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Pakistan Meteorological Service

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Particulars of Stations and Instruments

(a) Stations

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

(b) Instruments

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

(Contd.)

Instruments	Components	Period Seismo. & Galvo.	Damping	Max. Magnification
Willmore	Z, N, & E	Seismo = 1 sec. Galvo = ½ „	—	—
Sprengnether Pen recorder	E	1.0 „	—	—
Lahore				
Sprengnether	Z	1.8 „	Critical	4,900
„	N	1.7 „	„	4,200
„	E	1.6 „	„	4,100
Karachi				
Sprengnether	Z	1.8 sec	Critical	5,890
„	N	1.6 „	„	4,700
„	E	1.4 „	„	4,700
Chittagong				
Sprengnether	Z	1.7 „	Critical	5,200
„	N	1.8 „	„	5,700
„	E	1.5 „	„	3,600
„	N	7.0 „	„	6,600
Willmore	Z	Seismo = 1 sec Galvo = ½ „	—	—
Warsak				
Sprengnether	N	2.0 sec.	Critical	4,000
Willmore (with Sprengnether galvo. & recorder)	Z	1.0 „	—	—

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

Major Shocks

Date	Station	Phase	h m s
1	Wr	iPZ	00 09 35 d
		iSZ	10 07
	Qt	ePZ	38
		eSNE	11 58
		H 00 08 53 Hindukush	
1	Qt	ePZ	02 53 08 c
		epPZN	13
		eSN*	03 03 03
		Mu Sec PZ 0.2 1.3	
		△= 79.0° USCGS H 02 41 06.0 52.3 N 177 9 E Rat Islands, Aleutian Islands depth about 26km Mag 6.0 (Qt)	
1	Qt	ePZ	05 27 47
		USCGS H 05 17 35.0 39.2 N 141.6 E Honshu, Japan depth about 26km	
1	Qt	ePZ	07 01 56
		USCGS H 06 49 57.9 51.9 N 177.8 E Rat Islands, Aleutian Islands depth about 59km	
1	Qt	ePZ	10 29 03
		USCGS H 10 17 05.6 51.9 N 177.7 E Rat Islands, Aleutian Islands depth about 58 km	
1	Ch	ePE	23 51 34
	Wr	ePZ	48
	Lh	ePZ	53
	Qt	ePZ	52 21
		epPNE	31
		eSN*	00 02 16
		ePSN*	03 06
		USUGS H 23 40 20 3 52.4 N 177.7 E Rat Islands, Aleutian Islands depth about 27 km	
2	Qt	ePKPZ	05 43 05
	Ch	ePKP$_2$ Z	35
		USCGS H 05 23 38.2 17.8 S 69.8 W Peru-Bolivia border depth about 74 km	
2	Wr	ePZ	12 31 49
	Qt	ePZ	32 14
		eXN*	43 56
	Ch	ePZNE	33 32
		epPZ	43
		USCGS H 12 22 58·7 80.0 N 24.3 E Svalbard region depth about 48 km	
3	Qt	ePKPZ	11 39 54
		USCGS H 11 20 53.5 20.6 S 174.4 W Tonga Islands region depth about 32 km	
3	Qt	iPnZ	14 46 56 c
		iSnNE	47 20
	Kr	ePNZ	25

Major Shocks

Date	Station	Phase	h m s
		ePgZ	38
	Lh	ePgZ	48 35 ±
	Wr	ePnZ	02
		H 14 46 23	
		28½ N 67¾ E	
		West Pakistan	
3	Wr	ePZ	18 04 31
	Lh	ePZ	33
	Qt	ePZ	05 03 c
		ePcPZN	12
		eSN*	14 56
	Kr	ePZ	05 28
		USCGS H 17 53 05.3	
		52.2 N 177.5 E	
		Rat Islands, Aleutian Islands	
		depth about 68 km	
4	Lh	iPZ	04 25 07
	Wr	iPZ	17 c
	Qt	ePZ	53 c
		USCGS H 04 16 01.7	
		35.1 N 138 9 E	
		Near coast of Honshu, Japan	
		depth about 178 km	
4	Lh	iPZ	04 44 38
		eSE	51 51
	Wr	iPZ	44 49 d
		eSN	52 16
	Qt	ePZ	45 25
		e!pPZNE	39
		e!SPZNE	51
		ePPZE	47 39
		eSN*	53 21
		e!sSEN*	38
		e!ScSN	55 16
		eLN*	59.4
		ePKPPKPZ	05 15 28
		Mu Sec	
		PZ 0.6 1.3	
		PN 0.3 1.2	
		PE 0.4 1.3	
		△= 58°.3	
	Kr	iPZ	04 45 42 d
		USCGS H 04 35 42.6	
		33.9 N 135.2 E	
		Near Shikoku, Japan	
		depth about 56 km	
		Mag 6.6 (Berk), 6½ (Pas) (Qt)	
4	Ch	ePZ	07 42 52
		eXZ	43 02
		epPZ	40
		ePcPZ	44 25
		ePPZ	40
		eSNE	49 20
		esSNE	50 46
		eScSNE	52 24
	Lh	ePZ	45 00
	Qt	ePZ	35 c
		epPZNE	46 26
		eSNEN*	54 26
		eXNE	38
		USCGS H 07 34 44·4	
		5.0 S 130.4 E	
		Banda Sea	
		depth about 222 km	
4	Lh	ePZ	13 28 03
		eSNE	29 04
	Qt	ePZ	28 20
		eSNE	29 36

