

Seis. Bull. Pakistan, Quetta, Vol. 6 No. 1, January 1960

SEISMOLOGICAL BULLETIN OF PAKISTAN

Vol. 6

JANUARY 1960

No. 1



Issued under the authority of the Director, Meteorological Service

PAKISTAN METEOROLOGICAL SERVICE

GEOPHYSICAL INSTITUTE

QUETTA

CONTENTS

| | | | |
|----|---|--------|----|
| 1. | Particulars of Stations and Instruments | ... | 1 |
| 2. | Major shocks | | 3 |
| 3. | Local and Minor shocks | | 18 |

Particulars of Stations and Instruments

(a) Stations

| Station | Symbol | Latitude | Longitude | Height (a.s.l.) | Ground |
|------------|--------|-------------|-------------|-----------------|----------------------|
| Quetta | Qt | 30° 11'·3 N | 66° 57'·0 E | 1719 meters | Cretaceous Limestone |
| Lahore | Lh | 31° 33'·0 N | 74° 20'·0 E | 210 " | Alluvium |
| Karachi | Kr | 24° 49'·8 N | 67° 02'·2 E | 30 " | Alluvium |
| Chittagong | Ch | 22° 21'·5 N | 91° 49'·0 E | 15 " | Alluvium |
| Warsak | Wr | 34° 09'·0 N | 71° 25'·0 E | 343 " | River Terrace |

(b) Instruments

| Instruments | Components | Period Seismo. & Galvo. | Damping | Max. Magnification |
|---------------------------------|------------|----------------------------|----------|-----------------------|
| <u>Quetta (Central Station)</u> | | | | |
| Sprengnether | Z | 1·9 sec. | Critical | 5,500 |
| " | N | 1·95 " | " | 4,500 |
| " | E | 1·95 " | " | 5,800 |
| " | N | 15·8 " | " | 15,000 |
| " | E | 16·5 " | " | 16,000 |

(Contd).

Pakistan Meteorological Service

Director,
Meteorological Service

Sibte Nabi Naqvi

Deputy Director,
Geophysical Institute

Abdul Qadir Khan

Officer Incharge,
Seismological Section

The Seismological Bulletin of Pakistan is a monthly publishing data of seismological stations in Pakistan.

All correspondence regarding the supply of this bulletin on exchange basis should be addressed to the Director, Meteorological Service, Secretariat Block No. 3, Frere Road, Karachi-1, Pakistan.

| Instruments | Components | Period Seismo. & Galvo. | Damping | Max. Magnification |
|--|------------|------------------------------------|----------|-----------------------|
| Willmore | Z, N & E | { Seismo = 1 sec. Galvo = 1/4 " | — | — |
| Milne-Shaw | E | 12.0 sec. | 20:1 | 250 |
| 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 | 5,800 |
| " | N | 1.6 " | " | 4,700 |
| " | E | 1.4 " | " | 4,700 |
| Chittagong Sprengnether | Z | 1.7 " | Critical | 5,200 |
| " | N | 1.8 " | " | 5,700 |
| " | E | 1.5 " | " | 3,600 |
| " | N | 7.0 " | " | 6,600 |
| Willmore | Z | { Seismo = 1 sec. Galvo = 1/4 " | — | — |
| Warsak Sprengnether | N | 2.0 sec. | Critical | 4,000 |
| Willmore (with Sprengnether galvo. & recorder) | Z | 1.0 " | — | — |

* indicates long period seismographs, Sprengnether or Milne-Shaw.
c=compression, d=dilatation, X=unidentified phase.
Mu=Actual ground motion of the indicated phase in microns.
Sec=Period of the indicated phase in seconds
(Pas), (Berk), (Up), (Ki) stand for seismological observatories Pasadena (U.S.A.),
Berkley (U.S.A.), Uppsala (Sweden) and Kiruna (Sweden) respectively.
All times are in Greenwich Mean Time.

