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PAKISTAN METEOROLOGICAL SERVICE

GEOPHYSICAL INSTITUTE

QUETTA.

Pakistan Meteorological Service

Director,
Meteorological Service

Sibte Nabi Naqvi

Deputy Director,
Geophysical Institute

Abdul Qadir Khan

Officer Incharge,
Seismological Section

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All correspondence regarding the supply of this bulletin on exchange basis should be addressed to the Director, Meteorological Service, Secretariat Block No. 3, Frere Road, Karachi, Pakistan.

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Particulars of Stations and Instruments

(a) Stations

Station	Symbol	Latitude	Longitude	Height (a.s.l.)	Ground
Quetta	Qt	30° 11' N	66° 57' E	1721 meters	Cretaceous Limestone
Lahore	Lh	31° 33' N	74° 20' E	210 "	Alluvium
Karachi	Kr	24° 50' N	67° 02' E	30 "	Alluvium
Chittagong	Ch	22° 21' N	91° 49' E	35 "	Alluvium
Warsak	Wr	34° 09' N	71° 25' E	343 "	River Terrace

(b) Instruments

Instruments	Components	Period Seismo. & Galvo.	Damping	Max. Magnification
Quetta (Central Station)				
Sprengnether	Z	1.9 sec.	Critical	5,500
"	N	1.95 "	"	4,500
"	E	1.95 "	"	5,800
"	N	15.8 "	"	15,000
"	E	19.5 "	"	16,000

(Contd.)

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Major Shocks

Instruments	Components	Period Seismo. & Galvo.	Damping	Max. Magnification
Willmore	Z, N, & E	Seismo = 1 sec. Galvo = 1/4 "	—	—
Sprengnether Pen recorder	E		1.0 "	—
Lahore				
Sprengnether	Z	1.8 ,	Critical	4,900
"	N	1.7 "	"	4,200
"	E	1.6 "	"	4,100
Karachi				
Sprengnether	Z	1.8 sec	Critical	5,890
"	N	1.6 "	"	4,700
"	E	1.4 "	"	4,700
Chittagong				
Sprengnether	Z	1.7 "	Critical	5,200
"	N	1.8 "	"	5,700
"	E	1.5 "	"	3,600
"	N	7.0 "	"	6,600
Willmore	Z	Seismo = 1 sec Galvo = 1/4 "	—	—
Warsak				
Sprengnether	N	2.0 sec.	Critical	4,000
Willmore (with Sprengnether galvo. & recorder)	Z	1.0 "	—	—

* indicates long period seismographs, Sprengnether or Milne-Shaw.

c=compression, d=dilatation, X = unidentified phase.

Mu=Actual ground motion of the indicated phase in microns.

Sec=Period of the indicated phase in seconds.

(Pas), (Berk), (Up), (Ki), (Pal), stand for seismological observatories Pasadena (U.S.A.), Berkly (U. S. A.), Uppsala (Sweden), Kiruna (Sweden) & Palisade (U. S. A.) respectively.

All times are in Greenwich Mean Time.

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
1	Qt	ePZ	03	44	04	2	Lh	ePZ	15	51	53
		USCGS H	03	37	36.2		Wr	ePZ		52	09
		30.1 N	102.8 E				Qt	ePE			29
		Sikang Province China						USCGS H	15	42	22.1
		depth about 25 km						0.2 S	123.1 E		
1	Qt	ePZE	11	50	37			Celebes region			
	Wr	ePZ			43			depth about 136 km			
		USCGS H	11	46	29.8	2	Qt	ePE	16	51	54
		40.8 N	49.9 E					e(S)E		52	47
		Off coast of Azerbaijan					Wr	ePZ			27
		S S. R.					Lh	ePZ			41 ±
		depth about 46 km				3	Wr	iPZ	03	17	42 c
1	Wr	iPZ	21	25	19 d			iSZ		18	15
	Lh	ePZ			42 d		Lh	ePZ			23
		eSN			27 15			eSN			19 23
	Qt	ePN			26 29		Qt	ePZE			18 40
		eSE			28 36			eSE			19 59
		H	21	23	45			H	03	16	59
		39 1/2 N	75 1/2 E					36 1/2 N	71 E		
		Sinkiang Province China						Hindukush			
		depth about 30 km						depth about 200 km			
		USCGS H	21	23	41.7			USCGS H	03	16	55.6
		40.0 N	75.4 E					36.7 N	70.9 E		
		Sinkiang Province China						Hindukush			
		depth about 25 km						depth about 200 km			
1	Wr	ePZ	22	42	20	3	Qt	ePZE	06	33	35
	Qt	ePZ			43 27		Wr	ePZ			34 41
2	Wr	ePZ	00	19	42			USCGS H	06	31	08.5
	Qt	ePE			20 53			28.0 N	56.2 E		
		eSE			23 00			Iran			
2	Wr	ePZ	08	46	14.3			depth about 25 km			
		USCGS H	08	32	37.9	3	Lh	ePKPZ	18	33	12
		10.3 S	165.9 E				Qt	ePKPE			17
		Santa Cruz Islands					Wr	ePKPZ			17
		depth about 50 km						USCGS H	18	13	35.6
		Mag 6 1/2 (Berk)						56.3 S	142.5 E		