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Major Shocks

Date	Station	Phase	h m s
		H 13 26 41	
		Hidukush	
4	Ch	ePZ	20 06 18
		ePPZ	57
		eXZNE	10 52
	Lh	ePZ	08 33
	Wr	ePZ	09 01
	Qt	ePZ	03
		eLN*	19.2
		USCGS H 20 00 54.4	
		1.6 S 99.6 E	
		Near coast of Sumatra	
		depth about 59 km	
4	Ch	ePZ	21 30 37
	Qt	ePZ	33 40
		USCGS H 21 24 54.5	
		24.6 N 121.9 E	
		Off east coast of Formsoa	
		depth about 38 km	
5	Ch	eXZ	00 37 39
		ePPZE	40 54
		esPPZ	41 11
		ePPPZ	43 03
		eSKKSE	47 46
		USCGS H 00 23 32.1	
		15.5 S 177.7 W	
		Fiji Islands region	
		depth about 24 km	
		Mag 6¼ (Pas), 6¼ – 6½ (Berk)	
5	Wr	iPZ	04 27 41 d
		iSN	28 10
	Lh	ePZ	19
		eSNE	29 19
	Qt	ePZ	28 46 d
		esPNE	29 24
		esZNE	30 05
	Ch	ePZ	31 58
		epPZN	32 34
		ePPZN	38
		eSNE	35 58
		H 04 27 04	
		36 N 71½ E	
		Hindukush	
		depth about 150 km	
		USCGS H 04 27 05.4	
		36.4 N 71.2 E	
		Hindukush	
		depth about 182 km	
5	Qt	ePKPZ	08 27 05
		USCGS H 08 08 07.5	
		15.5 S 172.5 W	
		Tonga Islands region	
		depth about 60 km	
		Mag 6¼ (Pas)	
5	Ch	ePZ	12 03 48 c
		epPZ	04 24
		eX	06 39
		USCGS H 11 51 35.4	
		15.1 S 167.6 E	
		New Hebrides Islands	
		depth about 133 km	
5	Wr	iPZ	13 08 53 d
	Qt	iSZ	09 26
	Lh	ePZ	40
		eSNE	10 45
	Qt	ePZ	02
		eX	41
		eSNE	11 20

Date	Station	Phase	h	m	s
		H 13 08 17			
		36 N 71 E			
		Hindukush			
5	Ch	iPZ	14	07	09 c
		ePPZ			42
		eSN		11	31
		Mu Sec			
		PZ 0.6 2.0			
		△= 25°.5			
	Lh	ePZ		09	24
	Wr	ePZ			51
	Qt	ePZ			53 c
		epPZE		10	03
		ePPZ		11	32
		eXZE			46
		eSN*		16	25
		eSSN*		19	36
		eLN*			20.0
		USCGS H 14 01 41.7			
		1.6 S 100.0 E			
		Near south coast of Sumatra			
		depth about 25 km			
		Mag. 5.9 (Ch)			
5	Wr	ePZ	17	46	20
	Qt	ePZ			35
5	Qt	ePZ	23	20	26
		USCGS H 23 08 29.9			
		52.3 N 177.6 E			
		Rat Islands, Aleutian Islands			
		depth about 70 km			
7	Lh	ePZ	01	26	55
	Qt	ePZ			27 04
		ePPZN			30 36
		USCGS H 01 14 12.5			
		55.2 N 154.1 W			
		Near Kodiak Islands			
		depth about 27 km			
7	Ch	ePZ	01	41	45
	Qt	ePZ		42	32
		eSN*		52	22
		USCGS H 01 30 34.5			
		52.0 N 177.8 E			
		Rat Islands, Aleutian Islands			
		depth about 55 km			
7	Qt	ePZ	10	11	00
		ePPNE		12	40
		ePPPE		13	10
		eXE			54
		eSN*		17	18
		esSE			34
		eLN*			20.5
	Wr	ePZ		11	11
	Lh	ePZ			37
	Ch	ePZ		13	47
		epPZ			55
		esPZ		14	00
		ePcPZ			24
		eXZ			54
		ePPZ		16	12
		eSNE		22	23
		eSeSE		23	38
		USCGS H 10 03 12.8			
		43.4 N 17.4 E			
		Yugoslavia			
		depth about 32 km			
7	Qt	ePZ	15	14	04
7	Qt	ePKPZ	22	20	06
		ePKP2Z			26
		epPKPZNE			36