| Date | Station | Phase | h m s | Date | Station | Phase | h m s |
|------|---------|--------------------|----------|------|---------|----------------------|----------|
| 1 | Ch | ePZ | 04 21 10 | | | ePPPZE | 12 08 |
| | | ePPZ | 23 11 | | | eSE | 15 21 |
| | | USCGS H 04 11 40 | | | | eSSZE | 50 |
| | | 49 N 153 1/2 E | | | Wr | iPZ | 14 23 c |
| | | Kurile Islands | | | Qt | ePZ | 25 c |
| 1 | Ch | ePZ | 04 26 03 | | | ePPZ | 16 01 |
| | | ePPZ | 27 55 | | | eSN* | 20 21 |
| | | eSZ | 32 53 | | | eLN* | 23.4 |
| | Wr | ePZ | 27 48 | | | USCGS H 05 06 54 | |
| | Qt | ePZ | 28 20 | | | 2 1/2 N 96 E | |
| | | USCGS H 04 17 32 | | | | Off coast of Sumatra | |
| | | 27 1/2 N 142 E | | 2 | Wr | iPZ | 05 55 42 |
| | | Bonin Islands | | | | eSN | 53 14 |
| 1 | Ch | ePZ | 23 22 50 | | Lh | ePZ | 23 |
| | | ePPZ | 25 03 | | | eSN | 54 26 |
| | Qt | ePZ | 23 37 | | Qt | ePZ | 53 37 |
| | | USCGS H 23 12 31 | | | | eSN | 54 51 |
| | | 56 N 162 1/2 E | | | | H 05 52 00 | |
| | | Near east coast of | | | | 36 N 70 1/4 E | |
| | | Kamchatka | | | | Hindukush | |
| 2 | Qt | ePZ | 02 03 11 | | | depth about 230 km | |
| | | USCGS H 01 52 18 | | 2 | Qt | ePZ | 07 10 40 |
| | | 54 N 157 1/2 E | | | | USCGS H 06 59 36 | |
| | | Kamchatka | | | | 56 1/2 N 163 1/2 E | |
| 2 | Qt | ePKPZ | 03 40 59 | | | Near east coast of | |
| | | ePPE | 43 50 | | | Kamchatka | |
| | | epPPE | 44 27 | | | | |
| | | USCGS H 03 21 52 | | 2 | Qt | ePZ | 14 44 22 |
| | | 15 1/2 S 68 W | | | | eSZEN* | 46 23 |
| | | Bolivia | | | Wr | ePZ | 45 09 |
| | | depth about 150 km | | | | H 14 41 45 | |
| | | Mag 6 1/4 (Pas) | | | | Iran | |
| 2 | Ch | ePZE | 05 11 39 | 2 | Ch | ePZ | 21 33 34 |
| | | ePPZE | 58 | | Qt | ePZ | 35 46 |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|---------------------------------------|----|----|----|------|---------|-----------------------|----|----|-------|
| 2 | Wr | iPZ | 23 | 15 | 46 | 3 | Ch | ePZE | 21 | 29 | 05 |
| | Qt | ePZ | | 16 | 48 | | | epPZ | | | 50 |
| 3 | W. | iPZ | 11 | 27 | 21 | | | ePcPE | | | 30 13 |
| | Qt | iSZ | | 29 | 50 | | Wr | eSZE | | | 36 15 |
| | | ePZ | | 28 | 30 | | Qt | iPZ | | | 29 56 |
| | | ePPE | | | 46 | | | ePZ | | | 30 32 |
| | | ePPPE | | | 54 | | | eSN* | | | 38 56 |
| | Ch | eSNN* | | 31 | 59 | | | USCGS H 21 20 13 | | | |
| | | ePZ | | 29 | 01 | | | 45 N 148 E | | | |
| | | ePPE | | | 28 | | | Kurile Islands | | | |
| | | ePPPE | | | 41 | | | depth about 150 km | | | |
| | | eSE | | 33 | 04 | 4 | Ch | ePnZE | 03 | 58 | 10 |
| | | eSSE | | | 43 | | | ePgZE | | | 21 |
| | | H 11 24 04 | | | | | | iSnZE | | | 52 |
| | | 43 $\frac{1}{4}$ N 84 $\frac{1}{2}$ E | | | | | | eSgE | | | 59 06 |
| | | Sinkiang Province | | | | | Wr | iPE | 04 | 01 | 16 |
| | | China | | | | | Qt | ePZ | | | 51 |
| | | USCGS H 12 24 00 | | | | | | eSNE | | | 05 31 |
| | | 44 N 84 $\frac{1}{2}$ E | | | | | | H 03 57 14 | | | |
| | | Sinkiang Province | | | | | | East Pakistan-Assam | | | |
| | | China | | | | | | border | | | |
| | | USCGS H 12 24 00 | | | | | | Felt Rangpur | | | |
| | | 44 N 84 $\frac{1}{2}$ E | | | | | | USCGS H 03 57 03 | | | |
| | | Sinkiang Province | | | | | | 26 N 90 E | | | |
| | | China | | | | | | India-Pakistan border | | | |
| 3 | Qt | ePZ | 20 | 27 | 00 | 4 | Qt | ePZ | 06 | 14 | 01 |
| | | eSN* | | 33 | 07 | | | eSN* | | | 18 58 |
| | | esSN* | | 34 | 52 | | | iSSN* | | | 20 28 |
| | | esSSN* | | 37 | 41 | | | eLN* | | | 21.5 |
| | | USCGS H 20 19 30 | | | | | | iPZ | | | 14 46 |
| | | 39 $\frac{1}{2}$ N 15 $\frac{1}{2}$ E | | | | | Wr | ePZ | | | 16 36 |
| | | Tyrrbenin | | | | | Ch | H 06 07 49 | | | |
| | | depth about 250 km | | | | | | Ethiopia | | | |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|---------------------------------------|----|----|-------|------|---------|---------------------------------------|----|----|----------|
| 4 | Qt | ePZ | 06 | 22 | 37 | 6 | Ch | ePnZE | 18 | 45 | 58 |
| | | ePPNE | | 23 | 34 | | | ePgZE | | | 46 05 |
| | | ePPPNE | | | 52 | | | iSnZE | | | 28 |
| | | eSNE | | 27 | 37 | | | eSgZE | | | 34 |
| | | eSSE | | 29 | 01 | | Lh | ePZ | | | 49 43 |
| | | eLN* | | 30 | 3 | | Wr | ePZ | | | 50 16 |
| | Wr | ePZ | | 23 | 24 | | Qt | ePZ | | | 40 |
| | Lh | ePZ | | | 26 | | | H 18 45 17 | | | |
| | Ch | ePZ | | 25 | 14 | | | 23 $\frac{1}{4}$ N 94 $\frac{1}{4}$ E | | | |
| | | ePPE | | 27 | 07 | | | Assam-Burma border | | | |
| | | eSE | | 32 | 18 | | | USCGS H 18 45 08 | | | |
| | | H 06 16 22 | | | | | | 23 $\frac{1}{2}$ N 95 E | | | |
| | | Ethiopia | | | | | | Burma | | | |
| 4 | Ch | ePZ | 06 | 30 | 30 | 6 | Ch | ePZ | 20 | 25 | 23 |
| | | USCGS H 06 19 49 | | | | | | eXZ | | | 40 |
| | | 4 $\frac{1}{2}$ S 153 $\frac{1}{2}$ E | | | | | | ePcPZE | | | 26 51 |
| | | New Britain | | | | | | ePPE | | | 27 15 |
| 4 | Qt | ePZ | 12 | 58 | 54 | | | ePPPE | | | 28 06 |
| | Wr | ePZ | | | 57 | | | eSE | | | 32 23 |
| | | USCGS H 12 51 52 | | | | | Lh | ePZ | | | 27 29 |
| | | 45 N 27 E | | | | | Wr | ePZ | | | 49 |
| | | Romania | | | | | Qt | ePZ | | | 28 02 |
| 4 | Ch | ePZ | 13 | 39 | 59 | | | USCGS H 20 16 29 | | | |
| | Qt | ePZ | | | 43 27 | | | 6 $\frac{1}{2}$ S 133 E | | | |
| | | USCGS H 13 34 20 | | | | | | Banda Sea | | | |
| | | 18 N 120 $\frac{1}{2}$ E | | | | | | ePZ | 22 | 59 | 39 |
| | | Luzon Islands | | | | | | eSNEN* | | | 23 01 34 |
| | | Philippine Islands | | | | | | ePZ | | | 00 41 |
| 6 | Ch | ePZ | 07 | 49 | 53 | | | H 22 57 10 | | | |
| | | USCGS H 07 37 36 | | | | | | Southern Iran | | | |
| | | Santa Cruz Islands | | | | | | ePZE | 08 | 19 | 10 |
| 6 | Ch | ePZ | 13 | 23 | 14 | | | ePPZE | | | 22 |
| | | USCGS H 13 11 00 | | | | | | ePPZE | | | 31 |
| | | 10 $\frac{1}{2}$ S 167 E | | | | | | eSZE | | | 22 09 |
| | | Santa Cruz Islands | | | | | | eSSZE | | | 29 |

Seismological Bulletin of Pakistan
Volume 6 No. 1, January 1960

Major Shocks

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|------------------|----|----|----|------|---------|------------------|----|----|----|
| | Qt | ePZ | 22 | 21 | | | | USCGS H 02 35 00 | | | |
| | | ePPE | 23 | 36 | | | | 58½ S 26 W | | | |
| | | eSN* | 27 | 50 | | | | Sandwich Islands | | | |
| | | eLN* | 30 | 6 | | 8 | Qt | ePKPZ | 11 | 48 | 04 |
| | | USCGS H 08 15 21 | | | | | | eSKSPN* | 59 | 11 | |
| | | 6½ N 94 E | | | | | Ch | ePKPZ | 48 | 15 | |
| | | Nicobar Islands | | | | | | ePPZ | 49 | 58 | |
| 7 | Qt | ePKPZ | 13 | 47 | 00 | | | ePKSZ | 51 | 52 | |
| | | ePPZ | 48 | 10 | | | | USCGS H 11 29 18 | | | |
| | | eSKSN* | 53 | 53 | | | | 55 S 27½ W | | | |
| | | eSKSPN* | 58 | 07 | | | | Sandwich Islands | | | |
| | | eSSN* | 14 | 04 | 30 | 8 | Qt | ePKPZ | 15 | 04 | 42 |
| | Ch | ePKPZE | 13 | 47 | 15 | | | eSKSN* | 11 | 39 | |
| | | eXZE | 35 | | | | | eSKSPN* | 15 | 47 | |
| | | ePPZE | 49 | 02 | | | | eSSN* | 22 | 20 | |
| | | ePKSZE | 50 | 51 | | | Ch | ePKPZ | 04 | 50 | |
| | | USCGS H 13 28 16 | | | | | | USCGS H 14 45 53 | | | |
| | | Sandwich Islands | | | | | | 55½ S 27½ W | | | |
| | | Mag 6¼-6½ (Pas) | | | | | | Sandwich Islands | | | |
| 7 | Ch | ePZ | 23 | 21 | 01 | 8 | Qt | ePnZ | 21 | 43 | 05 |
| | | ePPPZE | 22 | | | | | ePgZE | 14 | | |
| | | eSZE | 23 | 56 | | | | eSnNE | 37 | | |
| | | eSSZE | 24 | 15 | | | | eS*NE | 43 | | |
| | Wr | ePZ | 23 | 24 | 14 | | | eSgNE | 47 | | |
| | Qt | ePZ | 18 | | | | Wr | ePZ | 44 | 12 | |
| | | ePPZ | 25 | 39 | | | | H 21 42 22 | | | |
| | | ePPPZ | 53 | | | | | Baluchistan | | | |
| | | eSN* | 29 | 53 | | | | West Pakistan | | | |
| | | eLN* | 32 | 6 | | 8 | Qt | ePZ | 22 | 08 | 10 |
| | | USCGS H 23 17 18 | | | | | | ePZ | 02 | 34 | 25 |
| | | 6½ N 94½ E | | | | | | eSN | 36 | 04 | |
| | | Nicobar Islands | | | | 9 | Wr | ePZ | 03 | 09 | 00 |
| 8 | Qt | ePKPZ | 02 | 53 | 49 | | Qt | ePZ | 43 | | |
| | | | | | | | | eSN | 11 | 44 | |

