 03:18:10. 83 $\frac{1}{2}$ ^o N. , 112 ^o E. North Polar region.
4	(W)Z E	iP iS	15 04 54.2 05 06.4	Dilatation. Felt at Chaman.
4	Z (W)N	eP eS	15 39 11 40 31	
5	Z	e	02 31 51	
5	(W)Z,Z	eP	03 53 30	USCGS: H - 03:42:25. 52 ^o N. , 159 $\frac{1}{2}$ ^o E. Near southeast coast of Kamchatka.
5	(W)Z (W)N,(L)E	eP iS	07 15 03 17 13	Compression. USCGS: H - 07:12:13. 37 ^o N. , 77 ^o E. Southern Sinkiang Province, China.
5	(W)Z (W)Z (W)ZE	eP i iS	22 55 28 59 56 46	
5	(W)Z,Z (L)N	eP eS	23 39 58 48 18	Compression. USCGS: H - 23:29:41. 44 $\frac{1}{2}$ ^o N. , 144 ^o E. Near north coast of Hokkaido, Japan. Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.)

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
5	(W)Z,Z E	eP eS	23	45	59 48 16	USCGS: H - 23:42:53. Sinkiang Province, China.
6	(W)Z	e	01	08	24	
6	(W)Z	eP	02	03	53	USCGS: H - 01:53:43. Depth: about 150 km. About 150 miles off south coast of Honshu, Japan.
6	(W)Z,Z (L)E	eP i	08 58 32 09 01 42			Dilatation? USCGS: H - 08:55:28. 28°N. , 52½°E. Southern Iran.
6	(W)Z,Z N	eP i	09 12 44 14 57			Dilatation. USCGS: H - 09:09:40. Iran aftershock.
6	(W)Z (W)N	eP eS	09 17 35 19 51			
6	(W)Z	e	10 21 00			
6	(W)Z (W)N	eP eS	10 26 31 28 49			
6	(W)Z	eP	14 28 45			
6	(W)Z	e	15 10 29			
6	(W)Z	eP	19 04 15			
6	(W)Z	eP	20 10 22			
6	(W)Z,Z (W)Z (L)E	eP eS e	20 56 12 58 27 59 21			Dilatation. USCGS: H - 20:53:12. Iran aftershock.
6	(W)Z,Z	eP	23 56 58			
7	(W)Z (W)Z	iP e(S)	01 24 51 28 28			Dilatation.
7	(W)Z (W)E	eP eS	03 46 25 48 39			
7	Z	eP	07 13 50			

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
7	Z	eP	09	46	48	
7	Z	e	12	18	51	
7	(W)Z,Z (W)E	eP e(S)	14	07	30 09 40	Dilatation.
7	(W)Z (W)E	eP e(S)	14	21	11 23 27	
7	(W)Z	eP	16	54	16	
7	(W)Z	iP	17	01	39	Dilatation.
8	(W)Z,Z	eP	11	18	10	
8	(W)Z E	eP e	16	31	14 33 55	
8	(W)Z	eP	17	29	28	
9	(W)Z,Z	eP	11	49	10	USCGS: H - 11:37:56. Banda Sea.
9	(W)Z	eP	15	25	36	
9	(W)Z,Z (L)N	eP e(S)	15	36	50 39 29	USCGS: H - 15:33:26. Southern Iran.
9	(W)Z (W)N	eP e(S)	15	45	54 48 47	
9	(W)Z,Z (L)N	eP eS	16	47	54 50 14	Dilatation. H - 16:44:54. 26°N. , 53½°E. Southern Iran. △ = 12° .4 Lahore P = 16:49:18. USCGS: H - 16:44:50. Iran aftershock.
9	(W)Z	eP	17	57	18	
9	(W)Z (W)E E	eP eS e	20	08	40 10 55 11 01	
10	(W)Z	eP	16	36	51	USCGS: H - 16:26:33. 5°N. , 126°E. Near south coast of Mindanao, Phillipine Islands.

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
10	(W)Z,Z	e	18	40	00	
10	(W)Z,Z	ePKP	19	52	14	USCGS: H - 19:33:40. Depth: about 200 km. 22 $\frac{1}{2}$ ^o S. , 176 ^o W. Tonga Islands.
10	(W)Z,Z	eP	20	09	29	Dilatation.
10	(W)Z	e	20	22	15	
10	(W)Z (L)E Z	eP eS eP'P'	21	47	30	Compression? USCGS: H - 21:37:01. 1 $\frac{1}{2}$ ^o N. , 125 $\frac{1}{2}$ ^o E. Molucca Passage.
11	(W)Z	eP	02	19	33	
11	(W)Z,Z (W)E	eP eS	08	09	06	Dilatation.
11	(W)Z,Z	eP	16	33	22	Dilatation.
12	(W)Z,Z	eP	04	06	15	
12	(W)Z,Z	eP	11	32	24	Dilatation. USCGS: H - 11:22:51. 10 ^o N. , 122 ^o E. Near Panay Island, Philippine Islands.
13	(W)Z	e	04	07	00	
13	Z	eP	09	36	37	USCGS: H - 09:26:13. 36 ^o N. , 142 ^o E. Near east coast of Honshu, Japan.
13	Z (W)Z,Z (W)Z,Z (L)N (L)N (L)N	ePKP e iPKS ePS ePPS iSS	13	32(34)		USCGS: H - 13:13:10. 7 ^o N. , 82 ^o W. Off south coast of Panama.
13	Z	eP	19	33	42	USCGS: H - 19:22:15. 54 ^o N. , 169 ^o E. Komandorski Islands region.

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
13	Z	eP	23	44	46	USCGS: H - 23:31:50. 4°S. , 153°E. New Ireland.
14	(W)Z,Z	iP	11	07	06	Dilatation. USCGS: H - 11:00:38. Andaman Islands.
14	Z,E E E	eP e(S) e	16	44	36 48 23 49 03	Felt Bogra. USCGS: H - 16:39:43. East Pakistan.
15	(W)Z,Z	eP	15	30	50	
15	(W)Z,Z (W)Z	ePKP ePP	20	36	03 39 12	USCGS: H - 20:16:30. 20°S. , 69½°W. Northern Chile.
16	(W)Z	eP	13	45	54	Dilatation.
16	(W)Z	e	14	36	17	
16	(W)Z	eP	18	10	40	
16	(W)Z,Z	eP	18	31	33	Dilatation? USCGS: H - 18:21:25. 42°N. , 141½°E. Near south coast of Hokkaido, Japan.
16	(W)Z	ePKP	19	21	37	USCGS: H - 19:02:40. Tonga Islands region.
16	(W)Z,Z (L)N	eP i	19	38	24 43 26	USCGS: H - 19:32:43. 34°N. , 36°E. Lebanon foreshock.
16	(W)Z	eP	19	49	12	USCGS: H - 19:43:28. 34°N. , 36°E. Lebanon.
17	(W)Z,Z N	iP eS	11	52	24 12 00 28	Dilatation. USCGS: H - 11:42:31. Depth: about 150 km. 40°N. , 141°E. Northern Honshu, Japan.
17	(W)Z,Z	eP	15	51	36	Compression? USCGS: H - 15:41:18. 43°N. , 145°E. Near east coast of Hokkaido, Japan.

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
17	(W)Z,Z	eP	20	08	10	USCGS: H - 19:54:56. 10°S. , 154°E. Solomon Sea foreshock.
17	(W)Z,Z	eP	23	54	58	Dilatation. USCGS: H - 23:41:42. 10°S. , 154°E. Solomon Sea.
18	(W)Z	eP	08	24	52	USCGS: H - 08:17:57. 6°N. , 93°E. Nicobar Islands.
	(W)Z,Z	i			54	
	(L)E	iPP		26	24	
	(L)E,N	eS		30	29	
19	(W)Z,Z	eP	17	48	46	USCGS: H - 17:35:57. 6°S. , 150°E. New Britain.
	(L)E	eSKS		59	09	
20	(W)Z,Z	eP	02	33	44	USCGS: H - 02:23:29. 43°N. , 143½°E. Hokkaido, Japan.
20	Z	eP	04	26	02	USCGS: H - 04:15:00. 51½°N. , 159½°E. Off southeast coast of Kamchatka.
20	(W)Z,Z	eP	09	54	26	USCGS: H - 09:41:36. Depth: about 60 km. 5°S. , 152½°E. Near coast of New Britain.
20	Z	eP	10	32	30	USCGS: H - 10:23:39. 19½°N. , 120°E. Off northwest coast of Luzon, Philippine Islands.
20	(W)Z	eP	11	37	28	USCGS: H - 11:26:54. Southern Kurile Islands.
20	(W)Z,Z	eP	12	54	10	
20	Z	e	16	23	39	
20	(W)Z	ePKP	17	30	13	Dilatation. USCGS: H - 17:12:15. Depth: about 500 km. 19°S. , 178½°W. Fiji Islands.

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
20	(W)Z,Z	eP	22	13	11	
21	(W)Z	e	01	10	36	
21	(W)Z	eP	01	53	(57)	
	(L)N	e(S)		56	59	
21	(W)Z,Z	iP	04	59	08	Dilatation.
	(W)Z	i			28	USCGS: H - 04:54:46.
	(L)E	eS	05	02	34	41°N. , 48½°E. Azerbaijan S. S. R.
22	(W)Z,Z	ePKP	06	53	16	USCGS: H - 06:33:55.
	(W)Z,Z	ipPKP			42	Depth: about 100 km.
	(L)N	iSKP		56	53	3½°S. , 79°W.
	(L)E	ipSKP		57	18	Ecuador. Mag: 6¾ (Pas.) 6½ (Berk.)
22	Z	e	16	05	29	
23	(W)Z	e	04	00	43	
23	(W)Z,Z	eP	05	23	42	USCGS: H - 05:10:48. 5°S. , 151°E. New Britain.
23	(W)Z	eP	05	44	40	
23	(W)Z	eP	05	54	47	USCGS: H - 05:50:08.
	(W)E	eS		58	27	Southeastern Tibet.
23	Z	ePKP	15	15	56	USCGS: H - 14:56:52. Tonga Islands.
23	Z	e	19	04	56	Dilatation.
	(W)Z	i			57	
23	(W)Z	eP	20	13	51	USCGS: H - 20:00:44. 6°S. , 155°E. Solomon Islands.
24	(W)Z	eP	15	53	59	
	(W)N	eS		56	04	
24	(W)Z,Z	eP	19	01	48	
25	(W)Z,Z	ePKP	06	03	37	Dilatation. USCGS: H - 05:44:20. Near coast of Guatemala and El Salvador.

March, 1956. Quetta.

DATE	COMPT. .	PHASE	GMT			REMARKS
			h.	m.	s.	
25	Z (L)N	eP eS	23	38	34 47 37	Compression? USCGS: H - 23:27:31. 52°N. , 159°E. Near southeast coast of Kamchatka.
26	Z	eP	04	10	28	USCGS: H - 03:59:25. 52°N. , 159°E. Near southeast coast of Kamchatka.
26	Z Z	ePKP ePP	05	40	27 43 29	USCGS: H - 05:21:20. Depth: about 150 km. 24½°S. , 68°W. Northern Chile - Argentina border.
26	Z	eP	08	29	55	Dilatation? USCGS: H - 08:17:24. 6½°N. , 151°W. Southern Alaska.
27	(W)Z,Z	eP	17	03	02	Dilatation? USCGS: H - 16:51:38. Banda Sea.
28	Z	eP	03	33	35	Dilatation? USCGS: H - 03:21:24. Andreanof Islands region, Aleutian Islands.
28	(W)Z,Z	iP	22	14	40	Dilatation. USCGS: H - 22:05:18. Depth: about 500 km. 30°N. , 137°E. Off south coast of Honshu, Japan.
30	Z	eP	02	38	04	Compression.
30	(W)Z	e	18	03	(22)	USCGS: H - 17:50:45. Central Alaska.
30	Z	e	18	54	04	USCGS: H - 18:43:45. 40°N. , 144°E. Off coast of northern Honshu, Japan.

March, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	REMARKS
30	(W)Z,Z	iPKP	22 34 32	Dilatation. USCGS: H - 22:15:31. 22°S. , 176°W. Tonga Islands region.
31	(W)Z	e	03 20 21	

Abdul Qadir Khan.
Mohammad Idris.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

I-9.237

OCT 8 1956

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 4.

Seismological Bulletin

April 1956

QUETTA OBSERVATORY

April, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W)Z,Z (W)Z N,E	eP i eS	06	44	36 50 33	USCGS: H - 06:37:08. Near west coast of northern Sumatra.
1	(W)Z	e	11	00	23	
1	(W)Z,Z	e	11	14	01	
1	(W)Z,Z (W)Z	eP e	19	26	18 43	Dilatation.
2	(W)Z,Z Z (L)N, (M)E	eP ePP iS	10	57	30 09 34	Compression. USCGS: H - 10:49:56. 2°N. , 97°E. Off coast of Sumatra.
2	Z (W)EN	eP iS	11	08	31 49	USCGS: H - 11:04:22. Depth: about 100 km. Southern Tibet.
2	(W)Z	eP	14	52	28	
3	(W)Z,Z	iP	12	15	37	Dilatation.
4	(W)Z,Z	eP	07	33	00	Dilatation?
4	(W)Z,Z	e	08	28	27	
5	(W)Z	e	01	26	35	
5	(W)Z	e	04	12	55	USCGS: H - 04:02:00. 53°N. , 158°E. Near east coast of Kamchatka.
5	Z Z	eP epP	08	00	03 29	USCGS: H - 07:47:39. Depth: about 100 km. 6°S. , 146½°E. Near northeast coast of New Guinea.
5	(W)Z (W)E	eP eS	22	30	25 34	

April, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
6	Z (L)N	iP iS	07	13	18 14 36	Dilatation. H - 07:11:38. Depth: about 150 km. 36 $\frac{1}{2}$ ^o N. , 71 ^o E. Hindukush. Felt Peshawar & Risalpur, West Pakistan. $\Delta = 6^{\circ}.9$ Lahore = P : 07 13 01. S : 14 00. Chittagong P : 07 16 28. S : 20 21. USCGS: H - 07:11:34. Depth: about 200 km. 36 $\frac{1}{2}$ ^o N. , 71 ^o E. Hindukush.
7	(W)Z, Z (W)E	eP eS	04	32	07 33 36	USCGS: H - 04:30:10. Western Pakistan - India border.
7	(W)Z, Z (W)E	eP e(S)	06	12	58 16 37	
7	Z	ePKP	18	19	17	Dilatation? USCGS: H - 18:00:57. Depth: about 350 km. 32 ^o S. , 180. Kermadec Islands.
7	(W)Z, Z	eP	19	05	45	
7	(W)Z (W)N	eP eS	21	29	34 32 42	
8	(W)Z (W)E	eP e(S)	11	50	52 54 34	
8	(W)Z	iP	18	13	53.5	Compression. Felt Quetta.
10	(W)Z, Z (W)Z Z Z Z (L)N (L)N	iP ipP i iPP i iS i	13	24	27 25 00 11 26 25 28 18 31 08 35 40	Dilatation. USCGS: H - 13:16:04. Depth: about 150 km. 3 ^o S. , 102 ^o E. Near south coast of Sumatra.
10	(W)Z	eP	14	17	06	Compression.

April, 1956. Quetta.

