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PAKISTAN METEOROLOGICAL SERVICE

GEOPHYSICAL INSTITUTE

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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	To	Period (Sec.)	Tg	Damping	Max. Magnification
<u>Quetta</u>						
Sprengnether	Z	1.9		1.9	Critical	5,500
"	N	15.8		15.8	"	15,000
Benioff	Z	1.0		0.77	"	2,00,000
"	N	1.0		0.76	"	2,00,000
"	E	1.0		0.77	"	2,00,000

(Contd.)

Instruments	Components	Period		Damping	Max. Magnification
		To	Tg (Sec.)		
Sprengnether	Z	30.1	100.0	"	3,000
"	N	30.3	100.0	"	3,000
"	E	30.2	100.0	"	3,000
Willmore	Z	1.0	0.25	—	—
Sprengnether		1.0	6.0	—	—
Pen recorder					
Lahore					
Sprengnether	Z	1.8	1.8	Critical	4,900
"	N	1.7	1.7	"	4,200
"	E	1.6	1.6	"	4,100
Benioff	Z	1.0	0.75	"	6,250
"	N	1.0	0.75	"	6,250
"	E	1.0	0.75	"	6,250
Sprengnether	Z	30.0	100.0	"	750
"	N	30.0	100.0	"	750
"	E	30.0	100.0	"	750
Karachi					
Sprengnether	Z	1.8	1.8	Critical	5,890
"	N	1.8	1.8	"	4,700
"	E	1.4	1.4	"	4,700
Chittagong					
Sprengnether	Z	1.7	1.7	Critical	5,200
"	N	1.8	1.8	"	5,700
"	E	1.5	1.5	"	3,600
Warsak					
Sprengnether	Z	1.95	1.95	Critical	8,000
"	N	1.8	1.8	"	4,000

* indicates long period seismographs.

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	Wr	ePZ	00	07	29.5		Kr	iPZ		16	42
		iSZ		08	03.5			eSE		18	56
	Lh	ePZ		01			Wr	ePZ		17	39.1
		iSN		09	14		Lh	ePZ			58
	Qt	ePZ		08	21.5		Ch	ePZ		20	42
		eSNE		09	39.0			H 12 14 02			
		$\Delta=6^{\circ}.7$						28.0 N 55.0 E			
		H 00 06 44						Southern Iran			
		36.2 N 70.3 E						USCGS H 12 13 57.4			
		Hindukush						27.9 N 54.9 E			
		depth about 200 km						Southern Iran			
1	Lh	ePZ	01	09	44.1			depth about 16 km			
		eSN			53.1			Mag 6.1 (Qt)			
	Wr	ePZ		10	24.7	1	Qt	ePZ		19	53 11.7
	Qt	ePZ		11	18 \pm			eSN			39.0
		$\Delta=7^{\circ}.0$					Wr	ePZ		54	02.8
		H 01 09 32						H 19 52 35.4			
		North eastern region						Baluchistan region			
		of West Pakistan						West Pakistan			
1	Qt	ePZ	07	57	46.6	1	Qt	ePKPZ		21	01 21.0
		USCGS H 07 50 52.8						USCGS H 20 42 30			
		6.5 N 95.1 E						19.6 S 174.5 W			
		Nicobar Island region						Fiji Islands region			
		depth about 33 km						depth about 143 km			
1	Lh	ePZ	10	03	24	2	Qt	ePZ		20	02 12.2
	Wr	iPZ			25			USCGS H 19 51 53.4			
	Qt	ePZ		04	02.4			2.1 N 126.2 E			
		USCGS H 09 53 32.9						Molucca Passage			
		47.3 N 151.5 E						depth about 135 km			
		Kurile Islands					3	Qt	ePZ	01	28 30.0
		depth about 127 km						Wr	ePZ		32.8
1	Qt	ePZ	12	16	35.8			USCGS H 01 16 46.7			
		eSN*			18 32.0			40.6 N 29.7 W			
		Mu Sec						Azores region			
		PZ 0.18 1.0						depth about 33 km			
		$\Delta=10^{\circ}.4$					3	Qt	ePZ	01	31 05.0

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Wr	ePZ			07.6			eSE			15 21
	USCGS H	01 19 22.5					H	22 13 00			
		40.7 N 29.7 W						Near central			
		Azores region						Afghanistan-Pakistan border			
		depth about 33 km				5	Qt	ePZ	01	16	34.9
3	Qt	ePKPZ	19	07	37±			eSN			18 07.2
	USCGS H	18 48 52.4				5	Wr	ePZ	04	26	27±
		57.5 S 26.7 W						USCGS H	04 14 39.1		
		Sandwich Islands							40.2 N 29.5 W		
		depth about 33 km						Azores border			
3	Lh	ePZ	20	23	13.5			depth about 33 km			
	Wr	ePZ			42.9	5	Qt	ePZ	08	51	14±
	Qt	iPZ			24 20.0d			USCGS H	08 39 32.2		
4	Qt	ePZ	13	35	15.1				40.7 N 29.8 W		
	USCGS H	13 23 34.4						Azores region			
		40.9 N 29.7 W						depth about 33 km			
		Azores region				5	Qt	ePZ	15	26	41.5
		depth about 33 km						eLN*			29 48.0
4	Qt	ePZ	17	38	35.6	5	Qt	ePZ	20	04	29.8
4	Qt	ePZ	19	53	19.4			iPgZN*			05 07.0
	Wr	ePZ			36.0			iSnN*			06 02.5
	Kr	ePZ			42			iSgN*			47.0
	Ch	ePZ			56 17		Wr	ePZ	04	58.8	
	USCGS H	19 46 10.1					Kr	ePZ	05	27	
		38.3 N 22.7 E					Lh	ePZ		38	
		Greece					Ch	ePZ	08	48	
		depth about 38 km						ePPPZ			10 00
4	Qt	ePZ	20	47	28.0			Mu Sec			
	USCGS H	20 34 38.7						PZ	0.07	0.08	
		5.1 S 151.9 E						$\Delta=8^{\circ}.0$			
		Bismarck Sea						H	20 02 30		
		depth about 33 km							34.6 N 58.9 E		
4	Qt	ePZ	22	13	50.5			Eastern Iran			
		eSN*			14 31.2			Mag 5.8 (Qt)			
	Wr	ePZ			08.4	5	Wr	iPZ	22	18	23.8
	Lh	ePZ			20		Lh	ePZ			19 06

