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GEOPHYSICAL INSTITUTE

QUETTA.

Pakistan Meteorological Service

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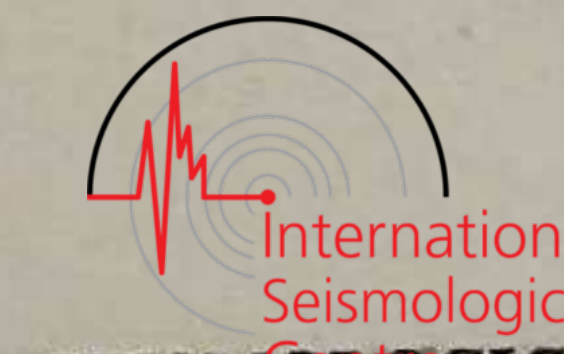
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Particulars of Stations and Instruments

(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		Damping	Max. Magnification
		To	(Sec.) Tg		
Quetta					
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	(Sec.) Tg		
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 Pen recorder	E	1.0	6.0	—	—
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	Qt	ePZ	00	43	36.2			6.2 (Qt)			
1	Wr	iPZ	03	21	26.1d	1	Ch	ePZ	04	09	45
		iSZ			57.8		Qt	ePZ		10	30.9
	Qt	ePZ			22 23.5d			ePcPZ			42.5
		eSNE			23 40.5			USCCS H	03	58	21.5
		Mu			Sec			51.1 N	180.0 W		
		PZ	0.04		0.5			Rat Islands, Aleutian Islands			
		PH	0.02		0.5			depth about 33 km			
		$\Delta = 6^\circ.8$					1	Ch	iPZ	04	53 03 c
		H 03 20 43.8						epI'ZNE			10
		Hindukush						ePcPZE			20
		Mag 4.9 (Qt)						ePPZ			53 40
1	Ch	iPZ	03	57	29 c			eSNE			05 02 21
		epPZE			40			Mu			Sec
		ePcPZ			48			PZ	0.4		1.6
		ePPZ	04	00	04			$\Delta = 72^\circ.0$			
		eSZNE			06 47		Wr	iPZ	04	53	17.6c
		eScSN			07 28		Lh	ePZ			18
		Mu			Sec		Qt	iPZ			49.0c
		PZ	0.5		1.6			iSNE			05 03 51.2
		$\Delta = 72^\circ.3$						iXZ			04 34.0
	Wr	iPZ	03	57	43.7c			Mu			Sec
	Lh	ePZ			46			PZ	0.2		1.0
	Qt	iPZ			58 15.4c			PH	0.1		1.0
		ePcPZ			25.9			$\Delta = 80^\circ.4$			
		iSNE	04	08	19.5			USCGS H	04	41	41.5
		eScSE*			38.0			51.3 N	179.9 W		
		Mu			Sec			Rat Islands, Aleutian Islands			
		PZ	0.2		1.0			depth about 37 km			
		PH	0.1		1.0			Mag 6.1 (Qt), 6.3 (Ch)			
		$\Delta = 80^\circ.8$					1	Ch	iPZ	05	04 20 c
		USCGS H	03	46	05.0			iPcPZNE			25
		51.3 N	179.7 W					ipPZ			05 18
		Rat Islands, Aleutian Islands						esPZ			41
		depth about 25 km						eXN			57
		Mag 6½ (Pas), 6 (Pal), 6.4 (Ch),						iSNE			14 27

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		eScSN			32			eSNE*			13 18.5
		iXN		15	17			Mu Sec			
		ePKPPKPZ		30	43			PZ 0.3 1.2			
		Mu Sec						PH 0.3 1.5			
	PZ	1.0 1.5						PPZ 0.3 2.0			
		$\Delta = 83^\circ.7$						$\Delta = 79^\circ.9$			
	Qt	ePZ	06	05	.6c		Kr	ePZ	03	34	
		epPZ	07	05	.5			USCGS H 07 51 08.2			
		eXZ*	11	29	.0			Rat Islands, Aleutian Islands			
		iSKSNE*	16	25	.5			depth about 42 km			
		ePPSN	21	38	.5			Mag 6 $\frac{1}{2}$ (Pas), 6 (Pal), 6.1 (Qt)			
		eSSPE*	27	00	.0		1 Qt	ePZ	08	59	15.4
		USCGS H 04 52 14.5						esPZE			29.7
		15.9 S 168.2 E						USCGS H 08 47 06.9			
		New Hebrides Islands						51.4 N 179.8 W			
		depth about 244 km						Rat Islands, Aleutian Islands			
		Mag 6.3 (Ch)						depth about 29 km			
1	Qt	ePZ	06	54	34.0	1	Kr	ePZ	15	01	29
1	Wr	ePZ	07	53	23.0		Qt	iPZ	02	13	.7c
	Qt	iPZ	54	15	.9c			eSE*	03	10	.0
		USCGS H 07 42 07.4					Lh	ePZ			21
		51.2 N 180.0 W					Wr	ePZ			25.0
		Rat Islands, Aleutian Islands					Ch	ePZ	06	21	
		depth about 33 km						ePPZ			55
1	Ch	ePZ	08	02	30			eSNE	10	41	
		epPZ			38			eLN	11	58	
		ePoPZ			47			H 15 01 00.4			
		eSN	11	48				25.8 N 65.4 E			
		eScSNE	12	29				Near Mekran coast West Pakistan			
Wr		iPZ	02	43	.6c			depth about 33 km			
Lh		ePZ			47			Felt Ormara, Lasbela			
Qt		iPZ	03	15	.4c			USCGS H 15 01 04.6			
		ePcPZZ*			23.5			25.8 N 65.3 E			
		epPZ			27.5			Near coast of West Pakistan			
		esPZ			35.0			depth about 46 km			
		ePPZ	06	15	.5	1	Qt	iPZ	19	24	17.2c