DATE	COMPT.	PHASE	GMT		REMARKS
			h.	m. s.	
11	Z (M)E	eP eS	01 47 26 49 08		Compression. USCGS: H - 01:45:10. 39°N. , 70°E. Tadzhik S. S. R.
11	(W)Z	e	14 46 12		
11	(W)Z, Z (L)E	e e	17 24 16 33 52		
11	(W)Z (L)E	eP e(S)	17 45 06 54 03		USCGS: H - 17:34:15. 35 $\frac{1}{2}$ °S. , 54 $\frac{1}{2}$ °E. Indian Ocean, about 800 miles southeast of Madagascar.
12	(W)Z, Z	e	05 24 34		
12	(W)Z, Z (W)Z N (L)N	ePKP e e e	05 24(59) 27 44 28 01 46 17		USCGS: H - 05:05:37. 22°S. , 72 $\frac{1}{2}$ °W. Off coast of northern Chile.
12	Z	eP	19 27 50		
12	(W)Z	e	19 39 06		
12	(W)Z, Z (W)Z (L)N, (W)E (W)N, N	eP i iS e	22 38 32 39 41 31 43		Dilatation. USCGS: H - 22:34:44. 37°N. , 50°E. Northern Iran.
13	(W)Z	eP	00 17 52		
13	Z (W)Z, Z	e i	05 00 38 01 06		USCGS: H - 04:38:53. Depth: about 250 km. 23°S. , 67°W. Chile - Argentina - Bolivia border.
13	(W)Z, Z	eP	08 05 57		Dilatation. USCGS: H - 07:55:00. 50°N. , 156°E. Near south coast of Kamchatka.
15	(W)Z (W)N	eP e(S)	12 01 10 03 17		

April, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
15	(W)Z,Z (W)E,N	eP eS	12	48	29 50 24	
15	(W)Z (W)E	eP eS	12	58	19 13 00 13	
16	(W)Z,Z Z	eP e	01	53	31 45	USCGS: H - 01:42:29. 55°N. , 162°E. Near east coast of Kamchatka.
16	(W)Z,Z E	eP i	10	55	20 58 13	Compression. USCGS: H - 10:46:42. 3½°S. , 102°E. Near south coast of Sumatra.
16	Z Z	ePKP e	21	08	44 12 31	USCGS: H - 20:49:00. 500 miles west of Galapagos Islands.
17	(W)Z (L)N,N,E	iP eS	12	25	44 33 25	Dilatation.
17	(W)Z	e	22	18	07	
18	Z,E Z (L)N (L)E	eP e e(S) e	02	01	16 31 04 31 50	USCGS: H - 01:56:49. South eastern Tibet.
18	Z (L)N (L)N (L)N	eP iS i i	11	12	32 22 40 24 29 26 46	Dilatation? USCGS: H - 11:00:13. 52°N. , 178°W. Andreanof Islands, Aleutian Islands. Mag: 6 (Berk), 6¾ (Pas.).
18	Z Z	ePKP epPKP	16	18	32 48	Dilatation? USCGS: H - 15:59:00. Depth: about 60 km. Northern Chile.
18	(W)Z	eP	18	07	(25)	USCGS: H - 17:55:11. 52°N. , 178°W. Andreanof Islands aftershock.
19	(W)Z,Z (W)Z (L)NE	eP e eS	17	14	(52) 15 12 19 29	

April, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
20	(W)Z,Z (W)E	iP eS	03	24	07 25 26	Compression?
20	(W)Z,Z	iP	15	27	02	Compression. USCGS: H - 15:15:56. Depth: about 150 km. 7 $\frac{1}{2}$ ^o S. , 129 ^o E. Banda Sea.
20	Z Z (L)N (L)E (L)N	eP iP eS e e	16	44	52 53 51 11 54 21 58 18	Compression? USCGS: H - 16:37:01. About 500 miles southwest of Chagos Islands.
21	Z	e	00	16	33	USCGS: H - 00:03:23. 6 ^o S. , 155 ^o E. Solomon Islands.
21	E	e	01	34	03	USCGS: H - 01:25:12. About 100 miles south of Formosa.
21	(W)Z	e	13	11	57	
22	(W)Z,Z (L)E (L)N (L)N (L)N (L)N	eP iSKS eS e e e	04 05	53 04	45 15 28 05 08 06 46 09 52	USCGS: H - 04:40:53. 6 ^o S. , 151 $\frac{1}{2}$ ^o E. New Britain.
22	Z N (L)N (L)E E	eP e iS i e	17	34	38 37 50 45 07 35 48 11	Compression. USCGS: H - 17:21:53. 54 ^o N. , 162 ^o W. South of Alaska Peninsula. Mag: 6 (Pas.), (Berk.)
23	(W)Z,Z (L)E (L)N,(W)N (L)N	iP eS i iScS	03	41	58 50 20 39 51 48	Compression. USCGS: H - 03:31:40. 42 $\frac{1}{2}$ ^o N. , 144 $\frac{1}{2}$ ^o E. Off east coast of Hokkaido. Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.)
24	(W)Z (W)E	eP eS	21	47	31 49 35	H - 21:44:45. 39 ^o N. , 75 $\frac{1}{2}$ ^o E. Sinkiang-Tadzhikistan border. $\Delta = 11^{\circ}.3$ Lahore P : 21 46 41.

April, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
24	(W)Z,Z	eP	23	35	40	Dilatation? USCGS: H - 23:24:37. 51 $\frac{1}{2}$ ^o N. , 160 ^o E. Off southeast coast of Kamchatka.
25	(W)Z,Z	e	04	42	21	
25	Z	ePP	08	49	40	USCGS: H - 08:29:58.
	(L)N	e			45	17 ^o S. , 175 ^o E.
	(L)N	eSS	09	05	32	Fiji Islands.
	(L)N	eSSS			09 43	Mag: 6 $\frac{1}{4}$ (Pas.).
26	(L)E	ePP	08	01	34	USCGS: H - 07:41:52.
	(L)E	e			07 48	16 $\frac{1}{2}$ ^o S. , 174 ^o E.
	(L)E	e			16 55	Fiji Islands.aftershock.
	(L)N	eSSS			21 32	Mag: 6 (Pas.).
26	(W)Z,Z	eP	11	48	38	Compression? USCGS: H - 11:38:42. Depth: about 100 km. 37 ^o N. , 140 ^o E. Central Honshu, Japan.
26	(W)Z,Z	eP	15	02	18	USCGS: H - 14:52:19.
	(L)E	eS			10 21	51 ^o N. , 143 ^o E.
	(L)NE	e			24 57	Northern Sakhalin.
26	Z	eP	17	10	04	USCGS: H - 16:59:05. Northern Kurile Islands.
28	Z	ePKP	15	13	35	USCGS: H - 14:54:30. Kermadec Islands.
29	(W)Z,Z	iP	22	00	06	Compression?
	(L)E	e			01 25	USCGS: H - 21:52:31.
	(L)NE	eS			06 14	6 $\frac{1}{2}$ ^o S. , 51 $\frac{1}{2}$ ^o E.
	(L)N	e			09 10	Amirante Islands, Indian Ocean.
30	(W)Z	e	12	19	18	

Abdul Qadir Khan.
Mohammad Idris.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

OCT 8 1956

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 5.

Seismological Bulletin

May 1956

QUETTA OBSERVATORY

May, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W)Z,Z	iP	02	50	53	Compression. USCGS: H - 02:42:03. 4 $\frac{1}{2}$ ^o S. , 103 ^o E. Near coast of southern Sumatra.
	Z	ePcP		52	15	
	(L)E	ePP			49	
	(L)E	ePcS		56	15	
	(L)N	e		57	47	
	(L)E	eS			54	
	(L)E	i		58	21	
	(L)E	iScS		03	00 44	
1	(W)Z	eP	09	53	15.6	
	(W)N	eS		54	09.3	
1	(W)Z	e	22	19	34	
2	(W)E,Z	eP	02	56	24	USCGS: H - 02:45:16. Banda Sea, about 150 miles northeast of Timor Islands.
3	(W)Z	eP	13	45	28.6	
3	(W)Z	eP	17	29	26	
	(L)E	e		34	24	
4	(W)Z	ePKP	14	33	17	USCGS: H - 14:14:20. 19 ^o S. , 175 ^o W. Tonga Islands.
4	(W)Z,Z	eP	18	54	34	USCGS: H - 18:45:25. 17 ^o N. , 122 ^o E. Northern Luzon P.I.
	(L)E	e	19	02	03	
5	(W)Z,Z	ePKP	12	58	35	USCGS: H - 12:39:15. 28 $\frac{1}{2}$ ^o S. , 69 ^o W. Depth: about 150 km. Argentina-Chile border.
	(W)Z	e	13	01	49	
6	Z	eP	15	25	30	Dilatation.
6	(W)Z,Z	eP	21	09	58	USCGS: H - 20:57:16. 54 $\frac{1}{2}$ ^o N. , 162 $\frac{1}{2}$ ^o W. Unimak Island region, Alaska. Mag: 5 $\frac{3}{4}$ (Pas.) 5 $\frac{1}{2}$ (Berk).
	(L)N	eSKS		20	27	
	(L)N	iS			33	
	(L)N	e		21	50	
6	(W)Z,Z	eP	22	13	10	Compression. USCGS: H - 22:02:27. 45 $\frac{1}{2}$ ^o N. , 150 $\frac{1}{2}$ ^o E. Kurile Islands.

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
6	(W)Z (W)E	eP eS	23	17	33 18 52	Dilatation?
7	(W)Z (W)E	iP iS	09	06	37 07 58	Dilatation.
7	(W)Z, Z (L)N (L)N	eP eS iPS	11	10	28 20 33 21 23	USCGS: H - 10:58:12. 46 $\frac{1}{2}$ $^{\circ}$ S. , 96 $^{\circ}$ E. South Indian Ocean. Mag: 6 $\frac{1}{4}$ (Pas.).
7	(W)Z	eP	11	16	39	
7	(W)Z, Z	eP	18	50	13	USCGS: H - 18:38:47. 10 $^{\circ}$ N. , 141 $\frac{1}{2}$ $^{\circ}$ E. Caroline Islands.
7	(W)Z	eP	22	19	52	
8	(W)Z, Z	eP	03	16	37	USCGS: H - 03:07:34. 19 $^{\circ}$ N. , 121 $\frac{1}{2}$ $^{\circ}$ E. Near north coast of Luzon P.I.
8	(W)Z (W)E (W)E	eP e(S) e	19	52	39 54 38 47	H - 19:50:00. 39 $^{\circ}$ N. , 75 $^{\circ}$ E. Tadzhikistan-Sinkiang border. $\Delta = 10^{\circ}.8$ Lahore P = 19:51:55. USCGS: H - 19:50:05. 38 $\frac{1}{2}$ $^{\circ}$ N. , 74 $\frac{1}{2}$ $^{\circ}$ E. Hindukush.
8	(W)Z (W)E	eP eS	20	53	01 55 17	USCGS: H - 20:50:00. Iran, near north coast of Persian Gulf.
9	(W)Z	e	18	52	(38)	
10	(W)Z	eP	05	56	10	USCGS: H - 05:44:48. 12 $^{\circ}$ N. , 143 $^{\circ}$ E. Marianas Islands. Depth: about 100 km.
10	Z	eP	16	49	14	USCGS: H - 16:36:32. 55 $\frac{1}{2}$ $^{\circ}$ N. , 164 $^{\circ}$ W. Near Unimak Island, Alaska.

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
10	(W)Z,Z	eP	18	21	41	Dilatation. USCGS: H - 18:12:00. 79°N. , 3°E. Off west coast of Spitzbergen.
10	(W)Z E	eP e(S)	23	12	21 14 21	
10	(W)Z,Z	eP	23	14	33	USCGS: H - 23:04:05. 4½°N. , 127½°E. Molucca Passage.
12	(W)Z (W)E	eP e(S)	14	39	52 42 03	
13	Z Z (L)N	eP i iS	07	51	15.7 27.4 43.6	Dilatation. H - 07:50:34. 30°N. , 70°E.* Northeast Baluchistan. △ = 2°4 Lahore P = 07:51:39. Felt at Barkhan, Rakhni, Fort Munro, Girdu and Sakhi Sarwar.*(Please see the note attached). USCGS: H - 07:50:33. 30°N. , 70°E. Central Pakistan.
13	Z	eP	08	00	(05)	Northeast Baluchistan aftershock.
13	(W)Z (W)Z	eP i	09	13	14.6 24.1	Northeast Baluchistan aftershock.
13	(W)Z (W)Z (W)N (W)N (W)E	eP i i i i	13	03	16.3 25.5 40.0 52.0 59.4	Northeast Baluchistan aftershock.
13	(W)Z	eP	14	43	(35)	USCGS: H - 14:34:00. 85½°N. , 82°E. North Polar region.
14	(W)Z,Z (W)E (W)N	eP i e	07	46	13.4 25.0 45.6	Northeast Baluchistan aftershock. Felt at Rakhni, Fort Munro & Girdu.

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
15	(W)Z	ePKF	08	32	26	USCGS: H - 08:13:02. 13 $\frac{1}{2}$ ^o S. , 77 ^o W. Depth: about 100 km. Near coast of Peru.
15	(W)Z (W)E	eP eS	09	16	40.8 17 10.5	Northeast Baluchistan aftershock.
15	(W)Z	e	12	52	49	USCGS: H - 12:32:59. 6 ^o S. , 82 ^o W. Near coast of Peru.
15	Z (W)E	eP e	18	41(27)	42	USCGS: H - 18:34:15. 37 $\frac{1}{2}$ ^o N. , 21 ^o E. Near west coast of Greece.
15	Z	eP	23	04	17	USCGS: H - 22:56:55. 38 ^o N. , 22 ^o E. Southern Greece.
16	(W)Z,Z (W)E	eP eS	14	19	04 20 43	Dilatation?
16	(W)Z,Z	eP	21	44	45	
17	Z Z E; (L)N	iP i iS	00	09	05 10 20 22	Dilatation. USCGS: H - 00:07:24. Depth: about 200 km. Hindukush.
17	(W)Z	ePKP	06	19	24	USCGS: H - 05:59:57. Depth: about 60 km. 16 $\frac{1}{2}$ ^o S. , 72 ^o W. Near coast of southern Peru.
17	(W)Z,Z	iP	21	20	38	Dilatation. USCGS: H - 21:08:46. 52 $\frac{1}{2}$ ^o N. , 174 ^o E. Near Islands, Aleutian Islands.
17	(W)Z	e	23	10	24	Compression?
18	(W)Z	eP	22	15	42	USCGS: H - 22:08:25. Near east coast of Greece.
19	(W)Z,Z Z (L)E (L)E (L)E (L)E	eP i e iSKS iS ePS	01	43	51 44 02 53 44 54 21 48 56 07	Dilatation. USCGS: H - 01:30:36. 7 ^o S. , 156 ^o E. Solomon Islands.

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
19	(W)Z,Z	eP	14	17	26	
	(L)E	e(S)		20	04	
	(L)N	e			30	
19	Z	eP	17	40	34	
	(L)E	e(S)		43	40	
19	Z	eP	20	13	50	USCGS: H - 20:02:15. 40°S. , 43°E. Indian Ocean.
	(L)N	i		15	23	
	(L)N	eS		23	16	
	(L)E	i			47	
20	Z	eP	15	44	30	Dilatation. USCGS: H - 15:41:56. 37½°N. , 76°E. Sinkiang Province, China.
	E	eS		46	21	
21	(W)Z	ePKP	00	49	04	USCGS: H - 00:29:47. Depth: about 100 km. Northern Chile.
	(W)Z	epPKP			32	
	Z	e		51	48	
21	(W)Z	e	22	13	29	
22	(W)Z,Z	eP	02	15	28	USCGS: H - 02:04:57. 2½°N. , 126½°E. Molucca Passage.
	(W)Z,Z	iPcP		16	10	
22	(W)Z,Z	ePKP	03	20	05	USCGS: H - 03:01:03. 15½°S. , 173°W. Samoa Islands. Mag: 6½ (Pas.).
	(L)E	iPP		22	02	
	(L)E	e		24	23	
	(L)E	eSKS		27	10	
	(L)E	e		28	32	
	(L)N	e		38	25	
22	(W)Z	eP	05	21	12	USCGS: H - 05:10:40. Near east coast of Celebes.
22	Z	iP	13	48	12	Compression. USCGS: H - 13:36:12. Depth: about 550 km. 4°S. , 152½°E. New Ireland.
	Z	epP		50	04	
	(L)N	e		51	19	
	(L)N	ePP		52	11	
	(L)E	eSKS		57	52	
	(L)E	iSKS			55	
	(L)N	iPS	14	00	40	
	(L)N	e		01	20	
	(L)E	i			26	
	22	Z	eP	21	00	
E		e		01	14	
(L)N		eS		05	25	

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
23	(W) Z, Z	eP	10	23	04	Dilatation. USCGS: H - 10:15:33. 9°S. , 67°E. Chagos Islands region.
	(L) N	eS		29	04	
	(L) N	e		32	05	
23	(W) Z	eP	12	23	26	
	(W) N	e(S)		26	04	
23	(W) Z, Z	eP	21	02	53	USCGS: H - 20:48:30. Depth: about 450 km. 15½°S. , 179°W. Fiji Islands. Mag: 7¼ (Pas.)
	(L) E	i(pP)		04	30	
	(L) N	e		05	00	
	(W) Z	ePKP		06	31	
	(L) E	i			47	
	(L) E, E, Z	i		07	39	
	E	i		10	33	
	E	eSKS		12	48	
	E	i		14	17	
E	eSKSP		17	22		
23	(W) Z	e	21	16	51	
24	(W) Z, Z	eP	03	37	52	Dilatation?
24	(W) Z, Z	eP	05	31	12	
24	Z	iP	19	33	18.6	
	Z, E	eS			30.6	
24	Z	iP	20	11	07	Compression. USCGS: H - 19:59:42. 5°S. , 131°E. Banda Sea.
	(L) N	eS		20	17	
25	Z	iP	00	58	19	Compression. USCGS: H - 00:50:33. 1°N. , 97½°E. Near coast of Sumatra
	Z	i(PP)	01	00	04	
	E	eS		04	33	
25	Z	e	02	26	(35)	
	Z	e		27	23	
25	Z	eP	07	22	59	
	E	e		25	30	
	E	e			58	
25	Z	iP	18	42	05.2	Felt at Quetta.
26	(W) Z, Z	eP	08	41	08	USCGS: H - 08:30:18. 4°S. , 126½°E. Boeroe Island, Banda Sea.
	(L) N	e(PP)		43	24	
	(L) N	eS		49	54	

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
26	(W)E,Z E	eP eS	12	42	09 26	Dilatation.
26	(W)E,Z	e	13	24	40	
26	Z Z Z E Z (L)E E (L)N (L)E (L)E (L)N (L)E (L)N (L)E	iPKP i e iPP i eSKS iSKS e(SKKS) i eSP eSKSP i eSS esSS	20	39	07 12 40 22 42 41 50 45 10 22 46 28 48 02 49 40 50 00 52 33 56 29 59 46	Dilatation. USCGS: H - 20:21:14. Depth: about 550 km. 19°S. , 178½°W. Fiji Islands. Mag: 6½ (Pas.), 6¼ (Berk).
27	Z	eP	04	13	51	
27	(W)Z,Z (W)E Z (L)N (L)N	eP e ePP eS e	13	16	55 17 07 18 24 22 42 25 20	USCGS: H - 13:09:42. Near coast of northern Sumatra.
27	(W)Z,Z Z (W)Z (L)N (L)N (L)E (L)N	iP epP i iS i ipS e	17	07	46 08 43 09 34 16 39 17 31 36 20 58	Compression. USCGS: H - 16:56:49. Depth: about 200 km. 6½°S. , 129½°E. Banda Sea.
27	(W)Z,Z (W)E (L)N	eP e e	18	51	50 53 25 54 14	
27	(W)Z,Z (L)E Z	eP e(S) e	23	40	30 43 45 44 03	
28	(W)Z,Z	eP	09	24	36	Dilatation? USCGS: H - 09:14:59. 13°N. , 124½°E. North of Samar Island, Philippine Islands.

May, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
28	(W)Z,Z	iP	09	35	36	Dilatation.
	(W)E	iS		36	55	
28	(W)NE	eP	09	44	18	
	(W)NE	eS		45	40	
28	(W)Z,Z	iP	13	33	17	Dilatation. USCGS: H - 13:23:20. Depth: about 100 km. Northern Celebes. 1°N. , 121½°E.
	(W)Z,Z	ipP			42	
	(L)E	i			52	
	Z	ePP		35	33	
	(L)N	iS		41	20	
	E	esS		42	04	
	(L)E	isS			06	
29	(W)Z	eP	06	38	03	USCGS: H - 06:29:21. Depth: about 100 km. 4½°S. , 103°E. Near south coast of Sumatra.
	(W)E	e		39	03	
29	(W)E	e	10	27	(44)	
	(W)E	e		28	38	
29	(W)E	eP	19	16	05	
	(W)NE	eS		17	23	
30	E	eP	02	36	(52)	
	E	e		37	05	
	N	e(S)			42	
30	E	eP	03	00	(23)	
	N	e		02	17	
	N	e			29	
30	Z	eP	14	58	39	
	Z	e		59	17	
30	Z	eP	18	48	40	USCGS: H - 18:37:10. About 100 miles off north coast of New Guinea.
30	Z	e	22	12	46	
31	Z	eP	15	00	59	Dilatation. USCGS: H - 14:50:13. 45½°N. , 151°E. Kurile Islands.

The Geophysical Observatory,
Post Box No. 2,
Quetta. (Pakistan).

Abdul Qadir Khan
S. Abul Hassan Naqvi.

*Fort Munro Earthquake of 13th May, 1956.

1. The main shock was followed by innumerable aftershocks for the next fortnight. Of these about 24 were felt at Fort Munro.
2. Aftershocks were later recorded on portable Willmore Seismograph at 3 temporary field stations viz: Khar, Sohrababad, and Girdu all within 15 kms. from the epicentre ($29^{\circ}50'N.$, $69^{\circ}50'E.$). The nearest field station was about 10 kms. northeast of the epicentre.

Recorded aftershocks suggest that the epicentral region is very close to Chacha Village ($29^{\circ}50'N.$, $69^{\circ}50'E.$) in the Rakhni-Phulali Fault Zone which is about 12 kms. southwest of Fort Munro ($30^{\circ}N.$, $70^{\circ}E.$ approximately).

Aftershocks occurred along a line of about 15 kms. in the Rakhni-Phulali Fault (Normal Type).

Small aftershocks are still occurring at the time of writing (June 1956).

3. An area of about 100 square kms. was surveyed and the maximum damage was noticed at Fort Munro and Khar while minor damage was observed at Sohrababad, Rakhni and Duba Villages. More than 50% of the buildings all constructed of mudmortar and stone with cement plasters at Fort Munro were rendered useless by this earthquake and according to an estimate of an official of Public Works Department, properties worth at least 200000 of rupees were destroyed.
4. Little or no structural damage occurred to recently built structures with good cementing material.
5. No life was lost in this earthquake which is partly due to the sparse population and partly because the main shock occurred in the daytime.
6. No depth indication could be found but it is assumed that the focus of this earthquake was rather shallow.
7. The intensity at the epicentre was VIII (Modified Mercalli) and the magnitude as determined by the Kiruna and Uppsala observatories was 6.

.....

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 6.

Seismological Bulletin

June 1956

QUETTA OBSERVATORY

June, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	Z	eP	01	11	56	
	N	e(S)		14	45	
2	E	eP	07	16	(34)	
	E	eS		18	09	
2	Z, (W)E	iP	23	05	50	Dilatation. USCGS: H - 22:53:59. Depth: about 100 km. 52 $\frac{1}{2}$ $^{\circ}$ N. , 178 $^{\circ}$ E. Rat Islands, Aleutian Islands.
2	(W)E	e	23	25	05	
3	(W)Z, Z	eP	05	30	38	Compression. USCGS: H - 05:19:23. 79 $\frac{1}{2}$ $^{\circ}$ N. , 118 $\frac{1}{2}$ $^{\circ}$ W. Arctic Ocean.
	(L)N	iS		39	52	
3	(W)Z, Z	eP	05	43	10.2	
	(W)E, Z	e			20.6	
	(L)N	iS			42.6	
	(L)N	i		44	03.7	
3	(W)Z, Z	e	05	58	37	
3	(W)E	e	12	30	(11)	
3	Z	e	19	07	52	
3	Z	ePKP	19	11	20	Dilatation. USCGS: H - 18:52:20. 31 $^{\circ}$ S. , 178 $\frac{1}{2}$ $^{\circ}$ W. Kermadec Islands.
4	Z	eP	07	19	46	USCGS: H - 07:07:13. Aleutian Islands foreshock.
4	Z	eP	07	21	52	Compression. USCGS: H - 07:09:18. 52 $^{\circ}$ N. , 170 $\frac{1}{2}$ $^{\circ}$ W. Fox Islands, Aleutian Islands. Mag: 6 $\frac{1}{4}$ (Pas.), (Berk).
	(L)N	iS		32	14	
4	Z	ePKP	12	24	54	USCGS: H - 12:05:55. 31 $^{\circ}$ S. , 178 $^{\circ}$ W. Kermadec Islands.

June, 1956. Quetta.



DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
4	E	eP	12	57	41.9	
	E	iS		58	07.5	
4	(W)Z,Z	eP	19	04	30	
4	(W)Z,Z	eP	23	50	01	
	(W)E	i		51	47	
5	Z	eP	05	39	34	USCGS: H - 05:29:47. 8°S. , 112°E. Java.
	Z	e			45	
	E	eS		47	28	
5	(W)Z	eP	16	26	28	USCGS: H - 16:13:55. Fox Islands, Aleutian Islands.
5	(W)Z,Z	eP	20	29	34	Compression? USCGS: H - 20:17:04. Depth: about 60 km. 52°N. , 171°W. Fox Islands, Aleutian Islands.
6	E	eP	16	16	05.8	
	E	e			38.0	
	E	e			45.3	
6	Z	eP	22	55	04	
8	(W)Z	eP	12	42	55	USCGS: H - 12:29:47. 6°S. , 154½°E. Solomon Islands.
8	(W)Z,Z	ePKP	14	12	34	USCGS: H - 13:53:09. Depth: about 150 km. 30°S. , 70°W. Argentina-Chile border.
9	(W)Z,Z	ePKP	10	27	59	USCGS: H - 10:08:32. Depth: about 150 km. 30½°S. , 70½°W. Central Chile. Mag: 6¾ (Pas.)
	(W)Z	epPKP			38	
	Z	ePP		31	21	
	(L)N	iSKS		34	51	
	(L)N	ePPS		44	35	
	(L)N	iSS		50	34	
9	Z	iP	23	15	09	Compression. H - 23:13:55. 35°N. , 67½°E. Northern Afghanistan. △ = 4°.7 Lahore P = 23:15:33.
	Z	i			25	

June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
						USCGS: H - 23:13:51. 35 $\frac{1}{2}$ ^o N. , 67 $\frac{1}{2}$ ^o E. Afghanistan. Mag: 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$ (Pas.), 7 $\frac{1}{2}$ (Berk).
10	Z Z (L)N	eP i i	03	34	19 36 35	H - 03:33:03. 35 ^o N. , 67 $\frac{1}{2}$ ^o E. Afghanistan aftershock. $\Delta = 4^{\circ}.7$ Lahore P = 03:34:47. USCGS: H - 03:33:05. Afghanistan aftershock.
10	Z	eP	04	32	22	Dilatation? USCGS: H - 04:22:08. $\frac{1}{2}$ ^o N. , 123 $\frac{1}{2}$ ^o E. Celebes.
10	Z Z	eP i	06	31	01 17	Afghanistan aftershock.
10	Z	eP	07	01	39	Afghanistan aftershock.
10	(W)Z Z	eP e	09	26	09 25	Afghanistan aftershock.
10	(W)Z	eP	10	36	15	Afghanistan aftershock.
10	(W)Z,Z	eP	13	16	10	
10	Z	eP	15	22	(35)	
10	(W)Z Z E E	eP e i i	23	44	52 45 07 59 46 14	H - 23:43:38. 35 ^o N. , 67 $\frac{1}{2}$ ^o E. Afghanistan aftershock. $\Delta = 4^{\circ}.7$ Lahore P = 23:45:18.
11	(W)E,E	eP	01	18	19	USCGS: H - 01:11:24. 34 $\frac{1}{2}$ ^o N. , 26 $\frac{1}{2}$ ^o E. Near south coast of Crete.
11	(W)Z,Z N,E E E	eP i i i	02	58	30 46 38 50	Lahore P = 02:58:57. S = 03:00:09. USCGS: H = 02:57:15. 35 ^o N. , 67 $\frac{1}{2}$ ^o E. Afghanistan aftershock. Mag: 5.6 (Uppsala & Kiruna).

June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
11	(W) Z, Z	eP	04	34	43	
11	Z Z	eP ePP	08	33	31	USCGS: H - 08:22:09. 52°N. , 31½°W. North Atlantic Ocean.
11	(W) Z, Z E	ePKP ePP	10	15	49	USCGS: H - 09:56:10. 27½°S. , 69°W. Northern Chile-Argentina border. Mag: 5½ - 6 (Pas.)
11	Z Z Z, E E (L) N (L) N	eP e eS e i i	16	15	14	Afghanistan aftershock.
11	(W) Z	eP	22	09	43	H - 22:08:28. 35°N. , 67½°E. Afghanistan aftershock. △ = 4° 8 Lahore P = 22:10:09.
11	(W) Z, Z	eP	23	00	23	USCGS: H - 22:54:48. 50½°N. , 89°E. Southern Siberia.
12	(W) Z, Z (L) N, E, N (L) N	eP eS i	03	17	23	Compression. H - 03:12:31. 25½°N. , 91°E. Assam - Pakistan border. Felt at Sylhet & Mymensingh. △ = 21° 4 Lahore P = 03:16:09. USCGS: H - 03:12:28. Assam.
12	(W) Z (W) N (W) N (W) E (W) N	eP i e(S) i i	08	46	(34) 45 38 42 59	Afghanistan aftershock.
12	Z Z	ePKP e	09	13	(59) 23	USCGS: H - 08:54:02. 9°S. , 110°W. Eastern Pacific Ocean. Mag: 6½ (Pas.), 6¼ (Berk).

June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
12	(W) Z (W) Z, Z	eP e	18	54	(51) 04	Afghanistan aftershock.
12	(W) Z, Z Z (L) N	eP e eS	21	15	16 27 36	Dilatation. USCGS: H - 21:04:52. 9°S. , 117½°E. Soembawa Island.
13	(W) Z, Z (W) Z, Z	eP i	08	48	43 58	Afghanistan aftershock.
13	(W) Z, Z	e	10	50	51	
13	(W) Z, Z N	eP e(S)	12	17	48 26 11	USCGS: H - 12:07:41. Depth: about 200 km. ½°S. , 124½°E. Near coast of Celebes.
13	(W) Z, Z	iP	17	22	44	Dilatation. USCGS: H - 17:10:10. 6°S. , 147°E. Near coast of New Guinea.
13	(W) Z (W) Z	eP i	22	02	22 38	Afghanistan aftershock.
14	(W) Z (W) Z	eP e	11	23	29 44	Afghanistan aftershock.
14	(W) Z, Z N	eP eS	12	23	02 31 38	USCGS: H - 12:12:19. 45°N. , 150½°E. Kurile Islands.
15	(W) Z, Z	eP	14	04	15	USCGS: H - 13:53:22. Northern Kurile Islands.
15	(W) Z	ePKP	15	54	30	USCGS: H - 15:35:47. Depth: about 200 km. About 300 miles south of Tonga Islands.
15	Z	eP	20	08	24	
16	Z, (W) N	e	00	30	58	
16	(W) Z, Z Z (L) N (L) N (L) N (L) N	eP i eS e e e	06	29	01 10 36 43 37 29 41 10 42 00	Compression. USCGS: H - 06:19:22. 28½°N. , 131½°E. Ryukyu Islands.

June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
17	(W) Z, Z (W) Z, E	iP iS	03	19	24 44	Compression.
17	(W) Z, Z (W) Z, Z	eP e(S)	23	51	(13) 08	
18	(W) Z	eP	12	07	15	
19	(W) Z, Z (L) N (L) N	eP ePP eSS	00	26	42 28 09 35 32	USCGS: H - 00:19:08. Southern Sumatra.
19	(W) Z, Z	eP	21	07	27	Dilatation.
20	Z Z	e e	02	24	08 53	USCGS: H - 02:03:58. Pacific Ocean, about 650 miles northwest of Easter Island.
20	(W) Z, Z E (W) N, E	iP i iS	10	41	25 42 15 38	
21	(W) Z, Z	e	00	02	50	
21	(W) Z, Z	eP	11	18	03	USCGS: H - 11:06:36. Western New Guinea.
21	(W) Z, Z	eP	19	50	33	Dilatation. USCGS: H - 19:40:12. 5°S. , 120°E. Celebes.
21	(W) Z Z	eP ePcP	20	42	27 43 05	USCGS: H - 20:32:03. Soembawa.
22	Z	e	05	59	25	
22	(W) Z (W) Z	eP e(S)	06	46	(48) 49 22	
22	(W) Z, Z	eP	12	26	08	
22	(W) Z	e	20	08	14	
23	(W) Z, Z Z (L) N (L) N, N Z	iP ePP iS i eP'P'	02	29	08 31 37 38 13 39 13 57 15	Compression. USCGS: H - 02:18:02. 56½°N. , 163½°E. Near east coast of Kamchatka. Mag: 6½ (Pas.), 6¼ - 6½ (Berk).

June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
24	(W) Z, Z	eP	13	06	41	USCGS: H - 12:55:02. Indian Ocean, about 400 miles north of Prince Edward Island.
	Z	i			50	
	(L) N	iS	16	20		
	(L) N	iScS			51	
24	(W) Z, Z	iP	21	11	48	Dilatation. USCGS: H - 20:58:36. 7°S. , 155°E. Solomon Islands. Mag: 6¼ (Pas.)
	E	eSKS	22	21		
	(L) N	iS			46	
	(L) N	e	24	28		
25	(W) Z, Z	eP	01	11	38	Compression. USCGS: H - 01:02:30. 21½°S. , 67°E. Mascarene Islands region.
	Z	ePcP			55	
	(L) N	eS			53	
25	(W) Z, Z	eP	12	53	35	Dilatation? USCGS: H - 12:52:07. Eastern Iran.
	Z	e			49	
	(L) N	i			55	
	Z	i(S)			54 40	
	(L) N	i			55 03	
	(L) N	i			16	
25	(W) Z	eP	20	16	08	
	(W) E, Z	e			16	
	(L) E	e(S)			21 07	
26	(W) Z, Z	eP	11	53	52.4	
26	(W) Z, Z	iP	18	01	36	Dilatation.
	(W) N	eS			03 05	
27	Z	eP	19	06	16	Compression. USCGS: H - 18:57:30. 23°N. , 121°E. Southern Formosa.
27	(W) Z, Z	eP	23	03	09	
	(W) Z	eS			04 22	
28	(W) Z	e	17	50	11	USOCS: H - 17:42:30. Central Yugoslavia.
28	Z	eP	23	12	51	USCGS: H - 22:58:48. 49°N. , 129½°W. Off coast of Vancouver Island, British Columbia. Mag: 6¼ - 6½ (Pas.)
	(L) E	e			24 17	
	(L) E	e			30 48	
29	(W) Z, Z	eP	02	20	44	USCGS: H - 02:18:28. 28°N. , 57°E. Southern Iran.
	(W) N, (L) E	iS			22 28	
	(L) E	i			23 21	



June, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
29	(W) Z, Z (L) E	eP eS	02	30	43 37 37	USCGS: H - 02:22:00. 26°N. , 122°E. Off north coast of Formosa.
29	(W) Z, Z	eP	04	19	55	USCGS: H - 04:09:54. 37°N. , 139½°E. Central Honshu, Japan.
29	(W) Z, Z (W) Z, N	eP iS	06	10	41 11 51	
29	(W) Z, Z	eP	10	11	54	Dilatation.
29	(W) Z (W) E	iP iS	14	59	48 15 00 58	Dilatation?
29	(W) Z, Z (L) E	eP eS	17	52	39 59 59	Dilatation. USCGS: H - 17:43:37. 15½°N. , 120°E. Near west coast of Luzon, Phillipine Islands.
30	(W) Z, Z	eP	01	56	59	USCGS: H - 01:50:20. 44°N. , 29°E. Black Sea, near cost of Romania.
30	(W) Z (W) NE	eP eS	03	10	39 12 29	USCGS: H - 03:08:18. 39½°N. , 70°E. Tadzhik, S. S. R.
30	(W) Z, Z Z	eP i	11	39	32 44	USOCS: H - 11:37:06. Northeastern Iran.
30	(W) Z, Z	e	14	39	23	

Abdul Qadir Khan.
Mohammad Idris.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

Iq-181

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 7.