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		eSN			20 06		Wr	iPZ			47 09.7
	Qt	ePZ			19 28.5		Qt	ePZ			43.1 c
		eSNE			20 48.5		USCGS H	05 38 40.3			
	H	22 17 48						26.2 N 126.9 E			
		36 N 71½ E						Ryukyu Islands			
		Hindukush						depth about 122 km			
		depth about 200 km				6	Ch	ePZ			07 29 31
6	Qt	ePZ	03	28	51.1		USCGS H	07 17 03.3			
	Wr	ePZ			51.5			17.4 S 167.8 E			
	USCGS H	03 17 07.2						New Hebrides Islands			
		40.8 N 29.5 W						depth about 33 km			
		Azores region				6	Ch	ePZ			08 08 52
		depth about 33 km						ePcPZ			58
6	Qt	ePZ	04	06	42.5		USCGS H	07 56 20.4			
	Wr	iPZ			44.6			17.4 S 167.9 E			
	USCGS H	03 54 58.3						New Hebrides Islands			
		40.5 N 29.5 W						depth about 33 km			
		Azores region				6	Ch	ePZ			08 16 05
		depth about 33 km						ePcPZ			11
6	Ch	ePZ	04	35	53			ePPZ			19 21
		ePcPZ			59			eSE			26 30
		ePPZE			39 12			eScSN			41
		eSE			46 14		USCGS H	08 03 31.7			
		eScSE			26			17.2 S 168.0 E			
	USCGS H	04 23 24.1						New Hebrides Islands			
		17.4 S 167.7 E						depth about 33 km			
		New Hebrides Islands				6	Ch	iPZ			11 12 52 c
		depth about 33 km						epPZ			13 38
6	Wr	eXZ	04	40	45.1			ePPZ			16 08
	Qt	eXZ			41 13.5			eSE			22 45
6	Ch	ePZ	05	44	59 c		USCGS H	11 00 52.8			
		epPZ			45 19			13.3 S 167.3 E			
		ePcPZ			47 48			New Hebrides Islands			
		eSNE			50 12±			depth about 209 km			
		esSE			48	6	Qt	ePZ			17 22 13 d
	Lh	ePZ			46 53	6	Ch	ePZ			23 43 56

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s	
		epP	44	04		8	Wr	ePZ	05	20	18.5	
		eScSE	54	25				eSZ			53.0	
	Wr	ePKPZ	49	47.2			Qt	ePZ	21	17.0		
	Qt	ePKPZ		52.5				eSNE	22	37.0		
		USCGS H	23	31	27.7		H	05	19	33		
		17.5 S			167.6 E			Hindukush region				
		New Hebrides Islands				8	Qt	ePZ	05	26	04.7	
		depth about 42 km						USCGS H	05	14	20.4	
7	Wr	ePZ	00	06	21.2			40.5 N		29.5 W		
	Qt	ePZ			52.7			Azores region				
7	Wr	iPZ	01	11	38.2			depth about 33 km				
		iSZ	12	06.7		8	Ch	ePZ	22	02	10.e	
	Qt	ePZ			40.5c			epPZ			20	
		eSNE	13	55.7				ePPZ	03	01		
		H	01	11	01		Lh	ePZ	04	16		
		Hindukush region					Wr	iPZ	04	35.9		
7	Qt	ePZ	02	52	02.7c		Qt	ePZ	05	05.6c		
		eSN*			20.2			ePcPZ	06	36.4		
	Wr	ePZ	53	09.2				ePPZ	07	04.0		
	Kr	ePZ			27±			eSN*	12	09.0		
		eSZ	54	47±				eSSN	15	35.0		
		H	02	51	40.5			USCGS H	21	56	22.2	
		30.7 N			65.8 E			24.3 N		121.7 E		
		South eastern						Near east coast of Formosa				
		Afghanistan						Mag 6 (Pas), 6½ (Pal)				
7	Qt	ePZ	05	36	20.0							
7	Qt	ePZ	06	56	53		8	Ch	ePZ	22	29	54
		USCGS H	06	45	13.8			epPZ			30	06
		40.5 N			29.2 W			Qt	ePZ	32	50.5	
		Azores region						USCGS H	22	24	06.5	
		depth about 33 km						24.1 N		121.8 E		
7	Qt	ePZ	12	47	42.4			Near east coast of Formosa				
		USCGS H	12	35	30.2			depth about 39 km				
		4.9 S			144.3 E		9	Wr	iPZ	02	24	20.0
		New Guinea						iSZ			32.6	
		depth about 75 km						Qt	ePZ	25	25.0±	

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s	
		eSNE	26	24.5				eSSN*			43	07.8
		H	02	24	08			USCGS H	20	14	38.3	
		North western region of						3.2 S		148.2 E		
		West Pakistan						Bismarck Sea				
								depth about 33 km				
								Mag 6½ (Pas)				
9	Wr	iPZ	16	00	03.0							
	Lh	ePZ			41							
		eXE	01	35		10	Qt	ePZ	02	24	12.3d	
	Qt	ePZ			01.1d		Wr	ePZ			25	15.5
		eSN*	02	21.0		10	Qt	ePZ	04	48	11.3	
	Kr	ePZ	02	00			Wr	ePZ			46.4	
		eSZ	04	10				USCGS H	04	41	46.9	
		H	15	59	19			1.6 S		66.8 E		
		36.3 N			71.2 E			Indian Ocean				
		Hindukush						depth about 33 km				
		depth about 240 km					10	Qt	ePZ	07	59	47.1
		USCGS H	15	59	17.5			USCGS H	07	50	18.1	
		36.4 N			71.3 E			31.2 N		131.5 E		
		Hindukush						Kyushu, Japan				
		depth about 241 km						depth about 33 km				
		Felt Peshawar					10	Kr	iPZ	13	42	34d
							Wr	ePZ			50.3	
9	Wr	ePZ	19	18	18.1		Qt	iPZ			54.3d	
	Qt	ePZ	19	22.5d				USCGS H	10	33	10.3	
		eSNE	21	38.5				8.9 S		110.3 E		
		H	19	16	28			Off south coast of Java				
		Tadzhik S.S.R.						depth about 33 km				
9	Ch	ePZ	20	24	52d							
		epPZ	25	01		10	Qt	iPZ	20	46	13.0d	
		ePoPZ			28		Lh	ePZ			47	35
		ePPZ	27	15				USCGS H	20	43	36.6	
		eSNE	33	13				27.9 N		54.8 E		
		ePKPPKPZ	54	15				Iran				
	Lh	ePZ	26	38				depth about 47 km				
	Wr	ePZ			51.1	10	Qt	iPKPZ	21	12	56.7d	
	Kr	ePZ	27	05			Lh	ePKPZ			13	15
	Qt	ePZ			08.0			USCGS H	20	53	34.5	
		eSNE*	37	37.0				34.9 S		70.1 W		