Seismological Bulletin of Pakistan
Volume 6 No. 1, January 1960

International
Seismological
Centre

Major Shocks

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|---------------------|----|----|----|------|---------|------------------------|----|----|----|
| | | H 03 07 06 | | | | | | depth about 150 km | | | |
| | | Uzbekistan, S.S.R. | | | | | | Mag 6.6 (Qt) | | | |
| 9 | Qt | ePZ | 04 | 04 | 00 | | | Felt Warsak, Peshawar, | | | |
| | | USCGS H 03 58 45 | | | | | | Lyallpur & Lahore | | | |
| | | 37 N 29 E | | | | 9 | Ch | ePZ | 07 | 49 | 16 |
| | | Southwestern Turkey | | | | | Qt | ePZ | 52 | 15 | |
| 9 | Wr | iPZ | 07 | 24 | 52 | | | ePcPZ | 56 | | |
| | Lh | iPN | 25 | 13 | | | | ePPZN* | 54 | 30 | |
| | Qt | iPZ | 43 | | | | | ePPPZN* | 55 | 58 | |
| | | isPZN* | 26 | 24 | | | | eLN* | 08 | 07 | 2 |
| | | iSNEN* | 27 | 00 | | | | USCGS H 07 41 57 | | | |
| | | Mu Sec | | | | | | 1 S 124 E | | | |
| | | PZ 8.1 2.0 | | | | | | Celebes | | | |
| | Kr | ePZ | 07 | 26 | 47 | 9 | Qt | ePZ | 10 | 07 | 02 |
| | | iSE | 28 | 51 | | 9 | Qt | ePZ | 18 | 01 | 40 |
| | Ch | iPZE | 55 | | | | | USCGS H 17 49 07 | | | |
| | | epPZE | 29 | 30 | | | | 55½ N 165 W | | | |
| | | ePPZE | 38 | | | | | Unimak Island region | | | |
| | | ePPPZE | 50 | | | 10 | Lh | ePZ | 23 | 00 | 55 |
| | | esPZE | 56 | | | | Qt | ePZ | 01 | 37 | |
| | | iPcPZE | 32 | 35 | | 11 | Ch | ePZE | 02 | 34 | 46 |
| | | iSZNE | 52 | | | | | eSE | 40 | 23 | |
| | | isSZE | 33 | 54 | | | Wr | ePZ | 36 | 41 | |
| | | eSSZE | 58 | | | | Qt | ePZ | 37 | 17 | |
| | | H 07 24 05 | | | | | | eSN* | 44 | 56 | |
| | | 36¼ N 69¾ E | | | | | Kr | ePZ | 37 | 27 | |
| | | Hindukush | | | | | | USCGS H 02 27 38 | | | |
| | | depth about 200 km | | | | | | 28½ N 131 E | | | |
| | | USCGS H 07 23 50 | | | | | | Ryukyu Islands | | | |
| | | 36 N 69 E | | | | | | | | | |
| | | Hindukush | | | | | | | | | |

| Major Shocks | | | |
|--------------|---------|---------------------|------------|
| Date | Station | Phase | h m s |
| 11 | Ch | iPnZE | 03 12 06 c |
| | | eP*ZE | 24 |
| | | ePgZE | 36 |
| | | iSnZE | 13 29 |
| | Wr | ePZ | 16 12 |
| | Kr | ePZ | 14 |
| | Qt | ePZ | 27 |
| | | ePPZE | 17 25 |
| | | ePPPE | 36 |
| | | ePcPN* | 19 28 |
| | | eSEN* | 21 25 |
| | | eSSN* | 22 54 |
| | | iSSSN* | 23 21 |
| | | eLN* | 24.1 |
| | | H 03 10 15 | |
| | | 16½ N 96 E | |
| | | Near south coast of | |
| | | Burma | |
| | | USCGS H 03 10 14 | |
| | | 16 N 96½ E | |
| | | Near south coast of | |
| | | Burma | |
| 11 | Ch | ePZ | 15 01 59 |
| | | ePPZ | 03 49 |
| | | eSE | 08 47 |
| | Wr | ePZ | 04 29 |
| | | USCGS H 14 53 29 | |
| | | 9 S 127 E | |
| | | Timor Island region | |
| 11 | Ch | ePZE | 23 03 28 |
| | | ePcPZ | 04 34 |
| | | ePPPE | 06 36 |
| | | e(S)E | 10 41 |
| | Lh | iPZ | 05 24 |

