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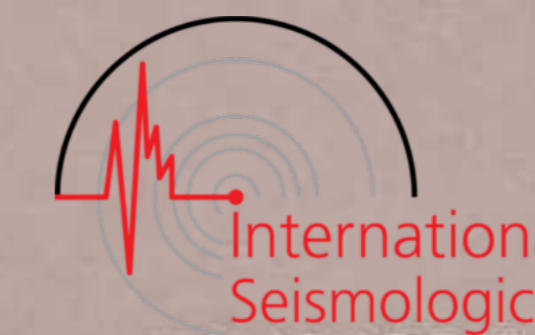
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Particulars of Stations and Instruments

(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.)

Pakistan Meteorological Service

Director.

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Instruments	Components	To	Period (Sec.)	Tg	Damping	Max. Magnification
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	E	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	Qt	ePZ	09	24	52±			Hindukush			
		eXZ		26	48.0			depth about 100 km			
1	Wr	ePZ	13	47	36.8			USCGS H 15 26 56.1			
	Lh	ePZ		48	20			37.4 N 70.0 E			
		eSE		49	41±			Hindukush region			
	Qt	iPZ		48	41.4c			depth about 124 km			
		iSN		49	58.0			Mag 4.6 (Qt)			
		Mu Sec				1	Ch	ePZ	15	41	33d
		PZ 0.03 0.7						epPZ		46	
		Δ = 7° 7						ePcPZ		43	09
	Kr	ePZ		49	40.0			ePPZE		19	
	Ch	ePZ		51	51c			eSNE		47	57
		eSN		56	00			esSNE		48	17
		H 13 46 41.0					Lh	ePZ		43	41
		37.3 N 69.6 E					Wr	ePZ		44	01.6
		Hindukush					Kr	ePZ		14	
		depth about 100 km					Qt	ePZ		20.6d	
		USCGS H 13 46 43.4						eSN		53	24.0
		37.2 N 70.0 E						USCGS H 15 33 22.6			
		Hindukush region						1.9 N 133.0 E			
		depth about 132 km						Off coast of Western New Guinea			
		Mag 4.6 (Qt)						depth about 56 km			
1	Wr	ePZ	15	27	51.0	1	Ch	ePZ	16	00	53
	Lh	ePZ		28	34		Qt	iPZ		03	38.5d
		eSE		29	52			eSN		12	42.0
	Qt	iPZ		28	45.5			USCGS H 15 52 43.2			
		eSN		30	10.5			1.7 N 132.9 E			
		Mu Sec						Off coast of Western New Guinea			
		PZ 0.02 0.5						depth about 58 km			
		Δ = 7° 6					1	Wr	ePZ	16	12 44.9
	Kr	ePZ		29	55±		Qt	ePZ		46.0	
	Ch	ePZ		32	05		1	Qt	ePZ	16	40 30.0
		epP		30			1	Qt	ePZ	16	48 26.0
		eSNE		36	15		1	Ch	ePZ	16	52 10
		H 15 26 55.9					Wr	ePZ		54	41.3
		37.5 N 69.4 E					Qt	ePZ		56.5	

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Ch	ePZ	18	00	32d		USCGS H	13 23 01			
		epPZ		43				36.5 N 71.4 E			
		eSNE	07	13				Hindukush			
	Lh	ePZ	02	40d				depth about 60 km			
		epPZN		49		2	Wr	ePZ	13	58	43.4
		ePoPN	03	23				iSZ		59	14.6
		ePPN	04	59			Qt	ePZ		44.5	
		eSNE	11	04				eSNE	14	01	06.9
	Wr	iPZ	03	01.3d				H 13 57 58.0			
	Kr	ePZ		14				Hindukush region			
	Qt	ePZ		20.4		2	Ch	ePZ	14	54	22
		ePPZ	05	53.0				ePoPZN		56	20
		eSN	12	24				eSN	15	00	17±
		Mu Sec						cScSN		04	25
	PZ	0.1 1.2					Lh	ePZ	14	56	35
		$\Delta = 69^\circ.4$						eSE	15	04	38
		USCGS H 17 52 20.2					Kr	ePZ	14	56	50
		1.9 N 132.8 E					Wr	ePZ		58.4	
		North of Western New Guinea					Qt	ePZ		57	04.0
		depth about 36 km						iPZ		06.0	
		Mag 5.7 (Qt)						epPZ		16.0	
2	Ch	ePZ	07	06	47			eSN*E*	15	05	31.5
		USCGS H 06 54 19.9						Mu Sec			
		17.7 S 167.5 E						PZ 0.1 1.0			
		New Hebrides Islands						MH 2.9 20			
		depth about 32 km						$\Delta = 63^\circ.2$			
2	Wr	ePZ	13	23	44.0			USCGS H 14 46 39.2			
		iSZ		24	13.1			10.0 S 117.8 E			
	Lh	ePZ		27				South of Sumbawa			
		iSZNE		25	25			depth about 33 km			
	Qt	ePZ		24	47.5			Mag 5.8 (Qt)			
		eSNE		26	06.5						
		H 13 23 05.0				2	Ch	ePZ	15	08	33
		36.3 N 71.0 E						epPZ		46	
		Hindukush						eSN		15	09
		depth about 100 km						esSN		30	
							Lh	ePZ		09	48

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		epPZ			59			depth about 33 km			
		eSE	17	25		3	Wr	ePZ	08	31	13.7
	Wr	ePZ	09	57.2				iSZ		37.7	
	Qt	ePZ	10	31.6			Qt	ePZ		32	08±
		epPZ		44.0				eSNE		33	27.2
		ePPZ	12	44.0		3	Qt	ePZ	13	58	17.6
		USCGS H 15 00 25.4				3	Wr	ePZ	15	06	10.1
		36.7 N 141.1 E					Qt	ePZ		07	01.6
		Near East coast of Honshu						USCGS H 15 01 39.6			
		Japan						37.1 N 95.5 E			
		depth about 75 km						Tsinghai Province, China			
	2	Wr	15	22	58.3			depth about 33 km			
	Qt	iPZ	23	05.8c		3	Qt	ePZ	15	17	36.0
		epPZ		15.0				eSNE		20	07.5
		eSE	31	33.0			Wr	ePZ	18	44.0	
		USCGS H 15 12 37.2				3	Qt	ePZ	15	49	55.8
		10.2 S 117.6 E						USCGS H 15 38 09.3			
		South of Sumbawa						2.6 S 139.5 E			
		depth about 33 km						Near coast of New Guinea			
	2	Wr	16	14	23.3c			depth about 94 km			
		eSZ		59.0		3	Wr	ePZ	16	34	31.3c
	Qt	ePZ	15	16.3				eSZ		35	00.7
		eSNE	16	35.5			Qt	iPZ		33.8c	
		ePZ	19	19	15.0			eSNE		36	54.2
	2	Qt	21	02	06.5			H 16 33 49			
	3	Qt	00	47	34.0			Hindukush region			
	3	Qt	03	40	32.3d			ePKPZ	18	24	05.0
		eSE		42	22±			USCGS H 18 05 06.2			
		Mu Sec						37.6 S 179.5 E			
		PZ 0.03 0.7						Near east coast of North Island			
		$\Delta = 9^\circ.8$						Newzealand			
		Mag 5.0 (Qt)						depth about 33 km			
	3	Qt	05	10	56.6d			ePZ	19	13	06.0
		USCGS H 05 00 29.7				3	Qt	USCGS H 19 04 20.8			
		10.3 S 117.8 E						4.5 S 103.4 E			
		South of Sumbawa						Southern Sumatra			