Date	Station	Phase	h	m	s
	Wr	ePKPZ			17±
	Lh	eXZ			23
		USCGS H 22 00 30.9			
		37.7 S 71.7 W			
		Central Chile - Argentina border			
		depth about 90 km			
8	Qt	ePKPZ	01	19	06
		eXZE		20	10
		ePPZNE			19
		eSKSN*		25	54
		eXN*		26	18
		e(SKKS)N*		27	06
		ePSN*		29	56
		eSSN*		36	29
	Wr	ePKPZ		19	06
		eSKSN		25	55
	Ch	ePKPZ		19	44
		epPKPZ		20	00
		ePPZ		22	28
		ePKSZ		23	12
		ePPPZ		25	28
		e(SKKS)N		29	01
		eSKSPN		32	23
		USCGS H 01 00 24.2			
		18.5 N 70.5 W			
		Near south coast of			
		Dominican Republic			
		depth about 63 km			
		Mag 6½ (Pas), 6¼ - 6½ (Berk),			
		6 (Pal)			
8	Qt	ePKPZ	06	01	48
		USCGS H 05 43 02.2			
		24.2 S 177.7 W			
		Tonga Islands region			
		depth about 133 km			
8	Qt	ePZ	17	15	48
		epPZE		16	17
		USCGS H 17 03 18.9			
		6.4 S 147.3 E			
		Near north coast of			
		New Guinea			
		depth about 104 km			
8	Wr	iPZ	22	25	55 d
		iSN		26	27
	Lh	iPZ			35
		iSNE		27	33
		Mu Sec			
		PZ 2.4 1.2			
		△=5°.0			
	Qt	iPZ		26	52 d
		esPZE		27	35
		iSZNEN*		28	07
		Mu Sec			
		PZ 1.0 1.1			
		△=6°.6			
	Kr	ePZ		27	51 d
		eSE		29	50
	Ch	ePZ		30	00
		epPZ			42
		esPE		31	06
		eSNE		33	56
		H 22 25 16			
		35¾ N 71¼ E			
		Hindukush			
		depth about 200 km			
		USCGS H 22 25 11.1			
		36.5 N 70.9 E			
		Hindukush			

Date	Station	Phase	h	m	s	
		depth about 208 km				
		Mag 6.0 (Qt), 6.2 (Lh)				
9	Qt	ePZ	06	57	55	
		USCGS H 06 45 10.2				
		33.1 N 39.7 W				
		Mid Atlantic Ocean				
		depth about 25 km				
9	Ch	ePZ	12	49	29	c
		eXZ			41	
		ipPZ			49	
		esPZ		50	04	
		ePcPZ			54	
		ePPE		51	18	
		ePcSZ		54	46	
		eSZE		56	24	
		eSSNE		57	03	
		eXE		59	24	
Lh		ePZ		50	23	
		eXZ			36	
		eSN		58	08	
Wr		ePZ		50	28	c
		eSN		58	16	
Qt		ePZ		51	05	c
		eXZ			17	
		epPZNE			25	
		ePcPZNE			41	
		eSNEN*		59	24	
		ePPSN*	13	00	11	
		e!XN*		01	16	
Kr		ePZ	12	51	25	
		eXZ			38	
		epPZ			46	
		USCGS H 12 40 49.3				
		42.9 N 144.8 E				
		Near coast of Hokkaido, Japan				
		depth about 78 km				

Date	Station	Phase	h	m	s	
9	Ch	ePZ	19	58	18	c
		ePPZ	20	00	09	
	Qt	ePZ	19	58	27	
		eSN*	20	05	37	
	Lh	ePZ	19	58	39	c
	Wr	ePZ		59	09	
		USCGS H 19 49 29.7				
		20.2 S 66.2 E				
		Mascarene Islands region				
		depth about 25 km				
9	Ch	iPZE	22	22	12	d
		e(pP)E		24	00	
		eSE		28	55	
	Lh	ePZ	22	50		d
		eSNE		30	07	
	Wr	ePZ	22	52		d
		eSZ		30	07	
	Qt	ePZ	23	29		d
		eSNE		31	18	
		USCGS H 22 13 51.5				
		48.3 N 147.5 E				
		Sea of Okhotsk				
		depth about 480 km				
10	Ch	ePZ	01	21	43	
		ePPZ		22	59	
	Wr	ePZ		23	51	
	Qt	ePZ		24	24	
		USCGS H 01 15 03.0				
		27.0 N 128.7 E				
		Ryukyu Islands				
		depth about 29 km				
10	Ch	ePZ	02	31	52	
	Qt	ePZ		32	28	
		epPZ			37	

Date	Station	Phase	h	m	s	
		eXZ		34	59	
		USCGS H 02 19 57.1				
		52.9 N 169.1 W				
		Fox Islands, Aleutian Islands				
		depth about 43 km				
10	Qt	ePZ	12	43	41	c
		eXZ		45	10	
	Wr	ePZ		44	00	c
	Ch	ePZ		46	39	
11	Ch	ePZ	03	03	31	c
		esPZ			46	
		iXZN		04	20	
		iSZN		05	02	
	Qt	ePZ			11	
		esPZNE			26	
		eSNEN*		08	02	
		eSSEN*			20	
		eLN*		08	.9	
		H 03 01 33				
		27.6 N 84.9 E				
		USCGS H 03 01 33.0				
		28.1 N 84.8 E				
		Nepal				
		depth about 38 km				
11	Qt	ePZ	05	12	50	c
		epPZE			58	
		ePPZNE		14	33	
		ePPPE		15	03	
		eSNEN*		19	04	
		eSSNN*		22	05	
		iLN*		22	.6	
	Wr	ePZ		13	01	c
	Lh	ePZ			27	
	Ch	ePZ		15	36	c