| Major Shocks | | | |
|--------------|---------|---------------------|----------|
| Date | Station | Phase | h m s |
| 13 | Qt | ePZ | 02 08 57 |
| 13 | Ch | ePZ | 07 35 53 |
| | Wr | ePZ | 38 09 |
| | Qt | ePZ | 27 |
| | | eSN* | 48 23 |
| | | USCGS H 07 26 26 | |
| | | 3½ S 140 E | |
| | | Northern New Guinea | |
| 13 | Qt | ePZ | 08 11 22 |
| | | ePPZE | 45 |
| | | eSN* | 15 21 |
| | | eSSN* | 59 |
| 13 | Qt | ePKPZ | 15 59 47 |
| | | epPKPZNE | 16 00 32 |
| | | esPKPZ | 01 02 |
| | | ePPZ | 03 05 |
| | | ePKSNEN* | 30 |
| | | epPPZ | 04 02 |
| | | esPPZ | 26 |
| | | ePPPZ | 06 32 |
| | | eSKSNE | 37 |
| | | epPPPZ | 07 11 |
| | | eSKKSE | 08 52 |
| | Wr | ePKP | 15 59 49 |
| | Kr | ePKPZ | 51 |
| | Lh | ePKPZ | 59 |
| | Ch | ePKPZE | 16 00 21 |
| | | eXZE | 01 05 |
| | | epPKPZE | 14 |
| | | iXZE | 50 |
| | | epPPZE | 07 14 |
| | | USCGS H 15 40 34 | |
| | | 16 S 72 W | |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s | | | | | | | | | | |
|------|---------|---------------|------|----------------------|---------|------|---------|---------|--------|------------------------------|---------|-----|-------------------------|------------------------------|--------------------|----------------------------------|----|------|------|----|----|
| 14 | Ch | iPZE | 10 | 33 | 56 c | 14 | Ch | ePPPE | 56 | 52 | 14 | Ch | ePZE | 12 | 59 | 16 | | | | | |
| | | ePPZE | 35 | 37 | epPPPN* | | | 57 | 24 | USCGS H | | | 12 | 49 | 07 | | | | | | |
| | | eSE | 40 | 23 | eSKKSN* | | | 59 | 11 | 57 N | | | 162½ E | Near east coast of Kamchatka | | | | | | | |
| | Wr | iPZ | 35 | 22 c | eSKSPN* | | | 10 | 02 | 55 | | | | | | | | | | | |
| | | Qt | ePZ | 53 | esPSN* | | | 04 | 16 | USCGS H | | | 09 | | 30 | 24 | | | | | |
| | Kr | ePcPE | 36 | 43 | Mu | | | Sec | 15 S | | | | 75 W | Near coast of Southern Peru | depth about 150 km | Mag 7 (Pas), 6½ (Berk), 7.1 (Qt) | 15 | Lh | ePZ | 23 | 48 |
| | | ePPE | 38 | 01 | PPZ | | | 4.8 | 3.0 | USCGS H | | | 23 | | | | | | 38 | 50 | |
| | | ePPPE | 39 | 38 | PPN | | | 3.7 | 2.8 | | | | Northern Celebes region | 16 | Wr | iPZ | 13 | 34 | 11 c | | |
| | | eSN* | 43 | 58 | PPE | | | 5.0 | 2.8 | Hindukush | | | | | | 16 | Ch | ePZ | 18 | 50 | 30 |
| | ePZ | 36 | 13 c | $\Delta = 144^\circ$ | iPKPZ | | | 09 | 49 | | | | 44 | 16 | Ch | | | ePZE | 18 | 50 | 30 |
| | USCGS H | 10 | 25 | 52 | Wr | | | ePKPZ | 48 | 16 | | | Ch | | | ePZ | 21 | 52 | 57 | | |
| 37 N | 140 E | Honshu, Japan | 12 | 59 | 16 | Ch | ePKPZE | 50 | 19 | | USCGS H | 21 | | 41 | 44 | | | | | | |
| 57 N | 162½ E | | | | | | isPKPZ | 19 | 16 | Ch | | ePZ | 21 | 52 | 57 | | | | | | |
| 14 | Ch | ePZ | 12 | 59 | 16 | 16 | Ch | ePZ | | | 21 | 52 | 57 | 16 | Ch | ePZ | 21 | 52 | 57 | | |
| | | USCGS H | 12 | 49 | 07 | | | 57 N | 162½ E | Near east coast of Kamchatka | | | | | | | | | | | |
| 14 | Ch | ePZ | 16 | 07 | 02 | 14 | Ch | ePZ | 16 | | 07 | 02 | 14 | Ch | ePZ | 16 | 07 | 02 | | | |
| | | USCGS H | 15 | 58 | 56 | | | 3 S | 127½ E | Ceram Islands region | | | | | | | | | | | |
| 14 | Wr | iPZ | 09 | 37 | 14 | Wr | iPZ | 09 | 37 | | 14 | Wr | iPZ | 09 | 37 | 14 | Wr | iPZ | 09 | 37 | |
| | | USCGS H | 15 | 58 | | | 56 | 3 S | 127½ E | Ceram Islands region | | | | | | | | | | | |
| 14 | Ch | ePZ | 21 | 04 | 12 | 14 | Ch | ePZ | 21 | | 04 | 12 | 14 | Ch | ePZ | 21 | 04 | 12 | | | |
| | | USCGS H | 20 | 55 | 10 | | | 44½ N | 148 E | Kurile Islands | | | | | | | | | | | |
| 15 | Qt | ePKPZ | 09 | 49 | 42 | 15 | Qt | ePKPZ | 09 | | 49 | 42 | 15 | Qt | ePKPZ | 09 | 49 | 42 | | | |
| | | epPKPNE | 50 | 27 | epPKPNE | | | 50 | 27 | epPKPNE | 50 | 27 | | | | | | | | | |
| | | esPKPZ | 40 | esPKPZ | 40 | | | esPKPZ | 40 | | | | | | | | | | | | |
| | | iXZE | 52 | 52 | iXZE | | | 52 | 52 | | | | | | | | | | | | |
| | | iPPZEN* | 53 | 04 | iPPZEN* | | | 53 | 04 | | | | | | | | | | | | |
| | | ePKSZNE | 28 | ePKSZNE | 28 | | | ePKSZNE | 28 | | | | | | | | | | | | |
| | | epPPZ | 47 | epPPZ | 47 | | | epPPZ | 47 | | | | | | | | | | | | |
| | | esPPZ | 54 | 08 | esPPZ | | | 54 | 08 | | | | | | | | | | | | |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s | | | | | | |
|------|---------|-------------------------------------|--------------------|-----------------------------|--------------------|---------------------|-----------------------------|--------------------|--------------|-----|------|-----------------------------|--------------------|--------------|------|-----|------|
| 16 | Lh | eSE | 19 | 00 | 30 | 16 | Lh | eP*E | 59 | 16 | Lh | eP*E | 59 | | | | |
| | | USCGS H | 18 | 38 | 40 | | | eSnN | 47 | | | 58 | | | | | |
| | | 13 S | 167½ E | New Hebrides Islands region | depth about 200 km | | | Kr | Kr | | | ePnN | 46 | 51 | | | |
| | | ePZ | 21 | | | | | | | | | 01 | 07 c | ePgn | 47 | 17 | |
| 16 | Wr | ePZ | 21 | 01 | 07 c | 16 | Wr | ePZ | 21 | 01 | 07 c | 16 | Wr | ePZ | 21 | 01 | 07 c |
| | | Ch | ePZ | 12 | 39 | | | Ch | ePZ | 12 | 39 | | | | | | |
| 16 | Ch | ePZE | 02 | 27 | 16 | Ch | ePZE | 02 | 27 | 16 | Ch | ePZE | 02 | 27 | | | |
| | | ePPZE | 04 | 54 | | | ePPZE | 04 | 54 | | | | | | | | |
| 16 | Ch | USCGS H | 20 | 49 | 31 | 16 | Ch | USCGS H | 20 | 49 | 31 | 16 | Ch | USCGS H | 20 | 49 | 31 |
| | | 63 N | 151 W | 63 N | 151 W | | | 63 N | 151 W | | | | | | | | |
| 16 | Ch | Alaska | depth about 150 km | 16 | Ch | ePZ | 21 | 52 | 57 | 16 | Ch | ePZ | 21 | 52 | 57 | | |
| | | USCGS H | | | | 21 | 41 | 44 | USCGS H | | | 21 | 41 | 44 | | | |
| 17 | Wr | ePKPZ | 03 | 17 | 21 | 17 | Wr | ePKPZ | 03 | 17 | 21 | 17 | Wr | ePKPZ | 03 | 17 | 21 |
| | | Ch | ePKPZ | 57 | Ch | | | ePKPZ | 57 | | | | | | | | |
| 17 | Ch | USCGS H | 02 | 57 | 58 | 17 | Ch | USCGS H | 02 | 57 | 58 | 17 | Ch | USCGS H | 02 | 57 | 58 |
| | | 14½ S | 74½ W | 14½ S | 74½ W | | | 14½ S | 74½ W | | | | | | | | |
| 17 | Wr | Near coast of Southern Peru | depth about 150 km | Mag 6½ (Pas) | 17 | Wr | Near coast of Southern Peru | depth about 150 km | Mag 6½ (Pas) | 17 | Wr | Near coast of Southern Peru | depth about 150 km | Mag 6½ (Pas) | | | |
| | | ePZ | | | | | 04 | | | | | 27 | | | 21 | ePZ | 04 |
| 17 | Ch | ePZ | 04 | 27 | 21 | 17 | Ch | ePZ | 04 | 27 | 21 | 17 | Ch | ePZ | 04 | 27 | 21 |
| | | Wr | iPZ | 28 | 47 c | | | Wr | iPZ | 28 | 47 c | | | | | | |
| 17 | Wr | USCGS H | 04 | 19 | 07 | 17 | Wr | USCGS H | 04 | 19 | 07 | 17 | Wr | USCGS H | 04 | 19 | 07 |
| | | 40½ N | 142 E | 40½ N | 142 E | | | 40½ N | 142 E | | | | | | | | |
| 17 | Qt | Off coast of northern Honshu, Japan | 17 | Qt | iPZ | 21 | 46 | 00 d | 17 | Qt | iPZ | 21 | 46 | 00 d | | | |
| | | ePnZ | | | 47 c | ePnZ | 47 c | | | | | | | | | | |
| 18 | Qt | iPgZ | 22 | 01 | 10 d | 18 | Qt | iPgZ | 22 | 01 | 10 d | 18 | Qt | iPgZ | 22 | 01 | 10 d |
| | | USCGS H | 19 | 30 | 18 | | | USCGS H | 19 | 30 | 18 | | | | | | |
| 18 | Lh | 9 N | 77 W | 18 | Lh | 9 N | 77 W | 18 | Lh | 9 N | 77 W | 18 | Lh | 9 N | 77 W | | |
| | | Off coast of Panama | depth about 100 km | | | Off coast of Panama | depth about 100 km | | | | | | | | | | |