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		Mendoza Province, Argentina depth about 137 km						Kermadec Islands region depth about 134 km			
10	Qt	ePKPZ	22	11	32.6	13	Qt	ePZ	10	27	13.60
		USCGS H 21 52 36.8 151.1 S 173.3 W Samoa Islands region depth about 33 km						eXN	30	20.2	
11	Qt	ePZ	12	45	34		Lh	ePZ	28	14 ±	
	Wr	ePZ		47	07 ±			eXN	32	07	
11	Ch	ePZ	16	08	22		Ch	ePZ	31	00	
		epPZ		31				ePPZ	32	38	
	Qt	ePZ	11	17.0				ePoPZ	33	10	
		USCGS H 16 02 33.6 24.3 N 121.6 E Near east coast of Formosa depth about 32 km						eSNE	36	59	
12	Qt	ePZ	00	26	20			eScSN	41	07	
12	Lh	ePZ	09	16	50 ±			USCGS H 10 23 38.2 35.5 N 49.8 E North western Iran depth about 33 km			
	Wr	iPZ		17	06.8	13	Ch	ePZ	19	00	00
	Qt	ePZ		38.5				epPZ		12	
		epPZ		49.0			Qt	ePZ	01	48.0	
		USCGS H 09 08 15.9 27.4 N 129.1 E Ryukyu Islands depth about 25 km						USCGS H 18 47 44.5 12.6 S 166.6 E Santa Cruz Islands region depth about 33 km			
12	Qt	ePKPZ	17	13	07.5	13	Qt	ePZ	20	23	09.7
		ePPZ		14	17.0	13	Lh	ePZ	20	58	53
	Wr	ePKPZ		13	16.8		Wr	ePZ		59	15.7
	Lh	ePKPZ		24			Qt	ePZ		29.2	
		USCGS H 16 53 33.6 28.0 S 70.6 W Near coast of north Chile depth about 25 km				13	Qt	ePZ	21	59	54.3
12	Qt	ePZ	19	17	58.0			USCGS H 21 49 38.6 44.0 N 146.4 E Near north coast of Hokkaido Japan depth about 103 km			
12	Qt	ePKPZ	19	03	54.4	13	Qt	ePZ	23	11	56.5
		28.9 S 177.1 W						eXZ		12	51.0
						14	Qt	ePKPZ	00	48	52.2
								UZCGS H 00 29 56.0			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		33.4 S 179.3 W Kermadec Islands region depth about 33 km						e(S)NE	15	29.4	
14	Ch	ePZ	01	43	25	14	Qt	ePZ	14	08	19.0
		ePPZ		56				eSN*	12	09.5	
		iSINE		47	16	14	Ch	ePZ	15	16	03
		eSSE		48	08		Lh	ePZ	17	38	
		eScSNE		54	26		Qt	ePZ	18	27.7c	
	Wr	ePZ		46	17.3			iPZ		28.5	
	Qt	ePZ		20.6d				ipPZ		38.2	
		USCGS H 01 38 38.8 1.5 N 99.0 E Near west coast of Sumatra depth about 100 km						USCGS H 15 08 59.5 31.8 N 131.5 E Near south coast of Kyushu Japan depth about 33 km			
14	Wr	ePZ	04	15	14.5	14	Wr	ePZ	17	22	00.0
		eSZ		58.0				eSZ		31.9	
	Lh	ePZ		16	11 ±		Qt	ePZ		23	00.5
	Qt	ePZ		20.0				eSNE		24	24.3
		eSNE		17	59.0			H 17 21 12 Hindukush			
		H 04 14 14 Hindukush				14	Qt	ePZ	19	41	37.50
14	Wr	ePZ	09	08	02.6			USCGS H 19 32 17.3 75.5 N 5.8 E Arctic Ocean depth about 42 km			
		eSZ		36.7				ePZ	21	23	47.0
	Lh	ePZ		43.4				epPZ		24	04.5
		eSNE		09	47.4	14	Qt	ePZ	21	13	44.2
	Qt	ePZ		08	57.2			39.1 N 141.1 E North Central Honshu Japan			
		iSNE		10	14.5			ePKPZ	14	18	46.9
		H 09 07 19 36.2 N 70.5 E Hindukush depth about 190 km				15	Qt	ePKPZ	14	18	46.9
		USCGS H 09 07 20.0 36.2 N 70.5 E Hindukush depth about 234 km						USCGS H 13 59 54.9 33.1 S 178.5 W Kermadec Islands depth about 89 km			
14	Qt	ePZ	09	13	26.3	15	Wr	ePZ	14	45	58.0

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		eSZ	46	24	.5			South of Mascarene Islands			
		ePZ	47	00	.6			depth about 33 km			
		eXNE	48	34	.0	16	Qt	ePZ	12	00	45.5
	H	14 45 22					Kr	ePZ	01	07	±
		Hindukush region					Wr	ePZ	01	46	.3
15	Qt	iPKP	23	55	21.3c			USCGS H	11	58	45.6
		USCGS H	23	36	35.0			30.6 N	57.3	E	
		43.5 S	169.8	E				Iran			
		Near coast of South Islands						depth about 33 km			
		New Zealand				16	Ch	iPZ	18	14	10c
16	Ch	ePZ	03	02	06			epPZ			18
		USCGS H	02	49	37.0			ePPZ	16	53	
		17.1 S	167.7	E				eSNE	23	41	
		New Hebrides Islands						eScSE	24	12	
		depth about 33 km					Lh	ePZ	14	23	e
16	Wr	ePZ	05	00	13.8		Wr	ePZ			26.8
	Lh	ePZ	01	06			Qt	iPZ			51.1c
	Qt	ePZ	01	51	.5		Kr	ePZ	15	13	
		eSNE	03	20	.3			USCGS H	18	02	32.9
		H	04	58	48			51.6 N	175.8	W	
		39.5 N	73.2	E				New Islands Aleutian Islands			
		Tadzhik S.S.R.						depth about 27 km			
		depth about 33 km						Mag 5½ (Pal)			
		USCGS H	04	58	49.7	17	Ch	ePZ	12	46	29
		39.4 N	73.4	E			Lh	ePZ	47	56	
		Tadzhik S.S.R.					Wr	ePZ	48	06	.1
		depth about 33 km					Qt	ePZ	40	06	.6
16	Ch	ePZ	05	33	55			USCGS H	12	32	12.0
		USCGS H	05	21	26.5			33.3 N	137.7	E	
		17.1 S	167.6	E				South of Honshu			
		New Hebrides Islands						depth about 335 km			
		depth about 33 km				17	Lh	ePZ	22	41	49 ±
16	Qt	ePZ	07	25	27.7		Wr	ePZ			26.1
	Wr	ePZ			55.8			eSZ	43	17	.9
		USCGS H	07	15	32.7		Qt	ePZ			12.0
		28.3 S	62.5	E				eSNE	44	37	.0