Date	Station	Phase	h	m	s	
		esPZ			52	
		ePcPZ		16	14	
		ePPZ		18	02	
		e(PcS)N		20	24	
		eSN		24	12	
		ePPSN			43	
		USCGS H 05 05 01.6				
		43.5 N 17.7 E				
		Near coast of central				
		Yugoslavia				
		depth about 25 km				
		Mag - $5\frac{3}{4}$ (Pas)				
11	Ch	iPZN	07	00	30	
		esPZN		01	00	
	Wr	ePZ		00	46	
	Lh	ePZ			48	
	Qt	ePZ		01	16	c
		eSN*		11	15	
		USCGS H 06 49 07.6				
		51.9 N 179.3 W				
		Andreanof Islands, Aleutian Islands				
		depth about 60 km				
12	Ch	ePZ	08	59	20	
	Lh	ePZ	09	00	58	
	Wr	ePZ		01	12	
	Qt	ePZ			40	d
		e(pP)ZE			54	
		eSNE		10	51	
		USCGS H 08 50 31.2				
		20.2 N 145.9 E				
		Mariana Islands				
		depth about 103 km				

Major Shocks

Date	Station	Phase	h	m	s	
12	Ch	ePZ	11	06	14	c
		epPZ			24	
		ePcPZ			44	
		eSNE		15	26	
		esSE			50	
		eScSE		16	16	
	Wr	ePZ		06	28	
	Qt	ePZ			59	c
		epPZ		07	10	
		USCGS H 10 55 00.8				
		52.4 N 177.7 E				
		Rat Islands, Aleutian Islands				
		depth about 49 km				
12	Ch	ePZ	13	46	41	
		eSN		53	28	
	Qt	ePZ		48	17	
		USCGS H 13 38 11.6				
		42.5 N 143.0				
		Hokkaido, Japan				
		depth about 100 km				
12	Wr	iPZ	22	42	48	d
		iSZ		43	21	
	Lh	ePZ			31	
		eSN		44	30	
	Qt	ePZ		43	50	
		esPZN		44	28	
		eSNE		45	09	
		H 22 42 08				
		36¼ N 71 E				
		Hindukush				
		depth about 160 km				
13	Ch	ePZ	04	59	49	c
		ePcPZ	05	00	11	
	Qt	ePZ			34	c
		epPZ			47	
		USCGS H 04 48 37.3				
		52.3 N 177.4 E				
		Rat Islands, Aleutian Islands				
		depth about 49 km				
13	Qt	ePZ	05	40	05	
		USCGS H 05 30 54.9				
		12.9 N 120.8 E				
		Mindanao Philippine Islands				
		depth about 60 km				
13	Ch	ePZ	08	25	41	
		ePPE		27	13	
		e(s)NE		31	22	
	Lh	ePZ		28	07	
	Wr	ePZ			19	
	Qt	ePZ			36	
		epPZE			46	
		USCGS H 08 18 18.7				
		2.9 N 124.8 E				
		Celebes Sea				
		depth about 25 km				
13	Qt	ePKPZ	11	24	14	
		USCGS H 11 05 20.1				
		37.5 S 178.7 E				
		North Islands Newzealand				
		depth about 25 km				
14	Qt	ePZE	07	35	09	
		USCGS H 07 24 47.6				
		43.1 N 145.1 E				
		Hokkaido, Japan				
		depth about 30 km				
14	Qt	ePZ	08	28	31	
		USCGS H 08 17 08.1				
		5.3 S 129.0 E				
		Banda Sea				
		depth about 18 km				
14	Ch	ePZ	13	42	04	
		eSE		48	24	
	Wr	ePZ		43	04	
	Qt	ePZ			42	
		eSNE		51	27	
		USCGS H 13 34 02.8				
		44.9 N 140.8 E				
		Off northwest coast of				
		Hokkaido, Japan				
		depth about 193 km				
15	Wr	ePZ	12	23	41	
	Qt	ePZE		24	38	
		eSNE		26	21	
		H 12 22 24				
		Tadzhik S S R				
15	Qt	ePZ	18	33	32	
		USCGS H 18 21 12.8				
		6.0 S 146.8 E				
		Near east coast of				
		New Guinea				
		depth about 150 km				
16	Wr	ePZ	06	53	05	
		eSZ			37	
	Qt	ePZE		54	03	
		eSNE		55	22	
		H 06 52 22				
		Hidukush				
16	Wr	ePKPZ	11	54	38	
	Qt	ePKPZE			39	
		USCGS H 11 35 41.3				
		30.5 S 177.9 W				
		Kermadec Islands				
		depth about 39 km				
		Mag 6½ (Pas)				
16	Wr	iPZ	16	52	10	c
		iSZ			43	
	Lh	ePZ			48	
		eSZN		53	55	
	Qt	ePZE			04	
		esPZ			52	
		eSNE		54	21	
		H 16 51 25				
		36½ N 70½ E				
		Hindukush				
		depth about 250 km				
		USCGS H 16 51 24.9				
		36.5 N 70.3 E				
		Hindukush				
		depth about 235 km				
17	Ch	e(P)Z	13	27	54	
	Lh	ePZ		30	02	
		eSNE		38	30	
	Wr	ePZ		30	25	
	Qt	ePZ			35	
		eXZ			43	
		eSNE		39	36	
17	Lh	ePZ	15	38	54	
	Wr	ePZ		39	18	
	Qt	ePZ			37	
		epPNE			45	
		esSN*		48	21	
		eScSN		49	20	
		USCGS H 15 29 06.6				
		4.3 N 128.3 E				
		Molucca Passage				
		depth about 25 km				
17	Lh	ePZ	15	52	54	
	Wr	ePZ		53	16	
	Qt	ePZ			34	