Seismological Bulletin

July 1956

QUETTA OBSERVATORY

July, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W) Z (W) EN	eP iS	03	34	44 36 09	Lahore P - 03:34:19.
1	(W) E	e	09	36	12	Lahore P - 09:36:49.
1	(W) Z	e	15	06	(56)	
1	(W) Z (W) Z, Z E	eP e e(S)	16	31	54 32 05 33 12	
2	(W) Z, Z Z E, N	eP e eS	14	37	31 42 46 13	Lahore P - 14:36:57. S - 45:10. USCGS: H - 14:26:35. 8°S. , 124°E. Sawoe Sea.
2	(W) Z E E	eP e e	17	20	(10) 21 19 34	
3	(W) Z, Z N	eP eS	10	21	36 24 27	H - 10:17:56. 29°N. , 84½°E. Southern Tibet. Δ = 15° .4 Lahore P - 10:20:14. S - 21:56. USCGS: H - 10:17:57. 28°N. , 84½°E. Nepal.
3	(W) Z (W) E	eP e(S)	11	18	38 21 21	
3	(W) Z (W) N	e e	15	10	35 11 40	
3	(W) Z	e	21	13	20	
3	(W) Z, Z Z Z, L(N) Z Z, E	iP i isP i iS	23	28	00 25 55 29 14 20	Dilatation. M T PZ 2¼ 1.1 PH 2.1 1.1 H - 23:26:18. Depth: about 200 km. 36° .5N. , 71° .2E. Hindukush. Δ = 7° .1 Lahore P - 23:27:38. Felt at Rawalpindi, Peshawar & Risalpur.

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	REMARKS
				USCGS: H - 23:26:17. Depth: about 250 km. 36° .5N. , 71° .0E. Hindukush. Mag: 6½ (Quetta), 6.2(Uppsala & Kiruna).
4	(W) Z (W) Z (W) Z	ePKP epPKP e	00 57 57 59 36 01 00 54	USCGS: H - 00:39:55. Depth: about 450 km. 18° S. , 178½° W. Fiji Islands.
4	(W) Z, Z (L) N	eP eS	03 17 27 28 29	Dilatation? Lahore P - 03:16:57. USCGS: H - 03:04:14. 7° S. , 155½° E. Solomon Islands.
4	(W) Z, Z (L) N	iP eS	03 56 02 04 07 06	Compression. Lahore P - 03:55:33. USCGS: H - 03:42:50. 7° S. , 155½° E. Solomon Islands aftershock.
4	(W) Z, Z	eP	07 32 22	Dilatation. Lahore P - 07:31:49. USCGS: H - 07:19:09. 7° S. , 155½° E. Solomon Islands aftershock.
4	Z Z	ePKP e	11 28 03 23	Lahore e - 11:28:14. USCGS: H - 11:08:28. 31° S. , 71° W. Central Chile.
4	Z	e	12 59 10	
4	Z N	eP e(S)	13 49 38 50 44	Lahore P - 13:50:04.
4	Z E	eP e(S)	15 16 27 17 32	Lahore P - 15:17:06.
4	(W) Z	e	20 04(13)	
5	(W) Z, Z (W) Z	eP e	08 26 30 38	USCGS: H - 08:16:47. Depth: about 100 km. 43½° N. , 140° E. Off Coast Hokkaido, Japan.

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
5	(W)Z	eP	12	14	21	Lahore P - 12:14:22.
	(W)E	eS		15	30	
5	(W)Z	eP	12	39	21	
	(W)E	eS		40	29	
5	(W)Z	eP	14	10	42	Lahore P - 14:10:22.
	(W)E	eS		12	20	
5	(W)Z	e	15	11	39	
6	(W)Z, Z	eP	01	44	58	Compression.
6	(W)Z	eP	01	55	21	
	(W)ZN	i			29	
	N	e(S)		56	42	
7	(W)Z, Z	eP	10	33	20	Dilatation?
	(W)N, ZE	i			42	
	(W)E	i(S)		36	38	
	(L)E	i		37	13	
7	(W)Z	e	15	16	25	
7	(W)Z, Z	eP	21	04	43	
	(W)Z	e		05	42	
	(W)Z	e		06	40	
	(W)N, N	e(S)		07	14	
8	(W)Z, Z	eP	01	38	51	
8	(W)Z, Z	eP	04	43	45	Compression. USCGS: H - 04:33:00. Halmahera region.
8	(W)Z	eP	06	12	25	USCGS: H - 06:01:56. Depth: about 60 km. 0°, 128½°E. Molucca Passage.
8	(W)Z	e	17	28	54	
9	(W)Z, Z	iP	03	18	31	Dilatation. Lahore P - 03:19:16. USCGS: H - 03:11:39. 37°N. , 26°E. Aegean Sea. Mag: 8 (Pas.), 7¼ - 7½ (Berk).
	Z	iPP		19	50	
	E	i(S)		23	47	

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
9	(W)Z,Z	iP	05	06	34.0	Lahore e - 05:07:15.
9	(W)Z	eP	06	26	(00)	USCGS: H - 06:19:07. Aegean Sea aftershock.
9	(W)Z,Z	eP	06	29	40	USCGS: H - 06:22:49. 37°N. , 25½°E. Aegean Sea aftershock.
9	(W)Z,Z	eP	09	51	57	
9	(W)Z,Z	ePKP	10	14	54	USCGS: H - 09:56:13. Depth: about 100 km. 20°N. , 73°W. Near coast of Haiti. Mag: 6½ - 6¾ (Pas.) 6½ (Berk).
	(W)Z,Z	e		15	47	
	(W)Z,Z	ePP		16	03	
	(L)N	eSKS		21	46	
	(L)N	ePS		25	55	
	(L)N	e		32	41	
9	(W)Z,Z	eP	14	37	51.7	Compression.
	(W)Z	i		38	10.0	
	(W)E	i(S)			52.5	
	(W)E	i		39	30.4	
9	(W)Z	e	17	54	10	
9	(W)Z	eP	20	20	42	USCGS: H - 20:13:56. Aegean Sea aftershock.
9	(W)Z,Z	e	20	35	49	
9	(W)Z	eP	20	43	42	USCGS: H - 20:34:38. Off coast of southern sumatra.
9	(W)Z	eP	20	54	(52)	
9	(W)Z	eP	21	35	34	USCGS: H - 21:28:42. 37°N. , 26°E. Aegean Sea aftershock.
10	(W)Z	eP	03	08	(16)	USCGS: H - 03:01:27. 37°N. , 26°E. Aegean Sea aftershock.
10	(W)Z,Z	e	09	33	(04)	
10	(W)Z	eP	13	37	55	Compression.
10	(W)Z,Z	iP	22	10	10	Compression. H - 22:08:28. Depth: about 100 km. 36½°N. , 71½°E. △ - 7°.0
	E	isP			47	
	Z	i		11	07	
	NE	iS		29		
	E	i		59		

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
						Lahore P - 22:09:43. S - 10 42. Felt at Peshawar & Rawalpindi. USCGS: H - 22:08:23. Depth: about 100 km. 36 $\frac{1}{2}$ ^o N. , 71 $\frac{1}{2}$ ^o E. Hindukush.
10	(W) Z, Z	eP	22	42	34	
11	(W) Z, Z	e	15	14	54	
	(W) Z, Z	e		16	39	
11	(W) Z, Z	eP	18	55	59	
	(L) N	e(S)	19	02	00	
	(L) N	e		05	03	
11	(W) Z	eP	20	31	32	
11	(W) Z	e	22	32	(08)	
11	(W) Z	e	22	40	(43)	
12	(W) Z, Z	eP	00	24	20	
	(W) Z	e			28	
12	(W) Z, Z	eP	02	59	33	Compression.
12	(W) Z, Z	eP	15	06	49	H - 15:01:19.
	Z	i		07	07	23 ^o N. , 94 $\frac{1}{2}$ ^o E.
	Z	i			21	Burma. $\Delta = 25^{\circ}.3$
	Z	i			36	Lahore P - 15:05:51.
	(L) N	iS	11	15		S - 09:12.
	(L) N, N	i			30	Chittagong P - 15:02:01.
	E	i	12	06		USCGS: H - 15:01:17.
						23 ^o N. , 94 ^o E.
						Central Burma.
12	(W) Z, Z	ePKP	17	15	06	
	Z	e			20	
	Z	e			40	
	(L) N	e		16	03	
	E	e		17	02	
	(L) N	e		19	27	
	(L) N	ePPS		31	20	
	(L) E	eSS		37	32	
13	(W) Z	eP	01	34	18	
	(W) Z	e			31	

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
13	(W)Z,Z	eP	06	51	21	Dilatation.
13	(W)Z Z E	ePKP epPKP eSKP	13	55	(21) 54 55	USCGS: H - 13:36:03. Depth: about 100 km. 27°S. , 70°W. Northern Chile.
14	Z Z N	eP e i	00	16	26 23 40	Lahore P - 00:16:08. S - 17:08.
14	(W)Z,Z (W)Z,Z	eP e	17	30	(30) 43	
14	(W)Z,Z	e	17	41	13	
14	(W)Z	e	18	19	21	
14	(W)Z (L)E	eP e	19	07	(29) 28	
14	(W)Z,Z	eP	22	14	41	Dilatation. USCGS: H - 22:05:41. 20°N. , 12½°E. Off north coast of Luzon, Philippine Islands.
15	(W)Z,Z E	eP e(S)	07	23	36 47	
15	(W)Z,Z N,E	iP eS	13	01	57 44	Dilatation. USCGS: H - 12:52:16. Depth: about 500 km. 28°N. , 139°E. Bonin Island region.
15	(W)Z,Z	eP	18	49	34	Compression. USCGS: H - 18:39:33. Depth: about 100 km. 42°N. , 142°E. Off coast of northern Honshu, Japan.
16	(W)Z (W)N	eP i(S)	04	27	06.4 59.0	Felt at Astor in Kashmir.
16	N (L)N	eP e(S)	05	20	33 43	
16	Z	e	07	53	18	

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
16	(W)Z (W)Z	eP e	09	35	42 36 42	USCGS: H - 09:24:38. 55 $\frac{1}{2}$ ^o N. , 161 $\frac{1}{2}$ ^o E. Near east coast of Kamchatka.
16	(W)Z,Z Z (L)N,E (M)E	eP i i(S) i	15	12	49 13 21 17 42 18 30	Compression. H - 15:07:06. 22 $\frac{1}{2}$ ^o N. , 96 ^o E. Burma. $\Delta = 26^{\circ}.7$ Chittagong Γ - 15:08:07. Lahore P - 15:11:56. USCGS: H - 15:07:06. 23 $\frac{1}{2}$ ^o N. , 96 ^o E. Central Burma.
16	(W)Z,Z (W)Z,Z (L)N	eP e e(S)	20	46	04 27 51 16	Compression? USCGS: H - 20:40:23. 24 ^o N. , 96 ^o E. Burma aftershock.
16	Z	e	21	27	45	
16	(W)E,Z	eP	21	46	19	Compression. USCGS: H - 21:34:00. Andrean-of Islands, Aleutian Islands.
16	(W)Z,Z E	eP e(S)	23	52	26 53 44	Compression.
17	(W)Z,Z (W)E	eP eS	06	39	23 40 33	Compression? Lahore P - 06:39:01.
17	Z Z Z (L)NE,NE,(M)E (M)E (L)N Z Z	iP ipP e iS i iScS eP'P' e	07	44	24 45 59 46 48 52 44 53 10 37 08 12 41 34 51	Compression. Chittagong P - 07:41:46. S - 47:44. Lahore P - 07:43:50. S - 51:32. USCGS: H - 07:34:07. Depth: about 450 km. 7 ^o S. , 126 $\frac{1}{2}$ ^o E. Banda Sea. Mag: 6 $\frac{3}{4}$ (Pas.)
17	Z	eP	15	31	17	Dilatation. USCGS: H - 15:19:38. 41 ^o N. , 27 ^o W. Azores region.
17	Z	eP	17	17	01	USCGS: H - 17:05:07. Marianas Islands aftershock.

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
18	Z	eP	00	40	21	Compression. USCGS: H - 00:27:27. 5°S. , 151°E. New Britain.
	Z	ePP	43	48		
	(L)E	eSKS	50	45		
	(L)E	eS	51	12		
	(L)E	ePPS	52	36		
18	Z	e	05	58	50	
18	Z	iP	06	30	32	Compression. USCGS: H - 06:19:15. 5°S. , 130°E. Banda Sea. Mag: 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$ (Pas.)
	(M)E	i	31	21		
	(M)E	i	33	52		
	(M)E	i	35	39		
	E	iS	39	30		
	(M)E	e	40	11		
	E	i	41	35		
	E	e	42	53		
	(M)E	i	43	24		
	Z	eP'P'	58	(36)		
19	Z	e	12	38	29	
19	Z	e	14	47	29	
19	Z	eP	20	49	59	Compression. USCGS: H - 20:40:54. 15°N. , 120 $\frac{1}{2}$ °E. Near west coast of Luzon, Philippine Islands.
	(L)E	e	52	13		
	(L)N,N,(M)E	iS	57	12		
19	Z	ePKP	23	45	43	Dilatation. USCGS: H - 23:26:25. 9 $\frac{1}{2}$ °N. , 84 $\frac{1}{2}$ °W. Near coast of Costa Rica. Mag: 6 (Berk).
	Z	e	49	09		
20	Z	eP	07	05	(01)	
20	Z	eP	11	55	40	
21	(W)Z,Z	iP	15	00	30	Dilatation. USCGS: H - 14:51:06. Depth: about 600 km. 50 $\frac{1}{2}$ °N. , 147 $\frac{1}{2}$ °E. Sea of Okhotsk.
	N,E	eS	08	05		
21	(W)Z,Z	iP	15	34	16	Compression. Lahore P-15:34:51. H - 15:32:25. (S)- 37:18. 23 $\frac{1}{2}$ °N. , 69 $\frac{3}{4}$ °E. Kathiawar, India. $\Delta = 7^{\circ}.3$ USCGS: H - 15:32:25. 23°N. , 70°E. Western India. Mag: 6 $\frac{1}{2}$ (Pas.)
	Z,(L)E	iPP	22			
	(L)E	iS	35	38		
	Z,E	iS	41			
	(M)E	iSS	52			

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
21	(W)Z (W)E	eP eS	23	43	51 45 16	
22	(W)Z	eP	03	35	47	USCGS: H - 03:28:59. Aegean Sea aftershock.
22	(W)E (W)E	ePKP e	09	44	26 47 24	USCGS: H - 09:25:08. Depth: about 100 km. 19°S. , 69°W. Northern Chile. Mag: 6 - 6½ (Pas.)
23	(W)Z	e	09	29	50	
23	(W)Z,Z (W)E	eP iS	12	49	07 50 55	Lahore P - 12:48:25. S - 49 36.
23	Z (L)E	eP eSKS	14	38	45 49 14	USCGS: H - 14:25:46. 4½°S. , 154°E. Solomon Islands region.
23	(W)Z,Z (W)Z (L)E (L)E Z Z (L)N (L)E	e(FKP) e e e e e e e(SS)	19	46	19 47 43 48 24 52 06 53 59 55 28 58 41 20 13 18	Compression? USCGS: H - 19:25:58. 24°S. , 102°W. Easter Island region. Mag: 6¾ (Pas.) 6¼ - 6½ (Berk).
23	(W)Z,Z	eP	22	09	33	USCGS: H - 21:56:56. 6°S. , 148°E. Near north coast of New Guinea.
23	(W)Z,Z	e	23	40	41	
24	(W)Z,Z (L)NE	eP eS	02	19	40 23 40	
24	(W)Z,Z (W)E,E (L)NE	iP eS iS	13	09	44 17 24 25	Dilatation. USCGS: H - 13:00:18. Depth: about 500 km. 30½°N. , 139°E. South of Honshu, Japan.
24	(W)Z,Z	eP	14	11	03	Dilatation. USCGS: H - 14:01:07. 38½°N. , 138½°E. Honshu, Japan.