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		iSN*	27	22	.0			79.0 N 2.7 E			
	Wr	iPZ	24	46	.0			Svalbard region			
	Kr	ePZ			49			depth about 19 km			
	Lh	ePZ	25	19	c	2	Ch	ePZ	03	13	52
	Ch	iPZ	28	04	c			ePcPZ			14 09
		eSN	34	04			Qt	iPZ			38.9c
		H 19 20 28.0						Mu Sec			
		36.0 N 50.0 E						PZ 0.1 1.2			
		North West Iran						$\Delta = 80^\circ.4$			
		depth about 33 km						USCGS H 03 02 29.3			
		USCGS H 19 20 38.5						51.3 N 179.8 W			
		35.6 N 50.0 E						Rat Islands, Aleutian Islands			
		North West Iran						depth about 26 km			
		depth about 33 km						Mag 5.6 (Qt)			
		Mag 7 $\frac{1}{4}$ (Pas), 7 $\frac{3}{4}$ (Berk), 7 (Pal)				2	Wr	iPZ	04	02	33.2
								iSZ			03 01.5
1	Qt	ePZ	20	31	11.1		Qt	ePZ			36.0
	Lh	ePZ			32 22			eSE			04 52.5
	Ch	ePZ			35 05			H 04 01 56			
		USCGS H 20 27 37.2						Hindukush region			
		35.3 N 49.6 E						ePZ	04	41	00.4
		North West Iran				2	Wr	ePZ			33.4
		depth about 33 km					Qt	ePZ	04	44	56.5
1	Qt	ePZ	21	20	18.0	2	Qt	ePZ			52 27.5
1	Qt	ePZ	21	53	23.6			e(S)			05 39 32
		eXNE			54 50 5	2	Ch	ePZ			41 39.0
	Wr	ePZ			53 51.4		Wr	ePZ			42 12.5
1	Qt	ePZ	22	17	06.6		Qt	ePZ			
1	Qt	ePZ	23	13	42.5			USCGS H 05 33 05.4			
1	Wr	ePZ	23	36	41.8			27.5 N 127.0 E			
		eSZ			37 14.2			Ryukyu Islands			
	Qt	ePZ			31.8			depth about 58 km			
		eSE			38 43.5	2	Qt	iPZ	07	15	44.5d
		H 23 35 58.1						esPZ			55.8
		Hindukush region						ePPZ			59.9
1	Qt	ePZ	23	53	03.5			Mu Sec			
		USCGS H 23 43 24.9						PZ 0.06 1.2			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		epPZ			11.0			21.2 S 174.5 W			
		esPZ			17.0			Tonga Islands region			
		ePPZ			28.5			depth about 110 km			
		eSN*	08	05	.0	6	Ch	ePZ	11	18	50
Wr		iPZ	04	19	.3c		Wr	ePZ	21	23	.0
Kr		ePZ			38		Qt	ePZ			36.8
Lh		ePZ			44			USCGS H 11 10 50.3			
	USCGS H		22	59	19.4			4.0 S 126.4 E			
			39.9 N		44.2 E			Ceram Sea			
			Turkey-Armenia, S.S.R. border					depth about 33 km			
			depth about 33 km				6	Qt	ePZ	11	55 12.0
5	Qt	ePZ	02	16	58.0		Wr	ePZ			25.8
	Wr	ePZ			17 09.8	6	Wr	iPZ	13	09	58.6d
5	Wr	iPZ	06	15	07.4d			iSZ			10 30.9
		iSZ			40.7		Qt	ePZ			48±
	Qt	iPZ			16 06.4d			iSE			12 11.1
		iSNE			17 26.4			H 13 09 17			
		Mu			Sec			Hindukush region			
	PZ	0.03			0.6	6	Wr	iPgZ	13	45	30.8d
		$\Delta=7^{\circ}.1$						iSgZ			41.3
	H	06 14 23					Qt	ePZ			46 37.5
		Hindukush region						eSN			47 48.0
		depth about 160 km						H 13 45 15			
		Mag 4.7 (Qt)						Hindukush region			
5	Qt	ePZ	10	56	09.7	6	Qt	ePZ	17	08	05.5
5	Wr	ePZ	11	28	33.0	6	Qt	ePZ	17	48	47.0
	Qt	ePZ			50.2			USCGS H 17 38 41.4			
			USCGS H	11 17 06.7				34.5 N 139.7 E			
			3.3 S	139.9 E				Near coast of Honshu			
			New Guinea					Japan			
			depth about 110 km					depth about 33 km			
5	Qt	ePZ	11	47	02.2	6	Qt	ePZ	18	10	43.5
6	Qt	ePZ	07	34	00.6	6	Qt	ePKPZ	18	25	12.0
6	Qt	ePKPZ	11	07	50.5			USCGS H 18 06 22.9			
		eXZ			08 00.5			31.8 S 178.8W			
			USCGS H	10 49 00.7				Kermadec Islands region			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
								depth about 81 km			
7	Qt	ePZ	00	23	55.7			34.0 N 139.3 E			
7	Wr	iPZ	01	20	30.2d			Near east coast of Honshu,			
		iSZ			21 02.5			Japan			
	Qt	ePZ			30.1	7	Qt	ePZ	12	20	25.0
		eSNE			22 49.2			depth about 33 km			
		H 01 19 48						USCGS H 12 11 08.4			
		Hindukush region						34.5 N 134.8 E			
7	Qt	ePZ	06	37	05.8			Near Northeast coast of			
7	Qt	ePZ	07	17	48.0			Shikoku Japan			
		USCGS H 07 07 27.8						depth about 33 km			
		3.2 S 128.0 E				7	Wr	ePZ	12	30	33.6
		Ceram Sea						eSZ			31 11.0
		depth about 216 km					Qt	ePZ			49±
7	Qt	ePZ	07	31	23.0			eSE			33 11.5
		eXZ			33 57.5			H 12 29 45			
	Wr	ePZ			31 49.3			Hindukush region			
7	Ch	ePZ	07	50	07c	7	Qt	ePZ	17	50	17.4d
		epPZ			49	7	Wr	ePZ	18	03	00.5
		ePcPZ			51 43			eSZ			28.1
		ePPZ			55		Qt	ePZ			04 02.5
	Lh	ePZ			52 13			eSE			05 21.5
	Wr	ePZ			35.4			H 18 02 22			
	Qt	iPZ			49.2c			Hindukush region			
		epPZ			53 32.5	7	Wr	iPZ	21	21	36.7d
		eSE			08 01 47.0			SN			22 08.4
		Mu			Sec			ePZ			16
		PZ 0.1			1.3			eSNE			23 21
		$\Delta=70^{\circ}.4$					Qt	iPZ			22 33.0d
		USCGS H 07 41 51.0						iSE			23 50.5
		6.3 S 130.0						Mu			Seo
		Banda Sea						PZ 0.03			0.5
		depth about 180 km						$\Delta=6^{\circ}.9$			
		Mag 5.4 (Qt)						H 21 20 53			
7	Qt	ePZ	12	13	36.5			36.3 N 70.7 E			
		USCGS H 12 03 31.1						Hindukush			
								depth about 250 km			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		Mag 4.8 (Qt)						epPZ			15.6
7	Qt	iPZ	23	55	48.8d			ePcPZ			45 04.5
8	Qt	ePZ	04	32	28.5			USCGS H 01 34 38.5			
8	Qt	ePZ	10	26	09.5			10.3 N 121.4 E			
		ePPZ		27	54.5			Near coast of Panay			
		Mu						Philippine Islands			
		MH 1.0			20			depth about 58 km			
		$\Delta = 44^\circ.0$									
		USCGS H 10 17 57.7									
		73.7 N 53.8 E									
		Novaya Zemlya									
		depth about 0 km									
		Mag 4.4 (Pal), 5.3 (Qt)									
8	Qt	ePZ	13	51	00.5d	9	Qt	ePKPZ	03	41	11.2
8	Qt	ePZ	18	16	36.9			USCGS H 03 21 55.5			
		e(S)E		18	30.5			15 6 S 73 3 W			
8	Wr	ePZ	20	19	24.9			Peru			
		eSZ		20	05.1			depth about 98 km			
	Qt	iPZ			29.5d						
		iSE		22	01.6						
		Mu									
		PZ 0.01			0.8						
		$\Delta = 8^\circ.3$									
		H 20 18 30									
		Hindukush region									
		depth about 160 km									
		Mag 4.1 (Qt)									
8	Wr	ePZ	22	17	38.4						
		iSZ		18	14.0						
	Qt	ePZ			42.0						
		eSE		20	02.2						
		H 22 16 55									
		Hindukush region									
9	Qt	ePZ	00	41	38.2						
9	Wr	iPZ	01	43	39.3d						
	Qt	ePZ		44	01.7d						