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		depth about 33 km						Bay of Bengal			
3	Lh	ePZ	23	30	26			depth about 33 km			
	Wr	ePZ		28		4	Qt	ePZ	17	41	45.0d
	Qt	ePZ	31	06	.5c			eSNE	43	02	.5
		eXE	35	37	.0	4	Wr	ePZ	18	27	54.8
4	Wr	ePZ	02	39	54.8			eSZ	28	54	.7
		eSZ	44	06	.4		Qt	ePZ		41	.5
	Qt	ePZ	40	23	.0			eSE	30	25	.0
		eXE	45	29	.0	4	Qt	ePZ	18	57	00.0
4	Wr	iPZ	07	14	41.8d	4	Qt	ePZ	22	55	16 ±
		iSZ	15	08	.5	4	Kr	ePKPZ	23	13	11
	Qt	ePZ		39	.0		Qt	ePKPZ		15	.0
		eSNE	16	50	.0			ePPZ	16	51	.0
		H 07 14 07.0						ePPZ	20	12	.0
		Hindukush region						ePSZ	27	20	.0
4	Lh	ePZ	10	59	14			ePPSZ	29	38	.0
		eSNE	11	00	57			eSSN	36	00	.0
	Qt	iPZ		06	.2c		Lh	ePKPZ	13	23	
		eSN	02	25	.0			ePPZ	17	23	
		Mu Sec					Ch	ePKPZ	13	23 ±	
		PZ 0.09 0.8						USCGS H 22 53 34.2			
		$\Delta=12^\circ.3$						43.2 S 75.6 W			
		USCGS H 10 57 04.2						Off coast of Southern Chile			
		40.3 N 77.7 E						depth about 33 km			
		Sinkiang Province, China						Mag 5 $\frac{1}{2}$ - 6 (Pas)			
		depth about 33 km				5	Qt	ePZ	00	31	34.5
		Mag 5.0 (Qt)				5	Qt	ePZ	11	55	14.0
4	Ch	ePZ	13	41	36			epPZ		25	.0
		eSN	42	20		5	Qt	ePKPZ	21	15	18 ±
	Lh	ePZ	45	04				USCGS H 20 54 41.1			
	Qt	ePZ		37	.9			49.8 S 114.9 W			
		ePZ		50	.0			South Pacific Ocean			
		epPZ		59	.0			depth about 33 km			
		eSSN	50	57	.0	6	Qt	iPZ	00	12	15.7d
		H 13 40 36.0						eSN*	14	10	.0
		18.5 N 90.4 E						Mu Sec			

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		PZ 0.4 1.0						ePPZ		56	05
		$\Delta=10^\circ.1$						ePcPZ		57	56
	Kr	ePZ	12	20				eSZ	21	00	05
	Wr	iPZ	13	19	.0c		Lh	ePZ	20	57	24d
	Lh	ePZ		39			Wr	ePZ		48	.6
		ePPN		49			Kr	ePZ		58	05
		eSSNE	16	55			Qt	iPZ		09	.5
	Ch	ePZ		24				USCGS H 20 48 42.4			
		ePcPZ	19	06				10.5 N 121.9 E			
		eSZ	21	53 ±				Near west coast of Panay			
		H 00 09 48						Philippine Islands			
		27.8 N 55.5 E						depth about 33 km			
		Southern Iran				6	Qt	ePZ	21	39	34.0
		USCGS H 00 09 47.2				7	Qt	ePZ	09	41	07.7
		28.0 N 55.6 E				7	Qt	ePZ	12	08	42.0
		Southern Iran				7	Qt	ePZ	12	14	55.0
		Felt Straits of Hormuz Islands				7	Qt	ePZ	12	55	34.3
		depth about 33 km				7	Qt	ePZ	13	09	29.3
6	Qt	ePZ	01	23	58.0		Wr	ePZ		31	.6
		eSNE		25	51.0		Lh	ePZ		50	.0
		Iran after shock						USCGS H 12 57 45.7			
6	Qt	iPZ	01	46	36.1d			40.5 N 29.4 W			
		eSNE		25	51.0			Azores			
		Iran after shock						depth about 33 km			
6	Qt	ePZ	06	47	03.6	7	Ch	ePZ	16	10	34
6	Qt	ePZ	07	11	38.0			ePPZ		12	14
	Wr	ePZ		12	41.0			ePcPZ		34	
6	Wr	ePZ	15	16	33.6			iSNE		16	35
	Qt	ePZ		54	.9c		Lh	ePZ		12	45
		USCGS H 15 07 35.8						ePcPZ		13	29
		12.1 N 124.1 E						eSNE		20	28 ±
		Near west coast of Samar Island						eScSNE		22	23
		Philippine Islands					Kr	ePZ		13	03
		depth about 200 km					Wr	ePZ		08	.0
6	Qt	iPZ	20	42	53.4c		Qt	ePZ		17	.0
6	Ch	ePZ	20	54	59d			epPZ		59	.0