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		H	22	41	20		Kr	ePZ	33	23	
		West Pakistan						ePPE	35	50	
18	Ch	ePZ	02	02	36 ±			USCGS H	11	22	40.2
		eXE	03	00				46.5 N	149.5	E	
	Wr	ePZ	05	02	.3			Kurile Islands			
	Qt	ePZ			37.5			depth about 128 km			
		esSN*	10	24	.0	18	Qt	ePKPZ	20	08	54.0
		USCGS H	02	00	04.5			ePPKPZ	09	24	.4
		28.4 N	97.3	E				ePPZ	12	06	.0
		China-India-Burma border						USCGS H	19	49	59.2
		depth about 77 km						16.2 N	93.5	W	
18	Ch	ePZ	04	13	31			Chiapas, Mexico			
		ePPZ	15	10				depth about 179 km			
		ePcPZ			36	18	Wr	ePZ	21	27	23.1
		eSN	19	29			Lh	ePZ			56 ±
	Kr	ePZ	15	57			Qt	ePZ	28	30	.0
	Wr	ePZ	16	08				eSE	30	14	.0
	Qt	ePZ			16.5			USCGS H	21	26	13.3
		USCGS H	04	06	00.4			38.4 N	73.3	E	
		8.9 S	117.0	E				Tadzhik S.S.R.			
		Sumbawa						depth about 186 km			
		depth about 33 km				19	Qt	ePKPZ	04	32	26.4c
								epPKPZ			52.0
18	Ch	iPZ	08	49	54d			ePPZ	35	35	.7
	Lh	ePZ	50	37				iPKPZ	32	32	.7
	Wr	iPZ			40.5		Wr	iPKPZ			32 32.7
	Qt	iPZ	51	16	.5d		Lh	ePKPZ			39c
	Kr	ePZ			37d		Ch	ePKPZ			52
		USCGS H	08	40	55.5			USCGS H	04	13	03.6
		46.5 N	149.6	E				31.0 S	69.4	W	
		Kurile Islands						San Juan Province, Argentina			
		depth about 140 km						depth about 120 km			
18	Ch	ePZ	11	31	40d	19	Wr	ePZ	09	22	42.9
	Lh	ePZ	32	23			Qt	ePnZ			45.0
	Wr	iPZ			24.2			eSnE	23	15	.6
	Qt	ePZ	33	02	.4d			eSgN			29.7
		eSE	41	29	.4			Δ=2°.6			

Major Shocks

Date	Station	Phase	h m s	Date	Station	Phase	h m s
19	Ch	H 09 22 05 ePZ epPZ ePPZ ePoPZ eSNE	10 51 34d 46 52 40 54 09 57 00		Wr	iPZ iPZ iSZ Qt ePZ epPZ eSNE	53 17.7 54 05.7 00 02 02.3 23 53 31.5 54 20.5 00 02 24.5
	Lh	ePZ	54 13		USCGS H	23 42 34.9	
	Wr	ePZ	15.2		5.7 S 130.3 E		
	Kr	ePE	32 ±		Banda Sea		
	Qt	ePZ	37.5		depth about 177 km		
		USCGS H	10 44 51.9	20	Ch	ePZ	05 39 04
		10.6 N 125.2 E			epPZ	35	
		Leyte Philippine Islands			Wr	ePZ	41 28.0
		depth about 50 km			Qt	ePZ	40.5 c
19	Wr	ePZ	11 48 15.5		eSNE	50 38.0	
	Qt	ePZ	16.5 d		USCGS H	05 30 42.2	
		iSNE	37.5		6.7 S 130.1 E		
	Lh	ePZ	21 ±		Banda Sea		
		eSE	49 01		depth about 167 km		
	Kr	ePE	14 ±	20	Qt	ePZ	09 19 20.6
		H 11 47 26		20	Qt	ePZ	17 36 47.7 c
		31.2 N 70.8 E		21	Wr	ePZ	02 17 27.8
		West Pakistan			Ch	ePZ	43
		depth about 33 km			epPZ	58	
		USCGS H	11 47 24.1		Qt	ePZ	47.0
		30.8 N 70.8 E			epPZ	18 05.7	
		West Pakistan			eSN	28 08.0	
		depth about 41 km			esSNE	43.2	
19	Wr	ePKPZ	21 40 44.7		USCGS H	02 05 22.7	
	Qt	ePKPZ	53.0		61.1 N 149.7 W		
		USCGS H	21 21 48.8		Vicinity of Anchorage, Alaska		
		19.8 N 108.3 W			depth about 80 km		
		Off west coast of Jalisco, Mexico		21	Qt	ePZ	04 48 55.0
		depth about 53 km			eXNE	51 02.0	
19	Lh	ePZ	23 52 57	21	Qt	ePZ	07 22 16.2
		epPZ	53 44		eXNE	23 59.2	

Major Shocks

Date	Station	Phase	h m s	Date	Station	Phase	h m s
21	Qt	ePZ	12 42 48.6 c				
		USCGS H	12 32 27.4				
		1.5 N 127.2 E					
		Halmahera Islands region		23	Qt	ePKPZ	00 44 56.5
		depth about 111 km			USCGS H	00 26 00.3	
21	Wr	ePZ	16 53 34.7		15.2 S 173.0 W		
	Qt	aPZ	54 27.0		Samoa Islands region		
		eSNE	56 28.0		depth about 33 km		
		$\Delta = 10^\circ.8$		23	Qt	ePZ	00 58 15.0
		H 16 51 00			USCGS H	00 47 27.2	
		Tadzhik S.S.R.			46.2 N 153.2 E		
22	Qt	ePKPZ	01 27 34.0		Kurile Islands		
		USCGS H	01 09 50.9		depth about 33 km		
		18.1 S 177.9 W		23	Wr	iPZ	20 11 45.3 c
		Fiji Islands region			iSZ	12 18.6	
		depth about 612 km			Lh ePZ	24	
22	Wr	ePZ	04 46 39.6		eSN	13 24	
	Qt	ePZ	57.3		Qt ePZ	12 42.1 d	
		USCGS H	04 34 38.9		iSNE	14 03.0	
		3.4 S 145.3 E			H 20 10 55		
		Bismarck Sea			36.5 N 71.5 E		
		depth about 36 km			Hindukush		
22	Ch	ePZ	15 33 17 c		depth about 200 km		
		ePoPZ	34 15		USCGS H	20 10 57.6	
		ePPN	35 16		37.6 N 71.1 E		
	Wr	ePZ	33 49.9		Hindukush		
	Lh	ePZ	51		depth about 216 km		
	Qt	ePZ	34 25.6		Lh ePZ	10 01 07	
		USCGS H	15 23 32.9		eSN	52	
		49.8 N 155.8 E			Wr ePZ	45.1	
		North Kurile Islands			Qt ePZ	02 32.1	
		depth about 19 km			eSNE	04 19.2	
22	Ch	ePZ	22 27 02		H 10 00 09		
	Wr	ePZ	28 25.3		32.5 N 79.0 E		
	Qt	ePZ	29 01.1		Tibet		
		USCGS H	22 18 50.3	25	Wr	ePZ	08 38 26.6