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		epPZ									
		USCGS H 09 36 24.3									
		35.0 N 27.1 E									
		Dodecanese Islands									
		depth about 33 km									
		Mag 5.6 (Qt)									
10	Qt	ePZ	14	02	59.2						
		USCGS H 13 50 48.7									
		21.2 N 179.7 E									
		Rat Islands, Aleutian Islands									
		depth about 62 km									
10	Qt	ePZ	15	58	18.3						
10	Wr	ePKPZ	16	01	29.6						
	Qt	iPKPZ			41.5d						
		ePPZ		03	19.0						
		epPKPZ		04	20.0						
		ePKSE		05	14.5						
		eSKSN		07	45.5						
		eSKKSN*		08	38.0						
		opSKSN*		10	20.5						
		eSKSPE		11	51.1						
		esSKSE*		12	09.0						
		ePSE*		13	28.0						
		eSSN*		18	44.0						
		USCGS H 15 43 59.4									
		21.1 S 179.2 W									
		Fiji Islands									
		depth about 640 km									
		Mag 6.1 (Pas)									
10	Qt	ePZ	17	22	13.8d						
		USCGS H 17 10 12.2									
		51.3 N 179.1 E									
		Rat Islands, Aleutian Islands									
		depth about 60 km									
10	Qt	ePZ	18	08	15.0c						
		USCGS H 17 49 16.1									

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Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		e(S)NE	51	12	.7			eSE	10	27	.0
11	Qt	ePZ	07	41	31.5			USCGS H 17 51 11.1			
11	Wr	ePZ	07	49	45.8			26.9 N 142.7 E			
	Qt	ePZ	50	44	.5			Bonin Islands region			
11	Qt	iPZ	11	18	42.0d			depth about 33 km			
		ePPZ	59	.5		11	Ch	ePZ	22	02	06
		eSE*	21	46	.0			ePPZ	50		
		Mu Sec					Qt	ePZ	05	05	.1
	PZ	0.06	1.6					USCGS H 21 56 22.4			
		$\Delta=16^{\circ}.7$						23.8 N 121.3 E			
	Wr	ePZ	19	10	.6			Formosa			
	Lh	ePZ	50					depth about 33 km			
	Ch	ePZ	22	27		11	Wr	ePZ	23	42	39.8
		H 11 14 49					Lh	ePZ	43	12	
		34.7 N 48.1 E					Qt	ePZ	46	.0	
		Northwest Iran						ePPZ	44	02	.0
		depth about 33 km						ePPPZ	07	.0	
		Mag 5.0 (Qt)						eSE	46	08	.1
11	Qt	ePZ	13	50	34.7			eSSN	24	.5	
11	Qt	ePZ	16	13	44.0			Mu Sec			
11	Wr	iPZ	17	12	06.6d			PZ 0.04	1.0		
		iSZ	39	.0				$\Delta=13^{\circ}.0$			
	Qt	iPZ	13	09	.7d		Ch	ePZ	45	50	
		iSNE	14	31	.0			H 23 40 44			
		Mu Sec						42.1 N 73.6 E			
		PZ 0.1	0.5					Kirgiz S. S. R.			
		$\Delta=7^{\circ}.2$						depth about 96 km			
		H 17 11 24						USCGS H 23 40 49.6			
		Hindukush region						40.9 N 75.6 E			
		depth about 250 km						Kirgiz S. S. R-Sinkiang,			
		Mag 5.3 (Qt)						China border			
11	Ch	ePZ	17	59	36			depth about 95 km			
	Lh	ePZ	18	01	18			Mag 5.1 (Qt)			
	Wr	ePZ	23	.0		12	Qt	ePZ	02	19	29.6
	Qt	ePZ	54	.5c			Wr	ePZ	58	.0	
		epPZ	02	05	.0	12	Qt	ePZ	05	02	48.9



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Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		USCGS H 04 50 14.3						USCGS H 20 57 00.4			
		7.0 S 12.4 W						36.5 N 69.2 E			
		Ascension Island region						Hindukush			
		depth about 33 km						depth about 150 km			
12	Wr	ePZ	05	55	08.6			Mag 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (Pas), 6 (Pal), 6.7 (Ch),			
	Qt	ePZ	56	15	.5	12	Wr	ePZ	23	37	54.9
12	Wr	ePZ	06	25	54.0			eSZ	38	28	.1
	Qt	ePZ	26	35	.1	12	Wr	ePZ	23	52	03.9
12	Wr	iPZ	08	07	29.5			eSZ	42	.7	
		eSZ	08	03	.2	13	Wr	ePZ	00	26	12.3
12	Ch	ePZ	18	28	38			eSZ	42	.9	
		epPZ	48			13	Wr	ePZ	00	55	59.4d
	Wr	ePZ	30	46	.8			eSZ	56	40	.0
	Qt	ePZ	31	03	.5	13	Wr	ePZ	01	40	21.2
		epPZ	14	.0		13	Wr	ePZ	03	30	27.0
		USCGS H 18 18 42.9					Qt	ePZ	31	55	.0
		4.4 S 145.4 E				13	Qt	ePZ	06	56	21.5
		Near north coast of New Guinea					Wr	ePZ	57	26	.1
		depth about 32 km				13	Wr	ePZ	08	18	13.9
12	Wr	ePZ	20	57	50.0		Qt	ePZ	49	.5	
	Qt	ePZ	58	33	.0			USCGS H 08 07 49.2			
		ePPZ	45	.6				47.7 N 157.0 E			
		eSN*	59	43	.0			Kurile Islands			
	Lh	ePZ	58	35				depth about 31 km			
	Ch	iPZ	21	02	13c	13	Wr	ePZ	12	46	47.0
		ipPZ	25					eSZ	47	28	.1
		isPZ	30				Qt	ePZ	30	.9	
		ePPZ	55					eSNE	48	46	.0
		iSNE	06	33				Mu Sec			
		Mu Sec						PZ 0.05	0.5		
		PZ 2.5	1.5					$\Delta=6^{\circ}.6$			
		$\Delta=24^{\circ}$						H 12 45 54			
		H 20 56 57						East Afghanistan			
		36.0 N 69.0 E						Mag 4.5 (Qt)			
		Hindukush				14	Qt	ePZ	01	14	29.6
		depth about 200 km				14	Wr	ePZ	06	30	43.4