Date	Station	Phase	h	m	s
		USCGS H 15 43 18.3			
		3.9 N 126.6 E			
		Mollucca Passage			
		depth about 74 km			
17	Lh	ePZ	19	13	10
	Wr	ePZ			38
	Qt	ePZ			51
18	Qt	ePZ	15	55	18
		USCGS H 15 42 25.5			
		5.3 S 153.7 E			
		Solomon Islands region			
		depth about 83 km			
18	Wr	ePZ	15	58	23
	Qt	ePZ			40
		USCGS H 15 45 40.9			
		4.2 S 153.6 E			
		New Britain			
		depth about 127 km			
18	Lh	ePZ	16	08	57 c
	Qt	ePZ		09	27 c
19	Wr	ePZ	06	11	41
	Qt	ePZ		12	16
		epPZNE			26
		esPZE			31
		eSNE		21	26
		USCGS H 06 01 09.5			
		51.5 N 161.1 E			
		Off southeast coast			
		of Kamchatka			
		depth about 29 km			
19	Qt	ePZ	19	15	53
19	Qt	epPZ	19	45	29
		ePPE		46	46
		eLN*		53	9

Date	Station	Phase	h	m	s
	Lh	ePZ		45	58
		USCGS H 19 38 04.1			
		38.5 N 22.1 E			
		Greece			
		depth about 38 km			
19	Lh	ePZ	20	52	07
	Wr	ePZ			32
	Qt	ePZ			52
		eXNE		53	01
		USCGS H 20 43 24.4			
		10.8 N 122.4 E			
		Negros, Philippine Islands			
		depth about 99 km			
19	Wr	ePZ	21	30	24
	Qt	ePZ			41
		USCGS H 21 18 58.5			
		2.9 S 139.0 E			
		Near north coast of			
		New Guinea			
		depth about 76 km			
20	Qt	ePZ	03	35	04
		eSN*		37	58
		eLN*		38	.6
	Wr	ePZ		35	44
		USCGS H 03 31 31.4			
		32.7 N 49.5 E			
		Iran			
		depth about 40 km			
20	Lh	ePZ	20	26	56
	Qt			27	30
		USCGS H 20 14 32.7			
		6.6 S 152.1 E			
		Off south coast of New Britain			
		depth about 33 km			

Date	Station	Phase	h	m	s
21	Qt	ePKPZ	13	09	44
		USCGS H 12 51 52.1			
		17.7 S 178.8 W			
		Fiji Islands			
		depth about 558 km			
22	Wr	ePZ	07	32	30
	Qt	ePZ		33	17 c
		epPZNE			31
		esPN			43
		ePPN		34	36
		eSN*		38	28
		USCGS H 07 26 45.3			
		52.4 N 100.0 E			
		Lake Baikal region			
		depth about 68 km			
22	Wr	ePZ	20	24	20
	Qt	ePZ		25	03
		e(S)N		27	02
		eLEN*		27	.6
	Ch	ePZNE		25	26
		ePPZ			38
		eSN		27	51
		H 20 22 17			
		30½ N 80½ E			
		Tibet - India border			
		USCGS H 20 22 17.6			
		30.7 N 80.6 E			
		Tibet - India border			
		depth about 25 km			
23	Ch	ePZNE	16	11	17 c
		ePcPZ			28
		esPZ			35
		Mu Sec			
		PZ 0.4 1.5			
		△= 78°			

Date	Station	Phase	h	m	s
	Wr	ePZ		11	23
	Lh	ePZ			27 c
	Qt	ePZ			52 c
		ePcPN			58
		esPZE		12	06
		eSNN*		22	16
		esSNE			32
		Mu Sec			
		PZ 0.2 1.3			
		△= 84°.7			
		USCGS H 15 59 20.4			
		52.5 N 169.5 W			
		Fox Islands			
		depth about 25 km			
		Mag 6.2 (Qt, Ch)			
23	Wr	ePZ	16	45	14
		eSZ		46	45
	Qt	ePZ			28
		eSNE		48	50
		H 16 43 24			
		Western Sinkiang			
		Province China			
24	Ch	ePZ	04	58	43
		epPZ		59	11
		eXN	05	05	50
		USCGS H 04 46 29.1			
		15.6 S 167.6 E			
		New Hebrides Islands			
		depth about 133 km			
24	Qt	ePZ	08	49	51
24	Ch	ePZ	15	45	33 c
		epPZ			52
		eXZE		46	10
		ePcPN		48	50
		eSNE		50	11