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
3	Lh	ePKPZ	18	41	58						
	Qt	ePKPE		42	10						
		USCGS H	18	22	06.3						
		54.6 S	132.3	W							
		South Pacific Ocean									
		depth about 25 km									
5	Lh	ePZ	17	50	39						
	Wr	ePZ			49						
		USCGS H	17	40	55.3						
		30.9 N	141.4	E							
		South of Honshu, Japan									
		depth about 23 km									
6	Lh	ePZ	02	17	39						
	Wr	iPZ			46 d						
		USCGS H	02	12	19.9						
		13.3 N	58.0	E							
		Arabian Sea, east of Socotra									
		depth about 30 km									
6	Qt	ePZ	09	23	41						
	Wr	ePZ			57						
	Lh	ePZ			24 46						
		USCGS H	09	16	15.0						
		38.0 N	20.2	E							
		Ionian Sea									
		depth about 30 km									
		Mag 5.0 (Pal)									
6	Wr	iPZ	23	06	17 c						
		Mu			Sec						
		P N	23.1		0.6						
		$\Delta =$	2.5								
	Lh	ePZE	07	02	d						
	Qt	ePZE			11						
		Felt Lahore, Warsak,									



Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
8	Ch	H	20	41	22						
		iPZNE	23	53	38 d						
		eSZNE		54	08						
	Wr	ePZ		57	28						
	Qt	ePNE		58	46						
		H	23	52	48						
		Assam									
9	Wr	iPZ	05	09	15 c						
		iSZ			53						
	Lh	ePZ		10	57						
		H	05	08	29						
		Hindukush region									
11	Qt	ePZE	01	04	28						
		eSE			54						
	Wr	iPZ		05	05 c						
	Lh	iPZ			28						
		iSN		06	30						
		H	01	03	54						
		31 $\frac{1}{2}$ N	66 $\frac{1}{2}$ E								
		Afghanistan									
		depth about 130 km									
		USCGS H	01	03	59.3						
		31.8 N	66.9	E							
		Afghanistan									
		depth about 25 km									
11	Qt	ePE	02	48	40						
		eSE		49	05						
	Wr	ePZ			18						
		H	02	48	08						
		32 N	66 $\frac{1}{2}$ E								
		Afghanistan after shock									
11	Qt	ePE	04	16	25						
		eSE			49						
	Wr	ePZ		17	00						
		H	04	15	53						
		32 N	66 $\frac{1}{2}$ E								
		Afghanistan after shock									

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
13	Ch	ePZ	03	38	20		Qt	ePE		30	26
	Lh	ePZ		40	48		USCGS H	22 19 23.3			
	Wr	iPZ		41	07 c		56.2 N	164.0 E			
	Qt	ePE			29		Komandorskie Islands region				
							depth about 59 km				
		USCGS H	03	32	12.6	14	Qt	ePZ	06	46	47
			10.2 N	121.7 E			Wr	ePZ		47	52
			Panay, Philippine				USCGS H	06 44 26.5			
			depth about 157 km				27.3 N	56.7 E			
13	Lh	ePZ	05	02	19		Iran				
		eSNE		03	13		depth about 30 km				
	Wr	iPZ			03 c	14	Lh	iPZ	16	00	02 c
	Qt	ePZE			44		Wr	iPZ			45
		eSE		05	46		Qt	ePZ	01	26	
	Ch	ePZ		04	22			eSZN	03	25	
		eSNE		06	50		Ch	ePZ	02	13	±
			H	05	01	06		eSN	04	32	
			30½ N	80.0 E			H	15 58 51			
			Tibet - India border				30.5 N	79.5 E			
		USCGS H	05	01	08.6		Tibet - India border				
			30.5 N	79.6 E			USCGS H	15 58 53.7			
			Tibet - India border				30.4 N	79.5 E			
			depth about 25 km				Tibet - India border				
13	Qt	ePZ	11	57	23		depth about 40 km				
		eSE			50						
	Wr	ePZ		58	13	14	Ch	ePZ	20	47	38
		eSZ		59	17		Lh	ePZ		48	12
			H	11	56	47	Wr	ePZ			11
			Afghanistan				Qt	ePZ			48
13	Qt	ePZ	20	54	26		USCGS H	20 38 01.3			
		eSE			53		50.2 N	155.8 E			
	Wr	ePZ		55	16		Kurile Islands				
			H	20	53	50	depth about 60 km				
			Afghanistan								
13	Wr	ePZ	22	29	48	15	Wr	ePZ	01	02	07
							Qt	ePZ			50
						15	Lh	iPZ	06	56	35