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Date	Station	Phase	h m s	Date	Station	Phase	h m s
14	Qt	ePZ	31 50.4			iSZ	51.5
	Wr	ePZ	11 44 16.0	14	Qt	ePZ	26 36 ±
		eSZ	59.4			eS	27 50.7
	Qt	ePZ	45 22.4			H 04 24 51	
		eSNE	47 01.1			Hindukush region	
		Mu	Sec	15	Qt	eLZ*N*E*	08 25.0
	PZ	0.01	0.7			USCGS H 08 02 13.9	
		△=8°.8				74.4 N 51.5 E	
		Mag 4.1 (Qt)				Novaya Zemlya	
14	Wr	ePZ	13 17 16.0			depth about 0 km	
		eSZ	53.3	15	Qt	ePZ	13 16 35.0
	Qt	ePZ	18 06 ±	15	Lh	ePZ	12 35 22
		e(S)	19 36.5			iSE	41
14	Qt	ePKPZ	17 41 23.5 e		Wr	ePZ	58.8
		USCGS H 17 23 13.4			Qt	ePZ	36 48.3
		26.6 S 178.5 W				eSNE	38 17.0
		South of Fiji Islands				H 12 34 55	
		depth about 449 km				32.3 N 75.7 E	
14	Qt	ePKPZ	18 36 05.6			Kashmir	
		USCGS H 18 17 52.1		15	Wr	ePZ	15 53 46.9
		19.9 S 177.6 W				eSZ	54 07.6
		Fiji Islands				Qt	37 ±
		depth about 350 km		15	Qt	ePZ	18 12 42.5
14	Wr	ePZ	19 21 33.2			eSNE	14 03.0
	Qt	ePZ	22 39.3	15	Qt	ePZ	20 43 39.4
14	Wr	ePZ	20 42 18.1	15	Ch	ePZ	23 00 34
	Qt	ePZ	43 11.2			epPZ	48
		eSNE	44 38.3			ePcPZ	01 21
		H 20 41 19				ePPZ	02 44
		Hindukush region				eSNE	08 27
15	Qt	ePZ	01 06 50.5			esSN	46
		USCGS H 00 55 41.0				Mu	Sec
		13.3 N 141.9 E				PPZ 0.4	2.1
		Mariana Islands				△=57°.5	
		depth about 45 km			Lh	ePZ	01 08
15	Wr	iPZ	04 25 25.6d			eSNE	09 37



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Date	Station	Phase	h m s	Date	Station	Phase	h m s
	Wr	iPZ	01 10.6d			74.2 N 51.6 E	
		eSN	09 33.2			Novaya Zemlya	
	Qt	ePZ	01 45.2d			depth about 0 km	
		epPZ	54.5			Mag 4 $\frac{3}{4}$ -5 (Pal)	
		esPZ	59.0	16	Qt	ePZ	12 05 21.0
		ePcPZ	02 02.5		Wr	ePZ	58.9
		ePPZ	04 08.0	16	Wr	ePZ	15 52 38.2
		ePPPZ	05 53.0			eSZ	53 10.0
		eSN*	10 41.0		Qt	ePZ	30.5
		esSN	56.0			eSNE	55 07.0
		eSSN*	14 58.0			H 15 51 26	
		ePKPPKPZ	29 48.0			Hindukush region	
		Mu	Sec	16	Ch	ePZ	19 08 02
	PZ	0.5	1.8			eSE	09 12
	PH	0.3	2.0		Lh	ePZ	11 53
	SH	0.4	2.5			eSNE	15 45
	MH	35.0	20		Wr	ePZ	12 08.2
		△=68°.0				eSN	16 33.4
	Kr	ePZ	02 06		Qt	ePZ	12 22.0
		USCGS H 22 50 46.3				epPZ	34.5
		48.5 N 156.8 E				eSN	17 05.0
		Kurile Island				USCGS H 19 06 29.2	
		depth about 33 km				16.7 N 94.2 E	
		Mag 6 $\frac{1}{2}$ (Pas) 6 (Pal) 6.3, (Ch), 6.4 (Qt)				Near coast of Burma	
16	Qt	ePKPZ	03 24 32.0			depth about 33 km	
		USCGS H 03 05 33.0		16	Lh	ePZ	22 53 19
		19.3 N 103.1 W			Wr	ePZ	38.6
		Jalisco, Mexico			Qt	ePZ	54 10.0d
		depth about 100 km				epPZ	20.0
		Mag 4 $\frac{3}{4}$ -5 (Pal)				USCGS H 22 45 10.8	
16	Wr	ePZ	04 32 04.2			22.8 N 123.5 E	
		eSZ	47.9			Near coast of Formosa	
	Qt	ePZ	48.0			depth about 33 km	
16	Qt	ePZ	09 54 13.5	17	Wr	ePZ	01 21 42.1
16	Qt	eLZ*N*E*	11 12.0		Qt	ePZ	22 12.0
		USCGS H 10 59 10.5				USCGS H 01 10 18.7	