Date	Station	Phase	h	m	s
	Lh	ePZ		47	37
	Wr	ePZ			56
	Qt	ePZ		48	29
		eSN*		55	27
		eLN*		59	.7
		USCGS H 15 39 46.0			
		24.4 N 122.0 E			
		Near east coast of			
		Formosa			
		depth about 58 km			
24	Lh	ePZ	17	53	41
	Wr	ePZ		54	01
	Qt	ePZ			18
25	Ch	ePZ	02	01	50
	Wr	ePZ		03	39
	Qt	ePZ			54
		USCGS H 01 50 11.4			
		10.7 S 161.8 E			
		Solomon Islands			
		depth about 80 km			
25	Qt	ePKPZ	07	45	07
		epPKPZNE		46	02
		e(PP)Z		47	52
		USCGS H 07 26 05.7			
		15.8 S 69.5 W			
		Peru – Bolivia border			
		depth about 209 km			
25	Wr	ePZ	09	36	08
	Qt	ePZ			34
		USCGS H 09 25 25.9			
		12.3 N 142.3 E			
		Mariana Islands			
		depth about 145 km			
25	Qt	ePKPZ	10	22	27
		USCGS H 10 03 07.0			
		4.4 S 152.7 W			
		Line Islands region			
		depth about 50 km			
26	Ch	iPZ	05	30	13
		eXZ			40
		eXZN		31	19
		ePPZN			48
		iSNE		36	05
		eXN		37	00
	Lh	ePZ		31	30
	Wr	ePZ			49
		eSZ		39	05
	Qt	ePZ		32	24
		eSNEN*		40	09
		USCGS H 05 22 51.3			
		32.2 N 138.1 E			
		South of Honshu, Jappan			
		depth about 333 km			
26	Qt	ePZ	08	24	51
		epPZNE			59
		esPZE		25	04
		ePPZN		26	22
		ePPPZNE			42
		ePcPZE		27	08
		eSNEN*		30	38
		eLN*		33	.4
		Mu Sec			
		PZ 0.2 1.4			
		△= 37°.6			
	Kr	ePZ		25	09
		ePPZ		26	47
	Wr	ePZ		25	10
		eSN		31	08

Date	Station	Phase	h	m	s
	Lh	ePZ		25	37 c
	Ch	ePZ		27	50 c
		ipPZ			59
		ePcPZ		28	40
		ePPZ		30	10
		iSNE		36	07
		ePSNE			28
		eScSE		37	44
		eSSE		40	12
		USCGS H 08 17 37.0			
		35.1 N 22.7 E			
		Mediterranean Sea			
		west of Crate			
		depth about 32 km			
		Mag 5-5¼ (Pal), 5.8 (Qt)			
26	Qt	ePKPZ	14	54	42
		USCGS H 14 34 45.7			
		36.9 S 88.9 W			
		South Pacific Ocean			
		about 600 miles southwest			
		of Juan Fernandez Islands			
		depth about 60 km			
26	Qt	esPKPZ	19	00	00
		epPKSN*		03	27
		USCGS H 18 40 23.0			
		10.3 N 90.6 W			
		Off coast of Elsalvador			
		depth about 45 km			
28	Qt	ePZ	04	06	24
		USCGS H 03 54 17.1			
		4.6 S 144.0 E			
		Near north coast of			
		New Guinea			
		depth about 157 km			
28	Wr	ePKPZ	05	59	00
	Qt	ePKPZ			09 c
		ePPKPZ			20
		ePPZN	06	01	06
		e(ss)N*		17	58
		USCGS H 05 40 08.2			
		17.2 S 172.0 W			
		Tonga Islands			
		depth about 25 km			
		Mag 6¼ (Pas)			
28	Ch	ePZ	16	48	27
		esPZ			59
		ePPZ		50	19
		eSN		54	14
	Lh	ePZ		50	47
		eSNE		58	29
	Wr	ePZ		51	09
		eSN		59	11
	Qt	ePZ		51	24
		epPZ			52
		ePcPZNE		52	05
		eSNEN*		59	41
		eLN*	17	06	.7
		USCGS H 16 41 13.8			
		0.0 N 123 .9 E			
		Northern celebes region			
		depth about 101 km			
28	Qt	ePZ	21	32	41
	Wr	ePZ		33	29
30	Qt	ePKPZ	08	53	43
	Ch	ePKPZ			57
		epPKPE		54	18
		USCGS H 08 34 26.8			
		12.7 N 87.7 W			
		Near coast of Nicaragua			
		depth about 101 km			

