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Old seismologic reports

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SEISMIC OBSERVATIONS
AT FABRA OBSERVATORY IN 1981

by JAVIER PAVIA SEGURA
and M.^a TERESA SUSAGNA VIDAL

The Observatory has now the following seismographs:

- One short period "Hiller-Stuttgart" seismograph, vertical component, with photographic recording.
- Two long period "Mainka" seismographs, horizontal components, with mechanic recording.
- One short period "Vicentini" seismograph, vertical component, with mechanic recording.

We symbolize by ZH the Z component of Hiller-Stuttgart set, by NM and EM the Mainka horizontal components and by ZV the Vicentini vertical component.

For the most outstanding earthquakes, we describe their epicentral characteristics, calculated by the Seismic Section of this Observatory (FBR), together with "Laboratori d'Estudis Geofisics Eduard Fontseré" of "Institut d'Estudis Catalans" (IEC) or provided by the United States Geological Survey (GS), by the Centre Seismologique Europeo-Mediterranean (CSEM), by the "Sección de Sismología e Ingeniería Sísmica" (S.S.I.S.) of "Instituto Geográfico Nacional" (I.G.N.), by the Laboratoire de Détection et de Géophysique (LDG) or by P. Stahl (PS).

The average instrumental constants have been:

1.º Seismograph with photographic recording:

| Type | Component | Period (s) | | Maximun Amplification V_m | Damping |
|------------------|-----------|------------|-------|-----------------------------|----------|
| | | T_p | T_g | | |
| Hiller-Stuttgart | Z(ZH) | 1,61 | 1,3 | 7,326 | Critical |

2.º Seismographs with mechanic recording:

| Type | Component | Mass Kg. | Period (s) T_0 | Damping ϵ | Friction $r/T \sigma^2$ | Amplification V |
|-----------|-----------|----------|------------------|--------------------|-------------------------|-------------------|
| Mainka | N-S (NM) | 141 | 9,3 | 2,05 | 0,029 | 39,50 |
| Mainka | E-W (EM) | 144 | 9,3 | 2,03 | 0,024 | 48,55 |
| Vicentini | Z (ZV) | 56 | 0,9 | — | — | 125 |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|-------|-------|-------|---------|----|------|-------------|--|
| | | | h | m | s | | |
| 8 Jan | ZH | ePg | 13 | 06 | 29,2 | | Ep.: Local. |
| | | iSg | 13 | 06 | 30,7 | | |
| 15 | ZH | ePn | 04 | 26 | 28,3 | | Ep.: 36,5 N; 1,7 E; H = 04 25 16 h = 5 km; M = 4,8 (SSIS) Algeria. |
| | ZH | iSn | 04 | 27 | 26,3 | | |
| 18 | ZH | eP | 18 | 30 | 38 | 10260 | Ep.: 38,6 N; 142,7 E; H = 18 17 24 h = 33 km; M = 6,1 (GS) Near East Coast of Honshu, Japan. |
| | ZH | ePP | 18 | 33 | 40 | | |
| 19 | ZH | iP | 15 | 30 | 03 | 14110 | Ep.: 4,6 S; 139,2 E; H = 15 11 01 h = 33 km; M = 6,0 (GS) West Irian. |
| | ZH | e | 15 | 31 | 51 | | |
| 22 | ZH | iP | 19 | 47 | 53,8 | 10300 | Ep.: 38,2 N; 142,7 E; H = 19 34 40 h = 20 km; M = 6,1 (GS) Near East Coast of Honshu, Japan. |
| | ZH | iPP | 19 | 51 | 22,8 | | |
| 23 | ZH | iP | 05 | 11 | 14,3 | 9860 | Ep.: 42,5 N; 142,1 E; H = 04 58 31 h = 116 km; M = 6,3 (GS) Hokkaido, Japan Region. |
| | ZH | ipP | 05 | 11 | 44,3 | | |
| | ZH | iPP | 05 | 14 | 46,3 | | |
| | ZH | iSKS | 05 | 21 | 31,3 | | |
| | ZH | iPS | 05 | 22 | 55,3 | | |
| 23 | ZH | eP | 21 | 25 | 38,7 | | Ep.: 30,9 N; 101,1 E; H = 21 13 52 h = 33 km; M = 5,7 (GS) Sichuan Province, China. |
| 23 | ZH | iP | 22 | 07 | 37,2 | 9940 | Ep.: 29,7 S; 60,8 E; H = 21 54 42 h = 10 km; M = 6,1 (GS) Atlantic-Indian, Rise. |
| | ZH | ePP | 22 | 11 | 10,9 | | |
| 26 | ZH | ePg | 15 | 34 | 47,1 | | Ep.: Local. |
| | ZH | iSg | 15 | 34 | 49,3 | | |
| 28 | ZH | iPg | 03 | 02 | 16,3 | | Ep.: See page 60. |