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Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	64.3 N 149.3 W Alaska depth about 63 km							ePKSEN* Mu Sac PPZ 0.3 2.5 $\Delta = 130^\circ.0$			51 41.0
17	Qt	ePZ	01	50	25.5						
17	Wr	ePZ	08	03	51.8		Kr	ePKPZ			48 24
		iSZ	04	22	6		Ch	ePKPZ			59
	Qt	ePZ			47.0			epPKPZ			49 06
		eSNE	06	04	5			ePKP ₂			21
	H 08 03 07 Hindukush region							ePPZ			52 44
17	Qt	ePZ	08	24	07.1		USCGS H	00 29 05.2			
		eSNE			25 24.6		7.5 N 82.3 W				
17	Wr	iPZ	10	12	31.3c		South of Panama				
		iSZ	13	03	5		depth about 33 km				
	Qt	ePZ			28.5		Mag 7 (Pas), 7 (Berk) 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (Pal), 6.2 (Qt)				
		eSNE	14	49	0	18	Qt	ePZ			04 23 01.6
	H 10 11 46 Hindukush region					18	Wr	iPZ			05 23 53.5c
17	Qt	ePZ	16	40	03.1			iSN			24 31.0
		ePPZ			41 26.7		Qt	ePZ			38.2
	USCGS H 16 31 17.9 23.5 N 121.7 E Off east coast of Formosa depth about 33 km							eSNE			25 52.0
17	Wr	ePKPZ	18	13	17.4		H 05 23 03 Hindukush region				
	Qt	ePKPZ			29.5	18	Lh	ePZ			06 20 15
		ePPZ			15 56.0		Wr	ePZ			37.0
	USCGS H 17 55 45.4 21.0 S 179.1 W Fiji Islands depth about 601 km						Kr	ePZ			45 \pm
18	Wr	ePKPZ	00	48	19.5		Qt	ePZ			50.5
		ePPZ			51 52.6			USCGS H 06 10 26.3			
	Qt	ePKPZ	43	17	5			2.3 N 126.9 E			
		epPKPZ			30.5			Molucca Passage			
		ePPZZ*	50	40	0			depth about 33 km			
						18	Qt	ePZ			06 27 47.5
								eSNE			28 20.0
							Wr	ePZ			23.3
						18	Qt	ePZ			10 36 43.5
							Wr	ePZ			37 38.7
						18	Wr	ePZ			12 24 44.0

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Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Qt	ePZ			25 15.0		Kr	ePZ			32 21 \pm
	USCGS H 12 19 44.3 26.4 N 96.6 E Northern Burma depth about 76 km						Wr	ePZ			53.4
18	Qt	ePKPZ	20	30	13.2		Lh	ePZ			33 19
	USCGS H 20 11 47.5 21.0 S 169.9 E New Hebrides Islands depth about 81 km						H 07 28 40 29.5 N 50.0 E Western Iran depth about 50 km				
19	Lh	ePZ	00	41	53		USCGS H 07 28 43.2 29.9 N 50.4 E Western Iran depth about 66 km				
	Wr	ePZ			59.6		Mag 4.4 (Qt)				
	Qt	ePZ	15	37	6d	19	Lh	ePZ			07 59 05
	USCGS H 00 06 58.7 42.0 N 132.9 E Sea of Japan depth about 436 km						Wr	iPZ			21.7c
19	Qt	ePZ	01	34	56.0		Qt	iPZ			46.3c
		epPZ			35 05.5			epPZ			08 00 00.3
	USCGS H 01 22 35.5 52.3 N 173.4 W Andreanof Islands, Aleutian Islands depth about 33 km						USCGS H 07 48 35.2 11.5 N 141.0 E Mariana Islands region depth about 61 km				
19	Qt	ePKPZ	02	01	28.5			ePZ			11 31 40.4
	USCGS H 01 42 15.1 7.6 N 81.8 W South of Panama depth about 33 km							eSZ			32 06.6
19	Wr	ePZ	04	53	37.3		Qt	ePZ			43.5
		iSN			54 12.1			eSNE			33 56.5
	Qt	ePZ			53 47.9		H 11 31 07 Hindukush region				
19	Qt	ePZ	07	32	04.7		19	Qt	ePZ		14 18 47.9
		eSN*E*			34 41.0			Wr	ePZ		19 01.0
		Mu Sec					19	Wr	ePZ		18 17 12.5
	PZ 0.02 0.8 $\Delta = 14^\circ.5$						Qt	ePZ			21.1
							USCGS H 18 06 44.4 9.9 S 120.5 E Soemba Islands depth about 34 km				
						20	Qt	ePZ			06 26 04.4c
							USCGS H 06 16 30.4				

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
20	Qt	30.3 N 132.3 E Ryukyu Islands depth about 59 km ePZ	13	12	23.6	21	Qt	depth about 33 km ePKPZ	09	01	54.3 c
		e(S)N*	14	40	0			USCGS H 08 44 11.0			
	Wr	ePZ	12	46	3			21.2 S 170.0 W Tonga Islands region depth about 624 km			
20	Wr	ePZ	16	50	02.5	21	Qt	ePZ	09	20	56.0 d
	Qt	ePZ	18	8				USCGS H 09 08 45.7			
		USCGS H 16 38 24.6						51.4 N 178.3 W Andreasnof Islands, Aleutian Islands depth about 33 km			
		4.7 S 139.4 E West New Guinea depth about 33 km				21	Wr	ePZ	11	58	09.3
20	Qt	ePZ	17	04	42.5		Qt	ePZ			24 ±
20	Qt	ePZ	17	19	48.5	21	Wr	iPZ	16	29	08.6 c
20	Qt	ePZ	18	12	15.0			ISZ			41.3
20	Qt	ePZ	23	44	20.0		Qt	iPZ	30	03	0 c
21	Qt	ePZ	01	06	34.0			iSN	31	19	0
		USCGS H 00 56 41.6						Mu Sec			
		8.0 N 126.4 E Near east coast of Mindanao depth about 146 km						PZ 0.01 0.5			
21	Qt	ePZ	01	43	47.7 c			$\Delta=6^{\circ}.8$ H 16 28 25 Hindukush region depth about 160 km Mag 4.3 (Qt)			
		e(S)NN*	44	24	0	21	Qt	ePZ	17	13	56.0
	Wr	ePZ	02	±		21	Qt	ePZ	19	24	28.0
	Lh	ePZ	16	±			Wr	ePZ	25	15	7
21	Wr	ePZ	21	69	54.7	21	Qt	ePKPZ	22	58	15.0
		eSZ	02	00	21.4		Wr	ePKPZ			18.0
	Qt	ePZ	51	5				USCGS H 22 38 51.7			
		eSE	01	04	4			57.7 S 64.1 W Drake Passage depth about 51 km			
21	Qt	ePZ	05	16	51.5	22	Qt	ePZ	03	50	46.0 d
		USCGS H 05 04 28.6						epPZ			58.0
		51.4 N 178.0 W Andreasnof Islands, Aleutian Islands						USCGS H 03 38 29.9			



Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		51.1 N 177.9 E Rat Islands, Aleutian Islands depth about 33 km				22	Qt	ePZ	09	59	27.5
22	Qt	ePZ	04	45	12.5	22	Wr	ePZ	12	40	45.4
22	Ch	iPZ	06	53	02 d		Qt	ePZ			41 13.0
	Wr	iPZ	56	39	1 d	22	Qt	ePZ	15	27	00.0
		iSN	07	00	50.8	22	Qt	ePZ	16	03	31.5
	Qt	iPZ	06	57	10.6 d			USCGS H 16 02 40.2			
		epPZ	20	0				2.5 S 126.9 E Ceram Sea depth about 78 km			
		ePPZ*	54	0		22	Qt	ePZ	18	11	13.0
		iSN*	07	01	45.0			USCGS H 18 00 57.7			
		esSN	02	00	5			41.1 N 142.8 E Off south coast of Hokkaido Japan depth about 59 km			
		eSSN*	57	0		23	Qt	ePZ	02	38	26.0 c
		Mu Sec						eSNE			40.0
		PZ 0.22 1.0						about 75 miles northeast of Quetta			
		$\Delta=27^{\circ}.3$ H 06 51 27				23	Wr	iPZ	09	19	32.3
		26.2 N 97.4 E Northern Burma depth about 33 km						eSZ	20	05	6
		USCGS H 06 51 32.3					Qt	ePE			34.5
		26.5 N 97.0 Northern Burma depth about 33 km				24	Qt	ePE	00	51	07 ±
		Mag 6.1 (Qt)				24	Lh	ePZ	03	29	57
22	Qt	iPZ	08	08	04.0 d		Qt	ePE	30	44	5
		eSE	09	14	2		Ch	ePZ	31	51	
		Mu Sec						USCGS H 03 26 38.8			
		PZ 0.04 0.7						44.3 N 80.6 E Kazakh, S.S.R. depth about 33 km			
		$\Delta=6^{\circ}.2$ USCGS H 08 06 28.2				24	Ch	ePZ	05	35	16
		36.4 N 69.0 E Hindukush depth about 33 km						ePPN			36 21
22	Qt	ePZ	08	59	22.8			ePcPZ			37 51
		Mag 4.8 (Qt)					Wr	ePZ	38	04	4
							Qt	ePE			26.9
								USCGS H 05 28 26.5			

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Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
24	Qt	9.2 N 126.6 E Off east coast of Mindanao P.I. depth about 33 km ePE	09	33	11.0	24	Qt	USCGS H 15 15 04.3 36.4 N 70.9 E Hindukush depth about 216 km ePE	23	22	45±
24	Qt	USCGS H 09 23 16.5 35.9 N 139.6 E Central Honshu, Japan depth about 83 km ePE	11	11	34.5	24	Qt	ePE	23	50	25.0
24	Ch	ePZ	14	47	07.0	25	Qt	ePE	00	15	27±
		ePcPZ	48	18		25	Qt	ePKPE	00	41	12.5
		ePPZ	52					USCGS H 00 21 14.6 55.6 S 124.3 W South Pacific Ocean depth about 67 km ePZ	10	32	15.7d
	Lh	eSN	54	18		25	Ch	USCGS H 10 22 45.1 32.9 N 137.8 E South of Honshu Island Japan depth about 325 km ePZ	14	58	14
	Wr	ePZ	48	01			Wr	ePZ	15	00	27.6
	Qt	iPZ	06	00			Qt	ePZ	51	00	51.90
		ePE	43	00				USCGS H 14 49 46.9 11.7 N 138.6 E Mariana Islands depth about 33 km ePZ	17	32	06±
		eSN*	57	07	00	25	Qt	ePZ	17	43	08.5
		Mu						USCGS H 17 27 03.0 3.6 S 128.3 E Ceram Island region depth about 33 km ePZ	20	20	33.3
		Sec							21	32	5
		MH 4.0	20						21	55	43.4d
		$\Delta = 62^\circ.6$							56	07	1
		USCGS H 14 38 21.7 42.8 N 145.3 E Near east coast of Hokkaido Japan depth about 33 km Mag 5.9 (Qt) iPZ	15	15	47.0d						
		iSZ	16	17	00						
	Lh	ePZ	27								
		eSE	17	29							
	Qt	ePE	16	45	7						
		eSE	18	03	9						
		H 15 15 06 36.0 N 70.8 E Hindukush depth about 200 km									

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Qt	ePZ			31.3			iSZ			59 0
		eSN			57 37.5		Qt	ePZ			09 33±
26	Qt	ePZ	03	04	18.7			eSN			10 52.0
		USCGS H 02 53 29.9 46.5 N 153.0 E Kurile Islands depth about 51 km iPZ	05	23	42.7d	27	Qt	ePZ			07 05 50.0
		iSZ	24	09	8	27	Qt	eLN*			08 25.0
		Mu						Mu		Sec	
		PZ 0.2	1.2					MH 4.5		20	
		$\Delta = 2^\circ.3$						$\Delta = 45^\circ.0$			
	Wr	ePZ			20.6			USCGS H 08 03 16.4 74.3 N 52.4 E Novaya Zemlya depth about 0 km Mag 5½-5½ (Pal), 5.6 (Qt) ePZ			09 26 48
		depth about 33 km Mag 3.0 (Qt)						Lh			27 47
	Ch	ePZ	10	49	51			Wr			52.8c
		e(S)E	50	41				Qt			28 29.8c
	Wr	ePZ	52	16	8						35.5
	Qt	ePZ	53	17	5						48.0
		ePKPZ	13	03	47.6d			USCGS H 09 18 24.9 42.3 N 142.3 E Hokkaido, Japan depth about 47 km ePZ			13 02 10
		USCGS H 12 44 48.9 27.5 S 176.4 W Kermadec Islands depth about 33 km ePZ	13	35	02.8			epPZ			44
	Wr	ePZ			29.5			ePPZ			03 12
	Qt	ePZ						eSNE			06 54
		USCGS H 13 24 30.1 18.7 N 145.4 E Mariana Islands region depth about 201 km ePZ	13	43	29.9			Lh			04 28
	Ch	ePZ	46	48	0			Kr			36d
	Wr	ePZ	47	22	0			Wr			54.8d
	Qt	ePZ	16	35	44.0			Qt			57.6d
		ePZ	21	38	55.5						14 36.0
	Qt	ePZ	03	08	28,7			USCGS H 12 56 18.6 4.6 S 104.4 E Southern Sumatra depth about 144 km			
	Wr	ePZ									