Major Shocks



Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		ePPZ	15	33	.0			1700 km South west of Galpagos Islands			
		eSN*	21	30	.0			depth about 33 km			
		esSN*	22	42	.0	8	Lh	ePZ	18	57	40
		ePKPPKPZ	42	15	.3		Qt	ePZ	58	18	.0
		Mu Sec						USCGS H 18 48 06.3			
		PZ 0.1 1.2						45.2 N 147.2 E			
		$\Delta = 63^\circ.3$						Kurile Islands region			
		USCGS H 16 03 04.1				8	Ch	ePZ	21	26	58c
		7.8 S 119.8 E						epPZ	27	05	
		Flores Sea						ePoPZ	21		
		depth about 156 km						ePZ	14	.3	
		Mag 5.9 (Qt)						ePZ	16		
7	Ch	ePZ	20	08	05		Wr	ePZ	14	.3	
		eSE	12	47			Lh	ePZ	16		
	Wr	ePZ	10	34	\pm		Qt	ePZ	46	.5c	
	Qt	ePZ	11	07				USCGS H 21 15 56.0			
		USCGS H 20 02 12.8						52.0 N 174.9 E			
		20.4 N 122.1 E						Near Islands, Aleutian Islands			
		Batan Island, Philippine Islands						depth about 33 km			
		depth about 57 km				9	Qt	iPZ	01	15	01.5c
7	Qt	ePZ	22	06	08.8			epPZ	11	.0	
		USCGS H 21 57 17.5						eSN*	18	14	.0
		15.5 N 120.3 E						Mu Sec			
		Near west coast of central Luzon						PZ 0.16 1.0			
		Philippine Islands						$\Delta = 17^\circ.4$			
		depth about 95 km						Kr ePZ	15	24	
7	Lh	ePZ	22	37	58		Wr	ePZ	35	.5	
	Qt	iPZ	38	28	.8		Lh	ePZ	16	04c	
		USCGS H 22 26 33.8					Ch	iPZ	18	42c	
		51.5 N 176.1 E						epPZ	51		
		Rat Islands, Aleutian Islands						ePPZ	20	14	
		depth about 43 km						eSNE	24	50	
8	Wr	ePKPZ	00	52	58.1			esSN	25	04	
	Qt	ePKPZ	53	10	.0			eScSE	28	38	
		USCGS H 00 33 13.8						H 01 11 00.0			
		4.4 S 105.5 W						32.9 N 46.3 E			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		Iran Iraq-Border						5.4 S 132.5 E			
		depth about 33 km						Banda Sea			
		USCGS H 01 11 02.1						depth about 33 km			
		33.4 N 47.2 E				9	Qt	ePZ	18	20	32.5
		Iraq-Iran Border					Wr	ePZ	37	.8	
		Felt-Pol-E-Dochtan					Lh	ePZ	52		
		depth about 33 km						USCGS H 18 08 47.9			
9	Ch	ePZ	04	54	05			40.3 N 29.3 W			
	Qt	ePZ	57	07	.5			Azores			
		USCGS H 04 47 20.4						depth about 33 km			
		10.4 N 126.2 E				9	Wr	ePZ	23	38	05.4
		Off coast of Samar Island						eSZ	38	.7	
		Philippine Island					Qt	ePZ	39	00	.0
9	Qt	ePZ	05	41	27.2			eSN	40	17	.8
9	Ch	ePZ	09	29	37c			H 23 37 19.0			
		ePPZ	31	21				Hindukush region			
	Lh	ePZ	30	53		10	Qt	ePZ	01	34	31.5
	Wr	ePZ	31	02	.6			eSE	36	31	.5
	Qt	iPZ	38	8c			Wr	ePZ	35	37	.3
		ePoPZ	32	24	.0			USCGS H 01 32 03.7			
		eSE	39	49	.0			27.9 N 55.6 E			
		USCGS H 09 21 30.8						Near south coast of Iran			
		35.8 N 140.3 E						depth about 33 km			
		Near east coast of Honshu				10	Ch	iPZ	01	42	11c
		Japan						epPZ	26		
		depth about 33 km						ePcPN	43	37	
9	Qt	ePZ	11	41	26.5			ePPN	44	06	
9	Qt	ePZ	14	01	21.5			ePPPZ	45	07	
		USCGS H 13 51 38.5						iSNE	49	20	
		27.5 N 140.1 E						eScSN	52	08	
		Bonin Islands region					Lh	ePZ	43	03c	
		depth about 452 km						ePPZ	45	16	
9	Qt	ePZ	15	49	24.8			eSN	50	54	
9	Qt	ePZ	17	42	42.5			esSN	51	25	
9	Qt	ePZ	18	13	52.0			USCGS H 18 02 27.9			
		USCGS H 18 02 27.9					Wr	iPZ	43	01	
							Qt	iPZ	43	.5c	

Major Shocks

Date	Station	Phase	h	m	s
		ePcPZ	44	30.0	
		ePPZ	46	01.5	
		eSN*	52	11.0	
		Mu Sec			
	PZ	0.2 1.3			
		$\Delta = 62^\circ.5$			
	USCGS H	01 33 19.0			
		43.8 N 147.2 E			
		Kurile Islands			
		depth about 60 km			
		Mag 6.1 (Qt)			
10	Ch	ePZ	11	09 25	
	Wr	ePZ	12	03.8	
	Qt	ePZ		31.0	
		epPZ		38.5	
	USCGS H	11 03 36.8			
		19.3 N 121.1 E			
		Near northern coast of Luzon			
		Philippine Islands			
		depth about 33 km			
10	Wr	iPZ	11	47 58.8d	
		iSZ		48 37.4	
	Qt	ePZ		49 04.0	
		eSN		50 31.5	
10	Qt	ePZ	17	25 56.5	
10	Qt	ePZ	18	44 03.0	
10	Lh	ePZ	19	41 27	
	Qt	ePZ		42 11.0	
	USCGS H	19 32 05.4			
		38.3 N 141.8 E			
		Near east coast of Honshu			
		Japan			
		depth about 100 km			
10	Qt	ePZ	20	50 28.5	
10	Qt	ePZ	21	24 22 \pm	
11	Ch	ePZ	07	48 17c	

Major Shocks

Date	Station	Phase	h	m	s
		ePPZ	50	19	
	Qt	ePZ	48	37.7	
		epPZ		45.0	
		eSN*	56	16.0	
		Mu Sec			
	PZ	0 1.8			
		$\Delta = 55^\circ.0$			
	Lh	ePZ	48	47	
	Wr	ePZ	49	05.5	
	USCGS H	07 39 15.4			
		23.6 S 69.4 E			
		Mascarene Islands region			
		depth about 33 km			
		Mag 5.9 (Qt)			
11	Wr	ePZ	09	09 59.8	
	Qt	ePZ	10	20.5	
11	Ch	ePZ	10	40 50	
	Qt	ePZ	41	11.3	
		eSN*	48	50.0	
	Lh	ePZ	41	22	
	Wr	ePZ		38.6	
	USCGS H	10 31 48.3			
		23.8 S 69.4 E			
		Mascarene Islands region			
		depth about 33 km			
11	Wr	iPZ	11	38 44.4d	
	Ch	ePZ		54d	
		epPZ		39 03	
		eSE		44 37	
	Lh	ePZ	38	56 \pm	
	Qt	ePZ	39	29.0	
		epPZ		37.5	
		eSN*	45	43.0	
		Mu Sec			
	MH	6.1 20			
		$\Delta = 41^\circ.6$			
	USCGS H	11 31 44.5			
		55.8 N 113.1 E			
		Lake Baikal region U.S.S.R.			
		depth about 33 km			
		Mag 6 $\frac{1}{4}$ (Pas), 5.8 (Qt)			
11	Qt	ePKPZ	12	15 39.5	
	USCGS H	11 57 47.9			
		19.3 S 177.6 E			
		Fiji Islands			
		depth about 547 km			
11	Qt	iPZ	15	21 18.7c	
		ePPZ		22 02.8	
		iSN*E*		26 00.0	
		Mu Sec			
	PZ	0.3 1.4			
		$\Delta = 28^\circ.2$			
	Wr	ePZ	22	02.6	
	Lh	ePZ		14c	
		ePPE	23	29	
	Ch	iPZ	24	14c	
		epPZ		22	
		ePcPZ	25	41	
		ePPZ	26	05	
		ePPPZ	27	00	
		eSE	31	18	
	USCGS H	15 15 33.6			
		17.2 N 40.7 E			
		Red Sea			
		depth about 34 km			
		Mag 5.6 (Qt)			
11	Ch	ePZ	16	22 08c	
		ePcPZ		14	
		epPZ		23	
		ePPZ	25	20	
		ePPPZ	27	04	
		eSN	32	14	
	Lh	ePZ	23	29	
		ePKPZ		17	
		esPKPZ		29	
		ePPZ		38 01	
	Wr	iPKPZ		34 09.0c	
	Lh	ePZ	23	29	
		epPZ		43	
		eSKSE	34	02	
		eSE		49	
Wr	ePZ	23	42.3		
Qt	ePZ		57.7		
	epPZ		24	10.0	
	ePPZ		28	14.0	
	eSKSN*		34	37.3	
	eSN		35	17	
	USCGS H	16 09 57.6			
		12.9 S 166.5 E			
		Santa Cruz Islands			
		depth about 77 km			
		Felt Port Vila			
11	Qt	ePZ	16	39 27 \pm	
		eXZ		40 20.0	
11	Qt	ePZ	16	57 39.7	
		eSNE		58 47.3	
11	Qt	ePZ	18	45 32.8	
11	Wr	ePZ	21	21 30.8	
		iSZ		22 00.6	
	Qt	ePZ		34.7	
		eSN		23 56.6	
11	Qt	ePKPZ	23	33 58.6c	
		esPKPZ		34 19.5	
		ePPZ		37 39.2	
		eSKSE*		41 06.0	
		eSKKSE*		50 26.0	
		eSSN*		56 47.0	
		eSSPZ*		57 30.0	
	Lh	ePKPZ		34 07	
		epPKPZ		17	
		esPKPZ		29	
		ePPZ		38 01	
	Wr	iPKPZ		34 09.0c	