| | ZH | iSg | 03 | 02 | 31,3 | | |
| 28 | ZH | iSg | 13 | 12 | 13,5 | | Ep.: Local. |
| 30 | ZH | iP | 09 | 05 | — | 9650 | Ep.: 51,7 N; 176,3 E; H = 08 52 44 h = 33 km; M = 6,3 (GS) Rat Islands, Aleutian Islands. |
| | ZH | ePP | 09 | 08 | — | | |
| 30 | ZH | eP | 15 | 02 | 06 | | Ep.: 51,6 N; 176,1 E; H = 14 49 22 h = 19 km; M = 5,6 (GS) Rat Islands, Aleutian Islands. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|---|---------|
| | | | h | m | s | | |
| 31 Jan | ZH | iPg | 07 | 56 | 22,4 | Ep.: See page 60. | |
| | ZH | Sg | 07 | 56 | 40,4 | | |
| 31 | ZH | iPn | 16 | 31 | 09,4 | Ep.: 36,5 N; 1,6 E; H = 16 29 57 h = 5 km; M = 4,7 (SSIS) Algeria. | |
| | ZH | iSn | 16 | 32 | 02,4 | | |
| 31 | ZH | iPn | 18 | 05 | 03,7 | Ep.: 36,5 N; 1,5 E; H = 18 03 51 h = 1 km; M = 4,7 (SSIS) Algeria. | |
| | ZH | iSn | 18 | 05 | 58,7 | | |
| 1 Feb | ZH | iPn | 13 | 21 | 12,4 | Ep.: 36,5 N; 1,5 E; H = 13 20 03 h = 10 km; M = 5,2 (SSIS) Algeria. | |
| 1 | ZH | ePn | 20 | 59 | 40,5 | Ep.: 36,5 N; 1,8 E; H = 20 58 27 h = 8 km; M = 3,8 (SSIS) Algeria. | |
| | ZH | iSn | 21 | 00 | 31 | | |
| 1 | ZH | iP | 22 | 55 | 57,3 | Ep.: 53,0 N; 162,4E; H = 22 43 27 h = 33 km; M = 5,9 (GS) Off East Coast of Kamchatka. | |
| 1 | ZH | iPn | 23 | 01 | 54,2 | Ep.: 36,4 N; 1,5 E; H = 23 00 43 h = 5 km; M = 4,9 (SSIS) Algeria. | |
| | ZH | iSn | 23 | 02 | 48,4 | | |
| 5 | ZH | iSg | 13 | 13 | 03,9 | Ep.: Local. | |
| | ZH | iL | 13 | 13 | 05,9 | | |
| 5 | ZH | eP | 21 | 57 | 47,7 | Ep.: 43,5 N; 0,7 W; H = 21 57 00 h = 5 km; M = 4,2 (SSIS) Ortez, France. | |
| | ZH | eS | 21 | 58 | 31,7 | | |
| 9 | ZH | ePg | 12 | 27 | 56,3 | Ep.: Local. | |
| | ZH | eSg | 12 | 27 | 58 | | |
| 9 | ZH | iP | 13 | 00 | 23 | Ep.: 55,0 N; 166,0; H = 12 47 59 h = 33 km; M = 5,5 (GS) Komandorsky Islands Region. | |
| 12 | ZH | iP | 01 | 55 | 06,9 | Ep.: 38,5 N; 26,7 W; H = 01 50 07 h = 10 km; M = 5,4 (GS) Azores Islands. | |
| 12 | ZH | e | 21 | 48 | 33,9 | Ep.: 11,3 S; 167,1 E; H = 21 28 46 h = 33 km; M = 5,2 (GS) Santa Cruz Islands. | |
| 14 | ZH | iPn | 13 | 16 | 36,9 | Ep.: 36,0 N; 1,3 E; H = 13 15 18 h = 26 km; M = 5,0 (SSIS) Algeria. | |
| | ZH | iSn | 13 | 17 | 27,9 | | |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phade | Time T.U. | | | Δ km | Remarks |
|--------|-------|-------|-----------|----|------|-------------|---|
| | | | h | m | s | | |
| 16 Feb | ZH | eP | 05 | 07 | 40,4 | | Ep.: 11,1 S; 13,4 W; H = 04 58 12 h = 10 km; M = 5,6 (GS) Ascension Islands Region. |
| 19 | ZH | iP | 19 | 49 | 06,8 | | Ep.: 44,6 N; 149,3 E; H = 13 36 12 h = 33 km; M = 5,9 (GS) Kuril Islands. |
| 23 | ZH | ePKP | 16 | 32 | 10 | | Ep.: 13,8 S; 166,5 E; H = 16 12 26 h = 66 km; M = 5,6 (GS) Vanuatu Islands. |
| 23 | ZH | ePg | 16 | 48 | 44,5 | | Ep.: Local. |
| | ZH | iSn | 16 | 48 | 48 | | |
| | ZH | iL | 16 | 48 | 50 | | |
| 24 | ZH | iPn | 20 | 57 | 28,6 | | Ep.: 38,2 N; 22,9 E; H = 20 53 38 h = 33 km; M = 5,9 (GS) Greece. |
| | ZH | eL | 21 | 03 | 01,1 | | |
| 25 | ZH | eP | 02 | 39 | 40,9 | | Ep.: 38,1 N; 23,1 E; H = 02 35 53 h = 33 km; M = 5,6 (GS) Greece. |
| 26 | ZH | iPKP | 17 | 37 | 58,8 | | Ep.: 13,9 S; 166,5 E; H = 17 18 18 h = 82 km; M = 5,7 (GS) Vanuatu Islands. |
| 2 Mar | ZH | ePg | 13 | 19 | 04 | | Ep.: Local. |
| | ZH | iSg | 13 | 19 | 07 | | |
| 2 | ZH | iSg | 15 | 30 | 57 | | Ep.: Local. |
| 3 | ZH | iP | 09 | 29 | 35 | | Ep.: 0,4 S; 19,8 W; H = 09 21 06 h = 10 km; M = 5,0 (GS) Central Mid-Atlantic Ridge. |
| 3 | ZH | ePg | 13 | 33 | 02 | | Ep.: Local. |
| | ZH | eSg | 13 | 33 | 05 | | |
| 4 | ZH | iP | 22 | 01 | 58,6 | 1840 | Ep.: 38,2 N; 23,3 E; H = 21 58 06 h = 29 km; M = 6,0 (GS) Greece. |