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
27	Ch	ePZ	13	13	46	28	Ch	ePZ	11	18	32
		epPZ			57			ePPZ			41
		ePPZ			14			eSE			20 00
	Qt	ePZ			16 52.8		Wr	eSS			12
		USCGS H 13 07 57.8					Qt	ePZ			21 13.0
		18.6 N 121.8 E					Qt	ePZ			53.0
		Near north coast of Luzon, P.I.						H 11 16 37			
		depth about 30 km						29.5 N 95.0 E			
27	Qt	ePKPZ	13	42	57.3			India-Tibet border			
		USCGS H 13 25 05.6						depth about 100 km			
		17.6 S 178.9 W				28	Qt	ePZ	12	18	16.5
		Fiji Islands				28	Wr	iPZ	16	17	44.5d
		depth about 507 km						iSZ	18	10.4	
27	Ch	ePZ	15	51	04		Lh	ePZ			26
	Wr	ePZ			54 57.4			eSN			19 23
	Qt	ePZ			55 26.1		Qt	ePZ			18 48.3
27	Qt	ePZ	16	32	49.0			iSNE			20 05.8
27	Ch	ePZ	18	37	30			H 16 17 09			
	Wr	ePZ			39 18.1			36.0 N 71.1 E			
	Qt	ePZ			35.0			Hindukush			
		USCGS H 18 26 52.5						depth about 160 km			
		4.0 S 151.2 E				28	Wr	ePKPZ	19	15	04.9
		New Ireland region					Qt	ePKPZ			06.5c
		depth about 51 km						ePPZ			17 16.5
28	Qt	ePZ	05	26	48.4			ePKSNE			18 21.0
		USCGS H 05 16 20.7					Cn	ePKPZ			15 48
		44.0 N 149.6 E						ePPZ			19 17
		Kurile Islands region						USCGS H 18 56 08.7			
		depth about 33 km						5.2 N 76.2 W			
28	Qt	ePZ	05	46	49.0			Western Colombia			
		USCGS H 05 34 21.1						depth about 127 km			
		55.0 N 160.7 W				29	Qt	ePZ	06	56	02.2
		Alaska Peninsula						eSNE			57 35.0
		depth about 89 km						Mu Sec			
28	Wr	ePZ	06	21	46.1			PZ 0.06 1.0			
	Qt	ePZ			47.7			$\Delta = 8^{\circ}.2$			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Kr	ePZ	56	10							
		eSE			57 38						
	Wr	ePZ			08.9						
		H 06 54 02									
		28.8 N 57.4 E									
		Southern Iran									
		depth about 33 km									
		USCGS H 06 53 56.1									
		28.2 N 57.4 E									
		Southern Iran									
		depth about 50 km									
		Mag 5.3 (Qt)									
29	Wr	iPZ	09	52	57.8						
		eSZ			53 31.3						
	Qt	ePZ			53.1						
		eSNE			55 10.6						
		H 09 52 13									
		Hindukush region									
29	Qt	ePKPZ	15	35	55.0						
		iXZ*			36 07.0						
		ePPZ*			38 25.0						
		iPKSZZ*			48.0						
		ePPPZ*			41 53.0						
	Kr	ePKPZ			36 06						
	Wr	ePKPZ			06.9						
	Lh	ePKPZ			15						
	Ch	ePKPZ			41						
		iPKP ₂ Z			37 14						
		epPKPZ			38 53						
		epPKP ₂ Z			39 30						
		ePPZ			40 55						
		ePPPZ			44 45						
		USCGS H 15 17 47.7									
		27.0 S 63.6 W									
		Santiago Del Estero Province									
		Argentina									
		depth about 575 km									
29	Qt	ePZ	17	29	50.0						
		eSNE			31 31.0						
29	Qt	ePZ	19	26	29.0						
		eSN*			30 15.2						
30	Wr	iPZ	01	17	36.9d						
		iSZ			18 05.8						
	Qt	ePZ			38.1						
		eSNE			19 51.5						
		H 01 16 59									
		Hindukush region									
30	Wr	iPZ	06	06	05.5d						
		iSZ			51.1						
	Lh	ePZ			38						
	Qt	iPZ			07 15.5d						
		iSE			08 51.5						
		Mu Sec									
		PZ 0.02 0.5									
		$\Delta = 9^{\circ}.1$									
		H 06 05 05									
		37.8 N 72.8 E									
		Tadzhik, S.S.R.									
		depth about 160 km									
		USCGS H 6 04 54.9									
		38.4 N 73.1 E									
		Tadzhik, S.S.R.									
		depth about 33 km									
		Mag 4.6 (Qt)									
30	Lh	ePZ	06	54	51						
	Wr	iPZ			55 04.5c						
	Qt	iPZ			29.5c						
		USCGS H 06 44 00.4									
		13.5 N 146.2 E									
		Mariana Islands									
		depth about 94 km									
30	Lh	ePZ	11	00	32 c						

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Wr	ePZ			46.1						
	Qt	iPZ	01	02	.5e						
	USCGS H		10	48	10.3						
	5.2 S	152.7 E									
	New Britain region depth about 33 km										
30	Qt	ePZ	11	11	04.5						
	USCGS H		10	58	37.0						
	5.9 S	151.0 E									
	Near southern coast of New Britain Island depth about 50 km										
30	Qt	ePZ	20	12	43.9						
30	Ch	ePZ	22	03	12						
	Lh	ePZ	05	27							
	Wr	iPZ			49.9d						
	Qt	iPZ	06	17	.5						
	USCGS H		21	57	24.8						
	18.6 N	120.9 E									
	Near north coast of Luzon Philippine Islands depth about 51 km										
30	Qt	ePZ	23	25	04.0						

Date	Phase	h	m	s	Date	Phase	h	m	s	
	Quetta									
1	e(P)Z	05	21	26.6	6	eSE			47 17.5	
1	ePgZ	08	07	13.6		ePgZ	16	58	31.2	
	eSgNE			27.2	6	eSgE			40.9	
1	ePZ	17	58	40.1	6	ePZ	19	54	21.5	
	e(S)N			59 01.1	6	ePZ	22	09	27.7	
1	ePZ	22	04	34.9	7	eSNE			38.4	
2	ePZ	00	10	44.5		ePZ	05	55	34.5	
2	ePZ	01	52	41.0	7	eSE			56 03.3	
2	ePZ	21	22	09.5	8	ePZ	10	29	29.0	
	eSNE			27.0		ePZ	22	51	39.5	
3	ePZ	13	22	36.9	8	e(S)NE			57.3	
	eS			59.0		ePZ	23	56	48.3	
4	ePgZ	00	43	23.6	9	eSE			57 11.0	
	eSgZ			31.8		eXZ	17	34	11.0	
4	ePZ	08	42	29.7	10	e(S)NE			20.5	
5	eXZ	05	01	11.0		ePZ	09	31	39.3	
5	ePZ	06	43	30.0		ePZ			41.3	
	eSNE			54.3		eSN			32 16.5	
5	ePgZ	09	25	30.9	10	eSE			19.3	
	eSgNE			40.8		ePZ	10	06	22.8d	
5	ePZ	11	17	46.4	10	eSE			51.0	
5	ePgZ	15	08	20.8	10	ePZ	13	41	14.5±	
	eSgNE			30.5		e(P)Z	17	31	58.0	
6	ePZ	03	56	36.6	10	e(S)E			33 07.0	
	eSNE			58.5		ePgZ	18	54	12.5	
6	ePZ	04	31	40.0±	10	i(Sg)NE			25.5	
6	ePZ	05	14	40.0		ePgZ	20	14	45.1	
	eSE			15 20.5	10	iSgZNE			47.3	
6	ePZ	05	49	14.4		ePZ	23	46	02.7	
	eSNE			41.1	11	eSE			48 06.0	
6	ePZ	06	00	30.0±		ePZ	05	27	28.0	
	e(S)NE			41.6	11	eSN			28 02.0	
6	ePZ	13	57	00.9		ePZ	05	59	04.0	
	eSNE			23.0	11	eSE			22.0	
6	ePZ	16	46	55.5±		ePZ	09	50	39.0	
						e(S)N			54.9	