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		iSZ	39	00	.3			8.4 N 82.6 W			
	Qt	ePZ		22	.2			Panama-Casta Rica border			
		eSNE	40	39	.5			depth about 51 km			
		$\Delta = 6^\circ.8$				25	Qt	ePZ	19	26	59.2
		H 08 37 42				25	Qt	eXZ	20	24	48.8
		Hindukush region					Wr	eXZ	25	57	
25	Ch	iPZ	09	41	41			USCGS H 20 06 10.0			
		ePPPZ	43	37				61.4 S 154.9 E			
		ePcPZ	51					South West Macquaries Islands			
		iSNE	47	37				depth about 33 km			
		eScSN	51	45		25	Qt	ePZ	21	53	47.8
	Lh	ePZ	43	53			Wr	ePZ	54	19	.1
	Wr	ePZ	44	19	.4			USCGS H 21 49 37.5			
		eSZ	52	23	.2			33.3 N 46.1 E			
	Kr	ePZ	44	29				Iraq-Iran border			
		eSE	52	48				depth about 33 km			
	Qt	ePZ	44	36	.5c	26	Wr	iPZ	07	29	18.5d
		eSN	53	02	.5			iSZ	51	.6	
		USCGS H 09 34 14.6					Qt	ePZ	30	18	.3
		3.0 N 126.7 E						eSNE	31	36	.6
		Molucca Passage						H 07 28 37			
		depth about 33 km						Hindukush region			
25	Wr	ePZ	12	40	29.0	26	Ch	ePZ	07	32	56
		eSZ	41	00	.1			epPZ	33	06	
	Qt	ePZ	30	.0				eSN	43	22	
		eSNE	42	45	.6			USCGS H 07 20 25.8			
		$\Delta = 6^\circ.7$						17.7 S 167.5 E			
		H 12 39 51						New Hibrades Islands			
		Hindukush region						depth about 33 km			
25	Wr	ePKPZ	16	11	35.5	26	Qt	ePZ	08	42	49.7
	Qt	ePKPZ	37	.5		26	Qt	ePZ	11	32	50.6
		ePKSZ	15	02	.6		Wr	ePZ	33	13	.6
	Ch	ePKPZ	12	08			Ch	ePZ	35	56	
		epPKPZ	25					USCGS H 11 26 12.4			
		ePKSZ	15	33				33.7 S 27.9 E			
		USCGS H 15 52 29.2						Eastern Mediterranean Sea			

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		depth about 33 km									
26	Qt	ePKPZ	16	17	17.7						
		USCGS H 15 58 34.8									
		55.5 S 26.5 W									
		Sandwich Islands									
		depth about 33 km									
27	Wr	ePZ	01	38	39.6						
	Qt	ePZ	39	25	.3c						
27	Wr	ePKPZ	08	29	27.0						
		USCGS H 08 10 24.5									
		14.0 N 90.4 W									
		Guatemala-el Salvador border									
		depth about 107 km									
27	Wr	ePZ	10	39	48.3						
	Qt	ePZ	40	42	.0						
		eSNE	42	24	.1						
		$\Delta = 9^\circ.1$									
		H 10 38 30									
		Tadzhik S.S.R.									
27	Qt	ePKPZ	14	11	56.2						
		ePKSNE	15	30	.0						
		USCGS H 13 52 51.2									
		11.5 N 86.4 W									
		Near west coast of Nicaragua									
		depth about 80 km									
27	Wr	ePZ	16	03	12.5						
	Qt	ePZ	04	07	.5						
		eSNE	05	51	.0						
	Lh	ePZ	04	09							
		H 16 02 09									
		38.3 N 70.7 E									
		Tadzhik S.S.R.									
		USCES H 16 02 04.8									
		38.6 N 70.4 E									
		depth about 135 km									
		Tadzhik S.S.R.									
27	Qt	ePZ	16	31	54.2						
		eSN	42	04	.5						
		eScSE	25	.0							
		USCGS H 16 19 30.7									
		52.1 N 171.1 W									
		Rat Islands, Aleutian Islands									
		depth about 60 km									
27	Wr	ePZ	17	18	51.2						
		eSZ	19	21	.5						
	Qt	ePZ	48	.5							
		eSNE	21	08	.0						
		$\Delta = 7^\circ.0$									
		H 17 18 05									
		Hindukush region									
27	Qt	ePZ	22	42	08.±						
		USCGS H 22 28 56.5									
		7.4 S 156.5 E									
		Solomon Islands									
		depth about 14 km									
28	Qt	ePZ	01	14	38.3						
28	Qt	iPZ	06	04	32.5c						
		iSE	05	04	.0						
	Wr	ePZ	04	59	.2						
		$\Delta = 2^\circ.7$									
		H 06 03 50									
		Afghanistan									
28	Wr	ePZ	12	14	48.3						
	Qt	iPZ	15	14	5d						
		USCGS H 12 06 21.5									
		14.8 N 119.7 E									
		Off west coast of Luzon P.I.									
		depth about 115 km									
28	Lh	ePZ	15	09	52						
	Wr	iPZ	10	15	.5						
	Qt	ePZ	30	.0							
		USCGS H 15 00 17.0									
		0.1 N 123.6 E									