| Date | Station | Phase | h | m | s |
|------|---------|-------------------------|----|----|---------|
| | | iSgN* | | | 23 |
| | | Mu Sec | | | |
| | PZ | 5.1 | | | 0.8 |
| | | $\Delta = 1^\circ 0$ | | | |
| Kr | iPZ | | 22 | 02 | 09 |
| | iSE | | | | 03 07 |
| Wr | iPZ | | | | 02 20 c |
| Lh | ePnZ | | | | 25 |
| | eS*N | | | | 03 52 |
| | | H 22 00 53 | | | |
| | | 29½ N 67½ E | | | |
| | | Dadhar | | | |
| | | Eastern Baluchistan | | | |
| | | West Pakistan | | | |
| | | USCGS H 22 00 40 | | | |
| | | Southern Pakistan | | | |
| 19 | Ch | ePZ | 02 | 26 | 48 c |
| | Wr | iPZ | | | 27 15 c |
| | Qt | ePZ | | | 51 c |
| | | ePcPZE | | | 28 16 |
| | | eScSN* | | | 37 43 |
| | | eLN* | | | 45.6 |
| | | USCGS 02 16 52 | | | |
| | | 52 N 158 E | | | |
| | | Near southeast coast of | | | |
| | | Kamchatka | | | |
| | | Mag 6¼-6½ (Pas) | | | |
| 19 | Qt | ePgZ | 04 | 12 | 07 d |
| | | iSgZNE | | | 20 |
| | Wr | ePZ | | | 13 18 |
| | | H 04 11 47 | | | |
| | | Dadhar | | | |
| | | Eastern Baluchistan | | | |
| | | West Pakistan | | | |