| | ZH | i | 22 | 02 | 03,6 | | |
| 5 | ZH | iPn | 01 | 22 | 41,1 | | Ep.: 38,4 N; 0,1 E; H = 01 21 53 h = 5 km; M = 4,9 (SSIS) Alicante, Spain. |
| 5 | ZH | e | 07 | 03 | 02,8 | | Ep.: 38,2 N; 23,1 E; H = 06 59 07 h = 25 km; M = 5,1 (GS) Greece. |
| | ZH | e | 07 | 03 | 06,8 | | |
| 5 | ZH | iPg | 13 | 27 | 26,8 | | Ep.: Local. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ Km | Remarks |
|-------|-------|-------|---------|----|------|-------------|---|
| | | | h | m | s | | |
| 6 Mar | ZH | iP | 19 | 55 | 37,4 | 9560 | Ep.: 3,9 N; 85,9 W; H = 19 42 59 h = 33 km; M = 6,1 (GS) Off Coast of Central America. |
| 7 | ZH | iPKP | 04 | 07 | 56,6 | | Ep.: 10,5 S; 166,4 E; H = 03 48 21 h = 57 km; M = 4,6 (GS) Santa Cruz Islands. |
| 7 | ZH | iPKP | 06 | 05 | 45,6 | | Ep.: 10,6 S; 166,3 E; H = 0546 06 h = 33 km; M = 4,8 (GS) Santa Cruz Islands. |
| 7 | ZH | iP | 11 | 38 | 38,6 | | Ep.: 38,2 N; 23,3 E; H = 11 34 44 h = 33 km; M = 5,5 (GS) Greece. |
| 8 | ZH | iP | 08 | 52 | 27 | | Ep.: 0,2 S; 24,8 W; H = 08 43 45 h = 10 km; M = 5,3 (GS) Central Mid-Atlantic Ridge. |
| 9 | ZH | iSg | 12 | 45 | 33,2 | | Ep.: Local. |
| | ZH | iL | 12 | 45 | 36,2 | | |
| 9 | ZH | ePg | 18 | 42 | 28,5 | | Ep.: Local. |
| | ZH | iPn | 18 | 42 | 30,8 | | |
| | ZH | iSg | 18 | 42 | 34,5 | | |
| 9 | ZH | iP | 22 | 51 | 43,6 | | Ep.: 18,8 N; 103,9 W; H = 22 38 52 h = 56 km; M = 5,7 (GS) Near Coast of Michoacan, Mexico. |
| | ZH | i | 20 | 51 | 52,6 | | |
| 19 | ZH | iSg | 11 | 55 | 03,2 | | Ep.: Local. |
| 20 | ZH | iSg | 16 | 34 | 43,4 | | Ep.: Local. |
| 21 | ZH | ePKP | 23 | 11 | 28,2 | 14690 | Ep.: 5,4 S; 146,7 E; H = 22 52 39 h = 227 km; M = 6,0 (GS) East Papua. New Guinea Region. |
| | ZH | ePP | 23 | 14 | 31,2 | | |
| 21 | ZH | iPn | 23 | 45 | 56,2 | | Ep.: 36,3 N; 1,7 E; H = 23 44 39 h = 2 km; (SSIS) Sonk et Tnine, Algeria. |
| | ZH | eSn | 23 | 46 | 50,2 | | |
| 23 | ZH | iSg | 12 | 11 | 31,1 | | Ep.: Local. |
| 24 | ZH | iSg | 13 | 30 | 08,9 | | Ep.: Local. |
| 24 | ZH | Ip | 18 | 34 | 06,6 | | Ep.: 52,7 N; 168,0 W; H = 18 21 28 h = 33 km; M = 5,5 (GS) Fox Islands. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ Km | Remarks |
|--------|-------|-------|---------|----|------|-------|---|
| | | | h | m | s | | |
| 25 Mar | ZH | ePg | 12 | 27 | 13,7 | 12630 | Ep.: Local. |
| | ZH | eSg | 12 | 27 | 15,2 | | Ep.: Local. |
| 26 | ZH | iSg | 13 | 02 | 37,1 | | Ep.: Local. |
| 26 | ZH | ePKP | 21 | 48 | 40,1 | 12630 | Ep.: 3,4 N; 128,0 E; W = 21 30 05 h = 61 km; M = 6,1 (GS) Taland Islands. |
| 29 | ZH | iPg | 08 | 59 | 05,6 | | Ep.: 36,7 N; 1,8 E; H = 08 57 57 h = 5 km; M = 4,7 (SSIS) Gouraya, Algeria. |
| | ZH | iSg | 08 | 59 | 56,6 | | |
| 29 | ZH | ePg | 14 | 15 | 56,9 | | Ep.: 36,7 N; 1,7 E; H = 14 14 48 h = 1 km; M = 4,0 (SSIS) Gouraya, Algeria. |
| | ZH | eSg | 14 | 16 | 47,9 | | |
| 1 Apr | ZH | iP | 18 | 15 | 43,7 | | Ep.: 27,3 S; 63,3 W; H = 18 03 36 h = 554 km; M = 5,9 (GS) Santiago del Estero, Argentina. |
| 2 | ZH | iPg | 11 | 31 | 42,7 | | Ep.: Local. |
| | ZH | iSg | 11 | 31 | 46,7 | | |
| 2 | ZH | eSg | 12 | 07 | 48,8 | | Ep.: Local. |
| 6 | ZH | iPg | 13 | 01 | 35,4 | | Ep.: Local. |
| 8 | ZH | iPg | 23 | 55 | 42,5 | | Ep.: Local. |
| 9 | ZH | ePKP | 08 | 57 | 07,8 | 17030 | Ep.: 59,8 S; 150,2 E; H = 08 37 10 h = 10 km; M = 6,1 (GS) West of Macquarie Islands. |
| 9 | ZH | iSg | 15 | 35 | 27,3 | | Ep.: Local. |
| 10 | ZH | Pg | 12 | 08 | 21,6 | | Ep.: Local. |
| 13 | ZH | iPg | 13 | 08 | 52,7 | | Ep.: Local. |
| 16 | ZH | iPg | 14 | 00 | 30,8 | | Ep.: Local. |
| | ZH | iPg | 14 | 00 | 30,8 | | |
| 23 | ZH | iPn | 15 | 53 | 28,0 | | See page 61. |