Major Shocks

Date	Station	Phase	h m s	Date	Station	Phase	h m s
28	Wr	Northern Celebes depth about 61 km				Qt	ePZ 54 22.1
							eSNE 55 36.2
							$\Delta = 6^\circ.5$
		ePZ	18 08 00.0			H	18 52 46
		iSZ	28.2				
	Qt	ePZ	09 06.3				
		eSNE	10 25.5				
		$\Delta = 7^\circ.0$					
		H	18 07 23				
		Hindukush region					
28	Wr	ePKPZ	23 11 55.5				
	Qt	iPKPZ	12 02.0c				
		USCGS H	22 53 01.3				
		16.0 N 93.6 W					
		Chiapas Mexico					
		depth about 110 km					
29	Wr	ePKPZ	00 38 53.4				
	Qt	ePKPZ	55.5				
		USCGS H	00 19 39.7				
		7.1 N 82.6 W					
		Off South coast of Panama					
		depth about 21 km					
29	Wr	ePZ	01 58 28.0				
	Qt	ePZ	59 14 \pm				
		$\Delta = 7^\circ.6$					
		H	02 21 36				
		Hindukush region					
29	Qt	ePZ	07 23 17.2				
	Wr	ePZ	58.3				
29	Wr	ePKPZ	09 50 29.4				
		USCGS H	09 30 48.2				
		33.9 S 70.7 W					
		Central Chile					
		depth about 33 km					
29	Lh	ePZ	12 09 42				
	Qt	ePZ	10 39.5				
	Wr	ePZ	45.8				
29	Qt	ePZ	16 37 28.6				
	Wr	ePZ	18 53 20.9				
		eSZ	49.1				
		$\Delta = 8^\circ.4$					
		H	03 50 30				
		Tadzhik S.S.R.					
30	Qt	ePKPZ	08 50 57.6				
		USCGS H	08 31 51.8				
		12.5 N 88.0 W					
		Off west coast of Nicaragua					
		depth about 80 km					
30	Wr	ePZ	15 52 42.3				

Major Shocks

Date	Station	Phase	h m s	Date	Station	Phase	h m s
		Qt	ePZ 53 05.3				
30	Wr	iPZ	16 18 00.8				
	Qt	ePZ	32.6				
		USCGS H	16 13 25.6				
		26.6 N 93.3 E					
		Eastern India					
		depth about 33 km					
31	Wr	ePKPZ	11 51 43.8				
	Qt	ePKPZ	48.5				
	Ch	ePKPZ	52 20.0				
		USCGS H	11 32 29.0				
		5.6 N 82.6 W					
		South of Panama					
		depth about 33 km					
		Mag 6 $\frac{1}{2}$ (Pas), 5 $\frac{1}{2}$ (Pal)					
31	Qt	ePZ	13 39 18.4				
		USCGS H	13 27 25.0				
		51.6 N 177.3 E					
		Rat Islands, Aleutian Islands					
		depth about 83 km					
31	Ch	iPZ	21 28 26d				
		eSNE	54				
	Lh	ePZ	31 53				
	Qt	iPZ	32 55.6c				
		H	21 27 48				
		24.5 N 93.0 E					
		Burma					

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
	Quetta		5	ePZ	16 49 27.0
1	ePZ	05 11 58.0±	6	ePZ	01 45 08.5
1	ePgZ	10 57 44.3	6	ePZ	04 59 32.5
	eSgNE	46.0	6	ePZ	12 16 19.5
1	ePZ	20 39 31.9±	6	ePgZ	14 24 05.5+
2	ePZ	15 12 16.6		eSgNE	08.7
	eXNE	49.5	6	ePZ	23 39 53.5
2	ePZ	20 02 12.2	7	ePZ	01 49 13.5d
2	ePZ	20 50 52.0±	7	ePZ	07 09 40.2
2	ePgZ	22 47 48.5		eSNE	56.6
	eSgNE	57.0	7	ePZ	08 58 20.0
3	iPgZ	16 11 25.1d	7	ePZ	12 13 26.1±
	iSgZNE	37.5	7	ePZ	14 16 07.6±
3	iPgZ	20 58 33.5d	7	ePZ	15 07 06.6
	iSgNE	41.1		eSNE	08 25.6
3	ePZ	21 50 10.0±	7	ePZ	15 41 36.8
	eXZ	18.6	7	ePZ	18 53 15.1
	eSNE	28.6	7	ePZ	23 12 39.3
4	ePZ	10 07 56.5±	8	ePZ	02 33 32.7
	eSNE	08 21.0		eSNE	52.0
4	ePZ	13 58 39.5	8	ePgZ	04 33 09.0
4	ePZ	16 40 27.5		eSgNE	19.3
4	ePZ	16 37 25.7	8	ePZ	06 25 05.0±
4	ePZ	20 49 06.5		e(S)NE	43.0
	eSNE	16.5	8	ePZ	07 11 58.0
4	ePZ	21 40 52.5±		eSNE	07.9
	eSNE	41 30.0	8	ePZ	07 24 54.2
5	ePgZ	01 06 57.5		eSNE	25 34.5
	eSgNE	59.5	8	ePZ	07 18 26.0±
5	eXZ	08 51 14.3		eSNE	43.8
5	ePgZ	11 49 08.0	8	ePZ	07 49 56.7±
	eSgNE	09.5		eSNE	50 14.5
5	ePgZ	12 16 11.1	8	eXZ	10 35 15.5
	eSgNE	19.0	8	ePZ	14 14 26.5



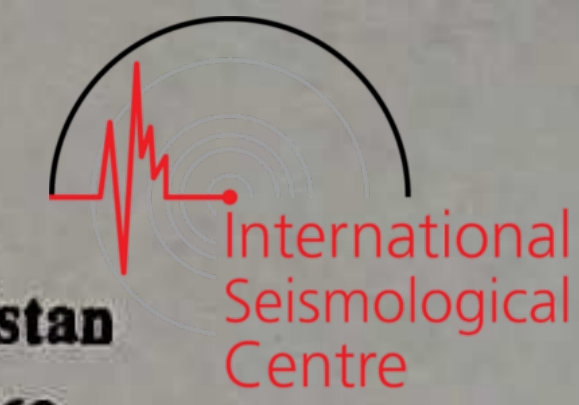
Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
8	ePZ	15 44 51.1	10	ePZ	23 03 16.1
8	ePgZ	16 59 42.7		eSNE	04 35.0
	eSgNE	53.0	11	iPZ	03 59 22.6d
8	ePZ	18 51 14.5		eSNE	48.1
8	ePgZ	18 53 29.9	11	ePZ	14 14 14.3
	eSgNE	39.9	11	iPgZ	14 19 11.2c
8	ePZ	21 34 35.0		eSgNE	18.0
	eSNE	35 04.5	11	ePgZ	19 29 16.1
9	ePZ	00 20 50.1		eSgNE	22.5
	eSNE	22 40.2	12	ePZ	07 33 47.3c
9	ePZ	02 21 56.0		iSZNE	06.6
9	ePgZ	02 28 04.0	12	eXZ	11 01 36.3
	eSgNE	14.3		eSNE	02 35.2
9	ePZ	06 35 09.5	12	eXZ	11 26 28.5
	eSE	37 33.6	12	eXZ	18 21 10.8
9	ePZ	07 12 59.5		ePZ	16.0
	eSN	13 49.3	12	e(P)Z	19 38 00.5
9	ePZ	07 23 24.0c		eSZNE	39 08.3
	eSNE	52.5	12	ePZ	21 47 19.0
9	ePZ	17 21 14.5	12	ePZ	22 41 59.0
9	ePZ	19 53 37.4	13	ePZ	00 35 12.0
10	ePZ	00 04 57.5c		eXE	16.6
	eSZ*E	05 33.0	13	ePZ	07 44 15.8
10	ePZ	00 08 30.5		eSZ	42.3
	eSE	09 06.8	13	eXZ	13 17 04.2
10	ePZ	06 44 30.0	13	eXZ	14 39 32.6
	eSNE	53.5	13	ePZ	15 34 26.7±
10	ePgZ	07 22 09.6		eSN	35 07.0
	eSgNE	11.7	13	ePgZ	18 14 37.5
10	ePZ	12 34 13.6		eSgN	48.0
10	ePZ	18 02 52.0	13	ePgZ	22 38 10.4
	eSNE	03 17.7		eSgNE	12.6
10	ePgZ	19 58 37.0	14	ePZ	01 51 49.5
	eSgNE	48.9	14	ePgZ	02 38 02.5
10	ePZ	20 37 27.5		eSgNE	05.1
	eSNE	38 08.5	14	ePZ	03 03 02.1