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Ch	ePKPZ			14			17.8 S 13.6 W			
		epPKPZ			25			Southern Atlantic Ocean			
		USCGS H	22	14	18.7			depth about 33 km			
			43.2	S	76.0	13	Qt	ePZ	01	11	19.8
			Off coast of southern Chile			13	Wr	ePZ	02	24	57.0
			depth about 33 km					eSZ			26 07.1
			Mag 6½-6¾ (Pas)				Qt	ePZ			04.5
12	Qt	ePZ	00	43	10.5			eSN	28	10.8	14
12	Qt	ePZ	02	31	31.2	13	Qt	ePZ	08	05	41.0
12	Ch	iPZ	12	55	50.5c	13	Qt	ePZ	08	20	01.0
		epPZ			58	13	Ch	ePZ	09	03	00
		ePPZ			57 06		Lh	ePZ			58
		ePPZ			20		Wr	ePZ	04	04.1	41.1
		eSE	13	01	10		Qt	ePZ			41.1
		esSE			25			USCGS H	08	54	39.1
		ePcS			02 27			42.0 N 141.9 E			
		eScS			06 16			Off coast of Hokkaido			
	Lh	ePZ	12	57	43c			Japan			
		eSN	13	04	33			depth about 61 km			
	Wr	iPZ	12	57	59.7c	13	Wr	iPZ	09	44	47.1
	Qt	iPZ			58 31.8c			iSZ			45 17.1
		eSE	13	06	04.0		Qt	ePZ			47.1
		USCGS H	12	49	10.8			eSN	47	02	14
			26.0	N	128.3	13	Ch	ePZ	10	10	13
			Ryukyu Island				Qt	iPZ			43.1
			depth about 33 km					USCGS H	09	58	13.4
12	Ch	ePZ	19	44	03			52.9 N 166.7 W			
		ePcP			19			Fox Islands, Aleutian Islands			
	Lh	ePZ			20			depth about 69 km			
	Qt	ePZ			46 ±	13	Qt	ePKPZ	22	06	28.1
		USCGS H	19	32	38.0			USCGS H	21	47	50.3
			51.5	N	174.4			56.9 S 29.0 W			
			Andreanof Islands, Aleutian Island					Sandwich Islands			
			depth about 57 km					depth about 33 km			
12	Qt	ePZ	21	08	42.3	14	Qt	ePZ	01	45	01.1
		USCGS H	20	55	39.0	14	Qt	ePZ	04	43	10.1



Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		eSN			36.6			eSNE			16 25
		Mu			Sec			ePSE			44
		PZ	0.04		0.5			esSN			17 06
		Δ = 2° .2						eScSE			18 24
		Mag 3.5 (Qt)					Wr	ePZ			09 08.4
							Qt	ePZ			21.6
								epPZ			39.5
	14	Ch	07	56	13			ePPZ			11 35.0
								eSN*			17 34.0
								ePSN*			18 08.0
								eSSN*			21 36.0
								esSSSN*			24 46.0
								ePKPPKPZ			38 48.1
								Mu			Sec
								MH	1.7		20
								Δ = 61° .0			
							Kr	ePZ			09 23 ±
								USCGS H	21	59	16.1
								0.3 S 123.0 E			
								Northern Celebes			
								depth about 92 km			
								Mag 5.6 (Qt)			
						14	Wr	iPZ	22	47	08.9d
								iSZ			39.0
							Qt	ePZ			48 07.6
								eSN			49 22.6
								H	22	46	30.4
								Hindukush region			
						15	Qt	ePZ	02	19	23.5
								eXZ			33.5
						15	Wr	ePZ	13	58	05.0
							Qt	iPZ			41.7c
								USCGS H	13	48	40.1
								36.0 N 140.3 E			
								Central Honshu, Japan			
								depth about 90 km			

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
15	Kr	ePKPZ	16	11	30 d	15	Qt	ePZ	18	45	45
	Qt	ePKPZ			36.4 c			ePZ	21	45	28
		ePPZ*	14	52	.0			ePKPZ	23	44	41
		ePSE*	25	22	.0			ePPZ	47	50	
	Wr	ePKPZ	11	47	.3			ePKS	48	26	
	Lh	ePKPZ			52			eSKKSE*	54	44	
	Ch	ePKPZ			55			Mu		Sec	
		USCGS H 15 51 57.6						MH	4.4	20	
		38.3 S 73.2 W						$\Delta=143^\circ.0$			
		Central Chile									
		depth about 33 km									
15	Kr	ePKPZ	16	29	00						
	Qt	ePKPZ			05.5 c						
		epPKPZ			13.0						
		esPKPZ			22.0						
	Wr	ePPZ	32	36	.5						
	Lh	ePKPZ			21						
	Ch	ePKPZ			22						
		USCGS H 16 09 26.9									
		38.4 S 73.6 W									
		Central Chile									
		depth about 33 km									
15	Ch	ePZ	16	35	23 c						
		epPZ			36						
		ePcPZ			36 03						
		eSN			43 39						
		eScS			45 09						
	Lh	ePZ			37 09						
		epPZ			24						
	Wr	ePZ			23.6						
	Kr	ePZ			37						
		epPZ			48						
	Qt	iPZ			40.6 c						
		epPZ			55.0						
		eSE			48 03.0						
		USCGS H 16 25 09.4									