| | ZH | iSn | 14 | 53 | 48,0 | | |
| 24 | ZH | ePg | 12 | 11 | 09,2 | | Ep.: Local. |
| | ZH | eSg | 12 | 11 | 12,2 | | |
| 24 | ZH | ePKP | 15 | 04 | 19,8 | | Ep.: 12,1 S; 166,5 E; H = 14 44 43 h = 45 km; H = 5,7 (GS) Santa Cruz Islands. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|-------------|---|
| | | | h | m | s | | |
| 24 Apr | ZH | ePKP | 22 | 09 | 49,9 | 16550 | Ep.: 13,4 S; 166,4 E; H = 21 50 06 h = 33 km; M = 6,1 (GS) Vanuatu Islands. |
| 25 | ZH | iP | 11 | 43 | 57,2 | | Ep.: 24,9 N; 95,4 E; H = 11 32 23 h = 148 km; M = 5,7 (GS) Burma. |
| 27 | ZH | ePKP | 18 | 37 | 24,7 | | Ep.: 57,6 S; 148,1 E; H = 18 17 34 h = 10 km; M = 5,7 (GS) West of Macquarie Islands. |
| 28 | ZH | iSg | 11 | 56 | 14,8 | | Ep.: Local. |
| 28 | ZH | eP | 18 | 03 | 50,1 | | Ep.: 36,4 N; 70,9 E; H = 17 54 17 h = 197 km; M = 5,2 (GS) Hindu Kush Region. |
| 28 | ZH | ePKP | 21 | 32 | 39,7 | 18040 | Ep.: 23,7 S; 180,0 E; H = 21 14 48 h = 540 km; M = 6,0 (GS) South Fiji Islands. |
| | ZH | ePKKP | 21 | 33 | 47,7 | | |
| 30 | ZH | eP | 14 | 54 | 35,3 | 10080 | Ep.: 43,2 N; 150,2 E; H = 14 41 41 h = 49 km; M = 6,1 (GS) Kuril Islands. |
| | ZH | ePP | 14 | 57 | 59,3 | | |
| 2 May | ZH | iSg | 10 | 32 | 41,8 | | Ep.: Local. |
| 2 | ZH | iP | 16 | 13 | 47,9 | 5840 | Ep.: 36,3 N; 71,1 E; H = 16 04 56 h = 229 km; M = 6,3 (GS) Afghanistan-USSR Border Region. |
| | ZH | ipP | 16 | 14 | 14,9 | | |
| 6 | ZH | eP | 21 | 49 | 04 | 9570 | Ep.: 1,9 S; 80,9 W; H = 21 36 07 h = 33 km; M = 6,0 (GS) Near Coast of Ecuador. |
| 7 | ZH | iPg | 13 | 07 | 28,7 | | Ep.: Local. |
| 8 | ZH | iP | 22 | 12 | 28,5 | | Ep.: 37,6 N; 26,8 E; H = 22 07 49 h = 10 km; M = 3,7 (GS) Dodecanese Islands. |
| 8 | ZH | iP | 23 | 47 | 11,6 | 9720 | Ep.: 42,7 N; 139,1 E; H = 23 34 45 h = 200 km; M = 6,0 (GS) Hokkaido, Japan. |
| | ZH | ePP | 23 | 51 | 25,5 | | |
| | ZH | eS | 23 | 57 | 28,5 | | |
| 11 | ZH | ePg | 19 | 20 | 03,5 | | Ep.: Local. |
| 12 | ZH | ePg | 15 | 56 | 14,6 | | Ep.: Local. |
| | ZH | iSg | 15 | 56 | 15,6 | | |
| 13 | ZH | iPg | 16 | 44 | 45,6 | | Ep.: Local. |
| 14 | ZH | iPg | 15 | 27 | 39,2 | | Ep.: Local. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|-------------|--|
| | | | h | m | s | | |
| 15 May | ZH | iSg | 15 | 30 | 19,2 | | Ep.: Local. |
| 19 | ZH | iPg | 11 | 52 | 48,7 | | Ep.: See page 61. |
| | ZH | iSg | 11 | 52 | 54,2 | | |
| 19 | ZH | e | 13 | 14 | 02 | | Ep.: Aftershock. |
| 25 | EM | ePKP | 05 | 46 | 17,2 | 18410 | Ep.: 48,8 S; 164,4 E; H = 05 25 14 h = 33 km; M = 6,1(GS) New Zealand. |
| | EM | ePP | 05 | 51 | 06,2 | | |
| | EM | eSS | 06 | 12 | 06,2 | | |
| | EM | eSSS | 06 | 17 | 20,2 | | |
| 3 Jun | ZH | iP | 05 | 59 | 58 | | Ep.: 35,6 S; 17,0 W; H = 05 47 44 h = 10 km; M = 5,8 (GS) South Atlantic Ridge. |
| | Z | ePP | 06 | 03 | 00 | | |
| 4 | ZH | ePg | 11 | 19 | 18,5 | | Ep.: Local. |
| | ZH | iSg | 11 | 19 | 21,8 | | |
| 4 | ZH | eSg | 13 | 28 | 19,8 | | Ep.: Local. |
| 5 | ZH | iP | 19 | 54 | 44 | | Ep.: 44,7 N; 148,9 E; H = 19 41 51 h = 33 km; M = 5,9 (GS) Kuril Islands. |
| 6 | ZH | iPg | 13 | 30 | 46,6 | | Ep.: See page 62. |
| | ZH | iSg | 13 | 31 | 02,5 | | |
| 6 | ZH | iP | 18 | 12 | 18,5 | | Ep.: 37,3 N; 116,3 W; H = 18 00 00 h = 0 km; M = 5,5 (GS) Southern Nevada. |
| 7 | ZH | iPg | 13 | 03 | 02,5 | | Ep.: Local. |
| 7 | ZH | e | 13 | 03 | 17,5 | | Ep.: 37,7 N; 12,5 E; H = 13 00 57 h = 19 km; M = 4,9 (GS) Sicily. |
| 7 | ZH | iPKP | 21 | 58 | 35,7 | | Ep.: 16,6 N; 145,5 E; H = 21 40 35 h = 311 km; M = 5,7 (GS) Mariana Islands. |
| | ZH | ePKKP | 21 | 59 | 29,2 | | |
| 10 | ZH | ePg | 19 | 14 | 27 | | Ep.: Local. |
| | ZH | iSg | 19 | 14 | 33 | | |