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
24	(W)Z,Z	eP	19	07	05	USCGS: H - 18:56:32. 1°N. , 126½°E. Molucca Passage.
	(L)N	eS		15	29	
	(L)E	iScS		16	56	
25	(W)Z,Z	e	03	39	(33)	
25	(W)Z,Z	eP	04	48	00	
25	(W)Z,Z	eP	05	14	05	
	(W)EN	e(S)		15	25	
	(W)EN	i(S)			30	
26	(W)Z	eP	04	02	37	
	(W)E	eS		03	57	
26	(W)Z	eP	06	23	27	USCGS: H - 06:13:29. Near east coast of Hokkaido, Japan.
	(W)Z	e		27	33	
26	(W)Z	e	08	29	33	
26	(W)Z	eP	09	57	00	
	(W)E	e(S)		58	21	
26	(W)Z	e	14	28	55	
26	(W)Z	e	15	17	(07)	
26	(W)Z	ePKP	18	06	59	USCGS: H - 17:49:12. Depth: about 650 km. 27°S. , 178°E. Kermadec Islands region.
26	(W)Z	e	18	17	07	
26	(W)Z	e	18	23	13	
	(W)Z	e		24	40	
27	(W)Z,Z	eP	02	28	51	
	(W)E	e(S)		30	00	
27	(W)Z	eP	14	01	44	USCGS: H - 13:50:43. 54°N. , 161°E. Kamchatka.
27	(W)Z,Z	eP	17	37	56	
27	(W)Z	e	19	37	(52)	
27	(W)Z	eP	21	48	33	USCGS: H - 21:36:52. 15°N. , 147½°E. Marianas Islands.

July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
27	(W) Z	eP	23	35	33	USCGS: H - 23:23:54. 15 $\frac{1}{2}$ ^o N. , 147 $\frac{1}{2}$ ^o E. Marianas Islands aftershock.
28	(W) Z	eP	00	42	40	Dilatation.
	(W) E	eS		43	58	
28	(W) Z,Z	eP	02	14	51	USCGS: H - 02:01:58. Depth: about 150 km. 6 ^o S. , 154 ^o E. New Britain region.
28	(W) Z	eP	11	20	47	USCGS: H - 11:09:05. 15 $\frac{1}{2}$ ^o N. , 147 $\frac{1}{2}$ ^o E. Marianas Islands aftershock.
	(W) N	e		22	06	
28	(W) Z	eP	13	40	46	
	(W) N	eS		42	01	
28	(W) Z	e	15	25	49	
28	(W) Z	eP	19	17	30	
28	(W) Z	eP	23	08	(13)	
29	(W) Z,Z	eP	07	21	43	Dilatation. USCGS: H - 07:13:44. 9 ^o S. , 85 $\frac{1}{2}$ ^o E. Eastern Indian Ocean.
	(W) Z,Z	i			48	
	(L) E	eS		28	05	
	(L) E	eSS		31	04	
29	(W) Z	e	11	56	56	
29	(W) Z	ePKP	13	47	58	USCGS: H - 13:28:56. Depth: about 100 km. 14 $\frac{1}{2}$ ^o N. , 90 $\frac{1}{2}$ ^o W. Guatemala.
29	(W) Z	eP	21	20	27	
29	(W) Z	eP	21	38	43	
29	(W) Z	eP	22	31	57	
	(W) EN	eS		33	17	
30	(W) Z	eP	09	21	48	Dilatation. USCGS: H - 09:15:00. 37 ^o N. , 26 ^o E. Aegean Sea aftershock.
	(L) NE	e		26	10	
	(L) N	eS		27	18	
30	(W) Z	eP	10	46	49	Dilatation. USCGS: H - 10:39:56. 36 $\frac{1}{2}$ ^o N. , 26 ^o E. Aegean Sea aftershock.



July, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
30	(W)Z	eP	11	33	02	USCGS: H - 11:23:54. Ryukyu Island region.
30	(W)Z	eP	14	52	29	Dilatation. USCGS: H - 14:43:33. 19°N. , 121°E. Near north coast of Luzon, P.I.
31	(W)Z	iP	16	49	04	Compression. USCGS: H - 16:38:24. 2½°N. , 128½°E. Halmahera Island.
31	(W)Z	e	21	37	45	
31	(W)Z	eP	22	14	24	

Abdul Qadir Khan.
S. Abul Hassan Naqvi.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 10.

Seismological Bulletin

October 1956

QUETTA OBSERVATORY

October, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W)Z,Z	eP	12	06	45	Dilatation?
1	(W)Z	eP	14	15	52	
2	(W)Z	eP	03	43	39	
	(W)N	eS		44	57	
2	(W)Z,Z	eP	08	27	28	Compression. Lahore P = 08:27:31. Felt at Kabul.
	(W)Z	i			33	
	Z	i			46	
	(W)E	iS		28	19	
2	(W)N,Z	eP	09	47	37	Hindu Kush.
	(W)N	eS		48	54	
2	(W)Z	eP	12	57	23	
	(W)N	e(S)		59	02	
	Z	e	13	00	01	
2	(W)Z	e	14	42	08	
2	(W)Z,ZEN	eP	15	07	21	Compression. USCGS: H - 14:56:26. Depth: about 60 km. 53°N. , 159°E. Near southeast coast of Kamchatka. Mag: 6½ - 6½ (Pas.) Lahore P = 15:06:47.
	Z	epP			38	
	(L)E	ePcS		11	45	
	(L)E	eS		16	13	
	(L)N	i(sS)		17	10	
	Z	eP'P'		35	38	
2	(W)Z	eP	18	37	37	Hindu Kush?
	(W)Z	i		38	05	
	(W)N	iS			58	
2	(W)Z	eP	21	47	24	
3	(W)Z	eP	03	00	37	
	(W)N	eS		01	34	
3	(W)Z,Z	ePKP	08	38	06	USCGS: H - 08:18:46. Depth: about 100 km. 20°S. , 69½°W. Northern Chile. Mag: 6½ (Pas.)
	(W)Z,Z	epPKP			32	
	Z	ePP		41	24	
	E	i		42	13	
	E	eSKS		45	17	
	(L)E	e		47	45	
	E	e		48	34	
	(L)N	e		50	36	
	(L)N	e		59	00	

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
3	(W) Z	eP	14	38	46	
3	(W) Z	e	21	38	14	
4	(W) Z	eP	19	01	08	
	(W) N	eS		02	24	
4	(W) Z	eP	19	39	05	
4	(W) Z, Z	eP	20	11	27	Compression.
4	(W) Z	eP	22	02	39	Dilatation.
	(W) EN	eS		04	07	
5	(W) Z	iP	18	56	25	Dilatation.
	(W) E	e(S)		57	37	
	(W) N	iS			41	
5	(W) Z	e	22	01	12 ⁺	USCGS: H - 21:43:16. Depth: about 100 km. 14°S. , 167 $\frac{1}{2}$ °E. New Hebrides Islands.
6	(W) Z	eP	06	26	24	USCGS: H - 06:15:57. 2 $\frac{1}{2}$ °N. , 126 $\frac{1}{2}$ °E. Molucca Passage.
7	(W) E, Z	iP	01	44	10	Dilatation
7	(W) Z	e	19	53	08	
7	(W) Z	e	21	44	57	USCGS: H - 21:27:50. Depth: about 100 km. 13°S. , 167°E. New Hebrides Islands.
	(L) E	e		52	32	
8	ZEN	eP	00	31	55	Compression?
	(L) NE	eS		41	56	USCGS: H - 00:19:47. Depth: about 100 km. 4°S. , 144 $\frac{1}{2}$ °E. Near north coast of New Guinea.
	(L) N	esS		42	38	
8	Z	eP	04	40	30	USCGS: H - 04:29:21. Depth: about 150 km. 12 $\frac{1}{2}$ °N. , 142°E. Marianas Islands region.

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
8	(W) Z, Z	ePKP	15	14	53	USCGS: H - 14:55:52. 19 $\frac{1}{2}$ ^o S. , 174 $\frac{1}{2}$ ^o W. Tonga Islands.
	(L) E	ePP		16	49	
	(L) E	e		18	12	
	(L) E	eSKS		21	58	
	(L) E	iSKS		22	04	
	(L) E	ePS		26	36	
	(L) E	eSS			33.5	
	(L) E	e			38.6	
8	(W) Z	eP	21	49	18	
	(W) NE	eS		51	04	
9	(W) Z	eP	11	07	10	USCGS: H - 10:53:41. 25 ^o N. , 46 ^o W. Atlantic Ocean.
9	(W) Z	eP	14	59	49	USCGS: H - 14:46:18. 24 $\frac{1}{2}$ ^o N. , 45 $\frac{1}{2}$ ^o W. Atlantic Ocean.
9	(W) Z	eP	15	07	59	
	(W) E	eS		09	17	
From 16 G.M.T. of 9th to 08 G.M.T. of 10th clock was under adjustment.						
10	(W) Z, ZEN	eP	15	33	57	Dilatation from S.E. Felt at Delhi. USCGS: H - 15:31:39. 28 $\frac{1}{2}$ ^o N. , 77 $\frac{1}{2}$ ^o E. Northern India. Lahore P = 15:32:47. Mag: 6.4 (Uppsala & Kiruna).
	Z	i		34	02	
	Z	i			08	
	Z	i			57	
	NE, (L) N	iS		35	41	
10	(W) Z	e	16	47	18	
11	(W) Z, ZEN	iP	02	35	06	Compression. USCGS: H - 02:24:33. Depth: about 100 km. 46 ^o N. , 150 $\frac{1}{2}$ ^o E. Kurile Islands. Mag: 7 $\frac{1}{4}$ - 7 $\frac{1}{2}$ (Pas.) Lahore P = 02:34:28. S = :42:24.
	Z	ipP			33	
	Z	iPcP			38	
	Z	ePP		37	41	
	(L) NE, N	eS		43	36	
	E	esS		44	23	
	Z	eP'P'		03	03	
11	(W) Z	e	17	06	42	USCGS: H - 16:48:46. 40 $\frac{1}{2}$ ^o N. , 126 $\frac{1}{2}$ ^o W. Off Cape Mendocino, California. Mag: 6 (Pas.), (Berk).
	(L) E	i		15	28	
11	(W) Z	e	17	18	42 \pm	

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
11	(W)Z	eP	17	28	00	
11	(W)Z	e	20	31	36	
11	(W)Z,Z	eP	21	12	59	Compression.
12	(W)Z,Z	ePKP	02	57	14	USCGS: H - 02:37:43. 15°S. , 74½°W. Near coast of Central Peru. Mag: 6½ (Pas.), (Berk).
	(W)Z	e		58	35	
	(W)Z,Z	e(PP)	03	00	23	
	(L)E	iPKS			49	
	(L)E	eSKS		04	22	
	(L)E	e		06	43	
	(L)E	iPS		10	39	
12	(W)Z,Z	iP	03	58	44.2	Compression from Southwest.
	E	iS			55.2	
12	Z,E	eP	12	33	07	USCGS: H - 12:22:48. 42½°N. , 144½°E. Near east coast of Hokkaido, Japan. Mag: 6¼ - 6½ (Pas.) Lahore P = 12:32:24.
	Z	e(pP)			21	
	(L)E	eS		41	30	
12	Z	eP	13	32	12	USCGS: H - 13:21:52. 42½°N. , 144½°E. Hokkaido, Japan aftershock.
12	Z	eP	22	20	13.1	Local.
13	Z	eP	08	22	55	USCGS: H - 08:21:02. 36½°N. , 71°E. Hindu Kush, Afghanistan. Mag: 6.1 (Uppsala & Kiruna). Lahore P = 08:22:31.
13	(W)Z,Z	eP	15	18	41	
13	Z	eP	15	23	18	USCGS: H - 15:12:25. 49½°N. , 156°E. Northern Kurile Islands.
13	(W)Z,Z	eP	19	06	24	USCGS: H - 18:54:06. Depth: about 150 km. 5°S. , 149½°E. New Britain.
	(W)Z,Z	e			35	
	(L)N	e		16	17	
	(L)E	e(S)			49	
13	(W)Z,Z	eP	19	48	49	Local?
14	(W)Z,Z	eP	00	43	39	

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
14	(W)Z,Z	eP	01	29	13	
14	(W)Z,Z	eP	04	11	51	USCGS: H - 03:59:27. 4°S. , 146°E. Near north coast of New Guinea.
14	(W)Z,Z	iP	10	54	09	Dilatation. USCGS: H - 10:43:28. Depth: about 400 km. 18½°N. , 145°E. Marianas Islands.
14	(W)Z,Z	e	11	23	18	Dilatation?
14	(W)Z,Z	eP	13	14	10	
14	(W)Z	e	14	11	10	
14	(W)Z	e	14	41	04	Seismic?
14	(W)Z,Z Z	eP epP	21	15	44 56	Compression. USCGS: H - 21:05:56. Depth: about 60 km. 38°N. , 141½°E. Off east coast of Honshu, Japan.
15	(W)Z,Z	e	04	07	42	
15	(W)Z,Z (L)N	eP eS	07 55 34 08 03 40			USCGS: H - 07:46:13. Depth: about 450 km. Philippine Islands. Mag: 5.8 (Uppsala & Kiruna).
15	(W)Z,Z	e	08	28	56	
15	(W)Z,Z	iP	11	28	20	
Clock was under adjustment between 18 G.M.T. of 15th to 05 G.M.T. of 16th.						
16	(W)E (W)E	eP e(S)	05 48 27+ 50 08 -			
16	(W)E, ZEN (W)EN	iP eS	06 20 43.6 55.0			Dilatation.
16	ZEN Z N E	eP e e(S) i	22 41 34.4 42.2 46.3 48.2			Dilatation.

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT		REMARKS
			h.	m. s.	
17	(W)E, Z	eP	01	06 57	Dilatation.
17	(W)E, ZEN Z Z (W)N, N, (L)NE	iP i i iS	01	16 31.2 39.7 17 14.9 47.3	Dilatation from Northeast. Lahore P = 01:16:15. S = :17:00.
17	(W)Z (W)N	eP e(S)	08	47 49± 48 50	
17	(W)Z, Z (W)EN	eP e(S)	20	03 08 05 33	Lahore P = 20:01:42.
18	Z (L)E	eP e(S)	03	37 26 44 24	USCGS: H - 03:27:18. Near north coast of Mindanao, P.I.
18	(W)Z, Z	e(P)	03	41 32	
18	(W)Z	eP	10	26 56	Lahore P = 10:27:41. S = :29:10.
18	(W)Z, Z (W)EN	eP eS	14	04 34	Dilatation. H - 14:02:52. $\Delta = 6^{\circ}.7$ $36\frac{1}{2}^{\circ}N.$, $70\frac{3}{2}^{\circ}E.$ Hindu Kush. Lahore P = 14:04:17. S = :05:20.
18	(W)Z, Z	eP	18	40 06	
18	(W)Z	eP	19	24 42±	Lahore P = 19:24:45. S = :26:10.
19	(W)Z, Z	eP	11	03 31	USCGS: H - 10:50:29. $5^{\circ}S.$, $154\frac{1}{2}^{\circ}E.$ Solomon Islands.
19	(W)Z, Z	iPKP	12	18 25	Dilatation. USCGS: H - 12:00:38. Depth: about 650 km. $21^{\circ}S.$, $179^{\circ}W.$ Fiji Islands. Mag: 6 (Pas.)
19	(W)Z, Z	e	12	33 50	
19	(W)Z	e	13	08 27	

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
19	Z	ePKP	14	25	30	USCGS: H - 14:05:34. 56 $\frac{1}{2}$ $^{\circ}$ S. , 122 $^{\circ}$ W. South Pacific Ocean. Mag: 6 $\frac{1}{2}$ (Pas.)
	(L)E	e		28	37	
	Z	ePP		29	29	
	(L)E	i(SS)		48	50	
19	(W)Z, Z	eP	20	59	29 \pm	USCGS: H - 20:47:33. 52 $^{\circ}$ N. , 177 $^{\circ}$ E. Rat Islands, Aleutian Islands. Mag: 6 $\frac{3}{4}$ (Berk), (Pas.)
	(W)Z	i			33	
	N	i(PP)	21	02	42	
	(L)N	iS		09	27	
	(L)N	i		14	24	
19	(W)Z, Z	eP	21	39	50	USCGS: H - 21:27:47. 52 $^{\circ}$ N. , 177 $^{\circ}$ E. Rat Islands aftershock.
19	(W)Z, Z	eP	21	49	46	USCGS: H - 21:37:45. Rat Islands aftershock.
19	Z	e	22	35	28	
20	Z	eP	03	43	58	Dilatation. USCGS: H - 03:31:24. 51 $\frac{1}{2}$ $^{\circ}$ N. , 170 $^{\circ}$ W. Fox Islands, Aleutian Islands.
20	Z	eP	11	14	34 \pm	
20	(W)Z, Z	eP	20	43	09	
20	(W)Z	eP	21	34	17	Compression?
	(W)E	e(S)		35	30	
21	(W)Z	e	08	41	29	
22	Z	e	07	43	33	
22	(W)Z, Z	eP	12	48	08	USCGS: H - 12:35:10. 9 $\frac{1}{2}$ $^{\circ}$ S. , 150 $^{\circ}$ E. Near coast of Papua, New Guinea.
	(L)E	eSKS		58	37	
	(L)N	iS			52	
22	(W)Z, Z	e	13	04	40	
22	(W)Z	eP	15	31	04	USCGS: H - 15:18:13. Depth: about 100 km. 9 $\frac{1}{2}$ $^{\circ}$ S. , 150 $^{\circ}$ E. Near southeast coast of New Guinea.
22	(W)Z, Z	eP	17	21	55	

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
23	(W)Z,Z	eP	04	36	47	
23	(W)Z,Z Z (L)E (L)N,N	eP epP iS i	08	50	26 48 57 38 48	USCGS: H - 08:41:22. Depth: about 100 km. 13 $\frac{1}{2}$ ^o N. , 120 $\frac{1}{2}$ ^o E. Mindanao Island, Philippine Islands. Mag: 6 $\frac{3}{4}$ (Uppsala & Kiruna).
23	(W)Z	eP	10	40	57	USCGS: H - 10:32:03. Off southeast coast of Formosa.
24	(W)Z,Z (W)N,E	eP eS	05	38	23.7 41.4	
24	(W)Z Z (L)E (L)N (W)Z,(L)N (L)N (L)N (L)N (L)E	ePKP i ePP i iPKS eSKS e e i	15	01	17 37 03 16 37 04 50 08 27 13 48 21 05 23 02	USCGS: H - 14:42:11. 12 ^o N. , 87 ^o W. Near coast of Nicaragua. Mag: 7 $\frac{1}{4}$ (Pas.), 7 (Berk).
24	(W)Z	e	17	36	01	
25	(W)Z	eP	04	01	50	
25	(W)Z,Z (L)N	ePKP e	05	40	55 44 17	USCGS: H - 05:21:40. 12 ^o N. , 87 ^o W. Nicaragua aftershock. Mag: 6 - 6 $\frac{1}{4}$ (Berk), 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Pas.).
26	(W)Z Z N	eP e e(S)	00	17	22 34 19 00	
26	(W)Z,Z (W)Z (L)N,NE (L)E (L)E	eP i eS iScS i	09	05	48 58 14 46 15 38 16 39	Compression. USCGS: H - 08:54:46. Depth: about 200 km. 6 $\frac{1}{2}$ ^o S. , 130 ^o E. Banda Sea. Lahore P = 09:05:14. S = :13:41.
26	(W)Z,Z (W)E	eP iS	16	49	25.9 47.5	Dilatation.