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
	Lh	ePKPZ			48 ±						
		USCGS H 07 18 37.3									
		32.3 S 111.1 W									
		Eastern Island region									
		depth about 43 km									
		Mag 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (Pas)									
16	Wr	ePZ	10	02	54.1	16	Ch	ePZ	22	47	48 c
	Qt	ePZ			03 21.5						
		epPZ			04 16.0						
		USCGS H 09 52 25.1									
		19.0 N 145.3 E									
		Mariana Island									
		depth about 207 km									
16	Qt	ePZ	10	32	41.0						
16	Qt	ePZ	12	34	55.0						
		eSE			36 52.0						
16	Ch	iPZ	21	12	10 c						
		iSE			13 50						
	Lh	iPZ			15 25 c						
		esPZ			38						
		ePPZ			16 03						
		ePcPZ			18 57						
		eSE			19 47						
		eSSN			20 01						
	Kr	iPZ			15 46 c						
	Wr	iPZ			56.2 c						
	Qt	ePZ			16 06.0						
		eSN*			21 00.0						
		Mu			Sec						
		PZ	0.9	1.5							
		PH	0.5	1.5							
		MH	33.1	20							
		$\Delta=29^\circ.9$									
		H 21 09 58									
		13.5 N 93.6 E									
		Andaman Islands									

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		depth about 37 km						epPZ			46
17	Wr	ePKPZ	11	26	24.1			ePPZ			52 03
	Qt	ePKPZ			30.5			ePcPZ			42
		ePPZ			28 46.0			eSE			56 33
		ePKSN			29 57.0		Lh	ePZ			52 52
		USCGS H 11 07 15.4						epPZ			53 07
		16.3 N 98.2 W						eSE			07 00 44
		Oaxaca Mexico					Wr	ePZ			06 53 13.1
		depth about 12 km					Qt	ePZ			28.70
17	Lh	ePZ	14	29	53 d			epPZ			40.0
		ePcPZ			30 52			ePcPZ			54 08.5
		eSE			36 38			ePPZ			55 52.0
		eScSN			38 36			eSN			07 01 52.0
	Wr	iPZ			30 16.0d			USCGS H 06 43 08.3			
	Qt	iPZ			31.5d			0.2 S 125.1 E			
		epPZ			32 36.0			Molucca Sea			
		eSN			37 49.3			depth about 56 km			
		USCGS H 14 21 30.6					18	Qt			22 16 20.5
		2.8 N 121.7 E					19	Qt			02 02 55.5
		Celebes Sea					19	Ch			04 21 27e
		depth about 609 km						epPZ			44
17	Wr	iPZ	15	13	01.3d			eSE			26 11
		iSZ			30.6			ePZ			24 23 1
	Lh	ePZ			42			epPZ			41.0
		eSN			14 40			ePcPZ			25 44.8
	Qt	ePZ			06.5			USCGS H 04 15 36.1			
		eSN			15 24.5			24.3 S 122.6 E			
		H 15 12 24.0						Ryukyu Islands			
		36.3 N 71.3 E						depth about 53 km			
		Hindukush					19	Ch			07 30 45
		depth about 160 km						Qt			33 40.60
17	Qt	ePZ	19	56	43.0		19	Wr			08 58 29.8
17	Qt	ePZ	21	24	15.0			Qt			47.5d
17	Qt	ePZ	22	40	36.0		19	Ch			10 34 04
18	Qt	ePZ	01	10	17.0			Qt			35±
18	Ch	ePZ	06	50	34			USCGS H 10 14 29.4			

Major Shocks

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		50.0 S 114.3 W						Qt			43 32.0
		South Pacific Ocean						ePZ			
		depth about 33 km						USCGS H 07 32 42.9			
19	Ch	ePZ	10	48	42			56.2 N 159.3 E			
	Qt	ePZ			49 43±			Kamchatka			
19	Ch	ePZ	14	04	42			depth about 33 km			
		eSN			06 23		20	Ch			10 22 03
	Wr	ePZ			07 12.9			Qt			30 56
	Qt	ePZ			53.0			ePZ			24 20±
		H 14 02 30						USCGS H 10 11 11.2			
		30.3 N 96.7 E						6.1 S 154.5 E			
		China						Solomon Islands			
		depth about 33 km					20	Qt			13 10 18.0
19	Qt	ePKPZ	14	49	20±			USCGS H 13 00 00.3			
	Ch	ePKPZ			59			1.8 N 126.4 E			
		USCGS H 14 30 29.1						Celebes Sea region			
		6.7 N 73.0 W						depth about 109 km			
		Colombia					20	Ch			16 10 56
		depth about 135 km						Qt			12 25.5
19	Lh	ePZ	17	01	50.2			epPZ			36.0
	Qt	ePZ			02 19.2			USCGS H 16 02 14.5			
		USCGS H 16 49 29.3						42.6 N 143.4 E			
		5.2 S 152.6 E						Hokkaido, Japan			
		New Britain Island region						depth about 40 km			
		depth about 62 km					20	Ch			18 07 49.5
19	Ch	ePZ	21	56	59		20	Qt			20 48 22.50
	Lh	ePZ			57 05			eSN			50 24.5
	Qt	ePZ			24.0			Mu Sec			
20	Ch	ePZ	07	04	06d			PZ 0.02 1.0			
	Qt	ePZ			56.0			$\Delta = 10^\circ.9$			
		USCGS H 06 54 04.1					Wr	ePZ			49 25.5
		55.6 N 158.8 E						USCGS H 20 45 46.9			
		Kamchatka						27.9 N 54.9 E			
		depth about 33 km						Southern Iran			
20	Ch	ePZ	07	42	41			depth about 34 km			
		esPZ			58			Mag 4.9 (Qt)			



Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
01 08 71		$\Delta = 6^\circ.2$						epPZ	39	04	.0
10 08 08	Ch	ePZ	14	06		26 08 22	Lh	ePKPZ	16	17	32
08 08 08		epPZ		43		26 08 22	Qt	ePKPZ		46	.0
08 08 08		eSE	50	12		08 08 22		ePPZ	19	24	.0
	H 01 41 09.0					08 08 22	USCGS H		15	58	46.2
	35.8 N 70.2 E						23.8 S 174.8 W				
	Hindukush						Tonga Islands				
	depth about 150 km						depth about 19 km				
20 08 00	USCGS H	01 41 04.0				26 08 22	Qt	ePZ	23	05	18.8
71 08	36.2 N 70.0 E					26 08 22	Qt	ePZ	23	09	34.1
12 00 01	Hindukush					27 08 22	Ch	ePZ	06	58	43
12 00	depth about 110 km							eSE	07	03	19
28 08 00	Mag 5.5 (Qt)					08 08 22	Lh	ePZ	00	45	
26 08 01	Qt	ePZ	03	43	44.0	08 08 22	Wr	iPZ	01	02	.6c
08 08 00		e(S)N	45	41	.0			eSE	06	56	
26 08 00	Wr	iPZ	05	31	22.5c	08 08 22	Qt	iPZ	01	35	.5c
		iSN	32	44	.3			epPZ	02	15	.0
	Lh	ePZ	31	38				iSN	08	30	.2
		iSN	33	10				Mu Sec			
08 08 01	Qt	ePZ	32	31	.5c	08 08 22	PZ	0.2 1.5			
08 08 01		eSN*	34	49	.2	08 08 22	PH	0.1 1.5			
08 08 01		Mu Sec				08 08 22	$\Delta = 50^\circ.3$				
08 08 00	PZ	0.15 0.8				08 08 22	USCGS H	06 52 57.8			
08 08 00	$\Delta = 12^\circ.6$						25.1 N 122.9 E				
08 08 00	Ch	ePZ		20			Ryukyu Island				
08 08 00		ePPZ		41			depth about 148 km				
10 08 00		eSN	38	11			Mag 5.2 (Qt)				
08 08 00	H	05 29 28.0				27 08 22	Qt	ePZ	07	02	55.5
08 08 00	39.5 N 77.5 E							i(S)Z	11	09	.5
08 08 00	Sinkiang Province							ePZ	07	06	34.2
08 08 00	USCGS H	05 29 30.2				27 08 22	Wr	ePZ	11	52	32.9
08 08 00	39.8 N 77.2 E										
08 08 00	Sinkiang province, China										
08 08 00	depth about 14 km										
08 08 00	Mag 6.3 (Qt)										
26 08 00	Qt	ePZ	13	38	52.0						