| 11 | ZH | iP | 07 | 32 | 44 | 5090 | Ep.: 29,9 N; 57,7 E; H = 07 24 25 h = 33 km; M = 6,1 (GS) Southern Iran. |
| 11 | ZH | eSg | 10 | 18 | 28,8 | | Ep.: Local. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|-------------|---|
| | | | h | m | s | | |
| 11 Jun | ZH | ePg | 12 | 54 | 01,5 | | Ep.: Local. |
| | ZH | iSg | 12 | 54 | 04,5 | | |
| 11 | ZH | iPg | 15 | 04 | 14,3 | | Ep.: Local. |
| 11 | ZH | eP | 21 | 05 | 35,8 | | Ep.: Local. |
| 12 | ZH | ePg | 11 | 45 | 06,0 | | Ep.: Local. |
| 12 | ZH | eSg | 17 | 54 | 35 | | Ep.: Local. |
| 13 | ZH | eP | 07 | 38 | 08,6 | | Ep.: 36,2 N; 67,8 E; H = 07 29 11 h = 24 km; M = 5,5 (GS) Hindu-Kush Region. |
| | ZH | ePP | 07 | 39 | 50,6 | | |
| 15 | ZH | iPn | 07 | 36 | 41,3 | | Ep.: 36,2 N; 1,8 E; H = 07 35 31 h = 20 km; M = 4,4 (SSIS) Algeria. |
| 15 | ZH | ePn | 22 | 58 | 36,0 | | Ep.: 36,3 N; 1,8 E; H = 22 57 25 h = 20 km; M = 3,8 (SSIS) Algeria. |
| | ZH | iSn | 23 | 00 | 18,0 | | |
| 17 | ZH | iPg | 13 | 10 | 52 | | Ep.: Local. |
| | ZH | iSg | 13 | 10 | 53,5 | | |
| 29 | ZH | ePn | 13 | 28 | 35,9 | | Ep.: 43,1 N; 0,4 W; H = 13 27 42 h = 5 km; M = 3,9 (LDG) Pau, France. |
| | ZH | iSn | 13 | 29 | 00,9 | | |
| 6 Jul | ZH | ePKP | 01 | 22 | 23,2 | | Ep.: 15,3 S; 173,5 W; H = 01 02 25 h = 33 km; M = 5,6 (GS) Tonga Islands. |
| | ZH | i | 01 | 22 | 37,2 | | |
| 6 | ZH | ePKP | 03 | 28 | 20,4 | 17680 | Ep.: 22,3 S; 171,7 E; H = 03 08 24 h = 33 km; M = 6,9 (GS) Logalty Islands. |
| | ZH | iPKKP | 03 | 29 | 08,4 | | |
| | ZH | iPP | 03 | 32 | 41,4 | | |
| 7 | ZH | iP | 21 | 19 | 19,6 | | Ep.: 0,2 S; 18,8 W; H = 21 10 58 h = 10 km; M = 5,7 (GS) Central Mid Atlantic Ridge. |
| | ZH | iPP | 21 | 21 | 12,1 | | |
| 8 | ZH | iP | 04 | 07 | 51,8 | | Ep.: 36,4 N; 70,7 E; H = 03 59 01 h = 216 km; M = 5,3 (GS) Hindu-Kush Region. |
| 8 | ZH | iPg | 10 | 40 | 16,6 | | Ep.: Local. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|-------|-------|-------|---------|----|------|-------------|--|
| | | | h | m | s | | |
| 8 Jul | ZH | ePg | 12 | 13 | 33,7 | | Ep.: Local. |
| 13 | ZH | ePg | 17 | 42 | 48,5 | | See page 62. |
| | EM | iSg | 17 | 42 | 53,5 | | |
| 15 | ZH | iPKP | 08 | 19 | 04,5 | | Ep.: 17,3 S; 167,6 E; H = 07 59 08 h = 30 km; M = 5,6 (GS) Vanuatu Islands. |
| 15 | ZH | eP | 08 | 36 | 22,5 | | Ep.: 51,4 N; 174,8 W; H = 08 25 37 h = 39 km; M = 5,0 (GS) Aleutian Islands. |
| | ZH | ePKKP | 08 | 47 | 58,5 | | |
| 15 | ZH | ePg | 11 | 06 | 15,7 | | Ep.: Local. |
| | ZH | iSg | 11 | 06 | 20,2 | | |
| 15 | ZH | iPKKP | 11 | 24 | 33,7 | | Ep.: 17,0 S; 167,3 E; H = 10 45 00 h = 33 km; M = 4,6 (GS) Vanuatu Islands. |
| 15 | ZH | iPKP | 23 | 40 | 51,7 | | Ep.: 17,6 S; 167,6 E; H = 23 20 42 h = 31 km; M = 5,3(GS) Vanuatu Islands. |
| 16 | ZH | iSg | 15 | 28 | 02,8 | | Ep.: Local. |
| 17 | ZH | eP | 06 | 35 | 02 | | Ep.: 34,9 N; 22,8 E; H = 06 30 55 h = 12 km; M = 5,0 (GS) Mediterranean Sea. |
| 17 | ZH | iPg | 15 | 54 | 45,6 | | Ep.: Local. |
| 19 | ZH | ePn | 19 | 59 | 11,0 | | See page 62. |
| | ZH | eSn | 19 | 59 | 39,0 | | |
| 21 | ZH | iPKP | 12 | 06 | 31,3 | | Ep.: 15,4 S; 167, 5 E; H = 11 47 01 h = 143 km; M = 5,8 (GS) Vanuatu Islands. |
| | ZH | iPP | 12 | 10 | 15,3 | | |
| 22 | ZH | iL | 10 | 20 | 13,8 | | Ep.: Local. |
| 22 | ZH | eSg | 11 | 16 | 25,8 | | Ep.: Local. |
| 22 | ZH | iPn | 14 | 55 | 06 | | Ep.: 36,6 N; 1,2 E; H = 14 54 00 h = 10 km; M = 3,5 (SSIS) Algeria. |
| 22 | ZH | e | 15 | 35 | 02 | | Ep.: Local. |
| 23 | ZH | eP | 00 | 12 | 06,6 | | Ep.: 37,1 N; 45,2 E; H = 00 05 31 h = 33 km; M = 5,6 (GS) North Western Iran. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|-------------|---|