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Wr	iPZ			42 d						
		iSN	07	04	17	16	Wr	iPZ	21	06	35 d
	Qt	ePZE	06	57	19			iSZ			59
		USCGS H	06	47	22.5		Lh	ePZ			07 19
			39.8 N	140.9 E				eSN			08 15
			Honshu, Japan				Qt	ePZ			07 34
			depth about 103 km					eSZ			08 47
15	Wr	ePZ	09	44	50		H	21 06 02			
	Qt	ePZ			45 13		36.0 N	71¼ E			
		USCGS H	09	33	39.3		Hindukush				
			14.7 N	146.3 E		17	Qt	ePKPZ	05	51	50
			Mariana Islands region				Wr	ePKPZ			58
			depth about 25 km				Lh	ePKPZ			59
15	Lh	ePZ	15	22	10		USCGS H	05 32 08.8			
	Wr	iPZ			17 c		43.0 S	74.9 W			
	Qt	ePZE			54		Near coast of Chile				
		USCGS H	15	12	44.1		depth about 26 km				
			40.2 N	142.4 E		17	Lh	ePZ	17	29	58
			Honshu, Japan				Wr	iPZ			30 04 c
			depth about 55 km				Qt	ePZE			40
15	Qt	ePE	21	57	02		USCGS H	17 20 22.9			
	Lh	ePZ			53		43.1 N	144.5 E			
	Wr	ePZ			55		Hokkaido, Japan				
		USCGS H	21	52	16.7		depth about 30 km				
			13.4 N	53.1 E		17	Qt	ePZ	23	19	35
			Gulf of Aden					eSE			20 02
			depth about 25 km				Wr	ePZ			11
16	Wr	ePZ	13	06	34		H	23 18 59			
	Lh	ePZ			46		Afghanistan				
	Qt	ePZ			07 02	18	Lh	ePZ	00	21	50
	Ch	ePZ			03		Wr	ePZ			22 13
		USCGS H	12	54	40.6		Qt	ePZ			34
			62.3 N	153.1 W			USCGS H	00 13 22.6			
			Alaska				11.2 N	121.9 E			



Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
18	Qt	Panay, Philippine Islands depth about 164 km ePZ	03	04	17	21	Wr	Afghanistan iPZ	17	29	23 e
		USCGS H 05 53 48.1					Lh	iSN			53
		9.6 S 119.8 E					Lh	ePZ	30	02	
		Sumba Islands depth about 68 km					Qt	eSN			57
18	Lh	ePZ	10	21	17		Qt	ePZNE			29
	Wr	ePZ			31			eSZNE	31	50	
	Qt	ePZE			58		H	17 28 46			
		USCGS H 10 10 12.7						36½ N 72 E			
		15.3 N 148.1 E				21	Wr	Hindukush region depth about 130 km	18	22	30
		Mariana Islands region depth about 16 km					Qt	ePZ			44
19	Lh	ePZ	01	04	39			eSZNE	23	08	
	Wr	ePZ			53			eSN			52
	Qt	ePZE			05 08 e		H	18 22 10			
		USCGS H 00 52 13.9				22	Qt	ePZ	12	05	01
		5.1 S 153.6 E					Wr	eSE			28
		New Britian region depth about 49 km						ePZ			37
19	Lh	ePZ	22	15	00		H	12 04 25			
	Wr	ePZ			06	23	Qt	Afghanistan ePZ	16	16	17
	Qt	ePZ			43		Wr	eSE			43
		USCGS H 22 05 45.0						ePZ			59
		39.8 N 140.7 E					H	16 15 41			
		Honshu, Japan depth about 93 km				23	Qt	Afghanistan ePZ	18	30	11
21	Qt	ePZ	06	04	22		Wr	eSE			36
	Lh	ePZ			53			ePZ			59
	Wr	ePZ			59		H	18 29 36			
21	Qt	ePZ	06	24	46	24	Wr	Afghanistan ePZ	10	00	13
		eSE			25 14		Qt	ePZ			01 04
	Wr	ePZ			19	24	Lh	ePZ	16	31	55
	H	06 24 09					Wr	iPZ			32 19 d