Major Sho

Date	Station	Phase	h m s
30	Lh	ePZ	15 33 04
	Qt	ePZ	44 d
		ePcPZNE	57
		epPZN	34 29
		ePSNEN*	43 35
	Kr	ePZ	33 52 d
		USCGS H 15 22 49.4	
		20.7 N 144.5 E	
		Mariana Islnds region	
		depth about 178 km	
30	Wr	ePZ	17 24 20
	Lh	ePZ	39
	Qt	ePZ	56
		USCGS H 17 15 33.8	
		79.4 N 123.5 E	
		Laptev Sea	
		depth about 63 km	
31	Wr	ePZ	00 07 05
	Lh	ePZ	47
		eSN	09 13
	Qt	ePZ	08 03
		eXZNE	09
		esPZNE	44
		eSZNE	09 35
	Kr	e(P)Z	18
	Ch	e(P)Z	11 15
		ePPZ	43
		H 00 06 00	
		38.4 N 69.8 E	
		depth about 80 km	
		USCGS H 00 05 57.0	
		38.5 N 70.3 E	
		Tadzhik S. S. R.	
		depth about 60 km	

Minor Shocks

Date	Phase	h m s
	Quetta	
1	ePZ	16 41 00
1	ePZ	22 52 17
2	ePgZ	02 49 27
	eSgN	43
2	ePZ	05 27 28
	eSNE	51
2	ePgZ	09 26 45
	eSgNE	46
2	ePgZ	10 16 23
	eSgNE	26
2	ePZ	12 13 08
	eSNE	14 25
2	ePZ	19 27 31
3	ePZ	02 55 23 ±
	eSE	55
3	ePZ	07 49 58
	eSE	51 36
3	ePZ	08 15 27
	eSN	42
3	ePZ	09 52 09
3	ePE	16 52 26
	eSE	53 15
3	ePE	16 57 06
	eSE	58 29
3	ePE	17 05 00
	eSE	24
4	ePZ	04 38 32
4	ePgZ	10 34 07
	eSgE	20
4	ePE	23 14 06
	eSE	29
4	ePZE	23 25 07
	eSNE	29
5	ePZE	01 18 44
	eSE	20 00
5	eXZ	15 05 15
6	ePE	22 55 04
	eSE	43
8	ePN	05 11 16
8	ePE	21 30 50
	eSNE	32 10
9	ePgE	06 14 25
	iSgE	27
9	ePgE	07 26 38
	eSgE	50
9	eXZ	09 15.7
9	ePgN	15 03 51
	eSgNE	04 04
9	ePgN	17 24 36
	eSgE	39
10	eXE	03 33.5
10	ePE	12 42 09
	eSE	29
10	ePE	20 10 54
	eSE	11 15
11	ePE	14 59 04
	eSE	25
11	eXE	20 23 16
13	ePE	00 04 22
13	ePZ	02 28 09
13	ePgZ	04 49 36
	iSgE	37
13	ePgE	17 42 24
	eSgE	40
13	eXE	20 11.3
13	ePZ	23 45 21

Date	Phase	h m s
14	eXE	00 06.0
14	eXE	06 51.0
14	ePE	12 06 26 ±
	eSNE	40
14	eXE	13 36.5
14	ePgE	17 18 17
	eSgE	27
14	ePE	18 55 13
	eSE	38
14	ePE	19 20 50
15	ePZ	14 47 22
	eSNE	48 34
15	eXE	23 09.5
16	eXE	13 45 21
17	ePE	04 41 02
	eSE	41
17	ePZ	13 58 44
17	ePgE	16 55 28
	eSgE	40
17	ePZ	20 59 11
17	ePE	22 01 15
	eSE	33
18	ePE	07 55 45
	eSNE	58 01
18	ePZ	16 01 58
18	ePgZE	16 43 50
	eSgNE	52
18	ePZ	18 10 31
18	ePgE	19 56 04
	eSgE	06
18	ePZ	21 20 28
19	eXE	00 23.5
19	ePZ	03 40 50
19	ePZ	03 45 53
	eSZ	40 17
19	ePN	12 59 56 ±
19	ePZ	18 25 56
20	eXZ	01 43 33
	ePZ	37
	eSN	44 06
20	eXZ	03 26 38
20	ePZ	09 34 00
	eSNE	21
20	ePgZ	11 14 13
	eSgNE	25
21	ePZ	06 01 39
	eSZE	58
21	ePgZ	20 40 17
	eSgN	26
22	ePgE	00 36 46
	eSgE	52
22	ePE	01 33 55
	eSNE	34 19
22	ePZ	08 14 31
	eSN	56
22	ePE	10 39 37 ±
	e(S)E	40 54
22	ePZ	13 22 02
	eSNE	24
23	ePZ	13 39 46
23	eXZ	22 45 02
24	ePgZ	04 16 17
	iSgNE	19
24	eXZ	20 45.5
24	ePZ	21 17 51 ±
25	ePZ	08 47 20
25	eXZ	09 36.5
25	ePZ	19 42 16
	e(S)NE	40
25	ePZN	19 44 15