| | | | h | m | s | | |
| 24 Jul | ZH | eSg | 11 | 54 | 35,2 | | Ep.: Local. |
| 28 | ZH | eP | 17 | 30 | 43,5 | | Ep.: 30,0 N; 57,8 E; H = 17 22 25 h = 33 km; M = 5,7 (GS) Iran. |
| 29 | ZH | eP | 01 | 31 | 04,8 | | Ep.: 21,6 S; 169,6 E; H = 01 11 13 h = 40 km; M = 5,7 (GS) Loyalty Islands Region. |
| | ZH | e | 01 | 31 | 19,8 | | |
| 29 | ZH | iPg | 12 | 09 | 19,2 | | Ep.: Local. |
| 30 | ZH | iSg | 11 | 05 | 42,4 | | Ep.: Local. |
| 30 | ZH | iSg | 16 | 52 | 03,3 | | Ep.: Local. |
| 4 Aug | ZH | eP | 18 | 42 | 40 | | Ep.: 38,1 N, 49,3 E; H = 18 35 41 h = 25 km; M = 5,5 (GS) Caspian Sea. |
| | ZH | ePP | 18 | 44 | 10 | | |
| 4 | ZH | iP | 22 | 09 | 11,3 | | Ep.: 16,9 N; 61,4 W; H = 22 00 15 h = 47 km; M = 5,3 (GS) Leeward Islands. |
| 5 | ZH | eP | 13 | 10 | 03,6 | | Ep.: 3,8 N; 76,4 W; H = 12 58 29 h = 56 km; M = 5,0 (GS) Colombia. |
| | ZH | e | 13 | 10 | 18,6 | | |
| 19 | ZH | eP | 23 | 02 | 49,5 | | Ep.: 9,3 S; 67,2 E; H = 22 50 50 h = 10 km; M = 5,1 (GS) Mid-Indian Rise. |
| 26 | ZH | iPg | 15 | 17 | 59,8 | | Ep.: Local. |
| 26 | ZH | ePKP | 16 | 51 | 27,8 | | Ep.: 5,4 S; 151,5 E; H = 16 32 16 h = 67 km; M = 5,7 (GS) New Britain Region. |
| | ZH | ePP | 16 | 55 | 13,8 | | |
| 29 | ZH | iL | 10 | 39 | 42,5 | | Ep.: Local. |
| 1 Sep | ZH | ePKP | 09 | 49 | 22 | 17040 | Ep.: 15,0 S; 173,1 W; H = 09 29 31 h = 25 km; M = 7,0 (GS) Samoa Islands Region. |
| | ZH | ePP | 09 | 52 | 57 | | |
| | ZH | ESKS | 09 | 55 | 55 | | |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|-------|-------|-------|---------|----|------|-------------|--|
| | | | h | m | s | | |
| 2 Sep | ZH | ePKP | 00 | 15 | 55,4 | | Ep.: 15,2 S; 173,2 W; H = 23 55 45. h = 33 km; M = 5,6 (GS) Tonga Islands. |
| 2 | ZH | ePKP | 09 | 04 | 36,5 | | Ep.: 15,5 S; 173,0 W; H = 08 44 21 h = 33 km; M = 5,3 (GS) Samoa Islands Region. |
| 2 | ZH | iP | 09 | 48 | 02,5 | | Ep.: 7,8 S; 128,6 E; H = 09 39 28 h = 33 km; M = 4,8 (GS) Banda Sea. |
| | ZH | ePP | 09 | 51 | 52,5 | | |
| 2 | ZH | eP | 10 | 50 | 50,5 | | Ep.: 14,9 S; 173,7 W; H = 10 30 53 h = 33 km; M = 5,3 (GS) Samoa Islands Region. |
| 3 | ZH | iP | 05 | 48 | 39 | 9930 | Ep.: 43,6 N; 147,0 E; H = 05 35 45 h = 45 km; M = 6,6(GS) Kuril Islands. |
| | ZH | eS | 05 | 59 | 24 | | |
| 4 | ZH | iP | 08 | 33 | 05,3 | | Ep.: 15,7 S; 13,1 W; H = 08 23 06 h = 10 km; M = 5,1(GS) South Atlantic Ridge. |
| 4 | ZH | iSg | 11 | 31 | 07,8 | | Ep.: Local. |
| 4 | ZH | e | 11 | 32 | 25,3 | 11780 | Ep.: 10,0 N; 124,0 E; H = 11 15 14 h = 645 km; M = 6,0 (GS) Mindanao, Philippine Islands. |
| 6 | ZH | ePn | 07 | 22 | 11,7 | | Ep.: 36,4 N; 1,5 E; H = 07 20 55 h = 10 km; M = 4,3 (SSIS) Algeria. |
| 6 | ZH | iPKP | 11 | 22 | 36,7 | | Ep.: 21,5 S; 169,6 E; H = 11 02 41 h = 31 km; M = 5,9 (GS) Loyalty Islands Region. |
| 8 | ZH | iP | 19 | 39 | 21,4 | | Ep.: 43,4 N; 146,5 E; H = 19 26 27 h = 46 km; M = 5,7 (GS) Kuril Islands. |
| 12 | ZH | iP | 07 | 25 | 22 | 6070 | Ep.: 35,7 N; 73,6 E; H = 07 15 54 h = 33 km; M = 6,2 (GS) Northwestern Kashmir. |
| 13 | ZH | eP | 23 | 29 | 52,7 | | Ep.: 34,8 N; 25,1 E; H = 23 25 28 h = 44 km; M = 4,8 (GS) Creta. |
| 14 | ZH | eP | 01 | 26 | 01,8 | | Ep.: 34,7 N; 25,0 E; H = 01 21 40 h = 43 km; M = 4,6 (GS) Creta. |
| 14 | ZH | iP | 12 | 54 | 45,6 | | Ep.: 18,3 N; 68,9 W; H = 12 44 30 h = 170 km; M = 5,9 (GS) Mona Passage. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|---|---|
| | | | h | m | s | | |
| 17 Sep | ZH | ePKP | 08 | 43 | 21 | Ep.: 22,5 S; 170,5 E; H = 08 23 25 h = 30 km; M = 5,7 (GS) Loyalty Islands Region. | |
| | ZH | ePP | 08 | 47 | 34 | | |
| 24 | ZH | eSg | 14 | 50 | 35,7 | Ep.: Local. | |