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		iSZ	53	08	.5			eSN	56	43	.6
	Qt	iPZ		32	.1d			USCGS H	02 35 48.8		
		eSN	54	54	.2			12.1 N 143.7 E			
	H	11 51 46.0						Mariana Islands			
		Hindukush region						depth about 33 km			
27 08 00	Ch	ePZ	12	13	02	28 08 22	Qt	ePZ	04	10	32.2
	Wr	ePZ	15	47	.5	28 08 22	Qt	ePZ	05	15	42.5
	Qt	ePZ	16	12	.1			USCGS H	05 02 36.1		
		epPZ		22	.0			22.4 S 10.5 W			
	USCGS H	12 07 12.7						South Atlantic Ocean			
	14.9 N 119.9 E							depth about 33 km			
	Near west coast of Luzon, P.I.					28 08 22	Qt	ePZ	06	03	52.5
	depth about 33 km							USCGS H	05 53 13.0		
27 08 00	Wr	ePZ	17	01	30.3			24.3 N 141.3 E			
	Qt	iPZ		55	.9d			Volcano Islands			
		eSZ	11	20	.8			depth about 82 km			
	USCGS H	16 50 27.7				28 08 22	Ch	ePZ	15	28	56d
	12.2 N 143.8 E							ePPZ	29	07	
	Mariana Islands							iSN	31	07	
	depth about 33 km							Lh	ePE	47	
27 08 00	Qt	ePZ	17	19	15.5			ePPE	32	25	
		eXZ		22	00.5			eSN	36	22	
27 08 00	Qt	ePZ	18	39	57.9			eSSE	37	26	
		eSN	41	19	.0			Wr	iPZ	32	18.3d
27 08 00	Qt	ePZ	22	05	37.7				iSN	37	32.4
27 08 00	Wr	ePZ	22	46	54.5			Qt	iPZ	32	24.5
		eSZ	48	20	.2				ePPZ	33	22.0
	Qt	ePZ		04	.7				eSE	37	30.0
		eSE	50	26	.4				Mu Sec		
27 08 00	Qt	ePZ	23	16	03.0			PZ	0.16 0.8		
		e(S)N	17	54	.0			$\Delta = 31^\circ.4$			
28 08 00	Lh	ePE	02	46	37			H	15 26 04		
	Wr	ePZ		51	.4			10.0 N 93.1 E			
	Qt	ePZ	47	17	.6c			Andaman Islands region			
		epPZ		27	.3			depth about 33 km			
		ePcPZ		37	.0			USCGS H	15 25 58.7		

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		9.9 N 93.4 E						depth about 33 km			
		Andaman Island				29	Qt	ePZ	19	36	22.0
		depth about 33 km				29	Wr	ePZ	22	53	13.3
		Mag 5.8 (Qt)					Qt	ePZ	54	09.0	
28	Qt	ePZ	15	38	46.0			eSN	55	53.5	
28	Qt	ePZ	21	16	55.6			USCGS H	22	52	06.9
		eXZ	17	14.0				38.4 N 70.4 E			
28	Qt	ePZ	21	58	56.5			Hindukush			
29	Qt	ePZ	02	24	56.4			depth about 179 km			
		USCGS H	02	20	27.8						
		14.0 N 55.1 E				29	Qt	ePZ	23	06	26.4
		Arabian Sea						eSN	07	47.0	
		depth about 33 km				30	Wr	iPZ	09	08	31.7d
29	Qt	ePZ	04	11	27.9			iSZ	09	05.1	
		e(S)E	13	40.5			Qt	iPZ	30	2d	
29	Qt	ePKPZ	04	17	17.1			eSN	10	51.2	
		USCGS H	03	58	32.1			H	09	07	46.0
		29.4 S 177.9 E						Hindukush region			
		Kermadec Islands				30	Ch	iPZ	16	02	56d
		depth about 33 km						iSE	03	29	
29	Wr	ePZ	06	40	28.3		Lh	ePN	06	25	
		eSZ	41	52.5				eSE	09	46	
	Qt	ePZ	39.0				Wr	iPZ	06	57.4	
		eSE	44	00.0			Qt	iPZ	07	25.5d	
29	Qt	ePZ	07	49	37.0			epPZ	45.0		
29	Qt	ePKPZ	09	22	47.6			esSN	12	15.0	
		USCGS H	09	03	51.1			H	16	02	12.0
		22.3 S 175.9 W						24.1 N 94.4 E			
		Tonga Islands						Western Burma			
		depth about 33 km						depth about 160 km			
29	Qt	ePZ	13	23	39.5			USCGS H	16	02	13.6
29	Ch	ePZ	19	19	16			24.2 N 94.5 E			
	Qt	ePKPZ	25	10				Burma			
		USCGS H	19	06	37.6			depth about 175 km			
		17.3 S 168.5 E				30	Ch	ePZ	17	00	50
		New Hebrides Islands					Lh	ePE	03	19	

Date	Station	Phase	h	m	s	Date	Station	Phase	h	m	s
		Wr						ePZ	28.4		
		Qt						ePZ	46.4		
								epPZ	04	07.0	
								ePcPZ	21.0		
		USCGS H	16	53	24.6						
		3.2N 127.1 E									
		Molucca Passage									
		depth about 58 km									
30	Wr	ePZ	21	20	49.2						
	Qt	ePZ	21	11.1							
		USCGS H	21	11	30.0						
		10.8 N 124.7 E									
		Leyte, Philippine Islands									
		depth about 64 km									
30	Wr	ePKPZ	22	10	27.0						
	Qt	ePKPZ	31.0								
		epPKPZ	43.0								
		ePPZ	12	44.0							
		ePKSZ	13	54.0							
		USCGS H	21	51	22.9						
		17.4 N 99.6 W									
		Guerrero, Mexico									
		depth about 51 km									
30	Wr	ePZ	23	19	54.6						
	Qt	iPZ	20	11.0							
		USCGS H	23	07	51.6						
		5.5 S 145.9 E									
		Near north coast of New Guinea									
		depth about 79 km									