Date	Phase	h m s
26	ePZ	12 07 11
28	ePgZ	19 03 46
	eSgNE	05 00
30	eXZ	13 04 31
31	eXE	06 10.0
	eXE	12.0
31	eXZ	12 00 00
	e(P)Z	04 39
	Warsak	
1	ePZ	04 51 36
	ePZ	52 02
1	iPZ	16 40 29 c
	iSZ	55
2	ePZ	12 12 01
	eSN	28
3	ePZ	01 13 53
	eSZ	15 19
3	ePZ	07 43 49
	eSZ	45 50
3	ePZ	07 48 52
	iSZ	49 38
3	ePZ	16 50 58
	eSN	51 46
4	ePZ	13 48 52
	eSZ	49 23
4	ePZ	18 41 57
	eSN	42 29
5	ePZ	07 34 16
	eSZ	35 16
6	ePZ	15 13 40
7	iPZ	03 51 33 d
	eSZ	52 03
7	ePZ	09 51 13
	eSZ	50
7	ePZ	10 19 58
	eSZ	20 31
7	ePZ	21 08 40
	eSZ	09 10
8	ePZ	20 28 51
	eSZ	29 12
8	ePZ	21 29 50
	iSZ	30 22
8	ePZ	23 22 46
	eSZ	23 43
9	ePZ	10 56 46
9	ePZ	22 08 45
10	ePZ	02 20 53
	eSZ	21 27
10	ePZ	08 35 12
	iSZ	39
10	ePZ	15 01 02
	iSZ	23
10	ePZ	23 27 25
	eSZ	28 31
11	ePgZ	00 56 08
	iSgZ	18
11	eFZ	01 59 17
	eSZ	02 00 25
11	ePZ	03 04 22
11	ePZ	10 10 38
11	ePZ	11 32 54
	eSZ	33 05
12	ePgZ	00 49 53
	iSgZ	50 04
12	ePZ	00 59 53
12	ePZ	05 09 03
12	iPgZ	20 02 11
	iSgZ	19
13	ePZ	20 09 43

Date	Phase	h m s
14	ePZ	06 12 30
	eSZ	13 03
14	ePZ	12 05 19
14	ePZ	16 05 57
	eSZ	06 31
14	ePZ	21 52 24
	eSZ	49
15	ePZ	06 40 17
	eSZ	47
15	iPZ	14 46 24 d
15	ePZ	20 40 24
	eSZ	51
16	ePZ	13 42 50
	eSZ	43 30
17	ePZ	20 58 02
	eSZ	48
18	eSZ	10 54 20
	eSZ	48
18	ePZ	21 18 20
	eSZ	53
19	ePZ	03 40 51
19	ePZ	19 45 27
21	ePgZ	05 48 10
	eSgZ	23
21	ePZ	15 56 24
	ePZ	22 55 20
22	ePZ	10 38 22
22	ePZ	15 55 22
22	ePZ	16 23 53
23	ePZ	23 10 07
	eSZ	39
24	ePZ	00 49 57
24	ePZ	20 08 04
25	ePZ	08 44 58
	eSN	45 31
25	ePZ	12 52 52
25	ePZ	17 46 11
	eSZ	47
26	ePZ	12 06 34
26	ePZ	16 33 44
27	ePZ	08 03 57
	eSZ	04 10
27	ePZ	17 38 09
28	ePZ	04 54 22
28	ePZ	15 07 21
	eSZ	08 14
28	ePN	23 34 35
	eSN	35 18
29	iPZ	02 00 24 d
	iSZ	55
29	ePZ	16 49 27
	iSZ	50 02
30	ePZ	09 02 23
30	iPZ	17 53 01
	iSN	33
31	iPZ	02 33 31 d
	iSZ	34 00
31	ePZ	05 19 35
	eSZ	20 04
31	ePZ	06 08 43
	eSZ	10 12

Lahore

1	ePZ	00 09 53
2	eXZ	12 13 43
2	eXZ	12 32 11
8	eSNE	21 31 30
9	ePZ	22 08 30
11	cPZ	20 24 23

Date	Phase	h m s
12	ePZ	20 26 10
13	e(P)Z	01 04 40
14	ePZ	12 04 44
15	ePZ	12 25 22
15	eXZ	14 47 56
15	eSZ	22 17 57
18	ePZ	18 11 26
18	iPNZ	21 18 04 d
18	ePZ	21 40 40
	eSNE	59
22	eXZ	10 41 20
22	ePZ	20 23 39
	eSN	25 04
23	ePZ	17 40 21
30	ePZ	17 53 46
	eSNEZ	54 49

Karachi

11	eXE	03 08 19
	eSE	09 28
22	eXZ	20 24 40±
	eSE	28 58
29	ePZ	10 22 32
	eSE	35

Chittagong

1	ePZN	11 20 43
	eSNEZ	21 06
2	eXZ	11 59 20
4	ePZ	23 41 05
5	eXZ	00 00 07
5	ePZ	00 13 22
	eSZN	43
9	ePZE	16 52 50
	eXZ	53 18
13	ePgZ	17 03 42
	eSgZN	49
18	ePZE	23 48 14
	eSZE	28
21	eXZ	04 25.1
21	eXN	05 24.1
22	e(P)ZN	05 16 05
24	eXN	19 16 30
	e(S)ZE	17 06
25	ePNZ	16 50 47d
	iSNZNE	51 14
26	ePZN	07 11 48
	eSNE	12 09
28	eXZ	21 04 05
30	eXNE	09 57.6