| 25 | ZH | iSn | 09 | 25 | 05,7 | Ep.: 36,5 N; 1,8 E; H = 09 23 51 h = 10 km; M = 4,5(SSIS) Algeria. | |
| | ZH | eSn | 09 | 25 | 58,7 | | |
| 28 | ZH | iPn | 01 | 42 | 29 | Ep.: 43,1 N; 0,2 W; H = 01 41 53 h = 20 km; M = 4,1 (SSIS) Bagneres Bigore, France. | |
| | ZH | iPg | 01 | 42 | 32,7 | | |
| 29 | ZH | iPn | 14 | 23 | 46,3 | Ep.: Local. | |
| | ZH | iSg | 14 | 23 | 49,5 | | |
| 30 | ZH | eP | 07 | 40 | 11,4 | Ep.: 34,0 N; 25,6 E; H = 07 36 00 h = 33 km; M = 5,0 (GS) Crete. | |
| 30 | ZH | eP | 12 | 06 | 59,8 | Ep.: 37,6 N; 118,9 W; H = 11 53 27 h = 5 km; M = 5,6 (GS) California Nevada Border Region. | |
| 30 | ZH | iPn | 13 | 36 | 07,7 | Ep.: Local. | |
| 1 Oct | ZH | iP | 12 | 22 | 34,5 | Ep.: 73,3 N; 54,8 E; H = 12 14 57 h = 0 km; M = 5,9 (GS) Novaya Zemlya. | |
| 1 | ZH | iSg | 13 | 17 | 20,4 | Ep.: Local. | |
| 1 | ZH | eP | 17 | 17 | 21,9 | Ep.: 50,7 N; 160,4 E; H = 17 04 45 h = 33 km; M = 5,9 (GS) Kuril Islands. | |
| | ZH | ePP | 17 | 20 | 45,9 | | |
| 4 | ZH | eP | 20 | 15 | 53,8 | Ep.: 1,5 S; 77,4 W; H = 20 03 53 h = 204 km; M = 5,2 (GS) Ecuador. | |
| 5 | ZH | iSg | 12 | 42 | 32,6 | Ep.: Local. | |
| 7 | ZH | iP | 03 | 21 | 06,3 | Ep.: 20,7 S; 178,6 W; H = 03 02 13 h = 620 km; M = 5,8 (GS) Fiji Islands Region. | |
| | ZH | pP | 03 | 21 | 46,3 | | |
| | ZH | ePP | 03 | 25 | 21,3 | | |
| 7 | ZH | eP | 13 | 31 | 29 | 8790 | Ep.: 11,4 S; 66,3 E; H = 13 19 20 h = 10 km; M = 6,0 (GS) Mid Indian Rise. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|-------|-------|-------|---------|----|------|-------------|---|
| | | | h | m | s | | |
| 8 Oct | ZH | iSg | 13 | 15 | 49,7 | | Ep.: Local. |
| 9 | ZH | iSg | 11 | 31 | 42,7 | | Ep.: Local. |
| 9 | ZH | iP | 12 | 39 | 11,7 | 16000 | Ep.: 10,0 S; 162,0 E; H = 12 19 40 h = 50 km; M = 6,0 (GS) Salomon Islands. |
| 10 | ZH | ePn | 21 | 48 | 58,1 | | Ep.: 36,0 N; 1,6 E; H = 21 47 39 h = 20 km; M = 3,9 (SSIS) El Asnam, Algeria. |
| | ZH | iSn | 21 | 49 | 59,1 | | |
| 14 | ZH | iPg | 12 | 24 | 20,2 | | Ep.: Local. |
| | ZH | iSg | 12 | 24 | 21,2 | | |
| 15 | ZH | eP | 02 | 00 | 53,6 | 10090 | Ep.: 40,2 N; 142,3 E; H = 01 47 53 h = 47 km; M = 6,0 (GS) Near East Coast of Honshu, Japan. |
| | ZH | ePP | 02 | 04 | 19,6 | | |
| 16 | ZH | iP | 03 | 39 | 35 | 11300 | Ep.: 33,1 S; 73,1 W; H = 03 25 42 h = 33 km; M = 6,2 (GS) Off Coast of Central Chile. |
| | ZH | ePP | 03 | 43 | 28 | | |
| 16 | ZH | iSg | 12 | 54 | 53 | | Ep.: Local. |
| 16 | ZH | iL | 12 | 57 | 00 | | Ep.: Local. |
| 16 | ZH | eP | 15 | 51 | 38,7 | | Ep.: 0,2 S; 16,5 W; H = 15 43 20 h = 10 km; M = 5,2 (GS) North of Ascension Islands. |
| | ZH | ePP | 15 | 53 | 21,7 | | |
| 17 | ZH | iPKP | 07 | 03 | 32 | 13550 | Ep.: 7,1 S; 129,0E; H = 06 44 55 h = 179 km; M = 6,1 (GS) Banda Sea. |
| 17 | ZH | iP | 14 | 48 | 32,2 | | Ep.: 45,5 S; 15,2 W; H = 14 35 41 h = 10 km; M = 5,6 (GS) South Atlantic Ridge. |
| 17 | ZH | ePKP | 20 | 22 | 23,6 | | Ep.: 4,6 N; 122,7 E; H = 20 04 15 h = 625 km; M = 5,8 (GS) Celebes Sea. |
| 18 | ZH | iP | 04 | 06 | 17,9 | 5780 | Ep.: 49,9 N; 78,9 E; H = 03 57 03 h = 0 km; M = 6,0 (GS) Eastern Kazakh SSR. |
| 19 | ZH | iSg | 12 | 25 | 54,0 | | Ep.: Local. |
| 19 | ZH | iPg | 19 | 18 | 10,6 | | See page 63. |
| | ZH | iSg | 19 | 18 | 15,6 | | |
| 25 | ZH | iP | 03 | 35 | 04,2 | 9820 | Ep.: 18,0 N; 102,1 W; H = 03 22 15 h = 33 km; M = 6,2 (GS) Michoacan, Mexico. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time TU | | | Δ km | Remarks |
|--------|-------|-------|---------|----|------|-------------|--|
| | | | h | m | s | | |
| 28 Oct | ZH | iSg | 12 | 57 | 57,1 | | Ep.: Local. |
| 28 | ZH | ePg | 15 | 32 | 40,7 | | Ep.: Local. |