Date	Phase	h m s	Date	Phase	h m s
	QUETTA				
1	ePZ	02 16 34.5	8	eXNE	07 18.3
1	ePgZ	11 51 06.0	8	ePZ	00 21 37.8
	e(S)gN	18.5	8	e(S)NE	23 27.8
1	ePZ	11 52 45.6	8	ePZ	04 14 38.5
	eXN	47.5	8	ePZ	19 01 27.8
	eXN	53 00.0	8	eSNE	49.0
1	ePZ	12 02 58.4	9	ePZ	19 30 45±
	eSNE	03 19.5	9	ePZ	00 28 25.0±
1	ePZ	18 57 41.5	9	eSNE	43.0
	eSNE	58 06.2	9	ePZ	00 34 19.5
2	ePZ	18 04 26.3	9	ePZ	09 01 25.5
3	ePZ	01 02 26.1	9	ePZ	10 47 42.5
	e(S)NE	58.5	9	ePgZ	11 47 37.5±
3	ePZ	14 31 38±	9	eSgNE	47.5
4	ePZ	20 03 48±	9	eXZ	12 10 02.5
	eSNE	05 23.0	9	ePZ	13 26 02.3
4	ePZ	21 30 48±	9	ePZ	16 23 32.5
	eSE	31 23.0	9	eSNE	24 56.5
5	ePZ	20 46 20.5±	9	ePZ	20 00 32.5
	eSN	47 09.5	9	ePZ	20 47 10±
6	ePZ	15 58 02.5	10	eSNE	48 19.5
	e(S)N	26.0	10	ePZ	07 00 06.5
7	ePZ	09 47 38.5±	10	eSZNE	42.0
7	ePZ	10 59 03.9	10	ePZ	09 10 16±
	eSN	11 00 23.0	10	eSNE	11 19.5
7	ePZ	14 03 50.4	10	ePZ	13 01 25±
	eSNE	05 32.7	10	eSN	02 04.5
7	ePZ	14 53 07.3	10	ePZ	17 08 07.5
	eSNE	28.3	10	e(S)E	09 39.0
7	ePZ	16 56 49.1	11	ePZ	22 31 02.0
	eSNE	57 45.0	11	ePZ	13 40 50.5
7	iPZ	23 06 01.7	11	eXZ	41 09.7
	eSNE	28.3	11	ePZ	18 34 48.0
				eSE	35 08.2

Date	Phase	h m s	Date	Phase	h m s
11	ePZ	20 55 37.3		eSgNE	18 09.3
	eXZ	56 09.0	18	ePgZ	02 45 31.9
12	ePZ	03 08 06.5		eSgNE	43.2
	eSN	07.5	18	ePgZ	12 03 31.5
12	ePZ	15 34 56.6±		eSgNE	42.6
	eSNE	36 27.4	18	ePZ	12 16 03.7
13	ePZ	03 10 43±		eSN	15.0
13	ePZ	03 39 14.0	18	ePZ	20 35 27.0
13	ePZ	13 43 02.0		eSN	37.0
	eSNE	36.5	18	ePgZ	20 38 39.5
13	ePZ	23 03 00.1		eSgNE	49.5
	eSNE	25.6	19	ePZ	00 47 21.3
14	eXZ	05 55 32.0		eSN	29.0
14	ePZ	07 49 04.2	20	iPgZ	04 03 18.3d
	eSNE	26.1		iSgNE	30.0
14	ePZ	14 25 49.2	20	ePZ	11 08 19.5
	eSNE	26 17.6		e(S)N	09 02.0
14	ePgZ	15 55 12.3	20	ePZ	16 11 28.0
	eSgNE	16.0		eSNE	30.3
15	ePZ	10 08 34.7	20	ePZ	21 31 12.6
	e(S)E	09 11.0	21	ePZ	08 31 49.5
15	ePgZ	11 45 13.4		eSNE	32 39.0
	eSgNE	15.7	21	ePZ	09 48 04.4
15	ePZ	15 13 45.2		eSNE	19.0
	eSNE	14 06.0	21	ePgZ	12 24 19.1
15	ePZ	20 34 56.0		eSgNE	20.1
	eSNE	35 22.3	21	ePZ	17 55 28.5
16	e(P)Z	07 40 29.5		eSNE	44.5
16	e(P)Z	07 44 22.0	21	iPZ	20 45 03.7d
17	ePZ	00 49 09.8		eSgNE	15.3
	eSN	23.0	22	ePgZ	00 15 30.6
17	ePZ	15 47 08.5±		eSgNE	44.8
	eSNE	24.0	22	ePZ	14 07 02.0
18	ePgZ	01 17 58.0d		eXNE	16.0

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Date	Phase	h m s	Date	Phase	h m s
22	ePZ	17 04 02.7			
	e(S)NE	16.5			
22	ePZ	19 43 14.7			
	eSNE	41.4			
23	eXZ	08 32 02.9			
23	ePZ	10 31 32.0±			
23	ePZ	16 35 48.4			
	eXN	36 13.5			
	eXN	19.9			
23	ePZ	20 32 17.5			
	eSE	34 27.5			
23	ePZ	23 42 02.5			
24	ePZ	15 02 53.5			
	eSNE	03 26.5			
25	ePgZ	05 49 04.5±			
	eSgNE	14.5			



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Date	Phase	h m s	Date	Phase	h m s
25	ePZ	06 48 21.9	27	eXZ	17 32 04.6
25	ePZ	14 46 00.9	27	eXZ	18 13 01.8
25	ePZ	16 44 05.5	27	ePZ	18 15 52.5
25	ePZ	17 51 40.5		eSNE	16 11.3
	eSZ	52 18.0	27	ePZ	18 18 27.8
26	ePZ	04 24 54.4	27	ePZ	18 43 59.3
	eSNE	25 22.0		eSNE	45 25.2
26	ePZ	05 19 56.3	27	ePgZ	19 41 12.5
	e(S)Z	20 26.0		eSgNE	22.8
26	e(P)Z	08 12 55 ±	27	ePZ	21 43 06.8
	eSN	15 06.0		eSE	43.3
26	ePgZ	11 07 26.0		eSN	44.5
	eSgNE	36.0	27	ePZ	22 19 27.3
26	ePgZ	20 39 19.5		eSN	20 32.4
	eSgNE	25.5	27	ePZ	22 42 10.4
27	ePZ	00 43 38.1		eSNE	39.9
	eSNE	56.2	2	eXZ	01 19 48.0
27	ePZ	01 55 02±	28	eXZ	01 23 24.2
	eSNE	19.5	28	ePZ	01 24 31.6
27	ePZ	04 47 41.1		e(S)NE	47.5
27	ePZ	05 21 59.0		eSZNE	51.0
	eSNE	22 18.9	28	ePZ	01 28 39.1
27	ePgZ	12 21 23.6		eSNE	58.2
	eSgNE	26.0	28	ePZ	01 35 40.1
27	ePgZ	12 26 27.2		eSNE	36 00.6
	eSgNE	28.2	28	ePZ	05 21 34.0
27	eXZ	15 00 48.2		eSNE	58.5
	eSZNE	01 37.7	28	ePZ	06 47 24.0
27	ePZ	15 52 31.7		eSNE	52.5
	eSN	43 10.5	28	ePZ	14 40 05.8
27	ePZ	16 14 49.7		eSNE	23.3
	eSNE	15 09.7	28	ePZ	16 58 50.4
27	ePZ	16 29 36.0		e(S)E	17 00 09.5
27	ePZ	17 29 35.5	28	eXZ	18 57 13.9
	eSNE	53.7	28	ePZ	19 41 53.9