| Date | Station | Phase | h | m | s |
|------|---------|---------------------|----|----|-------|
| | | USCGS H 02 14 11 | | | |
| | | 42 N 142½ E | | | |
| | | Near south coast of | | | |
| | | Hokkaido, Japan | | | |
| 22 | Qt | ePZ | 07 | 44 | 22 |
| | Wr | ePZ | | | 34 |
| 22 | Qt | ePZ | 11 | 36 | 38 |
| 22 | Ch | ePZE | 13 | 43 | 29 |
| | | ePPZE | | | 45 04 |
| | | eSZE | | | 49 33 |
| | Wr | ePZ | | | 46 01 |
| | Qt | ePZ | | | 23 |
| | | ePcPZE | | | 47 02 |
| | | ePPZ | | | 48 47 |
| | | USCGS H 13 35 54 | | | |
| | | 0 125 E | | | |
| | | Molucca Passage | | | |
| 22 | Qt | ePnZ | 18 | 05 | 08 |
| | | ePgZ | | | 16 |
| | | eSnZEN* | | | 41 |
| | | eS*NE | | | 45 |
| | | eSgZN | | | 51 |
| | Kr | ePZ | | | 10 |
| | | eSE | | | 47 |
| | Wr | ePZ | | | 06 11 |
| | | H 18 04 23 | | | |
| | | 27½ N 68¾ E | | | |
| | | West Pakistan | | | |
| 23 | Qt | ePZ | 02 | 48 | 26 |
| 23 | Ch | iPZE | 02 | 49 | 09 c |
| | | iPcPZE | | | 50 53 |
| | | ePPZE | | | 57 |
| | | iSZE | | | 55 46 |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|-------------------------------------|-----|----|----------|------|---------|---|---|----|-------|
| | | ePPSE | | 16 | | | Kr | ePZ | | | 18 |
| | | eSSE | 49 | 03 | | | Qt | ePZ | | | 29 d |
| | | eScSE | | 29 | | | | ePcPNE | | | 54 |
| Lh | | iPZ | 41 | 38 | c | | | ePPZ | | 09 | 55 |
| | | eSN | 50 | 05 | | | | ePPPZ | | 11 | 38 |
| Kr | | ePZ | 42 | 01 | c | | | eSEN* | | 16 | 14 |
| | | ePPZ | 44 | 29 | | | | ePPSN* | | | 58 |
| | Mu | Sec | | | | | | iLN* | | | 21.4 |
| | PZ | 0.6 | 1.3 | | | | | USCGS H 17 56 30 | | | |
| | | $\Delta=66^\circ$ | | | | | | 4 S 127 $\frac{1}{2}$ E | | | |
| Qt | | ePZ | 07 | 42 | 12 c | | | Ceram Islands region | | | |
| | | ePcPZE | | 38 | | | | Mag 6 $\frac{1}{2}$ -6 $\frac{3}{4}$ (Pas) | | | |
| | | ePPZNE | 44 | 41 | | 23 | Qt | ePZ | | 22 | 10 05 |
| | | ePPPZ | 46 | 17 | | | | USCGS H 21 57 08 | | | |
| | | eXNE | 47 | 22 | | | | 5 $\frac{1}{2}$ S 152 E | | | |
| | | eSNEN* | 51 | 03 | | | | New Britain | | | |
| | | eScSNE | 52 | 00 | | 24 | Qt | ePZ | | 01 | 17 00 |
| | Mu | Sec | | | | 24 | Ch | ePZE | | 04 | 35 26 |
| | PZ | 0.7 | 1.5 | | | | Qt | ePKPZ | | 40 | 38 |
| | PPZ | 0.5 | 1.7 | | | | | eXZ | | 41 | 47 |
| | | $\Delta=67^\circ$ | | | | | | ePPZ | | 42 | 26 |
| | | USCGS H 07 31 14 | | | | | | ePKSZN* | | 44 | 19 |
| | | 4 S 127 E | | | | | | ePPPN* | | 49 | |
| | | Ceram Islands region | | | | | | eSKKSN* | | 48 | 59 |
| | | Mag 6 $\frac{3}{4}$ (Pas), (Qt, Kr) | | | | | | eSKSPN* | | 51 | 54 |
| 23 | Qt | ePZ | 08 | 15 | 07 | | | ePSN* | | 52 | 23 |
| 23 | Qt | ePZ | 08 | 40 | 14 | | | ePPSN* | | 53 | 26 |
| 23 | Ch | iPZE | 18 | 04 | 43 d | | | USCGS H 04 21 42 | | | |
| | | ePPZE | | 06 | 28 | | | 15 $\frac{1}{2}$ 179 W | | | |
| | | ePPPZE | | 07 | 03 | | | Fiji Islands | | | |
| | | eSZE | | 11 | 14 | | | Mag 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ (Pas), | | | |
| Lh | | iPZ | | 07 | 04 \pm | | | 6-6 $\frac{1}{4}$ (Berk) | | | |
| Wr | | iPZ | | 16 | | 24 | Qt | ePnZ | | 05 | 04 58 |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|---------------------------------------|----|------|----|------|---------|---------------------------------------|----|------|-------|
| | | ePgZNE | 05 | 12 | | 25 | Qt | ePZ | 21 | 37 | 48 |
| | | eSnNE | | 45 | | | | e(S)N* | | 40 | 44 |
| | | eSgNE | 06 | 00 | | | | eLN* | | 41.3 | |
| 24 | Ch | ePZ | 09 | 22 | 29 | | Wr | ePZ | | 38 | 43 |
| | Qt | ePZ | | 25 | 21 | 26 | Qt | ePZ | 01 | 51 | 01 |
| | | USCGS H 09 14 03 | | | | | | eSNEN* | | 52 | 53 |
| | | Banda Sea | | | | | | eSSN* | | 53 | 08 |
| 24 | Ch | ePZ | 12 | 26 | 35 | | | eLN* | | 53.7 | |
| | | USCGS H 12 16 23 | | | | | Kr | ePZ | | 51 | 08 |
| | | 4 $\frac{1}{2}$ S 143 $\frac{1}{2}$ E | | | | | | H 01 48 36 | | | |
| | | New Guinea | | | | | | Southern coast of Iran | | | |
| | | depth about 100 km | | | | 26 | Kr | ePZ | 03 | 30 | 07 |
| 24 | Ch | ePZ | 18 | 44 | 02 | | Qt | ePZ | | 11 | |
| | | USCGS 18 33 45 | | | | 26 | Ch | ePZ | 09 | 46 | 11 |
| | | 52 $\frac{1}{2}$ N 160 E | | | | | | eSZE | | 53 | 30 |
| | | Near east coast of | | | | | Qt | ePZ | | 47 | 43 |
| | | Kamchatka | | | | | | USCGS H 09 37 00 | | | |
| 25 | Wr | ePZ | 08 | 56 | 54 | | | 44 $\frac{1}{2}$ N 149 E | | | |
| | | USCGS H 08 46 25 | | | | | | Kurile Islands | | | |
| | | 52 $\frac{1}{2}$ N 160 E | | | | 26 | Qt | ePZ | 09 | 57 | 36 |
| | | Near east coast of | | | | | | ePPNE | | 58 | 12 |
| | | Kamchatka | | | | | | ePPPNE | | 22 | |
| 25 | Lh | ePnZ | 18 | 32 | 46 | | | eSN* | | 10 | 02 04 |
| | | ePgN | | 33 | 08 | | | eLN* | | 04.3 | |
| | | eSgN | | 34 | 22 | | Wr | ePZ | 09 | 57 | 52 |
| | Wr | ePZ | | 33 | 08 | | Kr | ePZ | | 58 | 05 |
| | | iS Z | | 34 | 33 | | Ch | ePZ | | 10 | 00 53 |
| | Qt | ePZ | | 11 | | | | H 09 52 02 | | | |
| | | eSE | | 36 | 24 | | | 39 $\frac{1}{4}$ N 37 $\frac{1}{2}$ E | | | |
| | | eLN* | | 37.0 | | | | Turkey | | | |
| | | H 18 31 17 | | | | | | USCGS H 09 52 00 | | | |
| | | 34 $\frac{1}{4}$ N 80 $\frac{1}{2}$ E | | | | | | 39 $\frac{1}{2}$ N 37 $\frac{1}{2}$ E | | | |
| | | Western Tibet | | | | | | Turkey | | | |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|------------------|----|----|---------|------|---------|-------|---|---|---|
| 26 | Qt | ePZ | 13 | 12 | 04 | | | | | | |
| | Ch | ePZ | | 15 | 11 | | | | | | |
| | | USCGS H 13 05 40 | | | | | | | | | |
| | | 38 N 29 E | | | | | | | | | |
| | | Turkey | | | | | | | | | |
| 27 | Kr | ePnZ | 19 | 39 | 05 | | | | | | |
| | | eSgE | | | 51 | | | | | | |
| | Qt | ePnZ | | | 44 c | | | | | | |
| | | eP*Z | | | 55 | | | | | | |
| | | eXZNE | 40 | | 23 | | | | | | |
| | | eSnNE | | | 52 | | | | | | |
| | | eS*NE | 41 | | 10 | | | | | | |
| | Wr | ePZ | 40 | | 57 | | | | | | |
| | | H 19 38 15 | | | | | | | | | |
| | | 25½ N 36¾ E | | | | | | | | | |
| | | Mekran coast | | | | | | | | | |
| | | West Pakistan | | | | | | | | | |
| 27 | Qt | ePZ | 22 | 17 | 39 | | | | | | |
| | | eSNEN* | | | 19 09 | | | | | | |
| 28 | Qt | ePZ | 10 | 34 | 08 | | | | | | |
| | | e(S)NN* | | | 36 09 | | | | | | |
| 29 | Wr | iPZ | 07 | 34 | 28 c | | | | | | |
| | Qt | iPZ | | | 35 25 d | | | | | | |
| | | isPZNE | | | 36 03 | | | | | | |
| | | iSZNEN* | | | 44 | | | | | | |
| | | Mu Sec | | | | | | | | | |
| | | PZ 0.9 0.7 | | | | | | | | | |
| | | Δ=7°0 | | | | | | | | | |
| | Kr | iPZ | 07 | 36 | 28 d | | | | | | |
| | | iSE | | | 38 32 | | | | | | |
| | | H 07 33 44 | | | | | | | | | |
| | | 36 N 71 E | | | | | | | | | |
| | | Hindukush | | | | | | | | | |