Minor Schoks

Date	Phase	h m s	Date	Phase	h m s
11	ePgZ	16 33 26.1		eSNEZ	35.3
	eSgZNE	27.5	20	ePZ	16 15 01.0
11	ePZ	22 25 37.5		eSNE	17.5
	eSE	56.0	21	ePZ	10 18 33.0±
11	eSgN	22 47 57.7		eSNE	59.0
13	eXZ	19 49 42.5	21	ePZ	17 07 41.0
15	ePgZ	02 08 06.0		eSNE	08 11.5
	eSgNE	12.5	22	ePZ	04 30 50 ±
15	eXZ	14 33 21.5	22	ePZ	12 14 06.5±
15	ePZ	15 54 37.3±		esN	27.5
	e(S)NE	55 36.5	22	ePZ	19 27 22.9c
	e(S)E	40.5	23	ePE	05 06 19.5
15	iPZ	16 27 00.5c	23	ePE	12 04 38.5
	eSN	06.5	23	ePgE	20 42 18.5
16	ePZ	20 24 40.3		eSgE	25.5
	e(S)NE	25 04.5	24	ePE	11 18 58 ±
17	ePgZ	06 32 05.5	24	ePE	11 30 16 ±
	eSgN	17.6	24	ePE	16 22 35.5
17	ePgZ	07 40 31.0	24	ePgE	21 22 42.1
	eSgNE	37.7		eSgE	53.4
17	ePgZ	10 58 23.5	24	eXE	21 24 40.0
	eSgNE	24.5	25	ePZ	21 10 40.5
17	ePZ	11 01 56.3	25	ePgZ	21 51 10.2
	eSNE	02 16.5		eSgNE	12.5
17	ePZ	20 56 25.5	26	ePZ	09 42 25.0±
18	ePgZ	02 05 35.0		eSNE	51.5
	eSgNE	41.0	27	ePZ	14 59 11.5
18	ePgZ	15 04 13.5		eSE	44.0
	eSgNE	20.0	27	ePZ	21 08 02.0
18	ePgZ	20 41 08.1		eSNE	27.0
	eSgNE	21.1	28	ePZ	06 13 01.0±
19	ePZ	00 49 48.0	28	ePZ	13 35 56.3
	eSNE	50 15.5		eXNEZ	36 08.8
19	ePgZ	01 47 01.1		eSE	29.5
	eSgNE	14.4		eXN	36.0
20	ePZ	11 26 14.8		eXE	40.3



Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
28	ePZ	16 15 47.0	12	ePZ	21 20 16.6
	eSNE	16 13.0	13	iPZ	18 25 25.2
28	e(P)Z	22 30 40.7		iSZ	55.5
29	ePgZ	15 04 53.5	13	ePZ	19 24 13.8
	eSgNE	55.4		eSZ	45.1
30	ePZ	18 02 28.2	13	ePZ	19 47 31.9
	eSNE	03 04.2		eSZ	48 01.2
30	ePgZ	19 26 42.0	14	ePZ	00 05 40.5
	eSgNE	50.5		eSZ	06 (9.1
30	ePgZ	22 36 07.0	14	ePZ	07 21 18.0
	eSgZNE	08.0		eSZ	53.6
	Warsak		14	ePZ	19 27 25.1
1	ePZ	05 08 56.4		eSZ	50.8
	eSN	16 06.3	16	ePZ	18 03 25.8
1	ePZ	10 21 51.2	16	ePZ	19 42 44.8
1	ePZ	20 41 46.1	17	ePZ	19 33 39.4
2	eSZ	05 43 37.7		eSZ	34 24.6
2	ePZ	07 52 42.2	19	ePZ	12 52 33.7
	ePZ	14 51 46.5	20	ePZ	09 45 01.1
2	eSZ	52 51.6	21	ePZ	15 15 19.6
	ePZ	21 36 51.3		iSZ	52.8
2	eSZ	37 16.6	24	ePZ	11 09 23.0
6	ePZ	07 09 48.0		eSZ	55.2
	eSZ	10 19.6	25	ePZ	00 14 40.6
6	ePgZ	08 26 22.9		iSZ	15 15.3
	iSgZ	33.3	25	iPZ	21 21 06.0
6	ePgZ	14 37 34.6		iSZ	44.7
	eSgZ	44.9	26	ePZ	11 16 23.5
7	ePZ	01 02 35.7		eSZ	49.0
7	ePZ	08 01 22.1	26	ePZ	12 37 17.5
10	ePZ	14 17 50.2		iSZ	55.1
11	ePZ	05 27 08.3	27	ePZ	08 14 39.4
	eSZ	55.5	28	ePZ	15 18 28.5
12	ePgZ	00 16 29.2	29	ePZ	08 25 22.1
	iSgZ	36.1	30	ePZ	20 55 29.2



Date	Phase	h m s	Date	Phase	h m s
	Lahore		16	ePgZ	09 50 50
3	eSN	11 01 20		eSgNE	55
10	ePZ	21 44 13	17	ePgZN	09 29 13
	eSN	41		eSgZN	20
14	ePZ	07 29 48	28	eXNE	12 25 02
19	ePZ	05 54 10	30	eXZ	11 27 40
	eSNE	56	30	ePZE	23 33 45
20	ePZ	00 55 28		eXZE	34 00
	eSN	39		eSZN	10
				eXNE	20
	Karachi				
10	ePZ	09 44 50			
12	ePZ	20 45 46			
	eSZ	46 45			
18	ePZ	07 06 11			
	Chittagong				
2	eXE	06 34 05			
3	eXNE	00 10 09			
6	eXZ	10 26.0			
6	eXN	18 43.7			
7	e(P)Z	12 21 00			
10	eXZ	15 56 41			
11	ePZ	13 07 51			
	eXZE	08 06			
11	ePZ	14 29 34			
	eSNE	54			
11	eXNE	19 23.0			
11	ePZE	23 24 29			
	eXZNE	34			
	eSNE	43			
14	ePZN	03 05 59			
	eXZE	06 05			
	eSZNE	25			
14	eXNE	14 42 56			
16	iPZ	09 49 42			