Date	Phase	h m s	Date	Phase	h m s	Date	Phase	h m s	Date	Phase	h m s
14	eXZ	14 16 20.0		iSgNE	56.0		e(S)E	38.2	24	ePZ	02 19 56.4
14	ePZ	14 18 49.2	18	ePgZ	16 57 53.2	21	ePZ	18 01 56.0		eSNE	20 25.0
14	eXZ	19 27 13.2		iSgNE	58.4		eSNE	02 17.0	25	eXZ	07 56 16.2
	eSNE	30 06.5	18	eXZ	20 58 36.2	22	eXZ	01 41 36.5	25	ePZ	08 39 22.2
14	ePZ	21 33 26.0		e(S)NE	21 01 01.6	22	eXZ	02 13 56.0		eSNE	40 39.5
	e(S)NE	51.0	19	iPgZ	06 49 45.0	22	eSNE	14 12.0	25	eXZ	14 13 21.0
15	ePZ	05 20 38.8	19	ePZ	07 24 32.1	22	ePZ	06 01 57.5±	25	ePgZ	17 05 43.0c
15	eXZ	07 35 26.1		e(S)NE	58.5		eSZNE	02 08.0		iSgZNE	45.0
	eXNE	36 54.8	19	e(P)Z	09 46 40.1	22	ePgZ	19 45 01.2	25	eXZ	19 55 25.0
15	iPgZ	10 21 43.7c	19	ePZ	13 26 48.1		eSgNE	12.5	25	eXZ	23 49 23.5
	iSgZNE	53.5		eXZ	27 42.0	22	ePZ	22 11 56.4	25	ePgZ	23 56 34.0
15	e(P)N	15 10 40.8	19	e(P)Z	14 49 52.2		e(S)N	12 53.7		eSgNE	46.2
	eSNE	12 26.0		e(S)E	51 06.8	23	ePZ	01 17 13.2	26	ePgN	00 10 33.0±
15	eXZ	17 05 32.1	19	ePgZ	15 24 08.6		eXN	29.0		iSgNE	35.0
	eSNE	41.8		iSgNE	23.8	23	ePZ	01 58 33.5	26	e(P)Z	03 06 37.0
15	ePZ	19 38 58.5	19	e(P)Z	17 14 16.5		eX(S)NE	56.5	26	eXZ	04 46 39.3
	eSNE	39 17.0		iSgNE	26.0	23	ePZ	02 15 34.0	26	ePZ	14 45 11.4
15	eXZ	22 13 05.8	19	ePZ	19 54 27.4		eSNE	46.2	26	ePZ	16 49 03.2
15	ePgZ	23 06 04.6		eSNE	53.0		e(S)N	48.0	26	eXZ	20 08 19.3
	eSgNE	11.6	19	ePgZ	20 48 48.0	23	eXZ	06 37 47.6	26	eXZ	20 33 06.6
15	ePgZ	23 07 57.0		eSgNE	49 01.5		eXZ	50.1	27	ePZ	01 28 25.3
	eSgNE	08 03.3	19	eXZ	20 57 03.0		eXZ	56.6		eSNE	29 46.3
16	ePZ	18 35 43.3	19	eXZ	21 31 57.5	23	e(P)Z	06 38 11.5	27	ePZ	08 29 27.0
16	ePZ	21 30 32.5	19	ePZ	22 58 17.0		e(S)NE	32.5	27	ePZ	18 42 51.0±
17	eXZ	01 10 50.3	20	ePZ	03 56 09.3	23	e(P)Z	07 37 26.0	27	ePZ	21 15 56.0
	ePZ	59.0		eSNE	41.2		eSNE	47.0		eSN	16 13.6
17	ePZ	11 43 51.1	20	eXZ	12 07 49.5	23	ePZN	14 22 31.5±	27	ePZ	22 23 09.3c
	e(S)NE	44 13.3		eSNE	08 06.1		eXZ	40.0		e(S)EN	28.5
17	eXZNE	15 04 26.6	20	e(P)ZN	12 52 28.0	23	ePZ	15 08 29.3	28	eXZ	02 22 08.5
17	ePgZ	17 18 19.9		eSNE	51.0		e(S)NE	11 17.3	28	eXZ	03 45 40.0±
	eSgE	32.0	20	ePZ	13 43 34.0	23	eXZ	15 18 10.0	28	ePZZ	13 14 04.5
17	ePZ	17 54 45.1		eSNE	55.0	23	eXZ	17 32 43.1	28	ePZ	16 06 25.0
	e(S)E	07.6	20	ePZ	19 24 24.5	23	ePZ	20 40 39.0±		eSN	44.1
17	ePZ	19 02 02.9±		eXZN	28.0		eSNE	41 49.4	28	eXZ	17 59 52.7
	e(S)E	04 04.0	20	eXZ	22 02 46.0	23	eXZ	22 27 25.0	28	ePZ	23 00 01.4
18	iPgZ	12 04 54.2c	21	e(P)ZNE	15 10 13.0	23	eXZ	23 34 23.0		eSNE	01 02.5