| Date | Station | Phase | h | m | s | Date | Station | Phase | h | m | s |
|------|---------|------------------------|----|----|-------|------|---------|-------|---|---|---|
| | | USCGS H 03 34 42 | | | | | | | | | |
| | | 21½ N 143½ E | | | | | | | | | |
| | | Mariana Islands region | | | | | | | | | |
| 31 | Ch | ePZE | 04 | 15 | 12 c | | | | | | |
| | | epPZE | | | 16 06 | | | | | | |
| | | ePPE | | | 18 27 | | | | | | |
| | | eSE | | | 25 13 | | | | | | |
| | | USCGS H 04 03 11 | | | | | | | | | |
| | | 12½ S 167½ E | | | | | | | | | |
| | | Santa Cruz Islands | | | | | | | | | |
| | | depth about 200 km | | | | | | | | | |
| 31 | Ch | ePZE | 05 | 15 | 50 c | | | | | | |
| | | ePPZE | | | 17 24 | | | | | | |
| | | ePPPZE | | | 48 | | | | | | |
| | | eSE | | | 21 52 | | | | | | |
| | Wr | ePZ | | | 17 29 | | | | | | |
| | Qt | ePZ | | | 18 04 | | | | | | |
| | | ePcPZE | | | 57 | | | | | | |
| | | ePPZNN* | | | 20 08 | | | | | | |
| | | ePPPZNN* | | | 24 | | | | | | |
| | | eSN* | | | 25 55 | | | | | | |
| | | ePSEN* | | | 26 08 | | | | | | |
| | | ePPSNE | | | 23 | | | | | | |
| | | eScSN* | | | 27 48 | | | | | | |
| | | eSSN* | | | 29 38 | | | | | | |
| | | eLN* | | | 30.9 | | | | | | |
| | Kr | ePZ | | | 18 13 | | | | | | |
| | | USCGS H 05 08 18 | | | | | | | | | |
| | | 33½ N 134½ E | | | | | | | | | |
| | | Near east coast of | | | | | | | | | |
| | | Shikoku, Japan | | | | | | | | | |
| 31 | Qt | ePnZ | 11 | 21 | 25 | | | | | | |
| | | iPgZNE | | | 28 | | | | | | |

| Date | Phase | h m s | Date | Phase | h m s |
|------|---------------|----------|------|-------|------------|
| | Quetta | | 14 | eXZE | 07 04 26 |
| 1 | eXZ | 05 43 0 | 14 | ePZ | 13 00 14 |
| 2 | ePZ | 00 43 36 | 14 | ePZ | 16 14 40 |
| 2 | ePgZ | 10 47 23 | | eSN | 15 57 |
| | eSgE | 36 | 15 | ePZ | 12 13 12 |
| 2 | ePZ | 16 17 07 | | eSNE | 48 |
| 3 | ePZ | 18 59 12 | 18 | ePZ | 09 12 17 |
| 4 | ePZ | 01 48 26 | | eSN | 47 |
| | e(S)E | 49 42 | 18 | ePZ | 19 49 25 |
| 4 | ePZ | 15 04 29 | 20 | ePZ | 10 03 52 |
| | eSN | 05 59 | | eSZE | 04 20 |
| 4 | ePZ | 17 24 35 | 21 | eXZ | 10 58 05 |
| 5 | ePZ | 10 40 13 | 21 | ePZ | 13 02 53 |
| | eSE | 38 | | eSZN | 04 54 |
| 5 | ePgZ | 14 22 19 | 22 | e(P)Z | 11 36 38 |
| | eSgE | 31 | 23 | ePZ | 23 58 50 |
| 6 | ePZ | 20 35 17 | 25 | ePZ | 03 34 47 |
| 7 | ePZ | 11 42 51 | | eSN | 35 11 |
| 8 | ePZ | 02 19 08 | 26 | ePZ | 09 28 35 |
| 8 | eXZ | 13 33 33 | 27 | ePZ | 02 09 44 |
| 9 | eXZ | 12 28 03 | 27 | ePZ | 10 08 03 |
| 9 | ePgZ | 14 48 23 | 27 | ePgZ | 21 01 07.2 |
| | eSgNE | 34 | | eSgNE | 16.7 |
| 9 | ePZ | 22 20 08 | 28 | ePZ | 10 33 49 |
| 11 | ePZ | 06 30 28 | | eSN | 36 09 |
| | eSZNE | 31 03 | 28 | ePZ | 15 17 47 |
| 12 | ePZ | 03 06 33 | 28 | eXZ | 21 47 24 |
| 12 | ePZ | 11 18 37 | 29 | ePZ | 00 13 49 |
| | eSZNE | 19 04 | | eXZ | 14 00 |
| 12 | ePZE | 18 29 46 | 29 | ePZ | 07 59 52 |
| | eSZN | 30 06 | 30 | ePZ | 12 37 0 |
| 13 | ePZ | 01 31 14 | 31 | eXZ | 18 07 14 |
| 13 | ePgZN | 01 41 24 | | | |
| | eSgZN | 34 | | | |
| 13 | ePZ | 02 20 30 | | | |
| 13 | ePZ | 10 56 41 | | | |

| Date | Phase | h m s | Date | Phase | h m s |
|------|---------------|------------|------|-------|------------|
| | Warsak | | 4 | iPZ | 11 48 10 d |
| 1 | iPZ | 03 29 25 d | | iSZ | 53 |
| | iSZ | 55 | 4 | ePZ | 12 07 39 |
| 1 | ePZ | 04 21 47 | 4 | iPZ | 15 03 24 d |
| 1 | ePZ | 14 28 13 | | eSN | 04 02 |
| | iSZ | 42 | 4 | iPZ | 15 43 37 c |
| 1 | ePZ | 16 34 18 | | iSZ | 44 01 |
| | iSZ | 35 00 | 5 | iPZ | 02 49 54 d |
| 1 | iPZ | 20 00 52 d | | iSZ | 50 25 |
| | iSZ | 01 15 | 5 | ePZ | 14 14 08 |
| 1 | ePZ | 20 28 35 | | iSZ | 41 |
| 2 | iPZ | 09 27 54 c | 5 | ePZ | 20 46 09 |
| | iSZ | 28 24 | | iSZ | 43 |
| 2 | ePZ | 12 22 14 | 5 | iPZ | 21 32 00 c |
| 2 | iPZ | 16 16 49 c | | iSZ | 37 |
| 3 | iPZ | 03 19 41 d | 6 | ePZ | 11 42 53 |
| | iSZ | 20 26 | | iSZ | 43 24 |
| 3 | ePZ | 08 49 13 | 6 | ePZ | 21 59 15 |
| | iSZ | 46 | | iSZ | 44 |
| 3 | iPZ | 10 46 22 c | 7 | ePZ | 18 02 14 |
| 3 | ePZ | 17 45 28 | 7 | ePZ | 23 37 07 |
| | iSZ | 46 09 | | eSZ | 35 |
| 3 | ePZ | 19 50 08 | 8 | iPZ | 02 24 26 |
| | iSZ | 44 | | iSZ | 25 14 |
| 3 | iPZ | 20 51 15 d | 8 | ePZ | 13 31 18 |
| | iSN | 47 | | iSZ | 52 |
| 3 | iPZ | 23 33 08 d | 8 | iPZ | 14 08 40 c |
| | ePZ | 01 31 02 | | iSZ | 09 32 |
| 4 | iSZ | 41 | 8 | iPZ | 21 16 13 d |
| 4 | ePZ | 06 30 24 | | iSZ | 55 |
| | iSZ | 51 | 8 | ePZ | 22 10 51 |
| 4 | ePZ | 07 26 28 | 8 | ePZ | 23 40 55 |
| | iSZ | 50 | 9 | ePZ | 09 20 34 |
| | | | | iSZ | 21 11 |