| | ZH | eSg | 15 | 32 | 44,7 | | |
| 2 Nov | ZH | iSg | 13 | 20 | 01,5 | | Ep.: Local. |
| 2 | ZH | iSg | 13 | 49 | 15 | | Ep.: Local. |
| 2 | ZH | iP | 21 | 22 | 49 | | Ep.: 12,2 N; 92,8 E; H = 21 10 27 h = 33 km; M = 5,7 (GS) Andaman Islands Region. |
| 3 | ZH | iP | 07 | 14 | 57,2 | | Ep.: 18 S; 78,4 W; H = 07 02 38 h = 129 km; M = 5,6 (GS) Ecuador. |
| | ZH | e | 07 | 15 | 32,2 | | |
| 3 | ZH | ePg | 12 | 53 | 28,8 | | Ep.: Local. |
| 3 | ZH | iP | 14 | 00 | 05,7 | 9320 | Ep.: 43,5 N; 127,7 W; H = 13 47 34 h = 10 km; M = 6,0 (GS) Off Coast of Oregon. |
| 4 | ZH | ePg | 09 | 49 | 25,6 | | Ep.: Local. |
| 4 | ZH | iPKP | 14 | 58 | 06,4 | 17610 | Ep.: 20,0 S; 174,3 W; H = 14 38 11 h = 33 km; M = 6,3 (GS) Tonga Islands. |
| | ZH | ePP | 15 | 02 | 21,4 | | |
| 6 | ZH | eL | 10 | 45 | 00,3 | | Ep.: Local. |
| 6 | ZH | iPKP | 17 | 06 | 58,1 | 14340 | Ep.: 3,6 S; 143,8 E; H = 16 47 49 h = 33 km; M = 6,2 (GS) Near N. Coast of Papua New Guinea. |
| | ZH | iPP | 17 | 09 | 08,1 | | |
| | ZH | iPKS | 17 | 10 | 23,1 | | |
| 7 | ZH | iP | 03 | 43 | 27,7 | 11110 | Ep.: 32,2 S; 71,3 W; H = 03 29 51 h = 65 km; M = 6,2 (GS) Near Coast of Central Chile. |
| 7 | ZH | e | 09 | 55 | 22,5 | 9290 | Ep.: 17,1 S; 66,7 E; H = 09 42 55 h = 10 km; M = 6,0 (GS) Mascarene Islands Region. |
| 7 | ZH | ePg | 23 | 13 | 46,1 | | Ep.: Local. |
| | ZH | iSg | 23 | 13 | 48,3 | | |
| 9 | ZH | ip | 16 | 57 | 42,6 | | Ep.: 53,2 N; 165,7 W; H = 16 45 06 h = 33 km; M = 5,5 (GS) Fox Islands, Aleutian Islands. |



SEISMIC OBSERVATIONS

1981

| Date | Comp. | Phase | Time | | | Δ km | Remarks |
|--------|-------|-------|------|----|------|-------------|---|
| | | | h | m | s | | |
| 13 Nov | ZH | iPg | 13 | 31 | 06,1 | | Ep.: Local. |
| 10 | ZH | iSg | 12 | 20 | 03,6 | | Ep.: Local. |
| 16 | ZH | ePKP | 14 | 13 | 11,8 | | Ep.: 22,1 S; 169,5 E; H = 13 53 19 h = 33 km; M = 5,7 (GS) Loyalty Islands Region. |
| | ZH | ePP | 14 | 17 | 19,8 | | |
| 17 | ZH | iSg | 12 | 38 | 58,3 | | Ep.: Local. |
| 18 | ZH | eP | 09 | 26 | 06,7 | | Ep.: 2,3 S; 22,8 E; H = 09 17 30 h = 7 km; M = 5,8 (GS) Zaire Republic. |
| | ZH | ePP | 09 | 27 | 58,7 | | |
| 18 | ZH | ePg | 12 | 31 | 32,5 | | Ep.: Local. |
| | ZH | eSg | 12 | 31 | 35 | | |
| 22 | ZH | iP | 15 | 18 | 55 | 10830 | Ep.: 18,7 N; 120,8 E; M = 15 05 20 h = 24 km; M = 6,2 (GS) Luzon, Philippine Islands. |
| | ZH | ePP | 15 | 22 | 47 | | |
| 23 | ZH | iP | 10 | 30 | 19,5 | | Ep.: 43,0 N; 146,2 E; H = 10 17 23 h = 39 km; M = 5,9 (GS) Kuril Islands. |
| 23 | ZH | iP | 21 | 39 | 19,5 | | Ep.: 36,4 N; 70,7 E; H = 21 30 28 h = 229 km; M = 5,0 (GS) Hind Kush Region. |
| | ZH | i | 21 | 40 | 07,5 | | |
| 24 | ZH | ePKP | 23 | 50 | 28,5 | | Ep.: 22,5 S; 170,6 E; H = 23 30 33 h = 30 km; M = 5,6 (GS) Loyalty Islands. |
| 25 | ZH | iPKP | 00 | 10 | 26,4 | | Ep.: 22,4 S; 170,6 E; H = 23 49 54 h = 33 km; M = 5,4 (GS) Loyalty Islands. |
| 27 | ZH | iP | 17 | 33 | 21,5 | | Ep.: 42,9 N; 131,1 E; H = 17 21 46 h = 543 km; M = 5,8 (GS) E. USSR-NE China Border Region. |
| | ZH | iPP | 17 | 36 | 16,5 | | |
| | ZH | iS | 17 | 42 | 55,5 | | |
| 1 Dec | ZH | iSg | 13 | 40 | 36,5 | | Ep.: Local. |
| 19 | EM | eP | 14 | 14 | 55 | 1.970 | Ep.: 39,2 N; 25,2 E; H = 14 10 51 h = 10 km; M = 6,2 (GS) Aegean Sea. |
| 21 | ZH | iP | 14 | 17 | 23,6 | | Ep.: 39,2 N; 25,4 E; H = 14 13 17 h = 14 km; M = 5,0 (GS) Aegean Sea. |
| 26 | ZH | iPKKP | 17 | 26 | 46,5 | 18740 | Ep.: 29,9 S; 177,7 W; H = 17 05 32 h = 33 km; M = 6,1 (GS) Kermadec Islands. |
| | ZH | ePP | 17 | 29 | 56,5 | | |
| 27 | ZH | iP | 17 | 43 | 15,6 | | Ep.: 38,9 N; 24,9 E; H = 17 39 14 h = 13 km; M = 5,5 (GS) Aegean Sea. |