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s	
	Qt	ePZE	33	39			Lh	ePKPZ	34	15		
		USCGS H 16 23 10.8					Ch	ePKPZ			33	
		10.3 N 121.5 E						epPKPZE			46	
		Sulu Sea depth about 21 km						ePKP ₂ ZE	35	00		
24	Wr	iPKPZ	21	27	16 d			ePKSZ	38	03		
	Qt	ePKPZ			20			ePPZE			30	
	Lh	ePKPZ			22			eSKSZ	41	45		
		USCGS H 21 08 22.6						USCGS H 08 14 41.8				
		15.5 N 92.5 W						7.5 N 82.7 W				
		Mexico - Guatemala border depth about 129 km						South of Panama depth about 21 km				
25	Wr	ePZ	00	31	25			Mag 6½ (Pas), 7 (Brk)				
		USCGS H 00 11 52.2				26	Wr	ePZ	18	17	34	
		14.4 S 76.1 W						iSN			18 01	
		Near coast of southern Peru depth about 46 km					Qt	ePZ			22	
25	Wr	ePZ	04	56	47		27	Wr	ePZ	05	57	28
		USCGS H 04 37 50.7						Qt	ePZ			58 17 ±
		18.9 N 81.1 W					27	Wr	ePZ	12	50	27
		West of Jamaica depth about 64 km						Lh	ePZ			41
		Mag 6 (Pas)						Qt	ePZE			57
		5½ (Brk) 6 (Pal)						USCGS H 12 38 35.1				
25	Wr	iPZ	17	57	26			51.6 N 174.1 W				
		i(S)N			53			Andreanof Islands				
	Lh	ePZ			42 ±			Aleutian Islands depth about 60 km				
	Qt	ePZ			58 04							
25	Wr	ePZ	22	45	31		27	Qt	ePZ	19	59	45
	Qt	ePZ			46 10			Wr	ePZ	20	00	44
26	Qt	ePKPZ	08	33	54		28	Wr	ePKPZ	00	24	02
		ePPZ			36 25			Qt	ePKPZE			09
		ePKSN			37 31			USCGS H 00 05 10.8				
	Wr	iPKPZ	33	57	d			16.2 S 173.2 W				
								Samoa Islands region depth about 40 km				
							28	Wr	ePZ	19	52	39
								Qt	ePZ			53 16

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
	Quetta		11	ePE	01 40 02
				eSE	26
1	ePZ	12 50 57	11	ePE	01 41 37
1	ePgE	13 12 37		eSE	42
	eSgE	45	11	ePE	01 42 07
1	ePgE	20 46 58		eSE	33
	eSgE	47 01	11	ePZE	01 58 48
3	ePE	04 57 58		eSE	59 16
	eSE	58 10	11	eXE	02 03 50
3	ePgE	20 47 43	11	eXE	02 06 46
	eSgE	45	11	ePE	02 16 22
3	ePgE	20 55 59		eSE	17 30
	eSgE	56 01	11	eXE	02 18 50
5	eXZE	05 04 18	11	eXE	02 19 31
6	ePZ	09 48 40	11	eXE	02 21 30
	eSE	49 09	11	ePZE	02 27 56
6	ePZ	09 55 12		eSE	28 22
	eSE	41	11	eXE	02 32 01
8	ePNE	03 34 14	11	ePE	02 33 28
8	ePgNE	15 31 45		eSE	50
	eSgNE	47	11	ePE	02 35 57
8	ePZ	20 33 37		eSE	36 23
	eSN	34 03	11	eXE	02 51 34
10	ePgE	03 48 47	11	ePE	02 52 29
	eSgE	49		eSE	55
11	ePgE	00 04 16	11	ePE	02 55 08
	eSgE	23		eSE	34
11	ePE	01 21 31	11	ePE	03 24 12
11	ePE	01 24 41		eSE	38
	eSE	25 05	11	ePE	03 32 32
11	ePE	01 29 51		eSE	58
11	ePE	01 33 23	11	ePE	03 58 39
	eSE	43	11	ePE	04 14 55
11	eXE	01 36 40		eSE	15 21



Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
11	ePE	04 36 50	13	ePE	00 08 12
	eSE	37 05	13	ePgE	07 30 11
11	ePE	05 09 26		eSgE	26
11	ePE	10 43 20	13	ePgE	07 37 38
	eSE	48		eSgE	49
11	ePZE	16 07 38	13	ePE	07 38 18
	eSE	08 06		eSE	30
11	ePE	16 11 05	13	ePZE	07 38 39
11	ePZE	16 33 16	13	ePE	14 01 39
	eSE	29		eSE	02 05
11	ePE	17 27 16	13	ePZE	17 04 54
	eSE	54		eSE	05 20
11	ePE	17 40 47	14	ePZ	03 16 11
	eSE	41 01		eSZ	37
11	ePE	18 20 02	14	ePZ	04 00 00
	eSE	21 22		eSZ	27
11	ePE	18 59 49	14	ePZ	12 34 23
	eSE	19 00 14	14	ePZ	12 48 09
12	ePZE	04 07 22		eSZ	37
	eSE	47	14	ePgZE	15 44 19
12	ePE	06 00 24		eSgE	23
	eSE	50	14	ePZ	18 20 50
12	ePE	12 13 20		eSE	21 18
	eSE	45	14	ePZE	23 26 32
12	ePE	17 50 15		eSE	59
	eSE	38	15	ePE	00 47 12
12	ePE	18 50 12		eSE	38
	ePE	20 37 20	15	ePZNE	02 25 48
	eSE	46		eSNE	26 14
12	ePE	21 58 53	15	ePZNE	02 27 33
	eSE	59 20		eSNE	28 00
12	ePE	22 43 58	15	ePZE	07 45 50
	eSE	44 24		eSNE	46 17
12	ePE	23 27 51			

Date	Phase	h	m	s	Date	Phase	h	m	s
15	ePE	09	20	50	22	eSgNE	02	03	55
15	ePZNE	21	28	43		ePgZ	04	07	
	eSNE		29	08	22	eSgZE	21	57	10
15	ePZE	21	52	16		ePZE			19
	eSNE			41	23	ePZE	04	30	08
15	ePZNE	22	41	27		eSE			38
	eSNE			55	23	ePgZ	12	13	14
16	ePNE	00	11	45		eSgZ			25
	eSNE		12	12	24	ePZE	01	01	04
16	ePZE	04	28	12		eSNE			43
	eSZE			44	24	ePZE	03	06	12
16	ePZ	18	16	45		ePgZE	16	24	01
16	ePZ	21	44	06		eSgZE			03
16	ePZ	23	30	51	24	ePZE	21	53	34
	eSZ			58	25	ePZ	01	33	04
16	ePZ	23	37	39		eSE			48
17	ePZ	01	02	50	25	ePgZE	06	43	08
17	ePZE	13	26	25		eSgZE			23
	eSNE			52	25	ePZE	20	22	46
18	ePZE	00	55	20		eSNE			23 13
	eSNE			47	25	ePZE	21	23	18
18	ePgZE	02	04	14		eSNE			45
	eSgE			29	26	ePZ	21	52	03
18	ePZ	09	03	02		ePZ	01	02	36
18	ePZNE	13	45	38	27	eSE			03 06
	eSNE		46	10		ePZE	13	52	37
18	ePZE	20	27	15		eSE			53 07
	eSNE			45	27	ePZE	14	08	10
18	ePZE	21	31	02		ePZE	01	54	04
19	ePZ	17	45	16		eSE			30
20	ePZ	08	33	50	28	ePZE	19	48	06
21	ePZN	00	16	15		ePZ	19	53	16
22	ePZ	00	00	32	28	ePgZNE	23	03	13
	eSN			59		eSgE			28
22	ePgZE	02	01	26					