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
29	ePZ	01 20 15.0	3	ePZ	07 03 50.8
29	ePZ	06 00 43.1±		eSZ	04 16.0
	e(S)N	02 14.0	3	ePZ	09 19 04.0
29	ePZ	13 07 30.5±		eSZ	40.5
29	ePZ	15 08 52.1	3	ePZ	12 38 55.4
	eSNE	09 14.5	3	iPZ	12 44 13.0d
29	ePZ	19 10 23.7		iSZ	51.9
	eSNE	54.0	4	ePZ	00 09 01.6
29	ePZ	21 21 36.1	4	ePZ	20 35 18.4
	eXZ	23 02.2	6	ePZ	01 44 46.5
29	ePZ	23 49 05.1	6	ePZ	01 55 00.7
30	ePgZ,Z(W)Z	11 19 31.6	6	ePZ	12 16 03.8
	eSgZN*	42.4	6	ePZ	23 32 29.0
30	ePgZ	12 07 07.6	6	ePZ	23 57 04.3
	eSgNE	18.5	7	ePZ	11 00 04.2
30	ePZ	12 18 00.9	7	ePZ	11 34 42.2
	eSNE	27.4	7	ePZ	18 35 47.1
30	iPZ	15 39 27.6d	8	ePZ	01 08 09.1
31	ePZ	09 46 42.0	8	ePZ	03 11 50.3
	eSNE	47 08.8	8	ePZ	05 20 18.5
31	ePZ	09 52 50.2		eSZ	53.0
	eSNE	53 15.8	9	ePZ	13 11 09.1
31	ePZ	09 54 04.4	9	ePZ	17 19 16.4
	eSNE	35.6	9	ePZ	20 26 51.1
31	ePZ	13 17 01.1	10	ePZ	00 06 11.4
	eSNE	21.0	10	ePZ	20 45 01.0
31	iPZ	18 22 07.0d	10	ePZ	21 14 03.9
	eSNE	23.5	10	ePZ	23 02 49.2
	Warsak		11	ePZ	04 27 39.1
1	ePZ	11 56 39.9	11	ePZ	09 25 01.5
	eSZ	57 03.5	11	ePZ	11 17 20.4
1	ePZ	14 58 25.2	11	ePZ	11 21 04.5
1	ePZ	22 43 42.2	11	ePZ	11 44 40.4
	eSZ	44 21.0	11	ePZ	13 57 07.4
2	ePZ	15 33 27.9	11	ePZ	15 46 12.0
2	ePZ	22 33 14.4	12	ePZ	02 54 02.2



Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
	eSZ	28.7		eSgZ	55.5
12	ePZ	11 08 04.7	20	ePZ	23 27 43.5
	eSZ	40.7		eSZ	28 08.6
12	ePZ	11 31 43.7	21	ePZ	00 53 17.3
12	ePZ	11 19 44.0		eSZ	41.8
13	ePZ	06 43 37.6	21	ePZ	09 18 36.9
	eSZ	44 08.8	21	ePZ	11 50 48.8
13	ePZ	10 26 36.5	22	ePZ	02 11 40.9
	eSZ	27 44.5		eSZ	12 15.7
13	ePZ	11 12 36.9	22	ePZ	14 59 17.7
	eSZ	13 04.4	23	ePZ	00 48 14.5
14	ePgZ	11 10 56.7		eSZ	40.7
	eSgZ	11 07.6	23	ePZ	05 04 00.0
14	eSgZ	14 28 18.0	24	iPZ	20 19 12.6d
	eSZ	53.1		iSZ	51.2
16	ePZ	12 13 57.1	24	ePZ	18 01 11.1
16	ePZ	13 33 01.9		eSZ	40.3
16	ePZ	15 16 47.7	25	ePZ	00 34 43.2
17	ePZ	02 03 11.5		eSZ	35 21.5
17	ePZ	07 52 50.5	26	ePZ	03 25 33.6
17	ePZ	14 27 15.9		eSZ	26 01.9
	eSZ	45.9	26	ePZ	08 58 13.4
17	ePZ	15 02 06.0	27	ePZ	01 04 54.7
	eSZ	41.7		eSZ	05 25.1
18	ePZ	20 48 58.7	27	ePZ	03 27 08.2
18	ePZ	21 16 03.8	28	ePZ	13 47 11.8
19	ePZ	05 29 30.6	28	ePZ	22 02 48.7
19	ePZ	09 43 30.8		eSZ	03 16.1
19	ePZ	21 02 53.7	29	iPgZ	03 47 56.1
19	ePZ	22 22 38.8		iSgZ	48 06.5
20	iPZ	00 02 02.3d	29	ePZ	04 50 16.8
20	ePZ	09 06 33.4	29	ePZ	12 32 41.8
20	ePZ	12 05 53.9		eSZ	33 08.4
	eSZ	06 27.2	29	ePZ	21 21 33.6
20	ePZ	12 25 18.4	29	ePZ	23 46 55.4
20	ePgZ	16 35 42.9		eSZ	47 21.7



Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
30	ePZ	04 00 26.4		eSZN	23 02
	eSZ	01 13.0	22	eXZ	04 44 03.1
30	ePZ	15 06 56.5		eXZ	35
	eSZ	07 48.0	22	eXN	17 19 45.2
30	ePZ	21 04 53.8	23	eXZ	11 08 15.2
	eSZ	05 28.6	25	ePZ	03 51 20.1
31	ePZ	06 49 04.0	25	ePZ	14 08 03
	eSZ	47.7		iXZ	10
31	ePZ	07 50 21.6	26	eXNE	08 56.0
	eSZ	51 03.3	31	eXZ	20 17.6
31	ePZ	21 22 27.5	31	eXZ	22 31 46
	Lahore			Karachi	
26	e(P)Z	08 44 19.2	10	ePZ	00 05 30
29	ePZ	03 39 40	11	ePZ	12 45 32.3
	eSN	41 54	17	ePE	07 21 45.5
	Chittagong		18	ePE	18 16 13.0
3	eXNE	23 40.9		eSE	25.5
6	ePZE	01 41 45±	28	ePZ	22 59 09.7
	e(S)E	42 47		eSZ	21.7
	e(S)NE	43 03			
7	eXZ	00 07 25			
7	ePZ	05 33 24.0			
9	eSPZE	16 05 13			
	eSE	07 51			
9	ePZ	23 25 56.2			
10	ePZ	05 01 38			
	eXZ	43			
10	eXZ	07 01 48			
10	eXE	20 09 55			
17	ePZE	01 06 34			
	eXZNE	40			
19	ePZ	13 23 43			
	eXZ	58			
19	ePZ	23 55 53			
	eSNE	57 20			
20	ePZ	19 21 52d			