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
26	Z	eP	23	04	28±	USCGS: H - 22:50:24. 14°S. , 167°E. New Hebrides Islands. Mag: 6½ (Pas.), (Berk). Lahore P = 23:04:04.
	(L)NE	ePP		08	53	
	(L)E	e		15	19	
	(L)E	i		18	11	
	(L)E	e		20	10	
	(L)N	i		24	24	
27	(W)E, Z	eP	00	51	16	USCGS: H - 00:45:21. 39½°N. , 99°E. Kansu Province, China. Lahore P = 00:50:14.
28	(W)Z, Z	ePKP	03	47	40	Compression. USCGS: H - 03:28:41. 32°S. , 179°W. Kermadec Islands. Mag: 6¾ - 7 (Pas.), 6¾ (Berk).
	Z	ePP		49	26	
	(L)E	i		50	58	
	(L)NE	eSKS			55.1	
	(L)E	ePS			59.5	
	(L)N	eSS	04	06	11	
28	Z	ePKP	07	01	55	USCGS: H - 06:42:52. 17°S. , 173°W. Tonga Islands.
28	(W)Z, Z	eP	10	54	34	USCGS: H - 10:45:08. 14°N. , 123½°E. Luzon, Philippine Islands. Mag: 6¾ (Uppsala & Kiruna).
	(L)E	eS	11	02	05	
28	(W)Z, Z	e	13	36	59	
29	(W)Z	eP	04	17	45.5	
	(W)E	i		18	03.3	
	(W)E	i(S)		19	13.0	
29	(W)Z	e	07	41	53	USCGS: H - 07:34:57. Dodecanese Islands.
29	(W)Z	ePKP	16	01	26±	USCGS: H - 15:42:08. Depth: about 60 km. 8½°S. , 77°W. Central Peru.
	(W)Z, Z	e			34	
	(W)Z, Z	epPKP			56	
29	(W)Z, Z	ePKP	22	52	23	USCGS: H - 22:33:50. Depth: about 150 km. Fiji Islands region.
30	Z	eP	00	21	17	USCGS: H - 00:11:03. 66½°N. , 17½°W. Near coast of Northern Iceland.

October, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
31	(W) Z	eP	19	42	39	
	(W) E	e(S)		44	41	
31	(W) Z	e	21	21	53	
31	(W) Z	eP	21	46	04	
31	(W) Z	eP	21	57	04	Compression?
31	(W) Z	eP	22	26	30	USCGS: H - 22:21:15. Northeast India.
	(W) N	e(S)		28	33	
31	(W) Z	eP	22	52	15	
31	(W) Z	eP	23	35	31	
	(W) N	e		37	34	

Abdul Qadir Khan.
S.A.H. Naqvi.

PAKISTAN METEOROLOGICAL SERVICE

Director: S. N. NAQVI

GEOPHYSICAL REVIEW

Vol. 2. 1956

Part I. Seismology

No. 11.

Seismological Bulletin

November 1956

QUETTA OBSERVATORY

November, 1956.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
1	(W) Z, Z N, E	eP eS	05	55	21 57 28	USCGS: H - 05:52:37. 27 $\frac{1}{2}$ ^o N. , 53 $\frac{1}{2}$ ^o E. Southern Iran aftershock. Lahore P = 05:56:42.
1	Z	eP	08	02	02	DILATATION.
1	(W) Z, Z N	eP e(S)	08	51	44 52 16	Lahore P = 08:52:35.
1	(W) Z (W) N	eP eS	10	08	04 09 32	
1	(W) Z	eP	10	24	20	
1	(W) Z	e	14	52	07	Seismic?
1	(W) Z	e	14	59	06	
1	(W) Z	eP	16	16	50	
1	(W) E	eP	16	48	05	
1	(W) E, Z (W) E	eP e(S)	22	22	27 24 26	
2	(W) E, Z (W) N, Z (W) EN	eP i iS	02	08	34 09 07 33 37	COMPRESSION. Epicentre lies at about 590 km. SW of Quetta. (Probably near Mekran Coast, Pakistan).
2	(W) E, Z (W) N	eP eS	03	07	32 08 41	
2	(W) Z	eP	12	10	13	
2	Z E (L) E	eP eS e	16	11	44 17 35 19.4	DILATATION. USCGS: H - 16:04:30. 39 ^o N. , 23 ^o E. Near East Coast of Greece. Mag: 5 $\frac{3}{4}$ (Upp. & Kir.) Lahore P = 16:12:26.
3	Z	eP	10	15	04	USCGS: H - 10:04:02. 52 ^o N. , 159 ^o E. Near Southeast coast of Kamchatka.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
3	Z	e	10	21	20	
3	(W)Z,Z	eP	11	29	18	
3	(W)Z,Z (W)E,E	iP	15	40	54	DILATATION. Hindu Kush. Lahore P = 15:40:38. S = :41:40.
		iS		42	11	
3	(W)Z,Z (L)E (L)E (L)E	ePKP	18	20	04	USCGS: H - 18:02:04. Depth: about 500 km. 24°S. , 180°E. South of Fiji Islands.
		eSKS		26	18	
		e		29	53	
		e(SS)		37.6		
4	Z	e	00	45	27	
4	Z	eP	01	36	40	
4	(W)Z,Z Z (L)N,E	eP	05	47	20	USCGS: H - 05:37:15. Depth: about 100 km. 35½°N. , 140°E. Near East Coast of Honshu, Japan. Lahore P = 05:46:39.
		epP			36	
		eS		55	31	
4	(W)Z,Z (L)E (L)N (L)E (L)E (L)E (L)E	ePKP	07	24	42	USCGS: H - 07:05:51. Depth: about 100 km. 20½°S. , 176½°W. Tonga Islands. Mag: 6½ - 6¾ (Pas.)
		ePP		26	23	
		eSKS		31	33	
		i			47	
		i		33	24	
		iPS		36	21	
		i		37	57	
5	E E	eP	07	42	41	
		e(S)		44	29	
6	(W)Z,Z (L)EN,N	iP	14	24	12	DILATATION. Deeper than normal. USCGS: H - 14:12:30. 5½°S. , 132½°E. Banda Sea. Lahore P = 14:23:37.
		iS		33	38	
6	Z	eP	18	57	17	
6	Z	eP	23	26	39	COMPRESSION. USCGS: H - 23:14:20. 52°N. , 176°W. Andreanof Islands, Aleutian Islands.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	REMARKS
7	(W) Z, Z	iP	16 34 17	DILATATION. Hindu Kush. Lahore P = 16:34:05. S = :35:10.
7	(W) Z	eP	17 10 07	USCGS: H - 17:07:55. Northeastern Iran.
8	(W) Z, Z	ePKP	04 03 45	USCGS: H - 03:45:51. Depth: about 550 km. 24°S. , 179°E. Fiji Islands region.
8	(W) Z, Z (W) Z, Z (L) E	iPKP e eSKS	07 08 24 09 55 14 39	DILATATION. USCGS: H - 06:50:24. Depth: about 500 km. 18°S. , 178°W. Fiji Islands.
8	(W) Z, Z (L) NE	eP eS	15 54 49 16 02 55	USCGS: H - 15:44:50. 9°N. , 126°E. Mindanao, Philippine Islands. Lahore P = 15:54:05.
8	(W) Z	eP	18 41 50	
8	(W) Z	e	23 00 28	
9	(W) Z, Z	eP	02 51 33	
9	(W) Z, Z	eP	06 14 11	DILATATION. USCGS: H = 06:01:51. 36°N. , 34½°W. North Atlantic Ocean.
9	(W) Z, Z	eP	09 55 36	DILATATION.
9	(W) Z, Z	eP	12 05 06	COMPRESSION. USCGS: H - 11:55:21. Near South Coast of Java.
9	(W) Z, Z Z Z (W) Z, Z (L) N (L) E (L) N	ePKP epPKP e i i i i !	13 24 57 25 37 48 28 21 34 00 42 28 46 55	USCGS: H - 13:06:10. Depth: about 150 km. 17°N. , 94°W. Southern Mexico. Mag: 6 (Berk), 6.5 (Upp.&Kir.)
9	Z	eP	17 10 55	

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT h. m. s.	REMARKS
9	Z	e	18 14 47	USCGS: H - 17:56:26. Depth: about 350 km. 17 $\frac{1}{2}$ ^o S. , 178 ^o W. Kermadec Islands.
10	Z	e	00 27 37	USCGS: H - 00:08:27. Depth: about 100 km. 10 $\frac{1}{2}$ ^o N. , 86 ^o W. Near Coast of Costa Rica. Mag: 6 (Pas.)
10	(W) Z, Z	eP	07 20 06	
10	(W) Z, Z (W) N	eP iS	08 21 49 23 51	
10	(W) Z, Z	e	09 00 22	
10	(W) Z	eP	12 05 57	
10	(W) Z, Z (W) Z (L) N (L) N	eP iPcP iS eScS	14 48 59 50 19 56 15 58 48	COMPRESSION. USCGS: H - 14:39:56. 16 ^o N. , 121 ^o E. Luzon Islands, Philippine Islands. Mag: 6 (Upp. & Kir.)
10	(W) Z, Z E	eP e	15 46 20 51 15	COMPRESSION. Chittagong P = 15:41:57. S = :42:40.
10	(W) Z N	eP eS	18 21 21 23 06	
10	(W) Z, Z	eP	20 58 27	
10	(W) Z, Z	eP	23 43 03	
11	(W) Z, Z	ePKP	03 31 30	USCGS: H - 03:13:47. Depth: about 650 km. Fiji Islands.
11	(W) Z, Z	e	03 45 52	
11	(W) Z (L) N, NE	eP e(S)	04 43 11 46 41	
11	(W) Z, Z (W) Z (W) Z, N	eP iS i	12 58 56 13 00 40 46	H - 12:56:36. Δ = 9 ^o .4 38 $\frac{3}{4}$ ^o N. , 71 ^o E. Tadzhikistan. Lahore P = 12:58:33. S = :59:59.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
11	(W) Z, Z E N	eP e e	18	04	35 19 25	H - 13:03:15. $\Delta = 9^{\circ}.4$ 38 $\frac{3}{4}$ $^{\circ}$ N., 71 $^{\circ}$ E. Tadzhikistan. Lahore P = 13:04:18 \pm S = :05:38
11	(W) Z, Z Z (L) N, N	eP e(pP) eS	19	25	58 16 26	COMPRESSION. Deeper than normal. USCGS: H - 19:15:20. 44 $^{\circ}$ N. , 149 $^{\circ}$ E. Kurile Islands.
12	(W) Z, Z (L) E	eP eS	08	43	53 20	USCGS: H - 08:33:20. 1 $^{\circ}$ N. , 126 $^{\circ}$ E. Molucca Passage.
12	(W) Z, Z	eP	15	26	42	
12	(W) Z	eP	20	24	53	
12	(W) Z, Z	eP	21	06	52	USCGS: H - 20:57:35. 73 $^{\circ}$ N. , 7 $^{\circ}$ E. Svalbard Region.
12	(W) Z, Z	e	21	43	24	DILATATION?
13	(W) Z, Z	eP	03	07	54	USCGS: H - 02:58:37. 73 $^{\circ}$ N. , 7 $^{\circ}$ E. Svalbard Region.
13	(W) Z, Z (L) N (L) E	iP eS iS	03	28	56 15 17	COMPRESSION.
13	(W) Z	e	04	22	56	
13	(W) Z, Z N	eP e(S)	04	59	14 17	
13	(W) Z, Z (L) N (L) N	eP eSKS eS	10	08	47 23 57	DILATATION. USCGS: H - 09:55:30. 48 $\frac{1}{2}$ $^{\circ}$ S. , 124 $^{\circ}$ E. Indian Ocean. About 1000 miles South of Australia.
13	(W) Z, Z (L) N	eP eS	14	48	15 44	COMPRESSION. USCGS: H - 14:38:51. 15 $^{\circ}$ N. , 123 $^{\circ}$ E. Near East Coast of Luzon.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
14	(W) Z, Z	iP	00	53	16	DILATATION. H - 00:51:35. Depth: about 200 km. $\Delta = 7^{\circ}.0$ 36°N., 71°E. Hindu Kush. Felt at Parachinar, Kakul, Risalpur and Lahore. Lahore P = 00:52:53. S = :55:50. USCGS: H - 00:51:36. Depth: about 200 km. 36°N., 71°E. Hindu Kush. Mag: 6½ (Upp. & Kir.)
	(L) N	i			23	
	(L) N, N	i			41	
	(L) N, Z	isP			50	
	(L) N	iS		54	35	
14	(W) Z, Z	eP	04	00	03	COMPRESSION? Lahore P = 04:59:05. S = 05:00:27.
	E	eS		02	32	
	(L) N	eL		04.5		
14	(W) Z, Z	eP	05	23	28	USCGS: H - 05:10:24. Depth: about 100 km. 16°S., 153½°E. New Britain Islands region.
15	(W) Z, Z	eP	15	29	31±	Lahore P = 15:29:19. S = :30:24.
	N	iS		30	47	
15	(W) Z, Z	e	17	47	48	USCGS: H - 17:27:55. 3°S., 103½°W. Pacific Ocean. About 900 miles West of Galapagos Islands.
15	(W) Z, Z	eP	20	33	26	COMPRESSION. H - 20:30:32. $\Delta = 11^{\circ}.9$ Deeper than normal. Sinkiang Tibet Border. Lahore P = 20:32:15. S = :33:21.
	(W) Z	i		35	36	
	N, E	eS			40	
16	(W) Z, Z	iP	04	09	54	DILATATION. Hindu Kush. Depth: about 200 km.
	(W) Z, Z	isP		10	45	
	N, E	iS		11	12	
16	(W) Z, Z	eP	06	35	11±	USCGS: H - 06:23:10. Rat Islands, Aleutian Islands.
16	(W) Z, Z	eP	08	59	53	DILATATION. USCGS: H - 08:48:14. Depth: about 150 km. 4°S., 139°E. Central New Guinea.
	(W) Z, Z	ipP	09	00	21	
	(L) NE, N	iS		09	30	
	(L) N	eScS		10	03	
	(L) E	esS		17		
16	(W) Z, Z	e	11	43	43	