Date	Phase	h	m	s	Date	Phase	h	m	s
29	ePZNE	01	07	54	4	ePZ	09	03	51
	eSNE		08	11		eSZ		05	27
29	ePZE	01	23	44	4	ePZ	21	00	17
	eSNE		24	11	4	ePZ	23	34	12
29	ePZE	07	18	07	5	iPgZ	05	07	45 d
	eSNE			32		iSgZ			56
29	ePZ	07	30	06	5	ePZ	06	55	12
29	ePZE	12	38	32		iSZ			27
	eSN			59	6	ePZ	05	19	17
30	ePgZE	00	24	36	6	ePZ	23	44	22
	eSgNE			39	6	ePZ	23	55	03
30	ePZE	00	51	21	7	ePZ	06	18	48
	eSN			47	7	eSZ		19	12
30	ePgE	18	01	42	7	ePZ	06	43	42
	eSgE			44		eSZ		44	04
30	ePE	19	32	21	8	ePZ	17	43	22
	eSE			45		eSZ		44	06
30	ePE	23	32	47	9	ePZ	04	53	14
						eSZ			46
1	Warsak				10	ePZ	22	29	25
1	ePZ	04	28	36		eSZ		30	05
1	iPZ	12	00	32 d	11	iPZ	18	35	46 d
2	iSZ		01	02		iSZ		36	19
2	ePZ	03	41	43	12	ePZ	05	05	49
2	ePZ	04	23	47		eSZ		06	15
2	iPZ	07	07	30 c	12	ePZ	10	37	55
2	iSZ		08	03		ePZ	23	25	26
2	iPZ	13	59	50 c		iSZ			56
2	eSZ	14	00	23	13	ePZ	04	58	04
2	iPZ	22	55	09 d		ePZ	07	31	25
2	iSZ			36	14	ePZ	06	16	00
3	ePZ	04	58	07		ePZ	03	06	15
3	eSZ			47	15	iSZ			45
4	ePZ	01	47	50		ePZ	20	02	40
4	eSZ		48	17		eSZ		03	13
4	iPZ	08	16	29 c					
4	iSZ			41					

Minor Shocks

Date	Phase	h	m	s	Date	Phase	h	m	s
16	ePZ	05	58	55		iSZ		07	22
16	ePZ	11	46	08	22	ePZ	15	52	05
16	ePZ	15	32	01		eSZ			38
	iSZ			34	22	ePZ	18	23	03
17	ePZ	01	02	07		eSZ			37
17	ePZ	04	56	15	22	ePZ	19	38	01
17	ePZ	05	49	29		eSZ			44
	eSZ			57	23	ePZ	08	02	26
17	ePZ	07	13	25		iSZ		03	03
18	ePZ	01	22	54	23	ePZ	19	04	22
	eSZ		23	48		iSZ			57
18	ePZ	08	59	48	25	ePZ	07	48	39
19	ePZ	06	19	34		iSZ		49	53
19	iPZ	15	01	00	26	ePZ	06	32	12
19	eSZ			32		iSZ			32
19	iPZ	17	03	06 c	26	ePZ	23	35	13
	iSZ			33		eSZ		36	00
19	ePZ	19	31	39	27	ePZ	05	50	58
	eSZ		32	15		iSZ		51	22
20	ePZ	09	08	55	27	ePZ	17	31	49
	eSZ		09	22	28	iPZ	10	08	56 c
20	ePZ	23	08	55		iSZ		09	28
	eSZ		09	16	28	ePZ	10	36	28
21	ePZ	03	10	12		eSZ		37	11
21	iPZ	07	04	52 c	28	ePZ	14	15	45
	iSZ		05	22	28	ePZ	19	47	20
21	ePZ	10	46	12	29	ePZ	09	01	38
21	iPZ	16	39	47 d		eSZ		02	05
	iSZ		40	26	29	ePZ	15	08	50
21	iPZ	20	48	15 d		eSZ		09	16
	eSZ			49	30	ePZ	05	49	45
22	ePZ	05	44	05		iSZ		50	07
22	ePZ	06	58	18	30	ePZ	09	14	06
22	ePZ	08	10	02		eSZ		15	14
	eSZ			30	31	ePZ	04	05	53
22	ePZ	15	06	49		eSZ		06	19

Minor Shocks

Date	Phase	h	m	s	Date	Phase	h	m	s
31	ePZ	22	42	53					
	Lahore								
1	eXN	22	43	58					
7	e(P)Z	16	18	29					
	eSN		19	05					
14	ePZ	06	27	28					
18	eXZ	20	30	17					
21	ePZ	06	05	53					
	e(S)N		06	36					
21	ePZ	18	23	08					
	e(S)N			52					
23	ePZ	06	28	12					
26	eXZ	18	18	20					
31	eXZ	05	02	08					
	Chittagong								
10	ePZ	20	18	30					
	iSNE			41					
10	eXZ	21	17	04					
15	eXZ	09	44	17					
17	eXE	01	01	20					
	e(S)E		02	06					
19	ePgZNE	22	44	50					
	iSgZE			46					
21	eXZE	10	21	52					
	e(S) E		22	03					
28	eXZ	22	03	30					
30	eXNE	08	53	16					