| Date | Phase | h m s | Date | Phase | h m s |
|------|-------|------------|------|-------|------------|
| 9 | ePZ | 11 31 33 | | iSZ | 52 |
| 9 | iPZ | 12 26 08 c | 21 | iPZ | 07 30 41 d |
| 13 | ePZ | 07 13 47 | | iSZ | 31 16 |
| | iSZ | 14 15 | 21 | iPZ | 11 11 10 c |
| 13 | iPZ | 09 24 58 d | | iSZ | 38 |
| | iSZ | 25 32 | 21 | iPZ | 15 03 18 c |
| 13 | iPZ | 15 25 41 d | | iSZ | 49 |
| 14 | iPZ | 19 19 38 d | 21 | ePZ | 15 16 59 |
| | iSZ | 20 06 | 21 | iPZ | 16 35 02 d |
| 14 | iPZ | 16 13 23 d | | iSZ | 34 |
| 15 | iPZ | 11 34 54 d | 21 | ePZ | 20 53 06 |
| | iSZ | 35 28 | 21 | ePZ | 23 03 29 |
| 16 | ePZ | 06 02 26 | | iSZ | 58 |
| | iSZ | 52 | | ePZ | 23 26 16 |
| 16 | iPZ | 10 11 26 d | 21 | iPZ | 01 41 54 c |
| 16 | ePZ | 21 56 36 | 22 | iSZ | 42 25 |
| | iSZ | 57 10 | | iPZ | 04 32 15 c |
| 17 | iPZ | 01 19 37 d | 22 | iSZ | 48 |
| | iSZ | 20 22 | | iPZ | 12 18 55 c |
| 17 | ePZ | 02 53 53 | | iSZ | 19 25 |
| 17 | ePZ | 19 01 37 | 22 | iPZ | 17 09 08 c |
| | eSZ | 02 03 | | iPZ | 18 07 16 c |
| 18 | ePZ | 09 12 30 | 22 | iPZ | 00 58 43 c |
| 18 | iPZ | 13 37 27 d | 23 | ePZ | 06 55 59 |
| | iSZ | 59 | 24 | ePZ | 09 42 55 |
| 18 | ePZ | 19 31 34 | 25 | iPZ | 10 06 36 c |
| 20 | iPZ | 06 10 11 c | 25 | iPZ | 10 55 22 |
| | iSZ | 31 | 25 | iPZ | 11 46 11 |
| 20 | iPZ | 13 33 28 d | 25 | ePZ | 15 09 17 |
| | iSZ | 56 | 25 | iSZ | 51 |
| 20 | iPgZ | 22 30 00 c | | | |
| | iSgZ | 13 | | | |
| 21 | iPZ | 01 51 20 d | | | |



| Date | Phase | h m s | Date | Phase | h m s |
|------|-------|------------|------|-------------------|----------|
| 26 | iPZ | 15 47 50 d | 12 | ePZ | 21 31 32 |
| | iSZ | 48 15 | 19 | eXZ | 04 14 31 |
| 26 | iPZ | 20 33 53 c | 21 | eXZ | 13 01 31 |
| 27 | iPZ | 02 08 57 c | 22 | eXZ | 13 38 51 |
| 27 | iPZ | 19 14 14 d | 25 | ePZ | 10 07 19 |
| | iSZ | 15 15 | 26 | eXZ | 09 57 46 |
| 28 | iPZ | 06 47 34 d | 27 | ePZ | 02 09 27 |
| | iSZ | 48 11 | 30 | eXZ | 18 49 30 |
| 28 | iPZ | 17 49 56 c | 31 | eXZ | 11 22 36 |
| | iSZ | 50 53 | 31 | ePZ | 18 07 37 |
| 28 | iPZ | 21 45 12 d | 31 | ePZ | 18 23 16 |
| | iSZ | 45 | | | |
| 29 | iPZ | 00 13 43 d | | Karachi | |
| 29 | ePZ | 02 52 49 | 3 | eXZ | 00 09 58 |
| | iSZ | 54 10 | 4 | eXZ | 06 22 13 |
| 29 | ePZ | 13 59 44 | 6 | eXZ | 19 58 53 |
| 31 | iPZ | 07 12 15 d | 8 | eXZ | 21 22 33 |
| | iSZ | 51 | 8 | eXZ | 21 42 51 |
| 31 | iPZ | 09 55 42 c | 19 | eXE | 04 14 03 |
| | iSZ | 54 | 27 | eXZ | 05 47 56 |
| 31 | iPZ | 18 04 57 c | 27 | eXZ | 05 54 12 |
| | iSZ | 05 31 | 27 | eXZ | 10 08 22 |
| 31 | iPZ | 18 22 34 c | 31 | eXE | 07 36 19 |
| | iSZ | 23 08 | | Chittagong | |
| | | | | Lahore | |
| | | | 1 | ePZE | 06 06 21 |
| 3 | eXN | 11 27 10 | 2 | eXZ | 03 42 13 |
| 4 | eXZ | 04 03 15 | 2 | eXZ | 03 46 27 |
| 9 | eXN | 12 27 53 | 2 | eXZ | 12 41 10 |
| 10 | eXZ | 19 06 11 | 2 | ePgZ | 21 38 28 |
| 11 | eXZ | 03 21 16 | | eSgZ | 38 |
| 11 | ePZ | 09 45 56 | 3 | ePZE | 11 50 29 |

| Date | Phase | h | m | s | Date | Phase | h | m | s |
|------|--------|----|----|----|------|-------|----|----|----|
| 3 | eXE | 20 | 30 | 25 | 20 | eXZ | 03 | 03 | 07 |
| 4 | e(P)ZE | 13 | 02 | 07 | 21 | eXZ | 16 | 51 | 36 |
| 4 | eXZ | 15 | 25 | 55 | 23 | ePZ | 01 | 40 | 24 |
| 7 | ePZ | 11 | 38 | 22 | 24 | e(P)E | 09 | 30 | 13 |
| 8 | eXZ | 02 | 56 | 59 | 25 | eXZ | 08 | 56 | 10 |
| 9 | e(P)Z | 04 | 08 | 20 | 25 | ePZ | 16 | 42 | 24 |
| 10 | eXE | 06 | 03 | 32 | 29 | ePgZ | 08 | 35 | 52 |
| 16 | eXZ | 00 | 50 | 13 | | eSgE | | 36 | 07 |
| 16 | eXZ | 12 | 45 | 08 | 31 | ePZ | 03 | 43 | 18 |
| 16 | ePZ | 15 | 45 | 06 | 31 | eXZ | 08 | 30 | 34 |
| 16 | ePZE | 23 | 43 | 05 | 31 | ePZ | 08 | 54 | 04 |
| 18 | eXZ | 00 | 31 | 22 | 31 | eXE | 11 | 33 | 36 |
| 18 | eXZ | 22 | 05 | 01 | 31 | ePZ | 15 | 13 | 18 |
| 19 | ePZ | 09 | 26 | 58 | 31 | ePZ | 16 | 21 | 10 |
| 19 | eXZ | 16 | 19 | 56 | 31 | ePZ | 17 | 37 | 14 |
| | | | | | 31 | ePZ | 20 | 37 | 50 |