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
16	(W) Z, Z	eP	11	53	02	USCGS: H - 11:43:35. 14°N. , 123°E. Southern Luzon.
16	(W) Z, Z NE (L) E	eP iS iL	14	06	53 08 46 09.2	H - 14:04:30. $\Delta = 9^{\circ}.65$ 37 $\frac{1}{2}$ °N. , 73 $\frac{3}{4}$ °E. Pamirs. Lahore P = 14:06:05. S = :07:01.
16	(W) Z	e	22	21	35	USCGS: H - 22:02:19. Depth: about 150 km. 18°S. , 69°W. Peru-Bolivia-Chile Border Region.
16	(W) Z	eP	23	46	08	
17	(W) Z, Z	eP	19	24	03	COMPRESSION. USCGS: H - 19:15:06. Depth: about 150 km. 27 $\frac{1}{2}$ °N. , 126°E. Ryuku Islands region.
17	(W) Z, Z (L) N (L) N	eP ePP eSKS	20	40	39 44 32 51 17	DILATATION. Six seconds earlier than P time there is some activity. USCGS: H - 20:27:15. 54 $\frac{1}{2}$ °N. , 134°W. Queen Charlotte Islands region. Mag: 6 $\frac{1}{4}$ - 6 $\frac{1}{2}$ (Berk.), 6 $\frac{1}{2}$ (Pas.) Lahore P = 20:40:23±
18	(W) Z, Z	iP	01	58	02	DILATATION.
18	(W) Z, Z E (L) E	eP eS i	05	22	27 24 48 25 11	H - 05:19:25. $\Delta = 12^{\circ}.5$ 39 $\frac{3}{4}$ °N., 75 $\frac{1}{4}$ °E. Sinkiang, China. Lahore P = 05:21:36± S = :23:03. USCGS: H - 05:19:26. Western Sinkiang Province, China.
18	(W) Z, Z	eP	09	31	02	COMPRESSION.
18	(W) Z, Z (L) E (L) E	ePKP e eSKKS	18	35	26 38 42 44 14	USCGS: H - 18:16:25. 27°S. , 176°W. Kermadec Islands region.
18	(W) Z	eP	20	36	30	
18	(W) Z, Z	eP	21	32	09	COMPRESSION. USCGS: H - 21:22:38. 28 $\frac{1}{2}$ °N., 129 $\frac{1}{2}$ °E. Kurile Islands. Lahore P = 21:31:18.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
19	(W) Z (L) N (L) E	eP eS iS	03	02	22 12 06 15	USCGS: H - 02:50:31. 3°S. , 139½°E. New Guinea.
19	(W) Z, Z (L) NE	eP eS	12	13	41 23 05	COMPRESSION. USCGS: H - 12:02:06. 12½°N., 143½°E. Marianas Islands. Lahore P = 12:13:03.
19	(W) Z, Z (W) EN	eP eS	21	04	08 05 25	DILATATION. Hindu Kush. Deeper than normal. Lahore P = 21:03:50. S = :04:52.
20	(W) E, Z	eP	11	14	42	USCGS: H - 11:03:30. 7°S., 129°E. Banda Sea.
20	(W) Z, Z (L) N, N (L) E	eP eS e	12	09	00 17 16 52	COMPRESSION. Deeper than normal. USCGS: H - 11:58:37. 0 , 123½°E. Near East Coast of Celebes. Lahore P = 12:08:22.
20	(W) Z	eP	22	47	28±	
20	(W) Z	eP	23	27	41±	USCGS: H - 23:20:52. 39½°N. , 25½°E. Aegean Sea. Mag: 5½ (Upp. & Kir.)
21	(W) E, Z (W) N, N	eP eS	03	46	04 47 32	
21	(W) Z, Z	eP	06	32	08	USCGS: H - 06:22:10. 49°N. , 141½°E. Off West Coast of Sakhalin.
21	(W) Z, Z (W) Z, Z (L) E (L) N, N	iP ipP eS iS	07	43	42 53 51 52 52 00	COMPRESSION. USCGS: H - 07:33:28. Depth: about 60 km. 38°N., 142°E. Near Coast of Northern Honshu, Japan. Mag: 6¼ (Upp. & Kir.) Lahore P = 07:42:57½.
21	(W) Z, Z	eP	08	02	32	COMPRESSION. USCGS: H - 07:49:47. Depth: about 100 km. 4°S. , 152½°E. Solomon Islands.

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
21	(W) Z	e	15	05	42	
22	(W) Z	eP	04	28	42	
22	(W) Z, Z	eP	23	40	25	USCGS: H - 23:29:07. 3°S. , 132°E. Ceram Sea. Lahore P = 23:39:48.
	(L) N	eS		49	33	
	(L) E	eS			39	
23	(W) Z, Z	iP	06	40	47	DILATATION. Epicentre lies about 90 km. Northwest of Quetta.
	(W) E, E	iS			58	
23	(W) Z, Z	eP	10	13	27	COMPRESSION. USCGS: H - 10:00:50. 52½°N. , 169½°W. Fox Islands, Aleutian Islands.
24	(W) Z, Z	ePKP	02	15	31	COMPRESSION? USCGS: H - 01:56:06. Depth: about 150 km. 22½°S. , 67°W. Argentina Bolivia border.
24	(W) Z	e	04	36	56	
24	(W) Z, Z	eP	05	18	45	
24	(W) Z, Z	iP	13	49	53	COMPRESSION. Epicentre lies about 90 km. Northwest of Quetta.
	Z	i		50	00	
	NE	iS			04	
24	(W) Z, Z	eP	16	05	45	Lahore P = 16:05:10.
	(W) Z, Z	i			52	
24	(W) Z, Z	eP	19	50	44	
24	(W) Z	e	20	41	26	
24	(W) Z, Z	ePKP	21	01	05	USCGS: H - 20:42:06. 26°S. , 176°W. Tonga Islands region.
	(L) N	eSKS		08	10	
	(L) E	eSKKS		09	52	
	(L) N	e		22	52	
25	(W) Z, Z	eP	02	09	02	
25	(W) Z, Z	eP	11	37	40	USCGS: H - 11:24:59. 54°N. , 164°W. Unimak Island region.
25	(W) Z, Z	e	11	59	20	

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
25	(W) Z, Z E	eP eS	13	02	58 04 15	
25	(W) Z, Z	e	14	34	32	
25	(W) Z (L) E (L) E	eP iSKS ePS	18	21	51 32 40 35 39	USCGS: H - 18:07:34. 14 $\frac{1}{2}$ °S. , 168°E. New Hebrides Islands.
25	(W) Z	e	18	37	22	
25	(W) Z, Z	eP	20	12	10	
26	(W) Z	e	00	33	16	
26	(W) Z, Z	iP	03	10	17	COMPRESSION.
26	(W) Z	e	04	18	52	
26	(W) Z, Z (W) Z (L) NE, N (L) N	eP i iS i	05	18	06 40 26 10 54	COMPRESSION. USCGS: H - 05:07:55. $\frac{1}{2}$ °N. , 122 $\frac{1}{2}$ °E. Celebes. Lahore P = 05:17:27. S = :25:00.
26	(W) Z	eP	05	56	48	
26	(W) Z	eP	16	19	27	
26	(W) Z (L) N (L) E (L) E (L) E (L) E	ePKP ePP iPKS ePSKS ePPS eSS	19	09	15 12 38 13 02 22 39 25 12 31.0	USCGS: H - 18:49:56. Depth: about 100 km. 26°S. , 70 $\frac{1}{2}$ °W. Northern Chile. Lahore P = 19:09:30. i = :49.
26	(W) Z (W) Z (L) E (L) N (L) N (L) E (L) E (L) E	eP ePKP ePP eSKS eSKKS i iPS iSS	23	44	19 48 17 49 05 54 56 56 00 57 03 58 29 04.3	USCGS: H - 23:29:41. 22°S. , 169°E. Loyalty Islands. Mag: 6 $\frac{1}{4}$ (Pas.), 6 $\frac{1}{2}$ (Berk.)
26	(W) Z	e	23	59	15	May be some phase of above shock.
27	(W) Z	e	02	45	30	

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS		
			h.	m.	s.			
27	Z	eP	07	12	37	USCGS: H - 06:59:34. Solomon Islands.		
	(L)E	eSKS		23	02			
	(L)N	iS			27			
	(L)E	eSS		29	5			
27	Z	eP	08	10	20	USCGS: H - 08:00:06. Off North Coast of Hokkaido, Japan.		
27	Z	e	13	38	00			
27	(W)Z	e	16	33	13			
27	(W)Z, Z	eP	18	50	12	DILATATION. Deeper than normal. Hindu Kush. Lahore P = 18:50:01. sP = :50. S = 51:06.		
	(W)N	iS					29	
27	(W)Z	eP	19	52	19			
28	(W)Z, Z	ePKP	15	50	40		COMPRESSION. USCGS: H - 15:11:33. 30°S., 176°W. Kermadec Islands.	
	(L)E	eSKKS				39		41
	(L)E	e				42		57
28	(W)Z	eP	19	27	12			
	(W)N, N	e(S)					30	20
28	(W)Z, Z	eP	19	38	05	COMPRESSION. USCGS: H - 19:27:11. 49½°N. , 155°E. Northern Kurile Islands. Mag: 6¾ - 7 (Pas.), 6¾ (Upp. & Kir.)		
	(L)NE	iS					46	52
	(W)N, N	i					48	01
	Z	eP'P'					20	06
28	(W)Z, Z	eP	21	19	38			
29	(W)Z	eP	02	07	51			
	(W)E	e					09	00
	(W)NE	eS						10
29	(W)Z, Z	ePKP	04	32	36	USCGS: H - 04:13:35. 58°S. , 46½°W. South Orkney Islands region.		
	(L)E	ePP					34	19
	(L)E	eSKS					39	39
29	(W)Z, Z	eP	07	26	40	USCGS: H - 07:16:07. 27°N. , 141°E. Bonin Islands aftershock.		
	(L)E	eS					35	07
29	(W)Z, Z	eP	09	25	56	DILATATION. Due to defective power supply at this time other phases are left unmarked in this otherwise well recorded earthquake.		
	(L)N, N	eS					34	33
	Z	eP'P'					54	54

November, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
						USCGS: H - 09:15:20. 27°N., 141°E. Bonin Islands. Mag: 7 (Pas.) Lahore P = 09:25:15.
29	(W) Z, Z	e	10	02	06	
29	(W) Z, Z (L) N (L) N	eP eS eSS	14	46	55	DILATATION. USCGS: H - 14:36:20. 27½°N., 141½°E. Bonin Islands aftershock. Lahore P = 14:46:12.
29	(W) Z, Z	eP	17	32	27	
30	(W) Z	eP	03	04	58	
30	(W) Z, Z	eP	13	49	42	
30	(W) Z, Z	e	14	56	48	
30	(W) Z	eP	16	08	50	
30	(W) Z, Z	ePKP	17	10	30	COMPRESSION. USCGS: H - 16:51:28. 20½°S., 174½°W. Tonga Islands.
30	(W) ZN (W) N	eP eS	18	36	48	Deeper than normal. Hindu Kush. Lahore P = 18:36:26± S = :37:29.
30	(W) Z, Z	ePKP	19	49	49	USCGS: H - 19:30:34. Depth: about 150 km. 3½°S., 70°W. San Juan Province, Argentina. Lahore P = 19:50:04.

Abdul Qadir Khan.
S.A.H. Naqvi.

The Geophysical Observatory,
Post Box No. 2,
Quetta.
PAKISTAN.

QUETTA OBSERVATORY

December, 1956.

DATE	COMPT.	PHASE	GMT		REMARKS
			h.	m. s.	
1	(W) Z, Z	eP	18	13 53	
1	(W) Z, Z	eP	19	33 56	
1	(W) Z, Z	ePKP	21	44 40	USCGS: H - 21:24:54. 17 $\frac{1}{2}$ ^o S. , 72 $\frac{1}{2}$ ^o W. Off coast of Southern Peru.
2	(W) Z, Z (L) NE	eP eS	03	12 30 22 56	USCGS: H - 02:59:56. 52 $\frac{1}{2}$ ^o N. , 169 ^o W. Fox Islands foreshock.
2	(W) Z, Z (L) N	eP e(S)	06	04 00 12 09	USCGS: H - 05:53:45. 27 $\frac{1}{2}$ ^o N. , 137 $\frac{1}{2}$ ^o E. Bonin Islands region. Depth: about 300 km.
2	(W) Z	e	16	52 39	USCGS: H - 16:33:36. Tonga Islands.
3	(W) Z, Z	eP	03	57 50	
3	(W) Z, Z (L) NE	eP eS	07	25 17 35 40	USCGS: H - 07:12:44. 53 ^o N. , 169 ^o W. Fox Islands foreshock.
3	(W) Z, Z (L) N	eP eS	07	32 42 43 08	Compression. USCGS: H - 07:20:08. 53 $\frac{1}{2}$ ^o N. , 169 ^o W. Fox Islands, Aleutian Islands. Mag: 6 $\frac{1}{2}$ - 6 $\frac{3}{4}$ (Pas.)
3	(W) Z, Z	eP	07	57 31	Compression. Lahore P - 07:57:04. USCGS: H - 07:44:55. 52 $\frac{1}{2}$ ^o N. , 169 ^o W. Fox Islands aftershock.
3	(W) Z, Z	eP	07	59 45	
3	(W) Z, Z	eP	08	05 18	
3	(W) Z, Z	iP	08	27 28.9	Compression. Felt at Quetta. Epicentre about 20 kms NNW of Observatory.
3	(W) Z, Z	eP	15	36 49	

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
3	(W) Z, Z	eP	17	08	47	Compression.
3	(W) Z, Z	e	19	17	52	
3	(W) Z, Z	eP	21	09	15	Compression?
4	(W) Z, Z	eP	08	55	23	USCGS: H - 08:44:28. 50°N. , 156°E. Kurile Islands.
	(L) NE	eS	09	04	12	
4	(W) Z, Z	ePKP	10	28	00	Dilatation. USCGS: H - 10:07:54. 45½°S. , 106°W. South Pacific Ocean. Probably more than one shock?
	(W) Z, Z	i			53	
	(L) NE	ePKS		31	17	
	(W) Z, Z, (L) N	e		32	38	
	(L) E	ePPP		34	58	
	(L) N	eSKKS		38	20	
	(L) N	eSS		50	53	
	(L) NE	eSSS		56	40	
4	(W) Z, Z	eP	10	54	43	Compression. USCGS: H - 10:42:10. 53°N. , 169°W. Fox Islands aftershock.
	N	eS	11	05	08	
	(L) NE	ei			23	
4	(W) Z	e	11	05	27	Dilatation?
4	(W) Z, Z	eP	12	11	54	
4	(W) Z, Z	eP	21	09	00	
4	(W) Z	eP	22	21	51	
4	(W) Z, Z	ePKP	23	20	37	Dilatation? Lahore P - 23:20:37. USCGS: H - 23:01:35. Depth: about 150 km. 15°N. , 92°W. Guatemala. Felt: Western San Salvador. Mag: 6 (Pas.)
	(L) E	ePP		23	09	
	(L) EN	ePKS			56	
	(L) N	eSKS		27	42	
	(L) E	eSS		40	14	
	(L) E	esSS		41	37	
5	(W) Z, Z	eP	04	25	39	Felt: at Lahore.
	E	e		26	41	
	N, E	eS			49	
5	(W) Z, Z	eP	07	26	18	
	(W) N, N	e(S)		27	42	
5	(W) Z, Z	eP	07	54	50 ±	
	(W) N, N	eS		56	40	

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
5	(W) Z, Z	eP	15	09	56	
	(W) N, E	e		13	44	
6	(W) Z, Z	eP	10	50	55	Compression?
	(W) N	eS		52	13	
6	(W) Z, Z	iP	20	32	00	Dilatation. H - 20:30:21. $\Delta = 6^{\circ}.9$ Depth: about 200 km. $36\frac{1}{4}^{\circ}$ N. , 71° E. Hindukush. Lahore P - 20:31:44. S - :32:45.
	Z	esP			43	
	(W) N, N, E	eS		33	19	
7	(W) Z	e	06	54	14	Seismic?
7	(W) Z	e	07	30	19	
7	(W) Z, Z	eP	11	30	41	Compression? USCGS: H - 11:21:00. Sulu Sea.
7	(W) Z, Z	eP	14	39	03	Compression. Lahore P - 14:38:37. USCGS: H - 14:30:24. Near South Eastern Sumatra.
	(L) E	eS		46	07	
7	(W) Z, Z	eP	18	26	30	Compression.
7	(W) Z, Z	eP	20	09	31	Compression.
7	(W) Z, Z	eP	20	46	21	Compression.
8	(W) Z	e	03	48	09	
8	Z	eP	05	49	18	
	(L) N	e(S)		58	16	
8	(W) Z	eP	08	28	51	
8	(W) Z, Z	iP	16	22	39	Compression. Lahore P - 16:22:12. USCGS: H - 16:10:27. 51° N. , $179\frac{1}{2}^{\circ}$ W. Andreanof Islands, Aleutian Islands. Mag: $6\frac{1}{2}$ (Berk).
	(W) Z	iPcP			47	
	Z	e		23	43	
	(W) Z, Z	ePP		25	41	
	(L) E, NE	eS		32	44	
	(L) N	ePPS		33	49	
8	(W) Z, Z	eP	16	28	43	Compression.
8	(W) Z, Z	eP	16	35	41	

December, 1956. Quetta.



DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
8	(W) Z, Z	eP	17	12	42	Compression.
8	(W) Z	e	20	49	57	
9	(W) Z	eP	00	21	12	
9	(W) Z, Z	eP	02	47	15	
9	(W) Z, Z	eP	03	15	22	
9	(W) Z, Z (W) E	eP eS	07	44	57	Dilatation.
9	(W) Z (L) N	eP e(S)	11	41	23	USCGS: H - 11:28:29. Depth: about 100 km. 6°S. , 152°E. New Britain.
9	(W) Z (W) Z (W) E	eP i i(S)	18	07	47	
9	(W) Z	eP			57	
9	(W) Z	eP	21	02	06	
9	(W) Z, Z	eP	22	22	05	Lahore P - 22:22:38.
10	(W) Z, Z	eP	07	51	02	
10	(W) Z, Z	eP	08	23	52	USCGS: H - 08:13:30. Bonin Islands.
10	(W) Z, Z	eP	08	43	02	USCGS: H - 08:30:45. 51°N. , 179½°W. Andreanof Islands, Aleutian Islands.
10	(W) Z, Z	eP	17	01	06	USCGS: H - 16:48:21. 15°S. , 152°E. Depth: about 60 km. New Britain.
10	(W) Z	e	23	34	29	USCGS: H - 23:15:00. Argentine-Chile Border.
11	(W) Z	e	00	40	01 ±	
11	(W) Z, Z (W) N	eP eS	05	03	29	Dilatation.
11	(W) Z, Z	eP			04 50	
11	(W) Z, Z	eP	08	50	12	

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
11	(W) Z	e	09	40	25	
11	(W) Z, Z	eP	16	58	24	Lahore P - 16:58:58.
	Z	e(PP)			40	
	(W) Z, ZN	e(PPP)			49	
	(L) N	e		59	02	
	E	e			19	
	N	e			55	
	(L) E	e	17	00	07	
	(L) E, E	e			47	
	N	e(S)			01 59	
	(L) N	e(SS)			02 21	
	(L) N, N	e			58	
	(L) N	i			05.9	
11	(W) Z, Z	eP	18	02	52	
12	(W) Z	eP	20	42	14	
12	(W) Z, Z	eP	21	01	52	USCGS: H - 20:53:15. Depth: about 150 km. Formosa.
12	(W) Z	eP	23	28	41	
13	(W) Z, Z	eP	15	02	38	USCGS: H - 14:52:02.
	(L) N	eS			10 59	2°N. , 126½°E. Molucca Passage.
13	(W) Z, Z	iP	19	45	57	Dilatation.
	(W) Z, Z	iPcP			46 12	USCGS: H - 19:34:24.
	(L) NE	eS			55 21	12°N. , 143°E.
	(L) N	eScS			56 00	Marianas Islands.
14	(W) Z	eP	06	57	00	Lahore P - 06:56:03.
	N	e(S)			58 52	
14	(W) Z	eP	11	44	52	
	(W) N	e(S)			46 11	
14	(W) Z	eP	14	46	15	
	(W) N	e(S)			48 02	
14	(W) Z, Z	eP	15	15	35	Compression.
14	(W) Z, Z	iP	19	00	12.7	
14	(W) Z	e	23	22	45	

December, 1956. Quetta.



DATE	COMPT.	PHASE	GMT			REMARKS		
			h.	m.	s.			
15	(W)E	e	08	38	45	USCGS: H - 09:03:30. About 300 miles north of Galapagos Islands.		
15	(W)Z,Z	iP	14	01	21	Dilatation. USCGS: H - 13:50:53. 2 $\frac{1}{2}$ ^o N, , 128 $\frac{1}{2}$ ^o E. Depth: about 150 km. Halmahera.		
	(W)Z,Z	ipP					55	
	N	esP					02	11
	(L)E,E	eS					09	43
	(L)E	esS					10	47
	N,(L)EN	isS						53
15	(W)Z,Z	eP	17	14	10			
15	(W)Z	eP	17	38	20	USCGS: H - 17:24:24. Depth: about 150 km. 13 ^o S, , 167 $\frac{1}{2}$ ^o E. New Hebrides Islands. Mag: 6 - 6 $\frac{1}{4}$ (Pas.)		
	(W)Z	ePP					42	35
	(L)E	iSKS					48	51
	(L)E	eS					50	02
15	(W)Z	eP	19	15	58			
15	(W)Z	eP	19	20	24	Compression.		
15	(W)Z	e	21	35	13 ±			
16	(W)Z	e	00	07	00	USCGS: H - 23:41:20. About 150 miles off west coast of Colombia.		
16	(W)Z,Z	ePKP	02	01	06	USCGS: H - 01:41:52. 6 $\frac{1}{2}$ ^o N, , 78 ^o W. Near west coast of Colombia. Felt: Balboa Heights. Mag: 6 $\frac{1}{2}$ (Pas.), 6 $\frac{1}{4}$ (Perk).		
	(L)E	ePP					03	19
	(L)NE	ePKS					04	35
	(L)N	ePPP					06	16
	(L)E	e						24
	(L)E	eSKS					08	10
	(L)N	e					09	27
	(L)E	eSKKS					10	15
	(L)E	e					12	46
	(L)EN	ePPS					15	12
	(L)E	eSS					20	51
	(L)E	eSSS					25	48
	16	(W)Z,Z					ePKP	22
17	(W)N,Z	iP	04	12	54.0	Compression. 80 kms Northwest of Quetta.		
	E	iS						43.3

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
18	(W)N, Z	eP	02	24	56	USCGS: H - 02:14:12. Bonin Islands.
18	(W)E, ZEN	ePKP	02	50	33	Deeper than normal.
	(W)E, (L)E	i			47	Lahore P - 02:50:51.
	Z	iPP		54	04	USCGS: H - 02:31:00.
	(L)NE	iPKS			16	25 $\frac{1}{2}$ ^o S. , 68 $\frac{1}{2}$ ^o W.
	(L)NE	isPP			40	Chile-Argentina border.
	(L)E	ePPP		57	21	Felt: Antofagasta & Copiapo.
	(L)NE	eSKS			32	Mag: 7-7 $\frac{1}{4}$ (Pas.),
	(L)NE	ipPPP			47	6 $\frac{3}{4}$ -7 (Berk).
	(L)E	e		59	47	
	(L)E	i	03	01	00	
	(L)E	i		03	53	
	(L)N	eSKSP		04	03	
	(L)E	iPPS		06	42	
	(L)E	i		08	01	
(L)N	eSSS		18	13		
18	(W)Z, Z	eP	12	26	51	USCGS: H - 12:14:13.
	(L)N	eS		37	24	53 $\frac{1}{2}$ ^o N. , 164 ^o W. Unimak Island region.
18	(W)Z, Z	eP	17	58	48	Lahore P - 17:59:41.
	NE	e	18	02	45	USCGS: H - 17:53:00.
	(L)E	e		03	04	50 $\frac{1}{2}$ ^o N. , 35 $\frac{1}{2}$ ^o E.
	(L)N, N	eS			26	Israel-Jordan border region.
	(L)NE	i			52	Minor damage in Haifa. Felt: Kasaru, Tel Aviv and Jerusalem.
18	(W)Z, Z	iP	19	04	30	Dilatation.
18	(W)Z, Z	eP	19	30	58	USCGS: H - 19:20:06.
	(W)Z, (L)E	e(PP)		33	17	36 ^o S. , 77 ^o E.
	(L)N	iS		39	51	South Indian Ocean.
	(L)E	eScS		40	51	
	(L)N	eSS		44	00	
18	(W)Z, Z	eP	21	22	52	USCGS: H - 21:12:49.
	(L)E	eS		30	58	34 $\frac{1}{2}$ ^o N. , 139 ^o E. Depth: about 100 km. Near South Coast of Honshu, Japan.
19	(W)Z, Z	eP	01	29	06	USCGS: H - 01:18:10.
	(L)N	eS		37	56	51 $\frac{1}{2}$ ^o N. , 157 ^o E. Southern Kamchatka.

December, 1956. Quetta.



DATE	COMPT.	PHASE	GMT		REMARKS
			h.	m. s.	
19	(W) Z	iP	04	45 56	Compression. Time not very reliable due to loss of minute marks. USCGS: H - 04:36:20. Depth: about 450 km. 29°N. , 139½°E. Bonin Islands region.
20	(W) Z, Z	ePKP	11	19 00	USCGS: H - 10:59:56. 27°S. , 176°W. Kermadec Islands. Mag: 6½ (Pas.)
	(L) N	ePP		20 57	
	(L) NE	ePKS		22 30	
	(L) N	eSKKS		27 48	
	(L) NE	ePS		30 45	
	(L) E	eSS		37 41	
	(L) E	eSSP		38 08	
	(L) E	eSSS		42 26	
20	(W) Z, Z	eP	18	10 02	
20	(W) Z, Z	eP	19	28 41	
	(L) N	eS		32 15	
20	(W) Z, Z	eP	19	58 32	Compression. USCGS: H - 19:47:51. 46°N. , 150°E. Kurile Islands.
20	(W) Z, Z	eP	21	22 20	Compression. USCGS: H - 21:13:40. 4½°S. , 101½°E. Near West of Sumatra.
	(L) N	e(S)		29 06	
21	(W) Z, Z	eP	00	08 40	USCGS: H - 23:57:36. 54°N. , 161½°E. Kamchatka.
21	(W) Z	eP	02	07 42 ±	
	(W) N	e(S)		09 56	
21	(W) Z, Z	eP	03	33 17	USCGS: H - 03:27:46. Depth: about 30 km. 28°N. , 96½°E. Burma-Pakistan border.
	(W) Z, Z	i		23	
	(W) N	i		30	
	(W) N	i		40	
	(W) N	iPP		34 06	
	(L) N	iS		37 47	
	(W) N	i		38 01	
	(L) N	eSS		58	
	(L) N	iSSS		39 19	
21	(W) Z, Z	eP	05	30 05	

December, 1956. Quetta.



DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
21	(W) Z, Z	eP	09	12	32	USCGS: H - 08:58:53. 51°N. , 131°W. Queen Charlotte Islands. Mag: 6 $\frac{3}{4}$ (Pas.), 6 $\frac{1}{2}$ (Berk).
	(W) Z, Z, (L) E	ePP		16	33	
	Z	ePPP		18	42	
	(L) N	eSKS		23	10	
	(L) NE	eSKKS			33	
	(L) E	iS			57	
	(L) N	ePS		25	26	
	(L) NE	ePPS		26	12	
	(L) N	eSS		30	37	
	(L) N	iSSP		31	03	
(L) N	iSSS		34	23		
21	(W) Z, Z	eP	18	21	17	USCGS: H - 18:11:07. 34°N. , 140°E. Near South Coast of Honshu, Japan.
21	(W) Z, Z	eP	20	20	15	Compression. USCGS: H - 20:10:06. 34°N. , 139°E. South Coast of Honshu, Japan.
	(W) E, Z	ePP		22	29	
	(L) E	eS		28	27	
	(L) N	iPS			39	
	(L) E	ePPS			50	
	(L) E	eSS		32	27	
	(L) E	eSSS		34	44	
22	(W) Z, Z	eP	00	38	57	
	(W) Z	e		39	03	
	(W) Z, Z	e			11	
	(W) ZE, N	e(S)			46	
	(W) Z	e			53	
	(W) ZE	e		40	02	
22	(W) Z, Z	eP	04	53	02	
22	Z	e	11	34	30	
22	(W) Z, Z	e	12	18	27	
22	(W) Z	eP	22	13	58	
	(L) N	e(S)		18	00	
22	(W) Z, Z	ePKP	22	57	12	Compression. USCGS: H - 22:38:12. 29 $\frac{1}{2}$ °S. , 177°W. Kermadec Islands.
	(L) N	ePKS	23	00	48	
	(L) N	ePS		08	53	
	(L) N	ePPS		10	27	
	(L) E	eSS		15	47	
22	(W) Z	eP	23	22	43	USCGS: H - 23:12:35. 33 $\frac{1}{2}$ °N. , 139°E. Honshu, Japan. Aftershock.
	(W) ZE, Z	ePcP		23	28	
	(L) N	e		28	56	
	(L) N	eS		30	47	
	(L) N	iPS		31	08	
	(L) E	iPPS			18	
	(L) NE	eScS		33	32	

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
23	(W) Z, Z	eP	06	15	22	
23	(W) Z, Z	eP	06	29	29	
23	(W) Z, Z	iP	08	48	26	Compression. USCGS: H - 08:37:26. Depth: about 100 km. 22°N. , 144½°E. Marianas Islands region. Mag: 6½ (Pas.)
	(W) Z	epP			51	
	Z	ePcP			54	
	(L) N	ePPP		52	42	
	(L) N	iS		57	23	
	(L) NE	esS		58	01	
	(L) EN	iScS			11	
	(L) N	eSS		09	01	
23	(W) Z, Z	eP	09	16	38	
23	(W) Z, Z	eP	17	37	36	
24	Z	eP	08	33	37	
24	(W) Z, Z	eP	17	21	14	
24	(W) Z, Z	eP	18	48	37	Compression. USCGS: H - 18:38:35. Northern Mindanao, Philippine Islands.
24	(W) Z, Z	iP	20	49	52.7	Dilatation. Epicentre about 100 kms Northwest of Observatory.
	EN	iS		50	05.1	
25	(W) Z	eP	02	50	53	
25	Z	ePKP	04	48	24	USCGS: H - 04:29:53. Depth: about 200 km. Tonga Islands.
25	(W) Z, Z	eP	09	44	56	Dilatation. USCGS: H - 09:33:37. 48½°N. , 28°W. North Atlantic Ocean. Mag: 6½ (Pas.), (Berk).
	(W) Z	ePcP		45	17	
	Z, E, (L) N	ePP		47	33	
	(L) N	iPPP		49	15	
	(L) E	eS		54	13	
	(L) N	ePS			41	
	(L) N	eSS		58	43	
	(L) N	eSSS		10	01	
25	(W) Z, Z	eP	13	55	33	
25	(W) Z	eP	16	45	38	
26	(W) Z	e	00	26	52	

December, 1956. Quetta.



DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
26	(W) Z, Z	eP	07	44	15	USCGS: H - 07:34:18. 9 $\frac{1}{2}$ °S. , 112°E. Off South Coast of Java.
	Z	ePP		46	26	
	(L) N	eS		52	14	
26	Z	e	09	14	19	
27	(W) Z, Z	e	00	29	25	
27	(W) Z, Z	ePKP	00	32	45	USCGS: H - 00:14:15. Depth: about 300 km. 24°S. , 177°W. Tonga Islands region. Mag: 7 - 7 $\frac{1}{2}$ (Pas.), 7 (Berk).
	(W) Z, (L) N	epPKP		33	57	
	(L) N	ePP		34	29	
	(L) N	epPP		35	35	
	ZEN	ePPP		37	23	
	E	epPPP		38	24	
	ZE	eSKS		39	21	
	(L) N	i			34	
	(L) N	iSKKS		40	22	
	(L) N, ZN	eSKSP		44	03	
	Z, (L) N	ePS			35	
	(L) N	iPPS		46	01	
(L) N	i		50	34		
27	Z	eP	10	14	48	USCGS: H - 10:08:15. 37°N. , 29°E. Western Turkey.
	NE	eS		19	54	
27	Z, (W) N	iP	14	24	29	Compression.
27	Z	eP	21	41	36 ±	USCGS: H - 21:31:28. 7 $\frac{1}{2}$ °N. , 126°E. Mindanao, Philippine Islands.
	N	eS		49	36	
28	(W) N, Z	eP	02	25	46	H - 02:24:04. 36 $\frac{1}{4}$ °N. 70 $\frac{3}{4}$ °E. Hindukush. Lahore P - 02:25:28. S - :26:30. USCGS: H - 02:23:51. 37 $\frac{1}{2}$ °N. , 70 $\frac{1}{2}$ °E. Northern Afghanistan.
	(W) N, N	eS		27	04	
28	(W) N, Z	eP	13	51	19	USCGS: H - 13:41:08. 5 $\frac{1}{2}$ °N. , 126°E. Near South Coast of Mindanao, Philippine Islands.
	Z	ePcP		52	07	
	(L) N	e(S)		59	17	
28	(W) N, Z	ePKP	14	43	27	USCGS: H - 14:24:45. Depth: about 150 km. 38°S. , 167 $\frac{1}{2}$ °E. Near Coast of North Island, New Zealand. Mag: 6 $\frac{1}{4}$ (Pas.), 6 $\frac{3}{4}$ (Berk).
	(W) N, Z	epPKP		44	05	
	(W) N	ePP			54	
	E	epPP		45	30	
	(L) N	esPP			51	
	ZN, (L) N	ePPP		47	39	

December, 1956. Quetta.

DATE	COMPT.	PHASE	GMT			REMARKS
			h.	m.	s.	
28	Z, (L) N	eSKS	14	50	15	
	(L) N	eSKKS		51	07	
	(L) N	eSP		54	37	
	(L) N	eSS	15	01	15	
28	(W) N	eP	19	21	29 ±	Lahore P - 19:20:31. S - :49. Epicentre lies about 130 kms West of Lahore.
29	(W) N, Z	eP	09	48	18	USCGS: H - 09:37:47. Near South Coast of Kamchatka.
29	(W) Z, Z	ePKP	19	45	04	USCGS: H - 19:26:25. Fiji Islands.
	(W) Z	ePP		46	02	
29	(W) Z, Z	eP	20	01	32	Dilatation. USCGS: H - 19:51:49. Near South Coast of Java. Depth: about 150 km.
	Z	ePcP		02	36	
	E, (L) N	eS		09	19	
29	(W) Z, Z	ePKP	20	41	12	USCGS: H - 20:22:12. Tonga Islands. Mag: $6\frac{1}{4}$ - $6\frac{1}{2}$ (Pas.)
	Z, (L) N	ePP		43	02	
	(L) N	e		48	00	
	(L) N	eSKKS		49	59	
	(L) N	e		53	58	
	(L) N	e		54	50	
30	(W) Z	e	18	31	46	USCGS: H - 18:24:30. Greece.
30	(W) Z, Z	eP	22	04	36	Lahore P - 22:03:35. S - :07:14. USCGS: H - 21:59:06. 24° N. , $94\frac{1}{2}^{\circ}$ E. India-Burma border.
	Z, (L) N	ePP		05	16	
	Z	ePPP			29	
	(L) N	ePcP		08	09	
	NE	eS		09	00	
	(L) N	eSS		10	03	
31	(W) Z	eP	03	33	45	
	(W) Z, E	e(S)		35	12	
31	(W) Z	eP	23	13	08	Lahore P - 23:13:09. S - :14:09.

The Geophysical Observatory,
Post Box No. 2;
Quetta.
PAKISTAN.

Abdul Qadir Khan.
A.F.M. Reazul Haq.