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
	eSNE	42 16.9		eSZ	43.6
28	ePZ	19 55 31.0	2	ePZ	23 21 29.8
28	ePZ	19 58 14.5		eSZ	22 19.6
	eSNE	30.5	2	ePZ	23 41 47.0
29	ePZ	09 56 04.1		eSZ	42 15.9
	eSNE	36.4	4	ePZ	10 54 59.5
29	ePZ	14 30 10.7	4	iPZ	10 58 57.1
	eXNE	21.5	4	ePZ	20 03 03.1
	eSNE	44.5		eSZ	41 3
29	ePgZ	18 31 58.3	4	ePZ	23 13 23.2
	eSgNE	32 00.9	5	ePZ	15 00 56.8
29	ePgZ	18 37 10.5	5	ePZ	15 17 01.5
	eSgNE	12.5	7	ePZ	09 36 48.4
30	ePZ	07 44 01.3	7	ePZ	14 03 10.2
	eSNE	24 0		eSZ	35.5
30	ePZ	08 15 54.2	8	ePZ	00 21 43.1
30	ePZ	08 33 28.0	8	ePZ	01 00 59.8
	eSNE	34.5		eSZ	01 35 1
30	eXZ	12 26 00.0	8	ePZ	09 44 37.5
30	ePZ	13 21 27.1		eSZ	45 26.6
	eSNE	50.5	8	ePZ	13 17 18 6
30	ePgZ	14 04 34.5		eSZ	47 8
	eSgNE	44.0	8	ePZ	20 42 46.2
30	ePZ	19 09 51.1		iSZ	43 10.8
	e(S)NE	10 19.1	9	ePZ	09 00 15.0
30	ePZ	21 31 45.0	9	ePZ	12 08 15.6
	eSNE	33 07.5		iSZ	46.8
	Warsak		9	ePZ	13 25 05.3
				eSZ	37.6
1	ePZ	09 22 20.6	9	ePZ	16 22 16.6
	eSZ	23 14.0		iSZ	48.8
1	ePZ	15 42 34.3	9	iPgZ	17 59 51.0
1	ePZ	21 11 17.8		iSgZ	18 00 01.6
	eSZ	54.9	9	ePZ	20 45 52.2
2	ePZ	21 08 03.0			

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
	eSZ	46 22.3	19	ePgZ	03 25 40.6
10	iPgZ	08 17 42.7		eSgZ	56.0
	iSgZ	44.8	19	ePZ	08 56 20.9
10	ePZ	09 09 14.3		eSZ	49.0
10	ePZ	09 48 29.0	20	ePZ	21 29 45.9
	eSZ	49 05.8	20	ePZ	23 45 56.9
11	ePZ	07 29 45.4		eSZ	46 36.0
	eSZ	30 21.7	21	ePZ	14 34 50.2
11	ePZ	16 34 19.0		iSZ	35 14 4
12	ePZ	15 03 05.8	22	ePZ	16 38 39 7
12	ePZ	15 33 52.5	24	ePZ	13 51 14 5
	eSZ	34 25 1		eSZ	48.7
13	ePgZ	23 37 37.8	24	ePZ	17 05 13.0
	eSgZ	50.4	25	ePZ	00 09 23.0
14	ePZ	17 10 06.1		eSZ	41.8
14	ePZ	20 23 00.8	25	ePZ	16 49 54.4
	eSZ	52.2	25	ePZ	22 44 46 1
14	ePZ	22 38 40.8		eSZ	45 14.1
15	ePZ	04 58 09.3	26	ePZ	06 26 29.0
15	ePZ	08 53 29.2		eSZ	27 04.2
15	ePZ	16 46 28 5	26	ePZ	08 11 38 6
	eSZ	47 01 3	26	ePZ	09 45 08.4
16	ePZ	23 26 00.2		eSZ	32.6
	eSZ	21 4	26	ePZ	13 23 15.6
17	ePgZ	11 41 58.4	27	ePZ	02 40 41.2
	eSgZ	42 08.0		eSZ	41 03.4
17	ePZ	12 01 43 3	27	ePgZ	18 39 31.6
	eSZ	02 14.0		eSgZ	33.7
17	ePZ	13 15 17.5	27	ePZ	22 41 04.9
	eSZ	43.3	28	ePZ	03 26 28.1
17	ePZ	22 03 05.3		iSZ	56.2
17	ePZ	22 58 20.5	28	iPZ	16 58 00.1
	eSZ	47.2		iSZ	39.4
18	ePZ	11 54 52.6	29	ePZ	01 10 22.6
	eSZ	55 19.2	29	ePZ	16 13 47.3

Minor Shocks

Date	Phase	h m s	Date	Phase	h m s
30	ePZ	08 13 38.6			
	eSZ	14 15.9		Karachi	
30	ePZ	21 30 40.3			
	eSZ	31 09.6	10	ePZ	01 14 04
	Lahore		16	ePZ	06 06 00.6
				eSE	27.2
3	eSZNE	16 36 10		Chittagong	
8	ePKPZ	00 21 52			
10	ePZ	09 08 29	2	ePZ	14 47 58
	iSNE	46	3	e(P)E	23 28 10
13	eSZE	09 46 31		eXNE	29 06
17	ePZ	22 04 30 d		e(S)E	30 06
	iSNE	57	4	eXZ	15 11.1
17	eXZ	22 07 22	5	ePZ	15 48 47
22	iXNE	22 48 32		eSNE	49 00
23	ePgNE	08 36 53.3	11	eXNE	04 22 13
	iSgZNE	58.3	11	eXZ	16 48 48
23	ePE	20 32 02	11	eXNE	19 42.6
	eSNE	41	12	eXNE	07 37.1
23	eXN	23 04 12	12	eXN	12 22.0
	eSNE	05 27	13	ePgE	07 12 29
24	eXN	16 02 07		eSgNE	35
24	eXN	16 34 04	19	ePZ	08 56 13
25	eXE	10 00 25	19	ePZ	20 43 01
27	e(S)N	11 54 15		eSNE	44 06
27	eXE	12 16 33	20	ePZE	21 38 11
27	eXE	17 01 15		eXZ	44
27	eXE	22 48 22		eSNE	56
	eXE	41	21	eXZ	15 10 56
	eXNE	49 33	22	eXZ	07 50 23
28	eXE	16 59 52	22	ePZ	10 52 43
	eXNE	17 00 00	24	eXZ	16 38 51
29	eXE	04 11 38	25	ePZE	12 51 33
29	eXN	22 53 56		eSNE	54
	eXN	54 24	26	eXE	21 56 00
	eXNE	55 21	27	ePZ	02 45 17
30	eXNE	21 32 20			